

WEBSTER COUNTY, MISSOURI

Design Standards For Public Road Improvements

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Section 1 Drawing Standards

Plans will be submitted to the Webster County Road Department for review by the Road Superintendent and the County Surveyor or County Engineer.

Section 2 Road Standards

This work shall consist of clearing, grubbing, removing and disposing of vegetation within the limits of the right-of-way and easement area. The engineer or surveyor will establish right-of-way and construction lines and will designate all trees, shrubs and plants that are to remain. The contractor shall preserve, without damage, the vegetation designated to remain. All trees, stumps, and brush not designated to remain shall be cleared, grubbed and disposed of in an acceptable manner. Stump holes shall be filled and compacted to the approximate density of the adjacent area.

Section 3 Roadway, Drainage, Excavation, Embankment, and Compaction

This work shall consist of excavation, disposal or compaction of all materials encountered in the work area. This work shall be performed with the lines and grades established by the engineer or surveyor.

Section 3.1 Blasting

Blasting shall be done to minimize damage to the surrounding area.

Section 4 Construction Requirements

Prior to the beginning of excavation and embankment operations in any area, all necessary clearing grubbing and stripping in that area shall have been performed. The excavation and embankment for roadways, intersections, and entrances shall be to the designated alignment and grade. Side slopes and fills shall be finished to a reasonable smoothness

Section 4.1 Field Stone

All loose fieldstone within the limits of the right-of-way shall be removed before commencing the operation of finish grading. All small rock and boulders resulting from the operation of subgrade construction shall be disposed of.

Section 4.2 Roadway Surface

Roadway surface shall not be less than 24' wide. See Fig. 1.

Section 5 **Curbs**

Curb and gutter may be required in all subdivisions unless the Commission shall find the following condition to exist:

- (a) The average lot area in a residential subdivision is three (3) acres or in excess of three (3) acres.
- (b) Surface drainage can be adequately controlled with a ditch system constructed in accordance with construction specifications of the Webster County Commission.
- (c) Curb and gutter may be required to extend the existing curb and gutter or to control erosion.

Section 5.1 **Concrete Curb and Gutter Requirements**

Prior to setting paving forms, the subgrade shall conform to the density requirements for compaction as set forth in the Missouri Standard Specifications for Highway Construction, latest edition. In residential areas, a minimum of four inches (4") of compacted base stone under all curb and gutter, and the entire street area, as per Attachment A. In industrial and commercial areas, eight inches (8") of compacted base stone shall be used as per Attachment B.

- (a) Curb and gutter shall be constructed of four thousand pound (4,000-PSI) concrete that is air entrained.
- (b) Curb backfilling shall be done prior to street paving and the material shall be free of large rock.

Section 6 **Sub-base**

Roads shall have a minimum of four inches (4") of compacted base on them after construction.

1. New construction can have a combination of clean rock and base stone to equal or exceed the requirement of four inches (4") minimum.
2. Industrial or Commercial roads a minimum of six inches (6") of compacted base stone shall be required, or a combination of clean rock and base stone to meet the minimum of six inches (6").
3. River run gravel may be used as a sub-base stabilizer or fill.

Section 7 Road and Street Paving

1. County roads and streets may be constructed of Portland Cement concrete. All concrete pavements must meet Missouri Standard Specifications for Highway Construction, Division 500, Rigid Pavements.
2. Plant mix bituminous asphalt mix may be used as a wearing surface, of a minimum of two inches (2") will be required on top of 4" of compacted base stone. For Industrial or Commercial roads a minimum of four inches (4") will be required on a minimum of six inches (6") of compacted base stone.
3. Cold mix asphalt may be used as a wearing surface, two inches (2") will be the minimum over four inches (4") of compacted of base stone. For Industrial or Commercial roads, a minimum of five inches (5") will be required on a minimum of six inches of compacted base stone.
4. Plant mix bituminous base course may be required on Industrial or Commercial roads.
5. Seal coats may be used as a wearing surface, a double coat of seal coat will be required on a minimum of four inches (4") of compacted base stone. A minimum of ½ inch size aggregate will be required on the first (1st) seal coat application on compacted base stone. On Industrial or Commercial roads, seal coats will not be permitted.

