

Construction and Excavation Standards for Work in the Public-Rights-of-Way

Table of Contents

- I. Purpose
- II. Location of Facilities
 - A. General
 - B. Above-ground Structures
 - C. Underground Access Structures (Vaults and Hand-Holes)
- III. Construction Standards
 - A. General
 - B. Pavement Removal
 - C. Boring
 - D. Excavation and Backfill
 - E. Repairing Streets
 - F. Sidewalk, Curb, and Gutter
 - G. Driveways
 - H. Landscape Areas
 - I. Street Closures
 - J. Traffic Control
 - K. Pedestrian Access
- IV. Restricted Rights-of-Way

Appendix

- Exhibit A– Utility Boundary Areas
- Exhibit B – Testing Requirements
- Exhibit C – Approach to Street Repairs
- Exhibit D – Example of Lane Closure, Traffic Control Setup
- Exhibit E – Restricted Rights-of-Way Map (main and core highlighted)
- Exhibit F – Minimum Street Sections
- Exhibit G – Sidewalk, Curb, Gutter, and Valley/Cross Pan Specifications
- Exhibit H – Driveways/Alleys

Construction and Excavation Standards for Work in the Public-Rights-of-Way

I. Purpose

This document establishes the minimum construction and excavation standards for all work in the public right-of-way. All proposed work submitted for approval under Title 21 of the city of aspen municipal code shall conform to the criteria set forth herein.

Construction and Excavation Standards for Work in the Public-Rights-of-Way

II. Location of Facilities

A. General

1. The location of all facilities within the public right of way shall comply with the details and specifications shown on the construction plans approved by the city engineer or designee.
2. It is city policy to discourage the placement of utility lines and other facilities within landscaped areas unless there is no other reasonable location for the placement of such lines and facilities.
3. The utility alignment shall not vary greater than eighteen inches (18") plus $\frac{1}{2}$ of the diameter of the proposed conduit from the approved design horizontal alignment or thirty-six inches (36") plus $\frac{1}{2}$ of the diameter of the proposed conduit from the approved design vertical alignment without prior city engineer approval.
4. The entire conduit shall be contained within the described tolerance range. If a variance in the approved alignment which exceeds the acceptable alignment tolerance as defined above is required to clear a conflict, the permittee shall, prior to proceeding:
 - a) Notify the city engineer or designee within twenty four (24) hours of identifying the conflict.
 - b) A city inspector may approve the variance in the field. Once a variance is approved by the city, it shall become the approved alignment. A city inspector shall be on site during the variance work.
5. If the designed alignment conflicts with other facilities not shown on the approved plans, the permittee shall submit an alignment modification request and the change shall be approved by the city engineer or designee prior to proceeding.
6. All underground cables and wires shall be placed within a conduit sleeve and have a warning ribbon placed in the trench eighteen (18) inches above the utility.
7. All underground installations shall have a minimum of thirty inches (30") of cover below the roadway surface.
8. The permittee's proposed facilities shall be located outside the restricted areas as defined by Exhibit A.

B. Above-ground Structures

1. A detailed plan shall be required for all above-ground structures. The plan shall show dimensions of the cabinet, base, and proposed location.

Construction and Excavation Standards for Work in the Public-Rights-of-Way

2. A permittee shall locate all above-ground structures outside the public right-of-way within a private easement on the property being served.
3. All above ground-structures on private property shall be screened with landscaping while maintaining minimum access clearances, as approved by the city engineer or designee. Existing above-ground structures shall be exempt from this requirement.
4. The location of above-ground structures shall not interfere with sight distance requirements for intersecting streets and access drives.
5. Above-ground structures shall be located to minimize the aesthetic impact to the landscape.

C. Underground Access Structures (Vaults and Hand-Holes)

1. Underground access structures shall be placed in line with the utility alignment. Horizontal adjustments to accommodate underground access structures are discouraged and shall only be permitted when conditions warrant at the city engineer's discretion. The placement of each access structure shall require field approval prior to placement.
2. The minimum separation between access structures shall be five hundred feet (500'). An exemption to this provision shall be granted by the city engineer if the following criteria are met:
 - a) The access structure is required to provide service to a building or a customer within a building;
 - b) The width of the property frontage does not allow the permittee to meet the minimum separation requirement while still providing service at a reasonable cost;
 - c) The permittee has no access structure already located within one hundred feet (100') of the boundaries of the property to be served;
 - d) Other conduit owned or leased by the permittee is not available for the permittee's use; and
 - e) Options to provide service to the building from other directions are not reasonably available to the permittee. In no case shall an exemption granted pursuant to this section authorize access structures to be separated by less than two hundred fifty feet (250').
3. Access structures shall be placed a minimum of fifty feet (50') from any intersection, unless otherwise approved by the city engineer or designee.
4. The maximum size of an access structure and access lid shall be the minimum necessary for the facilities being installed, as determined by the city engineer or designee. In making its determination, the city

Construction and Excavation Standards for Work in the Public-Rights-of-Way

- engineer or designee shall consider any information submitted by the permittee to justify the size of the access structure or access lid.
5. Access lids located in landscaped areas shall be buried in mulch, rock beds, or sod, unless otherwise approved by the city engineer or designee.
 6. Access lids placed in sidewalks shall be flush with the existing surface and capable of being filled with like material.
 7. All access lids within travel lanes shall be placed outside of the wheel track as defined in Exhibit C.
 8. Access lids shall be placed at an elevation of +0 inch to $-3/8$ inch relative to the surrounding pavement surface.

III. Construction Standards

A. General

1. Testing, in compliance with the city's testing schedule, which is attached hereto as Exhibit B, shall be performed by an independent testing company acceptable to the city engineer or designee, and results shall be provided to the city engineer or designee within two (2) working days of completion of testing and prior to the next phase of construction. For example, a subgrade test is required prior to asphalt placement.
2. Any damage not documented during the pre-construction inspection shall be repaired by the permittee at the sole expense of the permittee.
3. Utility markings shall be limited to the boundaries of the construction area and shall be removed by a method approved by the city engineer within forty-five (45) days of the completion of work.
4. A permittee shall advise the city engineer or designee at least forty-eight (48) hours in advance of the date work will be started and shall notify the city engineer or designee at least twenty-four (24) hours in advance if this date is changed or cancelled. Inspections required on the permit shall be scheduled by permittee at least twenty-four (24) hours in advance.
5. Each permittee shall utilize erosion and sediment control measures to prevent erosion and degradation of water quality.
6. The city shall restrict any work within the public right of way from November 15 to April 1.
7. Each permittee shall maintain its work site so that:
 - a) Trash and construction materials are contained and not blown off the work site.
 - b) Trash is removed from a work site often enough so that it does not become a health, fire, or safety hazard.

Construction and Excavation Standards for Work in the Public-Rights-of-Way

8. Each permittee shall utilize its best efforts to eliminate the tracking of mud or debris upon any street or sidewalk. Streets and sidewalks shall be cleaned of mud and debris at the end of each day. All equipment and trucks tracking mud and debris into a public right-of-way shall be cleaned of mud and debris at the end of each day or as otherwise directed by the city engineer or designee.
9. Backhoe equipment outriggers shall be fitted with rubber pads or other like protective material whenever outriggers are placed on any paved surface. Tracked vehicles that may damage pavement surfaces shall not be permitted on paved surfaces unless specific precautions are taken to protect the surface. The permittee shall be responsible for any damage caused to the pavement by the operation of such equipment. Should the permittee fail to make such repairs, within three (3) days, to the satisfaction of the city engineer, the city may repair any damage and charge the permittee pursuant to Section 21.12.270 of the Aspen Municipal Code.
10. As the work progresses, all public rights-of-way and other property shall be cleaned of all rubbish, excess dirt, rock, and other debris, at the sole expense of the permittee.
11. No permittee shall disturb any surface monuments, property marks or survey hubs and points found on the line of work unless prior approval is obtained from the city engineer. Any monument, hub, or point which is disturbed by a permittee shall be replaced by a Colorado Registered Land Surveyor at the sole expense of the permittee.
12. Each permittee shall provide employee and construction vehicle parking so that there is limited parking in the neighborhood adjacent to the work site. Permittee shall obtain parking permits from the parking department for construction parking. There shall be no parking on sidewalks or unpaved portions of city right of way.
13. Each permittee shall provide necessary sanitary facilities for workers, the location of which shall be approved by the city engineer or designee and set forth in the permit.
14. For major installations, a permittee shall locate all parallel dry facilities within forty two inches (42") plus $\frac{1}{2}$ of the diameter of the proposed conduit and all parallel wet facilities within seventy eight inches (78") plus $\frac{1}{2}$ of the diameter of the proposed conduit. The location of parallel facilities shall be field verified by locate potholes, unless the locate potholing causes pavement disturbance in an adjacent travel lane that otherwise would be undisturbed. The location of existing facilities, including lateral crossings, which may affect the proposed facility

Construction and Excavation Standards for Work in the Public-Rights-of-Way

alignment shall also be field verified by locate potholes. Wet facilities include water, sewer, and gas; and all other facilities shall be considered dry facilities.

15. As-built drawings shall be required for all work involving changes to finish grade of streets, curbs, gutters, and sidewalks. All as-built information shall be provided by the permittee to the city in a format acceptable to the city engineer or designee, and approved by the city engineer or designee prior to use of the facility.

B. Pavement Removal

1. All asphalt pavement cuts shall be in straight lines. Irregular shaped cuts with more than four (4) sides or cuts within existing patches shall not be allowed. All cuts shall be rectangular in shape, and edges shall be parallel or perpendicular to the flow of traffic.
2. In order to provide straight edges, all asphalt pavement cuts shall be cut by saw cutting, rotomilling, or another approved method which assures a straight edge for the required depth of the cut.
3. Asphalt pavement cuts shall be such that no longitudinal joint lies within the wheel track.
4. Concrete pavement shall be removed and replaced from existing panel joints only.

C. Boring

1. To minimize the impact to traffic and the right-of-way infrastructure, the city engineer encourages boring rather than open trenching.
2. Upon completion of the boring, the permittee shall certify that all storm and sanitary sewer service lines to adjacent properties have not been damaged by the boring in a signed affidavit in a form acceptable to the city engineer.
3. If the permittee's boring results in disturbance to other utilities or facilities in the public right-of-way not described on the approved plan the permittee shall immediately contact the owner of the damaged utility or facility so that the owner may make any necessary repairs. The permittee shall provide the city engineer written notice that the owner of the damaged utility or facility has been informed.
4. Waste material from boring shall be contained within the work site and shall not be allowed to discharge onto private property, curb, gutter, roadway, or any other city right of way.

Construction and Excavation Standards for Work in the Public-Rights-of-Way

D. Excavation and Backfill

1. Excavation

- a) All trench excavation shall be made by open cut to the depth required to construct the facility and provide adequate bracing of trench walls. All excavation, trenching, shoring, and stockpiling of excavated materials shall be in strict compliance with the applicable Occupational Safety and Health Administration (OSHA) rules and regulations. The permittee shall furnish, place, and maintain all supports and shoring required for the sides of the excavation, as to prevent damage to the work or adjoining property.
- b) The length of an open trench shall be limited to the amount of pipe or conduit that can be placed and backfilled in a single day. However, in no case shall the length of the open trench exceed one hundred feet (100') unless otherwise approved by the city engineer or designee. No open trench shall be left unprotected overnight.
- c) A maximum of two (2) excavations shall be open at any time for access structure installation and conduit splicing, unless otherwise approved by the city engineer or designee.
- d) Only material that will be hauled or backfilled within one (1) day shall be stockpiled in the public right-of-way and must be approved by the city engineer or designee. The city engineer or designee, in conjunction with all affected city agencies, shall approve all proposed construction staging areas.
- e) All open excavations shall be properly barricaded, according to current MUTCD guidelines, to protect vehicles and pedestrians.
- f) Current field moisture and density test results (taken within forty-eight (48) hours of the scheduled construction date) for top one foot (1') of subgrade shall be provided to the city engineer or designee prior to placing forms. If any lift of the top one foot (1') of subgrade does not meet moisture or density requirements, then the material shall be scarified, wetted and re-compacted accordingly. If subgrade requires stabilization, the method shall be approved by the city engineer or designee prior to proceeding.

2. Backfilling

- a) Controlled Low Strength Material (CLSM)
 - i. Excavations that are less than 100 cubic yards in volume, within the roadway pavement may be backfilled with controlled low strength material (flowable fill).

Construction and Excavation Standards for Work in the Public-Rights-of-Way

- ii. Controlled low strength material shall consist of a controlled low strength, self-leveling material composed of various combinations of cement, fly ash, aggregate, water, and chemical admixtures. It shall have a design compressive strength between 50 to 150 psi at twenty-eight (28) days when tested in accordance with ASTM 4832. The mix shall result in a product having a slump in the range of seven inches (7") to ten inches (10") at the time of placement. The permittee shall submit the mix design for approval by the city engineer or designee prior to placement.
- iii. The maximum layer thickness for CLSM shall be three feet (3'). Additional layers shall not be placed until the backfill has lost sufficient moisture to be walked on without indenting more than two inches (2").
- iv. If excavation under an emergency situation, occurs during the time of November 15th through April 1st, the top twelve (12) inches of the excavation will be filled with high strength (>150 psi) flowable fill. The permittee shall replace the flowable fill patch with a permanent asphalt patch per these standards, after April 1st.

b) Select Backfill

- i. In cases where CLSM is not used, CDOT standard Class 6 backfill shall be placed in maximum eight-inch (8") loose lifts and compacted. All construction involving excavation and backfill shall meet CDOT Standard Specifications for Road and Bridge Construction, current edition, ("CDOT Standard Specifications") Section 203.
- ii. The permittee shall provide compaction testing for all backfill work per the Minimum Testing Requirements table in Exhibit B. Each lift not tested in accordance with the testing frequency and lifts required may be rejected by the city engineer or designee.
- iii. Excavation and backfill shall be accomplished on the same day in order to minimize impact to the public right-of-way. In instances where the city engineer or designee determines that this cannot be accomplished, the permittee shall submit a plan for approval by the city engineer or designee showing how traffic will be handled around the work zone.

Construction and Excavation Standards for Work in the Public-Rights-of-Way

c) Bridging Plates

- i. Substantial bridging, properly anchored and capable of carrying the legal limit loading, in addition to adequate trench bracing, shall be used to bridge across trenches at street crossings where trench backfill and temporary patches have not been completed during regular working hours. Safe and convenient passage for pedestrians and access to all properties shall be maintained.
- ii. The bridging plate shall be secured to the pavement with anchored pins so that it does not slip. The bridging plate shall extend over supporting pavement by a minimum of one foot (1') on all sides. Cold mixed asphalt shall be ramped a minimum of two feet (2') in the travel direction.
- iii. The use of bridging plates shall not be allowed from October 1st till April 1st. Use of bridging plates shall only be allowed with the prior approval of the city engineer or designee.
- iv. The permittee's design engineer shall certify in writing the suitability of the plates for the specific use by the permittee.

