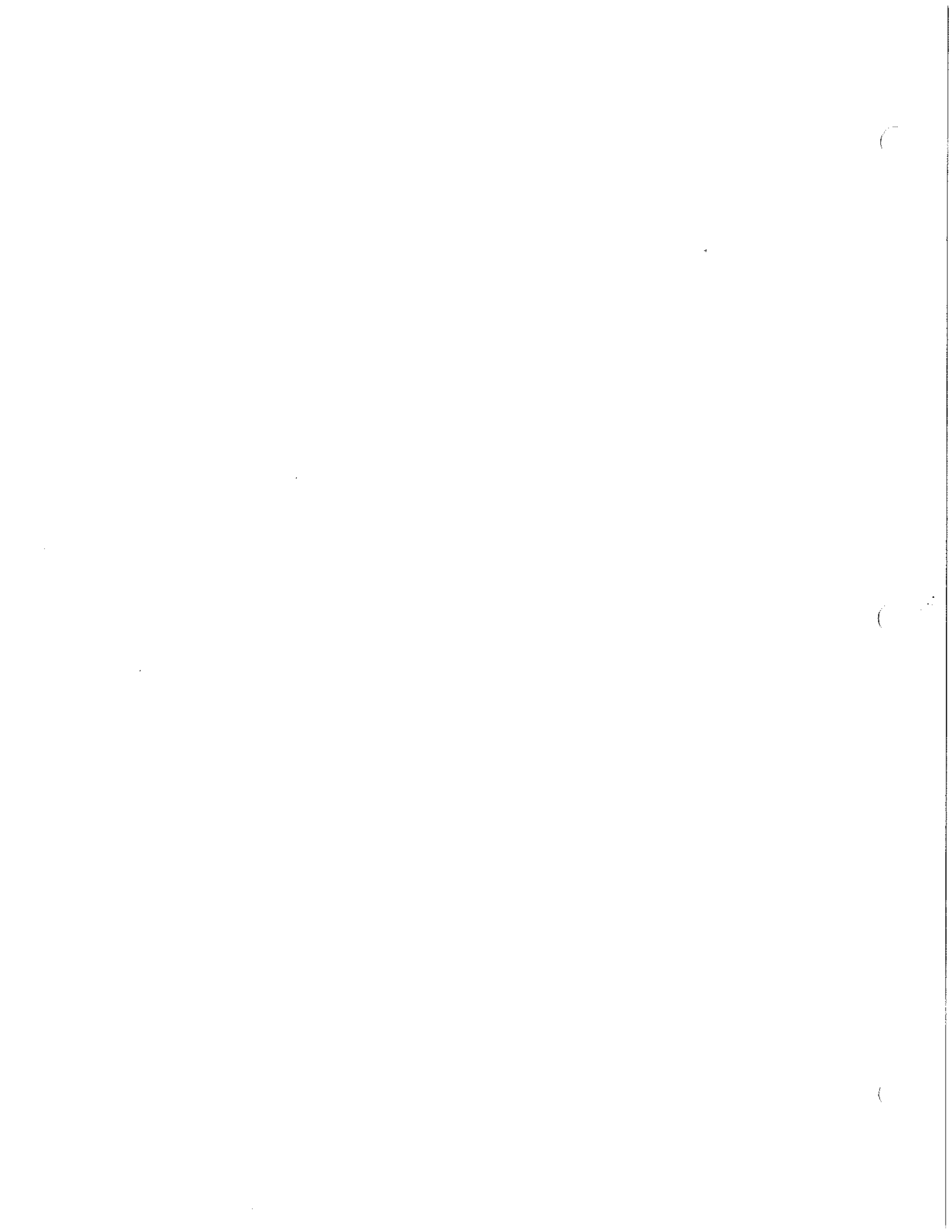


CHAPTER 17

APPENDIX A

STANDARD PLATES



APPENDIX A
STANDARD PLATES

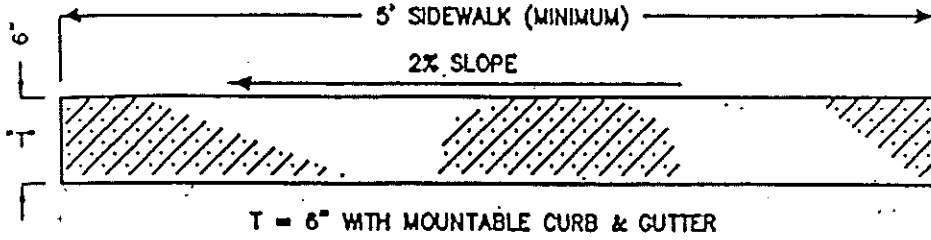
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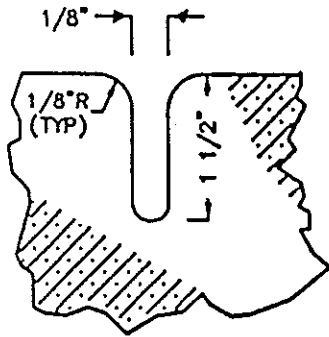
REFERENCES

1. City of Aurora Roadway Design Standard and Specifications
2. Arapahoe County Roadway Design and Construction Standards
3. Adams County Roadway Design and Construction Standards
4. Town of Castle Rock Public Works Regulations
5. Douglas County Subdivision Resolution
6. A Policy on Geometric Design of Highway and Streets 1984
American association of State Highway and Transportation
Officials
7. Design Criteria and Standard Specifications City of
Boulder, CO
8. Subdivision Policy Manual City of Colorado Springs, CO
9. Storm Drainage Design and Technical Criteria Prepared for
Douglas County by WRC Engineering Inc., Denver, CO
10. Standard Specifications for Road and Bridge Construction
Colorado Department of Highways, 1986
11. Design Manual Colorado Department of Highways
12. Standard Construction Specifications and Drawings
Department of Public Works, Denver, CO
13. Public Works Design Standards and Specifications City of
Thornton, CO

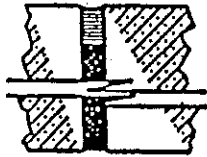
STANDARD ATTACHED OR
DETACHED WALK



IF USED FOR
PEDESTRIAN/
BICYCLE COMB-
INED SIDEWALK
WIDTH SHALL
BE 8'.

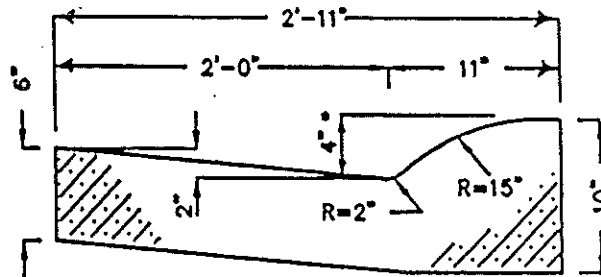


CONTRACTION OR
WEAKENED PLANE
JOINT

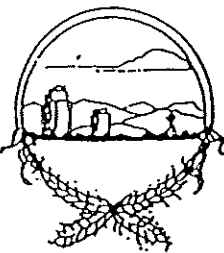
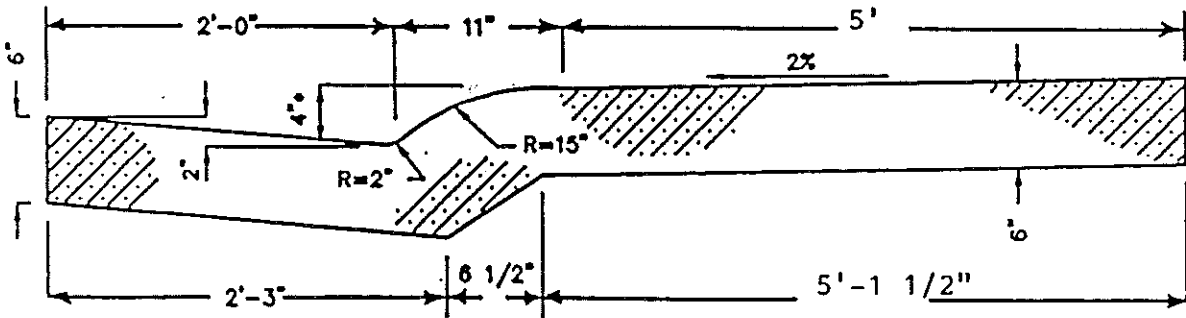


