

**GUNNISON COUNTY
STANDARDS AND SPECIFICATIONS
FOR
ROADS AND BRIDGES**

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SECTION 1
GENERAL PROVISIONS

1.1 Title

This document (as it may be amended by the Board of County Commissioners) shall be known as the "Gunnison County Standards and Specifications for Roads and Bridges" and will be referred to herein as "these Standards and Specifications."

1.2 Purpose

The purpose of these Standards and Specifications is to provide for the uniform planning, design, construction, maintenance, and permitting of roads and related facilities and/or improvements to roads and related facilities in Gunnison County, and further, to provide for the administration of the Gunnison County Road System and other roads under the jurisdiction of Gunnison County in a manner consistent with applicable federal, state and local statutes, ordinances and regulations. These Standards and Specifications identify the minimum standard or specification necessary to achieve public safety, functional effectiveness, ease of maintenance, pleasing appearance, and to address environmental concerns.

1.3 Permit Required

Unless otherwise expressly excepted by these Standards and Specifications, no person shall engage in, cause or allow any construction of, or work on, in, or over any road under the jurisdiction of Gunnison County or approved by Gunnison County unless that person has first obtained each appropriate permit required by Gunnison County. If such activity has begun before issuance of such permit(s), no permit shall be issued until the applicant ceases the activity, remedies any damage caused, and complies with all enforcement actions taken by Gunnison County. The following permits are required as appropriate according to the anticipated work:

- A. Rights-of-way Work Permit (see Section 6.2)
- B. Access Permit (see Section 6.3)
- C. Oversize/Overweight Permits (see Section 6.4)
- D. Snow Management Permit (see Section 6.5)
- E. Rights-of-way Encroachment Permit (see Section 6.6)
- F. Parking Permit (see Section 6.7)
- G. Reclamation Permit for Revegetation and Noxious Weed Control (see Section 6.8)
- H. Any permit required by any governmental or other agency that applies to the work in question.

In order to compensate the County for the cost of reviewing and processing permits, each applicant shall pay the fees, as shown in a schedule of fees charged for permits issued by the Public Works Department, adopted and amended from time to time by the Board. The fee schedule (Exhibit A) is designed to make the amount of the fee proportional to the amount of expense likely to be incurred by the County in reviewing and processing the application.

1.4 Scope and Application

These Standards and Specifications apply to County, public, and private roads, accesses and trails within the jurisdiction of Gunnison County.

1.5 Partial Exemptions

The following are partially exempt from the requirements of these Standards and Specifications:

- A. Agricultural (as defined by the Gunnison County Land Use Resolution in Section 2-102) roads are exempt from these Standards and Specifications except that they require access permits as set forth herein. (see Section 4.5 and Section 6.3) Residential accesses to agricultural operations are not exempt from these Standards and Specifications.

1.6 Authority

It is the intent of the Board in adopting and enforcing these Standards and Specifications to fully exercise all authority and power conferred on it by, and to rely on, Colorado law including but not limited to C.R.S. § 43-1-101 et. seq., 43-2- 101 et. seq. and 30-11-107 (1)(h); 30-15-401.

C.R.S. Title 42, Article 4 authorizes the Board to regulate traffic on County roads and public roads under County jurisdiction. C.R.S. Title 42, Article, 4, and Title 43, Article 2 also authorizes local governments to regulate vehicular access to or from any public highway under their respective jurisdiction to or from property adjoining such highway in order to protect the public health, safety and welfare, to maintain smooth traffic flow, to maintain highway rights-of-way and to protect the functional levels of public highways. Colorado law, including but not limited to C.R.S. § 43-5-301 et. seq. prohibits anyone from obstructing a highway. The Board of County Commissioners, the Public Works Director, or the Public Works Director's designee, is authorized to interpret and enforce these standards.

1.7 Amendments

These Standards and Specifications may be amended or repealed, in whole or in part, by the Board.

1.8 Severability

If any section, clause, provision, or portion of these Standards and Specifications should be found to be unconstitutional or otherwise invalid by a court of competent jurisdiction, such determination shall not affect the validity of these Standards and Specifications as a whole or

any part of these Standards and Specifications other than the part determined to be unconstitutional or invalid. Nor will such a finding affect the validity of any permit previously issued, financial security previously accepted, or action previously taken by the County, except as specifically adjudicated by a court of competent jurisdiction.

1.9 Waiver

- A.** No waiver of these Standards and Specifications shall be valid unless approved as set forth in this section.

- B.** Only the Board may approve a waiver of these Standards and Specifications, except that the Director of Public Works has authority to waive these Standards and Specifications for an access or for a minor extension of an existing road; though the Director may refer any such waivers to the Board. The Board or the Director of Public Works may place special conditions on the approval of a waiver. Such conditions may include but are not necessarily limited to:
 - 1. Seasonality of use;
 - 2. Number of structures;
 - 3. Size of structures;
 - 4. Type of use;
 - 5. Geography;
 - 6. Existence or installation of public utilities; and
 - 7. Risk to emergency services personnel.

- C.** All waivers shall be project specific and shall not establish a precedent for any other proposed waiver.

- D.** No waiver shall be granted:
 - 1. Unless and until all related fees and costs have been paid to Gunnison County.
 - 2. If the applicant is in violation of any Gunnison County rule or regulation, including but not limited to the Gunnison County Building Code, the Gunnison County Onsite Wastewater Treatment System regulations, and the Gunnison County Land Use Resolution.

- E.** A request for a waiver must be applied for in writing and identify the following:
 - 1. The name, address, and telephone number of the applicant;
 - 2. Identification of the subject property, proposed site improvements, expected use, and public road access point;

3. A specific description of the requested waiver (including relevant information and proposed access construction plans);
 4. A detailed explanation of why the proposed waiver is warranted by site specific conditions which create an unusual aspect or feature not shared by property in general; and
 5. A detailed explanation of why the proposed waiver:
 - a. Would not adversely affect the safe, efficient and orderly movement of motorized and non-motorized traffic;
 - b. Would not adversely affect health or safety;
 - c. Would not cause substantial injury to the owner or occupant of adjacent land(s);
 - d. Would not cause substantial injury to the environment; and
 - e. Would provide the functional intent of these Standards and Specifications.
 6. Any other information required by the Board or Director of Public Works (e.g. physical survey, engineered plans).
- F.** The determination of whether an application is complete lies within the sole discretion of the Director of Public Works.
- G.** No public meeting is required for a determination of a waiver by the Director of Public Works, except that the applicant for such waiver may appeal the Director's determination to the Board by submitting a written appeal to the Director of Public Works within fourteen (14) days of the Director's decision. The Board may accept or decline to hear such appeal at its discretion. Should it accept such appeal, the Board will decide the application for waiver *de novo* under the procedures set forth in Paragraphs H through J.
- H.** After receipt by the Board of a complete application for waiver or an appeal set forth in Section 1.9, the Board shall set a date, time and place for a public meeting on that petition. The applicant shall publish, at a minimum, notice of such meeting once a week, for the two consecutive weeks immediately before the meeting. The applicant for the waiver must notify all property owners adjacent to the property on which the waiver applies no later than fourteen days before the meeting, by mailing to each of them, by certified mail, return receipt requested, a complete copy of the request for a waiver and a copy of the notice of the public meeting; the applicant must provide proof of such notification to the Director of Public Works at least seven (7) days prior to the public meeting.

- I.** The Board, or if applicable, the Director of Public Works, may grant a waiver in its discretion pursuant to this Section (1.9). In deciding whether to grant a waiver, the Board or the Director of Public Works should consider the following factors:
1. The waiver is warranted by site specific conditions which create an unusual aspect or feature not a shared by property in general;
 2. The waiver will not adversely affect the safe, efficient and orderly movement of motorized and non-motorized traffic;
 3. The waiver will not adversely affect public, health, safety or welfare;
 4. The waiver will not cause substantial injury to the owner or occupant of adjacent land(s);
 5. The waiver will not cause substantial injury to the environment;
 6. The waiver is not otherwise prohibited by or inconsistent with any other Gunnison County rule or regulation, including but not limited to the Gunnison County building code, the Gunnison County Onsite Wastewater Treatment System regulations, and the Gunnison County Land Use Resolution; and
 7. Granting the waiver would be consistent with the purpose and spirit of these Standards and Specifications.
- J.** The Board may deny a waiver orally but shall state on the record its findings under Paragraph I above. The Board may grant a waiver only through written instrument, which shall be duly recorded with the Gunnison County Clerk and Recorder and in the chain of title for the property(s) on which the waiver applies. Any costs of recording shall be borne solely by the applicant. Such approval shall include the findings of the Board under Paragraph I above and any conditions imposed pursuant to Paragraph I above.
- K.** The Public Works Director shall grant or deny a waiver application in writing, setting forth the Director's finding for grant or denial of a waiver under Paragraph G above and, if granted, any condition imposed. The written statement of the Public Works Director granting a waiver shall be provided to the applicant, who shall record such statement in the chain of title for the property(s) on which the waiver applies.
- L.** An application for a waiver may be considered concurrently with other applications under the Gunnison County Land Use Resolution unless the Public Works Director concludes in their discretion that there is or will be significant public concern, in which case the waiver shall be considered first.
- M.** The applicant must prepay the cost of processing the waiver application as identified in the Schedule of Fees (Exhibit A).

SECTION 2

ADMINISTRATION

2.1 Road Systems

The road system in Gunnison County consists of federal highways, state highways, county roads, city streets and alleys, town streets and alleys, other public roads and private roads, lanes, accesses, and trails over fifty (50) inches wide or trails that intersect with other roads, lanes, accesses, or trails covered by this document. The defined road system does not indicate acceptance of any road by the County. Acceptance of a road for County maintenance requires affirmative action by resolution by the Board.

A. The Colorado State Highway System

1. The Colorado State Highway System in Gunnison County is administered by the Colorado Department of Transportation under the direction of the Executive Director and the State Highway Commission. The Colorado Department of Transportation has full responsibility for the construction and maintenance of all Colorado state highways within the unincorporated areas of Gunnison County. Within incorporated areas, maintenance responsibilities may be assumed by a municipality under a maintenance agreement. The placement of traffic control signs on all County roads at an intersection with a state highway is under the jurisdiction of the Colorado Department of Transportation.
2. Access to the Colorado State Highway System in Gunnison County is administered by the Colorado Department of Transportation through the State Highway Access Code, any access control plan adopted by the Board, and/or other applicable regulations.
3. **NOTE:** The portion of the access from the edge of CDOT rights-of-way to the building footprint must comply with the access requirements in Section 4.5 and Section 6.3.
4. Planning for state highways is conducted by the Colorado Department of Transportation in cooperation with the county, local municipalities, and other agencies.

B. The County Road System

The State of Colorado, by statute, authorizes the Board to administer the County Road System, including but not limited to planning, design, construction, maintenance, and traffic regulation of County, public, and private roads under County jurisdiction.

1. The Gunnison County Road Map

Pursuant to C.R.S. § 43-2-110(1)(a), a Gunnison County Road Maintenance Map has been adopted by the Board of County Commissioners. This map shall be updated

periodically to reflect additions, deletions, and alterations to the primary road system in the County. Copies of the County Road Map shall be available online. Nothing in these Standards shall be construed as the Board of County Commissioners assuming responsibility for any road not expressly and unambiguously displayed on the County Road Map as a numbered primary County road.

2. Road Administration

The Board shall determine the standards, policies, practices and priorities of the County as to County roads and public and private roads under County jurisdiction. The Board shall develop planning, design and construction standards, and regulate, inspect and enforce activity conducted pursuant to such standards.

- a. At the Board's discretion and subject to available manpower and resources, the County Public Works Department is responsible for the maintenance, repair, and improvement of certain designated County roads and bridges, and the inspection and regulation of utilities and access points in County rights-of-way.
- b. County Maintenance. Consistent with applicable law, Gunnison County shall maintain or contract for maintenance of all roads for which the County receives gas tax monies pursuant to Highway User Tax Fund reporting. Nothing in these Standards and Specifications creates or shall be construed to create any specific obligation of Gunnison County to maintain, or to allow private maintenance of, any road or portion of a road; the location, quantity, quality, and frequency of such maintenance shall be in the sole discretion of the Board.
- c. County Snowplowing. Nothing in these Standards and Specifications or any prior policy or practice of Gunnison County creates or shall be construed to create any obligation of Gunnison County to snowplow, or to allow private snowplowing, of any road or portion of a road; the location, quantity, quality, and frequency of such snowplowing shall be in the sole discretion of the Board.

3. Nothing in these Standards and Specifications shall be construed to apply to the County Road System except 1) to the extent required by other law or regulation, and 2) as expressly provided in these Standards and Specifications.

C. Municipal Streets

Each municipality in the County should have a street system that consists of streets open to and used by the public.

D. Mixed Jurisdiction

Situations arise in which both the County and a municipality or other government entity have ownership and/or jurisdiction over portions of the same road (e.g., a municipality annexes to the centerline of a County road.) The standards applicable in each such

situation shall be determined on a case-by-case basis by the governing authorities and shall be reduced to a binding written instrument. To reduce jurisdictional problems, municipalities shall annex full width roads when annexing areas. Absent express direction from the Board or pursuant to a duly executed intergovernmental agreement, Gunnison County will not normally assume the financial or operational responsibility of winter or summer maintenance of any road or portion of road within the jurisdiction or service area of any other federal, state or local government entity, including but not limited to special districts, municipalities, the United States Forest Service, the Bureau of Land Management, the National Park Service, the Colorado Department of Transportation, the Colorado State Lands Board, and counties adjacent to Gunnison County.

E. Other Public Roads

C.R.S., §§43-2-201, as amended, determines what are public roads or highways in Colorado. Public roads are not County roads except as provided by Section 2.1(B) of these Standards and Specifications. Public roads shall comply with these Standards and Specifications in order to provide predictable, consistent, and safe roads for users. In order to provide predictable, consistent and safe roads, public roads must comply with the Manual for Uniform Traffic Control Devices for all road signage.

F. Private Roads

Gunnison County assumes no maintenance responsibility on private roads, and does not regulate utilities on private roads. The use of the private roads for emergency services, postal delivery, or school transport shall be arranged by the owner with the appropriate governmental entity. Private roads shall comply with these Standards and Specifications in order to provide predictable, consistent, and safe roads for users. In order to provide predictable, consistent and safe roads, private roads must comply with the Manual for Uniform Traffic Control Devices for all road signage.

2.2 County System Regulations

A. Traffic Control Devices

No person shall install a traffic control device on a County road or public road under County jurisdiction without prior written permission from Gunnison County; all traffic control devices installed on County roads or public roads under County jurisdiction shall conform to the latest edition of the Manual on Uniform Traffic Control Devices, published by U.S. Department of Transportation, Federal Highway Administration, as edited and accepted by the State of Colorado, and as amended. Said manuals will be available for review at the County Public Works Department. The County Public Works Department may conduct accident studies, traffic analysis, traffic control studies, or any other engineering studies required by state law or by the Manual on Uniform Traffic Control Devices which are prerequisite for the installation of traffic control devices on roads. The cost of obtaining such information shall be borne in whole or in part by the project proponent as reasonably determined by the Director of Public Works.

If the need for such device is caused by traffic resulting from a development as demonstrated by a traffic study, the cost of such device and such study be borne in whole or in part by the project proponent, except where the project proponent is the County, in which case such study and such device are not required by these Standards and Specifications (though such device may be required by state or federal law or regulation).

B. Cooperation with Other Entities

To the extent reasonably practicable, the County Public Works Department, and other officials of Gunnison County, should seek the cooperation of law enforcement officials and federal, state and local governments in administering the provisions of these Standards and Specifications, and in developing ways and means to improve traffic conditions.

2.3 Enforcement

These Standards and Specifications shall be enforced in accordance with the requirements of Federal and Colorado law and as provided herein. Each enforcement remedy can be invoked by Gunnison County independently or in conjunction with any or all of the other enforcement remedies. The Director of Public Works and their designees are each individually and collectively charged with and authorized to enforce all the requirements of these Standards and Specifications.

A. Notification To Correct Violation

When a County official, employee, agent or attorney charged with enforcement of these Standards and Specifications has reasonable cause to believe that any activity is being conducted or any condition exists which is contrary to or in violation of these Standards and Specifications, or any permit issued pursuant to them, the Director shall give written notice to the responsible person. The notification shall state which requirements are being violated, shall state the conditions that are to be satisfied for compliance, and shall state that the violator shall correct the violation within thirty (30) days, or sooner, of receipt of the notification, unless otherwise determined by the Director. Such written notification is cumulative to, and not a prerequisite to, any other enforcement remedies available to Gunnison County. The Director shall issue a written compliance letter only if the activity or condition that is the basis for the notice has been remedied and any required reclamation work has been completed.

B. Stop Order

When a person charged with enforcement of these Standards and Specifications has reasonable cause to believe that any activity is being conducted or any condition exists which is contrary to or in violation of these Standards and Specifications or any permit issued pursuant to them, the Director may, by written notice ("Stop Order") order the activity stopped, and/or condition remedied immediately or by a time certain. The stop order shall be served by delivering it or mailing it certified mail, return receipt requested, to any person engaged in the activity or responsible for the condition. The stop order

shall be complied with by all persons, departments, agencies, or others. The stop order applies to all work, permits, reviews, or other situations covered by these Standards and Specifications or County Land Use Resolution for all properties under the ownership or control of the person, persons, or group covered by the stop order. The Stop Order shall remain in effect until the Director determines that the activity or condition that is the basis for the stop order has been remedied, and the Director issues a written compliance letter only if the activity or condition that is the basis for the notice has been remedied and any reclamation work has been completed. The issuance of a Stop Order is cumulative to, and not a prerequisite to, any other enforcement remedies available to Gunnison County.

C. Suspension or Revocation of Permit

When a person charged with enforcement of these Standards and Specifications has reasonable cause to believe that any activity is being conducted or any condition exists which is contrary to or in violation of these Standards and Specifications or any permit issued pursuant to them, such person may request, and upon such request the Board shall schedule a hearing to determine whether any relevant permit shall be suspended or revoked. The Board shall give written notice of the hearing to the holder of the permit by mailing notice by electronic mail, if available, and certified mail, return receipt requested at the last known address, postmarked at least fourteen (14) days before the hearing. The notice shall contain a summary of the grounds for the potential suspension or revocation. The permit holder shall provide to the Board, to the County Attorney and to the Director at least seven (7) days before the hearing a written response to the foregoing summary. At the hearing, the person(s) charged with enforcement of these Standards and Specifications shall demonstrate, why the permit should be suspended or revoked. The permit holder or applicant shall be given an opportunity to be heard at such hearing and present evidence and testimony, but the Board may place reasonable limitations on the presentation of evidence or testimony by any party to the hearing. The Board shall suspend or revoke the permit if, after the close of the hearing, and based on credible evidence obtained at the hearing, either of the following findings is made by the Board:

1. The permit was issued in reliance on materially erroneous or misleading information from the applicant or his/her representative; or
2. Activity is being conducted or a condition exists that is a violation of these Standards and Specifications or a permit issued pursuant to them. Notification of the Board's decision shall be provided by the Director to the holder of the permit by certified mail, return receipt requested, within seven (7) days of the Board's decision. The suspension or revocation shall remain in effect until the Board determines that the activity or condition that is the basis of the suspension or revocation has been remedied and any required reclamation work completed, and the Board issues a written compliance order. The remedy of suspension or revocation is cumulative to, and not a prerequisite to, any other enforcement remedies available to the Board.

D. No Processing of Applications.

No permit application shall be processed or approved pursuant to these Standards and Specifications, and no Building permit or other permits shall be issued by Gunnison County, for any persons and any properties that are the subject of an active Notice of Violation, Stop Order, or Suspension Order issued by any County department. This enforcement remedy is cumulative to, and not a prerequisite to, any other enforcement remedies available to the Board.

E. Other Remedies

The Board may seek all civil, criminal and /or other legal or equitable remedies available to it for any violation of these Standards and Specifications, including but not limited to any fees associated with the investigation and prosecution of such violation as set forth in Exhibit A to these Standards. Such remedies are cumulative to, and not a prerequisite to, any other enforcement remedies available to the Board.

F. Abatement and Reclamation

No compliance order shall be issued unless and until the activity or condition is abated and reclaimed to the satisfaction of the Director of Public Works at the cost of the violator; Gunnison County shall have the right to abate and reclaim the violation at the cost of the violator.

2.4 Inspection

The Director, or the Director's designee, to the fullest extent permitted by law, may inspect and examine the use, occupation, or development of, or activity in, each and every area or activity subject to these Standards and Specifications for the purpose of determining from time to time whether any use, occupation, development or activity is in violation of any of the provisions of these Standards and Specifications or of any permit issued or required pursuant to these Standards and Specifications. This includes, but is not necessarily limited to, any land use change as that term is defined in Section 3.2 of these Standards and Specifications. The Director may refuse to accept or process any application for a permit under these Standards and Specifications if an applicant fails or refuses to allow the Director or Director's designee to inspect those portions of property or structures implicated by the permit application.

2.5 County Road System Additions and Improvements

A. By the County

To the fullest extent permitted by law, the Board may lay out, alter, restrict use of, close, or change any road in the County Road system under its jurisdiction, and acquire lands for County roads. The County Public Works Department has the primary responsibility for the planning, design, rights-of-way acquisition, construction, and inspection of all additions and improvements to the existing County Road System. Such activities will

comply with these Standards and Specifications.

B. By Others

Any road proposed by other than the County to be added to the existing County Road System will ordinarily pass through multiple review steps (in writing): planning, acceptance of design, permitting, acceptance of rights-of-way dedication, construction, and inspection. As a final step, the Board may accept maintenance and/or plowing responsibilities for the road by duly adopted resolution. Such activities will comply with these Standards and Specifications.

C. Planning

The planning or layout of any road subject to these Standards and Specifications and any improvements to any existing roads subject to these Standards and Specifications shall be in accordance with Section 3 of these Standards and Specifications as it may be amended. If a road is created through the land use change process, all provisions of these Standards and Specifications and the Gunnison County Land Use Resolution shall be met.

D. Design

The design of any road subject to these Standards and Specifications and any improvements to any existing roads subject to these Standards and Specifications shall be in accordance with Section 4 of these Standards and Specifications as it may be amended. Road and bridge plans and specifications shall be prepared by a Professional Engineer in accordance with these Standards and Specifications and shall be approved in writing by the Director of Public Works before any construction activity whatsoever commences. Any such written approval shall expire without further notice one year from the date it is issued. Any amendment or revision to a plan or specification, and any resubmission of a plan or specification must conform to the Standards and Specifications, as they exist at the time of the amendments, revision or resubmission.

E. Rights-of-way Dedication/Acceptance

Dedications of Rights-of-Way shall comply with standards in Section 12-103 of the Gunnison County Land Use Resolution.

2.6 Development Improvement Agreement Required

Development Improvement Agreements shall comply, to the fullest extent practicable, with Section 16-118 of the Gunnison County Land Use Resolution as amended, but the Director may depart from such standards in their discretion so long as such departure is consistent with these Standards and Specifications.

- A. Vacant Land Access** Permits may require a Development Improvement Agreement as a condition of issuance at the discretion of the Director. The Vacant Land Access Permit

shall include the purpose and intended use of the access and parcel as part of the application.

2.7 Construction

Construction of County, public, and private roads under County jurisdiction and reconstruction of same shall conform to the provisions of Section 5 of these Standards and Specifications. Permits shall be obtained as per Section 6.

A. Inspection

Inspections and testing shall be performed to ensure compliance with these Standards and Specifications and any other requirements and conditions before any County Public Works Department recommendation is made to the Board for acceptance and/or release of a guarantee or financial security. Requirements for inspections and testing are found in Section 5 - Construction Specifications of these Standards; compliance is the sole responsibility of the developer or permittee.

2.8 Acceptance of Roads for Dedication to the County and for County Maintenance

- A. Dedication can be statutory or by written instrument at the sole discretion of the Board.
- B. Conditions for new dedications are by written instrument. Any instrument of dedication must be on a County form and include language approved by the Gunnison County Attorney.
- C. Requirements for acceptance include but are not limited to the following:
 - 1. The road shall have been constructed in accordance with these Standards and Specifications.
 - 2. Roads located within a 3-mile radius of an incorporated municipality should be paved before acceptance into the County Road System.
 - 3. The Director of Public Works or their designee shall have completed final inspection and shall have approved the roads in accordance with Section 5 of these Standards and Specifications and shall have provided a recommendation for or against to the Board.
 - 4. The road and all associated appurtenances shall be in good repair, requiring no maintenance (except plowing for snow), improvements, or additions by the County at the time of acceptance.
 - 5. The road must connect to another maintained County road, state highway, or municipal street of the same or higher functional classification.
 - 6. A written request for acceptance of the road shall have been submitted to the County

Public Works Department. The application shall have been submitted at least four (4) weeks before performance of the final inspection is requested. An application for acceptance will not be accepted by the Director of Public Works, nor will any inspection be performed when, in the sole discretion of the Director, weather conditions prohibit a complete inspection.

7. All required road signs and traffic control devices shall have been installed in accordance with the most current version of the Manual of Uniform Traffic Control Devices. Reflective signs showing road numbers or street names shall be installed to facilitate emergency services response prior to acceptance.
 8. A guarantee of financial security shall have been submitted to the County in an amount determined by the Board to warrant the integrity of the road construction for two (2) years after the date of the acceptance by the County. In the sole discretion of the Board, such time period may be enlarged. An inspection by the County shall be conducted at the end of the time period. The obligations of the developer or permittee shall terminate only upon correction or repair by the developer or permittee of all deficiencies identified by such inspection.
 9. All required subsurface utilities shall have been installed in the roadway prior to finishing subgrade. A Subsurface Utility Engineering Survey that meets state requirements shall be complete for all buried infrastructure. All subsurface utilities within the roadway profile shall have been installed prior to the road inspection.
 10. All survey monuments that were in a roadway or a road rights-of-way shall have been reset by a surveyor licensed in the State of Colorado.
 11. Trench compaction tests and results, as required in Article V of these Standards and Specifications and as required by any permit shall have been submitted to and approved by the Director of Public Works for all trenches within the road rights-of-way. Such tests and results shall have been submitted and approved prior to placement of any road base material whatsoever.
 12. A reproducible 11" x 17" copy and/or digital copy of as-built drawings shall have been submitted to the Director of Public Works. The drawings shall accurately show all road construction details, utility, and lateral locations and depths, property boundaries and corners, and other pertinent information as required. Upon its submission to the Director, the copy shall become and remain the property of the County. The County reserves the right to require the submission of plans in any digital format.
 13. Such other conditions as the Board deems necessary for public health, safety, or budget constraints shall have been satisfied. The Director of Public Works, in their sole discretion, shall assign the road a Level of Service rating.
- D. Roadways through State and Federally Owned Lands. It may be to the benefit of the general public for the County to accept roads through state and federally owned land

whether or not such roads meet these Standards and Specifications. Upon the receipt of a petition for acceptance of such roads into the County Road System, roads which fall into these classifications may be accepted into the County Road System by the Board pursuant to the waiver process set forth in Section 1.9 of these Standards and Specifications.

2.9 Private Road Construction and Inspection

The construction, substantial improvement, or extension of a private road that is subject to the Gunnison County Land Use Resolution shall comply with the processes and procedures set forth herein

2.10 Deletions from the Road System

A. Abandonment

1. Abandoned State Highway

When a portion of a state highway is relocated and, because of such relocation, a portion of the route as it existed before such relocation is, in the opinion of the State Transportation Commission, no longer necessary as a State Highway, such portion shall be considered as abandoned. An abandoned state highway or portion thereof shall become a county highway, upon the adoption of a resolution to that effect by the board of county commissioners of an affected county, or a city street, upon the adoption of an ordinance to that effect by the governing body of any affected municipality, within ninety (90) days after the official notification of abandonment by the transportation commission. If in the written and recorded opinion of the Board, the portion of the road is not needed for a public purpose, the Board shall approve the title to it reverting to the owners of the land through which such abandoned portion may lie subject to the provisions of state law.

2. Abandoned County Roads

A County road shall be abandoned only when a portion of the County Road System is relocated and because of such relocation a portion of the route as it existed before such relocation is, in the written and recorded opinion of the Board, no longer needed for a public purpose; in such a case, such portion shall be considered as abandoned, and title to it shall revert to the owners of the land through which such abandoned portion may lie, subject to the provisions of state law.

3. Removal from the County Road System

Consistent with C.R.S. § 43-2-120, the Board may approve the removal of a road from the County Road system.

B. Policy and Procedures Regarding Vacation of County Road or Public Road Under County Jurisdiction

The purpose of this section is to establish standards and a uniform process by which the Board may act on request to vacate a County Road or public road or rights-of-way under county jurisdiction.

It is the intent of the Board in adopting this section to exercise the Board's authority pursuant to, among other statutes, C.R.S. §§ 43-2-301 et. seq. No person shall be deemed to have a right to vacation of a public road. The vacation of any particular road by the Board shall not be deemed precedent with regard to any future request for vacation of a road; nor shall this Section be deemed to create any rights, including property rights, in any person or individual.

The Board has discretion, but no obligation, to vacate all or a portion of a County Road or public road or rights-of-way under County jurisdiction. No such road shall be vacated so as to leave any parcel adjoining such road without any established public road connecting said parcel with another established public road or create impracticable barriers to access a parcel or right of way section.

1. The applicant for a vacation shall bear the burden to prove to the Board that the request meets the criteria of C.R.S. §§ 43-2-301 et. seq., as amended, and these Standards and Specifications.
2. This wisdom of granting a vacation is a matter committed to the discretion of the Board and is not controlled by any one factor. In determining whether to grant a request to vacate all or a portion of a county road or public road under County jurisdiction, the Board of may consider one or more of the following criteria:
 - a. The vacation would create demonstrable benefit to public health, safety or welfare and would not solely or exclusively benefit a single or small group of private landowners;
 - b. The vacation meets any requirements of C.R.S. §§ 43-2-301 et. seq., as amended;
 - c. The Vacation is consistent with any comprehensive land use, corridor or master plan adopted by Gunnison County;
 - d. The vacation would not unreasonably or unduly limit access from a public road to any public or private parcel.
 - e. The vacation would not disrupt existing or anticipated travel modes;
 - f. The proposed vacation accounts for any changed or anticipated conditions related to traffic or development patterns;
 - g. The vacation would cause no adverse impact to the local ecosystem, wildlife, water

or air quality, climate, soils, riparian areas, or noxious weed and invasive species management;

- h. The vacation would not interfere with the existence, operation, control or maintenance of other County roads, other public roads under County jurisdiction, utilities, or access to public lands, water, or other public resources; and
- i. The vacation would not unduly or unreasonably interfere with access to persons or property for emergency response, law enforcement or first responder services. Does not functionally remove right-of-way by reducing its width to a size that does not allow for reasonable use by the Public.

3. Application Process.

The applicant shall complete and file with the Director of Public Works an application in the form required by the Director.

- a. At a minimum the request shall contain:
 - 1. Applicant's name, address, email, and phone number.
 - 2. Legal description from a licensed surveyor, if not a platted street or alley.
 - 3. A narrative explaining the need for the vacation and its effects, covering the criteria listed in section 2.10.B.2.
 - 4. Name, address, phone number for person or firm authorized to represent the applicant.
 - 5. Map showing location of section to be vacated which also shows names and addresses of all owners of property adjacent to the section or street or alley to be vacated.
 - 6. If any portion of the street or alley is within a subdivision, whether an active common interest community or not, or is adjacent to a subdivision lot, the applicant must provide the names and addresses of all property owners within the subdivision.
 - 7. A Property Improvement Survey Plat by a Colorado licensed surveyor of affected properties and street rights-of-way prior to Board consideration. Applicant shall commit to a licensed surveyor placing monuments at the new property corner locations, should the vacation be approved. The County reserves the right to have this survey performed and bill the successful applicant the full cost of the work if not completed by the applicant.
- b. The Director of Public Works will forward copies of all information to the pertinent County Departments and other agencies that may have an interest.
- c. The applicant for the vacation shall notify all property owners adjacent to the

road, and if the road is within a subdivision, all property owners within that subdivision, in writing on a form approved by the Director of Public Works, postmarked no later than thirty (30) days before the hearing, by mailing to each of them, by certified mail, return receipt requested, a complete copy of the request for a vacation and a copy of the notice of the public hearing; the applicant shall provide proof of such notification to the Director of Public Works at least seven (7) days prior to the public hearing.

- d. As applicable, letters of consent to the vacation from utility providers and special districts whose facilities are located in legal easements in or adjacent to the proposed vacation, and a copy of the easement agreements, if such agreements exist, shall be provided to the Director of Public works at least fourteen days prior to the public hearing. A precondition to granting any vacation shall be the granting and recording of perpetual easements for all existing and proposed utilities on the rights-of-way being vacated, should they not already exist.
- e. A staff report based on information available will be prepared for the Board and included in the agenda documentation before the public hearing is held.
- f. The applicant, at its sole expense, will prepare all proposed documentation if the street vacation is approved by the Board; such documentation shall be subject to review and approval by the County Attorney or their designee.
- g. Any condition required by the Board shall be completed before the vacation is made effective.
- h. The applicant for a vacation shall be required to prepay all estimated costs, including but not limited to administrative costs, costs of publication of legal notice of public hearing, travel time and cost of certified and regular mailings, pertinent to application whether or not the application is granted. The prepayment is not refundable. (See Exhibit A).

2.11 Road Name and/or Number Changes

- A. Neither the name nor number of any road dedicated to public use or to the County may be changed except upon written application to and written approval by the Director of Public Works.
- B. The applicant shall be responsible for all costs and expenses associated with establishing the new road number or name.
- C. The name or number of a road within a recorded subdivision may be changed only after such application and approval by amending the final plat in compliance with the Gunnison County Land Use Resolution.
- D. No road names or numbers shall be used which are generally deemed offensive, or will duplicate, or be readily confused with, the names of any existing street or road in Gunnison County. Emergency response agencies will have the opportunity to comment on all road

name changes.

- E. The County will be responsible for changing the applicable physical road number signs of any road accepted by the County as a County road. If the road name or number change is for a road that has not been accepted by the County as a County road, the applicant, homeowner's association, or the developer is responsible for changing the physical road name or number signs.

2.12 Snowplowing

Gunnison County shall not snowplow any road unless and until such road has been dedicated to the public use and accepted by the County as a County road, in writing, by the Board. It shall be in the sole discretion of the Board to determine which such roads so accepted will be plowed by the County. The plowing of County roads, not maintained in the winter by the County, shall be arranged through a written permit agreement and approved by the Board, except that the Director in their discretion may renew an existing snowplow permit without express approval of the Board as set forth in these Standards and Specifications.

A. Policy and Procedures for Requests for Gunnison County to Provide Snow Removal Services on County Roads.

1. The County shall not provide snow removal services on private, non-public roads. With regard to public roads, the decision on whether to provide snow removal services rests with the discretion of the County, as exercised by the Board. In deciding whether to cease snow removal on a public road, the Board should consider the public benefit of continued winter maintenance.
2. In addition to the requirements of the Gunnison County Land Use Resolution, Section 5-210, a request for the County to provide snow removal services on a County road, or public road under County jurisdiction, to an area not currently being served shall be submitted in written form to the Director of Public Works. The written request shall include at a minimum:
 - a. The applicant(s)' name, address and telephone number.
 - b. The name and number (if applicable) of the road requested to be plowed.
 - c. A map designating the portion of the road to be plowed.
 - d. The distance to be plowed.
 - e. Description of the location where plowing is anticipated to terminate and the resulting turnaround for plowing equipment.
 - f. Evidence that the road is a public road.
 - g. Confirmation of any land use change associated with plowing request.

- h. Evidence of no significant adverse impact on wildlife, water and air quality, or the local ecosystem.
 - i. A list of property owners benefiting from or affected by the proposed service.
 - j. The reason the plowing is being requested.
3. All requests shall be submitted to the Director of Public Works before August 1 of the year when plowing is requested to begin. Requests received after August 1 will be considered as requests for the following winter season.
- a. Upon receipt of the request, the Director of Public Works may require the applicant to provide information in addition to the subject matters contained in the written request. After receipt of the written request and any additional information, the Director or their designee shall conduct a site visit and prepare a report for the Board. The report shall address the following:
 - i. An assessment of the condition of the road including width, base drainage, fencing, etc.
 - ii. An evaluation and estimate of cost to bring the road up to a standard suitable for winter maintenance and plowing.
 - iii. A recommendation of the type of equipment that would be required to remove snow; the frequency, duration and extent of snowplowing, the amount of manpower and time involved and an estimate of cost.
 - iv. An assessment of safety considerations involved with the request.
 - v. A statement as to whether the road is a natural extension of an existing snowplow route.
 - vi. A statement of any general public benefit served by providing snow removal service.
 - vii. An assessment of any negative impact that might result from providing snow removal service.
 - viii. Any other criteria set by the board.
4. The written request to provide snow removal service together with the evaluation prepared by the Director of Public Works shall be submitted to the Board. Requests shall be considered in a public meeting of the Board. At its discretion, the Board may approve or deny the request for the County to plow the road. The Board may conditionally approve the request based on specific, written conditions.
5. The County shall exercise its appropriate, lawful authority to ensure compliance with this

section. Should either the Director or the Board fail or refuse to comply with this section A, such failure or refusal shall not be deemed to create any right or interest in any person, including any right to appeal such failure or refusal. Nor shall any person be deemed to have a right to appeal any decision made under this section A.

B. County Policy and Procedures for Requests by Private Individuals to Plow a County Road or Public Road under County Jurisdiction

The purpose of this section is to outline the procedures and criteria by which the Board will consider requests presented to perform private snow removal on County and public roads under County jurisdiction.

1. In order to facilitate the plowing of a road that might not otherwise be plowed, the Board may allow a private individual or company to remove snow from all or part of a County or public road under County jurisdiction.
 - a. Private Plow Permits do not run with the land, and the issuance or denial of a private plow permit shall not be deemed to create any entitlement, property interest or right in the permittee or any other person.
 - b. No person shall remove snow from a County road, or public road under County jurisdiction without first receiving permission from the Board and a Snow Removal Permit issued by the Director of Public Works.
2. If an applicant is requesting permission to plow a public road or a section of road beyond current snowplowed access, such applicant must obtain a Land Use Change Permit per section 11-110 of the Gunnison County Land Use Resolution. The first issuance of a permit is reviewed and approved by the Board. After the initial permit is obtained, the applicant will only need apply for the renewal of the permit from the Director of Public Works. If issued, the first permit issuance will be for a single season. The applicant shall be responsible to apply for renewal of a permit(s).
3. In addition to the requirements and process set forth in the Gunnison County Land Use Resolution, a permit for private snow removal on a County or public road shall comply with the requirements and procedures set forth in this section. The Public Works Director or the Board, in their discretion, may impose additional conditions on any permit issued under this section, and such additional conditions shall appear on the face of the permit issued by the Public Works Director.
4. A request to plow a County road, or public road under County jurisdiction, shall be made in writing to the Director of Public Works. The written request shall include at a minimum:
 - a. The name and/or number of the road to be plowed.
 - b. If less than the entire road, a map designating the portion of the road to be plowed.

