



Planning and Development Services

860 Levoy Drive, Suite 300 • Taylorsville, UT 84123

Phone: (385) 910-5600

Town of Brighton Planning Commission

Public Meeting Agenda

****AMENDED****

Wednesday, October 21, 2026, 6:00 pm

Location:

Microsoft Teams Meeting

https://teams.microsoft.com/l/meetup-join/19%3ameeting_YjFmZTlkYzAtMDQ3YS00MWU2LWI1MjAtZDE4MjI0ZTQzZDNI%40thread.v2/0?context=%7b%22Tid%22%3a%22fac3e0b8-c4a6-4120-b366-ee6cb2fb76a8%22%2c%22Oid%22%3a%22f8a001a5-21cc-482a-9f5a-682bacd87641%22%7d

Meeting ID: 269 615 453 839 6

Passcode: B8RV2HS2

Dial in by phone

[+1 213-357-4434,,807528697#](tel:+12133574434807528697) United States, Los Angeles

Phone conference ID: 807 528 697#

Anchor Location: Big Cottonwood Fire Station

7688 South Big Cottonwood Canyon Road

UPON REQUEST, WITH 5 WORKING DAYS NOTICE, REASONABLE ACCOMMODATIONS FOR QUALIFIED INDIVIDUALS MAY BE PROVIDED. PLEASE CONTACT WENDY GURR AT 385-391-8268.

TTY USERS SHOULD CALL 711.

The Planning Commission Public Meeting is a public forum where, depending on the agenda item, the Planning Commission may receive comment and recommendations from applicants, the public, applicable agencies and MSD staff regarding land use applications and other items on the Commission's agenda. In addition, it is where the Planning Commission takes action on these items, which may include: approval, approval with conditions, denial, continuance, or recommendation to other bodies as applicable.

BUSINESS MEETING

- 1) Approval of September 16, 2026, Planning Commission Meeting Minutes.
(Motion/Voting)
- 2) Other Business Items. (As Needed)

PUBLIC HEARING(S)

OAM2026-001681 - The purpose of the new Manual of Engineering Standards, Specifications, and Plans is to establish a unified, modern framework for public and private infrastructure development within the city. By updating these technical specifications, the city planning

commission ensures that all future designs for roads, utilities, drainage, and public spaces prioritize safety, long-term durability, and environmental sustainability. This manual serves as a vital regulatory tool that streamlines the development review process, provides clear and predictable guidelines for engineers and developers, and aligns physical growth with the city's broader long-term master plan. Ultimately, adopting these standards protects public investments, reduces future municipal maintenance costs, and safeguards the overall health, safety, and quality of life for the community. **Presenter:** Richard Stephens (Discussion, Hearing, Action)

OAM2026-001672 – (Continued from August 19, and September 16, 2026) - Amendments to sections 19.24.050, 19.24.060, and 19.46.070 to create clear standards to protect roadways from snow shedding off rooftops in the Town of Brighton. **Planner:** Curtis Woodward (Discussion, Hearing, Action)

ADJOURN

Rules of Conduct for Planning Commission Meetings

PROCEDURE FOR PUBLIC COMMENT

1. Any person or entity may appear in person or be represented by an authorized agent at any meeting of the Commission.
2. Unless altered by the Chair, the order of the procedure on an application shall be:
 - a. The supporting agency staff will introduce the application, including staff's recommendations and a summary of pertinent written comments and reports concerning the application
 - b. The applicant will be allowed up to 15 minutes to make their presentation.
 - c. The Community Council representative can present their comments as applicable.
 - d. Where applicable, persons in favor of, or not opposed to, the application will be invited to speak.
 - e. Where applicable, persons opposing the application, in whole or in part will be invited to speak.
 - f. Where applicable, the applicant will be allowed 5 minutes to provide concluding statements.
 - g. Surrebuttals may be allowed at the discretion of the Chair.

CONDUCT FOR APPLICANTS AND THE PUBLIC

1. Speakers will be called to the podium by the Chair.
2. Each speaker, before talking, shall give his or her name and address.
3. All comments should be directed to the Commissioners, not to the staff or to members of the audience.
4. For items where there are several people wishing to speak, the Chair may impose a time limit, usually 3 minutes per person, or 5 minutes for a group spokesperson. If a time limit is imposed on any member or spokesperson of the public, then the same time limit is imposed on other members or spokespersons of the public, respectively.
5. Unless otherwise allowed by the Chair, no questions shall be asked by the speaker or Commission Members.
6. Only one speaker is permitted before the Commission at a time.
7. The discussion must be confined to essential points stated in the application bearing on the desirability or undesirability of the application.
8. The Chair may cease any presentation or information that has already been presented and acknowledge that it has been noted in the public record.
9. No personal attacks shall be indulged in by either side, and such action shall be sufficient cause for stopping the speaker from proceeding.
10. No applause or public outbursts shall be permitted.
11. The Chair or supporting agency staff may request police support to remove offending individuals who refuse to abide by these rules.
12. After the public comment portion of a meeting or hearing has concluded, the discussion will be limited to the Planning Commission and Staff.



Planning and Development Services

2001 S. State Street N3-600 • Salt Lake City, UT 84190-4050

Phone: (385) 468-6700 • Fax: (385) 468-6674

MEETING MINUTE SUMMARY TOWN OF BRIGHTON PLANNING COMMISSION MEETING Wednesday, September 16, 2026, 6:00 p.m.

Approximate meeting length: 1 hour 7 minutes

Number of public in attendance: 1

Summary Prepared by: Wendy Gurr

Meeting Conducted by: Commissioner Ward

***NOTE:** Staff Reports referenced in this document can be found on the State website, or from Planning & Development Services.

ATTENDANCE

Commissioners and Staff:

Commissioners	Public Mtg	Business Mtg	Absent
Donna Conway	x	x	
Don Despain (Chair)			x
Ulrich Brunhart	x	x	
Tom Ward (Vice Chair)	x	x	
Ben Machlis	x	x	
Brian Reynolds (Alternate)	x	x	
John Carpenter (Alternate)			x

Planning Staff / DA	Public Mtg	Business Mtg
Wendy Gurr	x	x
Jim Nakamura	x	
Curtis Woodward	x	x
Kara John	x	x
Polly McLean	x	x

BUSINESS MEETING

Meeting began at – 6:03 p.m.

- 1) Approval of Minutes of August 19, 2026, Planning Commission Meeting.

Motion: To approve Minutes of August 19, 2026, Planning Commission Meeting as presented.

Motion by: Commissioner Brunhart

2nd by: Commissioner Machlis

Vote: Commissioners voted unanimously in favor (of commissioners present)

- 2) Other Business Items. (As Needed)

No other business items to discuss.

PUBLIC HEARING(S)

Hearings began at – 6:04 p.m.

OAM2026-001672 – (Continued from August 19, 2026) - Amendments to sections 19.24.050, 19.24.060, and 19.46.070 to create clear standards to protect roadways from snow shedding off rooftops in the Town of Brighton. **Planner:** Curtis Woodward (Discussion, Hearing, Action)

Greater Salt Lake Municipal Services District Senior Planner Curtis Woodward provided an analysis of the staff report.

Commissioners and staff had a brief discussion regarding flat roofs and tight lots, criteria you don't have to be an engineer to plead your case, just math. Measuring from the ground to the roof surface at the eave, multiplied by 1.5, setback to be measured from the dripline. When ground slopes away, it needs to be considered. What is slope at the lowest point and add into the height. If insisting on dropping towards the road or neighbor's property, add snow brakes. If slope design meets the criteria, the snow stays on your property when it slides, that would be sufficient. If not, have other means of slow pack. If unsuccessful, would need to work with engineering and mitigate risk and impact of snow shed.

Commissioner Brunhart motioned to open the public hearing, Commissioner Reynolds seconded that motion.

PUBLIC PORTION OF HEARING OPENED

Speaker # 1: Citizen

Name: Chad Smith

Address: Not provided

Comments: Mr. Smith said he agrees with the premise we are headed. At the time of build or remodel, ideal people think about snow shedding. Come up with rules where lots and houses FCOZ restructure, maybe unanticipated consequences. Like the idea of working around. Have carport on slide side with depression to hold snow. Looking at the options, with a little area, effectively going from one story with natural grade. Add causes allowing clarity with instances.

Commissioner Brunhart motioned to close the public hearing, Commissioner Reynolds seconded that motion.

PUBLIC PORTION OF HEARING CLOSED

Commissioners and counsel had a brief discussion regarding open-ended solutions, snow dumps and retaining walls. Exception requests would be decided by the Planning Commission, as it would be hard to predict the nuances of every property. Planning Commission would take recommendation from town engineers and decide if plan is sufficient to solve the problem. No matter the setback, step one flat roof, if can't meet the setback and permission to adjoining property line, need an engineering solution.

If the slope of the ground is 15% or more, add 25% to setback, and snow storage easement needs to be a recorded permanent easement.

- 1) Clarify height is to the roof surface/dripline*
- 2) Setback from the dripline/edge of overhang*
- 3) If slope exceeds 15%, increase setback increases to 1.75 times height the dripline/overhang*

Motion: To continue file #OAM2026-001672 Amendments to sections 19.24.050, 19.24.060, and 19.46.070 to create clear standards to protect roadways from snow shedding off rooftops in the Town of Brighton to the October Planning Commission Meeting.

Motion by: Commissioner Reynolds

2nd by: Commissioner Brunhart

Vote: Commissioners voted unanimously in favor (of commissioners present)

Commissioner Brunhart motioned to adjourn, Commissioner Reynolds seconded that motion.

MEETING ADJOURNED

Time Adjourned – 7:10 p.m.

DRAFT



Planning and Development Services

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Phone: (385) 391-8268

<https://msd.utah.gov/>

Town of Brighton Planning Commission 2027 Regular Meeting Schedule

Meeting Place: 7688 South Big Cottonwood Canyon Road

Time: 6:00PM *Unless otherwise posted*

The Public is Welcome to Attend

Wednesday January 20, 2027

Wednesday February 17, 2027

Wednesday March 17, 2027

Wednesday April 21, 2027

Wednesday May 19, 2027

Wednesday June 16, 2027

Wednesday July 21, 2027

Wednesday August 18, 2027

Wednesday September 15, 2027

Wednesday October 20, 2027

Wednesday November 17, 2027

Wednesday December 15, 2027

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The Public May Attend. Meetings May Be Closed For Reasons Allowed By Statute.



MANUAL OF ENGINEERING STANDARD SPECIFICATIONS AND PLANS

2026 Edition

Planning Commission Approval and Recommendation XXXX XX, 2026

City Council Approval and Adoption XXXX XX, 2026



GREATER SALT LAKE
**Municipal Services
District**

860 W Levoy Drive, Suite #300
Taylorsville, UT 84123

(385) 910-7027

msd.utah.gov/engineering

TABLE OF CONTENTS

	<u>Page</u>
1.0 GENERAL	1
1.1 DEFINITIONS	1
1.2 ADOPTION OF BRIGHTON TOWN MANUAL OF ENGINEERING STANDARD SPECIFICATIONS AND PLANS	3
1.3 TOWN ENGINEER'S AUTHORITY	4
1.4 BRIGHTON TOWN CHANGES TO THE CURRENT APWA MANUAL OF STANDARD SPECIFICATIONS AND PLANS	4
A. CHANGES TO THE APWA SPECIFICATIONS	4
B. CHANGES TO THE APWA PLANS	4
1.5 CONSTRUCTION NOTES	5
A. GENERAL	5
B. TRENCHES AND UTILITIES	5
C. ROADWAY CONSTRUCTION AND RESTORATION	6
1.6 SUBMITTALS	6
A. ENGINEERING PLAN REVIEW CHECKLIST	6
B. SUPPLEMENTAL ENGINEERING REPORTS	6
C. BOUNDARY SURVEY	7
D. EASEMENT AGREEMENT	7
E. SUBDIVISION PLAT	7
F. LEGAL DESCRIPTION	7
G. STORM WATER POLLUTION PREVENTION PLAN	7
H. STORM WATER MANAGEMENT PLAN	8
I. ENGINEERING DESIGN PLANS	8
2.0 STORM DRAIN SYSTEM	9
2.1 HYDROLOGY	9
A. PRECIPITATION FOR USE WITH THE RATIONAL METHOD	9
B. PRECIPITATION FOR USE WITH THE TR-55 METHOD	9
C. DESIGN STORM FREQUENCIES	10
D. RUNOFF COEFFICIENTS FOR USE WITH THE RATIONAL METHOD	10
E. REQUIRED METHODOLOGIES	11
2.2 DESIGN REQUIREMENTS	11
A. GENERAL	11
B. COLLECTION AND CONVEYANCE	11
C. IRRIGATION DITCHES	12
D. DETENTION AND RETENTION	13
E. WATER QUALITY	14
3.0 STREETS SYSTEM	14
3.1 DESIGN REQUIREMENTS	14
A. COMMERCIAL DRIVEWAY APPROACH REQUIRED FOR NON-RESIDENTIAL	14
B. CURB RETURNS FOR ADA	14
C. CLEARANCE TO OBSTRUCTIONS	15
D. NON-FRONTAGE PARK STRIP MATERIAL	15
E. TRAFFIC CALMING REQUIREMENTS	15
F. PARTIAL STREETS	15
G. CROSSWALKS	15
H. GEOMETRIC DESIGN OF STREETS	15

TABLES

	<u>Page</u>
TABLE 1 – PRECIPITATION FOR USE WITH THE RATIONAL METHOD.....	9
TABLE 2 – PRECIPITATION FOR USE WITH THE TR-55 METHOD.....	9
TABLE 3 – DESIGN STORM FREQUENCIES.....	10
TABLE 4 – RUNOFF COEFFICIENTS FOR USE WITH THE RATIONAL METHOD.....	10
TABLE 5 – GEOMETRIC DESIGN OF STREETS.....	16
TABLE 6 – ACCESS MANAGEMENT.....	17

APPENDICES

APPENDIX A – MSD TRAFFIC IMPACT STUDY REQUIREMENTS
APPENDIX B – GUO “AVERAGING PARAMETER” METHOD
APPENDIX C – SUBDIVISION PLAT TEMPLATE
APPENDIX D – AS-BUILT DRAWINGS CHECKLIST
APPENDIX E – CITY STANDARD PLANS

STREETS

- ST-1 Street Functional Classification Dimensions
- ST-2 Typical Section and Pavement Specifications
- ST-3 Utility Locations and Curb Return Radii
- ST-4 Cul-de-Sacs
- ST-5 Local Street Traffic Calming Intersection
- ST-6 Street Sign
- ST-7 Regulatory Sign
- ST-8 Combination Street and Regulatory Sign
- ST-9 Sign Post in Concrete
- ST-10 Trench Plating
- ST-11 Pot/Key Hole
- ST-12 Bituminous Concrete Pothole Patch
- ST-13A Micro-Trench
- ST-13B Micro-Trench

STORM DRAIN

- SD-1 Outlet Structure Configuration

1.0 GENERAL

1.1 DEFINITIONS

ACCESS: Any driveway or other point of entry or exit, such as a street, road, or highway that connects to the general street system. Where two public streets intersect, the secondary street is considered the access.

ACKNOWLEDGEMENT: Recognition by the Town that the Engineer-of-Record has certified their construction plans and supporting information to comply with the Brighton Town Code and Engineering Standard Specifications and Plans.

APPLICANT: Any person, corporation, entity, designee, or agency applying for a permit.

APPROVED EQUAL: Equipment or material which, in the opinion of the Town's Representative, is equal in quality, durability, appearance, strength, design, performance, physical dimensions, and arrangement to the equipment or material specified, and will function adequately in accordance with the general design.

AS-BUILT DRAWINGS: Drawings that show the Project as actually constructed, and which include all changes made to the construction plans before and during construction.

BEST MANAGEMENT PRACTICE (BMP): Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of Waters of the State.

TOWN INSPECTOR: The authorized representative of the Town assigned to make detailed inspections of the Work performed, or of materials furnished by the Contractor.

TOWN/OWNER: Wherever, in the Contract Documents the word "Town" or "Owner" appears, it shall be interpreted to mean "Brighton Town", unless otherwise denoted.

CONSTRUCTION ACTIVITIES: Clearing, dredging, excavating, and grading of land and other activities associated with buildings, structures or other types of real property such as utilities, bridges, dams, and roads. Includes mobilization, demobilization, and any other activity that occurs on site.

DRIVEWAY: A grade-separated access constructed within the right-of-way connecting the public street with adjacent property.

EASEMENT: An interest in real property that conveys use, but not ownership, of a portion of an owner's property.

EIGHTIETH PERCENTILE STORM EVENT: The depth of rainfall which is not exceeded in 80 percent of all runoff-producing rainfall events within the time period analyzed. In other words, 80 percent of the rainfall storm events that produce runoff are less than or equal to this depth. In Brighton town, this depth is 0.30 inches.

ENGINEER-OF-RECORD: The professional engineer, licensed in the State of Utah, who prepared or directly supervised the preparation of the engineering plans and documents presented to the Town for Acknowledgement, and who shall accept sole responsibility for the completeness and accuracy of the plans and documents presented to the Town.

ESSENTIAL INFRASTRUCTURE: Infrastructure necessary to obtain a building permit before all development infrastructure is finished. It includes temporary all weather surface roads, fire hydrants, and street signs for emergency wayfinding. The access requirements of IFC Chapter 5 and Appendix D must be installed and approved prior to final inspection and the issuance of a Certificate of Occupancy. Temporary roads are required to be capable of supporting vehicle loading under all weather conditions, and must meet the following criteria:

- A. The surface of the road should be capable of carrying the load of the anticipated emergency response vehicles and be traversable in all kinds of weather.
- B. Compacted road base to APWA Standards at least 8 inches thick.
- C. Access roads shall be maintained for emergency and fire access throughout the duration of the project.
- D. Fire hydrants must be installed and functional prior to combustible materials arrival on the site.

FINAL ACCEPTANCE OF PUBLIC INFRASTRUCTURE: The date specified in writing by the Engineer when all work, including all punch list work designated by the Engineer, is complete and accepted by the Town after the completion of the warranty period following the Project Acceptance.

IMPACT-TO-PRIVATE-IRRIGATION PLAN: A dedicated (If simple, it can be part of the Demolition Plan) sheet in the Engineering Plans showing the existing gravity irrigation system (usually ditches) sourced by a canal and showing how it will be affected by development.

INSPECTED AND ACCEPTED or ACCEPTANCE: Town recognition of infrastructure conformance to all applicable Town standards.

INTERSECTION: The general area where two or more streets join or cross at grade.

LAW: Any applicable Town, County, State, or federal statutes or regulations governing anything relating to the Work embodied in the Agreement.

LOW-IMPACT DEVELOPMENT (LID): An approach to land development, or redevelopment, that works with nature to more closely mimic pre-development hydrologic functions.

PARTIAL STREET: A street that has full frontage improvements on one side and has at least 24 feet of pavement.

PAVEMENT: The uppermost layer of bituminous or Portland-cement concrete material placed on the traveled way or shoulders for a riding surface, whether rigid or flexible in composition. This term is used interchangeably with "surfacing."

PROFESSIONAL ENGINEER: An engineer who is licensed to practice in the State of Utah.

PROFESSIONAL LAND SURVEYOR: A land surveyor who is licensed to practice in the State of Utah.

PUBLIC UTILITY EASEMENT (PUE): A property right provided for "dry" utilities (gas, power, telecom) that are regulated by the Public Service Commission. Town utilities are not public utilities.

RECOGNIZED-AND-GENERALLY-ACCEPTED GOOD ENGINEERING PRACTICES (RAGAGEPs): Practices that are based on established codes, standards, published technical reports or recommended practices or similar documents. RAGAGEPs are not practices from other cities or practices promoted by individuals based on their individual professional judgement.

RETENTION BASIN: A best management practice designed to hold water to manage storm water runoff by capturing the storm water runoff to improve water quality through sedimentation.

RIGHT-OF-WAY (ROW): All public rights-of-way and easements, public footpaths, walkways and sidewalks, streets, roads, highways, alleys, and water or drainage ways. It does not, however, include Public Utility Easements not within public ways of the Town.

STANDARD SPECIFICATIONS/PLANS: The Brighton Town Manual of Engineering Standard Specifications and Plans.

STORM WATER MANAGEMENT AGREEMENT (SWMA): An executed agreement between the landowner and the Town, wherein the landowner agrees to operate and maintain a storm water system on their property in accordance with an O&M Plan (defined below) and assumes responsibilities and liabilities therewith. SWMAs are recorded against the subject property and run with the land.

STORM WATER OPERATION AND MAINTENANCE PLAN (O&M PLAN): A plan that addresses post-construction storm water runoff pursuant to the O&M PLAN Template published by the Utah Storm Water Advisory Committee (USWAC). O&M PLANs shall be accompanied by an SWMA pursuant to the template found at

<https://msd.utah.gov/210/Stormwater>. The O&M PLAN and SWMA shall be submitted to the Town and recorded against the property at the Salt Lake County Recorder's Office.

STREET: A general term for denoting a public way or private way for the purpose of transporting people, materials, and goods.

STRUCTURAL BEST MANAGEMENT PRACTICE: A best management practice that can be physically installed.

SUBGRADE: That portion of the roadbed surface which has been prepared, as specified, and upon which a layer of specified roadbed material or base, or sub-surfacing, or pavement is to be placed.

SUBSTANTIVE REVIEW: A general evaluation of overall design and general compliance with the Town Code and engineering standards. It is not an exhaustive review for compliance with each specific provision of the Town Code, other applicable standards or regulations, or RAGAGEPs. Substantive review shall not shift the responsibility and liability for the completeness and accuracy of the plans and related designs from the Engineer-of-Record to the Town.

SURFACE OR SURFACING: The uppermost layer of material placed on the traveled way or shoulders, and is usually asphalt or concrete. This term is used interchangeably with "pavement."

TOWN ENGINEER: The Greater Salt Lake Municipal Services District (MSD) Director of Engineering. (MSD is contracted by the Town to provide streets and storm drainage engineering services to the Town.)

WATER QUALITY VOLUME: The volume of runoff from the 80th-percentile storm event that is required, by the Town's storm water General Permit with the State, to be retained within a development.