EXPANSION JOINT
(SEE DRWG NO. 5)

MOUNTABLE CURB AND GUTTER



COMBINATION CURB, GUTTER AND SIDEWALK



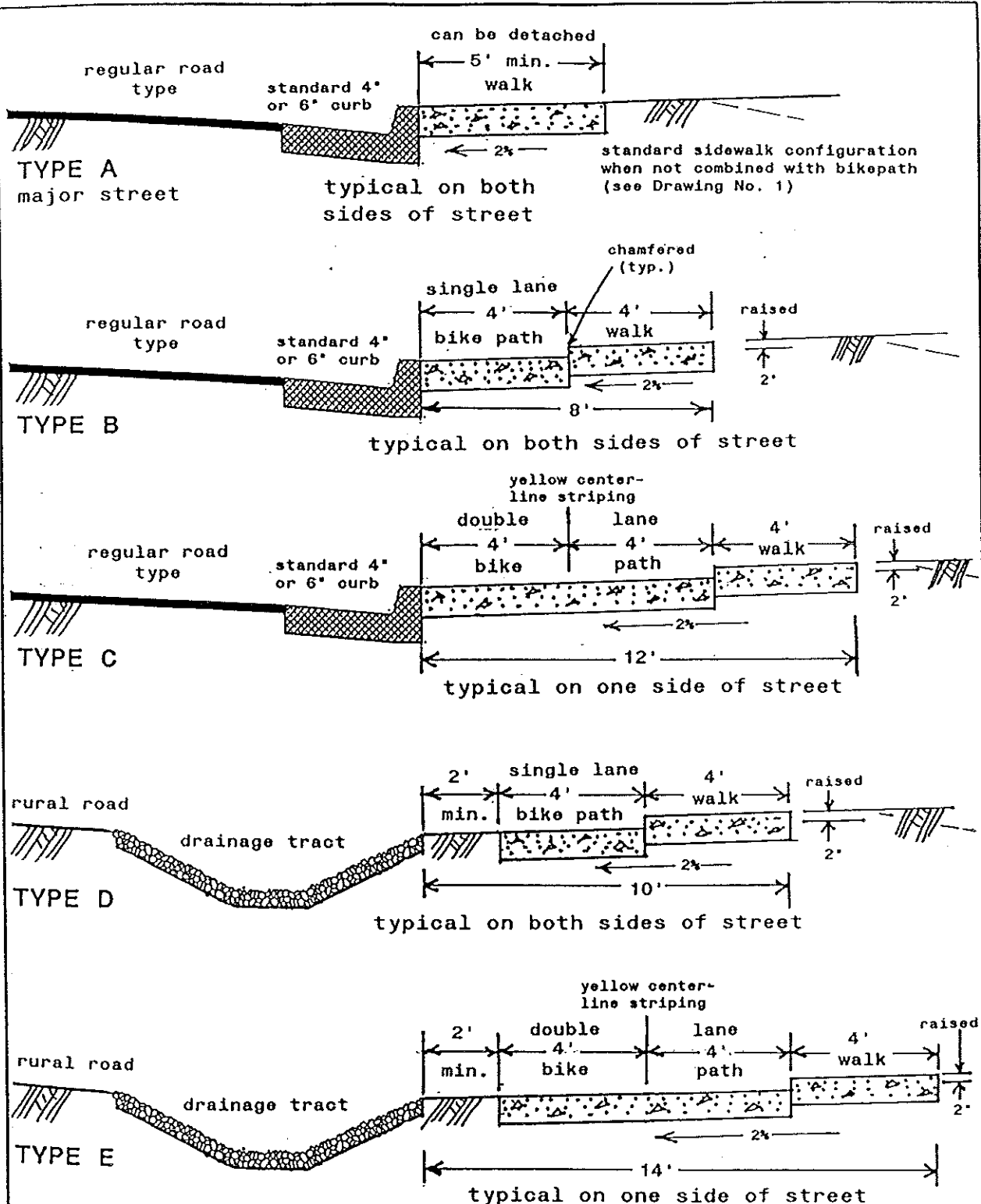
4" MNTBL CURB, GUTTER & WALK
SIDEWALK & CONSTRUCTION JOINTS

Town of Bennett

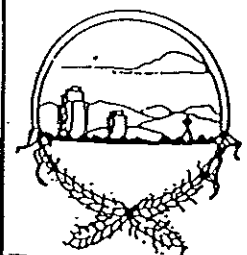
Issued: _____

Revised: _____

Drawing No. 1



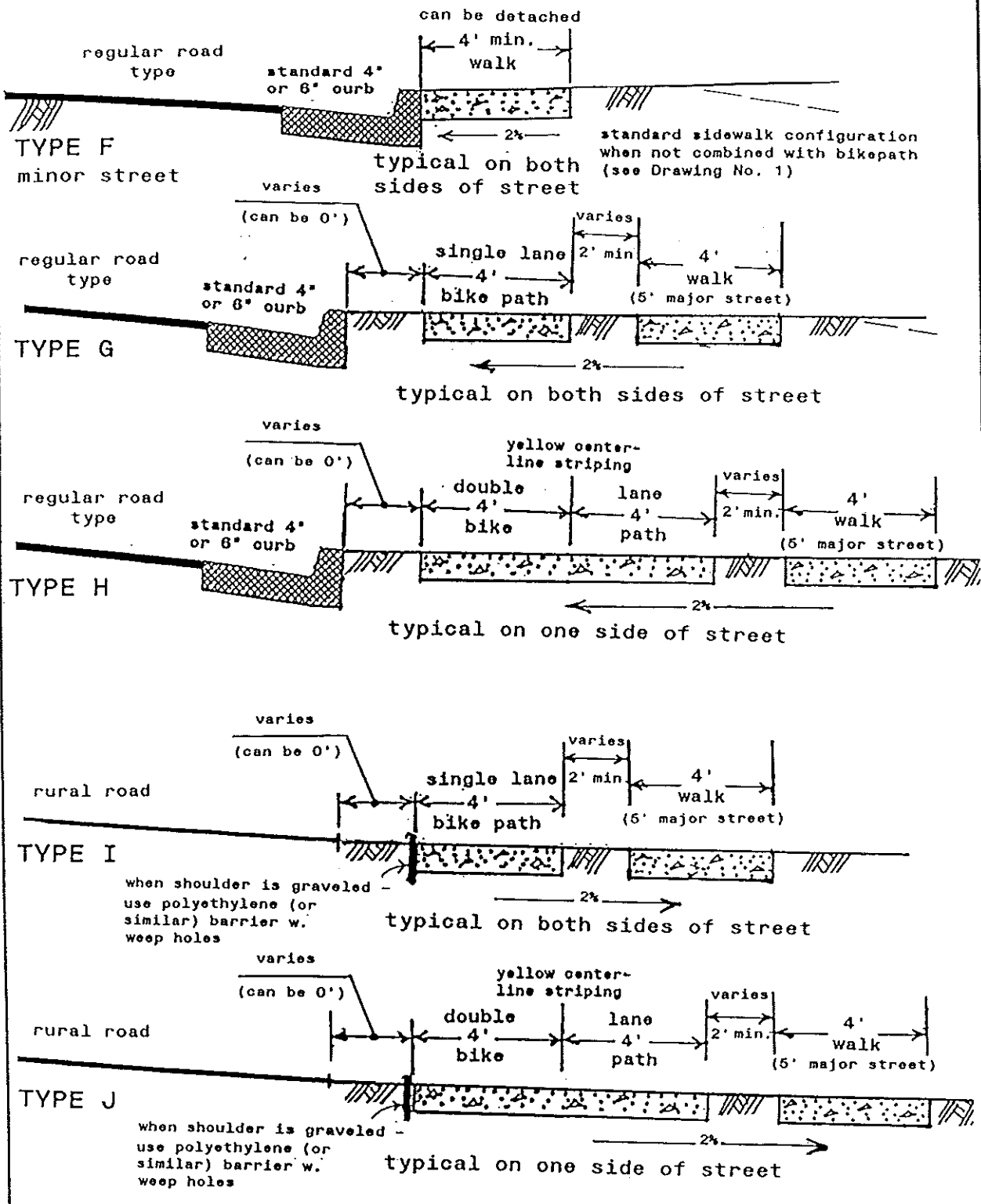
NOTE: ALL ROAD SIDEWALKS AND BIKE PATHS SHALL BE 6" THICK CONCRETE



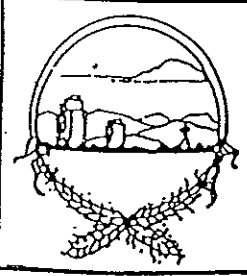
STANDARD SIDEWALK & BIKEPATH CONFIGURATIONS

Town of Bennett

Issued: _____
 Revised: _____
 Drawing No. 2



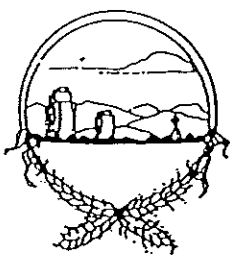
