

ORDINANCE #10

Meade County Roads, Streets and Highway Systems

Revised July 2009

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REVISION: JULY 8th, 2009

ARTICLE 1. POLICY AND PURPOSE

POLICY

The intent of this ordinance is to establish a uniform County Road, Street and Highway System including acquisition, construction and maintenance for all public roadways under the jurisdiction of the Meade County Board of Commissioners.

No road fund labor, equipment or material shall be used on roads that have not been approved for maintenance. The County Road System will be listed on the official County Road Inventory, which will be maintained by the Meade County Highway Superintendent and shall be on file with all affected departments. No resources, including labor, equipment and material, other than for routine maintenance, will be used for engineering, surveying, right-of-way acquisition, road upgrade or other projects unless pre-approved by the Board of County Commissioners as being part of an approved road project.

SECTION 1.01- PURPOSE

- A. To establish a uniform County Road, Street and Highway System including construction and maintenance for all public and private roadways within Meade County.
- B. To stipulate the condition under which roads would be accepted or retained as "County Roads".
- C. To insure that County Roads serve the greatest number of people in the most equitable way within our resources.
- D. To reserve the prerogative of the Board of Commissioners to exercise its best judgment to solve problems that are unforeseeable in this Ordinance.

SECTION 1.02- DEFINITIONS

- A. **ADTC:** Average Daily Traffic Counts.
- B. **APPROVED FOR MAINTENANCE:** Roadways which have been included in the road inventory as eligible for maintenance.
- C. **COUNTY ROAD SYSTEM:** Roads that have been adopted and included in Meade County's Highway Department official road inventory.
- D. **DEDICATED PUBLIC RIGHT-OF-WAY:** Strip of land dedicated to the public for a road or street including utilities, above or underground, (not wind or cell towers or any tower structure).
- E. **ESTABLISHED COUNTY HIGHWAY/ROAD:** Establishment is the formal process that occurs by the Board of County Commissioners for the purpose of construction or improvement of a public road including developing a road in a Section Line right-of-way. The County may choose to develop a road for the citizens of Meade County.
- F. **FEDERAL AID SECONDARY ROADS, FAS ROADS:** now will be referred to as "Major Collector Roads" which include Urban and Rural Arterials, Urban and Rural

Collectors, Highway Service Roads and/or Streets on the Meade County Road System. The highways designated for improvement with secondary federal aid funds.

NOTE: South Dakota Codified Laws, Chapter 31 and 32, define the source and use of revenue applicable to County Roads.

G. PRIVATE ACCESS ROADS OR STREETS: Private Access roads or street are roads or streets used by the property owners who live or who own property off of the designated road or street. These roads or streets are lightly traveled and may have a reduced surface width if recommended by the Planning Commission and approved by the Governing Board of Commissioners, although not preferred by the County, and would not be considered or looked upon as a road or street used by the general public. All Private Access Roads or Street must have a minimum of a 66' foot right-of-way easement regardless.

H. PRIVATE USE ROADS: Roads that are built on private property for private use only; for example, roads built on agricultural land to get to pastures or fields, roads built within a campground, driveways etc.

I. PUBLIC ROADWAYS: The entire width of property held for any road or street under the approval of the Meade County Board of Commissioners dedicated as a public right-of-way, whether held by deed, easement, dedication or other claim of right, including bridges.

J. ROUTINE MAINTENANCE: The process of patching asphalt, blading and shaping shoulders, blading gravel roads, placing plating material as needed, mowing weeds, cleaning ditches, sweeping road surfaces, placing traffic control devices, and other similar type activities.

K. ROAD INVENTORY

The Meade County Highway Superintendent shall prepare and maintain an official road inventory, which lists all roads in the County Road System, identifies the roads approved for maintenance, and the level and priority of maintenance. The official road inventory shall be reviewed and updated each year.

L. RIGHT-OF- WAY ACQUISITION

County resources may be used to obtain title for right-of-way necessary for approved projects. No construction shall commence prior to right-of-way acquisition. All right-of-way projects must be approved by the Board of Meade County Commissioners.

M. RIGHT-OF-WAY CONSTRUCTION

No construction of new public roads or improvements to existing public roads within road rights of way shall occur until an Approach or Construction Permit is obtained.

N. ROAD SURFACE THICKNESS: shall be the measured thickness of gravel or asphalt or similar after the designated compaction has been met.

O. UTILITY PERMIT

No public utility or other person shall dig trenches or remove trees within the right-of-way of a public road or cut into the surface of any public road in the County for the purpose(s) of installation, maintenance or repair of utilities until a Utility Permit has been issued by the Meade County Highway Superintendent and notice has been given in writing to the Meade County Highway Superintendent of the location, nature and duration of operation. The Meade County Highway Superintendent shall require appropriate surety before Utility Permit is issued, unless it is waived by the Governing Board of Commissioners.

P. TOWNSHIP HIGHWAYS

The secondary highways in organized townships that are administered by a Board of Township Supervisors

ARTICLE 2. ROAD CLASSIFICATIONS AND MAINTENANCE

COUNTY HIGHWAY SYSTEM – Definition: The County Highway System shall be the principal, or primary, highway system in Meade County. It is the system designated by the Board of Commissioners and approved by the State Department of Transportation Commission. This system of highways will include all FAS (major collectors) roads. This system of roads provides access to the major geographical areas. Road or Street designations will be determined from Meade County’s Transportation Plan.

SECTION 2.01 - ROAD/STREET CLASSIFICATION:

1. ARTERIALS: Arterial roads or streets used primarily for heavy traffic and serve as an arterial traffic way.

Two types of arterial roads are within Meade County:

- Rural Arterials – Standard minimum 24 foot Gravel Surface with 2 foot shoulders
- Urban Arterials- Asphalt paved roads that in most cases will have a minimum paved surface of 24 feet with 4 foot shoulders.

2. COLLECTORS: The County Secondary Road System represents the second level of County Roads. Roads or Streets that carry traffic from minor streets to the major systems, arterials, highways, and the principal entrance streets of high density residential and commercial lots. Those streets that perform a semi-arterial function as well as serving as distribution and land access streets. They are basically local streets that usually, because of more directness of routing and higher capacity than other local streets, receive higher volumes of traffic to be distributed from or collected toward nearby arterial roads or streets.

Two types of collector roads are within Meade County

- Rural Collectors – Standard 24 foot Gravel Roads with 2 foot shoulders
- Urban Collectors- Asphalt paved roads in most cases will have a minimum surface of 24 feet with 2 foot shoulders.

3. HIGHWAY SERVICE ROADS OR STREETS: Roads or Streets which are parallel and adjacent to Interstates or State Highways and which provide access to abutting properties and protection from through traffic; 24 foot minimum surface with 2 foot shoulders.

4. LOCAL ROADS OR STREETS: Minor roads or streets contained in a public right-of-way, privately maintained or maintained by a road district, which are used primarily for access to more that one parcel or lot.

SECTION 2.02 - GENERAL ROAD AND STREET CRITERIA

1. Criteria: Meets the criteria of Ordinance #10, specifically Sections 201 and 301. Must be located on legally established dedicated public right-of-ways as follows:
2. Dedicated public right-of-ways must be one-hundred foot wide (100') for urban and rural arterials, eighty foot wide (80') for urban and rural collectors and sixty-six feet (66') wide for local roads or streets unless within a High Density Multi-Family-Residential subdivision where a fifty foot (50') dedicated public right-of-way is acceptable, references made from the Meade County Transportation Plan or Ordinance No. 20.
3. Minimum Standard Lane Width shall be 12.0' (feet); on all new County Roads except Private Access Roads or Streets; that may be allowed which have a narrower width approved by the Governing Board of Commissioners.
4. Minimum Shoulder Width shall be 2.0' (feet) from the edge of the road and on all new County Roads if the truck traffic exceeds 40%, the Minimum Shoulder Width shall be 4.0' (feet) from the edge of the road.
5. Local Roads and Streets – Standard public access – 24 foot gravel roads with 2 foot shoulders.

B. Private Access Roads and Streets – The surface width preferred is 24 feet however **the developer** of a Private Access Road or Street may request a variance in the surface width from 12 foot to 24 foot based on an estimated Average Daily Traffic Volume (ADTV), and providing information and documentation that no further subdivision will occur along the Private Access Road. Requests for a Private Access Easement along with the road or street will be considered on a case by case basis with the recommendation of the Planning Commission and approval of the Governing Board of Commissioners.

1. Private Access Roads or Streets must provide access to every property that touches the private access easement.

C. Engineered Alternatives apart from Meade County's standards set forth in this Ordinance, for a Local Road and Street, designed by a Professional Engineer, will be considered by Meade County Equalization Planning Department, the Planning Commissioners and Governing Board of Commissioners, based on the information presented. Meade County reserves the right to make a determination on a case by case basis and in approving or denying a request for an engineered alternative road or street does not set a precedent.

D. Gates shall not be placed across Private Access Roads or Streets unless the road or street accesses an approved Gated Community (Ordinance No. 20).

6. All new **public and private access roads (not private use roads) shall have a platted right-of-way or statutory right-of-way or a combination thereof.**

SECTION 2.03 - COUNTY MAINTENANCE

1. MAINTENANCE ON COUNTY ARTERIALS

Maintenance Level: Priority 1 – full maintenance and snow removal service on all major County Roads within the Meade County Highway System.

Restrictions:

- 1) Budget;
- 2) Available resources- manpower – equipment – material.

2. MAINTENANCE ON COUNTY COLLECTOR ROADS OR STREETS

Maintenance Level: Priority 2 - full maintenance and snow removal service.

Restrictions:

1. Priorities: Second to Arterials;
2. Budget;
3. Available resources – manpower – equipment – material.

3. MAINTENANCE ON HIGHWAY SERVICE ROADS OR STREETS

Maintenance Level: Priority 3 – Maintenance and snow removal will be as determined by the Highway Department, but generally will be maintained by South Dakota Department of Transportation.

Restrictions:

1. Priority;
2. Budget;
3. Available resources – manpower – equipment – material;
4. Restricted level of service.

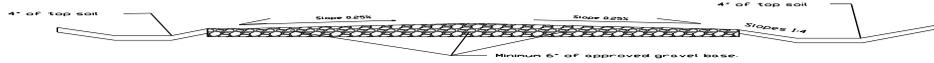
4. MAINTENANCE ON LOCAL ROADS OR STREETS

Maintenance Level: Priority 4 - Roads, streets, lanes, alleys and trails that access subdivisions will not receive maintenance or snow removal. Maintenance and snow removal service will be provided only under emergency situations as determined by the County Highway Superintendent, or as directed by the Board of Commissioners. The legally established Road District or individual will be responsible for all maintenance.

ARTICLE 3. CONSTRUCTION STANDARDS

SECTION 3.01 – MINIMUM CONSTRUCTION STANDARDS

1. Meade County has adopted South Dakota Department of Transportation Standard Specifications for Roads and Bridges 2004 as the County's Standard Specifications and more current versions of the South Dakota Department of Transportation Standard Specifications will automatically be adopted and will supersede any previous version.



SECTION 3.02 - TYPICAL ROAD/APPROACH DETAIL

1. The above Typical Road Section and Typical Approach Detail shall be followed in the construction of roads to be placed in Meade County. Road design shall be consistent with the current published Standards of the American Association of State Highway Transportation Officials. Road construction materials and methods shall conform to the current published edition of the “Standard Specifications for Roads and Bridges” of the South Dakota Department of Transportation, Division of Highways, when referenced in the Standards below. Copy of this Specification is on file at the County Highway Department Office.