- c. The distance in miles to be plowed privately.
 - d. The type of equipment to be used to remove the snow.
 - e. The name, address, and telephone number of the person(s) responsible for snow removal.
 - f. The names and mailing addresses of property owners located along the proposed snow removal route.
 - g. The reason the plowing is being requested.
 - h. The time period for which the permit is being requested.
5. Requests to provide snow removal must be submitted to the Director of Public Works no later than August 1 of the year when plowing is requested.
 6. Upon receipt of the request, the Director of Public Works or designee shall conduct a site visit and prepare a report for the Board. The report shall address the following:
 - a. An assessment of the condition of the road including width, base drainage, fencing, etc.
 - b. An evaluation and estimate of cost to bring the road up to a standard suitable for winter maintenance and plowing.
 - c. A recommendation of the type of equipment that would be required to remove snow; the frequency of plowing; and the duration of plowing.
 - d. An assessment of safety considerations involved with the request.
 - e. A statement of any general public benefit served by providing snow removal service.
 - f. An assessment of any negative impact that might result from allowing snow removal service.
 7. If the plowing is authorized by the Board, the Director of Public Works or designee and the person requesting permission to remove snow shall meet on-site to evaluate the condition of the road before plowing begins.
 8. The County may require that reasonable improvements and repairs be made to the road that are necessary for public safety and to protect and preserve the road. Such improvements or repairs shall be made at the expense of the applicant unless otherwise agreed to by the County.
 9. For the purposes of this section, snow removal work shall include:

- a. Removal of snow from all the traveled way, including sufficient turnouts for safe and efficient use of all emergency and other users.
 - b. Leaving culvert inlets in a natural condition without snow or other material excessively plowed into them so that the drainage system will function normally.
10. Upon review of the plow request, the Board may request a bond, cash deposit, or other form of security acceptable to the County to secure performance according to this section. The amount of security required will be relative to the distance being plowed, and the surface of the road.
11. As a condition of any permit issued under this section, a permittee shall:
 - a. Obtain and maintain insurance coverage in amount(s) the County deems necessary to protect the County from any and all claims related to the permittee's snow removal operations.
 - b. Indemnify and hold harmless the County with regard to any and all claims related to the permittee's snow removal operations.
12. The foregoing may be waived by the Board in its discretion, but only after conferral with the County Attorney and for reasons stated on the record at a public meeting of the Board.
13. The applicant shall acknowledge in writing that they have read, understand and agrees to comply with the conditions set forth in this section and with the conditions of a permit if one is issued.
14. The County shall exercise its' appropriate, lawful authority to ensure compliance with this Snow Removal section.
15. Nothing in this section is, or shall be construed to be, an obligation of the County to allow the private snowplowing of all or part of any particular road.
16. The Board may reduce or remove plow services at its discretion with rationale provided in writing in a public meeting.

2.13 No Personal Liability

Any County official, employee or agent charged with enforcement of these Standards and Specifications who acts in good faith in the discharge of the duties required herein or by any permit, other pertinent law, ordinance or regulation shall not thereby be rendered personally liable for any damages that may accrue to any person or property as a result of an act or by any permit, omission to act in the discharge of these duties.

2.14 No County Liability

These Standards and Specifications do not make, and shall not be construed to make, Gunnison County or any of its officials, employees or agents responsible for or liable for any injury to person or property resulting from any action taken pursuant to these Standards and Specifications.

2.15 Responsibility Not Lessened

These Standards and Specifications do not, and shall not be construed to, relieve from or lessen or eliminate the responsibility of any person acting pursuant to a permit issued hereunder for any damages to person or property.

2.16 No Waiver of Governmental Immunity

Nothing in these Standards and Specifications is, or shall be construed to be, a waiver by Gunnison County, or any of its officials, employees or agents, of governmental immunity under the Colorado Governmental Immunity Act or otherwise.

SECTION 3

TRANSPORTATION PLANNING AND DEVELOPMENT POLICIES

3.1 Functional Classification of Roads

All roads in the Gunnison County Road System shall receive a functional classification from the Director. The functional classifications used in Gunnison County are: (Also See Table 3-1)

- A. Major Arterial (Paved)**
3,000+ ADT Residential, commercial, and recreational traffic - significant economic importance to County (example: Gothic Road)
- B. Commercial/Industrial Collector (Paved or Gravel)**
10 to 500 ADT Heavy duty traffic - significant economic importance to County (example: Landfill Road/Industrial Park Roads)
- C. Suburban Lane (Paved or Gravel)**
30 to 500 ADT Primarily residential traffic -- width needed for parking and other density factors (example: Panaview, Castle Mountain, Meridian Lake)
- D. Rural Arterial (Paved)**
1,000 to 2,999 ADT Residential, commercial and recreational traffic - significant economic importance to County (example: Gold Basin, Marble, Brush Creek, Cement Creek, and Taylor River)
- E. Rural Collector (Paved)**
500 to 999 ADT Primarily residential or recreational traffic, but some commercial (examples: Cottonwood, Washington Gulch, Slate River, Antelope, Kebler, and Lower Quartz Creek)
- F. Rural Local (Paved or Gravel)**
200 to 499 ADT Primarily residential, recreational, and ranching uses (examples: Powderhorn, Upper Quartz Creek, Kebler over the top, Brush Creek after Avion, and Gothic Road after Mt. Crested Butte)
- G. Rural Lane (Gravel)**
30 TO 199 ADT Primarily residential or agricultural use (examples: Little Cimarron, Pine Creek, Sap Mesa, and Steuben Creek)
- H. Local Intermittent (Native Surface/Gravel)**
13 TO 90 ADT Primarily recreational, residential or commercial traffic (logging). May be joint jurisdiction, such as forest service and county and maintained by county under agreement. Can be access to National Forest and Bureau of Land Management lands. (Examples: Rainbow lake, Alpine Tunnel, Red Creek and Upper Taylor River above reservoir.)

I. Primitive Recreation (Native Surface)

No ADT Available - Limited and/or recreational use only

3.2 Land Use Changes – Applicability

FA land use change may require application of these Standards and Specifications. For purposes of these Standards and Specifications, “land use change” shall mean:

- A. A land use change, as defined by the Gunnison County Land Use Resolution, that requires compliance with Section 12-103 of the Gunnison County Land Use Resolution is required; or
- B. An activity or system that requires a permit under the applicable Gunnison County Building Code(s) or Gunnison County Onsite Wastewater Treatment System Regulations and:
 - 1. Such permit(s) are for activities or systems on vacant land;
 - 2. The activity or system requiring such permit(s) would encroach upon or substantively interfere with the use of any existing road, bridge or access to the property on which such activity or system is contemplated by such permit(s); or
 - 3. Such activity or system presents a potential hazard to public health, safety, or welfare in relation to a road, bridge or access governed by these Standards or Specifications, as determined by the Director or their designee in their discretion.

3.3 Planning Principles

- A. Basic factors in the design of a road system include:
 - 1. Safety for both vehicular and pedestrian traffic.
 - 2. Efficiency of Service for all users.
 - 3. Livability, especially as affected by traffic elements in the circulation system.
 - 4. Economy in both construction and use of land. Design should minimize maintenance costs and maximize ease of snow removal.
 - 5. Environment design should minimize the impact of road construction on wildlife, plant species, water and air quality, erosion, soils, invasive plant species promulgation, and forest health to the extent feasible.

- B.** Each of the following principles is an elaboration on one or more of these four factors. The principles are not intended as absolute criteria, since instances may appear where certain principles conflict. Therefore, the principles should be used as guides to proper system layout.
1. Insure Vehicular and Pedestrian Access. Road widths, placement of sidewalks or pathways, patterns of roads, crosswalk installations, and number of intersections shall be related to safe and efficient use of the road and access to abutting lands.
 2. Control Access to Arterials. Local road systems and land development patterns should not detract from the efficiency of peripheral arterial facilities. Ideally, land development should occur so that no parcels require direct access to arterial routes. The local flow of traffic should be managed with an internal traffic management plan. The number of access points between the local road system and the arterial system should be minimized. Intersections along arterial routes should be properly spaced for efficient and safe traffic flow. The roads that do intersect the arterial system will tend to have high traffic volumes since they are the only access points. The number of residential lots directly accessing collector roads should be minimized.
 3. Discourage Speeding. Residential roads should be designed to discourage excessive vehicle speed through generally accepted traffic engineering methods.
 4. Courts and Cul-de-Sacs. A road ending with a cul-de-sac should normally not be longer than six hundred (600') feet. All cul-de-sacs shall have a minimum radius of forty five (45') feet of maintained and plowed area as measured to the outside edge of the traveled surface and have defined and permanent snow storage locations with demonstrable drainage solutions.
- C.** Roads which do not connect or intersect with other roads shall have a turn around at the end of the road segment that meets the requirements of the local emergency agencies. A cul-de-sac that is being vacated shall be improved to the functional classification standard of the road which it serves if access is provided to dwellings or other structures. Turnarounds shall comply with any fire proception district requirements related to setbacks from flammable structures. (See Appendix E for Turnaround Standards.)

SECTION 4

DESIGN STANDARDS

4.1 Application of Design Standards

A. Minimum Standards

The standards set forth in this Article provide uniform minimum acceptable values. If the provided guidance is insufficient, CDOT M & S standards and Design Guide should be used. If it can be shown that an alternate design standard will provide an outcome equal to or better than the required minimum, then such alternate may be approved in the sole discretion of the Department and upon review and approval by the Director of plans submitted and signed by a professional engineer. Life cycle cost shall be considered in meeting minimum acceptable values.

4.2 Design Factors

A. Road Classification

Each road or trail or access as defined by the County proposed for construction or improvement shall receive, from the Director, a functional classification as defined in Section 3.1.

B. Projected Traffic Volumes

A traffic analysis is normally required to project future traffic volumes for roads. The most recent edition of the Institute of Transportation Engineers "Trip Generation Manual", shall be the County guideline where no detailed trip generation data is available. Traffic studies shall comply with the requirements of Section 12-103 of the Gunnison County Land Use Resolution.

The Director of Public Works shall consult with the County Planning Director to determine whether a traffic analysis will be required. The traffic analysis will be done during the initial application phase of the development, and at the sole cost of the road developer.

C. Terrain Classification

For the purpose of these Standards and Specifications, the terrain in Gunnison County shall be classified in two categories:

1. Flat or Rolling Terrain. Average cross slope less than fifteen (15%) percent and the ridges and draws are not well defined.
2. Mountainous Terrain. Average cross slope greater than fifteen (15%) percent and the

ridges and draws are steep and well defined.

D. Design Speed

The choice of a design speed is influenced primarily by the terrain classification, functional classification of the road, and land use. Design speeds will utilize the AASHTO Green Book and CDOT’s Roadway Design Guide to justify said design speed. All speed limits shall comply with C.R.S. § 42-4-1101 and consider the following factors, if applicable:

1. Roadway environment (such as roadside development, number and frequency of driveways and access points, and land use), functional classification, public transit volume and location or frequency of stops, parking practices, and pedestrian and bicycle facilities and activity;
2. Roadway characteristics (such as lane widths, shoulder condition, grade, alignment, median type, and sight distance);
3. Geographic context (such as an urban district, rural town center, non-urbanized rural area, or suburban area), and multi-modal trip generation;
4. Reported crash experience for at least a twelve (12) month period;

Maximum permissible sustained grades (expressed in percents) for roads are related to design speed and shall be as follows:

Design Speed - MPH

Terrain Classification	15	20	25	30	40
Rolling	7	6	6	6	6
Mountainous	11	11	10	9	8

Speed distribution of free-flowing vehicles, including the pace, median (50th-percentile), and 85th Percentile speeds; and/or
 The maximum design grade should be used infrequently rather than as a value to be used in most cases.

6. A review of past engineering speed studies to identify any trends in operating speeds.

4.3 Geometric Standards

A. Horizontal Alignment

1. General Considerations. The major considerations in horizontal alignment are topography, road classification, design speed, grade profile, subsurface conditions, safety, and sight distance. All of these must be balanced to produce an alignment that is safe and adequate for the functional classification of the road.

2. Sight Distance. Horizontal alignment must provide at least minimum stopping sight distance for the design speed at all points. This includes visibility at intersections, as well as around curves and roadside obstruction.
 - a. The minimum stopping sight distance is the distance required by the driver of a vehicle traveling at a given speed to bring the vehicle to a stop after an object on the road becomes visible. Stopping sight distance is measured from the driver's eye, which is assumed to be three and one-half (3.5') feet above the roadway surface, to an object 6 inches high on the road.
 - b. The required stopping distance for a given design shall comply with the AASHTO Green Book and CDOT's Roadway Design Guide. Criteria for measuring stopping sight distance include an eye height of three and one-half (3.5') feet and an object height of two (2.0') feet. Passing sight distance criteria include an eye height of three and one-half (3.5') feet and the object height of three and one-half (3.5') feet.
 - c. In some cases, passing sight distance may be required on collectors or arterials. The CDOT Roadway Design Guide should be used in determining passing sight distance.

Standards for Curvature. The permissible minimum curve radii and the permissible maximum allowable rate of superelevation for the various functional classifications shall comply with the AASHTO Green Book and CDOT's Roadway Design Guide based on design speed, friction factors, and superelevation.

- d. Sudden reductions in speed introduce the element of surprise to the driver and should be avoided. Where physical restrictions cannot be overcome and it becomes necessary to design curvature which is lower than the design speed for the project, the design speed between successive curves shall not change by more than ten (10) mile-per-hour increments. Normally a curve for a design speed lower than the design speed of the project shall not be introduced at the end of a long tangent or at other locations where high approach speeds may be anticipated. Use of lower standard curve radii is subject to approval by the County.
 - e. Angle points less than one degree require no curve radius. A compound curve is two curves of different radii joining with no tangent between them. A compound curve will not be permitted. A broken-back curve is two curves in the same direction joined by a short tangent. Broken-back curves are not permitted.
3. Superelevation. The standard superelevation rates shall comply with the AASHTO Green Book and CDOT's Roadway Design Guide and shall be designed to hold the side friction factor within tolerable limits for those operating speeds expected for the range of curve radii given.

- a. For undivided roads, the axis of rotation of superelevation is usually the centerline. Where curves are preceded by long relatively level tangents, the plane of superelevation may be rotated to about the edges of the pavement to improve the perception of the curve.
 - b. A superelevation transition is variable in length depending upon the amount of superelevation. Two-thirds of the transition is in the tangent approach at the beginning and the end of the curve, and one-third of the full superelevation is at the beginning and at the end of the curve. Where spiral curves are permitted, the transitions are to be designed using the latest edition of the Colorado Department of Transportation Roadway Design Manual.
4. Coordination with Vertical Alignment. To avoid the possibility of introducing serious traffic hazards, coordination is required between horizontal and vertical alignment. Particular care must be exercised to maintain proper sight distance at all times. Sharp horizontal curves introduced at or near the top of a pronounced crest, or at the bottom of sag vertical curves should be avoided.

B . Vertical Alignment

1. General Considerations. The centerline profile is a reference line by which the elevation or grades of the pavement and other features of the roadway are established. It is controlled mainly by topography, structure clearances, horizontal alignment, safety, sight distance, design speed, and the performance of heavy vehicles on a grade.
2. Minimum and Maximum Grades. To provide for adequate drainage, the minimum sustained grades shall be no less than 1 percent (1%) on roadway sections with curb and gutter and two percent (2%) on all other roads.
 - a. All grades shall flatten to at most four (4%) percent for at least one hundred (100) feet approaching intersections, and for at least fifty (50') feet entering and leaving turn-arounds or cul-de-sacs. In mountainous terrain, all grades shall flatten to four (4%) percent or less for at least fifty (50') feet approaching intersections and entering switchbacks or cul-de-sacs.
- 3 Vertical Curves. All vertical curves shall be designed to provide adequate stopping and passing sight distance, headlight sight distance, comfortable driving, good drainage, and a pleasing appearance.
 - a. Vertical curves shall be parabolic.
 - b. Vertical curves are not required where the algebraic difference of grades is less than 0.40%. The preferred minimum length of vertical curves, both crest and sag, is four hundred (400') feet.

- c. The minimum length of a vertical curve shall be three hundred (300) feet for design speeds above thirty (30) miles per hour, and two hundred (200) feet for design speeds of thirty (30) miles per hour and lower. Unequal tangent vertical curves are permitted only in special circumstances as approved by the County.
 - d. Vertical curves that are long and flat may develop poor drainage at the level section. This must be overcome by adjusting the flow line of the ditch section.
- 4 Sight Distance. Minimum lengths of crest vertical curves are controlled by stopping sight distance requirements as shown in as determined by the AASHTO Green Book.

4.4 Cross Section Standards

A . Typical Sections

Typical sections for each functional classification are given in Appendix B through D. Table 3-1 also provides a summary of design elements. Variations from these sections may be approved by the County when there is sufficient evidence that certain design elements can be reduced or eliminated.

B . Rights-of-Way Width

The basic minimum rights-of-way width for each typical section is shown in Table 3-1. This width is sufficient only to accommodate the specific geometric cross-sectional elements that are required. Additional rights-of-way may be required for snow removal and storage, pedestrian infrastructure, or other uses. Cut and fill slopes beyond the hinge point and rights-of-way may require additional easements.

C . Cross Slope

Cross slope is provided to provide a drainage gradient so that water will run off the surface to a drainage system such as a street gutter or ditch. Inadequate cross slope will contribute to aquaplaning.

- 1. On straight sections of normal two-lane roads, the pavement cross section is usually highest in the center (crown of road) and drains to both sides.
- 2. In horizontal curves, the cross slope is banked into superelevation to reduce steering effort and lateral force required to go around the curve.
- 3. Cross slope criteria apply to typical tangent alignments.
- 4. On high-speed roadways, normal cross slope is 1.5–2.0 percent, with the cross-slope break (the algebraic difference in slopes between the lanes) at the centerline not exceeding 4 percent.

5. In areas of intense rainfall and where there are three or more lanes in each direction, additional cross slope may be necessary for adequate drainage.
6. Accomplishing other design features (superelevation transitions, pavement warping at intersections, etc.) will inevitably require removal of cross slope in spot locations. These cases are routine and necessary in design, and a design exception is not required. In addition to the cross slope of the lanes, the cross-slope break on the high side of superelevated curves should not exceed 8 percent (8%) (Figure 23). A formal design exception is required when this condition is not met. At intersections, or in unusual situations, the crown position may vary depending upon drainage or other factors.
7. Standard cross slopes minimums to be used on the traveled way for different pavement and surface types are as follows:

Type of Surface	Cross Slope (Percent)
Portland Cement	1.5
Bituminous Mix Pavements	2.0
Penetration Treated Earth or Gravel	3.0
Unsurfaced Graded Section	4.0

D . Barrow or Bar Ditches

Ditches may be required in cut sections without curbs and gutters. The slope from the edge of the shoulder to the bottom of the ditch shall not be steeper than 3:1.

E . Curbs and Gutters

1. Curbs and gutters may be required as follows:
 - a. On urban roads.
 - b. When drainage, traffic, or public safety necessitates.
 - c. As determined by the department.
2. All curbs and gutters shall conform to standards detailed in the latest edition of Colorado Department of Transportation Standard Specifications for Type 2 curb and gutter, unless otherwise specified by the County Public Works Department.

F . Side Slopes

1. Cut and Fill Slopes: Shall comply with LUR standards.
2. Flatter slopes shall be required in unstable soils. Cut slopes that are steeper than the standard may be considered in special situations, such as in solid material, but require

prior approval by the County. Some side slopes may require additional measures to stabilize or revegetate the slope.

3. The tops of all cut slopes shall be rounded with a minimum of a four (4') foot radius where the material is other than solid rock, and shall be reseeded with vegetation native to the area or as recommended by the local Natural Resources Conservation Service. The backslopes at the ends of all cuts, except rock, shall be flattened. The ditch at the lower end of the cut shall be widened gradually to discharge side ditch drainage away from base of adjacent fill slopes in order to avoid erosion and improve appearance.

G . Ramps for Physically Handicapped

All newly constructed, repaired, or replaced sidewalks and curbs shall provide adequate and reasonable access for the safe and convenient movement of persons and in compliance with the most current and adopted Americans with Disabilities Act Guidelines and amendments and Architectural Barriers Act Accessibility Guidelines for the Public Rights-of-Way.

H . Trails

Recreation path standard specifications may be developed or promulgated by Gunnison County. All submittals for trails may be referred to the Sustainable Tourism and Outdoor Recreation Committee for recommendations and should conform to LUR section 12-104 and the Gunnison County Trails Master Plan, as amended.

I . Horizontal and Vertical Clearance

The following are minimum clearances for structures or other roadside obstructions, including but not limited to, shrubs, trees, signs, gates, and fences. Additional clearances may be required for sight distance and/or other requirements. Accesses will be assessed on a case-by-case basis.

1. In all areas without curbs, or with mountable curbs, and with design speeds of forty (40) MPH or less, a minimum clear zone of fifteen (15') feet shall be provided. The minimum horizontal clearance shall be provided from the outside edge of the traveled way of a public or private road.
2. Mailboxes may be placed four feet (4') from the edge of the traveled way and must comply with CDOT's Roadway Design Manual.
3. The minimum vertical clearance for all overhead structures including signs, cables, etc. shall be in accordance with those specified in the applicable provisions of the latest edition of CDOT's Roadway Design Manual and/or the Manual on Uniform Traffic

Control Devices. In no case shall the overhead clearance be less than 13 feet 6 inches (13'6").

4. When roads or highways under the jurisdiction of other agencies are involved, the clearance as required by said agency, if more restrictive than these Standards and Specifications, shall apply.

4.5 Access Control Standards

A. Control Standards

The County shall apply these access control standards to all connections made within the rights-of-way by any highway, road, drive, trail (>50 inches), path (50 inches), or access otherwise determined by the County. Accesses shall be constructed to meet all of these Standards and Specifications.

1. All residential accesses that connect to a County road or public or private rights-of-way shall have a minimum surface width of twenty (20') feet at the edge of the pavement or road surface, and taper to a minimum surface width of sixteen (16') feet at a distance of two feet (2') from the edge of the road, and maintain this surface width to the end of the access. No residential access shall be in excess of twenty-four feet(24') wide in the Right-Of-Way, excluding corner Radii.
2. All such accesses shall be constructed with the following surface treatment section dimensions or combination thereof:

Access Material	Minimum Section Depth
Concrete	6 inches
HBP (asphalt)	3 inches with 4 inches Class 6 aggregate base course
Gravel (compacted)	6 inches Class 6 aggregate base course
Native Material	Permissible only if access road is native material and native material provides structural stability and an all-weather driving surface

and shall be installed in accordance with both an approved access permit and all applicable sections of these Standards and Specifications. Access to a County road or rights-of-way must be obtained through a permit as described in Section 6. "Uniform screened aggregate" shall not be used in the ROW or on grades in excess of 4%.

3. The maximum grades for accesses shall be 11%. This will be measured in the center of the travel way and as an average over thirty-foot (30')-long sections. The grade of the entrance/exit shall slope away from the road surface at the same rate as the cross slope and for a distance at least equal to the width of the shoulder or to the centerline of the drainage ditch, in order to allow water to effectively drain from the roadway

and enter the designed drainage.

4. All accesses and approaches shall not interfere with the drainage system of the roadway. The Director may require a stormwater management plan for the access as a condition of approval. The applicant shall be required to pay for and install, at their own expense, drainage structures at entrances and exits which will become an integral part of the existing drainage system. The dimensions of all drainage structures must be approved by the Gunnison County Public Works Department prior to installation and may require an engineered plan. The minimum size of culvert installed parallel to the road will be a twelve (12") inch diameter. Installation, maintenance, and replacement of the culvert shall be the responsibility of the property owner and shall maintain the original efficiency of the installation.
5. The horizontal axis of an approach to the roadway shall be at right angle to the centerline of the roadway and extend a minimum of thirty (30) feet beyond the traveled way. An angle between ninety (90) and seventy (70) degrees may be permitted if it can be shown that physical constraints exist that require a different approach angle. An angle less than sixty (60) degrees shall not be permitted. No more than one access shall be allowed regardless of ownership or subdivision, on any parcel of property when there is less than one hundred (100') feet of property frontage. No more than one access approach shall be provided to an individual parcel or to contiguous parcels under the same ownership, except adjacent platted subdivision lots, unless it can be shown that they are necessary for the safe use of the property. In such cases, any additional accesses, measured from the center line tangent, must be separated by more than one hundred (100') feet or more. Additional accesses may be considered only when the site geography inhibits internal connections and the public right-of-way is the only way to achieve the proposed land use. Additional accesses must comply with these regulations.
6. The extension of the access into the right-of-way or the radius-taper portion of an access, shall not encroach upon adjoining property. Property lines shall be extended on the existing tangent to the middle of the right-of-way to assess encroachment.
7. An access approach that is gated shall be designed so that the longest vehicle commonly using it can completely clear the traveled way when the gate is closed. In no event shall such distance be less than thirty-five (35') feet. Public rights-of-way shall not be gated unless approved by BOCC resolution.
8. Intersecting public and private roads shall be located opposite each other where possible or be offset by a minimum of one hundred twenty-five (125') feet.
9. Accesses shall have an all-weather driving surface. In most cases a manufactured product will be required. A native material road must be requested in writing and the access shall achieve the characteristics that provide an all-weather driving surface.
10. Accesses shall be measured from the edge of the traveled way, along the centerline of

the access, to the structure or proposed building envelope if no structure is constructed.

11. Accesses 150' or longer - shall have a cul-de-sac, or a "Y" or "T" turn around adequate to accommodate emergency service vehicles. All turn around areas shall be kept open and clear, and shall have sufficient area for snow storage outside of the road prism, and shall be plowed by the owner in the winter. All turnarounds shall be reviewed by the fire district responsible for fire suppression in the area and subject to additional requirements. (See Appendix E).
12. Accesses which are in excess of six hundred (600') feet in length and are single lane shall have standard inter-visible turnouts. The minimum number of inter-visible turnouts is one per six hundred-foot section (600'). The location of the inter-visible turnout will be determined in cooperation with Public Works and the fire district responsible for fire suppression in the area and may be impacted by multiple variables. (See Appendix D).
13. Access designs that allow for backing onto or off of a road are discouraged and shall be evaluated on a case-by-case basis. Lot size, proposed house location, traffic volume, and speed can be used as determining factors but are not exhaustive. The Director of Public Works shall make the final determination.
14. Any access permit application that has the potential to be used for a road for future development may be referred to the Community Development office for proper review.
15. Accesses that exceed four (4%) percent grade, uphill or downhill, will require an approach area with slopes below four (4%) percent grade in all directions for a minimum of 30 (30') feet measured from the edge of the traveled way.
16. A temporary access road as defined herein shall be required to meet all Standards and Specifications only within the right-of-way. The temporary access or road shall be removed and reclaimed within one (1) year of the temporary access permit issuance if an access permit is not submitted to convert the temporary access or road permit to a permanent access.
17. Adequate vehicle parking must be provided on the private parcel based on the proposed land use. Constructed or designated parking along the road, in the emergency turnaround, or protruding into the right-of-way shall not be permitted.
18. Any overhead structures designed for vehicles to travel under, such as a Porte-cochère, passageway, screen wall, archway, or other shall be at least thirteen and a half feet (13' 6") high for the width of the travel way, measured from the road surface.
19. Reflective address signs, as required by the local fire district, shall be installed at the access approach if the structure is in excess of 100 feet (100') from the public right-

of-way.

20. Snow storage shall be identified on site plan. Snow removed from accesses shall not be or stored on Road right-of-way.
21. Storing of construction materials in the Road Rights-of-way is not allowed.
22. Summary of Access Width Elements:

Type of Access	# of Lanes	Lane Width
Residential	1	16 feet
Agricultural	1	16 feet
Commercial	2	11 feet
Industrial	2	11 feet

23. Commercial Accesses shall be assessed based on the commercial use of the land and the necessary use of the parcel. Safety of the public is paramount to the assessment of commercial use. Each commercial access permit will be addressed on a case-by-case basis and does not create precedent.
24. Site Plan shall be in compliance with LUR Standards and Requirements and these Standards and Specifications.
 - a. **Maps and Site Plans.** Maps and site plans submitted with any application shall be engineer quality and at a scale and sheet size that can be easily viewed or digital format with adequate resolution. A minimum scale of 1" = 100' is preferred. Sheet size shall not exceed 24 inches (24") by 36 inches (36").
 - b. **All Property Served by the Access.** Include all land served by proposed access. This can be a simple, hand-drawn layout, but it must be legible, clearly marked, drawn to scale, and signed and dated by the person who drew it.
 - c. **Phasing.** Any proposed phases of the construction, and their timing.
 - d. **Total Acreage of Contiguous Property Owned by the Applicant.** Total acreage and location of all contiguous property owned by the applicant.
 - e. **Total Acreage Impacted by Access Permit.** Total acreage of the site on which the applicant wants to obtain approval for the Access Permit.
 - f. **Adjacent Landowners.** Names and actual land uses of adjacent landowners (including federal, State of Colorado and other publicly owned lands), to the site (in addition to the separate narrative listing). This includes properties that may be across a road, stream or river from the applicant's property.
 - g. **Utility Locations in Area.** Location of all existing utilities on the property (septic tanks, wells, electric, gas, telephone or cable lines) that will serve the property.

- h. **Topographic Features.** Streams, lakes, ponds, wetlands, contour lines and elevations, any prominent ridgelines, and any other significant visual resource areas on the property.
- i. **Livestock Drives and Fencelines.** Historic or recorded stock drive easements crossing or adjoining the development property, including the location of any existing fences along property lines, and the location of new fences or other obstacles proposed to be built across any such stock drive.
- j. **Irrigation Ditches.** The location(s), and name(s), of any irrigation ditch crossing or adjoining the development property, as available from the Colorado Division of Water Resources, or ditch commissioner's records.
- k. **Drainage.** Drainage patterns and structures proposed or existing, on and adjacent to the Project property. Snow Storage and drainage impacts from snow storage location.
- l. **Parking.** Design and location of parking areas, both existing and proposed, This information should include length, width, Dimensions of emergency access turn arounds and intervisible pullouts, Access grade and points of grade changes, Radii of tight curves or switch backs, Sight distances, Elevations of access approach, and proposed elevation of home, Angle of access approach to roadway, and/or other items.
- m. **Existing Structures.** Locations and sizes of existing structures.
- n. **Proposed Structures.** Locations and sizes of proposed structures.
- o. **Boundaries.** Boundaries and related measurements.

B. Access to Arterial Roads

1. **Private Direct Access.** Private direct access to any arterial roads shall be permitted only when the property in question has no other feasible access to the public road system. When direct access must be provided, the following shall be considered:
 - a. Access shall continue until such time that some other reasonable access to a lower functional classification road or highway is available and permitted. The access permit shall specify the future reasonable access location and, if known, the date the change will be made. Subdivisions shall be designed, if possible, to provide for alternative access at a future date.

No more than one access approach shall be provided to an individual parcel or to contiguous parcels under the same ownership except adjacent platted subdivision lots unless it can be shown that they are required for the safe use of the property.
2. **Spacing and Signing.**
 - a. For rural road sections, minimum spacing of all intersecting public roads, roads and highways shall be on one-half (1/2) mile intervals for paved arterials and one-

quarter (1/4) mile intervals for gravel arterials, plus or minus approximately 200 feet (200'). Where topography makes such spacing inappropriate, location of public approaches shall be determined by topography, property ownerships, property lines and physical design constraints. The final location should serve as many properties and interests as possible to minimize the need for direct private access to the road system.

- b. In areas where development accesses an arterial road, a traffic engineering study shall be completed to properly locate all proposed approaches. These studies shall be submitted to the Director of Public Works for review prior to the issuance of a Access Permit and shall be paid for solely by the applicant.

C. Access to Collector Roads

1. Private Direct Access. No more than one access approach shall be provided to an individual parcel or to contiguous parcels under the same ownership except adjacent platted subdivision lots unless it can be shown that they are necessary for the safe use of the property.
2. Subdivision of a parcel shall not result in additional access unless shown to be necessary for safe use of the property.
3. Accesses located near an intersection shall be constructed so that the side nearest the intersection is no less than one hundred feet (100') from the centerline of the intersecting road
4. Access onto collector roads shall be spaced at a minimum one-quarter (1/4) mile intervals plus or minus two hundred feet (200').

D. Local Roads/Lanes

1. Private Direct Access. No more than one access approach shall be provided to an individual parcel or to contiguous parcels under the same ownership except adjacent platted subdivision lots unless it can be shown that additional access approaches are required due to geography and would not be detrimental to the safety and operation of the road. Multiple accesses are at the discretion of the director and require waivers.
2. Accesses located near an intersection shall be constructed so that the side nearest the intersection is no less than one hundred feet (100') from the centerline of the intersecting road.

4.6 Intersections

A. General Requirements

To minimize conflicts and to provide for the anticipated crossing and turning movements, geometric design of each intersection must be given careful consideration.

Intersections occurring on horizontal curves or crest vertical curves are undesirable. When latitude exists in the selection of intersection locations, vertical or horizontal curvature should be avoided. A line or grade change may be warranted when major intersections are involved.

B . Intersection or Access Corner Radii

1. Intersections and Access Approaches shall not have a corner radius of less than two feet (2').
2. Accesses designed for use by vehicles exceeding thirty feet (30') in overall length shall have a minimum effective corner radius of twenty-eight feet (28').
3. The access approach corner radii shall not be less than that necessary to accommodate the turning radius of the largest vehicle for which the access approach is intended for use on a regular basis.
4. Road Intersection corner radii shall be determined on a case-by-case basis.

C . Sight Distance

1. The required stopping sight distance necessary, as measured from the traveling vehicle to the intersection or access approach, shall be determined according to Section 4.3.A.2.
2. The minimum sight distance necessary for the entering vehicle will be based on the following criteria:
 - a. Intersection Sight Distance:

Design speed (mph)	AASHTO design sight distance criteria (feet)
15	80
20	115
25	155
30	200
35	250
40	305
45	360

- b. Sight distance shall be measured at a height of three and a half (3.5') feet between

the entering driver and the oncoming vehicle.

- c. The entering driver's eyes shall be considered to be fifteen (15') feet back from the edge of the traveled way.
- d. The vehicle shall be the largest vehicle normally intended to use the access approach. Normally means in excess of an average of one per day.
- e. After sight distance requirements are met and an access permit issued, a sign structure or parked vehicle shall not be permitted where it will obstruct the required sight distance.

4.7 Pavement Structure Design

A. General Design Procedure and Requirements

The requirements for the design of pavement structure sections shall be based on the most applicable section of the current edition of the Colorado Department of Transportation Roadway Design Manual.

B. Pavement Structure Design Report

A pavement structure design report shall be prepared by a professional engineer, as a requirement of road plan approval. The pavement structure design report shall include at minimum the following information:

1. Soil logs along the proposed roadway alignment at a maximum of five hundred (500) intervals.
2. Each log shall have a soil profile of at least four (4') feet below proposed subgrade elevation.
3. Representative samples for pavement design from each log shall be within two (2') feet below proposed subgrade elevation.
4. Each representative sample shall be classified according to the AASHTO Unified Soil Classification Table, along with an Atterberg Limits Test and sieve analysis.
5. The pavement design procedure is based on the Hveem Stabilimeter Test or the Expansion Pressure Test, which is used to compute a Resistance Value (R) of the subgrade. The California Bearing Ratio test may also be used to determine design parameters.
6. Proposed average daily traffic volumes (ADT) for each road shall be based on 100% of full development build-out including an adjustment for construction traffic. Traffic analysis for the purpose of pavement design shall be part of submittal requirements as

defined in the LUR.

7. Recommended structural sections, based on the design considerations, proposed typical sections, and sections of roadway which may require additional stabilization or treatment.

C. Flexible Pavement Design Considerations

The following elements are to be used in the design procedure:

1. The design procedure is based on the number of 18,000 pound single axle equivalent daily load applications (18k EDLA) per traveled lane.

The 18k EDLA shall be equivalent to 100% of fully developed ADT adjusted for construction traffic (110%). In no case will the 18k EDLA be less than 5 on private roads, lane and place roads, and local roads and 25 on collectors.

2. The serviceability index (SI) for private roads, collector roads, local roads, and lanes will be a minimum of 2.0. (See Figure 4-2). The SI for arterial, will be a minimum of 2.5. The specific SI will be determined using the CDOT Pavement Design Manual.
3. The regional factor shall be summarized as per Table 4-1. In no case will regional factor be less than 2.00.
4. Evaluation of subgrade soils and pavement structure materials shall follow the procedure in the Colorado Department of Transportation Roadway Design Manual and Table 4-2 of these Standards and Specifications.
5. An economic evaluation of alternate structure sections is encouraged. In making adjustments to the various layers of the pavement structure, a more economical design may result. For example, by increasing the asphalt thickness, a decrease in gravel and earthwork may result. By stabilizing a poor subgrade with lime or cement, a thinner structure section may result.
6. Also, the use of asphalt treated base or cement treated subbase or ridged concrete pavement may be a more economical use of materials. Life cycle cost analysis will help determine most economic materials to use.

D. Minimum Structural Sections

The minimum compacted depths of Hot Bituminous Pavement (HBP) and Aggregate Base Course (ABC) Class 6 (3/4") per road type which will be allowed are as follows:

	HBP	ABC
Gravel Roads	0"	6"
Local Road	3"	6"
Collectors	Dictated by project design	
Arterial	Dictated by project design	

Evaluation of the pavement design may result in an increase in HBP or substituting ABC with Plant Mix Bituminous Base (PMBB) or Portland Cement Treated Base. In no case will substitute sections be any less than three inches (3") in depth.

Minimum compacted depths of HBP and ABC shall only be used when all of the design consideration requirements and the pavement structure design report requirements have been fulfilled and show a section less than this minimum needed to support the design loads.

E. Rigid Pavement Design

The design of Rigid Pavements or Portland Cement Concrete Overlay for roadway surfaces shall conform to the applicable section of the latest edition of the Colorado Department of Transportation Roadway Design Manual. Thickness shall be dictated by the project design, and in no case shall the pavement thickness be less than 3 inches, overlays shall have a thickness of at least 2 inches (2").

4.8 Drainage

A. Application

This section presents minimum required standards for the design of road and access drainage systems. Design of ditches, storm sewers, drainage courses and drainage crossings shall be performed by an engineer. Proper and adequate accommodation of drainage shall be provided for the protection of the roadway improvements and safety of the public.