WORK: The construction services performed, including materials on Town infrastructure, and all labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations to construct a project. The term also includes supervision, inspection, and other on-site functions incidental to the actual construction.

1.2 ADOPTION OF BRIGHTON TOWN MANUAL OF ENGINEERING STANDARD SPECIFICATIONS AND PLANS

Brighton Town has adopted the following current editions, in hierarchical order, as the basis for the Brighton Town Manual of Engineering Standard Specifications and Plans:

- A. Brighton Town Manual of Engineering Standard Specifications and Plans as included herein.
- B. American Public Works Association (APWA) Manual of Standard Specifications, of the Utah Chapter of APWA and the Associated General Contractors of America.
- C. APWA Manual of Standard Plans, of the Utah Chapter of APWA and the AGC of America.
- D. All storm-drainage-related work not specifically described in these standards shall conform to Mile High Flood District (MHFD) Urban Storm Drainage Manual.
- E. International Fire Code (IFC), Appendix D.
- F. All transportation-related work not specifically described in these standards shall conform to the policies and practices published by:
 - 1. American Association of State Highway Transportation Officials (AASHTO)
 - 2. Institute of Transportation Engineers (ITE)
 - 3. Utah Department of Transportation (UDOT)The selection of which shall be at the sole discretion of the Town Engineer.
- G. Federal Highway Administration (FHWA) "Public Right-of-Way Accessibility Guidelines (PROWAG)"
- H. FHWA and Manual on Uniform Traffic Control Devices for Highways and Streets with Utah Amendments.
- I. All work not specifically described in these standards, APWA, MHFD, AASHTO, ITE, UDOT, IFC Appendix D, and MUTCD shall conform to RAGAGEPs.

The Brighton Town Manual of Engineering Standard Specifications and Plans is available for download at www.Brighton.utah.gov The APWA Manual of Standard Specifications and Manual of Standard Plans are available for download at <https://utah.apwa.org/education/utah-standard-plans-specifications/>.

Contract Documents and Conditions of the Contract as found in the Current APWA Manual of Standard Specifications and Plans are to be used as the basis for Town contracts. Modifications to these specifications may apply to specific projects. The following sections (General, 1.4-1.5) reflect Brighton Town

Manual of Engineering Standard Specifications and Plans that may clarify, differ with, or be in addition to APWA Manual of Standard Specifications and Plans. Additional modifications may apply to specific projects.

1.3 TOWN ENGINEER'S AUTHORITY

- A. The Town Engineer has the authority to provide substantive review of submitted Construction Plans, reports, studies, and supporting documentation.
- B. The Town Engineer shall provide feedback pursuant to his/her substantive review of the Construction Plans, reports, studies, and supporting documentation.
- C. The applicant shall:
 - 1. make changes to the Construction Plans to address the Town Engineer's feedback;
 - 2. return the Construction Plans to the Town Engineer for Town Acknowledgement for construction;
 - 3. provide a written explanation indexed with and in response to the Town Engineer's feedback, identifying and explaining the revisions and reasons for declining to make revisions, if any. The applicant's written explanation shall be comprehensive and specific, including citations to applicable standards and ordinances for the design. If the applicant fails to address a feedback comment in their response, the review cycle is not complete and the subsequent review cycle may not begin until all comments have been resolved.
- D. The Town Engineer has authority to issue Stop Work Orders when construction is progressing contrary to the Town Code, the Town's Manual of Engineering Standard Specifications and Plans, or an Acknowledged set of Construction Plans.
- E. The Town Engineer has additional authority as stated in these standards and the Town Code.

1.4 BRIGHTON TOWN CHANGES TO THE APWA MANUAL OF STANDARD SPECIFICATIONS AND PLANS

The following changes to the APWA Manual of Standard Specifications and Plans apply in Brighton Town:

A. APWA SPECIFICATIONS:

- 1. APWA Section 33 08 00, PART 1.5.A: Conduct inspection prior to installation of road base.

B. APWA PLANS:

- 1. APWA Plan 205.1: Brighton Town standard to be "Type A" unless specified otherwise.
- 2. APWA Plans 221.1, 221.2: When adverse slopes, ROW limitations, or existing obstructions occur, the Town Engineer may approve deviations from the standard apron slope and geometry.
- 3. APWA Plan 225: Replace Table in "Oblique" with the following table:

Street Type	LENGTH		
	Y	T	R
Residential	6"	6"	5 FT.
Other	24"	8"	10 FT. min.

- 4. APWA Plan 231: The thickness on a residential street with park strip is 6 inches.
- 5. APWA Plan 251: The bituminous concrete thickness is a minimum of 6 inches for both residential and non-residential streets.
- 6. APWA Plan 255: The bituminous concrete thickness is a minimum of 6 inches for both residential and non-residential streets. The 2-inch mill and overlay are not required if there is a known upcoming funded Town capital improvement project scheduled within the next two years that will reconstruct or overlay the road. Otherwise, the mill and overlay are required only when:
 - a. the existing pavement is less than three years old or has been overlaid in the previous three years, or
 - b. the length of the T-patch is over 300 feet, and the existing pavement (full depth or overlay) is less than seven years old.
- 7. APWA Plan 274: Replace with the latest Salt Lake County Surveyor requirements. A permit must be obtained from the Salt Lake County Surveyor prior to disturbance of installation of any monument.
- 8. APWA Plan 292: The steel tube shall be 2-inches by 2-inches. Use Town Standard Plan 140 when installing it in concrete.
- 9. APWA Plan 308: Replace with Town Standard Plan 201.

10. APWA Plans 315, 316, 322, 331.1, 331.3, 332: Structure shall not have dead volume (sump) below the flow line, except when approved by the Town Engineer as necessary to accommodate a specific Best Management Practice (BMP).
11. APWA Plan 373: The minimum clearance between the two pipes shall be 3 inches. The clearance between the piers and the bridged pipeline shall be 18 inches.
12. APWA Plan 381, Note 2A: Use Granular Backfill Borrow for Common Fill.
13. APWA Plan 382, Note 2A: Use Granular Backfill Borrow for Common Fill.

1.5 CONSTRUCTION NOTES

A. GENERAL

1. Contractor assumes all responsibility for job site conditions during construction of this project, including the safety and well-being of all persons and property. This responsibility shall apply continuously and not be limited to normal working hours.
2. Contractor shall obtain all applicable permits and/or written agreements necessary to complete the work.
3. Contractor shall schedule a pre-construction meeting with the MSD Engineering Division at least 5 business days prior to the start of construction. Contractor must attend and bring one hard-copy set of the approved construction plans and a copy of the current and applicable Brighton Town Manual of Engineering Standard Specifications and Plans (available at Brighton.utah.gov).
4. Contractor shall always have in possession and on-site one hard copy of the current Acknowledged construction plans stamped, signed, and dated by the Engineer of Record, the Applicant, and the Town.
5. Developer's Engineers (Civil and Geotechnical) shall perform sufficient inspections and surveys during grading and construction to render an opinion in writing as to adherence to the accepted plans and compliance with Brighton Town Manual of Engineering Standard Specifications and Plans.
6. All public storm drain facilities and private facilities, that connect directly to the public storm drain system or facility, shall be assessed using closed-circuit television pursuant to APWA Section 33 08 00.
7. In accordance with Section 17-73-14 of the Utah State Code and Chapter 14.17 of the Salt Lake County Code of Ordinances, any person performing construction activities within 30 feet of an existing public survey monument shall obtain the necessary permit/s from the Salt Lake County Surveyor's Office.
8. Survey monuments must be installed/reinstalled in accordance with the current Salt Lake County Surveyor's Office permits/requirements.
9. Contractor shall provide all traffic controls which must conform with the current MUTCD. Provide site-specific Traffic Control Plans prepared by a Certified Traffic Control Design Specialist and permitted by the MSD prior to installation of any traffic control device.
10. Roads shall be open for traffic during peak hours. Lane closures may only be in effect from 9am-3pm, and 7pm-7am unless permitted under an MSD ROW Encroachment Permit.

B. TRENCHES AND UTILITIES

1. Trenches shall be restored per APWA Plan 381 modification.
2. Pothole existing utilities in accordance with Brighton Town Manual of Engineering Standard Specifications and Plans, ST-10.
3. Contractor is responsible for locating, avoiding, protecting, and repairing all utilities encountered during construction, whether they are shown on the plans. Locations of underground utilities shown on plans are approximate and require field verification by Contractor.
4. All trenches within public right-of-way must be backfilled or securely plated (per Brighton Town Manual of Engineering Standard Specifications and Plans, ST-9) during non-working hours. Trenches outside these areas shall be backfilled or protected by approved temporary fencing and/or barricades during non-working hours. Trenches in roadways must be backfilled, compacted and asphalted (per Brighton Town Manual of Engineering Standard Specifications

and Plans) within 48 hours of road-cut. Paint striping shall be replaced in accordance with Town standards within 48 hours of restoration of pavement.

C. ROADWAY CONSTRUCTION AND RESTORATION

1. Subgrade must be approved by an MSD inspector prior to construction of asphalt and untreated base course pavement sections. Subgrade approval requires that all utilities be installed, connections to main lines completed, inspected, and accepted by the Town.
2. Asphalt paving and patching of roads between October 15 and April 15 is considered temporary and must be replaced in accordance with that specification.
3. Material Submittals are required for all items placed within the Town ROW. All submittals must be dated within 90 days of the construction date (unless specified otherwise) and be submitted prior to the start of construction activities.
4. Moratorium Standard (new, reconstructed, and overlaid Streets): No cuts, except those permitted under the Special Restoration Standard, are permitted for 3 years from the time of construction/reconstruction/overlay.
5. Special Restoration Standard: This standard applies to new, reconstructed, overlaid, and slurried streets:
 - a. *New, Reconstructed, and Overlaid Streets during the moratorium:* The asphalt surface shall be milled a minimum depth of two (2) inches, and fifteen (15) feet each way from the edge of the cut. Milling shall be done in widths equivalent to existing striped traffic lanes. The Town Engineer reserves the right to require additional area and/or depth if deemed appropriate to restore roadway to original condition.
6. *Slurried Streets for 2 years after slurry application:* The asphalt surface shall be re-slurried a minimum of fifteen (15) feet each way from the edge of the cut, in widths equivalent to existing striped traffic lanes.
7. Paint striping shall be replaced in accordance with Town standards within 48 hours of restoration of pavement.

1.6 SUBMITTALS

- A. **ENGINEERING PLAN REVIEW CHECKLIST** – The Town provides an Engineering Plan Review Checklist with the permit application to assist developers and their professionals in the preparation of the engineering submittals for the acceptance of a development project. The Engineering Checklist does not replace the Town Code or Engineering Standards. The Engineering Checklist must be completed and signed by the Applicant and the Engineer-of-Record.
- B. **SUPPLEMENTAL ENGINEERING REPORTS** – Pursuant to Utah Code 58-22-602(2), “any final report prepared by, or under the supervision of, the professional engineer shall bear the seal of the professional engineer when filed with public authorities” ON THE FIRST SUBMITTAL.
 1. **Drainage Report** – Drainage reports must include a drainage plan and be prepared in accordance with the design criteria and methodologies specified in these standards. Drainage reports shall include an LID Evaluation to identify feasible BMPs, and an Infiltration Feasibility Determination in accordance with Utah Rule 317-4-4. The median measured percolation rate divided by 2 shall be used for design purposes. Ideas for BMPs can be found from the U.S. Environmental Protection Agency and the Utah Department of Environmental Quality. In addition to the required engineer’s stamp, signature, and date, drainage reports must include a certification from the engineer stating:

I hereby certify that this report/design for the management of storm water of this development was prepared by me, or under my direct supervision, according to applicable engineering standards. I understand that the Town assumes no responsibility or liability whatsoever for the feasibility and long-term viability of the facilities addressed herein.

2. **Geotechnical Report** – Geotechnical reports shall include pavement designs that comply with the Town standards. Pavement designs shall account for construction traffic. Where storm water retention is proposed, Geotechnical reports shall include percolation tests performed on the exact location(s) where infiltration is proposed to occur in accordance with Utah Rule 317-4-14, Appendix D, and shall be submitted on a signed “Percolation Test Certificate”. The Percolation Test Certificate shall report the median measured percolation rate.
3. **Traffic Impact Study (TIS)** – A traffic study is necessary to identify, review, and make recommendations for mitigation of the potential impacts a development may have on the roadway system. Identification of impacts and appropriate mitigation measures allows the Town to assess the existing and future system safety, performance, maintenance, and capacity needs. TISs shall follow the MSD’s TIS Requirements, including the Levels of Study and associated thresholds found in Appendix A. Additional requirements and investigation may be imposed upon the applicant as the Town Engineer deems necessary. Likely information presented in a TIS may include, but is not limited to, site location and proposed access point(s), phased and/or full development trip generation, connection point design elements, adjacent and relevant development, existing and future traffic volumes, assessment of the system impacts, and mitigation measures as appropriate.
4. **Reimbursement Agreement Exhibits** – Reimbursements for all infrastructure upsizing (system improvements) beyond the project improvement needs must be presented to the Town Council at the plat or site plan step for authorization to have staff work on a reimbursement agreement with the applicant. Reimbursement agreements must be accepted by the Town Council and executed by both parties before construction can begin on the project. If the applicant wishes to begin construction before there is an agreement in place with the Town, they must sign a waiver stating they accept the risk that they may not be reimbursed for any improvements installed, even if they are system improvements. The following exhibits are required to initiate a reimbursement agreement:
 - a. **Exhibit A – Itemized Schedule of Values** – Include quantities and unit prices of reimbursable items. Correlate it with an accompanying map. It shall be stamped, signed, and dated by the Engineer-of-Record.
 - b. **Exhibit B – Contractor bids or engineer estimates** that support the prices shown in the Itemized Schedule of Values.
 - c. **Exhibit C – Map of Reimbursable Items** – Show the locations of all of the reimbursable items. Correlate it with the accompanying Itemized Schedule of Values.
- C. **BOUNDARY SURVEY** – Boundary surveys, also known as record of survey, shall be stamped, signed, and dated by a professional land surveyor. If performed within the last 90 days, the survey shall have been filed in the Office of the County Surveyor and include evidence of filing.
- D. **EASEMENT AGREEMENT** – All easement agreements shall be submitted to the Town Engineer on the Town’s Standard Easement template (available upon request from the Town Engineer) for Town acceptance. Easements in the name of the Town shall not be recorded by anyone except the Town. After Town acceptance, the recordation at the County Recorder’s Office of which shall be referenced on the subject plat. Right-of-Discharge easements (available upon request from the Town Engineer) shall be granted to and indemnify the Town whenever storm water drainage from Town ROW discharges onto private property.
- E. **SUBDIVISION PLAT** – Subdivision plats submitted for final acceptance shall be stamped, signed, and dated by a professional land surveyor ON THE FIRST SUBMITTAL.
- F. **LEGAL DESCRIPTION** – Legal descriptions submitted for final acceptance shall be accompanied by an illustration of the legal description, both of which shall be stamped, signed, and dated by a professional land surveyor ON THE FIRST SUBMITTAL.
- G. **STORM WATER POLLUTION PREVENTION PLAN for Construction Activities** – SWPPPs shall NOT be part of the Engineering Construction Plans. They shall be submitted by the general contractor prior to a pre-construction meeting. SWPPPs, for all projects disturbing greater than 5 acres, including small construction projects (1 to 5 acres) having a perennial surface water within 50 feet of the project, or having a steep slope (70 percent or 35 degrees or more) with an elevation change from the slope of 10 feet or more (at any point during the time of construction – not including stock piles), shall be prepared by a “qualified SWPPP Writer”,

as defined in the State General Permit for Storm Water Discharges from Construction Activities, and shall follow the latest USWAC Committee Template.

- H. **STORM WATER OPERATION AND MAINTENANCE PLAN** – O&M PLANS shall NOT be part of the Engineering Construction Plans. They shall be submitted by the homeowners' association, site operator, or property owner prior to recording the plat or prior to occupancy of a commercial site. O&M PLANS shall follow the Template published by USWAC. O&M PLANS must be accompanied by an SWMA, found at <https://msd.utah.gov/210/Stormwater>. The O&M PLAN and SWMA shall be recorded against the property at the Salt Lake County Recorder's Office.
- I. **ENGINEERING DESIGN PLANS**

Pursuant to Utah Code 58-22-602(2), "any final plan [or] specification prepared by, or under the supervision of, the professional engineer shall bear the seal of the professional engineer when filed with public authorities" **ON THE FIRST SUBMITTAL.**

By virtue of being sealed, final plans shall, in the mind of the Engineer-of-Record, be ready for construction. If final plans are re-submitted with changes, the Engineer-of-Record shall cloud those changes and document them in the Revision Block to allow the Town to focus solely on those changes instead of having to re-review the entire set of plans. If clouds clutter a drawing, the changes shall be described in a note, and the note shall be clouded.

Engineering design plans shall include, but are not limited to:

1. Reference to the Town's Construction Notes (Section 1.5 of this Manual)
2. A list, preferably on the Notes sheet, of applicable APWA Standard Plans
3. Boundary Survey or ALTA Survey
4. Topographical (existing conditions) Survey
5. Subdivision Plat
6. Demolition Plan (as necessary)
7. Impact-to-Private Irrigation Plan (as necessary)

The Impact-to-Private-Irrigation Plan shall include a certification, signed by the Applicant, stating:

As the developer of this property, I hereby certify that I understand: (1) how the existing gravity irrigation system works in the vicinity of this property, (2) how my development of this property will affect this system and associated stakeholders, (3) that I take full responsibility for the changes I am making to this system, (4) Brighton Town does not and will not assume liability for changes I make to this system.

8. Site Plan
9. Grading and Drainage Plan -- The Grading and Drainage Plan shall include a certification from the Engineer-of-Record stating:

By virtue of my seal, I hereby certify that this report/design for the management of storm water of this development was prepared by me, or under my direct supervision, according to applicable engineering standards. I understand that the Town assumes no responsibility or liability whatsoever for the feasibility and long-term viability of the facilities addressed herein.

10. Utility Plan
11. Signing and Striping Plan, including a Safe Routes to School Plan
12. Plan/Profile Sheets
13. Detail Sheets (not including copies of Town Standard Plans or APWA Standard Plans). To avoid conflicting references, Town and APWA Standard Plans shall be referenced in ONE place for all applicable infrastructure.

Plans submitted for final Acknowledgement

The Engineering Design Plans, simultaneous with the Acknowledgement by the Applicant and Town Engineer, shall be certified by the Engineer-of-Record with the following language.

Engineer's Certification

As the Engineer-of-Record, I hereby certify that these construction plans and supporting information ("Plans") comply with the Brighton Town Code and Manual of Engineering Standard Specifications and Plans ("Standards"). I understand and agree that:

1. The Town's acknowledgment of these plans shall not be construed to be a permit for, or an approval of, any variance from any of the provisions of the Standards.
2. Any communication from the Town giving feedback on the Plans shall be construed as feedback only and shall not be interpreted as authorization to vary from or cancel the provisions of the Standards.
3. The Town's Acknowledgement of these Plans or feedback from the Town on whether the Plans meet the Standards shall not prevent the Town from requiring the correction of errors in the Plans at any time, including after construction of improvements.
4. The Town's Acknowledgement of these Plans does not constitute a permit from the Federal or State Government or permission to deviate from Federal or State Laws or Regulations.
5. The Town's Acknowledgement of these Plans does not grant permission to work on the properties of others.

2.0 STORM DRAIN SYSTEM

2.1 HYDROLOGY

A. TABLE 1 – PRECIPITATION FOR USE WITH THE RATIONAL METHOD (inches)

Duration	Recurrence Interval (years)		
	2	10	100
5-min	0.177	0.300	0.595
10-min	0.270	0.457	0.906
15-min	0.335	0.566	1.12
30-min	0.451	0.763	1.51
60-min	0.558	0.944	1.87
2-hour	0.724	1.14	2.15
3-hr	0.905	1.34	2.33
6-hr	1.25	1.73	2.70
12-hr	1.70	2.36	3.60
24-hr	2.23	3.04	4.35

B. TABLE 2 – PRECIPITATION FOR USE WITH THE TR-55 METHOD (inches)

Time (min.)	Precipitation (inches)		
	2-yr	10-yr	100-yr
00	0.000	0.000	0.000
05	0.014	0.017	0.019
10	0.014	0.017	0.019
15	0.014	0.017	0.019
20	0.014	0.017	0.019
25	0.014	0.017	0.019
30	0.014	0.017	0.019
35	0.014	0.017	0.019
40	0.014	0.017	0.019
45	0.014	0.017	0.019

50	0.014	0.017	0.019
55	0.014	0.017	0.019
60	0.014	0.017	0.019
65	0.153	0.260	0.514
70	0.131	0.222	0.439
75	0.095	0.160	0.318
80	0.049	0.083	0.165
85	0.039	0.066	0.131
90	0.028	0.047	0.093
95	0.020	0.033	0.065
100	0.009	0.016	0.032
105	0.008	0.014	0.028
110	0.008	0.014	0.028
115	0.008	0.014	0.028
120	0.008	0.014	0.028
125	0.014	0.017	0.019
130	0.014	0.017	0.019
135	0.014	0.017	0.019
140	0.014	0.017	0.019
145	0.014	0.017	0.019
150	0.014	0.017	0.019
155	0.014	0.017	0.019
160	0.014	0.017	0.019
165	0.014	0.017	0.019
170	0.014	0.017	0.019
175	0.014	0.017	0.019
180	0.014	0.017	0.019
Total	0.905	1.34	2.33

*These design storms capture the critical elements of shorter-duration storms that often control in subbasins with short times of concentration.