The following are Standards which shall be met:

- A. Maximum grade of any road or portion of road shall not exceed ten percent (10%), (12%) for designated Mountainous Subdivision roads or streets.
- B. Maximum degree of Curvature shall not exceed twenty-one degrees (21%),
- C. Minimum Crown Rate shall be 4% for gravel road surfaces, 2.5% for asphalt or blotter road surfaces and 2% for concrete road surfaces. Maximum Super-elevation Rate in curves shall meet current AASHTO Standards.
- D. Culverts shall be sized to assure proper drainage. The minimum size of culvert shall be fifteen inches (15”) in diameter, although eighteen inches (18”) is preferred. Requirements of Section 45Q of the “Standard Specifications” shall be met.
- E. Gravel Surfacing shall meet requirements of Section 290 of the “Standards Specifications” with a minimum gravel thickness of six (6) inches.
- F. Asphalt and Concrete construction methods and materials shall meet the requirements of Sections 320, 380, and 460 of the “Standard Specifications”.
- G. All Dead End Roads shall have cul-de-sacs with a minimum radius of fifty feet (65’).
- H. Approaches shall be constructed perpendicular and level to the County Road.
- I. Minimum Dedicated Public Right-of-way for all roads constructed after the Effective Date of this Ordinance shall be sixty-six feet (66’) in width for local streets or roads, eighty feet (80’) for Rural and Urban Collectors and one-hundred (100’) for Rural and Urban Arterials.

SECTION 3.03 – SUBDIVISION ROAD AND STREET STANDARDS

- 1) Street Width- hard-surface roads shall be measured from curb back to curb back and will be in accordance with Meade County’s Transportation Plan. Gravel roads shall be constructed to Meade County specifications.
- 2) The arrangement, character, extent, location and grade of all streets shall be in accordance with good land planning principles and shall be considered in their relation to

existing and planned streets, to topographical conditions, orientation to vistas, to public convenience and safety, and in appropriate relation to the proposed uses of land to be served by such streets.

- 3) The street pattern shall lead traffic toward local shopping and neighborhood centers and to main thoroughfares; however, the number of streets which would tend to promote congestion converging upon any one point shall be held to a minimum. Creation of a 'Five-Points' shall not be permitted.
- 4) The street pattern shall be in conformity with a plan for the most advantageous development of the entire neighboring area. Sufficient proposed streets shall be extended as far as the boundary lines of the tract to be subdivided in order to ensure normal circulation of traffic within the vicinity. Land abutting a proposed subdivision shall not be left land-locked by such proposed subdivision.
- 5) The street layout shall include residential collector and local residential streets when necessary. This should or will reduce the number of intersections of local residential streets with through streets and crossings of railroad tracks.
- 6) Local residential streets in the subdivision shall be laid out in a way that their use by through traffic will be discouraged.
- 7) Subdivisions which abut or include within the proposed area to be subdivided any highway or arterial street, or county road, shall provide: Marginal Access Street, or Frontage road with no less than five hundred (500) feet between approaches on to any County Road or highway, thoroughfare or any road designated by the governing board as having potentially heavy traffic flow. This does not apply to roads designated as minor streets (such as dead end cul-de-sacs which may be spaced at 150 feet), or reverse frontage with screen planting contained in a non-access reservation along the rear property line, or deep lots with rear service drives, or other treatment as may be necessary to adequately protect residential properties and to afford separation of through and local traffic. (See Section 3.06 – Approaches)
- 8) Intersections of local residential streets with arterial streets shall be held to a minimum and should be at right angles.
- 9) Intersections of local residential streets with arterial streets including approaches and driveways shall be held to a minimum and should be at right angles.
- 10) Unusable reserve strips controlling access to streets shall be prohibited.
- 11) Where there is a dedicated or platted half-street adjacent to the tract to be subdivided, the other half shall be platted. No new half-streets shall be permitted.
- 12) Streets designed to have one end permanently closed shall be provided at the closed end with a turnaround having a minimum right-of-way diameter of one hundred thirty (130) feet and a minimum roadway diameter of one hundred (100) feet. Between the street and the circle, there shall be a sixty-five-- (65) foot reverse radius unless otherwise approved.
- 13) A cul-de-sac length will be measured from centerline intersection to center point cul-de-sac. Length shall be dependent on density level and should be kept to a minimum. Length may range from a minimum 500 ft on high density to a maximum of 1,320 feet on

low or rural development. Consideration for alternate routes of ingress and egress must be demonstrated and approved prior to preliminary approval.

- 14) Street jogs with centerline offsets of less than one hundred twenty-five (125) feet shall not be permitted. In no case shall a jog be permitted on an arterial street or highway.
- 15) Maximum grades of any roadway shall not be greater than 10% except for roads or streets that are within a designated mountainous subdivision (Ordinance No. 20), which may have a maximum grade of 12%. A variance may be granted for a steeper grade if it is presented and determined by a Professional Engineer that extreme topographical changes make it an unreasonable hardship to the developer to meet the maximum required grade.
- 16) Vertical curves shall be such as to prevent abrupt changes and shall be as approved by the County Highway Superintendent.
- 17) Alignment and visibility conditions:
Minimum radii or horizontal curvature on the centerline shall not be less than 100 feet.
- 18) Tangents between reverse curves shall be as approved by the County Highway Superintendent or the Planning Official.
- 19) Angular breaks in right-of-way alignment of more than two degrees are not permitted. Street pavement and curbs shall be curved in all cases.
- 20) Visibility - clear horizontal visibility, measured along the centerline, shall equal or exceed the AASHTO Standard for the design speed of the road or street.
- 21) Where there are roads in existence, engineering plans for right-of-way must be so designed as to contemplate elimination of bends, crooks, and other undesirable hazardous conditions.
- 22) Thirty-Two (32) foot Hard Surface streets are required for all High Density, Modified High Density, Commercial and Multi-residential subdivisions and, Twenty-Four (24) feet of driving surface will be required for all other subdivisions as a minimum. However, in rare cases requirements for Rural Subdivisions roads widths may be narrowed based on the determination of the number of dwellings and/or building sites or lots that are served, which will be decided by the Board of Commissioners.
- 23) Five (5) or more dwellings will require a minimum of a 66' dedicated public right-of-way and a minimum driving surface of 24' or as otherwise outlined within this ordinance.
- 24) Streets with 5 or more lots must have two points of ingress and any subdivision of five (5) or more lots, where the lot size is less than 9.0 acres, shall make provision for two (2) separate points of access/egress. Each point must terminate on an approved road as designated by the highway superintendent or planning coordinator.
- 25) Submission of a grading plan showing existing conditions and a detailed design for intersections which are either unusual, or are located on difficult terrain, may be required by the Planning Department and/or highway superintendent.
- 26) Acute angles at street intersections are to be avoided. In no case will an angle of less than eighty (80) degrees be permitted.

- 27) Property lines at arterial street intersections shall be rounded with a radius of twenty-five (25) feet. An increased radius shall be required when the angle of intersection involves an arterial street.
- 28) Roadway and curb intersections shall be made concentric and shall be rounded by a radius of not less than twenty-five (25) feet.
- 29) Alleys may be required in commercial and industrial districts, except that the Planning Commission may waive this requirement where other definite and assured provision is made for service access, such as off-street loading, unloading and parking consistent with Ordinance No. 20 and this Ordinance requirement. Such alleys shall have a minimum of 20 feet right-of-way and shall be dedicated to the public as right-of-way.
- 30) Alleys are not permitted in residential districts except when the Planning Commission determines special conditions warrant a secondary means of access.
- 31) Driveways or part thereof that are within or intersect a public right-of-way shall have a maximum grade of 2% (percent) within the right-of-way.
- 32) Existing Drainage across or through any property or public right-of-way shall not be altered or interrupted which would reduce the existing storability, velocity or flow (Q).
- 34) All asphalt surface roads, streets and alleys shall be designed and constructed in accordance with South Dakota Department of Transportation Standard for Road and Bridges and in accordance with the Professional Engineer design for the road or street. Such construction will be subject to inspection by the Meade County Highway Superintendent and/or the Planning Official. Asphalt shall be compacted to 95% maximum density. Alternative surfacing to be approved by the Meade County Highway Superintendent and/or Meade County Planning Official with the final approval of the Governing Board of Commissioners.
- 35) All Portland Cement Concrete Pavement shall be in compliance with the current South Dakota Department of Transportation Standard Specifications for Roads and Bridges found in Part "D" Rigid Pavement, and must be designed by a Professional Engineer.
- 36) All gravel used for the construction of roads, streets or alleys must comply with Meade County Highway Department specifications for gravel road base or granular base, which also meets the requirements of the current South Dakota Department of Transportation Standard Specifications for Roads and Bridges Part "B" Granular Bases & Surfacing.
- 37) Scarified testing will be required for gravel surfaces at a depth of six (6) to eight (8) inches with a 95% compaction rate.
- 38) Standard "P" & "C" type curbs and gutters shall be placed on both sides of all streets in all required subdivisions. Concrete curb-walk (curb, gutter and sidewalk poured as one) may be used as an alternate. All design and material specifications shall be in compliance with the current South Dakota Department of Transportation Standard Specifications for Roads and Bridges and are the responsibility of the developer and/or subdivider.
- 39) Deceleration and turn lanes on any required road or street, based on the Meade County Transportation Plan and requirements of Ordinance No. 20, shall be a minimum of twelve (12') foot wide or the width of the existing lane of a County Road, whichever is greater in width and comply with current published Standards of the American Association of State

Highway Transportation Officials and the current South Dakota Department of Transportation Standard Specifications for Roads and Bridges.

SECTION 3.04 – FINAL APPROVAL OF ROAD/ STREETS – ESTABLISHED MAINTENANCE

1. The Meade County Highway Superintendent and/or Planning Official will not approve any constructed roads and streets unless it has been designed and it meets one of the following:
 - A. There is evidence that a Road District has been established in accordance with SDCL 31-12A or
 - B. A legally binding agreement has been filed with the Equalization and Planning Department guaranteeing sufficient financial commitment to maintaining the road or street or the same under an established Home Owners Association or
 - C. The road or street has been adopted into the Meade County Highway System.

SECTION 3.05 – ROAD/STREET SIGNS

- A. The County Highway Superintendent shall determine the need for road signs on County Roads or entries to County Roads and shall erect and maintain such signs.
- B. Developers of Road and Streets into and for subdivisions, including Private Access Roads shall be financially responsible for the placement of road and street signs. The placement of such signs will be \$150.00 per sign placement including labor and materials. Payment will be required prior to issuing any Building Permits. If the developer wishes to erect the road/street signs, the developer will consult with the Meade County Highway Superintendent on the specifications for the sign and erection of the sign thereof. The road/street signs must be installed before any building permits are issued and the road is opened for traffic. All street and road signs must meet MUTCD Standards, and must be ordered from the Meade County Highway Department and paid for by the developer.

SECTION 3.06 – APPROACHES

- A. Property owner must construct an approach according to County specifications and current policy, and is responsible for cost of construction and maintenance.
- B. An Approach Permit is required for all approaches and an Application shall be completed for all approaches including drive-ways. The cost of the application shall be \$85.00. The approach location must be approved by the County Highway Superintendent or his or her representative and must be approved after construction is completed. Approach permits can be obtained in the Equalization and Planning Department office.
- C. Approaches on arterials and/or collectors will be spaced at a minimum of 500 feet from the nearest existing approach in either direction. Approaches on Local Roads or Streets that are dead end roads or streets or local roads or streets with an Average Daily Traffic of 65 vehicles a day or less may be spaced a minimum of 150 feet from the nearest existing approach in either direction. Clear sight distance on all roads and streets in Meade County may dictate a greater spacing requirement which will be determined by the Meade County Highway Superintendent.

