

Port of Seattle CAD Standards Appendices 2023 Edition

Effective April 3, 2023

Major changes in this Edition are documented in the Change Log on page 2.

**These Appendices supersede Port of Seattle
CAD Standards, 2018 Edition**

2023 Port of Seattle Appendices Change Log	
Section	Modification Description
Appendix C	Design Symbols Library content has been updated to Arial font, restructured and renamed
Appendix C	Added Scale Bar block to CAD Library for 1/32" = 1'-0"
Appendix C	Sample Drawings/Title Block: Updated attribute - Consultant's #
Appendix H	Updated CAD & PDF Check Lists

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Appendix A

Public Website CAD Standards 2023 Index

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Port of Seattle Cad Standards Index

Included with the Port of Seattle CAD Standards manual are Port standard symbol blocks, title blocks, sheet index & templates, etc. Below is an index of the files found in this download. They are located at <https://www.portseattle.org/page/design-standards-and-guidelines>. Click on CAD Standards to download the package. Please contact your Port Project Manager for the current link.

Port of Seattle Civil 3D Template

Port_Design_R1.0.dwt

Port of Seattle Layer Template Drawings

01_General Root Layers	05_Civil Root Layers	09_Mechanical Root Layers
02_Detail, Elevations And Etc Root Layers	06_Landscape Root Layers	10_Plumbing Root Layers
03_General Trade Root Layers	07_Architectural Root Layers	11_Electrical Root Layers
04_Survey Root Layers	08_Structural Root Layers	12_Fire Protection Root Layers

Port of Seattle AutoCAD Library Folders

Design Symbols Blocks POS Design Symbols Index POS Key Plans Project Sheet_Blocks Paper Space_Only	Project Sheet_Blocks Detail_Elevation_Section Section_Cuts Titleblock For Xref → Title Block_4Xref_22x34 → Title Block_4Xref_24x36 → Title Block_4Xref_11x17 → Title Block_4Xref_8.5x11	Paper Space_Only Code Review Cover_Blocks North_Arrows Scale_Bars Titleblock_Attributes_4Xref_22x34 Titleblock_Attributes_4Xref_24X36 Titleblock_Stamps View_Titles
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Port of Seattle CAD Standards Appendices

Appendix A Port of Seattle Public Website CAD Standards Index

Appendix B Port of Seattle Abbreviation Tables and Descriptions

Appendix C Port of Seattle Design Symbols and Sample Drawings

Appendix D Port of Seattle Level Tables and Descriptions

Appendix E Port of Seattle CAD Layer naming Standards

Appendix F Design Submittal Deliverable Flowcharts

Appendix G Bluebeam Design Review Flowcharts

Appendix H AutoCAD and PDF Submittals Checklist

Port of Seattle CAD Standards Manual

Port of Seattle CAD Standards 2023 Edition Rev0.pdf

Port of Seattle CAD Standards 2023 Edition Appendix a to H Rev0.pdf

Port of Seattle 2023 CAD Standards Training.pdf

Port of Seattle 2023 Layer Primer.pdf

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Appendix B

Port of Seattle Abbreviation Tables and Descriptions

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Abbreviations Definition

A

A/C	Alternating Current
A/M	Auto/Manual Controller
AB	Anchor Bolt (-S)
ABAN	Abandon (-Ed)
ABBR	Abbreviation
ABS	Acrylonitrile-Butadiene-Styrene
ABST	Absolute
ABV	Above
AC	Acre
ACOT	Acoustical Title
ACST	Acoustic, Acoustical
ACT	Activate
AD	Area Drain
ADDL	Additional
ADH	Adhesive
ADJ	Adjust (-Ed, -Ment, -Able)
ADJT	Adjacent
ADWF	Average Dry Weather Flow
AEGP	Assured Equipment Grounding Program
AF	Ampere Frame
AFD	Adjustable Frequency Drive
AFET	Acre-Feet
AFF	Above Finished Floor
AGG	Aggregate
AHCC	Ambulatory Health Care Center
AHJ	Authority Having Jurisdiction
AHU	Air Handling Unit
AIC	Amperes Interrupting Capacity
AIH	Air Handler
AIL	Aileron
AIR	Ampere Interrupting Rating
AIRCON	Air Condition (-Er, -Ing)
AIRVAC	Air And Vacuum Valve
AL/ALUM	Aluminum
ALM	Alarm
ALT	Alternate (-E, -Ive)
ALTD	Altitude
ALY	Alloy
AM	Ammeter
AMB	Ambient
AMP	Ampere, Amps
AMPT	Ampere Trip
AMS	Ammeter Switch
AN	Anode
ANC	Anchor
ANN	Annunciator

Abbreviations Definition

A

ANSI	American National Standard Institute
ANT	Antenna
AOS	Automatic Sprinkler
APPD	Approved
APPL	Appliance
APPROX	Approximate (-E, -Ly)
APT	Apartment
AR	Area
ARC	Air Conditioned
ARCH	Architect (-Ural)
ARCON	Air Condition
AREQ	As Required
ARM	Armature
ARV	Air Release Valve
AS	Astragal
ASB	Asbestos
ASCM	Asbestos Cement
ASHRAE	American Society Of Heating, Refrigerating & Air Conditioning Engineers
ASPC	Asphalt Concrete
ASPH	Asphalt
ASPT	Asphalt Tile
ASST	Assistant
ASTM	American Society For Testing And Materials
AT	Air Tight
ATCB	Adjustable-Trip Circuit Breaker
ATM	Atmosphere (147 Lb/In)2
ATS	Automatic Transfer Switch
AU	Gold
AUTO	Automatic
AUX	Auxiliary
AVAR	Air Vacuum Air Release
AVE	Avenue
AVG	Average
AWG	American Wire Gauge
AWWA	American Water Works Association
AZ	Azimuth

B

BARM	Barminutor
BATT	Battery (Electric)
BCG	Bare Copper Ground
BCV	Ball Check Valve
BD	Board
BDD	Back draft Damper

Abbreviations Definition

C

C/S	Constant Speed/Control Switch
CA	Cold Air
CAB	Cabinet
CANTIL	Cantilever
CAP	Capacitor
CASO	Cased opening
CAT	Catalog
CATV	Cable Antenna Television
CB	Catch Basin
CBL	Cable
CBR	Circuit Breaker
CC	Control Cable/Closing Coil
CCF	Concrete Floor
CCW	Counterclockwise
CEL	Celsius (Centigrade) Degrees
CELR	Cellar
CEM	Cement
CEMF	Counter Electromotive Force
CEN	Central
CENM	Centimeter
CER	Ceramic
CF	Cubic Feet
CFM	Cubic Feet Per Minute
CFS	Cubic Foot Per Second
CHAN	Channel
CHAP	Chapter
CHAR	Characteristics
CHEM	Chemi (-Cal, -Stry)
CHH	Communication Handhold
CHKD	Checkered
CHM	Chimney
CHMB	Chamber
CHMOD	Chemical Oxygen Demand
CI	Cast Iron
CIP	Cast Iron Pipe
CIPTR	Circuit Interrupter
CIR	Circuit
CIRC	Circula (-R, -Tion)
CIRCUM	Circumference
CISP	Cast Iron Soil Pipe
CL	Centerline
CL2	Chlorine
CLASS	Classification
CLG	Ceiling
CLO	Cleanout
CLOS	Closet

Abbreviations Definition	
C	
CLR	Clear (-Ance)
CLWA	Castaic Lake Water Agency
CM	Circular mils
CM2	Centimeter Square
CM3	Centimeter Cubic
CMC	Cement Mortar Coated
CMF	Cement Floor
CMH	Communication Manhole
CML	Cement Mortar Lined
CML&C	Cement Mortar Lined & Coated
CMP	Code-Making Panel
CMU	Concrete Masonry Unit (-S)
CND	Conduit
CNDO	Conduit Only
CNR	Corner
CNST JT	Construction Joint
CNTOL	Control
CNTR	Counter
CNTRSK	Countersunk
CNTUR	Contour
CO2	Carbon Dioxide
COAX	Coaxial
COL	Column
COMM	Communication
COMPA	Compacted
COMPR	Compressor
CONC	Concrete
CONC BLK	Concrete Block
COND	Condenser
CONN	Connect (-S, -lon)
CONP	Concrete Pipe
CONS	Control Switch
CONSJ	Construction Joint
CONST	Construct (-lon)
CONT	Continuous
CONTJ	Control Joint
CONTR	Contractor
CONTY	County
COORD	Coordinate
COR	Cornice
CORMP	Corrugated Metal Pipe
CORR	Corrugated
CPLG	Coupling
CPR	Copper
CPS	Cycles Per Second
CPT	Control Power Transformer

Abbreviations Definition

C

CPU	Central Processing Unit
CPVC	Chlorinated Polyvinyl Chloride
CR	Control Relay
CRBS	Carbon Steel
CRM	Control Relay Master
CRMT	Ceramic Tile
CRS	Coarse
CS	Cast Steel
CSC	Car Sealed Closed
CSG	Casing
CSMT	Casement
CSO	Car Sealed Opened
CST	Cast Stone
CTC	Center To Center
CTD	Coated
CTR	Center
CTRAN	Current Transformer
CTRP	Control Panel
CTS	Catholic Test Station
CU	Cubic
CU FT	Cubic Foot
CU IN	Cubic Inch
CU YD	Cubic Yard
CURT	Court
CV	Check Valve
CW	Clock Wise
CWT	One Hundred Pounds
CWTR	Cold Water
CWTRP	Cold Water Pipe
CY	Cubic Yard

D

DB	Decibel
DBC	Dynamic Braking Contactor Or Relay
DBL	Double
DBL ACT	Double-Acting
DC	Direct Current
DD	Dutch Door
DDO	Ditto (Repeating Typical Beam Sizes On Plan)
DEG	Degree (-S)
DEMO	Demolish Or Demolition
DEPT	Department
DET	Detail (-S)
DF	Drinking Fountain
DFIR	Douglas Fir

Abbreviations Definition

D

DGRM	Diagram
DHW	Double Hung Window
DI	Ductile Iron
DIA	Diameter
DIAPH	Diaphragm
DIM	Dimension (-S)
DINR	Dining Room
DIP	Ductile Iron Pipe
DIR	Direction
DISC	Disconnect
DISCH	Discharge
DISTB	Distribution
DIV	Division
DK	Deck
DKG	Decking
DL	Dead Load
DI0	Diode
DIAG	Diagram
DINAL	Diagonal
DML	Demolition
DMPR	Damper
DMR	Dimmer
DN	Down
DNS	Down Spout
DO	Dissolved Oxygen
DP	Double-Pole
DP SW	Double-Pole Switch
DPANL	Distribution Panel
DPDT	Double-Pole Double-Throw
DPDT SW	Double-Pole Double-Throw Switch
DPNL	Distribution Panel
DPRO	Damp Proofing
DPST	Double-Pole Single-Throw
DPTH	Depth
DR	Door
DRG	Double Rubber Gasket Joint
DRM	Dormer
DRMS	Drum Switch
DRN	Drain
DRNT	Drain Tile
DRY	Dryer
DRYW	Drywall
DS	Disconnect Switch
DSG	Double Strength Glass
DSTT	Dust Tight
DTR	Double-Throw

Abbreviations Definition

D

DTY CY	Duty Cycle
DUP	Duplex
DW	Dishwasher
DWG	Drawing

E

EA	Each
EBJ	Equipment Bonding Jumper
EC	End Of Horizontal Curve
ECC	Eccentric
ECD	Epoxy Coated
EF	Each Face; Exhaust Fan
EFF	Effluent
EFFIC	Efficiency
EG1	Eg01 Hmt
EG2	Eg02 Hmt
EGC	Equipment Grounding Conductor
EGL	Energy Grade Line
EGH	Electrical Handhold
EL	Elevation
EL	Epoxy Lined
EL&C	Epoxy Lined & Coated
ELB	Elbow
ELEC	Electric (-Al)
ELEK	Electronic
ELEM	Elementary
ELEV	Elevator
ELF	Efficiency
ELMCH	Electromechanical
ELVTR	For Elevator
EM	Expanded Metal
EMERG	Emergency
EMF	Electromotive Force
EMT	Electrical Metallic Tubing
ENAM	Enamel
ENCL	Enclosure
ENGR	Engineer
ENTR	Entrance
EP	Ejector Pump
EPA	Environmental Protection Agency
EPAN	Electric Panel
EPAV	Edge Of Pavement
EPR	Ethylene Propylene Rubber
EQ	Equal (-Ly)
EQPT	Equipment

Abbreviations Definition

E

EQUAL	Equalization
EQULV	Equivalent
EST	Estimate (-D)
ETC	Et Cetera
ETM	Elapsed Time Meter
EUC	Eucalyptus
EVC	End Of Vertical Curve
EW	Each Way
EWC	Electric Water Cooler
EWB	Electric Water Heater
EXC	Excavate
EXH	Exhauster (-S) Or Exhaust
EXPP	Explosion Proof
EXPT	Exception
EXST	Existing
EXT	Exterior
EXT GR	Exterior Grade

F

F1S	Finish One Side
F2S	Finish Two Sides
FA	Fire Alarm
FAA	Federal Aviation Administration
FAB	Fabricate (-D)
FAC	Factory
FACIL	Facility (-les)
FAHT	Fahrenheit
FAI	Fresh Air Intake
FAO	Finish All Over
FAS	Fast
FB	Flat Bar
FBCK	Firebrick
FBLK	Fuse Block
FBRK	Face Brick
FC	Flexible Coupling
FCA	Flanged Coupling Adapter
FCO	Floor Cleanout
FD	Floor Drain
FDC	Fire Department Connection
FDN	Foundation
FDR	Fire Door
FDRN	Floor Drain
FEDR	Feeder
FEXT	Fire Extinguisher
FF	Far Face/Finished Floor

Abbreviations Definition

F

FG	Flap Gate
FH	Fire Hydrant
FHP	Fractional Horsepower
FHY	Fire Hydrant
FIG	Figure
FILT	Filter
FIN	Finish (-Ed)
FIN FLR	Finished Floor
FIN GD	Finish Grade
FIN GR	Finished Grade
FIXT	Fixture
FL	Floor Line
FLA	Full-Load Amps
FLC	Full-Load Current
FLD	Field
FLEX	Flexible
FLG	Flange (-D)
FLLT	Full-Load Torque
FLMB	Flammable
FLMT	Flush Mount
FLNE	Flow Line
FLR	Floor
FLS	Flow Switch
FLSH	Flashing
FLT	Flat
FLUOR	Fluorescent
FLUS	Flush
FM	Flow Meter
FMC	Flexible Metallic Conduit
FNSH	Finish
FNSH FL	Finished Floor
FOF	Face Of Flange
FOS	Face Of Stud
FP	Four-Pole
FPAGE	Fireplace
FPDT SW	Four-Pole Double-Throw Switch
FPM	Foot Per Minute
FPN	Fine Print Note
FPRF	Fireproof
FPS	Foot Per Second
FPST SW	Four-Pole Single-Throw Switch
FPSW	Four-Pole Switch
FR	Frame
FRACE	Furnace
FRC	Flexible Rubber Coupling
FREQ	Frequency

Abbreviations Definition

F

FRP	Fiberglass Reinforced Plastic
FS	Far Side
FSBL	Fusible
FSWTH	Float Switch
FT	Feet, Foot
FT2	Square Feet
FT3	Cubic Feet
FTG	Footing
FTS	Foot switch
FU	Fuse
FUBX	Fuse box
FUHLR	Fuse holder
FURN	Furniture
FURR	Furring
FV	Full Voltage
FVNR	Full Voltage, Non Reversing
FVR	Full Voltage, Reversing
FVW	Front view
FWAL	Fire wall
FWD	Forward
FWTR	Feed Water
FX WDW	Fixed window

G

GA	Gauge
GAL	Gallon (-S)
GALV	Galvanize (-D)
GAR	Garage
GASO	Gasoline
GC	Grooved Coupling
GDL	Ground Level
GEC	Grounding Electrode Conductor
GEN	Generator
GENL	General
GES	Grounding Electrode System
GFCI	Ground-Fault Circuit Interrupter
GFI	Ground Fault Interrupter
GFPE	Ground Fault Protection Of Equipment
GL	Glass
GLB	Glu-Lam Or Glu-Lam Beam
GLB	Glass Block
GLL	Glass Lined
GLV	Globe Valve

Abbreviations Definition

G

GLZ	Glaze
GND	Ground
GNDO	Grounded (Outlet)
GPD	Gallons Per Day
GPH	Gallons Per Hour
GPM	Gallons Per Minute
GR	Grade
GRDL	Grade Line
GRL	Guardrail
GRM	Gram
GRN	Green
GRS	Galvanized Rigid Steel
GRY	Gray
GS	Gas
GSB	Gypsum Sheathing Board
GSTL	Galvanized Steel
GTE	Gate
GV	Gate Valve
GVL	Gravel
GVW	Gross Vehicle Weight
GWB	Gypsum Wall Board
GYP	Gypsum

H

H2 O2	Hydrogen Peroxide
HACR	Heating, Air-Conditioning, Refrigeration
HAZ	Hazardous
HB	Hose Bibb
HBD	Hardboard
HC	Hollow Core
HD	Heavy-Duty
HDPE	High Density Polyethylene
HDR	Header
HDW	Hardware
HDWD	Hardwood
HGH	High
HGL	Hydraulic Grade Line
HGR	Hanger
HH	Handhold
HID	High Intensity Discharge
HM	Hollow Metal

Abbreviations Definition

H

HMD	Hollow Metal Door
HMI	Human Machine Interface
HNDRL	Handrail
HOA	Hand-Off-Automatic
HOR	Hand-Off-Remote
HORIZ	Horizontal
HP	High Point
HPFS	High Point Finished Surface
HPS	High Pressure Sodium
HPWR	Horsepower
HR	Hour
HRL	Handrail
HRS	Hours
HSS	High Strength Steel
HT	Height
HTG	Heating
HTR	Heater
HV	High Voltage
HVAC	Heating, Ventilating, And Air Conditioning
HVY	Heavy
HW	Hot Water
HWH	Hot Water Heater
HWL	High Water Level
HWY	Highway
HYDR	Hydraulic
HZ	Hertz

I

I & C	Instrumentation And Controls
IA	Instrument Air
IC	Interrupting Capacity
IC	Integrated Circuit
ICS	Illumination Control Station
ID	Inside Diameter
IDCI	Immersion Detection Circuit Interrupter
IEC	International Electro Technical Commission
IELV	Invert Elevation
IF	Inside Face
IG	Isolated Ground
IH	Insulation Hot
IJB	Instrument Junction Box
IMC	Intermediate Metal Conduit
IN	Inch (-Es)
IN LB	Inch-Pound

Abbreviations Definition

I

IN2	Inches Square
IN3	Inches Cubic
INCAN	Incandescent
IND LT	Indicator Light
INFL	Influent
INST	Instantaneous
INSTR	Instrument
INSUL	Insulate (-E, -lon)
INT	Interior
INT	Interrupt
INTLR	Interlock
INTR	Interior
INV	Invert
IOL	Instantaneous Overload
IP	Iron Pipe
IPS	International Pipe Standard
IPS	Inch Per Second
IR	Infrared
IRN	Iron
ITB	Instantaneous-Trip Circuit Breaker
ITB	Inverse Time Breaker
ITCB	Inverse-Time Circuit Breaker
IW	Industrial Waste

J

JAN	Janitor
JBOX	Junction Box
JCT	Junction
JMB	Jamb
JST	Joist
JT	Joint

K

K	Kilo (1000)
KIT	Kitchen
KCMIL	1000 circular mils
KD	Kiln-dried
KFT	1000'
KG	Kilogram; Knife Gate
KIP	One Thousand Pounds
KM	Kilometer
KN SW	Knife switch
KO	Knockout

Abbreviations Definition

K

KPL	Kick plate
KV	Kilovolts
KVA	Kilovolt amps
KVAR	Kilovolt-Amperes Reactive
KVARH	Kilovolt-Amperes Reactive Hours
KW	Kilowatt
KWH	Kilowatt-hour
KWHD	Kilowatt-Hour Demand
KWY	Key way

L

LAB	Laboratory
LAM	Laminate
LAT	Lateral
LAU	Laundry
LAV	Lavatory
LB	Pound (-S)
LB-FT	Pounds per feet
LB-IN	Pounds per inch
LBR	Lumber
LC	Locked Closed
LD	Load
LDG	Landing
LDT	Laundry tray
LE	Lifting Eye
LED	Light Emitting Diode
LEL	Lower Explosion Limit
LEN	Length
LF	Linear Feet
LFLI	Less-flammable, liquid-insulated
LFT	Left
LG	Long
LGT	Light
LH	Left Hand
LIB	Library
LIQ	Liquid
LL	Live load
LLH	Long Leg Horizontal
LINO	Linoleum
LLV	Long Leg Vertical
LM	Lime
LMP	Lamp

Abbreviations Definition

L

LNTL	Lintel
LO	Live Oak
LOC	Location
LONG	Longitudinal
LP	Lighting panel
LPD	Liters Per Day
LPG	Liquefied Petroleum Gas –Propane Or Butane As Noted
LPS	Low Pressure Sodium
LR	Living room
LRA	Locked-rotor opacity
LRC	Locked-rotor current
LS	Limit switch
LT	Light
LTG	Lighting
LTH	Lath
LTS	Lights
LV	Low Voltage
LVR	Louver
LWL	Low Water Level

M

M2	Square Meters
M3	Cubic Meters
MA	Mill amperes
MA	Metal anchor
MACH	Machine
MAGB	Magnetic brake
MAN	Manual
MATL	Material
MAX	Maximum
MBCSCGF	Motor branch-circuit, short-circuit, ground-fault
MBH	Thousand Btu Per Hour
MBJ	Main bonding jumper
MBT	Machine Bolt
MC	Medicine cabinet
MCC	Motor Control Center
MCP	Motor Circuit Protector
MECH	Mechanical
MED	Medium
MEM	Memory
MEZZ	Mezzanine
MFR	Manufacturer
MGAL	Million Gallons
MGPD	Million Gallons Per Day
MGPL	Milligrams Per Liter

Abbreviations Definition

M

MGRM	Milligrams
MH	Manhole
MILI	1/1000 Inch
MIN	Minimum
MINT	Minute
MIR	Mirror
MJ	Mechanical Joint
ML	Milliliter (-S)
ML	Monolithic
MLDG	Molding
MLO	Main Lugs Only
MLP	Metal lath and plaster
MISC	Miscellaneous
MMTR	Millimeter (-S)
MN	Main
MNCC	Main control center
MO	Masonry opening
MOD	Modification (-S)
MOM	Moment (As In Moment Frame)
MON	Monument
MOR	Mortar
MOT	Motor
MOV	Motor Operated Valve
MPG	Miles per gallon
MPH	Miles per hour
MRB	Marble
MS	Motor Starter
MSNRY	Masonry
MT	Mount
MTD	Mounted
MTG	Mounting
MTL	Metal
MTLD	Metal door
MTLF	Metal flashing
MTLJ	Metal jalousie
MTLT	Metal threshold
MTOR	Motor
MTR	Meter
MTS	Manual Transfer Switch
MUL	Mullion
MV	Mud Valve, Medium Voltage
MVA	Million Volt Amperes
MWP	Maximum working pressure

Abbreviations Definition

N

N/A	Not Applicable
NATCB	Nonadjustable-trip circuit breaker
NC	Normally closed
NE	Northeast
NEC	National Electrical code©
NEG	Negative
NEMA	National Electrical Manufacturer's Assoc
NEMA	National Electrical Manufacturers Association
NESC	National Electrical Safety Code
NEUT	Neutral
NEUT	Neutral
NF	Near Face
NFPA	National Fire Protection Association
NGVD	National Geodetic Vertical Datum
NIC	Not In Contract
NNO	Number/Normally Open
NO	Normally open
NOM	Nominal
NOR	North
NORM	Normal
NOS	Nosing
NPL	Nameplate
NRS	Non-Rising Stem (Valve)
NS	Non-Shear
NSD	Near Side,
NT	Normally Throttled
NTDF	Non-time delay fuse
NTS	Not to scale
NTWT	Net weight
NUMB	Number
NV	Needle Valve
NW	Northwest
NWL	Normal Water Level

O

O/C	Open/Close Service
OA	Overall
OBD	Opposed Blade Damper
OC	On center
OCPD	Over current protection device
OCRT	Over current
OD	Outside diameter
OF	Outside Face/Overflow
OFE	Owner Furnished Equipment
OFF	Office

Abbreviations Definition

O

OFS	Outside Face Of Stud
OH	Overhead
OHM	Ohmmeter
OL	Overload
OL	Overload relay
ONGE	Orange
OPA	Opaque
OPNG	Opening
OPP	Opposite
ORIG	Original
OS&Y	Outside Screw & Yoke
OSA	Outside Air
OSHA	Occupational Safety and Health Administration
OT	Over Temperature
OUI	Ounces per inch
OUTL	Outlet
OVHG	Overhang
OWJ	Open web joist
OZ	Ounce (-S)

P

P	PA
P&ID	Process (Or Piping) & Instrumentation Diagram
P/P	Poly Polyethylene
PA	Public Address
PAN	Pantry
PAV	Pavement
PBU	Push Button
PBX	Private Branch Exchange
PC	Personal computer
PCC	Point Of Compound Curve
PCF	Pounds Per Cubic Feet
PCO	Pressure Cleanout
PD	Pressure Drop
PDV	Plug Drain Valve
PEC	Photoelectric Cell
PED	Plain End
PEN	Penetration
PERF	Perforate (-E, -Ed, -Es, -Ation)
PERP	Perpendicular
PF	Power Factor
PFB	Prefabricated
PFN	Refinished
PG	Pressure Gauge
PGS	Pages

Abbreviations Definition

P

PH	Phase
PHM	Measure Of Acidity Or Alkalinity
PHMS	Pan Head Machine Screw
PIE	Piece
PIT	Pitch
PIV	Post Indicator Valve
PKG	Package
PL	Plate
PLAS	Plaster
PLAT	Platform
PLC	Programmable Logic Controller
PLCS	Places
PLG	Piling
PLGL	Plate glass
PLIT	Pilot light
PLK	Plank
PLMB	Plumbing
PLR	Pillar
PLS	Plugging switch
PLSTC	Plastic
PLWD	Plywood
PMP	Pump
PNEU	Pneumatic
PNL	Panel
PNLBD	Panel Board
PNT	Paint
PO	Pump Out
POB	Point of beginning
POC	Point Of Connection
POHC	Point Of Horizontal Curve
POHI	Point Of Horizontal Intersection
POL	Pole
POR	Porch
PORC	Porcelain
POS	Positive
POT	Point Of Tangency
POVC	Point Of Vertical Curve
POVI	Point Of Vertical Intersection
POVT	Point Of Vertical Tangency
PP	Pipe
PPB	Parts Per Billion
PPH	Pipe Hanger
PPM	Parts Per Million
PPOL	Power Pole
PR	Pair
PRCST	Recast
PRESS	Pressure

Abbreviations Definition

P

PRF	Profile
PRFV	Pressure Relief Valve
PRG	Pull Ring
PRI	Primary
PRIS	Primary switch
PRL	Property line
PRL	Parallel
PROJ	Project (-lon)
PROP	Property
PROT	Protector
PRS	Pressure Snubber
PRSS	Pressure switch
PRV	Pressure Reducing Valve
PSF	Pounds Per Square Feet
PSF	Pounds per square foot
PSI	Pounds Per Square Inch
PSIA	Pounds Per Square Inch Absolute (Pressure Above Vacuum)
PSIG	Pounds Per Square Inch-Gauge (Pressure Above Atmosphere)
PSL	Pipe Sleeve
PSTA	Pump Station
PSUP	Pipe Support
PSV	Pressure Safety (Relief) Valve
PSW	Pressure Switch
PSWT	Pressure Switch
PT	Point
PTD	Painted
PTOE	Photoelectric
PTP	Peak-to-peak
PUB	Pull box
PULS	Pull switch
PUSB	Pushbutton
PUT	Pull-up torque
PV	Plug Valve
PVC	Poly Vinyl Chloride
PWR	Power
PWR	Power
PWRC	Power consumed
PWWF	Peak Wet Weather Flow

Q

QA	Quick-acting
QDRNT	Quadrant
QT	Quarry tile
QTR	Quarry-tile roof
QTY	Quantity
QUT	Quart

Abbreviations Definition

R

R/W	Right-Of-Way
RA	Return Air
RACT	Reverse-Acting
RAD	Radius
RC	Reinforced Concrete
RCP	Reinforced Concrete Pipe
RCPT	Receptacle
RCT	Repeat Cycle Timer
RD	Road
RDM	Random
RDRN	Roof Drain
RDU	Reduce (-R)
RE	Red
REC	Recessed
REC	Rectifier
RECIRC	Recirculation (-E, -Ion)
REF	Reference
REFR	Refrigerator
REFSB	Reinforcing Steel Bar
REG	Regulate (-E, -Or, -Ion, -Ing)
REINF	Reinforce (-E, -Ed, -Ing, -Ment)
REL	Relative
REQD	Required
REQT	Requirement
RES	Resistor
RESIL	Resilient
REVC	Receiving
REVR	Reverse
REVSN	Revision
RF	Raised Face
RFG	Roofing
RGD	Rigid
RGH	Rough
RGT	Right
RGTR	Register
RH	Right Hand
RHES	Rheostat
RIB	Ribbed
RJ	Restrained Joints
RM	Room
RMS	Root Mean Square
RND	Round
RNGE	Range
RO	Rough Opening
ROC	Receipt Of Comments
ROF	Roof

Abbreviations Definition

R

ROP	Receipt Of Proposals
RPM	Revolutions Per Minute
RPS	Revolutions Per Second
RPS	Revolutions Per Second
RR	Railroad
RRM	Roll Room
RS	Rough Sawn
RSET	Reset Timer/Right
RSR	Riser
RST	Reinforcing Steel
RSVR	Reservoir
RT	Rain tight
RTE	Route
RTN	Return
RTR	Rotor
RVAT	Reduced Voltage Autotransformer
RVNR	Reduced Voltage Non-Reversing
RWD	Redwood

S

S/W	Sidewalk
S1S	Surface One Side
S4S	Surface Four Sides
SA	Supply Air
SAN	Sanitary
SB	Splash Block
SC	Sill Cock
SCA	Scale
SCBF	Brace Frame
SCFM	Standard Cubic Feet Per Minute
SCHED	Schedule
SCR	Silicon Controlled Rectifier
SCRN	Screen
SCU	Scuttle
SD	Smoke Detector
SDCR	Solid Core
SDG	Siding
SE	Southeast
SEC	Second (-S, -Ary)
SECN	Secondary
SECT	Section (-S)
SED	Sedimentation
SER	Series
SERE	Service Entrance

Abbreviations Definition

S

SERV	Service
SERVF	Service Factor
SEW	Sewer
SF	Soffit
SG	Sluice Gate
SGLA	Structural Glass
SH	Shower
SH & RD	Shelf And Rod
SHELV	Shelving
SHGL	Shingle
SHK	Shake
SHLD	Shield Or Shielded
SHT	Sheet
SHTHG	Sheathing
SHTR	Shutter
SI	Sidewalk Inlet
SIG	Signal
SIM	Similar
SK	Sink
SKLT	Skylight
SKTH	Sketch
SL	Sludge
SLD	Sliding Door
SLO	Slow
SLP	Slope
SLT	Slate
SM	Sheet Metal
SN	Solid Neutral
SO2	Sulfur Dioxide
SOC	Socket
SOG	Slab On Grade
SOL	Solenoid
SOW	Socket Weld
SPC	Space
SPCB	Single-Pole Circuit Breaker
SPCD	Spaced
SPCNG	Spacing
SPCS	Spaces
SPDT	Single Pole, Double Throw
SPDT SW	Single-Pole Double-Throw Switch
SPEC	Specifications
SPGR	Specific Gravity
SPIP	Soil Pipe
SPLY	Supply
SPOLE	Single-Pole
SPR	Spare

Abbreviations Definition

S

SPRES	Static Pressure
SPST	Single-Pole Single-Throw
SPST SW	Single-Pole Single-Throw Switch
SPSW	Single-Pole Switch
SPUP	Sump Pump
SQ	Square
SQ FT	Square Foot
SQ IN	Square Inch
SQ YD	Square Yard
SRG	Single Rubber Gasket Joint
SS	Stainless
SS 304	Stainless Steel Type 304
SS 316	Stainless Steel Type 316
SS/SS	Sanitary Sewer/Stainless Steel
SSG	Single Strength Glass
SST	Stainless Steel
SSW	Safety Switch
SSWT	Selector Switch
ST	Street
STA	Station
STD	Standard
STH	South
STIFF	Stiffen (-Er)
STK	Stack
STL	Steel
STM	Steam
STN	Stone
STOR	Storage
STP	Standpipe
STR	Starter
STRMD	Storm Drain
STRP	Shunt Trip
STRS	Stairs
STRUCT	Structure (-E, -Al)
SUB	Substitution
SUBM	Submission (Submit)
SUBSTA	Substation
SUP	Supernatant
SUPF	Supply Fan
SUPP	Support (-S)
SURF	Surface
SUSP	Suspend (-Ed)
SV	Solenoid Valve
SVC	Service
SW	Southwest
SWBD	Switchboard

Abbreviations Definition

S

SWD	Switched Disconnect
SWGR	Switchgear
SYM	Symmetrical
SYNC	Synchronizing
SYNCS	Synchroscope
SYS	System

T

T & B	Top & Bottom
T & G	Tongue & Groove
T/	Timer; Time Top Of
T-__-P	Type __ Pipe
T-__-S	Type __ Support
TAN	Tangent (-lal)
TB	Terminal Board
TB/TB	Thrust Block/Terminal Box
TBM	Temporary Bench Mark
TBO	Test Boring
TC	Terra Cotta
TCAB	Telephone Cabinet
TD	Time Delay
TDF	Time-Delay Fuse
TDH	Total Dynamic Head
TDR	Time Delay Relay
TECV	Twin Element Check Valve
TEL	Telephone
TEMP	Temperature
TEMPD	Tempered
TEMPY	Temporary
TER	Terrazzo
TERM	Terminal
TH	Threshold
THERMO	Thermostat
THERMP	Thermally Protected
THHN	Heat-Resistant Thermoplastic
THK	Thick (-Ened, -Ener, -Ness)
THMST	Thermostat
THOL	Test Hole
THRM	Thermal
THS	Thermostat Switch
THWN	Moisture-And-Heat Resistant Thermoplastic
TOCON	Top Of Concrete
TOCUB	Top Of Curb
TOD	Total Oxygen Demand

Abbreviations Definition

T

TOIL	Toilet
TOP	Top Of Pavement
TOPO	Topography
TOR	Torque
TOS	Top Of Steel; Top Of Slab
TOW	Top Of Wall
TP	Telephone Pole
TRANSF	Transformer
TRANSV	Transverse
TRD	Tread
TROF	Through Roof
TRS	Truss
TRTMT	Treatment
TS	Tube Steel
TSP	Twisted Shielded Pair
TTB	Telephone Terminal Board
TURB	Turbidity
TV	Television
TYP	Typical

U

U RM	Utility Room
UCL	Unclamp
UDG	Underground
UF	Under Floor
UGE	Underground Electric
UGND	Underground
UH	Unit Heater
UKWN	Unknown
UL	Underwriter Laboratories
UNEXC	Unexcavated
UNFLN	Unfinished
UNGF	Underground Feeder
UNO	Unless Noted Otherwise
UP	Up
UPR	Upper
UPS	Uninterruptible Power Supply
UV	Under voltage

V

VA	Volt Amps
VAC	Volts Alternating Current
VACUM	Vacuum

Abbreviations Definition

V

VAL	Valley
VALV	Valve
VAPS	Vapor Seal
VAPT	Vapor tight
VAR	Volt Amperes Reactive
VARB	Variable
VARS	Variable Speed
VAT	Vinyl Asbestos Tile
VB	Valve Box
VC	Vertical Curve
VCP	Vitrified Clay Pipe
VD	Voltage Drop
VDC	Volts Direct Current
VDMPR	Volume Damper
VELO	Velocity
VENT	Ventilation
VERT	Vertical
VERTBS	Vertical Bars
VEST	Vestibule
VF	Ventilation Fan
VFD	Variable Frequency Drive
VH	Var-Hour
VIO	Violet
VLT	Vault
VM	Voltmeter
VNT	Vent
VOL	Volt
VOLM	Volume
VP	Vent Pipe
VPI	Vertical Point Of Intersection
VS	Vent Stack
VT	Vinyl Tile

W

W CL	Water Column
W/	With
W/O	Without
WA	Warm Air
WAIN	Wainscot
WASP	Waste Pipe
WC	Water Closet
WD	Wood
WF	Wide Flange
WH	Water Heater
WHDM	Watt-Hour Demand Meter

Abbreviations Definition

W

WHM	Watt-Hour Meter
WHS	Welded, Headed Stud
WHT	White
WI	Wrought Iron
WIC	Walk-In Closet
WID	Width
WIRG	Wire Gauge
WIRM	Wire Mesh
WLD	Welded
WM	Water Meter
WN	Weld Neck
WP	Weatherproof
WPT	Work Point
WRE	Wire
WS	West
WS	Welded Steel
WS	Waste Stack
WSHM	Washing Machine
WST	Water Stop
WT	Watertight
WTR	Water
WTRG	Water Gauge
WTRM	Water Meter
WTRP	Waterproof
WTRTP	Water Treatment Plant
WTRW	Water Waste
WWF	Welded Wire Fabric
WWM	Welded Wire Mesh

X

XFMR	Transformer
XFMRSS	Transformer, Secondary Side
XHHW	Moisture/And Heat-Resistant Cross Linked Synthetic Polymer
XP	Explosion Proof
XRNC	Reactance
XXH	Double Extra Heavy

Abbreviations Definition

Y

YEL	Yellow
YD	Yard
YD2	Square Yard
YD3	Cubic Yard
YR	Year

Z

Z	Impedance
---	-----------

Misc

&	And
∠	Angle
±	Approximately
@	At
CL	Centerline
°	Degree
=	Equals
'	Foot
>	Greater Than
"	Inch
%%C	Phase
<	Less Than
#	Number
%	Percent







1 PH	Single-Phase
2PH	Two-Phase
3P	Three-Pole
3P SW	Triple-Pole Switch
3PDT	Three-Pole Double-Throw
3PDT	Triple-Pole Double-Throw
3PDT SW	Triple-Pole Double-Throw Switch
3PH	Three-Phase
3PST	Three-Pole Single-Throw
3PST	Triple-Pole Single-Throw
3PST SW	Triple-Pole Single-Throw Switch
3W	Three-Wire
3WAY	Three-Way

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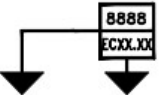


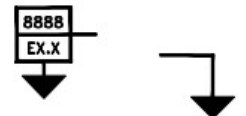

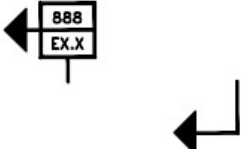



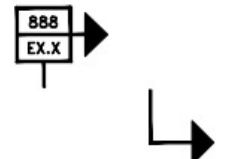

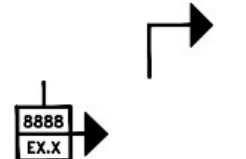
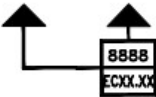



Appendix C

Design Symbols





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Symbol	Block Name	Description
	BUB_DETL	
	BUB_ELEV_UP	
	BUB_ELEV_DN	
	BUB_EL2V_UP	
	BUB_EL2V_DN	
	BUB_SECT	



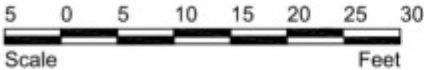









Detail_Elevation_Section (Model Space)

Symbol	Block Name	Symbol	Block Name
	SEC1_DN_L		Sect Exten_1 Sect Cut_1
	SEC2_DN_R		Sect Cut_2 Sect Exten_2
	SEC3_LF_1		Sect Cut_3 Sect Exten_3
	SEC4_LF_2		Sect Exten_4 Sect Cut_4
	SEC5_RT_1		Sect Cut_5 Sect Exten_5
	SEC6_RT_2		Sect Exten_6 Sect Cut_6
	SEC7_UP_1		Sect Exten_7 Sect Cut_7
	SECT_UP_R		Sect Exten_8 Sect Cut_8












Section Cuts (Model Space)

Symbol	Block Name	
	NAroBot	
	NAroLft	
	NAroRgt.	
	NAroTop.	


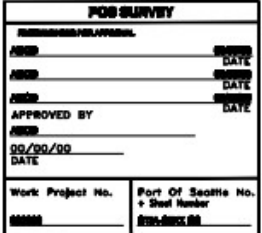
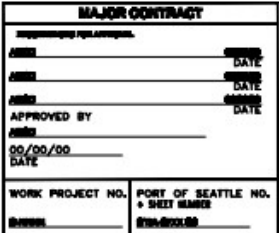

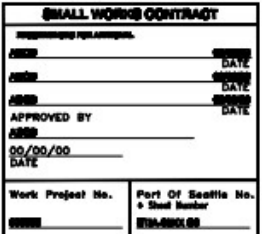


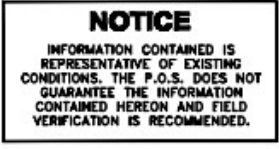
North Arrows (Paper Space)

Symbol	Block Name
$1/32"=1'-0"$ 	Bar_A384
$1/16"=1'-0"$ 	Bar_A192
$3/32"=1'-0"$ 	Bar_A128
$1/8"=1'-0"$ 	Bar_A96
$3/16"=1'-0"$ 	Bar_A64
$1/4"=1'-0"$ 	Bar_A48
$3/8"=1'-0"$ 	Bar_A32
$1/2"=1'-0"$ 	Bar_A24
$3/4"=1'-0"$ 	Bar_A16
$1"=1'-0"$ 	Bar_A12
$1-1/2"=1'-0"$ 	Bar_A8
$3"=1'-0"$ 	Bar_A4









Architectural Scale Bars (Paper Space)

Symbol	Block Name
$1"=10'-0"$  <p>Scale Feet</p>	Bar_C10
$1"=20'-0"$  <p>Scale Feet</p>	Bar_C20
$1"=30'-0"$  <p>Scale Feet</p>	Bar_C30
$1"=40'-0"$  <p>Scale Feet</p>	Bar_C40
$1"=50'-0"$  <p>Scale Feet</p>	Bar_C50
$1"=60'-0"$  <p>Scale Feet</p>	Bar_C60
$1"=100'-0"$  <p>Scale Feet</p>	Bar_C100
$1"=200'-0"$  <p>Scale Feet</p>	Bar_C200
$1"=300'-0"$  <p>Scale Feet</p>	Bar_C300
$1"=400'-0"$  <p>Scale Feet</p>	Bar_C400
$1"=500'-0"$  <p>Scale Feet</p>	Bar_C500

Civil Scale Bars (Paper Space)

Symbol	Block Name	Symbol	Block Name
	AsBltCvr		SurveyCvr
	MajContCvr		TenantCvr
	SmWkCvr		4RefOny
	ASBUILT		
	DISCLAIM		

Cover Sheet Stamps (Paper Space)

Symbol	Block Name
DETAIL LINE_1 LINE_2 LINE_3 SCALE: 1/4" = 1'-0" 	TTL_DETL
LINE DIAGRAM LINE_1 LINE_2 LINE_3 SCALE: None 	TTL_LDIA
RISER DIAGRAM LINE_1 LINE_2 LINE_3 SCALE: None 	TTL_RDIA
BLOCK DIAGRAM LINE_1 LINE_2 LINE_3 SCALE: None 	TTL_BDIA
ELEVATION LINE_1 LINE_2 LINE_3 SCALE: 1/8" = 1'-0" 	TTL_ELEV
ELEVATION LINE_1 LINE_2 LINE_3 SCALE: 1/16" = 1'-0" 	TTL_ELV2
ENLARGED PLAN LINE_1 LINE_2 LINE_3 SCALE: 1/4" = 1'-0" 	TTL_ENLP
PHOTO #/SHEET LINE_1 LINE_2	TTL_PHOT
PLAN LINE_1 LINE_2 LINE_3 SCALE: 1/8" = 1'-0"	TTL_PLAN
SECTION LINE_1 LINE_2 LINE_3 SCALE: 1/4" = 1'-0" 	TTL_SECT
TITLE LINE_1 LINE_2 LINE_3 SCALE: None	TTL_TTLE



























































View Titles (Paper Space)

Symbol	Block Name	Description	Symbol	Block Name	Description	Symbol	Block Name	Description
AC	101	ASPHALT		VLT 199	ELECTRICAL VAULT		245	GUARD POST
	103	ASPHALT OVER CONCRETE		M 200	ELECTRICAL METER		247	GROUND ROD
	110	BACK FLOW PREVENTER		201	ELECTRICAL OUTLET		249	GROUND ROD BOX
	118	BOLLARD		201A	ELECTRICAL SHIP OUTLET		254	GUY WIRE ANCHOR
	129	CARD READER		207	FAA CHECK POINT		255	GUT POST
	130	CATCH BASIN STORM SEWER		208	FAA CABLE MARKER		259	MISC. HATCH
	130A	IWS CATCH BASIN		210	FAA ANTENNA		260	HATCH ON PIER
	135	CLEAN OUT SANITARY SEWER		211	FAA MANHOLE		265	JERSEY BARRIER
	136	CLEAN OUT STORM		216	FENCE CORNER		275	LADDER
	137	CLEAN OUT IWS		219	FIRE HOSE		276	LIGHT
	138	CLEAT		220	FIRE HYDRANT		277	LIFT HOIST
	140	COLUMN		222	FIREHOLES IN DECK		278	LIFT STATION
	156	CRANE STOPS		224	FIRE ALARM		280	LIGHT HOLDING
	170	DECK DRAIN		232	FUEL PUMP		282	LIT_THLD ELECTRIC
	171	UNKNOWN DRAIN		234	FUEL VENT		283	LIGHT CAN ABANDON
	177	DOLPHIN PILE		235	FUEL CAP		284	LIGHT T/W CENTERLINE
	188	ECOLOGY BLOCK		236	FUEL PIT		285	LIGHT VASI
	193	ELECTRICAL JUNCTION BOX		236A	A=AIR PIT		286	LIGHT FAA R/W LANDING
	196	ELECTRICAL MANHOLE		236B	B=WATER PIT		288	EDGE LIGHT
	197	ELECTRICAL PANEL		238	GATE CONTROL BOX		289	WIGWAG LIGHT
	198	ELECTRICAL SUBSTATION		239	GUARD POST		290	RUNWAY LIGHT








































Site Design Symbols 1

Symbol	Block Name	Description	Symbol	Block Name	Description	Symbol	Block Name	Description
	294	MAILBOX		331	POST (METAL)		391	SPRINKLER VALVE
	295	MANHOLE UNKNOWN		332	POST (WOOD)		392	CONDUIT ELECTRICAL
	296	MANHOLE COMBINATION		333	PROPERTY CORNER		394	SPRINKLER
	297	MANHOLE ELECTRICAL		345	RIP RAP		395	YIELD SIGN BOX
	298	MANHOLE SANITARY SEWER		345A	RIP ROCK		396	DO NOT ENTER SIGN
	299	MANHOLE STORM SEWER		347	REEFER OUTLET		398	STOP SIGN
	300	MANHOLE IWS		350A	R.R. FLANGE LUBRICATOR		399	PARKING ARROWS
	301	MANHOLE TELEPHONE		353	RAILROAD SIGN			
	302	MANHOLE OIL / WATER SEPARATOR		359	ROOF DRAIN		400	FUEL TANK
	303	MANHOLE WATER		368	SENSOR		402	PHONE, ELEC. UNDERGROUND
	304	MANHOLE METRO		375	SHIP'S WATER HYDRANT		403	TELEPHONE HANDHOLE
	306	METER NATURAL GAS		376	PIPE SIZE (IWS)		404	PHONE CABLE UNDERGROUND DO NOT NEED
	307	WATER METER		377B	AIR VENT		405	TELEPHONE PANEL
	312	MONITORING WELL		378	SEWER STUB (SANSEWER)		410	TEST HOLE
	317	PHONE BOOTH		380	SHRUB		413	TRANSFORMER
	320	PHOTO TARGET		382	SIGN (ELECTRIC)		414	TRANSFORMER CAN
	322	PILE		383	SIGNBASE SIGNAGE		415	TELEVISION DISK
	323	PILE FENDER		384	SIGN POST		417	TREE
	324	PILE STUB		385	WARNING SIGN FOR PIPELINE		417A	TREE DECIDUOUS
	330	PUMP (ELECTRICAL)		386	ONEWAY SIGN		417B	TREE CONIFER
	330A	PUMP (SUMP)		387	TIE DOWN		438	VALVE

Site Design Symbols 2


















































Symbol	Block Name	Description	Symbol	Block Name	Description	Symbol	Block Name	Description
	439	GAS VALVE		P6 606	POLE POWER LIGHT PHONE CONDUIT		704	LIFE RING
	440	WATER VALVE		P7 607	POLE POWER TELEPHONE CONDUIT		M5 706	2 EL MET FIRE HOSE DOMESTIC WATER
	441	NATURAL GAS VALVE		P8 608	POLE POWER CONDUIT UNDERGROUND TRANS.		710	SMALL AIRCRAFT TIEDOWN
	442	WATER P.I. VALVE		P9 609	POLE POWER TELEPHONE		711	LIGHT POLE WITH 2 ELECTRICAL METERS
	442old	WATER P.I. VALVE old		P10 610	POLE POWER WITH LIGHT		R W 750	CENTERLINE RUNWAY LIGHT
	443	IWS VALVE		P11 611	POLE POWER LIGHT TELEPHONE TRANSFORMER		751	SOUTH TDZ LIGHT
	443old	IWS VALVE old		P12 612	POLE LIGHT TELEPHONE		752	NORTH TDZ LIGHT
	445	VAULT CORNER		P13 613	POLE LIGHT		753	RUNWAY EDGE LIGHT UPRIGHT
	447	VENT VALVE		P14 614	POLE POWER		754	RUNWAY EDGE LIGHT FLUSH
	448	WATER VALVE		P15 615	POLE TELEPHONE		AIR WTR PIT 780	AIR WATER PIT
	448old	WATER VALVE old		P16 616	POLE UTILITY		801	HH-L867
	453	TOP OF RETAINING WALL		P17 617	POLE PHONE WITH LIGHT		802	BASE-L868
	456	WINDSOCK MISC.		P18 618	POLE POWER LIGHT TRANSFORMER		803	BASE-L867
	460	WATER SPIGOT		P19 619	POLE POWER TELEPHONE LIGHT CONDUIT		804	REFLECTORS
	462	SEDIMENT WATER MONITORING		P20 620	POLE POWER TELEPHONE TRANSFORMER		805	MICROWAVE DETECTOR
	PP 600	POLE POWER TRANSFORMER		621	LIGHT POLE ON METER TWO LIGHTS		806	TRANSFORMER CAN
	P1 601	POLE POWER W/ CONDUIT		622	LIGHT POLE ON METER ONE LIGHT			
	P2 602	POLE POWER LIGHT CONDUIT		M1 700	2 EL MET FIRE HOSE DOMESTIC WATER			
	P3 603	POLE POWER TELEPHONE		M2 701	2 METERS DOMESTIC WATER			
	P4 604	POLE POWER TELEPHONE CONDUIT		M3 702	ELECTRICAL METERS			
	P5 605	POLE POWER LIGHT PHONE TRANS CON		M4 703	1 EL MET FIRE HOSE DOMESTIC WATER			

Site Design Design Symbols 3














Symbol	Block Name	Description	Symbol	Block Name	Description	Symbol	Block Name	Description
	BMK	BENCHMARK		MHL	MANHOLE		TSG	TRAFFIC SIGNAL
	CBN1	CATCH BASIN		MON	MONUMENT OR SURVEY POINT		UTB	UTILITY BOX (AS LABELED)
	CES	CULVERT WITH END SECTIONS		PWP	POWER POLE		WTR	WATER METER
	COT	CLEAN OUT		RSB	REINFORCING STEEL BAR		WTV	WATER VALVE
	CSN	CONSTRUCTION NOTE		RSBL	REINFORCING STEEL BAR (LONG.)		YDL	YARD LIGHT
	CVN	CURVE NUMBER		S1 S2	SIGN 1 SIGN 1			
	DIN	DROP INLET		SBID	SOIL BORING I.D. NUMBER			
	DOS	DITCH OR SWALE		SDR	STORM DRAIN			
	DVV	DRIVEWAY		SLT	STREET LIGHT			
	ETS	ELECTROLYSIS TEST STATION		SPT1	SPOT ELEVATION			
	FDC	FIRE DEPARTMENT CONNECTION		STC	SECTION CORNER			
	FLN	FLOW LINE		STL	STREET LIGHT			
	FRH	FIRE HYDRANT		STT	STREET LIGHT TRAFFIC SIGNAL			
	GAN	GUY ANCHOR		SVP	SURVEY PANEL			
	GAT	GATE		TPID	SOIL TEST PIT I.D. NUMBER			
	GLN	GENERAL NOTE		TRE	TREE			
	GSL	GRADED SLOPE		TRR	TELEPHONE RISER			

Civil Design Symbols




















































[illegible]

Symbol	Block Name	Description	Symbol	Block Name	Description	Symbol	Block Name	Description
	2SS	2 POSITION SELECTOR SWITCH		DCS	DISCONNECT SWITCH		MTO	MOTOR THERMAL OVERLOADS (3)
	3SS	3 POSITION SELECTOR SWITCH		EOS	ELECTRICALLY OPERATED SWITCH		MVT	MEDIUM VOLTAGE CABLE TERMINATION
	ACB	DRAWOUT AC CIRCUIT BREAKER		FAC	FLOW ACCUATED SWITCH CLOSSES ON INCREASED FLOW		NC	NORMALLY CLOSED
	ACB1	DRAWOUT AC CIRCUIT BREAKER 600V		FAO	FLOW ACCUATED SWITCH OPENS ON INCREASED FLOW		NCHO	NORMALLY CLOSED HELD OPEN
	ALS	ALARM LIGHT/STROBE		FCS	FUSED CUTOUT SWITCH		NO	NORMALLY OPEN
	BAT	BATTERY		FWR	FUSE WITH RATING		NOHC	NORMALLY OPEN HELD CLOSED
	CBCL	CIRCUIT BREAKER CURRENT LIMITING		GEN	GENERATOR		OOSS	ON-OFF SELECTOR SWITCH
	CBEG	CIRCUIT BREAKER EXT. GFCI		GND	GROUND		PVT	POTENTIAL VOLTAGE TRANSFORMER
	CBG	CIRCUIT BREAKER/GFCI		GOS	GROUP OPERATED SWITCH		PWT	POWER TRANSFORMER
	CBST	CIRCUIT BREAKER SUBSCRIPT IND. SHUNT TRIP		IIN	INDICATING INSTRUMENT		RCL	RELAY COIL
	CCL	CIRCUIT CLOSING		ILC	INDICATING LIGHT		RLC	RESISTOR
	CCO	CIRCUIT OPENING		LQC	LIQUID LEVEL ACCUATED SWITCH CLOSSES ON RISING LIQUID		SAR	SURGE ARRESTORS
	CLCB	CURRENT LIMITING CIRCUIT BREAKER		LQO	LIQUID LEVEL ACCUATED SWITCH OPENS ON RISING LIQUID		SBL	SUBSTATION LIGHT
	CMOB	CIRCUIT MOTOR OPERATED BREAKER		MCM	MICROPROCESSOR CONTROLLED MONITOR		SCN	SEPARABLE CONNECTOR
	CO1	NORMALLY OPEN		MOV	MOTOR OPERATED VALVE		SEGF	SWITCH W/EXT. GFCI
	CO2	NORMALLY CLOSED		MSP	MOV SURGE PROTECTOR		SSL	SUBSTATION LIGHT
	CRT	CURRENT TRANSFORMER		MTC	MOTOR CONNECTION		ST3	STARTER 3-POLE

Electrical Design Schematic Symbols 1

	Symbol	Block Name	Description
		SVL	SOLENOID VALVE
		TAC	TEMPRATURE ACTUATED SWITCH CLOSES ON RISING TEMPERATURE
		TAO	TEMPRATURE ACTUATED SWITCH OPENS ON RISING TEMPERATURE
		TBK	TERMINAL BLOCK
		TD1	TIME DELAY SWITCH NORMALLY OPEN, CONTACT CLOSES AFTER TIME DELAY WHEN COIL IS ENERGIZED OPEN WHEN DE-ENERGIZED
		TD2	TIME DELAY SWITCH NORMALLY CLOSED, CONTACT OPENS AFTER TIME DELAY WHEN COIL IS ENERGIZED CLOSE WHEN DE-ENERGIZED
		TD3	TIME DELAY SWITCH NORMALLY OPEN, CONTACT CLOSES AFTER TIME DELAY WHEN COIL IS ENERGIZED OPEN AFTER DELAY
		TD4	TIME DELAY SWITCH NORMALLY CLOSED, CONTACT OPEN AFTER TIME DELAY WHEN COIL IS ENERGIZED CLOSES AFTER DELAY
		TSST	TESTING SWITCH SHORTING TYPE
		TSW	TEST SWITCH
		VAC	PRESSURE OR VACUUM ACCUATED SWITCH - CLOSES
		VAO	PRESSURE OR VACUUM ACCUATED SWITCH - OPENS ON RISING PRESSURE
		WYE	WYE



