Section 8 Weather Limitations

Bituminous mixtures shall not be placed when:

- (a) the air or surface temperature on which the mix is to be placed is 40°F or below,
- (b) the surface is wet or frozen,
- (c) weather conditions prevent the proper handling or finishing of the mixture.

Section 9 Acceptance of Improvements:

All utilities and improvements, which are to be installed in road right-of-ways, shall be done so with the approval of the Road Superintendent and or County Surveyor at their discretion.

Section 10 Inspections:

Inspections may be made at the beginning of construction and at different times during construction. Roads that were constructed prior to the approval of this design standard will be inspected by the Road Superintendent, the County Commission, and/or County Surveyor before being considered to be accepted into the Webster County Road System. Core tests may be required at owner's expense to confirm pavement or base stone thickness on the road surface.

Section 11 Cul-de-sacs:

Shall be permitted at the end of a dead end road or street with a right-of-way of 100 feet and a driving surface of 80 feet. No obstructions will be allowed in the center of Cul-de-sacs on any road or street in the Webster County Road System.

Section 12 Alignment:

Arterial and collector roads shall be designed so as to facilitate the flow of traffic. Minimum curve radii shall be selected and curves designed so as to facilitate the flow of traffic at anticipated vehicle speeds.

Section 13 Sight Distance:

Proper sight distance shall be provided with respect to horizontal and vertical alignment. Where two roads or streets intersect of different classifications, then the road or street with the higher classification shall prevail. Sight distance may be hampered by natural obstructions in some cases.

Section 14 Grade:

The minimum grade on all roads and streets shall be four inches (4") of crown on aggregate surfaces and two inches (2") on paved surfaces.

Section 15 Minimum Road and Street Pavement Widths:

The minimum for roads and streets in shall be twenty-four feet (24') with the right-of-way width of sixty feet (60').

Section 15.1 Width of Pavement

The minimum width of pavement shall be twenty feet (20') wide although the county may require larger or wider pavements and right-of way on certain Industrial or Commercial roads.

Section 15.2 Right-of Ways

1. The County may require wider right-of-ways for the construction of drainage structures on county roads.

Section 16**Sidewalks:**

1. Sidewalks on roads and streets must comply with “Americans with Disabilities Act.”
2. Sidewalks shall be constructed of Portland Cement concrete, with a thickness of four inches (4”). The sub-base will be of 2” of compacted base.
3. Sidewalks shall be constructed of a minimum of 3,000 PSI concrete.
4. Sidewalks which are to be in a driveway shall have four inches (4”) of compacted base under them, and a ½” expansion joint between the driveway and the driveway approach.

Section 17**Installing Poles, Placing Pipe or Cable, Excavating, Boring,
Cutting on County Road or Rights-of-Way:**

1. A right-of-way work permit shall be required before any work shall begin on county right-of-ways.
2. Plans must be submitted to the Webster County Road Department.
3. Signs and barricades must be placed in accordance with the Missouri Standard Specifications for Highway Construction and the manual on Uniform Traffic control Devices.

4. Boring:

When the cause for placement of cable and/or pipe to cross the roadway, such placement shall be by boring for said cable or pipe. If cable or pipe shall require installation of a sleeve. In emergencies, cut or excavation in the driving surface may be allowed by the Road Department Superintendent.

- (a) When work is of such nature as to necessitate the cutting of a roadway surface, the surface will be replaced to the original condition.

5. Backfill:

Any cuts or excavations across road surfaces shall require one-inch (1”) base stone for backfill.

6. Cuts or excavations within the driving surfaces shall be determined to be necessary by the Webster County Road Department Superintendent. Cuts or excavations within the driving surface will be restored to the original condition by the contractor.
7. Inspection will be made by the Webster County Road Department upon completion of the work.
8. Utility poles will be set as close to the right-of-way as possible.

9. All utilities will be placed on the backslope of County Road right-of-ways when possible.

10. Utilities will be placed within a 6' corridor from the right-of-way line or the land owner fence.

Section 18 Driveways:

All driveways will be approved by the Webster county Road Department prior to installation of driveway and shall not be less than 24' wide. Any Driveways that are not approved by the Webster county Road Department may be subject to removal by the Road Department at owners expense.