E. Repairing Streets

1. Asphalt Pavements

- a) The minimum patch dimensions shall be two feet (2') beyond each side of the trench or excavation but shall not extend into an adjacent undisturbed lane or cross the street center line.
- b) The longitudinal edges of the patch shall not fall within the existing wheel tracks as defined in Exhibit C. If the extent of the patch falls within the wheel path, the patch shall extend to the full width of the lane.
- c) Prior to placing the permanent patch, the existing pavement shall be sawcut to a neat straight-line, square to the travel lane.
- d) A tack coat shall be applied to all edges of the existing pavement prior to placing the patch. After placing the new asphalt, all seams (joints) between the new and existing pavements shall be sealed with an asphalt tack coat or rubberized crack seal material.
- e) Asphalt mix shall be CDOT, S mix (3/4 inch). Patch back areas greater than one hundred twenty square feet (120 SF) shall require the

Construction and Excavation Standards for Work in the Public-Rights-of-Way

submittal and approval of a mix design to the city engineer prior to placement.

f) Compaction shall be between 92% and 96% of AASHTO T 209. Average compaction of less than 92% of AASHTO T 209 shall be cause for rejection.

g) Compaction equipment shall be capable of compacting corners and edges of patch.

h) Hot bituminous patches shall be placed in two compacted lifts. The first lift will extend two inches (2") below the bottom of the existing pavement and two inches (2") below the top of the existing pavement. The top lift shall be two inches (2") "teed" into existing pavement as shown in Exhibit F.

i) Patches shall also have a cross slope section consistent with the design of the existing roadway.

j) A cold mix asphaltic material may only be used as a temporary patch and the cold mix material shall be approved by the city engineer.

k) Temporary or permanent asphalt patches shall be placed within twenty four (24) hours of trench backfilling. Whenever permanent patches are not constructed within twenty four (24) hours following trench backfilling operations, temporary pavement patches consisting of a minimum of three inches (3") of hot or cold plant mix or steel plates must be placed to provide the required number of paved travel lanes. Temporary pavement patches may be left in place for a maximum of five (5) working days following completion of backfilling operations unless otherwise approved by the city engineer or designee.

l) The permittee shall monitor temporary patches on a daily basis and temporary patches exhibiting ruts, humps, or depressions shall be repaired or replaced immediately.

m) A permanent hot patch shall be made within five (5) days after the area is open to traffic, weather permitting.

n) If final patching is not completed within the specified time, no non-emergency permits shall be granted to the permittee until all outstanding work is completed.

o) Upon completion of the permanent patch, the surface shall be thoroughly compacted, smooth, and free from ruts, humps, depressions, or irregularities. When a straightedge ten feet (10') long is laid across the permanent patch parallel to the centerline of the street and in a direction transverse to the centerline, the surface shall

Construction and Excavation Standards for Work in the Public-Rights-of-Way

not vary more than 1/4 inch from the lower edge of the straight edge. Patches exhibiting deviations greater than 1/4 inch shall be replaced prior to acceptance of the patch. If the existing street exceeds the above tolerances, then the patch shall be equal or better than the condition of the surrounding pavement. In most cases, and particularly in the cases of extensive excavation and repairs, it is desirable to survey the existing pavement condition with a representative of the city prior to the work. After completion of the work, survey the pavement condition again to verify that the pavement condition has been maintained or improved. In the case of minor repairs, these pavement surveys can be made by visual observation.

2. Restoration of Locate Potholes

a) Locate potholes shall not be located within the wheel track of a travel lane as defined in Exhibit C.

b) All locate potholes in the pavement section shall be cored with a circular coring saw with a maximum diameter of ten inches (10"). The plug shall be carefully removed without causing damage.

c) Excavations for potholes shall be backfilled with controlled low strength material (flowable fill) only. Native material removed shall not be used to backfill the hole.

d) The removed pavement shall be replaced by one of the following methods as directed by the city engineer:

i. The full depth section or the top three inches (3") of pavement of the removed original core shall be replaced and grouted with a high strength, quick set epoxy or mortar, as approved by the city engineer, such that the surface is flush with the surrounding pavement; or

ii. The pavement shall be patched with hot mix asphalt of similar aggregate size to the surrounding pavement and compacted in maximum three inch (3") lifts with a "pogo stick" compactor capable of fitting into the core hole such that the surface is flush with the surrounding pavement.

e) A city inspector shall be on site during the repair of all locate potholes. The city engineer may waive this provision if the contractor demonstrates competent performance of the repair.

f) Where possible, locate potholes shall be located under existing pavement marking and such marking replaced in kind at the

Construction and Excavation Standards for Work in the Public-Rights-of-Way

completion of the repair to camouflage the pavement disturbance. If the permittee requests, city crews may install the new pavement markings at the sole expense of the permittee.

g) Initial locate potholes may be temporarily repaired, meeting all applicable safety requirements, for no more than thirty (30) days unless additional time is authorized by the city engineer or designee in writing. Initial locate potholes may be reused during construction.

3. Concrete Flatwork

a) Concrete material and placement shall be CDOT Class D, with 4500 psi compressive strength.

b) Weather protection shall be provided in compliance with CDOT Standard Specifications Section 601.

c) Permittee shall schedule a form inspection and obtain approval prior to pouring.

d) Damaged concrete pavement shall be removed and replaced as a full panel section with dowels set into adjacent panels in compliance with CDOT M&S Standards.

e) Damaged flatwork and curb and gutter shall be replaced in full sections from existing contraction joints. Partial section replacement shall not be permitted.

f) Concrete removed adjacent to asphalt pavements shall be sawcut along the abutting edge prior to removal in order to remove without damage to the pavement. The sawcut edge shall not be used as a form for the new concrete. Temporary formwork shall be placed along the sawcut edge in the desired alignment. The top edge of the replaced concrete section shall be straight and true without warping or irregularity. After the formwork is removed, the gap shall be filled with asphalt. Damage caused to the edge of the asphalt pavement shall result in the assessment of a restoration for asphalt resurfacing per Section II.

g) Subgrade elevation shall be brought up to +/- 0.1 foot of final grade per plans, with approved materials prior to placing forms.

h) No water shall be placed on concrete surface to assist finishing.

i) Variations of concrete surface shall not exceed 1/8 inch in ten feet (10').

j) Liquid membrane curing compound shall be placed in compliance with CDOT Standard Specifications Section 412 at a rate to completely coat all exposed concrete surfaces.

Construction and Excavation Standards for Work in the Public-Rights-of-Way

F. Sidewalk, Curb, and Gutter

1. Permittee shall be responsible for repairing sidewalk, curb, or gutter damaged from work activities of permittee.
2. Permittee shall be responsible for installation of new sidewalk, curb, and gutter per city code 21.16.030, and for repair of sidewalk, curb, and gutter per city code 21.16.080.
3. Sidewalks must be constructed with 4 inch thick concrete and must have 4500 psi compressive strength within 28-day maximum curing period. 80 percent of this strength must be achieved in 7 days following placement of concrete. Sidewalk width varies based on the land uses. The following minimum widths must be complied with:
 - a) Residential area: 5'-0"
 - b) High density and multi family Area: 6'-0"
 - c) Commercial Area: 8'-0"

Sidewalks must be placed next to the property lines in order to provide an adequate landscaping and snow storage buffer behind the curb gutters and travel paths.

4. Extenuating circumstances may require the permittee to take steps to mitigate the impacts of sidewalk construction to trees, other vegetation, and/or drainage.
5. Specifications for the design of sidewalk, curb, and gutter are contained in Exhibit G.

G. Driveways

1. Location and number of driveway(s) per lot are determined by city code 21.16.060. Driveways servicing property without a garage shall be no greater than ten (10) feet wide. Driveways servicing a single-stall garage shall be no greater than ten (10) feet wide. Driveways servicing a two-stall or greater garage shall be no greater than eighteen (18) feet wide.
2. Where curbs exist or are required, driveways shall be paved for their full width from curb to property line.
3. Where a driveway crosses a sidewalk, the sidewalk shall be increased to a minimum of six (6) inches of concrete.
4. There shall be a minimum of twenty five (25) feet between any two (2) curb cuts whether on one (1) or more properties, except common driveways may be used on adjoining properties. Distance between curb cuts will be such as to maximize the amount of on-street parking.

Construction and Excavation Standards for Work in the Public-Rights-of-Way

5. Further specifications for the design of driveways are contained in Exhibit H.

H. Landscape Areas

1. Excessive, unnecessary disturbance to landscaping and other existing improvements may result in a stop work order until repairs are made to the satisfaction of the city engineer or designee.
2. Landscape restoration shall be completed within two (2) weeks of completion of work at each site, weather permitting.
3. Irrigation shall be maintained throughout construction to ensure that no landscaping is affected during the construction phase.
4. A permittee shall work with adjacent property owners to coordinate any construction activity that disrupts adjacent property owners' landscaping.
5. Existing trees and landscape:
 - a. All trees growing in the public right-of-way must be shown on the plans. If requested, it will be determined if the trees may be removed as part of the redevelopment project. The City of Aspen must approval a tree removal permit with required mitigation plan prior to approval and issuance of a permit.
 - b. A vegetation protection fence shall be erected at the drip line of each individual tree or groupings of trees remaining on-site during the improvements. No excavation, storage of materials, storage of construction backfill, storage of equipment, foot or vehicle traffic allowed within the drip line of any tree on site. This fence must be inspected by the city forester or his/her designee (920-5120) before any construction activities are to commence.
6. Tree Permit and landscaping in the right-of-way permit:
 - a. Permits must be issued prior to any tree planting, pruning or removal.
 - b. Failure to obtain a permit prior to installation of landscaping improvements will result in a fine and the possibility of removal of to-date work.
7. Tree Species:

The following are some of the recommended street trees:

Box Elder
Autumn Blaze Maple
Norway Maple
Green and White Ash Varieties

Construction and Excavation Standards for Work in the Public-Rights-of-Way

Cottonwood (when historically appropriate)
Spring Snow Crabapple (fruitless)
Thorn less Cockspur Hawthorn
Mountain Ash
Japanese Tree Lilac

Unless otherwise authorized by the City Forester, the following species and types of trees and woody plants shall not be planted or allowed to grow upon public street rights-of-way within the City of Aspen unless in existence prior to January 1, 1990.

- a. Most of the poplar species (*Populus* sp.), including but not limited to Aspen, Silver Poplar and Lombardy Poplar.
 - b. Any of the Willow species (*Salix* sp.).
 - c. The Silver Maple tree (*Acer negundo*).
 - d. The Siberian (Chinese) Elm (*Ulmus pumila*).
 - e. Any weeping or pendulous type tree (i.e. Weeping Birch).
 - f. Any tree with bushy growth habit which cannot be maintained to a single leader or trunk.
 - g. Any shrub or hedge which by its habit of growth would obstruct, restrict, or conflict with necessary and safe use of the public rights-of-way.
 - h. Any Coniferous Tree including but not limited to Pine, Spruce, Fir and Juniper.
 - i. No plant material which would eventually exceed 36" in height will be allowed within the vision triangle of any intersection. Contact the Engineering Department or reference the Standards guide for more information on the vision triangle.
8. Regulations pertaining to spacing of trees to be planted on public rights-of-way
To ensure trees have adequate room to grow and for public safety reasons, plans are approved based upon the following spacing

Construction and Excavation Standards for Work in the Public-Rights-of-Way

requirements:

- a. Unless otherwise authorized by the City Forester, all newly planted street trees shall be planted midway between the sidewalk and the curb, when available at least 3 feet from back of curb. Most trees, unless authorized by the City Forester, shall be planted on 15 to 20 feet over center from the adjacent trees, dictated by the available space within the improved right-of-way.
 - b. No trees will be planted closer than 5 feet to any driveway or alley, nor shall it be planted in such a manner that eventual growth cannot be reasonably maintained so as to avert interference with, or obstruction to, any improvements installed for the public benefit such as traffic and street signs and lights, fire hydrants, overhead utility wires, street lights, utility poles, etc.
 - c. At edges of streets where a space of less than 3 feet in width exists between the curb and the abutting private property line, no trees or woody plants shall be planted on the public area, unless approved by the city forester.
 - d. Where the combination sidewalk-curb and gutter have been installed, no tree plantings are to be made closer than 5 feet from the edge of any concrete installation.
9. All trees planted within the City ROW inside of a hard surface parkway must design and install the trees within a tree trench. Tree trench specs are available from the City Parks Department. These specs allow for the planting of trees and proper structural soil for sidewalk installation, pavers, driveways, etc.
 10. All landscaping plans must be approved by the city of Aspen Parks Department.
 11. Prior to probationary acceptance by the city engineer, the permittee shall provide a letter from each property owner adjacent to the work site stating that all landscaping has been restored.
 12. Any additional landscaping required for screening above-ground structures shall be coordinated with and approved by the adjacent property owner responsible for landscape maintenance.

Construction and Excavation Standards for Work in the Public-Rights-of-Way

I. Street Closures

1. Street closures are not permitted(city code 21.12.120). However, the engineering department may permit lane closures. When lane closures are permitted, the applicant must:
 - a) Verify the closure specified on the permit with the Engineering Department, School District, and the Roaring Fork Transit Authority (RFTA) at least one week in advance.
 - b) Notify Aspen Communication Center at 920-5310 one day prior to closure and the time of re-opening.
 - c) Set and maintain, at applicant's expense, necessary barricades, flashers, construction signs, and flaggers; and take all necessary precautions in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).
 - d) Complete the work between 7:00 a.m. and 7:00 p.m., Monday through Saturday, unless approved otherwise by the Environmental Health Department for work activity outside the specified time frame.

J. Traffic Control

1. When it is necessary to obstruct roadways or pedestrian ways, the permittee shall submit traffic control plans, in compliance with the MUTCD, showing all work and including the following information:
 - a) Each lane closure scenario, including work zones for locate pothole work.
 - b) Lane configurations and access locations specific to the actual work zone.
 - c) Any upstream intersections within five hundred feet (500') of the work zone, showing all impacted inbound lanes to the intersection.
 - d) Pedestrian route detours showing the nearest crossing intersections at each end of the work zone.
 - e) Proposed hours of operation of each traffic control setup.
2. All traffic control plans shall be prepared under the supervision of a certified Work Site Traffic Control Supervisor. Documentation of certification shall be submitted with the traffic control plan(s).
3. Lane closures shall be permitted in the commercial core and main street corridor only between 9:00 a.m. and 3:00 p.m. Monday thru Friday.
4. When planning construction phasing and developing traffic control plans, the permittee shall make every effort to minimize the impact to the motoring public and maintain the capacity of the roadway system. The

Construction and Excavation Standards for Work in the Public-Rights-of-Way

- city engineer may require that a traffic control plan be modified to comply with this requirement.
5. When the traffic control plan requires the modification of any traffic signal timing plans, the permittee shall notify the Colorado Department of Transportation (CDOT) to coordinate the re-timing of the signal. All costs associated with such work shall be borne by the permittee.
 6. All signs and devices shall conform to the Manual on Uniform Traffic Control Devices. The devices and signs shall be clean, legible, properly mounted and meet a quality standard rating of “acceptable” per the requirements of American Traffic Safety Services Association (ATSSA) Quality Standard for Work Zone Traffic Control Devices (copies available from the city). All signs and devices used for night operation shall meet the retroreflective requirements of CDOT Standard Specifications Section 713.04.
 7. No permittee shall block access to any private property, fire hydrant, fire station, utility structure, or any other emergency response equipment unless the permittee provides the city engineer with written approval from the affected agency and/or property owner.
 8. When necessary for public safety and when required by the city engineer, the permittee shall employ flag persons, whom are certified, to control traffic around or through the work site.
 9. The permittee shall be responsible for maintaining all work area signing and barricading required throughout the duration of work. During non-work hours, all signs that are not appropriate shall be removed, covered or turned around so that they do not face traffic.
 10. Any deficiencies noted by the city engineer or designee shall be corrected immediately by the permittee. If the permittee is not available or cannot be found, the city engineer or designee may make the required corrections and charge the cost thereof to the permittee pursuant to Section 21.12.120 of the city of aspen municipal code.
 11. The proposed phasing of construction and length of the active work zone shall be submitted by the permittee to the city engineer for review and approval. Permittees shall make every effort to minimize the impact to the use of the public right-of-way and adjacent properties. The city engineer may require that the permittee modify the proposed construction phasing in order to minimize the impact during construction.

