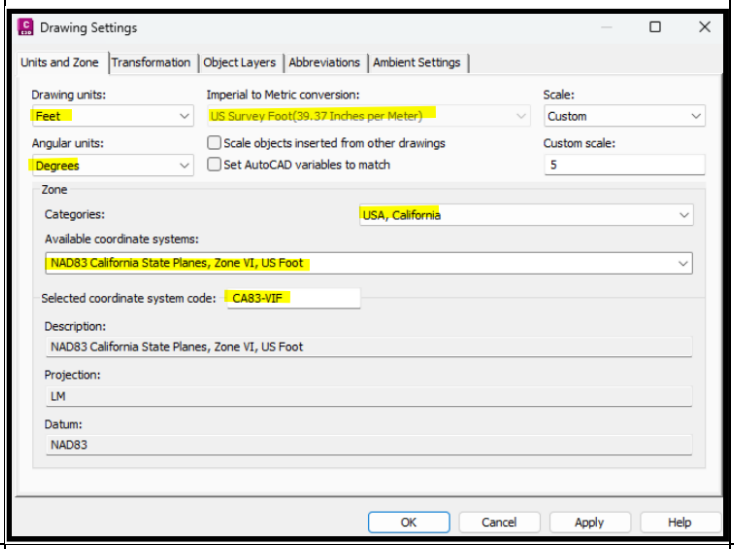
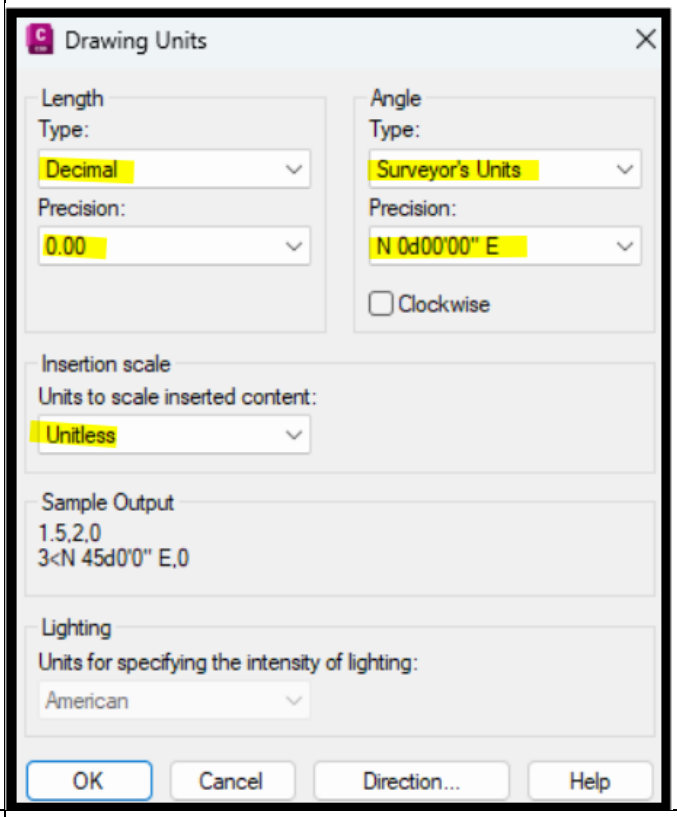
Engineering and Capital Projects

Civil 3D Survey Deliverables Checklist at 60%, 90 and/or 100%

Submittal

Project Name:_____
WBS#:_____ **CIP#:**_____ **D-Sheet:**_ **Project Engineer:**__
_____ **Date:**__ **Resident Engineer:**
_____ **Date:**_____

COVER SHEET				
YES	**NO**	**N/A**	**ITEMS**	**COMMENTS**
☐	☐	☐	1. The appropriate City Civil 3D Template has been utilized as is required by Citywide CADD Standards.	
☐	☐	☐	2. Drawing Settings Units and Zone are set to US Survey Feet (CA83-VIF) as follows… 	
☐	☐	☐	3. Drawing Units are set as follows…	

				
☐	☐	☐	4. The design file and all external reference files are included in an **ETRANSMIT** zip file. The file naming convention shall be WBS#_ProjectName_ProposedAssetType.dwg. (e.g. B18181 B18182 GJ 1056 Prop WTR.dwg, B18181 B18182 GJ 1056 Prop SWR.dwg, B18181 B18182 GJ 1056 Prop CURB.dwg, B18181 B18182 GJ 1056 Prop SD.dwg, etc.).	
☐	☐	☐	5. Design file is geospatially correct and referenced with the preliminary topographic survey file for the project.	
☐	☐	☐	6. Design line work is on the correct layer for its specific asset type.	
☐	☐	☐	7. Design line work is precise. **Only** the most current design line work is shown, with no gaps or overlaps on lines that are intended be connected.	
☐	☐	☐	8. Design file contains horizontal alignments and vertical profiles for all proposed design line work.	
☐	☐	☐	9. Design line work in the .dwg file matches the horizontal alignment data.	
☐	☐	☐	10. Horizontal alignment data in the dwg file matches the plan data.	
☐	☐	☐	11. Alignments are free of gaps and overlaps.	
☐	☐	☐	12. Horizontal alignments, with their active profiles, have been provided in an xml file. (LandXML)	
☐	☐	☐	13. Coordinates shown on the plans have been assigned unique point numbers and are annotated on the plans.	