Electrical Design Schematic Symbols 2

Symbol	Block Name	Description	Symbol	Block Name	Description	Symbol	Block Name	Description
	4WPB	480Y/270V, 4W PANELBOARD		CNP	CONTROL PANEL		GDD	GRND TYPE DBL. DUPLEX
	4WPB2	208Y/120V, 4W PANELBOARD		CO	CONTRACTORS SUBSCRIPT INDICATES NUMBER OF POLES		GDT	GAS DETECTOR
	ABL	ALARM BELL		CPB	CAPACITOR BANK		GPG	GROUND PIGTAIL
	ABZ	ALARM BUZZER		CSP	CLOCK/SPEAKER COMBINATION		GRW	GROUND WELL
	ACH	ALARM CHIME		DEL	DELTA		GTD	GROUNDING TYPE DUPLEX RECEPTACLE
	AUJ	AUXILIARY OUTPUT JACK		DLE	DIRECTIONAL LIGHTING FIXTURE ON EMERGENCY CIRCUIT		GTR	GROUNDING TYPE SINGLE RECEPTACLE
	ANN	ANNUNCIATOR		ECB	EQUIPMENT CABINET		HDT	HEAT DETECTOR
	AOJ	AUXILIARY OUTPUT JACK		ELF	EXTERIOR LIGHTING FIXTURE		HNH	HANDHOLE
	BPL	BATTERY POWERED LIGHT		EQC	EQUIPMENT CONNECTION		ICS	ILLUMINATION CONTROL STATION
	CBL	SUBSTATION LIGHT		ESF	EXT. STEP LIGHTING FIXTURE		IES	ILL. EXIT SIGN/1 FACE
	CBPE	COMBINATION BATTERY POWERED EMER. LIGHT WITH ILLUMINATED EXIT		ESS	EMERGENCY SHUTDOWN SWITCH		IES2	ILLUMINATED EXIT SIGN 2 - FACE WITH EGRESS
	CBS	COMBINATION STARTER 3 POLE		FCP	FLUSH FLOOR COUPLING WITH PEDESTAL TELEPHONE OUTLET		ISW	INSTRUMENT SWITCH
	CBT	CABLE TRAY		FDT	FLAME DETECTOR		ITS	INTERCOM STATION
	CDO	COMPUTER DATA OUTLET		FETS	FIRE / EMERGENCY TELEPHONE STATION		MIJ	MICROPHONE INPUT JACK
	CLK	CLOCK		FFB	FLUSH FLOOR BOX		MPS	MANUAL PULL STATION
	CMD	CEILING MOUNTED DUPLEX RECEPTACLE		FFC	FLUSH FLOOR COUPLING		NTL	NIGHT LIGHT
	CMDF	CEILING MOUNTED DOUBLE FACED CLOCK		FFD	FLUSH FLOOR BOX WITH DEVICES		PBS	PUSH BUTTON SWITCH



































Electrical Design Symbols

Symbol	Block Name	Description	Symbol	Block Name	Description	Symbol	Block Name	Description
	PHC	PHOTOCELL CONTROL		THT	THERMOSTAT			
	PHS	PHOTOELECTRIC SENSOR		TKL	TRACK LIGHT			
	PLB	PULLBOX		TLO	TELEPHONE OUTLET			
	PMD	PEDESTAL MOUNTED DEVICES		VDO	COMBINATION VOICE DATA OUTLET			
	PMF	POLE MOUNTED LIGHTING FIXTURE		VLC	VOLUME CONTROL			
	PTT	POKE THRU TYPE FITTING		WGC	WELDED GROUND CONNECTION			
	RCO	RECEPTACLE OUTLET		WSI	WALL SWITCH SUBSCRIPT INDICATES LOWER LETTER INDICATES SWITCHING GROUP			
	SCR	SPEAKER CEILING RECESSED						
	SCS	SPEAKER CEILING SURFACE						
	SDT	SMOKE DETECTOR						
	SPR	SPECIAL PURPOSE RECEPTACLE						
	SPS	SPEAKER						
	SPWS	SINGLE POLE WALL SWITCH						
	SWD	SPLIT WIRED GROUNDING TYPE DUPLEX RECEPTACLE						
	SWR	SPEAKER WALL RECESSED MOUNTED CXZCCZ						
	SWS	SPEAKER WALL SURFACE MOUNTED						
	TDR	TRANSDUCER						































Electrical Design Plan Symbols

Symbol	Block Name	Description	Symbol	Block Name	Description
	GS01	DISCRETE INSTRUMENTS PRIMARY LOCATION (NORMALLY ACCESSIBLE TO OPERATOR)		GS10	COMPUTER FUNCTION PRIMARY LOCATION (NORMALLY INACCESSIBLE TO OPERATOR)
	GS02	DISCRETE INSTRUMENTS PRIMARY LOCATION (NORMALLY ACCESSIBLE TO OPERATOR)		GS11	COMPUTER FUNCTION FIELD MOUNTED
	GS03	DISCRETE INSTRUMENTS FIELD MOUNTED		GS12	COMPUTER FUNCTION AUXILIARY LOCATION (NORMALLY INACCESSIBLE TO OPERATOR)
	GS04	DISCRETE INSTRUMENTS AUXILIARY LOCATION (NORMALLY INACCESSIBLE TO OPERATOR)		GS13	PROGRAMMABLE LOGIC CONTROL PRIMARY LOCATION (NORMALLY ACCESSIBLE TO OPERATOR)
	GS05	SHARED DISPLAY, SHARED CONTROL PRIMARY LOCATION (NORMALLY ACCESSIBLE TO OPERATOR)		GS14	PROGRAMMABLE LOGIC CONTROL PRIMARY LOCATION (NORMALLY INACCESSIBLE TO OPERATOR)
	GS06	SHARED DISPLAY, SHARED CONTROL PRIMARY LOCATION (NORMALLY ACCESSIBLE TO OPERATOR)		GS15	PROGRAMMABLE LOGIC CONTROL FIELD MOUNTED
	GS07	SHARED DISPLAY, SHARED CONTROL FIELD MOUNTED		GS16	PROGRAMMABLE LOGIC CONTROL AUXILIARY LOCATION (NORMALLY INACCESSIBLE TO OPERATOR)
	GS08	SHARED DISPLAY, SHARED CONTROL AUXILIARY LOCATION (NORMALLY INACCESSIBLE TO OPERATOR)		GS17	INDICATOR AUXILIARY LOCATION (NORMALLY INACCESSIBLE TO OPERATOR)
	GS09	COMPUTER FUNCTION PRIMARY LOCATION (NORMALLY ACCESSIBLE TO OPERATOR)		GS18	PRIMARY LOCATION (NORMALLY ACCESSIBLE TO OPERATOR)

P & Id Design Symbols

	Symbol	Block Name	Description	Symbol	Block Name	Description
		2WY_1	2 WAY SOLENOID VALVE		DBL_E	DOUBLE ACTING ELECTRICALLY OPERATED
		2WY_2	2 WAY SOLENOID VALVE		DHYDS	DOUBLE ACTING HYDRAULIC PISTON OPERATED VALVE W/HYDRAULIC SHUTTLE SOLENOID VALVE
		3WY	3 WAY SOLENOID VALVE		DIA_3WY	BACK PRESSURE REGULATOR (EXTERNAL TAP)
		3WY_FO	3 WAY FAIL OPEN TO PATH A-C		DIA_P	DIAPHRAGM OPERATED WITH POSITIONER
		3WY_P	3 WAY PNEUMATIC PILOT		DRG	DIFFERENTIAL PRESSURE REDUCING REGULATOR
		4WY	4 WAY SOLENOID VALVE		FC	FAIL CLOSED
		4WY_2S	4 WAY SOLENOID VALVE DOUBLE SOLENOID		FLO	FLOAT OPERATED
		4WY_FO	4 WAY FAIL OPEN TO PATH A-C, D-B		FO	FAIL OPEN
		4WY_P	4 WAY PNEUMATIC PILOT		FV1	FLOAT VALVE (SINGLE LINE)
		BRG	BACK PRESSURE REGULATOR		MB1	MOTORIZED BALL VALVE
		BRG_X	BACK PRESSURE REGULATOR (EXTERNAL TAP)		MV1	MOTOR OPERATED VALVE
		CTL	CONTROL VALVE		PN1	PRESSURE REGULATOR
		CTL_M	CONTROL VALVE WITH MANUAL ACTUATOR		PRG	PRESSURE REDUCING REGULATOR
		DAP	DOUBLE ACTING PISTON OPERATED VALVE		PRG_X	PRESSURE REDUCING REGULATOR (EXTERNAL TAP)
		DAP_4WY	DOUBLE ACTING PISTON OPERATED VALVE W/4 WAY SOLENOID		PRS	PRESSURE RELIEF OR SAFETY VALVE
		DAPO	DOUBLE ACTING PISTON OPERATED VALVE		PVR	PRESSURE AND VACUUM RELIEF VALVE
		DAPO_P	DOUBLE ACTING PISTON OPERATED VALVE WITH PISTON		SAP	SINGLE ACTING PISTON VALVE


































Piping Design Inline-p&id Actuated Valves Symbols

Symbol	Block Name	Description	Symbol	Block Name	Description
	90dETV	90° ELBOW WITH TURNING VANES		PUMP	PUMP
	AD-AP	ACCESS DOOR OR ACCESS PANEL		RDD	ROUND DUCT DOWN
	AMU	AIR MEASURING UNIT (PROVIDE ACCESS DOOR UPSTREAM AND DOWNSTREAM)		RDUP	ROUND DUCT UP
	BDD	BACKDRAFT DAMPER		RG	RETURN WALL GRILLE
	CD3	CEILING DIFFUSER (THREE WAY DIRECTIONAL AIRFLOW WITH BLANK-OFF SHOWN)		RG-EG-TG	CEILING PLENUM RETURN AIR/ EXHAUST CIELING GRILLE/ TRANSFER GRILL
	CD4	CIELING DIFFUSER (FOUR WAY DIRECTIONAL AIRFLOW)		SADD	SUPPLY AIR DUCT DOWN
	EADD	EXHAUST OR RETURN AIR DUCT (DOWN)		SADUP	SUPPLY AIR DUCT UP
	EADUP	EXHAUST OR RETURN AIR DUCT (UP)		SDF	COMBINATION SMOKE/FIRE DAMPER (PROVIDE ACCESS)
	FAN	FAN		SFF	SERIES FLOW FAN
	FD	FIRE DAMPER (PROVIDE ACCESS)		SG	SUPPLY WALL GRILLE
	FLC	FLEXIBLE CONNECTION		TU	TERMINAL UNIT
	HC-CC	HEATING OR COOLING COIL		UH	UNIT HEATER
	LD	LINEAR DIFFUSER (FLOW ARROW SHOWN ONLY IF AIRFLOW IS ONE DIRECTIONAL)		VAF	VANE AXIAL FAN
	MD	MANUAL VOLUME DAMPER			
	MOD	MOTOR OPERATED DAMPER			
	PF	PROPELLER FAN			
	PFF	PARALLEL FLOW FAN TERMINAL UNIT			































Design Hvac Symbols

	Symbol	Block Name	Description	Symbol	Block Name	Description
		AN1	ANGLE		PUP	PIPE TURNING UP
		ANC	ANCHOR		RC1	REDUCER - CONCENTRIC (SINGLE LINE)
		BF	BLIND FLANGE		RE1	REDUCER - ECCENTRIC (SINGLE LINE)
		BL1	BELL (SINGLE LINE)		REB	REDUCING ELBOW (SINGLE LINE)
		CAP1	CAP (SINGLE LINE)		SON	SLIP-ON
		CNR	CONCENTRIC REDUCER (DOUBLE LINE)		SW1	SCREWED (SINGLE LINE)
		CR1	CROSS (SINGLE LINE)		TE1	TEE (SINGLE LINE)
		ECR	ECCENTRIC REDUCER (DOUBLE LINE)		UN1	UNION (SINGLE LINE)
		EL1	EXPANSION LOOP (SINGLE LINE)		WD1	WELDED (SINGLE LINE)
		ELB	ELBOW (SINGLE LINE)			
		FD	FLOOR DRAIN			
		FG1	FLANGED (SINGLE LINE)			
		GV1	GROOVED JOINT (SINGLE LINE)			
		MC1	MECHANICAL (SINGLE LINE)			
		PDWN	PIPE TURNING DOWN			
		PL1	PLUG (SINGLE LINE)			
		POC	POINT OF CONNECTION			











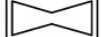


Pipe & Fittings Design Symbols

	Symbol	Block Name	Description	Symbol	Block Name	Description
		3PL1	3 WAY PLUG (SINGLE LINE)		GC	GAS COCK
		AAV	AUTOMATIC AIR VENT (SINGLE LINE)		GLV	GLOBE VALVE
		AFCV	AUTOMATIC FLOW CONTROL VALVE		GT1	GATE VALVE (SINGLE LINE)
		BC1	BALANCING COCK (SINGLE LINE)		MAV	MANUAL AIR VENT (SINGLE LINE)
		BFP	BACKFLOW PREVENTER		NV1	NEEDLE VALVE (SINGLE LINE)
		BFP1	BACK FLOW PREVENTER (SINGLE LINE)		PFC	PIPELINE FLUSHING COCK (SINGLE LINE)
		BFV	BUTTERFLY VALVE		PG1	PLUG VALVE (SINGLE LINE)
		BFV1	BUTTERFLY VALVE (SINGLE LINE)		PIV	POST INDICATOR VALVE (SINGLE LINE)
		BLV	BALANCING VALVE		PR1	PRESSURE REGULATOR (SINGLE LINE)
		BLV1	BALL VALVE (SINGLE LINE)		PRV1	PRESSURE RELIEF VALVE (SINGLE LINE)
		BV	BALL VALVE		PRV	PRESSURE REGULATING VALVE
		CK1	CHECK VALVE (SINGLE LINE)		PV1	PINCH VALVE (SINGLE LINE)
		CV	CHECK VALVE		RV	RELIEF VALVE
		DCV	DOUBLE CHECK VALVE (SINGLE LINE)		SV1	SPECIAL VALVE (SINGLE LINE)
		DH1	DIAPHRAGM (SINGLE LINE)		UNION	UNION
		FC	FLEXIBLE CONNECTION		VR1	VACUUM REGULATOR (SINGLE LINE)
		GB1	GLOBE VALVE (SINGLE LINE)			











Design Piping Inline - Valves Symbols

	Symbol	Block Name	Description	Symbol	Block Name	Description
		AFA	AIR FROM ATMOSPHERE		PT	PRESSURE/TEMP TEST PORT
		ATA	AIR TO ATMOSPHERE		RPD1	REDUCED PRESSURE DEVICE
		BS	BASKET STRAINER		SBDV	STRAINER WITH BLOW DOWN VALVE
		CHS	CHEMICAL SEAL		SG	SIGHT GLASS
		EXJ	EXPANSION JOINT		SMS	STATIC MIXER (SMALL)
		FC1	FLEXIBLE COUPLING		SNB	STEAM TRAP NO BYPASS
		FCA1	FLANGED COUPLING ADAPTOR		ST	STEAM TRAP ASSEMBLY
		FH1	FLEXIBLE HOSE		STM	STATIC MIXER
		FHL	FLEX HOSE (LONG)		SWB	STEAM TRAP WITH BYPASS
		FHS	FLEX HOSE (SHORT)		THM	THERMOMETER
		FN1	FLEXIBLE CONNECTOR		TMW	THERMOWELL
		HTR	HEAT TRACE		WHA	WATER HAMMER ARRESTER
		INSL	INSULATION (LONG)		WS	WYE STRAINER
		INSS	INSULATION (SHORT)			
		NUKS	NUCLEAR			
		PA	PIPE ANCHOR			
		PG	PIPE GUIDE			

Piping Design Inline Equipment Symbols













	Symbol	Block Name	Description
		ANB	SINGLE PORT PITOT TUBE
		ANL	ANALYZER
		CMFM	CONTINUAL MASS FLOW METER
		CONS	CONSISTENCY ANALYZER
		FM1	FLOW METER (SINGLE LINE)
		MAG_F	MAG METER
		NOZ	FLOW NOZZLE
		ORF_F	FLOW ORIFICE PLATE
		ORF_P	PRESSURE ORIFICE PLATE
		RM1	ROTAMETER (SINGLE LINE)
		ROTO	ROTAMETER
		VENT	VENTURI TUBE
		VRTX	VORTEX METER

Piping Design Inline-flowmeters-Symbols

	Symbol	Block Name	Description
		ADP	AIR DIAPHRAGM PUMP
		AGI	AGITATOR
		FAN	FAN
		MOT	MOTOR
		MTP	METERING PUMP
		PDP	POSITIVE DISPLACEMENT PUMP
		PMP	PUMP
		SMP	SUMP PUMP
		VPS	VERTICAL PUMP STANDARD HEAD
		VPT	VERTICAL PUMP TEE HEAD

Piping Design Inline - Machinery Symbols

[illegible]

	Symbol	Block Name	Description
		BELL	ALARM BELL
		DAV	DRY ALARM VALVE
		DPH	DRY PENDENT HEAD
		DSH	DRY SIDEWALL HEAD
		FDC	FIRE DEPARTMENT CONNECTION
		FDS	FLOW DETECTOR SWITCH
		HV	HOSE VALVE
		PH	PENDENT HEAD
		SH	SIDEWALL HEAD
		SVALVE	SUPERVISED VALVE
		UPH	UPRIGHT HEAD
		WAV	WET ALARM VALVE

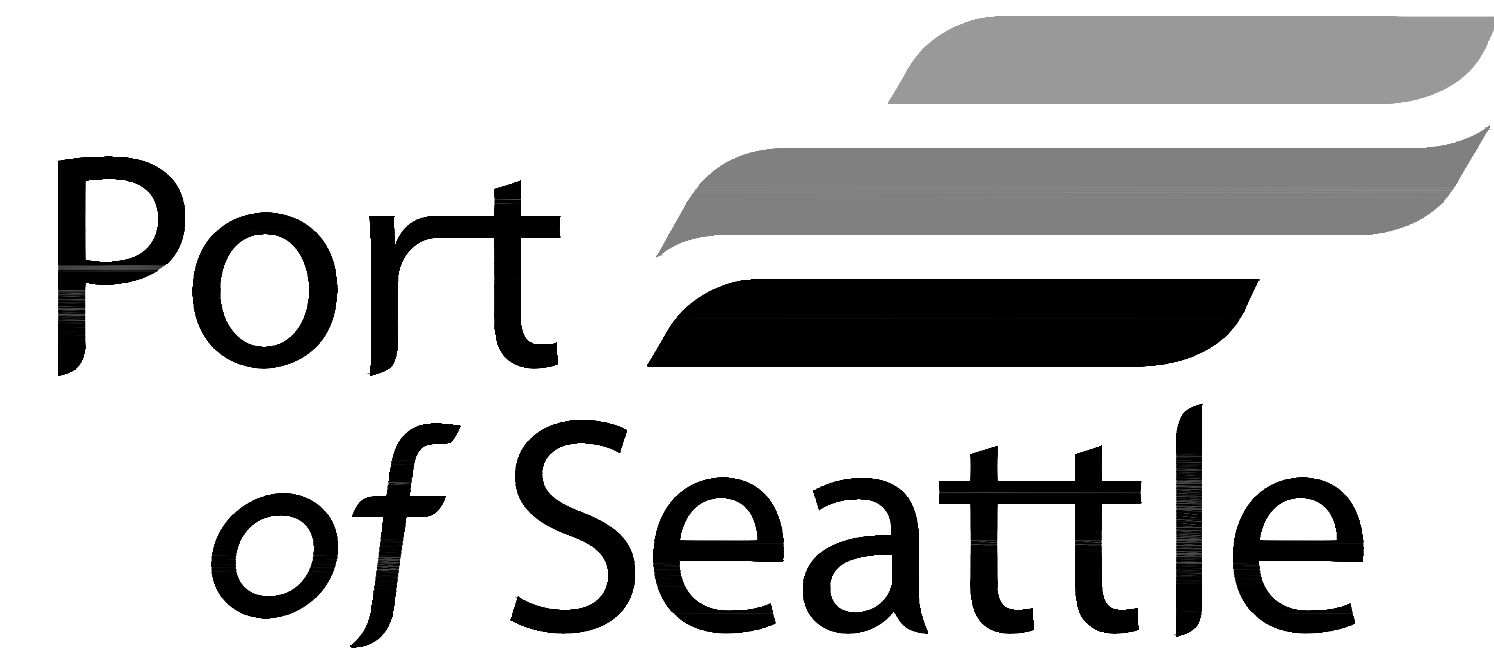
Design Piping Inline Fire Symbols

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Appendix C

Sample Drawings

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SEA-TAC INTERNATIONAL AIRPORT

COVER SHEET AND SHEET INDEX

						APPROVED AS-BUILT SET	
						THIS DRAWING SET REPRESENTS A RECORD OF HOW THE PROJECT WAS CONSTRUCTED AND DOES NOT REPRESENT DESIGN OR CHANGE APPROVAL	
						00/00/00 DATE	
						WORK PROJECT NO. D-NNNN	PORT OF SEATTLE NO. + SHEET NUMBER STIA-07XX G0
						MAJOR CONTRACT	
						RECOMMENDED FOR APPROVAL	
						ABCD	00/00/00 DATE
						ABCD	00/00/00 DATE
						ABCD	00/00/00 DATE
						APPROVED BY ABCD	
						00/00/00 DATE	
						WORK PROJECT NO.	PORT OF SEATTLE NO. + SHEET NUMBER
						D-NNNN	STIA-07XX G0

SHEET NO.	SHEET TITLE	SHEET NO.	SHEET TITLE	SHEET NO.	SHEET TITLE
	GENERAL PROJECT PLANS		MECHANICAL PROJECT PLANS		ELECTRICAL PROJECT PLANS
G.00	TITLE SHEET AND SHEET INDEX	M0.01.1	MECHANICAL LEGEND, SYMBOLS, AND ABBREVIATIONS	E0.01.1	ELECTRICAL ABBREVIATIONS AND REFERENCE SYMBOLS
G.01	CODE CHECKLISTS	M0.02.1	MECHANICAL SCHEDULES, GENERAL NOTES	E0.02.1	ELECTRICAL PLAN SYMBOLS LEGEND
G.03	GENERAL NOTES ABBREVIATIONS & SYMBOLS	M1.01.1	MECHANICAL DEMOLITION PLAN – STS LEVEL – SOUTH	E0.03.1	ELECTRICAL DIAGRAM SYMBOLS LEGEND
G.04	SEA-TAC INTERNATIONAL AIRPORT LAY-OUT & HAUL ROUTES	M1.11.1	MECHANICAL AND PLUMBING DEMOLITION PLAN – BAGGAGE LEVEL – SOUTH	E0.04.1	ELECTRICAL EQUIPMENT STANDARD LABELING DETAILS
		M1.21.1	MECHANICAL DEMOLITION PLAN – BRIDGE LEVEL – SOUTH	E1.01.1	POWER DEMOLITION PLAN – STS LEVEL – SOUTH
	CIVIL PROJECT PLANS	M2.01.1	HVAC PLAN – STS LEVEL – SOUTH	E1.11.1	POWER AND COMMUNICATIONS DEMOLITION PLAN – BAGGAGE LEVEL – SOUTH
		M2.11.1	HVAC PLAN – BAGGAGE LEVEL – SOUTH	E1.13.1	LIGHTING DEMOLITION PLAN – BAGGAGE LEVEL – SOUTH
C0.00	N/A	M2.21.1	HVAC PLAN – BRIDGE LEVEL – SOUTH	E2.00.1	POWER PLAN – STS LEVEL – SOUTH
		M3.01.1	MECHANICAL ENLARGED PLANS	E2.01.1	POWER PLAN – STS LEVEL – SOUTH
	ARCHITECTURAL PROJECT PLANS	M4.01.1	HVAC SECTIONS	E2.02.1	POWER PLAN – STS LEVEL – NORTH
A2.11	DEMOLITION PLAN – BAGGAGE LEVEL	M5.01.1	MECHANICAL DETAILS AND DIAGRAMS	E2.10.1	POWER PLAN – BAGGAGE LEVEL – SOUTH
A2.12	DEMOLITION PLAN – BAGGAGE LEVEL	M6.01.1	AIRFLOW DIAGRAM	E2.11.1	POWER PLAN – BAGGAGE LEVEL – SOUTH
A3.11	FLOOR PLAN – BAGGAGE LEVEL	M6.02.1	CONTROL DIAGRAM	E2.12.1	POWER PLAN – BAGGAGE LEVEL – NORTH
A3.12	FLOOR PLAN – BAGGAGE LEVEL	MP2.21.1	PIPING PLAN – BRIDGE LEVEL – SOUTH	E2.21.1	POWER PLAN – BRIDGE LEVEL – SOUTH
A3.13	FLOOR PLAN – BAGGAGE LEVEL			E3.11.1	LIGHTING PLAN – BAGGAGE LEVEL – SOUTH
A3.31	FLOOR PLAN – TICKETING LEVEL		PLUMBING PROJECT PLANS	E6.00.1	ELECTRICAL ONE LINE DIAGRAM – PARTIAL NORTH TERMINAL
A4.01	ROOM FINISH, DOOR SCHEDULES, NOTES, WALL TYPES & INTERIOR ELEVATIONS	P2.01.1	PLUMBING/FIRE PROTECTION PLAN – STS LEVEL – SOUTH	E7.00.1	ELECTRICAL DETAILS
A5.11	REFLECTED CEILING PLAN – BAGGAGE LEVEL – WEST END	P2.11.1	PLUMBING/FIRE PROTECTION PLAN – BAGGAGE LEVEL – SOUTH	E8.00.1	ELECTRICAL SCHEDULES
A5.31	REFLECTED CEILING PLAN – CONCOURSE LEVEL – WEST END	P2.21.1	PLUMBING PLAN – BRIDGE LEVEL – SOUTH		
		P3.01.1	PLUMBING – ENLARGED PLANS		COMMUNICATION PROJECT PLANS
				EC2.00.1	COMMUNICATION PLAN – STS LEVEL – SOUTH
			FIRE PROTECTION PROJECT PLANS	EC2.01.1	COMMUNICATION PLAN – STS LEVEL – SOUTH
		F2.01.1	FIRE PROTECTION PLAN – STS LEVEL – SOUTH	EC2.02.1	COMMUNICATION PLAN – STS LEVEL – NORTH
		F2.11.1	FIRE PROTECTION PLAN – BAGGAGE LEVEL – SOUTH	EC2.10.1	COMMUNICATION PLAN – BAGGAGE LEVEL – SOUTH
		F2.21.1	FIRE PROTECTION PLAN – BRIDGE LEVEL – SOUTH	EC2.11.1	COMMUNICATION PLAN – BAGGAGE LEVEL – SOUTH
				EC2.12.1	COMMUNICATION PLAN – BAGGAGE LEVEL – NORTH
				EC2.21.1	COMMUNICATION PLAN – BRIDGE LEVEL – SOUTH

GENERAL NOTES:

Consultants Logo Blocks Location

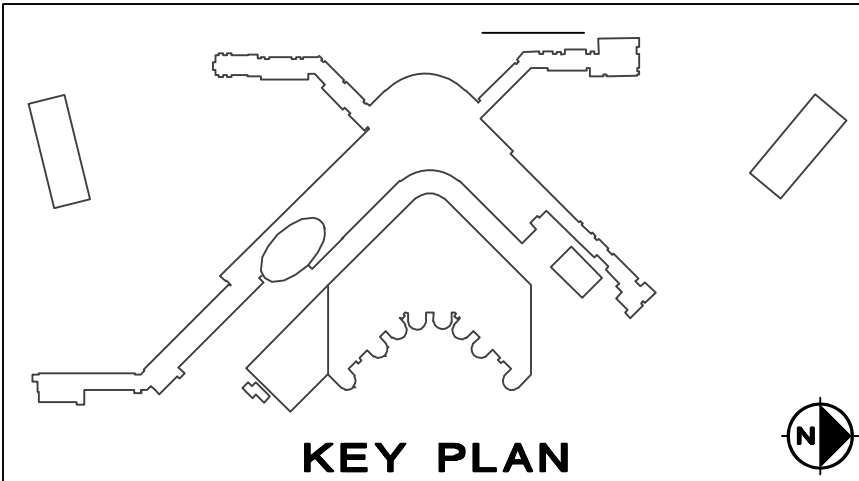
Professional Seal Location

Project % Review New Location In Revision Area

POS Wp Number:

POS Project Tracking Number
+ Trade & Sheet Number:

As-Built Stamp Location



Consultant's Internal
Project Number:

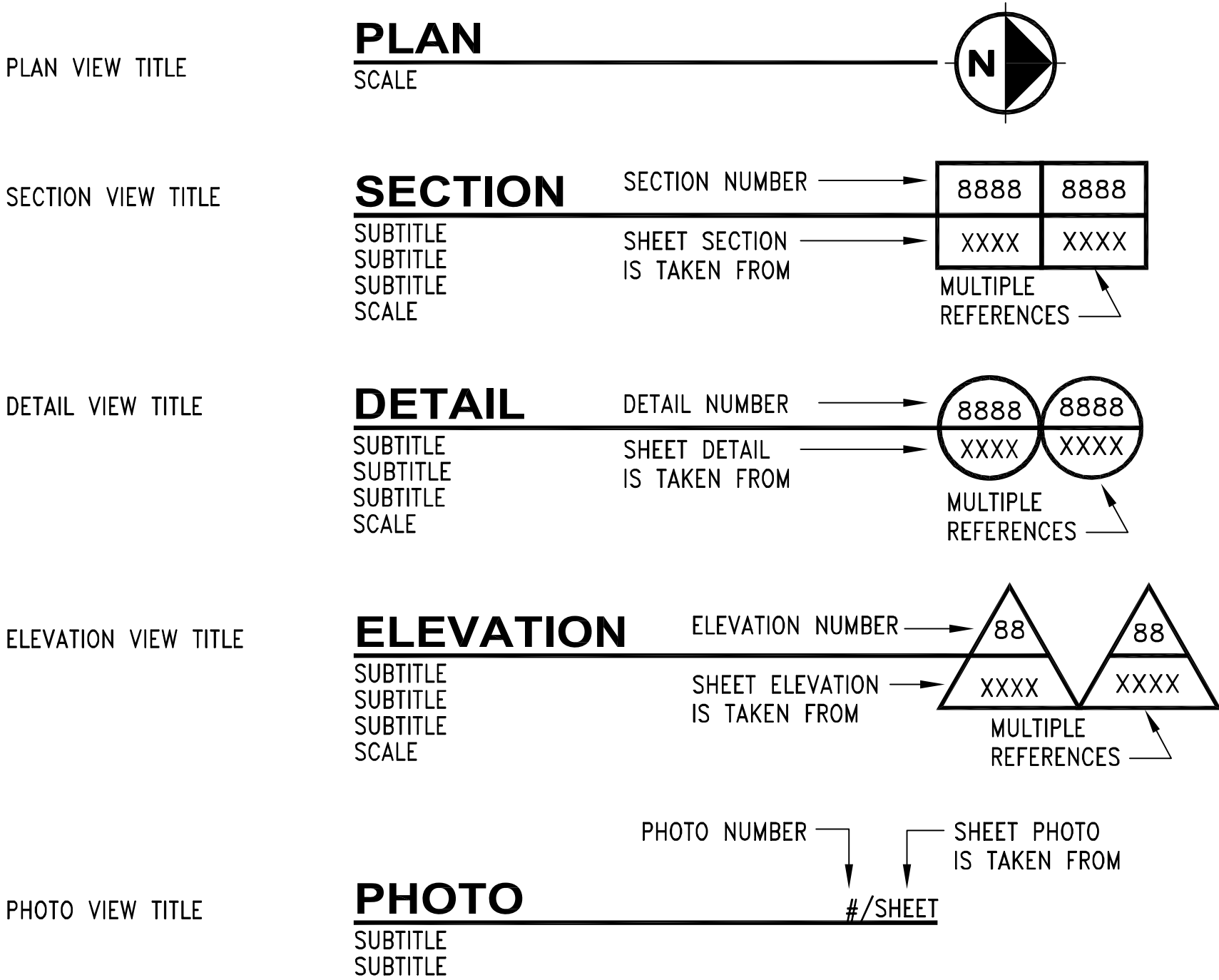
<div>CDiENGINEERS</div> <div>4200 - 194th St SW, Suite 200 Lynnwood, WA 98036 T 425.672.1071 F 425.778.8769 www.CDIENGINEERS.com</div>	<div>PROJECT ENGR./ARCH. CONSULTANT NAME</div> <div>DESIGNER:</div> <div>DRAWN BY:</div> <div>SCALE:</div> <div>DATE:</div> <div>CHECKED BY:</div> <div>CHECKED/APPROVED BY:</div>	<div><div>PORT OF SEATTLE STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER 22792 EXPIRES 12-21-2012</div></div>	<table><tr><th colspan="10">R E V I S I O N S</th></tr><tr><th>NO.</th><th>DATE</th><th>BY</th><th>DESCRIPTION</th><th>APP'D</th><th>NO.</th><th>DATE</th><th>BY</th><th>DESCRIPTION</th><th>APP'D</th></tr><tr><td>1</td><td>Today</td><td>Me</td><td>30% Design</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	R E V I S I O N S										NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D	1	Today	Me	30% Design																																																																													<div>POS PROJECT MANAGER: P.M. NAME</div> <div>POS PROJECT ENGINEER:</div> <div>POS DESIGN ENGINEER:</div> <div>POS DRAFTER:</div> <div>POS SCALE:</div> <div>POS DATE:</div> <div>POS CHECKED/APPROVED BY:</div>	<div>Port of Seattle</div> <div>SEA-TAC INTERNATIONAL AIRPORT</div> <div>PROJECT NAME: Project Name Above Project Name Below</div> <div>SHEET TITLE:</div>	<div>POS WORK PROJECT NUMBER</div> <div>000000</div> <div>CONSULTANT'S PROJECT NUMBER.</div> <div>CONST. No.</div> <div>POS PROJECT TRACKING NUMBER</div> <div>STIA-03xx</div>
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ARCHITECTURAL ABBREVIATIONS

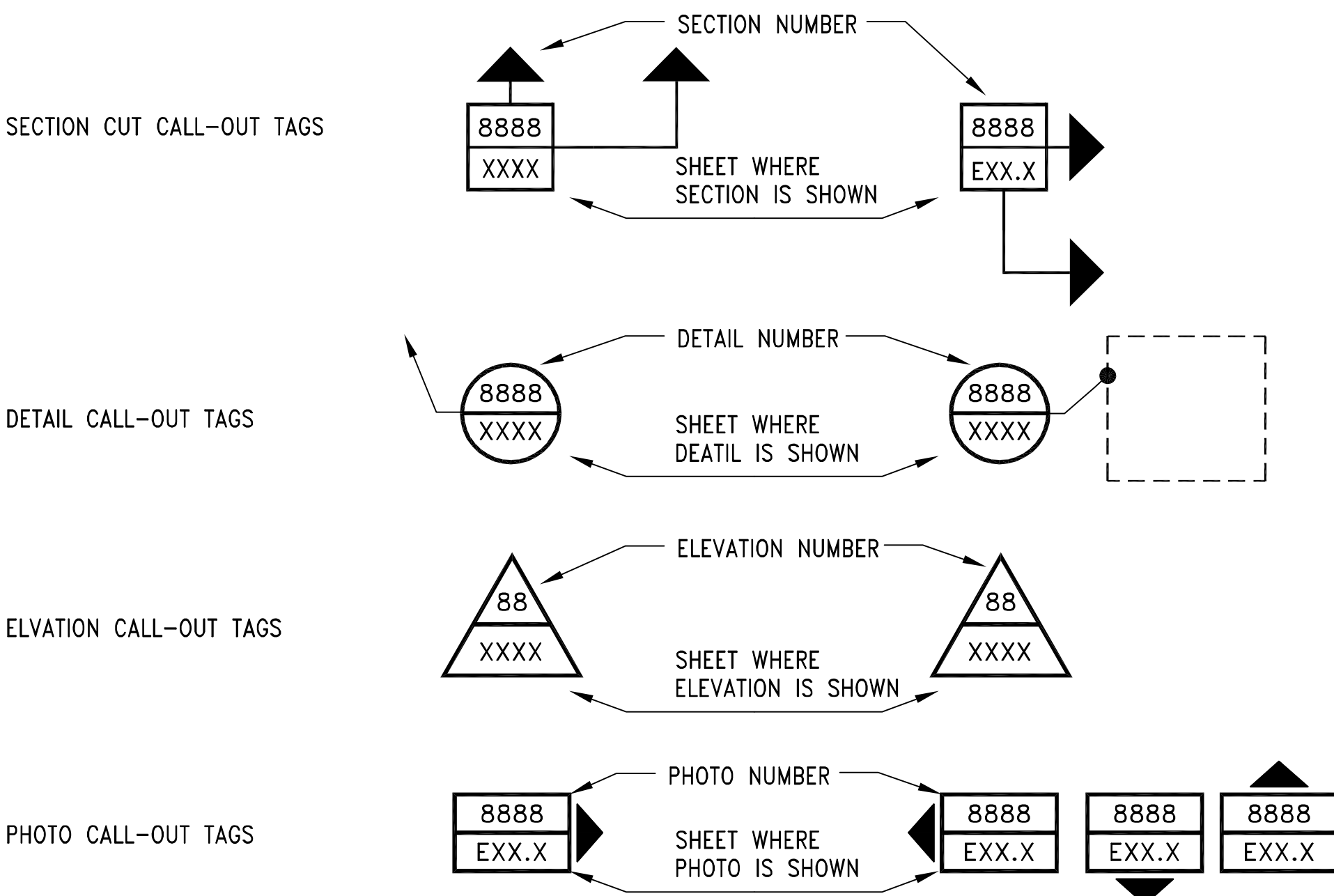
ABBREVIATIONS: THROUGHOUT THE PLANS ARE ABBREVIATIONS WHICH ARE IN COMMON USE. THE LIST OF ABBREVIATIONS PROVIDED IS NOT INTENDED TO BE COMPLETE OR REPRESENTATIVE OF CONDITIONS OR MATERIALS ACTUALLY USED ON THE PROJECT. THE ARCHITECT WILL DEFINE THE INTENT OF ANY ABBREVIATION IN QUESTION.

& ±	AND APPROXIMATELY	DIA	DIAMETER	JAN	JANITOR	PR	PAIR
⊙	AT CENTERLINE	DIAM	DIAGONA (S) OR DIAGRAM	JB,J--BOX	JUNCTION BOX	PRI	PRIMARY
'	DEGREE	DIM	DIMENSION(-S)	JST	JOIST	PROJ	PROJECT(-ION)
"	EQUALS	DIR	DIRECTION	JT	JOINT	PROT	PROTECTOR
>	FOOT	DIST	DISTRIBUTION			PSF	POUNDS PER SQUARE FOOT
"	GREATER THAN	DN	DOWN	KG	KILOGRAM; KNIFE GATE	PSI	POUNDS PER SQUARE INCH
"	INCH	DP1	DESIGN PACKAGE 1	Km	KILOMETER	PT	POINT
<	LESS THAN	DP2	DESIGN PACKAGE 2			PVC	POLY VINYL CHLORIDE
#	NUMBER	DR	DOOR	L	LENGTH; LITER	PVMT	PAVEMENT
%	PERCENT	DS	DOWN SPOUT	LAB	LABORATORY	PWR	POWER
		DWG(s)	DRAWING(-S)	LAM	LAMINATE	RAD	RADIUS
A	AREA	E	EAST	LAT	LATERAL	RC	REINFORCED CONCRETE
AB	ANCHOR BOLT(-S)	EA	EACH	LAV	LAVATORY	RD	ROAD
ABAN	ABANDON (-ED)	ECD	EPOXY COATED	LDG	LANDING	REC	RECEIVING
ABS	ABSOLUTE	EDS	EXPLOSIVE DETECTION SYSTEM	LE	LIFTING EYE	RECIRC	RECIRCULATE(-E, -ION)
ABS	ABSORPTION	EF	EACH FACE OR EXHAUST FAN	LF	LINEAR FEET	RED	REDUCE(-R)
AC	ACRE	EL	EPOXY LINED	LG	LONG	REF	REFERENCE
AC	ASBESTOS CEMENT	ELEV	ELEVATION	LGT	LIGHT	REFR	REFRIGERATOR
A/C	ASPHALT CONCRETE	ELEC	ELECTRIC (-AL)	LH	LEFT HAND	REG	REGULATE(-E, -OR, -ION, -ING)
ACOUS	ACOUSTICAL	EMERG	EMERGENCY	LQ	Liquid	REINF	REINFORCE(-E, -ING, -MENT)
ACT	ACOUSTICAL CEILING TILE	ENCL	ENCLOSURE	LL	LONG LEG VERTICAL	REL	RELATIVE
ADDL	ADDITIONAL	ENGR	ENGINEER	LLV	LONG LEG VERTICAL	REQ'D	REQUIRED
ADJ	ADJUST (-ED, -MENT, -ABLE)	ENTR	ENTRANCE	LOC	LOCATION	REQT	REQUIREMENT
ADUT	ADJUTANT	EQ	EQUIPMENT	LONG.	LONGITUDINAL	RESIL	RESILIENT
AFF	ABOVE FINISHED FLOOR	EST	ESTIMATE (-D)	LP	LOW POINT/		
AGG	AGGREGATE	ETC	ET CETERA	LPG	LIGHTING PANEL		
AL/ALUM	ALUMINUM	ETD	EXPLOSIVE TRACE DETECTION	LPS	LEFT		
ALT	ALTERNAT(-E, -IVE)	EXC	EXCAVATE	LT	LIGHTING	SQ	SQUARE
ALTD	ALTITUDE	EXIST	EXISTING	LTG	LIGHTS	SQ FT	SQUARE FEET
ANC	ANCHOR	EXP	EXPANSION	LTS	LIGHTS	SQ IN	SQUARE INCHES
ANSI	AMERICAN NATIONAL STANDARD INSTITUTE	EXP JT	EXPANSION JOINT	(M)	MODIF -Y, -IED	SS 304	STAINLESS STEEL TYPE 304
AOA	AIRPORT OPERATIONS AREA	EXT	EXTERIOR	M3	CUBIC METERS	SS 316	STAINLESS STEEL TYPE 316
APPROX	APPROXIMATE(-E, -LY)	EW	EACH WAY	M2	SQUARE METERS	ST	STREET
ARCH	ARCHITECT (-URAL)			M	METER	STA	STATION
ASB	ASBESTOS	FA	FAHRENHEIT	MACH	MACHINE	STD	STANDARD
ASPH	ASPHALT	FAB	FABRICATE(-D)	MATL	MATERIAL	STEP	SOUTH TERMINAL EXPANSION PROJECT
ASST	ASSISTANT	FAC	FACTORY	MB	MACHINE BOLT		
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	FACIL	FACILITY (-IES)	MCC	MOTOR CONTROL CENTER		
AUTO	AUTOMATIC	FD	FLOOR DRAIN	MECH	MECHANICAL		
AUX	AUXILIARY	FDC	FIRE DEPARTMENT CONNECTION	MET	METAL		
AVE	AVENUE	FDN	FOUNDATION	MFR	MANUFACTURER		
AVG	AVERAGE	FE	FIRE EXTINGUISHER	MG	MILLIGRAMS		
BD	BOARD	FF	FAR FACE/	MH	MANHOLE		
BITUM	BITUMINOUS	FH	FIRE HYDRANT	MIL's	1/1000 INCH		
BL	BUILDING LINE	FIG	FIGURE	MIN	MINIMUM; MINUTE		
BLDG	BUILDING	FIN GD	FINISH GRADE	MISC	MISCELLANEOUS		
BLK	BLOCK(-S)	FIN	FINISH(-ED)	MM	MILLIMETER(-S)		
BLKG	BLOCKING	FLG	FLASHING	MOD	MODIFICATION(-S)		
BM	BENCH MARK	FLR	FLOOR	MON	MONUMENT		
BM	BOTTOM	FOS	FACE OF STUD	MPH	MILES PER HOUR		
BOT	BLACK STEEL	FREQ	FREQUENCY	MT	MOUNT		
BS	BASEMENT	FRP	FIBERGLASS REINFORCED PLASTIC	MTD	MOUNTED		
BSMT	BASEMENT	FRT	FIRE-RETARDANT TREATED	MTG	MOUNTING		
BTWN	BETWEEN	FT2	FEET, FOOT	MTR	MOTOR		
		FT3	SQUARE FEET	MUL	MULLION		
C	DEGREES CELSIUS (CENTIGRADE)	FTG	FOOTING	MV	MUD VALVE, MEDIUM VOLTAGE		
CAB	CABINET	FURN	FURNACE	N	NORTH NEW		
CC	CENTER TO CENTER	FURR	FURRING	N/A	NOT APPLICABLE		
CEM	CEMENT	FUT	FUTURE	NE	NORTHEAST		
CEN	CENTRAL	FWD	FORWARD	NEC	NATIONAL ELECTRICAL CODE		
CF	CUBIC FEET			NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOC.		
CFMF	COLD-FORM METAL FRAMING	GA	GAUGE	NEUT	NEUTRAL		
CHAN	CHANNEL	GAL	GALLON (-S)	NF	NEAR FACE		
CHEM	CHEM (-CAL, -STRY)	GALV	GALVANIZE(-D)	NGVD	NATIONAL GEODETIC VERTICAL DATUM		
CHKD	CHECKED	GD/L	GROUND LEVEL	NIC	NOT IN CONTRACT		
CI	CAST IRON	GC/CM	GENERAL CONTRACTOR/CONSTRUCTION MANAGER	NO	NUMBER/NORMALLY OPEN		
CIRC	CIRCULA(-R, -TION)	GEN	GENERATOR	NOM	NOMINAL		
CIRCUM	CIRCUMFERENCE	GL	GLASS	NORM	NORMAL		
CL	CENTERLINE	GND	GROUND	NTS	NOT TO SCALE		
CLG	CLASSIFICATION	GR	GRAM	NW	NORTHWEST		
CLOS	CLOSET	GRL	GUARDRAIL	OA	OVERALL		
CLR	CLEAR (-ANCE)	GS	GALVANIZED STEEL	OC	ON CENTER		
CM	CENTIMETER	GWB	GYPSPUM WALL BOARD	OD	OUTSIDE DIAMETER		
CMU	CONCRETE	H	HIGH	OF	OUTSIDE FACE/OVERFLOW		
CNTR	MASONRY UNIT(-S)	HB	HOSEBIBB	OFF	OFFICE		
CNTRSK	COUNTER	HC	HANDICAP ACCESSIBLE	OFFS	OUTSIDE FACE OF STUD		
COL	COLUMNSUNK	HDPE	HIGH DENSITY POLYETHYLENE	OH	OVERHEAD		
COMM	COMMUNICATION	HDR	HARDWOOD	OL	OVERLOAD		
CONC	CONCRETE	HGT	HEIGHT	OPNG	OPENING		
CONN	CONNECT (-S, -ION)	HGT,HT	HEIGHT	OPP	OPPOSITE		
CONST	CONSTRUCT (-ION)	HM	HOLLOW METAL	ORIG	ORIGINAL		
CONST JT,CJ	CONSTRUCTION JOINT	HORIZ	HORIZONTAL	OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION		
		HP	HORSEPOWER	OT	OVER TEMPERATURE		
		HPS	HIGH PRESSURE SODIUM				
		HP	HIGH POINT	P	PIPE		
		HR	HOUR	PB	PULLBOX, PUSH BUTTON		
		HRL	HANDRAIL	PC	PIECE		
		HTR	HEATER	PCF	POUNDS PER CUBIC FEET		
		HV	HIGH VOLTAGE	PE	PLAIN END		
		HVAC	HEATING, VENTILATING & AIR CONDITIONING	PE	PHOTOELECTRIC/POLY		
		HVY	HEAVY	PEN	PENETRATION		
		HW	HOT WATER	PERF	PERFORAT(-E, -ED, -ES, -ATION)		
		HWY	HIGHWAY	PHMS	PAN HEAD MACHINE SCREW		
		HYD	HYDRAULIC	PV	POST INDICATOR VALVE		
		ID	INSIDE DIAMETER	PL	PROPERTY LINE/PLATE		
		IF	INSIDE FACE	PLAM	PLASTIC LAMINATE		
		IN	INCH (-ES)	PLAS	PLASTER		
		IN3	CUBIC INCHES	PLY	PLYWOOD		
		INCAN	INCANDESCENT	PNL	PANEL		
		IN2	SQUARE INCHES	PPB	PARTS PER BILLION		
		INSTR	INSTRUMENT	PPM	PARTS PER MILLION		
		INSUL	INSULAT(-E, -ION)				
		INT	INTERIOR				

DRAWING VIEW TITLES

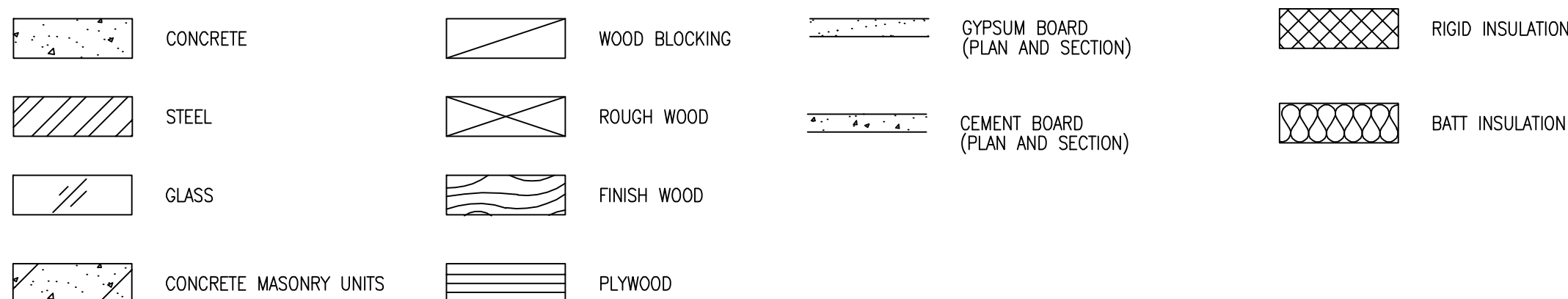


REFERENCE SYMBOLS



MATERIAL DESIGNATIONS

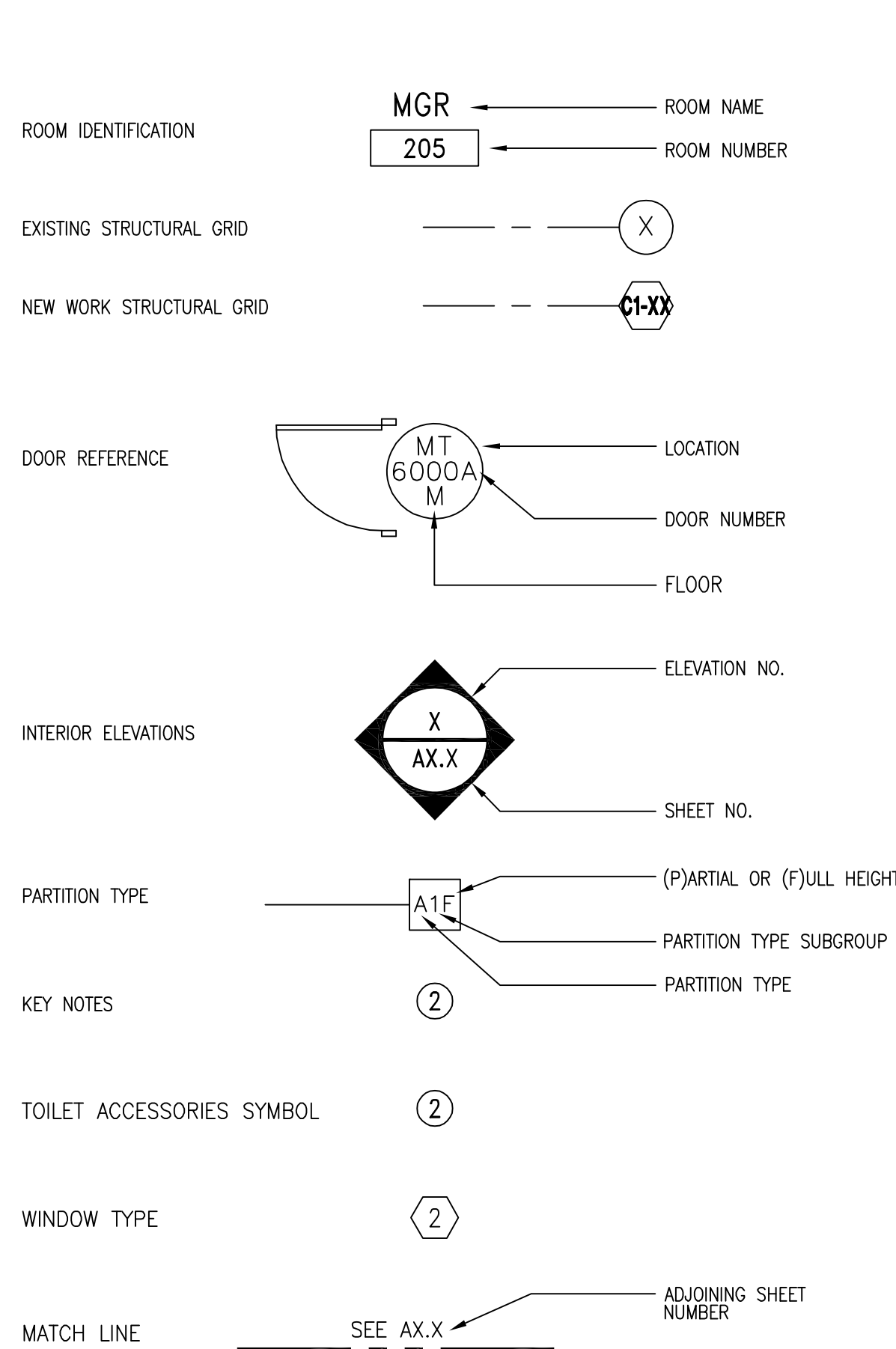
FOR ARCHITECTURAL DRAWINGS ONLY



GENERAL NOTES

- VERIFY ALL EXISTING CONDITIONS BEFORE COMMENCING WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND THE CONDITIONS SHOWN ON THE DRAWINGS.
- PROTECT EXISTING WORK TO REMAIN AND ITEMS REMOVED FOR SALVAGE OR RE-INSTALLATION. ANY SUCH ITEMS DAMAGED OR DESTROYED BY THE WORK OF THIS CONTRACT SHALL BE REPAIRED OR REPLACED TO ITS ORIGINAL CONDITION.
- ALL FLOOR ELEVATIONS INDICATED ARE NOMINAL ELEVATIONS OF THE FINISHED FLOOR, UNLESS NOTED OTHERWISE. THE ACTUAL ELEVATION MAY VARY DEPENDING ON THE THICKNESS OF THE FLOORING MATERIAL. WHERE THERE IS NO FINISHED FLOORING, THE TOP OF CONCRETE FLOOR OR TOPPING SLAB IS REFERENCED.
- DRAWINGS SHALL NOT BE SCALED - GRAPHIC SCALES ARE PROVIDED FOR CONVENIENCE ONLY. LARGER SCALE DRAWINGS SHALL HAVE PRECEDENCE OVER SMALLER SCALE DRAWINGS. NOTIFY THE ARCHITECT OF ANY DIMENSIONS REQUIRED WHICH ARE NOT IN THE DRAWINGS.
- ALL DIMENSIONS ARE TO THE CENTER OF STEEL STRUCTURE, COLUMNS, OR GRIDLINES, FACE OF GYPSUM BOARD, CONCRETE WALLS, BUILDING MATERIAL, OR EXISTING CONSTRUCTION UNLESS NOTED OR DETAILED OTHERWISE. INTERIOR WALL FINISHES SUCH AS CERAMIC TILE ARE NOT CONSIDERED FACE OF WALLS.
- PARTITIONS ARE PERPENDICULAR AND/OR PARALLEL TO GRID LINES UNLESS NOTED OTHERWISE. PARTITIONS, JOINTS, REVEALS, ARE CENTERED ON GRIDLINES UNLESS OTHERWISE NOTED. OBJECTS DRAWN TO VISUALLY APPEAR CENTERED IN AN OBJECT SHALL BE CENTERED IN THE OBJECT UNLESS NOTED OR DETAILED OTHERWISE.
- NOTES TO "ALIGN" SHALL MEAN TO ALIGN THE FINISHED FACE OF THE WALL AND/OR PARTITION UNLESS NOTED OR DETAILED OTHERWISE AND SHALL HAVE PRECEDENCE OVER A DIMENSIONED LOCATION.
- CENTERLINES OF PARTITIONS THAT MEET WINDOW MULLIONS SHALL ALIGN WITH THE CENTERLINE OF THE MULLIONS, UNLESS NOTED OR DETAILED OTHERWISE.
- PROVIDE FIRE RETARDANT TREATED BLOCKING OR SHEET METAL BACKING (THICKNESS AS REQUIRED FOR LOADS) AS SHOWN OR AS REQUIRED FOR ATTACHMENT OF WALL MOUNTED HARDWARE, MILLWORK, CASEWORK, FINISH CARPENTRY, ETC.
- ALL WOOD BLOCKING SHALL BE FIRE RETARDANT TREATED WOOD.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION AND COORDINATION OF THE WORK OF ALL TRADES TO ASSURE COMPLIANCE WITH THE CONTRACT DOCUMENTS.

