



City of Aurora Public Works Department

CIVIL PLAN SUBMITTAL PRE-ACCEPTANCE & REVIEW CHECKLIST

Development Review Division · 15151 E. Alameda Parkway, Ste. 3200 · Aurora, CO 80012
303.739.7335 · Email: engineering@auroragov.org

CIVIL PLAN SUBMITTAL PRE-ACCEPTANCE & REVIEW CHECKLIST

Checklist to be filled out by Licensed Civil Engineer in the State of Colorado. Checklist shall be uploaded separately with the civil plans. Checklist shall be used as a guidance document only and shall not be considered comprehensive for submittal requirements. All requirements included herein are collected from the City of Aurora respective criteria manuals. Please reference the most recent Aurora Criteria Manuals for full requirements.

*****Submittal shall be held if all applicable items are not included*****

Subdivision Name: _____ EDN: _____

Applicant Company: _____ Phone: _____

Contact Name: _____ Email: _____

Owner Company: _____ Phone: _____

Contact Name: _____ Email: _____

All civil submittals shall be routed through the Public Works Development Review Division (engineering@auroragov.org). The consultant will be notified by email when plan comments are ready to be downloaded.

After all approval signatures are obtained, the signature set shall become the property of the City of Aurora.

Plans are reviewed on a first come-first serve basis only.

Plans will be returned to the consultant for lack of adequate information as identified on the Pre-Acceptance checklist. The checklist items must be included prior to acceptance by the City of Aurora. Plans submitted without the required reports, plans, structural calculations (if required), etc. will be considered incomplete submittals and returned to the consultant without review.

The section numbers referenced in the tables below are marked with a superscript (#) to indicate which of the following criteria manuals the requirement references.

City of Aurora Roadway Design and Construction Specification (latest revision)

1. *City of Aurora Storm Drainage and Technical Criteria Manual (latest revision).*
2. *Aurora Water Standard Specifications Regarding Water, Sanitary Sewer and Storm Drainage Infrastructure (latest revision).*
3. *City of Aurora Rules and Regulations regarding Stormwater Discharges Associated with Construction Activities.*
4. *Urban Storm Drainage Criteria Manual, Vol. 3, Best Management Practices*
5. *Urban Storm Drainage Criteria Manual, Vol. 1, Management, Hydrology, and Hydraulics*
6. *Urban Storm Drainage Criteria Manual, Vol. 2, Structures, Storage, and Recreation*
7. *State of Colorado Department of Natural Resources Rules and Regulations for Dam Safety and Dam Construction (current version)*
8. *City of Aurora Unified Development Ordinance (current version)*
9. *Parks, Recreation and Open Space Dedication and Development Criteria Manual (current version)*
10. *International Fire Code (latest edition)*
11. *Fire Prevention and Protection Section in City Code*

Comments from Applicants

This section should be used for when you have a unique situation where an item on the checklist below is not or cannot be provided. Provide page & section number with justification for each instance.

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
General COA responsible group: PW Engineering				
1.	Cover Sheet	2.03.3		
2.	Vicinity Map (scale)	2.03.4.01		
3.	Key Map (scale)	2.03.4.02		
4.	Title Block, subdivision name lower right corner	2.03.5.01		
5.	Approval Block, lower right corner	2.03.5.02		
6.	Correct scale	2.03.5.03		
7.	North Arrow	2.03.5.04		
8.	Date of Plan	2.03.5.05		
9.	Benchmark (NAVD 1988)	2.03.5.07		
10	Existing underground utilities	2.03.5.08		
11.	Private improvements	2.03.5.09, 2.03.6.15		
12.	No copyright note	2.03.5.10		
13.	All required notes including, but not limited to erosion control notes and utility notes	2.03.6 Chapter 2: Section 2.2.2 ³ , 5.05.1 ²		
14.	Reports PDFs on 8 ½" x 11" and 11"x17" attachments where appropriate	2.04.3, 2.31 ¹		
15.	Match lines and Sheet numbers	2.06.1.08		
16.	Subdivision Names and City of Aurora Civil Plan Approval Numbers on adjacent sites and/or other jurisdictions where appropriate.	2.03.7		
17.	Details (non-standard or reference for standard)	2.03.8		
18.	Variance Table for Roadway Manual, Utility Specs with requested variance, or statement in table indicating "no variance requested". (Note: May include additional review time.)	2.03.9		
19.	Phasing Plan	2.03.10		
20.	Survey Control	2.11		
21.	Drafting Standards, sheet sizes & margins	3.02		
22.	Plan quality, text size	3.01 & 3.02		
23.	Sequential Numbering including Cover Sheet Index - If SWMP is broken out, number entire set so when full SWMP is combined with full set all pages are sequential	3.03		
24.	ROW and Easements shown on appropriate plan sheets	2.06.01.1		
Master Plan / Public Improvement Plan COA responsible group: PW Engineering				
1.	Master Plan / PIP approved DA # _____			