☐	☐	☐	14. Numbered points are shown in a coordinate table on the plans. (Format PNEZD)	
☐	☐	☐	15. Design .dwg file contains the points shown on the plans.	
☐	☐	☐	16. An xml file, xlsx, or csv file containing the points on the plans, formatted P,N,E,Z,D, has been provided.	
☐	☐	☐	17. Right of way lines are based on field survey measurements and a boundary analysis by a Licensed Land Surveyor.	
☐	☐	☐	18. Preliminary Topographic files have been provided. These include, but are not limited to, the following file extensions: .job, .dwg, .xml (surface file), .pdf, .docx, .csv (Format PNEZD).	

COVER SHEET				
YES	**NO**	**N/A**	**ITEMS**	**COMMENTS**
☐	☐	☐	19. Topography Source. (Work Order Number, Topo Name, Company Name and Date).	
☐	☐	☐	20. Basis of Bearing. (Tied to ROS 14492, based on CCS 1983, Zone 6).	
☐	☐	☐	21. Benchmark. (Vertical Datum must be NGVD 29, in accordance with the City of San Diego Vertical Bench book).	

TITLE BLOCK				
YES	**NO**	**N/A**	**ITEMS**	**COMMENTS**
☐	☐	☐	22. The names of the DCE, PM, PE are provided in the Title Block.	

LEGEND				
YES	**NO**	**N/A**	**ITEMS**	**COMMENTS**
☐	☐	☐	23. Survey Monuments are shown on the plans with symbols showing both well monuments and the property markers. (This can be shown on the cover sheet legend or in a legend on the Survey Monumentation Sheet). A separate monument sheet is not required if monuments are shown on the improvement plan sheets.	
☐	☐	☐	24. Monumentation Note is on the cover sheet or on its own Monumentation sheet.	

PLAN VIEW				
YES	NO	N/A	ITEMS	COMMENTS
☐	☐	☐	25. Street centerline and record width right-of-way lines are shown on the plans, including all pertinent easements, vacations and dedications where applicable.	
☐	☐	☐	26. Record, non-record monuments, and Benchmarks shall be shown on the plans. When boundary analysis is required for the project, monuments control the boundary determination. These monuments must be shown on a Monumentation Map, and all monuments within construction limits must be shown (see City of San Diego Bulletin 591).	
			27. Monuments in the topo survey files are in the "Found Points" layer.	
☐	☐	☐	28. Proposed improvements are designed within the right of way or easements.	
☐	☐	☐	29. Easements are in place for proposed infrastructure crossing into private or city owned property.	
☐	☐	☐	30. Plans show survey data for Easements, Temporary construction areas, jurisdictional waterways delineations (if applicable), etc.	
☐	☐	☐	31. Linear objects not parallel with centerline have independent layout line alignments. e.g. Curb return layout line is Face of Curb line.	
☐	☐	☐	32. Horizontal alignments are provided for proposed linear objects such as sewer, water, storm drain, face of curb, walls, street centerline, etc. Horizontal alignment reports and vertical profiles must be shown on the plans.	
☐	☐	☐	33. Station callouts are within the station range of their alignment. (Extend alignment to reach all station callouts.)	
☐	☐	☐	34. Appurtenances are drawn in the .dwg file and called out on the plans.	
☐	☐	☐	35. Storm drain cleanouts, inlets and structures are drawn to scale.	
☐	☐	☐	36. Storm drain alignments run along centerline of pipe and through the center of structure via the ends of pipe at the inside face of structure.	
☐	☐	☐	37. Alignment Reports have been provided on the plans. (Stations, Coordinates and Course Data with Bearings and Angles formatted to Degrees, Minutes, and Seconds). See example below.	
☐	☐	☐	38. Station and Offset callouts on plans.	