NOTE: ALL ROAD SIDEWALKS AND BIKE PATHS SHALL BE 6" THICK CONCRETE



STANDARD SIDEWALK & BIKEPATH CONFIGURATIONS

Town of Bennett

Issued: _____
Revised: _____
Drawing No. 3



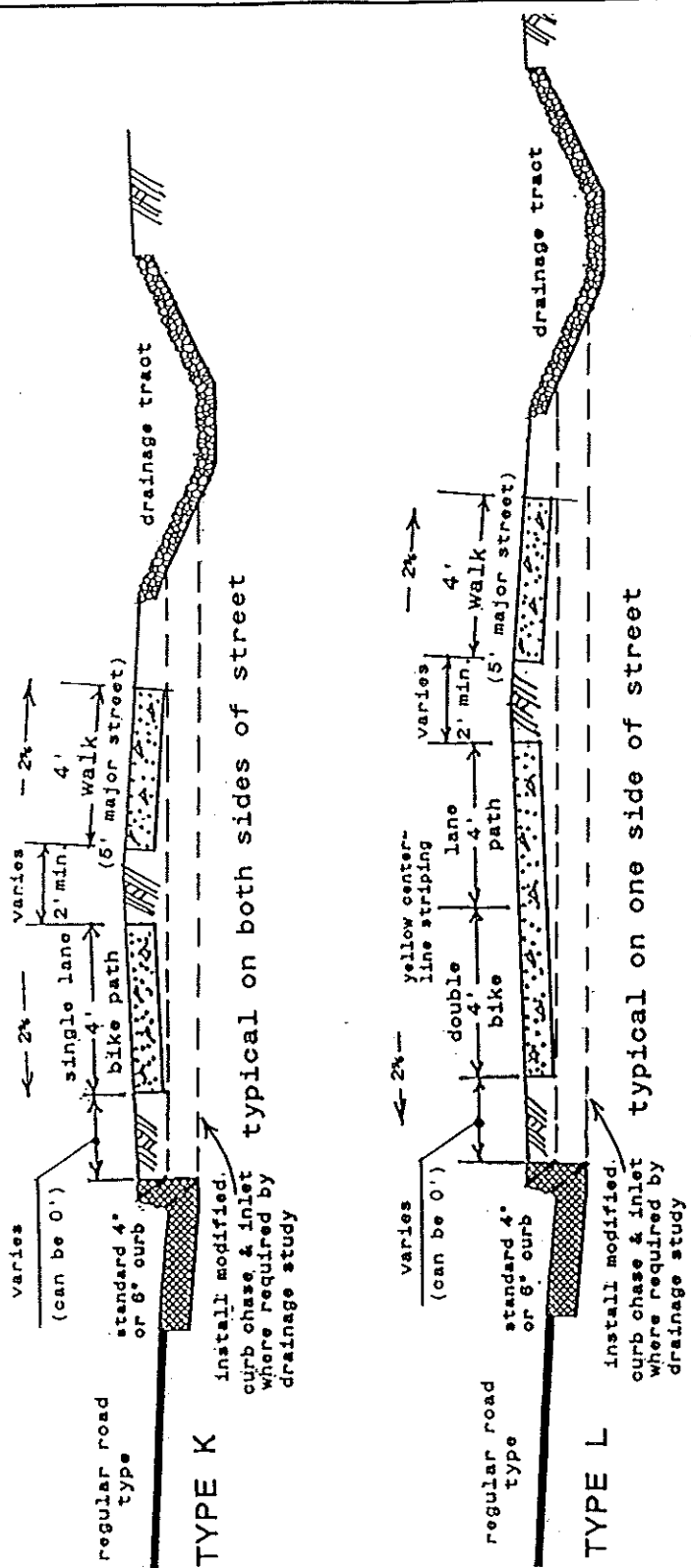
STANDARD SIDEWALK & BIKEPATH CONFIGURATIONS

Town of Bennett

Issued: _____

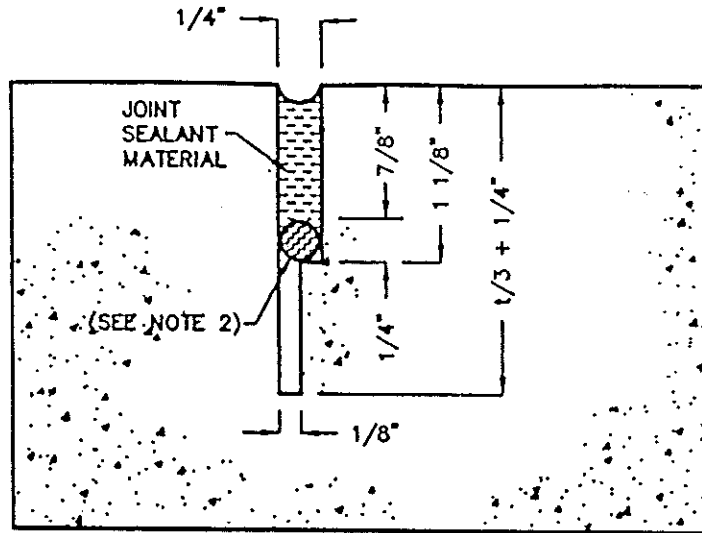
Revised: _____

Drawing No. 4



NOTE: ALL ROAD SIDEWALKS AND BIKE PATHS SHALL BE 6" THICK CONCRETE

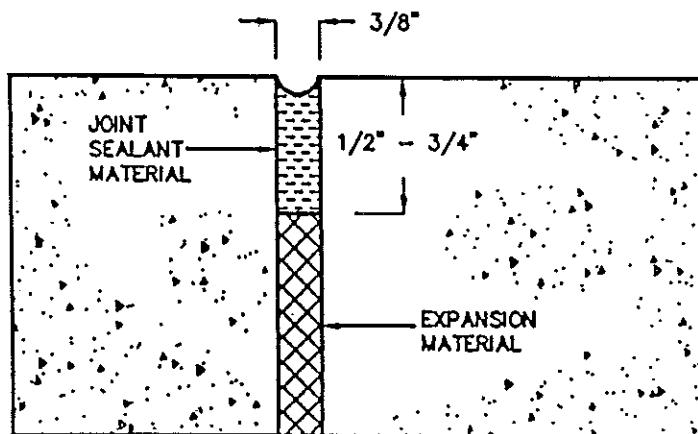
SAWED JOINT



NOTE:

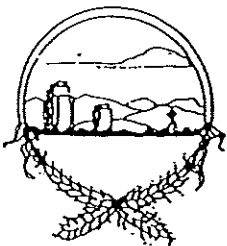
WASH & BLOW OUT WITH FORCED AIR UNTIL DRY BEFORE APPLYING SEALANT MATERIAL.

