TITLE 10. RECORD DRAWING STANDARDS

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CHAPTER 1. GENERAL REQUIREMNTS

a. The MPTN Land Use Law requires that Permittees submit accurate Record drawings prior to the issuance of a Certificate of Completion by the Land Use Commission (14 M.P.T.L., ch. 7, § 2b).

b. Record drawings are to be prepared by the Design Professional in Responsible Charge and shall document all site changes as a result of the Land Use Activity. Record drawings are a final amended set of construction documents updated with all information recorded on both the As-built drawings and Survey drawings.

(1) As-built drawings are required to be maintained, by contractors, throughout construction, to document all changes to the original construction documents (14 M.P.T.L. ch. 6., § 2b(2)). As-built drawings are typically associated with interior construction work and must depict:

(a) in red ink, all changes to the original construction documents; including,

(b) the accurate measured location, size and nature of any concealed project element such as structural elements, accessories, equipment, devices, plumbing lines, valves, mechanical equipment, and the like.

(2) Survey drawings are required to be prepared by a Qualified Surveyor throughout construction for the purpose of site documentation (14 M.P.T.L. ch. 6., § 2b(3)). Survey drawings are typically associated with exterior work and must depict the accurate location, size, and nature of all items noted, and to the standards specified, within Chapter 2 of this Title.

(3) Land Use Commissioners have the authority to review and request copies, throughout construction, of both the As-built and Survey drawings to confirm compliance with the standards of this Title (14 M.P.T.L. ch. 6., § 2b(4) & (5)).

c. Submission Requirements

(1) The Permittee or Project Manager shall review hard copies or electronic files to confirm information prior to submission to the Commission.

(2) The Permittee shall submit Record drawings to the Land Use Commission in both hard copy and electronic format.

(a) Hard Copy Submission

(i) Three (3) sets of complete drawings shall be required.

(ii) All drawings are to be presented on the preferred D Size (24" x 36").

(iii) Smaller sizes may be used where the Commission has determined it to be sufficient.

(iv) E size paper format (36" x 48") is not acceptable and therefore is not to be used.

(b) Electronic Submission

(i) A minimum of four (4) sets of electronic drawings shall be submitted; two (2) sets in Adobe Reader (i.e. PDF) and two (2) in AutoCAD format (i.e. DWG). An additional set of each will be required when the Land Use Activity involves utility infrastructure.

(ii) All electronic submissions shall be made in physical form, either on CD or DVD-ROMs.

(iii) AutoCAD files shall contain all information organized as specified within Chapter 3, AutoCAD Format Standard, of this Title.

d. Refusal of Record Drawings

(1) The Commissioner representing Planning shall review the submitted Record drawings for conformance with Chapter 3, Survey Drawings, and Chapter 5, AutoCAD Format Standard, provisions of this Title.

(2) Either the Commissioner representing Planning or the Commissioner representing the Gaming Enterprise, or both, shall review the Record drawings for conformance with Chapter 5, AutoCAD Format Standard, of this Title.

(3) Drawings & Electronic Files that do not follow the standards listed herein may be refused until they conform to standards.

e. Revisions

(1) Submitted drawings shall contain a revision date and brief description of the revision on each revised sheet

(2) Revisions shall be clearly identified using a revision cloud and revision number. In addition, the cover sheet shall show the latest applicable revision date.

CHAPTER 2. SURVEY DRAWING STANDARDS

§ 1. Field Survey Specifications

a. General

(1) Horizontal surveys shall comply with the minimum standards for an A-2 survey as stated in the MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT adopted 9/26/96, unless otherwise directed by the Mashantucket Pequot Tribal Nation.

(2) Vertical surveys shall comply with the minimum standards for a V-2 survey as stated in the MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT adopted 9/26/96, unless otherwise directed by the Mashantucket Pequot Tribal Nation. Vertical Surveys shall be based upon NGVD 29, unless otherwise directed by the Mashantucket Tribal Nation.

(3) Topographic surveys shall comply with the minimum standards for a T-2 survey as stated in the MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT, adopted 9/26/96, unless otherwise directed by the Mashantucket Pequot Tribal Nation.

(4) The Mashantucket Pequot Tribal Nation Planning Dept. has its own Survey Control and will provide this information to vendor upon reward of contract.

b. Field Survey Classes of Accuracy Sec. 20-300b-11

(1) All surveys prepared in metric format shall use 1 meter = 3.28083333 U.S. Survey feet.

(2) Horizontal Accuracy.

(a) Each survey depicting horizontal locations shall conform to a Horizontal Accuracy Class the tolerance of which is defined as follows:

Class	Positional	Linear		(Use ratio for D>...)	Angular
		Feet	Meters		
AA	1: 15,000	± 001'	± .003m	[1:22,500@D>225'(69m)]	± 8
A-1	1: 10,000	± 0.01'	± .003m	[1:15,000@D>150'(46m)]	± 10
A-2	1: 5,000	± 0.02'	± .006m	[1:7,500@D>150'(46m)]	± 20
B	1: 1,000	± 0.5'	± .15m	[1:1,500@D>750'(229m)]	± 2'
C	± 2'	± 2'	± .6m		± 30'
D	compilation of existing data-NOT A FIELD SURVEY				

(b) Linear accuracy's expressed as ± apply to distances less than (<) those prescribed as a ratio.