REFERENCE SYMBOLS



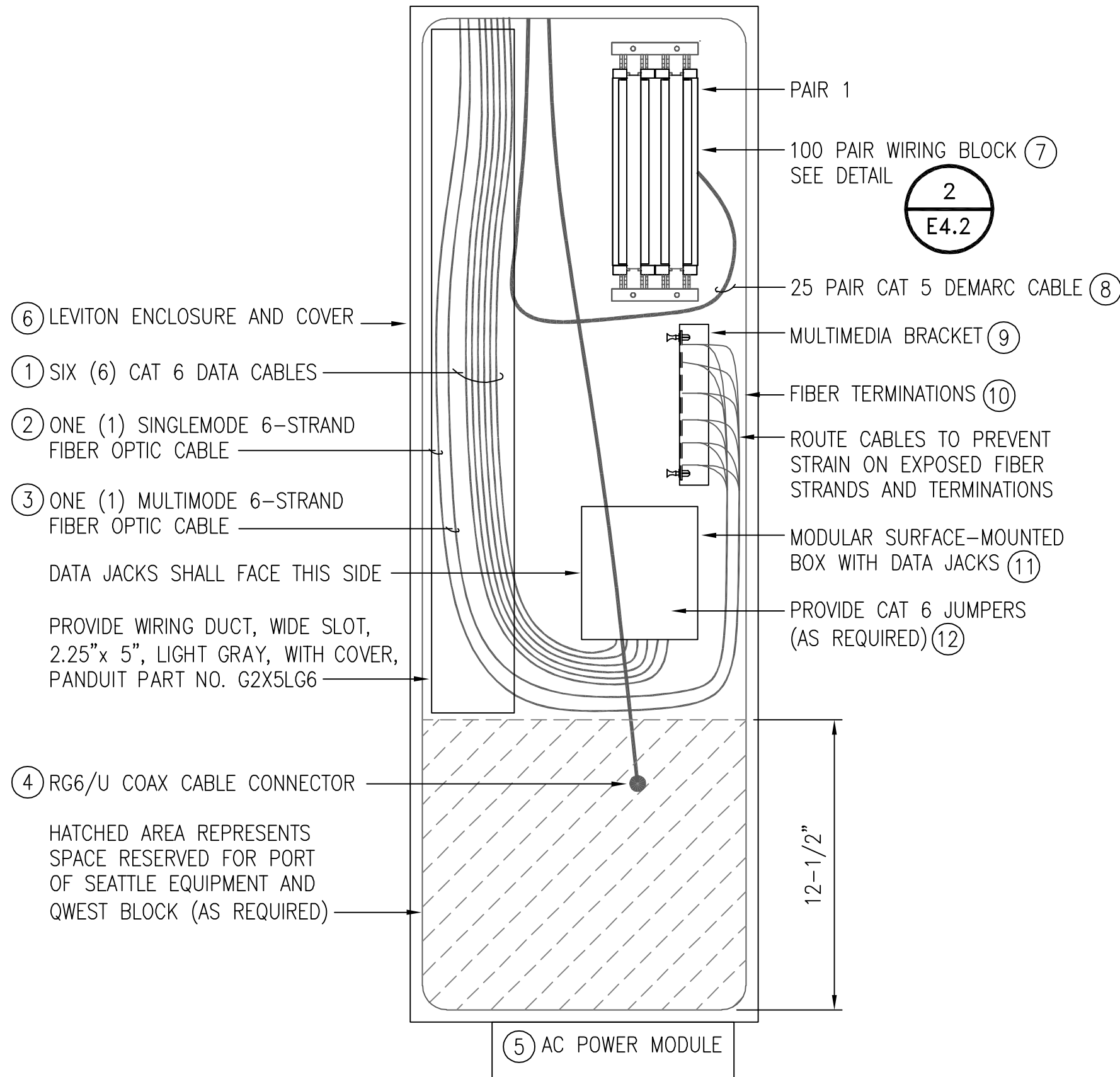
GENERAL NOTES

GENERAL REQUIREMENTS

LEGEND. SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT NECESSARILY APPEAR ON DRAWINGS.

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES AND REGULATIONS, INCLUDING BUT NOT LIMITED TO, INTERNATIONAL BUILDING CODE, INTERNATIONAL MECHANICAL CODE, UNIFORM PLUMBING CODE, WASHINGTON STATE ENERGY CODE AND VENTILATION CODE. WORK SHALL ALSO CONFORM TO PORT OF SEATTLE REGULATIONS FOR AIRPORT CONSTRUCTION, AIRPORT LIFE AND SAFETY CODE, AND ALL AUTHORITIES HAVING JURISDICTION.
2. EXISTING UTILITIES ARE AT APPROXIMATE LOCATION AND DEPTH. VERIFY ALL EXISTING UTILITIES THAT MAY BE AFFECTED BY NEW WORK. REPORT POTENTIAL CONFLICTS TO THE ENGINEER PRIOR TO EXCAVATING FOR NEW WORK.
3. AREAS OF SLAB (CONCRETE OR ASPHALT) REMOVAL AS INDICATED ON THE DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE ACTUAL AREAS OF SLAB REMOVAL NECESSARY TO COMPLETE THE WORK.
4. VISIT SITE AND NOTE EXISTING CONDITIONS AFFECTING THE WORK PRIOR TO BIDDING. RELOCATION (TEMPORARY OR PERMANENT) OF EXISTING WORK FOR THE INSTALLATION OF NEW WORK SHALL BE INCLUDED IN THE SCOPE OF THIS PROJECT.
5. COORDINATE ALL MECHANICAL WORK WITH THAT OF OTHER TRADES TO ENSURE PROPER AND ADEQUATE INTERFACE OF THEIR WORK WITH THE WORK OF THIS CONTRACTOR.
6. DEMOLITION: REMOVE OR REROUTE EXISTING WORK TO SUIT NEW WORK. DO ALL CORE DRILLING, SEALING, CUTTING AND PATCHING FOR INSTALLATION OF NEW WORK.
7. DAMAGES: CORRECT ALL DAMAGE TO EXISTING FINISHES, CEILINGS, OR SYSTEMS ASSOCIATED WITH THE INSTALLATION OF NEW WORK.
8. DRAWINGS ARE SCHEMATIC REPRESENTATION OF THE WORK TO BE PERFORMED AND ARE NOT INTENDED TO SHOW ALL DETAILS OF THE WORK. VERIFY LOCATIONS AND MEASUREMENTS OF ALL ITEMS AT PROJECT SITE PRIOR TO FABRICATION AND INSTALLATION. INSTALL MECHANICAL WORK AS HIGH AS POSSIBLE (TIGHT TO STRUCTURE), OR AS INDICATED.
9. PROVIDE NEC MINIMUM CODE CLEARANCE IN FRONT OF ANY ELECTRICAL EQUIPMENT. FRONT, BELOW, ABOVE, ETC.). ARRANGE EQUIPMENT SO THAT EQUIPMENT ACCESS CLEARANCE INDICATED ON DRAWINGS OR AS RECOMMENDED BY MANUFACTURER ARE PROVIDED.
10. PROVIDE ALL OFFSETS, FITTINGS AND TRANSITIONS REQUIRED TO CONNECT TO MECHANICAL EQUIPMENT, EXISTING DUCTWORK OR PIPING.
11. COORDINATE DEMOLITION WORK WITH ARCHITECTURAL AND DEMOLITION DRAWINGS.
12. SYSTEM HCI-A401 IS A SMOKE CONTROL SYSTEM DESIGNED IN ACCORDANCE WITH SECTION 909 OF THE INTERNATIONAL BUILDING CODE(IBC), ANY FUTURE MODIFICATIONS OR ADDITIONS TO THIS SYSTEM ARE TO BE DESIGNED IN STRICT ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF SECTION 909.

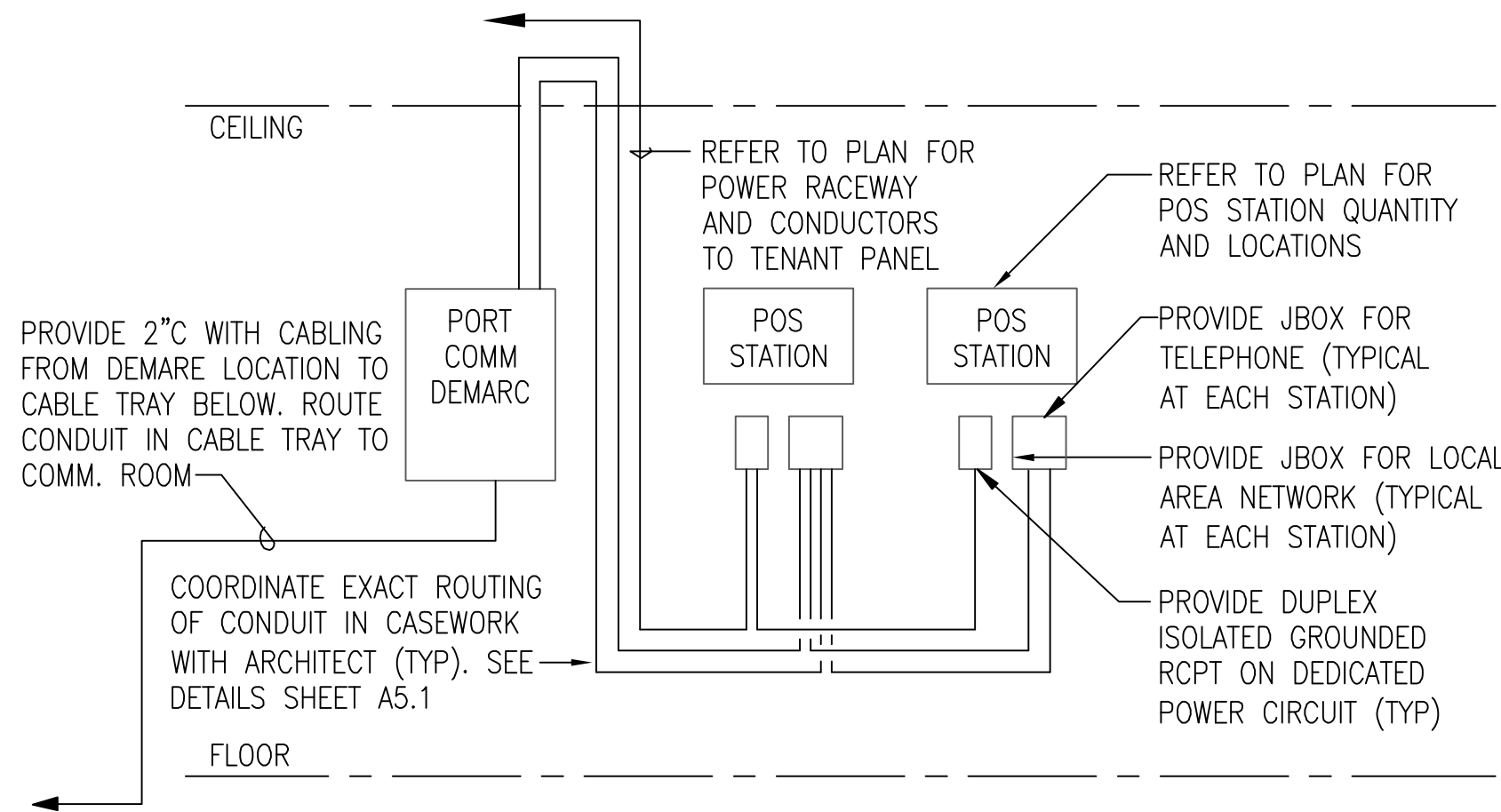
Appendix C - Example Plot Sheets



DETAIL

TENANT DEMARCATION COMMUNICATIONS BOX
SCALE: NTS

1
TYP

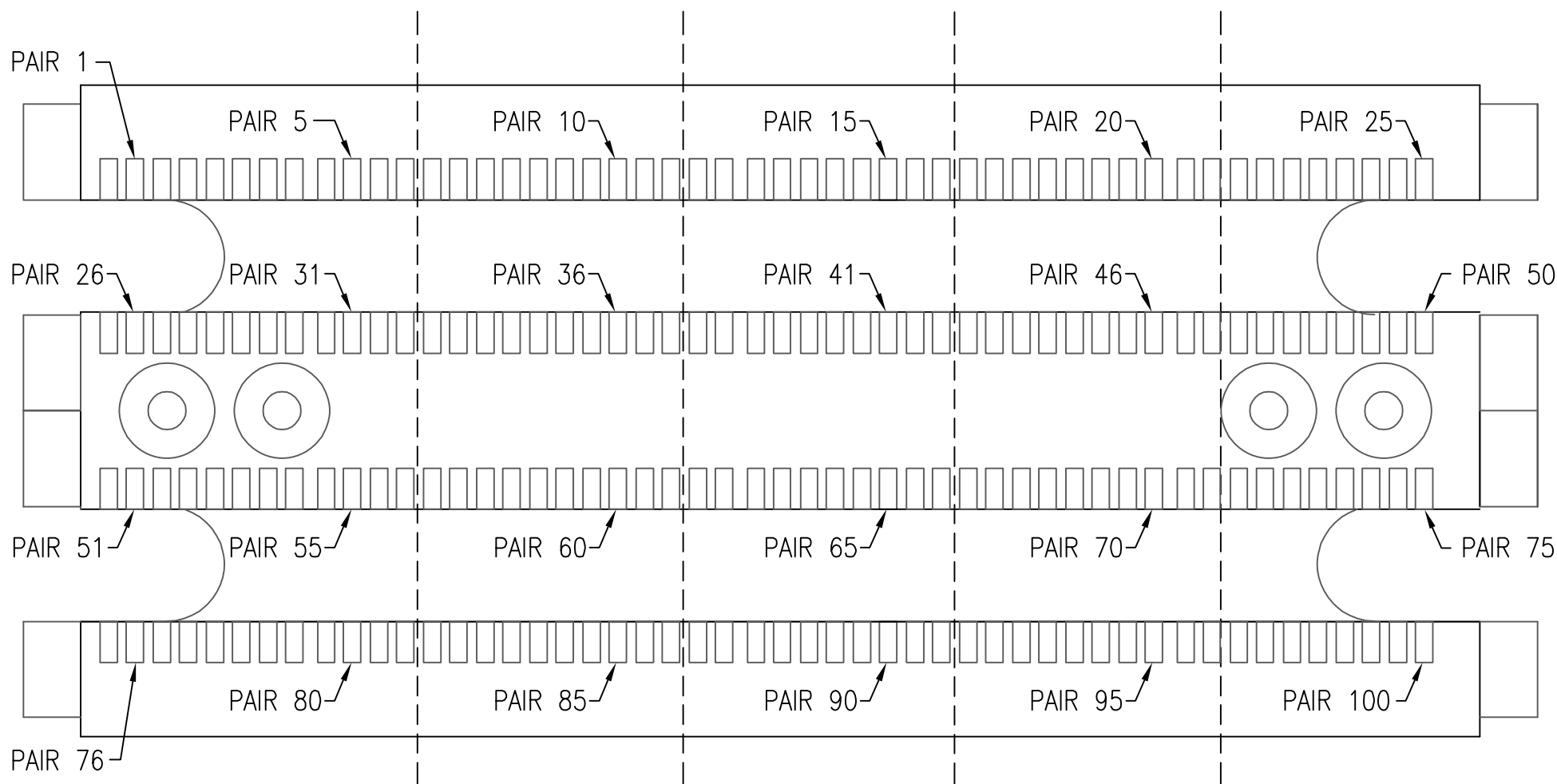


TYPICAL SCHEMATIC DIAGRAM

POINT-OF-SALE REQUIREMENTS
SCALE: NTS

POINT-OF-SALE (POS) SYSTEM NOTES:

- ALL CABLE WITHIN TENANT SPACE SHALL BE ROUTED IN CONDUIT, SIZED AS INDICATED OR AS APPROPRIATE FOR CABLE TYPE. USE 3/4" FOR UP TO 5 CABLES, AND 1" FOR 7 CABLES (7 CABLES MAXIMUM).
- USE FLEXIBLE CONDUIT WITHIN CABINETRY. PROVIDE ALL REQUIRED CABLING PENETRATIONS IN CABINETS, INCLUDING BLACK PLASTIC GROMMETS WITH COVERS.
- PROVIDE DEDICATED DUPLEX RECEPTACLES FOR POINT-OF-SALE SYSTEM EQUIPMENT, WITH DEDICATED NEUTRAL AND ISOLATED GROUND CONDUCTOR BACK TO TENANT PANEL GROUND BUS. ROUTE POWER AND COMMUNICATIONS CABLING IN SEPARATE RACEWAYS.
- THE POINT-OF-SALE SYSTEM SUPPLIER SHALL PROVIDE ALL EQUIPMENT AND TERMINATIONS AT COMM DEMARC BOX AND AT EACH 'DROP' POINT, AND SHALL INCLUDE ALL REQUIRED TESTING.



DETAIL

100 PAIR, 110 BLOCK WIRING
SCALE: NTS

2
E4.2

CT-27 PYRAMID TAPHOUSE PROJECT NO. 100899	CABLE TYPE:	CABLE LABEL		
		1ST LINE:	2ND LINE:	3RD LINE (FROM-TO):
DEMARC BOX LABEL: EQ. CB 05. 05171			(COMM RM END)	(DEMARC END)
RG6 PATCH PANEL LABEL: I.CXP. CB 05. 05171 .40	RG6/U	CB.CX. CB 05. 05171	(BLANK)	ER.CA04.00001 -EQ. CB 05. 05171
RJ45 PATCH PANEL LABEL: I.CXP. CB 05. 05171 .30	CAT 6, 4 PAIR	CB.U6. CB 05. 05171	(BLANK)	ER.CA04.00001 -EQ. CB 05. 05171
	CAT 6, 4 PAIR	CB.U6. CB 05. 05172	(BLANK)	ER.CA04.00001 -EQ. CB 05. 05171
	CAT 6, 4 PAIR	CB.U6. CB 05. 05173	(BLANK)	ER.CA04.00001 -EQ. CB 05. 05171
	CAT 6, 4 PAIR	CB.U6. CB 05. 05174	(BLANK)	ER.CA04.00001 -EQ. CB 05. 05171
	CAT 6, 4 PAIR	CB.U6. CB 05. 05175	(BLANK)	ER.CA04.00001 -EQ. CB 05. 05171
	CAT 6, 4 PAIR	CB.U6. CB 05. 05176	(BLANK)	ER.CA04.00001 -EQ. CB 05. 05171
110 PUNCH-DOWN BLOCK LABEL: I.CPB. CP 05. 05171 .20	CAT 5, 25 PAIR	CB.U5. CB 05. 05171	(BLANK)	ER.CA04.00001 -EQ. CB 05. 05171
FIBER OPTIC PATCH PANEL LABEL: I.FPP. CA 05. 05171 .10	SINGLEMODE FIBER OPTIC, 6 STRAND	FB.SM. CB 05. 05171	(BLANK)	ER.CA04.00001 -EQ. CB 05. 05171
	MULTIMODE FIBER OPTIC, 6 STRAND 62.5 MICRON	FB.M6. CB 05. 05171	(BLANK)	ER.CA04.00001 -EQ. CB 05. 05171

NOTE: ALL COMM WORK TO BE PROVIDED BY
TENANT OR PORT SERVICES. CONDUIT & BOXES BY
ELECTRICAL CONTRACTOR.

GENERAL NOTES:

- DEMARCATION BOX IS FOR PORT OF SEATTLE CABLING AND QWEST DEMARC. COORDINATE INSTALLATION OF QWEST BLOCK AND CABLE PULL WITH QWEST.
- PROVIDE PATHWAY TO PATCH FROM DEMARCATION BOX TO TENANT SYSTEMS EQUIPMENT OR PATCH PANELS OUTSIDE OF THIS BOX. METHOD AND SIZE OF PATHWAY SHALL BE APPROVED BY THE PORT AND TENANT AT TIME OF CONSTRUCTION.
- ROUTE ALL FIBER OPTIC CABLES TO ALLOW FOR MINIMUM CABLE BEND RADIUS, TO MAXIMIZE USABLE SPACE IN BOX, AND TO AVOID BLOCKING EASY ACCESS TO JACKS AND CONNECTORS.
- OBTAIN APPROVAL FOR ROUTING AND FASTENING FIBER OPTIC CABLES FROM THE PORT AT TIME OF CONSTRUCTION AND PRIOR TO TERMINATION.
- LEAVE SERVICE LOOP OF FIBER OPTIC CABLE AT THE COMMUNICATIONS ROOM END AND ALLOW SOME SLACK, IF POSSIBLE, CLOSE TO THE DEMARCATION BOX.

REFERENCE NOTES:

- PROVIDE SIX (6) CAT 6 DATA CABLES, RED, AVAYA PART NO. 1071004ERD/NON-PLENUM, OR AVAYA PART NO. 2071004ERD/PLENUM.
- PROVIDE ONE (1) SINGLEMODE 6-STRAND FIBER OPTIC CABLE, YELLOW, AVAYA PART NO. 5200-006A-SYRL/RISER, OR PART NO. 5200-006A-SYPL/PLENUM.
- PROVIDE ONE (1) MULTIMODE 6-STRAND FIBER OPTIC CABLE, ORANGE, AVAYA PART NO. 5200-006A-MRSL/RISER, OR PART NO. 5200-006A-MPSL/PLENUM.
- PROVIDE RG6/U COAX CABLE WITH MALE 'f' CONNECTOR, COMMSCOPE PART NO. 5700/NON-PLENUM, COMMSCOPE PART NO. 2275/PLENUM. PROVIDE 75 OHM TERMINATOR AND 'f' ADAPTER, TESSCO/STERLING PART NUMBERS 452154 AND 415156.
- PROVIDE AC POWER MODULE, 2-DUPLEX 15A RECEPTACLES WITH INTEGRAL HOSPITAL GRADE SURGE SUPPRESSOR, LEVITON PART NO. 47605-DP. WIRE TO 120VAC DEDICATED 20A CIRCUIT BREAKER.
- PROVIDE LEVITON SMC 420 ENCLOSURE AND COVER, PART NO. 47605-42W, 42"H x 14.38"W x 3.6"D, FLUSH OR SURFACE MOUNT AS REQUIRED. WHERE BOX IS FLUSH-MOUNTED, PROVIDE (2)-1" CONDUIT SPARES WITH PULL STRING TO CEILING SPACE.
- PROVIDE AVAYA 110AW2-100 WIRING BLOCK. REFER TO DETAIL THIS SHEET. PAIRS 1-25 ARE RESERVED FOR PORT DEMARC CABLE WITH 110C-5 CLIPS. PAIRS 26-100 ARE FOR TENANT STATION CABLE WITH 110C-4 CLIPS.
- PROVIDE 25 PAIR CAT 5 DEMARC CABLE, AVAYA PART NO. 1061025CSL/NON-PLENUM, OR PART NO. 2061025ABL/PLENUM.
- PROVIDE MULTIMEDIA BRACKET, LEVITON PART NO. 47612-MMA, WITH TWO (2) MOUNTING PLATES, EACH WITH THREE (3) SC-DUPLEX CONNECTORS, LEVITON PART NO. 5F100-3SC.
- TERMINATE SINGLEMODE FIBER AT FRONT (3) SC-DUPLEX AND MULTIMODE FIBER AT REAR (3) SC-DUPLEX. USE AVAYA PART NO. P6001A-Z-125 SC CONNECTORS FOR SINGLEMODE AND AVAYA PART NO. P6201-A-Z-125 SC CONNECTORS FOR MULTIMODE.
- PROVIDE MODULAR SURFACE-MOUNT BOX (AVAYA PART NO. M106SMB-262) WITH SIX (6) CAT 6 RED DATA JACKS, AVAYA PART NO. MGS400-317. NUMBERING OF JACKS SHALL BE PER PORT NAMING ASSIGNMENTS AND STANDARDS. NUMBERS SHALL INCREASE FROM TOP TO BOTTOM.
- PROVIDE CAT 6 JUMPERS (AS REQUIRED), RED JACKET, AVAYA PART NO. GSE-8x (x = LENGTH IN FEET).

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Appendix D Port of Seattle Level Tables and Descriptions

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Level Designations Used In Layer Names		
Verified Data (1 character)	1 or 0	Floor Level Indicator (3 Characters)
		ABV
		BAG
		BMZ
		BRG
		BS1
		BS2
		BS3
		CMP
		CON
		DCK
		FIS
		FL1
		FL2
		FL3
		FL4
		FL5
		FL6
		FL7
		FL8
		FL9
		GEN
		GRD
		INC
		MEZ
		PEN
		PG1
		PG2
		PG3
		PG4
		PG5
		PG6
		PG7
		PG8
		PG9
		P10
		RMP
		ROF
		TUN
		UDG
		UDK

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Appendix E Port of Seattle CAD Layer Naming Standards 2023 Edition

The following Port of Seattle Layer Tables are set to be specific to each trade.

Please Note:

- 1)...No mismatching of trade roots and root modifiers are allowed with other trades.***
- 2)...No mismatching of root modifiers with other roots within the same trade is allowed.***
- 3)...Use all layers that are in the layer table as specific as noted in the layer tables.***

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General Plot Sheet Layers

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Trade	Level	Root	Root Modifier	1st Optional Modifier	2 nd Optional Modifier	Description
Cover Sheet Layers W/ Sheet Index (General) 'G Trade'						
NO Other Root Modifiers allowed						
G		SHBD				
			COVR			Cover sheet
				ASBT		Cover Sheet Record Stamp Block
				INDX		Cover Sheet Index Template Lines
				MCON		Cover Sheet Major Contract Block
				TEXT		Cover Sheet Index Text
			TTLB			Cover Sheet frame
				CLIP		Cover Sheet Plot Sheet Limits
			TITLE			Title
				PROJ		Cover Sheet Project Title
		SHBD				
			NUMB			Sheet or project number
				DRWG		Title Block
			STMP			Stamps
				ASBT		Title Block As-Built Stamps
				B4D1		Title Block: Before You Dig Stamp (up)
				B4D2		Title Block: Before You Dig Stamp (down)
				NFCS		Not for Construction Stamp
				FRVW		For Review Only Stamp
			TTLB			Title block
				CLIP		Cover Sheet Plot Sheet Limits
				DSNR		Title Block Plot Design team info
				FRME		Title Block Frame and lines
				REVN		Title Block Rev Deltas & clouds + revision text

				TBLK		Title Block Border, Frame, lines, pos logo and text
				SNUM		Discipline Sheet Number
			TTLE			Title for view tag symbols
				DRWG		Title Block Plot Sheet attribute block
				PROJ		Title Block Project Name PM/ RE WP# Consultant Number & Port tracking number...E.g. Stia-0xxx + % of project
		SHBD	GRPH			Graphic images or renderings
NEWW NEWW			LGND			Legend
				BLCK		Legend Blocks
				TEXT		Legend Text
			LOGO			Company logo in title block
			NOTE			General Notes
			NPLT			Non-plotting graphic information
			MAPS			Vicinity or site location map
			MTCH			Match Lines
				TEXT		Match Line Text
				OTLN		Drawing Outline Location
			NRTH			North arrow
			NUMB			Sheet or project number
			PLOT			Plot date information
			RCLD			Revision Clouds
		RDEL			Revision Delta's	
		SCAL			Bar Scales	
NEWW			SEAL			Engineering, Structural, Architectural, etc. seals
			STMP			Stamps registration or Record Drawing
			TEXT			Miscellaneous text and callouts with associated leaders
			VIEW			View ports in the layout

Specified Trade Detail, Diagram, Elevation, Isometric, Profile, Schedule & Section Layers

Please note: Roots & Root Modifiers are for the below layers only.

Some 1st Optional Root Modifiers have been specified in the standard. If the object or element being drawn matches the layer description notes, the 1st Optional Root Modifier indicated must be used. The intent is to provide a consistent method of identifying the most common elements found throughout the Port of Seattle's properties and infrastructure. Objects or elements found on incorrect layers during the QC review process will be flagged as errors and will need to be corrected.

			PATT			Hatch patterns
			SYMB			Symbols, Tags or Tags
			TEXT			Text and notes
		DIAG				
			DIMS			Dimensions
			L001— L255	range from 1 to 255		Line Weight for plotting based on AUTOCAD colors
			BOLD			Bold Pen
			CNTR			Center Line
			HEVY			Heavy Pen
			HIDN			Hidden Line
			LITE			Light Pen
			MEDM			Medium Pen
			SCRN			Screen Pen
			XBLD			Extra bold pen
			XLIT			Extra light line
			XXBD			Extra-Extra bold pen
			XXLT			Extra-Extra light pen
			INVR			Invert data
			PATT			Hatch patterns
			SYMB			Symbols, Tags or Tags
			TEXT			Text and notes
		ELEV				
			DIMS			Dimensions
			L001— L255	range from 1 to 255		Line Weight for plotting based on AUTOCAD colors
			BOLD			Bold Pen
			CNTR			Center Line
			HEVY			Heavy Pen
			HIDN			Hidden Line
			LITE			Light Pen
			MEDM			Medium Pen
			SCRN			Screen Pen
			XBLD			Extra bold pen
			XLIT			Extra light line
			XXBD			Extra-Extra bold pen
			XXLT			Extra-Extra light pen
			INVR			Invert data
			PATT			Hatch patterns
			SYMB			Symbols, Tags or Tags
			TEXT			Text and notes
		ISOM				

			DIMS			Dimensions
			L001— L255	range from 1 to 255		<i>Line Weight for plotting based on AUTOCAD colors</i>
			BOLD			Bold Pen
			CNTR			Center Line
			HEVY			Heavy Pen
			HIDN			Hidden Line
			LITE			Light Pen
			MEDM			Medium Pen
			SCRN			Screen Pen
			XBLD			Extra bold pen
			XLIT			Extra light line
			XXBD			Extra-Extra bold pen
			XXLT			Extra-Extra light pen
			INVR			Invert data
			PATT			Hatch patterns
			SYMB			Symbols, Tags or Tags
			TEXT			Text and notes
		PROF				
			DIMS			Dimensions
			L001— L255	range from 1 to 255		<i>Line Weight for plotting based on AUTOCAD colors</i>
			BOLD			Bold Pen
			CNTR			Center Line
			HEVY			Heavy Pen
			HIDN			Hidden Line
			LITE			Light Pen
			MEDM			Medium Pen
			SCRN			Screen Pen
			XBLD			Extra bold pen
			XLIT			Extra light line
			XXBD			Extra-Extra bold pen
			XXLT			Extra-Extra light pen
			INVR			Invert data
			PATT			Hatch patterns
			SYMB			Symbols, Tags or Tags
NEWW			VIEW			for Civil 3-D (only)
NEWW				BRDR		Profile View borders
NEWW				GRID		Profile Grids
NEWW				TEXT		Profile View Text
NEWW				TICS		Profile View Dimensions
			TEXT			Text and notes

		SCHD			
			DIMS		Dimensions
			L001— L255	range from 1 to 255	<i>Line Weight for plotting based on AUTOCAD colors</i>
			BOLD		Bold Pen
			CNTR		Center Line
			HEVY		Heavy Pen
			HIDN		Hidden Line
			LITE		Light Pen
			MEDM		Medium Pen
			SCRN		Screen Pen
			XBLD		Extra bold pen
			XLIT		Extra light line
			XXBD		Extra-Extra bold pen
			XXLT		Extra-Extra light pen
			INVR		Invert data
			PATT		Hatch patterns
			SYMB		Symbols, Tags or Tags
			TEXT		Text and notes
		SECT			
			DIMS		Dimensions
			L001— L255	range from 1 to 255	<i>Line Weight for plotting based on AUTOCAD colors</i>
			BOLD		Bold Pen
			CNTR		Center Line
			HEVY		Heavy Pen
			HIDN		Hidden Line
			LITE		Light Pen
			MEDM		Medium Pen
			SCRN		Screen Pen
			XBLD		Extra bold pen
			XLIT		Extra light line
			XXBD		Extra-Extra bold pen
			XXLT		Extra-Extra light pen
			INVR		Invert data
			PATT		Hatch patterns
			SYMB		Symbols, Tags or Tags
			TEXT		Text and notes

Generic Roots and Root Modifiers Layers for All Trades Except 'G' & 'X'

Some 1st Optional Root Modifiers have been specified in the standard. If the object or element being drawn matches the layer description notes, the 1st Optional Root Modifier indicated must be used. The intent is to provide a consistent method of identifying the most common elements found throughout the Port of Seattle's properties and infrastructure. Objects or elements found on incorrect layers during the QC review process will be flagged as errors and will need to be corrected.

Trade	Level	Root	Root Modifier	1st Optional Modifier	2 nd Optional Modifier	Description
Generic Root for All Trade except 'G' & 'X' Layers						
NO Other Root Modifiers allowed						
A		ARCH				
NEWW			DIMS			<i>Dimensions</i>
			GENL			General Component Elements
			GRID			<i>Grids generic</i>
			GRID	BUBL		<i>Grid Bubbles</i>
			GRID	CNTL		<i>Grid Centerlines</i>
NEWW			NOTE			Reference keynotes with associated leaders
NEWW			NPLT			Non-plotting graphic information
NEWW			MISC			Elements not covered by other modifiers.
NEWW NEWW			PATT			<i>Floor Pattern or Hatch Patterns</i>
			PHTO			<i>Photograph</i>
			REDL			Redlines
			REVS			Revisions
			SYMB			<i>Symbols, Tags or Tags</i>
			TEXT			<i>Text associated with root</i>

V		SURV				
NEWW			DIMS			<i>Dimensions</i>
			GENL			General Component Elements
			GRID			<i>Grids generic</i>
			GRID	BUBL		<i>Grid Bubbles</i>
			GRID	CNTL		<i>Grid Centerlines</i>
NEWW			NOTE			Reference keynotes with associated leaders
NEWW			NPLT			Non-plotting graphic information
NEWW			MISC			Elements not covered by other modifiers.
NEWW NEWW			PATT			<i>Floor Pattern or Hatch Patterns</i>
			REDL			Redlines
			REVS			Revisions
			PHTO			<i>Photograph</i>
			SYMB			<i>Symbols, Tags or Tags</i>
			TEXT			<i>Text associated with root</i>

C		CIVL				
NEWW			DIMS			Dimensions
			GENL			General Component Elements
			GRID			Grids generic
			GRID	BUBL		Grid Bubbles
			GRID	CNTL		Grid Centerlines
NEWW			NOTE			Reference keynotes with associated leaders
NEWW			NPLT			Non-plotting graphic information
NEWW			MISC			Elements not covered by other modifiers.
NEWW NEWW			PATT			Floor Pattern or Hatch Patterns
			REDL			Redlines
			REVS			Revisions
			PHTO			Photograph
			SYMB			Symbols, Tags or Tags
			TEXT			Text associated with root
E		ELEC				
NEWW			DIMS			Dimensions
			GENL			General Component Elements
			GRID			Grids generic
			GRID	BUBL		Grid Bubbles
			GRID	CNTL		Grid Centerlines
NEWW			NOTE			Reference keynotes with associated leaders
NEWW			NPLT			Non-plotting graphic information
NEWW			MISC			Elements not covered by other modifiers.
NEWW NEWW			PATT			Floor Pattern or Hatch Patterns
			REDL			Redlines
			REVS			Revisions
			PHTO			Photograph
			SYMB			Symbols, Tags or Tags
			TEXT			Text associated with root

F		PROT				
NEWW			DIMS			Dimensions
			GENL			General Component Elements
			GRID			Grids generic
			GRID	BUBL		Grid Bubbles
			GRID	CNTL		Grid Centerlines
NEWW			NOTE			Reference keynotes with associated leaders
NEWW			NPLT			Non-plotting graphic information
NEWW			MISC			Elements not covered by other modifiers.
			PATT			Floor Pattern or Hatch Patterns
NEWW			REDL			Redlines
NEWW			REVS			Revisions
			PHTO			Photograph
			SYMB			Symbols, Tags or Tags
			TEXT			Text associated with root
L		LAND				
NEWW			DIMS			Dimensions
			GENL			General Component Elements
			GRID			Grids generic
			GRID	BUBL		Grid Bubbles
			GRID	CNTL		Grid Centerlines
NEWW			NOTE			Reference keynotes with associated leaders
NEWW			NPLT			Non-plotting graphic information
NEWW			MISC			Elements not covered by other modifiers.
			PATT			Floor Pattern or Hatch Patterns
NEWW			REDL			Redlines
NEWW			REVS			Revisions
			PHTO			Photograph
			SYMB			Symbols, Tags or Tags
			TEXT			Text associated with root

M		MECH			
NEWW			DIMS		Dimensions
			GENL		General Component Elements
			GRID		Grids generic
			GRID	BUBL	Grid Bubbles
			GRID	CNTL	Grid Centerlines
NEWW			NOTE		Reference keynotes with associated leaders
NEWW			NPLT		Non-plotting graphic information
NEWW			MISC		Elements not covered by other modifiers.
NEWW NEWW			PATT		Floor Pattern or Hatch Patterns
			REDL		Redlines
			REVS		Revisions
			PHTO		Photograph
			SYMB		Symbols, Tags or Tags
			TEXT		Text associated with root
P		PLMB			
NEWW			DIMS		Dimensions
			GENL		General Component Elements
			GRID		Grids generic
			GRID	BUBL	Grid Bubbles
			GRID	CNTL	Grid Centerlines
NEWW			NOTE		Reference keynotes with associated leaders
NEWW			NPLT		Non-plotting graphic information
NEWW			MISC		Elements not covered by other modifiers.
NEWW NEWW			PATT		Floor Pattern or Hatch Patterns
			REDL		Redlines
			REVS		Revisions
			PHTO		Photograph
			SYMB		Symbols, Tags or Tags
			TEXT		Text associated with root

S		STRU				
NEWW			DIMS			<i>Dimensions</i>
			GENL			General Component Elements
			GRID			<i>Grids generic</i>
			GRID	BUBL		<i>Grid Bubbles</i>
			GRID	CNTL		<i>Grid Centerlines</i>
NEWW			NOTE			Reference keynotes with associated leaders
NEWW			NPLT			Non-plotting graphic information
NEWW			MISC			Elements not covered by other modifiers.
NEWW NEWW			PATT			<i>Floor Pattern or Hatch Patterns</i>
			REDL			Redlines
			REVS			Revisions
			PHTO			<i>Photograph</i>
			SYMB			<i>Symbols, Tags or Tags</i>
			TEXT			<i>Text associated with root</i>

Survey Layers

Some 1st Optional Root Modifiers have been specified in the standard. If the object or element being drawn matches the layer description notes, the 1st Optional Root Modifier indicated must be used. The intent is to provide a consistent method of identifying the most common elements found throughout the Port of Seattle's properties and infrastructure. Objects or elements found on incorrect layers during the QC review process will be flagged as errors and will need to be corrected.

Trade	Level	Root	Root Modifier	1st Optional Modifier	2nd Optional Modifier	Description
V						
		ACFT				Small Aircraft
		ACST				Aircraft control striping
		AFLD				Airfield
		ALIT				Airfield lighting systems
NEWW		ALGN				Civil 3d
		ALPD				Airport layout plan Drawing
NEWW		ASSM				Civil 3d
NEWW		CHAN				Navigable channels
NEWW		CORR				Civil 3d
		CTOW				Control tower
		FAAC				FAA communication systems
		FAAL				FAA lighting systems
		FAAP				FAA Power systems
NEWW		GRAD				Civil 3d
		SFNC				Security Fence
		BRDG				Bridges site
		BLDG				Buildings site
		CHWR				Chilled water systems site
		CCTV				Cable TV systems
		CDAT				Data and computer systems
		CTEL				Telephone systems
NEWW		CTRL				Control points
		CTWR				Communication radio towers
		CMPA				Compressed air systems
		CDSR				Condenser water systems site
		CNDS				Condensate systems site
		DOCK				Docks and piers site
NEWW		DRIV				Driveways
NEWW		DTCH				Ditches or washes
NEWW		DOMW				Domestic Water
		ENVR				Environmental elements site
NEWW		ESMT				Easements
		FIRE				Fire protection systems site
		FDSL				Diesel fuel system elements
		FGAS				Fuel gas (gasoline) system elements
		FJET				Jet fuel system elements
		FOIL				Fuel oil system elements
		NGAS				Natural gas system elements

		PRPN			Propane system elements
		METH			Methane system elements
		GNDG			Grounding systems site
		HHWT			Heating hot water systems site
		IRRG			Irrigation systems
		IWSS			Industrial waste water sewer systems site
		LEMG			Emergency lighting systems
		LNOR			Normal lighting systems
NEWW		MASS			Civil 3d
		MTNK			Miscellaneous storage tanks site
NEWW		NODE			Civil 3d Node
		PKNG			Parking areas and elements
		PATH			Paths other than roads or sidewalks
		PLNT			Landscape plants
		POND			Ponds site
		POWR			Electrical Power
		PELV			Emergency power low voltage
		PEMV			Emergency power medium voltage
NEWW		PNET			Civil 3d
		PNHV			Normal power high voltage systems
		PNLV			Normal power low voltage systems
		PNMV			Normal power medium voltage systems
		PROP			Property and property management site
		RLRD			Railroads site
		ROAD			Roads site
		SITE			Project Site
		SSWR			Sanitary sewer systems
		SYRD			Ship yard site
		STEM			Steam systems site
		STRM			Storm sewer systems
		STRC			Structural elements site
		SRVY			Survey data
NEWW		SURF			Civil 3d
		TOPO			Topography site
		TRAF			Traffic control devices and signage
		TUNL			Tunnels (railroad roadway transit and utility tunnels)
		WATR			Domestic water systems site

Additional Root Modifiers for Survey Root Layers Only					
			ABLT		Anchor bolts
			ADAE		Americans with disabilities
			BASE		Equipment Base
			BOLT		Bolts (other than anchor bolts)
			CONC		Concrete
			CRNR		Object corners
			CTLO		Centerlines of objects
			FLOW		Flow
				FLIN	Flow line
			GRAD		Finished grade
			GRAV		Gravity flow
			MTR2		2 power meters
			PLAT		Metal Plates
			RBAR		Rebar
			ROLL		Rolling stock equipment
			SCAL		Scale weighing equipment
			SGNL		Signal
			SLEV		Sleeves for utilities
			SNSR		Sensor
			STAN		Stationing data (pipe roadway etc.)
			STUB		Stub
			TIED		Tied
			UTIL		Utility
Additional Root Modifiers for Survey Root Layers					
			ABOV		Above
			ACCY		Accessory
			AREA		An Area within Specific Boundaries
			AUXL		Auxiliary
			BELW		Below
			BYND		Object beyond
			CNTR		Centerlines
			DIMS		Dimensions
			FNSH		Surface Finish
			FITG		Fitting
			FIXT		Fixture
			GENL		General Component Elements

NEWW NEWW
--

			JLIN			J line
			JNOS			J line nose
			LSTR			Left straight arrow
			LTRN			Left turn arrow
			RSTR			Right straight arrow
			RTRN			Right turn arrow
			SBAR			Stop bar
			STRA			Straight arrow
			SWLK			Sidewalk
			TEMP			Temporary striping
			TEXT			Aviation systems text
			TWCL			Taxiway center line
			VHCL			Vehicle access route
			WING			Stripe wing line
V		AFLD				Airfield
NEWW			AHOA			Aircraft / Helicopter Operations Area
NEWW			AIDC			Airfield Navigational Aid - Critical Area
NEWW			AIDS			Airfield Navigational Aid - Site
			CONC			Airfield concrete
				CJNT		Contraction joint
				EJNT		Expansion joint
				FOOT		Footing
				ISLD		Concrete Island
				JOIN		Concrete joint
				PADS		Concrete pads
				RAMP		Concrete ramp
				SDWK		Concrete sidewalk
NEWW			DEVC			Capacitors, voltage regulators, motors, buses,
NEWW			DUCT			Duct banks
			GFLD			Greenfield
NEWW			JBOX			Junction boxes, pull boxes, manholes, handholds,
			NLGT			Airfield navigation lighting
NEWW			OBST			Airspace obstructions
			RNWX			Airfield runway
NEWW				ARST		Runway Arresting Gear Location
NEWW				BLST		Blast pad markings
NEWW				CNTR		Centerline
NEWW				DISP		Displaced threshold markings
NEWW				DIST		Fixed distance markings
NEWW				EDG		Airfield runway edges
NEWW				INTS		Runway intersection
NEWW				LAHS		Runway land and hold short area

NEWW				SAFT		Runway Safety Area
NEWW				SHLD		Shoulder markings
NEWW				SIDE		Side stripes
NEWW				STWY		Runway stop way markings
NEWW				TDZM		Touchdown zone markers
NEWW				THRS		Threshold markers
NEWW				APPR		Runway approaches
NEWW			SIDA			Security Identification Display Area
			SIGN			Airfield signs
			TAXI			Airfield taxiway
			WNDS			Windsock
V		ALIT				Airfield lighting systems
			ABAN			Lcan_Abn
NEWW			APPR			Approach lights
NEWW			APRN			Apron Lighting
			BASE			Light base
			CABL			Airfield lighting cable
				MRKR		Airfield lighting cable marker
NEWW				COAX		Coax cable
NEWW				FIBR		Fiber optics cable
NEWW				MULT		Multi-conductor cable
NEWW				TRAY		Cable trays and wire ways
			CIRC			Airfield lighting circuit
			CLRW			Center line runway lights
			COND			Airfield lighting conduit
NEWW			CONS			Constant Current Regulators
NEWW			DBNK			Airfield lighting duct-bank
			DIST			Distance and arresting gear markers and lights
NEWW			EDGE			Airfield lighting Edge elements
NEWW			EMER			Emergency fixtures
NEWW			FAAL			LT_FAARW
			EQMT			Airfield lighting equipment
			HNHL			Airfield lighting hand hole
			HOLD			Runway holding light
NEWW			LAND			LIGHT LANDING
			LNDL			Landing light
			MNHL			Airfield lighting manhole
			MRKR			Airfield lighting cable marker
			NTDN			North Tdz light
			PANL			Airfield lighting panel
			PAPI			Light papi
			PBOX			Airfield lighting pull box
			RNWW			FAA runway light
NEWW				CNTR		CNTR Runway Centerline lights
NEWW				DTGS		1 Runway Distance to go lights
NEWW				EDGE		Runway edge lights
NEWW				TDZN		Runway Touchdown Zone lights
			RWEF			Runway edge lights flush
			RWEU			Runway edge lights upright

NEWW			RWLL			Runway landing lights
			SIGN			Airfield lighting signs
			SNSR			Airfield lighting sensor
			STDN			South Tdz light
NEWW			STRC			Airfield lighting Structural elements
			SWBD			Airfield lighting switchboards
NEWW			TEXT			Airfield lighting text
			TDZL			Touchdown Light
NEWW			THRS			Thresh Hold light
			TWCL			Taxiway centerline light
				EDGE		Taxiway edge lights
			WWAG			Wigwag light
V		ALPD				Airport layout plan Drawing
			PDWG			Airplanes layout plan Drawing
V		APRN				Airfield apron
NEWW			ACPK			Aircraft gate/stand parking area
NEWW			ANOM			Aircraft non-movement area
NEWW			CNTR			Centerlines
NEWW			DEIC			Aircraft Deicing Area
NEWW			GRND			Grounding points
NEWW			HOLD			Holding position markings
NEWW			JOIN			Apron joints
NEWW			MOOR			Mooring points
NEWW			MRKG			Apron markings
NEWW			OTLN			Airfield apron - outlines
NEWW			SECU			Security zone markings
NEWW			SHLD			Shoulder stripes
NEWW			TEXT			Text
V		BLDG				Buildings and primary Structures
NEWW			BDOR			Building door
			BELV			Building Elevation
			BENT			Bridge: top of bent
			BFND			Building foundation
			BWAL			Building outside wall
			COLM			Building Columns
				CRNR		Column Corner
			CRNR			Building Corner
			CTLJ			Bridge: control joint
			COMR			Commercial Building
NEWW			DECK			Buildings and primary structures: deck (attached, no roof overhead)
			EBLD			Equipment building or enclosure
			FACE			Building face
				CRNR		Building Corner
NEWW				JTWY		Jet way
				OVHG		Building overhang
			GRAL			Bridge: guard rail

NEWW			INDU			Industrial building	
				BPLT		Batch-plant	
			LOAD			Loading dock	
			OFFC			Office building	
				OTLN			Object Outlines
			OVHD			Objects Overhead	
		NEWW		PRCH			Buildings and primary structures: porch (attached, roof overhead)
			RAMP			Building ramp	
		NEWW			ADAE		Handicap ramp
		NEWW		ROFF			Building roof
			STRC			Building Structural elements	
			TEMP			Temporary building	
				PORT			Portable building
				TRLR			Trailer
	TEXT			Text			
	WRHS			Warehouse building			
V		BRDG				Bridges site	
NEWW			BENT			Bridge: top of bent	
		BFRM			Bridge framework		
NEWW		COLM			Bridge column elements		
NEWW				JTWY		Jet Way Column	
NEWW		CTLJ			Bridge: control joint		
NEWW		CTWK			Bridge outside wall		
		DECK			Bridge deck elements		
		FOND			Bridge foundation elements		
NEWW		GRAL			Bridge: guard rail		
		PASS			Passenger Bridge		
		PEDS			Pedestrian		
		TEXT			Text		
NEWW		TMBR			Bridge Timber elements		
V		CCTV				Cable TV systems	
NEWW			CABL			Cable standard	
				COAX		Coax cable	
				FIBR		Fiber optics cable	
				MULT		Multi-conductor cable	
				TRAY		Cable trays and wire ways	
			CIRC			Circuit	
			COND			Conduit	
		NEWW			LOCT		Cable Conduit Locates
			DISK			Satellite Disk	
			EQMT			Cable TV equipment	
		CRDR			Security access card reader		
	HNHL			Communication hand hole			
	JBOX			Junction box			
	MNHL			Manhole			
	PANL			Panel			
	PBOX			Pull box			

V		CDAT			Communication Data and computer systems
NEWW			CABL		Data Cable
NEWW				COAX	Coax cable
NEWW				FIBR	Fiber optics cable
NEWW				MULT	Multi-conductor cable
NEWW				TRAY	Cable trays and wire ways
			CIRC		Circuit
			COND		Data Conduit
				LOCT	Data Conduit Locates
			EQMT		Generic data and computer systems equipment not associated with other systems
			FIBO		Fiber optic cable
NEWW				ABND	Abandon Fiber Optic
NEWW				COND	Fiber Optic Conduit
NEWW				LOCT	Fiber Optic Locates
			HNHL		Hand hole
			JBOX		Junction Box
			MNHL		Manhole
			NETW		Network components
NEWW			OVHD		Communications: Objects Overhead
			PANL		Panel
NEWW			PBOX		Pull Box
NEWW			POLE		Communications: pole
NEWW			STRC		computer systems Structural elements
NEWW			TEXT		Text
NEWW			UGND		Communications: underground
NEWW			VALT		Communications vault
V		CDSR			Condenser water systems site
			CLTR		Cooling tower elements
			EQMT		Generic condenser water equipment not associated with other systems
			ETNK		Expansion or surge tank
			MNHL		Manhole
			PIPE		
				ABND	Abandoned condenser water pipe
				CAPS	Blind flange or cap
				CWRP	Condenser water return pipe
				CWSP	Condenser water supply pipe
				TEMP	Temporary condenser water pipe
NEWW			PITT		Condenser water pit
			PUMP		Condenser water pumps
			SPRT		Condenser storage water tanks
			STNK		Condenser water tanks
			TEXT		Text
			VALV		Condenser water vaults

NEWW			VALT			vaults	
			VENT			Venting system elements	
NEWW			STRC			Condenser water systems Structural elements	
V		CHAN				Navigable channels	
NEWW			BWTR			Navigable channels: breakwater	
NEWW			CNTR			Navigable channels: center	
NEWW			DACL			Navigable channels: de-authorized channel limits, anchorages, etc.	
NEWW			DOCK			Navigable channels: decks, docks, floats, piers	
NEWW			NAID			Navigable channels: navigation aids	
NEWW			TEXT			Text	
V		CTRL				Control points	
NEWW			BMRK			Control points: benchmarks	
NEWW			FLYS			Control points: fly station	
NEWW			GRID			Control points: grid	
NEWW			HORZ			Control points: horizontal	
NEWW			HVPT			Control points: horizontal/vertical	
NEWW			PNPT			Control points: panel points	
NEWW			TRAV			Control points: transverse	
NEWW			VERT			Control points: vertical	
NEWW			TEXT			Text	
V		CHWR				Chilled water systems site	
NEWW			EQMT			Generic chilled water equipment not associated with other systems	
			ETNK			Expansion or surge tank	
			MNHL			Manhole	
			PIPE			Chilled water pipe	
				ABND		Abandoned chilled water pipe	
				CAPS		Blind flange or cap	
				CHRT		Chilled water return pipe	
				CHWS		Chilled water supply pipe	
				SCHR		Secondary chilled water return pipe	
				SCHS		Secondary chilled water supply pipe	
			PITT			Chilled water pit	
				PIPE	TEMP		Temporary chilled water pipe
				PUMP	PPMP		Primary chilled water pumps
				PUMP	SPMP		Secondary chilled water pumps
			STNK			Chilled water tanks	
				TEXT			Text
				VALT			Chilled water vaults
				VALV			Chilled water valves
NEWW			VENT			Venting system elements	

NEWW			STRC			Chilled water systems Structural elements
V		CMPA				Compressed air systems
			ADRY			Compressed air dryer
			COMP			Compressed air piping
			EQMT			Generic compressed air equipment not associated with other systems
			PIPE			Compressed air pipe or line
				ABND		Abandoned compressed air pipe
				CAPS		Blind flange or cap
				CMPR		Compressed air return pipe
				CMPS		Compressed air supply pipe
				LOCT		Compressed air pipe or line Locates
NEWW			PITT			Compressed air pit
NEWW			PIPE	TEMP		Temporary compressed air pipe
			QCON			Quick disconnect
			RCVR			Compressed air receiver
			SPRT			Pipe and equipment supports
NEWW			STNK			Compressed air tanks
NEWW			STRC			Compressed Air Structure
NEWW				PITT		Air Structure Pit
NEWW				VENT		Air Structure Vent
			TEXT			Compressed air text
			VALT			Compressed air vaults
			VALV			Compressed valves
NEWW			VENT			Venting system elements
V		CPRO				Cathodic Protection site
			ABOV			Above
			ACCY			Accessory
			ANOD			Anode Terminal or electrode from which electrons leave a system.
			AREA			An Area within a Specific Boundaries
			AUXL			Auxiliary
			BASE			Base
			BELW			Below
			BENT			Bent
				BUBL		Bubbles
				CNTR		Bent centerlines
			CABL			Cathodic cable
			CIRC			Circuits
			CNTR			Centerlines of objects
			COND			Conduit
NEWW			CURR			Impress current system
			CTRL			Control
			DIMS			Dimensions
			EQMT			Cathodic equipment
			FIXT			Fixtures

NEWW			GENL			General dock elements
			GRID			Dock grid
				BUBL		Grid Symbol Bubbles
				CNTR		Grid centerlines
			GRND			Ground
			HIDE			Hidden lines or objects
			HNHL			Hand hole
			IDEN			Equipment or material system ID
			JBOX			Junction box
			MISC			Elements not covered by other modifiers.
			MNHL			Manhole
			NPOS			All Non-POS property lines equipment etc.
			OPTN			Object Outlines
			PANL			panels
			PATT			Object Pattern or Hatch Patterns
			PHAS			Phasing
			PHTO			Photograph
			PILE			Piles
				AUGR		Auger cast piles
				BATT		Batter piles
				BEAR		Bearing piles
				CONC		Concrete piles
				EXST		Existing piles
				FNDR		Fender piles
				FUTR		Future piles
	MCRO		Micro piles			
	MOOR		Mooring piles			
	SHTP		Sheet pile			
	TIMR		Timber piles			
NEWW			PIPE			piping
			PPOS			POS property line
			REVN			Rev Deltas & clouds + revision text
			SIGN			Signs or signage
			SPRT			Pipe and equipment supports
NEWW			STRC			Cathodic systems Structure
			SYMB			
			STNK			tanks
			TEST			Test stations
			TEXT			Text
			UTIL			Utility
V		CTEL				Telephone systems
NEWW NEWW NEWW NEWW NEWW			CABL			Telephone cable
				COAX		Coax cable
				LOCT		Telephone Cable Locates
				FIBR		Fiber optics cable
				MULT		Multi-conductor cable
				TRAY		Cable trays and wire ways
			CIRC			Telephone Circuits
	COND			Telephone Conduit		

NEWW NEWW				ABND		Telephone Conduit Abandon
				LOCT		Telephone Conduit Locates
			ENCL			Telephone enclosure (booth)
			EQMT			Telephone equipment
			FIXT			Telephone Fixtures
			HNHL			Telephone Structure Handhold
			JBOX			Junction box
			MNHL			Manhole
				STRC		Telephone manhole Structure
			NEWW			OVHD
NEWW			PANL			Telephone panels
			POLE			Telephone poles
			STRC			Telephone systems Structure
NEWW			TEXT			Text
			VALT			Telephone Vaults
			UNKN			Telephone Unknown
			XFMR			Telephone pole transformer
V		CTOW				Control tower
			EQMT			Control tower equipment
			CSTR			Control tower Structure
V		CTWR				Communication radio towers
			EQMT			Communication radio tower equipment
V		DOCK				Docks and piers site
NEWW			ALDR			Access ladders (permanent)
			BEAM			Dock Beams
			BENT			Bent
				BUBL		Bubbles
				CNTR		Bent centerlines
			BLRD			Bollards
			BRTH			Ship Berth
			BULK			Bulkhead
			BULR			Bull rail
			CLET			Cleats
			CONC			Dock concrete
				CURB		Dock curbs
				RBAR		Rebar
			DECK			Deck
				DKDR		Deck drain
				DPNL		Deck panel
			DOLP			Dolphin
			EDGE			Deck edge
				PIER		Edge of Pier
				EQMT		Dock equipment
					BAGL	Baggage loading equipment
					CCRN	Container crane
					GCRN	Gantry crane
					HOST	Hoist
					PLOD	Passenger loading equipment

NEWW				SCAL		Weigh scales
				SLOD		Ship loading equipment
				WASH		Truck wash
			FHOL		Fire holes in deck	
			FLTS		Floats	
			FNDR		Fender	
			GENL		General dock elements	
			GRAL		Guard Rail	
			GRID		Dock grid	
				BUBL		Grid Symbol Bubbles
				CNTR		Grid centerlines
			HTCH		Utility Hatch (Ships Hydrant, Water Hatch & Ships Electrical hatch)	
			HRAL		Hand Rail	
			LADR		Dock Ladders	
			LFRG		Life ring	
			MFAB		Dock metal fabrication elements	
			PCAP		Pile cap	
			PILE		Piles	
					AUGR	Auger cast piles
					BATT	Batter piles
					BEAR	Bearing piles
					CONC	Concrete piles
					EXST	Existing piles
					FNDR	Fender piles
					FUTR	Future piles
					MCRO	Micro piles
					MOOR	Mooring piles
					SHTP	Sheet pile
					TIMR	Timber piles
			PNSK		Pin socket	
			PVMT		Dock pavement	
			RAIL		Dock Rails	
				CRAN		Crane rail
				STOP		Crane stop
			RAMP		Dock Ramps	
			SHTP		Dock Sheet Pile	
			SLEV		Sleeve for utilities	
			SPDR		Dock Structure Spreader	
			SPRT		Pipe and equipment supports	
			STRC		Dock Structure	
			STEP		Stairs and platforms	
			STGR		Timber stringer	
			TEXT		Text	
			TIED		Dock tie-down	
			TMBR		Timber dock elements	
			WALR		Dock Structure Whaler	
V		DOMW				Domestic Water
NEWW			ABND			Abandoned piping
NEWW			FIRE			Fire lines