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
ROADWAY PLANS COA responsible group: PW Engineering				
<u>PLANS:</u>		<u>2.06</u>		
1.	Property, R.O.W. lines, easements, sidewalks	2.06.1.01, 4.02.8		
2.	Centerline Stationing, survey lines	2.06.1.02		
3.	Roadway name(s) and classification	2.06.1.03		
4.	Existing and proposed utilities and structures	2.06.1.04		
5.	Station and critical elevation of utilities/drainage facilities including inlet centerline stationing	2.06.1.06, Std. Dtl. S1.19, Std. Dtl. S12.2		
6.	Flow direction arrows including curb returns	2.06.1.07		
7.	Station, elevation, curb returns/curb cuts, P.C's, P.T's, and P.C.C's	2.06.1.09 & 2.06.2.06		
8.	Curb return radii, existing & proposed	2.06.1.10 & 4.04.5.03, 4.05.09		
9.	Station mid-block handicap ramp	2.06.1.11		
10.	Horizontal curve data	2.06.1.12		
11.	Vertical curve high to low point, station	2.06.1.09		
12.	Typical roadway cross section	2.06.1.15, 4.02.1, 4.04.2		
13.	Centerline station of entrance drives (exception: single-family residential)	2.06.1.13		
14.	Survey lines tied to section corner	2.06.1.14		
15.	Range boxes	2.06.1.19		
16.	Pavement widening at non-standard horizontal curves for local streets only	4.07.10, 4.04.5.04		
17.	Sump inlet note	4.03.3		
18.	Arterial/Arterial, Boulevard/Boulevard, Multi-way Boulevard/ Multi-way Boulevard, Intersection and Warping	4.05.8.06, 4.05.6 5.09.2		
19.	Concrete joint layout detail (required at partially constructed intersections)	2.06.1.20 4.04.2.09.3		
20.	Superelevation	4.05.3		
21.	Connection to existing roadway and core note	4.05.10		
22.	Show proposed construction phasing	2.06.1.22		
23.	Street and Pedestrian Lights	4.10		
24.	Parking Area and Parking Lots	4.07.7		
25.	Loop Lanes and Motor Courts	4.04.2.08 4.04.2.09		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
26.	Turning movement – for non-signalized, non-standard intersections <ul style="list-style-type: none"> • Median nose setback • Island nose type • Autoturn / Tracking template • Pork chop placement and configuration 	2.06.1.24, 4.04.6.03.11, S2.14, S2.15		
PROFILE:		<u>2.06.2</u>		
1.	Original ground and proposed grade	2.06.2.01		
2.	Consistent design elevations	2.06.2.02		
3.	Continuous stationing	2.06.2.03		
4.	Existing/As-Built elevations/cross slope, Existing elevations at centerline, edge of asphalt	2.06.2.04 & 4.05.6		
5.	Intersection Warping	4.05.8.06, 4.05.6 & 5.09.2		
6.	Vertical grade breaks; station and elevation	2.06.2.07 & 4.05.5		
7.	Distance and slope between grade breaks and/or VPIs	2.06.2.08		
8.	Vertical curves; length K, VPI, VPC, VPT, high or low point and stationing	2.06.2.09 & 4.05.7		
9.	Curb return profiles	2.06.2.10		
10.	Minimum and Maximum grades	4.05.1 & 4.07.9		
11.	Intersection grades (longitudinal & transverse)	4.05.4, 4.05.5, 4.05.6, & 4.05.8		
12.	Off-site design/construction	4.05.11		
GRADING PLANS:		<u>2.08. 5.01.2.02 & 36.08</u>		
	Grading Plans: COA responsible group: PW Engineering	2.08.1		
1.	Finished floor elevations	2.08.1.03, 2.08.2.07		
2.	Curb, gutter, and sidewalk type and size	2.08.1.04 & 4.02.2, 4.02.8		
3.	Spot elevations – existing and proposed	2.08.1.05		
4.	Flow direction arrows	2.08.1.05		
5.	Minimum slope or grade <ul style="list-style-type: none"> • 0.5% concrete • 1.0% asphalt • 2.0% landscaping Min Slope Away from Buildings <ul style="list-style-type: none"> • 2% hardscape • 5% landscape for 10' or PL, whichever is closer 	2.08.1.06 2.08.1.06.2		
6.	Ramps (Reference Std. Details S9.0 - S9.6) Curb/Access Ramps – Public ROW	4.02.3, 4.07.8		
7.	Curb cuts/drive entrances/cross pans	4.02.4, 4.03.2		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
8.	Guardrails/barricades	4.02.5, 4.04.8		
9.	Pedestrian/bicycle hand railings	4.02.6, 2.08.1.09		
10.	Retaining wall <ul style="list-style-type: none"> • Coordinate with site plan • In plan view and typical section with material type • Material type, height, Label private, Terraced • Structural Calculations (as required per table) 	4.02.7		
11.	Private walks	4.02.8		
12.	Sidewalk Chases are included: <ol style="list-style-type: none"> 1. Within multi-family, commercial, or industrial developments storm water from concentrated points of discharge from a minor storm event shall not be allowed to flow over internal, private sidewalks and perimeter, public sidewalks. 2. Within single-family developments side yard points of discharge from a minor storm event may be allowed to flow over the public sidewalk, unless the drainage design exceeds two or more lots draining through a side yard swale. <i>(Note: Sidewalk Chases shall not be located within a curb cut, driveway, curb ramp, or curb return)</i>	4.03.6		
MISC. GRADING PLAN ITEMS COA responsible group: PW Engineering				
1.	Floodplain BFEs	2.08.2.06, 4.5.3.2 ¹ , 4.5.4.2 ¹		
2.	Elevation Certificate Requirements	4.5.3.2 ¹ , 4.5.4.2 ¹ , 4.6 ¹ , 2.08.1.11, 2.08.1.10		
Single-Family Area Grading Plan: COA responsible group: PW Engineering				
1.	Spot elevations, grades, flow direction arrows to define drainage	2.08.2.01		
2.	Existing and proposed spot elevations at lot corners	2.08.2.02		
3.	Building footprint or envelope	2.08.2.04		
4.	Lot designation (formerly FHA designation)	2.08.2.05		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
5.	Top of foundation	2.08.2.07		
6.	Side yard retaining walls	2.08.2.10		
7.	Rear yard retaining walls	2.08.2.11		
8.	Fire hydrants shown	2.08.2.09		
9.	Steep Slope Requirements	2.08.2.11, 2.08.2.10		
10.	Maximum two lots draining through third	2.08.2.03		
<u>STREET & PEDESTRIAN LIGHTING ITEMS</u> COA responsible group: PW - Engineering				
48.	Street Lighting Plan, including: a. Required plan items b. Photometric calculation table c. Street Light Assembly & Pole Spec	2.12 2.12.1.01-.14 4.10.4 4.10.4.07		
49.	Street Lighting Plan Private	2.13, 4.10		
<u>EASEMENTS</u> – For internal review use, <u>include easements as identified earlier in checklist</u> <u>Required to be completed prior to Civil Plan approval.</u> <u>Does not impact Pre-Acceptance</u>		COA Responsible Group		
1.	Water, Sanitary, Storm, Pocket Utility	AW – Utilities		
2.	Drainage, Access for Drainage	AW – Drainage		
3.	Public Access, Sidewalk, Slope Easement, ROW by separate document, Private Easements – Kinder Morgan, Xcel, etc.	PW – ENG		
4.	Fire Lane, Coordination with: Water, Public Access, Pocket utility	Fire / Life Safety		
5.	Trail access easements/tracts	Parks Recreation & Open Space		
6.	Traffic Signal and sight distance easements	PW – Traffic Engineering		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
Drainage Referrals COA responsible group: AW Drainage				
1.	Project includes a tributary basin in excess of 130 acres thus requiring coordination with MHFD for MEP facilities (Colorado Revised Statutes §32-11- 221(1)). Drainage concepts have already been approved in PDR and are adhered to in this Civil plan or a Variance Request is included in the report.	10.4.1.2 ¹		
FINAL DRAINAGE REPORT (FDR) COA responsible group: AW Drainage				
1.	All drainage design should conform to City of Aurora Storm Drainage Design & Technical Criteria. (COA SDDTC) ¹			
2.	Preliminary Drainage Plan (PDP) and Preliminary Drainage Report (PDR) reviewed and approved within the last 12 months Electronic Drawing Number (EDN) or Record Sequence Number (RSN) #_____	3.15.1 ¹		