Section 18.1

Residential driveways and field access driveways shall have a minimum of 24' wide, with crushed stone base as a covering. Corrugated metal pipe will be allowed for driveways. Concrete or corrugated plastic pipe will not be allowed.

Section 18.2 Concrete Driveways

Concrete driveways and approaches on county right-of-ways must be approved by the Webster County Road Department Superintendent before construction. Non-compliance may result in removal of said driveway, or approaches at landowner's expense.

Section 18.3 Asphalt Driveways

Asphalt driveways will be acceptable to Webster County Road Department with department approval.

Section 18.4 Industrial or Commercial Driveways

Industrial or Commercial driveways shall be approved prior to installation by the Road Department.

Section 18.5 Sight Distance

Sight distance for driveways will be a minimum of 200' each way from the centerline of the driveway.

Section 19 Signs in County Right-of-Way's

Signs will be allowed on County right-of-ways but shall be placed as close to the right-of-way line as possible. No sign will be erected within a stage sight distance of an intersection.

Section 20 Mailboxes

Mailboxes shall be of a breakaway design, or conform to Federal Postal Regulations.

Section 20.1 Mailbox Construction

Mailboxes constructed of brick or other non-breakaway material will not be allowed on County roads or roads that will become County maintained roads in the future.

Section 20.2 Removal of Mailboxes for Road Maintenance

Mailboxes shall be placed so they can be removed and replaced by maintenance crews or construction crews.

Section 21 Materials

This section is to cover the materials that shall conform to the standards set forth by the Webster County Road Department.

Section 21.1 Concrete

Concrete for construction shall conform to the following specifications:

3,000 PSI Concrete	-	Sidewalks
3,500 PSI Concrete	-	Sidewalks – Driveways
4,000 PSI Concrete	-	Roads and Bridges, Box Culverts

Missouri Standard Specifications for Highway Construction, Division 500, Ridge Pavements may be used.

Section 21.2 Asphalt:

Asphalt for construction shall conform to the following specifications:

Plant mix Bituminous Pavement. BPI and/or BPII, gradations may be obtained from section 401 in the Missouri Standard Specifications for Highway Construction.

Section 21.3

Superpave, Stone Mastic Asphalt, I B mixes may be used on special projects.

Asphaltic Base may be used on Industrial or Commercial roads according to the engineer or Road Department

Section 21.4

Bituminous Mixing Plants (cold mix)

- (a) Cold mix asphalt may be used on Webster County Roads
- (b) Pugmills may be used to make cold mix asphalt or a hot mix asphalt plant may be used also. Blade mix can be used on approval by the Road Department.

Section 21.5

Seal Coat may be used on Webster county Roads

- (a) Seal coats shall be of a double coat on new roads or a single coat on existing asphalt pavements.
- (b) Seal coat placement shall be in accordance with Section 409 of the Missouri Standard Specifications for Highway Construction, or by the Road Department Superintendent.

Section 21.6 Asphaltic Materials

The Following asphaltic materials may be used for Webster County Roads:

64-22 PG Asphalt

MC Liquid Asphalt
MC 30, MC 70, MC 250, MC 800, MC 3000

Emulsified Asphalt
SSI
MS2
EA300

Other specifications may be obtained in Section 1015 Bituminous material in the Missouri Standard Specifications for Highway Construction.

Section 22 Aggregate For Road Construction

Aggregate for construction of Webster County roads shall be from State inspected or Commercial crushed aggregate.

Section 22.1 Aggregate for Asphaltic Surfaces

Aggregates for asphaltic surfaces shall not exceed one inch (1")

Section 22.2 Aggregate for Seal Coats

Seal coats shall not exceed one half inch in size (1/2") or otherwise directed by the Road Department.

Section 22.3 Aggregate for Driving Surface

Aggregate for driving surfaces shall be one inch (1") or smaller.

Section 22.4

Aggregate for culvert installations shall not exceed two inches (2") in size for culverts 24" or less. Culverts larger than 30" in diameter six-inch (6") aggregate will be the maximum.