NEWW			FTTG			Caps, cleanouts, crosses, and tees
NEWW			HYDR			Hydrants
NEWW			IDEN			Identifier tags, symbol
NEWW			MAIN			Main domestic water piping
NEWW			METR			Meters
NEWW			NHYD			Non-potable hydrants/flushing hydrants
NEWW			NPOT			Non-potable water piping
NEWW			PITS			water pits
NEWW			PUMP			Booster pump stations
NEWW			REDC			Pressure reducing stations
NEWW			RSVR			Reservoirs
NEWW			SERV			Domestic water service piping
NEWW			SIGN			Surface markers/signs
NEWW			TANK			Water storage tanks
NEWW			VENT			Vent pits
NEWW			VLVE			Valve pits/vaults
NEWW			WELL			Water well houses
V		DRIV				Driveways
NEWW			ASPH			Driveways: asphalt
NEWW			CNTR			Driveways: center
NEWW			CONC			Driveways: concrete
NEWW			CURB			Driveways: curb
NEWW			FLNE			Driveways: fire lane
NEWW			GRVL			Driveways: gravel
NEWW			MRKG			Driveways: pavement markings
NEWW			UPVD			Driveways: unpaved surface
V		DTCH				Ditches or washes
NEWW			BOTM			Ditches or washes: bottom
NEWW			CNTR			Ditches or washes: center
NEWW			EWAT			Ditches or washes: edge of water
NEWW			TOPP			Ditches or washes: top
V		ENVR				Environmental elements site
NEWW			ASBS			Asbestos contaminated areas
			BORE			Bore hole (test)
			CTAM			Contaminated soil
			DPND			Detention pond
			EBAK			Ecology backfill
			EBLK			Ecology block
			ENMT			Environmental mitigation area
			EROS			Erosion control boundary area
			HAZM			Hazmat storage area
			LOGW			Environment Log
			MWEL			Monitoring well
				PIPE		Monitor Well Pipe
			RMDS			Remediation system
			SHOR			Shoreline mitigation area

NEWW			THLE			Environment Test Hole Soil Boring
			TEXT			Text
			WELL			Monitoring well
			WTLN			Wetland environmental area
				BUFF		Environment Wetland Area
V		ESMT				Easements
NEWW			ACCS			Easements: access (pedestrian only; private access)
NEWW			CATV			Easements: cable television system
NEWW			CONS			Easements: conservation
NEWW			CSTG			Easements: Construction/grading
NEWW			FDPL			Easements: flood plain
NEWW			INEG			Easements: ingress/egress (vehicles; private access)
NEWW			LSCP			Easements: landscape
NEWW			PHON			Easements: telephone line
NEWW			RWAY			Easements: right-of-way (public access)
NEWW			SGHT			Easements: sight distance
NEWW			SWMT			Easements: storm water management
NEWW			TRAL			Easements: trail or path (public access)
NEWW			UTIL			Easements: utility lines
V		EVTR				Elevators and components
NEWW			SHFT			Elevator shaft
NEWW				SVNT		Elevator shaft vent
NEWW			SPRT			Equipment supports
V		FAAC				FAA communication systems
NEWW			CABL			FAA communication cable
				MRKR		FAA communication cable marker
				COAX		Coax cable
				FIBR		Fiber optics cable
				LOCT		FAA Communication Locates
				MULT		Multi-conductor cable
				TRAY		Cable trays and wire ways
			CKPT			FAA Checkpoint
			CIRC			FAA communication circuit
			COMT			FAA communications tower
			COND			FAA communication conduit
			DBNK			FAA communication duct-bank
			EQMT			FAA communication equipment
			NEWW			
CEIL		FAA Ceil				
LOCL		FAA Local				
			FAAL			FAA Localizer

NEWW			FAAN			FAA Antenna
NEWW			FIBO			FAA fiber-optic communication elements
			MNHL			FAA communication manhole
			PANL			FAA communication panel
			PBOX			FAA communication pull box
NEWW			STRC			communication systems Structural elements
			SWBD			FAA communication switchboards
			TEXT			FAA communication text
NEWW			UNKN			FAA communication Unknown
V		FAAL				FAA lighting systems
			CABL			FAA lighting cable
NEWW				MRKR		FAA lighting cable marker
NEWW				COAX		Coax cable
NEWW				FIBR		Fiber optics cable
NEWW				MULT		Multi-conductor cable
NEWW				TRAY		Cable trays and wire ways
			CIRC			FAA lighting circuit
			COND			FAA lighting conduit
			DBNK			FAA lighting duct-bank
			EQMT			FAA lighting equipment
			FEED			FAA lighting feeders
			HNHL			FAA lighting hand hole
			JBOX			FAA lighting Junction box
			MNHL			FAA lighting manhole
			MKRR			FAA lighting cable marker
			PANL			FAA lighting panels
			PBOX			FAA lighting pull box
			RNWX			FAA runway light
NEWW			STRC			FAA lighting systems Structural elements
			SWBD			FAA lighting switchboards
			SWGR			FAA lighting switchgear
			TEXT			FAA lighting text
			XFMR			FAA lighting transformer
V		FAAP				FAA Power systems
			CABL			FAA power cable
NEWW				MRKR		FAA power cable marker
NEWW				COAX		Coax cable
NEWW				FIBR		Fiber optics cable
NEWW				MULT		Multi-conductor cable
NEWW				TRAY		Cable trays and wire ways
			CIRC			FAA power circuit
			COND			FAA power circuit conduit
NEWW				LOCT		FAA Power Locates
			DBNK			FAA power duct-bank
			EQMT			FAA power equipment
			FEED			FAA power feeders

NEWW			HNHL			FAA power hand hole
			JBOX			FAA power junction box
			MNHL			FAA power manhole
			MRKR			FAA power cable marker
			PANL			FAA power panels
			PBOX			FAA power pull box
			STRC			FAA Power systems Structural elements
			SWBD			FAA power switchboards
			SWGR			FAA power switchgear
			TEXT			FAA power text
			XFMR			FAA power transformer
V		FDSL				Diesel fuel system elements
NEWW NEWW			ALRM			Alarm system
			CTRL			Control system
			DISP			Dispenser
			DPIT			Diesel fuel pit
			EQMT			Diesel fueling equipment
			ETNK			Expansion tank
			FCAP			Fuel cap
			FLTR			Diesel fuel filters
			METR			Diesel fuel meter
			PIPE			Piping
				ABND		Abandon Diesel pipe or line
				LOCT		Diesel pipe or line Locates
			PITT			Diesel fuel pit
				ABND		Abandoned diesel fuel piping
				CAPS		Blind flange or cap
				RPIP		Diesel return pipe
				SPIP		Diesel supply pipe
				TEMP		Temporary diesel fuel pipe
			PUMP			Diesel fuel pumps
			SPRT			Pipe and equipment supports
			STNK			Diesel fuel storage tanks
			TEXT			Text
			VALT			Diesel fuel valve vault
			VALV			Diesel fuel valves
			NEWW			ABND
VENT					Venting system elements	
V		FGAS				Fuel gas (gasoline) system elements
NEWW			DISP			Fuel gas dispenser
			EQMT			Fuel gas equipment
			ETNK			Expansion tank
			FLTR			Fuel gas filters
			FTTG			Caps, crosses, and tees
			METR			Fuel gas meter
			PIPE			Piping
		NEWW NEWW			ABND	
LOCT					Gasoline pipe or line Locates	

NEWW OLD NEWW NEWW NEWW				ABND		Abandoned diesel fuel piping
				CAPS		Blind flange or cap
				FILL		Fill pipe
				RPIP		Fuel gas return pipe
				SPIP		Fuel gas supply pipe
				TEMP		Temporary fuel gas pipe
		PITT			Fuel pit	
		PUMP			Fuel gas pumps	
		SPRT			Pipe and equipment supports	
		STRC			Fuel Gas Structure	
		STNK			Fuel gas storage tank	
		TANK			Fuel Tank	
			ABOV		Above Ground Fuel Tank	
			BELW		Below Ground Fuel Tank	
			TEXT		Text	
NEWW NEWW			VALT		Fuel gas valve vault	
			VALV		Fuel Gas Valve	
			VENT		Venting system elements	
V		FJET				Jet fuel system elements
NEWW NEWW 						

NEWW NEWW				HATC		Jet fuel vault hatch	
			VALV			Jet fuel valves	
			VENT			Venting system elements	
			STRC			Jet fuel Structural elements	
			WAST			Jet fuel waste system elements	
				PIPE		Waste fuel pipe	
				PUMP		Waste fuel pump	
STNK		Waste fuel storage tank					
VALV		Waste fuel valves					
V		FOIL				Fuel oil system elements	
NEWW			ALRM			Fuel oil alarm panel and controls	
			EQMT			Fuel oil equipment	
			ETNK			Fuel oil expansion/surge tank	
			FLTR			Fuel oil filters	
			FTTG			Caps, crosses, and tees	
			METR			Fuel oil meter	
			PIPE			Fuel oil piping	
				ABND		Abandoned fuel oil pipe	
				CAPS		Blind flange or cap	
				RPIP		Fuel oil return pipe	
SPIP				Fuel oil supply pipe			
NEWW			TEMP			Temporary oil gas pipe	
			PITT			Fuel oil fuel pit	
			PUMP			Fuel oil pumps	
			SPRT			Pipe and equipment supports	
			STNK			Fuel oil storage tank	
			TEXT			Text	
			VALT			Fuel oil vault	
			VALV			Fuel oil valves	
			NEWW	VENT			Venting system elements
V		FIRE				Fire protection systems site	
			BFPA			Backflow prevention assembly	
			BLRD			Bollards	
			DELG			Deluge system elements	
				PIPE		Deluge system piping	
				VALV		Deluge system valves	
			DRYP			Dry pipe system elements	
				PIPE		Dry pipe system piping	
				VALV		Dry pipe system valves	
			ENCL			Valve enclosure	
			EQMT			Fire protection equipment	
			FHOS			Fire hose	
			FALM			Fire alarm panel and controls	
			FDCN			Fire department connections	
				SMSE		Siamese	
				FOMS			Foam water system elements
					PIPE		Foam system piping
					PUMP		Foam system pump
					STNK		Foam system storage tank
					VALV		Foam system valves
		HOSE			Fire hose		

NEWW NEWW				CBNT RACK		Fire hose cabinet Fire hose rack
			HYDT			Fire Hydrant
				FLSH		Fire hydrant flush
			METR			Fire meter
				FHOS		Metered fire hose
			PIPE			Fire protection piping
				ABND		Abandoned fire protection pipe
				CAPS		Blind flange or cap
				FSPK		Fire sprinkler line
				TEMP		Temporary pipe
			PUMP			Fire pumps jockey pumps
			SNSR			Sensors
		SPKL			Fire sprinklers	
			LINE		Fire Sprinkler Line	
		STRC			Fire Structural elements	
		STDP			Stand pipe	
		STNK			Fire protection storage tank	
		SPRT			Pipe and equipment supports	
		TEXT			Text	
		VALT			Fire protection valve vault	
		VALV			Fire protection valves	
		WETP			Wet pipe system elements	
			PIPE VALV		Wet pipe system piping Wet pipe system valves	
V		GNDG				Grounding systems site
			CIRC			Grounding system cables
			COND			Grounding system conduit
			EQMT			Grounding system equipment
			GROD			Grounding rod
			HNHL			Grounding system hand hole
			JBOX			Grounding system junction box
			TEXT			Text
V		HHWT				Heating hot water systems site
			BWLR			Boiler and associated equipment
			EQMT			Generic hot water equipment not associated with other systems
			ETNK			Expansion or surge tank
			HEXC			Steam/hot water heat exchanger
			MNHL			Manhole
			PIPE			Heating hot water pipe
				ABND		Abandoned hot water pipe
				CAPS		Blind flange or cap
				HWSP		Hot water supply pipe
				HWRP		Hot water return pipe
				SHWS		Secondary hot water supply pipe
				SHWR		Secondary hot water return pipe
				TEMP		Temporary hot water pipe
			PUMP			Hot water pumps
				PPMP SPMP		Primary hot water pumps Secondary hot water pumps

NEWWW			SPRT			Pipe and equipment supports
			STNK			hot water tanks
			TEXT			Text
			VALT			Hot water vaults
			VALV			Hot water valves
V		IRRG				Irrigation systems
NEWWW			CIRC			Control circuit
			COND			Conduit
			CSTA			Valve control station
			EQMT			Generic irrigation equipment not associated with other systems
			FTTG			Caps, crosses, and tees
NEWWW			HEAD			
NEWWW			PANL			Power/control panel
			PIPE			Irrigation piping
				ABND		Abandon Irrigation piping
				LOCT		Irrigation pipe Locates
			PUMP			Irrigation pump
NEWWW			SPRK			Sprinkler head
				FULL		Sprinkler head full coverage
				HALF		Sprinkler head ½ coverage
				HEAD		Sprinkler Head
				IMPL		Sprinkler head Impulse type
NEWWW				QRTR		Sprinkler head ¼ coverage
			SBOX			Sprinkler box
			SPRT			Pipe and equipment supports
			STRC			Irrigation Structural elements
			STNK			hot water tanks
NEWWW			VALV			Sprinkler valves
			VBOX			Valve box
V		IWSS				Industrial waste water sewer systems site
NEWWW			CBSN			IWSS catch basin
			COUT			IWSS clean out
			EQMT			Generic IWSS equipment not associated with other systems
			FLSH			IWSS flushing system components
			JBOX			Junction boxes
NEWWW			LFTS			Lift station (IWSS)
				STCR		IWSS manhole Structure
			MNHL			IWSS manhole
			OWSP			Oil/water separator
			PIPE			IWSS piping
NEWWW				ABND		Abandoned IWSS piping
				ARRW		IWS Direction of Flow Arrows
				CAPS		Blind flange or cap
				FMAN		Force main piping
				GRAV		Gravity IWSS drain piping
NEWWW				LOCT		IWS Locates
				ROFD		IWSS roof drain piping

NEWW				TEMP		Temporary IWSS piping	
				WOIL		Waste oil pipe	
			PUMP			IWSS lift station pump	
			SDRN			IWSS sub-drain elements	
			SPRT			Pipe and equipment supports	
				STNK			IWSS storage tank
				STRC			Industrial waste water sewer Structural elements
				TEXT			Text
		NEWW			UNKN		IWS Unknown
				VALT			IWSS vaults
		VALV			IWSS valves		
NEWW			WOIL			Ind Waste Water Sewer Sys	
V		LEMG				Emergency lighting systems	
NEWW			CABL				cable
NEWW				COAX			Coax cable
NEWW				FIBR			Fiber optics cable
NEWW				MULT			Multi-conductor cable
NEWW				TRAY			Cable trays and wire ways
NEWW			CEIL			Ceiling mounted (surface/pendant) fixtures	
			CIRC			Emergency lighting circuits	
			COND			Emergency lighting system conduit	
				ABND			Abandoned emergency lighting conduit
NEWW			CONS				Constant Current Regulators
			DBNK				Emergency lighting duct bank
			EQMT				Emergency lighting equipment
NEWW			EXIT				Emergency Exit fixtures
			FEED				Emergency lighting feeders
			FIXT				Emergency lighting fixtures
			HNHL				Emergency lighting hand holes
			JBOX				Emergency lighting junction box
			NAVG				Emergency lighting navigation lights marine GYRS system
			PANL				Emergency lighting panels
			POLE				Light poles emergency lighting
			SNSR				Emergency lighting sensor
			TEXT				Text
			VALT				Emergency lighting vaults
NEWW				WAAL			Emergency Wall mounted fixtures
				XFMR			Emergency lighting transformer
V			LNDS				Landis and GYR system
				EQMT			Landis and GYR system equipment
			TEXT			Text	

V		LNOR			Normal lighting systems
NEWW			CABL		cable
NEWW				COAX	Coax cable
NEWW				FIBR	Fiber optics cable
NEWW				MULT	Multi-conductor cable
NEWW				TRAY	Cable trays and wire ways
NEWW			CEIL		mounted (surface/pendant) fixtures
			CIRC		Circuits normal lighting
			COND		Conduit normal lighting
NEWW				ABND	Abandoned conduit normal lighting
			CONS		Constant Current Regulators
			DBNK		Duct bank normal lighting
			EQMT		Equipment normal lighting
			FEED		Feeders normal lighting
NEWW			FIXT		Fixtures normal lighting
			FLRR		Floor mounted fixtures
			HNHL		Hand holes normal lighting
			JBOX		Normal lighting junction box
			NAVG		Navigation lights marine GYRS system normal lighting
			PANL		Panels normal lighting
			POLE		Light poles normal lighting
			SNSR		Normal lighting sensor
			TEXT		Text
NEWW			VALT		Normal lighting vaults
			WAAL		Wall mounted fixtures
			XFMR		Normal lighting transformer
V		METH			Methane system elements
			ALRM		Methane system alarm panel and controls
			EQMT		Methane equipment
			METR		Methane meter
			PIPE		Methane piping
				ABND	Abandoned methane pipe
				CAPS	Blind flange or cap
			PREG		Methane pressure regulator
			SPRT		Pipe and equipment supports
			STNK		Methane storage tank
			TEXT		Text
NEWW			VALV		Methane system valves
			VENT		Venting system elements
V		MTNK			Miscellaneous storage tanks site
			ALDR		Storage tank ladder or stairs
			DRAN		Tank drain
			FIBR		Fiberglass storage tanks
			MDOR		Man-door
			PLAS		Plastic

			SPRT			Pipe and equipment supports
			STEL			Steel storage tanks
			TEXT			Text
			TVNT			Tank vents
V		NGAS				Natural gas system elements
NEWW			ALRM			Natural gas alarm panel and controls
			FTTG			Caps, crosses, and tees
			EQMT			Natural gas equipment
			METR			Natural gas meter
NEWW			MNHL			Natural gas systems: manhole
			PIPE			Natural gas piping
				ABND		Abandoned natural gas pipe
				CAPS		Blind flange or cap
NEWW				POST		Natural Gas Witness Post
NEWW			PITT			Natural gas fuel pit
NEWW			PREG			Natural gas pressure regulator
			SPRT			Pipe and equipment supports
			STNK			Natural gas storage tank
			STRC			Natural gas Structural elements
NEWW			TEXT			Text
			VALV			Natural gas valves
						Natural gas systems: underground
			UGND			Natural gas systems: underground
NEWW			VENT			Venting system elements
V		NODE				Node
NEWW			ABUT			Node: abutment
NEWW			ACTL			Node: aerial horizontal and vertical control points
			BLDG			Node: building points
			BLIN			Node: baseline
			BRDG			Node: bridge survey points
NEWW						Node: break lines, spot elev. points and lines for creation of break lines as top of bank
			BRKL			Node: brush row points
			BROW			Node: brush points
			BRSH			Node: underground cable systems
NEWW			CABL			Node: curb
NEWW			CURB			Node: description attributes for survey points
NEWW			DASP			Node: deck
			DECK			Node: driveway
			DRIV			Node: elevation attributes for survey points
			EASP			Node: expansion joint
NEWW			EXPJ			Node: ground
NEWW			GRND			Node: manhole
NEWW			MHOL			Node: pavement markings (yellow/white stripes)
NEWW			MRKG			

NEWW			NGAS			Node: natural gas line
NEWW			PASP			Node: point number attributes for survey points
NEWW			PIPE			Node: piping (driveway/roadway culverts)
NEWW			POLE			Node: pole (power, telephone, etc.)
NEWW			PVMT			Node: pavement
NEWW			SIGN			Node: signage
NEWW			SSWR			Node: sanitary sewer
NEWW			STRM			Node: storm sewer
NEWW			SWLK			Node: sidewalks
NEWW			TREE			Node: tree
NEWW			TROW			Node: tree row
NEWW			WATR			Node: water supply
V		PATH				Paths other than roads or sidewalks
			BIKE			Bike path
			PEDS			Pedestrian path
			TEXT			Text
V		PARC				Parcels
NEWW			ESMT			Parcel Easement
NEWW			ROWW			Right of Way of Parcel
NEWW			TABL			Parcel Tables
NEWW			TEXT			Parcel Text
V		PAVE				Generic paved areas (not roads etc.) site
			ASPH			Asphalt pavement
NEWW				DVWY		Asphalt Driveway
				EDGE		Edge of asphalt pavement
				OCON		AC concrete
				SWCT		Saw cut
NEWW				WALK		Asphalt pavement Walk ways
NEWW			CURB			Paved Roadway curbs
			CONC			Concrete pavement
NEWW				AVIA		Pavement Concrete Aviation
				DVWY		Concrete driveway
				EDGE		Edge of concrete pavement
NEWW				FOOT		Concrete Footing
				JOIN		Concrete joints
				PADS		Concrete Pad
				RAMP		Concrete Ramp
				RBBL		Concrete Rubble
				SPWY		Concrete Spillway
				SWCT		Saw Cut In Concrete
				ASPH		Asphalt Curb
			DVWY			Driveway
				ASPH		Asphalt driveway
				CONC		Concrete driveway

NEWW			EDGE		Edge of driveway pavement
			GROV		Pavement Grooving
NEWW			GRVL		Gravel roads areas
			EDGE		Edge of Pavement
NEWW			JNTS		Construction/ expansion Joints
NEWW			MRKG		Pavement markings
			SDWK		Sidewalk
			ADAE		Wheelchair access
NEWW			STRP		Striping
NEWW				FOGL	Pavement Striping Fog Line
NEWW				HASH	Pavement Striping Stripe Hatched
NEWW				OFAL	Pavement Striping Object Free Area
NEWW				RSNT	Pavement Striping Wing Line/Equip Restraint
NEWW				TWCL	Pavement Striping Taxiway Centerline
NEWW			TEXT		Pavement Text
NEWW			WALK		Asphalt pavement walk ways
V		PELV			
NEWW			BUSW		Emergency power low voltage
			CABL		Emergency power circuit bus-way low voltage
NEWW			CEIL		Emergency power low voltage cable
			CIRC		Ceiling mounted
			COND		Emergency power circuit low voltage
				ABND	Emergency power conduit low voltage
			DBNK		Abandoned emergency power conduit low voltage
			EQMT		Emergency power duct bank low voltage
			EXIT		Emergency power equipment low voltage
NEWW			FEED		Exit fixtures
			GRND		Emergency power feeders low voltage
			JBOX		Ground For Electrical Power
			METR		Emergency power junction box
				PMTR	Emergency power low voltage meter
				CMTR	Port of Seattle meter emergency power low voltage
			MONI		City power meter emergency power low voltage
			PANL		Emergency power monitoring system low voltage
					Emergency power panels low voltage

NEWW			PBOX			Emergency power pull box low voltage	
			RCPT			Emergency power receptacle low voltage	
			REEF			Reefer Receptacle emergency power low voltage	
		NEWW		STRC			Normal power low Structural elements
				SWBD			Emergency power switchboards low voltage
				SWGR			Emergency power switchgear low voltage
				WAAL			Wall Elements
				XFMR			Emergency power transformer low voltage
					TCAN		Emergency power transformer can low voltage
V		PEMV				Emergency power medium voltage	
NEWW NEWW NEWW NEWW NEWW NEWW NEWW NEWW NEWW			BUSW			Emergency power circuit bus-way low voltage	
			CABL			cable	
				COAX		Coax cable	
				FIBR		Fiber optics cable	
				MULT		Multi-conductor cable	
				TRAY		Cable trays and wire ways	
			CEIL			Ceiling mounted	
			CIRC			Emergency power circuit medium voltage	
			COND			Emergency power conduit medium voltage	
				ABND		Abandoned emergency power conduit medium voltage	
		DBNK			Emergency power duct-bank medium voltage		
		EQMT			Emergency power equipment medium voltage		
		NEWW NEWW	EXIT			Exit fixtures	
			FEED			Emergency power feeders medium voltage	
			GRND			Ground For Electrical Power	
			JBOX			Emergency power junction box medium voltage	
			METR			Emergency power medium voltage meter	
				PMTR		Port of Seattle meter emergency power medium voltage	
				CMTR		City power meter emergency power medium voltage	
			MONI			Emergency power monitoring system medium voltage	

NEWW			PANL			Emergency power panels medium voltage	
			PBOX			Emergency power pull box medium voltage	
			POLE			Emergency power medium voltage pole	
				GYWR		Guy wire	
				BASE		Power pole base	
			RCPT			Emergency power receptacle medium voltage	
		REEF			Reefer Receptacle emergency power medium voltage		
		NEWW		STRC			Emergency power medium voltage Structural elements
				SWBD			Emergency power switchboards medium voltage
				SWGR			Emergency power switchgear medium voltage
				TEXT			Text
				WAAL			Wall Elements
XFMR					Emergency power transformer medium voltage		
	TCAN		Emergency power transformer can medium voltage				
V		PKNG				Parking areas and elements	
NEWW			ASPH			Parking General Asphalt area	
NEWW			CARS			Graphic illustration of cars	
NEWW			CONC			Parking General Concrete area	
NEWW			CURB			Parking area curbs	
			DRAN			Parking lot drainage slope indications	
			FLNE			Parking lots: fire lane	
			GRVL			Parking lots: gravel	
NEWW			ISLD			Parking islands	
			MRKG			Parking lots: pavement markings	
			STOP			Parking stops and blocks	
NEWW			STRC			Parking areas Structural elements	
STRP					Striping for parking paved areas		
NEWW	UPVD				Parking lots: unpaved surface		
V		PLNT				Landscape plants	
			EDGE			Edge vegetation	
			PLTR			Planter	
			SHRB			Shrub	
			TREE			Tree	
				CONF		Conifer tree	
				DCDS		Deciduous tree	
			TURF			New seeded area	

V		PNET			Pipe Network
NEWW			PATT		
V		PNHV			High voltage systems over 480
NEWW			CABL		Emergency power low voltage cable
NEWW				COAX	Coax cable
NEWW				FIBR	Fiber optics cable
NEWW				MULT	Multi-conductor cable
NEWW				TRAY	Cable trays and wire ways
NEWW			CEIL		Ceiling mounted
			BUSW		Normal power circuit bus-way high voltage
			CIRC		Circuits normal power high voltage
			COND		Conduit normal power high voltage
				ABND	Abandoned normal power conduit high voltage
NEWW			CONS		Constant Current Regulators
			DBNK		Normal power duct-bank high voltage
			EQMT		Equipment normal power high voltage
			FEED		Feeders normal power high voltage
NEWW			FLRR		Floor
NEWW			GRND		Ground For Electrical Power
NEWW			GYWR		Guy wire
			HNHL		Hand holes normal power high voltage
			JBOX		Normal power junction box high voltage
					Elements less than 480v electrical system (e.g. conduits, wires, panels, handholds, vaults, switches, etc)
NEWW			L480		Normal power high voltage meter
			METR		City power meter high voltage
				CMTR	Port of Seattle meter high voltage
				PMTR	
			MNHL		Manhole normal power high voltage
			MONI		Normal power monitoring system high voltage
			PANL		Panels normal power high voltage
NEWW			PBOX		pull box High voltage
			POLE		Power poles normal power high voltage
				BASE	Power pole base

NEWW NEWW NEWW				GPST GYWR		Guy post Guy wire	
			TEXT			Text	
			STRC			High voltage systems over 480 Structural elements	
			SWGR			switchgear High voltage	
			VALT			Vaults normal power high voltage	
			WAAL			Wall Elements	
			XFMR			Normal power transformer high voltage	
				TCAN		Normal power transformer can high voltage	
V		PNLV				Normal power low voltage systems 120	
NEWW NEWW NEWW NEWW NEWW NEWW			CABL			Normal power low voltage cable	
			COAX		Coax cable		
			FIBR		Fiber optics cable		
			MULT		Multi-conductor cable		
			TRAY		Cable trays and wire ways		
			CEIL		Ceiling Normal Power		
NEWW			CIRC			Circuits normal power low voltage	
			COND			Conduit normal power low voltage	
				ABND		Abandoned normal power conduit low voltage	
NEW			CONS			Constant Current Regulators	
			DBNK			Normal power duct-bank low voltage	
NEWW NEWW				EQMT			Equipment normal power low voltage
				FEED			Feeders normal power low voltage
				GRND			Ground For Electrical Power
				GYWR			Guy wire
				HNHL			Hand holes normal power low voltage
				JBOX			Normal power junction box low voltage
				METR			Normal power low voltage meter
					PMTR		Port of Seattle meter normal power low voltage
					CMTR		City power meter normal power low voltage
	MNHL					Manhole normal power low voltage	
	MONI			Normal power monitoring system low voltage			
	PANL			Panels normal power low voltage			

NEWW			PBOX			pull box Normal power low voltage
			POLE			Power poles normal power low voltage
			RCPT			Receptacles normal power low voltage
			STRC			Normal power low voltage systems 120 Structural elements
			SWGR			switchgear Normal power low voltage
			TEXT			Text
			VALT			Vaults normal power low voltage
			WAAL			Wall Elements
			XFMR			Normal power transformer low voltage
				TCAN		Normal power transformer can low voltage
V		PNMV				Normal power medium voltage systems 220-440
NEWW NEWW NEWW NEWW NEWW NEW NEW NEW NEW NEW NEW NEW NEW NEW NEW NEW NEW NEW NEW			BUSW			Normal power circuit bus-way medium voltage
			CABL			Normal power low voltage cable
				COAX FIBR MULT TRAY		Coax cable Fiber optics cable Multi-conductor cable Cable trays and wire ways
			CEIL			Ceiling
			CIRC			Circuits normal power medium voltage
				ABND		Abandoned normal power conduit medium voltage
			COND			Conduit normal power medium voltage
			CONS			Constant Current Regulators
			DBNK			Normal power duct-bank medium voltage
			EQMT			Equipment normal power medium voltage
			FEED			Feeders normal power medium voltage
			GRND			Ground For Electrical Power
			GYWR			Guy wire
			HNHL			Hand holes normal power medium voltage
			JBOX			Normal power junction box medium voltage
						Elements less than 480v electrical system (e.g. conduits, wires, panels, handholds, vaults, switches, etc)
			L480			
			METR			Normal power medium voltage meter

NEWW				PMTR		Port of Seattle meter medium voltage	
				CMTR		City power meter medium voltage	
			MNHL			Manhole normal power medium voltage	
			MONI			Normal power monitoring system medium voltage	
			PANL			Panels normal power medium voltage	
			PBOX			pull box medium voltage	
			POLE			Power poles normal power medium voltage	
				GYWR		Guy wire	
				BASE		Power pole base	
			RCPT			Receptacles normal power medium voltage	
			SUBS			Substation normal power medium voltage	
				BASE		Substation equipment base	
		NEWW			STRC		Normal power medium voltage systems 220-440 Structural elements
		NEWW					switchgear Normal power medium voltage
NEWW			SWGR TEXT VALT		Text Vaults normal power medium voltage		
			WAAL XFMR		Wall Elements Normal power transformer medium voltage		
					TCAN	Normal power transformer can medium voltage	
V		POND				Ponds site	
			INLT			Inlet Structure for pond	
				CONC		Concrete inlet Structure for pond	
				PIPE		Inlet pipe	
				RIPR		Riprap inlet Structure for pond	
			OUTL			Outlet Structure for pond	
				CONC		Concrete inlet Structure for pond	
				RIPR		Riprap inlet Structure for pond	
				PIPE OVFL		Outlet pipe Overflow Structure for pond	

V		POWR				Survey Power for site
NEWW			CABL			Power Cables
NEWW				COAX		Coax cable
NEWW				FIBR		Fiber optics cable
NEWW				MULT		Multi-conductor cable
NEWW				TRAY		Cable trays and wire ways

NEWW			CBNT			Power Cabinet
NEWW			CIRC			Power Circuits
			CMTR			CITY OWNED POWER METERS
NEWW			COND			Power Conduit
NEWW				ABND		Abandon Power
OLD			CNDT			Power conduit underground
						ELEMENTS OF CRANE POWER SYSTEMS (e.g. MAIN SWITCH GEAR, POWER FEED, POWER TRENCH, ISOLATION CIRCUITS, ETC)
NEWW			CRAN			
NEWW			CTRL			ELECTRICAL Power CONTROL SYSTEMS
			DUCT			Center line power conduit
			FENC			Power: fences
			GRND			Ground rod box
NEWW			GYRS			Landis gyrs system
NEWW			GYWR			Guy wire
NEWW				POST		Guy Wire Post
						ELEMENTS GREATER THAN 480V ELECTRICAL SYSTEM (e.g. CONDUITS, WIRES, PANELS, HANDHOLDS, VAULTS, SWITCHES, ETC)
NEWW			G480			
NEWW			INST			Power: instruct (meters, transformers)
			HNHL			Power hand hole
			JBOX			Power junction box
			LITE			Lite
						ELEMENTS LESS THAN 480V ELECTRICAL SYSTEM (e.g. CONDUITS, WIRES, PANELS, HANDHOLDS, VAULTS, SWITCHES, ETC)
NEWW			L480			
			METR			Power Meter
				HOSE MTR2		2el met. Fire hose/ Water
						2 power meters
			MNHL			Manhole power
NEWW			MONI			Power Monitoring, site utility
NEWW			OTLT			Power Outlet
NEWW			OVHD			Power: overhead
NEWW			PBOX			pull box for Power
NEWW			PANL			Elect. Power Panel
NEWW			PMTR			POS Water meters
			POLE			Pole w/light
				GYWR		Guy wire anchor
				GYWR		Guy post
				LITE		Lightpole 2meters
			REEF			Reefer outlet
NEWW			SWGR			switchgear FOR power
			SNSR			Sensor

NEWW			STCR			Power Manhole Structure
			STRC			Power Structural elements
			SUBS			Power substation
			TELM			Telemetry Equipment
			TREN			Power trench
			UGND			Power: underground
			UNKN			Unknown objects associated with root
			VALT			Power vault
			XFMR			Transformer can
V		PROP				Property and property management site
			BNDY			Boundaries
NEWW				BLKS		Property Boundaries
NEWW				GLOT		Survey Boundary Government Lot lines
NEWW				MENR		Survey Boundary Meander Section lines
NEWW				QSEC		Survey Boundary Quarter Section lines
NEWW				SECT		Survey Boundary Section lines
NEWW				SSEC		Survey Boundary Sixteenth Section lines
NEWW			BERM			Berms
NEWW			BRKW			Breakwater
NEWW			BULK			Bulkheads
NEWW			CONS			Construction limits/controls, staging area
NEWW			CRNR			Surveyed Corner
NEWW			DAMS			Dams, run off control
			ESMT			Easements
				TEXT		Property Easements Text
			FENC			Fences
				ASPH		Fence at Asphalt
				CLNK		Chain link fence
				CRNR		Fence corner
				POST		Fence post
				TEMP		Temporary/construction fence
			GATE			Gates
				CBOX		Gate control box
				POST		Gate posts
			HARB			Harbor lines
NEWW				FORM		Harbor Lines Former
NEWW				INNER		Harbor Lines Inner
NEWW				OUTR		Harbor Lines Outer
NEWW				PIER		Harbor Lines Pier head Line
			LEAS			Lease line and areas
			LEGL			Legal descriptions
NEWW			LOTT			Property Lots
NEWW			MONS			Survey Monuments
			NPOS			Non Port of Seattle property lines

NEWW NEWW			MEAN			Mean water levels, tides
			PARC			Parcel Boundary Line
PARK					All parks	
PHLN					Pier head lines	
PHTO					Photographs images	
PPKG					Public parking areas	
PPOS					Port of Seattle property lines	
			CRNR		Port of Seattle property corner	
			LEAS		Port of Seattle lease line	
NEWW			PUBA		Public access areas	
NEWW			RTWL		Retaining wall	
NEWW			RTWY		Right of way	
NEWW			SBCK		Property: setback lines	
NEWW NEWW	SIGN		Signs (non traffic)			
NEWW NEWW	STEP		Site or landscaping steps			
NEWW NEWW	STRC		Property Structural elements			
	TEXT		Text			
	WTRW		Channels canals and waterways			
V		PRPN				Propane system elements
NEWW			ALRM			Propane system alarm panel and controls
			FTTG			Caps, crosses, and tees
			EQMT			Propane equipment
			METR			Propane meter
			PIPE			Propane piping
NEWW				ABND		Abandoned propane pipe
				CAPS		Blind flange or cap
				LOCT		Propane pipe or line Locates
NEWW NEWW				PREG		Propane pressure regulator
				SPRT		Pipe and equipment supports
				STNK		Propane tanks
NEWW NEWW				VENT		Venting system elements
V		RLRD				Railroads site
NEWW			CNTR			Railroad centerlines
			CROS			Railroad crossing
			EQMT			Generic railroad equipment not associated with other systems
			FROG			Railroad Frog
			LUBE			Railroad flange lubricator
			RTWY			Right of way
			SGNL			Railroad signal
			SIDG			Railroad siding
			SIGN			Traffic signs
			SPUR			Railroad spur
			SWCH			Railroad switch
			TEXT			Text
			TRAK			Railroad track
NEWW NEWW NEWW			TIES		Railroad Ties	
			YARD		Railroad Yard	
			XING		Railroad Crossings	

V		ROAD			Roads site
NEWW			AROD		Access road
			ASPH		Asphalt road
			BRCK		Brick road
			BRDG		Road Surface at Bridge
			CNTR		Road centerlines
			CRWN		Road Crown
			CONC		Concrete road
			CURB		Roadway curbs
			ASPH		Asphalt curb
			CAST		Pre-cast curb
NEWW			CTOP		Curb top
			ETRD		Extruded curb
			GUTR		Curb and gutter
			LINE		Curb line
			STOP		Wheel stops
			FLNE		Roadways: fire lane
			EDGE		Edge of road
			FEAT		Roadways: feature line
			GRAL		Guardrails
			GRVL		Gravel road
NEWW			MRKG		Roadways: pavement markings
			RPNT		Road survey points
			RSTA		Road stationing
			SDWK		Sidewalk
			SIGN		Traffic signs
			STRP		Striping
			TEXT		Text
			UPVD		Roadways: unpaved surface
V		SITE			Survey Site Elements
NEWW			APIT		Air service pit
			APIT	VENT	Air vent
			AWTR	PITT	Air water pit
			BNCH		Park bench
			EQMT		Machine
			FARM		Fire alarm
			PUMP		Pump
			PUMP		Sump pump
			EWAT		Site features: edge of water
			FENC		Fence
NEWW			ASPH		Fence at asphalt
			CLNK		Fence chain link
			CRDR		Card reader
			CRNR		Fence corner
			GATE		Gate
			GATE		Gate control box
			GATE		Gate post
			TEMP		Fence temporary
			HTCH		Misc. hatch
			MLBX		Mailbox
NEWW			ROCK		Site features: large rocks and rock outcroppings

NEWWW			RPRP			Rip rap
			RTWL			Site features: retaining wall
			RRCK			Rat rock
			SIGN			Site features: signage
			VALT			Vault corner
			VALT			Vault corner
			VEGE			Site features: trees, shrubs, and other vegetation
			VENT			Vent
NEWWW			WPIT			Water service pit
V		SFNC				Security Fence
			AOPF			Airside operations security fence
			BLST			Blast fence
			FAAF			FAA security fence
V		SGAT				Security control gates
			FAAG			FAA secure area access gate
V		SRVY				Survey data
			ALGN			Alignment
			BENC			Benchmarks
			BNDY			Survey boundary
			BRNG			Bearing and distance
			CLIN			Survey control lines
			CRNR			Surveyed corner
			DATM			Datum information
			GRID			Grid system
				LAMB		Lambert system
				STIA		SeaTac system
				TIDE		Tideland system
			MONS			Survey monuments
				RMON		Row monument
			MONS			Survey monuments
				WMON		Water monument
			PONT			Survey point data
				TEXT		Survey point text
			SNDG			Sounding data
				TEXT		Sounding data text
			TEXT			General text
			TRAV			Traverse data
				BCRV		Beginning of curve
				BSLN		Baseline
				CHEK		Traverse check
				CPNT		Control points
				ECRV		End of curve
				INST		Instrument setup
				PCRV		Point of curve
				PTAN		Point of tangent
				RADI		Radius of curve
				TEMP		Temporary traverse data
				TEXT		Traverse text

V		SSWR				Sanitary sewer systems		
NEWW NEWW			CBSN			Catch basin		
			COUT			Clean out		
			EQMT			Generic sanitary sewer system equipment not associated with other systems		
			FLOW			Flow line sewer		
			FTTG			Caps, crosses, and tees		
			JBOX			Junction boxes		
			LFTS			Lift station		
				PUMP		Lift station pumps		
			MNHL			Sanitary sewer: manhole		
				COMB		Combined manhole (sewer / storm)		
NEWW			STCR		Manhole Structure			
			OWSP			Oil Water or Grease Separator		
NEWW			PUMP			Sanitary sewer Pump elements		
			PIPE			Piping		
				ABND			Abandoned sanitary sewer pipe	
				CAPS			Blind flange or cap	
				FMAN			Force main piping	
				GRAV			Gravity drain piping	
				LOCT			Sewer Pipe Locates	
				STUB			Pipe stub	
TEMP			Temporary IWSS piping					
NEWW NEWW NEWW			SPRT			Pipe and equipment supports		
			STRC			Sewer Structural elements		
NEWW			UNKN			Sewer Unknown		
			UGND			Sanitary sewer: underground		
			TEXT			Text		
			VENT			Sanitary sewer Venting elements		
			VALT			Vaults		
			VALV			Valves		
V		STEM				Steam systems site		
NEWW			FTTG			Caps, crosses, and tees		
			EQMT			Generic steam equipment not associated with other systems		
			MNHL			Steam system: manhole		
			PIPE			Piping		
				CAPS		Blind flange or cap		
				EXPJ		Expansion joint		
			NEWW		LOCT		Compressed air pipe or line Locates	
					SPRT			Pipe and equipment supports
			NEWW NEWW		STRC			Steam Structural elements
					UGND			Steam system: underground
NEWW			TEXT			Text		
			TRAP			Steam trap		
				BUCK		Bucket type steam trap		
			VALT			Vaults		
			VALV			Steam valves		

NEWW			VENT			Steam Venting system elements
V		STRC				Structural elements site
			BASE			Equipment Support Base
			BCNV			Baggage conveyor
			BLOK			Concrete block
NEWW			CONC			Concrete site elements
			CTWK			Catwalk
			FOOT			Structural footing
			HRAL			Handrail
			JOIN			Structural joint
				CNST		Construction joint
				EXPJ		Expansion joint
			MFAB			Metal fabrications
NEWW			MPLT			Metal plate
			NCTR			Normal contour
				EXST		Existing grades
				GRAD		Finished grade
				GRBR		Grade break
NEWW				ORGR		Original ground
			PADS			Structural elements site pads
			PFRM			Platform
			POST			Structural post
				METL		Metal post
				WOOD		Wood post
			RAMP			Ramp
				CONC		Concrete ramp
				LOAD		Loading ramp
				METL		Metal ramp
			RPRP			Rip-rap
			RRCK			Rat-rock
			RTWL			Retaining wall site
				FACE		Face of retaining wall
				TOPW		Top of retaining wall
			RUBL			Concrete rubble
			SCOL			Structural columns site
				CRNR		Column corner
			SDEK			Structural deck site
			SDWK			Sidewalk site
			SFAB			Structural fabrications site
			SFND			Structural foundations site
				FOOT		Foundation footings site
				PILE		Foundation piles site
			SFRM			Structural framework site
			SIGN			Sign elements
				BASE		Sign support base
				SBRG		Sign-bridge
			SLEV			Sleeve for utilities
			SPAD			Structural concrete pads
			SSLB			Structural slab site
			STEP			Stairs site
			STWL			Structural walls site

			TMBR		Structural timber site
V		STRM			Storm sewer systems
NEWW			CBSN		Catch basin
			CHUT		Chutes and concrete erosion control structures
			CLVT		Culvert
			COUT		Clean out
				CONC	Concrete culvert
			DRAN		Storm drain
				RDRN	Roof storm drain
				UNKN	Unknown storm drain
			DTCH		Drainage ditch
			EQMT		Generic storm water equipment not associated with other systems
NEWW				LSPR	Storm Level Spreader
NEWW			FLOW		Flow line
			FLSH		Gutter flush
NEWW			FMON		Flow monitoring station
NEWW			FTTG		Caps, crosses, and tees
NEWW			GUTR		Gutter
			HDWL		Headwalls and end walls
NEWW			LFTS		Lift station
				PUMP	Lift station pumps
			MNHL		Storm sewer: manhole
				COMB	Combined manhole (Sewer/ Storm)
				MTRO	Metro storm manhole
				STCR	Manhole storm water Structure
				UNKN	Unknown Storm Manhole
			OFAL		Storm System Outfalls
			OWSP		Storm oil water separator
			PIPE		Piping
NEWW				ABND	Abandoned sanitary sewer pipe
				ARRW	Direction of Flow
NEWW				CAPS	Blind flange or cap
				CLVT	Culvert Pipe
NEWW				FCMN	Force main piping
				FLSH	Gutter Pipe flush
NEWW				GRAV	Gravity drain piping
				LOCT	Storm pipe or line Locates
NEWW				HALF	Gutter pipe half
				NPRF	Non-perforated pipe
				PERF	Perforated pipe
				ROFD	Roof drain
				STUB	Storm pipe stub
				UNKN	Unknown drain
NEWW			POND		Storm sewer: retention pond
NEWW			ROFD		Storm sewer Roof drain line
NEWW			SPRT		Pipe and equipment supports
			STRC		Storm sewer Structural elements

NEWW			SUBS			Subsurface drain piping
NEWW			SWAL			Storm Swale
			UDRN			Under-drain elements
NEWW			UGND			Storm sewer: underground
			UDRN			Under-drain elements
NEWW			UNKN			Storm Unknown
			TEXT			Text
			VENT			Storm sewer Venting system elements
NEWW			VALT			Vaults
			VALV			Valves
V		SURF				Surface
NEWW			BNDY			Survey boundary
NEWW			CONT			Contour Line
NEWW				MAJR		Major Contour Line
NEWW				MINR		Minor Contour Line
NEWW				TEXT		Surface Contour Text
NEWW				USER		
NEWW			GRBR			Surface Grade Break
NEWW				FEAT		Surface Feature Break
NEWW			FEAT			Surface Feature
NEWW			TEXT			Surface Contour Text
V		SYRD				Ship yard site
			EQMT			Generic ship yard equipment not associated with other systems
			FENC			Security fence
			GATE			Entrance and exit gates
			SBOT			Security booth
			SCAL			Weigh scales
				EQMT		Scale equipment
				SPIT		Scale pit
			SIGN			Shipyard signs
				CLOC		Shipyard container location signs
				SGNL		Shipyard traffic signals
				TSGN		Shipyard traffic signs
			SPRT			Pipe and equipment supports
			WASH			Truck wash system equipment
V		TABL	civil 3d			
NEWW			BRDR			
NEWW			FILL			
NEWW			GRID			
NEWW			TEXT			
V		TOPO				Topography site
			APPR			Runway approaches
NEWW			AUCO			Noise Complaint
NEWW			AUST			Noise Monitoring Station
NEWW			AUZN			Noise Contour/Zone
NEWW			BBLT			Baggage Conveyor Belt

NEWW			BKLN			Break lines
NEWW			BNCH			Park Bench
NEWW			BORE			Boring locations
NEWW			COLM			Top of Bolt
NEWW			CONC			Edge of Concrete
			CREK			Creek
				EDGE		Edge of creek
				FLIN		Creek flow line
NEWW			CURB			Roadway Curbs
NEWW				ASPH		Asphalt Curb
NEWW				CAST		Pre-cast Curb
NEWW				CTOP		Curb Top
NEWW				ETRD		Extruded Curb
NEWW				GUTR		Curb and Gutter
NEWW				STOP		Wheel Stops
NEWW				TEXT		Curb Text
NEWW			GRVL			Topography Gravel
			GRAD			Grading limits
			GRID			Topographic feature: grid
NEWW			FWAT			Topographic feature: edge of water
			EQMT			Equipment
NEWW			FENC			Fences
NEWW				CLNK		Fence Chain link
NEWW				CRDR		Card Reader
NEWW				CRNR		Fence Corner
NEWW				GATE		Fence Gate
NEWW				MISC		Misc Fence
NEWW				POST		Fence Post
NEWW				TEXT		Fence Text
NEWW				WOOD		Fence Wood
NEWW			FLOW			Flow Line
NEWW			FLZN			Flood Zone
NEWW			GATE			Gates
NEWW				CBOX		Gate Control Box
NEWW				POST		Gate Posts
NEWW			GRVL			
NEWW			HNHL			Hand Holes
NEWW			HOST			Equipment Hoist
NEWW			HOSL			Hoist Lift
NEWW			LIFT			Lift
NEWW				STAT		Lift Station
NEWW			MAJR			Topographic feature: major (contours)
NEWW			METL			Metal Plate
NEWW			MINR			Topographic feature: minor (contours)
NEWW			MLBX			Mailbox
NEWW			MNHL			Manhole
NEWW				UNKN		Unknown Manhole
			NCTR			Normal contour
				EXST		Existing grades
				GRAD		Finished grade

NEWW				GRBR		Grade break
				ORGR		Original ground
				NOTE		Topo Notes
				PILE		Pile (non seaport)
				PIPE		Pipe
				CASG		Pipe Casing (any utility)
				STND		Pipe Stand
				UNKN		Unknown Pipe
				POTH		Pot-Hole Utilities
				PUMP		Pump
NEWW				SUMP		Sump Pump
				RIVR		River
				EDGE		Edge of river
				FLIN		River flow line
				RPRP		Riprap Rock
				RRCK		Rat Rock
				RTWL		Property Retaining Wall
				FACE		Property Retaining Wall Face
				TOPW		Property Retaining Wall Top
				SCAL		Equipment Scales
NEWW				SDWK		Sidewalk
				SHOR		Shoreline
				EDGE		Edge of shoreline
				SHTP		Sheet Pile
				SIGN		Signs
				SLOP		Slopes
				DAYL		Daylight Top-Toe
				TOES		Toe of slope
				TOPS		Top of slope
				SLTP		Top/toe slopes
NEWW				SOUN		Topographic feature: soundings
				SPOT		Topographic feature: spot elevations
				STEP		Topo Steps
				HRAL		Topo Step Handrail
				SUBG		Sub-grades
				GRVL		Top of Rock (Base Coarse)
				TEXT		Text
				TREN		Trench
				UNKN		Utility Trench
				VALT		Misc Vault
NEWW				UNKN		Unknown Vault Type
				VALV		
				VENT		Misc Vent
				WTRW		Waterways
				EDGE		Edge of water
				WOOD		
				XCTR		Index Contour Minor

V		TRAF				Traffic control devices and signage		
NEWW			ATTE			Attenuators traffic		
			BARR			Barriers traffic		
				JRSY		Jersey barrier		
			GRAL			Guard rails		
			ISLD			Traffic islands		
			LOAD			Traffic load limits		
			MBOX			Mail box		
			PANL			Traffic signal control panels		
			POST			Traffic control post Structure		
			SGNL			Traffic signals or electrical signals		
				GARD		Traffic Guard Post		
				HNHL		Traffic Signal Hand hole		
		NEWW			POLE		Traffic Signal Pole	
				SIGN			Traffic signs	
					BASE			Sign support base
					DNOT			Do not enter sign
					ESGN			Electric traffic sign
					LTRN			Left turn arrow
					RTRN			Right turn arrow
	SIGN				Traffic signs			
			POLE		Traffic Sign Pole			
			SBAR			Stop bar		
			SDWK			Sidewalk		
			SLIM			Speed limit text		
			SPST			Sign post		
			STOP			Stop sign		
			STRT			Straight arrow		
			TEMP			Temporary striping		
			TEXT			Traffic control/warning text		
		WARN			Warning sign			
		YELD			Yield sign			
		STRP			Traffic control striping (paint stripe)			
		FOGL			Fog line			
		HASH			Hashed stripe			
		LSTR			Left straight arrow			
		LTRN			Left turn arrow			
		RSTR			Right straight arrow			
		RTRN			Right turn arrow			
		SBAR			Stop bar			
		STRT			Straight arrow			
		YELD			Yield sign			
	TPST			Traffic posts				
		GARD		Guard posts				
V		TUNL				Tunnels (railroad roadway transit and utility tunnels)		
			EQMT			Generic tunnel equipment not associated with other systems		

			HGWY			Highway/roadway tunnel
				TSTR		Tunnel Structure
			RDWY			Roadway tunnel
				TSTR		Tunnel Structure
			RRTN			Railroad tunnel
				TSTR		Tunnel Structure
			TRAN			Below Ground Transit Tunnel
				TSTR		Tunnel Structure
			UTIL			Utility tunnel
				TSTR		Tunnel Structure
V		WATR				Domestic water systems site
NEWW			ABND			Abandoned piping
			BKFL			Backflow preventer
			CMTR			City Meter
			DCBA			Double check backflow assembly
NEWW			DEVC			Connectors, faucets, reducers, regulators, etc.
NEWW			DOMW			Domestic cold water
NEWW			FTTG			Caps, cleanouts, crosses, and tees
			EQMT			Generic domestic water equipment not associated with other systems
				FHOS		Fire hose
			ETNK			Expansion or surge tank
			HBIB			Domestic water hose Bibb
			HYDT			Hydrants
NEWW				FHYD		Fire hydrant
				FLSH		Fire Hydrant Flush
				SHIP		Ship's hydrant
				WHYD		Wall hydrant
				YARD		Yard hydrant
			LFTS			Lift station
			METR			Meter (non Port of Seattle)
			MNHL			Manhole
				STCR		Manhole water Structure
NEWW			NHYD			Non-potable hydrants/flushing hydrants
			PIPE			Domestic water pipe
				ABND		Abandoned water pipe
				CAPS		Blind flange or cap
				FPRO		Fire protection piping
NEWW				LOCT		Domestic Water Pipe Locates
				SMON		Water monument
				TEMP		Temporary water pipe
NEWW			PITT			Water pit
NEWW			PIVL			Post Indicator Valve
			PMTR			Port of Seattle water meter
			PUMP			Domestic water pumps
			RPBA			Reduced pressure backflow assembly

NEWW			RSVR			Reservoirs
			SPGT			Water spigot
			SPRT			Pipe and equipment supports
			STNK			Domestic water tanks
NEWW			STRC			Water Structural elements
UGND					Water supply: underground	
TANK					Water Tank	
TEXT					Text	
NEWW			UNKN			Water Unknown
NEWW			VALT			Vaults
			VALV			Valves
NEWW			VENT			Vent pits
			WELL			Water wells

V		XSEC			
NEWW			VIEW		
NEWW			TEXT		
Requires Optional Modifier for Elements Matching Layer Description					

Civil Layers

Some 1st Optional Root Modifiers have been specified in the standard. If the object or element being drawn matches the layer description notes, the 1st Optional Root Modifier indicated must be used. The intent is to provide a consistent method of identifying the most common elements found throughout the Port of Seattle's properties and infrastructure. Objects or elements found on incorrect layers during the QC review process will be flagged as errors and will need to be corrected.

Notes for Civil Site Plan Drawings:

1. To the greatest extent possible, the civil layers should be used for all site work (including docks). The other disciplines (mechanical, electrical, plumbing, etc.) should be used for buildings and airport/seaport terminals. Landscaping may be used for both site and buildings.
2. To the greatest extent possible, the layer standards are divided into "systems". All utilities, equipment, structural elements, etc., associated with a "system" must be placed on layers associated with that "system".
3. Do not place text, notes, leaders, etc., on X-Refs. These should be placed on each individual drawing. Text and pattern X-Ref's that are sized for the drawing they are attached to are acceptable. The standard symbols with text and point information for manholes, handholes, catch basins, pipe sizes, etc., used by the survey team in backgrounds or base drawings can remain provided the symbols are small enough and the text attribute and point information can be frozen if required.
4. For mechanical utility plans, place all piping and fittings on piping layers. Put valves on valve layers, equipment on equipment layers, symbols on symbol layers, etc., (i.e., do not put valves on equipment layers or symbols on piping layers, etc.). This prevents issues associated with drawings at different scales. Align all valves with the piping in the direction of flow.
5. For electrical utility plans, place all conduits on conduit layers, duct-banks on duct-bank layers. Cables on cable layers, etc. Put electrical fixtures on fixture layers, handholes on handhole layers, manholes on manhole layers, etc., (i.e., do not put electrical manholes on duct-bank layers, electric handholes on conduit layers, etc.).
6. For docks, all structural elements of the dock must be placed on individual layers (i.e., deck panels on deck panel layer, fenders on fender layer, pile caps on pile cap layer, etc.).