(3) Vertical Accuracy.

Each survey depicting vertical location shall conform to a Vertical Accuracy Class the tolerance of which is defined as follows:

Class	Level Loop Closure Greater Than One Mile		Level Loop Closure Less Than Mile	
	Feet	Meters	Feet	Meters
V-1	± .02√M	± .005√K	± .006√N	± .002√N
V-2	± .035√M	± .008√K	± .010√N	± .003√N
V-3	± .05√M	± .012√K	± .020√N	± .006√N
M or K = The length of the level loop in miles/kilometer N = The number of instrument setups in the level loop				

c. Topographical Survey.

(1) Each Topographic Survey shall conform to a Topographic Accuracy Class the tolerance of which is defined as follows:

Class	Horizontal Position		Contour Interval Test
	Feet	Meters	
T-1	1/40 of map scale	1/1500 of map scale	90% within ½ contour interval
T-2	1/40 of map scale	1/1500 of map scale	80% within ½ contour interval

(2) Classes T-1 and T-2 are to be used for ground survey procedures.

(3) Class T3 applies to photogrammetric maps for which the surveyor provides the horizontal and vertical control. Refer to the National Map Standards for Photogrammetric Mapping for requirements.

(4) Class T-D applies to a topographic map complied from various sources of information not necessarily verified by the surveyor.

(5) In using Topographic Accuracy Class T-1 or T-2, the surveyor is expressing confidence that should a test profile be run in the field, a plotted comparison with a profile scaled from the map shall be in agreement within the above criteria and the remainder shall be within the contour interval.

§ 2. Field Survey Requirements

The requirements specified within this section are provided by MPTN's Planning program, as a guide and may not be inclusive of all data required to be included in final Record drawings. Additional information may be required at the direction of the engineer, project manager or owner.

a. Utilities

(1) General Notes

(a) For all new utilities including drainage, as-built data shall include the size and material of the conduits/pipes and in the case of multiple conduits/pipes, the number of each. Take photographs at major utility conflicts/crossings; number pictures same as field shot numbers.

(b) Whenever existing utilities or drainage structures, conduits or pipes are encountered, whether in use or abandoned, provide as-built information as noted below.

(2) Electric / communications

(a) Conduits

Survey all conduits every 20 ft and at change in elevation or direction

(b) Duct banks

(i) Survey top of concrete along centerline, but drawn to actual configuration

(ii) Note width and depth

(iii) Shots to be taken every 20 linear feet or change in elevation or direction.

(c) Manholes

Survey center of top section for round and note diameter or for square, four corners and center of top of frame.

(d) Lighting and secondary electrical

Survey all site lighting including, conduits, hand holds, etc.

(e) Low voltage controls and conduit

(i) Survey all site lighting including, conduits, hand holds, etc.

(ii) Note description

(f) Structures

(i) Survey center of top for round and note diameter or for square, four corners and center of top of frame.

(ii) Locate all electrical equipment, (transformers, switch gears, hand holds, etc.)

(g) Grounding

Survey grounding system.

(3) Water Service

(a) Pipe

(i) Shots to be taken every 20 ft. along center top of pipe and at change in elevation or direction.

(ii) Diameter shall be noted

(b) Couplings

Survey center top of coupling; Note bend radius.

(c) Valves, Hydrants, Blow offs, Corporations

Survey center top of item and note size, type, material, etc.

(d) Thrust Blocks

Survey location and size.

(e) Heat Tracing

Survey and note type and size.

(4) Sewer Line

(a) Sewer Manholes

Survey top of frame elevation and elevation of all inverts. Note flow direction.

(b) Gravity Sewer Pipe

(i) Survey all inverts. Identify size and type by layer per MPTN Standards.

(ii) Survey shots along pipe not required if installed by pipe laser.

(c) Sewer Force Mains

Survey at every change, bend or major elevation change. Survey not required at straight joints.

(d) Other structures

Survey center of top section for round and note diameter or for square, four corners and center of top. Survey base of structure, inverts, access hatches, etc.

(5) Gas Service

(a) Gas Lines

(i) Survey at every change, bend and weld joint.

(ii) Note size and type

(b) Couplings/valves

(i) Survey center top of coupling

(ii) Note bend radius

(c) Meters and exterior gas related equipment

Survey location and note type, etc.

(6) Drainage

(a) Catch Basins/Drainage Manholes

(i) Survey top of frame elevation at gutter line at center of frame and elevation of all inverts.

(ii) Note type (CL, C, double, etc.).

(b) Pipe

(i) Survey all inverts.