Section 22.5 Aggregate for Stabilization

River run aggregate will only be used for soil stabilization or fill.

Section 22.6

Aggregate for sub-base stabilization shall be approved by the Road Department.

Other specification may be obtained form division 1000 of Missouri Standard Specifications for Highway Construction.

Section 23 Culverts:

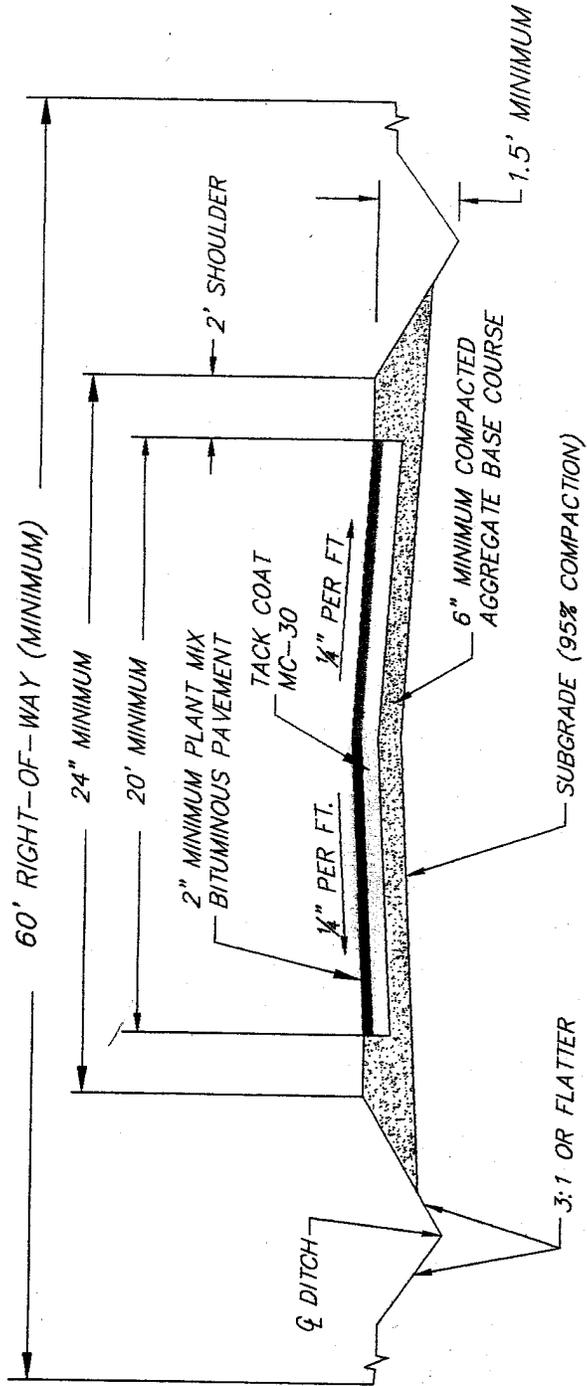
Culverts for Webster County Roads shall be no less than twelve inches (12") in diameter and no less than 24' in length and shall conform to the specifications for Highway Construction. All culverts shall be metal culverts. Concrete culverts may be used upon approval by the Webster County Road Department.

Section 24 **Bridges and Concrete Box Culverts:**

Bridges and concrete box culverts will be designed by a professional engineer. Missouri Highway and Transportation Commission plans may be used upon approval by the Road Department.