C. TABLE 3 – DESIGN STORM FREQUENCIES

Type of Structure	Minimum Design Storm Frequency
Storm Drain (gutters, street, inlets, MHs, pipes, etc.)	10 Year Storm – Peak Flow
Streets, channels, swales, creeks, bridges, culverts, and other surface routes	100-year Storm – Peak Flow
Water Quality Systems	0.30 inches using 2-yr Rational Coefficients
Flood Control Retention Systems	100-Year 24-hour Storm Depth
Flood Control Detention Systems	100-Year Storm – Critical intensity within 24 hours

D. TABLE 4 – RUNOFF COEFFICIENTS FOR USE WITH THE RATIONAL METHOD

Surface Type	2-Year Storm	10-Year Storm	100-Year Storm
Paved	0.79	0.83	0.87
Roof	0.79	0.83	0.87
Landscaped	0.14	0.28	0.57
Other	As Determined by the Town Engineer		

E. REQUIRED METHODOLOGIES

1. Runoff for areas less than 90 acres – Rational Method.
2. Runoff for areas 90 acres and greater – NRCS Technical Release 55 (TR-55) within Autodesk Storm and Sanitary Analysis (SSA) with a precipitation distribution and duration from Table 2. The NRCS Unit Hydrograph Transform Method shall be used with the lag time assumed to be equal to the time of concentration. The Muskingum-Cunge Routing Method shall be used for routing hydrographs. Pervious and directly-connected impervious areas must be modeled using separate subbasins. Composite Curve Numbers of these dissimilar areas is not allowed. The applicant must provide the Town with pdf copies of all input and output files in sufficient detail and format to perform a design review.
3. Flood control detention for areas less than 90 acres shall be modeled using the Federal Aviation Administration (FAA) Method modified with the Guo “Averaging Parameter” Method in Appendix A. Multi-stage control facilities (cascading ponds) shall be modeled using TR-55 per Section 2 above.
4. Flood control detention for areas 90 acres and larger shall be modeled using TR-55 per Section 2 above.
5. Water Quality Volume – $WQV = 0.5 \text{ in.} \times C_{2\text{-yr}} \times DCIA$, where:

$C_{2\text{-yr}}$ is the Rational Runoff Coefficient for the 2-year return period. See Table 4.

DCIA is the directly-connected (to the outfall) impervious area. For single-family residential (SFR) developments, this area shall be: the area of all of the streets between the backs of curbs; the area of all of the driveways, assuming 30-foot-wide driveway the depth of the setback plus 10 feet; and one-fourth of the roof areas. Developments other than SFR shall be individually calculated. The Water Quality Volume can be included as part of the flood control volume.

2.2 DESIGN REQUIREMENTS

A. GENERAL

1. The impact of any proposed storm drainage system on the existing storm drainage system will be reviewed by the Town Engineer. The developer may be required to add off-site storm drain project improvements to provide adequate drainage control for their development.
2. Flow from development that discharges into a Salt Lake County Flood Control Facility, as defined in Salt Lake County Code 17.08.040, and all land disturbance within 40 feet of a Salt Lake County Flood Control Facility, shall require a permit from Salt Lake County Flood Control.
3. Areas that will be drained through the proposed development will be considered and the method of drainage for those areas will be determined by the Town Engineer. Accommodations for pre-existing pass-through drainage are project improvements.
4. Unpermitted discharge into the Town's storm drainage system is prohibited, except for surface sheet flow incidental from parcels that front a public street (not driveways from parking lots). Storm drainage originating upon or traversing across private property shall not enter the Town's storm drainage system, or otherwise be directed onto public property, except as permitted under a development application.
5. Public storm drainage shall not flow onto private property and public and private storm drainage shall not be comingled unless the private property owner grants an easement to the Town accepting the drainage as theirs, and releases and indemnifies the Town from potential liabilities associated with it.

B. COLLECTION AND CONVEYANCE

1. The piped and surface drainage system together shall be capable of passing the storm runoff from a 100-year event without flooding buildings, with 1 foot of freeboard.
2. Natural drainage channels shall be:
 - a. left in their natural state whenever possible. Street crossings are acceptable if sized with the 1 foot of freeboard AND debris flow is accounted for.
 - b. remediated as a project improvement with adjacent land development
 - c. modeled using HEC-RAS, if directed by the Town Engineer
 - d. protected from erosion pursuant to HEC-15 and North American Green methodologies. Drop structures shall be employed where possible.
 - e. configured with side slopes not exceeding 3:1.

3. The piped system shall be sized for the 10-year event without pressurizing. If the developer desires, the piped system can be used to convey the 100-year event if it is sized from the top of the catchment to receive the 100-year event.
4. Except for when the piped system is sized for the 100-year event, the 100-year system shall remain on the surface, be directed to the street ROW, and shall terminate at a 100-year flood control pond.
5. Inlet boxes shall be placed:
 - a. on lot lines;
 - b. at sags;
 - c. at curb returns, preferably on the upstream side;
 - d. a maximum spacing based on gutter-spread, not exceeding $\frac{1}{2}$ of the drive lane, calculations using HEC-22, Appendix A, Chart 1B;
 - e. to eliminate the need for waterways.
6. Street sags shall have an overland runoff route to a flood control pond or to another street.
7. Downhill cul-de-sacs shall have an overland runoff route sized for the 100-year event along a lot line with an easement in the name of the Town, but maintained by the property owner(s), with the required channel cross section recorded on the plat.
8. Cleanout boxes shall be:
 - a. placed at junctions and changes in alignment and slope;
 - b. placed a maximum of 400 feet apart;
 - c. self-cleaning;
 - d. labeled with "Storm Drain" on the manhole cover;
 - e. labeled with "[water quality message]" on hooded inlets;
9. Pipelines shall be placed within Town ROW and shall:
 - a. be located pursuant to the Town's Standard Plans;
 - b. be made of reinforced concrete;
 - c. have a minimum diameter of 15 inches, or as shown in the Capital Facilities Plan;
 - d. have a minimum slope in accordance with HEC-22 Table 7-7 (3.0 fps flowing full); Slopes flatter than those required for the 3-feet-per-second-velocity criterion when flowing full, may be permitted by the Town Engineer provided that all of the following conditions are met:
 - i. there is no other practical alternative;
 - ii. the depth of flow is not less than 30 percent of the diameter at the average design rate of flow;
 - iii. the design engineer provides a report with the computations showing velocity and depth of flow corresponding to the minimum, average, and peak rates of flow for the present and design conditions in support of the request for exception; and
 - iv. the operating authority of the storm drain system submits a written acknowledgement of the ability to provide any additional system maintenance required by flatter slopes.
 - e. have a maximum velocity of 20 feet per second;
 - f. have a minimum cover pursuant to the manufacturer's recommendations, or below the road base, whichever is greater;
 - g. come together in cleanout boxes with crown elevations matching;
 - h. extend to property lines to accommodate future development;
 - i. Install fabricated galvanized steel trash grates over the ends of all exposed pipes 15 inches in diameter and larger;
 - j. include energy dissipation at enclosed-to-open-channel and open-channel-to-enclosed transitions pursuant to the MHFD Manual;
 - k. be inspected by video at the expense of the developer prior to acceptance.

C. IRRIGATION DITCHES

1. Irrigation ditches within developments must be piped, pursuant to the affected stakeholders' specifications. Such changes to existing irrigation systems shall be included in the engineering plans as an Impact-to-Private-Irrigation Plan.
2. Lids to irrigation systems shall be bolted down.
3. Provide irrigation easements on the subject plat "for the benefit of the upstream and downstream users" to formalize prescriptive easements.
4. Irrigation ditches shall not connect to the Town Storm Drain System unless approved by the Town Engineer. An O&M Plan is required for approved connections shall include a water quality pre-treatment device that has been approved for pretreatment by the Washington Department of Ecology under general use level designation (GULD) or conditional use level designation (CULD).

D. DETENTION AND RETENTION

Detention and retention facilities shall be privately owned and maintained unless specifically agreed to by the Town Council. Private surface ponds shall be designed the same as public ponds. While not superseding the Building Code, these standards do not apply to single-family dwelling developments with less than 1.0 acres of disturbance.

1. Planning and construction of storm drainage infrastructure, including detention and retention, are required for future land uses of the entire development, present and future phases.
2. Pursuant to Utah Code 19-5-108.5(5), retention basins are not allowed unless the applicant establishes to the satisfaction of the Town Engineer that no feasible alternative to use of a retention basin is available. Other LID BMPs shall be employed instead of retention basins.
3. Distributing detention or retention of drainage from outside of single-family-dwelling lots onto single-family-dwelling lots, or sharing detention across lot lines, is prohibited.
4. The maximum release rate from detention facilities shall be 0.20 cubic feet per second per acre (cfs/ac) or historical, whichever is less.
5. Detention or retention system volume shall not be reduced due to infiltration or evaporation.
6. The Water Quality Volume can be counted toward the flood control volume.
7. Retention facilities must drain within 48 hours. The median measured percolation rate divided by 2 shall be used for design purposes.
8. Provide a means for inspecting water levels in underground retention systems.
9. Provide an open channel emergency spillway or runoff route to a safe point for surface and underground detention ponds to convey the 100-year event if the outlet structure becomes blocked.
10. Surface ponds shall:
 - a. have at least 1 foot of freeboard, except for the spillway. Above ground detention ponds in parking lots shall have 1 foot of freeboard to the finished-floor elevation of adjacent structures;
 - b. have a maximum depth of 4 feet. In parking lots, the maximum depth is 8 inches in parking stalls;
 - c. have side slopes not exceeding 3H:1V;
 - d. have a bottom slope of at least 1.5 percent;
 - e. have a pipeline under the pond, or a concrete-lined low-flow channel through the bottom of the pond to convey flows that are less than the capacity of the outlet;
 - f. have inside corner radii of at least 10 feet;
 - g. have a structural BMP upstream of the orifice to catch trash and debris;
 - h. orifice plates (The minimum size of an orifice shall be 3.14 square inches. Every effort shall be made by the Engineer-of-Record to minimize the head over the orifice.) located such that they can be cleaned off when the pond is full;
 - i. be landscaped pursuant to Town standards, except for above-ground detention in private parking lots;
 - j. have an outlet structure pursuant to Standard Plan SD-1;
 - k. have a maintenance-access road and ramp into the bottom of the pond. Maintenance access roads shall:
 - i. be at least 10 feet wide;
 - ii. have a 6-inch-thick concrete surface;
 - iii. have a maximum slope of 12 percent;
 - iv. have a cross slope not exceeding 2 percent;
 - v. have breakover angles pursuant to APWA Plan 225 for service truck access;
 - vi. prevent public vehicular access by a means approved by the Town Engineer;
 - vii. provide a jet-truck work zone that is within proximity to the inlet/outlet structure: does not block a street lane, is not more than 7 feet from the front of the truck to the farthest inside wall of the inlet/outlet structure, and is not more than 15 feet from the side of the truck to the farthest inside wall of the inlet/outlet structure.
11. Underground ponds shall:
 - a. have a maintenance-access road, meeting the same requirements as those for a surface pond, to access all maintenance access ports;
 - b. have maintenance-access ports to access and remove accumulated sediment and trash.
12. Where no gravity alternative exists, a pump can be used to drain a detention pond if:
 - a. the pond is sized for the 100-year 24-hour event with no discharge;
 - b. the discharge rate does not exceed the maximum allowable discharge rate.
13. A detention pond that services an entire single-phase residential subdivision is permitted to be located within one single-family-dwelling lot, but only in a single-phase subdivision. The owner of the residential

lot on which a detention pond is located shall be responsible for maintaining the pond and its underground infrastructure. This responsibility shall be noted on the subject lot on the plat. An O&M Plan, for just the pond and applicable specifically to the lot owner, is required for the pond.

E. WATER QUALITY

1. New development projects, and redevelopment projects that increase the impervious surface by greater than 10 percent, shall manage rainfall on-site, and prevent the off-site discharge of the precipitation from all rainfall events less than or equal to 0.50 inches or a predevelopment hydrologic condition, whichever is less. This objective must be accomplished by the use of LID, where feasible.
2. Redevelopment projects that disturb greater than or equal to one acre, including projects less than an acre that are part of a larger common plan of development or sale which collectively disturbs land greater than or equal to one acre, must provide a site-specific and project-specific plan aimed at net gain to onsite retention or a reduction to impervious surface to provide similar water quality benefits.
3. The peak flow from the 2-year storm must be treated for water quality using a Water Quality Volume or a water quality treatment device that has been approved for pretreatment by the Washington Department of Ecology under general use level designation (GULD) or conditional use level designation (CULD).
4. All new development and redevelopment shall provide a Water Quality Volume that is managed with the BMPs determined in the LID Evaluation and depending on the LID Infiltration Feasibility Determination.
5. All discharges to underground systems and off-site shall provide a water quality pre-treatment device that has been approved for pretreatment by the Washington Department of Ecology under GULD designation or CULD designation.
6. Class V underground injection wells, as defined by State Code, must be registered with the Utah Division of Water Quality.
7. LID and water quality devices shall be privately-owned-and-maintained, unless specifically agreed to by the Town Council.

3.0 STREET SYSTEM

Private streets shall be privately owned and maintained. The pavement design (subbase, road base, and asphalt) for private streets shall be at least the same as public streets. The pavement width of private streets shall be at least as wide as required by the latest edition of Appendix D of the International Fire Code.

3.1 DESIGN REQUIREMENTS

A. COMMERCIAL DRIVEWAY APPROACH REQUIRED FOR NON-RESIDENTIAL

Because preference is given to pedestrians, a driveway approach is required for all private accesses (APWA Plan 225 for non-single-family residential accesses and private streets, and APWA Plan 221 for single-family residential accesses) unless recommended otherwise by the Town Engineer, based on site-specific considerations, such as:

1. speed, slope, and functional classifications of the adjacent street,
2. width of the proposed access,
3. volume of the proposed access,
4. drainage.

B. CURB RETURNS FOR ADA

Curb returns adjacent to ADA ramps shall have a maximum slope of 2 percent where possible. Where the base of the curb ramp, or the edge of the flush landing must join an intersection of two streets with running grades greater than 2 percent, the base of the curb ramp or the edge of the flush landing may be warped to meet the street running grade. Every effort shall be made to minimize this grade by warping the street cross slope plus or minus 4 percent on both legs of the intersection.

C. CLEARANCE TO OBSTRUCTIONS

A minimum clearance of twenty-four inches shall be provided between the curb face or shoulder edge and obstructions such as utility poles, fire hydrants, etc., except standard mailboxes approved by the U.S. Postal Service.

D. NON-FRONTAGE PARK STRIP MATERIAL

When properties are adjacent, but do not access or front on public ROW, stamped concrete pavement in the park strip or other suitable approved finishing material shall be required to reduce maintenance in these areas unless a homeowners association or special service district is provided.

E. TRAFFIC CALMING REQUIREMENTS

A physical traffic calming measure is required on local street segments longer than 1,000 feet without at least a 45-degree turn.

F. PARTIAL STREETS

Partial streets are allowed when developing a street along a property line and the other property owner is unwilling to participate in the development. But, storm drainage must still be managed according to these standards, which might require additional right-of-way and infrastructure.

G. CROSSWALKS

School crosswalks and associated STOP bars shall be placed along Safe Routes to School routes. Other crosswalks shall be placed as directed by the Town Engineer.

H. GEOMETRIC DESIGN OF STREETS

The following Table 5 serves as a guide to design professionals by providing a summary of the Town's Street Design Standards. These Standards are required unless specifically accepted otherwise by the Town Council.

TABLE 5 – GEOMETRIC DESIGN OF STREETS

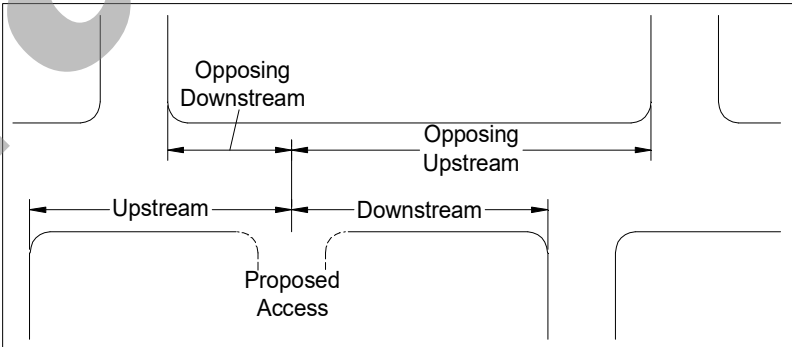
DESIGN ELEMENT	LOCAL (Class I)
Posted/Design Speed	25
TYPICAL SECTION	
ROW Width	40'
Pavement Width	24'
Number of Lanes	2
Shoulders	4' road base
Drainage Swales	2:1, 4' wide, 1' deep
Side Cut/Fill Slopes	2:1
20-Year ESAL/yr Requirement	10 ⁴
VERTICAL DESIGN	
Vehicle Design	S-Bus-40
Minimum Centerline Grade	0.5%
Maximum Centerline Grade	10% ^a
Maximum Centerline Grade Across Designated Crosswalks	5%
Maximum Grade in Cul-de-Sacs	5%
Maximum Centerline Grade Break w/o Vertical Curve	1%
Minimum Crest Vertical Curve "K" Value	12
Minimum Sag Vertical Curve "K" Value	26
Minimum Length of a Vertical Curve	60'
HORIZONTAL DESIGN	
Minimum Mid-Block Centerline Curve Radius	198'
Maximum Deflection Angle without a Curve	UDOT Roadway Design Manual Table 3.4
Superelevation	Not Allowed
INTERSECTIONS	
Intersection Sight Distance	AASHTO Green Book
Corner Curb Radius	25'
Minimum Angle of Intersection	60°
Maximum Centerline Offset	5 ^b
Maximum Centerline Grade ^c	5%
Vertical Tie-In	d

a. Grades steeper than 10 percent must be approved by the Unified Fire Authority.

b. An exemption may be permitted by the Town Engineer if the substandard offset can be resolved with future development.

c. Grade must extend to the PC/PT of the intersecting street, or to the extent of vehicle storage length when storage is expected.

d. Lower streets shall match the centerline crowns in an intersection. Higher streets shall tie in 10' off the centerline of local streets and at the edge of the outside travel lane of other streets.

Brighton Town Access Management Standards										
Functional Classification	Minimum Driveway Spacing (feet) ^{1,2,3,4}			Cross Street Unsignalized Intersection Spacing (feet)	Minimum Signal Spacing (feet)	Geometric Design of Driveway Access ⁶				
	Upstream and Downstream (feet)	Opposing Upstream (feet)	Opposing Downstream (feet)			Single-Family Residential Driveways			Other Driveways	
						Approach Width (feet) ⁶	Edge Clearance (feet) ⁷	Curb Return Radius (feet)	Approach Width (feet) ⁶	Edge Clearance (feet) ⁷
Minor Arterial w/o Median Barrier	200	115	105	660	1320	12 min	5 min	5 min	25 min	20 min
Minor Arterial w/ Median Barrier	150	not applicable	not applicable	660	1320	30 max		15 max	40 max	
Collector w/o Median Barrier	150	105	90	250	1320				<u>One Way</u>	
Collector w/ Median Barrier	85	not applicable	not applicable	150	1320					
Minor Collector w/o Median Barrier	85	105	90	250	1320				16 min	
Minor Collector w/ Median Barrier	50	not applicable	not applicable	150	1320				30 max	
Local w/ or w/o Median Barrier	-	-	-	150	N/A					
1. Driveway spacing is measured as shown in Figure 1. 2. Align opposing accesses if possible. 3. Corner clearance requirements for access points should meet or exceed the minimum driveway spacing requirements. Curb cuts on major arterials should be spaced at distances greater than 230 feet apart, measured from face-of-curb to face-of-curb, with the preferred distance being 300 feet. 4. For corner properties, access to public streets should be provided from the lesser (lowest functional classification) street. 5. Driveways in right-turn lane transition areas are discouraged. 6. For the benefit of traffic safety and flow, access points may be required to be designed to prohibit certain types of turning movements. 7. Wider driveway widths may be permitted to accommodate additional turning and/or acceptance lanes. 8. Distance between side property line and edge nearest drive as measured along traveled way.						 Figure 1: Measurements for Minimum Access Spacing Standards				

Appendix A

Traffic Impact Study Requirements



Traffic Impact Study Guidelines

Traffic Impact Study

This guideline dictates the minimum requirements for a Traffic Impact Study (TIS) within the jurisdiction of the Greater Salt Lake Municipal Services District (MSD). Its purpose is to guide MSD staff and traffic consultants in scoping and conducting traffic studies. The requirements in this document were based on guidelines from the Utah Department of Transportation (UDOT), the Institute of Transportation Engineers (ITE) and neighboring communities.

Application Submittal and Review

At the concept review stage, the applicant will be contacted regarding the need for a Traffic Impact Study (TIS) and what the scope of that study will be.

The following is information required to assess the scope and scale of the TIS:

- Location of Development
- Land Use Type (Single-family or multi family housing, office, retail, mixed-use, etc).
- Land Use Intensity (unit count, square footage, etc).

Based on the information submitted by the developer, the MSD Traffic Engineer will determine which level of traffic study is required and the boundaries for the study area. Prior to the study beginning, the developer should contact the MSD Traffic Engineer to identify the scope of the traffic study and the geographic area to be studied.

Traffic studies may also be required, as determined by the MSD Traffic Engineer, based on safety and/or operational concerns regardless of the number of trips generated. They also may be required by the Planning Commission or City Council by motion.

Additional items required for this study could include ADT counts, speed data collection / evaluation, intersection sight distance review, traffic control review, local trip generation study, parking study, etc.

Trip Generation

The latest ITE Trip Generation manual should be used to calculate new trips for a development. After calculating, all trip counts should be rounded up to a whole number. If the data provided by the ITE Trip Generation manual is not sufficient, the engineer performing the TIS may be required to collect local trip data.



Traffic Impact Study Guidelines

The following considerations should be made when determining whether to use the fitted curve equation, the average rate, or local trip data for traffic studies (See ITE Trip Generation Handbook, Chapter 4, for more details):

Use the fitted curve equation when:	A matching ITE land use has at least 20 study data points. OR The R ² value is at least 0.75.
Use the average rate when:	A matching ITE land use has at least three study data points and the fitted curve equation is not appropriate based on the criteria above. AND The standard deviation is less than 55% of the average rate value.
Use local trip data when:	The development land use is unique and does not match any ITE land uses. OR A matching ITE land use has less than three data points. OR If neither the average rate or fitted curve lines fall within the data cluster. OR The size of development is outside the range of land use sizes in the ITE data.