SECTION 3.07 – APPENDICES FOR EROSION CONTROL, COMPACTION, DRAINAGE AND TYPICALS.

1. The appendices containing regulations for Erosion Control, Compaction Control and drainage are a part of this Ordinance.
2. Typical South Dakota DOT plates and cross sections with the Meade County Transportation Plan adopted by Meade Highway Department, (See Appendix B).

SECTION 3.08 – SECTION LINE ROADS

1. Proposed section line roads (**or improvements**) must first be reviewed by the Meade County Highway Superintendent and then a formal request made to the Governing Board of Commissioners by the developer.
2. Once the formal request is made by the developer the Governing Board of Commissioners will set a public hearing date.
3. 14 days before the public hearing date, the developer must notify all **contiguous** land owners on both sides of the proposed section line **improvement** that will state their intent, will state the date and time of the public hearing, describe what section line is **proposed to be improved** and the **length** of the proposed improvement and list a phone number of the developer where they can be contacted for information.
4. Proposed section line roads, if approved, must meet the Meade County Construction Standards of a section line road in accordance with this ordinance and the Meade County Transportation Plan. At a minimum there must be a 24 foot driving surface with two (2) foot shoulders; exact width will be determined based on the road or street classification assigned by the Planning Official in conjunction with the Highway Superintendent in conformance with the Meade County Transportation Plan.
If a variance is requested by the developer for the section line improvement, then all the land owners along and on both sides of each section line that is proposed to be improved shall be notified including land owners along and on both sides of the section line one mile beyond the end of the proposed improvement, in the direction of the improvement.
5. A determination will be made by the Meade County Highway Superintendent and Equalization and Planning Department what functional class the proposed section line road should be and a recommendation will be made to the Governing Board of Commissioners during the time of the public hearing.
6. **A bond must be posted with the Meade County Equalization & Planning Department equal to 1.5 times the written estimated construction costs of the approved section line road before any construction activities begin; bonding may be waived by the Governing Board of Commissioners**

SECTION 3.09 – ROAD AND STREETS TO BE DESIGNED BY AN ENGINEER

1. Arterial and Collector roads or streets, including Section Line Roads, must be designed and sealed by a Professional Engineer.
2. Certified geotechnical tests are required throughout all the road or street building process, frequency to be determined by the geotechnical engineering company or design engineer.
 - a. Copies of certified geotechnical tests need to be mailed to the Meade County Highway Superintendent and the Meade County Equalization and Planning.

ARTICLE 4. REQUESTS FOR COUNTY ADOPTION OF ROADS OR STREETS

SECTION 4.01 – ROAD ADOPTION

- A. Consistent with the purposes stated above, the various criteria following will qualify a road for consideration for acceptance as County Roads, but does not guarantee acceptance. The Board of Commissioners may waive elements of the stated criteria in unusual circumstances to avoid absurdity or hardship, but shall exercise its discretion in every case by an action of majority of the Board, recorded in its minutes.

SECTION 4.02 – CATEGORY OF ROADS THAT GENERALLY WILL BE CONSIDERED FOR ADOPTION AND DESIGNATION AS COUNTY ROADS

- A. Roads that connect one County Road to another County Road.
- B. Roads that connect a County Road to a township, municipality, State or Federal Highway or to a critical area (to be recommended by the Meade County Highway Superintendent with the approval of the Governing Board of Commissioners).

SECTION 4.03 – PROCEDURE FOR REQUESTING ROADS TO BE ADOPTED AND DESIGNATED AS COUNTY ROADS

- A. A written request shall be sent to the County Highway Superintendent or to the Board of Commissioners. Requests shall be complete and include such information as location, length of road, map or plat. Requests shall state that the road meets county specifications. The County Highway Superintendent may request additional information including certification from contractors, engineers and suppliers that County specifications have been met.
- B. The Highway Superintendent shall promptly respond to every written request received. The Highway Superintendent shall make the necessary inspections and request additional information as required. The Superintendent's recommendation shall then be forwarded to the Board of Commissioners including an appreciation of current and reasonably foreseeable recurrent costs involved for their review and action. The Highway Superintendent shall notify the applicant, in writing, of the Board's decision.

SECTION 4.04 – RETENTION OR REMOVAL OF ROADS WHICH DO NOT SATISFY ACCEPTANCE CRITERIA

- A. The process for removing roads is specified in South Dakota Codified Laws, Chapter 31.
- B. The Highway Superintendent shall periodically recommend to the Board of Commissioners any roads, which in his opinion should be considered for removal from the list of County Roads.
- C. Any new roads or streets that are constructed by developers must meet Meade County Standards and must be approved by the Meade County Highway Superintendent or his or her representative. If the new road does not meet the

County's standard specifications, that new road or street must be re-constructed to meet Meade County's specifications or the Highway Superintendent along with the approval of the Meade County Board of Commissioners shall close the road and have it barricaded and it will remain closed until the new road or street is brought up to Meade County specifications and is approved by the Highway Superintendent.

SECTION 4.05 – IMPLEMENTATION

Request for designation of roads as County Roads may exist during the time of preparation and enactment of this Ordinance or revisions thereof. If such roads have already been constructed according to specifications existing before the date of enactment and all revisions to this Ordinance, the County Board of Commissioners shall consider each such application in light of its qualification under the criteria stated herein, and shall exercise its discretion to approve or disapprove each specific application based on any pertinent factors, including previous duly recorded actions of the Board of Commissioners.

ARTICLE 5. MEADE COUNTY TRANSPORTATION PLAN

All information contained with the Meade County Transportation Plan will be considered a part of this Ordinance, including Functional Classes or Roads, future roads, access management, roadway design standards and transportation impacts/financing.

ARTICLE 6. VARIANCES

SECTION - 6.01 VARIANCE PROCEDURE

1. The Meade County Board of Commissioners shall hear and decide appeals and requests for variances from the terms of this ordinance. The board shall base its determination on technical justifications, and has the right to attach such conditions to variances as it deems necessary to further the purposes and objectives of this ordinance.

2. In granting variances, modifications, and approvals, the Governing Board of Commissioners may require such conditions as will, in its judgment, secure substantially the objectives or the standards or requirements so varied, modified, or approved. In granting any variance, the Governing Board of Commissioners shall prescribe conditions that it deems necessary to, or desirable for the public interest. These conditions may include, without being limited to personal, surety, performance, or maintenance bonds, affidavits, covenants, or other legal instruments.

SECTION - 6.02 WRITTEN REQUEST REQUIRED

1. Requests made to the Meade County Highway Superintendent and or Equalization and Planning Department for any such variance shall be submitted in writing by the property owner and/or contractor for consideration by the Planning Commission and the Governing Board of

Commissioners stating fully and clearly all facts relied upon by the petitioner and shall be supplemented with maps, plans or other additional data which may aid the Planning Commission and/or Governing Board of Commissioners in the analysis of the proposed variance.

3. Applications for variance shall be considered by the Meade County Governing Board of Commissioners and they will render its decision at the hearing or no later than forty-five (45) days after the hearing at which the request for a variance was submitted. All variances must be approved by the Governing Board.

SECTION - 6.03 REPORT TO THE COUNTY BOARD OF COMMISSIONERS

For each application for a Variance, the property owner and/or contractor will coordinate with the Administrative Assistant to the Governing Board to set a date and time for a public hearing regarding a variance request.

SECTION - 6.04 PENALTIES FOR VIOLATION OF ORDINANCE NO. 10

1. Violation of this ordinance shall be a Class 2 misdemeanor, and each day's violation shall constitute a separate offense. In addition to the criminal penalty set forth above, the Governing Board of County Commissioners may immediately suspend all of the permits or the construction activities which do not meet the requirements of this Ordinance. If a suspension occurs, the reasons for such suspension shall be clearly stated by the Governing Board. The suspension on permits or construction activities shall be lifted by the Governing Board upon satisfactory approval that the reasons which led to the suspension have been remedied.

ARTICLE 7. SEVERABILITY AND SEPARABILITY

Should any Article, Section, Sub-section or Provision of this Ordinance be declared by a court of competent jurisdiction to be invalid or unconstitutional, such decision shall not affect the validity or constitutionality of this Ordinance as a whole or any part thereof other than the part so declared to be invalid or unconstitutional.

ARTICLE 8. EFFECTIVE DATE

(Revised) Ordinance No. 10 shall take effect and be in force from and after 20 days from the date of completed publication. Adopted this ____ day of _____, 2009.

Dated at Sturgis, South Dakota, this ____ day of _____, 2009.

Chairman Bob Mallow _____
Meade County Commissioner

Attested: _____
Lisa Schieffer, Meade County Auditor

First Reading: April 1, 2008	Revised First Reading: June 3, 2009
Second Reading: June 6 th , 2008	Revised Second Reading: July 8, 2009
Adopted: June 6 th , 2008	Adopted Revisions: July 8, 2009
Published:	Published: August 2009

APPENDICES

APPENDIX A

A. EROSION CONTROL AND SEEDING FOR ALL NEW ROAD AND STREET CONSTRUCTION

The following must be completed to prevent soil erosion as soon as it is practical and possible on all new road and street construction projects. Street and road construction projects include any road and/or street as defined in Ordinance No. 10.

1.0 PRODUCTS TO USE

1.1 Fertilizer:

A. The fertilizer shall be 18-46-0 (N/P/K) content commercial fertilizer conforming to State fertilizer laws or similar approved by the Equalization and Planning Department.

B. Application Rate.

1. Fertilizer shall be applied at 20 lb. acre unless recommended otherwise by the seed supplier.

1.2 Grass Seed Mixture:

Road Ditch Mixture:

1. Mixture.

Oat seed shall be used from April through July and winter wheat shall be used August through November.

2. Application Rate: 56 lbs. per acre unless recommended otherwise by the seed supplier.

3. Quality: Submit labeling of mixture with supplier, origin, purity and germination date.

1.3 Top Soil

A. Thickness: Topsoil thickness shall be 4" in all seeded areas.

1.4 Mulch

A. Hay Mulch: Native or tame grass hay in a friable, air-dry condition.

2.0 EXECUTION

2.1 Procedure:

A. Work procedures shall follow customary practice and shall commence as soon as the site is available and as soon as weather conditions permit.

2.2 Finish Grade

A. Finish grades shall be those shown on the plans and may have a tolerance *of* 0.1 foot. Where no grades are shown, areas shall have a smooth and continual grade between existing or fixed controls (such as walks, curbs and elevations at steps *of* buildings) and elevations shown on plans. All finish grades shall meet approval *of* the Design Engineer and Meade County.

B. Finish grading shall consist *of* uniformly and thoroughly cultivating soil to a minimum *of* 4 inches by approved power equipment. Areas inaccessible to power equipment shall be cultivated by hand.

C. After tilling, all areas shall *be* brought to uniform grade by floating or hand raking. Remove stones or foreign matter over two (2) inches in diameter from top two (2) inches of soil.

D. Soil adjacent to curbs, paved areas or landscape edging shall be finished at one inch below top *of* edging or pavement.

E. Grade lawn areas to finish grades, filling as needed or removing surplus dirt and floating areas to a smooth uniform grade as indicated on the plans. All lawn areas shall slope to drain.