Construction and Excavation Standards for Work in the Public-Rights-of-Way

K. Pedestrian Access

1. Pedestrian ramps must be installed at intersections for all new construction or reconstruction of curb gutter and sidewalk. Pedestrian ramps for streets with curb gutters must be constructed at all intersections with sidewalks and curb returns in accordance with the details at the end of this section. Pedestrian corridors at street intersections having functional classification as Residential, Local, Collector, Arterial or any heavily traveled corridor, must have directional crossing ramps. Avoid design and placement of diagonal ramps. Height of the curb in front of the ramp section must be depressed to flow line elevation (no lip), see Exhibit G. Bike path ramps follow the same design approach; the only change must be the width which will match the width of the bike path.

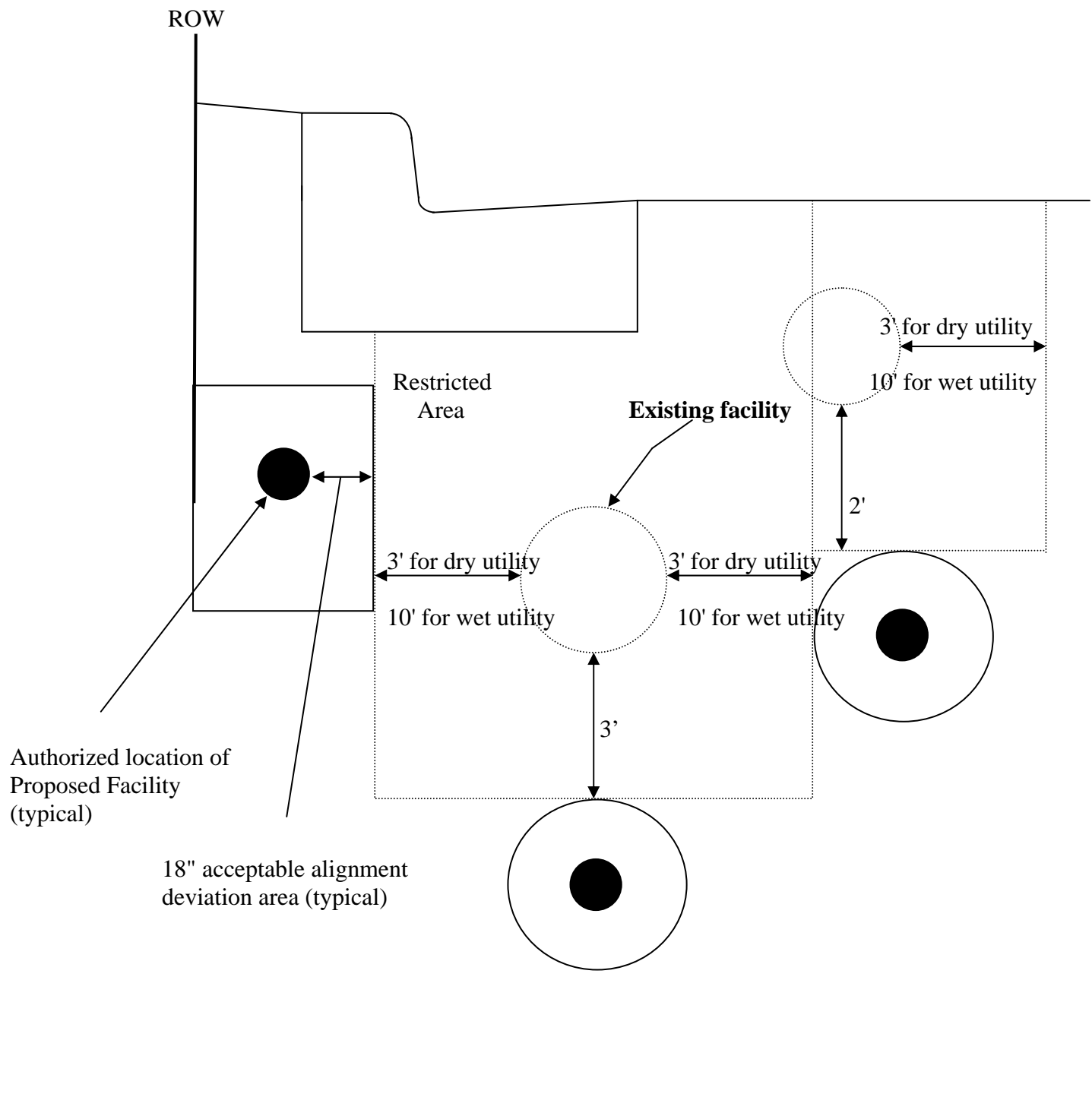
Construction and Excavation Standards for Work in the Public-Rights-of-Way

IV. Restricted Rights-of-Way

Those public rights-of-way in and around the streets listed on the hereto attached Exhibit E shall be subject to Section 21.12.090 of the city of aspen municipal code.

Construction and Excavation Standards for Work in the Public-Rights-of-Way

Exhibit A



Construction and Excavation Standards for Work in the Public-Rights-of-Way

EXHIBIT B

City of Aspen Engineering Department Minimum Testing Requirements

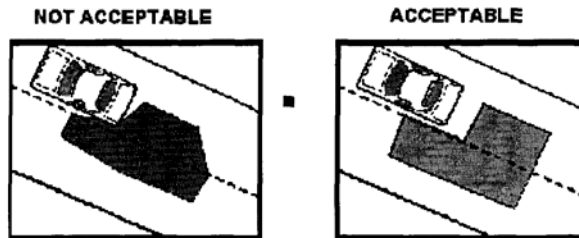
ALL TESTING TO BE PERFORMED PER CURRENT CDOT STANDARDS

ITEM	TYPE OF TEST	MINIMUM FREQUENCY
All excavation backfill - gas, elec., water, storm & san. sewer, cable TV, phone, etc.	Moisture/Density (Compaction Test)	1 per 150 lineal ft., and within 2 ft. of all structures; minimum 2 tests per lift
Inlets/structures Concrete testing	Rebar Inspection Air and Slump Cylinders	Visual/Documentation 1st 3 loads, every 5 th load thereafter 1 set of 4 per 100 yds ³ , or fraction thereof
Soil testing	Moisture/Density (Compaction)	minimum 2 tests per lift
Sidewalk, Curb & Gutter Soil testing	Moisture/Density (Compaction) Proof-roll	1 per 150 lineal ft., minimum. 2 tests per lift All subgrade
Concrete testing	Air and Slump Cylinders	First truck. Every 50 yds ³ after first truck. 1 set of 4 per 50 yds ³ , or fraction thereof
Roadway Subgrade testing	Moisture/Density (Compaction) Proof-roll	1 per 300 lane feet, min. 2 tests per lift All subgrade
Base course testing	Moisture/Density (Compaction) Gradation/Atterberg limits Proof-roll	1 per 300 lane feet, min. 2 test per lift 1 per 500 tons All base course
Concrete testing	Air and Slump Slump Cylinders	1 st 3 loads, if pass, 1 per 50yds ³ Every load 1 set of 4 per 50 yds ³ , or fraction thereof
Asphalt testing	Density Extraction/Gradation, Marshall Cores for thickness/density	1 per 300 lane feet, min. 2 tests per lift 1 per 500 tons As directed by the City only, if directed then 3 per 1000 lane feet, or fraction thereof.

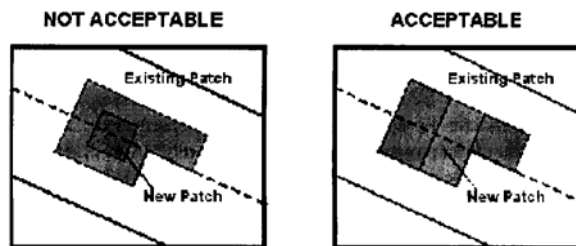
Construction and Excavation Standards for Work in the Public-Rights-of-Way

EXHIBIT C Approach to street repairs.

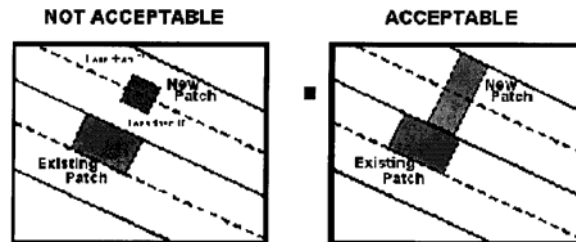
Existing pavements should be removed to clean, straight lines parallel and perpendicular to the flow of traffic. Do not construct patches with angled sides and irregular shapes. If the extent of the patch falls within the wheel path, the patch shall extend to the full width of the lane.



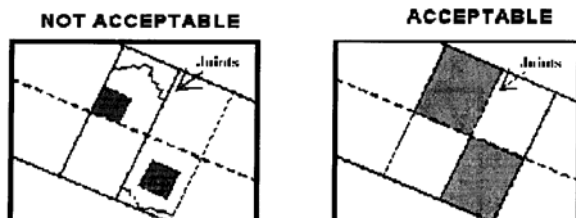
Avoid patches within existing patches. If this cannot be avoided, make the boundaries of the patches coincide.



Do not "leave" strips of pavement less than one-half ($\frac{1}{2}$) a lane in width from the edge of the new patch to the edge of an existing patch or the lip of the gutter.

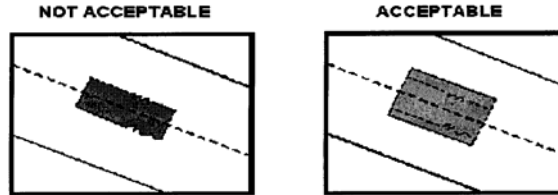


In concrete pavements, remove sections to existing joints in the case of concrete in good repair. In damaged concrete, the limits of removal should be determined in the field by a representative of the city engineer.

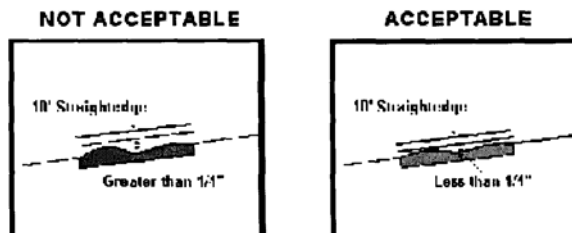
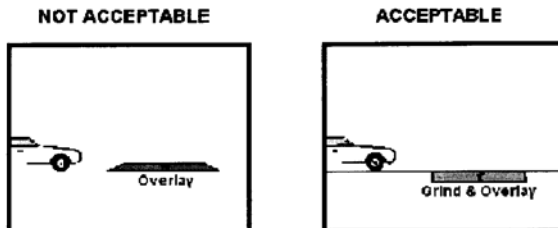
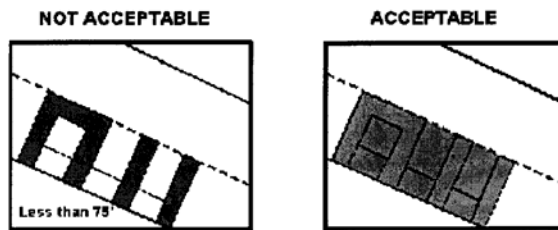


Construction and Excavation Standards for Work in the Public-Rights-of-Way

Asphalt and concrete pavements should be removed by saw cutting or grinding. Avoid breaking away the edges of the existing pavement or damaging the remaining pavement with heavy construction equipment.

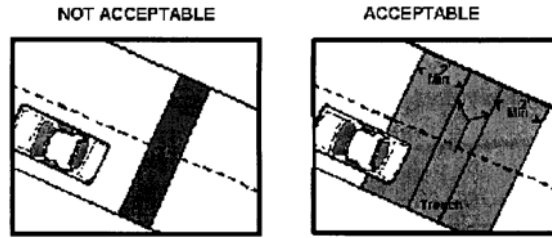


In the case of a series of patches or patches for service lines off a main trench, repair the pavement over the patches by grinding and overlay when the spacing between the patches is less than seventy-five (75) feet (in cases where the existing pavement is in poor condition and may require overlay within the next few years, this requirement may be modified or waived by the city engineer).

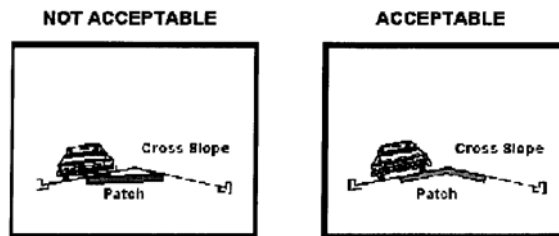


Transverse patches on arterial and collector streets shall be overlaid across the entire street width for a distance of two (2) feet minimum on all sides of the trench.

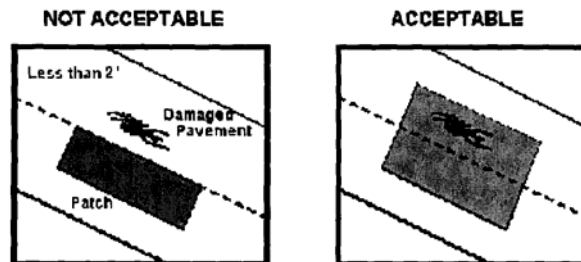
Construction and Excavation Standards for Work in the Public-Rights-of-Way



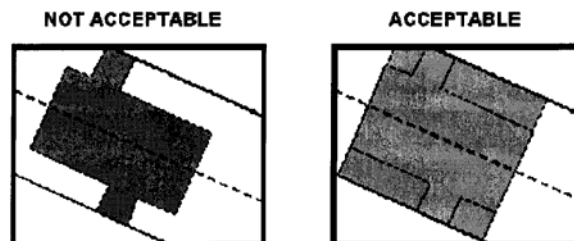
Patches should have a smooth longitudinal grade consistent with the existing roadway. Patches should also have a cross-slope or cross-section consistent with the design of the existing roadway.



When the proposed excavation falls within ten (10) feet of a section of failed pavement, the failed area shall be removed to sound pavement and patched.