3.	Approval Block.	2.5.2 ¹ , 2.6 ¹		
4.	Formal Subdivision name on report cover.	2.5.2 ¹		
5.	Required report outline/Table of Contents/content followed.	2.5.2 ¹		
6.	Location of project.	2.5.2, Item A.1 ¹		
7.	Description of proposed development, type of use, density, etc..	2.5.2, Item A.2 ¹		
8.	Address any changes from PDR.	2.5.2, Item A.3 ¹		
9.	Drainage Variances - All requested variances must be numerically listed with justifications in Section A.4 of the Report. If no variances, state "None." (Note: All variances will require additional review time.)	2.5.2, Item A.4 ¹ , 2.10 ¹ , 3.23 ¹		
10.	Discuss effects of proposed development on adjacent, upstream, and downstream sites under both existing and future build out condition. Discuss coordination with adjacent property owners.	2.5.2, Items D.1.e & g ¹		
11.	Project phasing: If project is to be phased, that phasing must be described in the FDR text (and the civil plans shall include a phasing plan sheet as referred below.) Hydrologic analysis of different phases may be required.	2.5.2, Item D.2.a ¹ , 2.5.3.4, ITEM Y ¹		
12.	Discussion of stormwater detention.	2.5.2, Items D.1.h & D.2.e ¹		
13.	Analysis of outfall/connection to system.	2.5.2, Items C.2.i, D.1.f, F.3.b, & F.3.j ¹		
14.	Floodplain(s) identified. Note FEMA Flood Insurance Rate Map (FIRM) panel # and effective date export in report.	2.5.2, Items B.1.b, B.1.f, C.2.d, & F.1.c ¹		
15.	Description of all drainage basins, including inlet types and design points.	2.5.2, Items D.2.c & D.2.d ¹		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
16.	Descriptions of all culverts and bridges .	2.5.2, Items D.2.g & h ¹		
17.	Discussion of emergency overflows .	2.5.2, Item D.2.i ¹		
18.	Description of swales, ditches, and open channels.	2.5.2, Item D.2.j ¹		
19.	Permanent storm water quality control description.	2.5.2, Item D.2.m ¹		
<u>Previous Studies and Master Plans</u> COA responsible group: AW Drainage				
1.	All sources for previous relevant drainage studies are reviewed and intent of each incorporated. (Reports/studies can be found for regional drainage studies, previous site studies, and adjacent site development drainage plans on the MHFD website and City's document website .) Include a label on plan with City EDN number where applicable.	2.5.2, Items B.1.f, E.a, & F.4.b ¹		
2.	FDR conforms with related Master Drainage Reports (MDRs), PDRs, and/or other FDRs.	2.5.2, Items A.3 & D.1.b ¹		
<u>Drainage Report: Hydrologic Analysis – Rainfall/Design Events</u> COA responsible group: AW Drainage				
1.	Point Rainfall Depth per NOAA Atlas 14.	5.2 ¹		
2.	Aurora City Center or Transit Oriented District (TOD) developments designed to major design storm.	6.1.2 ¹		
3.	City Center Zone developments use 5-year storm for minor design storm.	6.1.2 ¹		
<u>Drainage Report: Hydrologic Analysis – Rational Method</u> (Only for ≤ 90 acres) COA responsible group: AW Drainage				
1.	NRCS soils data map included in FDR with site boundaries delineated.	2.5.2, Item F.1.a ¹		
2.	Imperviousness and C value provided and in compliance with Master Drainage Plan (if applicable) and reflect Planning Department site plan. (Note: ensure impervious values are considering new runoff coefficients associated with 2023 update to SDDTC.)	2.5.2, Item F.2.c ¹ , 5.3.1 ¹ , 5.3.2 ¹		
3.	Time of concentration (Tc) calcs provided and per MHFD criteria.	2.5.2, Item F.2.d ¹ , 5.3 ¹ , Chapters 5 & 6 ⁵		
4.	Confirm basin areas, weighted C values, percent impervious, Tc, Intensity, and peak flows. Ensure WQCV portion of pond(s) is 100% impervious.	2.5.2, Item F.2.f ¹ , 5.3 ¹		
5.	Confirm routed/accumulated flows at critical locations (ponds, storm inlets, manholes, etc.) including design points.	2.5.2, Item F.2.f ¹ , 5.3 ¹		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
<u>Drainage Report: Hydrologic Analysis – CUHP</u> (See MHFD published criteria for items not published in COA SDDTC) COA responsible group: AW Drainage				
1.	Depression loss values per MHFD criteria.	5.3.3 ¹		
2.	Infiltration method parameters per MHFD criteria.	5.3.3 ¹		
3.	Impervious calculations reflect City percent impervious values. <i>(Note: ensure impervious values are considering new runoff coefficients associated with 2023 update to the Criteria.)</i>	5.3.3 ¹		
4.	Confirm Directly Connected Impervious Area (DCIA) Level is accurate. <i>(Unless distributed LID measures utilized throughout watershed. E.g., providing ponds, rain gardens, or other approved water quality BMPs sized for the subdivision or large portions of it does not justify DCIA Level > 0).</i>			
5	Confirm basin areas and percent impervious. Ensure WQCV portion of pond(s) is 100% impervious.	2.5.2, Item F.2.f ¹ , 5.3 ¹		
6.	PDF copy of model included in FDR. Electronic copy of the model uploaded with the FDR as a separate file.	2.5.2, Items F.2.e & F.5.a ¹		
<u>Drainage Report: Hydrologic Analysis – SWMM</u> COA responsible group: AW Drainage				
1.	Model schematic included, and design points shown on plan.	2.5.2, Item F.2.e ¹ , 2.5.3.4, Item J ¹		
2.	Pond storage and discharge rating curves match plan/calcs.			
3.	Confirm CUHP output hydrographs input to correct nodes and link node connectivity and continuity error not significant.			
4.	PDF copy of model included in FDR. Electronic copy of the model uploaded with the FDR as a separate file.	2.5.2, Items F.2.e & F.5.a ¹		
<u>Drainage Report: Hydrologic Analysis – Special Considerations</u> COA responsible group: AW Drainage				
1.	Site is tributary to Norfolk Pond and can utilize this detention and water quality by paying additional fees.	Fee Schedule		
2.	Additional criteria for watersheds with special requirements met.	3.12 ¹		
<u>Drainage Report: Hydrologic Analysis – New (or Modified) Ponds</u> COA responsible group: AW Drainage				
1.	Applicable detention and WQCV/EURV requirements are met. Developments with new imperviousness > 5,000 square feet use FSD.	10.3 ¹ , 10.4 ¹		
2.	Volumes per MHFD Simplified Equations, MHFD-Detention workbook, or CUHP/SWMM.	10.4.2 ¹		
3.	Proposed pond(s) is not classified as a jurisdictional dam(s). COA requires applicant to provide a letter of determination from the State Engineer's Office when a proposed pond's embankment appears to be greater than or equal to 9.5' in height. (Note: Additional review time may be required.)	10.8.1 ¹		
4.	Total drainage area and percent impervious for each pond correctly computed. (Reminder: check SDDTC for requirements for off-site tributary areas. WQ is required for entire tributary area to the WQ Facility. Detention/EURV for offsite areas may be permitted to pass through, discuss with COA prior to submittal.)	3.17 ¹ , 5.3.1 ¹ , 5.4 ¹ , 10.4.1.1 ¹		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
5.	Pond is within 10,000 feet of any airport and within 5 miles of DIA/DEN and applicant has confirmed drain time requirements and incorporated in pond design (e.g., near DEN, 40 hour max drain).	FAA AC 150/5200-33C, 10.14 ¹		
6.	Design considerations for pond grading met, e.g.: pond embankment slopes are maximum 4:1, minimum 2% slope at the bottom of all ponds, embankment top width minimum 10', etc..	10.9.1 ¹		
7.	Design considerations for trickle/low flow channels met, e.g.: 6' minimum bottom width per criteria, longitudinal slope of 0.4%-1% for concrete bottoms, 1%-2% for other bottoms, etc..	10.9.6 ¹		