B. Design Criteria

Design criteria for the collection of and movement of water through public roads are based on the size of the drainage basin.

1. Minor Drainage Basin. A minor drainage basin will consist of a surface area less than one hundred (100) acres. All water courses and structures in a minor drainage basin shall be designed for ten (10) year storms.
2. Major Drainage Basin. Drainage basins with surface areas greater than one hundred (100) acres shall be classified major drainage basins, in which one hundred (100) year storms shall be used as design criteria.

C. Hydrology

One of the following four computational techniques must be used in the planning and engineering of a drainage system. In addition, a written explanation must be given by the applicant why the particular technique was used.

1. Rational Method. The rational method is recommended for storm sewer, culvert design, and overland flow of minor drainage basin. It is simple, and when used with adequate input parameters, it provides reasonable results for use in project design.

The basic equation is $Q=CIA$ Where:

Q - Peak discharge in cubic feet per second (cfs)

C - Coefficient of runoff (dimensionless)

I - Average rainfall intensity for a duration equal to the time of concentration of the watershed (inches/hour)

A - Drainage area of the watershed (acres)

2. Soil Conservation Service (SCS) Unit Hydrograph Method and SCS Tabular Hydrograph Method. In most drainage basins, rainfall runoff data from which unit hydrographs can be derived is unavailable; thus, a synthetic unit hydrograph must be developed. The USDA Soil Conservation Service has developed a method of hydrograph syntheses which is now being widely used. The Tabular Hydrograph Method provides a tabular approach to estimating peak discharges from urban areas using the time of concentration and travel time. This method can readily predict the increase in peak flow when all or a portion of the watershed is to be developed.
3. Soil Conservation Service (SCS) Method. The SCS method was developed particularly for agricultural watersheds. This widely used method is applicable to the mountainous regions on areas from two hundred (200) acres up to ten square miles, and above 6,000 feet (6,000') in elevation. The method is presented in Procedures for Determining Peak Flows in Colorado - 1980 Edition (U.S. Department of Agriculture, Soil Conservation Service, 1980), or the most recent update.
4. Regional Analysis - A statistical or regional approach appears to be most appropriate for those areas in Gunnison County where peak flows occur from seasonal snow melt. Also, where large watersheds are expected to undergo significant urbanization, computer simulation techniques should be utilized, such as the HEC I and HEC II Programs.

D. Drainage and Irrigation Structures within County Road Rights-of-way

1. Materials. Culverts shall be constructed from acceptable polymers. The Public Works Department may allow reinforced concrete, corrugated aluminum, corrugated galvanized steel, or other material. The minimum pipe size installed perpendicular to the road shall be a fifteen (15") inch diameter round pipe or shall have an equivalent

15 inch diameter round cross sectional area for other shapes.

2. Inlets and Outlets. Culverts may need to be designed either with headwalls and wingwalls or flared-end sections at the inlet and outlet. Additional protection may also be required at the inlet and outlet due to the potential scouring velocities.
3. Velocity. A minimum velocity during a minor storm event of three feet (3') per second is required to assure a self-cleansing condition of the culvert. The maximum culvert velocity is dictated by the channel conditions at the outlet. If the outlet velocities are less than seven (7) feet per second for grassed channels, then only a minimal amount of protection is required. Higher outlet velocities will require substantially more protection. The maximum outlet velocity shall be twelve (12) fps along with the proper erosion protection.
4. Structures. All culverts, as a minimum, shall be designed in accordance with the procedures of AASHTO Standard Specifications for Highway Bridges and with the pipe manufacturer's recommendations.
5. Irrigation Ditches. Ditches may cross roads, but shall not parallel a road within the road right-of-way. The County is only responsible for conveying the water through the rights-of-way in a manner that maintains the efficient use of the irrigation water. The type, alignment, and size of the pipe will be determined by the County in consultation with the water right owner. Metering, diverting, measuring, or otherwise managing the water shall occur outside the rights-of-way and is not the County's responsibility.

E. Barrow or Bar or Roadside Ditches

1. In areas where no curb and gutter is required, the maximum allowable capacity for the roadside ditch shall be no more than that calculated through the use of Manning's formula with an appropriate roughness coefficient. If the natural channel slope would cause erosion velocity, suitable channel protection, as approved by the Public Works Department, shall be installed. (See Table 4-3).
2. The design must give full consideration to sediment disposition and to scour, as well as hydraulics.
3. For anticipated drainage velocities in excess of twelve (12') feet per second erosion protection shall be provided for the channel. Erosion protection design must be approved by the County Public Works Department.

F. Bridges and Low Water Crossings.

All private or public bridges over waterways shall meet or exceed legal load limit requirements, have an Army Corps 404 permit, and obtain a Permit from the Gunnison County Community Development Department before construction may begin. All private or public bridges not over waterways will also meet or exceed the legal load limit

requirements and obtain all necessary permits before construction may begin.

1. Standards for Bridges. The design and supporting calculations for bridges shall be prepared and certified by an engineer. The following minimum standards shall apply to all bridges:
 - a. A minimum clear width of no less than sixteen (16') feet or equal to the width of the approved approach road, sufficient to provide service for the proposed use. In no case shall a bridge be designed in a way that excludes emergency personnel and their vehicles.
 - b. Grade Criteria: Minimum of 0.5 percent / Maximum of 4.0 percent
 - c. Highway Semitrailer 15-ton (HS-15) load rating. In all cases, the bridge load limit and bridge ownership shall be conspicuously posted by the permit applicant. Posting shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices, and the signs shall be owned, posted, and maintained by the applicant or property owner in perpetuity. An alternative loading may be allowed by the County where it can be demonstrated that anticipated loads will not exceed an HS-10 rating. The design may need to be altered to restrict loads in excess of HS-10.
 - d. Non-County Bridges in public rights-of-way and/or open to public travel may be required to provide inspections at the sole cost of the responsible party in accordance with Colorado Department of Transportation Standards.
 - e. Hydraulic criteria:
 - i. A single clear span bridge.
 - ii. All bridges shall include a minimum one (1) foot clearance between the lowest horizontal member and the base flood elevation.
 - iii. Where bridge abutments and foundations are located below the base flood elevation, concrete wingwalls shall be required at forty (40) degree to sixty (60) degree angles tied to the existing side slopes to prevent erosion behind the abutments.
 - iv. At no time shall the waterway section at the bridge accelerate to velocities sufficient to scour and undermine the bridge's abutments and wingwalls.
 - f. Utilities attached to bridges shall not obstruct flows within the stream channel, or waterway users (i.e. boats, rafts); or sight distance to drivers using the structure. Attached utilities shall not interfere with or encumber the maintenance of the bridge.
 - g. All bridges on roads proposed for acceptance into the County Road System shall

meet AASHTO Standards for the use being served. Acceptance will be made in accordance with the following policies:

- i. **New Structures.** All structures shall be designed by a professional engineer in accordance with AASHTO specifications for highway bridges. Designs for said structures shall be reviewed for approval by the Gunnison County Public Works Department. Upon approval of the plans, any person, partnership, association, or corporation desiring to have such a bridge constructed shall bear all costs associated with the construction and final inspection. All new bridges shall have a sufficiency rating greater than ninety (90) when evaluated by FHWA/CDOT procedures.
 - ii. **Existing Structures.** All structures being reviewed for acceptance shall meet current AASHTO specifications and receive a sufficiency rating of greater than seventy (70) when evaluated by FHWA/ CDOT procedures. The petitioner shall present plans and specifications for review to the County Public Works Department. Upon approval of said plans and specifications, the subject bridge may be considered for acceptance, subject to a final field inspection by the County. After it has been determined that the subject structure meets all requirements, the County Public Works Director shall submit the petition to the Board for consideration of acceptance into the County Road System.
 - h. All bridge abutments shall be located to avoid adversely affecting the natural hydraulics and inundation characteristics of wetland areas.
2. **Low Water Crossings.** To protect water quality, wet low water crossings are prohibited. A dry low-water crossing (also known as an Irish bridge, causeway, low-level crossing or low-water bridge) is a low-elevation roadway traversing over a waterbody that stays dry above the water when the flow is low, but is designed to get submerged under high-flow conditions. The design and supporting calculations for all low water crossings must be prepared and signed by an engineer. The following are minimum standards for private low water crossings.
- a. A minimum clear roadway width sufficient to provide service for proposed use.
 - b. Grade criteria: Minimum of 0.5 percent / Maximum of 10.0 percent
 - c. Side slopes shall not be steeper than 3:1 and shall be protected by a six-inch (6") concrete facing or by eighteen (18") inch rip-rap.
 - d. The culverts used must be a minimum of fifteen (15") inches in diameter.
 - e. Minimum cover over the culverts will be as follows:
 - i. Round pipe – twelve (12") inches or as recommended by the manufacturer

- ii. Arch pipe – twelve (12”) inches or as recommended by the manufacturer.
- f. Hydraulic criteria: Culverts shall have the capacity to carry the ten-year peak discharge from that stream, with a HW/D ratio not to exceed 1.5.
- g. At no time shall the waterway section at the crossing cause a significant rise (one foot) in the intermediate regional flood elevation or cause flows to accelerate to velocities greater than those expected during the intermediate regional flood.

4.9 Road Appurtenances

A. Road Signs and Traffic Control Devices

All road signs, striping, delineators, barricades, signals, and other traffic control devices shall conform to the most recent Edition of the Manual on Uniform Traffic Control Devices (MUTCD) published by U.S. Department of Transportation, Federal Highway Administration, and any applicable Colorado supplement.

The permittee shall bear all expenses for the fabrication and installation of road name signs, permanent barricades, and/or signs for implementing the approved project design (i.e. one way, no parking, dead end, private drive). Road name signs shall be lettered and erected in accordance with the latest edition of the Manual on Uniform Traffic Control Devices. Non-typical signs shall not be the responsibility of the County to repair or replace after acceptance of the road. Materials shall require the review and approval of the Gunnison County Public Works Department. All Signs and traffic control devices shall be in place prior to road acceptance.

B. Guardrail

Guardrail may be required by the Public Works Department based on to the following criteria:

1. To protect a fixed object.
2. At a location with a high accident rate (vehicles accidentally leaving the traveled roadway).
3. In areas of steep terrain or high embankments.
4. On an isolated sharp curve on a road otherwise built to higher standards.
5. On curves requiring a reduction in approach speeds where one of the following conditions exist:

- a. The height of embankment is more than ten feet (10’).
 - b. The side slope is steeper than 4:1.
 - c. Substandard pavement and shoulder widths.
 - d. Other roadside hazards.
6. **Bridge Approaches.** Approach guardrail for bridges on roads classified as Major Arterial, Suburban Collector, Suburban Lane, Rural Arterial or Rural Collector shall conform to current Colorado Department of Transportation M-Standards for Guardrail. Approach guardrail for bridges on roads classified as Rural Local, Rural Lane, Local Intermittent or Primitive Recreation shall conform to Engineered plans.

C . Cattle Guards

Cattle guards may be installed where they are necessary for the control of livestock to improve the safety of the travelling public. Cattle guards are integral to livestock fencing. New applications for cattleguards shall be made in writing. Unless the County agrees otherwise expressly and in writing, the cost of construction, installation, and replacement shall be the applicant’s sole responsibility, including any fence attachments, gates, or posts. The clear opening of the cattle guard shall extend from the edge of the shoulder to edge of shoulder for the standard roadway section approved. Each cattle guard location shall also have a bypass gate installed to allow livestock passage. Cattle guard and gate location and design shall be approved by the Director of Public Works prior to installation.

Appendix H is a drawing of the standard 24-foot (24’) cattle guard built and used by the Department. Any proposed non-standard design or width must apply for a waiver of these standards from the Director.

4.10 Utilities

Any utility within a road right-of-way shall be designed and located to maximize public safety and minimize road impact and maintenance and snowplowing costs. All utilities requiring above-ground risers or boxes shall locate them at least twenty feet (20’) from the centerline of the road. All new underground facilities must be electronically locatable when installed, including laterals up to the structure or the building being served. All plowed or trenched installations must include appropriate color-coded warning tape placed not less than twelve (12”) inches vertically above the top of the line. The warning tape shall be surface-detectable if needed to facilitate detection of the line. When a utility company must make an emergency repair on a County road to restore service, they may do so. The company should notify the Director of Public Works within forty-eight (48) hours to coordinate the repair of the site as soon as possible.

A. Underground Utilities

- 1. Where the installation crosses a paved roadway, it shall be made by mechanical boring

or jacking beneath the road surface. Open cutting shall be allowed to the edge of the shouldered portion of the road. No tunneling shall be permitted. In no circumstance shall an existing culvert be used for an installation of an utility. The Director of Public Works may, in their sole discretion, authorize pavement cuts with associated requirements based on the condition of the asphalt and known soil conditions in the area.

2. If micro-trenching installation is requested, it will be evaluated based on several factors, including but not limited to: roadway classification (e.g., arterial, collector, or local), traffic volumes, signalized intersections, condition and age of the existing pavement, existing utility infrastructure, and other site specific circumstances. Requests for micro-trench installations are required to include detailed drawings of the proposed route(s), location of micro-trench along route (including laterals), justification for the nonstandard trench installation, and if approved, an electronic as-built file.
3. Pavement cuts are permitted when: two unsuccessful attempts have been made to bore or jack the installation; conflicting utilities place constraints as to elevation or alignment on the proposed installation; connecting to an existing utility located beneath the paved portion of the roadway; and approved in advance by the Director of Public Works.

Cutting existing asphalt shall be accomplished so as to provide a neat even line perpendicular to the centerline of the roadway, the cut and resulting repair will be done in accordance with the "T patching" best practice.

4. When an open cut is allowed, the permittee is responsible for restoring the disturbed portion of the roadway to its original condition. The disturbed area shall be repaired within forty-eight (48) hours from the time of excavation, or twenty-four (24) hours from completion of the project within the roadway. Prior to completing the repair the cut must be left in an acceptable condition for public use. Any repairs not completed within 48 hours must be approved by the Director of Public Works. (See Figure 4-1).

Backfilling within the roadway prism shall be made in six-inch lifts and mechanically compacted and to 90% density around the utility, and 95% density for the remaining portion of the trench between the base course and the utility. Backfill outside the roadway prism shall be compacted to a density consistent with the adjoining area. Relative densities shall be determined by AASHTO T-99, with the material within one percent of optimum moisture. Backfill material shall be of clean, random (non-granular) material. Bedding material may be granular. Imported backfill meeting standards defined by the Department of Transportation, Division of Highways, State of Colorado Standard Specifications for Road and Bridge Construction, latest edition may be required when existing material is unsuitable.

Permittee may be required to perform compaction control testing. The compaction testing schedule is as follows:

- a. One test at 1/2 trench depth from zero to five feet deep (0-5'), and one test at finish grade.
- b. Two tests, one at each third point for trenches five to ten feet (5-10') deep, and one test at finish grade.
- c. Three tests, one at each quarter point for trenches ten feet (10') deep and over, and one test at finish grade.

Tests shall be performed at thirty (30') foot intervals for trenches one to one hundred twenty (120') feet in length, fifty (50') foot intervals for trenches one hundred twenty (120') to three hundred (300') feet, and one hundred (100') foot intervals for trenches over three hundred (300') feet in length. Permittee shall bear all expense for testing fees and repair costs. The County reserves the right to conduct in-place density tests to confirm the permittee's density test results, and require retesting of areas where conflicting test results are obtained.

An acceptable surety guaranteeing repair or replacement of failures within a one-year period after completion of the last repair shall be required for road cuts.

Structural backfill (flow-fill) meeting an approved design containing portland cement water, coarse aggregate and fine aggregate and, resulting in a maximum of sixty (60) psi in twenty-eight (28) days may be used in lieu of compaction testing.

Hot Bituminous Pavement Mix Grading C, CX, G, OR F as defined by the Department of Highways, Division of Transportation, State of Colorado, Standard Specifications for Road and Bridge Construction, latest edition, shall be used for patching material, except when unavailable, during which time a temporary cold mix patch shall be allowed. Temporary patches shall be replaced with hot mix patches within five working days after material becomes available. The layer of patching shall be at least as thick as the original road surface, and in no case less than two inches. Asphalt cuts shall be twenty-four (24") inches wider (twelve inches per side) than the width of the excavation.

Permittee shall be responsible for patch failure and subsequent surface settlement for a period of twelve months after completion of the last repair.

Repairs to failed patches may be made by the county and billed directly to the permittee.

5. No underground utility may be installed within a road right-of-way if such installation would interfere in any fashion whatsoever with any existing utility installation or water course, including a corral, ditch or culvert, except with the prior written authorization of the owner of the existing utility installation or water course. Damage to any existing utility or in-ground infrastructure shall be the responsibility of the permittee, given that the existing utility complied with Colorado subsurface

utility regulations.

6. The traveling public shall be protected during the repair or installation of utilities with proper warning signs or signals. Warning signs and signals shall be installed and maintained by and at the expense of the permittee, in accordance with latest edition of The Manual on Uniform Traffic Control Devices. The County Public Works Department may require a construction signing plan prior to the granting of this permit. If proper signs are not in place during the work or a critical safety deficiency is observed, the Director of Public Works or authorized representative shall immediately stop all work until proper corrective actions are taken.
7. Utility placement by plowing may be allowed in certain locations. Plowing shall not occur across paved roads. Where plowing operations occur across the roadway prism and result in an open cut, backfilling shall be done in accordance with this Section. Longitudinal plowing on a gravel road within the traveled way shall require aggregate replacement.
8. When a road closure due to utility installation becomes necessary, the permittee shall notify the Gunnison County Sheriff's Office and/or State Patrol, transit authority, ambulance, fire department, and school district, stating duration of all road closures. All road closures must be approved by the Director of Public Works in writing in advance of road closure.
9. No cleated or tracked equipment shall work on or move over asphalt surfaces without mats.
10. Any materials excavated as the result of utility installation shall be removed from road surface each day unless the material pile is signed per The Manual on Uniform Traffic Control Devices and may serve as a barrier to an open excavation. The Director of Public Works may require that road surfaces be washed. (C.R.S. § 42-4-1207)
11. Requests for permits should allow forty-eight (48) hours for a field review by the County Public Works Department prior to the issuance of any permit.
12. Construction of underground installations will generally require the services of an inspector approved by the County Public Works Department. All extraordinary costs related to such inspection will be borne by the permittee.
13. Failure to obtain a permit when working within the County road rights-of-way will result in a fee five (5) times the regularly scheduled fee.
14. Road cuts for utility installation or repair made parallel to the centerline of the road, and which cause damage to, or require the removal of asphalt in any traffic lane, require the replacement of asphalt to the full lane width throughout the disturbed section.
15. When utilities are to be located behind the curb, the trench or excavation shall be located

at a distance away from the back of curb or edge or asphalt equal to the depth of the trench or excavation.

16. No placement of underground utilities will be allowed when there is more than four inches (4") of frost present.
17. Utility Locate Markers. All flagging feathers used for utility locates shall be removed by the applicant before release of financial security.
18. As-Built Plans. All applicants for surface alteration or road cut permits will be required to submit a complete set of as-built plans before the final release of financial security.
19. Reclamation of Disturbed Areas. The permittee shall be responsible for the complete reclamation of areas disturbed within the rights-of-way to prevent the introduction and/or spread of noxious weeds and soil erosion. Soil disturbance of five hundred (500) square feet or greater shall be revegetated. Revegetation requirements for soil disturbance less than five hundred (500) square feet will be at the discretion of Gunnison County.
20. Noxious Weed Control. The permittee shall be responsible for noxious weed control in disturbed areas utilizing Integrated Weed Management (IWM) practices. C.R.S. § 35-5.5-101, *et seq*; the *Colorado Noxious Weed Act*, Gunnison Basin Integrated Weed Management Plan; Board Resolution 98-13, as amended, and Gunnison County Land Use Resolution require that noxious weeds be controlled. Noxious weed infestations should be properly identified to determine proper control measures. Noxious weeds can be controlled by utilizing one or more of the following IWM practices: 1) biological control, 2) cultural control, 3) herbicide control, or 4) physical control. Contact Gunnison County for the current list of noxious weeds mandated by law to be controlled and for assistance in weed identification and control methods.

4.11 Procedures for Encroachments to Rights-of-Way

A. Purpose and Procedure.

The purpose of this section is to establish public works, engineering, inspection, permitting and other requirements that must be met before a structure, repair or other improvement (including but not limited to or temporary construction parking) can be placed by a public or private property owner within the rights-of-way of a County road, or public road under County jurisdiction, or private road under County jurisdiction.

1. No person or persons shall begin work on a proposed structure, repair or improvement, or make substantial renovation to an existing structure, repair or improvement, within County Rights-of-way, a County road, or public road under County jurisdiction, or private road under County jurisdiction except as specifically permitted herein, without first obtaining a Right-of-Way Encroachment Permit to erect or maintain a structure, repair or improvement on rights-of-way from the County. A

separate permit will be required for each structure, repair or improvement proposed, unless a group or series of structures are proposed at one time.

2. Installation, maintenance, or improvements of a utility in, on or below a County Road or public road under the jurisdiction of Gunnison County shall require:
 - a. A permit for improvement in the right-of-way
 - b. A Right-of-Way permit.
3. A permit will not be required, and the structure, repair or improvement considered exempt, for the following:
 - a. Minor or insubstantial maintenance to an existing specific structure. Such work includes, but may not be limited to, cleaning, painting or other minor resurfacing to an existing structure or structures; repairing or mending an existing structure or structures.
 - b. Any work within the rights-of-way to repair or maintain existing irrigation ditches or impoundments.
 - c. The Director of Public Works can determine if a proposed structure, or improvement or maintenance is exempt.
4. Whenever Gunnison County determines that an existing structure or structures, improvement or improvements, approved or not approved, becomes a hazard to public safety or interferes with the County's maintenance or structure plans for the rights-of-way on which it is placed, the owner of the property which the structure benefits, upon receipt of written notice from the Director of Public Works or their representative shall, within the period specified therein, repair, move, or eliminate said structure(s) or improvement (s), so as to eliminate the hazard or impedance and be in conformance with the requirements contained herein. Requirements contained herein may be enforced as set forth in Section 2.3.
5. To receive a permit to erect or maintain a structure or improvement in a public right-of-way, each applicant is required to submit a Right-of-Way Encroachment permit application form and any associated plans or specifications required by the County. The applicant is advised to meet with the County Public Works staff prior to application submission to ensure that all necessary information is provided.
 - a. Two (2) sets of plans and specifications shall be submitted for review by the Director of Public Works or her representative. If required by the County, these plans and specifications shall be prepared and signed by a Colorado Registered Professional Engineer. In all cases when they are requested, the plans and specifications shall show the following:
 - I. Structure(s) plan and profile;

- II. If the structures(s), repair(s), or improvement(s) impact existing roadside drainage, a plan showing how such impacts shall be mitigated by the applicant;
 - III. Map or letters from utility companies detailing utility placement in the area of the proposed structure(s);
 - IV. Any relevant current land use approvals;
 - V. Map showing property ownership and easements. Director of Public Works may require a survey.
 - VI. Proposed structure(s), repair(s), or improvement(s) design and site plan, showing reclamation/revegetation plan if hillsides are to be disturbed if fill or cuts are to take place as part of the plan;
 - VII. Signage plans, if any;
 - VIII. Maintenance requirements and plan; and
 - IX. Any other requirements as determined by the Director of Public Works in their discretion.
- b. Supplemental reports and data (i.e., geology, soils, water, drainage, wildlife, etc.) may be required. Supplemental reports are to be prepared by qualified professionals as required by the Director of Public Works or the Director's representative.
 - c. Gunnison County shall have the reasonable right to have all plans, specifications and supplemental reports reviewed by qualified professionals identified by Gunnison County at the cost of the applicant.
 - d. If required, the applicant shall execute and fully fund a security agreement in the form and amount determined by the Director of Public Works in consultation with the County Attorney.
- 6. Neither the issuance of a permit nor compliance with the provisions hereof or with any conditions imposed in the permit issued hereunder shall relieve the applicant from the full responsibility for any damage whatsoever caused to persons or property, nor impose any liability upon any official, appointee, or employee of Gunnison County for damage to person or property. Nothing herein is or shall be construed to be a waiver by Gunnison County of governmental immunity.
 - 7. The application shall be denied if the Director of Public Works determines that it is not in the public interest or that it will adversely affect public health, safety, or welfare.
 - 8. Whenever a permit is required by this section and the permit is denied by the Director of Public Works, or the Director's designee, the applicant for the permit may, within

fifteen (15) days from the date of such denial, request in writing to the Director of Public Works, an appeal of the denial to the Board. The Director of Public Works shall, within fifteen (15) days of receiving the request, submit to the Board the written request for the appeal, and any administrative record consisting of documents considered by the Director of Public Works in such denial, including the application for the permit and all relevant documents. The Board will then decide, based upon a review of the record, whether to accept or reject the decision of the officer, within thirty (30) working days of receiving the permit application and all relevant documents. The Board may, in its discretion, request additional or other information from the applicant, the county officer who issued the denial, or other county staff. The decision rendered by the Board is the final decision of the County. For Gunnison County "Right-of-Way Encroachment Permit" application information please refer to Section 6.

9. For fee information, see Exhibit A.

SECTION 5
CONSTRUCTION SPECIFICATIONS

5.1 General Policies

A. Gunnison County Construction Specifications

During the execution of road and bridge construction and related work, all materials, performance, and quality of work shall conform to the requirements of these Standards and Specifications, the applicable sections for the most current edition of the Department of Transportation, State of Colorado Standard Specifications for Road and Bridge Construction, Colorado Standards Plans, Division of Highways M & S Standards, American Association of State Highway and Transportation Officials, and the Standard Specification for Highway Bridges.

If these Standards and Specifications or the Department of Transportation Standard Specifications do not cover a specific situation during the course of work, applicable specifications must be approved by and permission obtained from the County. In the event that there is conflict between the various reference specifications, they shall govern in the following order:

1. Gunnison County Standards and Specifications for Road and Bridge Construction
2. Most recent, adopted, and applicable State of Colorado Department of Transportation, Standard Specifications for Road and Bridge Construction; and M & S Standards and Specifications
3. Most recent, adopted, and applicable AASHTO Standard Specifications

The County shall be the final authority on the meaning or interpretation of all specifications.

B. The Project Engineer

Each road developer shall designate to the County Public Works Department a person who shall be responsible for general compliance with these Standards and Specifications, approved permits, and development improvement agreements, and the following:

1. To provide to the County any engineering details, documentation, or any other information regarding the prosecution of the work;
2. To apply to the County for written approval by the County any proposed alterations to the approved plans and specifications prior to construction;
3. To provide reproducible "as-built" plans, and specifications to the County Public Works Department upon completion of all work to be performed on the project as a

condition of final approval of the work;

4. To furnish and set construction stakes and marks establishing all lines, grades, and measurements necessary to the proper prosecution of the work in its final location as shown on the approved plans and specifications;
5. To make sure all survey monuments disturbed or removed are replaced in kind at their original locations; and
6. To provide all materials testing necessary to establish parameters required to inspect work for compliance with approved plans and specifications.
7. To stop dirt work when frost levels reach four inches (4").

C. Inspection and Testing

1. All work done on County roads and those roads required to be in compliance with approved land use change permits may be inspected by the County Public Works Department to ensure compliance with these Standards and Specifications, and the applicable provisions of the land use change conditions, approved plans, or subdivision agreement.
2. The County shall suspend the work wholly or in part, due to the failure of the contractor to carry out provisions of these Standards and Specifications, approved permits and development improvement agreements.
3. To ensure compliance with these Standards and Specifications and approved plans, adequate in-process inspection and testing is required. The Project Engineer shall be responsible for certifying all work is completed in accordance with the approved plans and specifications.
4. The County shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Project Engineer and contractor as required to make a complete and detailed inspection. The County may require that any work done or materials used without inspection must be ordered, removed, or replaced. The County may, at any time before acceptance of the work, direct the Contractor to remove or uncover any such portion of the finished work. After examination and approval of the work by the County, the Contractor shall restore the disturbed portions of the work to the standard required by the specifications. Inspection by the County shall not relieve the developer and/or contractor, or their designated representatives of the responsibility to control the work and insure compliance with the approved plans and specifications. The County shall not be responsible for insuring project compliance with the approved plans and specifications.

5. When the Construction Specifications of other jurisdictions are involved in the work, written approval shall be provided by the other jurisdictions and made available to the County prior to final acceptance of the work. Regular in-progress materials testing shall be provided to the County in a timely manner during the course of the work, and should be a requirement of final acceptance.
6. All materials testing shall be performed by an independent laboratory under the supervision of a professional engineer. All testing shall be at the expense of the developer, the Project Engineer, or the contractor.
7. Prior to acceptance by the County, all work not in compliance with these Standards and Specifications, approved permits, and/or development improvement agreements shall be brought into compliance at the Contractor's or owner's sole expense.
8. For the minimum requirements for compaction of embankments, sub-grades, and utility trenches, see Table 5-1. For required quality tests, see Table 5-2.
9. Embankment shall be exempt from controlled compaction testing and the following shall apply: Embankment shall be by layer placement. Surfaces steeper than a ratio of 3 horizontal to 1 vertical (3:1) upon which embankment is to be placed, shall be roughened or stepped to provide permanent bonding of new and old materials.
10. Embankment shall be layer placed, except over rock surfaces, in which case material may be placed by end dumping to the minimum depth needed for operation of spreading equipment. Each embankment layer shall be leveled and smoothed before placement of subsequent layers. Hauling and spreading equipment shall be operated uniformly over the full width of each layer. Suitable material shall be placed in layers no more than twelve inches (12") thick, except when the material contains rock more than nine inches (9") in diameter, in which case layers may be of sufficient thickness to accommodate the material involved. No layer shall exceed twenty-four (24") inches before compaction.
11. Placing individual rocks or boulders greater than twenty-four (24") inches will be permitted provided the embankment will accommodate them. Such rocks and boulders shall be at least six (6") inches below sub-grade. They shall be carefully distributed and the voids filled with finer material to form a dense and compacted mass.
12. At a minimum, Material shall be a moisture content suitable to obtain a mass that will not visibly deflect under the load of hauling and spreading equipment.

D. The Use of Approved Plans and Specifications

1. Any work performed without approval or that deviates from the approved plans and specifications shall be considered unauthorized and may be ordered removed and the pre-existing conditions restored.

2. Standard drawings for proposed road and bridges submitted to Gunnison County for approval shall be drawn on standard plan and profile sheet 24" x 36" or submitted in an acceptable digital format.
 - a. Plan drawings shall be on a scale of not less than one inch (1") equals one hundred feet (100'). Bearings and distances shall be shown in plan view.
 - b. Profile drawing shall be on a scale of not less than one inch (1") equals ten feet (10') vertically and one inch (1") equals one hundred feet (100') horizontally. The length of vertical curves and percent of grade shall be shown on profile. Size, length and station location of pipe shall be shown on profile.
3. A typical roadway cross section of a scale not less than one inch (1") equals ten feet (10') shall be furnished with all road plans. Cross section shall show road width, surfacing type, width and depth, cut and fill slopes and other special treatments such as top soiling or rip rap. A cross section shall be drawn for each culvert installation showing size and length of pipe, height of cover over pipe and grade of pipe.
4. All standard drawings shall be drawn on reproducible quality paper or in digital format with adequate resolution.
5. The approved plans, specifications, supplementary specifications, standards, supplementary standards and any special provisions required or approved by the County shall be considered consistent to describe and provide for the complete work.
6. The contractor shall not take advantage of any error or omission in the approved plans, standards, and specifications. In the event of an apparent error or omission is discovered, the Project Engineer and the County shall be notified. The developer and/or contractor, acting through the Project Engineer, shall make any corrections required, subject to approval by the County.

E. Acceptance of Work

1. **Partial Acceptance.** Immediately after a section of the work is completed such as a section of the subgrade, structures, trench backfill, etc., acceptance of that element is required prior to proceeding with the next element. An example would be acceptance of subgrade prior to the placement of subbase. If, after partial acceptance of an element of work, conditions change and the next element is not constructed for a period of time, the County may require a re-inspection and acceptance as per Section 5.1.
2. **Final Acceptance.** Immediately upon completion of the project the road developer shall notify the County Public Works Department and schedule a final inspection.
3. If the County Public Works Department determines that construction is in compliance with these Standards and Specifications, approved permits and/or development

improvement agreements it may initiate the procedure for acceptance by the Board for maintenance or release of the performance guarantee securing the completion of the work within three hundred and sixty-four (364) days.

4. If the County Public Works Department determines that construction is not in compliance with these Standards and Specifications, the County shall provide written notification of the deficient items to the road developer and to the Gunnison County Community Development Department. In the event the work is not done, the developer or owner is responsible for maintenance of the work until such time as all such items are completed or corrected and a satisfactory re-inspection is made, and the work approved in writing by the Director of Public Works.

F. Cooperation with Utilities

1. The developer shall be responsible for coordinating the location, relocation, installation or removal of all utilities involved with the construction of the project.
2. The construction plans for the proposed project shall be submitted to the affected utilities as soon as possible. Adequate notice shall be given to utilities for utility locations required for the work to avoid damage to existing utilities and conflicts in the work.

G. Guidelines for Traffic Studies

Traffic Studies shall be required as determined by the Director of Public Works. Traffic studies shall follow the guidelines in the Gunnison County Land Use Resolution Section 12-103: ROAD SYSTEM or as determined by the Director in their discretion

SECTION 6

PERMITS

6.1 Issuance of Permits

Permit fees and bonds for any permit named in these Standards and Specifications shall be set by the Board.

6.2 Right-of-Way Permit (Work Within Rights-of-Way)

- A. No individual, company or corporation, or public agency shall construct or alter any road, drainage, or other infrastructure within a County road rights-of-way, County road, or public road under County jurisdiction, or private road under County jurisdiction without a Surface Alteration Permit from the Director of Public Works. Road construction shall be in accordance with engineering plans prepared by a professional engineer, in conformance with these Standards and Specifications, with said plans to be approved by Gunnison County.
- B. No individual, company, corporation, or public agency shall modify, install, repair, or otherwise change any utility located in, on, or over and within thirty (30') feet of the centerline of any County Road, or public road under County jurisdiction, or private road under County jurisdiction without first obtaining a Permit from the Public Works Department. Financial security may be required to insure conformance with these Standards and Specifications. Gunnison County may hold the financial security for one (1) year from the completion and inspection of the work by Gunnison County staff. It may be refunded earlier, in the sole discretion of the Director of Public Works.
- C. Permits shall be submitted for approval at least five (5) business days prior to commencement of the scheduled time of road cutwork unless the work is officially deemed an emergency by the utility owner. An approved permit must be issued forty-eight (48) hours or more in advance of commencing the work. The applicant shall submit a written schedule of the work, including materials and length of disturbance, the total time area will be disturbed, and a Manual for Uniform Traffic Control Devices compliant signing and traffic management plan. In the case of an emergency repair, the utility owner must notify the Public Works Department as soon as is reasonable prior to performing work and to obtain a permit during the next business day.

Such Permit is not transferable to any successor, assignee, designee, heir, parent or subsidiary, or person other than the named permit holder.

6.3 Access Permits

No person shall construct, substantially improve, change, and/or extend any access providing vehicular and/or off highway vehicle (OHV) and/or mechanized access to or from any public highway or rights-of-way, or County road or public road, or private road from or to property requiring or utilizing access to such road without a County Access Permit issued by the Public Works Department. Internal circulation roads, trails or accesses are subject to the access permit process. No access permit shall be issued without there having been a site inspection by the Director of Public Works or their representative. The Director, or their representative may specify certain conditions and/or requirements in addition to those set forth in these Standards and Specifications for issuance of an access permit. Work associated with Access Permits shall be complete within two years of issuance or shall be considered withdrawn and not refunded unless an extension is granted per the permit language. Access permits are assigned to the specific parcel being accessed. Easements shall be provided for every parcel the access crosses regardless of ownership. Access Permits shall not expire once a final inspection is approved and the permit is completed. This Permit shall be transferable through transfer of deed.

6.4 Oversize/Overweight Permits

The Director of Public Works may, upon application in writing and good cause being shown, issue an Oversize/Overweight Permit to operate or move a vehicle or combination of vehicles of a size or weight of vehicle or load exceeding the maximum legal load permitted by the State of Colorado. The County Public Works Department may limit the number of trips and/or the hours of operation, or otherwise prescribe conditions of operation of such vehicles to ensure against undue damage to road foundations, surfaces, or structures, and to ensure the safety of the motoring public. Further, the County Public Works Department may require such fee, undertaking, bonding, or other security as may be deemed necessary to compensate for any damage to any roadway or structure. In the case of a declared emergency permitting may be expanded to cover all traffic on a County road even if the vehicle is typically exempted from permit regulations. Such Permit is not transferable to any successor, assignee, designee, heir, parent or subsidiary, or person other than the named permit holder.

6.5 Snow Removal or Grooming Permit

The Director of Public Works may, after an application has been submitted, an evaluation has been prepared, and the permit has been approved by the Board of County Commissioners, issue a Snow Removal and/or Grooming Permit. Renewals may be issued for up to three (3) consecutive winter seasons at the Director's discretion and until either party has cause to terminate or not renew the permit. The Snow Removal or Grooming Permit may contain such conditions as necessary to preserve the integrity of the road, comply with the Gunnison County Land Use Resolution and/or a land use change, provide for the safety of the road users, protect the County from liability, or other conditions as determined by the Board in its sole discretion. The County Public Works Department may require financial security as may be deemed necessary to repair any damage to the roadway or structures. Such Permit is not transferable to any successor, assignee, designee, heir, parent or subsidiary, or person other than the named permit holder.

6.6 Right-of-Way Encroachment Permit

The Director of Public Works may, after an application has been submitted and evaluated, issue a permit for the construction, installation and/or maintenance of any artificially constructed semi-permanent or permanent structure, repair, or improvement in the road right-of-way of a County road, public road under the jurisdiction of Gunnison County, or private road under the jurisdiction of Gunnison County. The Right-of-Way Encroachment Permit may contain such conditions as necessary to preserve the integrity of the road and the rights-of-way, and provide for the safety of the road users. The rights-of-way encroachment permit is fully and freely revocable at any time by the County for any reason, or no reason at all, and shall not be construed to grant any right or privilege to any permit holder other than the revocable and limited rights afforded by the permit. Further, the County Public Works Department may require financial security as may be deemed necessary to repair any damage to the road, structure, or rights-of-way. Such Permit is transferable to a successor, assignee, designee, heir, parent or subsidiary, or person other than the named permit holder through legal instrument.