(ii) Note size and type

(iii) Survey shots along pipe not required if installed with pipe laser

(c) Sediment Control Structures

(i) Survey four corners and center of top of structure.

(ii) Survey base of structure, inverts, access hatch, etc.

(iii) Survey plunge pools, retention ponds and provide contours.

(iv) Note type

(7) Irrigation

Survey all sprinkler heads/ handholds and irrigation pipes.

b. Concrete

(1) Buildings and Structures

(a) Survey footprint of footings with shots at top of corners and at every direction and elevation change.

(b) Survey corner of walls after building completion.

(2) Bridges / Retaining walls

(a) Survey top corner of footings, top of walls, and abutments, and at elevation and direction changes.

(b) Identify geo-grid with text, hatch the area.

(3) Concrete ramps, loading docks, sidewalks, steps, patio areas, and structures

Survey at a frequency to adequately depict all items.

(4) Snowmelt

Survey limits and hatch the area. Take photographs of area.

(5) Columns

Survey center and extents of each column footing.

c. Planimetrics

(1) Roads

Survey elevation and of edge of road, top face of curbing, pavement markings, etc.

(2) Landscaping

Survey planting beds, edge of tree line, etc.

(3) Final Grading

(a) Provide contours at 2 foot intervals.

(b) One foot interval contours will not be accepted.

d. Abandoned Utilities

Survey cut offs note how "capped"

CHAPTER 3. AUTOCAD FORMAT STANDARD

§ 1. General

a. All drawings are to meet the U.S. National CAD Standard Version 3.1

b. Acceptable AutoCAD versions are between releases AutoCAD 2000 and AutoCAD 2012.

c. Use of MPTN Base Mapping

(1) When MPTN images or base mapping is used by outside services, it shall be noted on drawing.

(2) The MPTN Tribal north arrow is the property of the MPTN Planning Department and shall not be used by outside parties.

(3) Information added to a MPTN base drawing shall be included on a new layer named with the prefix 'asb' added to the name of the appropriate standard layer described in §6b. The addition of the

prefix 'asb' to the layer will assist in determining what work was done by the vendor for the CAD files.

d. Questions regarding the standards for Survey drawing elements of the Record Drawings should be addressed to:

Mashantucket Pequot Tribe Planning Dept.,

Telephone: 860 312-2503

e. Questions regarding the standards for Survey drawing elements of the Record Drawings should be addressed to:

Foxwoods Engineering Dept.,
RT. 2, P. O. Box 3777
Mashantucket, CT 06339-3777

§ 2. Format for Information Compiled from Survey Darwings (Generally Exterior Site Work)

a. General

(1) Drawings submitted shall abide by Connecticut State Statutes for "As-Builts"

(2) Drawing files shall not be rotated or translated so that the drawing coordinates differ from the field coordinates.

(3) When practical, all lines shall be drafted as continuous polylines.

(4) All ASCII points or hard shots shall be included in the AutoCad drawing.

(5) ASCII points shall include descriptions as well as elevations.

(6) Text indicating Utility Infrastructure, including drainage, shall be lower case

(a) Duct banks shall note width and depth

(b) Low voltage shall include description

(c) Manholes (round) shall indicated with diameter

(d) All Piping shall indicate diameter and type

(e) Valves, Hydrants, Blow offs, Corporations shall indicate size, type, material, etc.

b. Standard Layers and File Names Required for AutoCAD Drawings

(1) All layering shall conform with the requirements of this paragraph utilizing the naming conventions listed in Appendix I, except that:

(a) Information added to a base drawing received from MPTN, shall be included on a new layer named with the prefix 'asb' added to the name of the appropriate standard layer.

(b) If a layers or items used are not listed within Appendix I, the Vendor may create a custom layer if there is not one already created for the item. When creating custom layers, the Vendor shall follow the format of standard layers.

(2) Upon request, the Planning Department shall give the vendor a diskette with CAD script files. These script files contain all the layers listed in Appendix I, and can be dragged or dropped into a CAD drawing which will load the required layers instantly. Requests for this information should be directed to the Project Manager.

(3) The following are layering requirements for specific items:

(a) Electric and Communications are to be on separate layers

(b) Gravity Sewer Pipe shall be on layers identified by size and type

(c) Gas Lines shall be on layers identified by size and type

(d) Removed Utilities shall be identified "Removed" and moved to the "Removed" layer

c. Externally Referenced Drawings

(1) Any External references (Xrefs) shall stay in original drawings, but a copy of each one shall be on submitted on the CD in a directory called Xrefs.

(2) This is to insure no information is lost during merging of files. Contractor shall also provide list of Xrefs for drawings with descriptions of referenced data.

d. Miscellaneous Item Identification Requirements

(1) Couplings shall indicate bend radius

(2) Heat Tracing shall indicate type and size.

(3) Gravity Piping shall also indicate flow direction

(4) Gas Lines shall indicate size and type

(5) Meters and exterior gas related equipment shall indicate type, etc.