8.	Pond embankment is at least 1' above the spillway design discharge WSEL for ponds with tributary area ≥ 5 acres. For < 5 acres, embankment must be above spillway design discharge WSEL. Adjacent building FFEs at least 1' above pond embankment elevation. (Note: spillway design discharge is undetained 100-year peak inflow to pond.)	10.9.4 ¹		
9.	Exhibit and calculation included of tributary basin and watershed length to each pond to support the overall watershed slope and to confirm the allowable release rate(s) from the site.	10.4.2 ¹ , Chapter 12 ⁶		
10.	Stormwater Detention and Infiltration Facility Notification (SDI) Sheets included (uploaded to SDI website required prior to and for Civil Plan approval.)	CRS §37-92-602, 10.8.2 ¹		
<u>Drainage Report: Hydrologic Analysis – Use of Existing Ponds</u> COA responsible group: AW Drainage				
1.	Existing pond being utilized for detention and/or water quality is clearly labeled, and requirements established in PDR have been met.	2.5.2, Item D.2.f ¹ , 2.5.3.4, Items C & R ¹		
2.	Existing pond is being expanded or changed due to tributary area change, percent impervious increase, etc., and updated design requirements incorporated.	2.5.2, Items D.2.e & F.2.g ¹ , 2.5.3.4, Item R ¹ , 2.5.3.7, Item 1 ¹		
<u>Drainage Report: Specialty Water Quality Devices and Measures</u> COA responsible group: AW Drainage				
1.	Subsurface, proprietary water quality device proposed and meets requirements in SDDTC. (Note: these devices are not allowed in greenfield development or to increase development density.)	11.3.1.2 ¹ , MHFD Manual Volume 3 ⁴		
2.	Stormwater control measures (SCMs) including rain gardens, grass swales, etc. designed per SDDTC and MHFD design workbooks included.	11.3.1.2 ¹ , MHFD Manual Volume 3 ⁴		
<u>Drainage Report: Streets/Alleys Drainage</u> COA responsible group: AW Drainage				
1.	Street capacity calcs for public and private streets, drives, and alleys included. Street flow criteria met.	2.5.2, Items D.2.k & F.3.i ¹ , 6.2.1 ¹		
2.	When a street or alley ends at a T-intersection, mitigation measures must be included per SDDTC.	6.3.3 ¹		
3.	Inlets included upstream of street intersections and drive entrances. Superelevation and flanking inlet criteria met.	6.3.3 ¹		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
4.	Design considers sump inlets and emergency overflow. For sump inlet emergency overflow paths, minimum of 1' of freeboard from emergency overflow WSEL to building lowest point of entry (LPE). Freeboard calculations provided for all buildings with lowest floor elevations with 1.5" of emergency overflow WSEL. Report includes associated verbiage and calculations.	2.5.2, Items D.2.i & F.3.l ¹ , 6.3.2 ¹ , 6.3.3 ¹		
5.	Cross pans are not included across collector or arterial roadways or on roadways with storm sewer systems.	6.2.1 ¹ , 6.3.3 ¹		
6.	Minimum 1.27% slope around curb returns when turning water.			
<u>Drainage Report: Storm Drainage System</u> COA responsible group: AW Drainage				
1.	Site is connecting to an existing storm sewer pipe and capacity design study, and capacity verification is described, referenced (with relevant excerpts highlighted), and included in appendix.	2.5.2, Items C.2.i, D.1.f, F.3.j, & F.4.b ¹ , 6.4.5 ¹		
2.	Storm drains designed to convey minor design storm convey peak at maximum of 80% full-pipe capacity. HGL minimum of 1' below manhole lids, inlet grates, inlet inverts, and ground elevation.	6.4.5 ¹		
3.	HGL of storm drains designed to convey major design storm minimum of 1' below manhole lids, inlet grates, inlet inverts, and ground elevation.	6.4.5 ¹		
<u>Drainage Report: Culverts</u> COA responsible group: AW Drainage				
1.	Calculations included to demonstrate all culverts convey the 100-year peak flow, are a minimum 24" diameter (or if wider than 8' at least 6' high), and include flared end sections or headwalls, wingwalls, and aprons.	9.4.1 ¹ , 9.4.2 ¹ , 9.4.3 ¹		
2.	Culverts have a minimum slope of 0.5% and minimum and maximum barrel velocities of 3 fps and 12 fps, respectively.	9.4.5 ¹		
3.	Headwater depth no more than 1.5 times the culvert diameter (or rise dimension for non-circular culverts) and applicant has confirmed no excessive ponding that would damage adjacent properties.	9.4.4 ¹		
4.	Culverts are concrete and designed for H-20 Loading.	9.4.2 ¹		
5.	Safety grates implemented per MHFD criteria.	9.4.7 ¹		
6.	Emergency overflow calculated per SDDTC and emergency overflow path provided. Emergency overflow contained in drainage easement, and 1' of freeboard between building LPE and emergency overflow WSEL.	9.4.8 ¹		
7.	Inlet/outlet control analyzed.	9.4.3 ¹		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
<u>Drainage Report: Bridges</u>				
COA responsible group: AW Drainage				
1.	Calculations included to demonstrate bridge conveys appropriate design peak flow (2-year for low water crossings, 10-year for pedestrian bridges, 100-year for vehicular bridges).	9.5.1 ¹		
2.	Design resists scour for 100-year storm event. Scour analysis provided per HEC-18.	9.5.2 ¹		
3.	Minimum of 2' of freeboard between low-chord and 100-year WSEL.	9.5.3 ¹		
4.	Emergency overflow calculated per SDDTC.	9.5.4 ¹		
5.	Design considerations for pedestrian bridges and/or low water crossings incorporated.	9.5.5 ¹		
<u>Drainage Report: Channels</u>				
COA responsible group: AW Drainage				
1.	Natural channel design (i.e., HFLMS) requirements met and associated coordination with MHFD performed.	7.2.1 ¹ , 7.2.2 ¹ , 7.3.7 ¹		
2.	Calculations provided for channel and stream bank stabilization where required.	2.5.2, Items F.3.d & e ¹ , Chapter 8.0 ¹		
3.	Channel bottom width(s) and side slopes per MHFD criteria.	Chapter 8 ⁵		
4.	Centerline radius of curvature minimum of two times channel topwidth.	Chapter 8, Sections 5.4 & 5.8 ⁵		
5.	Manning's n-values per MHFD criteria or otherwise justified.	7.6 ¹ , Chapter 8 ⁵		
6.	Calculations provided demonstrating sufficient freeboard to channel banks (minimum 1' between top-of-bank and 100-year WSEL for major streams, minimum 6" between top-of-bank and 100-year WSEL for minor streams) and to adjacent structures (minimum 1' between top-of-bank and LFE).	2.5.2, Items D.2.j & F.3.b ¹ , 7.2 ¹ , 7.3.2 ¹ , 7.4 ¹		
7.	Depths, velocities, Froude numbers, shear stresses, and other design parameters per MHFD criteria.	Chapter 8 ⁵ , Chapter 8, Section 5.8 ⁵		
8.	Channels within DEN/DIA airport zone do not have any adverse slope sections and incorporate special plant palette. (<i>DEN/DIA review required</i>)	FAA AC 150/5200-33C		
<u>Drainage Report: Outfalls</u>				
COA responsible group: AW Drainage				
1.	Proposed outfall(s) corresponds to previously proposed/planned location(s) from MDR/PDR/etc. and include previous report reference including EDN/RSN.	2.5.2, Items B.1.e, D.1.b, D.1.f, & F.4.b ¹		
<u>Drainage Report: Floodplains</u>				
COA responsible group: AW Drainage				
1.	Include exhibit of floodplain based on best available data (e.g., FEMA, MHFD, other) if floodplain with 300' of grading/construction limits. Show floodway and 100-year floodplain limits, BFEs, cross sections, etc.. (<i>Note: contact COA Floodplain Administrator to confirm source of best available data floodplain.</i>)	2.5.2, Items B.1.b & F.1.c ¹ , 4.3.1 ¹ , 4.3.4 ¹ , 4.3.5 ¹		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