Trade	Level	Root	Root Modifier	1st Optional Modifier	2nd Optional Modifier	Description
C						
NEWW	NEWW	ALGN				IN POS CIVIL 3D TEMPLATE
		ASSM				IN POS CIVIL 3D TEMPLATE
		CORR				IN POS CIVIL 3D TEMPLATE
		MASS				IN POS CIVIL 3D TEMPLATE
		NODE				IN POS CIVIL 3D TEMPLATE
		PNET				IN POS CIVIL 3D TEMPLATE
		SURF				IN POS CIVIL 3D TEMPLATE
	NEWW	ACFT				Small Aircraft
		ACST				Aircraft control striping
		AFLD				Airfield
		ALIT				Airfield lighting systems
		ALPD				Airport layout plan Drawing
		BLDG				Buildings site
		BRDG				Bridges site
		CCTV				Cable TV systems
		CDAT				Data and computer systems
		CDSR				Condenser water systems site
		CHWR				Chilled water systems site
		CMPA				Compressed air systems
		CNDS				Condensate systems site
		CPRO				Cathodic Protection site
		CTEL				Telephone systems
		CTOW				Control tower
		CTWR				Communication radio towers
		DOCK				Docks and piers site
		ENVR				Environmental elements site
		FAAC				FAA communication systems
		FAAL				FAA lighting systems
		FAAP				FAA Power systems
		FDSL				Diesel fuel system elements
		FGAS				Fuel gas (gasoline) system elements
		FIRE				Fire protection systems site
		FJET				Jet fuel system elements
		FOIL				Fuel oil system elements
		GNDG				Grounding systems site
		HHWT				Heating hot water systems site
		IRRG				Irrigation systems
		IWSS				Industrial waste water sewer systems site
		LEMG				Emergency lighting systems

NEWWW	LNOR				Normal lighting systems
	METH				Methane system elements
	MTNK				Miscellaneous storage tanks site
	NGAS				Natural gas system elements
	PATH				Paths other than roads or sidewalks
	PAVE				Generic paved areas (not roads etc.)
	PELV				Emergency power low voltage
	PEMV				Emergency power medium voltage
	PKNG				Parking areas and elements
	PLNT				Landscape plants
	PNHV				Normal power high voltage systems
	PNLV				Normal power low voltage systems
	PNMV				Normal power medium voltage systems
	POND				Ponds site
	POWR				Civil Power for site
	PROP				Property and property management site
	PRPN				Propane system elements
	RLRD				Railroads site
	ROAD				Roads site
	SITE				Civil Site Elements
	SFNC				Security Fence
	SRVY				Survey data
	SSWR				Sanitary sewer systems
	STEM				Steam systems site
	STRC				Structural elements site
	STRM				Storm sewer systems
	SYRD				Ship yard site
	TOPO				Topography site
	TRAF				Traffic control devices and signage
	TUNL				Tunnels (railroad roadway transit and utility tunnels)
	WATR				Domestic water systems site
Additional Root Modifiers for Civil Root Layers Only					
		ABLT			Anchor bolts
		ADAE			Americans with disabilities
		BASE			Equipment Base
		BOLT			Bolts (other than anchor bolts)
		CONC			Concrete
		CRNR			Object corners
		CTLO			Centerlines of objects
		FLOW			Flow
			FLIN		Flow line

			GRAD			Finished grade
			GRAV			Gravity flow
			MTR2			2 power meters
			PLAT			Metal Plates
			RBAR			Rebar
			ROLL			Rolling stock equipment
			SCAL			Scale weighing equipment
			SGNL			Signal
			SLEV			Sleeves for utilities
			SNSR			Sensor
			STAN			Stationing data (pipe roadway etc.)
			STUB			Stub
			TIED			Tied
			UTIL			Utility
Additional Root Modifiers for Civil Root Layers						
NEWW NEWW NEWW NEWW NEWW NEWW			ABOV			Above
			ACCY			Accessory
			AREA			An Area within Specific Boundaries
			AUXL			Auxiliary
			BELW			Below
			BYND			Object beyond
			CNTR			Centerlines
			DIMS			Dimensions
			FNSH			Surface Finish
			FITG			Fitting
			FIXT			Fixture
			GENL			General Component Elements
			GRID			Grids generic
				BUBL		Grid Bubbles
			HIDE			Hidden lines or objects
			IDEN			Equipment or material system ID
			MATL			Material
			MISC			Elements not covered by other modifiers.
				NICN		
		NOTE				General Notes
		NPLT				Non-plotting graphic information
			NPOS			All Non-POS property lines equipment etc.
						Openings, ceiling/roof penetrations, ETC.
			OPEN			
			OPTN			Optional elements or equipment
			OTLN			Object Outlines
	OVHD			Objects Overhead		

NEWW			PATT			Floor Pattern or Hatch Patterns
			PHAS			Phasing
			PHTO			Photograph
			PPOS			POS property line
			REVN			Rev Deltas & clouds + revision text
			SIGN			Signs or signage
			SPCL			Specialty equipment
			SYMB			Symbols
		TEMP			Temporary	
		TEXT			Text associated with root	
		UTIL			Utility	
Specific Root Modifiers for Civil Root Layers						
		ACFT				Aircraft
NEWW			CLER			Airplanes turning clearance
			EQMT			Aircraft equipment
			PLNE			Airplanes
			TIED			Aircraft tie-down
NEWW			LBRG			Aircraft People Boarding Bridge
NEWW			LCAB			Aircraft Cab equipment for Boarding Bridge
		ACST				Aircraft control striping
			FOGL			Fog line
			HASH			Striped hashed line
			JANG			J line angle
			JEND			J line end
			JLIN			J line
			JNOS			J line nose
			LSTR			Left straight arrow
			LTRN			Left turn arrow
			RSTR			Right straight arrow
			RTRN			Right turn arrow
			SBAR			Stop bar
			STRA			Straight arrow
			SWLK			Sidewalk
			TEMP			Temporary striping
			TEXT			Aviation systems text
			TWCL			Taxiway center line
			VHCL			Vehicle access route
			WING			Stripe wing line

		AFLD			Airfield
NEWW			AHOA		Aircraft / Helicopter Operations Area
NEWW			AIDC		Airfield Navigational Aid - Critical Area
NEWW			AIDS		Airfield Navigational Aid - Site
			CONC		Airfield concrete
				CJNT	Contraction joint
				EJNT	Expansion joint
				FOOT	Footing
				ISLD	Concrete Island
				JOIN	Concrete joint
				PADS	Concrete pads
				RAMP	Concrete ramp
				SDWK	Concrete sidewalk
NEWW			FLNE		Airfields: fire lane
				MRKG	Airfields: fire lane: pavement markings
				SIGN	Airfields: fire lane: signage
			GFLD		Greenfield
NEWW			GRVL		Airfields: gravel
NEWW			MRKG		Airfields: pavement markings
			NLGT		Airfield navigation lighting
NEWW			OBST		Airspace obstructions
			RNWX		Airfield runway
NEWW				ARST	Runway Arresting Gear Location
NEWW				BLST	Blast pad markings
NEWW				CNTR	Centerline
NEWW				DISP	Displaced threshold markings
NEWW				DIST	Fixed distance markings
NEWW				EDG	Airfield runway edges
NEWW				INTS	Runway intersection
NEWW				LAHS	Runway land and hold short area
NEWW				SAFT	Runway Safety Area
NEWW				SHLD	Shoulder markings
NEWW				SIDE	Side stripes
NEWW				STWY	Runway stop way markings
NEWW				TDZM	Touchdown zone markers
NEWW				THRS	Threshold markers
				APPR	Runway approaches
NEWW			SIDA		Security Identification Display Area
			SIGN		Airfield signs
NEWW			STAN		Airfields: stationing
			TAXI		Airfield taxiway
NEWW			WHIT		Airfields: white paint

			WNDS			Windsock
NEWW			YELO			Airfields: yellow paint
		ALIT				Airfield lighting systems
NEWW			ABAN			Lcan_Abn
			APPR			Approach lights
			APRN			Apron Lighting
			BASE			Light base
NEWW			CABL			Airfield lighting cable
				MRKR		Airfield lighting cable marker
				COAX		Coax cable
				FIBR		Fiber optics cable
NEWW				MULT		Multi-conductor cable
NEWW				TRAY		Cable trays and wire ways
NEWW			CIRC			Airfield lighting circuit
			CLRW			Center line runway lights
			COND			Airfield lighting conduit
			CONS			Constant Current Regulators
NEWW			DBNK			Airfield lighting duct-bank
			DIST			Distance and arresting gear markers and lights
			EDGE			Airfield lighting Edge elements
			EMER			Emergency fixtures
NEWW			FAAL			LT FAARW
			EQMT			Airfield lighting equipment
			HNHL			Airfield lighting hand hole
			HOLD			Runway holding light
NEWW			LAND			LIGHT LANDING
			LNDL			Landing light
			MNHL			Airfield lighting manhole
			MRKR			Airfield lighting cable marker
NEWW			NTDN			North Tdz light
			PANL			Airfield lighting panel
			PAPI			Light papi
			PBOX			Airfield lighting pull box
NEWW			RNWX			FAA runway light
				CNTR		CNTR Runway Centerline lights
				DTGS		1 Runway Distance to go lights
				EDGE		Runway edge lights
NEWW				TDZN		Runway Touchdown Zone lights
			RWEF			Runway edge lights flush
			RWEU			Runway edge lights upright
			RWLL			Runway landing lights
			SIGN			Airfield lighting signs

NEWW			SNSR			Airfield lighting sensor
			STDN			South Tdz light
NEWW			STRC			Airfield lighting Structural elements
			SWBD			Airfield lighting switchboards
			TEXT			Airfield lighting text
			THRS			Thresh Hold light
			TWCL			Taxiway centerline light
NEWW				EDGE		Taxiway edge lights
			WWAG			Wigwag light
C		ALPD				Airport layout plan Drawing
			PDWG			Airplanes layout plan Drawing
		APRN				Airfield apron
NEWW			ACPK			Aircraft gate/stand parking area
NEWW			ANOM			Aircraft non-movement area
NEWW			CNTR			Centerlines
NEWW			DEIC			Aircraft Deicing Area
NEWW			GRND			Grounding points
NEWW			HOLD			Holding position markings
NEWW			JOIN			Apron joints
NEWW			MOOR			Mooring points
NEWW			MRKG			Apron markings
NEWW			OTLN			Airfield apron - outlines
NEWW			SECU			Security zone markings
NEWW			SHLD			Shoulder stripes
NEWW			TEXT			Text
		BLDG				Buildings site
NEWW			BDOR			Building door
			BELV			Building Elevation
			BFND			Building foundation
			BWAL			Building outside wall
			BCOL			Building Columns
			COMR			Commercial Building
			EBLD			Equipment building or enclosure
			FACE			Building face
				CRNR		Building Corner
				JTWY		Jet way
				OVHG		Building overhang
			INDU			Industrial building
				BPLT		Batch-plant
			LOAD			Loading dock
			OFFC			Office building

NEWW NEWW			RAMP			Building ramp
				ADAE		Handicap ramp
			ROFF			Building roof
			STRC			Building Structural elements
			TEMP			Temporary building
				PORT		Portable building
				TRLR		Trailer
			TEXT			Text
WRHS			Warehouse building			
		BRDG				Bridges site
NEWW			BFRM			Bridge framework
			COLM			Bridge column elements
			DECK			Bridge deck elements
			FOND			Bridge foundation elements
			PASS			Passenger Bridge
			PEDS			Pedestrian
			TEXT			Text
			TMBR			Bridge Timber elements
		CCTV				Cable TV systems
NEWW NEWW NEWW NEWW			CABL			Cable standard
				COAX		Coax cable
				FIBR		Fiber optics cable
				MULT		Multi-conductor cable
			TRAY		Cable trays and wire ways	
			CIRC			Circuit
			COND			Conduit
			DISK			Television disk
			EQMT			Cable TV equipment
				CRDR		Security access card reader
			HNHL			Communication hand hole
			JBOX			Junction box
			MNHL			Manhole
		NEWW	OVHD			Cable television system: overhead
			PANL			Panel
PBOX				Pull box		
NEWW		POLE			Cable television system: pole	
		UGND			Cable television system: underground	
		CDAT				Communications Data and computer systems
NEWW			CABL			Cable standard
				COAX		Coax cable

NEWW				FIBR		Fiber optics cable
NEWW				MULT		Multi-conductor cable
NEWW				TRAY		Cable trays and wire ways
			CIRC			Circuit
			COND			Conduit
			EQMT			Generic data and computer systems equipment not associated with other systems
			FIBO			Fiber optic cable
			HNHL			Hand hole
			JBOX			Junction Box
			MNHL			Manhole
			NETW			Network components
NEWW			OVHD			Communications Data : overhead
			PANL			Panel
			PBOX			Pull Box
NEWW			POLE			Cable television system: pole
NEWW			UGND			Cable television system: underground
NEWW			STRC			computer systems Structural elements
			TEXT			Text
		CDSR				Condenser water systems site
			CLTR			Cooling tower elements
			EQMT			Generic condenser water equipment not associated with other systems
			ETNK			Expansion or surge tank
			MNHL			Manhole
			PIPE	ABND		Abandoned condenser water pipe
			PIPE	CAPS		Blind flange or cap
			PIPE	CWRP		Condenser water return pipe
			PIPE	CWSP		Condenser water supply pipe
			PIPE	TEMP		Temporary condenser water pipe
NEWW			PITT			Condenser water pit
			PUMP			Condenser water pumps
			SPRT			Condenser storage water tanks
			STNK			Condenser water tanks
			TEXT			Text
			VALV			Condenser water vaults
			VALT			Vaults
NEWW			VENT			Venting system elements
NEWW			STRC			Condenser water systems Structural elements

		CHWR			Chilled water systems site
NEWW			EQMT		Generic chilled water equipment not associated with other systems
			ETNK		Expansion or surge tank
			MNHL		Manhole
			PIPE		Chilled water pipe
			PIPE	ABND	Abandoned chilled water pipe
			PIPE	CAPS	Blind flange or cap
			PIPE	CHRT	Chilled water return pipe
			PIPE	CHWS	Chilled water supply pipe
			PIPE	SCHR	Secondary chilled water return pipe
			PIPE	SCHS	Secondary chilled water supply pipe
NEWW			PITT		Chilled water pit
			PIPE	TEMP	Temporary chilled water pipe
			PUMP	PPMP	Primary chilled water pumps
NEWW			PUMP	SPMP	Secondary chilled water pumps
			STNK		Chilled water tanks
			TEXT		Text
NEWW			VALT		Chilled water vaults
			VALV		Chilled water valves
			VENT		Venting system elements
NEWW			STRC		Chilled water systems Structural elements
		CMPA			Compressed air systems
NEWW			ADRY		Compressed air dryer
			COMP		Compressed air piping
			EQMT		Generic compressed air equipment not associated with other systems
			PIPE	ABND	Abandoned compressed air pipe
			PIPE	CAPS	Blind flange or cap
			PIPE	CMPR	Compressed air return pipe
			PIPE	CMPS	Compressed air supply pipe
			PITT		Compressed air pit
			PIPE	TEMP	Temporary compressed air pipe
			QCON		Quick disconnect
NEWW			RCVR		Compressed air receiver
			SPRT		Pipe and equipment supports
			STNK		Compressed air tanks
NEWW			TEXT		Compressed Text
			VALT		Compressed air vaults

			VALV			Compressed valves
NEWW			VENT			Venting system elements
NEWW			STRC			Compressed air systems Structural elements
NEWW		CPRO				Cathodic Protection site
NEWW			ABOV			Above
			ACCY			Accessory
			ANOD			Anode Terminal or electrode from which electrons leave a system.
			AREA			An Area within a Specific Boundaries
			AUXL			Auxiliary
			BASE			Base
			BELW			Below
			BENT			Bent
				BUBL		Bubbles
				CNTR		Bent centerlines
			CABL			Cathodic cable
			CIRC			Circuits
			CNTR			Centerlines of objects
			COND			Conduit
			CTRL			Control
			DIMS			Dimensions
			EQMT			Cathodic equipment
			FIXT			Fixtures
			GENL			General dock elements
			GRID			Dock grid
				BUBL		Grid Symbol Bubbles
				CNTR		Grid centerlines
			GRND			Ground
			HIDE			Hidden lines or objects
			HNHL			Hand hole
			IDEN			Equipment or material system ID
			JBOX			Junction box
			MISC			Elements not covered by other modifiers.
			MNHL			Manhole
			NPOS			All Non-POS property lines equipment etc.
			OPTN			Object Outlines
			PANL			Panels
			PATT			Object Pattern or Hatch Patterns
			PHAS			Phasing
			PHTO			Photograph
			PILE			Piles

NEWW				AUGR		Auger cast piles
				BATT		Batter piles
				BEAR		Bearing piles
				CONC		Concrete piles
				EXST		Existing piles
				FNDR		Fender piles
				FUTR		Future piles
				MCRO		Micro piles
				MOOR		Mooring piles
				SHTP		Sheet pile
				TIMR		Timber piles
				PIPE		Piping
				PPOS		POS property line
				REVN		Rev Deltas & clouds + revision text
NEWW				SIGN		Signs or signage
				SPRT		Pipe and equipment supports
				STRC		Cathodic systems Structural elements
				SYMB		
NEWW				STNK		Tanks
				TEST		Test stations
				TEXT		Text
				UTIL		Utility
		CTEL				Telephone systems
NEWW NEWW NEWW NEWW				CABL		Telephone cable
					COAX	Coax cable
					FIBR	Fiber optics cable
					MULT	Multi-conductor cable
					TRAY	Cable trays and wire ways
				CIRC		Circuits
				COND		Conduit
				ENCL		Telephone enclosure (booth)
				EQMT		Telephone equipment
				FIXT		Fixtures
				HNHL		Hand hole
				JBOX		Junction box
				MNHL		Manhole
					STCR	Telephone manhole Structure
NEWW				PANL		Telephone panels
				POLE		Telephone poles
				TEXT		Text
				VALT		Telephone Vaults
				STRC		Telephone systems Structural elements

			XFMR			Telephone pole transformer
		CTOW				Control tower
			EQMT			Control tower equipment
			CSTR			Control tower Structure
		CTWR				Communication radio towers
			EQMT			Communication radio tower equipment
		DOCK				Docks and piers site
			ALDR			Access ladders (permanent)
			BEAM			Dock Beams
			BENT			Bent
				BUBL		Bubbles
				CNTR		Bent centerlines
			BLRD			Bollards
			BRTH			Ship Berth
			BULK			Bulkhead
			BULR			Bull rail
			CLET			Cleats
			CONC			Dock concrete
				CURB		Dock curbs
				RBAR		Rebar
			DECK			Deck
				DKDR		Deck drain
				DPNL		Deck panel
			DOLP			Dolphin
			EDGE			Deck edge
			EQMT			Dock equipment
				BAGL		Baggage loading equipment
				CCRN		Container crane
				GCRN		Gantry crane
				HOST		Hoist
				PLOD		Passenger loading equipment
				SCAL		Weigh scales
				SLOD		Ship loading equipment
				WASH		Truck wash
			FHOL			Fire holes in deck
			FLTS			Floats
			FNDR			Fender
			GENL			General dock elements
			GRAL			Guard Rail
			GRID			Dock grid
				BUBL		Grid Symbol Bubbles

				CNTR		Grid centerlines				
NEWW			HTCH			Utility Hatch (Ships Hydrant, Water Hatch & Ships Electrical hatch)				
			HRAL			Hand Rail				
			LADR			Dock Ladders				
			LFRG			Life ring				
			MFAB			Dock metal fabrication elements				
			PCAP			Pile cap				
			PILE			Piles				
				AUGR			Auger cast piles			
				BATT			Batter piles			
				BEAR			Bearing piles			
CONC				Concrete piles						
EXST				Existing piles						
FNDR				Fender piles						
FUTR				Future piles						
MCRO				Micro piles						
MOOR				Mooring piles						
SHTP				Sheet pile						
TIMR			Timber piles							
NEWW			PNSK			Pin socket				
			PVMT			Dock pavement				
			RAIL			Dock Rails				
				CRAN			Crane rail			
				STOP			Crane stop			
			RAMP			Dock Ramps				
			SLEV			Sleeve for utilities				
			SPDR			Spreader				
			SPRT			Pipe and equipment supports				
			STEP			Stairs and platforms				
STGR			Timber stringer							
TEXT			Text							
			TIED			Dock tie-down				
			TMBR			Timber dock elements				
			WALR			Whaler				
					ENVR				Environmental elements site	
			NEWW			ASBS			Asbestos contaminated areas	
						BORE			Bore hole (test)	
							CIPR			Erosion and sediment control: culvert inlet protection
							CNTE			Erosion and sediment control: construction entrance
CTAM						Contaminated soil				

NEWW			DDIV			Erosion and sediment control: drainage divides
			DPND			Detention pond
NEWW			DVDK			Erosion and sediment control: diversion dike
			EBAK			Ecology backfill
			EBLK			Ecology block
			ENMT			Environmental mitigation area
			EROS			Erosion and sediment control
			HAZM			Hazmat storage area
NEWW			INPR			Erosion and sediment control: inlet protection
			MWEL			Monitoring well
			RMDS			Remediation system
			SHOR			Shoreline mitigation area
NEWW			SILT			Erosion and sediment control: silt fence
NEWW			SSLT			Erosion and sediment control: super silt fence
			THLE			Test hole (bore)
			TEXT			Text
			WELL			Monitoring well
			WTLN			Wetland environmental area
C		FAAC				FAA communication systems
			CABL			FAA communication cable
				MRKR		FAA communication cable marker
NEWW				COAX		Coax cable
NEWW				FIBR		Fiber optics cable
NEWW				MULT		Multi-conductor cable
NEWW				TRAY		Cable trays and wire ways
			CKPT			FAA Checkpoint
			CIRC			FAA communication circuit
			COMT			FAA communications tower
			COND			FAA communication conduit
			DBNK			FAA communication duct-bank
			EQMT			FAA communication equipment
				ATNA		FAA Antenna
				CEIL		FAA Ceil
				LOCL		FAA Local
			FIBR			FAA fiber-optic communication elements
			MNHL			FAA communication manhole
			PANL			FAA communication panel
			PBOX			FAA communication pull box
NEWW			STRC			communication systems Structural elements

			SWBD		FAA communication switchboards	
			TEXT		FAA communication text	
		FAAL			FAA lighting systems	
NEWW NEWW NEWW NEWW			CABL		FAA lighting cable	
				MRKR	FAA lighting cable marker	
				COAX	Coax cable	
				FIBR	Fiber optics cable	
				MULT	Multi-conductor cable	
				TRAY	Cable trays and wire ways	
				CIRC	FAA lighting circuit	
		COND	FAA lighting conduit			
		DBNK	FAA lighting duct-bank			
		EQMT	FAA lighting equipment			
		FEED	FAA lighting feeders			
		HNHL	FAA lighting hand hole			
		JBOX	FAA lighting Junction box			
		MNHL	FAA lighting manhole			
		MKRR	FAA lighting cable marker			
		PANL	FAA lighting panels			
		PBOX	FAA lighting pull box			
		RNWX	FAA runway light			
		NEWW		STRC		FAA lighting systems Structural elements
				SWBD		FAA lighting switchboards
				SWGR		FAA lighting switchgear
				TEXT		FAA lighting text
				XFMR		FAA lighting transformer
		FAAP			FAA Power systems	
NEWW NEWW NEWW NEWW			CABL		FAA power cable	
				MRKR	FAA power cable marker	
				COAX	Coax cable	
				FIBR	Fiber optics cable	
				MULT	Multi-conductor cable	
				TRAY	Cable trays and wire ways	
				CIRC	FAA power circuit	
		COND	FAA power circuit conduit			
		DBNK	FAA power duct-bank			
		EQMT	FAA power equipment			
		FEED	FAA power feeders			
		HNHL	FAA power hand hole			
		JBOX	FAA power junction box			
		MNHL	FAA power manhole			
		MRKR	FAA power cable marker			

			PANL			FAA power panels
			PBOX			FAA power pull box
NEWW			STRC			FAA Power systems Structural elements
			SWBD			FAA power switchboards
			SWGR			FAA power switchgear
			TEXT			FAA power text
			XFMR			FAA power transformer
		FDSL				Diesel fuel system elements
NEWW			ALRM			Alarm system
			CTRL			Control system
			DISP			Dispenser
			DPIT			Diesel fuel pit
			EQMT			Diesel fueling equipment
			ETNK			Expansion tank
			FCAP			Fuel cap
			FLTR			Diesel fuel filters
			INST			instrumentation (meters, valves, etc.)
			METR			Diesel fuel meter
			PIPE			Piping
			PITT			Diesel fuel pit
				ABND		Abandoned diesel fuel piping
				CAPS		Blind flange or cap
				RPIP		Diesel return pipe
				SPIP		Diesel supply pipe
				TEMP		Temporary diesel fuel pipe
			PUMP			Diesel fuel pumps
			SPRT			Pipe and equipment supports
			STNK			Diesel fuel storage tanks
			TEXT			Text
			VALT			Diesel fuel valve vault
			VALV			Diesel fuel valves
				ABND		Abandoned diesel fuel valves
NEWW			VENT			Venting system elements
NEWW			UGND			Fuel systems: underground
		FGAS				Fuel gas (gasoline) system elements
			DISP			Fuel gas dispenser
			EQMT			Fuel gas equipment
			ETNK			Expansion tank
			FLTR			Fuel gas filters
NEWW			FTTG			Caps, crosses, and tees

NEWW			INST			instrumentation (meters, valves, etc.)
			METR			Fuel gas meter
			PIPE			Piping
				ABND		Abandoned diesel fuel piping
				CAPS		Blind flange or cap
				FILL		Fill pipe
				RPIP		Fuel gas return pipe
				SPIP		Fuel gas supply pipe
				TEMP		Temporary fuel gas pipe
			PITT			Fuel pit
			PUMP			Fuel gas pumps
			SPRT			Pipe and equipment supports
			STNK			Fuel gas storage tank
			TEXT			Text
			VALT			Fuel gas valve vault
NEWW			VENT			Venting system elements
NEWW			UGND			Fuel systems: underground
		FJET				Jet fuel system elements
NEWW			ALRM			Jet fuel alarm panel and controls
			FTTG			Caps, crosses, and tees
			ETNK			Jet fuel expansion/surge tank
			FLTR			Jet fuel filters
			FPIT			Jet fuel pit
			HTCH			Fuel hatch
NEWW			INST			instrumentation (meters, valves, etc.)
			METR			Jet fuel meter
			PIPE			Jet fuel piping
				ABND		Abandoned jet fuel pipe
				CAPS		Blind flange or cap
				RPIP		Jet fuel return pipe
				SPIP		Jet fuel supply pipe
				TEMP		Temporary jet fuel pipe
			PITT			Jet fuel pit
			PUMP			Jet fuel pumps
			SPRT			Pipe and equipment supports
			STNK			Jet fuel storage tank
				ALDR		Storage tank ladder or stairs
				MDOR		Storage tank Man-door
				FROF		Floating roof
				VALV		Storage tank valves
				VENT		Storage tank vents
			TCSE			Fuel test casing

			TEXT			Text
			TRCK			Jet fuel truck loading/unloading station
NEWW NEWW NEWW			VALT			Jet fuel vaults
			HATC			Jet fuel vault hatch
			VALV			Jet fuel valves
			VENT			Venting system elements
			UGND			Fuel systems: underground
			STRC			Jet fuel Structural elements
			WAST			Jet fuel waste system elements
			PIPE			Waste fuel pipe
			PUMP			Waste fuel pump
			STNK			Waste fuel storage tank
		VALV			Waste fuel valves	
C		FOIL				Fuel oil system elements
NEWW NEWW			ALRM			Fuel oil alarm panel and controls
			EQMT			Fuel oil equipment
			ETNK			Fuel oil expansion/surge tank
			FLTR			Fuel oil filters
			FTTG			Caps, crosses, and tees
			INST			instrumentation (meters, valves, etc.)
			METR			Fuel oil meter
			PIPE			Fuel oil piping
			ABND			Abandoned fuel oil pipe
			CAPS			Blind flange or cap
NEWW			RPIP			Fuel oil return pipe
			SPIP			Fuel oil supply pipe
			TEMP			Temporary oil gas pipe
			PITT			Fuel oil fuel pit
			PUMP			Fuel oil pumps
			SPRT			Pipe and equipment supports
			STNK			Fuel oil storage tank
			TEXT			Text
			VALT			Fuel oil vault
			VALV			Fuel oil valves
NEWW NEWW		VENT			Venting system elements	
	UGND				Fuel systems: underground	
		FIRE				Fire protection systems site
			BFPA			Backflow prevention assembly
			BLRD			Bollards
			DELG			Deluge system elements
			PIPE			Deluge system piping

			VALV		Deluge system valves
			DRYP		Dry pipe system elements
			PIPE		Dry pipe system piping
			VALV		Dry pipe system valves
			ENCL		Valve enclosure
			EQMT		Fire protection equipment
			FHOS		Fire hose
			FALM		Fire alarm panel and controls
			FDCN		Fire department connections
			SMSE		Siamese
			FOMS		Foam water system elements
			PIPE		Foam system piping
			PUMP		Foam system pump
			STNK		Foam system storage tank
			VALV		Foam system valves
			HOSE		Fire hose
			CBNT		Fire hose cabinet
			RACK		Fire hose rack
			HYDT		Fire Hydrant
			FLSH		Fire hydrant flush
			METR		Fire meter
			FHOS		Metered fire hose
			PIPE		Fire protection piping
			ABND		Abandoned fire protection pipe
			CAPS		Blind flange or cap
			FSPK		Fire sprinkler line
			TEMP		Temporary pipe
			PUMP		Fire pumps jockey pumps
			SNSR		Sensors
			SPKL		Fire sprinklers
			STDP		Stand pipe
			STNK		Fire protection storage tank
			SPRT		Pipe and equipment supports
			TEXT		Text
			UGND		Fire protection: underground
			VALT		Fire protection valve vault
			VALV		Fire protection valves
			WETP		Wet pipe system elements
			PIPE		Wet pipe system piping
			VALV		Wet pipe system valves
		GNDG			Grounding systems site
			CIRC		Grounding system cables
			COND		Grounding system conduit
			EQMT		Grounding system equipment

			GROD			Grounding rod
			HNHL			Grounding system hand hole
			JBOX			Grounding system junction box
			TEXT			Text
		HHWT				Heating hot water systems site
NEWW			BWLR			Boiler and associated equipment
			EQMT			Generic hot water equipment not associated with other systems
			ETNK			Expansion or surge tank
			HEXC			Steam/hot water heat exchanger
			MNHL			Manhole
			PIPE			Heating hot water pipe
				ABND		Abandoned hot water pipe
				CAPS		Blind flange or cap
				HWSP		Hot water supply pipe
				HWRP		Hot water return pipe
				SHWS		Secondary hot water supply pipe
				SHWR		Secondary hot water return pipe
				TEMP		Temporary hot water pipe
			PUMP			Hot water pumps
				PPMP		Primary hot water pumps
				SPMP		Secondary hot water pumps
			SPRT			Pipe and equipment supports
				STNK		
	TEXT			Text		
	VALT			Hot water vaults		
	VALV			Hot water valves		
		IRRG				Irrigation systems
NEWW			CIRC			Control circuit
			COND			Conduit
			CSTA			Valve control station
			FTTG			Caps, crosses, and tees
			EQMT			Generic irrigation equipment not associated with other systems
			PANL			Power/control panel
			PIPE			Irrigation piping
			PUMP			Irrigation pump
			SPRK			Sprinkler head
				FULL		Sprinkler head full coverage
				HALF		Sprinkler head ½ coverage
				HEAD		Sprinkler Head
				IMPL		Sprinkler head Impulse type
QRTR		Sprinkler head ¼ coverage				

NEWW			SBOX			Sprinkler box	
			SPRT			Pipe and equipment supports	
			STNK			hot water tanks	
			VALV			Sprinkler valves	
			VBOX			Valve box	
		IWSS				Industrial waste water sewer systems site	
NEWW			CBSN			IWSS catch basin	
			COUT			IWSS clean out	
			EQMT			Generic IWSS equipment not associated with other systems	
			FLSH			IWSS flushing system components	
			JBOX			Junction boxes	
			LFTS			Lift station (IWSS)	
				STCR		IWSS manhole Structure	
			MNHL			IWSS manhole	
			OWSP			Oil/water separator	
			PIPE			IWSS piping	
				ABND		Abandoned IWSS piping	
				CAPS		Blind flange or cap	
				FMAN		Force main piping	
				GRAV		Gravity IWSS drain piping	
				ROFD		IWSS roof drain piping	
				TEMP		Temporary IWSS piping	
				WOIL		Waste oil pipe	
				PUMP			IWSS lift station pump
				SDRN			IWSS sub-drain elements
	NEWW			SPRT			Pipe and equipment supports
			STNK			IWSS storage tank	
			STRC			Industrial waste water sewer Structural elements	
			TEXT			Text	
			VALT			IWSS vaults	
			VALV			IWSS valves	
		LEMG				Emergency lighting systems	
NEWW			CABL			cable	
NEWW				COAX		Coax cable	
NEWW				FIBR		Fiber optics cable	
NEWW				MULT		Multi-conductor cable	
NEWW				TRAY		Cable trays and wire ways	
NEWW			CEIL			Ceiling mounted (surface/pendant) fixtures	
			CIRC			Emergency lighting circuits	

NEWW			COND			Emergency lighting system conduit	
				ABND		Abandoned emergency lighting conduit	
			CONS			Constant Current Regulators	
NEWW			DBNK			Emergency lighting duct bank	
			EQMT			Emergency lighting equipment	
			EXIT			Emergency Exit fixtures	
			FEED			Emergency lighting feeders	
			FIXT			Emergency lighting fixtures	
			HNHL			Emergency lighting hand holes	
			JBOX			Emergency lighting junction box	
			NAVIG			Emergency lighting navigation lights marine GYRS system	
			PANL			Emergency lighting panels	
			POLE			Light poles emergency lighting	
			SNSR			Emergency lighting sensor	
			TEXT			Text	
			VALT			Emergency lighting vaults	
		NEWW		WAAL			Emergency Wall mounted fixtures
				XFMR			Emergency lighting transformer
		LNDS				Landis and GYR system	
			EQMT			Landis and GYR system equipment	
			TEXT			Text	
		LNOR				Normal lighting systems	
NEWW			CABL			cable	
NEWW				COAX			Coax cable
NEWW				FIBR			Fiber optics cable
NEWW				MULT			Multi-conductor cable
NEWW				TRAY			Cable trays and wire ways
NEWW			CEIL			mounted (surface/pendant) fixtures	
NEWW				CIRC			Circuits normal lighting
				COND			Conduit normal lighting
					ABND		Abandoned conduit normal lighting
				CONS			Constant Current Regulators
			NEWW		DBNK		
EQMT							Equipment normal lighting
FEED							Feeders normal lighting
FIXT							Fixtures normal lighting
				FLRR			Floor mounted fixtures
	HNHL			Hand holes normal lighting			

NEWW			JBOX			Normal lighting junction box
			NAVG			Navigation lights marine GYRS system normal lighting
			PANL			Panels normal lighting
			POLE			Light poles normal lighting
			SNSR			Normal lighting sensor
			TEXT			Text
			VALT			Normal lighting vaults
			WAAL			Wall mounted fixtures
			XFMR			Normal lighting transformer
		METH				Methane system elements
NEWW NEWW			ALRM			Methane system alarm panel and controls
			EQMT			Methane equipment
			METR			Methane meter
			PIPE			Methane piping
				ABND		Abandoned methane pipe
				CAPS		Blind flange or cap
			PREG			Methane pressure regulator
			SPRT			Pipe and equipment supports
			STNK			Methane storage tank
			TEXT			Text
			VALV			Methane system valves
			VENT			Venting system elements
			UGND			Fuel systems: underground
		MTNK				Miscellaneous storage tanks site
			ALDR			Storage tank ladder or stairs
			DRAN			Tank drain
			FIBR			Fiberglass storage tanks
			MDOR			Man-door
			PLAS			Plastic
			SPRT			Pipe and equipment supports
			STEL			Steel storage tanks
			TEXT			Text
			TVNT			Tank vents
		NGAS				Natural gas system elements
NEWW			ALRM			Natural gas alarm panel and controls
			FTTG			Caps, crosses, and tees
			EQMT			Natural gas equipment
NEWW			INST			instrumentation (meters, valves, etc.)
			METR			Natural gas meter

NEWW			MNHL			
			PIPE			Natural gas piping
				ABND		Abandoned natural gas pipe
				CAPS		Blind flange or cap
NEWW			PITT			Natural gas fuel pit
			PREG			Natural gas pressure regulator
			SPRT			Pipe and equipment supports
			STNK			Natural gas storage tank
			STRC			Natural gas Structural elements
			TEXT			Text
			VALV			Natural gas valves
NEWW			VENT			Venting system elements
UGND					Fuel systems: underground	
C		PATH				Paths other than roads or sidewalks
			BIKE			Bike path
			PEDS			Pedestrian path
			TEXT			Text
	NEWW	PAVE				Generic paved areas (not roads etc.) site
NEWW			ASPH			Asphalt pavement
				EDGE		Edge of asphalt pavement
				SWCT		Saw cut
				OCN		AC concrete
			CURB			Paved Roadway curbs
			CONC			Concrete pavement
				DVWY		Concrete driveway
				EDGE		Edge of concrete pavement
				JOIN		Concrete joints
			DVWY			Driveway
	ASPH			Asphalt driveway		
	CONC			Concrete driveway		
	EDGE		Edge of driveway pavement			
NEWW		GROV			Pavement Grooving	
GRVL				Gravel roads areas		
NEWW		EDGE			Edge of Pavement	
JNTS				Construction/ expansion Joints		
MRKG				Pavement markings		
NEWW		SDWK			Sidewalk	
		ADAE		Wheelchair access		
NEWW		STRP			Striping	

		PELV			Emergency power low voltage
			BUSW		Emergency power circuit bus-way low voltage
			CABL		Emergency power low voltage cable
			CEIL		Ceiling mounted
			CIRC		Emergency power circuit low voltage
			COND		Emergency power conduit low voltage
				ABND	Abandoned emergency power conduit low voltage
			DBNK		Emergency power duct bank low voltage
			EQMT		Emergency power equipment low voltage
			EXIT		Exit fixtures
			FEED		Emergency power feeders low voltage
NEWW			GRND		Ground For Electrical Power
			JBOX		Emergency power junction box
			METR		Emergency power low voltage meter
				PMTR	Port of Seattle meter emergency power low voltage
				CMTR	City power meter emergency power low voltage
			MONI		Emergency power monitoring system low voltage
			PANL		Emergency power panels low voltage
			PBOX		Emergency power pull box low voltage
			RCPT		Emergency power receptacle low voltage
			REEF		Reefer Receptacle emergency power low voltage
NEWW			STRC		Normal power low Structural elements
			SWBD		Emergency power switchboards low voltage
			SWGR		Emergency power switchgear low voltage
NEWW			WAAL		Wall Elements
			XFMR		Emergency power transformer low voltage
				TCAN	Emergency power transformer can low voltage

		PEMV			Emergency power medium voltage
NEWW			BUSW		Emergency power circuit bus-way
NEWW			CABL		low voltage
NEWW					cable
NEWW				COAX	Coax cable
NEWW				FIBR	Fiber optics cable
NEWW				MULT	Multi-conductor cable
NEWW				TRAY	Cable trays and wire ways
NEWW			CEIL		Ceiling mounted
			CIRC		Emergency power circuit medium voltage
			COND		Emergency power conduit medium voltage
				ABND	Abandoned emergency power conduit medium voltage
			DBNK		Emergency power duct-bank medium voltage
			EQMT		Emergency power equipment medium voltage
NEWW			EXIT		Exit fixtures
			FEED		Emergency power feeders medium voltage
NEWW			GRND		Ground For Electrical Power
			JBOX		Emergency power junction box medium voltage
			METR		Emergency power medium voltage meter
				PMTR	Port of Seattle meter emergency power medium voltage
				CMTR	City power meter emergency power medium voltage
			MONI		Emergency power monitoring system medium voltage
			PANL		Emergency power panels medium voltage
			PBOX		Emergency power pull box medium voltage
			POLE		Emergency power medium voltage pole
				GYWR	Guy wire
				BASE	Power pole base
			RCPT		Emergency power receptacle medium voltage
			REEF		Reefer Receptacle emergency power medium voltage
NEWW			STRC		Emergency power medium voltage Structural elements
			SWBD		Emergency power switchboards medium voltage

			SWGR			Emergency power switchgear medium voltage
			TEXT			Text
NEWW			WAAL			Wall Elements
			XFMR			Emergency power transformer medium voltage
				TCAN		Emergency power transformer can medium voltage
		PKNG				Parking areas and elements
NEWW			ASPH			Parking General Asphalt area
NEWW			CARS			Graphic illustration of cars
NEWW			CONC			Parking General Concrete area
			CURB			Parking area curbs
NEWW			DRAN			Parking lot drainage slope indications
			FIXT			Parking lots: fixtures (wheel stops, parking meters, etc.)
NEWW			FLNE			Parking lots: fire lane
				MRKG		Parking lots: fire lane: pavement markings
			GRVL			Parking lots: gravel
NEWW			ISLD			Parking islands
NEWW			MRKG			Parking lots: pavement markings
			STOP			Parking stops and blocks
NEWW			STRC			Parking areas Structural elements
			STRP			Striping for parking paved areas
NEWW			UPVD			Parking lots: unpaved surface
NEWW			WHIT			Parking lots: white paint
NEWW			YELO			Parking lots: yellow paint
		PLNT				Landscape plants
			EDGE			Edge vegetation
			PLTR			Planter
			SHRB			Shrub
			TREE			Tree
				CONF		Conifer tree
				DCDS		Deciduous tree
			TURF			New seeded area
		PNHV				High voltage systems over 480
NEWW			CABL			Emergency power low voltage cable
NEWW				COAX		Coax cable
NEWW				FIBR		Fiber optics cable
NEWW				MULT		Multi-conductor cable
NEWW				TRAY		Cable trays and wire ways

NEWW			CEIL			Ceiling mounted
			BUSW			Normal power circuit bus-way high voltage
			CIRC			Circuits normal power high voltage
			COND			Conduit normal power high voltage
NEWW				ABND		Abandoned normal power conduit high voltage
			CONS			Constant Current Regulators
			DBNK			Normal power duct-bank high voltage
			EQMT			Equipment normal power high voltage
NEWW			FEED			Feeders normal power high voltage
			FLRR			Floor
			GRND			Ground For Electrical Power
			GYWR			Guy wire
NEWW			HNHL			Hand holes normal power high voltage
			JBOX			Normal power junction box high voltage
			L480			Elements less than 480v electrical system (e.g. conduits, wires, panels, handholds, vaults, switches, etc)
			METR			Normal power high voltage meter
NEWW				CMTR		City power meter high voltage
				PMTR		Port of Seattle meter high voltage
			MNHL			Manhole normal power high voltage
			MONI			Normal power monitoring system high voltage
NEWW			PANL			Panels normal power high voltage
			POLE			Power poles normal power high voltage
				BASE		Power pole base
				GPST		Guy post
NEWW				GYWR		Guy wire
			TEXT			Text
			STRC			High voltage systems over 480 Structural elements
			VALT			Vaults normal power high voltage
NEWW			WAAL			Wall Elements
			XFMR			Normal power transformer high voltage
				TCAN		Normal power transformer can high voltage

		PNLV			Normal power low voltage systems 120
NEWW			CABL		Normal power low voltage cable
NEWW				COAX	Coax cable
NEWW				FIBR	Fiber optics cable
NEWW				MULT	Multi-conductor cable
NEWW				TRAY	Cable trays and wire ways
NEWW			CEIL		Ceiling mounted
NEWW			CIRC		Circuits normal power low voltage
NEWW			COND		Conduit normal power low voltage
				ABND	Abandoned normal power conduit low voltage
NEWW			CONS		Constant Current Regulators
			DBNK		Normal power duct-bank low voltage
			EQMT		Equipment normal power low voltage
			FEED		Feeders normal power low voltage
NEWW			GRND		Ground For Electrical Power
NEWW			GYWR		Guy wire
			HNHL		Hand holes normal power low voltage
			JBOX		Normal power junction box low voltage
			METR		Normal power low voltage meter
				PMTR	Port of Seattle meter normal power low voltage
				CMTR	City power meter normal power low voltage
			MNHL		Manhole normal power low voltage
			MONI		Normal power monitoring system low voltage
			PANL		Panels normal power low voltage
			POLE		Power poles normal power low voltage
			RCPT		Receptacles normal power low voltage
NEWW			STRC		Normal power low voltage systems 120 Structural elements
			TEXT		Text
			VALT		Vaults normal power low voltage
NEWW			WAAL		Wall Elements
			XFMR		Normal power transformer low voltage
				TCAN	Normal power transformer can low voltage
		PNMV			Normal power medium voltage systems 220-440

NEWW			BUSW			Normal power circuit bus-way medium voltage
			CABL			Normal power low voltage cable
NEWW				COAX		Coax cable
NEWW				FIBR		Fiber optics cable
NEWW				MULT		Multi-conductor cable
NEWW				TRAY		Cable trays and wire ways
NEWW			CEIL			Ceiling Elements
NEWW			CIRC			Circuits normal power medium voltage
NEWW NEWW				ABND		Abandoned normal power conduit medium voltage
			COND			Conduit normal power medium voltage
			CONS			Constant Current Regulators
			DBNK			Normal power duct-bank medium voltage
NEWW NEWW			EQMT			Equipment normal power medium voltage
			FEED			Feeders normal power medium voltage
			GRND			Ground For Electrical Power
			GYWR			Guy wire
NEWW			HNHL			Hand holes normal power medium voltage
			JBOX			Normal power junction box medium voltage
			L480			Elements less than 480v electrical system (e.g. conduits, wires, panels, handholds, vaults, switches, etc)
			METR			Normal power medium voltage meter
				PMTR		Port of Seattle meter medium voltage
				CMTR		City power meter medium voltage
			MNHL			Manhole normal power medium voltage
			MONI			Normal power monitoring system medium voltage
			PANL			Panels normal power medium voltage
			POLE			Power poles normal power medium voltage
				GYWR		Guy wire
				BASE		Power pole base
			RCPT			Receptacles normal power medium voltage
			SUBS			Substation normal power medium voltage

				BASE		Substation equipment base
NEWW			STRC			Normal power medium voltage systems 220-440 Structural elements
			TEXT			Text
NEWW			VALT			Vaults normal power medium voltage
			WAAL			Wall Elements
			XFMR			Normal power transformer medium voltage
				TCAN		Normal power transformer can medium voltage
		POND				Ponds site
NEWW			EDGE			Ponds: edge
			INLT			Inlet Structure for pond
				CONC		Concrete inlet Structure for pond
				PIPE		Inlet pipe
				RIPR		Riprap inlet Structure for pond
			OUTL			Outlet Structure for pond
				CONC		Concrete inlet Structure for pond
				RIPR		Riprap inlet Structure for pond
				PIPE		Outlet pipe
				OVFL		Overflow Structure for pond
NEWW			SWAY			Ponds: spillway
NEWW			TOPB			Ponds: top of bank
		PROP				Property and property management site
			BNDY			Property: Boundaries lines
NEWW			BERM			Berms
NEWW			BRKW			Breakwater
NEWW			BULK			Bulkheads
NEWW			CONS			Construction limits/controls, staging area
NEWW			DAMS			Dams, run off control
			ESMT			Easements
			FENC			Fences
				ASPH		Fence at Asphalt
				CLNK		Chain link fence
NEWW				GRAL		Fences: guard rail
				POST		Fence post
NEWW				STEL		Fences: steel (barbed wire and/or chain link)
				TEMP		Temporary/construction fence

NEWW			WOOD		Fences: wood
			GATE		Gates
			CBOX		Gate control box
			POST		Gate posts
			HARB		Harbor lines
			LEAS		Lease line and areas
			LEGL		Legal descriptions
NEWW			NPOS		Non Port of Seattle property lines
			MEAN		Mean water levels, tides
			PARK		All parks
			PHLN		Pier head lines
			PHTO		Photographs images
			PPKG		Public parking areas
			PPOS		Port of Seattle property lines
NEWW			CRNR		Port of Seattle property corner
			LEAS		Port of Seattle lease line
			PUBA		Public access areas
			RTWL		Retaining wall
			RTWY		Right of way
			SBCK		Property: setback lines
			SIGN		Signs (non traffic)
NEWW			STEP		Site or landscaping steps
			STRC		Property Structural elements
NEWW			TEXT		Text
			WTRW		Channels canals and waterways
		PRPN			Propane system elements
NEWW			ALRM		Propane system alarm panel and controls
			FTTG		Caps, crosses, and tees
			EQMT		Propane equipment
NEWW			INST		instrumentation (meters, valves, etc.)
			METR		Propane meter
			PIPE		Propane piping
NEWW			ABND		Abandoned propane pipe
			CAPS		Blind flange or cap
			PREG		Propane pressure regulator
NEWW			SPRT		Pipe and equipment supports
			STNK		Propane tanks
			VENT		Venting system elements
NEWW			UGND		Fuel systems: underground

C		POWR			Civil Power for site
NEWW			CABL		Power Cables
NEWW				COAX	Coax cable
NEWW				FIBR	Fiber optics cable
NEWW				MULT	Multi-conductor cable
NEWW				TRAY	Cable trays and wire ways
NEWW			CIRC		Power circuits
			CMTR		CITY OWNED POWER METERS
			CNDT		Power conduit underground
NEWW			CRAN		ELEMENTS OF CRANE POWER SYSTEMS (e.g. MAIN SWITCH GEAR, POWER FEED, POWER TRENCH, ISOLATION CIRCUITS, ETC)
NEWW			CTRL		ELECTRICAL Power CONTROL SYSTEMS
			DUCT		Center line power conduit
			GRND		Ground rod box
NEWW			GYRS		Landis gyrs system
NEWW			GYWR		Guy wire
NEWW			G480		ELEMENTS GREATER THAN 480V ELECTRICAL SYSTEM (e.g. CONDUITS, WIRES, PANELS, HANDHOLDS, VAULTS, SWITCHES, ETC)
			HNHL		Power hand hole
NEWW			INST		Power: instrumentation (meters, transformers)
			JBOX		Power junction box
			LITE		Lite
NEWW			L480		ELEMENTS LESS THAN 480V ELECTRICAL SYSTEM (e.g. CONDUITS, WIRES, PANELS, HANDHOLDS, VAULTS, SWITCHES, ETC)
			METR	HOSE	2el met. Fire hose d. Water
				MTR?	2 power meters
			MNHL		Manhole power
NEWW			MONI		Power Monitoring, site utility
NEWW			OVHD		Power: overhead
NEWW			PANL		Elect. Power Panel
NEWW			PMTR		POS Water meters
			POLE		Pole w/light
				GYWR	Guy wire anchor
				GYWR	Guy post
				LITE	Lightpole_2meters
			REEF		Reefer outlet

NEWW			SNSR			Sensor
			STCR			Power manhole Structure
			STRC			Power Structural elements
			SUBS			Power substation
			TELM			Telemetry Equipment
			TREN			Power trench
			UGND			Power: underground
			UNKN			Unknown objects associated with root
			VALT			Power vault
NEWW			XFMR			Transformer can
			RLRD			Railroads site
			CNTR			Railroad centerlines
			CROS			Railroad crossing
			EQMT			Generic railroad equipment not associated with other systems
			FROG			Railroad Frog
			LUBE			Railroad flange lubricator
			SGNL			Railroad signal
NEWW			SIDG			Railroad siding
			SIGN			Traffic signs
			SPUR			Railroad spur
			SWCH			Railroad switch
			TEXT			Text
			TRAK			Railroad track
			YARD			Railroad Yard
			ROAD			Roads site
NEWW			AROD			Access road
			ASPH			Asphalt road
			BRCK			Brick road
			CNTR			Road centerlines
			CONC			Concrete road
			CURB			Roadway curbs
				ASPH		Asphalt curb
				CAST		Pre-cast curb
				CTOP		Curb top
				ETRD		Extruded curb
				GUTR		Curb and gutter
				LINE		Curb line
				STOP		Wheel stops
			EDGE			Edge of road
			FLNE			Roadways: fire lane

NEWW			GRAL		Guardrails
			GRVL		Gravel road
NEWW			MRKG		Roadways: pavement markings
			RPNT		Road survey points
			RSTA		Road stationing
			SDWK		Sidewalk
			SIGN		Traffic signs
NEWW NEWW			STAN		Roadways: stationing
			STRP		Striping
NEWW NEWW NEWW			TEXT		Text
			UPVD		Roadways: unpaved surface
			WHIT		Roadways: white paint
			YELO		Roadways: yellow paint
		SITE	Civil Site Elements		
			APIT		Air service pit
				VENT	Air vent
			AWTR	PITT	Air water pit
			BNCH		Park bench
			EQMT		Machine
				FARM	Fire alarm
				PUMP	Pump
				PUMP	Sump pump
			FENC		Fence
				ASPH	Fence at asphalt
				CLNK	Fence chain link
				CRDR	Card reader
				CRNR	Fence corner
				GATE	Gate
				GATE	Gate control box
				GATE	Gate post
				TEMP	Fence temporary
			HTCH		Misc. hatch
			MLBX		Mailbox
			RPRP		Rip rap
			RRCK		Rat rock
			VALT		Vault corner
			VALT		Vault corner
			VENT		Vent
			WPIT		Water service pit
		SFNC	Security Fence		
			AOPF		Airside operations security fence
			BLST		Blast fence
			FAAF		FAA security fence

		SGAT			Security control gates
			FAAG		FAA secure area access gate
		SRVY			Survey data
			ALGN		Alignment
			BENC		Benchmarks
			BNDY		Survey boundary
			BRNG		Bearing and distance
			CLIN		Survey control lines
			CRNR		Surveyed corner
			DATM		Datum information
			GRID		Grid system
				LAMB	Lambert system
				STIA	SeaTac system
				TIDE	Tideland system
			MONS		Survey monuments
				RMON	Row monument
				WMON	Water monument
			PONT		Survey point data
				TEXT	Survey point text
			SNDG		Sounding data
				TEXT	Sounding data text
			TEXT		General text
			TRAV		Traverse data
				BCRV	Beginning of curve
				BSLN	Baseline
				CHEK	Traverse check
				CPNT	Control points
				ECRV	End of curve
				INST	Instrument setup
				PCRV	Point of curve
				PTAN	Point of tangent
				RADI	Radius of curve
				TEMP	Temporary traverse data
				TEXT	Traverse text
		SSWR			Sanitary sewer systems
			CBSN		Catch basin
			COUT		Clean out
			EQMT		Generic sanitary sewer system equipment not associated with other systems
			FLOW		Flow line sewer
NEWW			FORC		Sanitary sewer: force main
NEWW			FTTG		Caps, crosses, and tees

NEWW NEWW			JBOX			Junction boxes
			LATL			Sanitary sewer: lateral line
			LFTS			Lift station
				PUMP		Lift station pumps
			MNHL			Manhole
				COMB		Combined manhole (sewer / storm)
				STCR		Manhole Structure
			OWSP			Oil Water or Grease Separator
			PUMP			Sanitary sewer Pump elements
			PIPE			Piping
NEWW NEWW NEWW NEWW				ABND		Abandoned sanitary sewer pipe
				CAPS		Blind flange or cap
				FMAN		Force main piping
				GRAV		Gravity drain piping
				STUB		Pipe stub
				TEMP		Temporary IWSS piping
			SPRT			Pipe and equipment supports
			STAN			Sanitary sewer: stationing
			STRC			Sewer Structural elements
			UGND			Sanitary sewer: underground
NEWW			TEXT			Text
			VENT			Sanitary sewer Venting elements
			VALT			Vaults
			VALV			Valves
		STEM				Steam systems site
NEWW NEWW			FTTG			Caps, crosses, and tees
			EQMT			Generic steam equipment not associated with other systems
			INST			Steam system: instrumentation
			MNHL			Manhole
			PIPE			Piping
				CAPS		Blind flange or cap
				EXPJ		Expansion joint
			SPRT			Pipe and equipment supports
			TEXT			Text
			TRAP			Steam trap
NEWW				BUCK		Bucket type steam trap
			UGND			Steam system: underground
			VALT			Vaults
			VALV			Steam valves
NEWW			VENT			Steam Venting system elements

		STRC		Structural elements site
NEWW			BASE	Equipment Support Base
			BCNV	Baggage conveyor
			BLOK	Concrete block
			CONC	Concrete site elements
			CTWK	Catwalk
			FOOT	Structural footing
			HRAL	Handrail
			JOIN	Structural joint
			CNST	Construction joint
			EXPJ	Expansion joint
			MFAB	Metal fabrications
			MPLT	Metal plate
			PADS	Structural elements site pads
			PFRM	Platform
			POST	Structural post
			METL	Metal post
			WOOD	Wood post
			RAMP	Ramp
			CONC	Concrete ramp
			LOAD	Loading ramp
			METL	Metal ramp
NEWW			RPRP	Rip-rap
			RRCK	Rat-rock
			RTWL	Retaining wall site structures
			FACE	Face of retaining wall
			TOPW	Top of retaining wall
			RUBL	Concrete rubble
			SCOL	Structural columns site
			CRNR	Column corner
			SDEK	Structural deck site
			SDWK	Sidewalk site
			SFAB	Structural fabrications site
			SFND	Structural foundations site
			FOOT	Foundation footings site
			PILE	Foundation piles site
			SFRM	Structural framework site
			SIGN	Sign elements
			BASE	Sign support base
			SBRG	Sign-bridge
			SLEV	Sleeve for utilities
			SPAD	Structural concrete pads
			SSLB	Structural slab site
			STEP	Stairs site

			STWL			Structural walls site
			TMBR			Structural timber site
		STRM				Storm sewer systems
NEWW			CBSN			Catch basin
			CHUT			Chutes and concrete erosion control Structures
			CLVT			Culvert
			CNTR			Storm sewer: center
			COUT			Clean out
				CONC		Concrete culvert
			DRAN			Storm drain
				RDRN		Roof storm drain
				UNKN		Unknown storm drain
			DTCH			Drainage ditch
			EQMT			Generic storm water equipment not associated with other systems
			FLOW			Flow line
			FLSH			Gutter flush
			FMON			Flow monitoring station
NEWW NEWW			FTTG			Caps, crosses, and tees
NEWW			GUTR			Gutter
			HWAL			Headwalls and end walls
			LFTS			Lift station
				PUMP		Lift station pumps
NEWW			MNHL			Manhole
				COMB		Combined manhole (Sewer/ Storm)
				MTRO		Metro storm manhole
				UNKN		Unknown storm manhole
				STCR		Manhole storm water Structure
			OFAL			Storm System Outfalls
			OWSP			Storm oil water separator
			PIPE			Piping
				ABND		Abandoned sanitary sewer pipe
				CAPS		Blind flange or cap
				FCMN		Force main piping
				GRAV		Gravity drain piping
				HALF		Gutter pipe half
				NPRF		Non-perforated pipe
				PERF		Perforated pipe
				ROFD		Roof drain
				STUB		Storm pipe stub
				UNKN		Unknown drain

NEWW			RFDR			Roof drain line
NEWW			RISR			Storm drain risers
			SPRT			Pipe and equipment supports
NEWW			STAN			Storm sewer: stationing
NEWW			STRC			Storm sewer Structural elements
NEWW			SUBS			Subsurface drain piping
			TEXT			Text
NEWW			VENT			Storm sewer Venting system elements
			UDRN			Under-drain elements
NEWW			UGND			Storm sewer: underground
			VALT			Vaults
			VALV			Valves
		SYRD				Ship yard site
			EQMT			Generic ship yard equipment not associated with other systems
			FENC			Security fence
			GATE			Entrance and exit gates
			SBOT			Security booth
			SCAL			Weigh scales
				EQMT		Scale equipment
				SPIT		Scale pit
			SIGN			Shipyard signs
				CLOC		Shipyard container location signs
				SGNL		Shipyard traffic signals
				TSGN		Shipyard traffic signs
			SPRT			Pipe and equipment supports
			WASH			Truck wash system equipment
		TOPO				Topography site
			APPR			Runway approaches
NEWW			AUCO			Noise Complaint
NEWW			AUST			Noise Monitoring Station
NEWW			AUZN			Noise Contour/Zone
NEWW			BKLN			Break lines
NEWW			BORE			Boring locations
			CREK			Creek
				EDGE		Edge of creek
				FLIN		Creek flow line
NEWW			DEPR			Topographic feature: depression
NEWW			GRVL			Topography Gravel
			GRAD			Grading limits
NEWW			FLZN			Flood Zone

NEWW NEWW			MAJR			Major contours
			MINR			Minor contours
			NCTR			Normal contour
			EXST			Existing grades
			GRAD			Finished grade
			GRBR			Grade break
			ORGR			Original ground
		RIVR			River	
			EDGE			Edge of river
			FLIN			River flow line
NEWW		RTWL			Retaining wall	
		SHOR			Shoreline	
			EDGE			Edge of shoreline
		SLOP			Slopes	
			TOES			Toe of slope
			TOPS			Top of slope
NEWW NEWW NEWW		SLTP			Top/toe slopes	
		SOUN			Soundings	
		SPOT			Spot elevations	
		SUBG			Sub-grades	
		GRVL			Gravel sub-grade	
NEWW		TPIT			Topographic feature: test pits	
		TEXT			Text	
		WTRW			Waterways	
			EDGE			Edge of water
		XCTR			Index contours	
		TRAF				Traffic control devices and signage
NEWW			ATTE			Attenuators traffic
	BARR				Barriers traffic	
			JRSY			Jersey barrier
	GRAL				Guard rails	
	ISLD				Traffic islands	
	LOAD				Traffic load limits	
	MBOX				Mail box	
	PANL				Traffic signal control panels	
			POST			Traffic control post Structure
		SIGN			Traffic signs	
			BASE			Sign support base
			DNOT			Do not enter sign
			ESGN			Electric traffic sign
			LTRN			Left turn arrow
			RTRN			Right turn arrow

			SIGN			Traffic signs
				SBAR		Stop bar
				SDWK		Sidewalk
				SLIM		Speed limit text
				SPST		Sign post
				STOP		Stop sign
				STRT		Straight arrow
				TEMP		Temporary striping
				TEXT		Traffic control/warning text
				WARN		Warning sign
				YELD		Yield sign
				SGNL		Traffic signals or electrical signals
			STRP		Traffic control striping (paint stripe)	
				FOGL		Fog line
				HASH		Hashed stripe
				LSTR		Left straight arrow
				LTRN		Left turn arrow
				RSTR		Right straight arrow
				RTRN		Right turn arrow
				SBAR		Stop bar
				STRT		Straight arrow
			YELD		Yield sign	
			TPST		Traffic posts	
				GARD		Guard posts
		TUNL				Tunnels (railroad roadway transit and utility tunnels)
			EQMT			Generic tunnel equipment not associated with other systems
			HGWY			Highway/roadway tunnel
				TSTR		Tunnel Structure
			RDWY			Roadway tunnel
				TSTR		Tunnel Structure
			RRTN			Railroad tunnel
				TSTR		Tunnel Structure
			TRAN			Transit tunnel
				TSTR		Tunnel Structure
			UTIL			Utility tunnel
				TSTR		Tunnel Structure
		WATR				Domestic water systems site
NEWW			ABND			Abandoned piping
			BKFL			Backflow preventer
			CMTR			City Meter
			DCBA			Double check backflow assembly

NEWW			DEVC			Connectors, faucets, reducers, regulators, etc.
			DOMW			Domestic cold water
			FTTG			Caps, cleanouts, crosses, and tees
			EQMT			Generic domestic water equipment not associated with other systems
				FHOS		Fire hose
			ETNK			Expansion or surge tank
			HBIB			Domestic water hose Bibb
			HYDT			Hydrants
				FHYD		Fire hydrant
				SHIP		Ship's hydrant
				WHYD		Wall hydrant
				YARD		Yard hydrant
			INST			Water supply: instrumentation
			LFTS			Lift station
			METR			Meter (non Port of Seattle)
NEWW			MNHL			Manhole
				STCR		Manhole water Structure
			NHYD			Non-potable hydrants/flushing hydrants
			PIPE			Domestic water pipe
				ABND		Abandoned water pipe
NEWW				CAPS		Blind flange or cap
				FPRO		Fire protection piping
				SMON		Water monument
				TEMP		Temporary water pipe
			PITT			Water pit
NEWW			PMTR			Port of Seattle water meter
			PUMP			Domestic water pumps
			RPBA			Reduced pressure backflow assembly
			RSVR			Reservoirs
NEWW			SPGT			Water spigot
			SPRT			Pipe and equipment supports
			STAN			Water supply: stationing
NEWW			STNK			Domestic water tanks
			STRC			Water Structural elements
NEWW			TEXT			Text
			VALT			Vaults
			VALV			Valves
NEWW			VENT			Vent pits
			UGND			Water supply: underground
NEWW			WELL			Water wells
Requires Optional Modifier for Elements Matching Layer Description						

Landscaping Layers

Some 1st Optional Root Modifiers have been specified in the standard. If the object or element being drawn matches the layer description notes, the 1st Optional Root Modifier indicated must be used. The intent is to provide a consistent method of identifying the most common elements found throughout the Port of Seattle's properties and infrastructure. Objects or elements found on incorrect layers during the QC review process will be flagged as errors and will need to be corrected.