Certain developments may experience a reduced new trip generation number due to the nature of the project. The following are the trip reductions that should be considered in trip generation and traffic impact studies based on standard ITE methodologies:

- Pass-by trips: Trips made to a development on the way to another destination.
- Transit: Trips made on transit instead of by vehicle due to a nearby transit system.
- Mixed-use internal capture: Trips made within the development itself due to a mix of uses.



Traffic Impact Study Guidelines

Traffic Impact Study Requirements

- Prior to conducting the TIS, coordinate with the MSD Traffic Engineer to determine the appropriate scope, peak hours and area of the study. The nature of each TIS is unique, consequently, the MSD Traffic Engineer may add requirements to the TIS beyond what is shown in this guideline on a case-by-case basis.
- Data collection for the TIS (Roadway geometrics, turning movement counts, signal warrant analysis, accident rates, etc) is the responsibility of the party conducting the analysis.
- A Level of Service (LOS) of D or better is required for all movements and intersections for any scenario that includes development trips.
- Submit the completed report no later than two weeks prior to the scheduled Planning Commission meeting.
- Final report must be stamped and signed by a registered Professional Engineer with a valid Utah Professional Engineer license.
- The final report and all correspondence must reference the MSD project number assigned to the development.
- The final TIS deliverable shall consist of a pdf of the complete and final TIS report, including any applicable appendices; As well as electronic copies of any supporting data collected during the course of the study (i.e. traffic volumes, pedestrian volumes, bicycle volumes, speed data, vehicle class, crash data, near miss data, development site plan, TDM outputs, etc.).



Traffic Impact Study Guidelines

Traffic Impact Study Levels

Study Level ^{1,4}		Study Level Thresholds ^{1,4} (Projected Site Trips)	Study Horizon Year(s)	Study Area ^{1,4}
Traffic Impact Letter	I	1A: Less than 30 Peak Hour Trips ² OR 1B: Less than 30 Daily Trips ³	Opening year	Project accesses
	II	1A: 31-99 Peak Hour Trips ² OR 1B: 31-99 Daily Trips ³	Opening year	Project accesses. AND Closest collector or arterial intersections on any roadway(s) with Project accesses.
	III	1A: 100-499 Peak Hour Trips ² OR 1B: 100-2,999 Daily Trips ³	Opening year AND + 5 years	Project accesses. AND All collector or arterial intersections within one mile of any Project accesses.
	IV	1A: 500+ Peak Hour Trips ² OR 1B: 3000+ Daily Trips ³	Opening year AND +5 years AND +20 years	Project accesses. AND All collector or arterial intersections within two miles of any Project accesses.

1: Confirm with the MSD Traffic Engineer prior to beginning work.

2: The ITE Trip Generation Manual Time Period "Weekday, Peak Hour of Adjacent Street" will typically be used in most peak hour calculations.

3: The ITE Trip Generation Manual Time Period "Weekday" will typically be used in most daily calculations.

4: Residential subdivisions consisting of 10 or fewer units shall be exempt from this requirement

Signal Timing

For most signals in Utah, existing traffic signal timing can be acquired from the UDOT signal desk at (signaldesk@utah.gov). The consultant shall incorporate actual signal timing into their existing conditions traffic models, and signal timings should use the appropriate time period being modeled. Signal timings shall include the correct sequence, phases, cycle length, offset, overlaps, ped crossing times, min green, yellow, & all-red times, split times and vehicle extensions. The offset reference for signals running coordination should always be TS2 – 1st Green, not begin of Green or any other reference point. All signals in Utah use this reference.

For future or adjusted existing signal timing plans, use the same parameters provided in the existing plan **OR**, if warranted due to intersection geometry or phase pattern changes, use the parameters outlined in the [UDOT Guidelines for Traffic Signal Timing in Utah](#).



Traffic Impact Study Guidelines

Travel Demand Modeling

The MSD requires the use of the Wasatch Front Regional Council's (WFRC) travel demand model for determining growth rates and trip distribution for future modeling scenarios. Provide screenshots of the WFRC model volumes in the final TIS report.

Study and Report Format

The following are minimum requirements for the Trip Generation Letter, additional items may required on a case-by-case basis.

Trip Generation Letter

- 1) Cover sheet that includes the following:
 - a) Project name
 - b) Project address
 - c) MSD project number
 - d) Name and company of the person writing the letter
- 2) Description of project
- 3) Location of project
- 4) ITE trip generation calculation
 - a) Include land use code, relevant peak hour(s), independent variable(s), etc.
- 5) Conclusions
- 6) Recommendations (if applicable)

Traffic Impact Study

The following are minimum requirements for the Traffic Impact Study, additional items may required on a case-by-case basis.

The Traffic Impact Study shall be performed by a Professional Engineer registered in the state of Utah.

1. Cover sheet that includes the following:
 - a. Project name
 - b. Project address
 - c. MSD project number
 - d. Name, company and PE stamp of the PE signing and sealing the report
2. Introduction and Summary



Traffic Impact Study Guidelines

3. Proposed Project
4. Study Area Conditions
5. Analysis of Existing Conditions
6. Projected Traffic and ITE Trip generation calculations
 - a. Include land use code, relevant peak hour(s), independent variable(s), etc.
 - b. Calculate growth rate using the WFRC travel demand model.
7. Traffic Analysis
8. Safety/Crash Analysis
9. Conclusions
10. Recommendations
11. Appendices
 - a. Traffic Counts
 - b. Traffic Capacity Analysis
 - c. Accident Summary
 - d. Request for change of access (if applicable)
12. Figures and Tables

The following items shall be documented in the study:

- a. Site location
 - i. Show and label nearby roadways at such a scale to easily determine site location. Inclusion of nearby collectors or arterials is preferred.
- b. Site plan
 - i. Identify geometric / physical concerns relating to area, site and specific access points.
 - ii. Include and label adjacent streets and access points.
 - iii. Show property boundaries.
- c. Existing roadway and traffic control features
 - i. Number of lanes, lane widths, alignment, location of traffic signal or stop/yield signs, etc.
 - ii. Off-system features as related to site plan and access point(s).
- d. Existing daily volumes (directional if possible) and peak hour turning volumes. Discuss traffic characteristics (vehicle mix, %-make-up and any special vehicle requirements).
- e. Crash map (if applicable)
- f. Site generated trip summary
- g. Directional distribution of site generated traffic
- h. Assignment of non-site related traffic (existing, background and future)



Traffic Impact Study Guidelines

- i. Directional distribution of site generated traffic
- j. Traffic Capacity Analysis
 - i. Projected levels of service WITHOUT the project – coincides with the study level horizon years.
 - ii. Projected levels of service WITH the project – coincides with the study horizon years.
 - iii. Recommended mitigation / improvements
 - i. If traffic signal or lane configuration modifications are proposed, signal phasing, signal head locations, lane markings and curb lines shall be shown.

Draft

Appendix B

Guo “Averaging Parameter” Method

DETENTION BASIN SIZING FOR SMALL URBAN CATCHMENTS

by James C.Y. Guo, *PhD, P.E., Professor,*
Department of Civil Engineering, University of Colorado at Denver, Denver, Colorado.

Abstract

The Federal Aviation Administration (FAA) method for sizing small detention and retention basins is a volume-based approach that is sensitive to the release rate. In practice, such a release rate is often approximated by open channel hydraulics or culvert hydraulics. Without a consistent guideline, this practice of approximation can result in significant discrepancy or violation of the volume balance between the inflow and outflow hydrographs. In this study, a consistent procedure was developed to derive the average release from the allowable peak outflow. The required parameters for this method include peak inflow, design storm duration, and the time of concentration of the watershed. With this modification, the detention storage volume maximized by the FAA method can satisfy the volume conservation between hydrographs.

Key Words: Detention, Rational, FAA

INTRODUCTION

Urban stormwater facilities are designed to pass the peak flow through conveyance systems or to store a portion of the runoff volume in detention systems. For a small urban catchment with a tributary area less than 100 acres, the rational method is suitable for peak runoff predictions and the Federal Aviation Administration (FAA) method is recommended for detention storage volume predictions. The FAA's procedure is to maximize the required storage volume by the volume difference between the inflow and outflow volumes produced by a series of rain storms on the watershed. During the optimization process, the outflow volumes are calculated by an approximate average release from the detention basin. In current practice, there is not any guidance as to how to estimate the average release.

As a volume-based method, the FAA procedure has been widely used for small urban catchments in spite of its ambiguity in estimating the average release from the basin. For instance, the average release may be calculated by open channel flow, orifice formula, or culvert hydraulics. These hydraulic approaches result in violation of the hydrologic principle of volume conservation between the inflow and outflow hydrographs and inaccurate calculations on the required detention storage volume. To improve the current practice, this study suggests that the average release be a fraction of the allowable release rate. This fraction can be further derived by the volume conservation principle between inflow and outflow hydrographs during the maximization process. In this study, this ratio was found to vary with respect to storm duration, and is not a constant as recommended in many design criteria such as the Denver Design Criteria Manuals, and FAA Airfield and Heliports Design Criteria. The revised procedure can also be applied to other volume-based methods such as the capture runoff volume method (Guo and Urbonas, 1996) for sizing storm water quality control ponds. It provides a

consistent guideline to the estimation of the average release from a basin, and warrants volume conservation between the inflow and outflow hydrographs.

DETENTION STORAGE VOLUME BY THE FAA METHOD

The volume-based approach such as the FAA method is applicable to urban catchments with a tributary area less than 150 acres. To predict the peak runoff from such a small urban watershed, the Rational method states:

$$Q_d = \alpha C I_d A \quad (1)$$

The rainfall intensity in Eq 1 can be described as:

$$I_d = \frac{aP}{(b + T_d)^n} \quad (2)$$

in which α = unit conversion factor, equal to 1 for English units, and 1/360 for SI units, C = runoff coefficient, A = watershed area in acres (hectare), I_d = rainfall intensity in inch/hr (mm/hr), T_d = rainfall duration in minutes, Q_d = peak runoff rate in cfs (cms) and a , b , and n = constants on the Intensity- Duration- Frequency (IDF) formula.

Storm water detention process is to reduce the peak runoff and to delay the time to peak as well. In practice, the allowable release rate from a basin is defined by the downstream critical capacity, or the pre-development condition.

In this study, the average release is suggested to be a fraction of the allowable peak runoff, Q_a . Therefore, we have:

$$Q_m = mQ_a \quad (4)$$

in which Q_a = the allowable release which occurs at time T_a in Figure 1, Q_m = average release rate, and m = ratio of the average release to the allowable peak runoff rate. For a storm event, the detention storage volume is equal to the volume difference of the inflow and outflow as:

$$V_i = \alpha C I_d A T_d \quad (5)$$

$$V_o = Q_m T_d = mQ_a T_d \quad (6)$$

$$V_d = 60[\alpha C I_d A T_d - Q_m T_d] = 60[Q_d T_d - Q_m T_d] \quad (7)$$

in which V_i = inflow volume, V_o = outflow volume, and V_d = the required storage volume in cubic feet or cubic meter. The factor of 60 is to convert seconds to minutes. The reliability of Eq 7 depends on the specified average outflow in Eq 4. Without an adequate guidance, Eq 7 may lead to any result based on engineer's best estimation. Although an adjustment factor have been recommended to avoid underestimation of the detention volume by Urbonas and Stahle (1991) and Guo (1990), it is necessary to develop a consistent guideline for Eq 4.

MAXIMIZATION OF DETENTION STORAGE VOLUME

The peak runoff flow that occurs at the time of concentration, T_c is recommended for conveyance designs. It is well understood that the design storm duration for a detention basin is usually longer than T_c . As illustrated in Figure 1, the peak flow, Q_d , is produced by the design storm for the detention design. To estimate the required storage volume with no prior knowledge of the outlet hydraulics, it is suggested that the storage volume be calculated using the linear rising outflow hydrograph, i.e. line OB in Figure 1 (Malcom 1982) (Guo 1997). Based on the volume difference between the inflow and outflow hydrographs in Figure 1, the detention storage volume, i.e. the shaded area, is:

$$V_d = 60 \left[Q_d T_d - \frac{Q_a}{2} (T_d + T_c) \right] \quad (8)$$

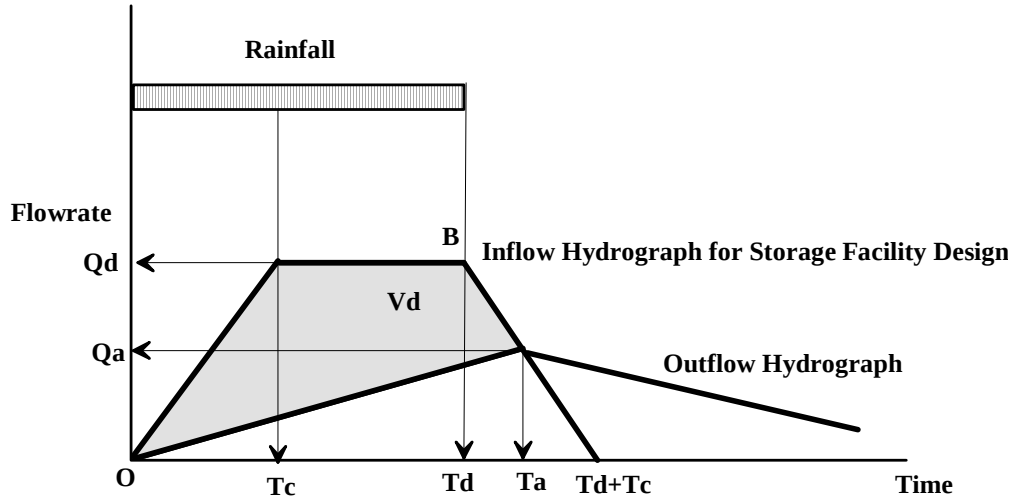


Figure 1. Detention Storage Volume Estimated by Hydrographs

Equating Eq 7 to Eq 8, the value of m is derived as:

$$m = \frac{1}{2} \left(1 + \frac{T_c}{T_d} \right) \quad \text{for } 0.5 < m < 1 \text{ and } T_d > T_c \quad (9)$$

Often the value of m is recommended to be a constant between 0.80 and 0.90 for all storm events (Urbanos and Stahre in 1991). Eq 19 indicates that the value of m varies with respect to the rain storm duration and can not be applied to a storm with duration less than T_c because the maximized operation of a detention basin requires the entire catchment to be tributary. The current practice does not have any limitation on storm duration and results in a maximization procedure starting from 5-minute rainfall. Eq. 9 begins with a value equal to unity when the storm duration is equal to T_c and then reduces to 0.5 when T_d is much longer than T_c . In comparison, the current practice of applying a constant value of m to all storm events can lead

to significant mistake. Substituting Eq 9 into Eq. 5 with the aid of Eq 3, the FAA method is modified to:

$$V_d = 60 \left[\alpha C I_d A - \frac{Q_a}{2} \left(1 + \frac{T_c}{T_d} \right) \right] T_d \quad (10)$$

The basic concept in the FAA method is to find the maximum volume difference between the inflow and outflow volumes under a series of storm events with different durations. Eq 10 shall be tested for a range of T_d until Eq 10 is maximized as:

$$V_m = 60 \left[\alpha C I_m A - \frac{Q_a}{2} \left(1 + \frac{T_c}{T_m} \right) \right] T_m \quad \text{at } T_d = T_m \quad (11)$$

where the subscript m represents the maximized solution.

DESIGN SCHEMATICS AND EXAMPLES

The example watershed used in this study is located in the City of Denver, Colorado. The 100-year IDF in Denver is specified by $a = 74.1$, $b = 10$, and $n = 0.786$. The developed watershed of 100 acres has a time of concentration of 25 minutes and runoff coefficient of 0.65. It produces a 100-year developed peak runoff of 296.86 cfs. The allowable release is 33% of the developed peak runoff. As a result, the allowable release rate is

$$Q_a = 0.33Q_p = 97.96 \text{ cfs} \quad (12)$$

The detention volumes for various periods of storm duration are calculated in Table 1. The maximized volume is found to be 8.52 acre-ft for this example.

Duration	Rainfall Intensity	Inflow Volume	Average Parameter	Average Outflow	Outflow Volume	Storage Volume
minutes	inch/hr	acre-ft	M	cfs	acre-ft	acre-ft
		Eq5	Eq 9	Eq 4	Eq 6	Eq 10
50.00	2.97	13.28	0.75	72.36	4.98	8.30
60.00	2.63	14.12	0.71	68.34	5.65	8.47
70.00	2.37	14.83	0.68	65.47	6.31	8.52
80.00	2.16	15.45	0.66	63.32	6.98	8.47
90.00	1.99	16.00	0.64	61.64	7.64	8.36

Table 1. Example for Maximization of Detention Volume.

CONCLUSIONS

Different hydrologic methods were developed for different hydrologic conditions. In the development of technical design criteria, it is a continual effort to maintain consistency among various design methods. The FAA method intends to be a simplified volume-based approach.

However, the current practice falls short in the estimation of the average outflow. This study presents a modification to the volume-based approach such as the FAA method so that the estimated detention volume can be consistent with the hydrograph method. Modifications to the FAA procedures shall not change its original intention as a simplified approach. As a result, this study applies the volume conservation principle between the simplified hydrographs to relate the average outflow as a fraction of the allowable release rate.

In this study, it was found that the average outflow can be determined by the allowable release from the basin, design storm duration, and the time of concentration of the watershed. In practice, the average release was often considered to be the average flow rate over the base time of the outflow hydrograph. This study indicates that this average outflow in fact is the equivalent average release rate that drains the basin storage volume over the storm duration time. Secondly, the ratio of average release to allowable release was not so constant as recommended by the current practice. Instead, it varies between one and 0.5, depending on storm duration. Applying a constant ratio to all storm events may result in a significant discrepancy against the volume conservation between the inflow and outflow hydrographs. Eq 9 provides a consistent guideline that modifies the current FAA procedures to satisfy the hydrograph volume balance.

APPENDIX I. REFERENCES

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7. Shueler, Thomas R., and Helfrich, Mike. (1989) "Design of Extended Detention Wet Pond System. " Design of Urban Runoff Quality Controls, Edited by Larry A. Roesner, Ben Urbonas, and Michael B. Sonnen, American Society of Civil Engineers, New York, New York.
8. Urbonas, Ben and Stahre, Peter. (1991) "Storm Water Detention. " Prentice Hall, Englewood Cliffs, New Jersey.

Appendix C

Subdivision Plat Template

Appendix D

As-Built Drawings Checklist

AS-BUILT DRAWINGS REQUIREMENT CHECKLIST

Project Name: _____

Submittal # _____ Date: _____ Submitted by: _____

Received by: _____

Drawings shall include only the following information on two (2) D size (22"x34") sheets in plan view as indicated at a clearly readable scale (maximum 1"=60'). Multiple sheets of each type may be necessary to provide clearly readable drawings. Do not submit plan/profile sheets. Remove all unnecessary information from the drawings. Drawings must be field checked for completeness and accuracy.

AutoCad record electronic drawing files must be submitted and approved following approval of paper record drawings.

As-built Drawing Plan Sheets: <u>GENERAL REQUIRMENTS</u>	TOWN USE ONLY	
	ACCEPTED	
The following must be shown on each sheet:	YES	NO
Title block including project/subdivision name, drawing title and sheet number, date, engineering firm's name and address	☐	☐
Developer and Contractor signature blocks stating "I have field verified that these record drawings are complete and accurately represent what was constructed for this project".	☐	☐
North arrow and drawing scale	☐	☐
Legend of symbols and abbreviations	☐	☐
Benchmark location and elevation	☐	☐
Subdivision boundary and lots (labeled)	☐	☐
Roadway improvements (curb & gutter, sidewalk, driveways). Label streets names.	☐	☐

As-built Drawing Plan Sheet 1: <u>OVERALL</u>	TOWN USE ONLY	
	ACCEPTED	
The following must be shown: (when applicable)	YES	NO
Street lights Indicate type: LP-1, LP-2, LP-3, LP-4 Show wiring to power source	☐	☐
Signage Indicate type ST-1, ST-2 or description	☐	☐
Future-Use Telecommunications Conduit Indicate size and type service boxes	☐	☐

Asphalt striping and markings	☐	☐
Fencing Indicate size and type	☐	☐
Traffic calming devices	☐	☐
Pedestrian sidewalk ramps Indicate ADA truncated dome material type	☐	☐
Irrigation system (gravity) Pipe: indicate size, type and slope Structures: indicate rim (grate) and invert elevations	☐	☐
Removal of unnecessary information	☐	☐

As-built Drawing Plan Sheet 2: <u>GRADING AND DRAINAGE</u>	TOWN USE ONLY	
	ACCEPTED	
	YES	NO
Finish contours – One foot intervals (labeled) and including all related flood and low impact infrastructure grades. Including but not limited to grades and measurements for Detention-retention storage, swales, channels, storage capacity, spillway, high-water levels, free -board, flood route, etc.	☐	☐
Drain Structures: Provide all drainage structure elevations and dimensions for, including but limited to: Pipes, inlets, outlets, manholes, water quality devices, etc.	☐	☐
Storm Drain Ponds, swales, spillways channels, etc - show contours, high-water mark, spillway and/or outfall structures, and as-built storage capacity.	☐	☐
Field Survey Drawing: The project engineer shall review as-built survey points and verify conformity to the constructed flood and water quality requirements. Provide a PDF copy of the site survey points and any linework.	☐	☐
Project As-built Drawing: Provide 11x17 PDF of project engineer's as-built, stamped and signed. Project engineer shall oversee and insure correction of all design plan non-conforming items prior to as-built submission. All minor constructed differences must be justified by project engineer. Justifications shall be explained in a stamped and signed PDF letter.	☐	☐
Removal of unnecessary information.	☐	☐

Comments:

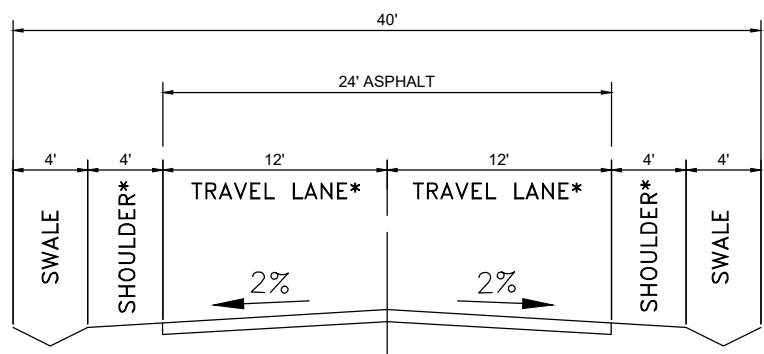
Drawings Approved By: _____

Date: _____

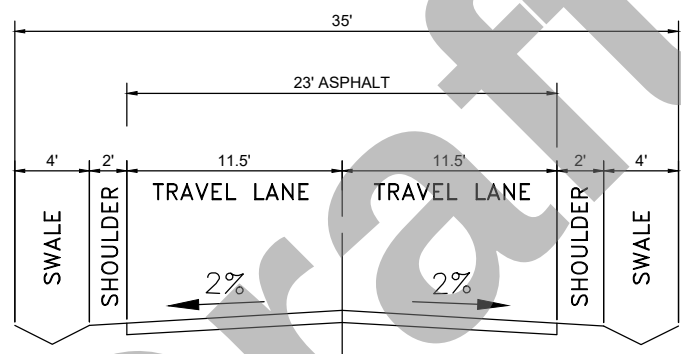
Appendix E

Town Standard Plans

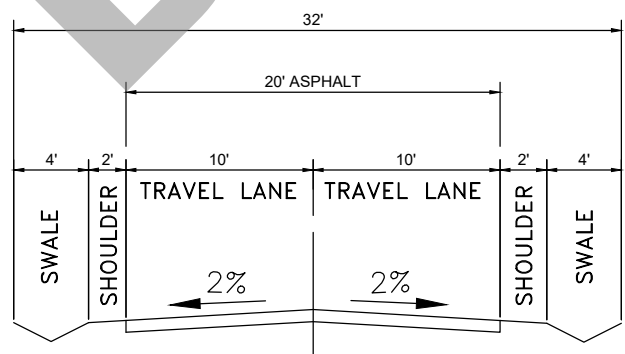
LOCAL ACCESS STREET



40'-FOOT RIGHT-OF-WAY
(TYPICAL)



35'-FOOT RIGHT-OF-WAY
(PARKING ON ONE SIDE - Used when the use on one side does not require parking.)