ALIGN-11 ALIGNMENT REPORT

LENGTH	LINE/CHORD DIRECTION	R	Δ	BEGIN N/E	END N/E	BEGIN STATION	END STATION
30.37'		15.00'	115°59'26"	N: 1791384.47 E: 6324585.37	N: 1791401.07 E: 6324566.09	110+00.00	110+30.37
29.95'		22.00'	78°00'20"	N: 1791401.07 E: 6324566.09	N: 1791424.98 E: 6324552.13	110+30.37	110+60.32
37.58'		30.00'	71°46'22"	N: 1791424.98 E: 6324552.13	N: 1791454.34 E: 6324532.77	110+60.32	110+97.90
27.30'		20.00'	78°12'35"	N: 1791454.34 E: 6324532.77	N: 1791474.59 E: 6324517.72	110+97.90	111+25.20
15.67'		15.00'	59°51'24"	N: 1791474.59 E: 6324517.72	N: 1791485.03 E: 6324506.99	111+25.20	111+40.87
18.18'	N14°12'20"W			N: 1791485.03 E: 6324506.99	N: 1791502.66 E: 6324502.52	111+40.87	111+59.05
8.33'		15.00'	31°49'27"	N: 1791502.66 E: 6324502.52	N: 1791509.77 E: 6324498.40	111+59.05	111+67.38
25.52'		16.00'	91°23'16"	N: 1791511.60 E: 6324486.50	N: 1791528.63 E: 6324471.18	111+79.43	112+04.95

☐	☐	☐	39. Station equations have been established at locations where the alignment intersects, or has a defined relationship with, another alignment.	
☐	☐	☐	40. Proposed curb that has design elevations, has a face of curb alignment and top of curb profile.	
☐	☐	☐	41. Curb alignment stationing is along Face of Curb line.	
☐	☐	☐	42. Curb stations of all horizontal event points and centerlines of ramps and driveways are called out on the plan view.	
☐	☐	☐	43. If ramp is "directional" (i.e. non-radial or not perpendicular to the curb alignment), a curb station and offset, of centerline of ramp at back of ramp, is also called out on the plan view.	
☐	☐	☐	44. The horizontal alignment reports of the face of curb alignments are shown the plans.	
☐	☐	☐	45. The profile view shows curb stations and proposed top of curb elevations. (Also Flow Line elevations, if applicable.)	
☐	☐	☐	46. Finish surface elevations, offset from the curb alignment, have dimension callouts from the face of curb line and cross slope percentages.	
☐	☐	☐	47. Standard Drawing Number is called out on the plans for all standard curb ramps.	
☐	☐	☐	48. Curb stations of centerlines of driveways are called out on the plan view. (If there is no curb alignment, use centerline stationing)	
☐	☐	☐	49. Driveway widths are called out on the plan view.	
☐	☐	☐	50. Standard Drawing Number is called out on the plans for standard driveways.	
PROFILE VIEW				
YES	**NO**	**N/A**	**ITEMS**	**COMMENTS**
☐	☐	☐	51. Tie in points are taken from the preliminary topo. (No GIS data).	
☐	☐	☐	52. Vertical Profiles on plans are stationed along their own horizontal alignments.	
☐	☐	☐	53. Profiles show design **stations** and **elevations** at vertical event points and **slope percentages** between them. (2 decimal places) Exception: water distribution lines, if minimum depth governs.	
☐	☐	☐	54. **Special Design Curb Ramps** on designed proposed curb alignments must be represented by designed **"True" Top of Curb**	

☐	☐	☐	55. **Standard Curb Ramps** on designed proposed curb alignments may be represented by **"Hypothetical" Top of Curb Profiles** but a **Flow Line Elevation** must be shown at the Centerline of Ramp.	
☐	☐	☐	56. Profiles specify which part of the object is being elevated. (e.g. TC, FL, IE, TW, TF, FS, etc.)	
☐	☐	☐	57. Storm drain profiles show stations and IE grades at all vertical angle points, including ins and outs of structures.	

Notes:

1. City CADD seed files can be accessed at the following link: https://www.sandiego.gov/publicworks/edocref/drawings

2. Resource files will be provided by the City Project Manager or designee to Design Consultant if requested. The City's AutoCad seed files and cell Libraries must be used and have been created to City Standards for Consultant use.

3. When receiving preliminary topographic surveys from consultants, a 3D surface model showing break lines and spot elevations must be provided along with all planimetric features and appurtenances that are necessary for the project, which may include, including but not limited to, water valves, meters, vaults, manholes, fire hydrants, utility boxes, cleanouts, poles, etc., as defined in the scope.

4. Surveys performed must list the basis of bearings as tied to Record of Survey 14492 or equivalent, based on the California Coordinate System of 1983, Zone 6, U.S. Survey foot, epoch 1991.35. The vertical datum used must be NGVD 29 in accordance with the City of San Diego Vertical Bench book..