2.	Identify any anticipated or ongoing LOMCs required for development.	2.5.2, Item C.2.d ¹ , 4.7 ¹		
3.	Identify if Floodplain Development Permit (FPDP) submitted.	2.5.2, Item C.2.d ¹ , 4.8 ¹		
<u>Drainage Report: Swales</u> COA responsible group: AW Drainage				
1.	Minimum longitudinal slope of 2% or underdrain provided.	7.5 ¹ , 7.5.2 ¹		
2.	Swales sized per MHFD criteria (swale capacity charts or swale design procedure).	7.5 ¹ , Chapter 8, Section 6.0 ⁵		
3.	Velocities and Froude numbers meet criteria and appropriate for soil conditions.	7.5 ¹		
4.	Minimum of 6" of freeboard between 100-year WSEL and building LPE.	7.2 ¹ , 7.5 ¹		
5.	Top of swale embankment minimum of 2' from nearest fence line.	7.5 ¹		
<u>Final Drainage Plan (FDP)</u> COA responsible group: AW Drainage				
1.	Meets drafting standards.	2.5.3.4, Item FF ¹		
2.	FDP included in Civil Plan Set.	2.5.3 ¹		
3.	No approval block on FDP.			
4.	No copyright notes on plans (including proprietary details by construction product companies).	2.5.3.1, Item D ¹		
5.	North arrow and scale with bar scale.	2.11.1.02		
6.	Legend.	2.11.1.03		
7.	Overview plan sheet.	2.5.3.4, Item E ¹		
8.	Minimum scale 1" =50' for single family or commercial with building footprint > 500,000 ft ² , 1" =30' for multi-family and commercial sites with building footprint < 500,000 ft ² . (Note: when FDP requires more than one sheet a sheet index showing entire site shall be provided.)	2.5.3.4, Items F & G ¹		
9.	Notes and information required on all sheets: 1. General Conformance note. 2. Adjacent Property Owner note. 3. Reference to COA NAVD 88 benchmark. 4. Formal platted subdivision name in title block. 5. Public/Private Maintenance note.	2.5.3.1 ¹ 2.6 ¹		
10.	All outstanding comments on Preliminary Drainage Plans (PDPs) are addressed and FDP matches PDP, Planning Site Plan, and Plat (site layout, drainage easements, etc.).	2.5.2, Item D.1.b ¹		
11.	Project Phasing: interim and ultimate conditions shown on separate sheets.	2.5.3.4, Item Y ¹		
12.	Contours shown and labeled at 2' minimum interval, extended a minimum of 50' beyond property line and includes all off-site tributary areas.	2.5.3.4, Item H ¹		
13.	Flow direction arrows with slope in percent.	2.5.3.4, Item I ¹		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
14.	Drainage basin boundaries (on-site and off-site) correspond to proposed topography and include design points.	2.5.3.4, Item J ¹		
15.	Plan includes table with basin identifier, basin area, major and minor runoff coefficients, percent imperviousness, and minor and major runoff for all basins and design points. Table includes both direct and accumulated (routed) runoff values.	2.5.3.4, Item K ¹		
16.	Off-site emergency flows perpetuated through site.	2.4.1 ¹		
17.	Emergency overflow pathway shown for all ponds, sumps, culverts, bridges, etc. with unique direction arrow(s) as identified in legend. Includes weir cross section(s) with flow depth(s) and freeboard.	2.5.3.4, Item T ¹ , 2.5.3.7, Item 4 ¹		
18.	Emergency overflows which discharge onto other undeveloped sites include a note indicating the owner shall perpetuate the flows.			
19.	Existing drainage facilities and public improvements (inlets, pipes, chase drains, etc.) with size, type, and EDN/RSN.	2.5.3.4, Item P ¹		
20.	Depict and label all proposed drainage facilities and structures (inlets, pipes, chase drains, etc.) with size and type.	2.5.3.4, Item Q ¹		
21.	Labels adjacent properties, subdivisions, developments, etc. with names and EDNs or RSNs. Provide COA jurisdictional boundary if applicable.	2.5.3.4, Item CC ¹		
22.	Existing and proposed easements, property lines, tracts, streets, and ROW. Easements, ROW, and streets dimensioned; street classification labeled.	2.5.3.4, Item BB ¹		
23.	Lots and blocks labeled. Sidewalks shown. License agreements identified.	2.5.3.4, Item BB ¹		
24.	Retaining wall(s) locations, top and bottom of wall elevations, and maximum height(s) shown.	2.5.3.4, Item AA ¹		
25.	Curb & gutter height and type (distinguish between catch and spill).	2.5.3.4, Item U ¹		
26.	100-year flood depth in streets..	2.5.3.4, Item V ¹		
27.	Inlets placed a minimum of 5-feet from curb returns.	4.03.3		
28.	No cross pans are included on collectors and arterials or when underground storm infrastructure exists or will be built. (Note: see <i>Roadway Criteria Manual</i>)	4.03.2, 6.53 ¹		
29.	Stormwater Quality Control Plan	Chapter 2 ³		
30.	Water quality and detention are included for all on-site areas (unless a variance approved by staff - may require additional review time).	3.13.1 ¹ , 10.3 ¹ , 11.2 ¹		
31.	Existing and proposed detention ponds labeled with WQCV, EURV, and 100-year storage volumes and WSELs, design release rates, maximum depths, ponding limits, and any other water quality SCM data as needed for the proposed SCM.	2.5.3.4, Item R ¹		
32.	Existing and proposed detention ponds' side slopes, bottom slope, trickle channel slope and width, forebays, micropool, spillway, and outlet structure labeled.	2.5.3.4, Item R ¹		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
33.	Pond embankment is at least 1' above the spillway design discharge WSEL for ponds with tributary area \geq 5 acres. For < 5 acres, embankment must be above spillway design discharge WSEL. Adjacent building FFEs at least 1' above pond embankment elevation. <i>(Note: spillway design discharge is undetained 100-year peak inflow to pond.)</i>	10.9.4 ¹		
34.	Design considerations for pond grading met, e.g.: pond embankment slopes are maximum 4:1, minimum 2% slope at the bottom of all ponds, embankment top width minimum 10', etc..	10.9.1 ¹		
35.	Design considerations for trickle/low flow channels met, e.g.: 6' minimum bottom width per criteria, longitudinal slope of 0.4%-1% for concrete bottoms, 1%-2% for other bottoms, etc..	10.9.6 ¹		
36.	Outlet structure pond sign (for each proposed pond).	2.5.3.7, Item 1.k ¹ , 10.9.7 ¹		
37.	Maintenance access provided to all pond components (e.g., top of outlet, micropool, orifice plate, screening/grating, low flow channel, forebay, etc.). Maintenance access comprised of appropriate all-weather material. Maintenance access width, radii, longitudinal slope, and cross slope labeled and meets SDDTC criteria. Turn-around or drive-through option provided if necessary.	2.5.3.4, Item R ¹ , 10.7 ¹		
38.	Cross sections included for spillways with length of spillway, side slopes, invert elevation, design flow, depth of flow, freeboard dimensions, LFEs and LPEs of adjacent buildings, and top of berm elevation.	2.5.3.7, Item 1.c ¹		
39.	Pond Certification note.	2.5.3.4, Item B ¹ , 2.6 ¹		
40.	Pond Recertification note.	2.5.3.4, Item C ¹ , 2.6 ¹		
41.	Notification of Downstream Water Rights Holders note.	2.5.3.4, Item D ¹ , 2.6 ¹		
42.	Clearly label any variance-allowed jurisdictional dams under State Engineer's Office rules.	10.8.1 ¹ , 4.6 ⁷		
43.	Plan view of channel(s) provided with existing and proposed topography; match lines with sheet numbers; stream centerline stationing; HEC-RAS cross sections with 100-year discharge and WSEL labeled; 100-year inundation extents; permanent erosion control and/or bank stabilization features with appropriate sizing and dimensions; property lines, ROW, easements, and tracts with appropriate labeling and dimensioning; streets with appropriate labeling; lots and blocks; and sidewalks.	2.5.3.5, Item B ¹		