(6) Catch Basins shall indicate type (e.g. CL, C, double, etc)

(7) Sediment Control Structures shall indicate type and flow direction

(8) Geo-grid shall be indicated with text and by hatching

(9) Abandoned Utilities shall be indicated with text with cut offs and caps shown

§ 3. Format for Information Compiled from As-Built Drawings (Generally Interior Work)

a. General

Drawing scales are to be limited to those defined on page UDS-04.12 of Reference A, with the addition of '3/32" = 1'-0"' which is also acceptable.

b. Standard Layers and File Names Required for AutoCAD Drawings

(1) Layer names are created in accordance with the AIA CAD Layer Guidelines contained in the Appendix II, Annex A, of this Title. Annex A provides a list of the Major Layer Groups that are to be used to create Record Drawings.

(2) If required, contactors may create custom layers provided they conform to the AIA CAD Layer Guidelines and that Major Groups are taken from the list in Annex A.

(3) All contractor created layers are to be identified by adding the initials of the company name as a suffix to the layer name. If the contractor identifies a need to add a Major Group definition, then they should contact Foxwoods Engineering at the address listed at the beginning of this document.

(4) These requirements will aid Foxwoods Engineering staff in distinguishing standard layers from custom layers and maintaining this document.

(5) Annex B, of Appendix II, lists the layers that have been created for gaming information. A drawing file containing all currently used layers, dim styles and text styles is available upon request or by downloading from MPTN Procurement's (www.mptnprocurement.com) web site.

c. File Naming and Sheet Numbering

Sheet file guidelines have been developed by the Uniform Drawing System (UDS) Task team of the Construction Specifications Institute (CSI). The following tables are provided for guidance only.

(1) Discipline Codes.

Discipline codes, including but not limited to the following, are used for sheet and model identification and for layer names.

A	Architectural	
	AE	Architectural Elements
	AF	Architectural Finishes
	AI	Architectural Interiors
C	Civil	
E	Electrical	
	EL	Electrical Lighting
	EP	Electrical Power
	EQ	Electrical Equipment
F	Fire Protection	
G	General	
H	Hazardous Material	
I	Interiors	
L	Landscape	
M	Mechanical	
	MH	Mechanical HVAC
	MP	Mechanical Piping
P	Plumbing	
Q	Equipment	
R	Resource	
S	Structural	
T	Telecommunications	
X	Other Disciplines	
Z	Contractor/Shop Drawings	

(2) Sheet Type Designator

Sheet type designators are listed below. Note that sheet type 7 has been reserved for Reflected Ceiling Plans. The remainder of the codes are as described in Reference A.

0	General
1	Plans
2	Elevations
3	Sections
4	Large Scale Views
5	Details
6	Schedules and Diagrams
7	Reflected Ceiling Plan
8	User defined
9	3D Representations

(3) Sheet Sequence Numbers

(a) Sheet numbers should be designated sequentially starting at "01" and continuing through "99".

(b) The following table contains examples of sheet numbers:

AE7.01	AE	Architectural Elements
	7	Reflected Ceiling Plan
	.01	Sheet 01
AE1.01	AE	Architectural Elements
	1	Plan
	.01	Sheet 01
EL4.06	EL	Electrical Lighting
	4	Large Scale View (Enlarged Plan)
	.06	Sheet 06
MP1.25	MP	Mechanical Piping
	1	Plan
	.25	Sheet 25

(c) Full instructions on naming model and sheet files and sheet numbering can be found in Reference A.

d. Externally Referenced Drawings

(1) Any links to externally referenced drawings (Xrefs) shall be present in electronic drawings and a copy of each shall be submitted on the CD-ROMs in a Folder named "Xrefs".

(2) Contractor shall also provide list of Xrefs for drawings with a brief description of information contained in each reference file. This will ensure no information is lost during merging of files.

Appendix I

Layer Naming Standard for Survey Drawings (exterior of building, site work etc.)

LAYER NAME	COLOR	DESCRIPTION
0	7	AutoCAD standard layer
BOUNDARIES		
Asc_boundary	130	Field shots
Boundary	130	Boundary Lines
Boundary_easement	130	Easements
Boundary_misc	2	Pins, Drill Holes, Monuments, etc
Boundary_project	130	Project Boundaries
Boundary_settlement	192	Settlement Boundary
Boundary_text	2	Boundary Text
Boundary_townlines	210	Town lines
LAYER NAME	**COLOR**	**DESCRIPTION**
Boundary_row	130	Right of Ways
Boundary_zoning	12	Zoning
BUILDINGS		
Asc_bldg	6	Field shots
Bldg	6	Buildings
Bldg_asbuilted	6	As-Built Buildings
Bldg_column	253	Column Lines
Bldg_h2otank	6	Water tank
Bldg_misc	2	Misc. items
Bldg_text	2	Text
Bldg_trailer	6	Trailers
DETAILS		
Detail	7	Detail lines
Detail_hatch	254	Hatching for details
Detail_text	20	Text for details
DIMENSIONING		
Dim_lines	20	Arrows, lines, etc.(no leaders)
Dim_text	20	Dimension text
LANDSCAPING		
Plani_brushl	110	Brush
Plani_groundcover	2	Ground covers
Plani_landscaping	2	Landscaping beds
Plani_tree	110	Single trees
Plani_treel	110	Treeline
Plani_vegetation	110	Vegetation
PLANIMETRICS		
Asc_plani	2	Various shots
Asc_tree	2	Field shots of trees
Plani_arch_limit	200	Archaeological limits
Plani_Ballfield	2	Ballfield
Plani_benches	2	Benches