2.3 Fertilizing:

A. Dry Application: Fertilize using fertilizer attachment to seed drill, drilling in advance *of* seeding, or by uniform spreading followed by tilling.

2.4 Seeding:

A. Plant grass in all areas where construction activity has disturbed the natural grass cover *or* where shown on plans. All disturbed areas shall be seeded except those where a different type *of* surface, such as pavement, is specifically shown on the plans. Road Ditch seed mixture shall *be* used in all areas.

B. Prior *to* seeding, the Contractor shall sufficiently water, float and roll seeded areas so as to establish a smooth, uniform, reasonably firm, debris-free surface suitable for seeding.

C. Dry Application: Seeding shall be performed with seed drill equipment.

2.5 Mulching:

A. Hay mulch application rate shall be at 2 tons/acre. Anchor mulch *by* punching or light disking. Mulch shall be uniformly applied such that approximately 10% *of* soil is visible through the mulch, and so that mulch is not excessively thick in any area.

B. Seeding shall be undertaken during one *of* two periods: August 1 through November 15 or April 1 through July 31.

2.6 Maintenance:

A. Contractor shall maintain seeded areas until final project acceptance, including repair *of* erosion, and replacing mulch damaged by wind or other causes.

B. Watering and/or mowing seeded areas by the Contractor after project closeout is not required; however an 80% growth rate is required.

B. COMPACTION CONTROL

1.0 GENERAL

1.1 Description:

1.1.1. Included in this section are the requirements for all compacted fill, including roadway embankments, backfill and road surface material.

2.1 Materials

This material shall be free from dirt, vegetable matter, cinder, ashes, refuse, organic matter, or other unsuitable foreign substance. Frozen material may not be used.

2.0 PRODUCTS

2.1 Use materials as required to accomplish the results indicated and as specified in each section of the work, per Meade County Ordinances.

3.0 EXECUTION

3.1 On-Site Soils

A. The following soil compaction requirements shall be achieved when placing satisfactory cohesive and/or cohesion less embankment materials in 4" to 8" layers and compacting by appropriate means to the designated percentage of maximum dry density as determined by modified Proctor Test ASTM 0-698. Road surface materials as gravel and asphalt must be compacted to 95%.

COMPACTION TYPE 95% OF MAXIMUM DRY DENSITY

(Standard Proctor)

- Trench Backfill
- Footings and Slabs
- Road Surface Materials

B. Water content in cohesive backfill soils shall be adjusted to a value not more than 3% below, nor more than 3% above optimum unless otherwise indicated.

C. Plasticity Index above 20 shall not be permitted. Water inundation of cohesive soils will not be permitted.

COMPACTION TYPE

3.2. The following compaction requirements shall be achieved when placing imported select granular fill material, as shown on the drawings and compacting by appropriate means to the designated percentage of standard method for standard Proctor Test ASTM 0-698.

- A. Compaction shall be in all Locations 95%, (including road beds)
- B. Moisture condition to +/- 3% of the optimum moisture content.
- C. Fill must be placed in 4" lifts unless field results indicate a slightly greater lift can be used at the approval of Meade County Equalization and Planning.

3.3 Compaction Requirements

In the event backfill compaction requirements are not met, the Contractor shall remove fill material, adjust moisture content if required, replace and re-compact until the required density is achieved.

3.4 Field ~ Control

A. Where embankment, backfill or road materials are required to be compacted by a specified density; tests for compliance may be required by Meade County Equalization & Planning Department, at the expense of the Developer/ Owner, using the appropriate test procedures.

Field density tests will be performed in accordance with test procedures established in "Standard Test Methods of Density of Soil in Place by the Nuclear Density Method", ASTM D-2922, or "Standard Test

Methods of Density of Soil-Aggregate/Gravel in Place by Nuclear Methods (Shallow Depth)," ASTM D-2922. The field tests may also be performed using the modified Proctor method.

The Contractor shall cooperate with testing by the Owner by allotting sufficient time for testing each layer. Any layer that does not meet density requirements shall be reworked and re-compact until it meets the specified density.

Retesting of non-complying backfill or road surface materials will be the Contractor's expense.

Backfill moisture and density shall be determined at least every 500 feet horizontally and every three (3) feet vertically in trenches and at road/driveway crossings. However, Meade County Equalization and Planning Department may require moisture and density tests at any location and depth they desire. The Contractor shall, at his own expense, excavate the backfill at those locations and to those depths required by Equalization & Planning Department to conduct moisture/density tests, if materials are suspect.

When specified moisture contents are not met, the Contractor has the options of drying wet soil, furnishing approved materials meeting specifications, or adding water as necessary, to soils that are too dry to meet specifications. If water is added to dry soil, it must be thoroughly mixed with the soil to provide uniform moisture content prior to backfilling.

Backfill material not meeting specified densities shall receive additional compaction or shall be removed and replaced at the Contractor's expense as necessary to meet specified densities. Wet soils that otherwise meet the requirements for backfill do not necessarily constitute unsuitable backfill material. It is the contractor's responsibility to either dry the material or furnish other approved material at his expense, unless otherwise specified herein. When the Contractor furnishes backfill material, he shall also furnish the results of the AASHTO T-180 test for the furnished material.

The Contractor shall not place the finished surface (asphalt, curb and gutter, grass, etc.) until the specified densities are met at each test location and the Equalization & Planning Department gives approval for placement.

Trench flooding with water as a method of compaction is prohibited.

C. FUGITIVE DUST CONTROL

(a) Purpose

The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

(b) Applicability

The provisions of this Rule shall apply to any activity or man-made condition capable of generating fugitive dust.

Definitions

CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planning, shaping or ground breaking.

FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.

VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

Source Category Control Measure Guidance

A. Cut and fill

1. Pre-water soils prior to cut and fill activities; and
2. Stabilize soil during and after cut and fill activities.
3. Pre-water with water trucks and allow time for penetration
4. Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts

B. Demolition; mechanical/manual

1. Stabilize wind erodible surfaces to reduce dust; and
2. Stabilize surface soil where support equipment and vehicles will operate; and

3. Stabilize loose soil and demolition debris;
4. Apply water in sufficient quantities to prevent the generation of visible dust plumes

C. Disturbed soil

1. Stabilize disturbed soil throughout the construction site
1.  Limit vehicular traffic and disturbances on soils where possible
3. Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.

D. Earth-moving activities

1. Pre-apply water to depth of proposed cuts; and Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and Stabilize soils once earth-moving activities are complete.
2. Grade each project phase separately, timed to coincide with construction phase
3. Upwind fencing can prevent material movement on site
4. Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes

E. Road shoulder maintenance

1. Apply water to unpaved shoulders prior to clearing; and Apply chemical dust suppressants, water and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.

F. Stockpiles/Bulk Material Handling

1. Stabilize stockpiled materials. Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.

G. Traffic areas for construction activities

1. Stabilize all off-road traffic and parking areas; and Stabilize all haul routes; and direct construction traffic over established haul routes.
2. Apply gravel/paving to all haul routes as soon as possible to all future roadway areas.
3. Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.

H. Trenching

Stabilize surface soils where trencher or excavator and support equipment will operate; and Stabilize soils at the completion of trenching activities.

D. DRAINAGE:

1. Drainage requirements on all road and streets constructed in Meade County shall meet South Dakota Department of Transportation 2004 Standard Specifications for Roads and Bridges of which a more current version will automatically be adopted.

2. Pipe culverts and drainage tubing shall meet South Dakota Department of Transportation's Section 990 South Dakota Department of Transportation's 2004 (most current version will supersede 2004 version) Standard Specifications for Roads and Bridges.

3. Drainage and flood control shall be provided in conformity with the Flood Control Ordinance #9 of Meade County.

4. The nature of the land use should not in itself impede surface water runoff and would not be subject to appreciable damage by inundation; or that the area must be filled or improved in such a manner as to prevent such periodic inundation, provided that such fill does not retard the flow of surface waters or result in increasing the water level endangering life and property of others.

5. Storm Sewers shall be designed in accordance with good, accepted engineering practice and are subject to approval by the Meade County Highway Superintendent and or Planning Official.

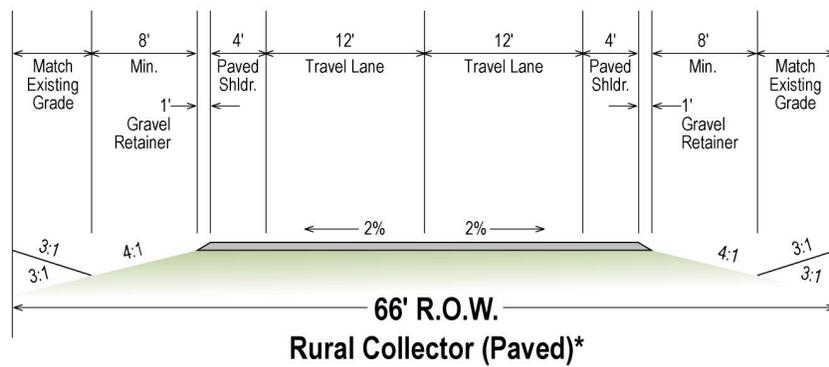
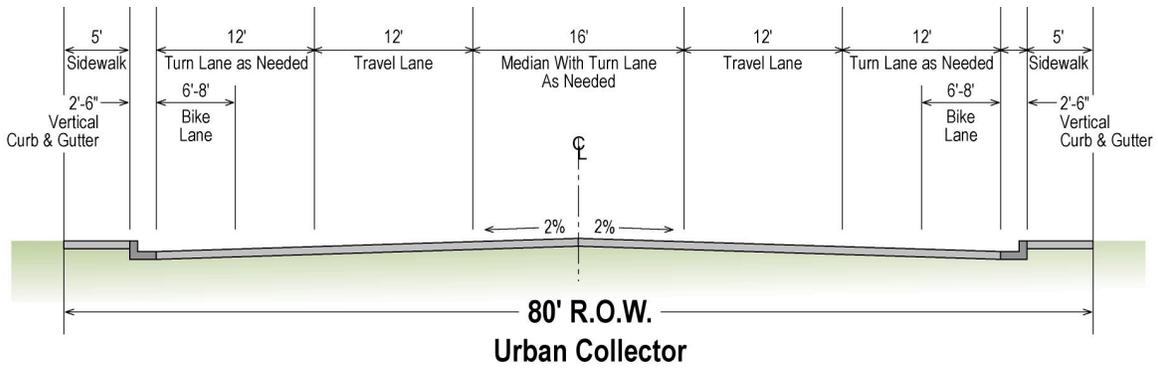
6. Grading design shall use natural drainage ways for drainage where possible and shall not cause or increase erosion conditions within or adjoining the site.

7. Open Drainage Systems- Drainage systems for roadways classified as collectors or arterial roads shall be designed for the 50-year storm event. Open drainage systems for all other roadways shall be designed for a 25-year frequency storm, unless the Meade County Highway Superintendent determines that an alternative design criteria is warranted based on the characteristics of the proposed development or locale.