Notes for Landscape Drawings:

1. To the greatest extent possible, the layer standards are divided into "systems". All utilities, equipment, structural elements, etc., associated with a "system" must be placed on layers associated with that "system".
2. Do not place text, notes, leaders, etc., on X-Refs. These should be placed on each individual drawing. Text and pattern X-Ref's that are sized for the drawing they are attached to are acceptable.
3. For landscape utility plans, place all piping and fittings on piping layers. Put valves on valve layers, equipment on equipment layers, symbols on symbol layers, etc., (i.e., do not put valves on equipment layers or symbols on piping layers, etc.). This prevents issues associated with drawings at different scales. Align all valves with the piping in the direction of flow.

Trade	Level	Root	Root Modifier	1st Optional Modifier	2nd Optional Modifier	Description
L						
		FOUN				Fountain
		IRRG				Irrigation systems
		LBRG				Landscape Bridge
		LDEK				Landscape deck
		LFEA				Landscape features
		LFUR				Landscape furniture
		LLIT				Landscape lighting
		PATH				Landscape paths other than sidewalks
		PLNT				Planted areas and components
		POND				Landscape ponds
NEWW		PVMT				Landscape Pavement
NEWW		SITE				Landscape Site Elements
NEWW		TOPO				Topographic feature
Additional Root Modifiers for Landscaping Root Layers only						
			GCOV			Ground coverage
			GRPH			Graphic images or renderings
			LCOV			Landscape groundcover
			SLEV			Sleeve for utilities
			STAN			Stationing data (pipe, project, etc.)
Generic Root Modifiers for All Landscaping Root Layers						
			ABOV			Above
			ACCY			Accessory
			AREA			An Area within Specific Boundaries
			AUXL			Auxiliary
			BELW			Below
			BYND			Object beyond
			CNTR			Centerlines

NEWWW NEWWW NEWWW NEWWW NEWWW NEWWW NEWWW NEWWW			DIMS			Dimensions
		FNSH			Surface Finish	
		FITG			Fitting	
		FIXT			Fixture	
		GENL			General Component Elements	
		GRID			Grids generic	
			BUBL		Grid Bubbles	
		HIDE			Hidden lines or objects	
		IDEN			Equipment or material system ID	
		MATL			Material	
		MISC			Elements not covered by other modifiers.	
			NICN		Not in contract	
			NOTE		General Notes	
			NPLT		Non-plotting graphic information	
			NPOS		All Non-POS property lines equipment etc.	
			OPEN		Openings, ceiling/roof penetrations, ETC.	
			OPTN		Optional elements or equipment	
			OTLN		Object Outlines	
			OVHD		Objects Overhead	
			PATT		Floor Pattern or Hatch Patterns	
			PHAS		Phasing	
			PHTO		Photograph	
			PPOS		POS property line	
			REVN		Rev Deltas & clouds + revision text	
			SIGN		Signs or signage	
			SPCL		Specialty equipment	
			SYMB		Symbols	
			TEMP		Temporary	
	TEXT		Text associated with root			
	UTIL		Utility			
Additional Optional Root Modifiers for All Landscaping Valve Layers (Only)						

		FOUN			Fountain
			VALV	ANGL	<i>Angle valves</i>
				AVAC	<i>Air/vacuum valves</i>
				BFLY	<i>Butterfly valve</i>
				BVLV	<i>Ball valves</i>
				CHEK	<i>Check valves</i>
				DRAN	<i>Drain valves</i>
				FCVL	<i>Flow control valves</i>
				FREZ	<i>Freeze protection valves</i>
				GLOB	<i>Globe valves</i>
				GVLV	<i>Gate valves</i>
				PIVL	<i>Post indicator valve</i>
				PLUG	<i>Plug valves</i>
				PREG	<i>Pressure regulator valve</i>
				SAFE	<i>Safety valves</i>
				STRN	<i>Strainers</i>
				VVLV	<i>High point vent valves</i>
		FOUN			Fountain
			VALV	ANGL	<i>Angle valves</i>
				AVAC	<i>Air/vacuum valves</i>
				BFLY	<i>Butterfly valve</i>
				BVLV	<i>Ball valves</i>
				CHEK	<i>Check valves</i>
				DRAN	<i>Drain valves</i>
				FCVL	<i>Flow control valves</i>
				FREZ	<i>Freeze protection valves</i>
				GLOB	<i>Globe valves</i>
				GVLV	<i>Gate valves</i>
				PIVL	<i>Post indicator valve</i>
				PLUG	<i>Plug valves</i>
				PREG	<i>Pressure regulator valve</i>
				SAFE	<i>Safety valves</i>
				STRN	<i>Strainers</i>
				VVLV	<i>High point vent valves</i>
		POND			Fountain
			VALV	ANGL	<i>Angle valves</i>
				AVAC	<i>Air/vacuum valves</i>
				BFLY	<i>Butterfly valve</i>
				BVLV	<i>Ball valves</i>
				CHEK	<i>Check valves</i>

				DRAN		Drain valves
				FCVL		Flow control valves
				FREZ		Freeze protection valves
				GLOB		Globe valves
				GVLV		Gate valves
				PIVL		Post indicator valve
				PLUG		Plug valves
				PREG		Pressure regulator valve
				SAFE		Safety valves
				STRN		Strainers
				VVLV		High point vent valves
Specific Root Modifiers for Land Scape Root Layers						
		FOUN				Fountain
			CIRC			Power circuit
			CTRL			Control station
			PANL			Fountain power/control panel
			PIPE			Fountain water piping
			PUMP			Fountain pumps
			SPRT			Pipe and equipment supports
			VALV			Fountain valves
		IRRG				Irrigation systems
			CIRC			Control circuit
			COND			Conduit
NEWW			COVR			Irrigation coverage, spray distribution patterns
			CSTA			Valve control station
NEWW			DRIP			Irrigation: drip irrigation tubing
			EQMT			Irrigation: equipment (pumps, valves, and controllers)
NEWW			LTRL			Irrigation: lateral pipe
NEWW			MAIN			Irrigation: mainline
			PANL			Power/control panel
			PIPE			Irrigation piping
			PUMP			Irrigation pump
NEWW			SLVE			Irrigation: pipe sleeve
			SPRK			Sprinkler head
				FULL		Sprinkler head full coverage
				HALF		Sprinkler head ½ coverage
				HEAD		Sprinkler Head
				IMPL		Sprinkler head Impulse type
				QRTR		Sprinkler head ¼ coverage

			SPRT			Pipe and equipment supports
			VALV			Valves
			VBOX			Valve box
		LBRG				Landscape Bridge
			CONC			Concrete Landscape Bridge
			ROCK			Rock Landscape Bridge
			WOOD			Wood Landscape Bridge
		LDEK				Landscape deck
			CONC			Concrete deck
			FLLD			Deck floor load schedule
			WOOD			Wood deck
		LFEA				Landscape features
			LFEN			Landscape fence
			LROK			Landscape rocks
		LFUR				Landscape furniture
			BNCH			Bench
			TBLE			Table
		LLIT				Landscape lighting components low voltage
			CIRC			Landscape lighting circuit low voltage
			LSTA			Lighting control station
			PANL			Landscape lighting panel
		PATH				Landscape paths other than sidewalks
			ASPH			Asphalt paths
			BIKE			Bicycle paths
			CNTR			Path centerline
			GRVL			Gravel paths
			PEDS			Pedestrian paths
			STON			Stepping stones
			STRP			Striping
		PLNT				Planted areas and components
			ACCY			Accessory
			BEDS			Planting beds general
			BUSH			Landscape bushes
				DCID		Deciduous bushes
				EGRN		Evergreen bushes

NEWW			CONI			Plant and landscape material: coniferous trees
						Plant and landscape material: container or planter
NEWW			CTNR			
			CNST			Construction
			EDGE			Plant and landscape material: planting bed edger
NEWW			EVGR			Plant and landscape material: evergreen trees - broadleaf
			FLWR			Flower beds
				ANUL		Annual flower beds
				PERR		Perennial flower beds
			GCOV			Plant and landscape material: ground cover
			GRAD			Finished grade
			GRSS			Grass areas
				EXST		Existing grass areas
				NEWG		New grass areas
			LIST			Plant list
			MATL			Material
			MISC			Elements not covered by other modifiers.
NEWW						
			MLCH			Plant and landscape material: mulches - organic and inorganic
NEWW			PALM			Plant and landscape material: palm trees
			PLTR			Planter vegetation
			RWAL			Retaining wall
				CONC		Concrete retaining wall
				ROCK		Rock retaining wall
				TMBR		Timber retaining wall
NEWW			SEED			Plant and landscape material: seeding areas
			SHAD			Plant and landscape material: shadow area
NEWW			SFTY			Safety equipment
			SHRB			Shrub
				CONF		Coniferous shrub
				DCDS		Deciduous shrub
			SIGN			Signs or signage
			SOIL			Planting soil or mix
			SPCL			Specialty equipment
			SPRT			Planter and equipment supports

NEWW			SWAL			Landscape drainage swale	
				FLIN		Drainage flow line	
			TREE			Tree	
				CONF		Coniferous Tree	
				DCDS		Deciduous Tree	
				SHAD		Shade Tree	
NEWW			TURF			Plant and landscape material: lawn areas	
NEWW			VINE			Plant and landscape material: vines	
		POND				Landscape ponds	
			CIRC			Power circuit	
			CTRL			Control station	
			EQMT			Generic pond equipment not associated with other systems	
			PANL			Pond power/control panel	
			PIPE			Pond water piping	
			PUMP			Pond pumps	
			SPRT			Pipe and equipment supports	
			VALV			Pond water valves	
			WTRB			Water bodies	
			WTRW			Waterway or stream	
		PVMT				Landscape Pavement	
NEWW			ASPH			Pavement: asphalt	
NEWW			BRCK			Pavement: brick	
NEWW			CONC			Pavement: concrete	
NEWW			GRVL			Pavement: gravel	
NEWW			JNTC			Pavement: control joint	
NEWW			JNTE			Pavement: expansion joint (for concrete only)	
NEWW			PAVR			Pavement: unit pavers	
NEWW			RAMP			Pavement: accessible ramp	
NEWW			STRS			Pavement: stair treads	
		SITE				Landscape Site Elements	
NEWW			BRDG			Bridges	
NEWW			CURB			Site features: curb	
NEWW			DECK			Decks	
NEWW			FENC			Fencing	
NEWW				LINK			Fences: chain link
NEWW				PRVC			Fences: privacy
NEWW				WOOD			Fences: wood

NEWW			GATE			Gate
NEWW			PLAY			Play Structures
NEWW			POOL			Pools and spas
NEWW			PRKG			Site features: parking
NEWW			ROAD			Site features: edge of roadway line
NEWW			ROCK			Boulders and cobble
NEWW			RRAP			Site features: riprap
NEWW			RTWL			Retaining walls
NEWW			SPRT			Sports fields
NEWW			STEP			Site features: steps
NEWW			SWLK			Site features: sidewalks and steps
NEWW			TUNL			Tunnels
NEWW			TRAL			Site features: trail or path
NEWW			WALL			Site features: walls
		TOPO				<i>Topographic feature</i>
NEWW			LIMI			Topographic feature: limit of earthwork
NEWW			SPOT			Topographic feature: spot elevations

Architectural Layers

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Notes for Architectural Drawings:

1. To the greatest extent possible, the layer standards are divided into "systems". All utilities, equipment, structural elements, etc., associated with a "system" must be placed on layers associated with that "system".
2. Do not place text, notes, leaders, etc., on X-Refs. These should be placed on each individual drawing. Text and pattern X-Ref's that are sized for the drawing they are attached to are acceptable.

Trade	Level	Root	Root Modifier	1st Optional Modifier	2nd Optional Modifier	Description
A						
NEWW		APPL				All Appliances for the kitchen office etc.
		BAGS				Baggage and components
		CLNG				Ceilings and components
		COLS				Columns design and components
		DOOR				Doors
		ESCL				Escalators and components
		EVTR				Elevators and components
		FLOR				Floors and components
		FURN				Furniture and elements
		FXTR				Fixtures and their components
		GLAZ				Glazing and window elements
		HYGN				Health and Safety including asbestos abatement
		LADR				Ladders and their components
		ROOF				Roof
		STAR				Stairs and their components
		WALL				Walls
Generic Root Modifiers for All Architectural Root Layers						
			ABOV			Above
			ACCY			Accessory
			AREA			An Area within Specific Boundaries
			AUXL			Auxiliary
			BELW			Below
			BYND			Object beyond
			CNTR			Centerlines
			DIMS			Dimensions
			FNSH			Surface Finish
			FITG			Fitting
			FIXT			Fixture
			GENL			General Component Elements
			GRID			Grids generic
				BUBL		Grid Bubbles
			HIDE			Hidden lines or objects
			IDEN			Equipment or material system ID
			MATL			Material

NEWW			MISC			Elements not covered by other modifiers.
			NICN			Not in contract
NEWW			NOTE			General Notes
NEWW			NPLT			Non-plotting graphic information
NEWW			NPOS			All Non-POS property lines equipment etc.
			OPEN			Openings, ceiling/roof penetrations, ETC.
NEWW			OPTN			Optional elements or equipment
			OTLN			Object Outlines
NEWW			OVHD			Objects Overhead
			PATT			Floor Pattern or Hatch Patterns
NEWW			PHAS			Phasing
			PHTO			Photograph
NEWW			PPOS			POS property line
			REVN			Rev Deltas & clouds + revision text
NEWW			SIGN			Signs or signage
			SPCL			Specialty equipment
NEWW			SYMB			Symbols
			TEMP			Temporary
NEWW			TEXT			Text associated with root
			UTIL			Utility

Specific Root Modifiers for Architectural Root Layers						
		APPL				Appliance kitchen office
NEWW			CMPT			Computers
			COPY			Copiers scanners plotters
			DISH			Dishwasher
			FAUC			Faucet
			FREZ			Freezer walk in
			GRIL			Grille restaurant
			HOOD			Exhaust hood
			OVEN			Oven
			RCPT			Receptacles/power outlets
			REFR			Refrigerator
			SINK			Sink
			STOV			Stove

NEWW BAGS						
NEWW		BAGS				Baggage and components
NEWW			CART			Cart/Tug
NEWW			CATW			Catwalk
NEWW			CLMD			Claim Device
NEWW			CONV			Baggage Conveyor
NEWW			CRBS			Curbside Baggage
						Conveyor
			CTRL			Control
NEWW			DIMS			Dimensions
NEWW			EQMT			Equipment

NEWW			ICNV			Inbound Baggage Conveyor
NEWW			IOSZ			Inbound Oversized Baggage Conveyor
NEWW			MKUP			Make-Up Device
NEWW			NOTE			Notes
NEWW			OCNV			Outbound Baggage Conveyor
NEWW			OOSZ			Outbound Oversized Baggage Conveyor
NEWW			RAIL			Guardrail
NEWW			ROWY			Right-of-Way
NEWW			SCDR			Security Door
NEWW			SCNU			Screening Unit
NEWW			TCBC			Ticket Counter Baggage Conveyor
NEWW			TEMP			Temporary
NEWW			TTRY			Tilt-Tray Baggage System
NEWW			XFBC			Transfer Baggage Conveyor
NEWW			XRAY			X-Ray Unit
		CLNG				Ceilings and components
NEWW			ACCS			Ceiling: access
NEWW			CAMR			Ceiling Camera
NEWW			CHAS			Utility chase
			GRID			Grids generic
			GRIL			Grill ventilation supply/return
			HEAD			Ceiling Headers
			JOIN			Joint slab construction expansion
			LEVL			Level changes for floors or roofs.
			LGHT			Ceiling mounted lights
				EMER		Emergency lighting ceiling mounted
			OPEN			Ceiling and roof penetrations
			RCPT			Receptacles/power outlets
			RFDR			Roof drain
			SDET			Smoke detector
			SIGN			Signage
			SKYL			Skylight
			SOFF			Soffits
			SPKL			Fire protection sprinklers
			SPKR			Speakers
			SUSP			Ceiling: suspended elements
		COLS				Columns design and components
NEWW			CONC			Concrete columns
			COVR			Column Covers
			ENCL			Column enclosures/fire protection
			GRID			Column grids

				BUBL		Column grid bubbles
				CNTR		Column grid centerlines
			RCPT			Receptacles/power outlets
			STEL			Steel columns
		DOOR				Doors
			ADOR			Access door
			DRFM			Door frame
			DRNO			Door number
			EXTR			Exterior doors
			FDOR			Fire-door
			FNSH			Door finish/type
				GLAS		Glass doors
				METL		Metal doors
				WOOD		Wood doors
			FULL			
			HRDW			Door hardware
			INTR			Interior doors
			PRHT			Partial height doors
			ROLL			Rollup door
		EVTR				Elevators and components
			CABL			Elevator cable and sheaves
			CRDR			Elevator card reader
			CWGT			Elevator counter weight
			ECAB			Elevator cab frame
				FNSH		Elevator cab finish
				OPEN		Elevator cab access/egress opening
			ELDR			Elevator access egress ladders
			EVNT			Elevator passenger ventilation
			FDET			Elevator fire detector
				SNSR		Elevator fire sensor
			FNSH			Elevator finish
			GRAL			Elevator guide rail
			LGHT			Elevator lighting
				EMER		Emergency lighting
				NORM		Normal lighting
			MOTR			Elevator motors
			PANL			Elevator panels control fire
				EMER		Emergency panel fire department control
				OPER		Operations panel inside cab
			SDET			Elevator smoke detector
			SHFT			Elevator shaft
				SVNT		Elevator shaft vent
			SPRT			Equipment supports

		ESCL			Escalators and components
			ADOR		Maintenance access door
			EQMT		Generic escalator equipment not associated with other systems
			HRAL		Escalator handrail
			LNDG		Escalator landing
			MOTR		Escalator motor
			PANL		Escalators control/operations panels
			STEP		Escalator steps
		FIXT			Bathroom fixtures and their components
			COUN		Counters and shelves
			FAUC		Faucet
			SINK		Sinks
			SPRT		Fixture supports
			STAL		Floor: toilet partitions
			TOIL		Toilets
			URNL		Urinals
		FLOR			Floors components
NEWW			ADAE		AMERICAN DISABILITIES ACT (ADA) ELEMENTS
NEWW			CSWK		Built-in or free standing Casework
			CHAS		Utility chase
			DECO		Décor decorate
			FNSH		Floor finish
				CONC	Concrete finish
				MRBL	Marble finish
				SPCL	Special flooring
				TILE	Tile floor
			FLDR		Floor drain
			GRAD		Finish floor or grade
			HRAL		Hand rail
			JOIN		Construction/expansion Joint
			JOST		Floor joist
			LEAS		Tenant lease lines
			LEVL		Level changes for floors or roofs.
			MASN		Masonry
			MEZN		Mezzanine
			OPEN		Opening or penetration
			PATT		Pattern
			RCPT		Receptacles/power outlets floor mounted
			RMNM		Room names
			RMNO		Room number identification
			SHFT		Shafts
			SLEV		Utility sleeve
NEWW			STRP		Floor Striping

NEWW			WDWK			Floor: architectural woodwork
		FNDN				Building foundation and components
			FOOT			Footing
			FSLB			Floor slab
			FWAL			Foundation wall
			INSU			Foundation insulation
			OPEN			Opening or penetration
			PILE			Foundation piles
			SBAS			Sub-base
			SLEV			Utility sleeve
		FURN				Furniture components
			CASE			Book cases cabinets etc.
			CHAR			Chairs, sofas, etc
			FILE			File cabinets
NEWW			FIXD			Fixed furnishings
NEWW			FREE			Free-standing furnishings (desks, beds, tables, dressers, credenzas, case goods)
			PLTR			Planters vegetation
			PNLS			Panels furniture system
			RCPT			Receptacles/power outlets
			STOR			Storage furniture
NEWW			SYST			Systems Furniture
			TABL			Tables and counters
			WDWK			Wood work
			WKSF			Work surface components
		GLAZ				Glazing and window elements
			EXTR			Exterior windows
			FNSH			Window finish
			INTR			Interior windows
NEWW			PRHT			Partial Windows
			SILL			Window sill
			WFRM			Window frame
		HYGN				Health & Safety plus asbestos abatement
			ASBS			Asbestos contaminated areas
			HAZM			Hazardous material storage area
			MPCT			Impacted areas (clean up/abatement)
		LADR				Access and maintenance ladders and their components permanent
			GRAL			Ladder guardrail

			HRAL			Ladder handrail
			LDRL			Ladder landings
				GRAT		Landing grating
			SPRT			Ladder structural support
			STEP			Ladder steps rungs
		ROOF				Roof components
			ACCY			Accessory
			BEAM			Roof beam
			CAPY			Canopies
NEWW			EXPJ			Expansion joints
			EQMT			Roof equipment
NEWW			GUTR			Roof internal gutters
NEWW			HRAL			Roof: handrails
			INSU			Insulation
			JOIN			Slab construction/expansion joint
			JOIS			Roof joist
			LEVL			Level changes for floors or roofs.
			MATL			Roof Material
			OPEN			Ceiling and roof penetrations
			OTLN			Roof Outlines
			PATT			Pattern
			RCPT			Receptacles/power outlets
			RFDR			Roof drain
			RFNG			Roofing materials
NEWW			RISR			Roof: stair risers
			SDRN			Roof storm drain pipe
			SLEV			Utility sleeve
			SKYL			Skylights
			SLOP			Roof slope
NEWW			STRS			Roof: stair treads, ladders
			TRUS			Roof truss
NEWW			WALK			Roof walkways
NEWW			WAAL			Parapet walls and wall caps
		STAR				Stairs and their components
			CATW			Catwalk
				GRTG		Grating
			EMER			Emergency egress stairs
			FESC			Fire escape
			LNDG			Stair landing
			HRAL			Stair handrail
			STEP			Stair steps
			TRED			Treads on Steps

		WALL			Walls and components	
NEWW			AGAP		Air gap	
			BACK		Backing	
			CBLK		Concrete block	
			CUBE		Cubical walls	
			CURT		Curtain wall	
			CWMG		Curtain wall mullions and glass	
NEWW			EXTR		Exterior	
			FIRE		Walls: fire protection	
NEWW			FULL		Full height wall	
			FWAL		Fire wall	
			GLAS		Glass walls	
			HEAD		Header door or window	
			HRAL		Wall mounted handrail	
			INSU		Insulation	
			INTR		Interior Walls	
			MASN		Masonry block wall	
			MOVE		Walls: moveable partitions	
			OPNG		Wall opening or penetration	
			PART		Partition	
			PRHT		Partial height doors and walls	
			RCPT		Receptacles/power outlets	
			RT1H		1 Hour Wall rating	
			RT2H		2 Hour Wall rating	
			RT3H		3 Hour Wall rating	
			SLEV		Sleeves for pipe conduit etc	
			STUD		Wall studs	
				METL		Metal wall studs
				WOOD		Wood wall studs
Requires Optional Modifier for Elements Matching Layer Description						

Structural Layers

Some 1st Optional Root Modifiers have been specified in the standard. If the object or element being drawn matches the layer description notes, the 1st Optional Root Modifier indicated must be used. The intent is to provide a consistent method of identifying the most common elements found throughout the Port of Seattle's properties and infrastructure. Objects or elements found on incorrect layers during the QC review process will be flagged as errors and will need to be corrected.

Notes for Structural Drawings:

1. To the greatest extent possible, the layer standards are divided into "systems". All utilities, equipment, structural elements, etc., associated with a "system" must be placed on layers associated with that "system".
For example: All structural elements of a dock must be placed on individual layers (i.e., deck panels on deck panel layer, fenders on fender layer, pile cap on pile cap layer, etc.).
2. Do not place text, notes, leaders, etc., on X-Refs. These should be placed on each individual drawing. Text and pattern X-Ref's that are sized for the drawing they are attached to are acceptable.

Trade	Level	Root	Root Modifier	1st Optional Modifier	2nd Optional Modifier	Description
S						
		COLS				structural columns
		DOCK				Docks Piers and their components
		FABS				structural fabrications
		FLOR				structural floors and elements
		FNDN				Foundations and elements
		FRAM				structural framing
		ROOF				structural roof
		SLAB				structural slabs
		WALL				structural Walls
Additional Root Modifiers for structural Root Layers (Only)						
NEWW			ABLT			Anchor bolt
			BLOK			Concrete blocks
			BRNG			Bearing structural
		NEWW NEWW NEWW			COLM	
CONC						Concrete
FLLD						Floor load schedule
	GYWR					Guy wire
	RBAR					Rebar
	SAFE					Safety Barriers
				FENC		Fencing
	HRAL		Handrails			
	SLEV			Sleeve for utilities		
Generic Root Modifiers for All structural Root Layers						
			ABOV			Above
			ACCY			Accessory
			AREA			An Area within Specific Boundaries
			AUXL			Auxiliary
			BELW			Below
			BYND			Object beyond
			CNTR			Centerlines
			DIMS			Dimensions
			FNSH			Surface Finish
			FITG			Fitting
			FIXT			Fixture
			GENL			General Component Elements
			GRID			Grids generic

NEWW NEWW NEWW NEWW NEWW NEWW NEWW				BUBL		Grid Bubbles
		HIDE			Hidden lines or objects	
		IDEN			Equipment or material system ID	
		MATL			Material	
		MISC			Elements not covered by other modifiers.	
		NICN			Not in contract	
		NOTE			General Notes	
		NPLT			Non-plotting graphic information	
		NPOS			All Non-POS property lines equipment etc.	
		OPEN			Openings, ceiling/roof penetrations, ETC.	
		OPTN			Optional elements or equipment	
		OTLN			Object Outlines	
		OVHD			Objects Overhead	
		PATT			Floor Pattern or Hatch Patterns	
		PHAS			Phasing	
		PHTO			Photograph	
		PPOS			POS property line	
		REVN			Rev Deltas & clouds + revision text	
		SIGN			Signs or signage	
		SPCL			Specialty equipment	
		SYMB			Symbols	
		TEMP			Temporary	
		TEXT			Text associated with root	
		UTIL			Utility	
		COLS				structural columns
NEWW NEWW			ABLT			Anchor bolt
			ALUM			Columns: aluminum
NEWW			COLM			Columns Elements
			CONC			Concrete columns
NEWW				RBAR		Column reinforcing
			COVR			Column Covers
NEWW			GRID			Column grid
				BUBL		Grid bubbles
NEWW NEWW				CNTR		Grid centerlines
			PRIM			Primary columns
NEWW			SCND			Secondary columns
			STEL			Steel columns
NEWW			WOOD			wood Columns

		DOCK			<i>Docks Piers and their components</i>
NEWW			ALDR		Access ladders (permanent)
			COLM		Columns Elements
			BEAM		Dock beams
			BENT		Bent Gridlines
				BUBL	Bent bubbles
				CNTR	Bent centerlines
			BLRD		Bollards
			BRTH		Ship Berth
			BULK		Bulkhead
			BULR		Bull rail
			CLET		Cleats
			CONC		Dock concrete
				CURB	Dock concrete curbs
			DECK		Deck
				DKDR	Deck drains
				DPNL	Deck panel
			DOLP		Dolphin
			EQMT		Dock equipment
				GCRN	Gantry crane
				PASS	Passenger loading elements
				SCAL	Weigh scales
				WASH	Truck wash
			FLTS		Floats
			FNDR		Fenders
			GRAL		Guard Rail
			GRID		Pile or column grid
				BUBL	Pile or column grid bubbles
				CNTR	Pile or column grid centerlines
			HTCH		Utility Hatch (Ships Hydrant, Water Hatch & Ship Electrical)
			HRAL		Handrail
			LFRG		Life ring
			MFAB		Metal fabrications
			PADS		Concrete Pads
			PCAP		Pile cap
				CONC	Pile cap concrete
				RBAR	Pile cap rebar
			PILE		Piles
				AUGR	Auger cast piles
				BATT	Batter piles
				BEAR	Bearing piles
				CONC	Concrete piles

				EXST		Existing piles
				FNDR		Fender piles
				FUTR		Future piles
				MCRO		Micro piles
				MOOR		Mooring piles
				SHTP		Sheet pile
				TIMB		Timber piles
			PNSK			Pin socket
			PVMT			Pavement
			RAIL			Rails
				CRAN		Crane rail
				STOP		Crane stop
			SLEV			Sleeve for utilities
			SPDR			Spreader
			SPRT			Pipe and equipment supports
			STEP			Stairs and platforms
			STGR			Timber stringer
TEXT			Text			
TMBR			Timber dock elements			
WHLR			Whaler			
		FABS				structural fabrications
NEWW			ABLT			Anchor bolts
			COLM			Columns Elements
			BASE			structural bases for equipment
				EQAK		Equipment earthquake restraints
				VIBR		Equipment vibration isolation bases
			BEAM			structural beams
			BRAC			structural bracing
			CATW			Catwalk
				GRAT		Grating
			MFAB			Metal fabrications
			PLAT			Metal plates
			POST			structural posts
			RAMP			Ramps
			SPRT			Equipment and pipe supports
			STEP			Stair steps
				ALDR		Access/maintenance ladders
				HRAL		Handrail
WELD			Fabrication welding symbols			

		FLOR			structural floors and elements
			BEAM		Floor beams
NEWW			COLM		Columns Elements
NEWW			CONC		Concrete
NEWW			FOOT		structural floor footings
			DECK		structural floor deck
NEWW			EDGE		Floor edge
			JOST		Floor joist
NEWW				BRDG	Bridging
NEWW				PRIM	Primary joists
NEWW				SECD	Secondary joists
NEWW			LEVL		Level Changes
NEWW			OVHD		Objects Overhead
			OPEN		Floor opening or penetration
NEWW			PADS		Concrete Floor pads
NEWW			RAMP		Floor Ramps
			RBAR		Floor reinforcing
			SLEV		Sleeve for utilities
		FNDN			structural foundations and their elements
NEWW			COLM		Columns Elements
NEWW			FACE		Foundation Face
			FOOT		Foundation: footings
				RBAR	Footing reinforcement
NEWW			GRBM		Foundation: grade beams
NEWW			OVHD		Objects Overhead
			PADS		Concrete equipment pads
				RBAR	Pad reinforcement
			PCAP		Foundation: pile caps
				RBAR	Pile cap reinforcement
NEWW			PIER		Foundation: drilled piers
			PILE		Foundation piles
				BEAR	Bearing piles
				CONC	Concrete piles
				FUTR	Future piles
				GRID	Pile grid
				RBAR	Pile reinforcement
				SHET	Sheet pile
				TIMB	Timber piles
				STEL	Steel piles
			RBAR		Foundation reinforcement
NEWW			RAMP		Concrete Ramps

			SLEV			Sleeve for utilities
NEWW			SDWK			Concrete Sidewalks
		FRAM				structural framing
NEWW			COLM			Columns Elements
			BEAM			structural frame-work beams
			BRAC			structural bracing
			BRKT			Brackets
			DECK			structural frame-work decking
NEWW			FOOT			structural framing footings
			JOIS			Joists that span between columns or posts
NEWW			OVHD			Objects Overhead
NEWW			PILE			structural framing piles
			SCOL			structural frame-work columns
				GRID		Framing grid
NEWW			SEIS			structural SEISMIC ELEMENTS
			SLEV			Sleeve for utilities
NEWW			STEL			Steel structural Elements
			TRUS			structural support truss
NEWW			STEP			structural Steps
		ROOF				Roof support Structure
			BEAM			Roof beams
				RBAR		Concrete beam reinforcement
				STEL		Steel beams
NEWW			DECK			Roof Deck openings
			JOIS			Roof joists
			TRUS			Roof truss
			EDGE			Roof support Structure edge
			JOIN			Slab control joints
NEWW			OVHD			Objects Overhead
			RBAR			Slab reinforcing
			SLEV			Sleeve for utilities
		SLAB				structural slabs
			CONC			Concrete slab
NEWW			DECK			Slab top surface
			EDGE			Slab edge
			JOIN			Slab control joints
NEWW			OPEN			Openings and penetrations
			RBAR			Slab reinforcing
			SLEV			Sleeve for utilities
NEWW			STEL			Slab: steel

NEWW			WOOD			Slab: wood
		STAR				Stairs and their components
NEWW			LADD			Stairs: ladders & ladder assemblies
NEWW			STRC			Stairs: structural elements
		WALL				structural walls
			ABOV			Wall Above
			BLOK			Concrete block walls
				RBAR		Concrete block wall reinforcement
NEWW			COLM			Columns Elements
			CONC			Concrete walls
NEWW			EXTR			interior Walls
NEWW				RBAR		Concrete wall reinforcement
NEWW			HBAR			Horizontal/secondary reinforcement
NEWW			INTR			interior Walls
NEWW			LOAD			Load bearing CMU walls
			MSNY			Masonry walls
				RBAR		Masonry wall reinforcement
			NONL			Non-load bearing CMU walls
NEWW			OPEN			Wall penetration or opening
NEWW			OVHD			Objects Overhead
NEWW			PCST			Precast walls concrete
			RETN			Retaining walls
				RBAR		Retaining wall reinforcement
			SHEA			structural bearing or shear walls
NEWW			SLEV			Sleeve for utilities
NEWW			STEL			Walls: steel stud
			STUD			Stud walls
				METL		Metal stud walls
				WOOD		Wood stud walls
NEWW			VBAR			Vertical/primary reinforcement
NEWW			VENR			Walls: veneer
NEWW			WOOD			Walls: wood
Requires Optional Modifier for Elements Matching Layer Description						

Mechanical Layers

Some 1st Optional Root Modifiers have been specified in the standard. If the object or element being drawn matches the layer description notes, the 1st Optional Root Modifier indicated must be used. The intent is to provide a consistent method of identifying the most common elements found throughout the Port of Seattle's properties and infrastructure. Objects or elements found on incorrect layers during the QC review process will be flagged as errors and will need to be corrected.

Notes for Mechanical Drawings:

1. To the greatest extent possible the layer standards are divided into "systems". All utilities, equipment, structural elements, etc., associated with a "system" must be placed on layers associated with that "system".
2. Do not place text, notes, leaders, etc., on X-Refs. These should be placed on each individual drawing. Text and pattern X-Ref's that are sized for the drawing they are attached to are acceptable.
3. For mechanical utility plans, place all piping and fittings on piping layers. Put valves on valve layers, equipment on equipment layers, controls on control layers, symbols on symbol layers, etc., (i.e., do not put valves, equipment, or symbols on piping layers, etc.). Align all valves with piping in the direction of flow.

Trade	Level	Root	Root Modifier	1st Optional Modifier	2nd Optional Modifier	Description
M						
NEWW		ACID				Industrial Waste Piping
		AH##				<i>Air Handling Units (AH01-AH99)</i>
		AMMO				<i>Ammonia systems</i>
		BAGC				<i>Baggage systems</i>
NEWW		BRIN				Brine systems
		CDSR				<i>Condenser water systems</i>
		CHEM				<i>Chemical Treatment System</i>
		CHWR				<i>Chilled water systems</i>
		CMPA				<i>Compressed/processed air systems</i>
		CNDS				<i>Condensate systems</i>
		CNVR				<i>Conveyor systems</i>
		CS##				<i>Central Station Air handling Units (CS01-CS99)</i>
NEWW		DOMW				Domestic water systems
NEWW		DUAL				Dual temperature systems
		DUST				<i>Dust collection and control systems</i>
		EXHS				<i>Industrial and commercial exhaust system</i>
		FDSL				<i>Diesel fuel systems</i>
		FGAS				<i>Fuel gas (gasoline) systems</i>
NEWW		FJET				Jet fuel system elements
		FOIL				<i>Fuel oil systems</i>
		GLYC				<i>Glycol systems</i>
		HHWT				<i>Heating Hot water systems</i>
		HVAC				<i>Generic or Single Unit HVAC Systems</i>
		HYDL				<i>Hydraulic systems</i>
		IWTP				<i>Industrial wastewater treatment plant systems and components</i>
		LPAR				<i>Low pressure compressed air systems</i>
		METH				<i>Methane systems</i>

		MTNK				Miscellaneous storage tanks, buildings
		NGAS				Natural gas systems
		PROC				Mechanical process systems for buildings
		PRPN				Propane systems
		REFG				Refrigeration systems
		STEM				Steam systems for buildings
		VACM				Vacuum systems
Additional Optional Root Modifiers for Mechanical Root Layers (only)						
			ADAE			Americans with disabilities
			BASE			Equipment Base
			DDTU			Dual duct terminal units
			FLOW			Flow
				FLIN		Flow line
			GRAD			Finished grade
			GRAV			Gravity flow
			INST			Instrumentation
			INSU			Pipe and equipment insulation
			PADS			Equipment pads
			RPIP			Return pipe
			ROLL			Rolling stock equipment
			SEIS			Seismic restraints
			SDTU			Single duct terminal unit
			SGNL			Signal
			SLEV			Sleeves for utilities
			SNUM			System Identification Number
			SNSR			Sensor
			SPIP			Supply pipe
			STAN			Stationing data (pipe project etc.)
			THRM			Thermostats
			TIED			Tied
			UHTR			Unit heater
			UTIL			Utility
			VENT			Equipment vents
			VIBR			Vibration isolation of equipment piping ductwork pumps etc.
Generic Root Modifiers for All Mechanical Root Layers						
			ABOV			Above
			ACCY			Accessory

NEWW NEWW NEWW NEWW NEWW NEWW NEWW			AREA			An Area within Specific Boundaries	
			AUXL			Auxiliary	
			BELW			Below	
			BYND			Object beyond	
			CNTR			Centerlines	
			DIMS			Dimensions	
			FNSH			Surface Finish	
			FITG			Fitting	
			FIXT			Fixture	
			GENL			General Component Elements	
			GRID			Grids generic	
				BUBL		Grid Bubbles	
			HIDE			Hidden lines or objects	
			IDEN			Equipment or material system ID	
			MATL			Material	
			MISC			Elements not covered by other modifiers.	
				NICN			Not in contract
		NOTE				General Notes	
		NPLT				Non-plotting graphic information	
				NPOS			All Non-POS property lines equipment etc.
				OPEN			Openings, ceiling/roof penetrations, ETC.
				OPTN			Optional elements or equipment
				OTLN			Object Outlines
				OVHD			Objects Overhead
				PATT			Floor Pattern or Hatch Patterns
				PHAS			Phasing
				PHTO			Photograph
				PPOS			POS property line
				REVN			Rev Deltas & clouds + revision text
				SIGN			Signs or signage
				SPCL			Specialty equipment
				SYMB			Symbols
		TEMP				Temporary	
		TEXT			Text associated with root		
		UTIL			Utility		

NEWW		ACID			Industrial Waste Piping
NEWW			EQMT		Acid, alkaline, and oil waste equipment
NEWW			PIPE		Acid, alkaline, and oil waste
NEWW			VENT		Acid, alkaline, and oil waste vent piping
NEWW			TEXT		Industrial Waste Piping Text
NOTE: The pound sign # in the Root = a numeral input from the user ...# # = A number range of 1-99					
		AH##			Air Handling Units (AH01-AH99)
			BLWR		Blowers
			COIL		HVAC system coils
				CHWT	Chilled water coil
				HWTR	Hot water coil
				GHTR	Natural gas fired heater
			COIL		HVAC system coils
				REFR	Refrigerant coil
				SCOL	Steam coil
				ELEC	Electric heating coil
			CNDU		Condensing unit
				PIPE	Condensing unit pipe
				VALV	Condensing unit valves
			CTRL		HVAC system controls
			DFSR		Supply diffusers
			DMPR		
				AUTO	Automatic dampers
				EAIR	Exhaust air damper
				FDMP	Fire/smoke dampers
				MAIR	Mixed air damper
				MANL	Manual dampers
				OAIR	Outside air damper
			DMPR		
				RAIR	Return air damper
				SAIR	Supply air damper
			DHMD		Dehumidifier
			DRAN		HVAC equipment drains
			DUCT		HVAC Ducts and equipment
				EAIR	Exhaust air duct
				MAIR	Mixed air duct
				OAIR	Outside air duct

			RAIR		Return air duct
			SAIR		Supply air duct
			EQMT		Generic HVAC equipment not associated with other systems
			FANS		Fan Powered Terminal Units
			EFAN		Exhaust fan
			RFAN		Return fan
			SFAN		Supply fan
			FLTR		Air filter
			CHAR		Charcoal filter
			HEPA		HEPA filter
			FPWR		Fan Powered Terminal Units
			HMID		Humidifier
			LOVR		Louvers
			MOTR		HVAC Motors
			PLNM		Plenum
			REGR		Register
			RGRL		Return grilles
			SGRL		Supply grilles
			SNSR		Sensors
			SPRT		Duct, pipe and equipment supports
			SEIS		Seismic restraint
			TUNT		Terminal Units
		AMMO			Ammonia systems
			AAHU		Ammonia air handling unit
			ACON		Ammonia condensing unit
			COIL		Ammonia refrigeration coil
			COMP		Ammonia compressor
			CTRL		Ammonia system controls
			EQMT		Generic Ammonia system equipment not associated with other systems
			INSU		Pipe and equipment insulation
			PIPE		Ammonia piping
			ABND		Abandoned ammonia pipe
			CAPS		Blind flange or cap
			RPIP		Return pipe
			SPIP		Supply pipe
			TEMP		Temporary pipe
			PUMP		Ammonia pumps

			RCVR			Ammonia receiver
			SNSR			Sensors
			SPRT			Pipe and equipment supports
			TEXT			Ammonia system text
			VALV			Ammonia valves
NOTE: The pound sign # in the Root = a numeral input from the user ...# # = A number range of 1-99						
		BAGC				Baggage system
			ABOV			Baggage System Mechanical Items Above
			BELO			Baggage System Mechanical Items Below
			BSDM			Baggage System Demolition
			BWAL			Baggage System Wall
			CAT#			Catwalk for Baggage System Conveyors
			CL##			Baggage Claim Device
			CLR#			Baggage Clearance Zone Identification
			CN##			Baggage System Conveyor
			COLN			Columns on Baggage System Drawings
			CSWK			Baggage System Casework
			CTRL			Baggage System Controls
			CURB			Curb
			DFT#			Baggage Conveyor Draft Curtain
			DIA#			Baggage System Mechanical Diagram
			DIM#			Baggage System Dimensions
			DR##			Baggage System Door
			DTL#			Baggage System Details
			DVT#			Baggage System Diverters
			EDS#			Baggage System Explosive Detection System
			EDSF			Future Baggage System Explosive Detection System
			EQ##			Baggage System Equipment – Multiple Layers
			EQMT			Baggage System Equipment
			ETD#			Baggage System Explosive Trace Detection

NEWW			FD##			Feed Baggage Conveyor
			FDR#			Baggage Conveyor Fire Door
			FUT#			Future Baggage System Work
			GRL#			Baggage System Guardrail
			IB##			Inbound Baggage Conveyor
			IBCL			Baggage Claim Device
			IBHS			Baggage System Conveyor
			IDEN			Equipment or material system ID
			INST			Instrumentation
			IO##			Inbound Oversize Baggage Conveyor
			IT##			Interim Baggage Conveyor
			LAD#			Baggage System Ladder
			ME##			Manual Encoding Baggage Conveyor
			MISC			Elements not covered by other modifiers.
			MK##			Baggage Make-up Device
			ML##			Mainline Baggage Conveyor
			NOT#			Baggage System Notes
			OB##			Outbound Baggage Conveyor
			OO##			Outbound Oversize Baggage Conveyor
			OPNG			Baggage System Opening
			PANL			Baggage Panels
			PLAT			Baggage System Platform
			PROT			Baggage System Protection
			RC##			Recirculation Baggage Conveyor
			RFSC			Conveyor for Radio Frequency Scanning
			SA##			Security Subsystem Baggage Conveyor
			SB##			Security Subsystem Baggage Conveyor
			SC##			Security Subsystem Baggage Conveyor
			SCHD			Baggage System Schedules
			SDR#			Baggage Conveyor Security Door
			SNSR			Sensors
			STP#			Striping for Carts/Tugs
			TAGR			Automation Tag Reader

NEWW			TC##			Ticketing Baggage Conveyor	
			TEMP			Interim Baggage Conveyor	
			TEXT			Text associated with root	
			TR##			Transfer Baggage Conveyor	
			TTR#			Tilt Tray Conveyor	
			TUGS			Tug/Cart	
			TX##			Transfer Input Baggage Conveyor	
			VSU#			Baggage System Vertical Sorter Unit	
			WIPE				
			XO##			Crossover Baggage Conveyor	
			XOVR			Access Crossover	
			XR##			Transfer Input Baggage Conveyor	
NEWW		BRIN				Brine systems	
NEWW			EQMT			Brine systems: equipment	
NEWW			PIPE			Brine systems: piping	
NEWW			TEXT			Brine systems: text	
		CDSR				Condenser water systems	
			CTRL			Condenser system controls	
			EQMT			Generic condenser water equipment not associated with other systems	
			ETNK			Expansion or surge tank	
			HEXC			Heat exchanger	
			INSU			Pipe and equipment insulation	
			MNHL			Manhole	
			PIPE			Condenser water pipe	
				ABND		Abandoned water pipe	
				CAPS		Blind flange or cap	
				RPIP		Condenser return pipe	
				SPIP		Condenser supply pipe	
				TEMP		Temporary water pipe	
			PUMP			Condenser water pumps	
			NEWW	RETN			Condenser water systems: return
				SNSR			Sensors
NEWW			SPLY			Condenser water systems: supply	

			SPRT			Pipe and equipment supports
			STNK			Condenser water tank
			STRN			Strainer
			TEXT			Text
			VALT			Vaults
			VALV			Condenser water valves
		CHEM				Chemical feed systems
			CTRL			Chemical feed system controls
			EQMT			Generic chemical feed equipment not associated with other systems
			ETNK			Expansion or surge tank
			PIPE			Chemical feed pipe
				ABND		Abandoned chemical feed pipe
				CAPS		Blind flange or cap
				RPIP		Chemical feed return pipe
				SPIP		Chemical feed supply pipe
				TEMP		Temporary chemical feed pipe
			PUMP			Chemical feed pumps
			SNSR			Sensors
			SPRT			Pipe and equipment supports
			STNK			Chemical feed storage tanks
			STRN			Strainer
			TEXT			Text
			VALV			Chemical feed valves
		CHWR				Chilled water systems for buildings
			CHIL			Chiller and associated equipment
			CNDS			Chilled water systems: condensate piping
			CTRL			Chiller system controls
			EQMT			Generic chilled water equipment not associated with other systems
			ETNK			Expansion or surge tank
			HEXC			Heat exchanger
			INSU			Pipe and equipment insulation

NEWW	NEWW		PIPE			Chilled water pipe
				ABND		Abandoned chilled water pipe
				CAPS		Blind flange or cap
				CHWS		Chilled water supply pipe
				CHWT		Chilled water return pipe
				SCHS		Secondary chilled water supply pipe
				SCHR		Secondary chilled water return pipe
				TEMP		Temporary chilled water pipe
			PUMP			Chilled water pumps
				PPMP		Primary chilled water pumps
				SPMP		Secondary chilled water pumps
			RETN			Chilled water systems: return
			SNSR			Sensors
			SPLY			Chilled water systems: supply
SPRT			Pipe and equipment supports			
STRN			Strainer			
TEXT			Text			
VALT			Chilled water vaults			
VALV			Chilled water valves			
		CMPA				Compressed air systems for buildings
NEWW			ADRY			Compressed air dryer
			COMP			Compressor
			CTRL			Compressor system controls
			EQMT			Generic compressed air equipment not associated with other systems
			PEQP			Compressed/processed air systems: process equipment
				PIPE		
				ABND		Abandoned compressed air pipe
				CAPS		Blind flange or cap
				TEMP		Temporary compressed air pipe
			PIPI			Compressed/processed air systems: process piping

			QCON			Quick disconnect
			RCVR			Compressed air receiver
			SNSR			Sensors
			SPRT			Pipe and equipment supports
			STRN			Strainer
			TEXT			Text
			VALV			Valves
		CNDS				Condensate systems for buildings
			CTRL			Condensate system controls
			EQMT			Generic condensate equipment not associated with other systems
			EXPJ			Expansion joint
			INSU			Pipe and equipment insulation
			MNHL			Manhole
			PIPE			Piping
				ABND		Abandoned pipe
				CAPS		Blind flange or cap
				RPIP		Return pipe
				SPIP		Supply pipe
				TEMP		Temporary pipe
				VENT		Vent piping
			PUMP			Condensate pump
			SNSR			Sensors
			SPRT			Pipe and equipment supports
			STRN			Strainer
			VALT			Vaults
			VALV			Condensate valves
		CNVR				Conveyor systems
			CATW			Catwalk for Conveyor Systems
			CTRL			Conveyor system controls
			CVDC			Conveyor Draft Curtain
			DIMS			Conveyor System Dimensions
			EDSX			Conveyor System Explosive Detection System
			EQMT			Generic conveyor equipment
			GRAL			Guardrail for conveyor system

			IDEN			Equipment or material system ID
			MISC			Elements not covered by other modifiers.
			SNSR			Sensors
			TEXT			Text
		CS##				Central Station Air handling Units (CS01-CS99)
			BLWR			Blowers
			COIL			HVAC system coils
				CHWT		Chilled water coil
				HWTR		Hot water coil
				GHTR		Natural gas fired heater
				REFR		Refrigerant coil
				SCOL		Steam coil
				ELEC		Electric heating coil
			CNDU			Condensing unit
				PIPE		Condensing unit pipe
				VALV		Condensing unit valves
			CTRL			HVAC system controls
			DFSR			Supply diffusers
			DMPR			Dampers
				AUTO		Automatic dampers
				EAIR		Exhaust air damper
				FDMP		Fire/smoke dampers
				MAIR		Mixed air damper
				MANL		Manual dampers
				OAIR		Outside air damper
				RAIR		Return air damper
				SAIR		Supply air damper
			DHMD			Dehumidifier
			DRAN			HVAC equipment drains
			DUCT			HVAC Duct
				EAIR		Exhaust air duct
				MAIR		Mixed air duct
				OAIR		Outside air duct
				RAIR		Return air duct
				SAIR		Supply air duct
			EQMT			Generic HVAC equipment not associated with other systems
			FANS			Fans
				EFAN		Exhaust fan
				RFAN		Return fan

			SFAN		Supply fan
			FLTR		Air filter
			CHAR		Charcoal filter
			HEPA		HEPA filter
			STRD		Standard filter
			FPWR		Fan Power Terminal Units
			HMID		Humidifier
			LOVR		Louvers
			MOTR		HVAC Motors
			PLNM		Plenum
			REGR		Register
			RGRL		Return grilles
			SGRL		Supply grilles
			SNSR		Sensors
			SPRT		Duct, pipe and equipment supports
			SEIS		Seismic restraint
			TUNT		Terminal Units
			VIBR		Vibration isolation
NEWW		DOMW			Domestic water systems
NEWW			MKUP		Domestic water systems: make-up water
NEWW			CPIP		Domestic water systems: cold water piping
NEWW			EQMT		Domestic water systems: equipment
NEWW			HPIP		Domestic water systems: hot water piping
NEWW			RISR		Domestic water systems: risers
NEWW		DUAL			Dual temperature systems
NEWW			RETN		Dual temperature systems: return
NEWW			SPLY		Dual temperature systems: supply
		DUST			Dust collection systems
			CHBR		Clean air chamber
			ADOR		Clean air chamber access door
			CTRL		Dust collection system controls

NEWW				LEVL		Dust level indicator	
			DBIN			Dust bin with drawers	
				DUCT			Dust and fume ductwork
				DRUM			Drum
					COVR		Drum cover
				EQMT			Generic dust collection equipment not associated with other systems
				FANS			Exhaust fans
					SILN		Silencer
				FLTR			Filter
					PFTR		Pre-filter
					FFTR		Final filter
				HOPR			Hopper
					ADOR		Hopper access door
					CATW		Cat walk
					EXPP		Explosion vent
					RLCK		Rotary airlock
				SNSR			Sensors
					PSNS		Pressure sensor
					SDET		Smoke detector
					TSNS		Temperature sensor
				SPRT			Duct pipe and equipment supports
					SEIS		Seismic restraint
		EXHS				Industrial and commercial ventilation and exhaust systems	
NEWW			BLWR			Blowers	
				CDFF			Exhaust air ceiling registers and grilles
				CTRL			Ventilation system controls
				DFSR			Supply diffusers
				DMPR			Dampers
					AUTO		Automatic dampers
					EAIR		Exhaust air damper
					FDMP		Fire/smoke dampers
					MANL		Manual dampers
					OAIR		Outside air damper
					SAIR		Supply air damper
				DUCT			Exhaust ductwork
					EAIR		Exhaust air duct
					OAIR		Outside air duct
					SAIR		Supply duct