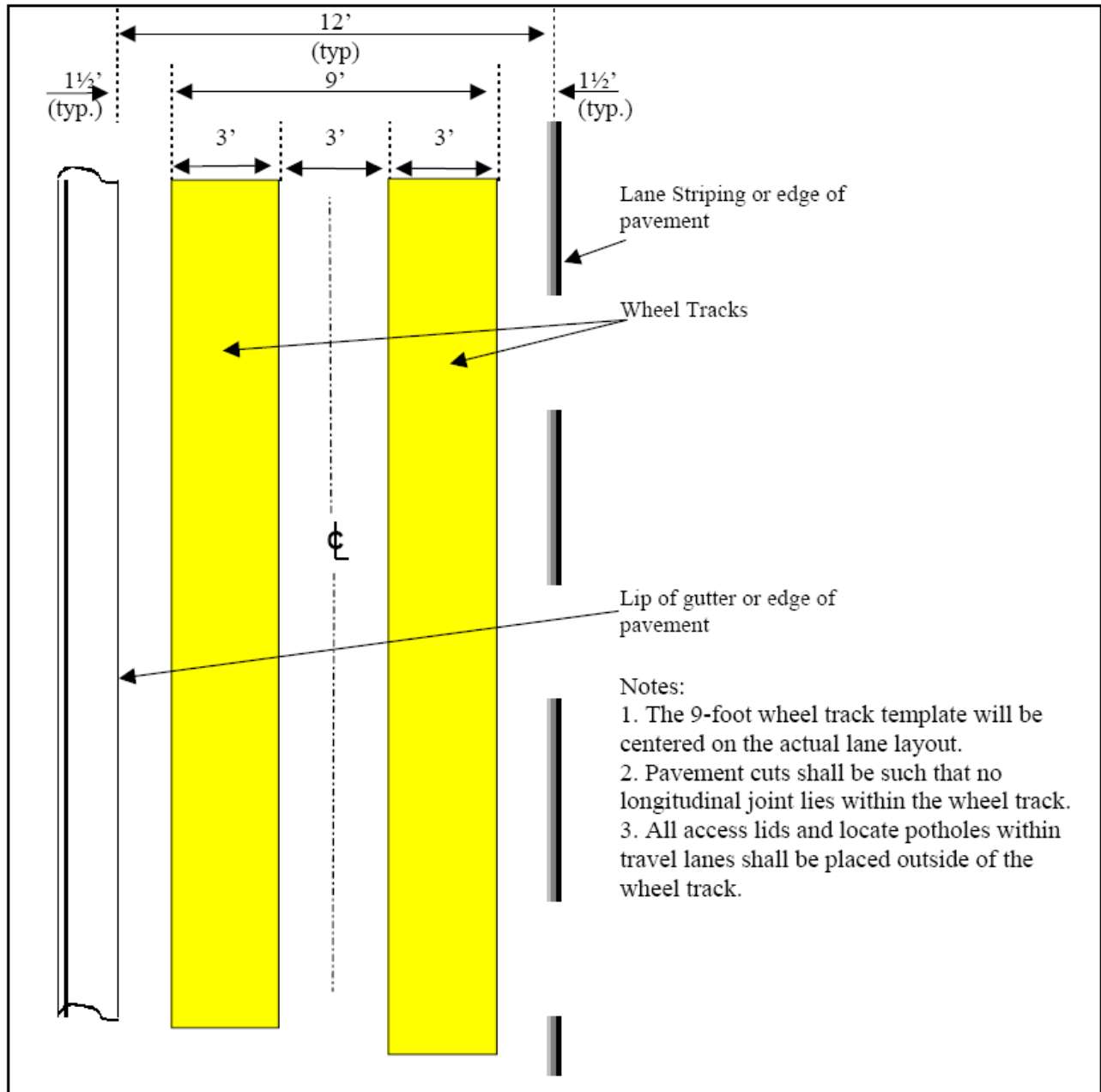


Avoid frequent changes in width of patches. For future maintenance, this simplifies removal of adjacent pavement failures.



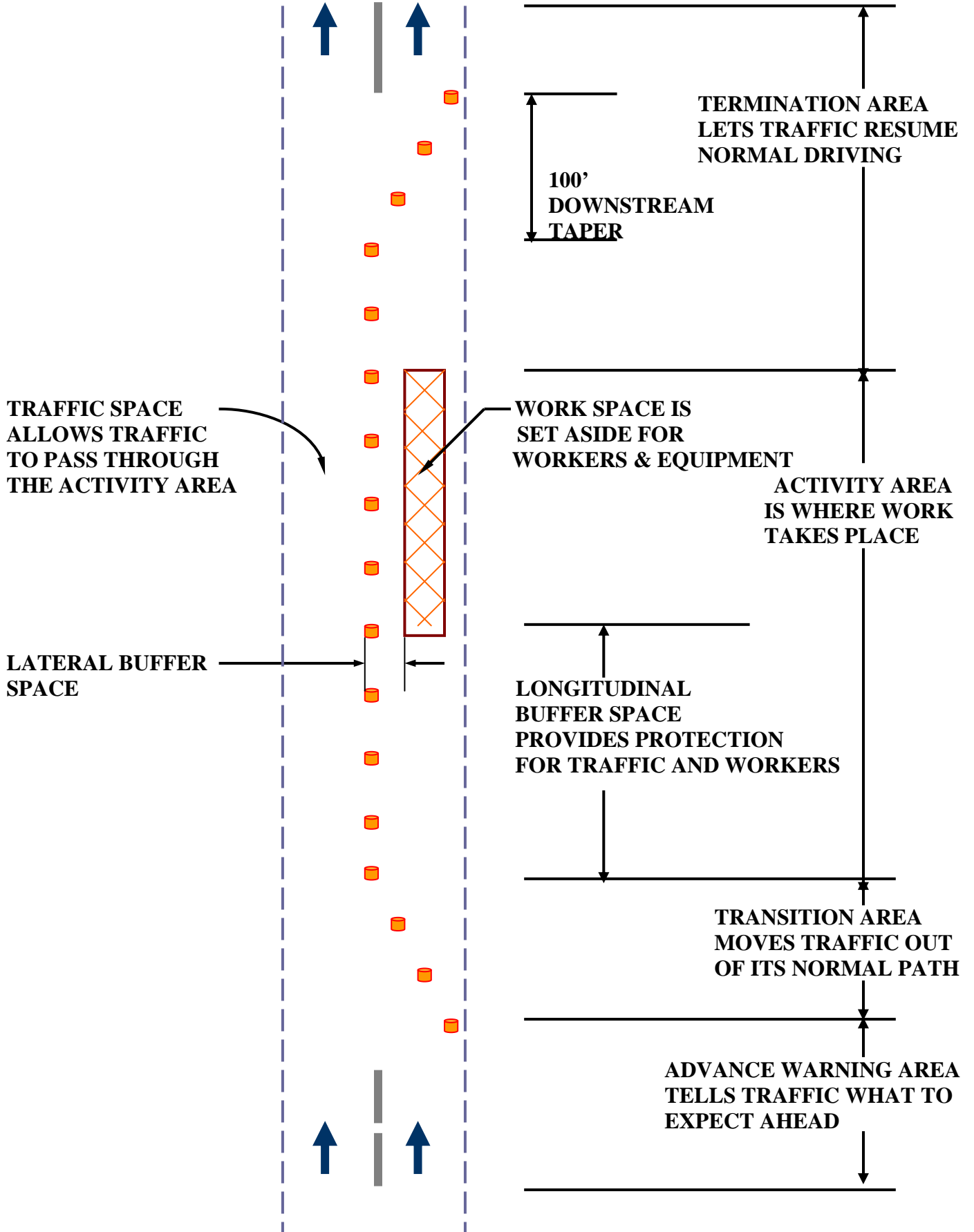
Construction and Excavation Standards for Work in the Public-Rights-of-Way

Wheel track diagram



Construction and Excavation Standards for Work in the Public-Rights-of-Way

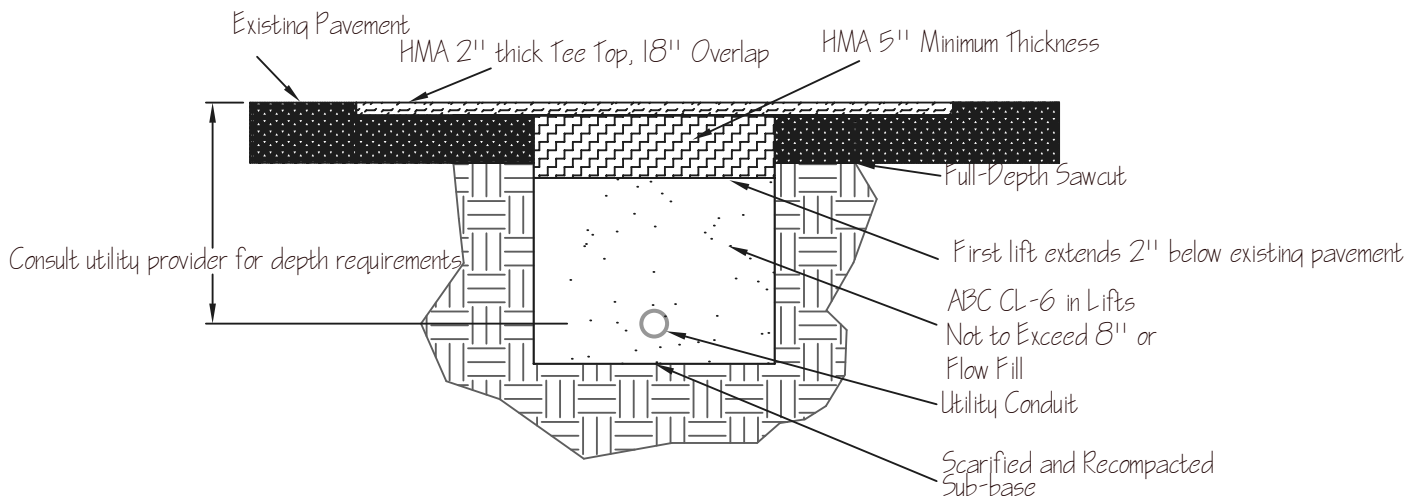
Exhibit D - Component Parts of a Temporary Traffic Control Zone



Construction and Excavation Standards for Work in the Public-Rights-of-Way

Exhibit F - Minimum Street Sections

STREET FUNCTIONAL CLASSIFICATION	FULL DEPTH SECTION (DEEP STRENGTH PAVEMENT)	COMPOSITE SECTION (MINIMUM PAVING SECTION)
<ul style="list-style-type: none"> - ALLEYWAY - COMMON ACCESS - PAVEMENT APRON 	NOT REQUIRED	3" CDOT S MIX (SINGLE LAYER) ON WELL COMPACTED NON-EXPANSIVE GRAVELBASE
<ul style="list-style-type: none"> - RESIDENTIAL 	5" CDOT S MIX (3" BASE LAYER + 2"TOP LAYOR) ON 6" LAYER OF SCARIFIED & RECOMPACTED NON-EXPANSIVE GRAVEL BASE	4" CDOT S MIX (2" BASE LAYER + 2" TOP LAYER) ON 6" LAYER OF IMPORTED & COMPACTED CRUSHED AGGREGATE BASE COURSE CLASS-6 OVER NON-EXPANSIVE SUB-BASE
<ul style="list-style-type: none"> - COLLECTOR - LOCAL 	5" CDOT S MIX (3" BASE LAYER + 2"TOPLAYOR) ON 8" LAYER OF SCARIFIED & RECOMPACTED NON-EXPANSIVE EXIST. BASE	4" CDOT S MIX (2" BASE LAYER + 2" TOP LAYER) ON 6" LAYER OF IMPORTED & COMPACTED CRUSHED AGGREGATE BASE COURSE CLASS-6 OVER NON-EXPANSIVE SUB-BASE
<ul style="list-style-type: none"> - ARTERIAL 	6.5" CDOT S MIX (4" BASE LAYER + 2.5"TOP LAYOR) ON 12" LAYEROF SCARIFIED & RECOMPACTED NON-EXPANSIVE EXISTING BASE	5" CDOT S MIX (3" BASE LAYER + 2" TOP LAYER) ON 10" LAYER OF IMPORTED AND COMPACTEDCRUSHED AGGREGATE BASE COURSE CLASS-6 OVER NON EXPANSIVE SUB-BASE



Notes:

1. Existing pavement shall be sawcut in full depth and in a neat straight line as shown. Sawcutting must occur after backfilling and before paving.
2. Stress cracking of existing pavement may occur during excavation for a variety of reasons. If this occurs, the contractor must sawcut at least 12" beyond the limit of visible cracks and remove and replace all stressed pavement.
3. Hot bituminous patch shall be a minimum of 7" thick and placed in three lifts as shown.
4. For excavations greater than 100 cubic yards, backfill for trench and base for patch shall conform to CDOT's aggregate base course class 6 (ABC CL-6) designation and shall be compacted to 95% of modified proctor density within 2% of optimum moisture as defined by ASTM 1557 Method "C". For excavations less than 100 cubic yards, and not within any alley, controlled low strength material or flow fill may be used for backfill and base for patch and should conform to CDOT specification 206.02 (a).
5. Bedding for flexible lines shall be crushed screened rock, free of fines.
6. Trench bottom must be scarified and recompact after excavation or after any dewatering action to ensure adequate support of utility bedding.

Drawn by: CAT

Approved by: AJT

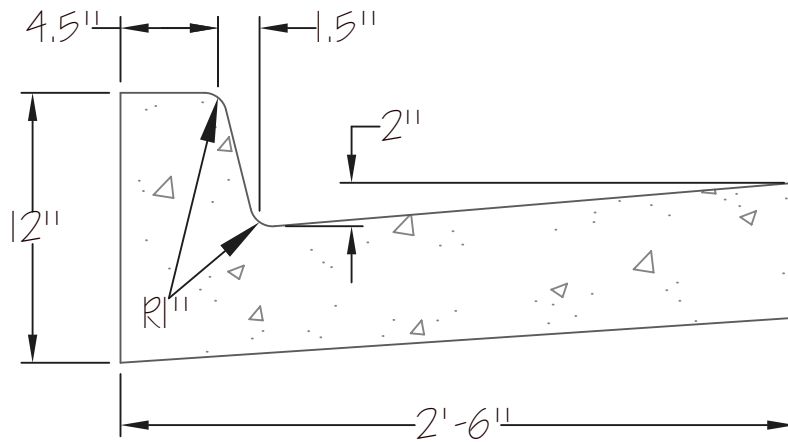
Exhibit F.1 of 1

ENGINEERING DEPARTMENT
CITY OF ASPEN, COLORADO

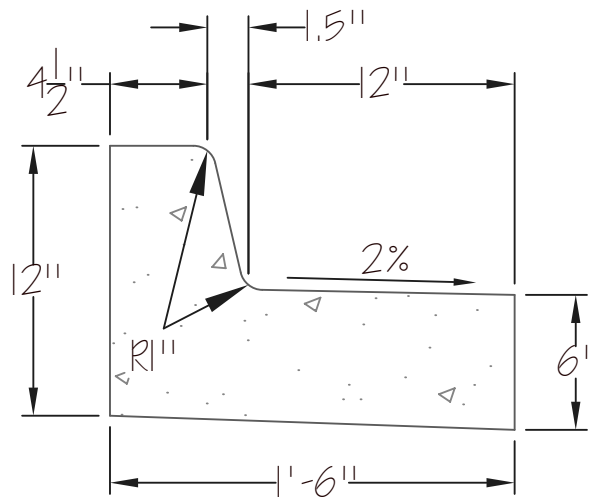


Trench and Patching Details
(Not to Scale)

ENG 210-1
March 2007



Runoff Collecting Curb & Gutter
 (Catch Type for Typical Edge of Street)



Runoff Conveying Curb & Gutter
 (Spill Type for Raised Medians)

Note: Concrete must conform to CDOT Class "D" (minimum 28-day compressive strength of 4500 psi) . 80% of this strength must be gained in the first 7 days.