EXPANSION JOINT



NOTE:

1. JOINT SEALANT MATERIAL MUST MEET ASTM 3406.
2. NYLON ROPE OR OPEN CEL POLYURETHANE STRAND.



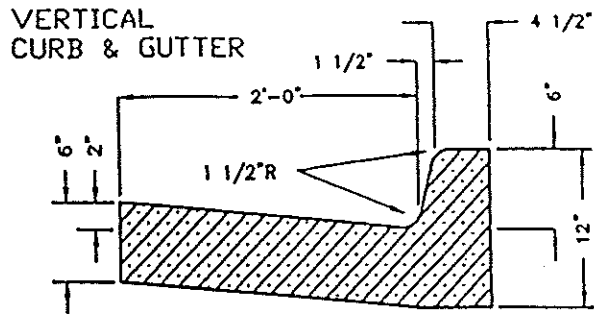
SAWED JOINT

Town of Bennett

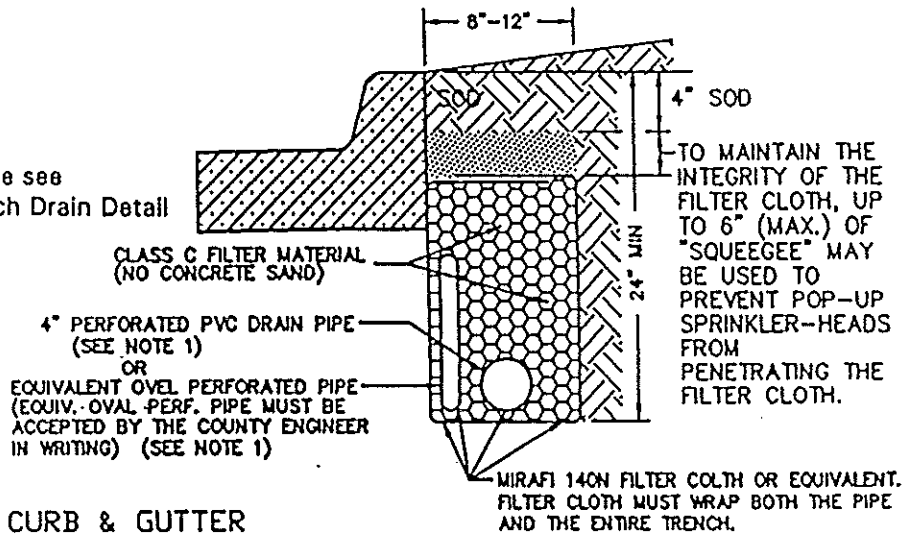
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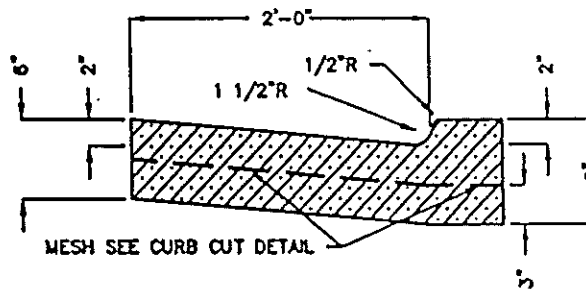
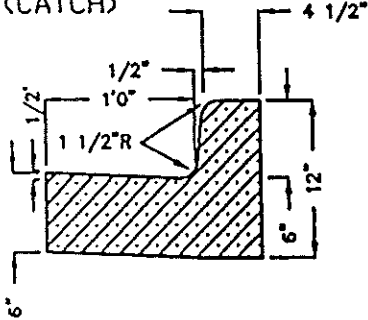
Drawing No. 5



Please see
Trench Drain Detail



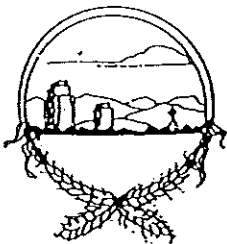
MEDIAN CURB & GUTTER
(CATCH)



TYPICAL CURB & GUTTER
AT DRIVEWAY

NOTES:

1. The 4" (or equivalent oval) drain pipe will be connected to a storm drainage system to create a positive drainage of runoff.
2. If a sidewalk is placed behind the curb but is not placed monolithically, a silicone base sealer must be applied between the sidewalk and the curb.



CURB, GUTTER & WALK
VERTICAL CURB

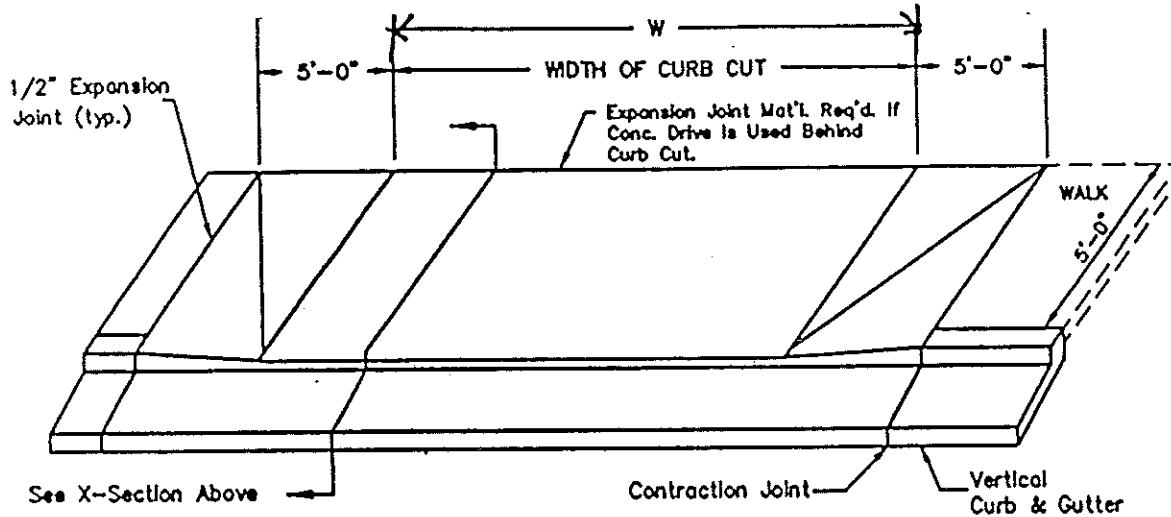
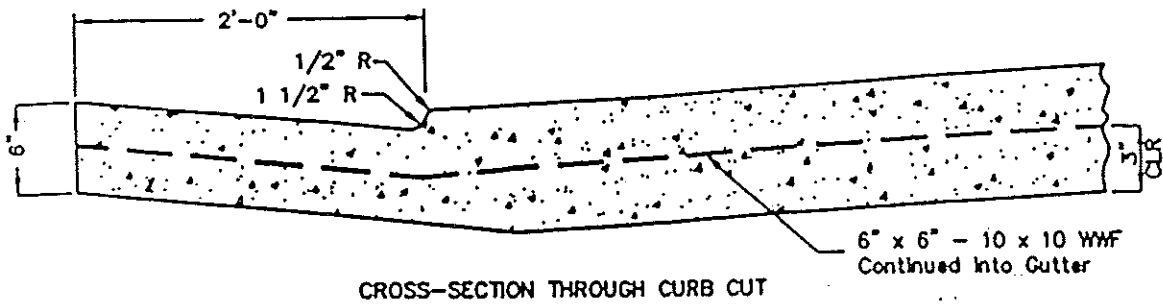
Town of Bennett

Issued: _____

Revised: _____

Drawing No.