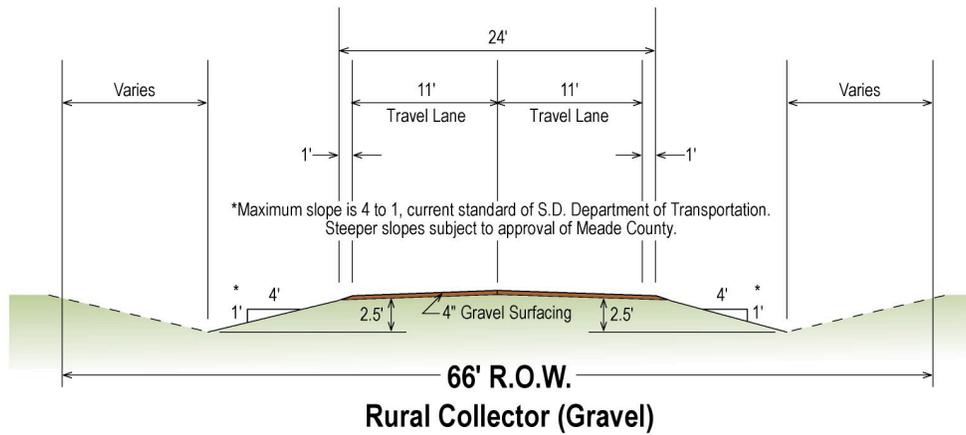
A. Open drainage systems must demonstrate and meet the following criteria for the storm frequency, as set forth above:

- (1) Except as set forth below, open stormwater runoff drainage systems within road rights-of-way shall be designed to maintain flows below 10 cubic feet per second (cfs). The depth of flow shall not exceed the depth of the ditch.
- (2) Drainage from rights-of-way must flow in an easement, which should be along lot lines wherever possible.
- (3) The maximum permissible velocities of flow for unprotected grass channels shall not exceed 3.5 fps.

APPENDIX B – Meade County Profiles and Typical's (SDDOT)

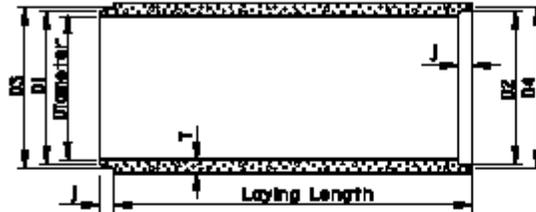


*Right-of-way may be increased to accommodate ancillary lanes (i.e. ATV / bike)



TOLERANCES IN DIMENSIONS

Diameters $\pm 1/32$ for 24" Dia. or less and $\pm 1/8$ or $3/16$ " whichever is more for 27" Dia. or greater.
 Diameters of Joints $\pm 3/16$ for 30" Dia. or less and $\pm 1/4$ for 36" or greater.
 Length of Joint (J) $\pm 1/4$ ".
 Wall thickness (T) not less than design T by more than $5/8$ or $3/8$ ", whichever is greater.
 Laying length shall not underrun by more than $1/2$ ".



LONGITUDINAL SECTION



END VIEW

GENERAL NOTES:

Construction of R.C.P. shall conform to the requirements of Section 590 of the Standard Specifications for Roads and Bridges.

Not more than 2 four foot sections shall be permitted near the ends of any culvert. Four foot lengths shall be used only to secure the required length of culvert.

Diam. (In.)	Approx. Wt. / FT. (lb.)	T (In.)	J (In.)	D1 (In.)	D2 (In.)	D3 (In.)	D4 (In.)
12	92	2	1 1/4	13 1/4	13 1/4	13 1/4	14 1/4
15	127	2 1/4	2	16 1/2	16 1/2	17 1/4	17 1/4
18	168	2 1/2	2 1/4	19 1/4	20	20 1/4	20 1/4
21	214	2 3/4	2 1/2	22 1/4	23 1/4	23 1/4	24 1/4
24	265	3	2 3/4	26	26 1/4	27	27 1/4
27	322	3 1/4	3	29 1/4	29 1/4	30 1/4	30 1/4
30	384	3 1/2	3 1/4	32 1/4	32 1/4	33 1/4	33 1/4
36	524	4	3 3/4	36 1/4	37 1/4	40	40 1/4
42	685	4 1/2	4	40 1/4	41 1/4	46 1/4	47
48	867	5	4 1/2	45 1/4	46	51	51 1/4
54	1070	5 1/2	4 3/4	51 1/4	50 1/4	56 1/4	56 1/4
60	1298	6	5	57 1/4	57 1/4	62 1/4	62 1/4
66	1542	6 1/2	5 1/2	63 1/4	63 1/4	68 1/4	68 1/4
72	1810	7	6	70 1/4	71 1/4	76 1/4	76 1/4
78	2098	7 1/2	6 1/2	77 1/4	77 1/4	82 1/4	82 1/4
84	2410	8	7	84 1/4	84 1/4	89 1/4	89 1/4
90	2740	8 1/2	7	91 1/4	91 1/4	96 1/4	96 1/4
96	2960	9	7	98 1/4	98 1/4	104 1/4	105
102	3075	9 1/2	7 1/2	105 1/4	105 1/4	111 1/4	112
108	3270	10	7 1/2	112 1/4	112	118	118 1/4

March 31, 2000

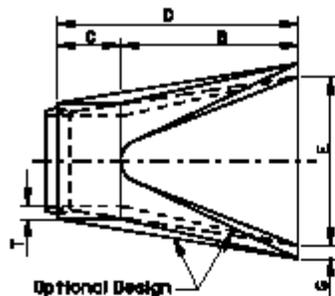
Published Date: Jan. 01, 2000

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D
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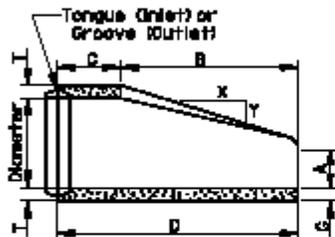
REINFORCED CONCRETE PIPE

**PLATE NUMBER
450-LH**

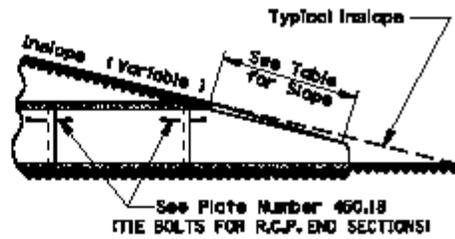
Sheet 1 of 1



TOP VIEW



LONGITUDINAL SECTION

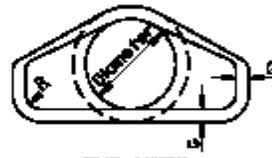


SLOPE DETAIL

GENERAL NOTES:

Lengths of concrete pipe shown on Plan Sheets are between flared Ends only.

Construction of R.C.P. Flared End shall conform to the requirements of Section 980 of the Standard Specifications for Roads and Bridges.



END VIEW

Dia. (In.)	Approx. Wt. of Section (lbs.)	Approx. Slope (% to Y)	T (In.)	A (In.)	B (In.)	C (In.)	D (In.)	E (In.)	G (In.)	R (In.)
12	530	2.4:1	2	4	24	48 1/2	72 1/2	24	2	1 1/2
15	740	2.4:1	2 1/2	6	27	46	73	30	2 1/2	1 1/2
18	990	2.5:1	2 1/2	9	27	46	73	36	2 1/2	1 1/2
21	1280	2.4:1	2 1/2	9	36	37 1/2	73 1/2	42	2 1/2	1 1/2
24	1520	2.5:1	3	9 1/2	43 1/2	30	73 1/2	48	3	1 1/2
27	1830	2.5:1	3 1/2	10 1/2	48 1/2	24	73 1/2	54	3 1/2	1 1/2
30	2180	2.5:1	3 1/2	12	54	19 1/2	73 1/2	60	3 1/2	1 1/2
36	4100	2.5:1	4	15	63	34 1/2	57 1/2	72	4	1 1/2
42	5380	2.5:1	4 1/2	21	83	36	98	78	4 1/2	1 1/2
48	6560	2.5:1	6	24	72	26	98	84	6	1 1/2
54	8240	2:1	5 1/2	27	65	33 1/2	88 1/2	80	5 1/2	1 1/2
60	8730	1.8:1	6	33	60	38	99	96	5	1 1/2
66	10710	1.7:1	6 1/2	30	72	27	99	102	5 1/2	1 1/2
72	12520	1.6:1	7	36	76	21	99	108	6	1 1/2
78	14770	1.6:1	7 1/2	36	90	21	111	114	6 1/2	1 1/2
84	18160	1.6:1	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2
90	20900	1.5:1	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	6

March 31, 2000

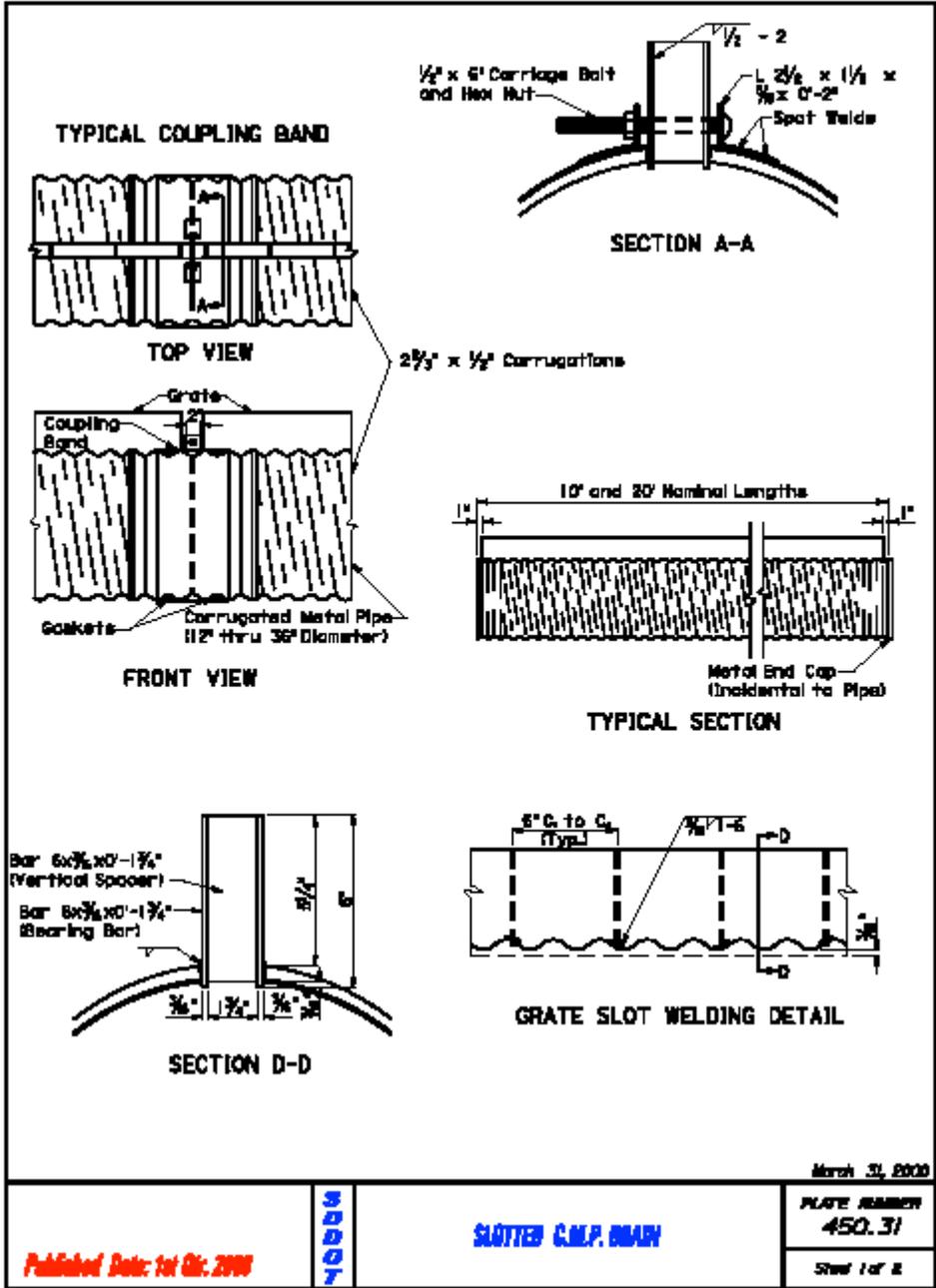
Published Date: Jul 01, 2000

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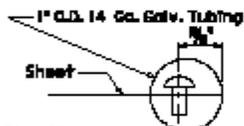
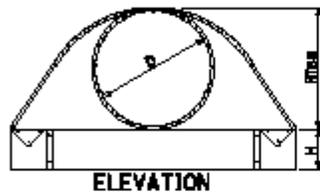
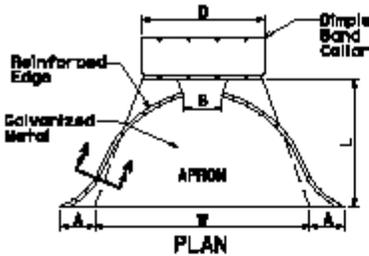
R. C. P. FLARED ENDS

PLATE NUMBER
450.10

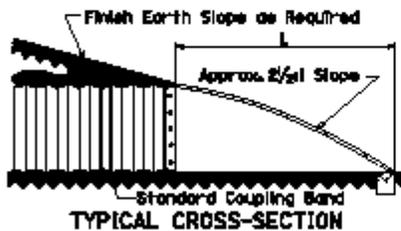
Sheet 1 of 1



Alternate Type Connector Sections may be used with approval of the Engineer.