32'-FOOT RIGHT-OF-WAY
(NO PARKING ON EITHER SIDE - Used when the uses on neither side require parking.)



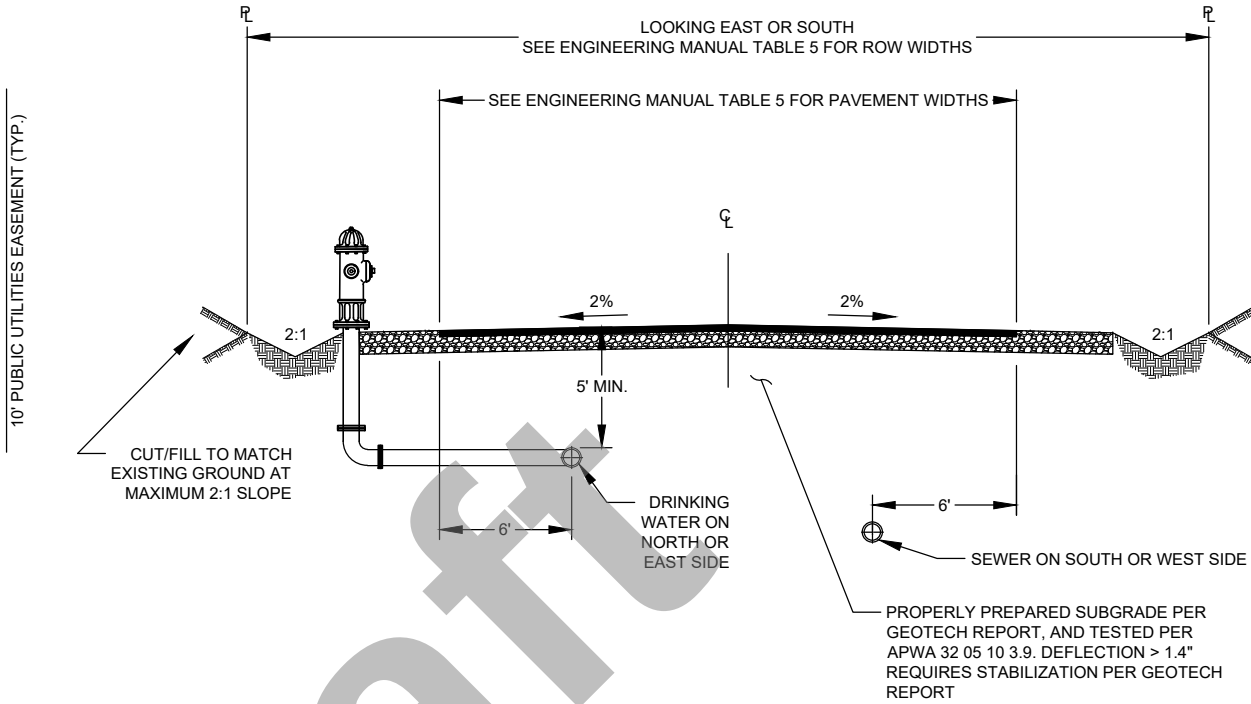
STREET FUNCTIONAL CLASSIFICATION DIMENSIONS

DRAWN 04/2026		
REVISIONS		
#	BY	DATE

PLAN
ST-1



TYPICAL SECTION AND PAVEMENT SPECIFICATIONS



STANDARD URBAN ROADWAY SECTION (SEE NOTES BELOW)

STREET DESIGNATION	ASPHALT-AGGREGATE DESIGNATOR	MINIMUM PAVEMENT SECTION (AC / UTBC)
LOCAL	PG 58-28 SP-3/8, 50 ND = APWA Class II Mix	3" / 8"

NOTES:

1. THE PAVEMENT DESIGN SHALL BE RECOMMENDED IN THE GEOTECHNICAL REPORT BASED ON THE MAXIMUM DAILY TRAFFIC CAPACITY AND CONSTRUCTION TRAFFIC. SEE APWA SECTION 32 12 05 (BITUMINOUS CONCRETE) FOR SPECIFICATIONS.
2. A HEAVY TYPE II SLURRY SEAL (OR APPROVED EQUAL) SHALL BE PLACED PER APWA 32 01 13.61 AT THE CONCLUSION OF THE WARRANTY PERIOD AND PRIOR TO WARRANTY RELEASE.
3. MAXIMUM OF 15 PERCENT RECLAIMED ASPHALT PAVEMENT.

04/2026

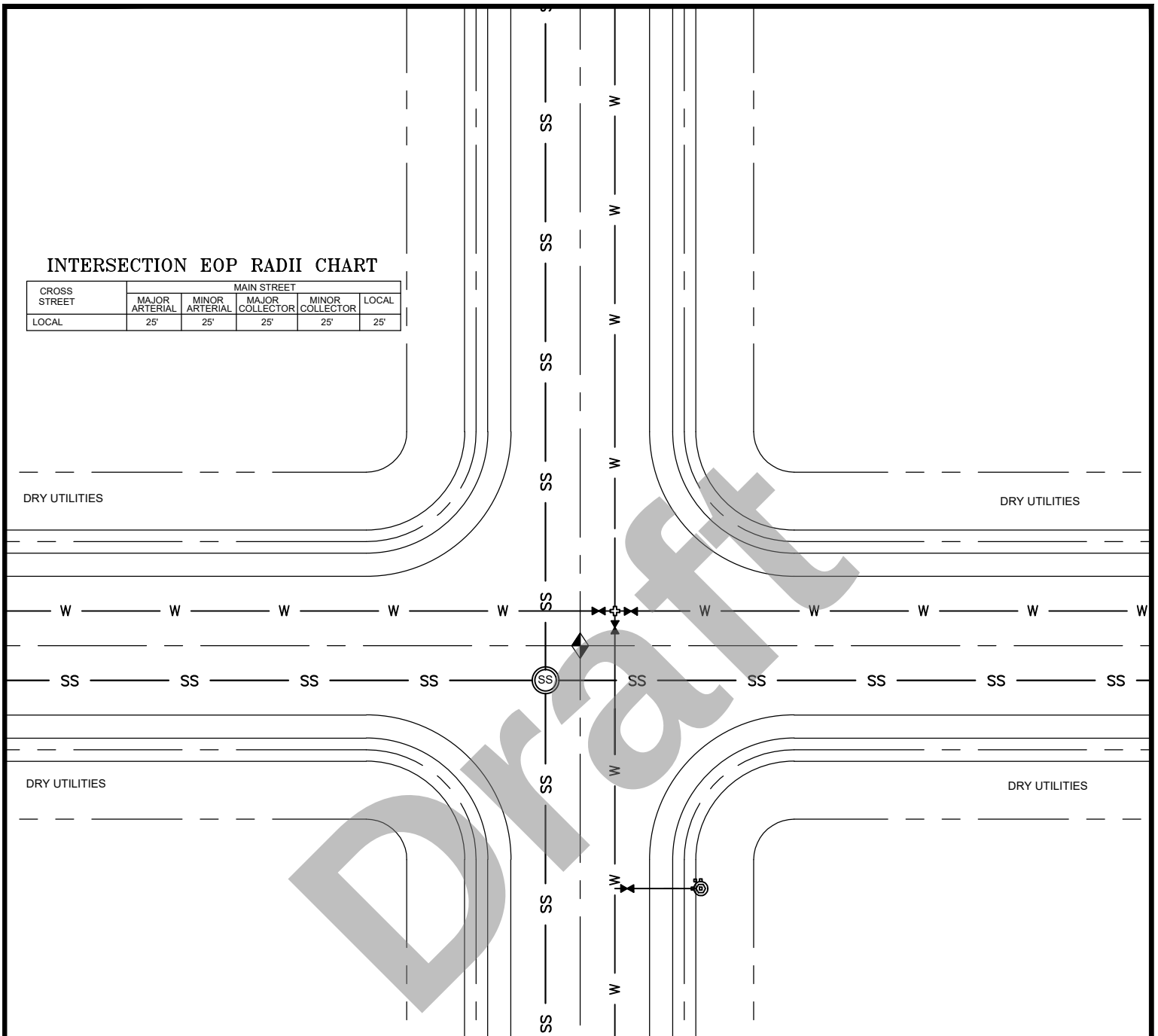
REVISIONS

BY DATE

PLAN
ST-2

INTERSECTION EOP RADII CHART

CROSS STREET	MAIN STREET				
	MAJOR ARTERIAL	MINOR ARTERIAL	MAJOR COLLECTOR	MINOR COLLECTOR	LOCAL
LOCAL	25'	25'	25'	25'	25'



LEGEND

- W — DRINKING WATER LINE TO BE INSTALLED ON NORTH AND EAST SIDES OF STREET
- SS — SANITARY SEWER LINE TO BE INSTALLED ON THE SOUTH AND WEST SIDES OF STREET



FIRE HYDRANT



DRINKING WATER VALVE



SURVEY MONUMENT PER S.L.CO. REQUIREMENTS



UTILITY LOCATIONS AND PAVEMENT RETURN RADII

04/2026

REVISIONS

#	BY	DATE

PLAN
ST-3

REQUIREMENTS FOR DEAD-END ACCESSWAYS

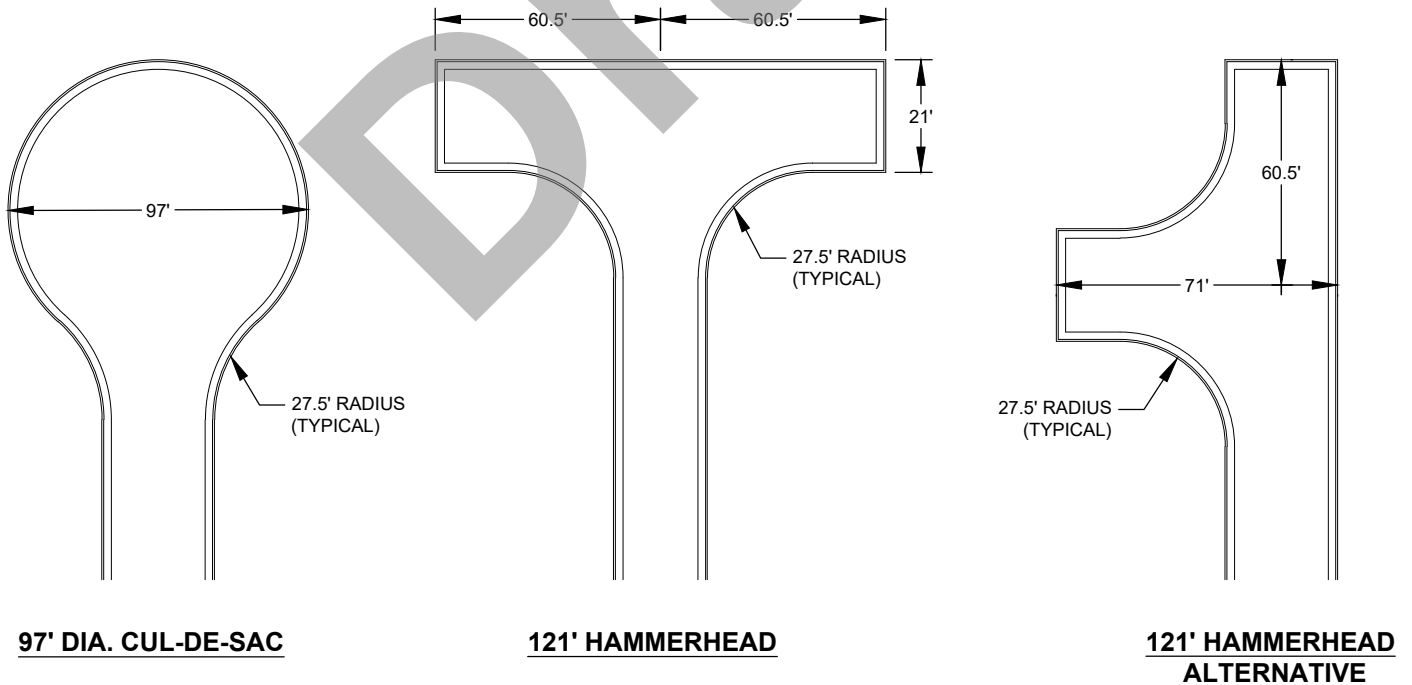
UNIFIED FIRE AUTHORITY

LENGTH	MINIMUM CLEAR WIDTH**	GRADE	TURNAROUND REQUIREMENTS
0' - 150' *	20'	10% MAX.	NONE REQUIRED
151' - 400' *	20'	10% MAX.	120' HAMMERHEAD 96' DIA. CUL-DE-SAC
OVER 400'	SPECIAL APPROVAL REQUIRED		

* CURVES AND TOPOGRAPHICAL CONDITIONS COULD ALTER THE REQUIREMENTS FOR TURNAROUNDS AND THE WIDTH OF ACCESSWAYS.

** PARKING RESTRICTIONS MAY APPLY. MEASURED FROM CURB FACE TO CURB FACE, OR BETWEEN FIXED ROADSIDE OBJECTS IF NO CURBS ARE PRESENT.

DIMENSIONS LISTED ARE TOP-BACK-OF-CURB TO TOP-BACK-OF-CURB. IF NO CURB, REDUCE BY 6" PER CURB.



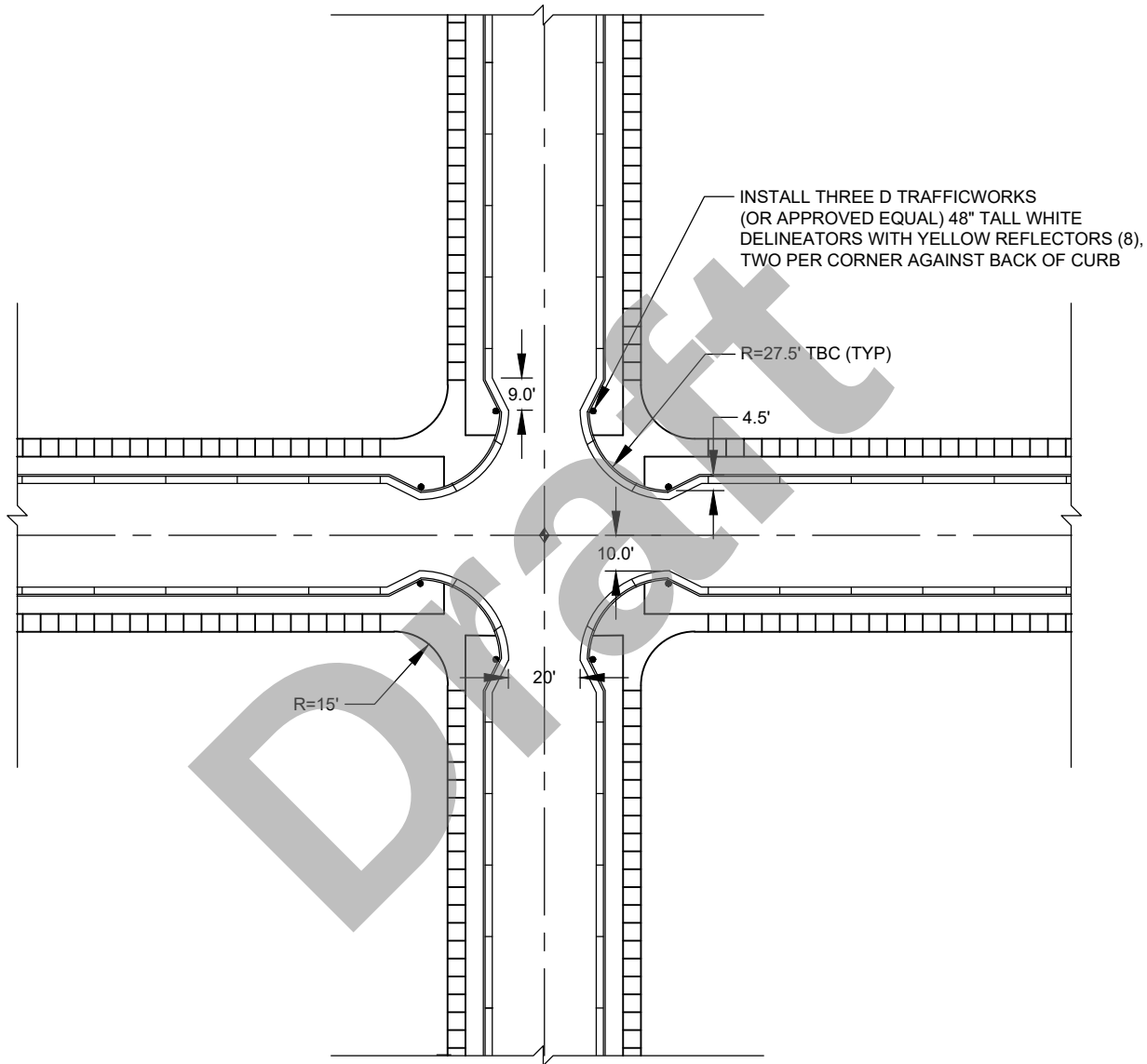
CUL-DE-SACS

DRAWN 04/2026

REVISIONS

#	BY	DATE

PLAN
ST-4



NOT TO SCALE

LOCAL STREET
TRAFFIC CALMING INTERSECTION

DRAWN 04/2026

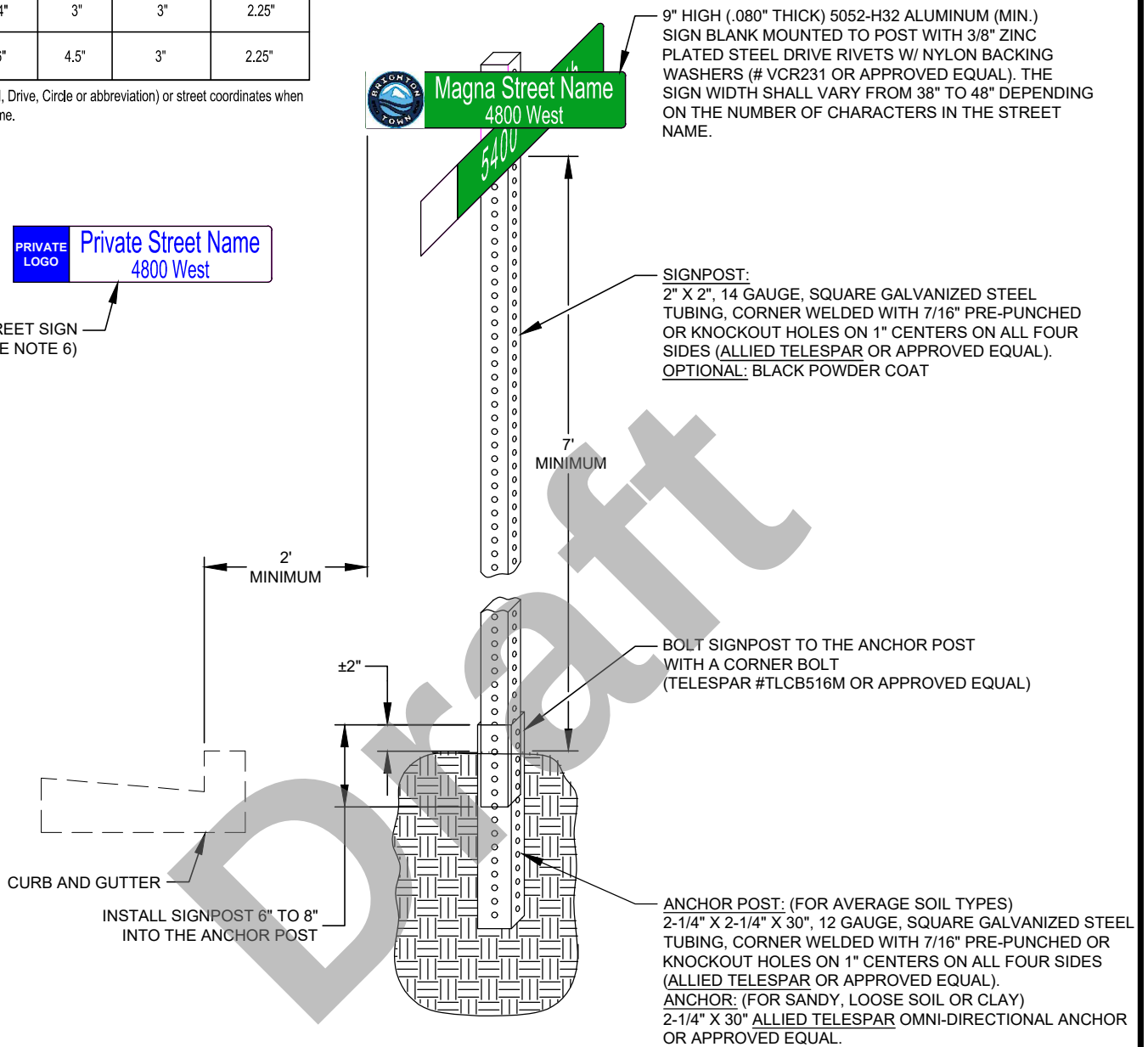
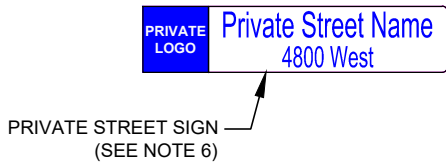
REVISIONS

#	BY	DATE

PLAN
ST-5

Minimum Letter and Number Heights				
Speed Limit	Upper Case	Lower Case	Supplemental Letters and Numbers*	
			Upper Case	Lower Case
25 mph or less	4"	3"	3"	2.25"
30 to 40 mph	6"	4.5"	3"	2.25"

* Type of street (i.e. Road, Drive, Circle or abbreviation) or street coordinates when not part of the street name.