6



NOTES:

1. Back of curb cut extends to back of walk or back of bicycle path. If no walk is present, extend back of curb cut to 5' 0" behind flowline.
2. County Shall approve location of curb cut before construction.

Width of Curb Opening (W)

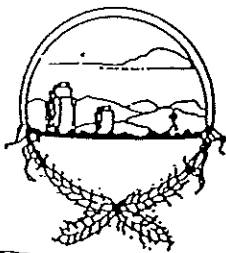
Note: Curb openings of 30' or more must be constructed as radius curb return.

WIDTH OF CURB OPENING (From Table 13.1)

	RESIDENTIAL SF	MF	SERVICE COMMERCIAL	STATION	INDUSTRIAL
FREEWAY	N/A	N/A	N/A	N/A	N/A
MAJOR ARTERIAL	IF ALLOWED UNDER 13.2.3.2.c.		DESIGN AS COLLECTOR		
MINOR ARTERIAL	IF ALLOWED UNDER 13.2.3.2.c.		DESIGN AS COLLECTOR		
MAJOR COLLECTOR	N/A	30-35	30-40	30-40	30-40
MINOR COLLECTOR	N/A	30-35	30-40	30-40	30-40
LOCAL	(**)	30-35	30-40	30-40	30-40

- NOTE: (1) Curb openings of 30' or more must be constructed as a radius curb return.
 (2) If a radius curb return is used, the width of the allowed driveway is measured by NOT counting the two (2) 20' radii, or in other words, it is measured at the throat extended to flowline.

**** FOR SINGLE FAMILY RESIDENTIAL ACCESS TO LOCAL STREETS:**
 LOCAL (SUBURBAN - with curb-gutter-sidewalk) = 16' to 30'
 LOCAL (URBAN - without curb-gutter-sidewalk) = 20' to 30'
 LOCAL (RURAL - Ag. zoned) = 20' to 30'



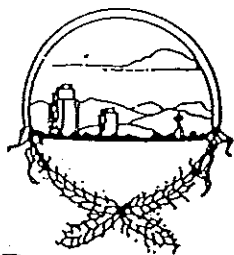
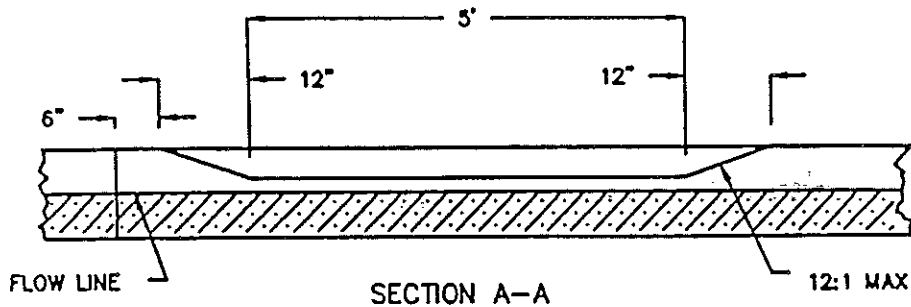
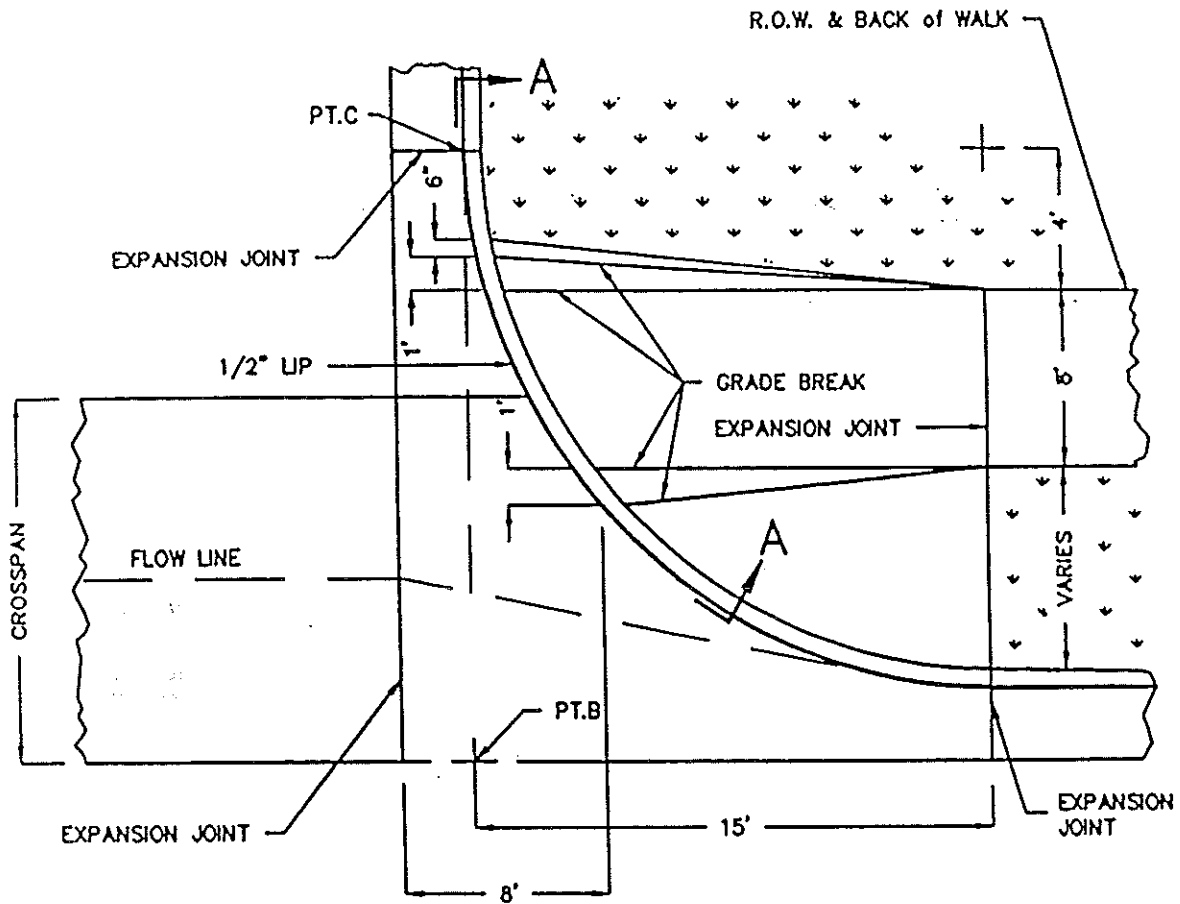
CURB, GUTTER AND WALK CURB CUTS