NEWW			FANS		Fans
				EFAN	Exhaust fan
				SFAN	Supply fan
			FLTR		Air filter
				HEPA	HEPA filter
				STRD	Standard filter
			LOVR		Louvers
			MOTR		Fan and blower motors
			PLNM		Plenum
		REGR		Register	
			RFEQ	Exhaust system: rooftop equipment	
			SGRL	Supply grilles	
			SNSR	Sensors	
			SPRT	Duct and equipment supports	
				SEIS	Seismic restraint
		FDSL			Diesel fuel system elements
			ALRM		Diesel Fuel Alarm System
			CTRL		Diesel fuel system controls
			DISP		Diesel fuel dispenser
			EQMT		Generic diesel fuel equipment not associated with other systems
			ETNK		Expansion tank
			FLTR		Diesel fuel filters
			METR		Diesel fuel meter
			PIPE		Piping
				ABND	Abandoned diesel fuel piping
				CAPS	Blind flange or cap
				RPIP	Return pipe
				SPIP	Supply pipe
				TEMP	Temporary pipe
			PITT		Diesel fuel pit
			PUMP		Diesel fuel pumps
			SNSR		Sensors
			SPRT		Pipe and equipment supports
			STNK		Diesel fuel storage tanks
			STRN		Strainer
			TEXT		Text
			VALT		Diesel fuel valve vault
			VALV		Diesel fuel valves

		FGAS			Fuel gas (gasoline) systems
			DISP		Fuel gas dispenser
			EQMT		Fuel gas equipment
			FLTR		Fuel gas filters
			METR		Fuel gas meter
			PIPE		Piping
				ABND	Abandoned fuel gas piping
				CAPS	Blind flange or cap
				RPIP	Return pipe
				SPIP	Supply pipe
				TEMP	Temporary pipe
			PITT		Fuel gas pit
			PUMP		Fuel gas pumps
			SNSR		Sensors
			SPRT		Pipe and equipment supports
			STNK		Fuel gas storage tank
			STRN		Strainer
			TEXT		Text
			VALT		Fuel gas valve vault
			VALV		Fuel gas valves
		FJET			Jet fuel system elements
NEWW			ALRM		Jet fuel alarm panel and controls
NEWW			EQMT		Jet fuel equipment
NEWW			ETNK		Jet fuel expansion/surge tank
NEWW			FLTR		Jet fuel filters
NEWW			FPIT		Jet fuel pit
NEWW			HTCH		Fuel hatch
NEWW			METR		Jet fuel meter
NEWW			PIPE		Jet fuel piping
NEWW				ABND	Abandoned jet fuel pipe
NEWW				CAPS	Blind flange or cap
NEWW				RPIP	Jet fuel return pipe
NEWW				SPIP	Jet fuel supply pipe
NEWW				TEMP	Temporary jet fuel pipe
NEWW			PITT		Jet fuel pit
NEWW			PUMP		Jet fuel pumps
					Pipe and equipment supports
NEWW			SPRT		

NEWW			STNK			Jet fuel storage tank
NEWW				ALDR		Storage tank ladder or stairs
NEWW				MDOR		Storage tank Man-door
NEWW				FROF		Floating roof
NEWW				VALV		Storage tank valves
NEWW				VENT		Storage tank vents
NEWW			TCSE			Fuel test casing
NEWW			TEXT			Text
NEWW			TRCK			Jet fuel truck loading/unloading station
NEWW			VALT			Jet fuel vaults
NEWW				HATC		Jet fuel vault hatch
NEWW			VALV			Jet fuel valves
NEWW			VENT			Venting system elements
NEWW			STRU			Jet fuel Structural elements
NEWW			WAST			Jet fuel waste system elements
NEWW				PIPE		Waste fuel pipe
NEWW				PUMP		Waste fuel pump
NEWW				STNK		Waste fuel storage tank
NEWW				VALV		Waste fuel valves
		FOIL				Fuel oil systems
			ALRM			Fuel oil alarm panel and controls
			CTRL			Fuel oil system controls
			DISP			Fuel oil dispenser
			EQMT			Generic fuel oil equipment not associated with other systems
			ETNK			Fuel oil expansion/surge tank
			FLTR			Fuel oil filters
			METR			Fuel oil meter
			PIPE			Fuel oil piping
				ABND		Abandoned fuel oil pipe
				CAPS		Blind flange or cap
				RPIP		Return pipe
				SPIP		Supply pipe
				TEMP		Temporary pipe
			PITT			Fuel gas pit
			PUMP			Fuel oil pumps

			SNSR			Sensors
			SPRT			Pipe and equipment supports
			STNK			Fuel oil storage tank
			STRN			Strainer
			TEXT			Text
			VALT			Fuel oil vault
			VALV			Fuel oil valves
		GLYC				Glycol systems
			CTRL			Glycol system controls
			EQMT			Generic glycol equipment not associated with other systems
			ETNK			Expansion or surge tank
			INSU			Pipe and equipment insulation
			MNHL			Manhole
			PIPE			Glycol pipe
				ABND		Abandoned glycol pipe
				CAPS		Blind flange or cap
				TEMP		Temporary glycol pipe
			PUMP			Glycol pumps
NEWW			RETN			Glycol systems: return
			SNSR			Sensors
NEWW			SPLY			Glycol systems: supply
			SPRT			Pipe and equipment supports
			STNK			Glycol storage tanks
			STRN			Strainer
			TEXT			Text
			VALT			Vaults
			VALV			Valves
		HHWT				Heating Hot water systems buildings
			BWLR			Boiler and associated equipment
			CTRL			Hot water system controls
			EQMT			Generic hot water equipment not associated with other systems
			ETNK			Expansion or surge tank
			HEXC			Steam/hot water heat exchanger
			INSU			Pipe and equipment insulation
			MNHL			Manhole

			PIPE			Chilled water pipe
				ABND		Abandoned heating hot water pipe
				CAPS		Blind flange or cap
				HWSP		Heating hot water supply pipe
				HWRP		Heating hot water return pipe
				SHWS		Secondary heating hot water supply pipe
				SHWR		Secondary heating hot water return pipe
				TEMP		Temporary heating hot water pipe
			PUMP			Heating hot water pumps
				PPMP		Primary heating hot water pumps
				SPMP		Secondary heating hot water pumps
			NEWW			RETN
SPLY						Hot water heating system: supply
	SNSR					Sensors
	SPRT					Pipe and equipment supports
	STNK					Heating Hot water storage tank
	STRN					Strainer
	TEXT					Text
	VALT					Vaults
	VALV					Heating hot water valves
		HVAC			Generic or Single Unit HVAC Systems	
NEWW			ACCS			Equipment access doors
			BLWR			Blowers
NEWW			BOXD			HVAC systems: mixing box, dual duct
						HVAC systems: mixing box, single duct
NEWW			BOXS			
NEWW			CDFE			Ceiling diffusers, registers, and grilles

NEWW			CLDA			HVAC systems: cold air
NEWW				DUCT		HVAC systems: cold air: ductwork
NEWW				EQMT		HVAC systems: cold air: ductwork equipment
			COIL			HVAC system coils
				CHWT		Chilled water coil
				HWTR		Hot water coil
				GHTR		Natural gas fired heater
				REFR		Refrigerant coil
				SCOL		Steam coil
				ELEC		Electric heating coil
			CNDU			Condensing unit
				PIPE		Condensing unit pipe
				VALV		Condensing unit valves
			CTRL			HVAC system controls
NEWW			DOOR			HVAC systems: equipment doors
			DFSR			Supply diffusers
			DMPR			Dampers
				AUTO		Automatic dampers
				EAIR		Exhaust air damper
				FDMP		Fire/smoke dampers
				MAIR		Mixed air damper
				MANL		Manual dampers
				OAIR		Outside air damper
				RAIR		Return air damper
				SAIR		Supply air damper
			DHMD			Dehumidifier
			DRAN			HVAC equipment drains
			DUCT			HVAC Duct
				EAIR		Exhaust air duct
				MAIR		Mixed air duct
				OAIR		Outside air duct
				RAIR		Return air duct
				SAIR		Supply air duct
NEWW			EFAN			HVAC systems: equipment with electric fans
NEWW			EPDU			HVAC systems: equipment with piping, ductwork and electricity

NEWW			EPIP			HVAC systems: equipment with piping and electricity
			EQMT			<i>Generic HVAC equipment not associated with other systems</i>
NEWW			EXHS			HVAC systems: exhaust air
				DUCT		HVAC systems: exhaust air: ductwork
				EQMT		HVAC systems: exhaust air: ductwork equipment
				GRIL		HVAC systems: exhaust air: grilles
			FANS			<i>Fans</i>
				EFAN		<i>Exhaust fan</i>
				RFAN		<i>Return fan</i>
				SFAN		<i>Supply fan</i>
NEWW			FDFD			Floor diffusers, registers, and grilles
			FPWR			<i>Fan Power Terminal Units</i>
			FLTR			<i>Air filter</i>
				CHAR		<i>Charcoal filter</i>
				HEPA		<i>HEPA filter</i>
				STRD		<i>Standard filter</i>
NEWW			HOTA			HVAC systems: hot air
NEWW				DUCT		HVAC systems: hot air: ductwork
NEWW				EQMT		HVAC systems: hot air: ductwork equipment
			HMID			<i>Humidifier</i>
NEWW			ODFF			HVAC systems: other diffusers
			LOVR			<i>Louvers</i>
			MOTR			<i>HVAC Motors</i>
NEWW			PIPE			HVAC systems: piping
			PLNM			<i>Plenum</i>
NEWW			RDFD			HVAC systems: return air diffusers
			REGR			<i>Register</i>
			RGRL			<i>Return grilles</i>
NEWW			RETN			HVAC systems: return
NEWW			ROOF			Roof mounted HVAC equipment
NEWW			SDFD			HVAC systems: supply diffusers

NEWW			SGRL			Supply grilles
			SNSR			Sensors
			SPLY			HVAC systems: supply
			SPRT			Duct, pipe and equipment supports
				SEIS		Seismic restraint
NEWW			TUNT			Terminal Units
			TAGS			Diffuser/register/grille tags and air flow arrows
			VIBR			Vibration isolation
				SEIS		Seismic restraint
NEWW			WDFD			Wall diffusers, registers, and grilles
		HYDL				Hydraulic systems
			CTRL			Hydraulic system controls
			ETNK			Expansion or surge tank
			EQMT			Generic hydraulic system equipment not associated with other systems
			MNHL			Manhole
			PIPE			Hydraulic system pipe
				ABND		Abandoned hydraulic system pipe
				CAPS		Blind flange or cap
				RPIP		Hydraulic system supply pipe
				SPIP		Hydraulic system return pipe
				TEMP		Temporary hydraulic system pipe
			PUMP			Hydraulic system pumps
			SNSR			Sensors
			SPRT			Pipe and equipment supports
			STRN			Strainer
			TEXT			Text
			VALV			Hydraulic system valves
			VALT			Hydraulic system vaults
		IWTP				Industrial wastewater treatment plant systems and components
			CBSN			IWTP catch basin
			CFUG			Centrifuge
			CLFY			Clarifier
			COUT			IWTP clean out

			CTRL			IWPT system controls
			DGST			Digester
			EQMT			Generic IWPT equipment not associated with other systems
			FLTR			Filter equipment
			FLSH			IWTP flushing system components
			MNHL			IWTP manhole
			OWSP			Oil/water separator
			PIPE			IWTP piping
				ABND		Abandoned piping
				CAPS		Blind flange or cap
				RPIP		Return pipe
				SPIP		Supply pipe
				TEMP		Temporary pipe
			PUMP			IWTP pumps
			SNSR			Sensors
			SPRT			Pipe and equipment supports
			STNK			IWTP storage tanks
			TEXT			Text
			VALV			IWTP valves
			VALT			IWTP vaults
		LPAR				Low pressure compressed air systems
			ADRY			Low pressure compressed air dryer
			COMP			Low pressure air compressor
			CTRL			Low pressure compressed air system controls
			EQMT			Generic low pressure air equipment not associated with other systems
			QCON			Quick disconnect
			PIPE			Low pressure compressed air piping
				ABND		Abandoned piping
				CAPS		Blind flange or cap
				TEMP		Temporary pipe
			RCVR			Low pressure compressed air receiver
			SNSR			Sensors
			SPRT			Pipe and equipment supports
			STRN			Strainer
			TEXT			Text

			VALV			Valves
			VALT			Vaults
		METH				Methane systems
			ALRM			Methane system alarm panel and controls
			CTRL			Methane system controls
			EQMT			Generic methane equipment not associated with other systems
			METR			Methane meter
			PIPE			Methane piping
				ABND		Abandoned methane pipe
				CAPS		Blind flange or cap
				TEMP		Temporary pipe
			PREG			Methane pressure regulator
			SNSR			Sensors
			SPRT			Pipe and equipment supports
			STNK			Methane storage tank
			STRN			Strainer
			TEXT			Text
			VALV			Methane system valves
		MTNK				Miscellaneous storage tanks
			DRAN			Tank drain
			FIBR			Fiberglass
			ALDR			Storage tank ladder or stairs
			MDOR			Man-door
			PLAS			Plastic
			SNSR			Sensors
			SPRT			Tank storage
			STEL			Steel
			TEXT			Text
			VALV			Tank valves
		NGAS				Natural gas systems
			ALRM			Natural gas alarm panel and controls
			CTRL			Natural gas system controls
			EQMT			Generic natural gas equipment not associated with other systems
			METR			Natural gas meter

			PIPE			Natural gas piping
				ABND		Abandoned natural gas pipe
				CAPS		Blind flange or cap
				TEMP		Temporary pipe
			PREG			Pressure regulator
			SNSR			Sensors
			SPRT			Pipe and equipment supports
			STRN			Strainer
			TEXT			Text
			VALV			Natural gas valves
		PROC				Mechanical process systems for buildings
			CTRL			Process system controls
			EQMT			Generic Process system not associated with other systems
			ETNK			Expansion or surge tank
			HEXC			Process heat exchanger
			INSU			Pipe and equipment insulation
			MNHL			Manhole
			PIPE			Process pipe
				ABND		Abandoned Processor pipe
				ARGO		Argon gas piping
				CAPS		Blind flange or cap
				LGAS		Laboratory gas piping
				NTRO		Nitrogen gas piping
				PRSP		Process supply pipe
				PRRP		Process return pipe
				TEMP		Temporary hot water pipe
			PUMP			Process pumps
			SNSR			Sensors
			SPRT			Pipe and equipment supports
			STNK			Process storage tank
			STRN			Strainer
			TEXT			Text
			VALT			Vaults
			VALV			Process valves
		PRPN				Propane systems
			ALRM			Propane system alarm panel and controls
			CTRL			Propane system controls

			EQMT			Generic propane equipment not associated with other systems
			METR			Propane meter
			PIPE			Propane piping
				ABND		Abandoned propane pipe
				CAPS		Blind flange or cap
				TEMP		Temporary pipe
			PREG			Pressure regulator
			SNSR			Sensors
			SPRT			Pipe and equipment supports
			STNK			Propane storage tank
			STRN			Strainer
			VALV			Propane system valves
		REFG				Refrigeration systems
NEWW			AAU#			Refrigeration system air handling unit
			COIL			Refrigeration coil
			CDNS			Condensing unit
			COMP			Compressor
			CTRL			Refrigeration system controls
			DISC			Refrigeration systems: discharge
			PIPE			Refrigeration piping
				ABND		Abandoned piping
				CAPS		Blind flange or cap
				RPIP		Return pipe
				SPIP		Supply pipe
NEWW				TEMP		Temporary pipe
			PUMP			Refrigeration pumps
			RETN			Refrigeration systems: return
			RCVR			Refrigeration receiver
NEWW			SNSR			Sensors
			SPLY			Refrigeration systems: supply
			SPRT			Pipe and equipment supports
			TEXT			Refrigeration system text
			VALV			Refrigeration system valves

NEWW		SMOK			<i>Smoke extraction systems</i>
			CDFF		Smoke extraction systems: ceiling diffusers
			DUCT		Smoke extraction systems: duct
			EQMT		Smoke extraction systems: equipment
		STEM			<i>Steam system: boiler blow down piping</i>
NEWW			BLBD		Steam system: boiler blow down piping
			BTNK		<i>Blow down tank</i>
			BWLR		<i>boiler</i>
NEWW			CNDS		Steam system: condensate piping
			CTRL		<i>Steam system controls</i>
			EQMT		<i>Generic steam equipment not associated with other systems</i>
			EXPJ		<i>Expansion joint</i>
			HEXC		<i>Heat exchanger</i>
NEWW			HPIP		Steam system: high-pressure piping
			INSU		<i>Pipe and equipment insulation</i>
NEWW			LPIP		Steam system: low-pressure piping
NEWW			MPIP		Steam system: medium-pressure piping
			MNHL		<i>Manhole</i>
			PIPE		<i>Piping</i>
				ABND	<i>Abandoned piping</i>
				CAPS	<i>Blind flange or cap</i>
				RPIP	<i>Return pipe</i>
				SPIP	<i>Supply pipe</i>
				TEMP	<i>Temporary pipe</i>
			SDRM		<i>Steam drum</i>
			SNSR		<i>Sensors</i>
			SPRT		<i>Pipe supports and equipment</i>
			STRN		<i>Strainer</i>
			TEXT		<i>Text</i>
			VALT		<i>Vaults</i>
			VALV		<i>Steam valves</i>

		VACM			Vacuum systems
			ADRY		Air dryer / liquid separator
			CTRL		Vacuum system controls
			ETNK		Expansion or surge tank
			EQMT		Generic vacuum system equipment not associated with other systems
			FLTR		Filter
			HBIB		Vacuum system hose Bibb
			PIPE		Vacuum system pipe
				ABND	Abandoned piping
				CAPS	Blind flange or cap
				TEMP	Temporary pipe
			PUMP		Vacuum pumps
			SNSR		Sensors
			SPRT		Pipe and equipment supports
			STNK		Storage tank
			STRN		Strainer
			TEXT		Text
			VALV		Valves
			VCND		Condenser
Requires Optional Modifier for Elements Matching Layer Description					
NOTE: The pound sign # in the Root = a numeral input from the user...# # = A number range of 1-99					

Plumbing Layers

Some 1st Optional Root Modifiers have been specified in the standard. If the object or element being drawn matches the layer description notes, the 1st Optional Root Modifier indicated must be used. The intent is to provide a consistent method of identifying the most common elements found throughout the Port of Seattle's properties and infrastructure. Objects or elements found on incorrect layers during the QC review process will be flagged as errors and will need to be corrected.

Notes for Building Plumbing Drawings:

1. To the greatest extent possible the layer standards are divided into "systems". All utilities, equipment, structural elements, etc., associated with a "system" must be placed on layers associated with that "system".
2. Do not place text, notes, leaders, etc., on X-Refs. These should be placed on each individual drawing. Text and pattern X-Ref's that are sized for the drawing they are attached to are acceptable.
3. For plumbing utility plans, place all piping and fittings on piping layers. Put valves on valve layers, equipment on equipment layers, controls on control layers, symbols on symbol layers, etc., (i.e., do not put valves, equipment, or symbols on piping layers, etc.). Align all valves with piping in the direction of flow.

Trade	Level	Root	Root Modifier	1st Optional Modifier	2nd Optional Modifier	Description
P						
		DCWT				Domestic cold water systems for buildings
		DHWT				Domestic hot water systems for buildings
		SSWR				Sanitary sewer systems for buildings
		STRM				Storm sewer systems for buildings
Additional Optional Root Modifiers for Plumbing Root Layers (only)						
			ADAE			Americans with disabilities
			FLOW			Flow
			GRAD			Finished grade
			GRAV			Gravity flow
			INST			Instrumentation
			FLOW			Flow
			GRAD			Finished grade
			GRAV			Gravity flow
			RACK			Electrical racks
			RISR			Riser pipe
			RPIP			Return pipe
			SGNL			Signal
			SLEV			Sleeves for utilities
			SNSR			Sensor
			SPIP			Supply pipe
			THRM			Thermostats
			TIED			Tied
			UTIL			Utility
			VENT			Equipment vent pipe
Additional Optional Root Modifiers for All Plumbing Root Layers						
			ABOV			Above
			ACCY			Accessory
			AREA			An Area within Specific Boundaries
			AUXL			Auxiliary
			BELW			Below
			BYND			Object beyond
			CNTR			Centerlines

NEWW NEWW NEWW NEWW NEWW NEWW NEWW			DIMS			Dimensions
			FNSH			Surface Finish
			FITG			Fitting
			FIXT			Fixture
			GENL			General Component Elements
			GRID			Grids generic
				BUBL		Grid Bubbles
			HIDE			Hidden lines or objects
			IDEN			Equipment or material system ID
			MATL			Material
			MISC			Elements not covered by other modifiers.
			NICN			Not in contract
		NOTE			General Notes	
		NPLT			Non-plotting graphic information	
		NPOS			All Non-POS property lines equipment etc.	
		OPEN			Openings, ceiling/roof penetrations, ETC.	
		OPTN			Optional elements or equipment	
		OTLN			Object Outlines	
		OVHD			Objects Overhead	
		PATT			Floor Pattern or Hatch Patterns	
		PHAS			Phasing	
		PHTO			Photograph	
		PPOS			POS property line	
		REVN			Rev Deltas & clouds + revision text	
		SIGN			Signs or signage	
		SPCL			Specialty equipment	
		SYMB			Symbols	
		TEMP			Temporary	
		TEXT			Text associated with root	
		UTIL			Utility	
		DCWT				Domestic cold water systems for buildings
NEWW			ACCS			Equipment access doors
		CMTR				City Meter
		CTRL				Domestic water system controls
		DCBA				Double check backflow assembly

NEWW			EQMT			Domestic water equipment
			ETNK			Expansion or surge tank
			FPIP			Domestic filtered water piping
			FIXT			Domestic cold water fixtures
				DRNK		Drinking fountain
				EWSH		Domestic cold water eye wash
				FCET		Domestic cold water faucet
				MVLV		Domestic hot water/cold water mixing valve for normal and emergency showers
				SINK		Sink (not shown on Architectural)
				TOIL		Toilet (not shown on Architectural)
				URNL		Urinal (not shown on Architectural)
			HBIB			Domestic cold water Hose Bibb
			FTNG			Domestic cold water fittings
			HYDT			Domestic cold water hydrant
				WHYD		Wall hydrant
				YARD		Yard or courtyard hydrant
			MNHL			Manhole
			PIPE			Domestic cold water pipe
				ABND		Abandoned water pipe
				CAPS		Blind flange or cap
				RISR		Domestic cold water riser pipe
				SLEV		Pipe sleeves
				TEMP		Temporary domestic cold water pipe
			PMTR			Port of Seattle water meter
			PUMP			Domestic water booster pumps
			RPIP			Domestic Cold water recirculation piping
			RISR			Domestic cold water risers
			RPBA			Reduced pressure backflow assembly
			SPGT			Domestic cold water spigot
			STRN			Strainer
			STNK			Domestic cold water storage tanks
			TEXT			Text
			VALT			Domestic water vaults
			VALV			Valves

		DHWT				Domestic hot water supply systems for buildings
NEWW NEWW			BWLR			Domestic hot water boiler / heater
			EQMT			Domestic hot water equipment
			ETNK			Expansion or surge tank
			FIXT			Domestic hot water fixtures
				EWSH		Tempered water eye wash
				FCET		Hot water faucet
			FTNG			Domestic hot water fittings
			HBIB			Domestic hot water hose Bibb
			MNHL			Manhole
			MVLV			Domestic hot water/cold water mixing valve for normal and emergency showers
			PIPE			Domestic water pipe
				ABND		Abandoned hot water pipe
				FLNG		Blind flange or cap
				RISR		Hot water riser pipe
				SLEV		Pipe sleeves
				TEMP		Temporary hot water pipe
			RPIP			Domestic hot water recirculation piping
			RISR			Domestic hot water risers
			PUMP			Domestic hot water booster pumps
			SPGT			Water spigot
			SPRT			Pipe supports
			STNK			Domestic hot water storage tanks
			TEXT			Text
			VALV			Domestic hot water valves
		SSWR				Sanitary sewer systems for buildings
NEWW			CONP			Condensate piping
NEWW			COUT			Clean out
			FITG			SANITARY FITTINGS
			FIXT			Sanitary sewer fixtures
			EDRN		Equipment drain	
			FDRN		Floor drain	
NEWW			FLDR			Sanitary sewer: floor drains
			MNHL			Manhole
			OWSP			Oil Water or Grease Separator

NEWW			PIPE			Sanitary sewer system drain and vent piping
				FCMN		Force main
				CAPS		Blind flange or cap
				RISR		Sanitary sewer riser pipe
				SDRN		Sanitary drain pipe
				SLEV		Pipe sleeves
				SVNT		Sanitary vent piping
NEWW			RISR			Sanitary drainage systems: risers
NEWW			ROOF			DOWNSPOUTS AND RELATED ELEMENTS
			TEXT			Text
			VALT			Sanitary sewer system vaults
			VALV			Sanitary sewer system valves (force mains)
NEWW			VENT			Sanitary sewer Vents

		STRM				Storm sewer systems
			CBSN			Catch basin
			COUT			Clean out
			DRAN			Storm drain
				RDRN		Roof storm drain
				DDRN		Deck storm drain
				UNKN		Unknown storm drain
			FLOW			Flow line
			FLSH			Gutter flush
			GUTR			Gutter
			LFTS			Lift station
			MNHL			Manhole
				UNKN		Unknown storm manhole
				MTRO		Metro storm manhole
				COMB		Combined sewer manhole (SSWRTRM)
				STCR		Manhole water Structure
			PIPE			Piping
				ABND		Abandoned sanitary sewer pipe
				CAPS		Blind flange or cap
				FCMN		Force mains
				HALF		Gutter pipe half
				NPRF		Non-perforated pipe
				PERF		Perforated pipe
				RISR		Storm drain riser pipe

NEWW				SLEV		Pipe sleeves
				STUB		Storm pipe stub
			RISR			Storm drainage systems: risers
			RFDR			Storm drainage systems: roof drains
			TEXT			Text
			UDRN			Under-drain elements
			VALT			Vaults
			VALV			Valves (force mains)
Requires Optional Modifier for Elements Matching Layer Description						

Electrical Layers

Some 1st Optional Root Modifiers have been specified in the standard. If the object or element being drawn matches the layer description notes, the 1st Optional Root Modifier indicated must be used. The intent is to provide a consistent method of identifying the most common elements found throughout the Port of Seattle's properties and infrastructure. Objects or elements found on incorrect layers during the QC review process will be flagged as errors and will need to be corrected.

Notes for Building Electrical Drawings:

1. To the greatest extent possible the layer standards are divided into "systems". All utilities, equipment, structural elements, etc., associated with a "system" must be placed on layers associated with that "system".
2. Do not place text, notes, leaders, etc., on X-Refs. These should be placed on each individual drawing. Text and pattern X-Ref's that are sized for the drawing they are attached to are acceptable.
3. For electrical utility plans, place all conduits on conduit layers, duct-banks on duct-bank layers, cables on cable layers. Put electrical fixtures on fixture layers, handholes on handhole layers, manholes on manhole layers, symbols on symbol layers, etc., (i.e., do not electrical manholes on duct-bank layers, etc.).

Trade	Level	Root	Root Modifie r	1st Optional Root Modifier	2nd Optional Root Modifier	Description
E						
NEWW		ACCS				Access systems power and control
		ALMS				Alarm systems
		BAGC				Baggage system power and controls
		CCTV				Communication Cable TV systems
		CDAT				Communication Data and computer systems
		CPRO				Cathodic Protection site
		CTEL				Communication Telephone systems
		CTWR				Communication radio towers
		GNDG				Grounding systems
		LEMG				Emergency lighting systems
		LNOR				Normal lighting systems
		PELV				Emergency power low voltage
		PEMV				Emergency power medium voltage
		PNLV				Normal power low voltage
		PNMV				Normal power medium voltage
NEWW		PNHV			High voltage systems over 480	
		POWR			Power for inside Buildings	
Specific Root Modifiers for Power and Lighting Root Layers (only)						
			ALRM			Alarm
			BUSW			Bus-way
			CTRL			Power Controls, Relay, Thermostat, Door Holders
			DBNK			Duct bank cabling
			EXIT			Exit sign
			FEED			Feeder electrical
			FIBO			Fiber optics
			HNHL			Hand hole
			INST			Instrumentation
			JBOX			Junction boxes
			MONI			Power monitoring site utility & electrical system or computer
			MSTR			Master
			NTWK			Network

			NUMB			All Electrical circuit numbers
			PANL			Electrical Panels
			RACE			Raceway
			RACK			Electrical racks
			RCPT			Receptacles/power outlets
			SLEV			Sleeves for conduit etc
			SNSR			Sensor
			SPLI			Splice
			STAN			Stationing data
			SUBS			Electrical substations
			SWBD			Switchboard
			SWCH			Switch
			SWGR			Switchgear
			TELM			Telemetry equipment
			TERM			Electrical terminal
			TRAY			Cable tray
			UTIL			Utility
			VALT			Utility Vault
			WIRE			Wire
Generic Root Modifiers for All Electrical Root Layers						
			ABOV			Above
			ACCY			Accessory
			AREA			An Area within Specific Boundaries
			AUXL			Auxiliary
			BELW			Below
			BYND			Object beyond
			CNTR			Centerlines
			DIMS			Dimensions
			FNSH			Surface Finish
			FITG			Fitting
			FIXT			Fixture
			GENL			General Component Elements
			GRID			Grids generic
				BUBL		Grid Bubbles
			HIDE			Hidden lines or objects
			IDEN			Equipment or material system ID
			MATL			Material
			MISC			Elements not covered by other modifiers.
NEWW			NICN			Not in contract
NEWW			NOTE			General Notes
NEWW			NPLT			Non-plotting graphic information
			NPOS			All Non-POS property lines equipment etc.
NEWW			OPEN			Openings, ceiling/roof penetrations, ETC.

NEWW			OPTN			Optional elements or equipment	
			OTLN			Object Outlines	
			OVHD			Objects Overhead	
			PATT			Floor Pattern or Hatch Patterns	
			PHAS			Phasing	
			PHTO			Photograph	
			PPOS			POS property line	
			REVN			Rev Deltas & clouds + revision text	
			SIGN			Signs or signage	
			SPCL			Specialty equipment	
			SYMB			Symbols	
			TEMP			Temporary	
NEWW	TEXT			Text associated with root			
	UTIL			Utility			
		ACCS				Access systems power and control	
NEWW			ACLN			Access system control line number	
			AGRD			Access system power and control grounding	
				GROD		Ground rod	
			APLN			Access system power line number	
			BUSW			Access systems control buss way	
				PBSW CBSW		Power buss way Control buss way	
			CEIL			Ceiling Elements	
			CIRC			Access systems circuit	
				PCIR CCIR		Power circuit Control circuit	
			COND			Access systems power and control systems conduit	
				PCND CCND		Power conduit Control conduit	
			CPWR CTRL			Access system control power Access system controls	
			EQMT			Access systems power & control equipment	
				PEQT CEQT CRDR		Access systems power equipment Access systems control equipment Card reader	
				FLRR			Floor Elements
				JBOX			Access system junction box

NEWW			MCPR			Access system main control power
			PANL			Access system panels
				CPNL		Access systems control panel
				PPNL		Access systems power panel
			PBOX			Access system pull box
			WAAL			Wall Elements
			WIRE			Access system control wiring
				PWIR		Power wire
				CWIR		Control wire
		ALMS				Alarm systems
NEWW			BELL			Pushbuttons, Buzzer/Horn, Buzzer
NEWW			CABL			Alarm system cable
			CEIL			Ceiling Elements
			CIRC			Alarm system circuit
				PCIR		Power circuit
				CCIR		Control circuit
NEWW			COND			Conduit
NEWW				PCND		Power conduit
NEWW				CCND		Control conduit
						Power Controls, Relay, Thermostat, Door Holders
NEWW			CTRL			
			EQMT			Alarm system equipment
				CMNT		Ceiling mounted access control device
				DMNT		Door mounted access control device
				FMNT		Floor mounted access control device
				GMNT		Gate mounted access control device
				WMNT		Wall mounted access control device
NEWW			FARM			Fire Alarm system
NEWW			FLRR			Floor Elements
						Ground For Electrical Power
NEWW			GRND			
			HDHL			Alarm system hand-hole
			IDEN			Alarm system identification
			JBOX			Alarm system junction box
			PANL			Alarm systems panels
				CPNL		Alarm system control panel
				PPNL		
						Alarm system power panel

NEWW			SNSR			Security Devices, Motion Sensors, Card Reader, Access Control Panels, Duress Alarm, Electric Locks/Strikes/Door Contact Switch, etc.
			TEXT			Alarm system text
			WAAL			Wall Elements
			WIRE			Alarm systems wire
				PWIR		Power wire
				CWIR		Control wire
		BAGC				Baggage system power and controls
NEWW			APSY			Audio paging system
NEWW			ATMS			Advanced traffic management system
NEWW			AVID			Automatic vehicle identification system
NEWW			BIDS			Baggage information display system
NEWW			BGRD			Baggage grounding systems
			BUSW			Baggage System Control Buss way
			CEIL			Ceiling Elements
			CIRC			Baggage System Control Circuit
			CMCP			Baggage System Control Line Number
NEWW			COND			Baggage System Control Conduit
			CTPO			Baggage System Control Power
			CTRL			Baggage System Controls
NEWW			FIDS			Flight information display system
NEWW			FLRR			Floor Elements
NEWW			GISY			Gate information system
NEWW			GRND			Ground For Electrical Power
NEWW			JBOX			Junction boxes
NEWW			PANL			power panels
			PMRC			Parking management and revenue control
			VPSY			Visual paging system
			WAAL			Wall Elements
			WIRE			Baggage System Control Wiring

		CCTV				Cable TV systems
NEWW			AUDI			Audio/Visual, Microphone system, Infrared Receivers, CATV outlets, Speakers, Assistive Listening, etc.
			CABL			Cable standard
NEWW				COAX		Coax cable
NEWW				FIBR		Fiber optics cable
NEWW				MULT		Multi-conductor cable
NEWW				TRAY		Cable trays and wire ways
			CIRC			Circuit
NEWW			CEIL			Ceiling Elements
NEWW			COND			Conduit
						Power Controls, Relay, Thermostat, Door Holders
NEWW			CTRL			
			DISK			Television disk
			EQMT			Communication equipment
				CRDR		Security access card reader
NEWW			FLRR			Floor Elements
NEWW			GRND			Ground For Electrical Power
			TEXT			Text
NEWW			WAAL			Wall Elements
		CDAT				Data and computer systems
NEWW			CABL			Data and computer Cable
NEWW				COAX		Coax cable
NEWW				FIBR		Fiber optics cable
NEWW				MULT		Multi-conductor cable
NEWW				TRAY		Cable trays and wire ways
NEWW			CEIL			Ceiling Elements
NEWW			CLOK			Clocks
NEWW			COND			Conduit
			CIRC			Circuit
NEWW			CNMB			Data/LAN system: circuit number
						Power Controls, Relay, Thermostat, Door Holders
NEWW			CTRL			
						Controls and instrumentation: devices
NEWW			DEVC			
			FIBO			Fiber optic cable
			JBOX			Junction Box

NEWW			FLRR			Floor Elements
NEWW			GRND			Ground For Electrical Power
NEWW			INTC			Intercom and devices
NEWW			MNHL			Manhole
			NETW			Network components
NEWW			STRC			computer systems
			PANL			Structural elements
NEWW			TRAY			Panel
						Cable tray
NEWW			VIDO			Video Equipment, Video Cameras, Video Displays, Projectors, Switchers, etc.
NEWW			WAAL			Wall Elements
NEWW			WIRE			Controls and instrumentation: wiring
NEWW		CPRO				Cathodic Protection site
			ABOV			Above
			ACCY			Accessory
			ANOD			Anode Terminal or electrode from which electrons leave a system.
			AREA			An Area within a Specific Boundaries
			AUXL			Auxiliary
			BASE			Base
			BELW			Below
			BENT			Bent
				BUBL		Bubbles
				CNTR		Bent centerlines
			CABL			Cathodic cable
			CIRC			Circuits
			CNTR			Centerlines of objects
			COND			Conduit
NEWW			CURR			Cathodic protection system: impress current
			CTRL			Control
			DIMS			Dimensions
			EQMT			Cathodic equipment
			FIXT			Fixtures
			GENL			General dock elements
			GRID			Dock grid
				BUBL		Grid Symbol Bubbles
				CNTR		Grid centerlines
NEWW			GRND			Ground
			HIDE			Hidden lines or objects
			HNHL			Hand hole
			IDEN			Equipment or material system ID
			JBOX			Junction box

NEWW			MISC			Elements not covered by other modifiers.
			MNHL			Manhole
			NPOS			All Non-POS property lines equipment etc.
			OPTN			Object Outlines
			PANL			panels
			PATT			Object Pattern or Hatch Patterns
			PHAS			Phasing
			PHTO			Photograph
			PILE			Piles
				AUGR		Auger cast piles
				BATT		Batter piles
				BEAR		Bearing piles
				CONC		Concrete piles
				EXST		Existing piles
				FNDR		Fender piles
				FUTR		Future piles
				MCRO		Micro piles
				MOOR		Mooring piles
				SHTP		Sheet pile
				TIMR		Timber piles
				PIPE		pipng
				PPOS		POS property line
				REVN		Rev Deltas & clouds + revision text
				SIGN		Signs or signage
				SPRT		Pipe and equipment supports
NEWW			STRC			Cathodic systems Structural elements
			SYMB			
			STNK			tanks
NEWW			TEST			Cathodic protection system: test stations
			TEXT			Text
			UTIL			Utility
		CTEL				Telephone systems
NEWW NEWW NEWW NEWW			CABL			Telephone cable
				COAX		Coax cable
				FIBR		Fiber optics cable
				MULT		Multi-conductor cable
				TRAY		Cable trays and wire ways
			CIRC			Circuits
			COND			Conduit
NEWW			CTRL			Power Controls, Relay, Thermostat, Door Holders

NEWW			ENCL			Telephone enclosure (booth)
			EQMT			Telephone equipment
			FIXT			Fixtures
			FLRR			Floor Elements
NEWW			GRND			Ground For Electrical Power
JBOX					Telephone system junction box	
MNHL					Manhole	
PANL					Telephone panels	
NEWW			POLE			Telephone poles
			STRC			Telephone systems Structural elements
NEWW			VALT			Telephone Vaults
NEWW			WAAL			Wall Elements
		CTWR				Communication radio towers
			EQMT			Communication radio tower equipment
		GNDG				Grounding systems
NEWW			CEIL			Grounding Ceiling elements
NEWW			CIRC			Grounding system cables
			CNMB			Ground system: circuit number
NEWW			COND			Grounding system conduit
	EQMT			Grounding system equipment		
	EQUI			Ground system: equipment		
	GROD			Grounding rod		
NEWW	HNHL			Grounding system hand hole		
	JBOX			Grounding system junction box		
	TEXT			Text		
NEWW			WAAL			Wall Elements
		LEMG				Emergency lighting systems
NEWW			CEIL			Emergency Ceiling elements
			CIRC			Emergency lighting circuits
			COND			Emergency lighting system conduit
					ABND	

NEWW			CONS			Emergency Constant Current Regulators
			EQMT			Emergency lighting equipment
NEWW			EXIT			Emergency Exit fixtures
			FEED			Emergency lighting feeders
			FIXT			Emergency lighting fixtures
NEWW			GRND			Ground For Electrical Power
NEWW			JBOX			Junction boxes
			NAVG			Emergency lighting navigation lights marine GYRS system
			PANL			Emergency lighting panels
			SNSR			Emergency lighting sensor
NEWW			SWCH			Emergency switches
			TEXT			Text
NEWW			WAAL			Emergency wall fixtures
			XFMR			Emergency lighting transformer
		LNOR				Normal lighting systems
NEW			CEIL			Ceiling elements
			CIRC			Circuits normal lighting
NEWW			CNMB			Lighting: circuit number
			COND			Conduit normal lighting
				ABND		Abandoned conduit normal lighting
NEWW			CONS			Constant Current Regulators
			DBNK			Normal lighting systems duct bank
NEW			EMER			Emergency fixtures
			EQMT			Equipment normal lighting
NEWW			EXTR			Lighting: exterior
NEWW			GRND			Ground For Electrical Power
			FEED			Feeders normal lighting
			FIXT			Fixtures normal lighting
NEW			JBOX			
			PANL			Panels normal lighting
NEWW			ROOF			Lighting: roof
			SNSR			Normal lighting sensor
NEWW			SWCH			Lighting: switches
			TEXT			Text
NEW			WAAL			Wall Elements
			XFMR			Normal lighting transformer
		PELV				Emergency power low voltage

NEWW			BUSW			Emergency power circuit bus-way low voltage
			CABL			Emergency power low voltage cable
				COAX		Coax cable
				FIBR		Fiber optics cable
				MULT TRAY		Multi-conductor cable
NEWW						Cable trays and wire ways
			CEIL			Emergency power Ceiling elements
			CIRC			Emergency power circuit low voltage
			COND			Emergency power conduit low voltage
				ABND		Abandoned emergency power conduit low voltage
NEWW			CONS			Constant Current Regulators
			DBNK			Emergency power duct bank low voltage
			EQMT			Emergency power equipment low voltage
			FEED			Emergency power feeders low voltage
NEWW			GRND			Ground For Electrical Power
			JBOX			Emergency power junction box
			METR			Emergency power low voltage meter
				PMTR		Port of Seattle meter emergency power low voltage
				CMTR		City power meter emergency power low voltage
NEWW						
			MONI			Emergency power monitoring system low voltage
			PANL			power panels
			PBOX			Emergency power pull box low voltage
			RCPT			Emergency power receptacle
NEWW			REEF			Reefer Receptacle emergency power low voltage

NEWW			SWBD			Emergency power switchboards low voltage
NEWW			SWGR			Emergency power switchgear low voltage
			TEXT			Text
NEWW			XFMR			Emergency power transformer low voltage
NEWW				TCAN		Emergency power transformer can low voltage
		PEMV				Emergency power medium voltage
NEWW			BUSW			Emergency power circuit bus-way low voltage
NEW			CABL			Emergency power low voltage cable
NEWW				COAX		Coax cable
NEWW				FIBR		Fiber optics cable
NEWW				MULT		Multi-conductor cable
NEWW				TRAY		Cable trays and wire ways
NEWW			CEIL			Ceiling elements
			CIRC			Emergency power circuit medium voltage
			COND			Emergency power conduit medium voltage
				ABND		Abandoned emergency power conduit medium voltage
NEWW			CONS			Constant Current Regulators
			DBNK			Emergency power duct-bank medium voltage
			EQMT			Emergency power equipment medium voltage
			FEED			Emergency power feeders medium voltage
NEWW			GRND			Ground For Electrical Power
NEW			JBOX			Emergency power junction box
NEW			METR	PMTR		Port of Seattle meter emergency power medium voltage
				CMTR		City power meter emergency power medium voltage

NEW			MONI			Emergency power monitoring system medium voltage
			PANL			power panels
			PBOX			Emergency power pull box medium voltage
NEW			POLE			Emergency power medium voltage pole
NEW			RCPT			Emergency power receptacle medium voltage
			REEF			Reefer Receptacle emergency power medium voltage
			SWBD			Emergency power switchboards medium voltage
NEW			SWGR			Emergency power switchgear medium voltage
			TEXT			Text
			XFMR			Emergency power transformer medium voltage
		PNLV				Normal power low voltage systems 120
NEWW			CABL			Emergency power low voltage cable
NEWW				COAX		Coax cable
NEWW				FIBR		Fiber optics cable
NEWW				MULT		Multi-conductor cable
NEWW				TRAY		Cable trays and wire ways
NEWW			CEIL			Ceiling elements
NEWW			CIRC			Circuits normal power low voltage
NEWW			COND			Conduit normal power low voltage
NEWW				ABND		Abandoned normal power conduit low voltage
NEWW			CONS			Constant Current Regulators
NEWW			DBNK			Normal power duct-bank low voltage
NEWW			EQMT			Equipment normal power low voltage
NEWW			FEED			Feeders normal power low voltage

NEWW			FLRR			Floor Elements
NEWW			JBOX			
NEWW			GRND			Ground For Electrical Power
NEWW			GYWR			Guy wire
NEWW			HNHL			Hand holes normal power low voltage
NEWW			JBOX			Normal power junction box low voltage
NEWW			METR			Normal power low voltage meter
NEWW				PMTR		Port of Seattle meter normal power low voltage
NEWW				CMTR		City power meter normal power low voltage
NEWW			MNHL			Manhole normal power low voltage
NEWW						Normal power monitoring system low voltage
NEWW			MONI			
NEWW			PANL			power panels
NEWW			RCPT			Receptacles normal power low voltage
NEWW			POLE			Power poles normal power low voltage
NEWW			STRC			Normal power low Structural elements
NEWW			VALT			Vaults normal power low voltage
NEWW			WAAL			Wall Elements
NEWW			XFMR			Normal power transformer low voltage
		PNMV				Normal power medium voltage systems
NEWW			BUSW			Normal power circuit bus-way medium voltage
NEWW			CABL			Normal power cable
NEWW				COAX		Coax cable
NEWW				FIBR		Fiber optics cable
NEWW				MULT		Multi-conductor cable
NEWW				TRAY		Cable trays and wire ways
NEWW			CEIL			Ceiling elements
NEWW			CIRC			Circuits normal power medium voltage

NEWW			COND			Conduit normal power medium voltage
			CONS			Constant Current Regulators
			DBNK			Normal power duct-bank medium voltage
			EQMT			Equipment normal power medium voltage
			FEED			Feeders normal power medium voltage
NEWW			FLRR			Floor Elements
NEWW			GRND			Ground
NEWW			GYWR			Landis gyrs system
			HNHL			Hand holes normal power medium voltage
NEWW			JBOX			junction box
NEWW			METR			Normal power medium voltage meter
NEWW				PMTR		Port of Seattle meter medium voltage
NEWW				CMTR		City power meter medium voltage
NEWW			GRND			Ground For Electrical Power
			MNHL			Manhole normal power medium voltage
						Normal power monitoring system medium voltage
NEWW			MONI			power panels
			PANL			Power poles normal power medium voltage
NEWW			POLE			Receptacles normal power medium voltage
NEWW			RCPT			Normal power medium Structural elements
NEWW			STRC			Substation normal power medium voltage
			SUBS			Substation equipment
				EQMT		Vaults normal power medium voltage
			VALT			Wall Elements
NEWW			WAAL			Normal power transformer medium voltage
			XFMR			Normal power transformer can high voltage
				TCAN		
			PNHV			High voltage systems over 480
NEWW			CABL			Emergency power low voltage cable

NEWW			COAX		Coax cable
NEWW			FIBR		Fiber optics cable
NEWW			MULT		Multi-conductor cable
NEWW			TRAY		Cable trays and wire ways
NEWW		CEIL			Ceiling elements
NEWW		BUSW			Normal power circuit bus-way high voltage
NEWW		CIRC			Circuits normal power high voltage
NEWW		COND			Conduit normal power high voltage
NEWW			ABND		Abandoned normal power conduit high voltage
NEWW		CONS			Constant Current Regulators
NEWW		DBNK			Normal power duct-bank high voltage
NEWW		EQMT			Equipment normal power high voltage
NEWW		FEED			Feeders normal power high voltage
NEWW		FLRR			Floor Elements
NEWW		GRND			Ground For Electrical Power
NEWW		GYWR			Guy wire
NEWW		HNHL			Hand holes normal power high voltage
NEWW		JBOX			Normal power junction box high voltage
NEWW		L480			Elements less than 480v electrical system (e.g. conduits, wires, panels, handholds, vaults, switches, etc)
NEWW		METR			Normal power high voltage meter
NEWW			CMTR		City power meter high voltage
NEWW			PMTR		Port of Seattle meter high voltage
NEWW		MNHL			Manhole normal power high voltage
NEWW		MONI			Normal power monitoring system high voltage

NEWW			PANL			Panels normal power high voltage
NEWW			POLE			Power poles normal power high voltage
NEWW				BASE		Power pole base
NEWW				GPST		Guy post
NEWW				GYWR		Guy wire
NEWW			TEXT			Text
NEWW			VALT			Vaults normal power high voltage
NEWW			WAAL			Wall Elements
NEWW			XFMR			Normal power transformer high voltage
NEWW				TCAN		Normal power transformer can high voltage
E		POWR				<i>Power for inside Buildings</i>
NEWW			BUSW			Bus ways and wire ways
NEWW			CABL			Power: cable systems
NEWW				COAX		Coax cable
NEWW				FIBR		Fiber optics cable
NEWW				MULT		Multi-conductor cable
NEWW				TRAY		Cable trays and wire ways
NEWW			CBOX			Power: combiner box
NEWW			CIRC			Power circuits (including cross lines and homeruns)
NEWW			CEIL			Ceiling outlets (receptacles and switches)
NEWW			CNDT			Power conduit underground
NEWW			CNMB			Power: circuit number
NEWW			CTRL			ELECTRICAL Power CONTROL SYSTEMS
NEWW			DEVC			Power: devices
NEWW			DSCO			Power: disconnect switches
NEWW			DUCT			Center line power conduit
NEWW			FEED			Feeders
NEWW			FLRR			Floor Elements
NEWW			GENR			Generators and auxiliary equipment
NEWW			GRND			Ground rod
NEWW			GRND			Ground rod box

NEWW			GYWR			Guy wire
NEWW						ELEMENTS GREATER THAN 480V ELECTRICAL SYSTEM (e.g. CONDUITS, WIRES, PANELS, HANDHOLDS, VAULTS, SWITCHES, ETC)
NEWW			G480			
NEWW			HNHL			Power hand hole
NEWW			JBOX			Power junction box
NEWW						ELEMENTS LESS THAN 480V ELECTRICAL SYSTEM (e.g. CONDUITS, WIRES, PANELS, HANDHOLDS, VAULTS, SWITCHES, ETC)
NEWW			L480			
NEWW			MOTR			Motors and utilization equipment
NEWW			PANL			Panel boards, switchboards, MCC, unit substations
NEWW			REEF			Reefer outlet
NEWW			ROOF			Power: roof
NEWW			SNSR			Sensor
NEWW			STRC			Power Structural elements
NEWW			SUBS			Power substation
NEWW			SWBD			Power: switchboards
NEWW						Disconnect switches, motor starters, contactors, etc.
NEWW			SWCH			
NEWW			TREN			Power trench
NEWW			UNKN			Unknown objects associated with root
NEWW			UCPT			Power: under-carpet wiring
NEWW			URAC			Under floor raceways
NEWW			VALT			Power vault
NEWW						Wall/floor outlets (receptacles and switches)
NEWW			WAAL			
NEWW			XFMR			Transformer can

Fire Protection Layers

Some 1st Optional Root Modifiers have been specified in the standard. If the object or element being drawn matches the layer description notes, the 1st Optional Root Modifier indicated must be used. The intent is to provide a consistent method of identifying the most common elements found throughout the Port of Seattle's properties and infrastructure. Objects or elements found on incorrect layers during the QC review process will be flagged as errors and will need to be corrected.

Notes for Building Fire Protection Drawings:

1. To the greatest extent possible the layer standards are divided into "systems". All utilities, equipment, structural elements, etc., associated with a "system" must be placed on layers associated with that "system".
2. Do not place text, notes, leaders, etc., on X-Refs. These should be placed on each individual drawing. Text and pattern X-Ref's that are sized for the drawing they are attached to are acceptable.
3. For fire protection utility plans, place all piping and fittings on piping layers. Put valves on valve layers, equipment on equipment layers, symbols on symbol layers, etc., (i.e., do not put valves, equipment, and symbols on piping layers, etc.). Align all valves with piping in the direction of flow.