3/8" x 1/2" Gal. Buttnut Rivets spaced 8" C. to C. Overall length of rivets 2.75"

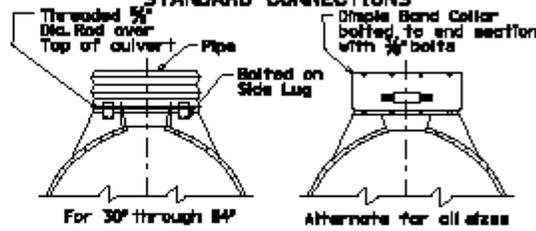


GENERAL NOTES

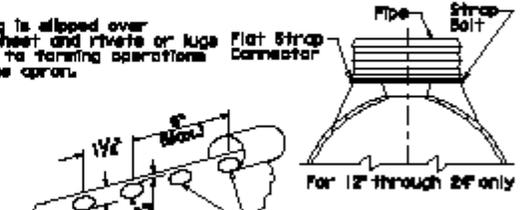
All 3 pc. bodies shall have 12 Ga. edges and 10 Ga. center panels. Width of center panels shall be greater than 20% of the pipe periphery. Multiple panel bodies to have lap seams tightly joined by 3/8" Dia. galvanized rivets or bolts.
 For 50" through 54" sizes, reinforced edges shall be supplemented with galvanized stiffener angles. The angles will be 2" x 2" x 1/4" for 50" through 72" diameters and 2 1/2" x 2 1/2" x 1/4" for 78" and 84" diameters. The angles shall be attached by 3/8" diameter galvanized nuts and bolts.
 Rivets and bolts shall be 3/8" Dia. Min. for 10 Ga. and 12 Ga. sheet, and 1/2" Dia. Min. for 14 Ga. and 16 Ga. sheets. Tighten nuts with torque wrench to 25 lbs. torque.

Dia. (In.)	DIMENSIONS (In.)						Approx. Slope	Body
	Ga.	A	B	H	L	W		
12	18	8	6	6	21	24	2 1/2%	1 Pc.
16	16	7	8	6	28	30	2 1/2%	1 Pc.
18	16	8	10	6	31	36	2 1/2%	1 Pc.
21	16	8	12	6	36	42	2 1/2%	1 Pc.
24	16	10	13	6	41	48	2 1/2%	1 Pc.
30	14	12	16	8	46	60	2 1/2%	1 Pc.
36	14	14	19	9	51	72	2 1/2%	2 Pc.
42	12	16	22	11	60	84	2 1/2%	2 Pc.
48	12	18	27	12	69	90	2 1/2%	2 Pc.
54	12	18	30	12	78	102	2 1/2%	3 Pc.
60	12	18	33	12	84	114	1 1/2%	3 Pc.
66	12	18	36	12	97	120	1 1/2%	3 Pc.
72	12	18	39	12	97	126	1 1/2%	3 Pc.
78	12	18	42	12	97	132	1 1/2%	3 Pc.
84	12	18	45	12	97	138	1 1/2%	3 Pc.

STANDARD CONNECTIONS



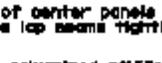
NOTES
 Tubing is slipped over the sheet and rivets or lugs prior to forming operations of the apron.



SECTION A-A (alternate)



SECTION A-A (alternate)



March 31, 2000

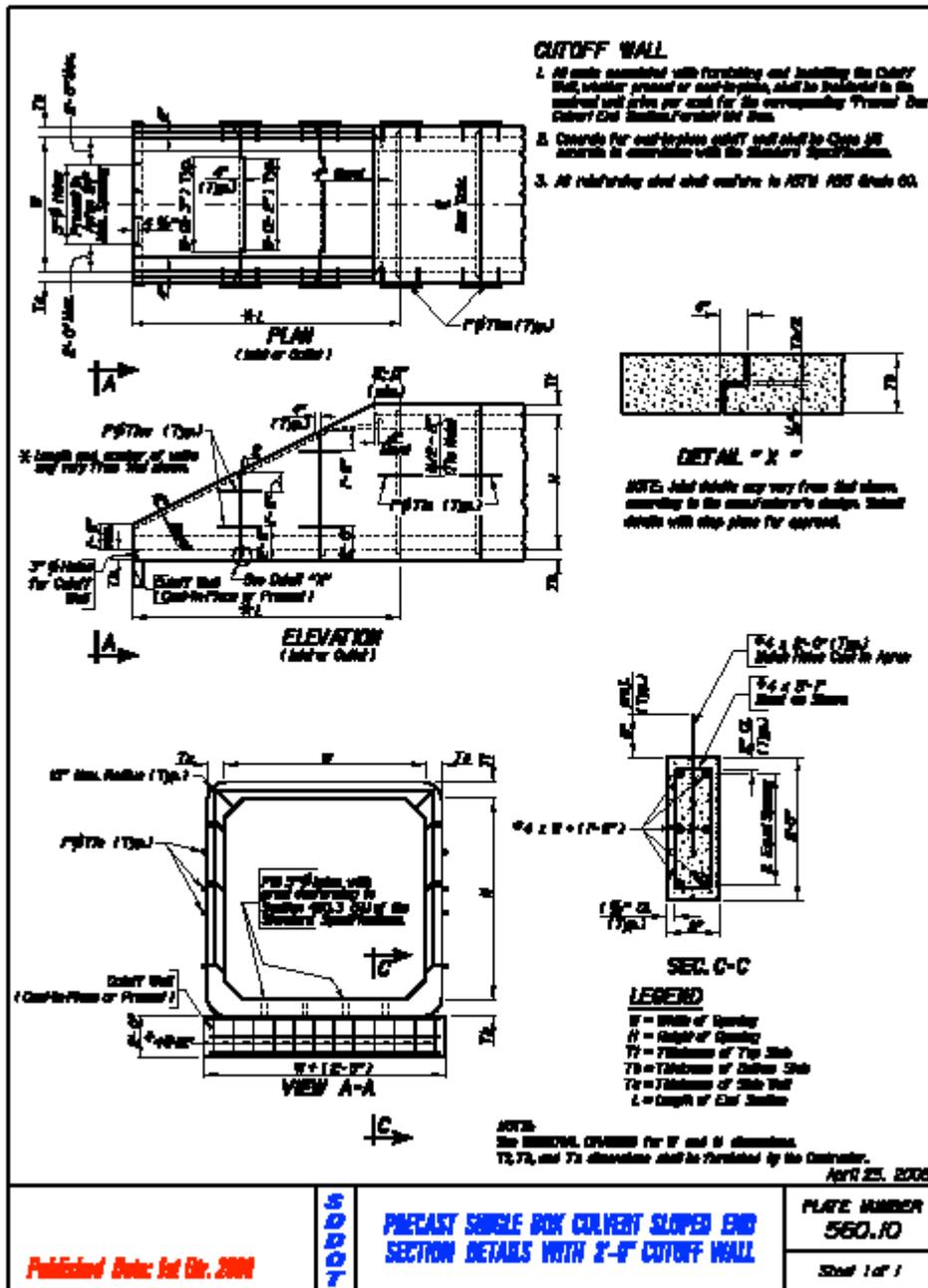
Published Date: Jul 01, 2000

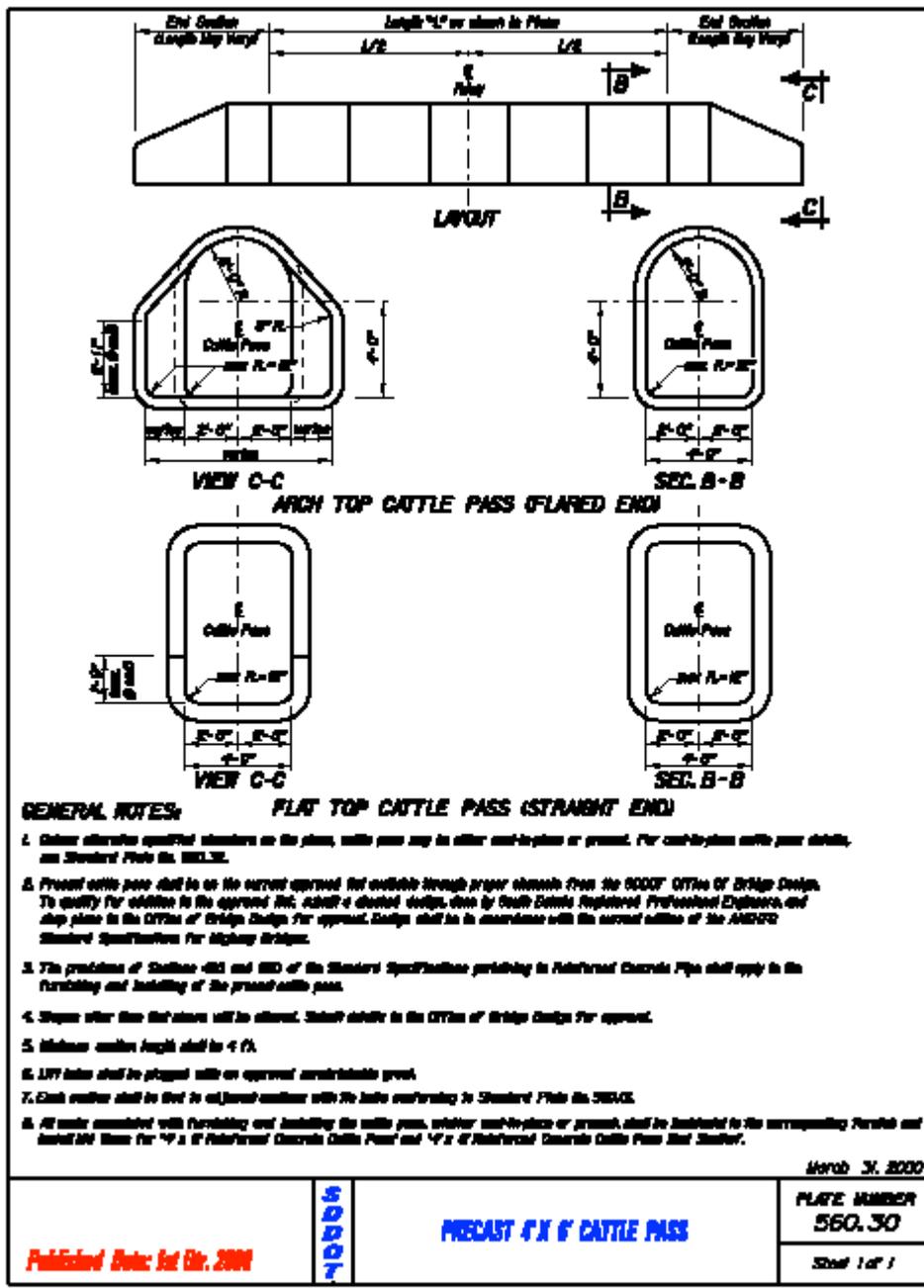
SDDOT

C.M.P. FLARED ENDS

PLATE NUMBER
450.35

Sheet 1 of 1





SPECIFICATIONS

1. **Design Specifications:** AASHTO Specifications for Highway Bridges, 2002 Edition, Clause 804.
2. **Construction Specifications:** South Dakota Standard Specifications for Earth and Related Structures and Related Practices, Supplemental Specifications and/or Special Provisions as Indicated in the Proposal.