Town of Bennett

Issued: _____

Revised: _____

Drawing No. **7**



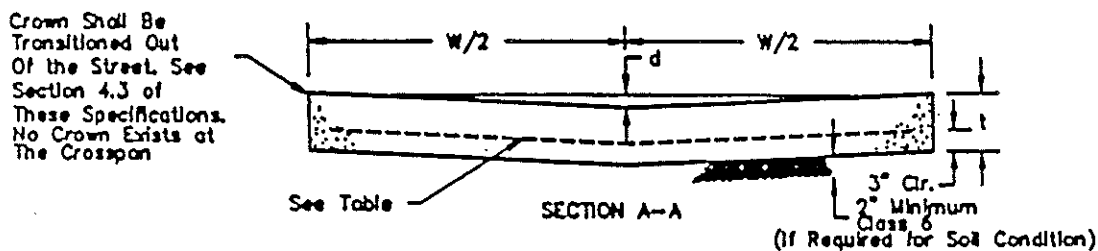
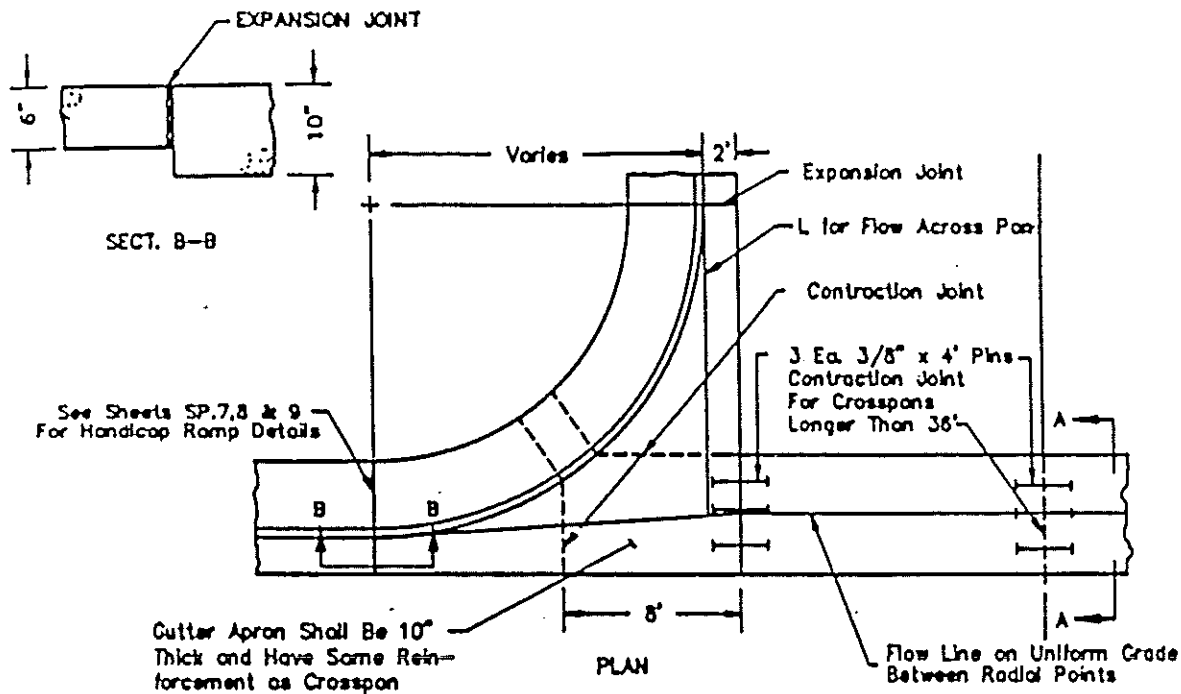
DRIVEWAY RETURNS OPPOSITE MAJ.
 ART. MED. OPENS 8' DETACHED

Town of Bennett

Issued: _____

Revised: _____

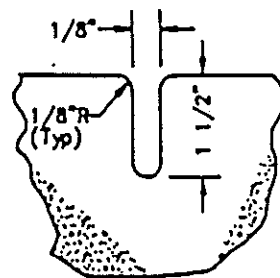
Drawing No. 8



Width (W)	Depth (D)	Thickness (T)
6'	1-1/2"	8"
8'	2"	10"
10'	2-1/2"	10"

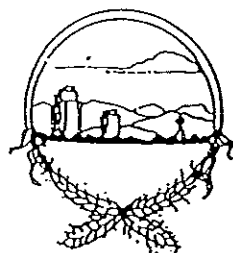
PAN LENGTH	WIRE MESH CALLED FOR	REPLACE WITH REBAR HAVING END AREA OF
24'	6x6 - 4.4	0.10 Sq. In. Per Ft. (#4 @ 18" E.W.)
32'	6x6 - 2.2	0.13 Sq. In. Per Ft. (#4 @ 18" E.W.)
38'	6x6 - 0.0	0.20 Sq. In. Per Ft. (#4 @ 12" E.W.)
40'	Two 6x6 - 2.2	0.26 Sq. In. Per Ft. (#4 @ 9" E.W.)

NOTE:
Square returns and pans shall use wire mesh as shown in the table above. When wire mesh is not available, steel reinforcing bar may be substituted.



CONTRACTION OR WEAKENED PLANE JOINT

* 1/4 D if Templates Are Not Used



CROSSPANS
TYPE I

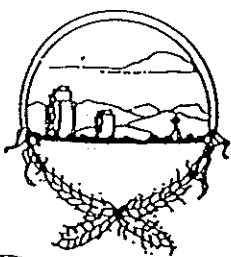
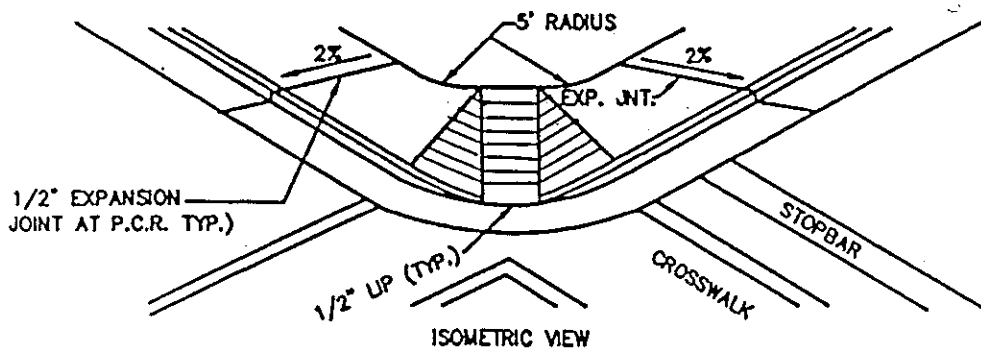
Town of Bennett

Issued: _____

Revised: _____

Drawing No. 9

1. In accordance with CRS43-2-107(2), ramps shall be provided at all corners of street intersections where there is existing or proposed sidewalk and curb. Ramps shall also be provided at walk locations in mid-block in the vicinities of hospitals, medical centers, athletic stadiums, and at "T" intersections directly opposite either curb return.
2. All work shall be done in accordance with the standard specifications of Town.
3. Sidewalks shall be ramped where a driveway curb is extended across the walk.
4. Details shown in this plan shall apply to all construction or reconstruction of streets, curbs or sidewalks.
5. Special designs are required when grades are over 4% or where the angle of the intersection is less than 75° or more than 105°.
6. In new construction, ramp and curb may be poured monolithically.
7. Ramp and wings shall be poured monolithically.
8. Minimum width of ramps shall be 4 feet and ramp slopes shall not be steeper than 12:1.
9. Maintain back of walk elevation at 2.0% above top of curb.
10. Concrete for sidewalk ramps shall be Class "A".
11. Normal gutter flow line and profile shall be maintained through the ramp area.
12. Ramp surface shall have a coarse broom finish SCORE perpendicular to the direction of ramp slope @ 9" OC.
13. A 1/2" expansion joint shall be required where the concrete ramp joins any rigid pavement or structure.
14. Drainage structures shall not be placed in line with ramps, location of the ramp shall take precedence over location of the drainage structure, except where existing drainage structures are being utilized in the new construction.
15. All pavement marking shall be in accordance with the latest edition of the MUTCD for streets and highways.