Plani_borings	2	Test pits, borings
Plani_bridge	4	Bridges
Plani_bulkhead	2	Bulkheads for buildings
Plani_cl	95	Centerline of road
Plani_cl_station	2	Centerline of road stationing
Plani_conc	253	Concrete slabs, footings etc.
Plani_conc_ab	253	Concrete slabs, footings etc. ,As-Builts
Plani_courts	2	Tennis, basketball courts
Plani_curb	11	Curbing
Plani_deck	2	Decks
Plani_digi_roads	11	Digitized Roads
Plani_dpark	34	Gravel Parking
Plani_drive	21	Driveways
Plani_droad	34	Gravel Roads
Plani_erosion	2	Erosion control
Plani_fence	2	Fences
LAYER NAME	**COLOR**	**DESCRIPTION**
Plani_fpole	2	Flagpoles
Plani_grail	12	Guard Rails
Plani_hatch	2	Hatching
Plani_misc	2	Misc, signs, benches, etc.
Plani_mbox	2	mail boxes
Plani_monorail_footing	2	Monorail Footings
Plani_pavemarking	211	Pavement markings
Plani_parking	11	Paved parking
Plani_Playground	2	Playgrounds
Plani_pool	2	Pools & spas
Plani_post	2	Posts
Plani_ramp	2	Ramps
Plani_retwall	4	Retaining walls
Plani_retwall_footing	2	Retaining wall footings
Plani_road	11	Roads
Plani_roads_As-Builts	11	Road As-Builts
Plani_rocks	2	Rocks
Plani_sidewalk	31	Sidewalks
Plani_steps	2	Steps
Plani_stwall	65	Stone walls
Plani_text	2	Text
Plani_trail	51	Trails
PROPOSED		
Proposed	1	Proposed features/objects
Proposed_grading	1	Proposed Grading
Proposed_notes	1	Proposed Notes
Proposed_text	1	Proposed Text (leaders)
Proposed_utilities	1	Proposed utilities
SURVEY		
Asc_survey	230	Boundary, etc
Asc_survey_ctrl	230	Control

Asc_survey_stakeout	230	Stakeout
Survey_control	230	Control
Survey_info	2	Survey info, bearings, distances
Survey_misc	2	Pins, Drill Holes, Monuments, etc
Survey_notes	40	Notes for map
TITLE		
Title	153	Title and text
Title_misc	153	Legends, notes, etc.
Title_nscale	153	North arrow and scale
TOPOGRAPHY		
Topo_Cont_hgh	22	Index Contours
Topo_Cont_hgh_field	22	Field generated Contours
Topo_Cont_nml	252	Intermediate Contours
Topo_Cont_nml_field	252	Field generated Contours
Topo_Cont_text	2	Contour Text
Topo_spot_elev	2	Spot elevations
LAYER NAME	**COLOR**	**DESCRIPTION**
UTILITIES		
Communications		
Asc_com	30	Field shots of com.
asc_com_spare	30	Spare conduit
asc_conduit_rte2	30	Rte 2 Conduit
u_com_abandoned	30	Abandoned in place lines
U_com_cable	30	Cable
U_com_cable_tv	30	Cable TV
U_com_camera_ab	30	Surveillance cameras
U_com_fiber_optic	30	Fiber Optic Lines
U_com_fire_alarm	30	Fire Alarm lines
U_com_hh	30	Communication hand hole
U_com_line	30	Communication line
U_com_mh	30	Communication manhole
U_com_security	30	Security Lines
U_com_structure	30	Structures
U_com_telephone	30	Telephone lines, etc
U_com_text	30	Communication text
Electric		
asc_elec	10	Field shots of electric
U_elec_abandoned	10	Abandoned in Place lines
U_elec_box	10	Electric box
U_elec_com_combined	10	Electric and Communication Combined
U_elec_ductbank	10	Ductbank
U_elec_gen_ducts	10	Ducts for generator
U_elec_gen_pads	10	Pads for generator
U_elec_hh	10	Electric hand hole
U_elec_light_exterior	10	Exterior Lighting (not Lightpoles)
U_elec_line	10	Electric lines
U_elec_line_approx	10	Approximate location of electric lines
U_elec_line_overhead	10	Overhead electric Lines