GENERAL NOTES

1. **Design Loading:** HS20-44 AASHTO.
2. Cattle Guard shall be constructed in accordance with Section 610.
3. All structural steel shall conform to ASTM A709, Grade 50. Structural tubing shall conform to ASTM A513, Grade 50. All bolts and nuts shall be galvanized and shall conform to ASTM A307. All lock washers shall be galvanized and shall conform to ASTM A307.
4. Welding and bolt torques shall be in accordance with AISC 360-Current Year.
5. Cattle Guard Grade, Slope and Curvature Plates shall be galvanized with a yield point which conforms to Section 610.51 and shall be applied in accordance with the manufacturer's recommendations. The top end shall be ground in order conforming to Federal Standard 8830.
6. Grade Slopes may be considered to obtain larger grade widths. Refer to Detail of Slope Retention Joints on this sheet when larger grade widths are required.
7. Cattle Guard Grade & Wing Details shall be used in conjunction with Cast-in-Place or Precast-Cast-In-Place Foundations Details on SDC Plans 610.02L or 610.02R when Cattle Guard Foundations are required.
8. Alternate designs will be considered, subject detailed drawings and specifications of the proposal, whether cattle guard grade or using through proper elements to the Office of Bridge Design for approval.

INFORMATIONAL QUANTITIES

ITEM	UNIT	QUANTITY			
		SP BRIDGE	IC BRIDGE	IF BRIDGE	C BRIDGE
Structural Steel	Lb.	100	1700	800	110

BILL OF MATERIALS FOR CATTLE GUARD GRATES

DEPTH OF CATTLE GUARD	CATTLE GUARD GRADE			CONNECTING PLATES		WING END BOLTS
	12'-0"	18'-0"	12'-0"	12'	18'	
12'	1			4	8	—
18'		1		4	8	—
12'			1	4	8	—
18'	8			4	8	8
18'		8		4	8	8
30'	3			4	8	12

June 05, 2003

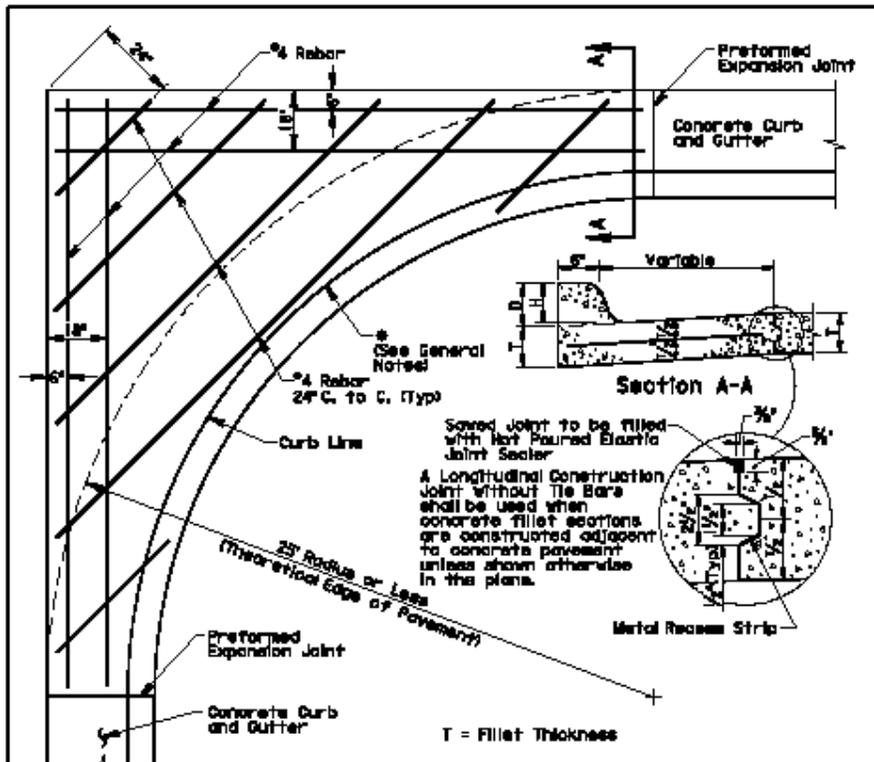
Published Date: 1st Oct. 2000

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CATTLE GUARD GRADE AND WING

PLATE NUMBER
610.03

Sheet 1 of 3



GENERAL NOTES:

- * If a curb ramp is constructed adjacent to a PCC fillet section, the curb will need to be modified. Refer to the corresponding curb ramp standard plate or other special details in the plans for modification of the PCC fillet section.
- Dimensions D, H, and T shall conform to those shown on the appropriate curb and gutter standard plate.
- All rebar shall conform to A.S.T.M. A615 Grade 60 and the Standard Specifications Sections 480 and 1010. All rebar shall have a minimum of 3" clear cover.
- Class MG Concrete shall be used in construction of the fillets.
- The concrete curb shall be monolithic with the concrete fillet. No separate payment for this curb will be made as the curb is considered a part of the fillet.
- Joints shall be constructed at 10' intervals except when fillets are constructed adjacent to PCC Pavement. If there is adjacent PCC Pavement the joints shall be extended from edge of pavement through the fillet section as directed by the Engineer.
- The cost for all materials, labor, and incidentals necessary to construct the PCC fillet section with curb and gutter shall be incidental to the contract unit price per square yard for the corresponding PCC fillet section bid item.

Fig. H. 8003

Published Date: Oct. 2001

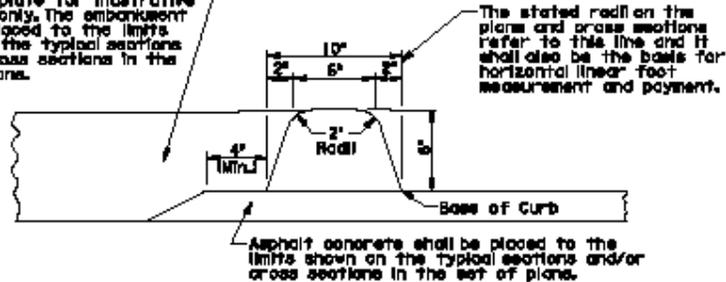
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**PCC FILLET SECTION WITH
TYPE B CURB AND GUTTER**

**PLATE NUMBER
380.16**

Sheet 1 of 1

Embankment is shown on this standard plate for illustrative purposes only. The embankment shall be placed to the limits shown on the typical sections and/or cross sections in the set of plans.



TRANSVERSE SECTION OF ASPHALT CONCRETE CURB

GENERAL NOTES:

Prior to placement of the asphalt concrete curb, the surface of the asphalt concrete in the vicinity of the curb placement location shall be dry and free of all foreign materials and shall have a tack application applied. The type of tack and rate of tack application shall be as stated elsewhere in the plans.

The asphalt concrete curb shall be constructed by use of a self-propelled automatic curb machine or a paver with curb attachments.

The automatic curb machine shall weigh enough such that the curb constructed will be of uniform shape.

Construction of asphalt concrete curb shall be a continuous operation in one direction to eliminate curb joints. However, when conditions are such that this is not possible, the joints shall be made to ensure a continuous bond between the older and newer sections of curb. All contact surfaces of previously constructed asphalt concrete curb shall be painted with a uniform coat of tack immediately prior to placing the new asphalt concrete curb material adjacent to the joint.

When asphalt concrete curb shall be placed along short sections and short radii, manual methods of construction as approved by the Engineer may be utilized instead of using the curb machine or paver. The completed curb shall be uniform in texture, shape, and density from that placed by the curb machine or paver.

All asphalt concrete curb placed shall be uniform in texture, shape, and density.

The new asphalt concrete curb shall be protected from traffic by barricading or other suitable method until the heat of the asphalt concrete mixture has dissipated and the asphalt concrete has obtained the proper degree of hardness.

The type of asphalt concrete and binder for the curb shall be as stated elsewhere in the plans. For payment, the asphalt concrete curb shall be measured to the nearest 0.1 foot measured along the base of the front of the curb as illustrated in the above drawing. All costs for the asphalt concrete curb including asphalt concrete, asphalt binder, tack, placement, shaping, labor, equipment, and incidentals necessary for construction of the curb shall be incidental to the contract unit price per foot for "Asphalt Concrete Curb".

September 14, 2006

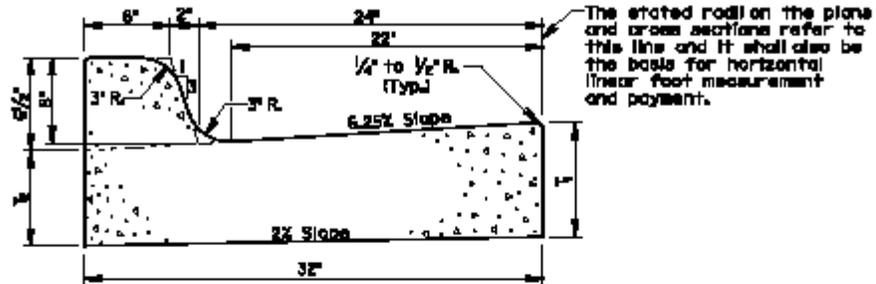
Published Date: Oct. 01, 2006

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ASPHALT CONCRETE CURB

PLATE NUMBER
3E014

Sheet 1 of 1



Type	$\frac{1}{4}$ Oncheat	$\frac{1}{2}$ Oncheat	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
B66	6	4%	0.055	18.2
B67	7	5%	0.063	15.9
B68	8	6%	0.071	14.1
B68.5	8.5	7%	0.075	13.3
B69	9	7%	0.079	12.7
B69.5	9.5	8%	0.084	11.8
B610	10	8%	0.088	11.4
B610.5	10.5	9%	0.092	10.9
B611	11	9%	0.096	10.4
B611.5	11.5	10%	0.100	10.0
B612	12	10%	0.104	9.6

GENERAL NOTES:

When concrete curb and gutter longitudinally adjoins new concrete pavement, the method of attachment shall be by one of the methods shown on Standard Plate 380.11.

See Standard Plate 650.90 for expansion and contraction joints in the curb and gutter.