6.7 Parking Permits

The Board or Director of Public Works may issue parking permits at its discretion on land that the County controls, owns, or has an agreement to administer. These permits apply only to the designated location set forth on the permit, and will set forth specific criteria or conditions with which the permit holder must comply, and may also require compliance with other provisions of these Standards. Issuance of such permit shall not be deemed to create any right or privilege in any permit holder other than the limited and temporary rights afforded by the terms of the permit and these Standards, and are fully and freely revocable by the Board or Director of Public Works for any reason, or no reason at all. Vertical, on-site signage describing the parking restrictions may provide notice of parking policies for that area, but such signage is not required for the County to enforce such policies, these Standards, or any other law or rule. There shall be no overnight parking in the public rights-of-way without a parking permit. Parking Permits are not transferable to any successor, assignee, designee, heir, parent or subsidiary, or person other than the named permit holder.

6.8 Reclamation Permits for the Control of Noxious Weeds

Except as otherwise exempted, construction or development as defined or regulated by the County by any individual, company or corporation, or public agency which results in any site disturbance of ten-thousand (10,000) or more square feet of disturbance, shall be required to obtain a Reclamation Permit for Revegetation and Noxious Weed Control from the Gunnison County Public Works Department Weed Management Program Coordinator. The permittee shall be responsible for the complete reclamation of all disturbed areas to prevent the introduction and/or spread of noxious weeds and soil erosion in accordance with Colorado Revised Statutes § 35-5.5-101, *et seq*; the *Colorado Noxious Weed Act*, Gunnison Basin Integrated Weed Management Plan; Board Resolution 98-13, and Gunnison County Land Use Resolution. Termination of Reclamation Permit coverage occurs when vegetation required pursuant to *Section 13-115: Reclamation and Noxious Weed Control* is established and growing within two full growing

seasons of the date of the issuance of a Certificate of Occupancy or Closing of the Building Permit associated the applicable Gunnison County Reclamation Permit. Such Permit is not transferable to any successor, assignee, designee, heir, parent or subsidiary, or person other than the named permit holder.

6.9 Financial Security

As a condition of the issuance of any permit, the Director, at the Director's sole discretion, may require a permittee to file a guarantee of financial security in an amount established by the Director and payable to the County. The guarantee may be in the form of cash, irrevocable letters of credit issued by a bank acceptable to the Board, surety bonds issued by a company authorized to do business in Colorado, or any other form, or combination of forms, established by the Board.

REFERENCED REPORTS

1. Gunnison County, Colorado Land Use Resolution, as amended, Gunnison County Planning Department.
2. State Highway Access Code, State of Colorado, Department of Transportation.
3. Manual on Uniform Traffic Control Devices, U.S. Department of Transportation, Federal Highway Administration.
4. Colorado Vehicle Code, Colorado State Patrol Troop Office, Grand Junction, Colorado.
5. Geometric Design of Highways and Roads, The American Association of State Highway and Transportation Officials.
6. Roadway Design Manual, State of Colorado, Department of Transportation.
7. Trip Generation, The Institute of Transportation Engineers.
8. Standard Specifications for Road and Bridge Construction, State of Colorado, Department of Transportation.
9. Gunnison County Flood Damage Prevention Resolution, Gunnison County, Colorado. Gunnison County Planning Department.
10. Procedures for Determining Peak Flows in Colorado, U.S. Department of Agriculture, Soil Conservation Service, 1980.
11. Concrete Pipe Design Manual, ACPA Arlington, Virginia, February, 1974.
12. Handbook of Steel Drainage and Highway Construction Products, A151, Washington, D.C. 1971.
13. Standard Specifications for Highway Bridges, The American Association of State Highway and Transportation Officials.
14. Colorado Standard Plans, State of Colorado, Department of Transportation.
15. Standard Plans for Highway Bridges, U.S. Department of Transportation, Federal Highway Administration.
16. Uniform Construction Standards for Colorado Public Works, Colorado Contractors Association, Inc.

APPENDIX A

LEGAL RESPONSIBILITIES

The latest edition of the Division of Highways, State of Colorado, Standard Specifications for Road and Bridge Construction; Section 107 - Legal Relations and Responsibilities to the Public, shall be considered Supplemental Specifications to these Standards with the additions, deletions, or revisions noted in Sections one and two as supplied annually by the Division of Highways, State of Colorado.

Section 1 - Definitions

State - shall be redefined as Gunnison County, Colorado.

Division - shall be redefined as the Gunnison County Public Works Department.

Engineer - shall be the Project Engineer as defined in Section 5.1.2 when acting as the authorized agent of the developer or contractor or the County as defined in Section 5.1.3 when acting in behalf of the Public Works Department.

Contract - shall be redefined as these Standards and Specifications.

Section 2 - Section 107, Legal Relations and Responsibility to Public

Payment - Delete any reference to payment for the use of these Standards.

107.04 - Delete Subsection.

107.07 - Delete "as specified under subsection 104.04".

107.09 - Delete Subsection.

107.16 - Paragraph one, line eight, revise to read the following: "the Contractor or Developer shall be required to assume any expenses entailed in maintaining traffic". Delete last sentence. Delete paragraphs two, three, and four.

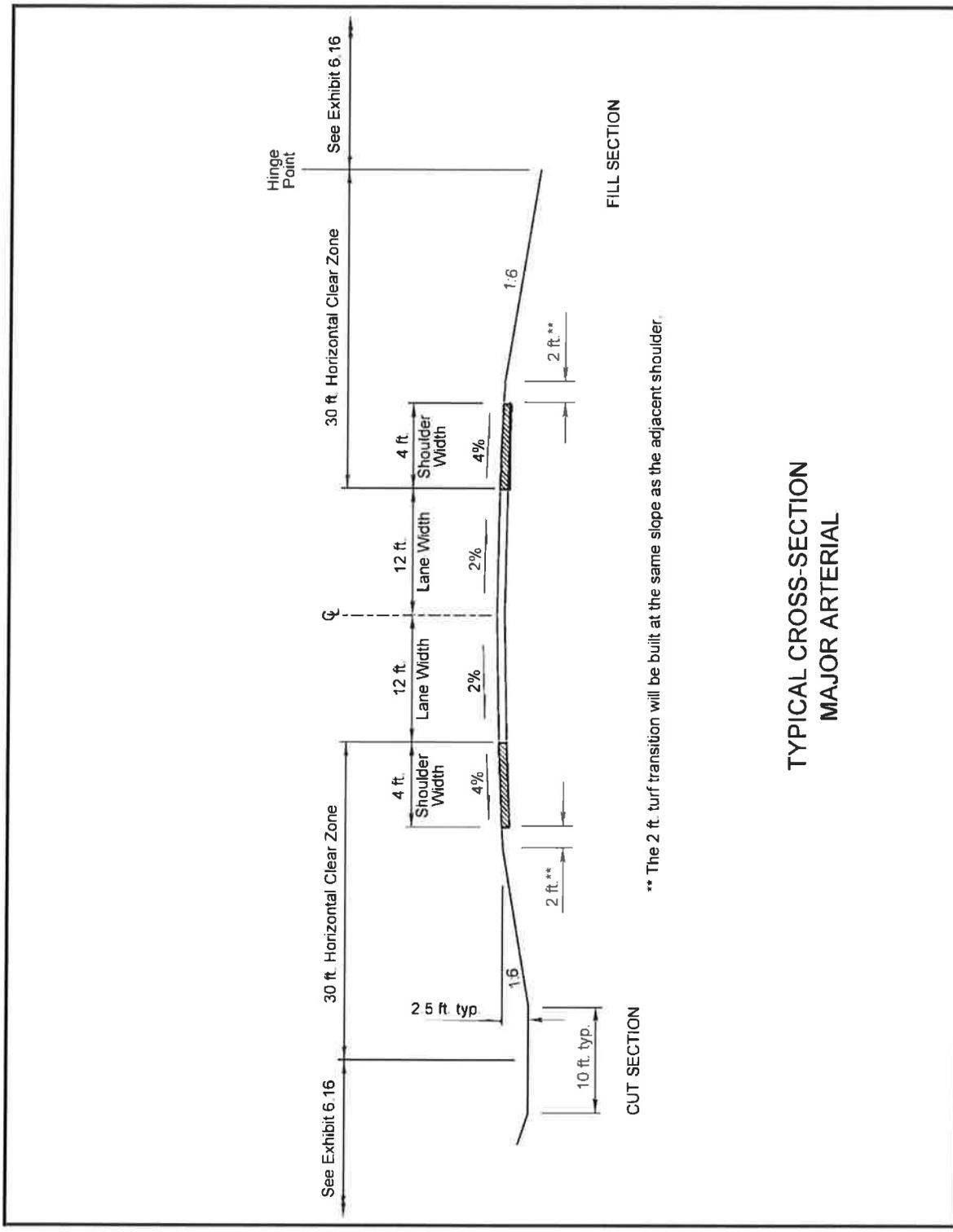
107.19 - Delete Subsection.

107.10 - Is hereby revised as follows: Paragraph one - "In carrying out any of the provisions of these Standards; or in exercising any power or authority granted to them by Gunnison County; or performing their duties within the scope of their employment, there shall be no personal liability upon the Board, Director of Public Works, or their authorized representatives due to injuries sustained from an act or omission of such employee, except as may be provided by law."

107.22 - Delete Subsection.

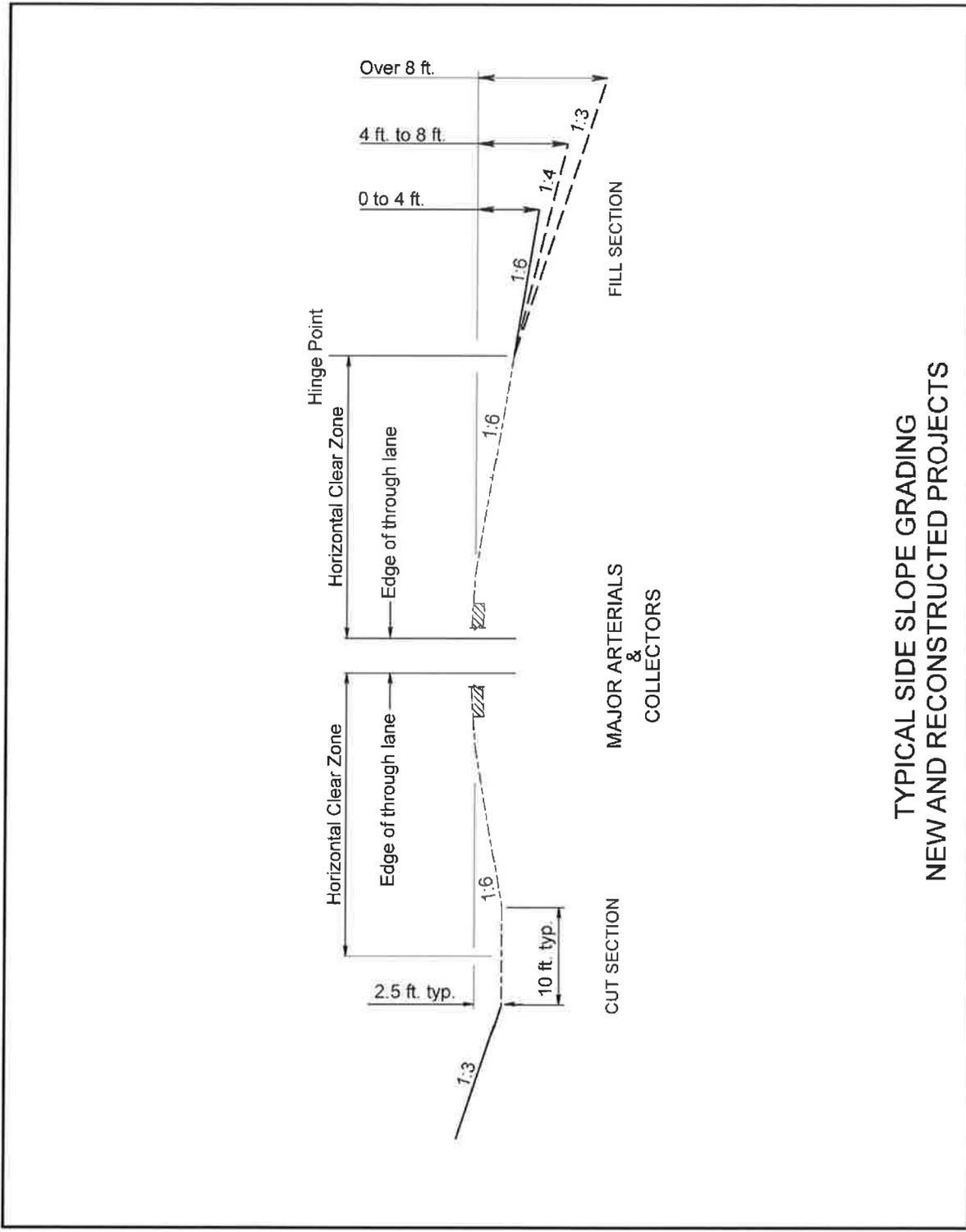
107.23 - Delete Subsection.

107.25 - Delete paragraph 2 of section - (c) Measurement and Payment.



** The 2 ft. turf transition will be built at the same slope as the adjacent shoulder.

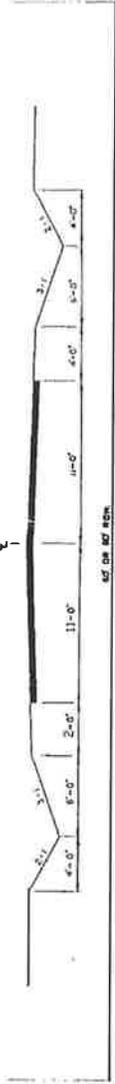
TYPICAL CROSS-SECTION
MAJOR ARTERIAL



TYPICAL SIDE SLOPE GRADING
NEW AND RECONSTRUCTED PROJECTS

APPENDIX C

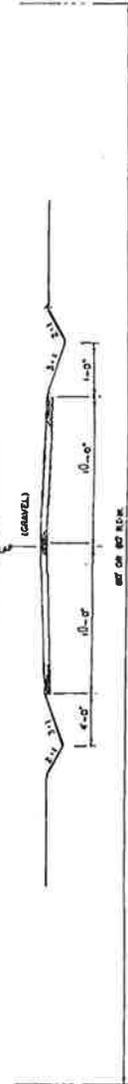
RURAL COLLECTOR SECTION



RURAL LOCAL SECTION

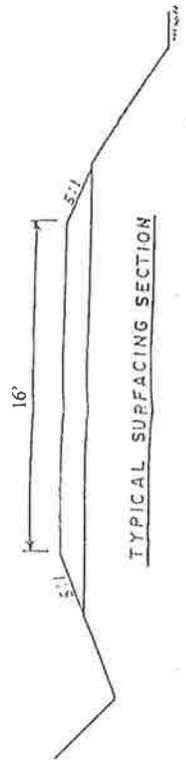
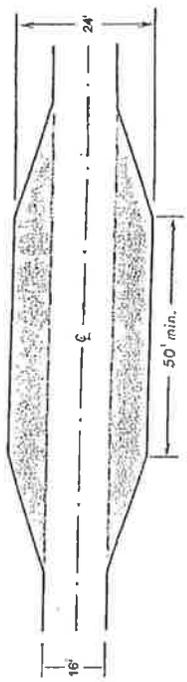
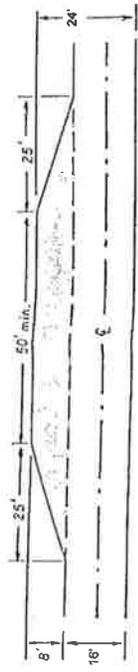
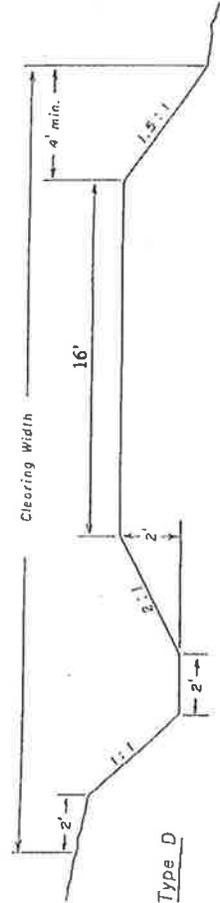
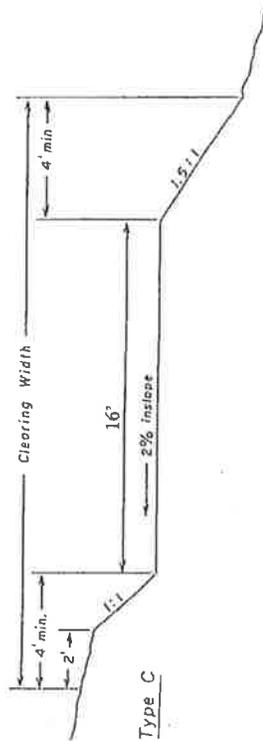
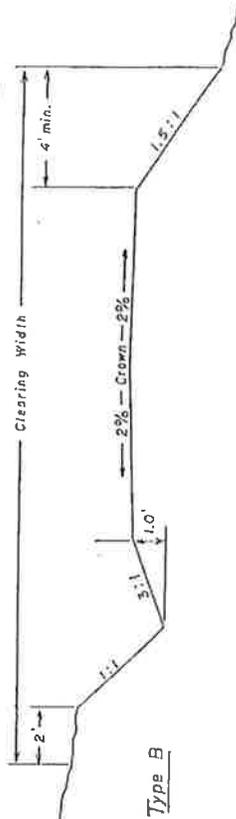
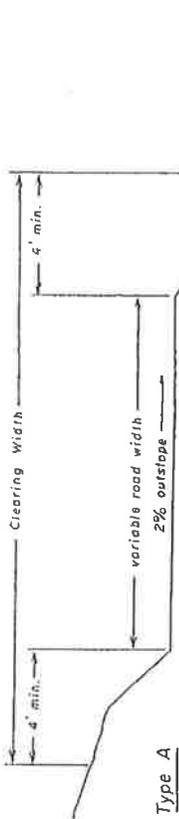


RURAL LANE SECTION



LOCAL INTERMITTENT SECTION

APPENDIX D



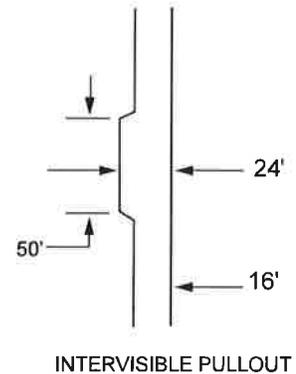
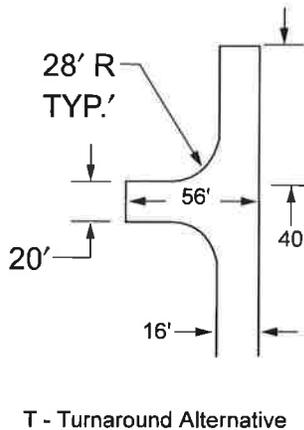
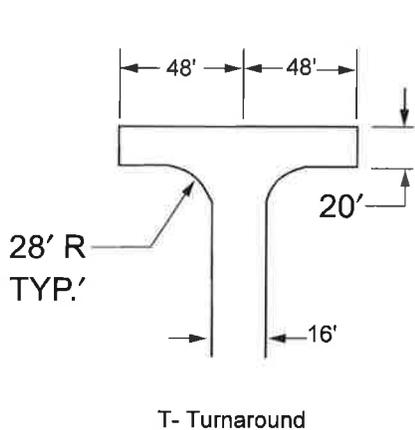
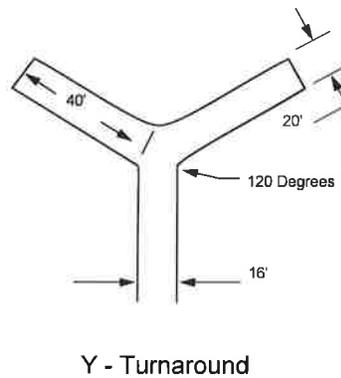
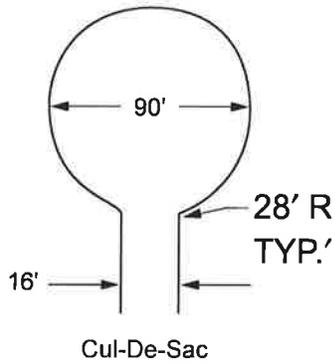
APPENDIX E

STANDARD TURNAROUND OPTIONS

1. Road width may exceed the 16-foot minimum.
2. Road grade approaching the Turnaround shall not exceed 4% for 50 feet.
3. Grades in Turnarounds shall not exceed + or - 4%.
4. A minimum of 2% crown shall be constructed into the Turnaround to provide drainage.
5. T - Turnarounds shall be a minimum of 20 feet from any flammable structures.

REQUIREMENTS FOR ACCESS ROADS

LENGTH (feet)	WIDTH (feet)	TURNAROUNDS REQUIRED
0-150	16	None required
151-500	16	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1
501-750	16	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1

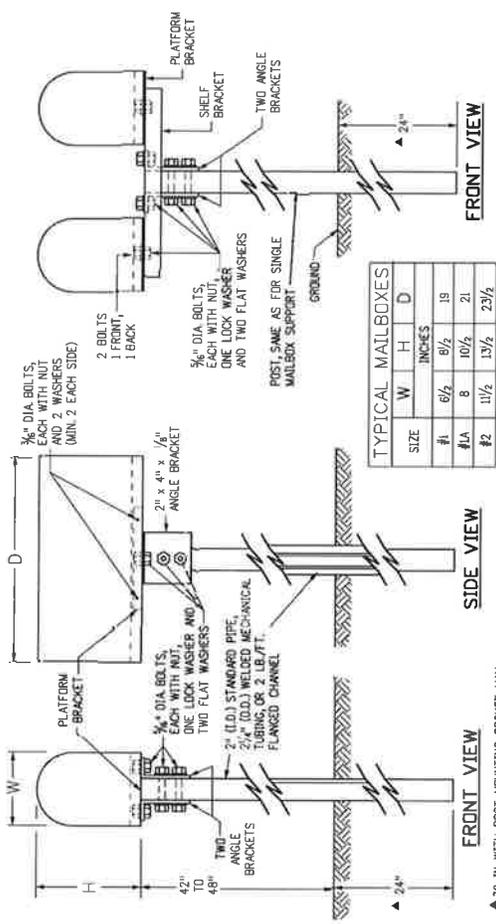


When driveways are in excess of 150 feet, the driveway shall be installed so as to provide serviceable fire department access prior to and during construction.

Drawings not to scale.

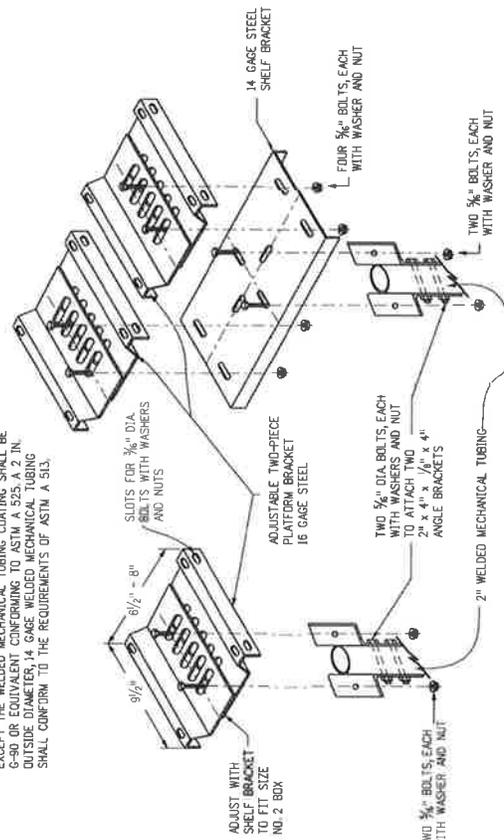
GENERAL NOTES

- EXACT DIMENSIONS OF ANGLES, PLATFORM AND SHELF BRACKETS, BOLT HOLES, SLOTS AND MULTIPLE MAILBOX SUPPORT COMPONENTS MAY VARY FROM THOSE SHOWN OR IMPLIED HEREIN SO THAT ALL COMPONENTS WILL FIT TOGETHER PROPERLY.
- PLASTIC NEWSPAPER RECEPTACLES MAY BE MOUNTED BELOW THE MAILBOX ON THE SUPPORT. PLASTIC NEWSPAPER RECEPTACLES SHALL BE MOUNTED ON THE SUPPORT WITH PLASTIC LUGS. SYSTEM GALVANIZED L-BOLT AND HARDWARE OR OTHER EQUIVALENT APPROVED BY THE ENGINEER ASSOCIATED COSTS WILL NOT BE PAID FOR SEPARATELY BUT WILL BE INCLUDED IN THE WORK.
- ON ROADS WITH CURB AND GUTTER, THE MAILBOX SUPPORT SHALL BE LOCATED IN THE GROUND SO THE FRONT FACE OF THE MAILBOX SHALL BE 8 IN. TO 12 IN. BACK FROM THE CURB FACE. THE HEIGHT SHALL BE 42 IN. TO 48 IN. MEASURED FROM THE GUTTER FLOW LINE TO THE BOTTOM OF THE MAILBOX.
- ON ROADS WITH SIDEWALK ATTACHED TO CURB AND GUTTER, THE MAILBOX SUPPORT SHALL BE LOCATED IN THE GROUND WITH OR SLIGHTLY BEHIND THE EDGE OF THE SIDEWALK. THE MOUNTING HEIGHT SHALL BE 42 IN. TO 48 IN. ABOVE THE SIDEWALK.
- THE GROUND SURROUNDING THE MAILBOX SUPPORTS SHALL BE FIRM UNDISTURBED GROUND OR WELL COMPACTED BACKFILL. STILL, THE SUPPORTS ARE NORMALLY DRIVEN INTO THE GROUND AND BE PLACED IN A DUG HOLE WITH WELL COMPACTED BACKFILL.
- A SINGLE MAILBOX SHALL BE RESET AT THE FINAL DESIGNATED LOCATION ON NEW TYPE 3 SUPPORTS. TYPE 1 AND TYPE 2 (TYPE 2) SUPPORTS SHALL BE RESET ON ONE SIDE. TYPE 1 SUPPORTS (OR ON TWO SINGLE (TYPE 1) SUPPORTS AS DESIGNATED, THREE, FOUR, OR FIVE MAILBOXES SHALL BE RESET ON A MULTIPLE (TYPE 3) SUPPORT. AN EXISTING MAILBOX THAT IS MOUNTED ON A CANTILEVER SUPPORT SHALL BE RESET ON A CANTILEVER (TYPE 4) SUPPORT. ALL WORK AND MATERIALS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR "RESET MAILBOX STRUCTURE (TYPE 3)".
- WHEN THE ENGINEER DETERMINES THAT THE EXISTING MAILBOX CAN NOT BE REUSED, A NEW METAL MAILBOX OF SIMILAR SIZE SHALL BE SUPPLIED AND ERECTED BY THE CONTRACTOR. A NEW PLASTIC MAILBOX CONFORMING TO POSTAL SERVICE SPECIFICATIONS MAY BE USED AS AN ALTERNATIVE WHEN APPROVED BY THE ENGINEER. AN EXISTING MAILBOX LARGER THAN THE NEW MAILBOX SHALL BE REUSED. THE COST OF SUPPLYING THE NEW MAILBOX WILL BE PAID FOR IN ACCORDANCE WITH SUBSECTION 105.04(b). EXCEPTION: A CUSTOM BUILT, RURAL-TYPE MAILBOX MAY BE RESET IF THE MAILBOX OWNER OBTAINS PRIOR WRITTEN APPROVAL FROM THE POSTMASTER.
- THE ADDRESS INFORMATION THAT APPEARED ON THE ORIGINAL MAILBOX SHALL BE PLACED ON THE APPROACH SIDE OF THE REPLACEMENT MAILBOX. SIZE AND STYLE OF LETTERING AND MATERIALS ARE SUBJECT TO THE ENGINEER'S APPROVAL.
- POSTS, BRACKETS, AND ALL MOUNTING HARDWARE SHALL BE GALVANIZED IN CONFORMANCE WITH ASTM A 513 AND 11, EXCEPT THE WELDED MECHANICAL TUBING COATING SHALL BE G-90 OR EQUIVALENT CONFORMING TO ASTM A 525. A 2 IN. OUTSIDE DIAMETER, 14 GAGE WELDED MECHANICAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 513.



▲ 30 IN. WITH POST MOUNTING SOCKET MAY BE USED, SEE DETAIL ON SHEET 2 OF 2.

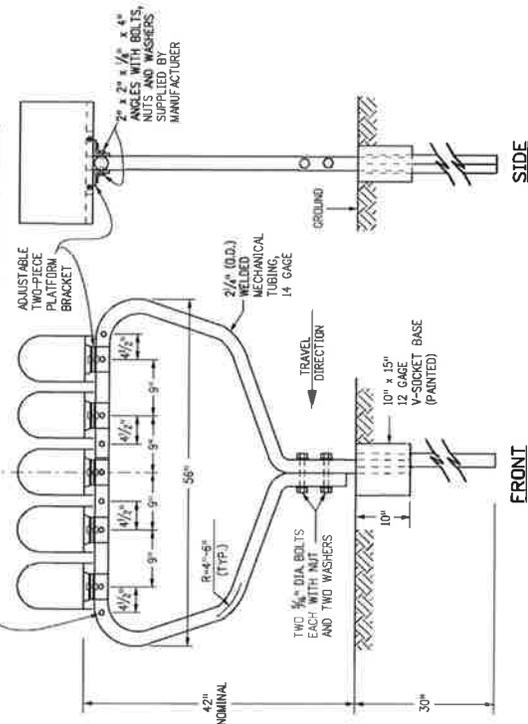
SINGLE (TYPE 1) AND DOUBLE (TYPE 2) MAILBOX SUPPORTS



SINGLE AND DOUBLE MAILBOX SUPPORTS ALTERNATIVE

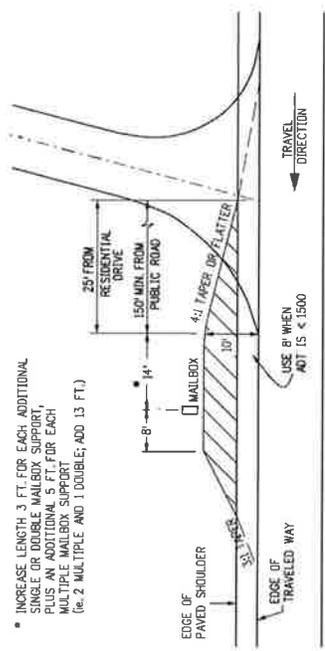
MAILBOX SUPPORTS

9 BOLT HOLES, SIZE 2 MAILBOX REQUIRES FOUR ANGLE CONNECTORS TO ATTACH THE MAILBOX TO TYPE 3 SUPPORT, MAXIMUM OF FOUR SIZE 2 MAILBOXES.

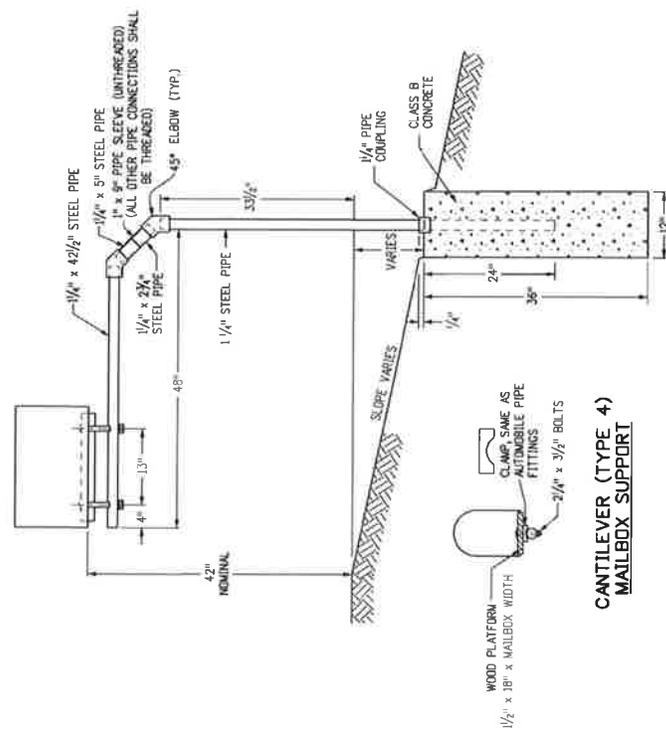


MULTIPLE (TYPE 3) MAILBOX SUPPORT FOR 3, 4, OR 5 MAILBOXES OR APPROVED EQUAL
FIVE SIZE 1 MAILBOXES SHOWN

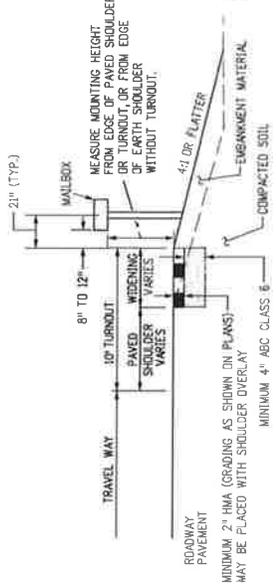
- INCREASE LENGTH 3 FT. FOR EACH ADDITIONAL SINGLE OR DOUBLE MAILBOX SUPPORT, PLUS AN ADDITIONAL 5 FT. FOR EACH MULTIPLE MAILBOX SUPPORT (i.e. 2 MULTIPLE AND 1 DOUBLE; ADD 13 FT.)



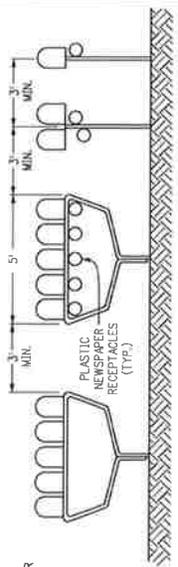
MAILBOX TURNOUT



CANTILEVER (TYPE 4) MAILBOX SUPPORT



TURNOUT TYPICAL SECTION



SUPPORT SPACING
NOTE: SEE SHEET 1, GENERAL NOTE 7, FOR MOUNTING PLASTIC NEWSPAPER RECEPTACLES.

MAILBOX SUPPORTS

APPENDIX G

RECLAMATION FOR EXPOSED EARTHWORK

- A. **Land Preparation:** Follow the Gunnison County Weeds Program and the most recent Natural Resources Conservation Service guidelines for the preparation of the land. This may include runoff control measures to ensure the successful rehabilitation of the land.
- B. **Seeding Information:** These seeding recommendations was provided by the Natural Resources Conservation Service.
1. **Seed Recommendations:** Seed mixes in Gunnison County are determined by elevation, moisture, surrounding foliage, and other considerations. The NRCS or the CSU Extension office employee experts that should be consulted for the specific project in question. Sometimes certain varieties of seed can be substituted.
 2. **Rate of Seeding:** Each specific seed mix will have a rate for the seed and climate.
 3. **Seeding Time:** The seeding time with the greatest success is a dormant seeding for areas that cannot be irrigated. Spring seeding can be successful if rainfall is above the historical average. Late summer seedings (late July to mid-August) have shown success in some areas since August and September have historically been the highest rainfall months.

Suggested seeding times (without irrigation) based on Major Land Resource Area (MLRA):

7500-9500 feet elevation

Dormant Seeding (Best) – October

1-November 15 Spring Seeding –
not recommended

Late Summer Seeding (Marginal) – August 1-31

Alpine Zone (10,000 feet

elevation and above)

Dormant Seeding (Best)

– September 1-30 Spring

Seeding – not

recommended

Late Summer Seeding (Marginal) – July 15-August 15

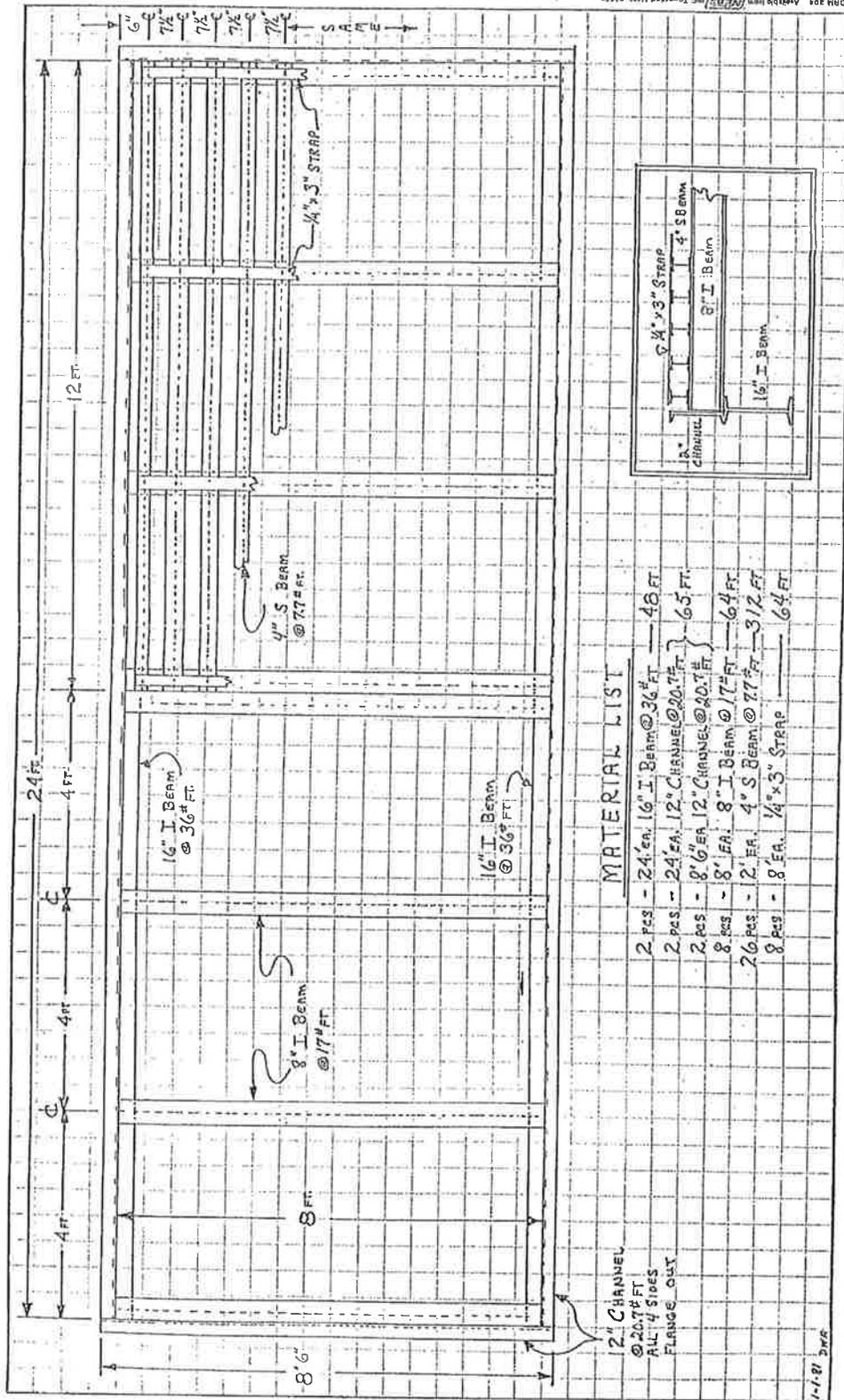
4. **Seeding Methods:** Drilling the grass seed is the best method. Drill depth should be placed between $\frac{1}{2}$ and $\frac{3}{4}$ inch below the soil surface. For slopes that are greater than 3:1 slope, seeding may be broadcast by hand or mechanical spreader and rated into the upper soil layer (no deeper than $\frac{3}{4}$ inch). Slopes steeper than 2:1 shall require seed stabilization methods. **Seed should not be incorporated and applied simultaneously with a hydromulch slurry.**

- C. **Mulches:** Straw and/or hay used for mulch, must be certified weed free. A hydromulch can be applied to the area after the seed has been drilled in or broadcast. On steep slopes where crimping is not possible, jute matting (biodegradable mesh) may be used as a mulch over the newly seeded areas.