44.	Profile view of channel(s) provided with channel thalweg, top of bank elevation(s), HEC-RAS cross sections with stationing labeled, 100-year discharge and HGL, other design storm discharges and HGLs, dimensioned freeboard, permanent erosion control and/or bank stabilization features with appropriate sizing and dimensions, existing and proposed utilities with clearance dimensioning and conflicts identified, reinforcement locations, adjacent building LFEs and LPEs, easements, and property lines.	2.5.3.5, Item C ¹		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
45.	Cross sections included for channels with bottom width and thalweg elevation, side slopes, top of bank elevation(s), 100-year discharge and WSEL, other design storm discharges and WSELs, dimensioned freeboard, permanent erosion control and/or bank stabilization features with appropriate sizing and dimensions, adjacent building LFEs, LPEs, easements, and property lines as applicable.	2.5.3.5, Item D ¹		
46.	Cross sections included for swales/ditches with bottom width, side slopes, top of bank elevation, major and minor design storm discharges and WSELs or flow depths, dimensioned freeboard, and adjacent building LPEs, easements, and property lines as applicable. Include a note identifying all swales and/or ditches as privately maintained.	2.5.3.7, Item 3 ¹		
47.	Cross sections included for emergency overflows with bottom width, side slopes, emergency overflow discharge, WSEL, dimensioned freeboard, and adjacent building LPEs, easements, and property lines, if applicable.	2.5.3.7, Item 4 ¹		
48.	Size, location, dimensions, and necessary detail(s) for all permanent rip/rap/erosion control.	2.5.3.5, Item E ¹		
49.	Inlets included upstream of street intersections and drive entrances. Superelevation and flanking inlet criteria met.	6.3.3 ¹		
50.	Existing and proposed outfall(s) labeled with projected flow rate and reference label to applicable report/plan (name, date, and EDN/RSN).	2.5.3.4, Item W ¹		
51.	Maintenance access provided both upstream and downstream of culverts with 20' minimum access around all riprap, headwalls, wingwalls etc..			
52.	Grade control/drop structures clearly labeled and details included.	2.5.3.5, Items B.6, C.7, D.7, & E ¹ , Chapter 8.0 ¹		
53.	Details included for all storm sewer points of connection and storm sewer outfalls.	2.5.3.4, Item Q ¹ , 2.5.3.6, Items B.4 & C.3 ¹		
54.	Channel maintenance access path(s) included where ROW does not allow for channel access. Minimum width 12', with appropriate slopes, centerline radii, and materials. Overtopping protection included where needed. Cross section detail provided. See PROS's Dedication and Development Criteria Manual ⁹ for more requirements.	7.3.6 ¹		
55.	Floodplain information shown, including 100-year floodplain and floodway limits, BFEs, cross sections, stream centerline, etc.. Identify source of floodplain and relevant information (e.g., FIRM map panel, effective date, etc.). Identify LOMCs.	2.5.3.4, Item L ¹		
56.	Floodplain Development Permit note included for any work planned within the floodplain.	2.5.3.4, Item M ¹ , 2.6 ¹		
57.	No portion of new residential lot or parcel included in 100-year floodplain. No portion of new non-residential lot or parcel allowing for building placement included in 100-year floodplain.	4.5.1 ¹		
58.	Residential and non-residential LFEs shown. Residential LFEs are minimum of 2' above BFE, and lot minimum of 1' above BFE. Non-residential LFEs are minimum of 1' above BFE.	4.5.3.1 ¹ , 4.5.3.2 ¹ , 4.5.4.1 ¹ , 4.5.4.2 ¹		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
59.	Building LPEs minimum of 1' above emergency overflow WSELs, minimum of 1' above either 100-year WSEL or two times 100-year depth for street flow, and minimum of 6" above swale 100-year WSEL. Building LFEs minimum of 1' above channel top of bank elevation.	3.18 ¹ , 6.2.1 ¹ , 6.3.2 ¹ , 7.2 ¹ , 7.5 ¹ , 9.4.8 ¹ , 10.9.4 ¹ , 10.11 ¹ , 10.12 ¹		
60.	Setback requirements are met.	4.30 ¹		
61.	Detail for the lockable hinge on any safety grates (or access panel for larger grates) included on plans or a note referencing COA Standard Detail S12.12 in the 2023 Roadway Manual.	5.3 ⁶		
<u>Inspection & Maintenance Report</u> COA responsible group: AW Drainage				
1.	I&M shall be submitted with the 1st submittal of civils. Note: Inspection & Maintenance Report for private infrastructure must be completed, signed and notarized prior to Signature Set submittals utilizing current I&M Template.	2.9 ¹		
<u>Erosion & Sediment Control Report and Plans</u> COA responsible group: AW Utilities				
1.	Current SWMP Report Template	2.2.1 ³		
2.	Signature Block includes owner and design engineer information	2.2.1 ³		
3.	Subdivision Name and Filing No.	2.2.1 ³		
4.	Section 6 Probable Cost sheet	2.2.1 ³		
5.	Appendix A and B (Floodplain and Soils Information)	2.2.1 ³		
6.	Sediment Basin calculations in Appendix D	2.2.1 ³		
7.	Standard Erosion Control Notes	2.2.2(2) ³		
9.	Signature Blocks	2.2.2(2) ³		
9.	Initial and post paving plans	2.2.2 ³		
10.	Elevation Contours and Drainage arrows	2.2.2 ³		
11.	Limits of constructions and perimeters BMPs	2.2.2 ³		
12.	Stockpile location including protection and stabilization	2.2.2 ³		
13.	Storage areas including staging, trailer, and concrete washouts	2.2.2 ³		
14.	Temporary roads and VTC	2.2.2 ³		
15.	Status of Initial BMPs shown on Post Paving plan	2.2.2(22) ³		
16.	Temporary Sediment Basin information including riser pipe details, dimensions, tributary area, volume, and discharge protection	2.2.2 ³		
17.	Slope stabilization on any slope 4:1 or steeper	2.2.2(22) ³		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
STORM DRAIN PLAN & PROFILE				
COA responsible group: AW Drainage & AW Utilities				
1.	Elevations and stationing on profile view	2.07.2, 2.5.3.6, Item C ¹		
2.	Horizontal control dimensions	2.07.2		
3.	Pipe length, size, slope, inverts, structural class, bedding class for pipes, and material type	2.07.3, 2.5.3.6, Items B.4 & C.3 ¹		
4.	Manhole inside diameter, size of inlets	5.07 ² , 2.5.3.6, Items B.4 & C.3 ¹		
5.	Drop through manholes and inlets	5.03.4 ² , 10.08 ² , 2.5.3.6, Items B.4 & C.3 ¹		
6.	Number of pipes and sizes coming into any manhole or inlet	5.07 ² , 10.08 ²		
7.	Show water and sanitary sewer alignment on plan view.	2.07		
8.	Clearance of utility crossings with labeling	11.08 ² , 2.5.3.6, Item C.5 ¹		
9.	Show and label proposed and existing grades in profile view	2.07.3.01, 2.5.3.6, Item C.2 ¹		
10	Detail of all connections to existing drainage systems and channels	2.07.2, 2.5.3.6, Items B.4 & C.3 ¹		
11.	Miscellaneous appurtenances (trash racks, handrails, dowel pins, and guardrails)	2.07.2		
12.	Show and label hydraulic grade line with design frequency. Label design flows for both major and minor storm events for each pipe.	2.07.3.09, 2.5.3.6, Item C.4 ¹		
13.	Depict Access, Drainage, Fire, Utility and Other Easements with dimensions	2.07.2		
14.	Depict Property Lines and Right(s)-of-Way	2.07.2, 2.5.3.6, Items B.10 & C.6 ¹		
15	Label Stormwater and Drainage items including whether they are Public or Private (detention pond outlets, on-site pipes, and drainage pans)	2.07.2.07, 2.5.3.1, Item C ¹		
16.	Note stating: "Contractor shall maintain a minimum of 0.5% grade at flow line into inlet."	2.5.3.6 ¹		