U_elec_loop_ab	10	Loops for guard shacks
U_elec_lp	10	Light poles
U_elec_meter	10	Electric meter
U_elec_mh	10	Electric manhole
U_elec_misc	10	Misc. lighting
U_elec_pole	10	Electric poles
U_elec_removed	10	Electric lines removed
U_elec_sleeve	10	Electric Sleeves
U_elec_structure	10	structures
U_elec_text	10	Electric text
U_elec_vault	10	Electric Vault
Gas		
asc_gas	50	Field shots of gas
u_gas_.5in	50	½ inch gas line
U_gas_.75in	50	¾ inch gas line
U_gas_1.25in	50	1.25 inch gas line
LAYER NAME	**COLOR**	**DESCRIPTION**
U_gas_1.5in	50	1.5 inch gas line
U_gas_10in	50	10 inch gas line
U_gas_12in	50	12 inch gas line
U_gas_1in	50	1 inch gas line
U_gas_2in	50	2 inch gas line
U_gas_3in	50	3 inch gas line
U_gas_4in	50	4 inch gas line
U_gas_5in	50	5 inch gas line
U_gas_6in	50	6 inch gas line
U_gas_8in	50	8 inch gas line
U_gas_off	50	Gas lines abandoned
U_gas_structure	50	structures
U_gas_text	50	Gas text
U_gas_valve	50	Gas valves
Sanitary		
asc_sanit	80	Field shots of sanitary
asc_sanit_approx	80	Field shots of sanitary (approx)
U_san_2in	80	2 inch Sanitary
U_san_3in	80	3 inch Sanitary
U_san_4in	80	4 inch Sanitary
U_san_6in	80	6 inch Sanitary
U_san_8in	80	8 inch Sanitary
U_san_10in	80	10 inch Sanitary
U_san_12in	80	12 inch Sanitary
U_san_14in	80	14 inch Sanitary
U_san_15in	80	15 inch Sanitary
U_san_16in	80	16 inch Sanitary
U_san_18in	80	18 inch Sanitary
U_san_20in	80	20 inch Sanitary
U_san_24in	80	24 inch Sanitary
U_san_30in	80	30 inch Sanitary

U_sanitary_approx	80	Sanitary approximate
U_san_fm	80	Force Main
U_san_fm_1.25	80	1.25in Force Main
U_san_fm_2.5in	80	2.5in Force Main
U_san_fm_1in	80	1in Force Main
U_san_fm_2in	80	2in Force Main
U_san_fm_3in	80	3in Force Main
U_san_fm_4in	80	4in Force Main
U_san_fm_6in	80	6in Force Main
U_san_fm_8in	80	8in Force Main
U_sanitary_grease	80	Sanitary grease traps
U_sanitary_mh	80	Sanitary manholes
U_san_pipe_text	80	Sanitary Pipe Text Size
U_sanitary_pumps	80	Pump stations, grinders
U_sanitary_septic_field	80	Septic fields
U_sanitary_structure	80	structures
LAYER NAME	**COLOR**	**DESCRIPTION**
U_sanitary_text	80	Sanitary text
Storm		
asc_storm	80	Field shots of storm
U_storm_2in	80	2 in Storm water
U_Storm_3in	80	3 in Storm water
U_Storm_4in	80	4 in Storm water
U_Storm_6in	80	6 in Storm water
U_Storm_8in	80	8 in Storm water
U_Storm_12in	80	12 in Storm water
U_Storm_15in	80	15 in Storm water
U_Storm_21in	80	21 in Storm water
U_Storm_24in	80	24 in Storm water
U_Storm_30in	80	30 in Storm water
U_Storm_36in	80	36 in Storm water
U_Storm_42in	80	42 in Storm water
U_Storm_48in	80	48 in Storm water
U_Storm_54in	80	54 in Storm water
U_storm_cb	80	Catch basins
U_storm_culvert	80	Culverts
U_storm_footdrains	81	Footing drains
U_storm_mh	80	Drainage manholes
U_storm_roofdrains_4in	80	4 in Roof Drains
U_storm_roofdrains_6in	80	6 in Roof Drains
U_storm_roofdrains_8in	80	8 in Roof Drains
U_storm_roofdrains_10in	80	10 in Roof Drains
U_storm_roofdrains_12in	80	12 in Roof Drains
U_storm_oil_h2o_sedchamber	80	Sedchambers
U_storm_riprap	80	Rip rap
U_storm_structure	80	Structures
U_storm_text	80	Storm water text
Water		