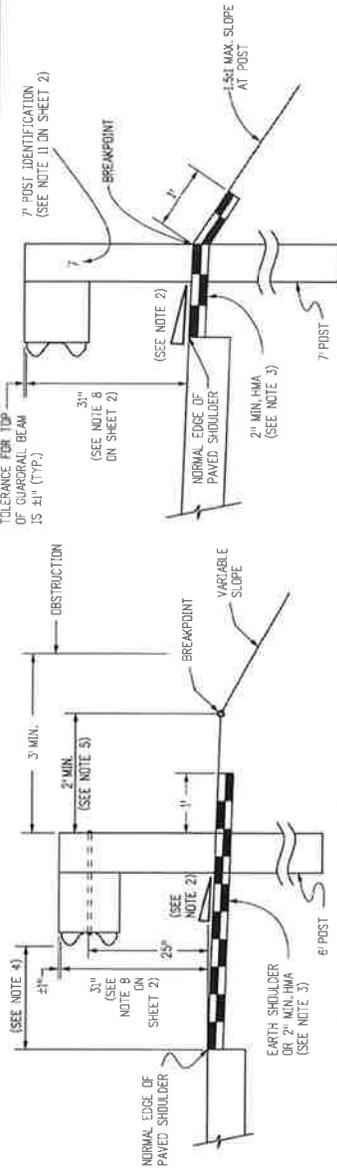
- D. **Time Frame of Reclamation Process:** Reclamation can require several years (1 to 5) to determine stand establishment. It should be expected that early seral species (such as summer and winter annuals) will occupy the area before the desired perennial stand dominates. Each year the revegetated sites will be reviewed by the Gunnison County Weed Specialist upon which time the permittee will be advised as to the management practices that are expected to ensure reclamation success.

It is expected that the reclaimed areas will be ecologically comparable to the surrounding undisturbed land.

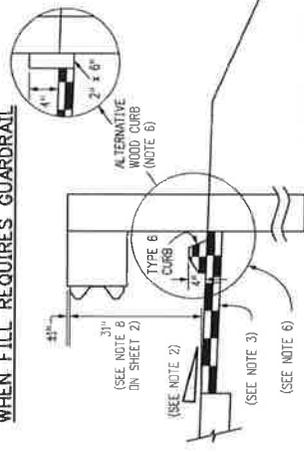
APPENDIX H



Appendix I



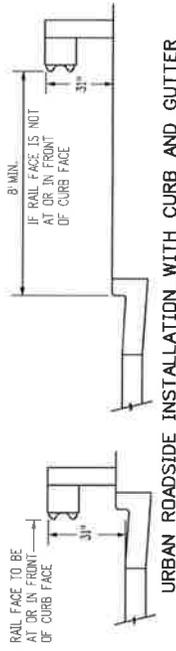
NORMAL ROADSIDE INSTALLATION WHEN FILL REQUIRES GUARDRAIL



RESTRICTIVE ROADSIDE INSTALLATION WITH 7 FOOT GUARDRAIL POSTS

ROADSIDE INSTALLATION WITH EROSION CONTROL CURB

OPTION A



URBAN ROADSIDE INSTALLATION WITH CURB AND GUTTER

LOCATION	SPACING
ALL LOCATIONS EXCEPT BRIDGE RAIL LOCATIONS	6'-3"
BRIDGE OR STRUCTURE APPROACH	SEE SHEET'S 11 & 19

NORMAL CENTER-TO-CENTER POST SPACING

GENERAL NOTES (CONTINUE ON SHEET 2)

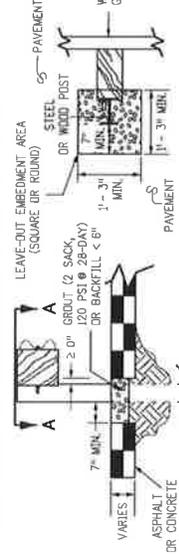
- ALL GUARDRAILS SHOWN ARE WASH 2016 TL-3 COMPLIANT.
- RATE OF SLOPE DEPENDS ON GUARDRAIL LOCATION:
 - FOR GUARDRAIL FACE 2 FT. OR LESS FROM THE NORMAL EDGE OF PAVED SHOULDER, CONTINUE THE RATE OF SLOPE OF THE NORMAL PAVED SHOULDER TO THE BREAKPOINT.
 - FOR GUARDRAIL FACE MORE THAN 2 FT. FROM THE NORMAL EDGE OF THE PAVED SHOULDER, THE SLOPE SHALL BE 10:1 OR FLATTER.
- WHEN SPECIFIED ON THE PLANS, EXTEND A 2 IN. MINIMUM THICKNESS PAVED SURFACE TO 1 FT. BEHIND THE GUARDRAIL POSTS OR TO THE EROSION CONTROL CURB AS SHOWN ON PLANS. ASPHALT CUTTING & PATCHING OR OTHER APPROVED METHOD SHALL BE USED TO MINIMIZE DAMAGE TO ALL PAVED SURFACES UNDER GUARDRAIL INSTALLATIONS. ALL REPAIRS TO THE PAVED AREA WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF WORK. MINIMUM 3 IN. THICK FIBER REINFORCED CONCRETE PAVEMENT MAY ALSO BE USED FOR GUARDRAIL RUNS AND TERMINALS. ASPECT PAVEMENT FOR THIS PAVED SURFACE WILL BE MADE UNDER A PAVEMENT OR CONCRETE PAY ITEM WITH QUANTITIES SHOWN ON THE PLANS.
- THE MINIMUM GUARDRAIL OFFSET FROM PAVED SHOULDER EDGE SHALL BE:
 - 0 FT. FOR SHOULDERS 8 FT. OR WIDER
 - 2 FT. FOR SHOULDERS 6 FT. OR LESS
 - 0 FT. MINIMUM FOR SHOULDERS 6 FT. OR WIDER
 - 2 FT. DESIRABLE FOR 4 FT. SHOULDERS

- THE GUARDRAIL OFFSET FROM PAVED INSIDE SHOULDER EDGE OF A DIVIDED HIGHWAY SHALL BE:
- 0 FT. MINIMUM FOR SHOULDERS 6 FT. OR WIDER
 - 2 FT. DESIRABLE FOR 4 FT. SHOULDERS
- THE ABOVE 2 FT. GUARDRAIL TO SHOULDER OFFSET IS DESIRABLE BUT NOT REQUIRED FOR:
- FOR AN EXISTING HIGHWAY WITH A DESIGN SPEED LESS THAN 50 MPH, THE MINIMUM OFFSET IS 4 FT. FROM THE TRAVELED WAY.

- FOR A ONE-WAY ONE-LANE RAMP, AND WHERE ONE OR MORE OF THE FOLLOWING ARE TRUE:
 - THE NON-OFFSET GUARDRAIL BEGINS AT LEAST 100 FT. BEYOND RAMP NOSE.
 - THE NON-OFFSET GUARDRAIL IS NOT LOCATED ON THE RAMP EXIT OR ENTRANCE CURVE CONNECTION TO THE MAJOR HIGHWAY.
 - THE RAMP SHOULDERS ARE 4 FT. OR WIDER.

USE OF GREATER THAN MINIMUM OFFSET DIMENSIONS IS ENCOURAGED TO MEET THE DESIRABLE RAIL OF PLACING THE GUARDRAIL AS FAR AS POSSIBLE FROM THE TRAVEL WAY, EVEN FOR SHORT DISTANCES, WHILE PROVIDING A SMOOTH CHANGE IN GUARDRAIL ALIGNMENT.

- IF 2 FT. CANNOT BE PROVIDED BETWEEN THE BACK OF THE GUARDRAIL POST AND THE BREAKPOINT, USE 7 FT. GUARDRAIL POSTS. REFER TO THE "RESTRICTIVE ROADSIDE INSTALLATION" DETAIL.
- WHEN SPECIFIED ON THE PLANS, INSTALL 4 IN. HIGH TYPE 6 CURB WITH ITS FACE AT OR BEHIND THE RAIL FACE AS AN ALTERNATIVE WHEN SPECIFIED ON THE PLANS. INSTALL A 2 IN. x 6 IN. TREATED (ASHSID M 133) WOOD CURB FASTEN WITH A 4 IN. LAG-BOLT AND WASHER AT EACH WOOD POST, OR A 1/4 IN. DIA. BOLT WITH WASHER AND NUT AT EACH STEEL POST. EACH WOOD POST, OR A 2 IN. x 6 IN. WOOD CURB IS SPECIFIED, IT WILL BE INCLUDED IN THE COST OF THE GUARDRAIL. IF APPROVED BY THE ENGINEER, A 2 IN. x 4 IN. TREATED WOOD CURB MAY BE SUBSTITUTED FOR THE 2 IN. x 6 IN. CURB AND SET ON TOP OF PAVEMENT SURFACE AND ATTACHED AS DESCRIBED ABOVE. NO SPLICING SHALL BE ALLOWED IN WOOD CURBS. ADJACENT BOARDS SHALL BE BUTTED TOGETHER AND BOLTED AT A POST LOCATION. JOINTS SHALL BE LOCATED AT THE POSTS.



SECTION A-A

LEAVE-OUT AREA FOR GUARDRAIL POSTS LOCATED IN PAVEMENT

NOTE: LEAVE-OUT AREAS SHALL BE PROVIDED FOR ALL GUARDRAIL POSTS LOCATED IN PAVEMENT TO ALLOW THE POSTS TO ROTATE IN THEIR EMBEDMENT SUCH THAT VEHICLE IMPACT LOADS ARE DISTRIBUTED THROUGH THE POST INTO THE EMBEDMENT MATERIAL PRIOR TO THE POSTS BREAKING PREMATURELY.

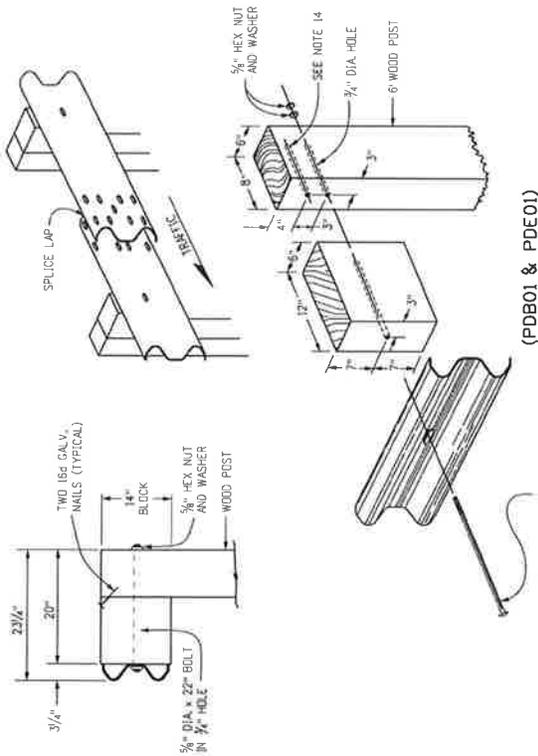
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Creation Date: 07/31/19	Designer Initials: JBK	Date: 03/05/20	Comments: Revised Gen. Note 1 to show WASH Compliance
Last Modification Date: 03/05/20	Detailer Initials: LTA		
CUA Ver.: MicroStation V8	Scale: Not to Scale		
	Units: English		

Colorado Department of Transportation	2525 West Howard Place COPT, 4th, 3rd Floor Denver, CO 80202 Phone: 303-757-9001 FAX: 303-757-9868
Project Development Branch	JBK

MIDWEST	STANDARD PLAN NO.
GUARDRAIL SYSTEM (MGS)	M-606-1
TYPE 3 W-BEAM 31 INCHES	Standard Sheet No. 1 of 19
Issued by the Project Development Branch: July 31, 2019	Project Sheet Number:

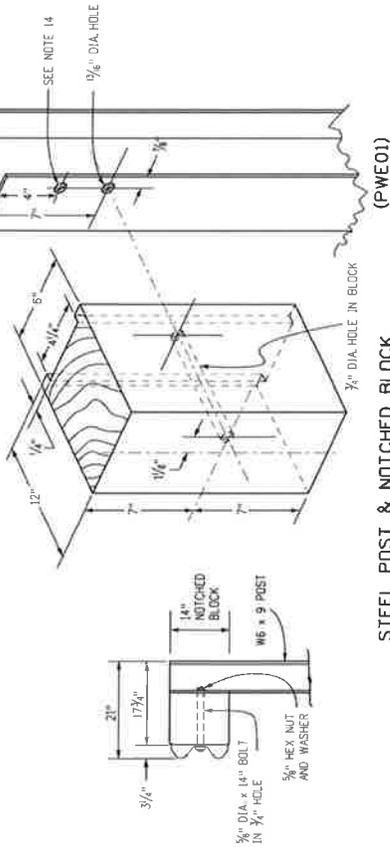
GENERAL NOTES (CONTINUED FROM SHEET 1)

7. SEE SHEETS 7 AND 9 FOR CURB TREATMENTS AT GUARDRAIL TERMINALS.
8. IF THIS DIMENSION WILL BE LESS THAN 28 INCHES, RESET GUARDRAIL HEIGHT TO 28 INCHES OR ABOVE.
9. ALL W-BEAM SPLICES, AND SPLICES OF TERMINAL CONNECTORS TO W-BEAM SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC UNLESS OTHERWISE NOTED IN THE PLANS OR BY THE MANUFACTURER.
10. MATERIAL TYPE AND SHAPE OF POSTS AND BLOCKS SHALL BE THE SAME THROUGHOUT THE PROJECT EXCEPT WHEN SPECIFIC POSTS AND BLOCKS ARE SPECIFIED, i.e. AT END ANCHORAGES AND BOX CULVERTS.
11. WHEN SPECIFIED IN THE CONTRACT, 7 FT. POSTS SHALL BE INSTALLED INSTEAD OF THE STANDARD 6 FT. POSTS. THE 7 FT. POSTS SHALL BE MARKED WITH THE NUMBER 7 TO ENSURE PERMANENT IDENTIFICATION. STEEL POSTS SHALL BE STAMPED PRIOR TO GALVANIZING. THE NUMBER 7 SHALL BE A MINIMUM 2 IN. TALL AND LOCATED AS SHOWN ON THE ELEVATION VIEW ON SHEET 1.
12. THE STANDARD 3 IN. X 1 1/2 IN. X 3/8 IN. RECTANGULAR WASHER USED UNDER POST BOLT HEADS IN THE PAST MAY REMAIN IN EXISTING INSTALLATIONS BUT SHALL NOT BE USED IN NEW CONSTRUCTION, REPAIRS, OR RESETTING OF RAIL EXCEPT WHEN SPECIFICALLY IDENTIFIED ON THE STANDARD PLAN.
13. STANDARD GALVANIZED ROUND STEEL WASHERS SHALL BE USED UNDER ALL NUTS IN CONTACT WITH WOOD POSTS.
14. AN ADDITIONAL HOLE SHALL BE PROVIDED IN THE POSTS TO FACILITATE FUTURE RAISING OF THE RAIL ELEMENTS AND BLOCKS FOR OVERLAYS. POSTS PROVIDED MAY ALSO HAVE ADDITIONAL HOLES (UP TO 4 PER FLANGE) FOR MEDIAN GUARDRAIL APPLICATION.
15. RETROREFLECTOR TABS SHALL BE INSTALLED AT 25 FT. INTERVALS (SEE SHEETS 6 AND 8 FOR EXCEPTIONS). RETROREFLECTOR TABS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK. THE TABS SHALL BE INSTALLED ON SPLICE BOLTS, NOT ON POST BOLTS AND SHALL BE MOUNTED SO THE BOLT SLOT FACES AWAY FROM TRAFFIC AND THE RETROREFLECTOR SURFACE FACES THE APPROACHING TRAFFIC. FOR TWO-WAY ROADS, BOTH SIDES OF THE TABS SHALL BE RETROREFLECTIVE. THE TABS SHALL BE IDENTIFIED BY PROVIDING BOTH DIRECTIONS OF TRAVEL. THE RETROREFLECTIVE SPLITTING COLOR SHALL MATCH THE COLOR OF THE ADJACENT TRAVEL WAY EDGE LINE. SEE THE RETROREFLECTOR TAB DETAIL ON SHEET 3.
16. AT THE TIME OF INSTALLATION, WOOD POSTS OR BLOCKS WITH SEASONING CHECKS GREATER THAN 1/4 IN. SHALL NOT BE USED WHEN THE CHECK EXTENDS THE FULL LENGTH OF THE PIECE.
17. WOOD BLOCKS SHALL BE CUT FROM THE SAME CROSS-SECTION SPECIES, AND GRADE AND SHALL RECEIVE THE SAME PRESERVATIVE TREATMENT AS THE POSTS WHEN WOOD POSTS ARE USED.



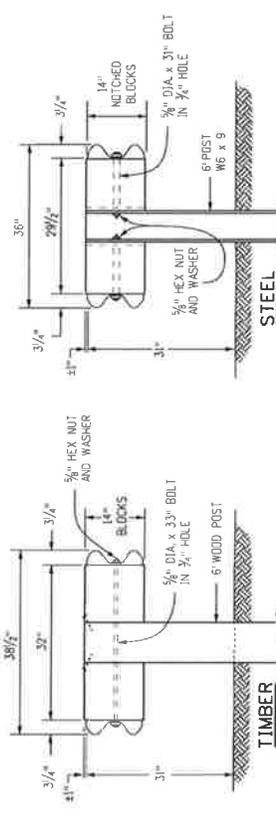
WOOD POST & BLOCK
(PDB01 & PDE01)

(NOMINAL DIMENSIONS ARE SHOWN FOR THE POSTS & BLOCKS)



STEEL POST & NOTCHED BLOCK
(PWE01)

(NOMINAL DIMENSIONS ARE SHOWN FOR THE POSTS & BLOCKS)



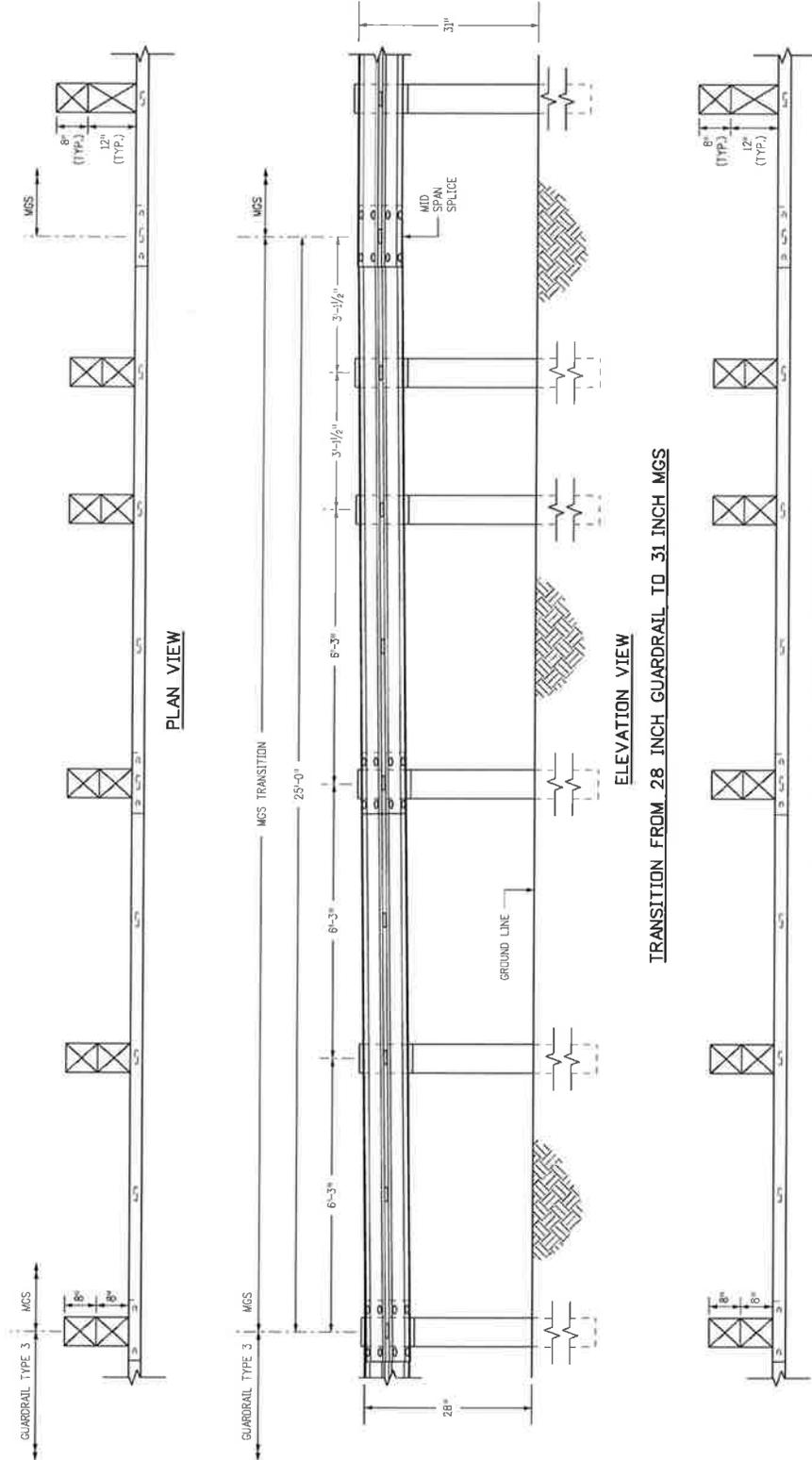
DOUBLE BLOCK AND GUARDRAIL TYPE 3 (DOUBLE) FOR MEDIAN BARRIER

18. REFERENCES SUCH AS "PDB01", "PDE01", AND "PWE01" IN THIS STANDARD PLAN SPECIFY HARDWARE DETAILS FROM A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE PREPARED BY THE ASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
19. RAIL BLOCKS MANUFACTURED FROM SYNTHETIC MATERIAL WILL BE ACCEPTED AS ALTERNATIVES TO WOOD BLOCKS FOR USE WITH STEEL POSTS PROVIDED THAT THE BLOCKS HAVE RECEIVED FHWA APPROVAL.
20. WOOD POSTS SHALL BE MADE OF TIMBER WITH AN EXTREME FIBER STRESS IN BENDS OF 1000 PSI STRESS. WESTERN WOOD PRODUCTS SHALL CONFORM WITH THE RULES OF THE WEST COAST INSPECTOR GENERAL. THE SOUTHERN PINE BUREAU OR THE WESTERN WOOD PRODUCTS ASSOCIATION, TIMBER FOR POSTS SHALL BE EITHER ROUGH SAW (UNPLANED) OR S4S (SURFACED FOUR SIDES) WITH NOMINAL DIMENSIONS INDICATED. ONLY ONE TYPE OF SURFACE FINISH SHALL BE USED FOR POSTS AND BLOCKS IN ANY ONE CONTINUOUS LENGTH OF GUARDRAIL.
21. CUL-AM POSTS AND BLOCKS WILL BE ACCEPTED AS ALTERNATIVES PROVIDED THAT THE SUPPLIED MATERIALS HAVE RECEIVED FHWA APPROVAL AND ARE CERTIFIED AS IDENTICAL TO THE SPECIMENS USED FOR TESTING AND APPROVAL.
22. PRESSURE TREATMENT OF POSTS AND BLOCKS SHALL CONFORM TO ASHTO M 133 EXCEPT THAT BLOCKS NEED NOT BE INCISED. PRESERVATION ASSAY RETENTION REPORTS SHALL BE SUBMITTED TO THE ENGINEER. THE CONTRACTOR SHALL CERTIFY THAT THE SPECIES AND GRADE MEET THE REQUIREMENTS OF THE CONTRACT.
23. W-BEAM AND THREE-BEAM GUARDRAIL POSTS SHALL BE MANUFACTURED RESISTING ASHTO M 270 (ASTM A 709 GRADE 36 STEEL UNLESS CORROSION RESISTANT STEEL IS REQUIRED, IN WHICH CASE THE POST SHALL BE MANUFACTURED FROM ASHTO M 270 (ASTM A 709 GRADE 50W STEEL). THE DIMENSIONS OF THE CROSS-SECTION SHALL CONFORM TO A W6 X 9 SECTION AS DEFINED IN ASHTO M 160 (ASTM A 60) W6 X 8.5 WIDE FLANGE STEEL POSTS ARE AN ACCEPTABLE ALTERNATIVE TO THE W6 X 9.
24. AFTER THE SECTION IS CUT AND ALL HOLES ARE DRILLED OR PUNCHED THE COMPONENT SHALL BE ZINC-COATED CONFORMING TO ASHTO M 111 (ASTM A 123) UNLESS CORROSION-RESISTANT STEEL IS USED. WHEN CORROSION-RESISTANT STEEL IS USED THE PORTION OF THE POST TO BE MANUFACTURED SHALL BE ZINC-COATED CONFORMING TO ASHTO M 111 (ASTM A 123) AND THE PORTION OF THE POST TO BE MANUFACTURED SHALL BE ZINC-COATED, PAINTED OR OTHERWISE TREATED.
25. FIELD MODIFICATION TO RAIL ELEMENTS IS ALLOWED PER MANUFACTURERS' SPECIFICATIONS. FIELD MODIFICATION OF PRODUCE FROM MANUFACTURERS AND SPECIFICATIONS. NUT POSTS SHALL BE USED IN ALL CASES UNLESS OTHERWISE SPECIFIED. THE SPLITTER COATING HAS BEEN DAMAGED SHALL BE EITHER RE-GALVANIZED OR RE-GALVANIZED IN CONFORMANCE WITH ASHTO M 56, OR PAINTED WITH ONE FULL BRUSH COAT OF ZINC RICH PAINT CONFORMING TO MILITARY SPECIFICATION DDD-P-21035A.

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19	Designer Initials: JBK	Date:	Comments
Loss Modification Date: 03/05/20	Designer Initials: LTA		
CAD Ver: MicroStation V8	Scale: Not to Scale	Units: English	
Colorado Department of Transportation		Project Development Branch	
2828 West Howard Place COOT, HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868		JBK	
MIDWEST		Standard Sheet No. 2 of 19	
GUARDRAIL SYSTEM (MGS)		Project Sheet Number:	
TYPE 3 W-BEAM 31 INCHES		M-606-1	
DOUBLE BLOCK AND GUARDRAIL TYPE 3 (DOUBLE) FOR MEDIAN BARRIER		STANDARD PLAN NO.	

NOTES

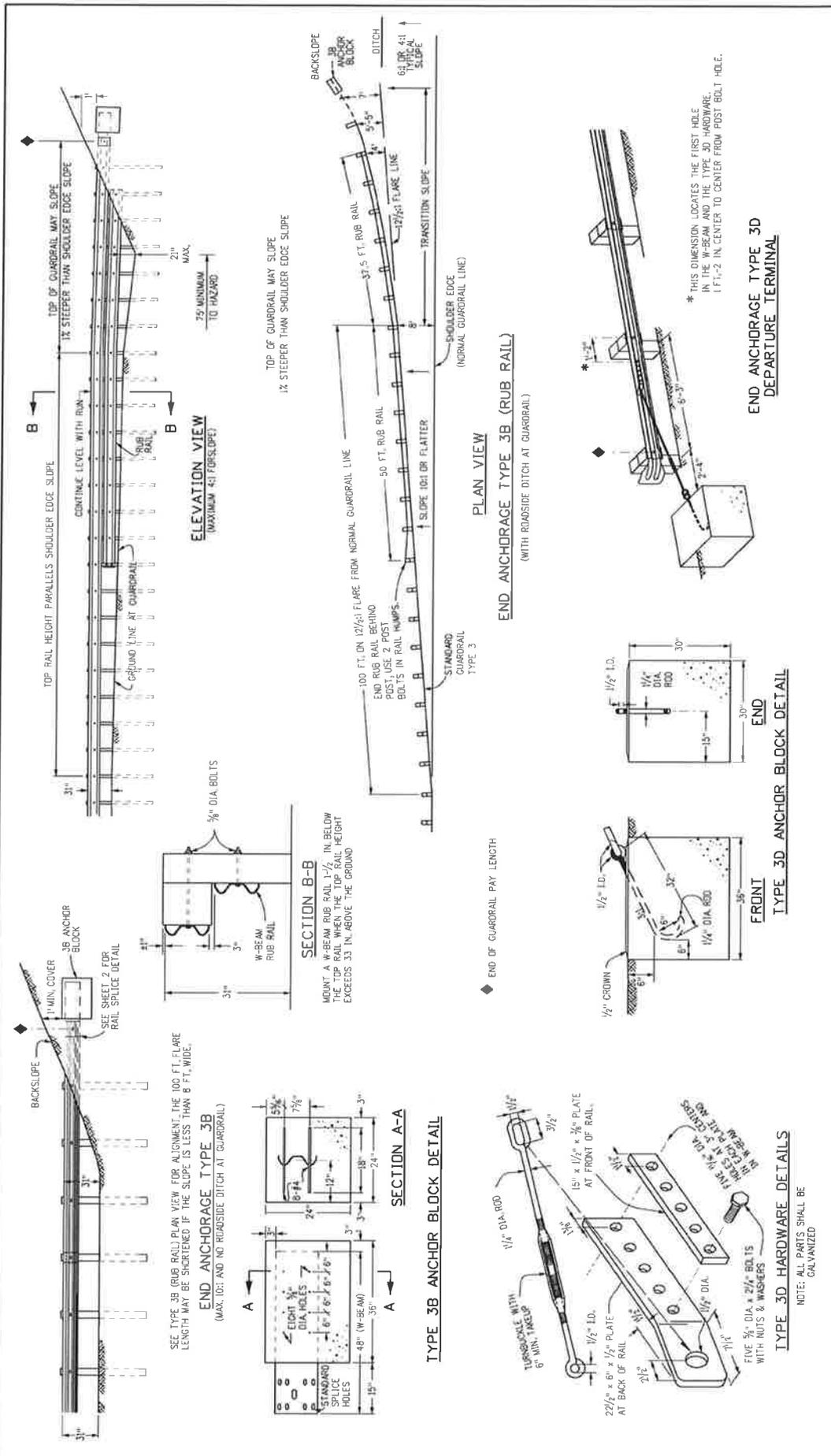
1. THE MCS TRANSITION FROM A TYPE 3 GUARDRAIL SHALL BE COMPLETED OUTSIDE THE MCS END ANCHORAGE LIMITS.



TRANSITION FROM 28 INCH GUARDRAIL TO 31 INCH MGS

ALTERNATE PLAN VIEW - ALIGNMENT TAPER

Computer File Information		Sheet Revisions		Colorado Department of Transportation		MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES		STANDARD PLAN NO. M-606-1	
Creation Date: 07/31/19	Designer: JBK	Date:	Comments:	2529 West Howard Place	Denver, CO 80202	Issued by the Project Development Branch: July 31, 2019		Project Sheet Number:	
Last Modification Date: 03/05/20	Detailer: LTA			Phone: 303-757-9021	FAX: 303-757-9868	Project Development Branch: July 31, 2019		Project Sheet No. 4 of 19	
CAD Ver.: MicroStation V8	Scale: Not to Scale			Project Development Branch		Project Development Branch: July 31, 2019		Project Sheet Number:	



Computer File Information		Sheet Revisions		Standard Plan No.	
Creation Date:	07/31/19	Date:		M-606-1	
Designer Initials:	JBK	Comments:		Standard Sheet No. 5 of 19	
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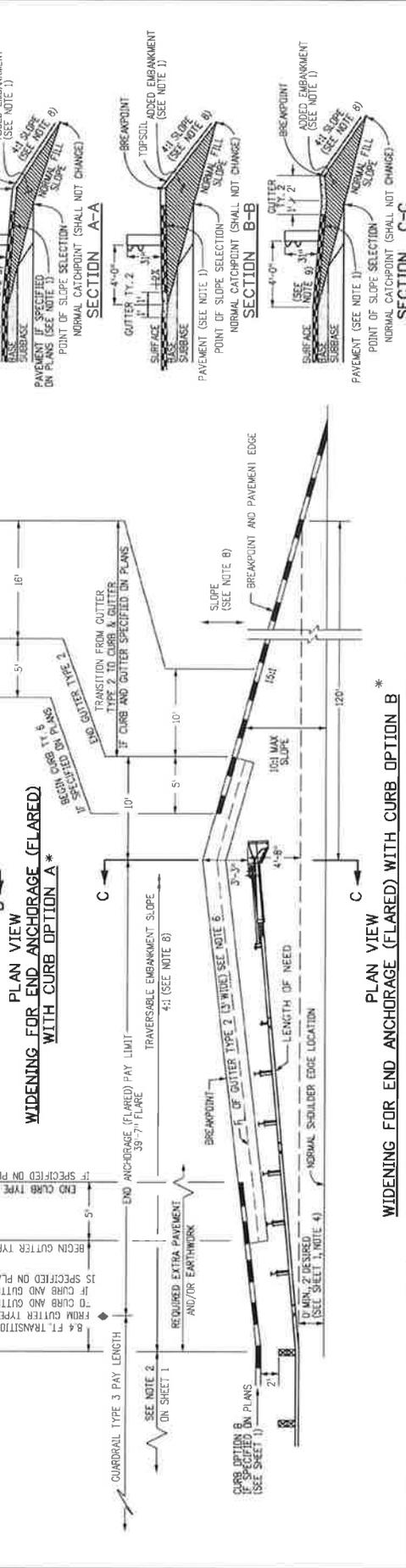
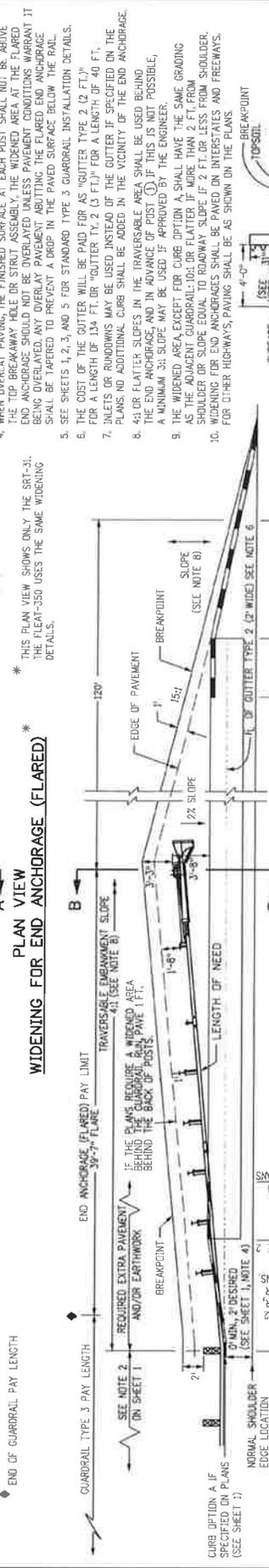
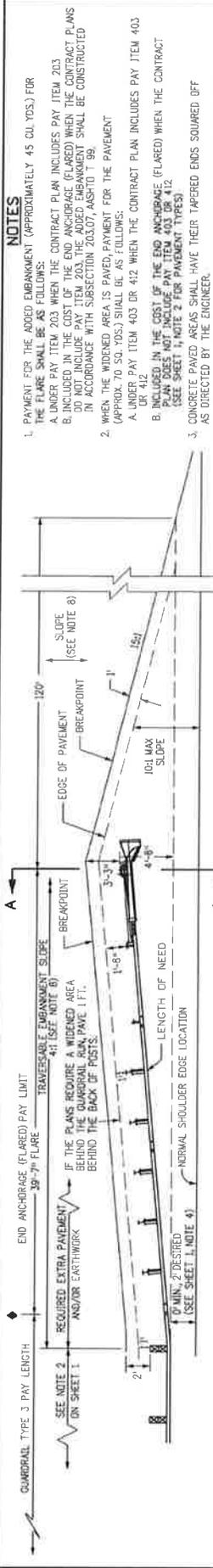
Project Development Branch JBK

MIDWEST
 GUARDRAIL SYSTEM (MGS)
 TYPE 3 W-BEAM 31 INCHES

END ANCHORAGE TYPE 3B (RUB RAIL)
 (WITH ROADSIDE DITCH AT GUARDRAIL)

END ANCHORAGE TYPE 3D
 DEPARTURE TERMINAL

NOTE: ALL PARTS SHALL BE GALVANIZED



NOTES

1. PAYMENT FOR THE ADDED EMBANKMENT (APPROXIMATELY 45 CU. YDS.) FOR THE FLARE SHALL BE AS FOLLOWS:

A. UNDER PAY ITEM 203 WHEN THE CONTRACT PLAN INCLUDES PAY ITEM 203

B. INCLUDED IN THE COST OF THE END ANCHORAGE (FLARED) WHEN THE CONTRACT PLANS DO NOT INCLUDE PAY ITEM 203

C. INCLUDED IN THE COST OF THE ADDED EMBANKMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SUBSECTION 203.07, PART 1 & 2.

2. WHEN THE WIDENED AREA IS PAVED, PAYMENT FOR THE PAVEMENT (APPROX. 20 CU. YDS.) SHALL BE AS FOLLOWS:

A. UNDER PAY ITEM 405 OR 412 WHEN THE CONTRACT PLAN INCLUDES PAY ITEM 405 OR 412

B. INCLUDED IN THE COST OF THE END ANCHORAGE (FLARED) WHEN THE CONTRACT PLAN DOES NOT INCLUDE PAY ITEM 405 OR 412

C. CONCRETE PAVED AREAS SHALL HAVE THEIR TAPERED ENDS SQUARED OFF AS DIRECTED BY THE ENGINEER.

3. WHEN OVERLAY PAVING, THE FINISHED SURFACE AT EACH POST SHALL NOT BE ABOVE THE TOP BREAKAWAY HOLE OR STRUT ASSEMBLY. THE WIDENED AREA AT THE FLARED END ANCHORAGE SHOULD NOT BE OVERLAYED UNLESS PAVEMENT CONDITIONS WARRANT IT BEING OVERLAYED. ANY OVERLAY PAVEMENT ABUTTING THE FLARED END ANCHORAGE SHALL BE TAPERED TO PREVENT A DROP IN THE PAVED SURFACE BELOW THE RAIL.