Section 25 **Seeding and Mulching:**

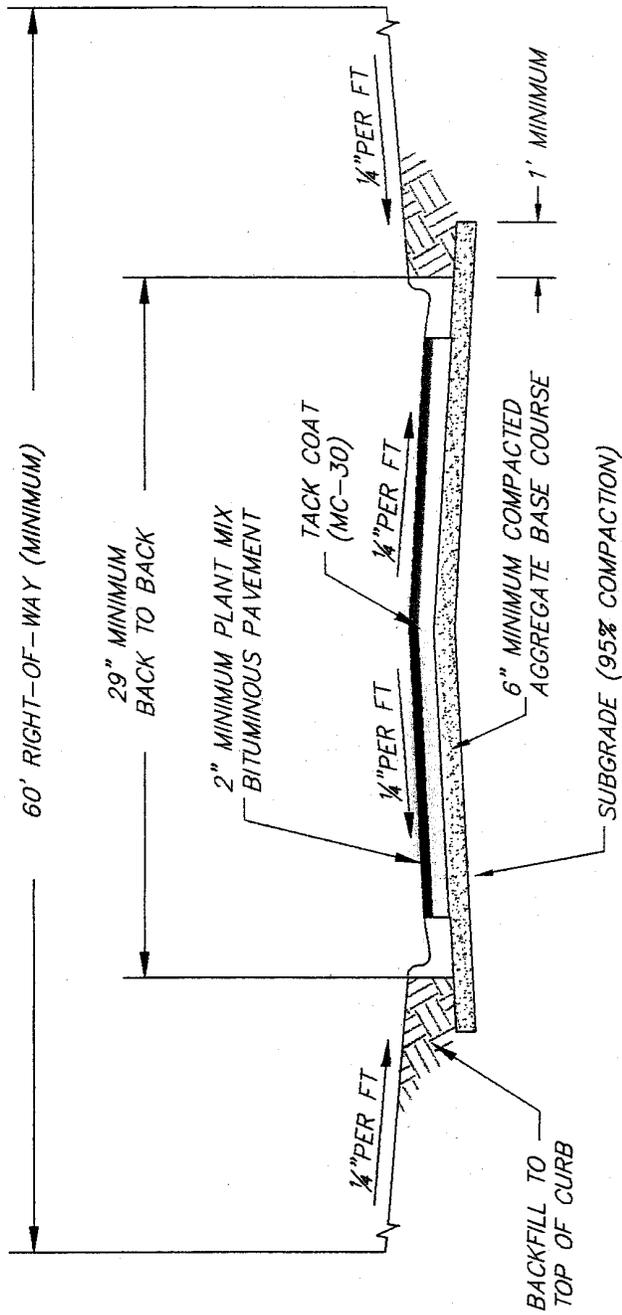
Seeding and mulching may be required by the Road Department to control storm water run-off and erosion.



ATTACHMENT "A"

MINIMUM RESIDENTIAL STREET STANDARDS
FOR TRACTS OF 3 ACRES OR MORE
IN WEBSTER COUNTY, MISSOURI

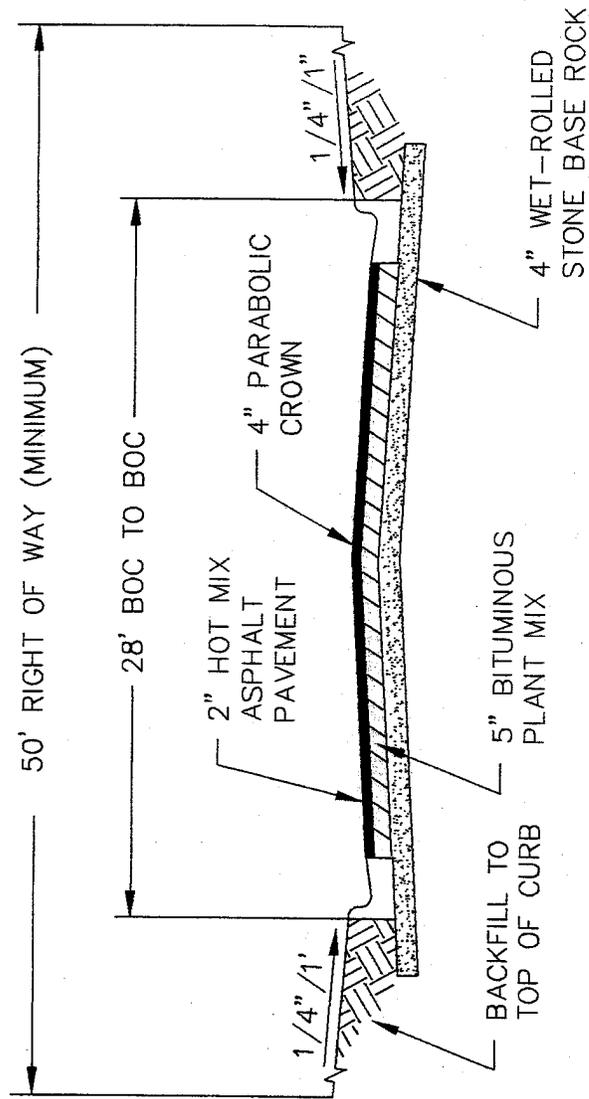
NOT TO SCALE



ATTACHMENT "B"