asc_water	160	Field shots of water
U_water_firehyd	160	Fire hydrant
U_water_h2otank	160	Water tank
U_water_irrigation	160	Irrigation
U_water_.5in	160	½ in Water lines
U_water_.75in	160	¾ in Water lines
U_water_1in	160	1 in Water lines
U_water_2in	160	2 in Water lines
U_water_3in	160	3 in Water lines
U_water_4in	160	4 in Water lines
U_water_6in	160	6 in Water lines
U_water_8in	160	8 in Water lines
U_water_10in	160	10 in Water lines
U_water_12in	160	12 in Water lines
U_water_16in	160	16 in Water lines
U_water_20in	160	20 in Water lines
LAYER NAME	**COLOR**	**DESCRIPTION**
U_water_structure	160	Structures
U_water_text	160	Water text
U_water_valve	160	Water valves
U_water_wells	160	Water wells
Wetlands		
Asc_wet	140	Field shots of wetlands
Wetland_buffer	200	Wetland buffer
Wetland_field	140	Field located wetlands
Wetland_fill	143	Filled wetland
Wetland_statebd	140	State boundary
Wetland_streams	142	Streams
Wetland_sym	2	Hatching
Wetland_text	2	Flags, text, etc.
Wetland_waterbodies	5	Lakes, ponds, etc

Appendix II

Layer Naming Standard for As-Built Drawing

ANNEX A

Annex A: Major Group Layer Names

(Those Major Groups shown in italics are locally defined).

Group	Description
ABAN	*Abandoned in position*
ACCS	Access Plan
ACID	Acid Waste Systems
AFFF	Aqueous Film-Forming Foam System
AFLD	Airfields
ALRM	Alarm
ANNO	Annotation
AREA	Area
AUXL	Auxiliary
BEAM	Beams
BELL	Bell Systems
BLDG	Building And Primary Structure
BLIN	Baseline
BNDY	Political Boundary
BORE	Borings
BRAC	Bracing
BRDG	Bridge
BRIN	Brine Systems
BRKL	Break
BZNA	Buffer Zone Area
CABL	Cable Systems
CASE	Casework
CATV	Cable TV
CCTV	Closed-Circuit TV
CEME	Cemetery
CHAN	Navigable Channels
CHIM	Chimneys And Stacks
CLNG	Ceiling
CLOK	Clock System
CMPA	Compressed / Processed Air Systems
CMPQ	Computer Equipment
CNDW	Condenser Water System
CO2S	Co2 System
CODE	Code Compliance Plan
COLS	Columns
COMM	Communication
CONT	Controls And Instrumentation
CONV	Conveying Systems
CPLX	*Complex Plans*
CTRL	Control Points / Systems
CWTR	Chilled Water Systems
DATA	Data Outlets
DECK	Structural Deck
DETL	Detail
DFLD	Drain Fields
DIAG	Diagrams
DICT	Central Dictation System
DOMW	Domestic Water Systems
DOOR	Doors
DRIV	Driveways
DTCH	Ditches Or Washes
DUAL	Dual Temperature System
DUST	Dust And Fume Collection Systems
ELEC	Electrical System
ELEV	Elevation
ELHT	Electrical Heat
EMCS	Energy Monitored Control System
ENER	Energy Management Systems
EQPM	Equipment
EROS	Erosion And Sediment Control
ESMT	Easements
EVAC	Evacuation Plan
EXHS	Exhaust
FENC	Fences
FIRE	Fire Protection System, Fire Alarm, Fire Extinguishers
FLHA	Flood Hazard Area
FLOR	Floors
FNDN	Foundation
FNSH	Finishes
FUEL	Fuel Gas Systems
FUME	Fume Hoods
FURN	Furnishings
GLAZ	Glazing
GLYC	Glycol Systems
GRID	Column Grid
GRND	Ground System
GRSW	*Grease Waste*
HALN	Halon Systems
HOTW	Hot Water Heating Systems
HVAC	HVAC Systems
IGAS	Inert Gas
INDC	*Detail Elevation and Section Indicators*
INST	Instrumentation System