Drawn by: CAT

Approved by: AJT

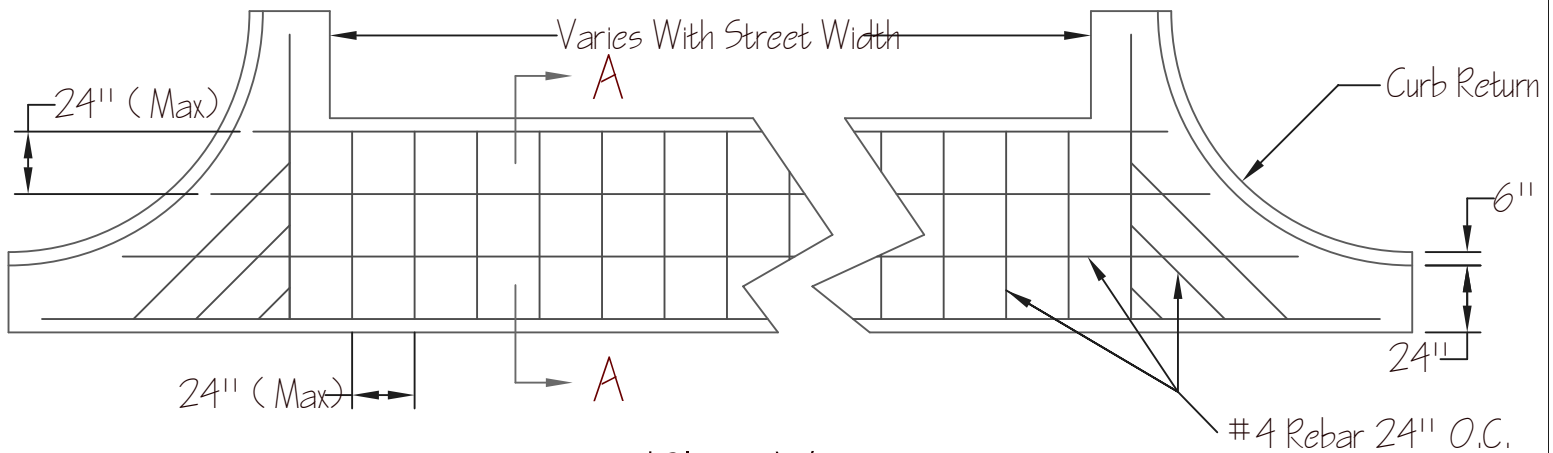
Exhibit G, 1 of 7

ENGINEERING DEPARTMENT
 CITY OF ASPEN, COLORADO



Curb & Gutter Details
 (Not to Scale)

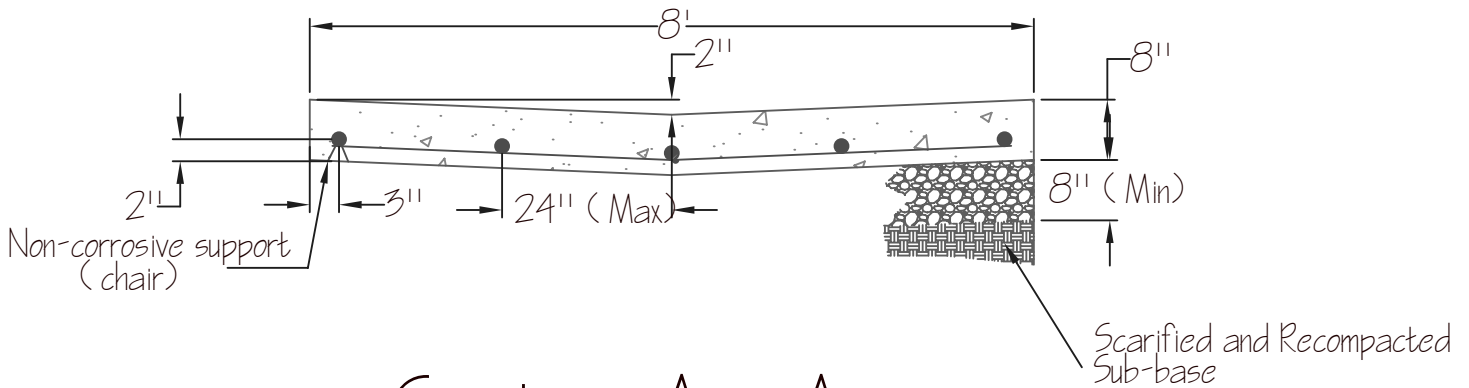
ENG 201-T
 March 2007



Plan View

Notes:

1. Steel reinforcement is #4 Grade 40 rebar placed a maximum of 24" O.C.
2. Rebar splices must maintain a 12" minimum overlap.
3. Base shall be either 3" crushed screened rock or ABC CL-6 compacted to 95% of maximum modified proctor density within 2% of optimum moisture as defined by ASTM 1557 Method "C".
4. Sub-base must be scarified and re-compacted and pass a proof rolling by a fully loaded tandem axle dump truck. Proof rolling must be witnessed and documented by Engineering Department staff.
5. Concrete must conform to CDOT class "D" (minimum 28-day compressive strength of 4500psi), 80% of this strength must be gained in the first 7 days.



Section A - A

Drawn by: CAT

Approved by: AJT

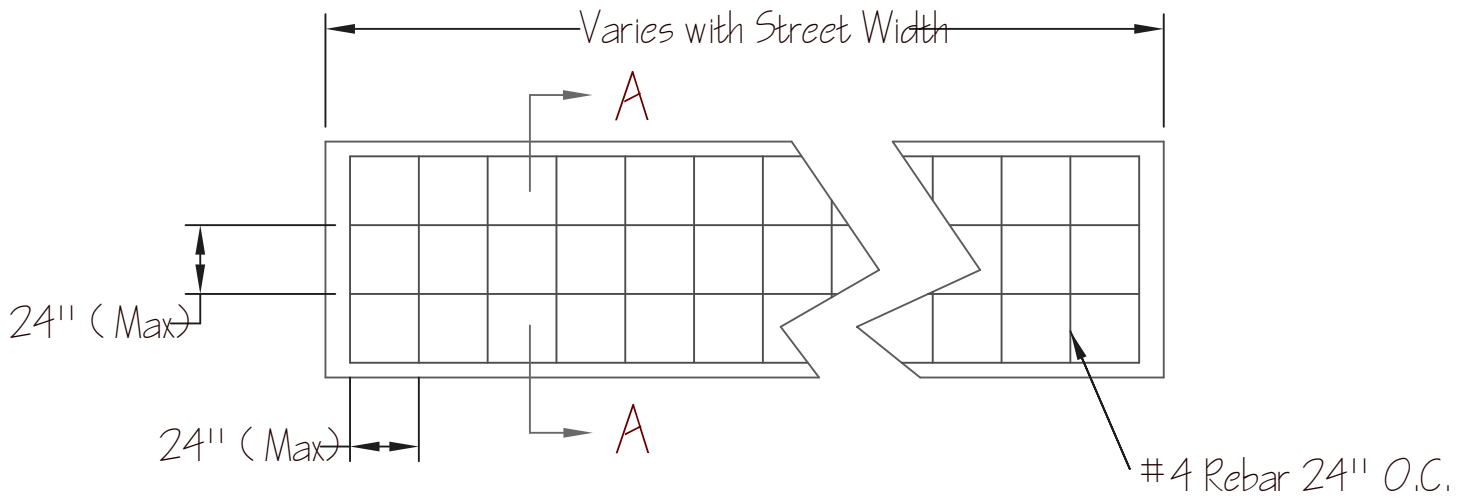
Exhibit G, 2 of 7

ENGINEERING DEPARTMENT
CITY OF ASPEN, COLORADO



Cross Pan with Curb Returns
(Not to Scale)

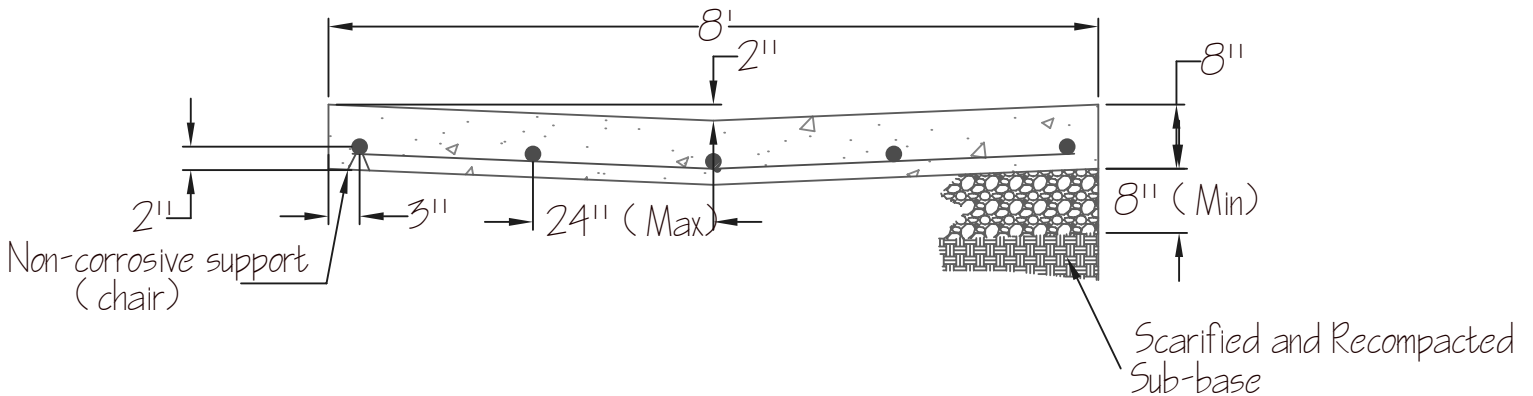
ENG 306-1
March 2007



Plan View

Notes:

1. Steel reinforcement is #4 Grade 40 rebar placed a maximum of 24" O.C.
2. Rebar splices must maintain a 12" minimum overlap.
3. Base shall be either 3" crushed screened rock or ABC CL-6 compacted to 95% of maximum modified proctor density within 2% of optimum moisture as defined by ASTM 1557 Method "C".
4. Sub-base must be scarified and re-compacted and pass a proof rolling by a fully loaded tandem axle dump truck. Proof rolling must be witnessed and documented by Engineering Department staff.
5. Concrete must conform to CDOT class "D" (minimum 28-day compressive strength of 4500psi). 80% of this strength must be gained in the first 7 days.



Section A - A

Drawn by: CAT

Approved by: AJT

Exhibit G, 3 of 7

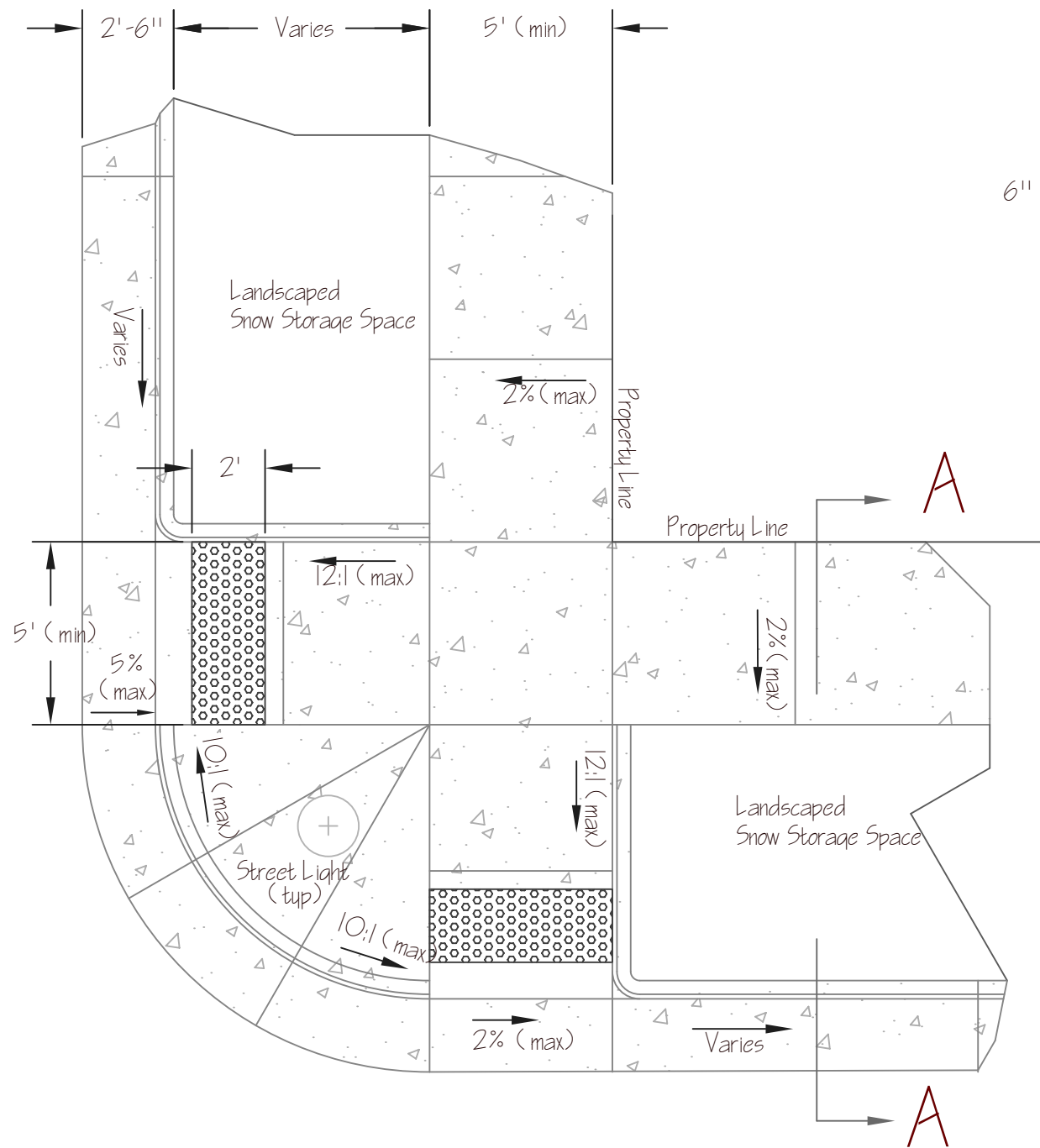
ENGINEERING DEPARTMENT
CITY OF ASPEN, COLORADO



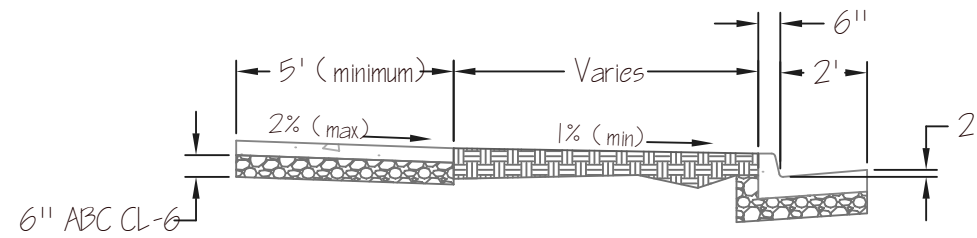
Cross Pan without Curb Returns
(Not to Scale)

ENG 307-1
March 2007

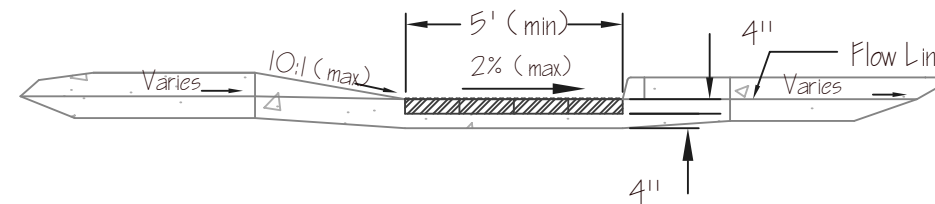
Plan:



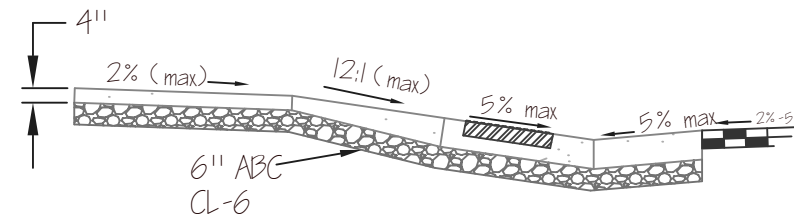
Sections:



Section A - A



Front Cross Section View of Detectible Warning, Curb and Gutter

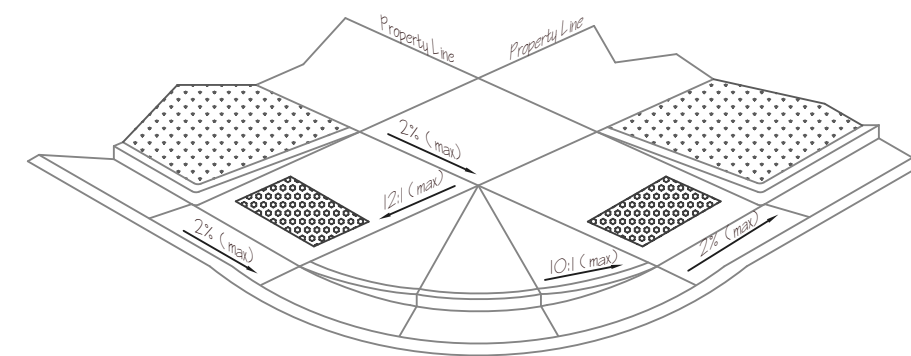


Side Cross Section View of Detectible Warning, Curb and Gutter

Notes:

1. This ramp detail is to be used where detached sidewalk is present and for new construction.
2. The least possible slope shall be used for all ramps excepting that slope must be enough to ensure adequate drainage. No cross-slope shall exceed 2%.
3. Street light installation location shall be confirmed with COA Electric and Streets department prior to installation.
4. Sidewalk shall be placed against property line to ensure adequate snow storage space behind curb.
5. Control joints shall be placed as shown unless site conditions prohibit. In such case, City must receive and approve variance.
6. Detectible warning pad shall be placed 6" - 8" behind back of curb.
7. Concrete conforming to CDOT class "D" shall be used for all flatwork construction. All sidewalk shall have a minimum thickness of 4".
8. Base for flatwork shall be at least 6" of CDOT ABC CL-6 compacted to 95% of modified proctor density within 2% of optimum moisture using ASTM D-1557 Method "C" or 3/4" crushed screened rock sub base will be scarified and re-compacted.
9. Coarse broom finish shall be provided perpendicular to the direction of pedestrian travel on sidewalk and ramps and perpendicular to the direction of water flow on curb and gutter.
10. Where detached sidewalk is present, deviation from this plan may be made only with the approval of Engineering department staff.