4. SEE SHEETS 1, 2, 3, AND 5 FOR STANDARD TYPE 3 GUARDRAIL INSTALLATION DETAILS.

5. THE COST OF THE GUTTER WILL BE PAID FOR AS "GUTTER TYPE 2 (2 FT.)" FOR A LENGTH OF 134 FT. OR "GUTTER TYPE 2 (3 FT.)" FOR A LENGTH OF 40 FT.

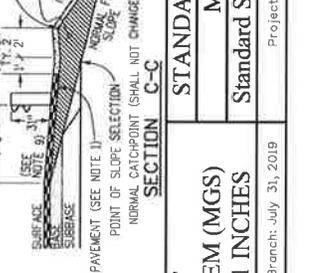
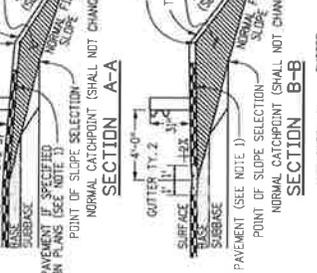
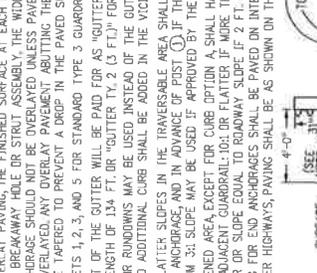
6. INLETS OR RUNDOWNS MAY BE USED INSTEAD OF THE GUTTER IF SPECIFIED ON THE PLANS. NO ADDITIONAL CURB SHALL BE ADDED IN THE VICINITY OF THE END ANCHORAGE.

7. 4:1 OR FLATTER SLOPES IN THE TRAVERSABLE AREA SHALL BE USED BEHIND THE END ANCHORAGE, AND IN ADVANCE OF POST 1 IF THIS IS NOT POSSIBLE, A MINIMUM 3:1 SLOPE MAY BE USED IF APPROVED BY THE ENGINEER.

8. THE WIDENED AREA EXCEPT FOR CURB OPTION A SHALL HAVE THE SAME GRADING AS THE ADJACENT GUARDRAIL-10:1 OR FLATTER IF MORE THAN 2 FT. FROM SHOULDER OR SLOPE EQUAL TO ROADWAY SLOPE IF 2 FT. OR LESS FROM SHOULDER.

9. WIDENING FOR END ANCHORAGES SHALL BE PAVED ON INTERSTATES AND FREeways.

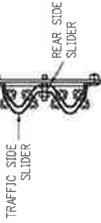
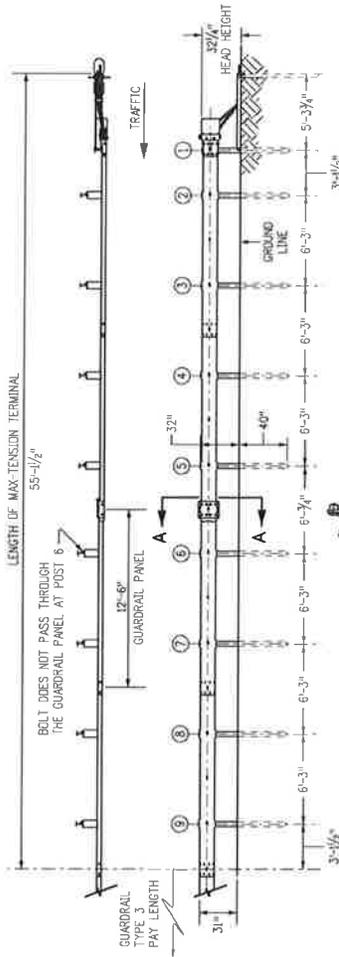
10. FOR OTHER HIGHWAYS, PAVING SHALL BE AS SHOWN ON THE PLANS.



Computer File Information		Sheet Revisions		STANDARD PLAN NO.	
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CAD Ver: MicroStation V8	Scale: Not to Scale	Unit: English		Project Sheet Number:	
Colorado Department of Transportation 2899 West Harvard Place COIT HQ, 1st Floor Denver, CO 80204 Phone: 303-761-9021 FAX: 303-761-9868			Project Development Branch		
Project Development Branch			Issued by the Project Development Branch: July 31, 2019		

NOTES FOR NONFLARED

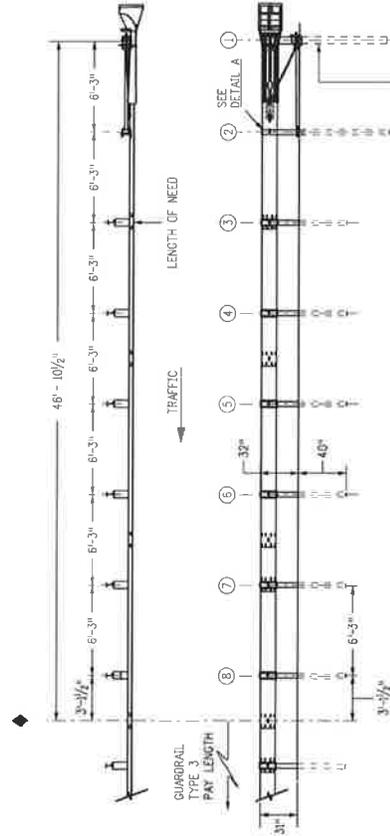
- THE END ANCHORAGE (NONFLARED) SHALL EITHER BE THE SOFTSTOP AS MANUFACTURED BY TRINITY INDUSTRIES, INC. (TEL. # 1-888-358-2363), OR THE MAX-TENSION AS MANUFACTURED BY LINDSAY TRANSPORTATION SOLUTIONS (TEL. # 402-829-6800), OR THE MSKT AS MANUFACTURED BY MGT SYSTEMS, INC. (TEL. # 432-263-2435). THE END ANCHORAGE (NONFLARED) SHALL INCLUDE THE BELT AND SLIDERS FOR COMPLETE UNIT INSTALLATION. THE END ANCHORAGE (NONFLARED) SHALL BE INSTALLED CONFORMING TO THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL PROVIDE A COPY OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PARTS LIST TO THE ENGINEER PRIOR TO THE INSTALLATION OF THE DEVICE.
- DO NOT ATTACH THESE END ANCHORAGES DIRECTLY TO A RIGID BARRIER (EX. CONCRETE BARRIER, STEEL BARRIER, CONCRETE STRUCTURE) WITHOUT A PROPER TRANSITION.
- CONNECTIONS TO W-BEAMS WHERE THE SPLICE IS NOT AT MID-SPAN BUT AT A POST CAN BE MADE USING A 3'-4 1/2", 9'-4 1/2", OR 15'-7 1/2" W-BEAM PANEL DOWNSTREAM OF TRAFFIC.
- FOR MSKT END ANCHORAGES (NONFLARED), USE THE MANUFACTURER'S SPECIFIED STEEL FOUNDATION TUBES FOR POSTS ① AND ②.
- RETROREFLECTOR TABS SHALL NOT BE USED ON END ANCHORAGE POSTS.
- DELINEATION SHALL BE APPLIED TO THE END PIECE AND SHALL NOT BE PAID FOR SEPARATELY BUT BE INCLUDED IN THE COST OF THE WORK. SEE STANDARD PLAN S-612-L.



SECTION A-A

MAX-TENSION TERMINAL END ANCHORAGE (NONFLARED)

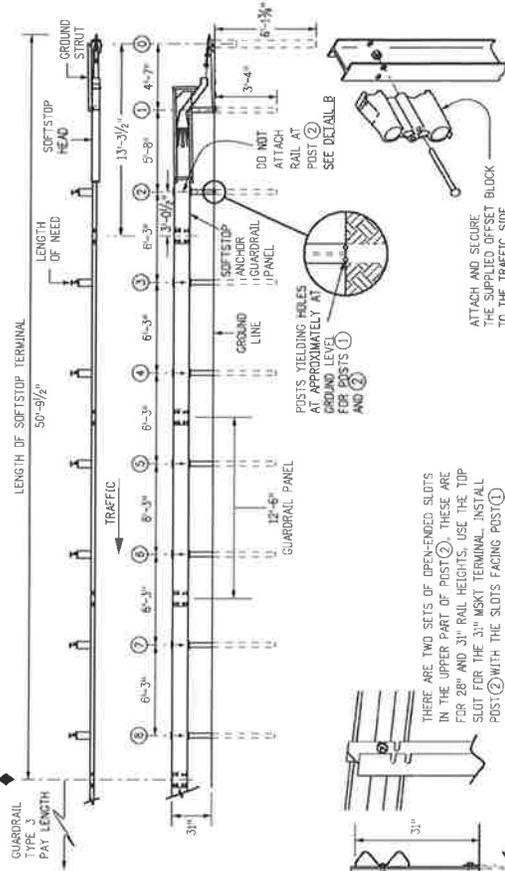
(MASH CERTIFIED)



DETAIL A

MSKT TERMINAL END ANCHORAGE (NONFLARED)

(MASH CERTIFIED)



DETAIL B

SOFTSTOP TERMINAL END ANCHORAGE (NONFLARED)

(MASH CERTIFIED)

END ANCHORAGES (NONFLARED)

Computer File Information

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Date:	Comments

Colorado Department of Transportation

2853 West Howard Place
 Golden, Colorado 80204
 Denver, CO 80204
 Phone: 303-757-9021 FAX: 303-757-9868



Project Development Branch

JBK

Issued by the Project Development Branch: July 31, 2019

MIDWEST

**GUARDRAIL SYSTEM (MGS)
 TYPE 3 W-BEAM 31 INCHES**

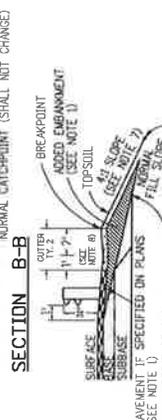
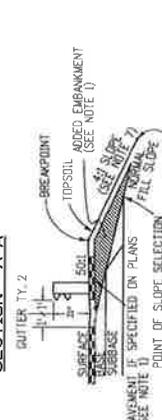
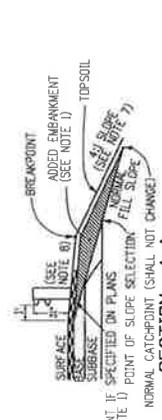
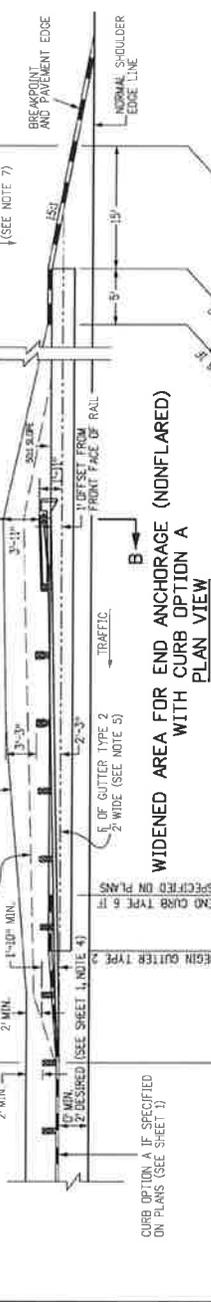
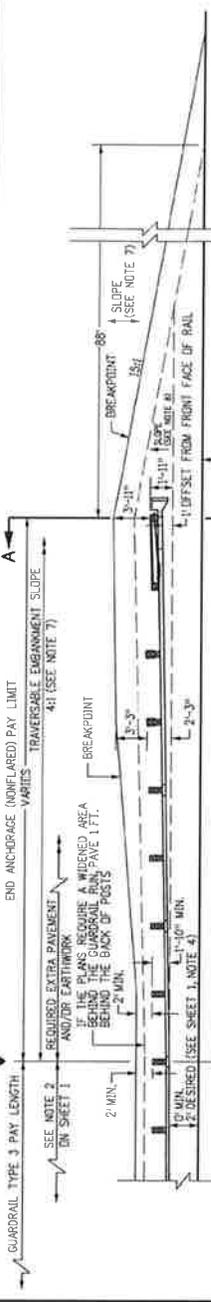
STANDARD PLAN NO.

M-606-1

Standard Sheet No. 8 of 19

Project Sheet Number:

- NOTES**
- PAYMENT FOR THE ADDED EMBANKMENT (APPROXIMATELY 25 CU. YDS.) FOR THE FLARE SHALL BE AS FOLLOWS:
 - UNDER PAY ITEM 203 WHEN THE CONTRACT PLAN INCLUDES PAY ITEM 203.
 - INCLUDED IN THE COST OF THE END ANCHORAGE (NONFLARED) WHEN THE CONTRACT PLAN DOES NOT INCLUDE PAY ITEM 203. THE ADDED EMBANKMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SUBSECTION 203.07, ASHOTO 1 99.
 - WHEN THE WIDENED AREA IS PAVED, PAYMENT FOR THE PAVEMENT (APPROX 39 SQ. YDS.) SHALL BE AS FOLLOWS:
 - AT ITEM 403 OR 412 WHEN THE CONTRACT PLAN INCLUDES PAY ITEM 403 OR 412.
 - INCLUDED IN THE COST OF THE END ANCHORAGE (NONFLARED) WHEN THE CONTRACT PLAN DOES NOT INCLUDE PAY ITEM 403 OR 412. (SEE SHEET 1, NOTE 2 FOR PAYMENT TYPES).
 - WHEN OVERLAY PAVING THE FINISHED SURFACE AT EACH POST SHALL NOT BE ABOVE THE TOP BREAKWAY HIG. OR STRIP CURB HIG. AT THE END ANCHORAGE (NONFLARED) SHALL NOT BE OVERLAY PAVEMENT ABUTTING THE END ANCHORAGE (NONFLARED) SHALL BE TAPERED TO PREVENT A DROP IN THE PAVED SURFACE BELOW THE RAIL.
 - SEE SHEETS 1, 2, 3, AND 5 FOR STANDARD TYPE 3 GUARDRAIL INSTALLATION DETAILS.
 - THE COST OF THE GUTTER WILL BE PAID FOR AS "GUTTER TYPE 2 (2 FT.)" FOR A LENGTH OF 11 FT. 11" OR "GUTTER TYPE 2 (3 FT.)" FOR A LENGTH OF 50 FT.
 - INLETS OR ROUNDOFFS MAY BE USED INSTEAD OF THE GUTTER IF SPECIFIED ON THE PLANS. NO ADDITIONAL CURB SHALL BE ADDED IN THE VICINITY OF THE END TREATMENT.
 - 4:1 OR FLATTER SLOPES IN THE TRAVERSABLE AREA SHALL BE USED BEHIND THE END ANCHORAGE AREA AND IN ADVANCE OF POST 1 IF THIS IS NOT POSSIBLE A MINIMUM 3:1 SLOPE MAY BE USED IF APPROVED BY THE ENGINEER.
 - THE WIDENED AREA, EXCEPT FOR CURB OPTION A, SHALL HAVE THE SAME GRADING AS BENEATH THE ADJACENT GUARDRAIL: 1:1 OR FLATTER IF MORE THAN 2 FT. FROM SHOULDER, OR SLOPE EQUAL TO ROADWAY SLOPE IF 2 FT. OR LESS FROM SHOULDER.
 - WIDENING FOR END ANCHORAGES SHALL BE PAVED ON INTERSTATES AND FREEWAYS. FOR OTHER HIGHWAYS, PAVING SHALL BE AS SHOWN ON THE PLANS.

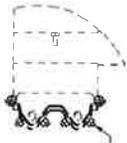


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Creation Date:	07/31/19	Date:		2029 West Howard Place		GUARDRAIL SYSTEM (MGS)		M-606-1	
Designer Initials:	JBK	Comments:		1000 North Lincoln Street		TYPE 3 W-BEAM 31 INCHES		Standard Sheet No. 9 of 19	
Last Modification Date:	03/05/20			Denver, CO 80202		TYPE 3 W-BEAM 31 INCHES		Project Sheet Number:	
Orderer Initials:	LTA			Phone: 303-757-9021 FAX: 303-757-9868		TYPE 3 W-BEAM 31 INCHES		Project Sheet Number:	
CAD Ver:	MicroStation V8	Scale:	Not to Scale	Unit: English		TYPE 3 W-BEAM 31 INCHES		Project Sheet Number:	

MEDIAN TERMINAL NOTES

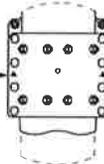
1. THE MEDIAN TERMINAL SHALL BE THE MAX-TENSION-MEDIAN AS MANUFACTURED BY THE BARRIER SYSTEM BY LINDSAY (LINDSAY TRANSPORTATION SOLUTIONS) (TEL. # 888 800-3693).
2. THE MAX-TENSION SHALL BE APPLIED DIRECTLY TO W-BEAM GUARDRAIL SYSTEMS AT OR TRANSITIONED TO 31 INCH WITH PANELS AND POST SPACING CONFIGURED AT MID-SPAN SPLICE. TRANSITIONS TO STRONG POST W-BEAM GUARDRAIL SYSTEMS OR OTHER BARRIERS WHERE THE SPLICE IS NOT MID-SPAN SHALL BE ACCOMPLISHED USING A 3 FT. 1-1/2 INCH, 9 FT. 4-1/2 INCH OR 15 FT. 7-1/2 INCH PANELS AFTER THE MAX-TENSION SYSTEM (MIN. OF 50 FT. DOWNSTREAM OF THE FIRST POST). TRANSITIONS TO OTHER BARRIER SYSTEMS SHALL ALSO BE AT A MIN. OF 50 FT. DOWNSTREAM FROM THE FIRST POST. SEE SHEET 4.
3. THE MAX-TENSION SHALL NOT BE ATTACHED DIRECTLY TO RIGID BARRIERS SUCH AS CONCRETE BARRIERS, STEEL BARRIERS OR CONCRETE STRUCTURES WITHOUT PROPER TRANSITION. IF ROCK OR STIFF SOIL IS ENCOUNTERED, THE POSTS AND SOIL ANCHOR MAY BE INSTALLED BY AUGURING AND BACKFILLING THE HOLE.
4. EITHER 8 INCH OR 12 INCH COMPOSITE OR TIMBER BLOCKOUTS SHALL BE USED PER MANUFACTURER'S RECOMMENDATIONS.
5. EITHER 12 FT., 6 INCH OR 25 FOOT PANELS SHALL BE USED DEPENDING ON SITE CONDITIONS OR CONNECTED BARRIER SYSTEMS.
6. RAIL PANELS SHALL BE LAPPED PER MANUFACTURER'S INSTALLATION MANUAL, REGARDLESS OF AN UPSTREAM OR DOWNSTREAM END SYSTEM POSITION.
7. ALL STEEL COMPONENTS SHALL BE GALVANIZED PER ASTM A123 OR EQUIVALENT UNLESS OTHERWISE STATED.
8. ONE MEDIAN TERMINAL SHALL INCLUDE ALL POSTS, RAIL, AND HARDWARE ITEMS REQUIRED FOR A COMPLETE INSTALLATION. THE TERMINAL SHALL BE INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PARTS LISTS TO THE ENGINEER PRIOR TO THE INSTALLATION OF THE DEVICE.
9. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE MEDIAN TERMINAL SHALL BE INSTALLED FOR BIDIRECTIONAL TRAFFIC APPLICATION.
10. EACH INSTALLATION SHALL BE SUPERVISED AND CERTIFIED AS CORRECT UPON COMPLETION BY A REPRESENTATIVE OF THE DEVICE MANUFACTURER OR BY AN EMPLOYEE OF THE CONTRACTOR WHO IS A CERTIFIED INSTALLER. THE CERTIFIED INSTALLER SHALL HAVE COMPLETED DEVICE TRAINING AND SHALL BE REGISTERED WITH THE MANUFACTURER AS A CERTIFIED INSTALLER.
11. DELINEATION, IF REQUIRED, SHALL BE APPLIED TO THE END PIECE AND WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK. SEE STANDARD PLAN S-612-L.

THE TRAFFIC SIDE SLIDER AND THE REAR SIDE SLIDER INSTALLED WITH ARROWS POINTING TOWARDS THE HEAD OF THE SYSTEM ON BOTH SIDES OF TRAFFIC

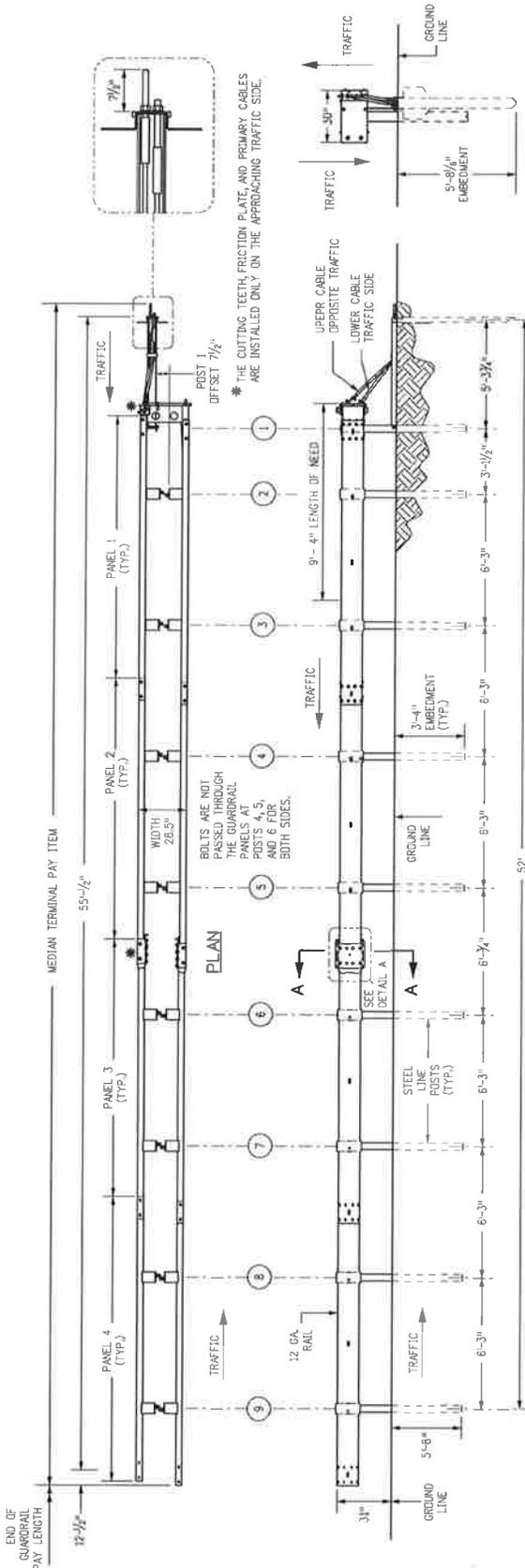


HEX BOLTS SHALL BE INSTALLED WITH THE BOLT HEADS ON THE TRAFFIC SIDE AND THE HEX NUTS ON THE NON-TRAFFIC SIDE

SECTION A-A



DETAIL A



ELEVATION

SIDE VIEW

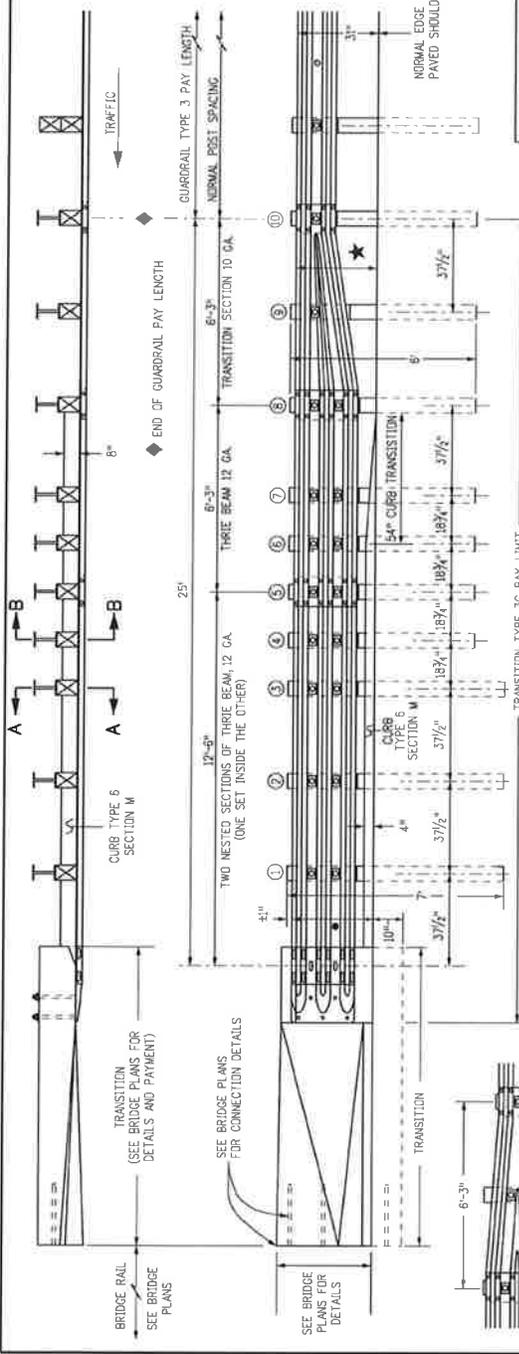
MAX-TENSION-MEDIAN
(WASH. CERTIFIED)

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CAD Ver.: MicroStation V8	Scale: Not to Scale	(C-X)		Project Sheet Number:	
	Units: English	(C-X)		Issued by the Project Development Branch: July 31, 2019	
			<p>MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES</p>		
			<p>Colorado Department of Transportation 2829 West Harvard Place CO 80202 Denver, CO 80202 Phone: 303-757-9021 FAX: 303-757-9568</p>		
			<p>Project Development Branch JBK</p>		

NOTES

- TRANSITION TYPE 3G IS FOR USE AT BOTH ENDS OF BRIDGES ON TWO-WAY HIGHWAYS AND AT THE APPROACH END OF BRIDGES IN ONE-WAY HIGHWAYS. ON ONE-WAY HIGHWAYS.
- TRANSITION TYPE 3H IS FOR USE AT THE TRAILING END OF BRIDGES ON ONE-WAY HIGHWAYS.
- THE THREE BEAM SECTION IN TRANSITION TYPES 3G OR 3H MAY BE SHIP BENT TO FIT CORRESPONDING RADIUS CURVES HOWEVER, THE 6 FT.-3 IN. TRANSITION SECTION SHALL NOT BE BENT.
- A TRANSITION SHALL BE REQUIRED BETWEEN TYPES 3G OR 3H AND TO TYPE 9 GUARDRAIL BARRIER.
- TRANSITION TYPES 3G AND 3H ARE BOTH WASH COMPLIANT.
- BACKUP PLATE IS NOT REQUIRED AT POSTS ON TYPE 3G AND 3H.
- THIS SYMBOL IN THE ELEVATION DRAWINGS SHOWS THE LOCATIONS WHERE A RECTANGULAR WASHER IS REQUIRED UNDER THE POST BOLT HEAD.
- CURB TYPE 6 SECTION MAY BE ASPHALT OR CONCRETE. THE COST OF CURB IS INCLUDED IN THE WORK, UNLESS A SEPARATE PAY ITEM IS INCLUDED IN THE BID SCHEDULE.
- FOR TYPE 3G, POSTS ① THRU ⑤ ARE 7 FT. LONG. ALL OTHER POSTS SHALL BE A STANDARD 6 FT. LONG UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. NOTCHED RAIL BLOCKS MANUFACTURED FROM SYNTHETIC MATERIAL WILL BE ACCEPTED AS ALTERNATIVES TO WOOD NOTCHED BLOCKS FOR USE WITH STEEL POSTS PROVIDED THAT THE BLOCKS HAVE RECEIVED FHWA APPROVAL AND ARE CERTIFIED AS IDENTICAL TO THE SPECIMENS USED FOR TESTING AND APPROVAL. STEEL BLOCKS ARE NOT ALLOWED.

3G TRANSITION POST / BLOCK SIZING		
POST #	STEEL POST SIZE	BLOCKOUT SIZE
1 - 3	64" W6 X 15	6" X 12" X 19"
4 - 9	72" W6 X 9	6" X 12" X 19"
10	72" W6 X 9	6" X 12" X 34"



SYMMETRICAL TRANSITION SECTION

TRANSITION TYPE 3G
ALL POSTS SHALL BE STEEL

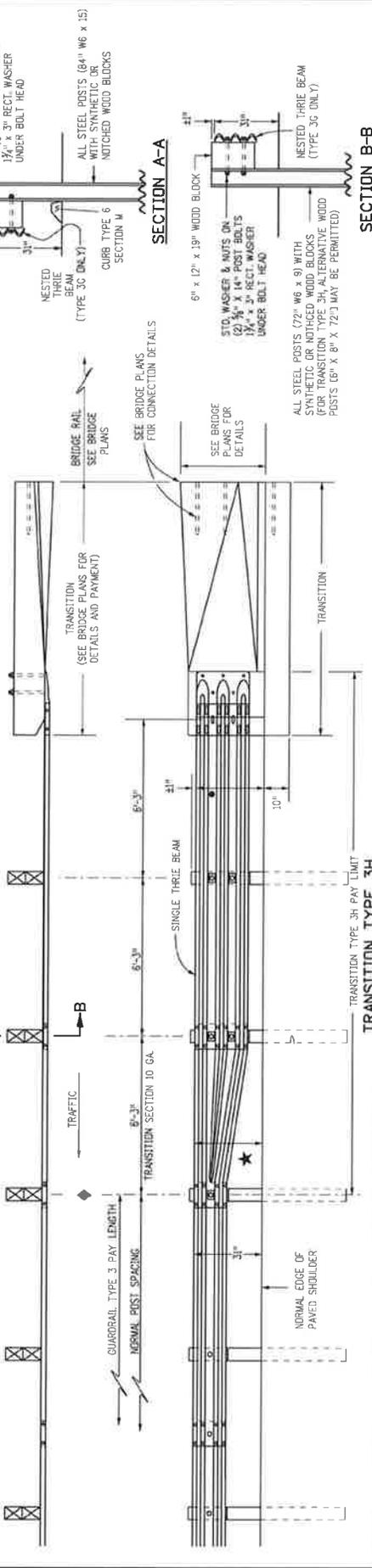
TRANSITION TYPE 3H PAY LIMIT

TRANSITION TYPE 3G
IF THE HEIGHT OF THE TRANSITION TYPES 3G OR 3H IS LESS THAN THE SYMMETRICAL TRANSITION SECTION SHALL BE USED HERE!

TRANSITION TYPE 3G
IF THE HEIGHT OF THE TRANSITION TYPES 3G OR 3H IS LESS THAN THE SYMMETRICAL TRANSITION SECTION SHALL BE USED HERE!

TRANSITION TYPE 3G
IF THE HEIGHT OF THE TRANSITION TYPES 3G OR 3H IS LESS THAN THE SYMMETRICAL TRANSITION SECTION SHALL BE USED HERE!

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STANDARD PLAN NO.

M-606-1

Standard Sheet No. 11 of 19

Project Sheet Number:

MIDWEST

**GUARDRAIL SYSTEM (MGS)
TYPE 3 W-BEAM 31 INCHES**

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Colorado Department of Transportation

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Project Development Branch
 JBK

Sheet Revisions

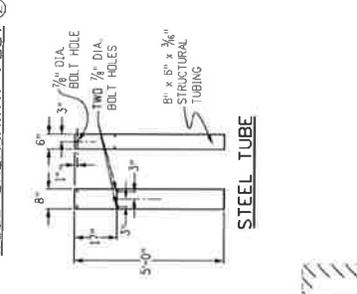
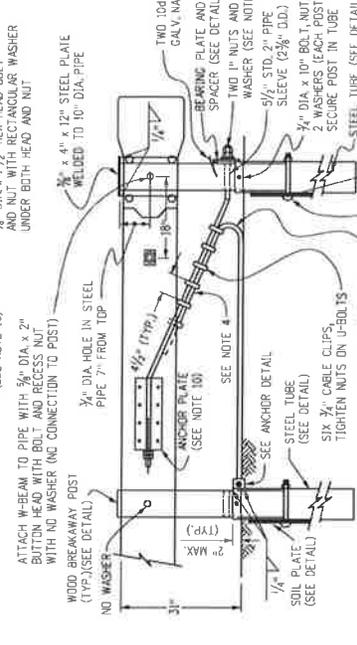
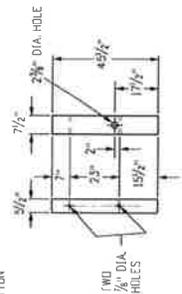
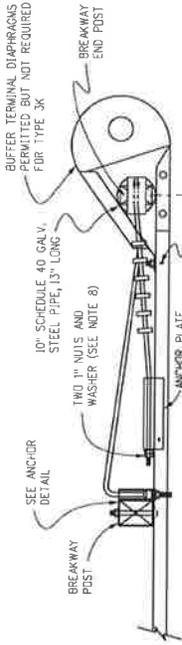
Date:	Comments
03/05/20	Sheet One, Notes 1 & 2, remove transition section notes. Refer to the "Wedge Post" and deleted the transition detail, replace by "R" note.

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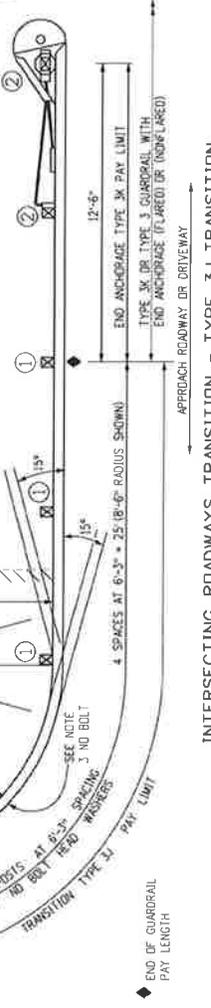
NOTES

- APPLICATION OF THE TRANSITION TYPE 3J MAY BE USED TO SHIELD HAZARDS AT THE INTERSECTION OF ROADWAYS. TYPICAL APPLICATIONS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
 - CANAL SERVICE ROADS AT BRIDGE ENDS.
 - INTERSECTIONS IN GUARDRAIL RUNS BY INTERSECTING ROADWAYS, ETC.
- THE LOW SPEED (45 MPH) END ANCHORAGE TYPE 3K SHALL BE USED FOR APPROVED CRASH-TESTED SERVICE ROADS. **END ANCHORAGE CRASHWORTHY WHEN AN APPROVED CRASH-TESTED END TREATMENT IS REQUIRED, USE THE END ANCHORAGE (FLARED OR NONFLARED) WITH 37 FT.-6 IN. LENGTH.**
- CRASHING AND PAVING FOR THE 3J & 3K SHALL MATCH CRASHING AND PAVING FOR THE GUARDRAIL TO WHICH THEY ARE ATTACHED, AND SHALL BE IN ACCORDANCE WITH SHEET ONE OF THIS STANDARD MAXIMUM FILL SLOPE SHALL BE 2:1.
- THE RAIL IS NOT BOLTED TO THE CRT POST AT THE CENTER OF THE RAIL. THE RAIL SHALL CONFORM TO ASTM A 36, AND THE STRUCTURAL TUBING TO ASTM A 500.
- THE 3/4" GALVANIZED WIRE ROPE (CABLE) SHALL CONFORM TO ASTM M 30 TYPE II.
- PLATES SHALL CONFORM TO ASTM A 36, AND STRUCTURAL TUBING TO ASTM A 500, WELDING SHALL MEET ALL REQUIREMENTS OF THE AMERICAN WELDING SOCIETY.
- ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN CONFORMANCE WITH ASTM A 123. POSTS SHALL NOT BE PUNCHED, DRILLED, CUT, OR WELDED AFTER GALVANIZING.
- WHEN THE SOIL PLATE WELDED OPTION IS SELECTED, SOIL PLATE CONNECTION BOLT HOLES ARE NOT REQUIRED.
- OUTSIDE NUT SHALL BE TORQUED AGAINST INSIDE NUT WITH THE CABLE INSTALLED TAUT BETWEEN THE ANCHOR PLATE AND FIRST POST.
- ALL CURVED GUARDRAIL SHALL BE SHARP BENT.
- SEE SHEET 5 FOR ANCHOR PLATE AND OTHER DETAILS.
- THE STEEL TUBE MAY BE DRIVEN WITH WOOD POST INSERTED IF NO DAMAGE OCCURS TO THE POST OR BOLTS.