NOTES:

1. SECURE CITY'S APPROVAL OF SIGN FORMAT AND INSTALLATION.
2. ALL MOUNTING HARDWARE, POST, AND ANCHOR MAY BE POWDER COATED BLACK (OPTIONAL).
3. INSTALL THE EDGE OF THE SIGN TWO FEET FROM THE VERTICAL EXTENSION OF THE FACE OF THE CURB AS NEAR AS POSSIBLE TO THE APPROACH CURB POINT OF CURVATURE. SIGNS SHOULD NOT OVERHANG SIDEWALK OR CURB & GUTTER.
4. ALL SIGNS SHALL BE 7' MINIMUM FROM GROUND TO BOTTOM OF SIGN.
5. LETTERING AND NUMBERING SHALL BE WHITE ON A GREEN BACKGROUND AND MADE OF HIGH INTENSITY PRISMATIC (HIP) SHEETING, ASTM TYPE III, IV, X. FONT SHALL BE ARIAL. UPPER AND LOWER CASE LETTERS SHALL BE USED. NAMED STREETS ALSO REQUIRE COORDINATES ON THE SIGN. SEE TABLE ABOVE FOR REQUIRED MINIMUM LETTER AND NUMBER HEIGHTS. SIGN SHALL HAVE A 9"X9" KEARNS CITY LOGO ON THE LEFT SIDE MADE OF HIGH INTENSITY PRISMATIC (HIP) SHEETING ASTM TYPE III, IV, X.
6. PRIVATE STREET SIGN LETTERING SHALL BE BLUE ON A WHITE BACKGROUND, MADE OF HIGH INTENSITY PRISMATIC (HIP) SHEETING, ASTM TYPE III, IV, X, AND SHALL **NOT** INCLUDE THE KEARNS CITY LOGO. THE LEFT SIDE OF THE SIGN SHALL HAVE THE WORD "PRIVATE" IN WHITE LETTERING (1" MINIMUM, UPPER CASE ARIAL FONT) ON A 9"X9" BLUE BACKGROUND MADE OF HIGH INTENSITY PRISMATIC (HIP) SHEETING ASTM TYPE III, IV, X.



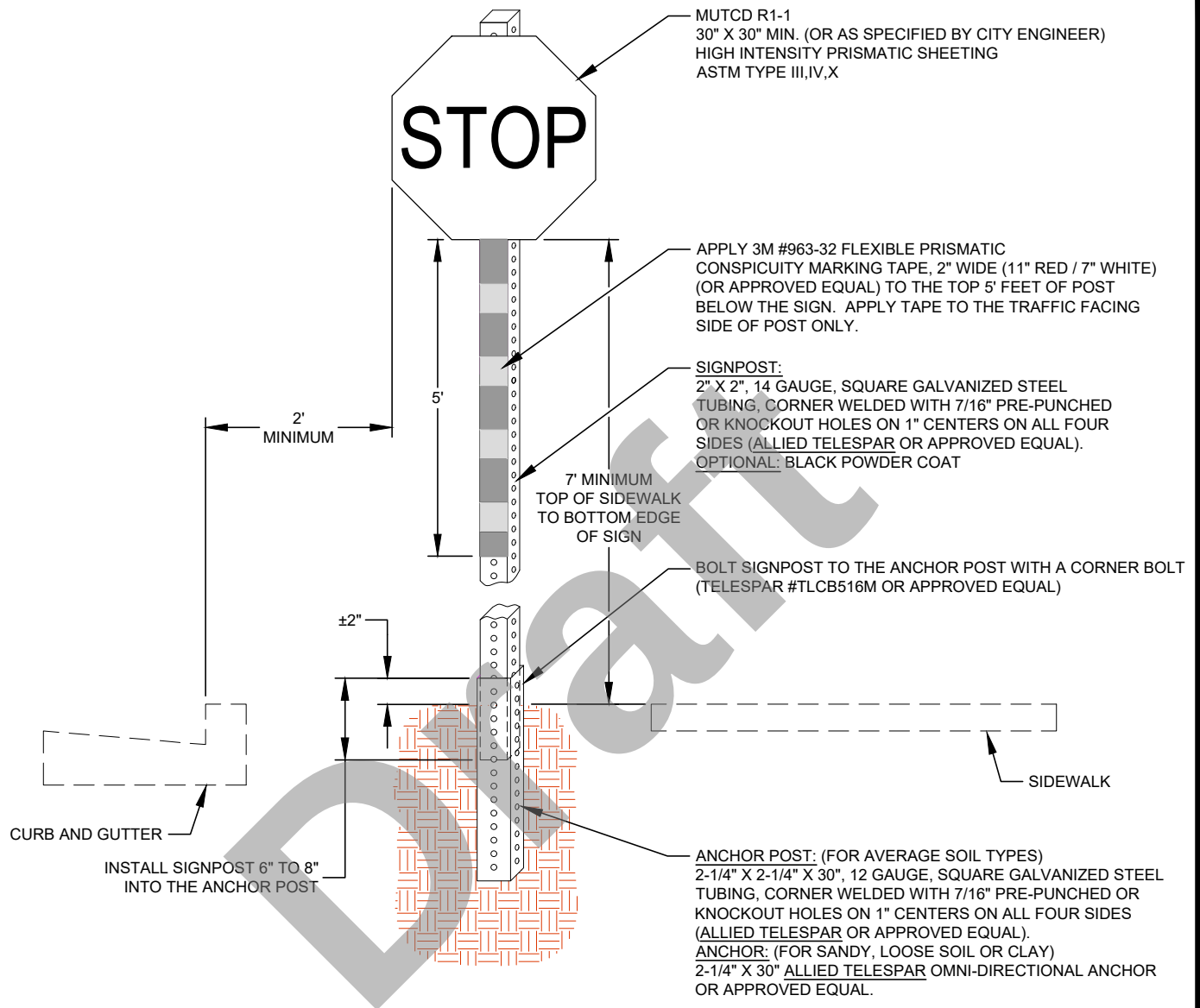
STREET SIGN

DRAWN 04/26

REVISIONS

#	BY	DATE

PLAN
ST-6



NOTES:

1. SECURE CITY'S APPROVAL OF SIGN FORMAT AND INSTALLATION.
2. ALL MOUNTING HARDWARE, POST, AND ANCHOR MAY BE POWDER COATED BLACK (OPTIONAL).
3. INSTALL THE EDGE OF THE SIGN TWO FEET FROM THE VERTICAL EXTENSION OF THE FACE OF THE CURB AS NEAR AS POSSIBLE TO THE APPROACH CURB POINT OF CURVATURE.
4. SIGNS SHOULD NOT OVERHANG SIDEWALK OR CURB & GUTTER. ALL SIGNS SHALL BE 7' MINIMUM FROM GROUND TO BOTTOM OF SIGN.



REGULATORY SIGN

DRAWN 04/2026

REVISIONS

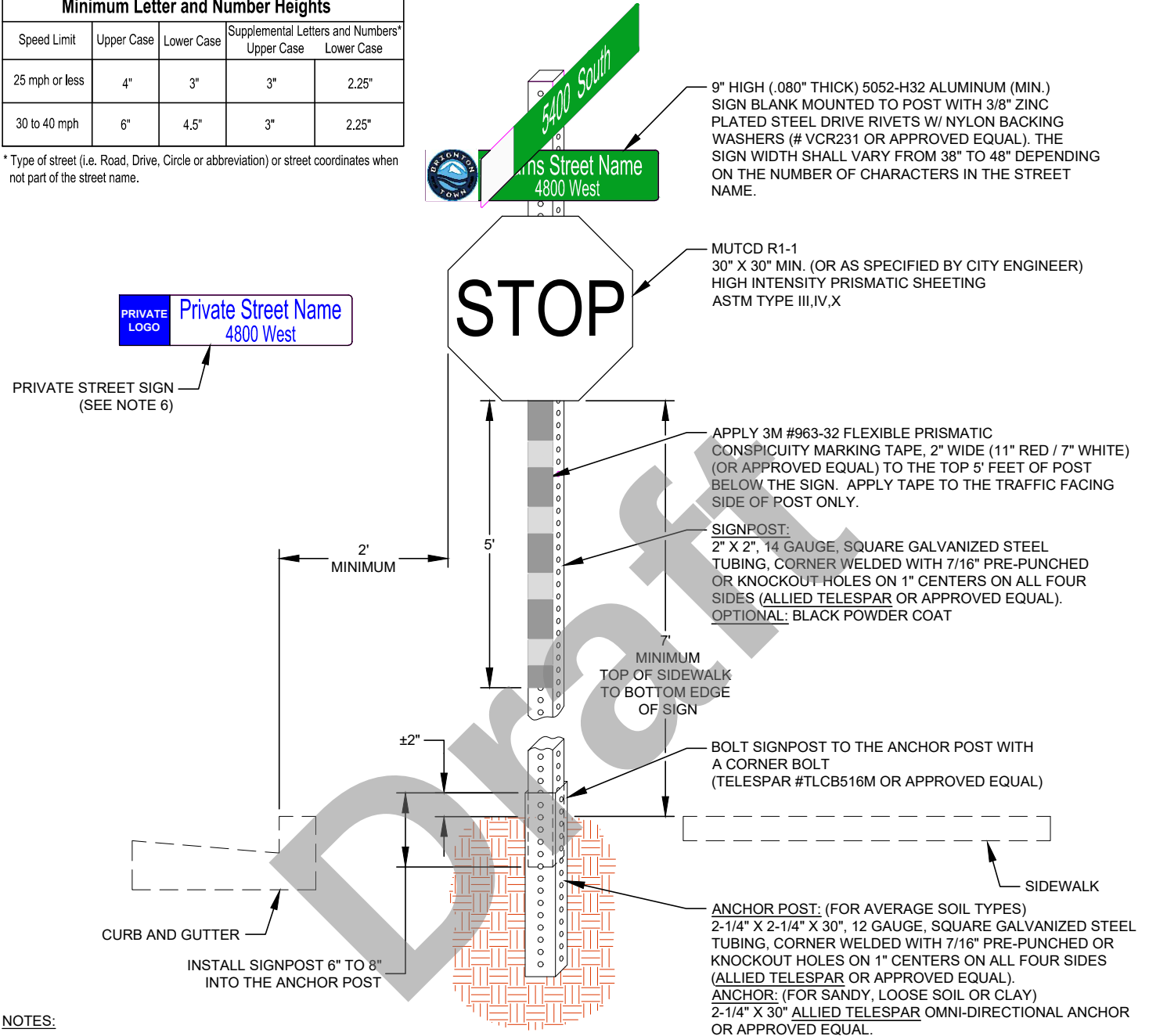
#	BY	DATE

PLAN
ST-7

Minimum Letter and Number Heights

Speed Limit	Upper Case	Lower Case	Supplemental Letters and Numbers*	
			Upper Case	Lower Case
25 mph or less	4"	3"	3"	2.25"
30 to 40 mph	6"	4.5"	3"	2.25"

* Type of street (i.e. Road, Drive, Circle or abbreviation) or street coordinates when not part of the street name.



NOTES:

1. SECURE CITY'S APPROVAL OF SIGN FORMAT AND INSTALLATION.
2. ALL MOUNTING HARDWARE, POST, AND ANCHOR MAY BE POWDER COATED BLACK (OPTIONAL).
3. INSTALL THE EDGE OF THE SIGN TWO FEET FROM THE VERTICAL EXTENSION OF THE FACE OF THE CURB AS NEAR AS POSSIBLE TO THE APPROACH CURB POINT OF CURVATURE. SIGNS SHOULD NOT OVERHANG SIDEWALK OR CURB & GUTTER.
4. ALL SIGNS SHALL BE 7' MINIMUM FROM GROUND TO BOTTOM OF SIGN.
5. LETTERING AND NUMBERING SHALL BE WHITE ON A GREEN BACKGROUND AND MADE OF HIGH INTENSITY PRISMATIC (HIP) SHEETING, ASTM TYPE III, IV, X. FONT SHALL BE ARIAL. UPPER AND LOWER CASE LETTERS SHALL BE USED. NAMED STREETS ALSO REQUIRE COORDINATES ON THE SIGN. SEE TABLE ABOVE FOR REQUIRED MINIMUM LETTER AND NUMBER HEIGHTS. SIGN SHALL HAVE A 9"X9" KEARNS CITY LOGO ON THE LEFT SIDE MADE OF HIGH INTENSITY PRISMATIC (HIP) SHEETING ASTM TYPE III, IV, X.
6. PRIVATE STREET SIGN LETTERING SHALL BE BLUE ON A WHITE BACKGROUND, MADE OF HIGH INTENSITY PRISMATIC (HIP) SHEETING, ASTM TYPE III, IV, X, AND SHALL **NOT** INCLUDE THE KEARNS CITY LOGO. THE LEFT SIDE OF THE SIGN SHALL HAVE THE WORD "PRIVATE" IN WHITE LETTERING (1" MINIMUM, UPPER CASE ARIAL FONT) ON A 9"X9" BLUE BACKGROUND MADE OF HIGH INTENSITY PRISMATIC (HIP) SHEETING ASTM TYPE III, IV, X.



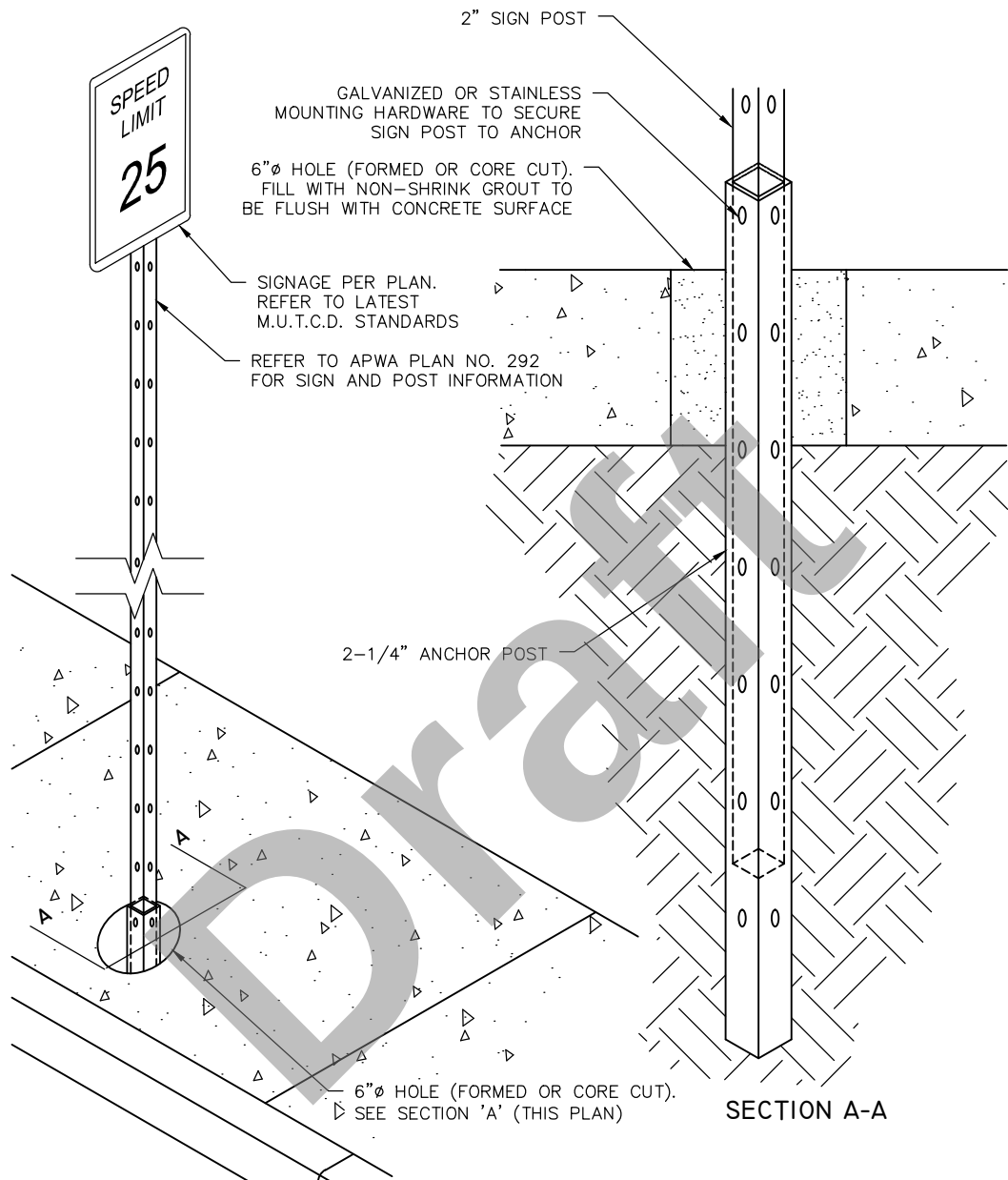
COMBINATION STREET AND REGULATORY SIGN

DRAWN 04/2026

REVISIONS

#	BY	DATE

PLAN
ST-8



NOTES:

1. Bolts, Nuts, Washers, Accessories: Stainless or galvanized steel, APWA Section 05 05 23.
2. Install sign posts on corner selected by ENGINEER.
3. Install the edge of the sign 2 feet from the vertical extension of the face of the curb as near as possible to the approach curb point of curvature.