Isometric:

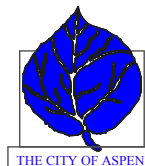


Drawn by: CAT

Approved by: AJT

ENGINEERING DEPARTMENT

130 South Galena Street
Aspen, CO, 81611
(970)-920-5080



THE CITY OF ASPEN

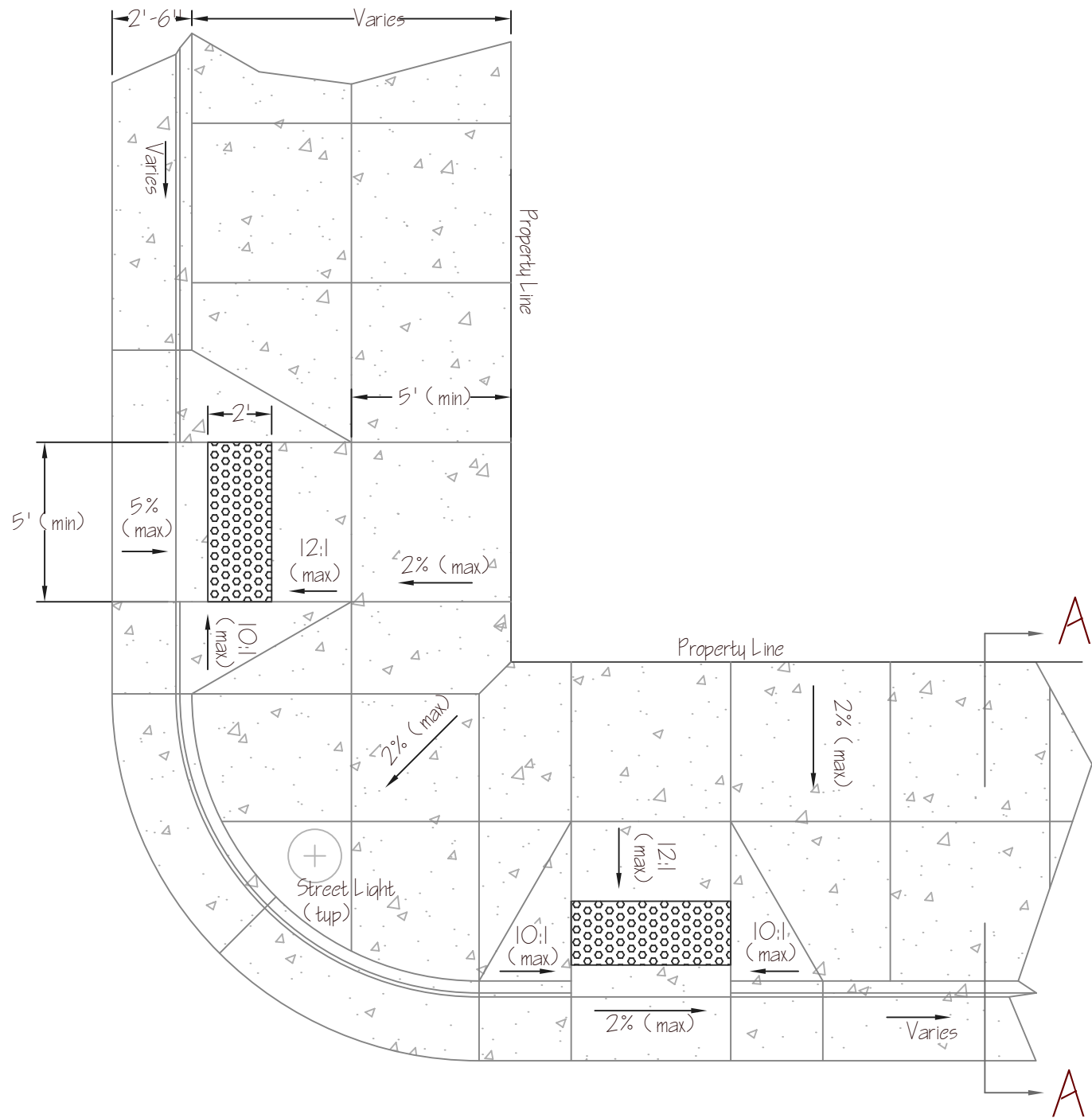
Bi-directional ADAAG Ramp Detached Sidewalk

Exhibit G, 4 of 7

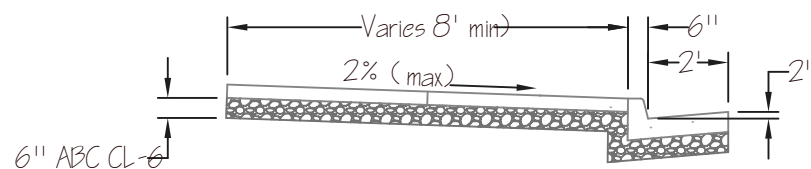
ENG 202-T

March 2007

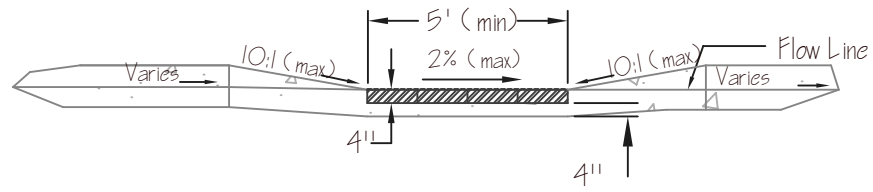
Plan:



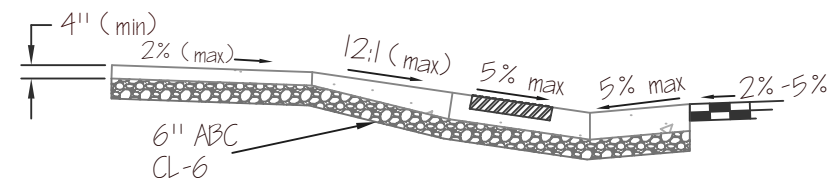
Sections:



Section A - A



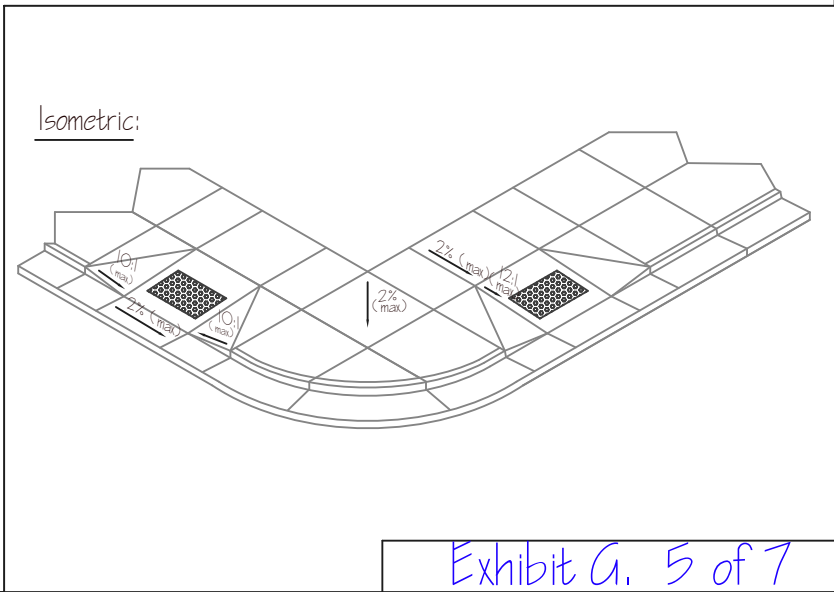
Front Cross Section View of Detectible Warning, Curb and Gutter



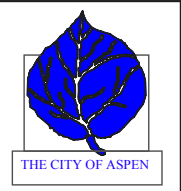
Side Cross Section View of Detectible Warning, Curb and Gutter

Notes:

1. This ramp detail is to be used in cases where wide (>8') sidewalk is present (such as in the commercial core).
2. The least possible slope shall be used for all ramps excepting that slope must be enough to ensure adequate drainage. No cross-slope shall exceed 2%.
3. Streetlight installation location shall be confirmed with COA Electric and Streets departments prior to installation.
4. Control joints shall be placed as shown unless site conditions prohibit. In such case, city must receive and approve variance.
5. Detectible warning pads shall be placed 6"-8" behind back of curb.
6. Concrete conforming to CDOT class "D" shall be used for all flatwork construction. All sidewalk will have a minimum thickness of 4".
7. Base for flatwork shall be at least 6" of CDOT ABC CL-6, compacted to at least 95% of modified proctor density within 2% of optimum moisture according to ASTM D-1557 Method C crushed screened rock. Sub-base will be scarified and re-compact.
8. Coarse broom finish shall be provided perpendicular to the direction of travel on sidewalk and perpendicular to the direction of water flow on curb and gutter.
9. Where wide (>8') attached sidewalk is present, deviation from this plan may be made only with the approval of the Engineering Department staff.



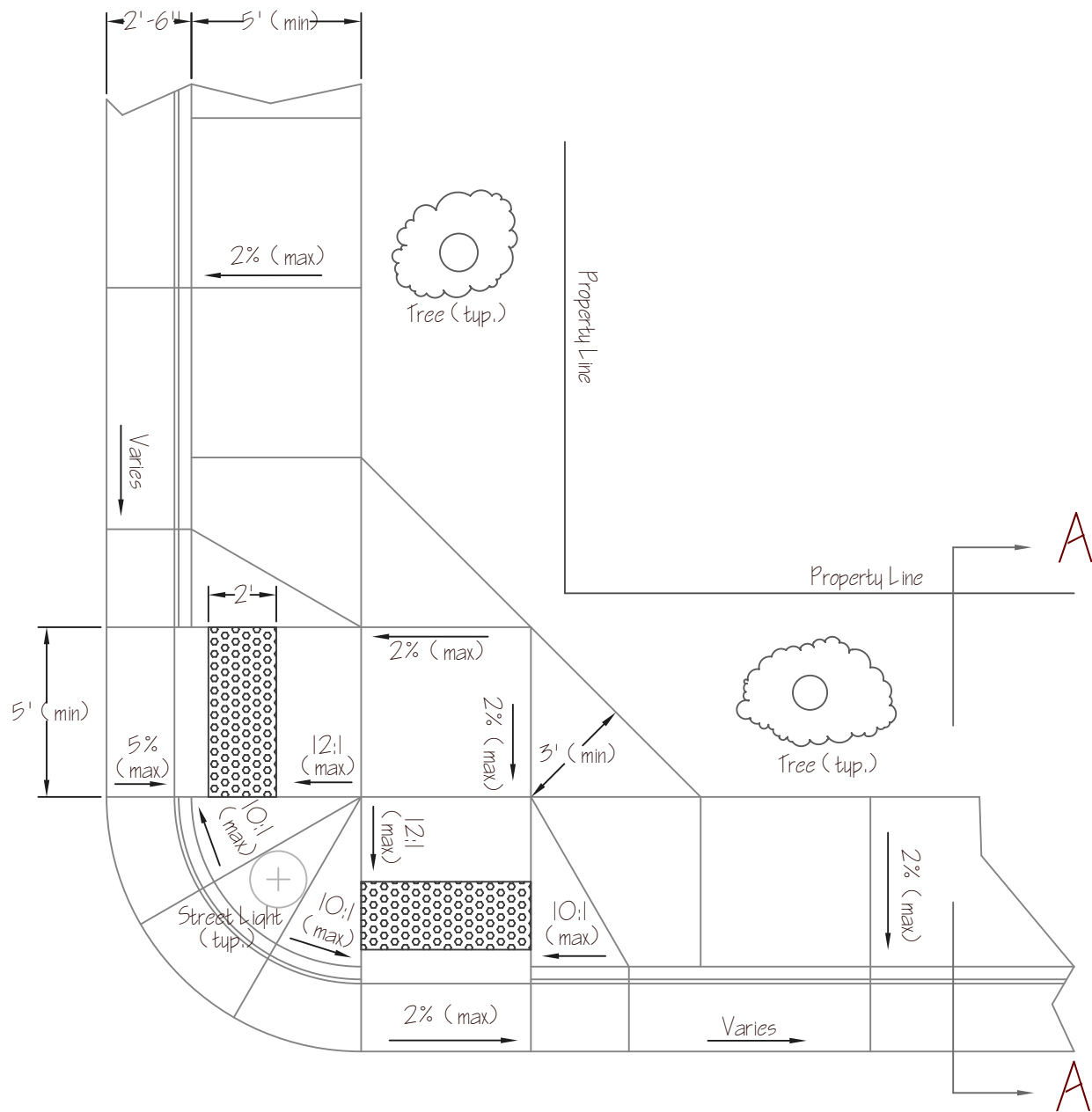
Drawn by: CAT
 Approved by: AJT
ENGINEERING DEPARTMENT
 130 South Galena Street
 Aspen, CO, 81611
 (970)-920-5080



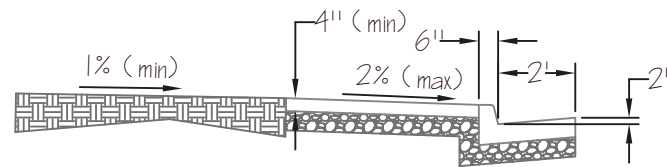
Bi-directional ADAAG Ramp for Wide (>8')
 Attached Sidewalk