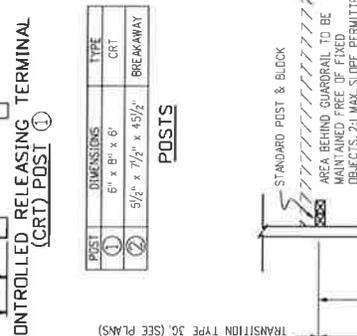
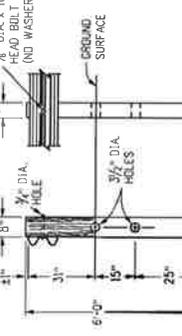
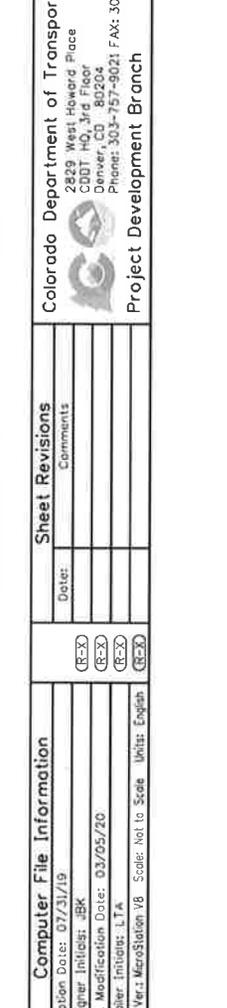


RADIUS	ANGLE	NO. CRT POSTS	AREA FREE OF FIXED OBJECTS	CURVED RAIL FOR ANCHOR
8'-6"	75°-105°	5	L 17' 11" W 13' 15"	75° 90° 105°
17'	75°-90°	6	20' 15"	11' 13' 15"
25'-6"	75°-85°	7	40' 20'	22' 27' 31'
35'	85°-105°	9	20' 46'	33' 40' 47'
	85°-95°	10	20' 46'	55' 64'
	95°-105°	11		

TRANSITION TYPE 3J APPLICATION

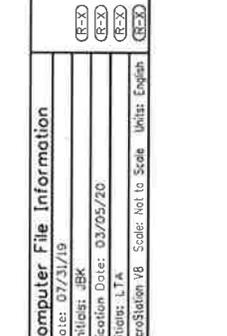
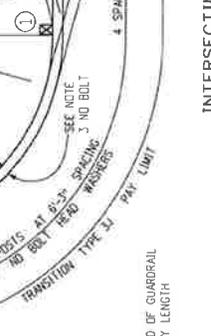


INTERSECTING ROADWAYS TRANSITION - TYPE 3J TRANSITION



POST	DIMENSIONS	TYPE
1	6" x 8" x 6"	CRT
2	5 1/2" x 7 1/2" x 45 1/2"	BREAKAWAY

POSTS



ANCHOR DETAIL



BEARING PLATE FOR STEEL TUBE



STANDARD PLAN NO.
M-605-1

Standard Sheet No. 12 of 19

Project Sheet Number:

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

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Colorado Department of Transportation
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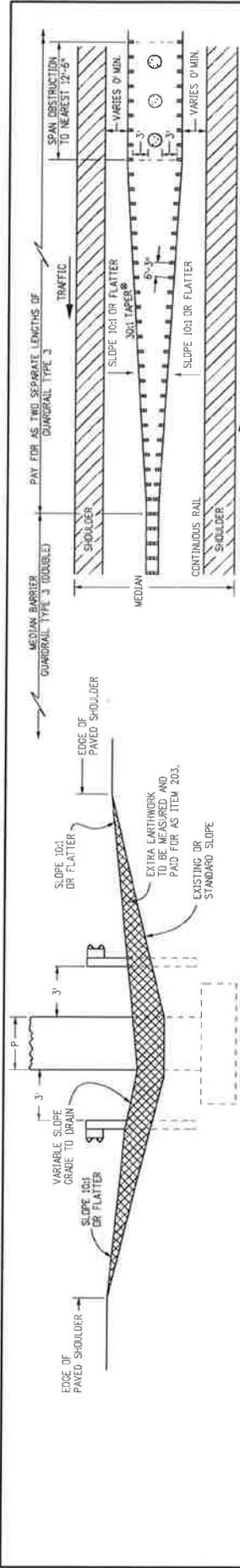
Project Development Branch

Sheet Revisions

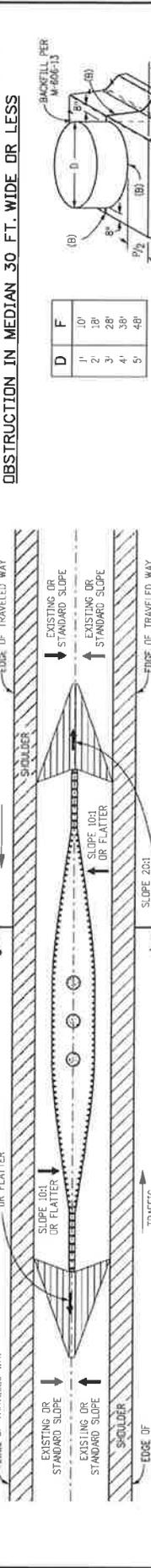
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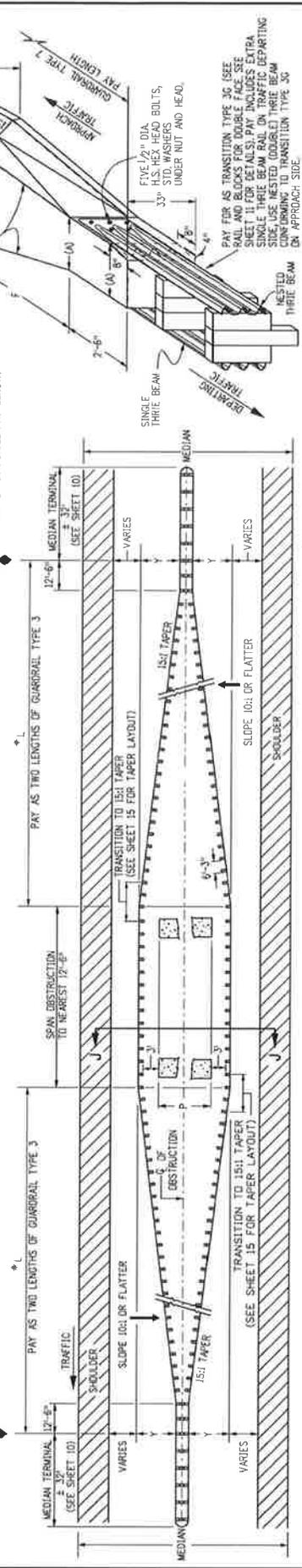
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SECTION J-J



GRADING FOR MEDIAN OBSTRUCTION

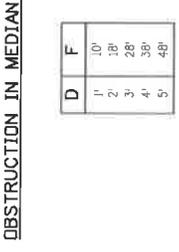


P	1'	2'	3'	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'
Y	4'-1"	4'-7"	5'-1"	5'-7"	6'-1"	6'-7"	7'-1"	7'-7"	8'-1"	8'-7"	9'-1"	9'-7"	10'-1"	10'-7"	11'-1"	11'-7"	12'-1"	12'-7"	13'-1"	13'-7"
L	75'	87'-6"	100'	112'-6"	125'	137'-6"	150'	162'-6"	175'	187'-6"	200'	212'-6"	225'	237'-6"	250'	262'-6"	275'	287'-6"	300'	312'-6"

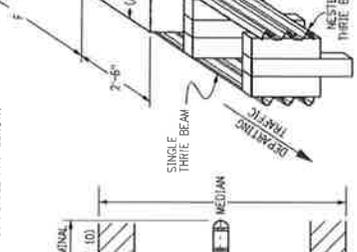
GUARDRAIL FOR OBSTRUCTION IN MEDIANS WIDER THAN 30 FT.

NOTE: FOR OBSTRUCTIONS (P) THAT ARE WIDER THAN 20 FT. IN MEDIANS USE SHEET 16.

OBSTRUCTION IN MEDIAN 30 FT. WIDE OR LESS



D	F
1'	10"
2'	18"
3'	28"
4'	38"
5'	48"



NARROW MEDIAN DETAIL

USUALLY LESS THAN 30 FT. WIDE MEDIAN WITH ALL PAVED SURFACE

OBSTRUCTIONS IN MEDIANS

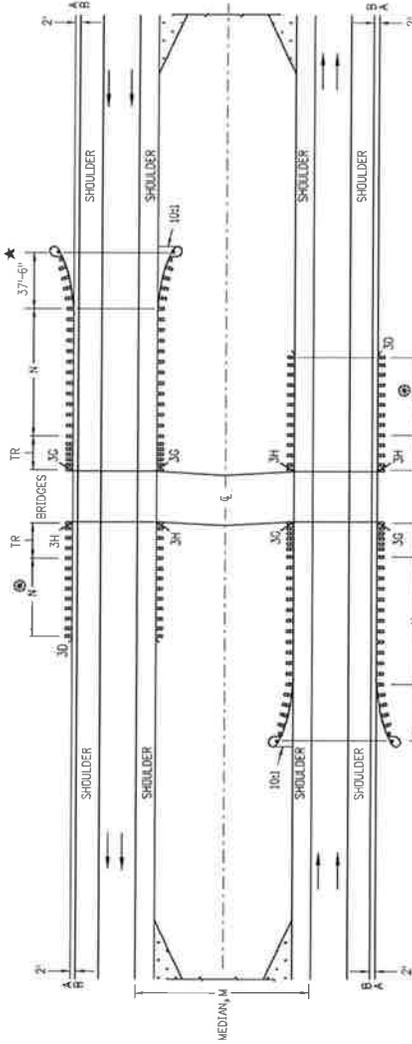
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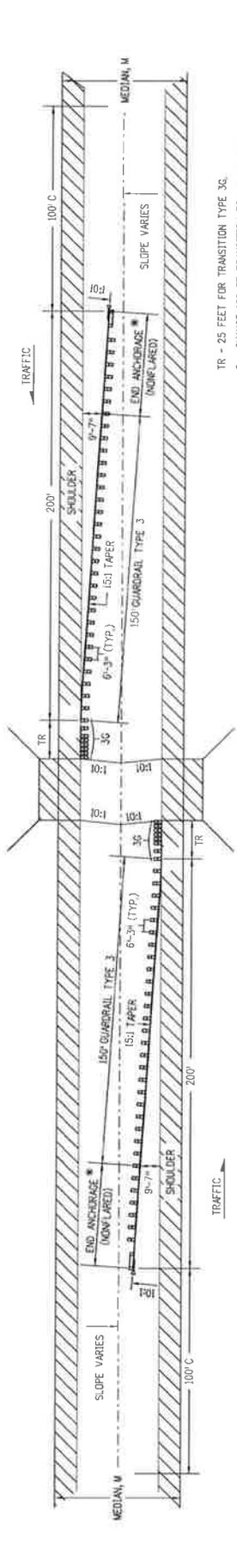
NOTES

1. MEDIAN BARRIERS TANGENT TO THE ROADWAY MAY BE USED WHERE THE SHOULDER SLOPES IN THE MEDIAN ARE STEEP.
 2. BARRIER LENGTHS SHALL BE INCREASED TO ACCOUNT FOR STEEP EMBANKMENTS OR OTHER HAZARDS WITHIN CLOSE PROXIMITY OF BRIDGES.
- ⊗ — DO NOT CONSTRUCT THE TR AND GUARDRAIL ON THE TRAILING BRIDGE ENDS IF SITE CONDITIONS DO NOT WARRANT THE USE OF GUARDRAIL.
- N — SHOWN ON PLANS LENGTH TO SHIELD ALL HAZARDS IS BASED ON GUARDRAIL'S LENGTH OF NEED COMPUTATION. SEE AASHTO ROADWAY DESIGN GUIDE. THE MINIMUM SHALL BE 100 FEET. THE LENGTH OF NEED SHALL INCLUDE THE LENGTH OF TRANSITION, THE LENGTH OF RAIL IN, AND ANY REDIRECTIVE LENGTH IN THE RAIL END TREATMENT.
- TR — 25 FEET FOR TRANSITION TYPES 3G AND 3H.
 A — EDGE OF 8 FT. OR 10 FT. SHOULDER.
 B — EDGE OF 6 FT. OR LESS SHOULDER.
 ★ — END ANCHORAGE CAN BE FLARED OR MONELARED.



MULTILANE DIVIDED HIGHWAYS FOR STEEP EMBANKMENTS IN MEDIAN

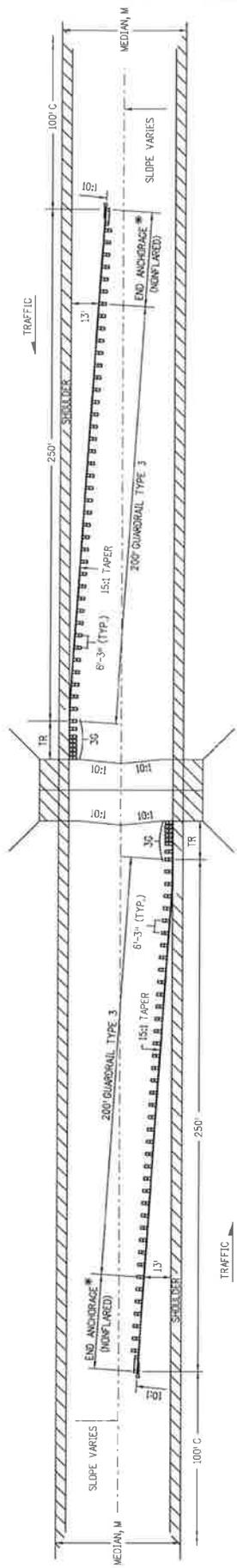
Computer File Information		Sheet Revisions		Colorado Department of Transportation		MIDWEST		STANDARD PLAN NO.	
Creation Date: 07/31/19	Designer: Initials: JBK	Date:	Comments:	2828 West Harvard Place	3033 West Third Street	Durham, CO 80204	Phone: 303-757-9021 FAX: 303-757-9868	M-606-1	
Lost Modification Date: 03/05/20	Detailer: Initials: LTA			Project Development Branch		JBK		Standard Sheet No. 14 of 19	
CAD Ver: MicroStation V8	Scale: Not to Scale	Units: English						Project Sheet Number:	



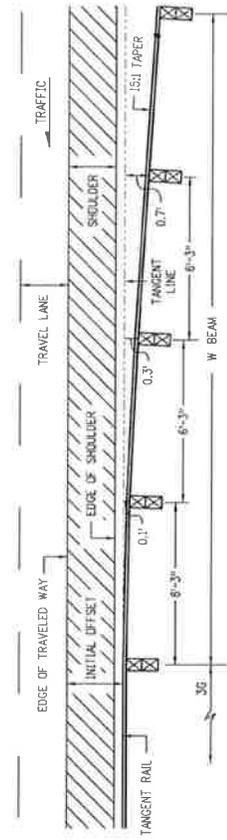
TR - 25 FEET FOR TRANSITION TYPE 3C.
 C - CHANGE: 100 FT, TRANSITION TO NORMAL SLOPE.
 M - WIDTH OF MEDIAN.

MEDIANS 60 FT. AND OVER WITH 10 FT. OR WIDER SHOULDERS.

* END ANCHORAGE LENGTH AND FLARE RATES VARY BY DEVICE.
 SEE MANUFACTURER/SUPPLIER FOR INSTALLATION REQUIREMENTS.



MEDIANS 60 FT. AND OVER WITH 4 to 8 FT. SHOULDERS.



TRANSITION TO TYPICAL 15:1 TAPER

NOTES

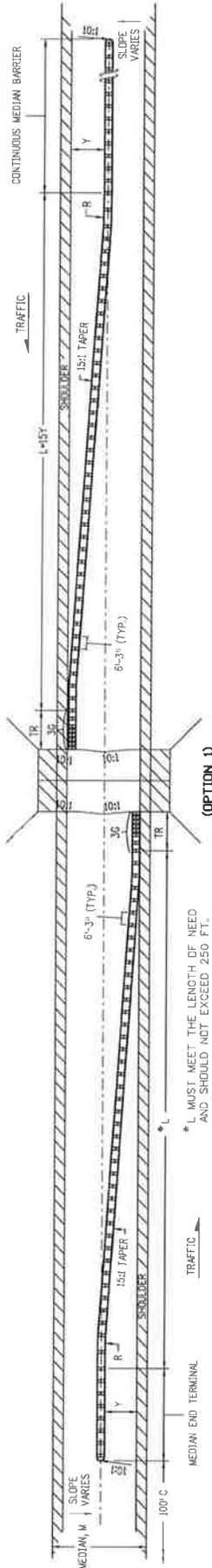
1. GUARDRAIL TRANSITIONS FROM PARALLEL TO ROADWAY SHOULDER AT 3G SEGMENT TO 15:1 TAPER WITHIN 25 FEET BASED ON POST OFFSET DIMENSIONS SHOWN.
2. SEE SHEET 14 FOR THE RIGHT SHOULDER GUARDRAIL LAYOUT.

MULTILANE DIVIDED HIGHWAYS - (DEPRESSED MEDIANS, 60 FT. AND OVER WITH OPEN HAZARDS OR OBSTRUCTIONS)

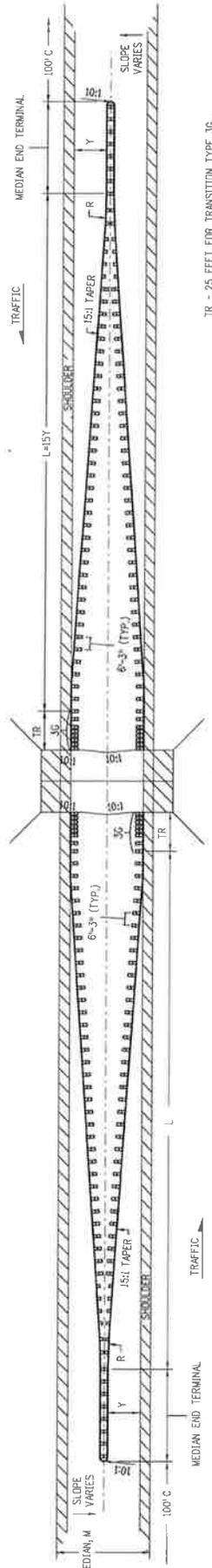
Computer File Information Creation Date: 07/31/19 Designer Initials: JBK Last Modification Date: 03/05/20 Detailer Initials: LTA CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	Sheet Revisions Date: _____ Comments: _____	Colorado Department of Transportation 8229 West Harvard Place Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES Issued by the Project Development Branch: July 31, 2019	STANDARD PLAN NO. M-606-1 Standard Sheet No. 15 of 19 Project Sheet Number:
	Project Development Branch			

NOTES

1. GUARDRAIL TRANSITIONS FROM PARALLEL TO ROADWAY SHOULDER AT 30' SEGMENT TO 15:1 TAPER WITHIN 25 FEET BASED ON POST OFFSET DIMENSIONS SHOWN.
2. THE OPTION 1 LAYOUT SHALL BE USED WHEN "M" EXCEEDS 16 FEET OR WHEN MEDIAN BARRIER IS CONTINUOUS.
3. THE OPTION 2 LAYOUT SHALL BE USED WHEN "M" IS 16 FEET OR LESS.
4. SEE SHEET 14 FOR RIGHT SHOULDER GUARDRAIL LAYOUT.

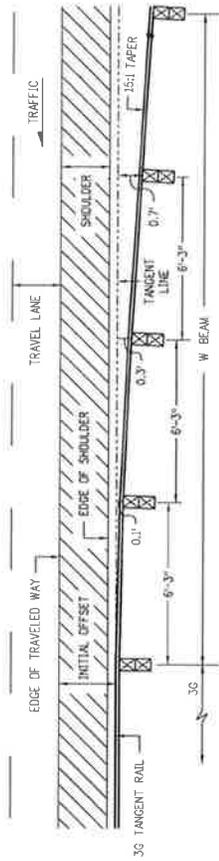


(OPTION 1)



(OPTION 2)

TR - 25 FEET FOR TRANSITION TYPE 3G.
 C - CHANGE: 100 FT. TRANSITION TO NORMAL SLOPE.
 M - WIDTH OF MEDIAN
 L - TOTAL LENGTH PAD AS GUARDRAIL TYPE 3.
 Y - FINAL OFFSET AT END.



TRANSITION TO TYPICAL 15:1 TAPER

MULTILANE DIVIDED HIGHWAYS - (DEPRESSED MEDIANS, 21 - 59 FT. WITH OPEN HAZARDS OR OBSTRUCTIONS)

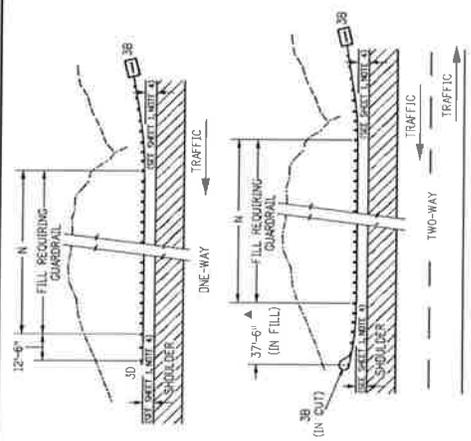
Computer File Information Creation Date: 07/31/19 Designer Initials: JBK Last Modification Date: 03/05/20 Detailer Initials: LTA CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	Sheet Revisions Date: _____ Comments: _____	Colorado Department of Transportation 2029 West Howard Place COOT Bldg, 3rd Floor Denver, CO 80202 Phone: 303-757-9021 FAX: 303-757-9868	STANDARD PLAN NO. M-606-1
			Project Development Branch JBK Issued by the Project Development Branch: July 31, 2019

MIDWEST
GUARDRAIL SYSTEM (MGS)
TYPE 3 W-BEAM 31 INCHES

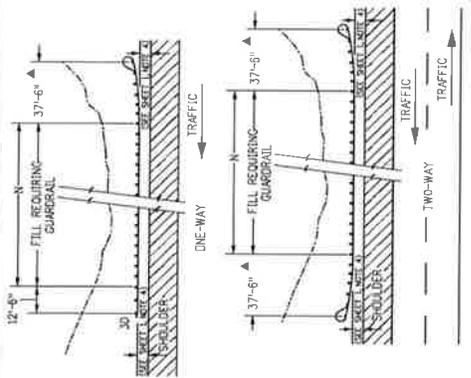
NOTES

1. TYPE 3C OR 3H TRANSITION (SEE SHEET 10) SHALL BE USED TO CONNECT THE TYPE 3, W-BEAM OR TO A TYPE 9 CONCRETE BARRIER (SEE M-606-15) OR TO A TYPE 8 OR 10 BRIDGE RAIL.
2. "TR" SHALL BE 25 FEET FOR THE TRANSITION TYPES 3G AND 3H.
3. THE GUARDRAIL LENGTH DIMENSION "N" IS THE LENGTH AS DETERMINED BY THE LENGTH OF NEED COMPUTATION AND IS SHOWN ON THE PLANS. THE MINIMUM IS 12 FT-6 IN. WHERE SITE CONDITIONS ALLOW, THE OVERALL REQUIRED LENGTH OF NEED CAN INCLUDE THE LENGTH OF TRANSITION, THE LENGTH OF RAIL (N), AND ANY REDUCED SLOPE LENGTH. THE LENGTH OF TRANSITION AND REDUCED SLOPE SHALL BE PROVIDED BEHIND THE GUARDRAIL PRIOR TO THE OBSTRUCTION UNLESS OTHERWISE APPROVED BY THE ENGINEER.

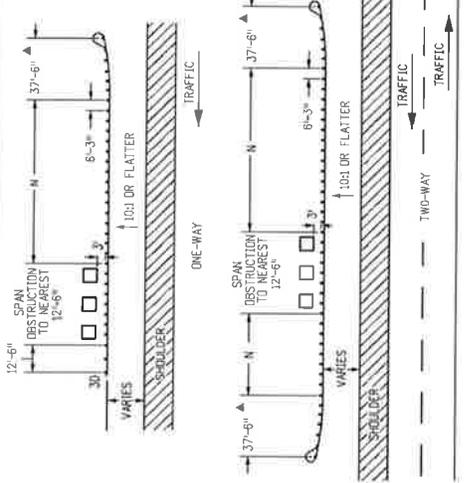
▲ END ANCHORAGE CAN BE FLARED OR NONFLARED



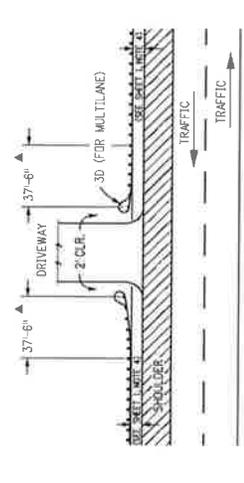
**GUARDRAIL FOR
ROADSIDE CUT-TO-FILL CONDITION**



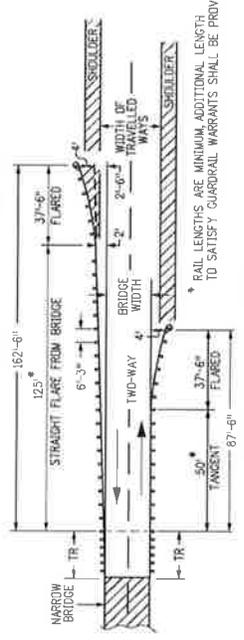
**GUARDRAIL FOR
ROADSIDE FILL CONSTRUCTION**



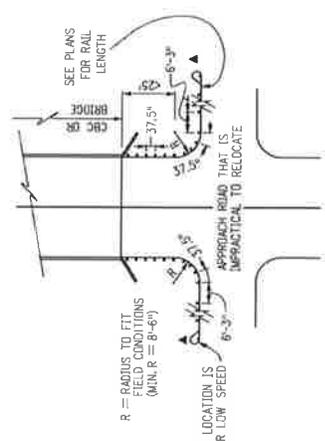
**GUARDRAIL FOR
ROADSIDE OBSTRUCTIONS**



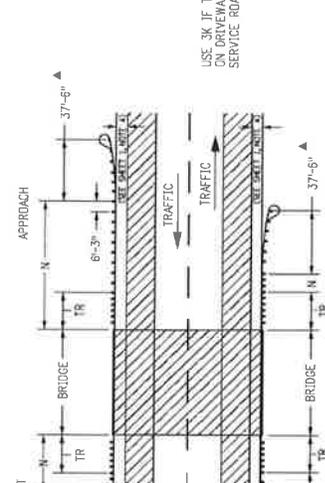
**LAYOUT FOR
DRIVEWAY APPROACH**



**2-WAY NARROW
APPLICATION**



**2-WAY NORMAL
BRIDGE APPLICATION**



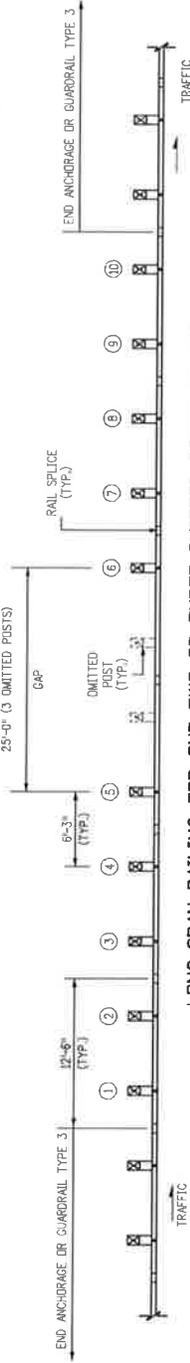
GUARDRAIL TYPE 3 WITH BLOCKED OUT POSTS SPACED AT 3'-1/2" FROM STRUCTURE AROUND CURVE.
**INTERRUPTED
STRUCTURE APPROACH**
(USE TYPE 3I ON SHEET 12 WHEN PRACTICAL)

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19	Designer Initials: JBK	Date:	Comments:
Lost Modification Date: 03/05/20	Designer Initials: LTA	(C-X)	(C-X)
ESD Ver: MicroStation V8	Scale: Not to Scale	(C-X)	(C-X)
Standard Plan No.		Standard Plan No.	
M-606-1		M-606-1	
Standard Sheet No. 17 of 19		Standard Sheet No. 17 of 19	
Project Sheet Number:		Project Sheet Number:	
Issued by the Project Development Branch: July 31, 2019		Issued by the Project Development Branch: July 31, 2019	
<p>Colorado Department of Transportation 2828 West Howard Place CODOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868</p>		<p>MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES</p>	
Project Development Branch		Project Development Branch	
JBK		JBK	

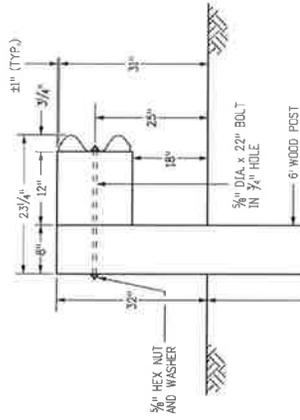
NOTES

1. POSTS ①, ②, ⑤, and ⑩ MAY BE TIMBER OR STEEL.
2. THE NUMBER OF OMITTED POSTS IS DEPENDENT ON THE LENGTH OF THE GAP.
3. ONE POST MAY BE OMITTED WITHOUT ANY MODIFICATION TO THE GUARDRAIL RUN.

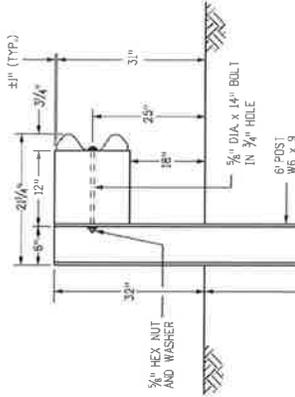
SEE NOTE 3.
18'-9" (2 OMITTED POSTS) OR
25'-0" (3 OMITTED POSTS)



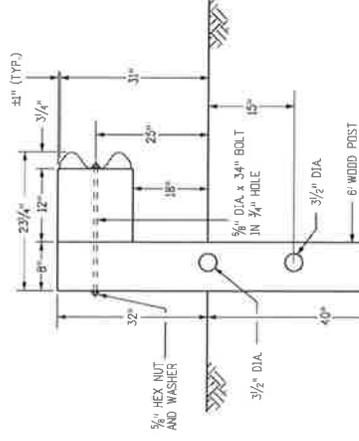
LONG-SPAN RAILING FOR ONE, TWO, OR THREE OMITTED POSTS AT GAP



TIMBER POST
POSTS ①-② AND ⑨-⑩
(SEE NOTE 1)



STEEL POST
POSTS ③-④ AND ⑥-⑧
(SEE NOTE 1)



BREAKWAY TIMBER POST
POSTS ⑤-⑩

Computer File Information

Creation Date: 07/31/19	CE-X
Designer Initials: JBK	CE-X
Last Modification Date: 03/05/20	CE-X
Detailer Initials: LTA	CE-X
CAD Ver: MicroStation V8	Scale: Not to Scale
Units: English	

Sheet Revisions

Date:	Comments

Colorado Department of Transportation

2829 West Howard Place
 2800 North
 Denver, CO 80202
 Phone: 303-757-9021 FAX: 303-757-9868



Project Development Branch

JBK

MIDWEST

**GUARDRAIL SYSTEM (MGS)
TYPE 3 W-BEAM 31 INCHES**

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.

M-606-1

Standard Sheet No. 18 of 19

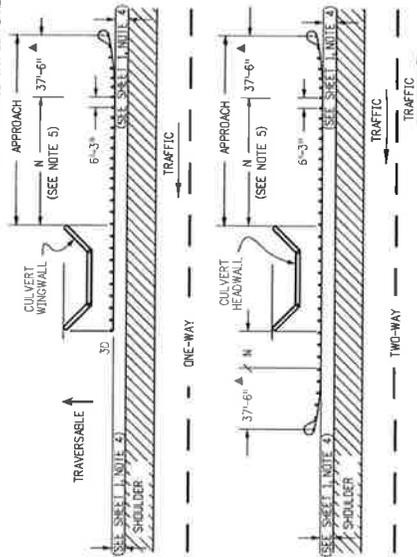
Project Sheet Number:

NOTES

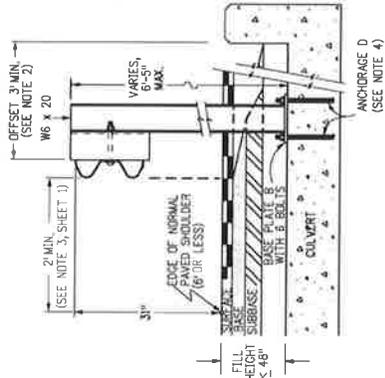
1. LOCATION AND LENGTH OF MEDIAN GUARDRAIL APPROACHES TO CULVERTS WITH FULL HEADWALL AND WINGWALLS SHALL BE AS SHOWN FOR BRIDGES ON SHEET 15. THE GUARDRAIL TYPE 3 SHALL CONTINUE ACROSS THE CULVERT AS SHOWN ON THIS SHEET.
2. RIGHT SHOULDER BOX CULVERT TREATMENT IS SHOWN ON THIS SHEET FOR CULVERTS 20 FT. OR LESS IN LENGTH.
3. CONSTRUCTION AND PAYMENT FOR FILL HEIGHTS SHALL BE INCLUDED IN THE COST OF THE GUARDRAIL TYPE 3.
4. ANCHORAGE D: SIX BOLTS FOR BASE PLATE 1/8" WITH INSIDE MOUNT. THE BOLTS SHALL BE 7/8 IN. DIA X 10 IN. HIGH STRENGTH RODS THREADED FULL LENGTH AND ALL GALVANIZED. RODS SHALL BE CAST-IN-PLACE FOR ALL STRUCTURES. FOR EXISTING STRUCTURES, THE BOLTS SHALL BE CAST-IN-PLACE WITH EPOXY. FOR HOLES WITH NON-SHANK GROUT OR EPOXY, THE HOLES TO ASTM C 881 IF THE THICKNESS OF A CULVERTS TOP PANEL REQUIRES BOLTS TO BE LESS THAN 10 IN. HIGH, THE BOLTS SHALL BE APPROVED BY THE ENGINEER.
5. THE GUARDRAIL LENGTH DIMENSION "M" IS THE LENGTH AS DETERMINED BY THE LENGTH OF NEED COMPUTATION AND IS SHOWN ON THE PLANS. THE MINIMUM IS 32 FT.-6 IN. LENGTH. THE LENGTH OF NEED COMPUTATION IS THE OVERALL LENGTH OF SECTION 505 CULVERTS. THE OVERALL LENGTH, THE LENGTH OF RAIL (N) AND ANY REDIRECTIVE LENGTH IN THE RAIL END TREATMENT.
6. ALL POSTS, BASE PLATES, AND ANCHOR BOLTS SHALL BE FABRICATED FROM ASTM A 36 STEEL, THE ABOVE MATERIAL, W-BEAM, AND ALL ANCHOR BOLTS AND MISCELLANEOUS BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SECTION 505. CONCRETE, REINFORCING STEEL, AND STRUCTURAL STEEL ELEMENTS SHALL BE IN ACCORDANCE WITH SECTIONS 601, 602, AND 305, RESPECTIVELY.
7. POST ANCHORS, ENCASED IN CONCRETE, SHALL BE ASTM A 36 STEEL, AND NEED NOT BE GALVANIZED.

PRIOR TO INSTALLATION OF GUARDRAIL ON CULVERTS, THREE SETS OF WORKING DRAWINGS WHICH COMPLY WITH THE REQUIREMENTS OF SECTION 105 SHALL BE SUBMITTED TO THE ENGINEER FOR INFORMATION ONLY.

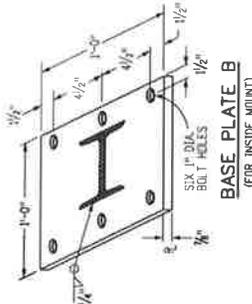
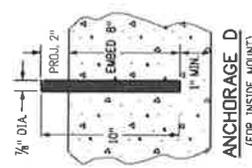
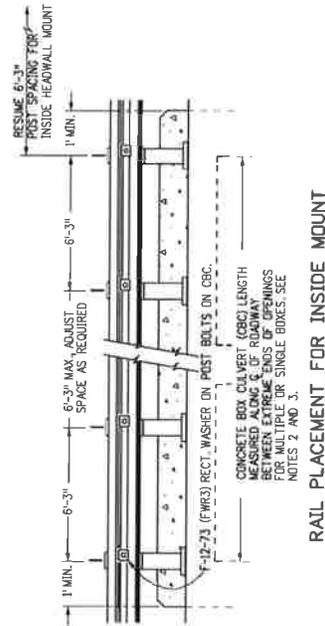
▲ END ANCHORAGE CAN BE FLARED OR NONFLARED.



GUARDRAIL FOR CULVERTS



INSIDE MOUNT ON CBC



RAIL PLACEMENT FOR INSIDE MOUNT

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19	Designer Initials: JBK	Date:	Comments
Last Modification Date: 03/05/20	Detailer Initials: LTA	(E-X)	
CAD Ver.: MicroStation V8	Scale: Not to Scale	(E-X)	
Units: English		(E-X)	
		Project Development Branch	
		Issued by the Project Development Branch: July 31, 2019	
		Project Development Branch	
		JDK	
		Phone: 303-757-9021 FAX: 303-757-9868	
		2828 West Harvard Place COOT HO, 100 Ft Denver, CO 80204	
		Colorado Department of Transportation	
		Project Development Branch	
		Standard Plan No.	
		M-606-1	
		Standard Sheet No. 19 of 19	

MIDWEST

**GUARDRAIL SYSTEM (MGS)
TYPE 3 W-BEAM 31 INCHES**

APPENDIX J

DEVELOPMENT IMPROVEMENTS AGREEMENT

This Development Improvements Agreement is entered into this _____ day of _____, 20____ between the Board of County Commissioners of Gunnison County, Colorado (herein the "County"), and (herein the "Permittee") as follows:

1. **PURPOSE.** The Permittee has submitted to the County the Permittee's application for a permit pursuant to the Gunnison County Standards and Specifications regarding _____ (herein the "Project"). The legal description of the Project is attached hereto and incorporated herein as Exhibit "A". As valuable and sufficient consideration for this Agreement, the County and the Permittee agree that approval of such application by the County is expressly conditioned on completion of the improvements described in paragraph 7, below (herein the "Improvements") to the specifications described herein and by the times specified herein. The County and the Permittee further agree that such Improvements are appropriate and necessary requirements to be required by the County, and to be performed by the Permittee and which Permittee shall perform. The County and Permittee further agree that an agreement guaranteeing the Permittee's performance secured by suitable security to protect the interests of the County, and the public in the amount set forth herein is an appropriate condition to the County's approval of such permit. The parties have entered into this agreement to memorialize such understandings and agreements. The relationship of the parties to this Agreement is contractual; Permittee is an independent contractor and is not an agent of the County.
2. **DEVELOPER BOUND.** The Permittee agrees to accept and be bound by the terms and conditions of the County's issuance of its approval of the Permit and the terms and conditions of this agreement. Permittee accepts the County's review and permitting authority; process and performance of same in connection with the permit as legal and valid and waives any defect therein.
3. **CONSTRUCTION.**
 - A. The Permittee agrees to complete construction of the Improvements within the Project in the locations set forth on the plans attached hereto as Exhibit __, and in accordance with the specifications thereof by not later than _____, 20____, acts of God and any cause beyond the reasonable control of the Permittee excepted, including without limitation labor disputes, laws, regulations, or orders of any governmental entity, orders of court, inability to obtain any required authorization, act of war or donations arising out of or attributable to war, riot, civil strike, insurrection or rebellion, fire, explosion, earthquake, storm, flood or other adverse weather condition, delay or failure by suppliers or material men, contractors, or subcontractors, shortage of or inability to obtain labor, supplies or materials.
 - B. The completion deadline set forth in this paragraph 3 may be extended by the County in its sole discretion upon written request of Permittee if the County determines that: (1) such extension of time will not operate to the detriment of the County, the public or the owners of property within the Project; and (2) the County's security is adequate to ensure full performance by Permittee by the extended completion date; and (3) that such an extension would not be in conflict with the conditions of the approved Permit. The County may require Permittee to provide, at Permittee's cost, supplemental estimates by Permittee's engineer of the costs of completion and to provide additional security as a prerequisite to its extension of any completion date. Any

extended completion date granted by the County hereunder may be further extended in like manner.