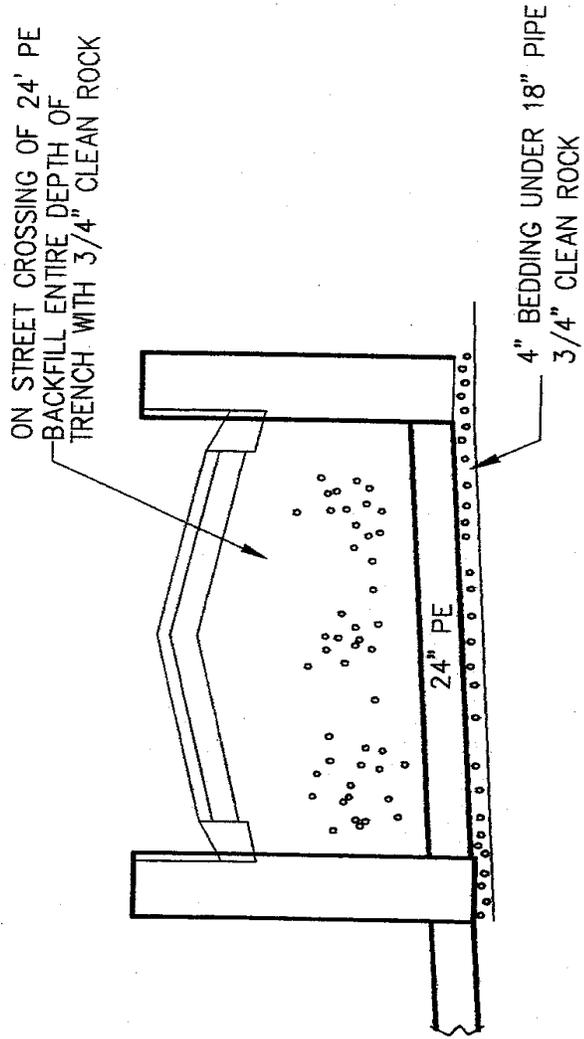
MINIMUM RESIDENTIAL STREET STANDARDS FOR
 SUBDIVISIONS WITH LOTS OF LESS THAN
 3 ACRES IN WEBSTER COUNTY, MISSOURI
 (STORM DRAINAGE SYSTEM REQUIRED)