September 5, 2005

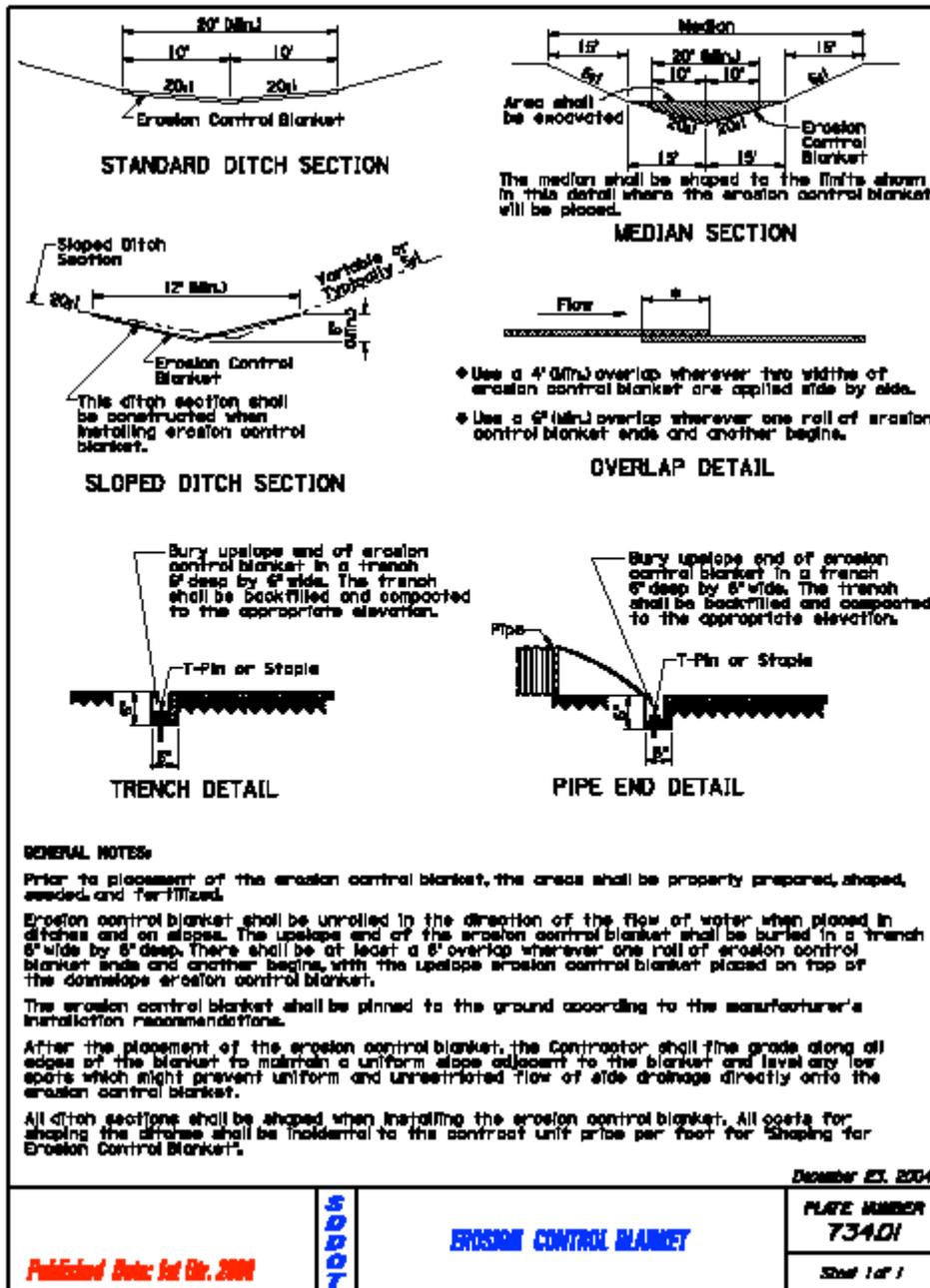
Published Date: Jan. 09, 2009

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TYPE B CONCRETE CURB AND GUTTER

**PLATE NUMBER
650.01**

Sheet 1 of 1



Published Date: Jul 08, 2008

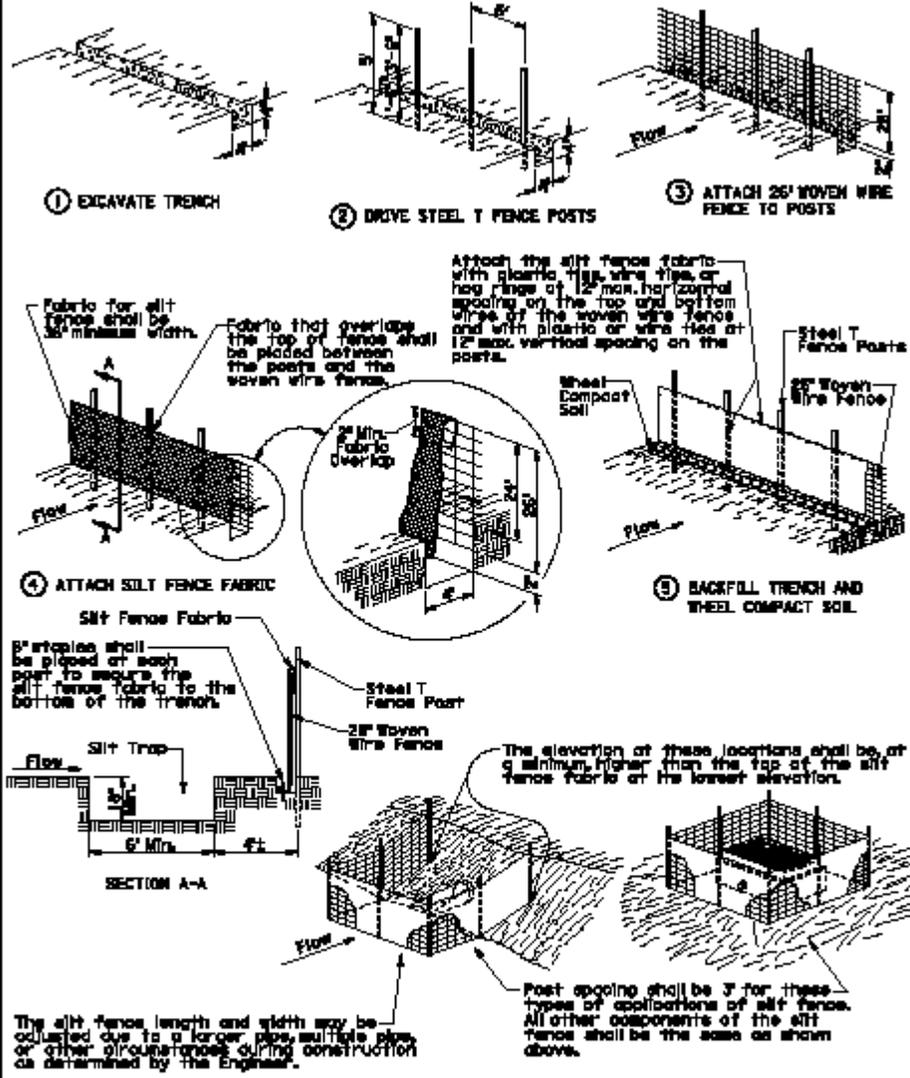
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EROSION CONTROL BLANKET

PLATE NUMBER
734DI

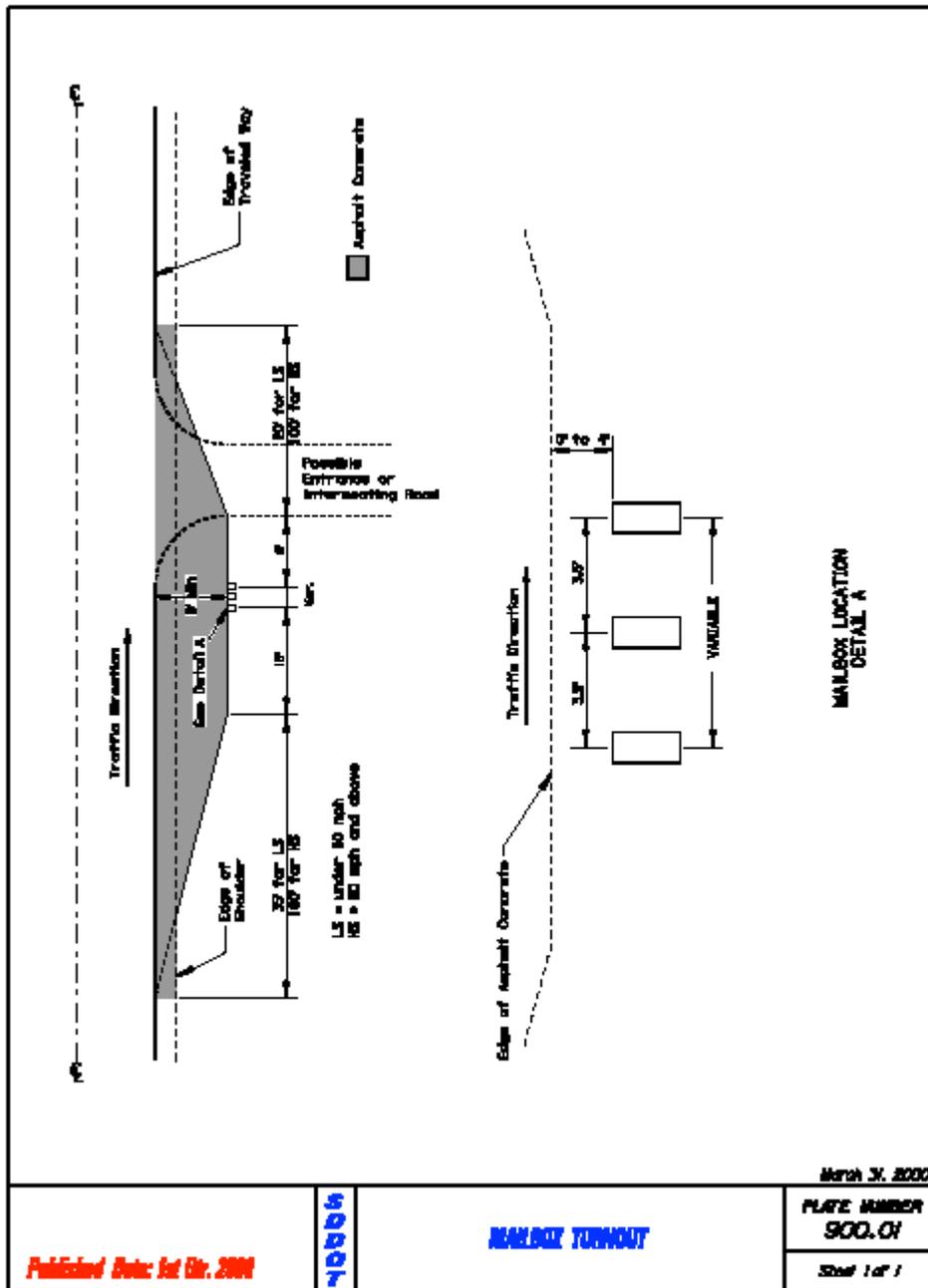
Sheet 1 of 1

MANUAL LOW FLOW SILT FENCE INSTALLATION



October 23, 2003

S D D T	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
		Sheet 1 of 2



Published Date: Jul 01, 2004

10006

MAILBOX TURNOUT

March 31, 2000

PLATE NUMBER
S00.01

Sheet 1 of 1