- C. Each contract entered into by Permittee for construction of the Improvements shall provide that the County is a third party beneficiary with all rights to enforce such contracts in place of Permittee in the event of a default by Permittee. Permittee shall provide to County a copy of each such contract upon its execution.
4. ESTIMATED COST. The total cost of the improvements to be constructed by the Permittee as provided by a third-party contractor bid that includes the full scope of work as presented in Exhibit A is estimated currently to be \$_____ (including a 10% contingency amount).
5. SECURITY. In order to secure of obligations of the Permittee herein, the Permittee and the County agree that the Permittee shall, at Permittee's sole cost, and before starting work on any phase of the Project or Improvements, and before conveying any portion of the Project, obtain and provide to the County a bond, and/or irrevocable letter of credit or other performance guarantee in a form and content satisfactory to the County to the benefit of the county in an amount of which is 125 percent of the currently estimated cost of the improvements, (including a 10% contingency amount).

If the contract(s) provided to the County pursuant to paragraph 3C indicate a substantially different total cost than estimated in paragraph 4, the amount of security may be increased or decrease. For the purposes of this paragraph 5, substantial is defined as 10 percent or more.

Pending full performance of all of the terms and conditions hereof by the Permittee, the County shall retain said security and shall remain the beneficiary of such security. In the event of any uncured default hereunder the County in its sole discretion, and without any other authority required, may draw upon said security up to the full amount of \$_____ upon presentation by the County to the ___ of a written statement by the County that such uncured default exists. Upon timely performance of all terms and conditions hereof, said security shall be tendered by the County to the Permittee.

6. CERTIFICATION.

- A. Not later than _____, 20__, a registered Colorado engineer retained by the Permittee at it s expense shall certify to the County whether the Permittee's construction obligations regarding Improvements under this agreement have been fully and faithfully performed according to design and time specifications. Upon receipt of such certification and a complete copy of as built specifications and drawings, the County shall review the same and shall make an independent judgment whether to accept the same in the sole discretion of the County. Permittee agrees not to cover or otherwise prevent inspection of the Improvements constructed hereunder until Permittee's engineer and the County's representative have had reasonable opportunity to inspect such Improvements.
- B. Not later than _____, 20__, Permittee shall provide to the County Attorney a sworn affidavit, signed by the Permittee's authorized representative, that the Improvements completed have been paid for, in full, by the Permittee. The Permittee shall be responsible for the information so provided. Said written certification will be reviewed by the County, but the County shall have no responsibility or liability to any part regarding the veracity of the information so provided.

7. SCOPE OF WORK.

- A. The scope of work to be done by the Permittee shall include, but not be limited to: Exhibit A (Attach applicable details)
- B. The conditions of this agreement and the permit are such that if the obligations hereunder of the Permittee are well, truly, faithfully and timely performed by Permittee, inspected and certified to by the Permittee's engineer, and such performance is accepted by the County in the County's sole discretion, the Permittee's obligations to the County under this agreement except as set forth in 7C below shall be at an end; otherwise such conditions and obligations shall remain in full force and effect.
- C. For a period of one year from and after the acceptance of all of the work described in paragraph 7A, above, Permittee shall, at its own expense, make all needed repairs and replacements to such work as shall, in the County's reasonable opinion, become necessary. The County shall have the right to retain up to \$____ of the security for up to one year following the acceptance of all of the work described in paragraph 7A. above, as security to ensure such repair and replacement.

8. PARTIAL RELEASE OF SECURITY.

- A. The County recognizes that as work proceeds upon the Improvements, the County's need for security shall be reduced. Accordingly, the County agrees to consider a partial release of the security to be delivered to the Permittee pursuant to paragraph 5 hereof upon receipt of a written certification by Permittee's engineer stating the estimated percentage of remaining work to reach completion, in which event the County may retain security equal to 125 percent of such estimated percent of remaining work to reach completion and shall release the balance of security held by the County.
- B. Upon Permittee's entering into a contract or contracts for construction of improvements hereunder, Permittee and County may negotiate an addendum to this Agreement setting forth such reasonable schedule for partial releases of the security in accordance with the anticipated construction schedule. In such circumstance, the County shall designate and authorize the County Manager, Director of Public Works or County Attorney to make the partial release(s) hereunder after consultation with appropriate County staff.

9. PERMITTEES' DEFAULT. In the event of any default hereunder by the Permittee, the County shall give notice to the Permittee specifying the nature of such default, which notice shall be given by facsimile transmission or by certified mail with return receipt requested addressed to the Permittee at _____. In the event the Permittee does not remedy such default to the satisfaction of the County within 14 days following such notice, the County may elect, in its discretion to exercise all remedies available to it, including but not limited to:

- 9.1 To specifically enforce the terms and conditions of this agreement;
- 9.2 To draw upon or otherwise obtain the benefit of the security;
- 9.3 To exercise any other rights and obtain any other remedies provided by law;
- 9.4 To obtain from the Permittee either an extension of the County's security hereunder to guarantee the completion of the improvements only on the conditions (1) that suitable additional security is provided the County to guarantee the construction of said Improvements within the new time period determined by the County, and (2) that the County determines that it would not be detrimental to the interest of the County, the public

or the owners

of property within the Project to allow such extension (3) that the County determines that it would not be in conflict with the conditions of the approved Permit.

10. RECORDING OF AGREEMENT. Upon its execution, this Agreement shall be recorded by the Permittee and shall be a covenant running with the property herein described in order to put prospective purchasers or other interested parties on notice as to the terms and provisions hereof.
11. RETENTION OF POLICE POWERS. The County retains the power and right to impose additional requirements upon Permittee with regard to the Project if the failure to do so would place the public or owners of property within the Project in a perilous condition, or in the event of substantially changed conditions; that is, nothing in this Agreement is or shall be construed to be a bargaining away of the County's police power.
12. TRANSFER OR ASSIGNMENT. No transfer or assignment of any of the rights or obligations of the Permittee under this Agreement shall be permitted without prior written approval of the County which approval shall not unreasonably be withheld.
13. TITLE AND AUTHORITY. The Permittee expressly warrants and represent to the county that it is the record owner of the real property constituting the Project, and further represents and warrants, together with the undersigned individual, that the undersigned individual has full power and authority to enter into Agreement. The Permittee and the undersigned individual understand that the County is relying on such representations and warranties in entering in to this Agreement.
14. LITIGATION. Nothing contained herein shall prevent either party from obtaining a judicial determination of the violation of its rights hereunder; provided however, that written notice to the other party advising the other party of the alleged violation, and advising that in the event the matter is not resolved by the parties within 14 days thereafter, shall be a condition precedent to the commencement of any litigation.
15. TIME OF ESSENCE. It is mutually agreed that time of performance is an essential part of this agreement and that all terms, covenants and conditions herein shall extend to and become obligatory upon the successors and assigns of the respective parties hereto.
16. VENUE AND CHOICE OF LAW. This agreement is entered into in Gunnison County, Colorado and it I agreed that the exclusive jurisdiction and venue of any action pertaining to the interpretation or enforcement of this agreement shall be in the District Court of Gunnison County, Colorado. The exclusive choice of law pertaining to this transaction shall be that of the State of Colorado without giving effect to Colorado choice of law principles.
17. SEVERABILITY. If any term or provision of this agreement shall be invalid or unenforceable, the remainder of this agreement and the terms and provisions thereof shall not be affected thereby and all other terms and provisions of the agreement shall be valid and enforceable to the full extent permitted by law.
18. ATTORNEYS' FEES. If any action is brought in a court of law by either party to this agreement

as to the enforcement, interpretation or construction of this agreement or any document provided for herein, the prevailing party in such action shall be entitled to reasonable attorneys' fees as well as all cost incurred in the prosecution of defense of such action.

- 19. HOLD HARMLESS CLAUSE. The Permittee shall indemnify, defend and hold harmless the County, its officials, employees and agents from and against liability for damages, injury or death which may arise from the direct or indirect operations of the owner, Permittee, contractors or subcontractors, which relate to the Project.
- 20. ENTIRE AGREEMENT. This agreement contains the entire and only agreement between the parties regarding development improvements, and no oral statements or representations not contained in this agreement shall be of any force and effect between the parties. This agreement shall not be modified or amended in any manner except by written instrument executed by the parties.
- 21. BINDING AGREEMENT. This agreement shall be binding upon and inure to the benefit of the heirs, personal representatives, successors and assigns of the parties hereto.
- 22. NOTICE. All notices and other communications required or permitted under this Agreement shall be in writing and shall be, as determined by the person giving such notice, either hand delivered, mailed by registered or certified mail, return receipt requested or by telecopier or telegraphic communication to the required party at the following addresses:

COUNTY: Board of County Commissioners
200 East Virginia
Gunnison, CO 81230

DEVELOPER: (Name, Address, Etc.)

IN WHEREOF the parties have executed this agreement the date first above written.

BOARD OF COUNTY COMMISSIONERS OF THE
COUNTY OF GUNNISON COUNTY

Attest: _____ By: _____
County Clerk Chairperson or Designee

DEVELOPER
By: _____

STATE OF COLORADO)
)
COUNTY OF)

The foregoing instrument was acknowledged before me this _____ day of _____, 20__ . By _____.

My commission expires: _____
Witness my hand and official seal.

Notary Public Address:

APPENDIX K

DEFINITIONS AND ABBREVIATIONS

The following words, terms and abbreviations shall have the following meanings when used in these Standards and Specifications, unless expressly defined in these standards, the words and phrases used in these Standards shall be the same as the Gunnison County Land Use Resolution:

A. ABBREVIATIONS

1. **AASHTO** means American Association of State Highway and Transportation Officials
2. **CDOT** means Colorado Department of Transportation
3. **FHWA** means Federal Highway Administration
4. **HUTF** means Highway Users Tax Fund
5. **ITE** means Institute of Traffic Engineers

B. DEFINITIONS

ABUT means adjacent or contiguous to, or sharing a common border.

ACCESS means the place, method, or way by which vehicles and pedestrians obtain usable ingress and egress to a property or land use.

1. **Residential Access** means ingress or egress to no more than two residential units, including any that includes a home occupation, or a multiple-family residence as defined by the Gunnison County Land Use Resolution. Residential access is a private access over 50 inches in width, for the exclusive use of the owners- occupants and their invitees and is not considered a road or highway.
2. **Agricultural Access** means the access providing ingress and egress exclusively to an agricultural operation and not to any residence(s).
3. **Commercial Access** means the access providing ingress and egress to any activity defined by the Gunnison County Land Use Resolution as commercial.
4. **Industrial Access** means the access providing ingress and egress to any activity defined by the Gunnison County Land Use Resolution as industrial.
5. Any other access as determined by the Director of Public Works.

ADJACENT means abutting or contiguous to or sharing a common border.

AGRICULTURAL ROAD means a road that links agricultural areas to highways and other roads, primarily to enable the transportation of inputs to the farm and agricultural produce to the market.

ALTERNATIVE TRANSPORTATION FACILITY means a trail, sidewalk, public bus or van, rail, or other facility that provides an alternative mode of transportation to travel by private automobile.

ARTERIAL ROAD - See Section 3.1

AS-BUILT (OR RECORD) DRAWINGS means a complete and accurate set of construction plans, with all pertinent information superimposed on them to identify the road or related facility as it actually has been constructed.

AVERAGE DAILY TRAFFIC (ADT) is the average number of vehicles that travel through a specific point of a road over a short duration time period (often 7 days or less). It is estimated by dividing the total daily volumes during a specified time period by the number of days in the period.

ANNUAL AVERAGE DAILY TRAFFIC (AADT) means it is the annualized volume of vehicle traffic of a highway or road. AADT estimates, with as little bias as possible, the mean traffic volume across all days for a year for a given location along a roadway. AADT is different from ADT because it represents data for the entire year. Gunnison County accepts the FHWA AADT method for AADT.

AXLE LOAD means the total load transmitted by all wheels on a single axle extending across the full width of the vehicle. Tandem axles forty (40") inches or less apart shall be considered as a single axle.

BASE COURSE means the layers of specified or selected material of designated thickness placed on a subbase or a subgrade to support a surface course.

BRIDGE means a structure including wall or abutments erected over a depression or an obstruction, such as water, highway or railway and having a track or passageway for carrying traffic or other moving loads.

CEMENT TREATED BASE or "Flowable Fill" means a base consisting of a mixture of mineral aggregate (or soil) and Portland cement, mixed and spread on a prepared surface, to support a surface course.

CHANNELIZATION means the separation or regulation of conflicting traffic movements into definite paths of travel by use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movement of traffic, both vehicular and pedestrian.

CITY STREET means roads that are within the boundaries of an incorporated municipality that are dedicated to the public.

COLLECTOR ROAD - See Section 3.1

CONSTRUCTION PLANS means a complete and accurate set of detailed plans, including but not

limited to profile, specifications, stationing, details, notes and any other information necessary for complete and timely construction of the road or related facility.

CONTROL OF ACCESS means the condition in which the right of access of owners or occupants of land abutting or adjacent to a roadway is controlled by public authority.

COUNTY PRIMARY ROAD SYSTEM means County roads selected pursuant to CRS §§ 43-2-109 and 110, as amended.

COUNTY ROAD means a public road which the Board has placed on the County Primary Road System pursuant to C.R.S. §§ 43-2-109 and 110, as amended.

COUNTY SECONDARY ROAD SYSTEM means roads not on the County primary road system pursuant to C.R.S. § 43-2-110, as amended.

CROSS SLOPE (ROADWAY) means a geometric feature of pavement surfaces: the transverse slope with respect to the horizon.

CUL-DE-SAC means a local road open at one end only, and with special provisions for turning around.

CURBWALK means monolithic combination of curb and gutter and sidewalk.

CULVERT means a closed conduit, other than a bridge, which conveys water carried by a natural channel or waterway transversely under the roadway.

WORKING DAYS shall be defined by Gunnison County Land Use Resolution section 1-111
COMPUTATION OF TIME.

DELINEATORS means devices used to define the roadbed, and are used as an aid to alert drivers of day and night hazard conditions.

DEPARTMENT means the Gunnison County Public Works Department.

DESIGN LOAD means the loads that must be supported by a structure in terms of live and dead weight loads.

DESIGN PERIOD means geometric design generally based on estimated traffic requirements 20 years after construction.

DESIGN SPEED means a speed determined for design and correlation of the physical features of a road that influence vehicle operation; the maximum safe speed maintainable on a specified section of road when conditions permit design features to govern.

DRIVEWAY see "Access"

ELECTRICAL ASSISTED BICYCLE (e-bike) means a vehicle having two or three wheels, fully

operable pedals, and an electric motor not exceeding seven hundred fifty watts of power. Electrical assisted bicycles are further required to conform to one of three classes as follows:

(a) "Class 1 electrical assisted bicycle" means an electrical assisted bicycle equipped with a motor that provides assistance only when the rider is pedaling and that ceases to provide assistance when the bicycle reaches a speed of twenty miles per hour.

(b) "Class 2 electrical assisted bicycle" means an electrical assisted bicycle equipped with a motor that provides assistance regardless of whether the rider is pedaling but ceases to provide assistance when the bicycle reaches a speed of twenty miles per hour.

(c) "Class 3 electrical assisted bicycle" means an electrical assisted bicycle equipped with a motor that provides assistance only when the rider is pedaling and that ceases to provide assistance when the bicycle reaches a speed of twenty-eight miles per hour.

EDLA means single axle Equivalent Daily Load Application. (See "Axle Load".)

ENGINEER means Professional Engineer registered in the State of Colorado.

EROSION means the wearing away of a land surface by detachment and transporting of soil and rock particles by the action of water, wind, or other agents.

FLARED INTERSECTION means an un-channelized intersection, or a divided highway intersection without islands other than medians, where the traveled way of any intersection leg is widened or an auxiliary lane added.

FLEXIBLE PAVEMENT means a pavement structure which maintains intimate contact with and distributes loads to the subgrade and depends upon aggregate interlock, particle friction and cohesion of stability.

GEOMETRIC DESIGN means the arrangement of the visible elements of a road, such as alignment, grades, sight distances, widths, slopes, etc.

GUARDRAIL means a protective device intended to make highways safer by reducing accident severity.

GUNNISON COUNTY ROAD SYSTEM means all roads in the Gunnison County primary or secondary road systems.

HIGHWAY means an open way reserved for the passage, generally, of people, vehicles, animals, and goods, where there is comparatively little access and egress and provides a way between prominent termini, as defined by CRS 43-2-201 .

HORIZONTAL ALIGNMENT means horizontal geometrics for safe and continuous operation at a uniform design speed for substantial lengths of highway and must afford at least the minimum stopping distance for the design speed at all points on the highway.

HVEEM STABILIMETER means a device to measure the lateral pressure transmitted by soil or aggregate being subjected to a vertical load. The pressure obtained is used to compute "R" Value. The

internal resistance of the friction property of a bituminous pavement or a base course. Data obtained is used to compute the relative stability.

INCLUDE means including without limitation.

INSPECTOR means the Director or designee.

INTERSECTION means the area embraced within the prolongation or connection of the lateral curb lines, or if none, then the lateral boundary lines of the roadways of two highways, streets, roads or accesses, or any combination of thereof, which join one another at, or approximately at, right angles, or the area within which vehicles traveling on different highways joining at any other angle may come in conflict.

LANE - See Section 3.1

LIME TREATED BASE means a base consisting of a mixture of soil, hydrated lime and water, usually mixed in place and placed to support a pavement structure, or the components thereof.

LOCAL ROAD- See Section 3.1

LOW WATER CROSSING means a structure used to cross a drainage course that provides only for limited conveyance of run-off under the traveled way with higher flows passing both under and over the traveled way.

MAY means a permissive condition.

MINIMUM COVER means the point of minimum cover shall be the edge of the paved shoulder giving the least cover over the culvert or structure.

MINIMUM TURNING RADIUS means the engineer determined radius of a minimum turning path.

NON-MOTORIZED TRAIL means a dirt, gravel or paved trail suitable for Class 1 or 2 E-bicycle, bicycle, pedestrian or equestrian travel that is physically constrained to 50" or less in width.

PASSING SIGHT DISTANCE means the minimum sight distance on two or three lane highways that must be available to enable the driver of one vehicle to pass another vehicle safely and comfortably without interfering with the speed of an on- coming vehicle traveling at the designed speed should it come into view after the overtaking maneuver is started.

PAVEMENT means that part of a roadway having a constructed surface for the facilitation of vehicular movement.

PAVEMENT STRUCTURE means the combination of subbase, base course and surface course placed on a subgrade to support the traffic load and distribute it to the roadbed.

PHYSICAL SURVEY means a field survey resulting in a drawing that shows all physical improvements located on the property. This will include topographic information of locations of both human-made and natural features on a parcel of land. These features may include roads, buildings,

ditches, trees, streams and utilities. To perform a physical survey, the surveyor shall visit the property, locate the boundaries, set boundary corner monuments, and verify the accuracy of existing boundary markers.

PLANT MIXED BITUMINOUS BASE means a base consisting of mineral aggregate and bituminous material, mixed in a central plant, laid and compacted while hot, on subbase or a subgrade, to support a surface course.

PORTLAND CEMENT CONCRETE PAVEMENT means a pavement composed of Portland cement concrete on a prepared subgrade or base course in accordance with plans and specifications.

PRIMITIVE ROAD means a road that has all of the following characteristics:

1. The road does not have the physical capacity to allow ready access to emergency services providers (e.g. medical emergency or fire suppression vehicles);
2. No public utility has been extended after May 7, 2002, or is proposed to be extended, to any lot served by the road;
3. Does not currently serve, and is not proposed to serve, average daily traffic more than the minimum threshold for a local intermittent road;
4. Any residential use established after May 7, 2002, shall be limited to seasonal use only by deed restriction or other instrument acceptable to Gunnison County

PRIVATE ROAD means any road that is not a public road.

PRIVATE ROADS UNDER COUNTY JURISDICTION means roads that have been permitted through the County Land Use Process.

PUBLIC ROAD OR HIGHWAY means:

1. All roads over private lands dedicated to the public use by deed to that effect, filed with the office of the Gunnison County Clerk and Recorder when such dedication has been accepted by the Board; and
2. All roads over private or other lands dedicated to public uses by due process of law, and not heretofore vacated by an order of the Board duly entered of record in the proceedings of the Board; and
3. All roads over private lands that have been used adversely without interruption or objection on the part of the owners of such lands for twenty (20) consecutive years; as defined by Colorado law; and
4. All toll roads or portions of them that may be purchased by the Board from the incorporators or charter holders of them, and thrown open to the public; and
5. All roads over the public domain whether agricultural or mineral.

PUBLIC WORKS DIRECTOR, DIRECTOR OF PUBLIC WORKS, OR DIRECTOR means the Assistant County Manager for Public Works or the person functionally responsible for the administrative and managerial duties of the Public Works Department.

R VALUE means the resistance value of the soil while in a state of density and degree of saturation typical of the most adverse conditions to be expected on the road during the service life.

REGIONAL FACTOR means a numerical factor expressed as a summation of the values assigned for precipitation, elevation and drainage. This factor is used to adjust the structural number.

RESIDENTIAL DRIVEWAY - See "Access"

RIGHTS-OF-WAY means a general term denoting lane, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

ROAD is a general term for denoting an open public way, including the entire area within the right-of-way, reserved or ordinarily used for the passage, generally, of people, vehicles, animals and goods and includes trails and non-motorized ways.

ROADSIDE means the area adjoining the edge of the roadway.

ROAD SIGN means a traffic control device mounted on a support above the level of the roadway that conveys a specific message by means of unchanging words or symbols.

ROADWAY means the portion of a highway, including shoulders, for vehicular use.

ROADWAY PRISM means the area of a road bounded by the traveled surface, the shoulders and lines projecting downward and away from the outside edge of the shoulder.

SERVICEABILITY INDEX means a number which is indicative of the pavement's ability to serve traffic at any specific time.

SHALL means a mandatory condition.

SHOULD means a recommended but not mandatory condition.

SHOULDER means the portion of a roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use and for lateral support of base and surface courses.

SIGHT DISTANCE means the distance visible to the driver of a passenger vehicle, measured along normal travel path of a roadway, to the roadway surface or to a specified height above the roadway, when the view is unobstructed by traffic.

SINGLE-UNIT TRUCK means a freight vehicle of two or three axles, a single unarticulated frame, and larger than a pickup.

SLOPE EASEMENT means an easement for cuts or fills.

SPEED STUDY or TRAFFIC STUDY means the collection and assessment of crash data, recent and planned roadway or adjacent land use changes, and even anecdotal information that can be obtained from safety, planning, enforcement, and other stakeholders. The data collected shall be used by a licensed engineer to examine the speeds of free-flowing traffic, roadway geometry, crash characteristics, land use, and access. The study shall comply with the Gunnison County Land Use Resolution standards.

STANDARDS means the Standards identified in this Gunnison County Standards and Specifications, as amended.

STABILIZATION means modification of soils or aggregate by incorporating materials that will increase load bearing capacity, firmness and resistance to weathering or displacement.

STATE HIGHWAY means roads that are within the County that are dedicated to the public, but are maintained by the Colorado Department of Transportation.

STOPPING SIGHT DISTANCE means the distance required by a driver of a vehicle, traveling at a given speed, to bring his vehicle to a stop after an object on the roadway becomes visible. It includes the distance traveled during the perception and reaction times and the vehicle braking distance.

STREET means a linear way for the conveyance of traffic that mostly has an improved surface for use by vehicles (motorized and non-motorized) and pedestrians and is primarily terminating at residences (see access).

STRUCTURE means anything constructed or erected, that requires location on the ground, or is attached to something having location on the ground, including portable shelters for human habitation or use, recreational vehicles and tents, storage, transmission or distribution facilities or public utilities, but not including transmission lines of less than forty-five (45) kilovolt capacity, or fences.

SUBBASE means the layer or layers of specified or selected material of designed thickness placed on a subgrade to support a base course.

SUBGRADE means the top surface of a roadbed upon which the pavement structure and shoulders, including curbs, are constructed.

SUPERELEVATION means the vertical distance between the heights of inner and outer edges of highway pavement used to prevent a vehicle from sliding outward, or to counteract all the centrifugal force of a vehicle traveling at an assumed speed.

SURVEY (BOUNDARY SURVEY) means a drawing of the property that details the location of the lot, property lines, home, Onsite Wastewater Treatment System, and any other structures within its bounds. Also known as land survey plats (LSPs), a boundary survey is used to measure and depict the precise and exact corners and limits of a particular parcel of land. The most common use of these surveys are within real-estate transactions to assess the size and shape of a plot of land before purchase;

to plan the construction of property-defining assets; to make improvements on existing structures; to create easements or encroachments; or to resolve disputes, such as party responsibility for property damage.

SUSTAINED GRADE means a continuous highway grade of appreciable length and consistent or nearly consistent gradient.

TEMPORARY ACCESS OR ROAD means an access or road that is limited in scope, duration, and/or frequency of use to serve only a vacant parcel and which does not require major cut and fill, and is constructed only for the purpose of determining the constructability of the submitted site plan, land use application, or proposed structure.

TERRAIN means the topography of the profile of a highway, road, or street. As used in this manual, the term generally has one of two modifiers; rolling, or mountainous. These two modifiers represent combinations or geometric features in varying degrees which relate primarily to gradients and horizontal and vertical alignment. They reflect the effect on capacity of the operating characteristics of trucks in terms of their passenger cars are equivalent under the different geometric conditions.

TOPOGRAPHY means the configuration of the earth surface including the shape and position of its natural and man-made features.

TRAFFIC CONTROL DEVICE means any sign, signal, marking or installation placed or erected under public authority, for the purpose of regulating, warning, or guiding.

TRAIL means an open way reserved for the passage and use, generally, of people, mechanized or non-mechanized machines, motorized or non-motorized vehicles, and animals and goods that is physically constrained to fifty inches (50") or less wide.

TRAVELED WAY means the portion of the roadway for the movement of vehicles, exclusive of Shoulders and auxiliary lanes.

EXHIBIT A

GUNNISON COUNTY PUBLIC WORKS DEPARTMENT SCHEDULE OF FEES

ALL FEES DUE IMMEDIATELY

Access Permit:

Review of existing access or modified site plan	\$100.00 / occurrence
Driveways up to 150 feet	\$809.00
Driveways from 150 feet up to 600 feet	\$1,091.00
Driveways over 600 feet	\$1,733.00
Final re-inspection fee	\$500.00

Reclamation Permit \$688.00

Reclamation Permit Bonding (Deposit) - Refundable

Initial 10,000 square feet of disturbance	\$1,500.00
Each additional 1,000 square feet	\$200.00

Special Transport Permit (Oversize/Overweight)

Single Trip Permit	\$30.00 - \$125.00 plus \$10 per axle for overweight
Annual Permit	\$250.00 - \$650.00

Revocable Right-of-way Permit \$281.00

Utility Permit \$839.00 + \$2,500.00 security
deposit for first 500 feet + \$5.00 /
linear foot after

Final re-inspection fee \$500.00 / occurrence

Vacation of a Street or Alley \$1,565.00

Waiver of Standards \$300.00 / occurrence

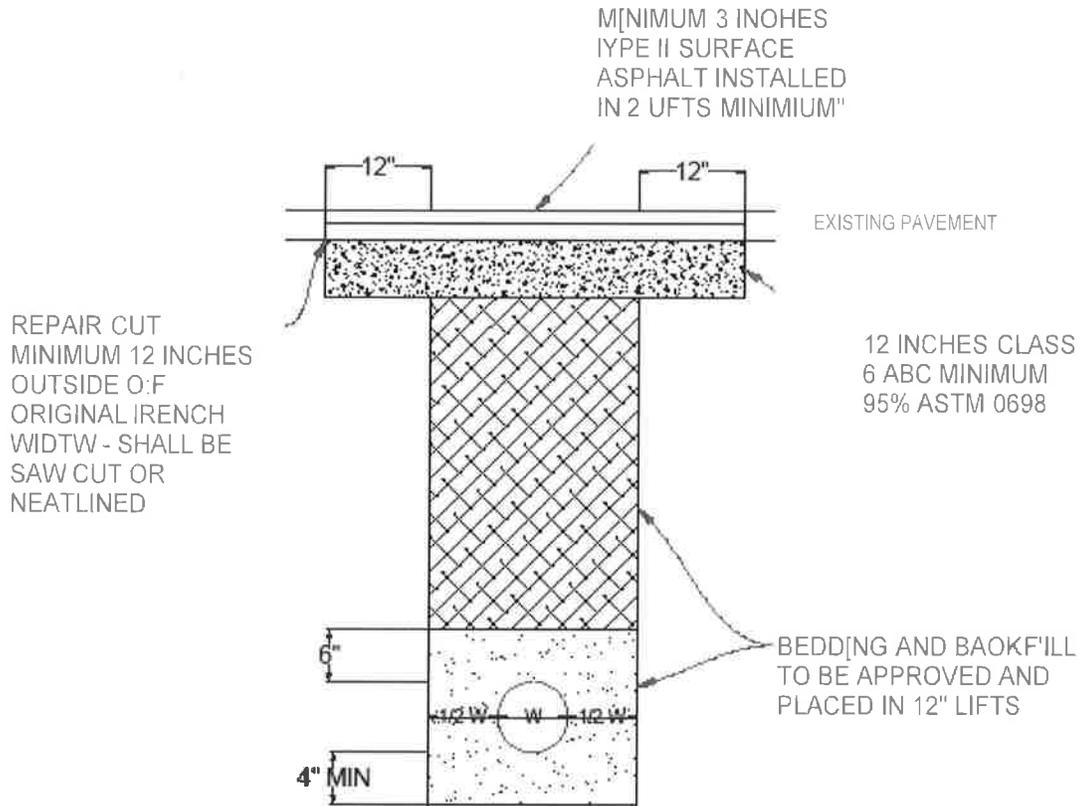
Stop Work Order Fee \$722.00 / violation + any hourly
violation fees incurred**

Violation Hourly Rate \$205.00**

**** Additional cost of office materials, advertising, postage, or staff time will be extra
Fees adjust accordingly every year based on CPI**

FIGURE 4-1

TYPICAL ROAD CUT RESTORATION AND BACKFILL



NOTES

1. SAW CUT SHALL BE FULL DEPTH OF EXISTING PAVEMENT SECTION.
2. TYPE II SURFACE ASPHALT LIFTS SHALL BE ADJUSTED ACCORDINGLY.

T-PATCH REPAIR

TABLE 3-1
SUMMARY OF ROADWAY DESIGN ELEMENTS

Functional Classification	Average Daily Traffic	Minimum Right-of-Way Width	Rights-of-Way Width High-Snow	# of Lanes	Lane Width	Shoulder Width Each Side	Curb & Gutter Ped. Path
Major Arterial (Paved)	3000+	100'	120'	2-3	12'	4'	2'/5' (Optional)
Suburban Com/Ind Collector (Paved or Gravel)	0-500	60'	100'	2	12'	4'	2'/0' (Optional)
Suburban Lane (Paved or Gravel)	13-500	60'	100'	2	10'	2'	
Rural Arterial (Paved)	1000-2999	80'	100'	2	11'	2'	2'/0' (Optional)
Rural Collector (Paved)	500-999	60'	80'	2	11'	2'	
Rural Local (Gravel/Paved)	200-499	60'	80'	2	10'	2'	
Rural Lane (Gravel)	30-199	60'	80'	2	10'	1'	
Local Intermittent *(Native/Gravel)	13-90	60'	80'	2	8'	0'	
Primitive Recreation Road	N/A	40'	40'	1	8-16'	0'	

* Single lane roads with turnouts used for low volume traffic. Turnouts shall be intervisible.

High-Snow areas are when the Design Ground Snow Load is equal to or greater than 90 pounds per square foot for adjacent properties as determined by the building department, using the Structural Engineers Association of Colorado, Colorado Ground Snow Map.

TABLE 4-1
PAVEMENT DESIGN REGIONAL FACTOR

Annual Precipitation

18" – 23"	0.00
14" – 17"	-0.25
Less than 14"	-0.50

Elevation

Over 9500	1.50
8500 – 9500	1.00
7500 – 8500	0.50
Less than 6500	0.25

Drainage

*Very Poor	1.00
Poor	0.50
Fair	0.25
Good	-0.25

* High groundwater table

Frost

**Frost boils in area	3.00
**Frost susceptible soil, frost penetration over 28"	1.00
Frost susceptible soil, frost penetration under 28"	0.25

** Moisture available when subject to frost action

The Minimum Regional Factor shall be no less than 2.00.

Other conditions that may influence the choice of regional factors are:

1. Elevation of the grade line, especially in swampy areas where the roadbed soils may be saturated for long time periods.
2. Number of freezing and thawing cycles during winter and early spring.
3. Steep grades with large volume of heavy trucks.
4. Areas of concentrated turning and stopping movements, such as bus stops, etc.

TABLE 4-2
PAVEMENT DESIGN STRENGTH COEFFICIENTS

Component	Limiting Test Criteria	Coefficient
Plant Mix Seal		0.25
Hot Bituminous Pavement	Rt \geq 95	0.44
“ “ “	Rt = 90-94	0.40
“ “ “	Rt = 87-89	0.35
“ “ “	Rt = 84-86	0.30
“ “ “	Rt \leq 83	0.25
Road Mix Bituminous Pavement		0.20
Existing Bituminous Pavement		0.20 to 0.44
Plant Mix Bituminous Base	Rt \geq 90	0.34
“ “ “	Rt = 85-89	0.30
“ “ “	Rt = 80-84	0.25
“ “ “	Rt \leq 79	0.22
Aggregate Base Course [A.B.C.]	“R” \geq 84	0.14
“ “ “	“R” = 78-83	0.12
“ “ “	“R” = 70-77	0.11
“ “ “	“R” \leq 69	0.10
Emulsified Asphalt Treated A.B.C.	Rt \geq 95	0.23
“ “ “	Rt = 90-94	0.20
“ “ “	Rt = 84-89	0.15
“ “ “	Rt \leq 83	0.12
Cement Treated A.B.C.	7-day test \geq 650 psi	0.23
“ “ “	7-day test = 400-649 psi	0.20
“ “ “	7-day test \leq 399 psi	0.15
Hydrated Lime Treated A.B.C.	“R” = 84	0.14
“ “ “	“R” = 78-83	0.12
Borrow Material		0.10 *

* Used only to determine a value of strength for layers of soil and/or borrow material which are located above the soil layer from which the soil support value of the subgrade is determined.

NOTE: The minimum strength coefficient for the Base Course on highways having a current ADT volume of 750 or greater shall be 0.12.

TABLE 4-3

PERMISSIBLE VELOCITIES FOR ROADSIDE DRAINAGE DITCHES

Roadside channels with erodible linings Major (earth; no vegetation):	Minor and Design Storm
Soil Type or Lining Fine sand (noncolloidal) Sandy loam (noncolloidal) Silt loam (noncolloidal) Ordinary firm loam Fine gravel Stiff clay (very colloidal) Graded, loam to cobbles (noncolloidal) Graded, silt to cobbles (noncolloidal) Alluvial silts (noncolloidal) Alluvial silts (colloidal) Coarse gravel (noncolloidal) Cobbles and shingles Shales and hard pans	Permissible velocity (fps) 2.5 2.5 3.0 3.5 5.0 5.0 5.0 5.5 3.5 5.0 6.0 5.5 6.0
Roadside channels, lines with various grass covers (uniform stand; well maintained)	
<p>LOW ELEVATION (< 8,500 FT)</p>	
<p>Dry areas with well-drained (often more sandy or shallow) areas dominated by lower-growing sagebrush and sparse vegetation. Low amounts of flowers and moderate levels of bare soil.</p> <p>Area examples: Antelope Hills, Parlin, Doyleville, Hartman Rocks.</p> <p>Seed Mix: Sheep Fescue-1, Sandberg Bluegrass-1, Western Wheatgrass-4 (Totaling 6 lbs/acre). May add Indian Ricegrass and Bottlebrush Squirreltail.</p> <p>Use crested wheatgrass in areas where other species are not taking.</p>	
<p>MID ELEVATION (8,500-9,500 FT)</p>	
<p>Slightly higher in elevation, but still dominated by sagebrush. More robust grass cover and a moderate diversity of flowers. Areas will have snowberry interspersed throughout, indicating a slightly higher moisture regime. Soils are deep (greater than 3 ft).</p> <p>Area examples: Mid-Ohio Creek, Powderhorn.</p> <p>Seed Mix: Western Wheatgrass-4, Sandberg Bluegrass-1, Indian Ricegrass-3, Squirreltail-1 (Totaling 9 lbs per acre).</p>	

HIGH ELEVATION (9,000-10,000 FT)

Areas where sagebrush is still dominant, but where pockets of aspen begin to come in. Grasses & flowers are prevalent, and bare ground is very low. The soil is deep and dark, but still well-drained.

Area examples: Arrowhead, CB South, Upper Ohio Creek, Crested Butte

Seed Mix: Western Wheatgrass 36%, Slender Wheatgrass 55%, Canby Bluegrass 9% (Totaling 11 lbs/acre)

TABLE 5-1

COMPACTION REQUIREMENTS

A. Minimum Requirements for Compaction of Embankments and Subgrades

Density, Percent of AA

Class of Soil (ASSHTO M145)	Under 50 ft(a) High	50 ft & Over	Subgrade
A-1, A-3	95	95	1 0 0
A-2-4, A-2-5	95	95	1 0 0
A-2-6, A-2-7	95	(b)	9 5
A-4, A-5, A-6, A-7	95	(b)	9 5

(a) 1 ft = 0.3048 m.

(b) Use of these materials requires special attention to design and construction and shall be specified by the design engineer and approved by the County Public Works Department.

B. Minimum Requirements for Compactions of Utility Trenches

Material	Density Percent	AASHTO Standard
Bedding Material	90%	T-99
Backfill	95%	T-99

TABLE 5-2
REQUIRED QUALITY CONTROL TESTS

Item	Type of Test	Minimum Test Frequency
Subgrade and Embankment	Moisture-Density Curve	1 per soil type
Compaction	In-Place Density	1/3, 400 sq.ft./lift*
Aggregate Base Course or Subbase Course	Gradation	1/1,000 ton or fraction thereof on each class
	Moisture-Density Curve	1/source on each class
	In-Place Density	1/200 ton*
Hot Bituminous Pavement	Asphalt Content	1/500 tons or 2 per project whichever is the lesser
	Gradation	Aggregate-minimum of 2/source
Sidewalks and Curbing (Concrete)	Compressive Strength	1 set cylinders (4) per 1,000 sq. yds. Of sidewalks and/or 2,000 In. ft. of curbing, minimum 1 set per project
	Slump & Air Content	1 per set of cylinders and as often as needed for quality control
Utility Trench Backfill	In-Place Density	1/400 In. ft. of trench; or 1/branch of section if <400 ft. ½ ft. vertical lift of backfill material (First test ≤ 2 ft. above the pipe, last test at pavement subgrade or 6 in. below ground surface on unpaved areas)
Manholes/Structures Compaction	In-Place Density	1/structure per 2 ft. vertical lift

***Failing areas are to be retested**

All testing shall be done in accordance with the most recent edition of AASHTO Test Standards.