NOT TO SCALE



**TYPICAL STREET CROSS SECTION
PER CITY OF ROGERSVILLE SPECIFICATIONS**

NOT TO SCALE

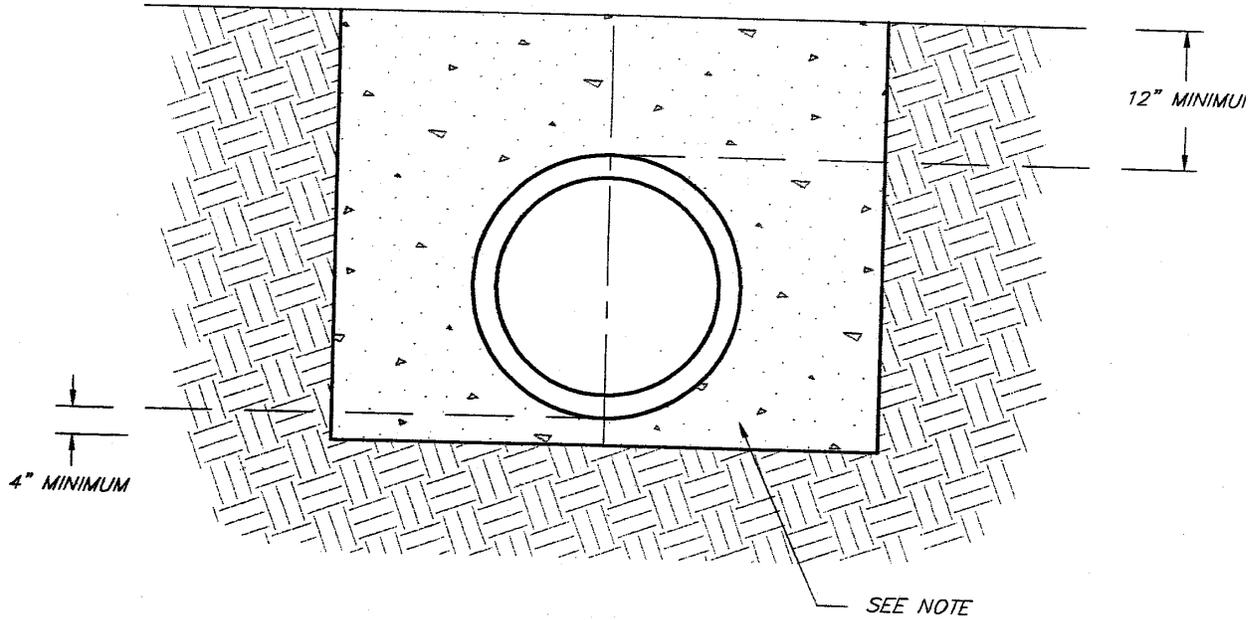


**STORM LINE 1 TRENCH
BEDDING AND BACKFILL STA 1+91.47**

NO SCALE

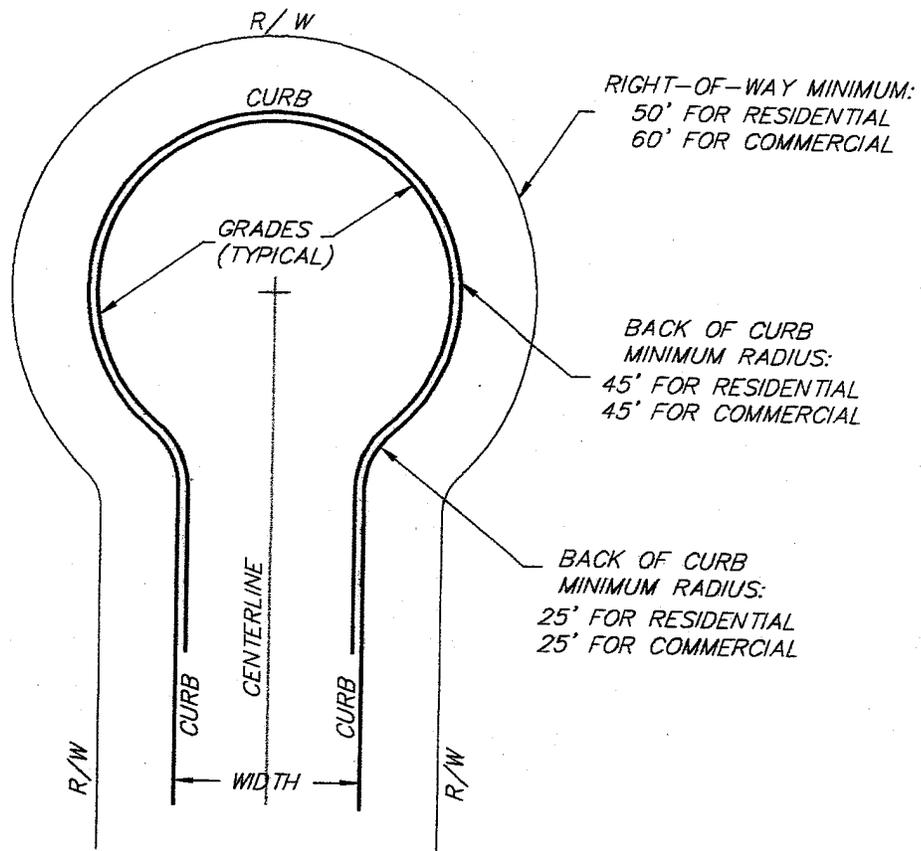
NOTE:

1. MATERIAL FOR BEDDING SHALL BE CRUSHED LIMESTONE CONFORMING TO THE REQUIREMENTS OF ASTM STANDARD C12-74 FOR RIGID PIPE AND ASTM 2321-74 FOR FLEXIBLE PIPE. 10 CSR 20-8.120 (6) (G)
2. ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE.