Exhibit G, 5 of 7
ENG 202-1
 March 2007

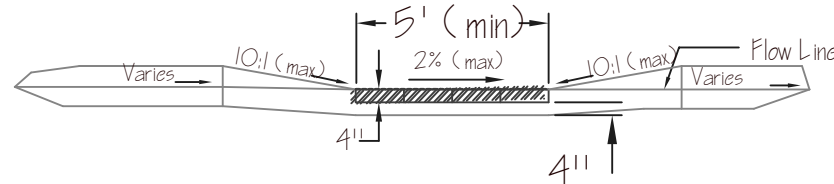
Plan:



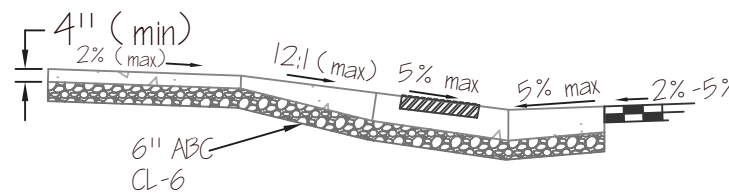
Sections:



Section A - A



Front Cross Section View of Detectible Warning, Curb and Gutter

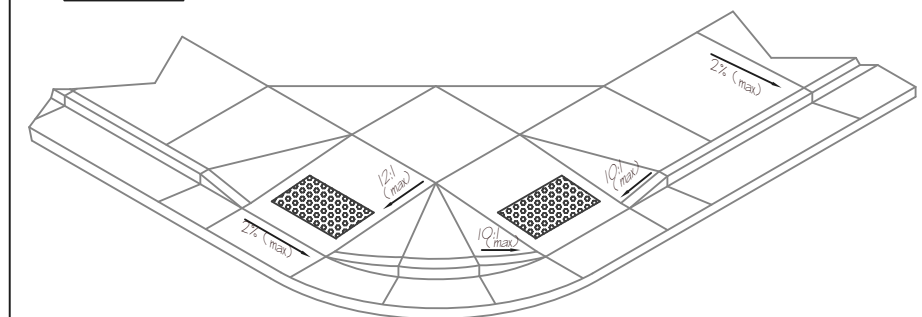


Side Cross Section View of Detectible Warning, Curb and Gutter

Notes:

1. This ramp detail is to be used where attached sidewalk already exists or where site conditions make detached sidewalk unfeasible (determination to be made by city engineering staff).
2. The least possible slope shall be used for all ramps excepting that slope must be enough to ensure adequate drainage. No cross-slope shall exceed 2%.
3. Street light installation location shall be confirmed with COA Electric and Streets department prior to installation.
4. Control joints shall be placed as shown unless site conditions prohibit. In such case, City must receive and approve variance.
5. Detectible warning pad shall be placed 6" - 8" behind back of curb.
6. Concrete conforming to CDOT class "D" shall be used for all flatwork construction. All sidewalk shall have a minimum thickness of 4".
7. Base for flatwork shall be at least 6" of CDOT ABC CL-6 compacted to 95% of modified proctor density within 2% of optimum moisture using ASTM D-1557 Method "C" or 3/4" crushed screened rock sub-base shall be scarified and recompactd
8. Coarse broom finish shall be provided perpendicular to the direction of pedestrian travel on sidewalk and ramps and perpendicular to the direction of water flow on curb and gutter.
9. Where attached sidewalk is present, deviation from this plan may be made only with the approval of Engineering department staff.

Isometric:

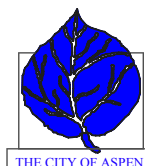


Drawn by: CAT

Approved by: AJT

ENGINEERING DEPARTMENT

130 South Galena Street
Aspen, CO, 81611
(970)-920-5080

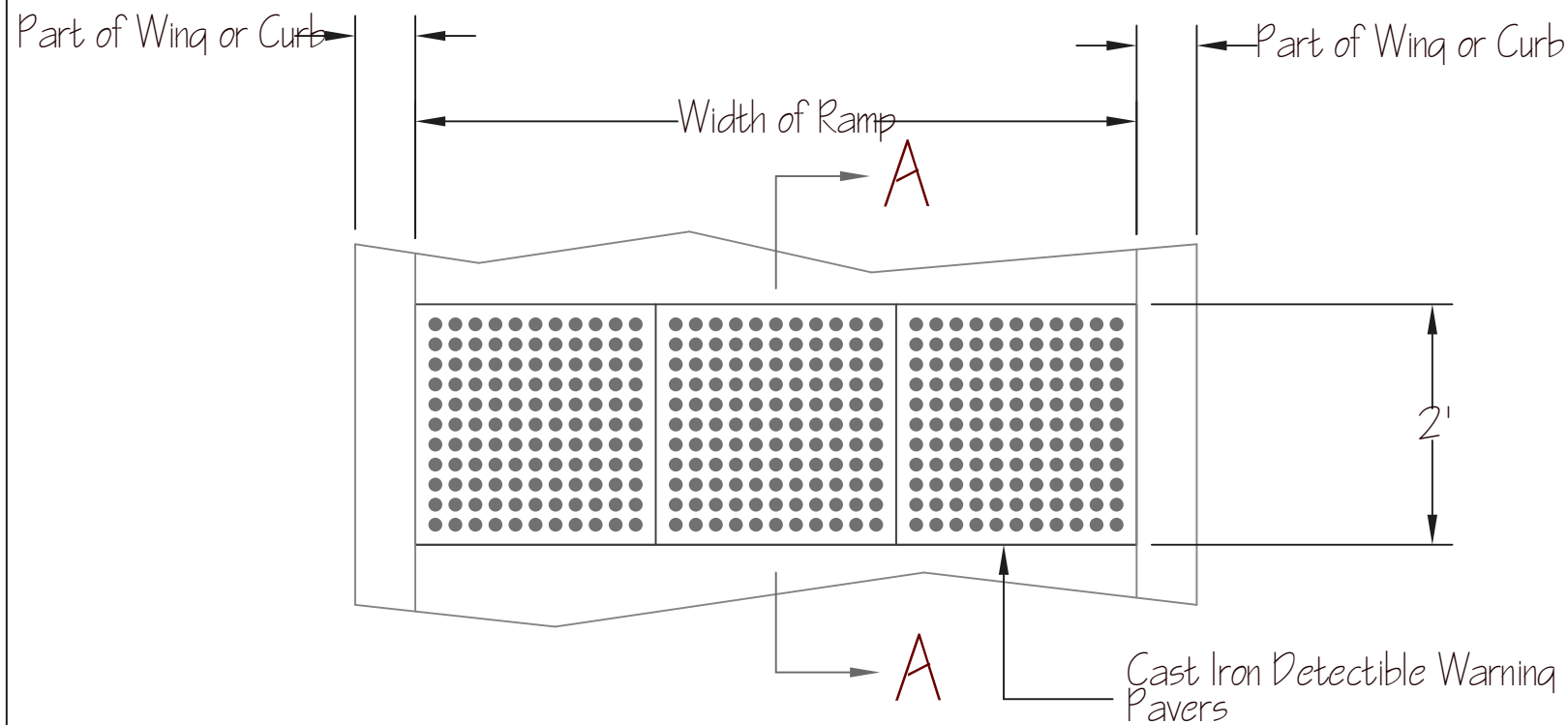


Bi-directional ADAAG Ramp for Narrow (<8')
Attached Sidewalk

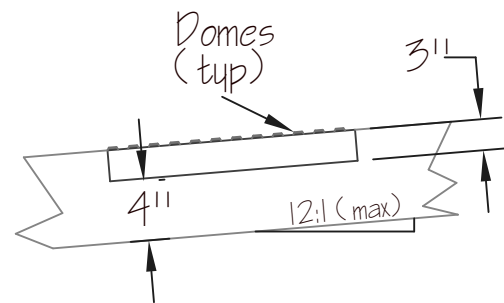
Exhibit G. 6 of 7

ENG 202-T
March 2007

Plan:

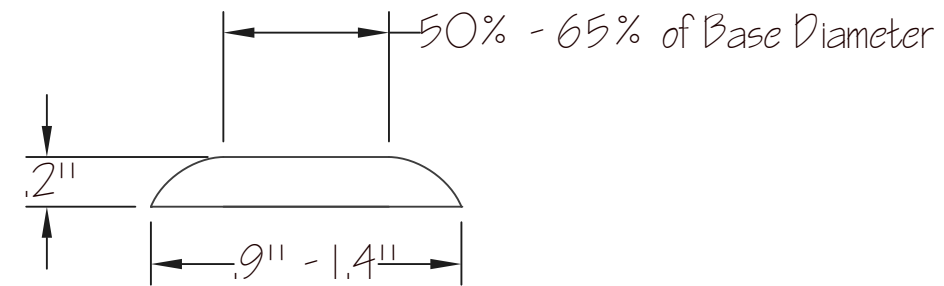


Section A - A:

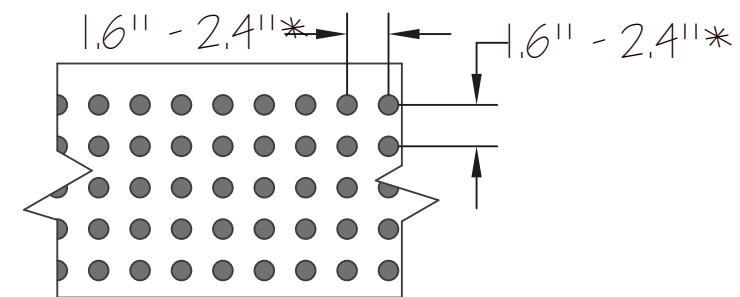


Dome and Layout Details:

Elevation View:



Plan View:



* Shall be equal in both directions

Notes:

1. Detectible warning pad shall be installed at all curb ramps. It shall be located 6-8" behind back of curb.
2. Detectible warning pad shall be two feet in length and shall cover the width of the ramp. Pad shall be cast iron, with a truncated dome surface and dimensions and layout as shown.
3. Longitudinal ramp slopes (including detectible warning pad) shall not be steeper than 12:1. Cross slopes may not be steeper than 2%.

Drawn by: CAT

Approved by: AJT

ENGINEERING DEPARTMENT

130 South Galena Street
Aspen, CO, 81611
(970)-920-5080

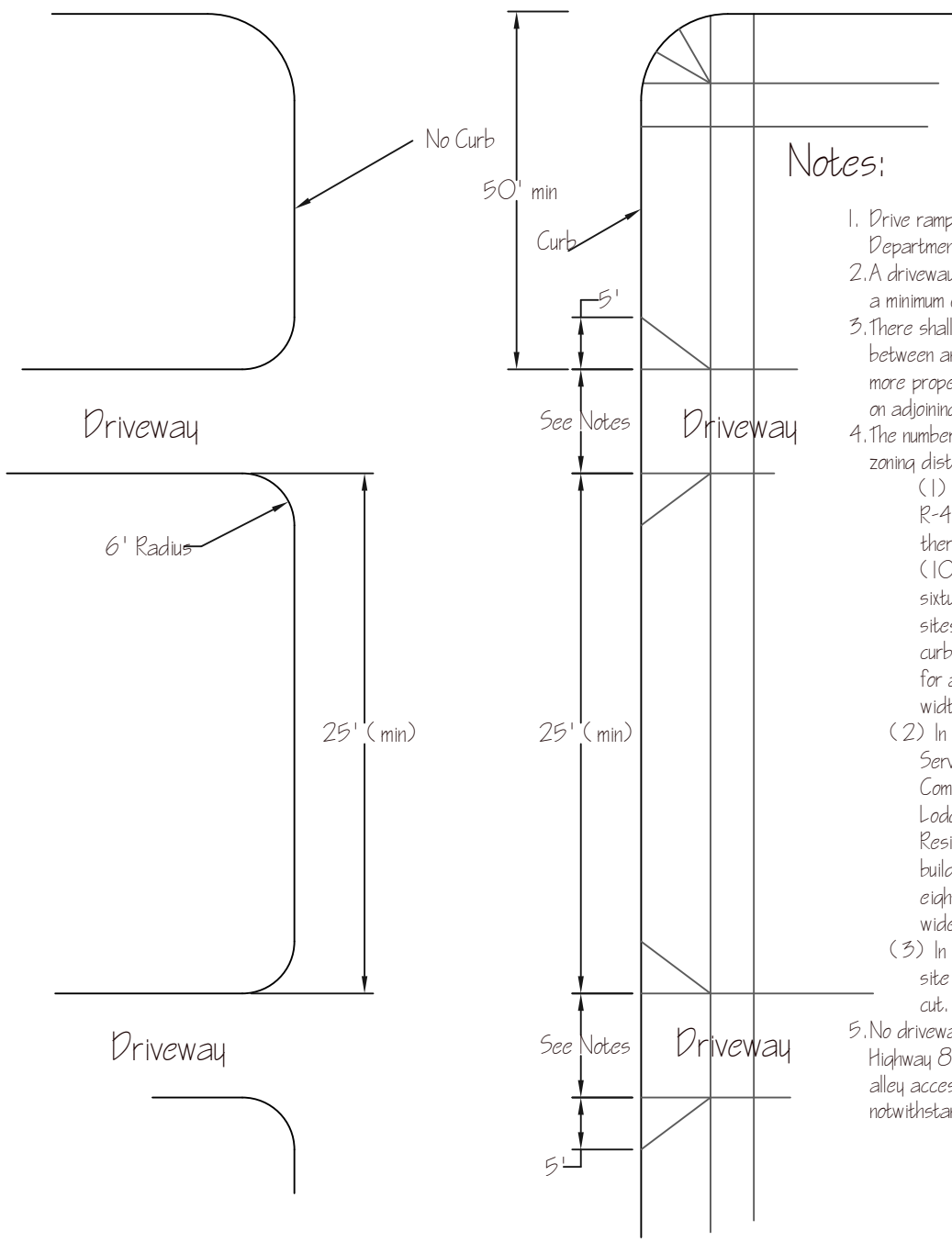


Detectible Warning Pad Details

Exhibit G, 7 of 7

ENG 202-T

March 2007



Notes:

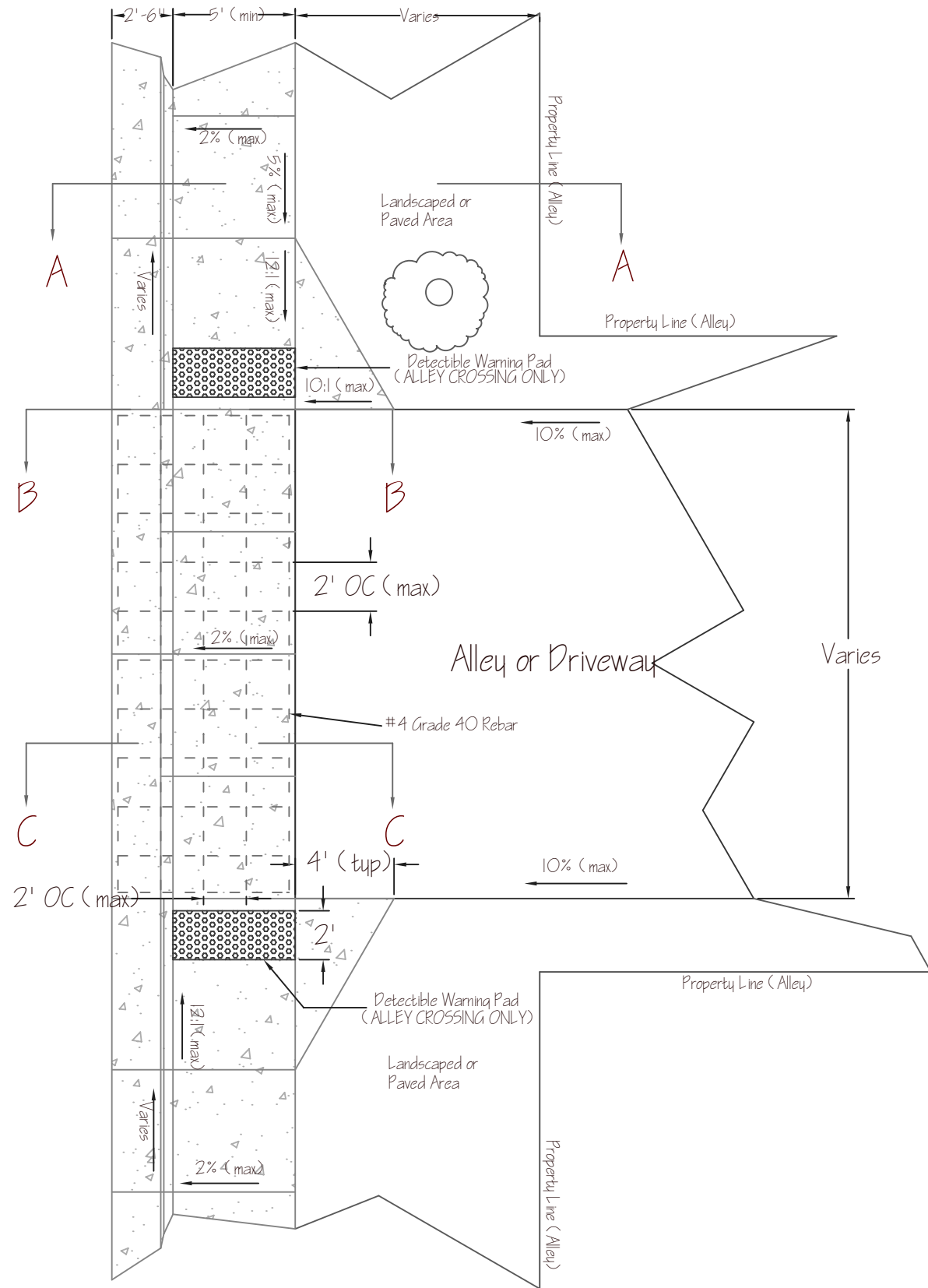
1. Drive ramp details are available from the Engineering Department as part of drawing set ENG 202-T.
2. A driveway or curb cut on a corner lot shall be set back a minimum of fifty (50) feet from the corner.
3. There shall be a minimum of twenty-five (25) feet between any two (2) curb cuts whether on one (1) or more properties, except common driveways may be used on adjoining properties.
4. The number and width of curb cuts for the different zoning districts shall be as follows:
 - (1) In residential districts R-6, R-15, R-30, R-40 and RR and in Conservation (C) District there shall be allowed one (1) curb cut of ten (10) feet in width for each building site with sixty (60) feet or less frontage. For building sites with over sixty (60) feet of frontage, the curb cut shall be either ten (10) feet in width for a single driveway or eighteen (18) feet in width for a double driveway.
 - (2) In districts Neighborhood Commercial (NC), Service/ Commercial/ Industrial (S/ C/ I), Commercial Lodge (CL), Lodge-One (L-1), Lodge-Two (L-2), Office (O) and O-2, and Residential-Multiple Family (R-MF), each building site shall be allowed either one (1) eighteen-foot wide curb cut or two (2) ten-foot wide curb cuts.
 - (3) In commercial districts CC and CI each building site shall be allowed one (1) ten-foot wide curb cut.
5. No driveway or curb cut shall be allowed on State Highway 82 or other designated arterial where public alley access exists, anything to the contrary notwithstanding.

Drawn by: CAT Approved by: AJT

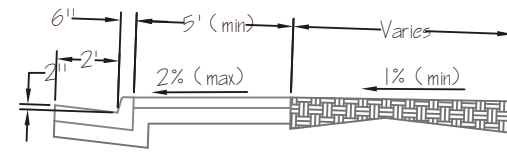
Exhibit H. 1 of 3



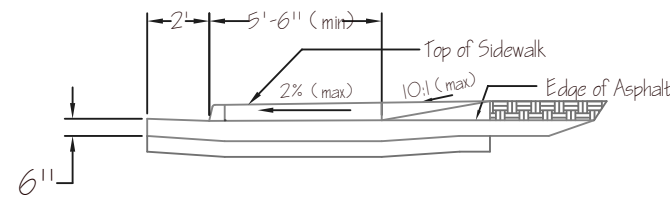
Plan:



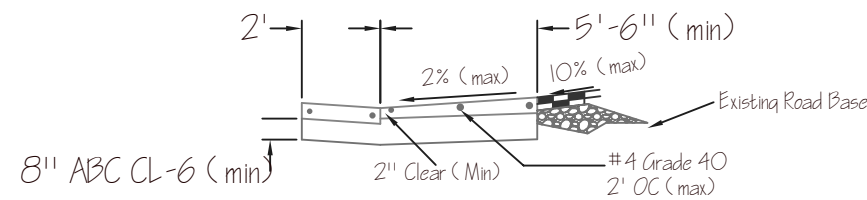
Sections:



Section A - A



Section B - B

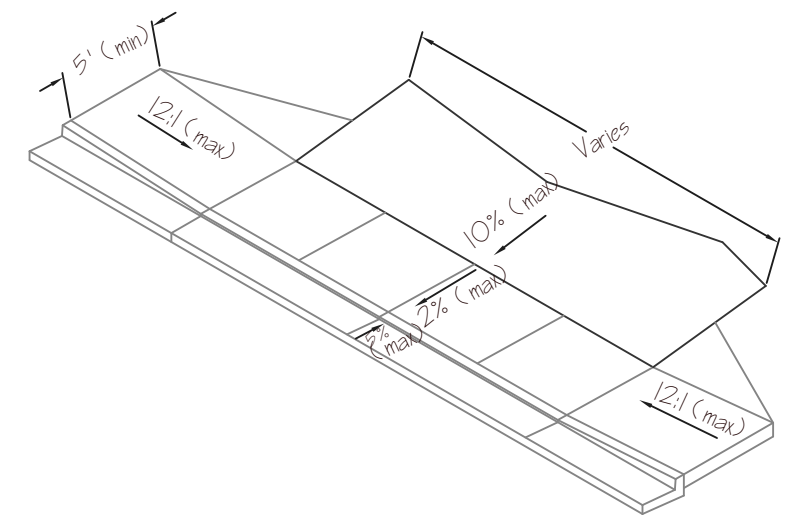


Section C - C

Notes:

1. This detail is to be used only where site conditions prohibit installation of detached sidewalk. Prohibitive site conditions must be verified by City Engineering Staff.
2. Reinforcement is to consist of #4 Grade 40 rebar placed a maximum of 24" O.C. Rebar shall be placed a minimum of 3" above bottom of slab and minimum of 2" below top of slab.
3. Base for sidewalk out of vehicle travel path is to consist of 6" (min) of ABC CL-6 over scarified and compacted subbase. Base for reinforced section is to consist of 8" (min) of ABC CL-6 over scarified and compacted subbase. Base is to be compacted to 95% of modified proctor density as defined by ASTM D-1557 method "C" or 3/4" crushed screened rock
4. The minimum slope necessary to maintain drainage is to be used throughout. Ramp longitudinal slope is not to exceed 12:1. Sidewalk cross slope is not to exceed 2%. Street slope is not to exceed 10%.
5. Concrete conforming to CDOT class "D" is to be used for all flatwork construction. Minimum thickness shall be 4" for sidewalk, 6" for ramp and reinforced section.
6. Rebar splices shall have a minimum 12" overlap.
7. There must be a minimum of 12" vertical rise between flowline of gutter and lowest point on any adjacent structure.

Isometric:

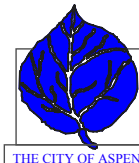


Drawn by: CAT

Approved by: AJT

ENGINEERING DEPARTMENT

130 South Galena Street
Aspen, CO, 81611
(970)-920-5080

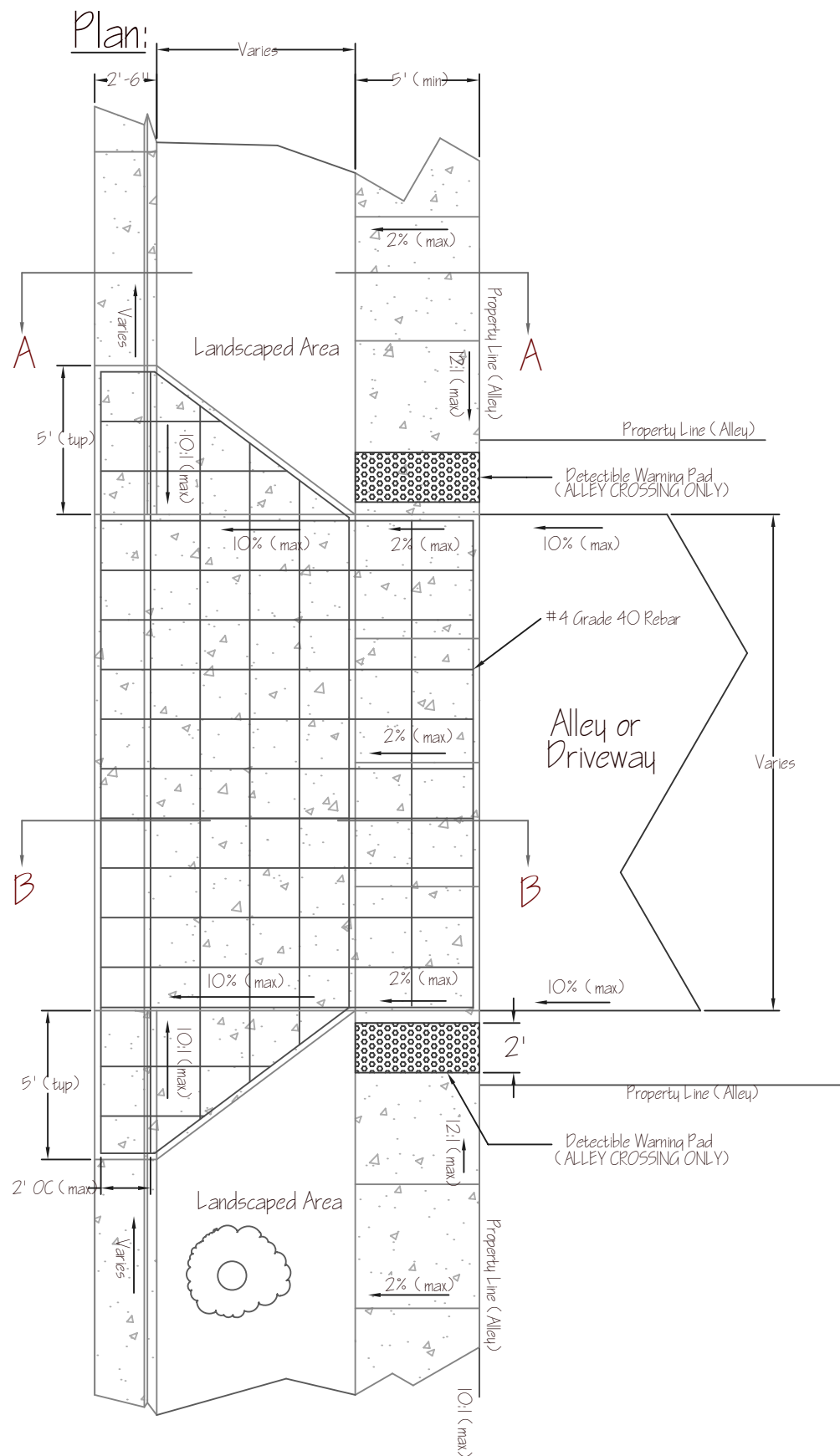


Alley/ Drive Ramp Design for Attached Sidewalk

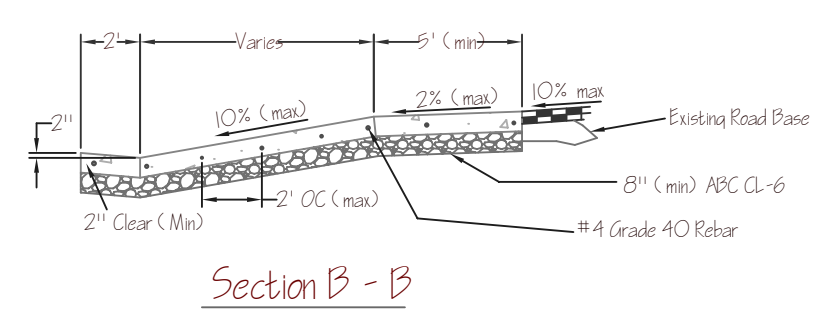
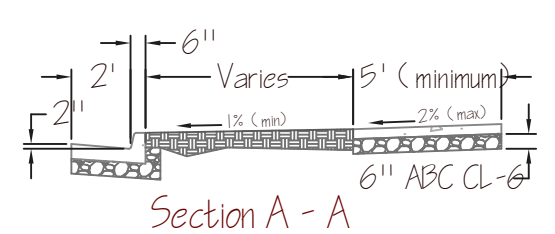
Exhibit H. 2 of 3

ENG 202-1

March 2007



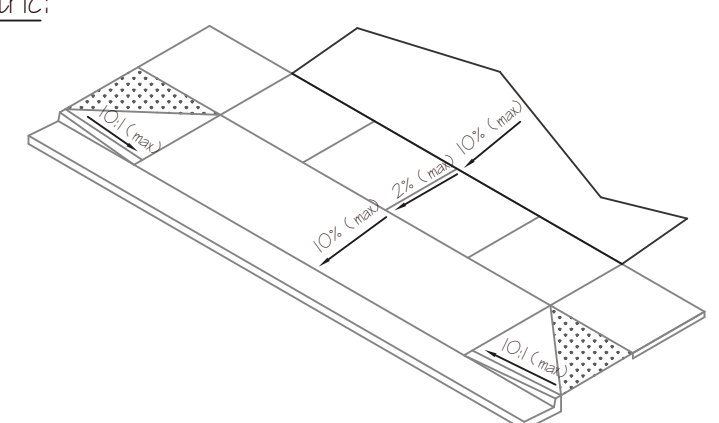
Sections:



Notes:

1. This detail is to be used where detached sidewalk is present or where attached sidewalk can be swept out to conform to this plan.
2. Reinforcement is to consist of #4 Grade 40 rebar placed a maximum of 24" O.C. Rebar shall be placed a minimum of 3" from bottom of slab and minimum of 2" from top of slab.
3. Base for sidewalk out of vehicle travel path is to consist of 6" (min) of ABC CL-6 over scarified and compacted subbase. Base for reinforced section is to consist of 8" (min) of ABC CL-6 over scarified and compacted subbase. Base is to be compacted to 95% of modified proctor density as defined by ASTM D-1557 method "C" #4 1/2" crushed screened rock.
4. The minimum slope necessary to maintain drainage is to be used throughout. Ramp longitudinal slope is not to exceed 12:1. Sidewalk cross slope is not to exceed 2%. Street slope is not to exceed 10%.
5. Concrete conforming to CDOT class "D" is to be used for all flatwork construction. Minimum thickness shall be 4" for sidewalk, 6" for ramp and reinforced section.
6. Rebar splices shall have a minimum 12" overlap.
7. There must be a minimum 12" vertical rise from flowline to lowest point on any adjacent structure.
8. A coarse broom finish is to be provided perpendicular to water flow on curb and gutter and perpendicular to the direction of pedestrian travel on sidewalk.

Isometric:



Drawn by: CAT Approved by: AJT
ENGINEERING DEPARTMENT
 130 South Galena Street
 Aspen, CO, 81611
 (970)-920-5080



Alley/ Driveway Ramp Design for Detached Sidewalk

Exhibit H. 3 of 3
ENG 202-1
 March 2007