Group	Description
INTC	Intercom System
IRRG	Irrigation
JNTS	Joints
JOIS	Joists
LEGN	Legend Of Symbols
LGAS	Laboratory Gas Systems
LITE	Lighting
LOCN	Limits Of Construction
LTNG	Lightning Protection System
MACH	Machine Shop
MAJQ	Major Equipment
MINQ	Minor Equipment
MDGS	Medical Gas
MILL	Millwork
MKUP	Make-Up-Air Systems
MPIP	Miscellaneous Piping Systems
NGAS	Natural Gas
NICN	Not In Contract Equipment
NODE	Node
NURS	Nurse Call System
PAIR	Process Air System
PCHM	Process Chemical System
PDRN	Process Drains System
PERC	PERC Testing
PEXH	Process Exhaust System
PGAS	Process Gas System
PGNG	Paging System
PHON	Phone System
PIPE	Pipe
PLAN	Key Plan Floor plan
PLNT	Plant And Landscape Material
PLQD	Process Liquid System
POIL	Process Oil System
POND	Ponds
POWR	Power
PRKG	Parking Lots
PROC	Process Systems
PROP	Property Boundary
PROT	Fire Protection System
PRTN	Partitions
PSLR	Process Slurry System
PVAC	Process Vacuum System
PVMT	Pavement
PWTR	Process Water System
RAIL	Railroad
RAIR	Relief Air Systems
RCOV	Energy Recovery Systems
REFG	Refrigeration Systems
RIVR	River
ROAD	Roads, Streets And Highways
ROOF	Roof
RRAP	Riprap
RWAY	Rights Of Way
SANR	Sanitary Drainage Systems
SECT	Sections
SERT	Security
SGHT	Sight Distance
SITE	Site
SLAB	Slab
SLOT	*Slot Machine*
SMOK	Smoke Extraction Systems
SOIL	Soils
SOUN	Sound / PA Systems
SPCL	Special Systems
SPCQ	Special Equipment
SPRN	Sprinkler System
SSWR	Sanitary Sewer System
STEM	Steam System
STRM	Storm Drainage & Sewer Syst.
STRS	Stairs
SURV	Survey
SWLK	Sidewalks
TABL	*Table Games*
TEST	Test Equipment
TINN	Triangulation Irregular Network
TOPO	Topography
TRAL	Trails And Paths
TRUS	Trusses
TVAN	TV Antenna System
UNID	Unidentified
VWPT	*Viewports*
WALL	Walls
WATR	Water Supply
WETL	Wetlands
XREF	*External References*

ANNEX B

Specific Layer Names For Gaming Areas

The following list includes but is not limited to layer names allocated to gaming layers.

LayerName	Description
X-EQPM-ATM	Gaming: ATM Machines
X-EQPM-ATM-IDEN	Gaming: ATM Machines Identifiers
X-EQPM-BOTH	Gaming: Booths
X-EQPM-BOTH-IDEN	Gaming: Booth Identifiers
X-EQPM-COIN-LOCK	Gaming: Coin Lockers
X-EQPM-COIN-LOCK-IDEN	Gaming: Coin Locker Identifiers
X-EQPM-COIN-REDM	Gaming: Coin Redemption
X-EQPM-COIN-REDM-IDEN	Gaming: Coin Redemption Identifiers
X-EQPM-FIXD	Gaming: Equipment Fixed
X-EQPM-IDEN	Gaming: Equipment Identifiers
X-EQPM-TCKT	Gaming: Ticket Redemption
X-EQPM-TCKT-IDEN	Gaming: Ticket Redemption Identifiers
X-EQPM-WKSK	Gaming: Wampum Kiosks
X-EQPM-WKSK-IDEN	Gaming: Wampum Kiosk Identifiers
X-FURN	Gaming: Furnishings
X-FURN-CHAR	Gaming: Game Seats
X-FURN-IDEN	Gaming: Furnishings Identifiers
X-SLOT	Gaming: slot machines
X-SLOT-DOOR	Gaming: Slots Door
X-SLOT-HBOY	Gaming: Slots High Boy
X-SLOT-HBOY-IDEN	Gaming: Slots High Boy Identifiers
X-SLOT-SLTP	Gaming: Slots Slope Top
X-SLOT-SLTP-IDEN	Gaming: Slots slope Top Identifiers
X-SLOT-WDWK	Gaming: Slots Woodwork Millwork Cabinets
X-SLOT-ZONE	Gaming: Slots Zone
X-SLOT-ZONE-IDEN	Gaming: Slots zone Identifiers
X-TBLE	Gaming: Game Table
X-TBLE-3CDP	Gaming: Game Table
X-TBLE-ACDC	Gaming: Game Table Acey Deucy
X-TBLE-BACC	Gaming: Game Table Baccarat
X-TBLE-BJCK	Gaming: Game Table Black Jack
X-TBLE-CAWV	Gaming: Game Table Catch a Wave
X-TBLE-CBST	Gaming: Game Table Caribbean Stud
X-TBLE-CHLK	Gaming: Game Table Chuk Luk
X-TBLE-CRAP	Gaming: Game Table Craps
X-TBLE-CWAR	Gaming: Game Table Casino War
X-TBLE-DEAL	Gaming: People Dealers
X-TBLE-IDEN	Gaming: Game Table Identifiers
X-TBLE-LITR	Gaming: Game Table Let it Ride
X-TBLE-MIDI	Gaming: Game Table Midi Bac
X-TBLE-MINI	Gaming: Game Table Mini Bac
X-TBLE-MWHL	Gaming: Game Table Money Wheel
X-TBLE-PGPK	Gaming: Game Table Pai Gow Poker
X-TBLE-PGTL	Gaming: Game Table Pai Gow Tiles
X-TBLE-PITS-STND	Gaming: Pit People Standing
X-TBLE-PLYR	Gaming: People - Players
X-TBLE-POKR	Gaming: Game Table Poker
X-TBLE-ROUL	Gaming: Game Table Roulette
X-TBLE-SICB	Gaming: Game Table Sic Bo
X-TBLE-SP21	Gaming: Game Table Spanish 21
X-TBLE-WAR	Gaming: Game Table War