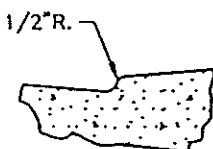
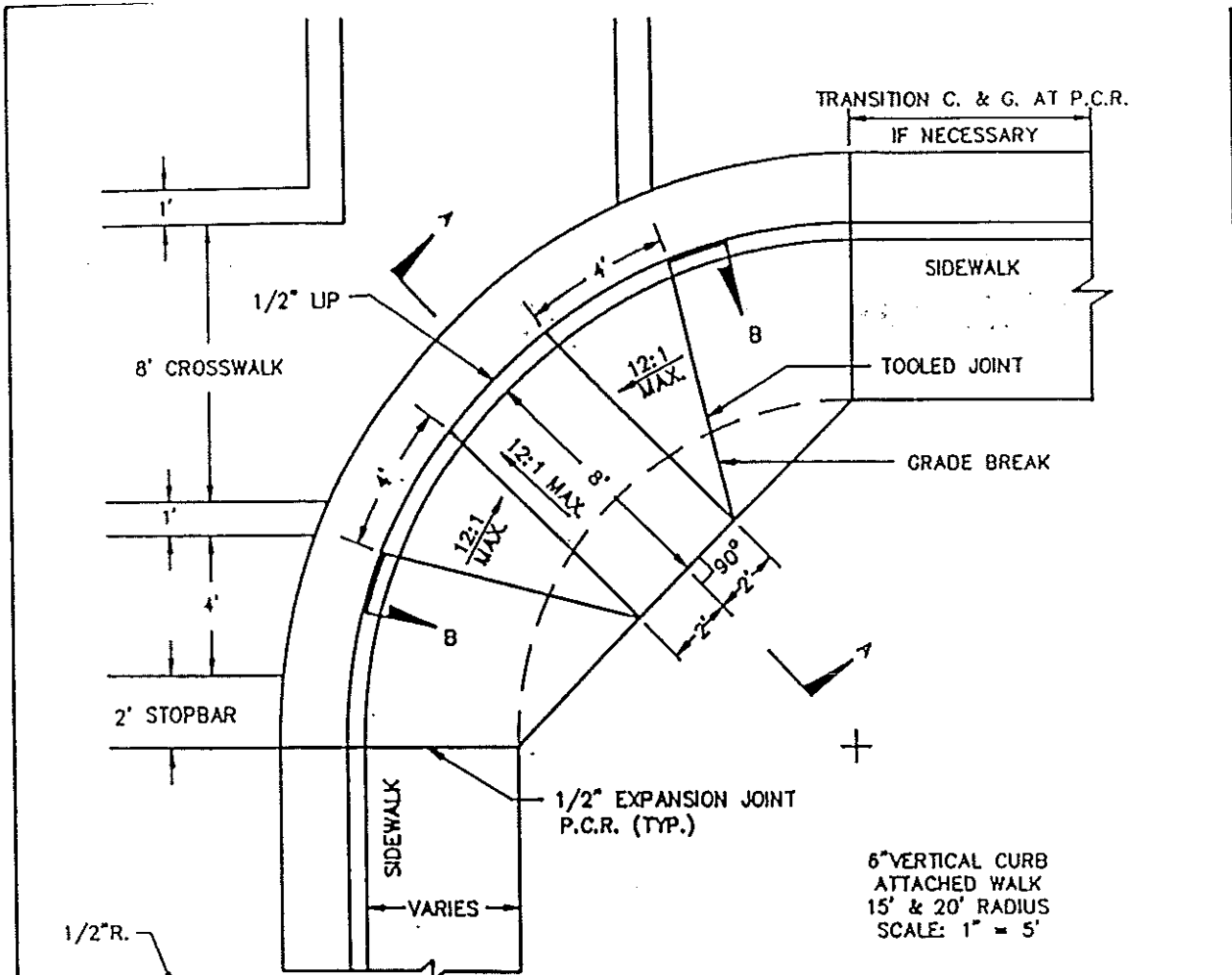
CURB RAMPS FOR
PHYSICALLY HANDICAPPED

Town of Bennett

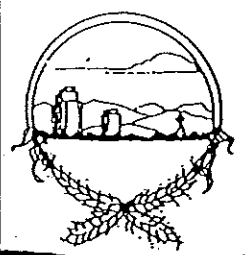
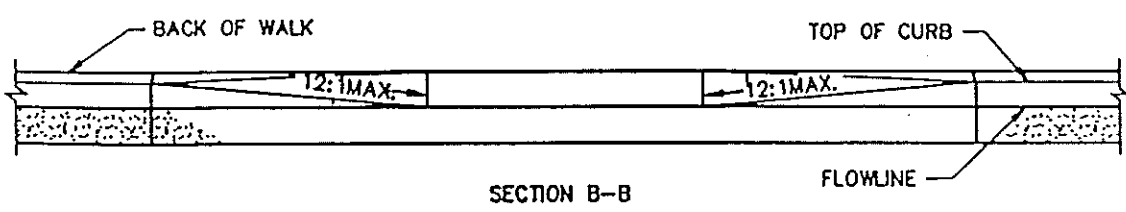
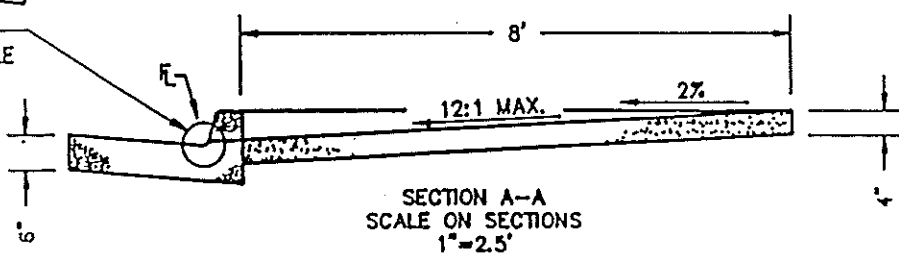
Issued: _____