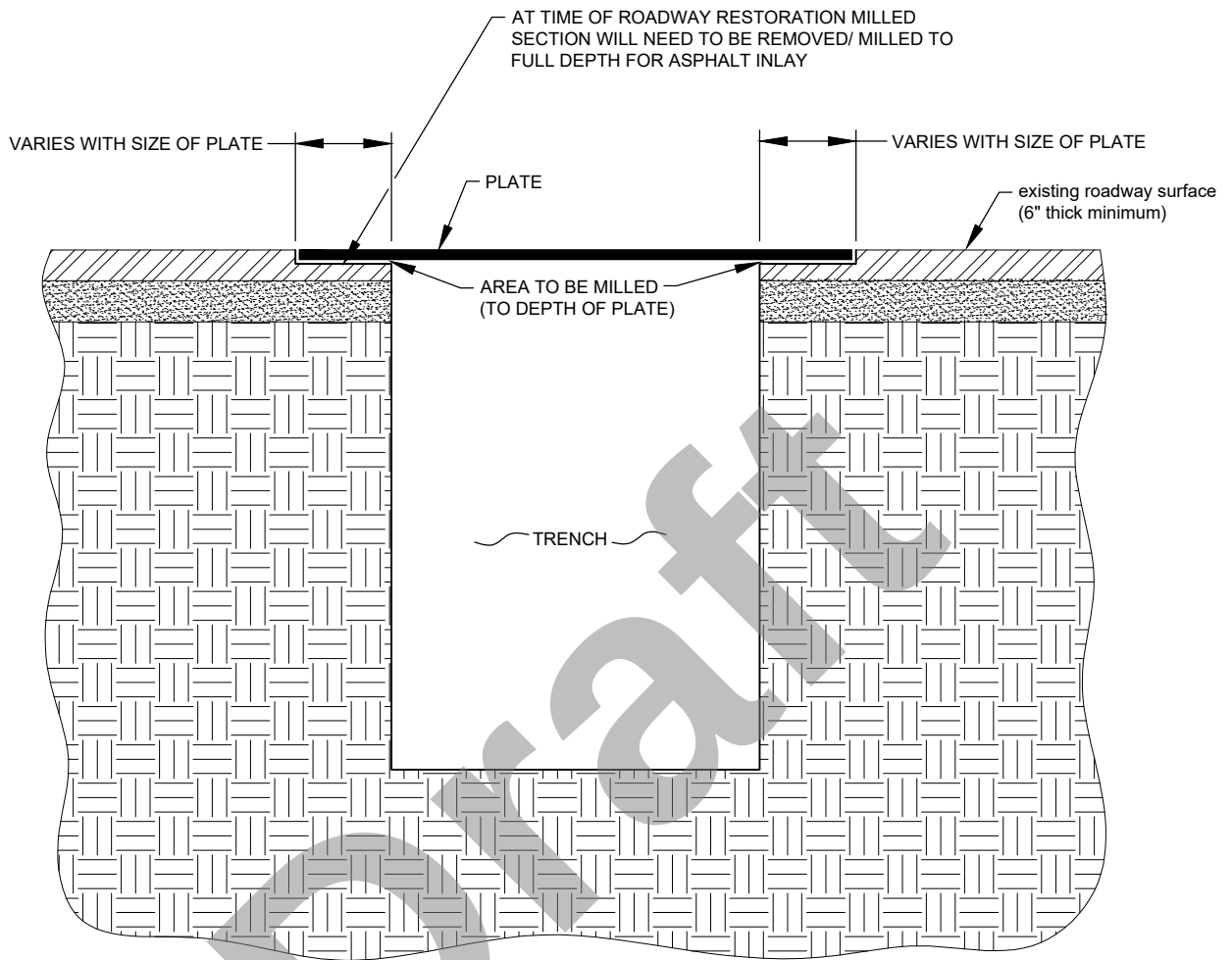
SIGN POST IN CONCRETE

DRAWN 04/2026

REVISIONS

#	BY	DATE

**PLAN
ST-9**



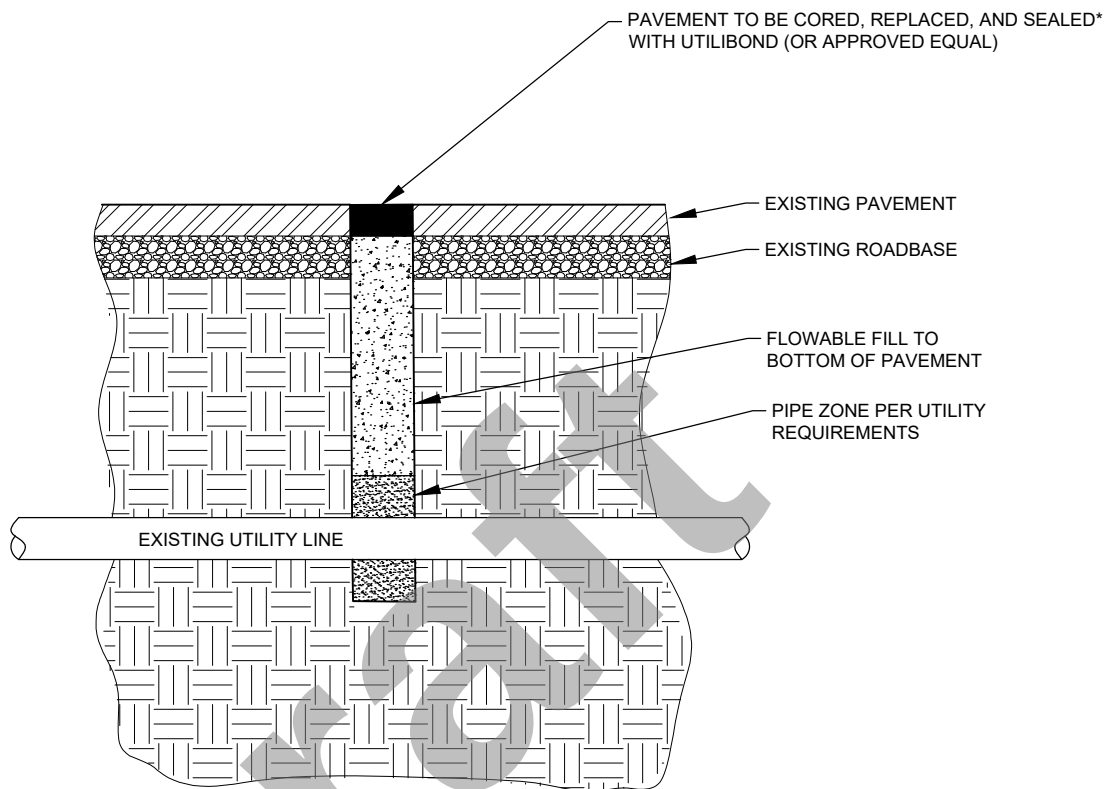
TRENCH PLATING

DRAWN 04/2026

REVISIONS

#	BY	DATE

PLAN
ST-10



*WHERE THE PAVEMENT CORE IS FOUND TO BE DEFECTIVE UPON REMOVAL, OR BECOMES DAMAGED AFTER REMOVAL AND PRIOR TO REINSTATEMENT, THE DEFECTIVE OR DAMAGED CORE SHALL NOT BE REINSTATED. PAVEMENT REPAIR SHALL BE PERFORMED USING "RAPID SET ASPHALT REPAIR MIX" (OR APPROVED EQUAL). A PAVEMENT CORE IS CONSIDERED TO BE DEFECTIVE OR DAMAGED WHEN ONE OF THE FOLLOWING CONDITIONS EXISTS:

1. THE CORE CONTAINS ANY VERTICAL CRACKS WIDER THAN 1/8-INCH; OR
2. ANY DETERIORATED PIECE OF THE CORE IS LARGER THAN 10 PERCENT OF THE OVERALL AREA OF THE CORE; OR
3. THE CORE HAS BECOME HORIZONTALLY DELAMINATED.

DEFECTIVE OR DAMAGED PAVEMENT CORES SHALL BE REMOVED FROM THE JOB SITE.



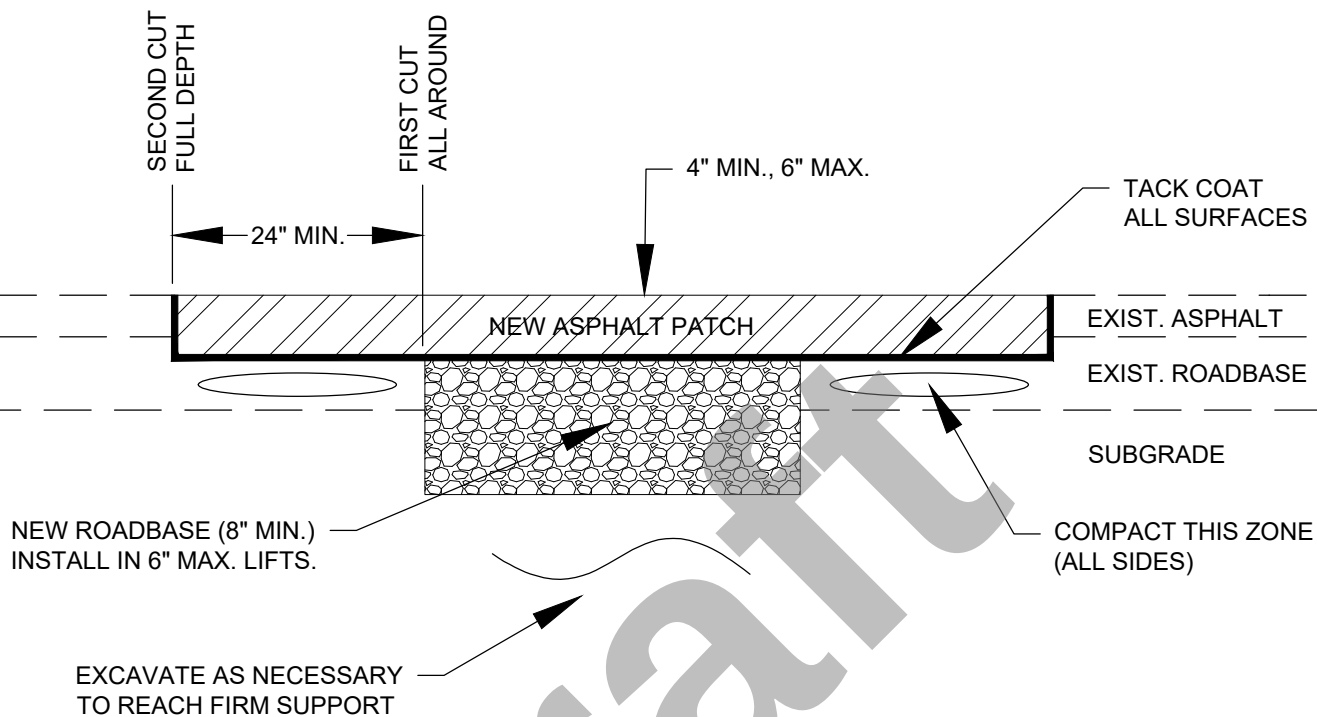
POT/KEY HOLE

DRAWN 04/2026

REVISIONS

#	BY	DATE

PLAN
ST-11



INSTALLATION SHALL BE PURSUANT TO APWA SPECIFICATION 33 05 25 PAVEMENT RESTORATION.



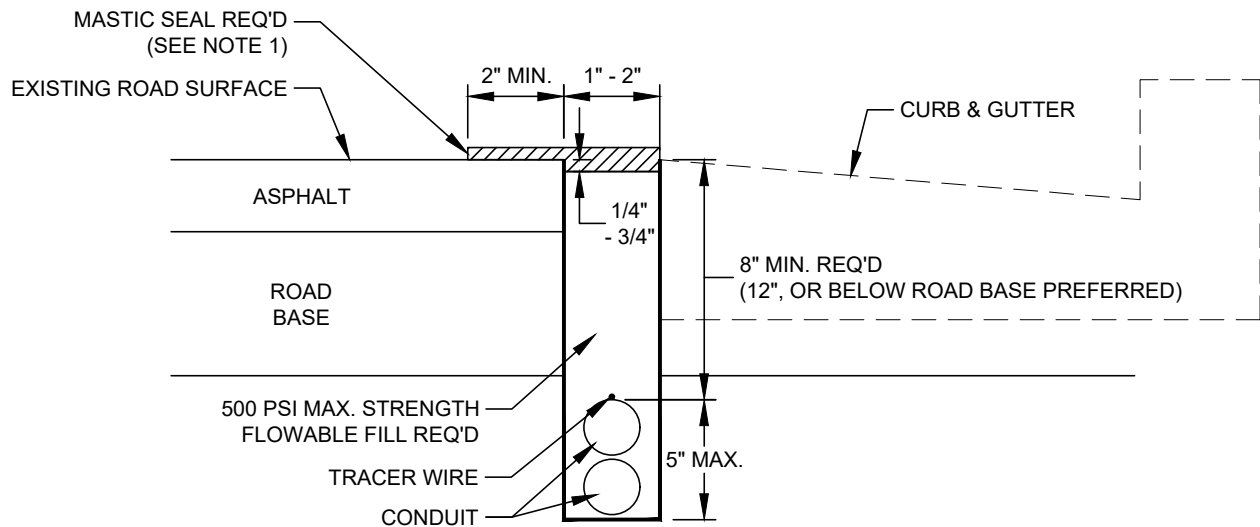
BITUMINOUS CONCRETE POTHOLE PATCH

DRAWN 04/2026

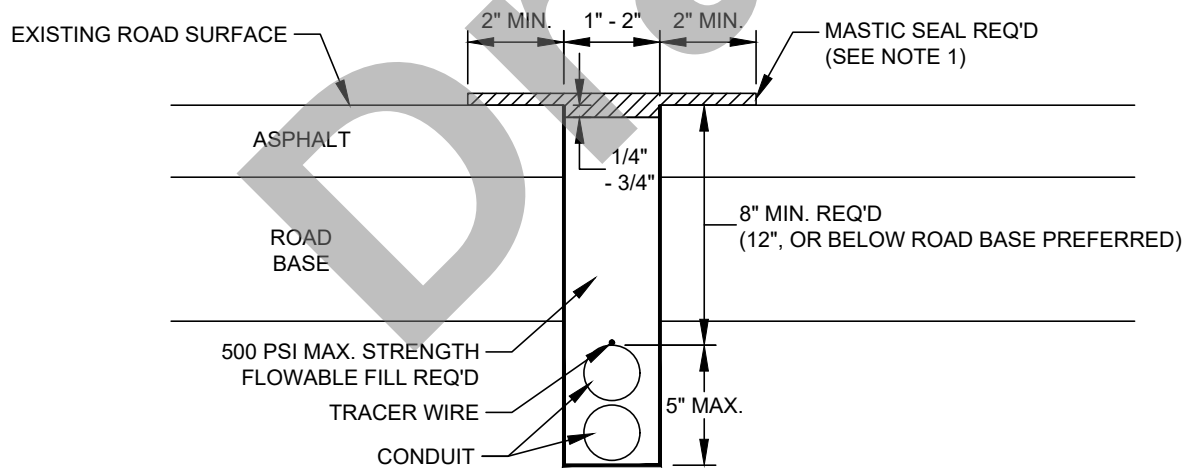
REVISIONS

#	BY	DATE

PLAN
ST-12



A MICRO-TRENCH ADJACENT TO CURB (PREFERRED)



B MICRO-TRENCH WHEN NO CURB IS PRESENT

NOTES:

1. CRAFCO MASTIC ONE, PART NO. 33339 (OR APPROVED EQUAL)



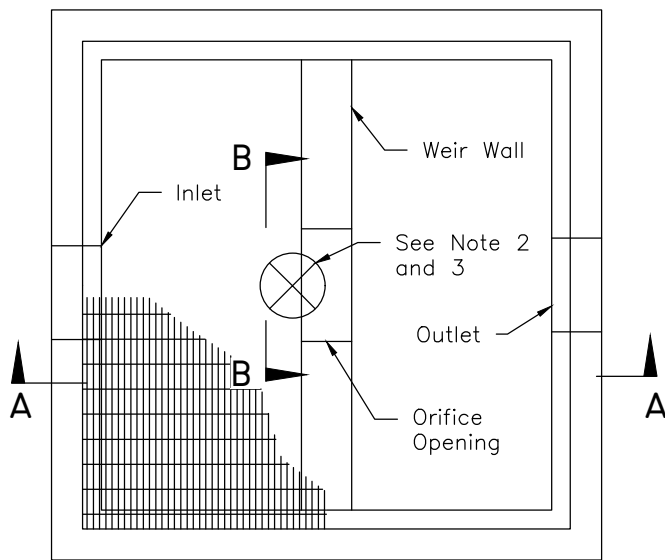
MICRO-TRENCH

DRAWN 04/2026

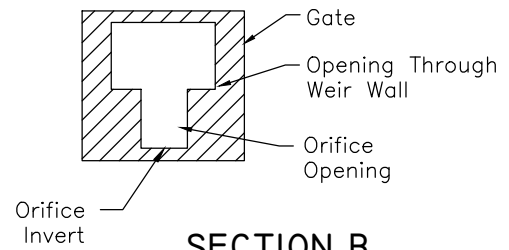
REVISIONS

#	BY	DATE

PLAN
ST-13A



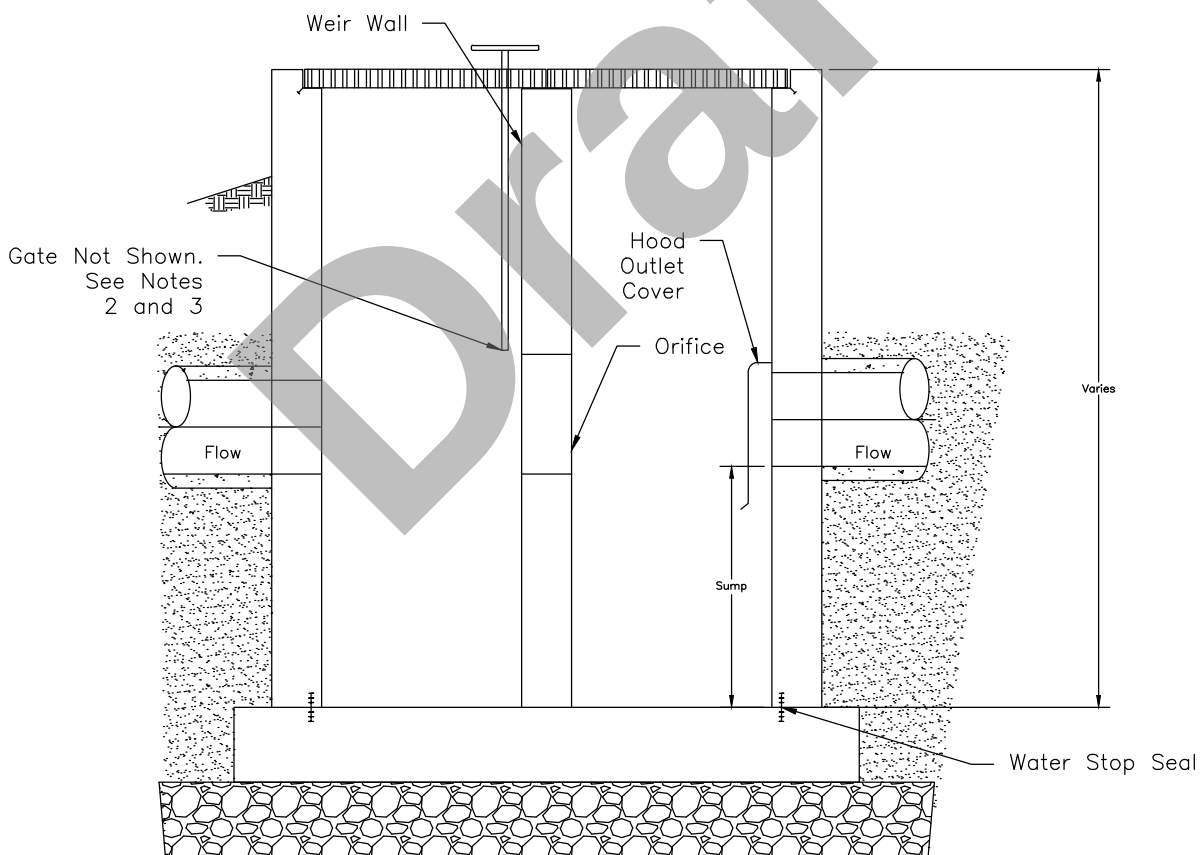
PLAN



SECTION B

NOTES:

1. Install a lock and chain on the handwheel. The Lock to be supplied by SLCo Public Works (Operations) Department.
2. Provide a gate with a stop nut on stem to hold the gate at 10" or higher above the invert of the orifice.
3. The slide gate shall be a Golden Harvest with non-rising stem and handwheel, or approved equal. Cut the grate as required for extension of frame.



SECTION A



OUTLET STRUCTURE CONFIGURATION

DRAWN 04/2026

REVISIONS

#	BY	DATE

PLAN
SD-1



Ordinance Amendment

Meeting Body: Planning Commission

Meeting Date: October 21, 2026

File Number & Project Type:

OAM2026-001672

Amendments to sections 19.24.050, 19.24.060 and 19.46.070 to create clear standards to protect roadways from snow shedding off rooftops in the Town of Brighton.

Planner:

Curtis Woodward

Key Findings:

- Current code does not create clear expectations for applicants or staff.
- The proposed amendment establishes clear, enforceable standards.

Staff Recommendation:

Positive recommendation to the Council

Exhibits:

- A. Illustrations
- B. Proposed ordinance

PROJECT DESCRIPTION

Sections 19.24.050.D and 19.24.060.D of the Brighton code currently state, "Site plans and building designs must resolve snow release issues to the satisfaction of the Chief Building Official." The wording of this provision is problematic in that neither the International Building Code nor International Residential Code provide specific requirements for snow release from roofs. The proposed ordinance amendment establishes a clear purpose, "to prevent snow shedding off the roof onto a right of way or onto adjoining property." It also sets a standard that "buildings shall be designed with roofs that shed snow away from any right of way, adjoining property, or driveway on adjoining property," with a relief clause applicable to properties where this is not feasible.

PUBLIC INPUT

On September 16, the planning commission continued discussion of the proposed amendment and provided direction to planning staff regarding a "consensus" version of the snow shedding ordinance. Instructions given to the staff were:

1. Draft the code such that additional setbacks did not apply to buildings that retained snow by using a flat roof system.
2. For relatively flat lots with pitched roofs, the setback from property/right-of-way line would be based on 1.5 times the height from grade to lowest edge of roof surface.
3. For lots with 15% slope or more, the setback from property/right of way line would be based on 1.75 times the height from grade to lowest edge of roof surface.
4. The vertical distance of roof overhang from wall of the building shall be added to calculated distances, so the final setback can easily be measured from the wall.
5. An exception process including review by the planning commission should be added as an option for applicants who propose alternative methods to control show shedding.
6. Graphics should be added to the code to clearly illustrate the requirements to the public.

ANALYSIS AND RECOMMENDATION

Analysis and Summary:

The risk of snow shedding from roofs causing injury to persons and/or blocking vehicular access ways is a concern that Brighton would like to address in the ordinance. Attached to this staff is the revised draft ordinance, including 2 graphics/illustrations.

PLANNING COMMISSION OPTIONS:

As a recommending body to the Council for zoning map amendments and text changes, the planning commission has the following options:

1. **Approval:** The planning commission recommends approval of application OAM2026-001672 to amend Sections 19.24.050.D, 19.24.060.D, and 19.46.070.G of the Brighton code as proposed.
Staff Recommendation
2. **Approval with changes:** The planning commission recommends approval of application OAM2026-001672 to amend Sections 19.24.050.D, 19.24.060.D, and 19.46.070.G of the Brighton code with the following changes:
 - a. ...
3. **Denial:** The planning commission recommends denial of application OAM2026-001672 to amend Sections 19.24.050.D, 19.24.060.D, and 19.46.070.G of the Brighton code as proposed.

ORDINANCE 2026-_____

File No._OAM2026-001672_____Date: _____

**AN ORDINANCE OF THE TOWN OF BRIGHTON AMENDING SECTIONS
19.04.030, 19.20.020, 19.24.050, 19.24.060 AND 19.46.070 TO CREATE
STANDARDS TO KEEP SNOW ON PROPERTY AND PROTECT ROADWAYS,
NEIGHBORING PROPERTIES AND DRIVEWAYS FROM SNOW RELEASE
FROM ROOFS.**

RECITALS

WHEREAS, the Town of Brighton is a municipality and has authority to regulate land uses and development pursuant to Utah Code Ann. Subsection 10-20-101(2); and

WHEREAS, Section 19.02.030.A(4) of the Brighton code states that one of the purposes of the Brighton Zoning Ordinance is “To regulate responsible alteration and development of land that promotes safety for people, wildlife, water, and the natural landscape;” and

WHEREAS, Sections 19.24.050.D and 19.24.060.D of the Brighton code state, “Site plans and building designs must resolve snow release issues to the satisfaction of the Chief Building Official;” and

WHEREAS, The Town Council finds it necessary to set clearer standards to prevent snow release from rooftops from creating public safety issues on roadways and to ensure that snow remains on the property.