OVERALL UTILITY PLANS

COA responsible group: AW Utilities

Note: Identify Utility Phasing – Show utility phasing on the overall utility plans. Extension agreements are issued based upon the phasing plan. The entire extension agreement must be completed prior to testing and initial acceptance.

1.	Resistivity test results for public water main installation	5.05.2 ²		
2.	Standard Utility Notes	5.05.1 ²		
3.	Phasing Plan included (for phased utilities).	2.07		
4.	Fixture Unit Table and Meter Sizing Table, excluding single family attached or detached	5.05.3 ²		
5.	Wet Tap sizes, labeled	11.06 ²		
6.	Waterline lowering shown with vertical bends labeled	2.07		
7.	Horizontal control dimensions	2.07		
8.	Easements with dimensions for water meters and fire hydrants	2.07		
9.	Service line piping length, size, and type of pipe, labeled in Overall Utility Plan (excluding single family attached or detached)	2.07		
10.	Pipe length, size, and material type	5.01 ²		
11.	Pipeline fittings including bends, tees, valves, air reliefs, and blow-offs	5.01 ²		
12.	Existing utility information, including size and material type	2.07		
13.	Label all fire lines as "PRIVATE", include length, size, and type of pipe	5.05.4 ²		
14.	Finish grade at base of the hydrant (Flange Elevation)	5.01 ²		
15.	Show domestic and irrigation water meters with easements clearly labeled. Note: All meter pits must be located two feet (2') from all concrete.	2.07		