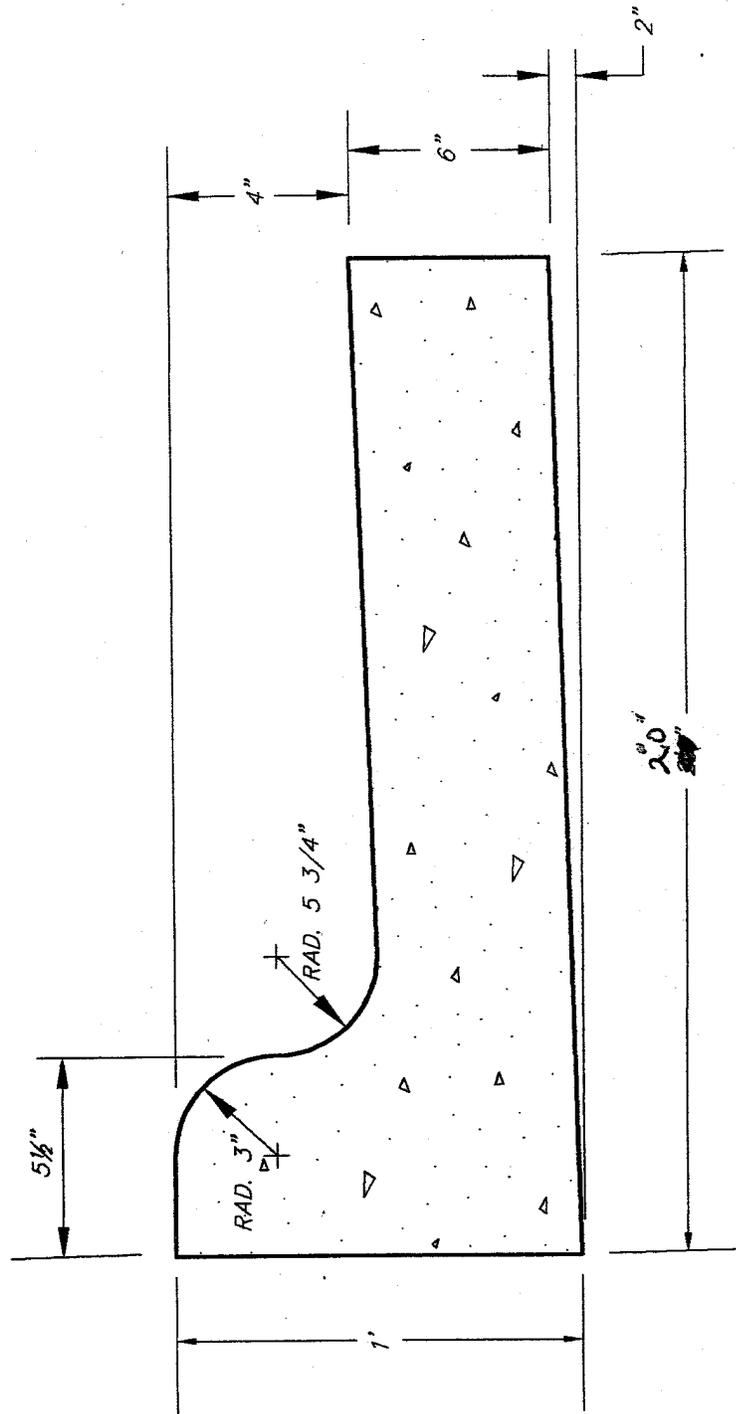
IMPROVED BEDDING

NOT TO SCALE



STANDARD CUL-DE-SAC

NOT TO SCALE



STANDARD CONCRETE CURB & GUTTER

NOT TO SCALE