Trade	Level	Root	Root Modifier	1st Optional Modifier	1st Optional Modifier	Description
F						
NEWW		ALRM				Fire Alarm / Detection Equipment
NEWW		CO2S				CO2 Sprinkler System
NEWW		CTRL				Control Panels
		DELU				Deluge systems for buildings
NEWW		FLOR				Floor Information
		FOAM				Aqueous film-forming foam system
NEWW		HALN				Halon System
NEWW		IGAS				Inert Gas
NEWW		LGHT				Lights
NEWW		LSFT				Egress Requirements
NEWW		PROT				Fire Protection / Suppression Equipment
NEWW		RATE				Fire Ratings
NEWW		SMOK				Smoke/Pressurization Control
		SPRN				Sprinkler systems for buildings
		STND				Standpipe systems for buildings
NEWW		WATR				Water Supply and Distribution
Generic Root Modifiers for All Fire Root Layers						
			ABOV			Above
			ACCY			Accessory
			AREA			An Area within Specific Boundaries
			AUXL			Auxiliary
			BELW			Below
			BYND			Object beyond
			CNTR			Centerlines
			DIMS			Dimensions
			FNSH			Surface Finish
			FITG			Fitting
			FIXT			Fixture
			GENL			General Component Elements

NEWW NEWW NEWW NEWW NEWW NEWW NEWW			GRID			Grids generic		
				BUBL		Grid Bubbles		
			HIDE			Hidden lines or objects		
			IDEN			Equipment or material system ID		
			MATL			Material		
			MISC			Elements not covered by other modifiers.		
					NICN			Not in contract
					NOTE			General Notes
					NPLT			Non-plotting graphic information
					NPOS			All Non-POS property lines equipment etc.
					OPEN			Openings, ceiling/roof penetrations, ETC.
					OPTN			Optional elements or equipment
					OTLN			Object Outlines
					OVHD			Objects Overhead
					PATT			Floor Pattern or Hatch Patterns
					PHAS			Phasing
					PHTO			Photograph
					PPOS			POS property line
					REVN			Rev Deltas & clouds + revision text
					SIGN			Signs or signage
			SPCL			Specialty equipment		
			SYMB			Symbols		
			TEMP			Temporary		
			TEXT			Text associated with root		
			UTIL			Utility		
		ALRM				Fire Alarm / Detection Equipment		
NEWW			DTCT			Smoke/heat/other detectors		
NEWW			INDC			Indicating appliances		
NEWW			FLRM			Fire protection system: alarm		
NEWW			MANL			Manual fire alarm pull stations		
NEWW			PHON			Fire service or emergency telephone stations		
NEWW			TEXT			Text		
NEWW			WIRE					

		CO2S			CO2 system
NEWW			EQMT		CO2 equipment systems
NEWW			PIPE		CO2 system piping
NEWW				CAPS	Blind flange or cap
NEWW				SPIP	Supply pipe
NEWW				TEMP	Temporary pipe
NEWW			PUMP		CO2 system pumps
NEWW			SNSR		Sensors
NEWW			SPRT		Pipe and equipment supports
NEWW			TEXT		Text
NEWW			VALV		CO2 system valves
		CTRL			Control Panels
NEWW			PANL		Control panels
NEWW			TEXT		Text
		DELU			Deluge systems for buildings
NEWW			ALRM		Fire alarm panel and controls
			BFPA		Backflow prevention assembly
			BLRD		Bollards
			CIRC		Deluge systems Circuits
			CTRL		Controls for equipment
			ENCL		Valve enclosure
			EQMT		Deluge equipment not associated with other systems
			FDCN		Fire department connections
				SMSE	Siamese
			FDET		Fire detectors
			HOSE		Fire hose
				CBNT	Fire hose cabinet
				RACK	Fire hose rack
			PIPE		Deluge system piping
				ABND	Abandoned pipe
				CAPS	Blind flange or cap
				SPIP	Supply pipe
				TEMP	Temporary pipe
			PUMP		Deluge system pumps
			SNSR		Sensors
			SPKL		Deluge system sprinklers
			SPRT		Pipe and equipment supports
			STNK		Deluge system storage tank
			TEXT		Text
			VALT		Fire protection valve vault

			VALV			Fire protection valves
		FLOR				Control Panels
NEWW			EQMT			Floor equipment
NEWW			TEXT			Text
		FOAM				Aqueous Film Forming Foam System
			ALRM			Fire alarm panel and controls
			BFPA			Backflow prevention assembly
			BLRD			Bollards
			CTRL			Controls for equipment
			ENCL			Valve enclosure
			EQMT			Foam equipment systems
			HOSE			Fire hose
				CBNT		Fire hose cabinet
				RACK		Fire hose rack
			PIPE			Foam system piping
				CAPS		Blind flange or cap
				SPIP		Supply pipe
				TEMP		Temporary pipe
			PUMP			Foam system pumps
			SNSR			Sensors
			SPRT			Pipe and equipment supports
			STNK			Foam system storage or bladder tank
			TEXT			Text
			VALT			Fire protection valve vault
			VALV			Foam system valves
		HALN				Halon
NEWW			EQMT			Halon equipment systems
NEWW			PIPE			Halon system piping
NEWW				CAPS		Blind flange or cap
NEWW				SPIP		Supply pipe
NEWW				TEMP		Temporary pipe
NEWW			PUMP			Halon system pumps
NEWW			SNSR			Sensors
NEWW			SPRT			Pipe and equipment supports
NEWW			TEXT			Text
NEWW			VALV			Halon system valves

		IGAS				Inert gas
NEWW			EQMT			Inert gas equipment systems
NEWW			PIPE			Inert gas system piping
NEWW				CAPS		Blind flange or cap
NEWW				SPIP		Supply pipe
NEWW				TEMP		Temporary pipe
NEWW			PUMP			Inert gas system pumps
NEWW			SNSR			Sensors
NEWW			SPRT			Pipe and equipment supports
NEWW			TEXT			Text
NEWW			VALV			Inert gas system valves
		LGHT				Lights
NEWW			EMER			Emergency fixtures
NEWW			EXIT			Exit fixtures
NEWW			TEXT			Text
		LSFT				Egress Requirements
NEWW			EGRE			Egress requirements designator
NEWW			OCCP			Exit fixtures
NEWW			TRVL			Maximum travel distances
NEWW			TEXT			Text
		PROT				Fire protection system
NEWW			CABN			Fire hose cabinets
NEWW			EXTI			Fire extinguishers and fire extinguisher cabinets
NEWW			HOSE			Fire hoses
NEWW			EQMT			Fire protection system equipment systems
NEWW			HYDT			Fire Hydrant and connections
NEWW			PIPE			Fire protection system piping
NEWW				CAPS		Blind flange or cap
NEWW				SPIP		Supply pipe
NEWW				TEMP		Temporary pipe
NEWW			PUMP			Fire protection system pumps
NEWW			SMOK			Fire protection system: smoke detector / heat sensors
NEWW			SPRT			Pipe and equipment supports
NEWW			TEXT			Text

NEWW			VALV			Fire protection system valves
		RATE				Fire protection system: ratings
NEWW			FDOR			Door fire ratings
NEWW			WAAL			Wall fire ratings
NEWW			TEXT			Text
		SMOK				Smoke/Pressurization Control
NEWW			DAMP			Dampers
NEWW			EQMT			Equipment
NEWW			TEXT			Text
		SPRN				Sprinkler systems for buildings
NEWW NEWW			ALRM			Fire alarm panel and controls
			BFPA			Backflow prevention assembly
			BLRD			Bollards
			CLHD			Sprinkler system: ceiling heads
			COMB			Combination system
			CTRL			Controls for equipment
			DRYP			Dry pipe system elements
				PIPE		Dry pipe system piping
				VALV		Dry pipe system valves
			ENCL			Valve enclosure
			EQMT			Sprinkler equipment not associated with other systems
			FDCN			Fire department connections
				SMSE		Siamese
			FDET			Fire detectors
			HOSE			Fire hose
				CBNT		Fire hose cabinet
				RACK		Fire hose rack
			HYDT			Fire Hydrant
			OTHD			Sprinkler - other heads
			OTHR			Sprinkler - other
			PEND			Sprinkler - pendant
NEWW NEWW NEWW			PIPE			Fire protection piping
				ABND		Abandoned pipe
				CAPS		Blind flange or cap
				RPIP		Return pipe
				SPIP		Supply pipe
				TEMP		Temporary pipe

NEWW			PUMP			Fire pumps
			SNSR			Sensors, switches
			SPKL			Fire sprinklers
			SPRT			Pipe and equipment supports
			STAN			Standpipe system
			TEXT			Text
			VALT			Fire protection valve vault
			VALV			Fire protection valves
			WETP			Wet pipe system elements
				PIPE		Wet pipe system piping
				VALV		Wet pipe system valves
		STND				Standpipe systems for buildings
			ALRM			Fire alarm panel and controls
			BFPA			Backflow prevention assembly
			BLRD			Bollards
			CTRL			Controls for equipment
			DRYP			Dry pipe system elements
				PIPE		Dry pipe system piping
				VALV		Dry pipe system valves
			ENCL			Valve enclosure
			EQMT			Standpipe equipment not associated with other systems
			FDCN			Fire department connections
				SMSE		Siamese
			HOSE			Fire hose
				CBNT		Fire hose cabinet
				RACK		Fire hose rack
			PUMP			Fire pumps
			SNSR			Sensors, switches
			SPKL			Fire sprinklers
			SPRT			Pipe and equipment supports
			TEXT			Text
			VALT			Fire protection valve vault
			VALV			Fire protection valves
			WFDT			Water flow detector
				AVLV		Alarm valve
				PIVL		Post indicator valves
				WMAL		Water motor alarm valve
			WETP			Wet pipe system elements
				PIPE		Wet pipe system piping
				VALV		Wet pipe system valves

		WATR			<i>Water Supply and Distribution</i>
NEWW			CONN		Fire department connections
NEWW			HYDT		Fire water hydrant
NEWW			HOSE		Water hoses
NEWW			PIPE		Piping
NEWW			PUMP		Fire pumps
NEWW			TEXT		

X-Reference Layers

Trade	Level	Root	Root Modifier	1st Optional Modifier	2nd Optional Modifier	Description
X	Not required	see note below				
		XF01	ARCH			<i>For Architectural X-Reference Bases</i>
		XF01	CIVL			<i>For Civil X-Reference Bases</i>
		XF01	SRVY			<i>For Civil Survey X-Reference Bases</i>
		XF01	ELEC			<i>For Electrical X-Reference Bases</i>
		XF01	FIRE			<i>For Fire Protection X-Reference Bases</i>
		XF01	LAND			<i>For Landscaping X-Reference Bases</i>
		XF01	MECH			<i>For Mechanical X-Reference Bases</i>
		XF01	BAGC			<i>For Mechanical Baggage X-Reference Bases</i>
		XF01	PLMB			<i>For Plumbing X-Reference Bases</i>
		XF01	STRU			<i>For Structural X-Reference Bases</i>
<p>NOTE: Replace the 00 to 01 and add additional numbers as needed for X-Reference drawings...Example</p> <p>X XF01 ARCH X XF02 ARCH</p>						
<p>NOTE 1: The pound sign # in the Root = a numeral input from the user.</p> <p># # = A number range of 1-99</p>						
<p>NOTE 2: The 1st and 2nd Optional Modifier may be used to provide additional information for each X-ref</p> <p>I.e. X XF01 STRU PILE For a new pile location X-ref</p>						

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Appendix F

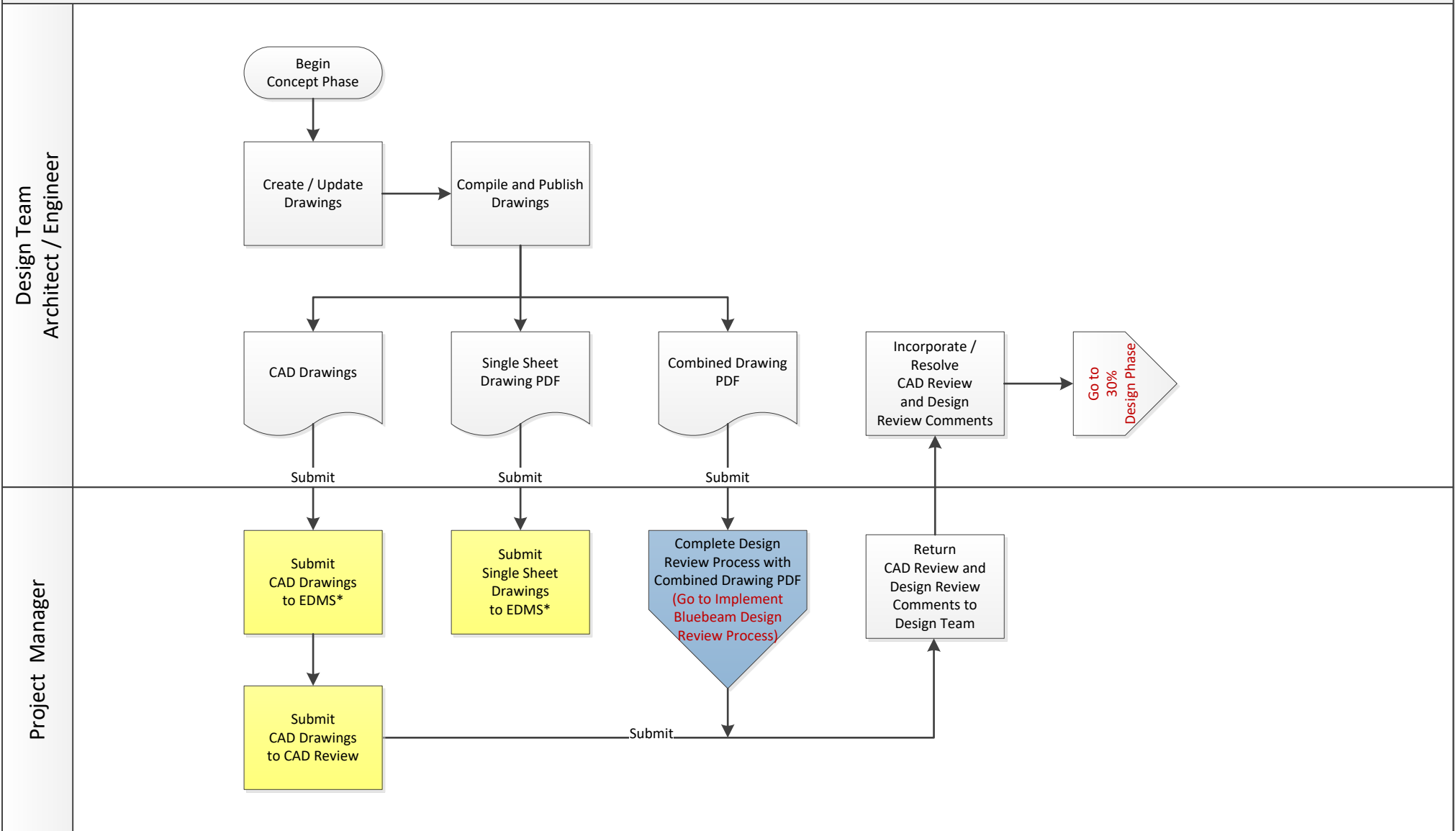
Design Submittal

Deliverable Flowcharts

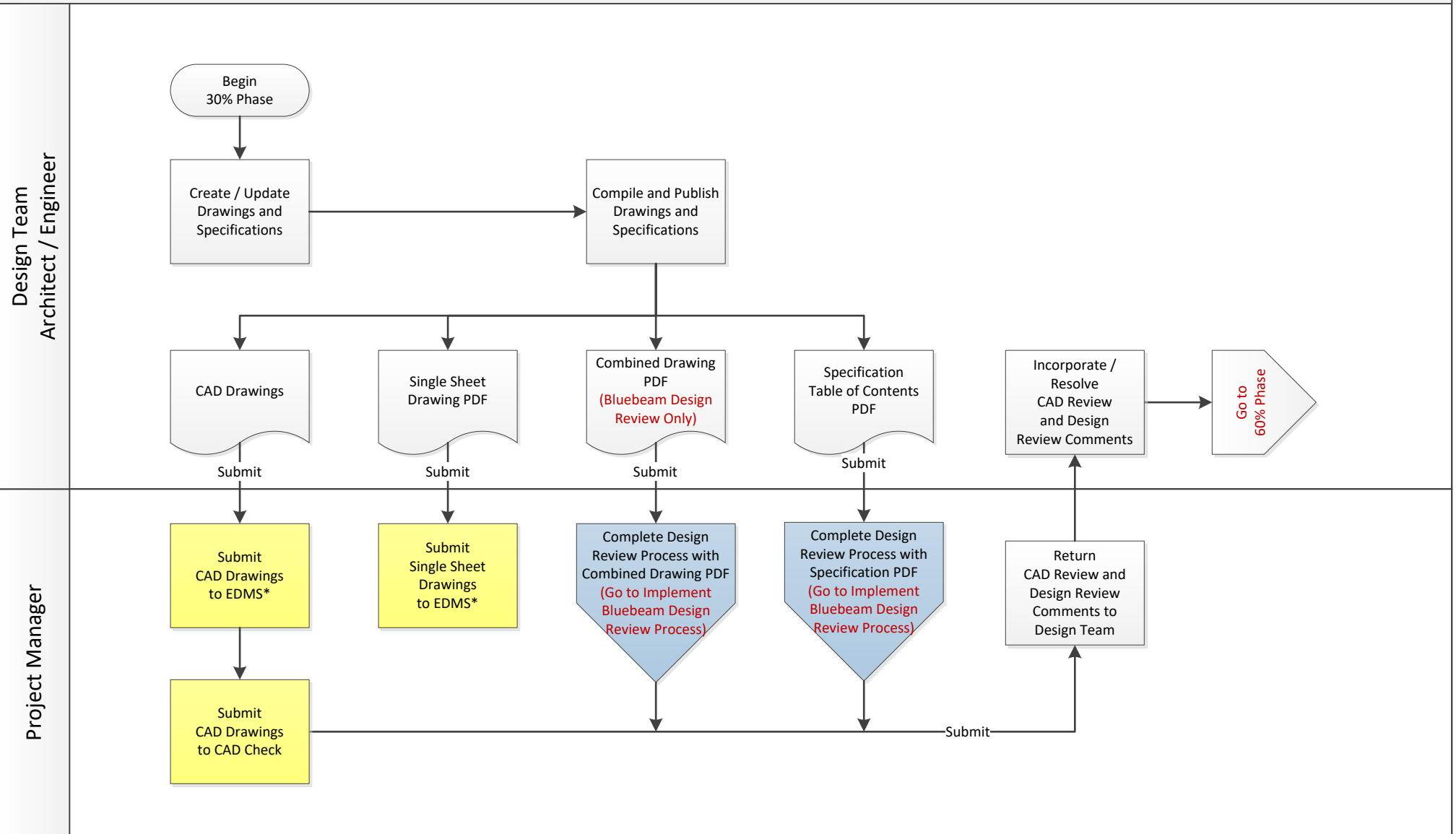
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Design Phase Deliverables

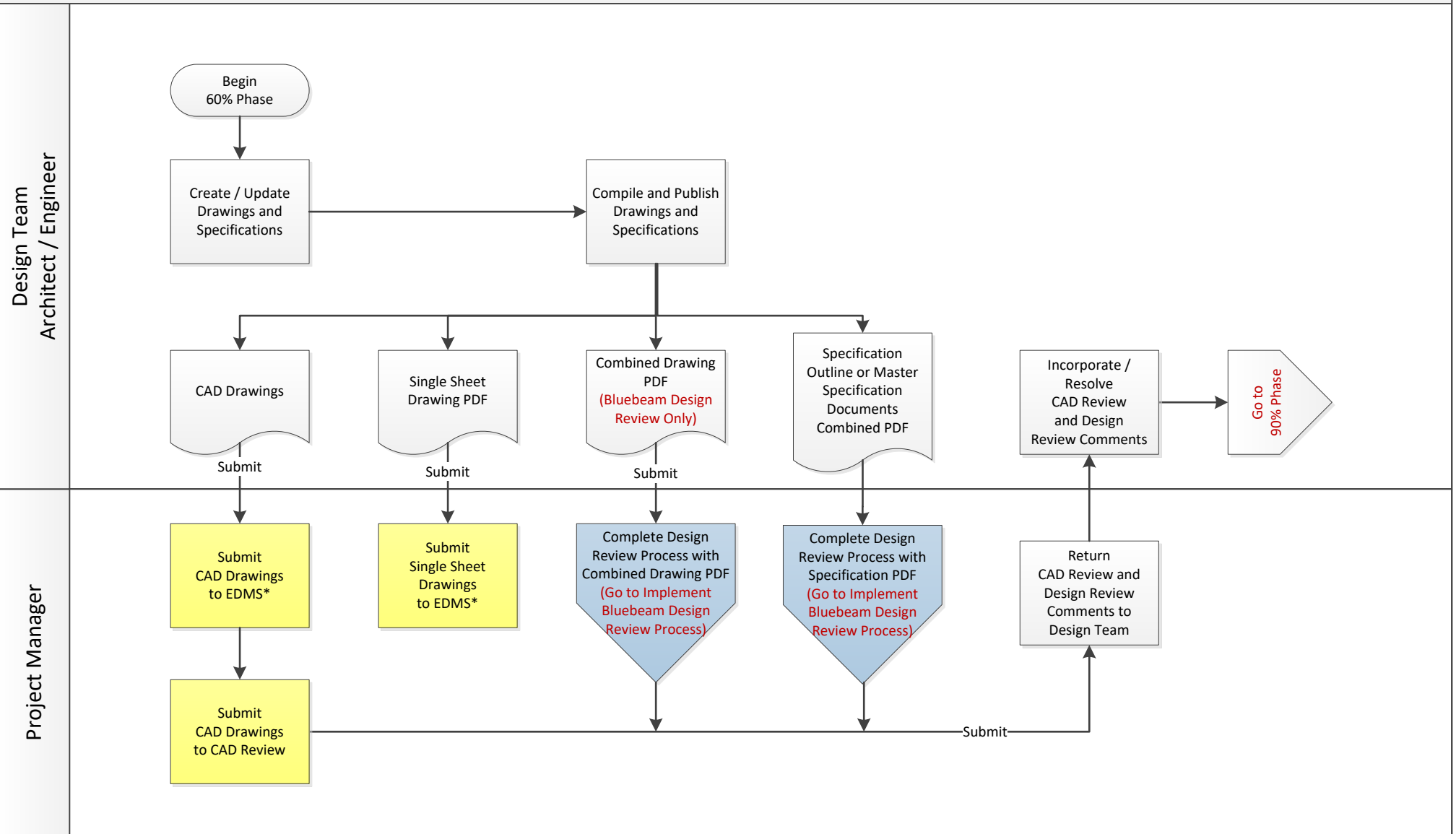
		A/E Deliverable	PM Task
Concept (15%) Design Review			
Drawings	CAD	Individual sheet files	Send to EDMS
			Send to CAD Review
	PDF	Individual sheet files	Send to EDMS
		Combined project drawings	Go through Bluebeam Design Review process
Specifications	Word	None required	N/A
	PDF	None required	N/A
30% Design Review			
Drawings	CAD	Individual sheet files	Send to EDMS
			Send to CAD Review
	PDF	Individual sheet files	Send to EDMS
		Combined project drawings	Go through Bluebeam Design Review process
Specifications	Word	None required	N/A
	PDF	Table of Contents	Go through Bluebeam Design Review process
60% Design Review			
Drawings	CAD	Individual sheet files	Send to EDMS
			Send to CAD Review
	PDF	Individual sheet files	Send to EDMS
		Combined project drawings	Go through Bluebeam Design Review process
Specifications	Word	None required	N/A
	PDF	Outline or Master Specs	Go through Bluebeam Design Review process
90% Design Review			
Drawings	CAD	Individual sheet files	Send to EDMS
			Send to CAD Review
	PDF	Individual sheet files	Send to EDMS
		Combined project drawings	Go through Bluebeam Design Review process
Specifications	Word	Individual section files	Go through Design Review process (optional)
	PDF	Combined specification file	Go through Bluebeam Design Review process
Building Permit Submittal			
Drawings	CAD	Signed individual sheet files	Send to EDMS
			Send to EDMS
	PDF	Signed individual permit sheet files	Submit to Building Department/Authority Having Jurisdiction
		Signed combined permit drawings	Submit to Building Department/Authority Having Jurisdiction
Specifications	Word	N/A	N/A
	PDF	Combined specification file (where required by Authority Having Jurisdiction)	Submit to Building Department/Authority Having Jurisdiction
100% Design Review			
Drawings	CAD	Individual sheet files	Send to EDMS
			Send to CAD Review
	PDF	Individual sheet files	Send to EDMS
		Combined project drawings	Go through Bluebeam Design Review process
			Send to CPO for review
Specifications	Word	Individual section files	Go through Bluebeam Design Review process (optional)
			Send to CPO for review
	PDF	Combined specification file	Go through Design Review process
			Send to CPO for review
Ready to Bid Document Submittal			
Drawings	CAD	Individual sheet files	Send to EDMS
			Send to EDMS
	PDF	Signed individual sheet files	Send to CPO for Bid
		Signed combined project drawings	Send to project delivery team for construction use
			Send to CPO for reference
Specifications	Word	Individual section files with signed Certification of Specifications PDF	Send to CPO for Bid
	PDF	Combined specification file	Send to EDMS
			Send to project delivery team for construction use
Bid Addenda			
Drawings	CAD	Individual sheet files	Send to EDMS
			Send to EDMS
	PDF	Signed individual sheet files	Send to CPO for Bid
		Combined project drawings	Send to project delivery team for construction use
Specifications	Word	Individual section files with signed Certification of Specifications PDF	Send to CPO for Bid
	PDF	Combined specification file	Send to EDMS
			Send to project delivery team for construction use



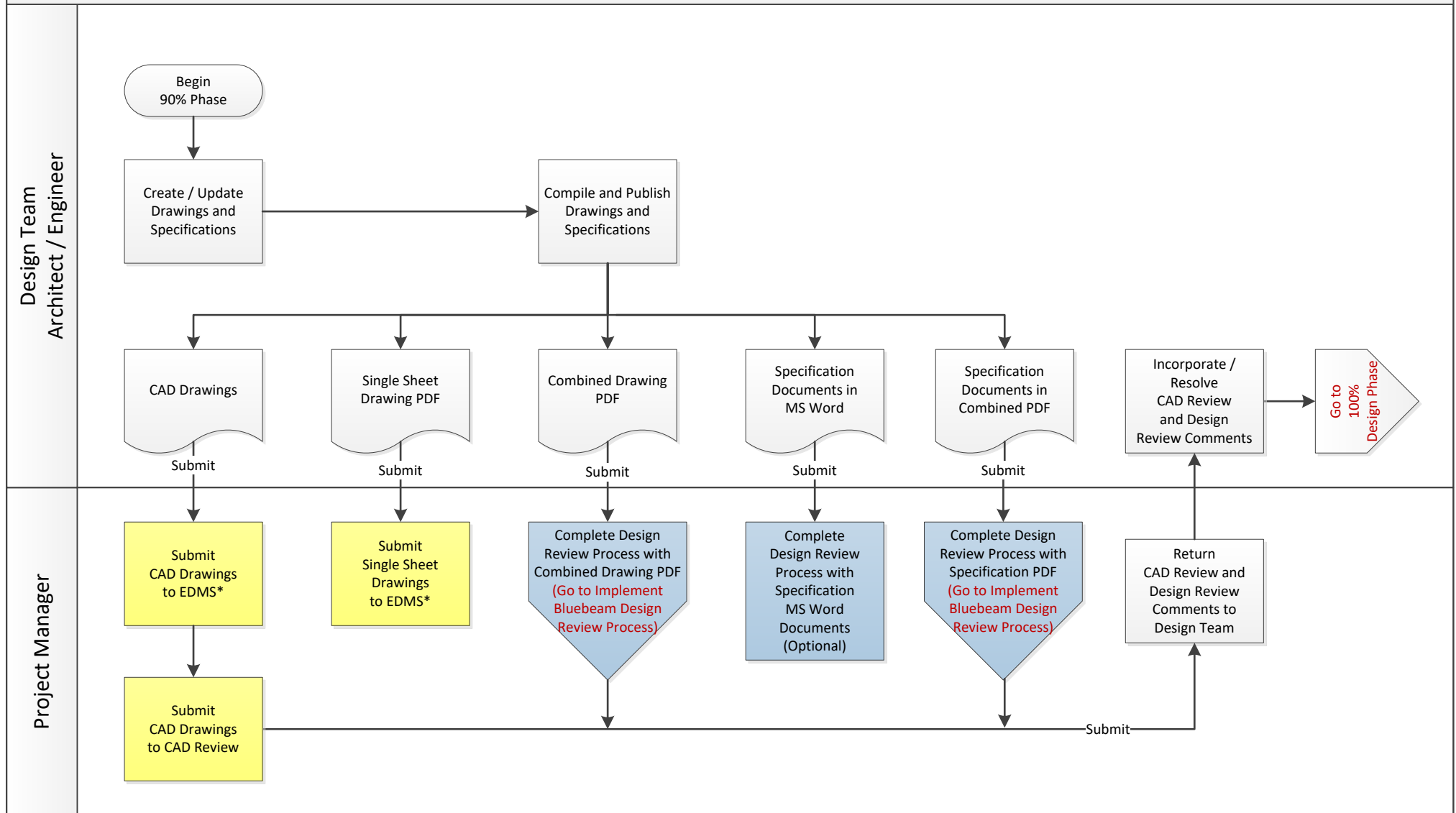
*Engineering Document Management System (EDMS)



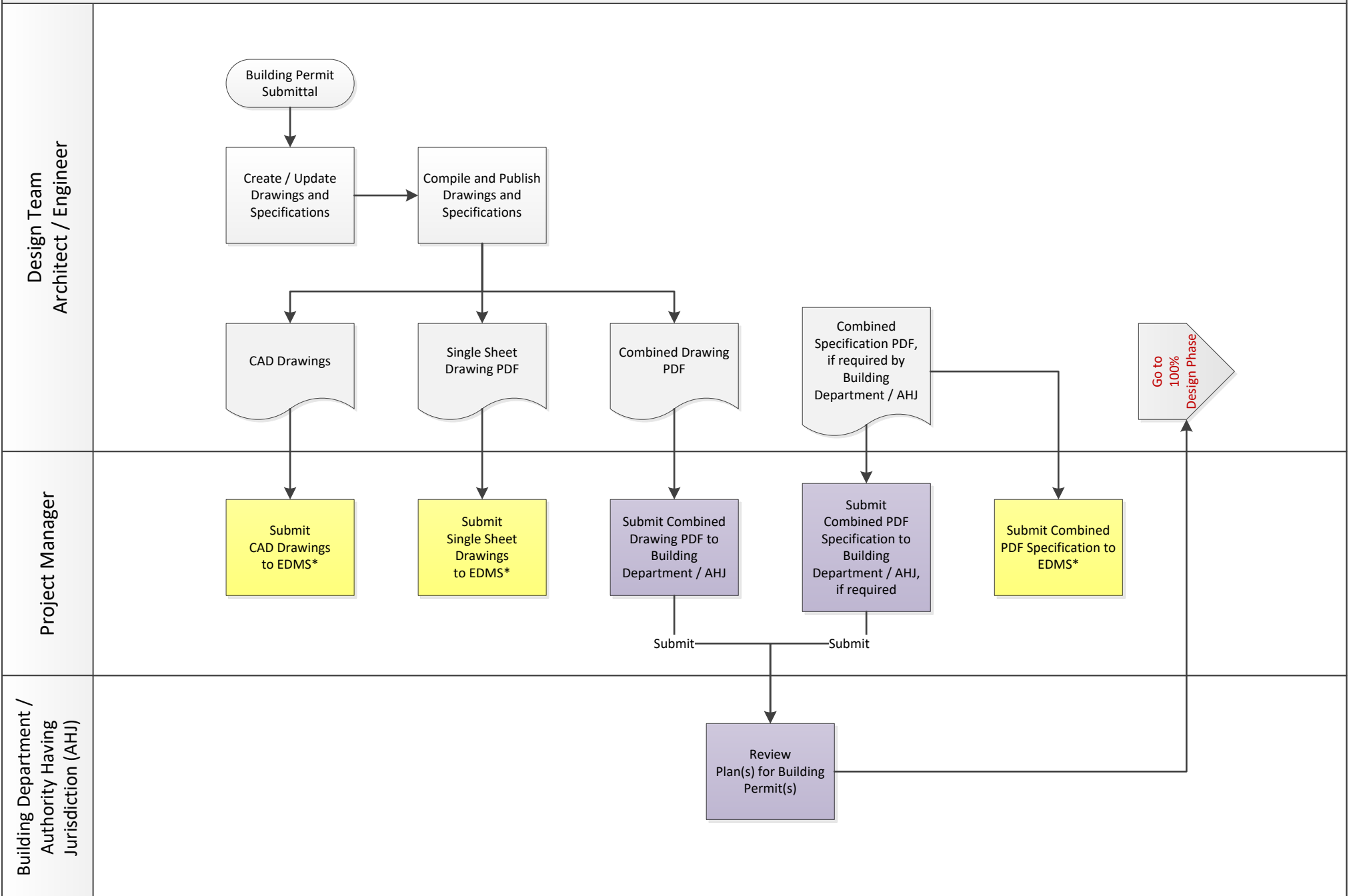
*Engineering Document Management System (EDMS)



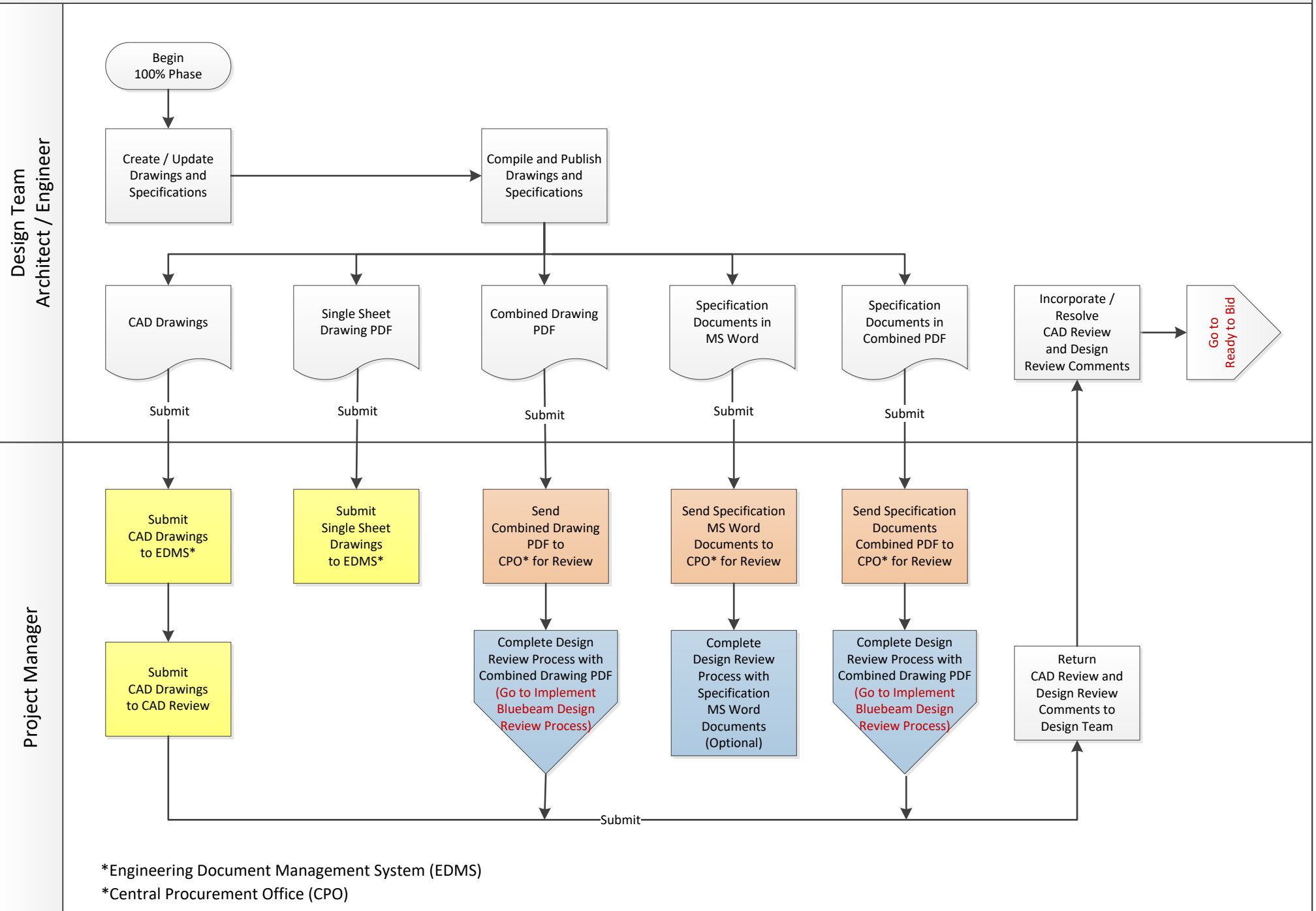
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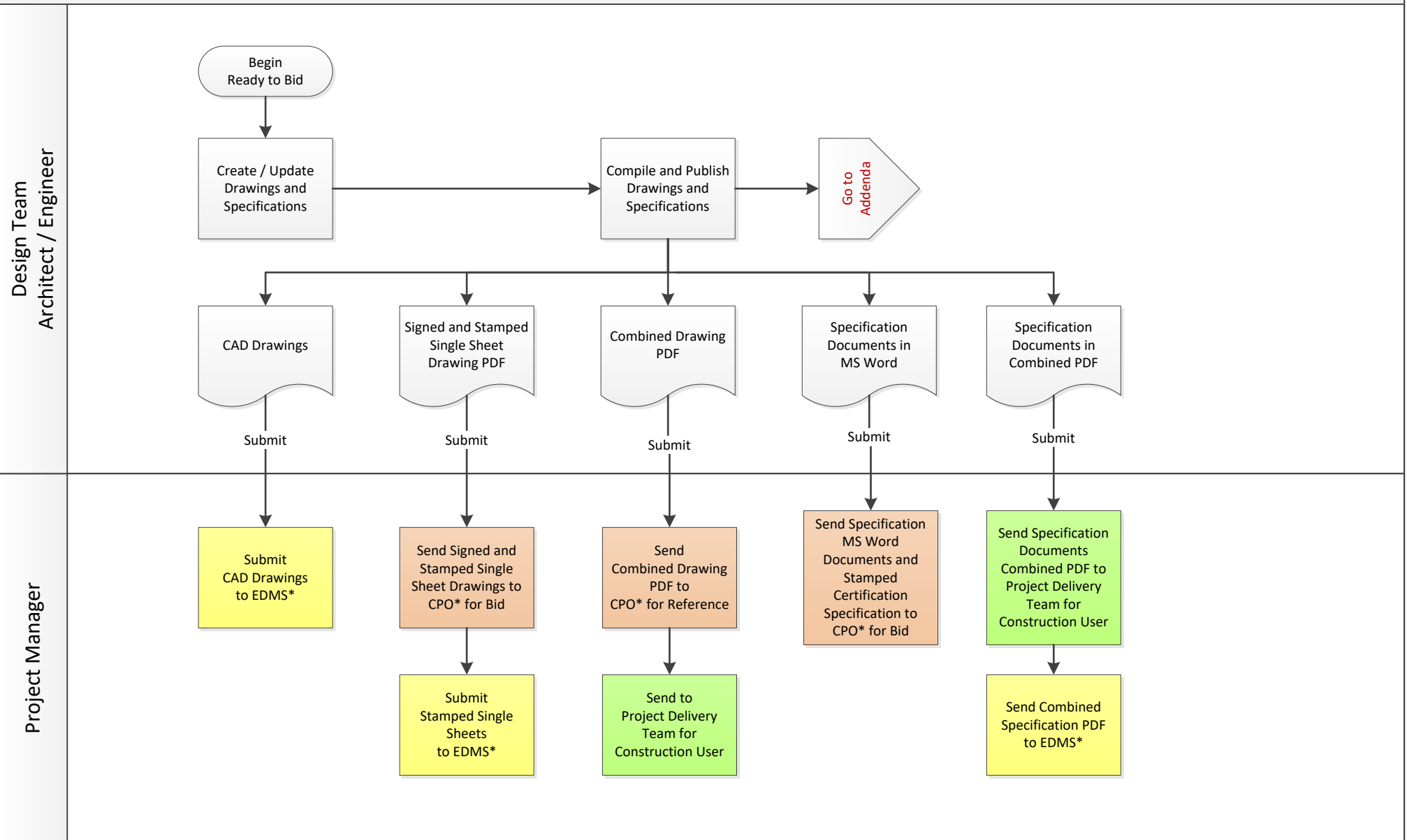


*Engineering Document Management System (EDMS)



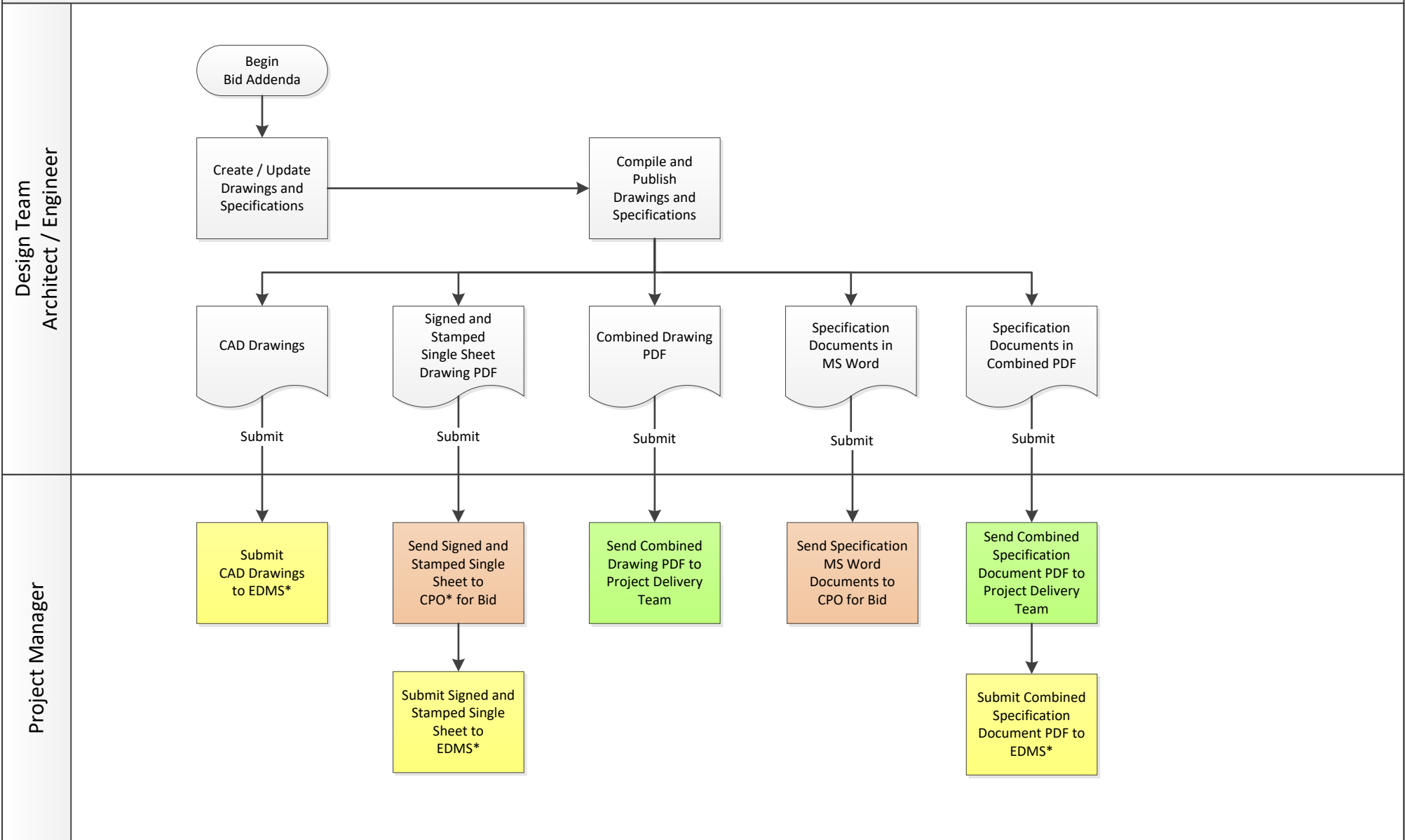
*Engineering Document Management System (EDMS)





*Engineering Document Management System (EDMS)

*Central Procurement Office (CPO)



*Engineering Document Management System (EDMS)

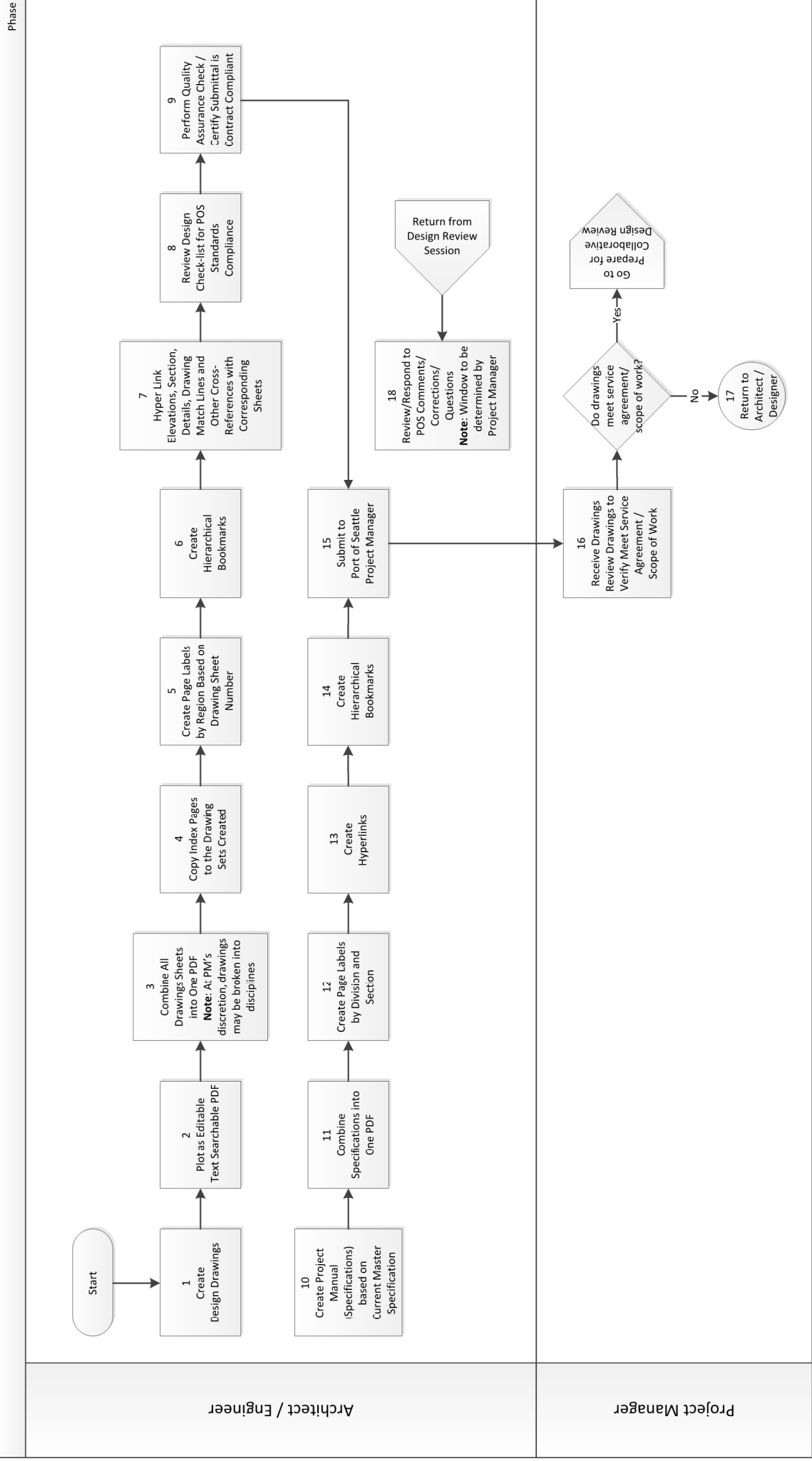
*Central Procurement Office (CPO)

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Appendix G Bluebeam Design Review Flowcharts

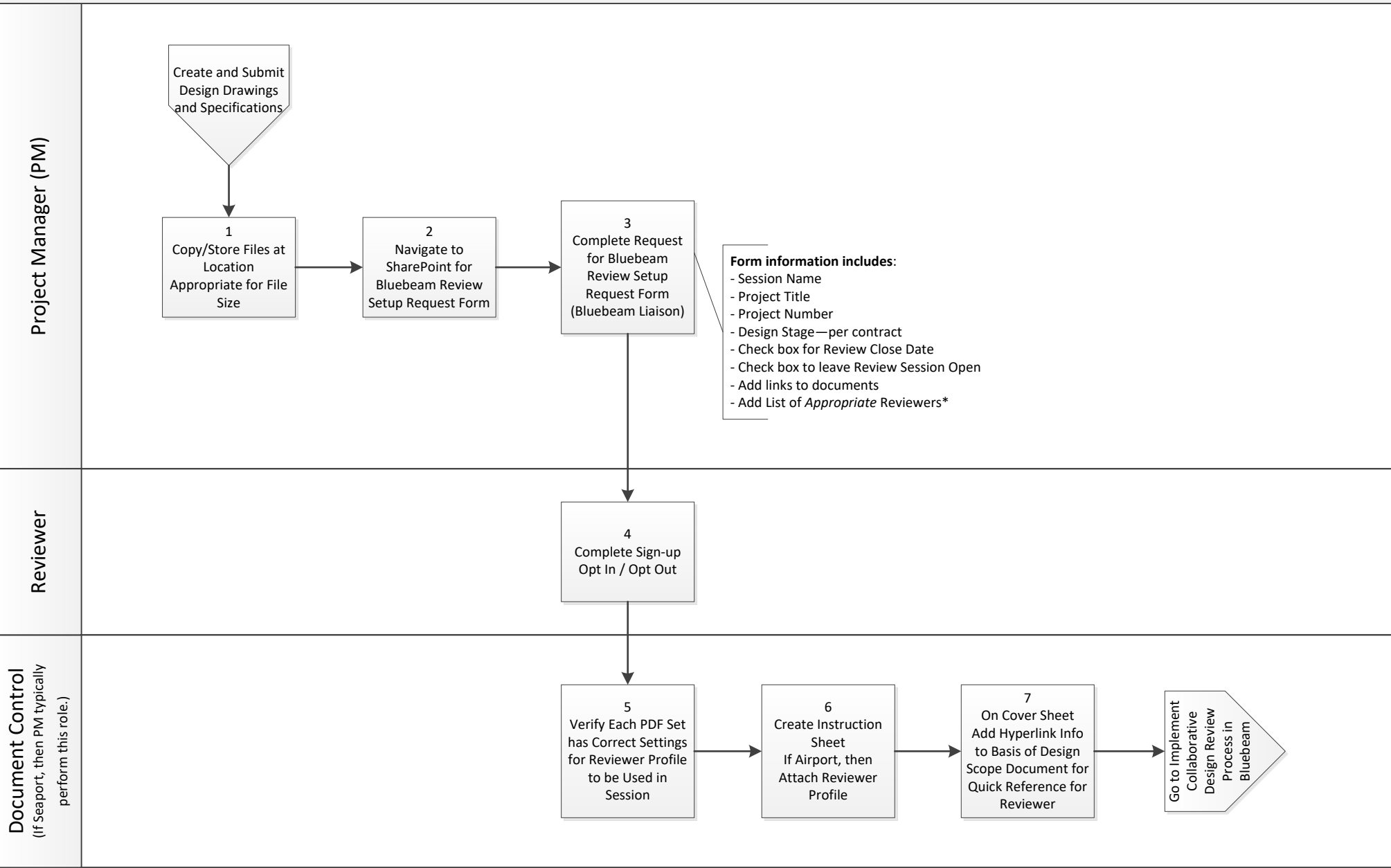
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1.0 Create and Submit Design Drawings and Specifications for Bluebeam Review Process, 4/17/18



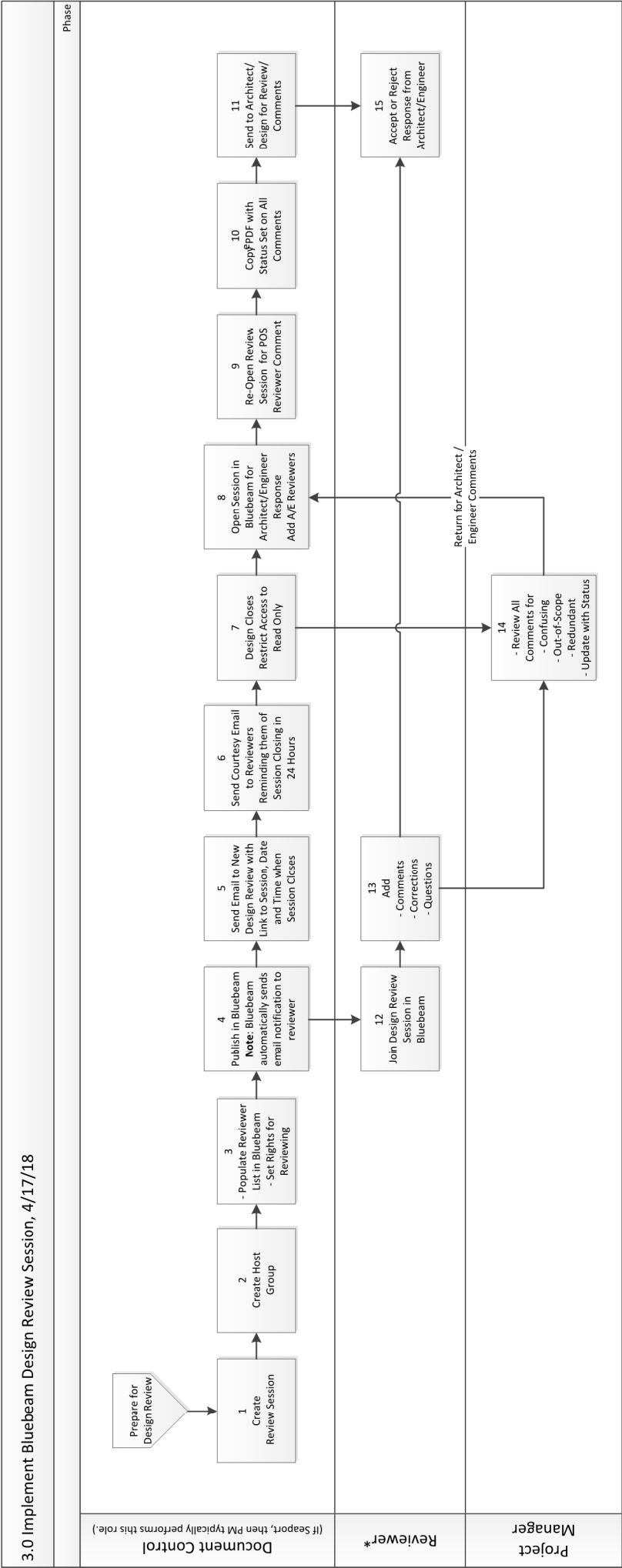
2.0 Prepare for Collaborative Design Review Session in Bluebeam, 4/17/18

Phase



* Reviewers may include Architect/Engineer, Airport Bldg. Dept. and Central Procurement Office as appropriate reviewers

Port of Seattle CAD Standards 2023



* Reviewers may include Architect/Engineer, Airport Bldg. Dept. and Central Procurement Office as appropriate reviewers

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Appendix H AutoCAD & Bluebeam PDF Submittals Checklists

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AUTOCAD AND PDF CHECKLISTS FOR SUBMITTALS




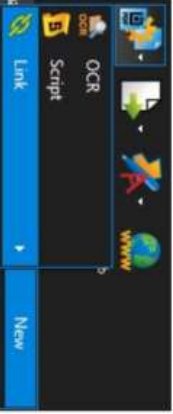

AUTOCAD Checklist (See PDF Below)									
PREPARER				QUALITY CONTROL REPRESENTATIVE					
<input type="checkbox"/>	<input type="checkbox"/>	N/A	Has there been a POS CAD Kick-Off Meeting for this project with the Quality Assurance Section of Design Engineering?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Comments (Optional):					
SUBMITTAL DOCUMENTS									
<input type="checkbox"/>	<input type="checkbox"/>	N/A	Is this submittal in conformance with the Port of Seattle CAD Standards 2018 Edition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Comments (Optional):					
<input type="checkbox"/>	<input type="checkbox"/>	N/A	Is each submitted AutoCAD sheet listed in the Sheet Index?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Comments (Optional):					
<input type="checkbox"/>	<input type="checkbox"/>	N/A	Are all sheets listed in the index submitted unless noted otherwise?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Comments (Optional):					
<input type="checkbox"/>	<input type="checkbox"/>	N/A	Do the Sheet Numbers and Sheet Titles in each title block match those listed in the Sheet Index?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Comments (Optional):					
<input type="checkbox"/>	<input type="checkbox"/>	N/A	Are both PDF and AutoCAD files included with this submittal?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Comments (Optional):					
<input type="checkbox"/>	<input type="checkbox"/>	N/A	Have all CAD drawing files been saved in an AutoCAD format compatible with AutoCAD 2018 software?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Comments (Optional):					
<input type="checkbox"/>	<input type="checkbox"/>	N/A	Is the complete AutoCAD submittal provided in one folder for all disciplines, including all referenced files (dwgs, jpgs, pdfs, etc.) and ctb files?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Comments (Optional):					
<input type="checkbox"/>	<input type="checkbox"/>	N/A	Have all comments in previous POS CAD Reviews been resolved?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Comments (Optional):					
NAMING									
<input type="checkbox"/>	<input type="checkbox"/>	N/A	Does this submittal follow POS Sheet Numbering convention?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Comments (Optional):					

AUTOCAD AND PDF CHECKLISTS FOR SUBMITTALS

Y	N	N/A	Are the sheet file names made per the POS protocol?	Verified <input type="checkbox"/>	Not Verified <input type="checkbox"/>	N/A <input type="checkbox"/>
				Comments (Optional):		
Y	N	N/A	Do the Paper Space Layout Tab and Title Block Sheet Number match?	Verified <input type="checkbox"/>	Not Verified <input type="checkbox"/>	N/A <input type="checkbox"/>
				Comments (Optional):		
LOCATION REFERENCE						
Y	N	N/A	Is all Model Space plan work located in the required Port of Seattle coordinate system, origin and orientation?	Verified <input type="checkbox"/>	Not Verified <input type="checkbox"/>	N/A <input type="checkbox"/>
				Comments (Optional):		
Y	N	N/A	Are all Model Space plans using a POS approved building grid base file?	Verified <input type="checkbox"/>	Not Verified <input type="checkbox"/>	N/A <input type="checkbox"/>
				Comments (Optional):		
DRAWING FORMAT AND PROTOCOL						
Y	N	N/A	Are the Cover Sheet and Sheet Index using the templates provided by the Port of Seattle?	Verified <input type="checkbox"/>	Not Verified <input type="checkbox"/>	N/A <input type="checkbox"/>
				Comments (Optional):		
Y	N	N/A	Does this submittal use a title block from the POS AutoCAD Library 2018?	Verified <input type="checkbox"/>	Not Verified <input type="checkbox"/>	N/A <input type="checkbox"/>
				Comments (Optional):		
Y	N	N/A	Are the x-referenced files (dwgs, jpgs, pdfs, etc.) successfully attaching, and is each applied onto a dedicated xref layer, as an overlay, with the 'No Path' option selected?	Verified <input type="checkbox"/>	Not Verified <input type="checkbox"/>	N/A <input type="checkbox"/>
				Comments (Optional):		
Y	N	N/A	Are all layers consistent with the POS Layer Tables?	Verified <input type="checkbox"/>	Not Verified <input type="checkbox"/>	N/A <input type="checkbox"/>
				Comments (Optional):		
Y	N	N/A	Are all view titles using POS Standard View Title Blocks?	Verified <input type="checkbox"/>	Not Verified <input type="checkbox"/>	N/A <input type="checkbox"/>
				Comments (Optional):		
<div> <div>Name:</div> <div>Date:</div> </div> <div> <div>Name:</div> <div>Date:</div> </div>						

PDF Checklist (See AUTOCAD Above)

PREPARER		QUALITY CONTROL REPRESENTATIVE		
STANDARD REVIEW (Non-Bluebeam) PDF's				
<input type="checkbox"/> Submit individual sheet PDFs, full-size pages. Document size must match size of full-size printed hardcopy (e.g. 22"x34" electronic pages for most drawings)	Verified <input type="checkbox"/>	Not Verified <input type="checkbox"/>	N/A <input type="checkbox"/>	
	Comments (Optional):			
<input type="checkbox"/> Submit single combined PDF for entire package, full-size pages.	Verified <input type="checkbox"/>	Not Verified <input type="checkbox"/>	N/A <input type="checkbox"/>	
	Comments (Optional):			
BLUEBEAM REVIEW PDFs				
At the discretion of the Port PM, files may be broken into disciplines, multi-discipline volumes, or other grouping (typically for large projects)				
<input type="checkbox"/> Create bookmarks for each page, with bookmark title to match sheet number (e.g. C2.1) <i>Recommendation: Batch-create bookmarks by area, selecting sheet number area on the drawing file</i> <ol style="list-style-type: none"> 1. Left pane → Bookmarks 2. Highlight and then delete all existing Bookmarks 3. Create Bookmarks 	Verified <input type="checkbox"/>	Not Verified <input type="checkbox"/>	N/A <input type="checkbox"/>	
	Comments (Optional):			
<input type="checkbox"/> Create hierarchical bookmarks for each discipline (e.g. "Civil", under which C1.0, C2.0, and C2.1 would fall) <i>Recommendation: Create New Bookmark at front of each discipline, then move individual pages' bookmarks under the parent discipline bookmark</i> <ol style="list-style-type: none"> 1. Left pane → Bookmarks 2. Add Bookmark for discipline 3. Drag individual sheet bookmarks under the discipline bookmark as a group 4. 	Verified <input type="checkbox"/>	Not Verified <input type="checkbox"/>	N/A <input type="checkbox"/>	
	Comments (Optional):			

<p><input type="checkbox"/> Ensure page labels match sheet numbers (e.g., C2.1) <i>Recommendation: Create bookmarks first, then use batch page label "by bookmarks"</i></p> <ol style="list-style-type: none"> 1. Verify Bookmarks exist for each page, matching sheet number 2. Left pane → Thumbnails  3. Create Page Labels  → Bookmarks 	<p>Verified <input type="checkbox"/></p> <p>Not Verified <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p> <p>Comments (Optional):</p>		
<p><input type="checkbox"/> Provide links between call-outs and pages referenced</p> <p><i>Recommendation: OCR (Optical Character Recognition) document only if needed, then batch create new links. These functions only available in Bluebeam eXtreme.</i></p> <ol style="list-style-type: none"> 1. "Document" ribbon → OCR  → Okay 2. "File" ribbon → Batch → Link → New 3.  4. Add Open Files → Next 5. Page Label → Generate 6. Run <p></p>	<p>Verified <input type="checkbox"/></p> <p>Not Verified <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p> <p>Comments (Optional):</p>		
<p><input type="checkbox"/> Use PDF format that is text-searchable, including all blocks, notes, labels, model space areas, paper space areas, etc.</p> <p><i>Recommendations:</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Use Autodesk DWG-to-PDF driver when creating PDFs <input type="checkbox"/> Do not flatten PDFs <input type="checkbox"/> When searching, select "Search Markups" in search options in Bluebeam. Alternatively, use OCR. <input type="checkbox"/> If a hardcopy is signed & scanned, use OCR (or submit copy w/o signature, originated with PDF driver) 	<p>Verified <input type="checkbox"/></p> <p>Not Verified <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p> <p>Comments (Optional):</p>		

<input type="checkbox"/> Embed all drawing fonts in PDF file.	Verified <input type="checkbox"/>	Not Verified <input type="checkbox"/>	N/A <input type="checkbox"/>
	Comments (Optional):		
	Verified <input type="checkbox"/>	Not Verified <input type="checkbox"/>	N/A <input type="checkbox"/>
<input type="checkbox"/> Verify that files are unlocked. <i>(i.e., pages can be split out, added, etc. No ability to edit text or images in drawings is required.)</i>			

Name:	
Date:	

Name:	
Date:	

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End of Appendices.**