SANITARY SEWER PLAN & PROFILE

COA responsible group: AW Utilities

1.	Elevation and stationing on profile view	2.07.2		
2.	Horizontal control dimensions	2.07.2		
3.	Easements with dimensions	2.07.2		
4.	Service line piping length, size, and slope (multi-family and commercial properties only)	2.07.2		
5.	Clean-outs required per specification	23.01 ² & 23.06 ²		
6.	Pipe length, size, slope, inverts, bedding class for pipe and material type	2.07.3		
7.	Manhole inside diameter/location per specifications	5.06 ² & 5.07 ²		
8.	Manhole requirement where service line diameter is equal to or greater than seventy-five percent (75%) of existing main	23.05.1 ²		
9.	No direct service taps on interceptors fifteen inches (15") and larger	23.05.1 ²		
10.	Tees on main, wyes on stub outs at cul-de-sacs	23.05.1 ²		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
11.	Drop through manholes (0.2 straight, 0.3 bends)	5.03.4 ²		
12.	Profile shall depict utility crossings for water mains, fire hydrant laterals, fire lines, and storm sewers with clearance depths.	2.07 & 11.08 ²		
13.	Proposed and existing grades in profile view; ensure RIM elevation match future grades	2.07		
14.	Label private utilities as "private" (under drains, service lines, manholes as applicable)	2.07.2.07		
15.	Maintenance access to all public manholes per specification.	5.06 ²		
16.	License Agreement for gravity under drains tying into mains and following the utility trench.	24.00 ²		
<u>WATER LINES 16" and LARGER (Plan and Profile required)</u> COA responsible group: AW Utilities				
1.	Elevation and stationing on profile view	2.07.2		
2.	Horizontal control dimensions	2.07.2		
3.	Easements with dimensions	2.07.2		
4.	Pipe length, size, material type, and slope	2.07.3 & 11.00 ²		
5.	Pipeline fittings, including bends, tees, valves, air reliefs, and blow-offs	2.07.3 & 11.05 ²		
6.	Finished grade at base of fire hydrants (flange elevation), return fire hydrant lateral to bury depth of five and half (5.5') feet	16.01 ² & 16.03.3 ²		
7.	Existing unused stub-outs removed and blind flanged at main	2.07.2		
8.	Constructability of future large diameter main extension (bulkheads, blow-offs, air vacs, valving and water availability)	2.07		
9.	Provide pressure zone labeling at Zone boundaries, zone valves, check valves, and P.R.V's	5.00 ² & 15.00 ²		
10.	Elevations and stationing on profiles, provide depth of cover to accommodate appurtenances, such as air vacs and butterfly valves, as necessary	2.07.3		
11.	Final grade over water line, set RIM elevation to final grade	2.07		
12.	Station and elevation at all breaks in grade, grade shall be zero percent (0%) entering and exiting air vac butterfly vault locations	2.07		
13.	Detail thrust restraint on lines larger than twenty-four (24")	23.01 ² & 23.06 ²		
<u>FIRE/LIFE SAFETY ITEMS</u> COA responsible group: Fire/Life Safety				
1.	Accessible Parking <ul style="list-style-type: none"> • Diagonal parking within TOD / Urban • Size • Route • Signage & Striping 	4.07.7.01		
2.	Fire lane width, radii & grades	4.07.9		
3.	ADA route – private site <ul style="list-style-type: none"> • Min & max grades • Width & path • Ramps 	4.02.3, 4.07.8		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
4.	Fire hydrants placement	2.07		
5.	Private interior sidewalks	4.02.8		
6.	Gating system	4.07.7.02.6		
7.	Fire lane easements included as follows: <ul style="list-style-type: none"> • 23' wide have 29' inside and 52' outside radii • 26' wide have 26' inside and 52' outside radii • Interconnects between 23' and 26' widths have 29' inside 	1503.1 ¹⁰ 66-32 ¹¹		
8.	Coordinated easements: Fire hydrant, water, public access & pocket utility	2.07		
<u>PROS ITEMS</u>				
COA responsible group: Parks, Recreation & Open Space				
1.	Trails in Floodplains: Trails generally shall be located above the 100-year floodplain. Trails located below the 10-year floodplain shall be concrete. Trail underpasses shall be above the 5-year developed flow depth.	PROS DDCM 6.20.G, 6.20.E and 6.20.I.1		
2.	Trail slopes: Longitudinal (5% maximum) and cross slope (2% maximum) for all trails, include trail cross sections and necessary details	PROS DDCM 6.20.C		
3.	Landscaped Medians: Median maintenance access area (minimum 15'x50' concrete flatwork) locations, and necessary details for special median design, if applicable	PROS DDCM 6.15.F(3)(a)		
4.	Parks, Recreation and Open Space standard civil plan and/or erosion control notes: To be included when work or improvements are located within existing or proposed Parks, Recreation and Open Space (PROS) properties or landscaped medians, or upon land, including rights-of-way, adjacent to PROS properties or medians.	PROS DDCM Appendix J		
<u>TRAFFIC ITEMS</u>				
COA responsible group: PW - Traffic Engineering				
1.	Roadway Classifications <ul style="list-style-type: none"> • Verify Typical Section based on Traffic Study, NEATS, etc. • Verify lane widths • Verify clear zone shown on typical section • Confirm adequate ROW based on section, turn lanes, accel/ decel lanes • Speed limit / Design Speed 	4.04.2		
2.	Traffic pull boxes, traffic signal cabinet, and conduit shown the traffic signal plans			
3.	Signing and striping all streets <ul style="list-style-type: none"> • Stop sign locations (determine through streets) • Offsite signing and striping as needed 	2.10		
4.	Taper lengths, lane shifts <ul style="list-style-type: none"> • Median • Auxiliary • Through movement lanes shifts • As result of project phasing 	4.05.11		
5.	Turning movement – for signalized intersections with non-standard geometry (including double left turns) <ul style="list-style-type: none"> • Median nose setback • Island nose type • Autoturn / Tracking template • Pork chop placement and configuration 	2.06.1.24, 4.04.6.03.11, S2.14, S2.15		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
6.	Channelization to control turning movements	4.04		
7.	• Location, configuration	4.04		
8.	• Ultimate signage and striping plan submitted	4.04		
9.	• Include interim plans as required	4.04		
10.	Gating System	4.07.7.02.6		
11.	Sight Triangles	4.04.6.03.07		
12.	Curb cut/drive entrance spacing	4.07.7.02.5		
13.	Curb ramp locations and directions	4.02.3, 4.07.8		
14.	Roundabouts			
15.	• Traffic Analysis and Consideration for a Preliminary Roundabout Design	4.04.6, 4.05.2		
16.	• Design Guidelines	4.04.6.03		
17.	• Cross slope			
18.	• Pedestrian Crossings	4.04.6.04		
19.	• Pedestrian Traffic	4.04.6.04.07		
20.	• Bike Ramp Exits and Entrances	4.04.6.04.21		
21.	• Stopping Sight Distance	4.04.6.04.22		
22.	• Intersection Sight Distance (ISD)	4.04.6.04.23		
23.	• Sight Lines and Triangles	4.04.6.04.16		
24.	• Entry Grade Profiles	4.04.6.04.17		
25.	• Alignment Profiles	4.04.6.03.07		
26.	• Curb Ramp Locations	4.04.5.2.02		
27.	• Approach Grades	2.06.3		
28.	• Lane Widths	4.04.6		
29.	• Notes indicating marking material shown on the signage and striping plans	2.10.1		
30.	Accel/decel lanes, turn pockets, and dual left turn lanes (as required by the traffic impact study) shown on the plan and profile and the signage and striping plans	2.10		
31.	Interim or temporary signage and striping plan submitted for phased projects	2.10		
32.	Additional work to tie-in to existing, roads addressed:	4.05.11		

ALL SUBMITTALS		SECTION NO.	INCLUDED	N/A
33.	a. Existing signing and striping	4.05.11		
34.	b. Tapers to existing cross section, 15:1 minimum	4.05.11		
35.	c. Additional off-site signage and striping changes caused by the new construction	4.05.11		
36.	d. Phasing	4.05.11		
37.	e. Check against other plan sets	4.05.11		
38.	f. Median locations match	4.05.11		
39.	g. Lane shifts	4.05.11		
40.	Signalization Plan for signal work to be installed or modified with the project	TBD		
41.	a. Intersection Plan	TBD		
42.	b. Phasing Diagram and Flash Program	TBD		
43.	c. Additional signage and striping	TBD		
44.	d. Cabinet locations	TBD		
45.	e. Sheets for existing, proposed, interim, ultimate, etc.	TBD		
46.	Traffic Control	50		
47.	Intersection geometry for future signals, if required by Traffic Impact Study	50.05		

*****Note: Signature(s) required from each Licensed Civil Engineer where multiple Civil Engineering Disciplines are completing the checklist. Please use a digital image stamp (can be flattened) or scan a physical signature in lieu of using a secure signature function.**

I hereby certify that the information provided above is complete and accurate.

Engineer of Record Name & Title	Signature	Date
Engineer of Record Name & Title	Signature	Date
Engineer of Record Name & Title	Signature	Date
Engineer of Record Name & Title	Signature	Date