BE IT ORDAINED BY THE BRIGHTON TOWN COUNCIL as follows:

1. Sections 19.04.030, 19.20.020, 19.24.050, 19.24.060, and 19.46.070 are amended and read as attached hereto as **Exhibit A**. The amendments made therein are designated by underlining the new words, with words being deleted designated by brackets with a line drawn through said words.
2. Effective Date. This Ordinance will take effect immediately upon posting and publication as required by law.

PASSED AND ADOPTED this _____ day of _____ 2026.

BRIGHTON TOWN COUNCIL

By: Scotty John, Mayor

ATTEST

Kara John, Town Clerk

Voting:

Council Member Bossard	voting ____
Council Member Brunhart	voting ____
Council Member John	voting ____
Council Member Keighley	voting ____
Council Member Zuspan	voting ____

EXHIBIT A

19.04.030 GENERAL SITE STANDARD DEFINITIONS

Site Development terms used in Title 19 are defined as follows:

.....

"Yard" means a space on a lot, other than a court, unoccupied and unobstructed from the ground upward by buildings or structures[, ~~except as follows:~~

- ~~A. Fences and walls that conform with this code.~~
- ~~B. Landscape elements including trees, shrubs, and other plants.~~
- ~~C. Planter boxes or masonry planters not exceeding twenty four inches (24") in height.~~
- ~~D. Cornices, eaves, belt courses, buttresses, and other similar architectural features may project into any yard not more than two feet (2').~~
- ~~E. Bay windows, cantilevered floors, and fireplace structures may project into any yard not more than two feet (2'), provided that they are not wider than eight feet (8') wide.~~
- ~~F. Porches, door stoops, awnings, fire escapes, and stairways may project into an interior side yard not more than two feet (2') and a front, rear, or corner side yard not more than four feet (4').~~
- ~~G. Accessory structures subject to this Title].~~

19.20.020 SPECIAL EXCEPTIONS

A. Submittal and Procedure.

1. Submittal of Application. All applications shall be filed in accordance with the requirements of Chapter 19.16.
2. MAILED NOTICE. Courtesy notice shall be mailed ten (10) days prior to the public meeting to adjacent and surrounding Property Owners within three hundred feet (300') of the subject property's boundary. The Property Owner or agent must provide the Planning Department with an electronic list of each Property Owner of record of each Parcel located entirely or partly within three hundred feet (300') of the subject property's boundary. The addresses for neighboring Property Owners must be as shown on the most recently available Salt Lake County tax assessment rolls. Any defect in such courtesy mailed notice shall not affect or invalidate any hearing or action on the Variance.
3. Special Exceptions Approved by the Land Use Hearing Officer.
 - a. The Land Use Hearing Officer may consider approval of the following special exceptions:
 - 1) Where a zone boundary line divides a lot in single ownership, extension of a use allowed on either portion of the lot a maximum of fifty feet (50') into the other portion of the lot.
 - b. The Land Use Hearing Officer shall consider a proposed special exception in a public meeting.

- c. During or after the close of the public meeting, the Land Use Hearing Officer may take action in the form of approval, modified approval or denial in writing.
 - d. Based upon the evidence presented at the meeting, the Land Use Hearing Officer shall evaluate the application to determine that the exception is consistent with the purposes of this Ordinance and will not be detrimental to the health, safety or general welfare of persons residing or working, or injurious to property in the vicinity
 - 4. Special Exceptions Approved by the Planning Commission.
 - a. The Planning Commission may consider approval of the following special exceptions:
 - 1) Exceptions as set forth in the Foothills and Canyons Overlay Zone, Chapter 19.38.
 - 2) **Exceptions as set forth in Section 19.26.070.G related to snow release.**
 - b. The Planning Commission shall consider a proposed special exception in a public meeting.
 - c. Having heard the matter at a public meeting, the Planning Commission may take action in the form of approval, modified approval or denial on applications for a special exception.
- 2. Conditions. The Land Use Hearing Officer or Planning Commission may impose such conditions and restrictions upon the location, construction, design or use of the property, as necessary or appropriate to protect the public interest and adjacent property.
- 3. Appeals.
 - 1. Any person adversely affected by a decision of the Planning Commission regarding a special exception may appeal that decision to the Land Use Hearing Officer.
 - 2. Any person adversely affected by a decision of the Land Use Hearing Officer regarding a special exception may appeal that decision to the 3rd District Court of Salt Lake County.

19.24.050 DEVELOPMENT STANDARDS FOR SINGLE-FAMILY RESIDENTIAL DWELLINGS IN THE FORESTRY ZONES

- A. Gross Square Feet of the Combined Primary and Accessory Structures. The maximum gross square feet of the combined primary and accessory structures on a property shall be five thousand square feet (5,000 sq. ft.).
- B. Setbacks. The minimum setback shall be eight feet (8') from all property boundaries and ten feet (10') from the nearest edge of any right-of-way.
 - 1. Garages Fronting the Street. If the garage entrance is facing the front lot line with a minimum setback of ten feet (10') the area between the front of garage and the right-of-way may not be used for parking of extra vehicles, unless to meet minimum parking requirements for single-family lots.

~~[Snow Storage. Adequate snow storage must be provided in the front yard setback for all parking, vehicle entrances and walkways. Snow storage must be provided on the property.]~~

- C. Building Height. Except as otherwise specifically provided in this Title, no building or structure shall exceed thirty feet (30') The elevation shall be determined using a certified topography survey with a maximum contour interval of two feet (2').
- D. Snow Release. Site plans and building designs must ~~[resolve snow release issues to the satisfaction of the Chief Building Official.]~~ **account for snow release to keep snow on the property and prevent snow shedding off the roof onto a right of way or onto adjoining property as set forth in Section 19.46.070.G.**

19.24.060 DEVELOPMENT STANDARDS FOR ACCESSORY STRUCTURES IN THE FORESTRY ZONES

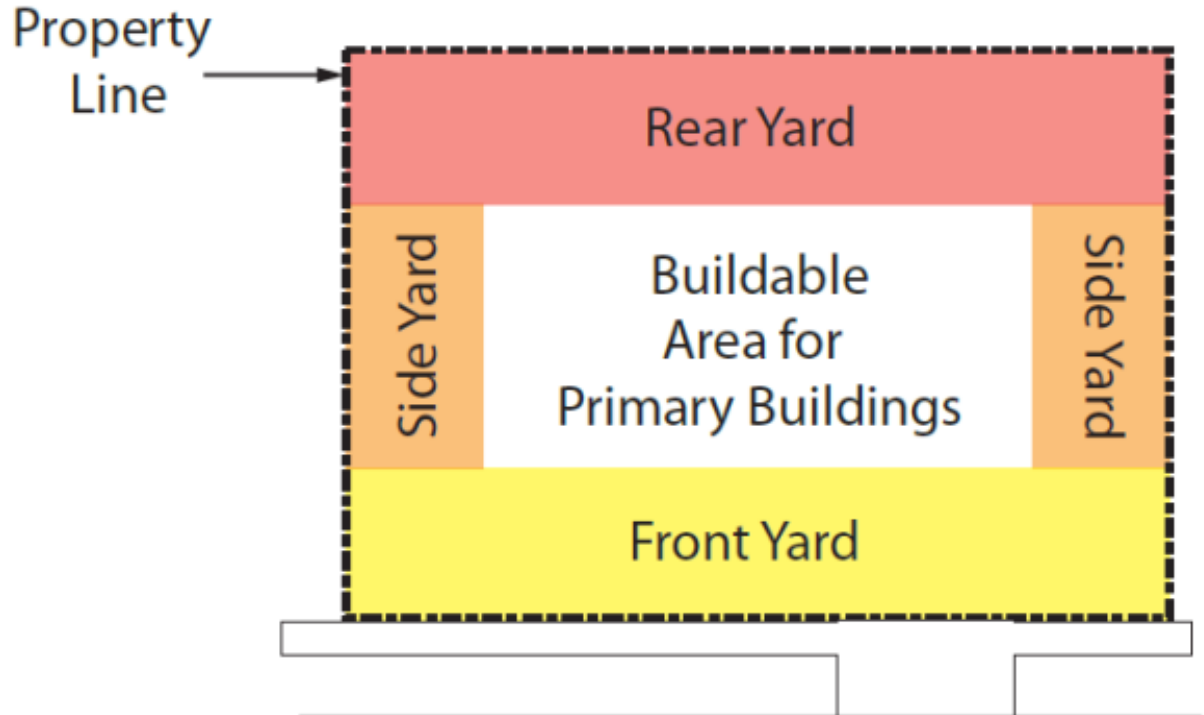
- A. Building Footprint. The maximum building footprint allowed for an accessory structure shall be eight hundred square feet (800 sq ft).
- B. Setback from Primary Structure. An accessory structure shall be set back at least six feet (6') from the primary structure on the lot.
- C. Building Height. The maximum height for an accessory structure shall be twenty feet (20').
- D. Snow Release. Site plans and building designs must ~~[resolve snow release issues to the satisfaction of the Chief Building Official.]~~ **account for snow release to keep snow on the property and prevent snow shedding off the roof onto a right of way or onto adjoining property as set forth in Section 19.46.070.G.**
- E. Accessory structures shall not encroach on any required easement or right-of-way.

19.46.070 GENERAL SITE STANDARDS

- A. Lot Frontage Required. Every lot shall have frontage upon a dedicated or publicly approved road or street, or right-of-way providing direct access to a dedicated or publicly approved road or street. The required lot frontage shall be not less than half of the minimum lot width required in the zone as measured at the front property line except for lots that have been approved as a flag lot.
- B. Yards and Setbacks Measurement.
 - 1. Yards and setbacks shall be measured according to the lengths required in the underlying zone.
 - 2. Yards and setbacks shall be measured from the property's boundary line, as determined by the legal description or subdivision plat on record at the Salt Lake County Recorder's Office, to the exterior foundation of the proposed or existing building.
- C. Required Yards for One Building Only.
 - 1. No required yard or setback area for a lot or building shall be considered as providing the required yard or setback for any other lot or building.

2. No area required to meet the lot width, area, setback, or other requirements of this Ordinance for any lot or building may be divided, sold, or leased separate from such lot or building.
- D. Required Yards to be Unobstructed.
1. All required setback areas shall be open to the sky and unobstructed except for permitted and approved accessory structures and structures and for projections ~~[allowed under section 19.46.080 (I.) Projections.]~~ **as follows:**
 - a. **Landscape elements including trees, shrubs, and other plants.**
 - b. **Planter boxes or masonry planters not exceeding twenty-four inches (24") in height.**
 - c. **Cornices, eaves, belt courses, buttresses, and other similar architectural features may project into any yard not more than two feet (2').**
 - d. **Bay windows, cantilevered floors, and fireplace structures may project into any yard not more than two feet (2'), provided that they are not wider than eight feet (8') wide.**
 - e. **Porches, door stoops, awnings, fire escapes, and stairways may project into an interior side yard not more than two feet (2') and a front, rear, or corner side yard not more than four feet (4').**
 - f. **Accessory structures subject to this Title**
 2. Walls and fences, complying with the requirements of this Ordinance and required approval by a Land Use Authority, as provided herein may encroach into required yards.
- E. Buildable Area. Every lot or parcel created after the effective date of this Ordinance shall have a buildable area sufficient to establish a building or structure thereon, which meets the minimum standards of the Zone in which the lot or parcel is located. Buildable areas shall be required to be identified for each lot on all subdivision plats and plans for the purposes of ensuring that an adequate buildable area is provided, and to inform future owners of the allowable buildable area. Any area located within an easement may not be included within any buildable area unless the easement beneficiary executes and records a release of the easement in a form acceptable to the Municipal Attorney.

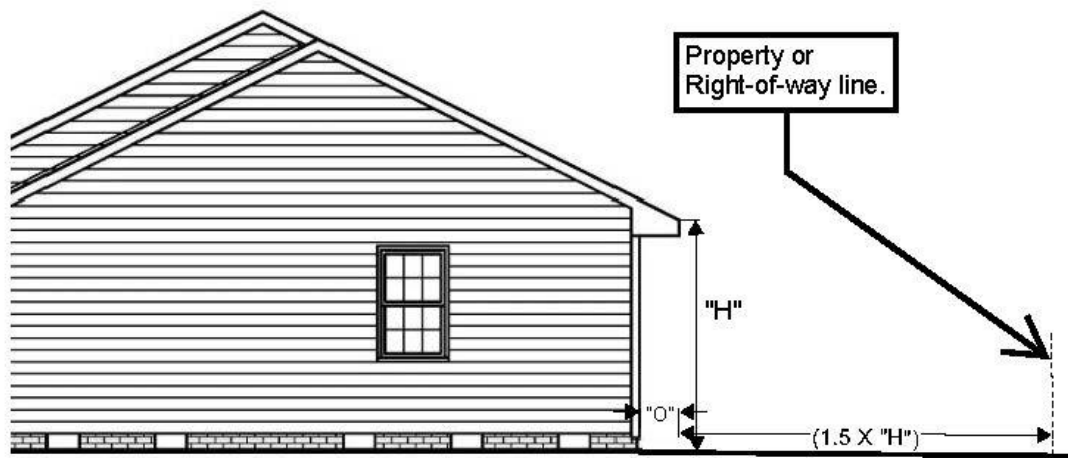
Figure 19.46.1: Buildable Area, Required by the Underlying Zone



- F. ~~[Snow Storage and Drainage. Where snow removal and storage may pose a problem to traffic circulation or reduce the amount of adequate parking for winter business, the property owner shall designate a snow storage area and remove snow as necessary.~~
- ~~1. Required Area: Snow storage areas not less than thirty-three percent (33%) of the parking, sidewalk, and driveways areas shall be incorporated into the site design.~~
 - ~~2. Location:~~
 - ~~a. Snow storage shall be located to avoid piling of snow against significant trees.]~~
- F. **Snow Storage, Removal and Release. Because snow storage and removal and the release of snow from roofs may pose problems to traffic circulation, parking, and public safety, the property owner shall design the site to accommodate for the removal and storage of snow as well as the release of snow from building roofs as set forth below:**
- 1. Snow storage.**
 - a. Commercial Snow Storage. Commercial properties are required to incorporate into the site design area(s) totaling not less than thirty-three percent (33%) of the parking, sidewalk and driveway areas for snow storage. Snow storage shall be located to avoid piling of snow against significant trees.**
 - b. Residential Snow Storage. Adequate snow storage must be provided in the front yard setback for all parking, vehicle entrances and walkways. Snow storage must be provided on the property**

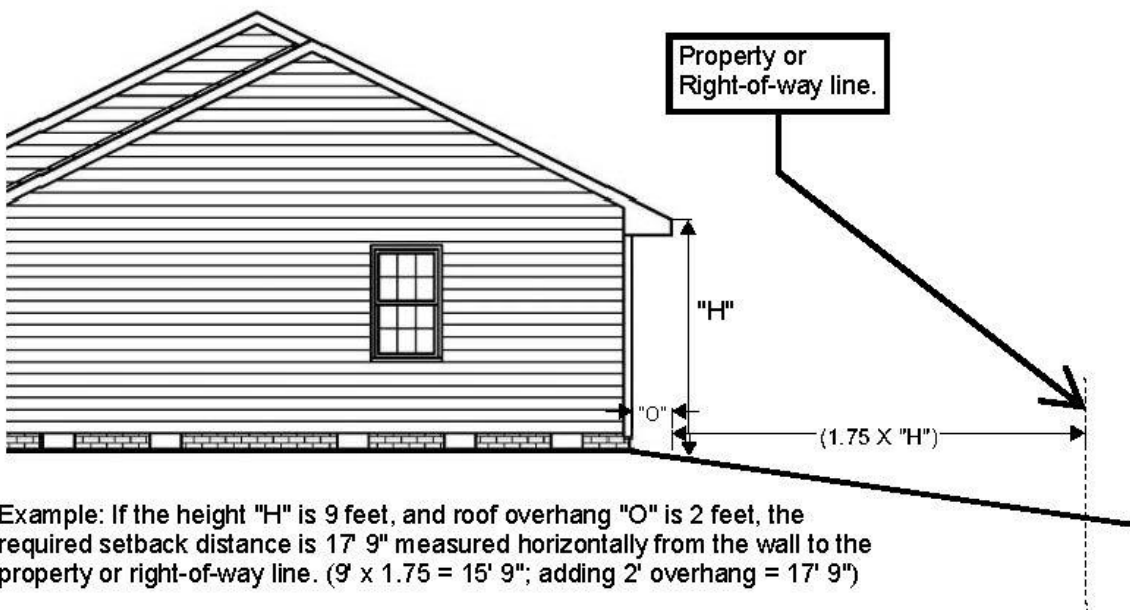
2. Snow removal. Snow may not be removed from any property in such a manner as to deposit snow onto a right of way.
3. Snow release. In addition to the minimum setbacks required in Section 19.24.050 (B), impacts of snow release from roofs shall be mitigated through the following:
 - a. Except as allowed below, buildings shall be designed with roofs that keep snow on the property and do not shed onto a right of way, adjoining property, or driveway on an adjoining property.
 - b. If design and orientation of the roof as outlined in (a) above is not feasible due to the size, shape and/or orientation of the lot, the following shall be required:
 - i. The required setback distance for each side of the building on which roof slopes downward toward the driveway, right of way or adjoining property shall be increased to a distance equal to 1.5 times the vertical distance between the lowest point of the roof surface to the lowest point of grade directly below the eave, plus the horizontal distance from the outer edge of the eave to the wall post supporting the roof. (See figure 19.46.2)
 - ii. If the ground between the building and the right of way or property line slopes downward from the building with 15% or greater slope, the setback shall be increased to a distance equal to 1.75 times the vertical distance between the lowest point of the roof surface and the lowest point of the grade directly below the eave, plus the horizontal distance from the outer edge of the eave to the wall or post supporting the roof. (see figure 19.46.3)
 - iii. If the setback outlined in subparagraphs (i) and (ii) is not achievable based on constraints of the property, an applicant may submit a Special Exception request to the planning commission that includes a plan prepared by a qualified engineer showing the manner in which snow will be retained on the property, using tools such as roof design, berms, and other physical methods to be incorporated into the building and/or site design. In rendering a decision regarding the Special Exception, the planning commission shall consider:
 - a) A written recommendation from the town engineer,
 - b) The physical and topographical features of the subject property, and
 - c) Proximity of the proposed building to neighboring buildings or right of ways.
 - c. Snow may be allowed to shed on adjoining property upon obtaining an easement from the adjoining property owner to receive and store the snow.

Figure 19.46.2: Required snow shedding setback



Example: If the height "H" is 9 feet, and roof overhang "O" is 2 feet, the required setback distance is 15' 9" measured horizontally from the wall to the property or right-of-way line. ($9 \times 1.5 = 13' 6"$; adding 2' overhang = 15' 6")

Figure 19.46.3: Required snow shedding setback with 15%+ slope



Example: If the height "H" is 9 feet, and roof overhang "O" is 2 feet, the required setback distance is 17' 9" measured horizontally from the wall to the property or right-of-way line. ($9 \times 1.75 = 15' 9"$; adding 2' overhang = 17' 9")

G. Buildings to be on Lots. All buildings and structures, as defined herein, shall be located and maintained on a separate legal lot, such lot meeting all requirements of ~~[the]~~ Title 19, including the requirements of the Zone in which the lot is located.

H. Fencing.

1. Fencing Setbacks. A fence, hedge, wall, column, pier, post or any other similar structure for fencing or any combination of such structures is permitted in the required setback if it meets the following conditions:
 - a. No fence, hedge, or wall extends beyond or across a property line without a recorded agreement with the abutting property owner; and
 - b. Only one fence or wall shall be allowed per property line. Double fences, walls, or combination thereof are prohibited.
2. Fencing Materials.
 - a. Fencing materials shall be made of high quality, durable, materials that require minimal maintenance. All fencing shall follow the design requirements set forth in Chapter 19.38 Foothills and Canyons Overlay Zone of this Title.
3. Prohibited Fencing Materials. The following fencing materials are prohibited:
 - a. Materials not typically used or designated/manufactured;
 - b. Scrap material;
 - c. Security wire; or
 - d. Electrified fencing.

I. Landscaping. Landscaping shall follow the requirements set forth in Chapter 19.38 Foothills and Canyons Overlay Zone of this Title.

J. Accumulation of Junk.

1. The accumulation of junk is prohibited in the municipality unless occurring in a fully enclosed and permitted structure.
2. Exceptions. The following exceptions apply:
 - a. A property owner may have up to two (2) inoperable vehicles on their property, provided
 - 1) The vehicle(s) are parked on private property on parking surface in compliance with Chapter 19.48;
 - 2) The vehicle(s) are secured with the windows closed, the trunk and hood closed, and the doors locked, and all four tires shall be on the ground;
 - 3) The vehicle(s) are not exposing jagged metal or other safety hazards due to damage;
 - 4) The vehicle(s) are completely on private property and not encroaching on any sidewalk, park strip, or public street; and
 - 5) The vehicle(s) do not visibly drip any fluids such as oil, transmission fluid, brake fluid, or coolant onto the parking surface or its surroundings; and
 - b. A property owner may have up to (2) two inoperable ~~[vehicle]~~vehicles that do not meet the requirements of Subsection 19.46.070.J.2.a.

Subsections ii. and iii. for a total of fourteen (14) days while the vehicle is undergoing major engine, transmission or similar work. At the end of the fourteen (14-day timeframe, the vehicle shall be brought back into compliance with Subsection 19.46.070.J.2.a.

- K. Signs. Any development shall follow the sign standards set forth in Chapter 19.52 of this Title.

SUMMARY OF
BRIGHTON
ORDINANCE NO. 2026-

On _____, 2026, the Brighton Town Council enacted Ordinance No. 2026-_____, amending Sections 19.04.030, 19.20.020, 19.24.050, 19.24.060, and 19.46.070 to create standards to protect roadways and driveways from snow release from roofs.

BRIGHTON TOWN COUNCIL

By: Scotty John, Mayor

ATTEST

Kara John, Town Clerk

Voting:

Council Member Bossard	voting ____
Council Member Brunhart	voting ____
Council Member John	voting ____
Council Member Keighley	voting ____
Council Member Zuspan	voting ____

A complete copy of Ordinance No. 2026-_____ is available in the office of the Town Clerk, 7688 S. Big Cottonwood Canyon Rd., Brighton, UT 84121.