Revised: _____

Drawing No. 10



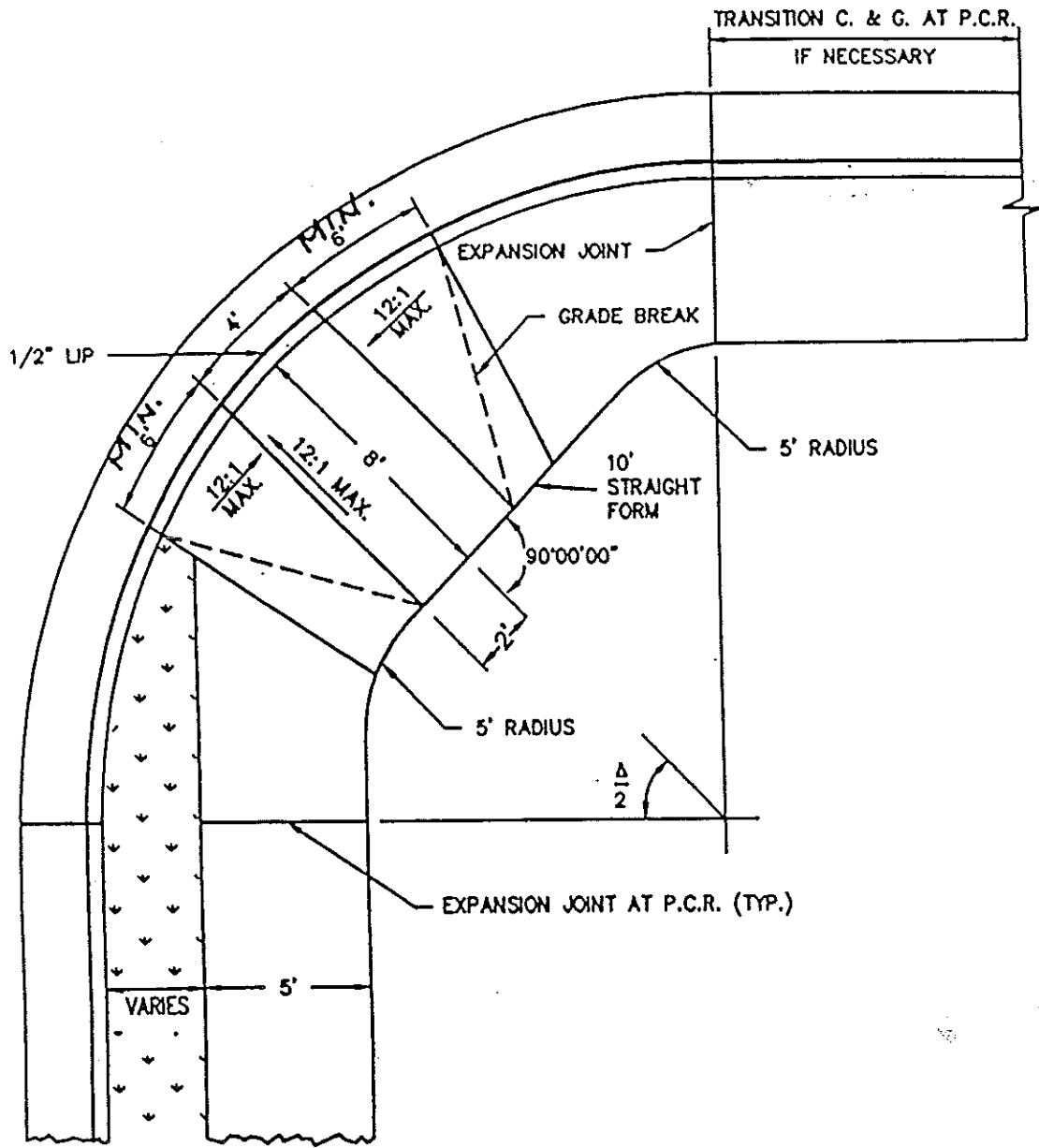
DETAIL
NO SCALE



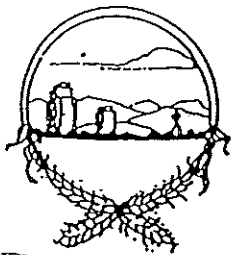
**CURB RAMPS FOR
PHYSICALLY HANDICAPPED**

Town of Bennett

Issued: _____
 Revised: _____
 Drawing No. 11



DETACHED WALK TO ATTACHED WALK
25' RADIUS OR GREATER



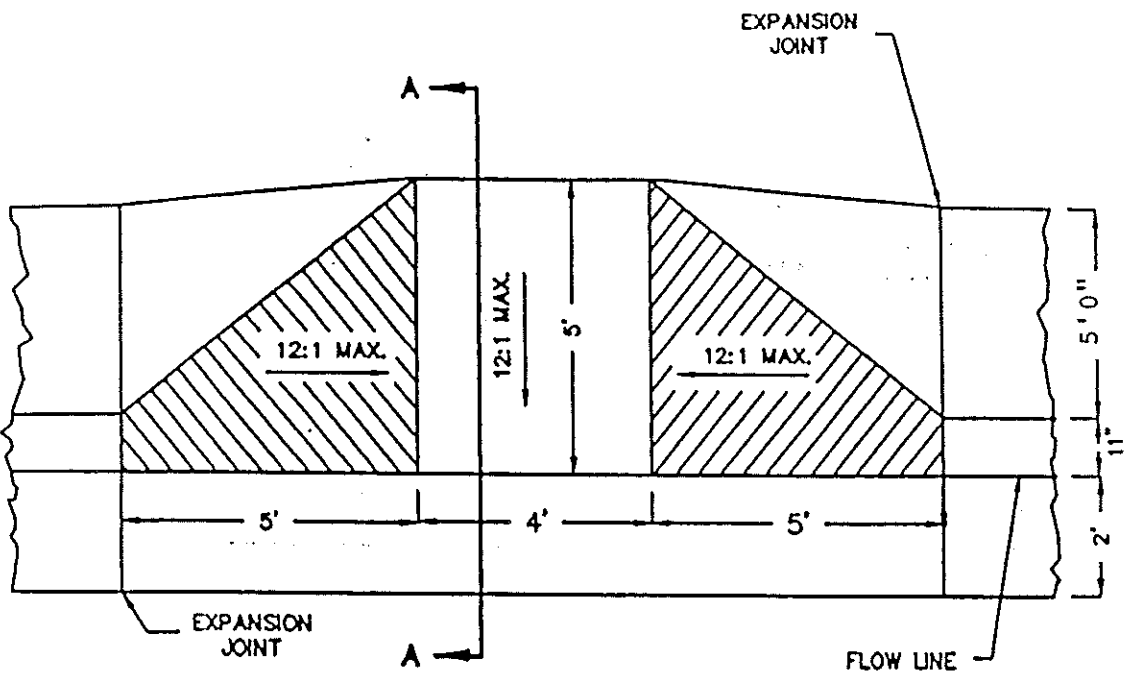
CURB RAMPS FOR
PHYSICALLY HANDICAPPED

Town of Bennett

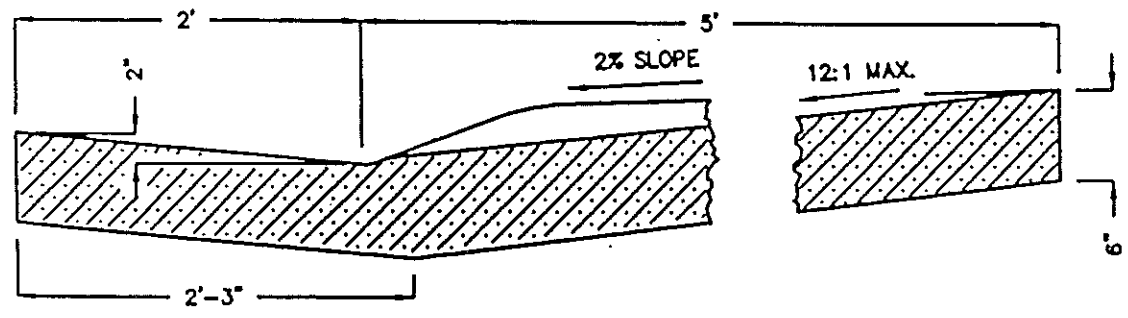
Issued: _____

Revised: _____

Drawing No. 12

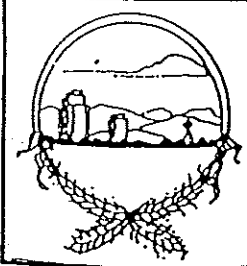


NOTE:
FOR LOCAL (36' FL/FL) STREETS ONLY.



SECTION A-A

FOR COMB. CURBWALK ONLY



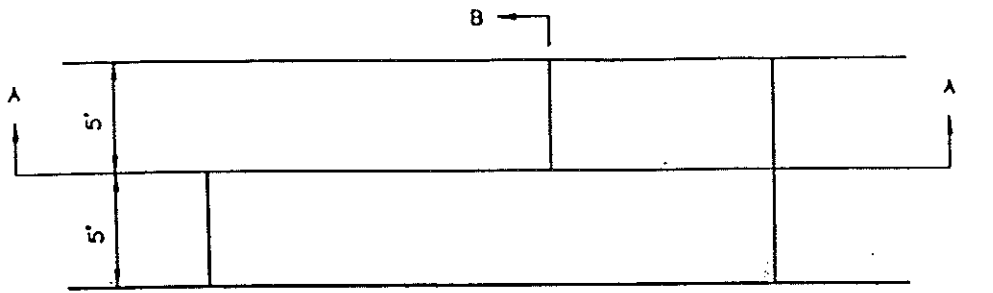
MID-BLOCK RAMP FOR PHYSICALLY
HANDICAPPED ON LOCAL STREETS

Town of Bennett

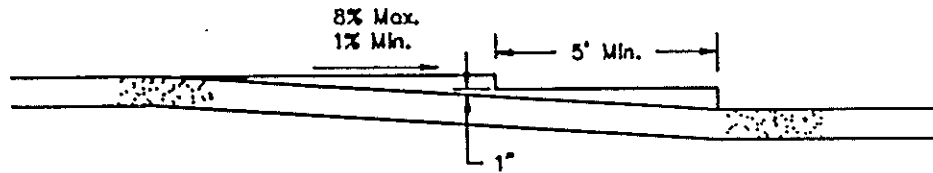
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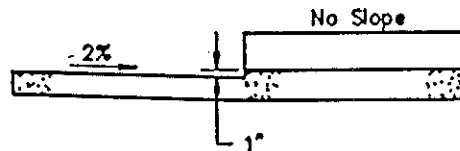
Drawing No. 13



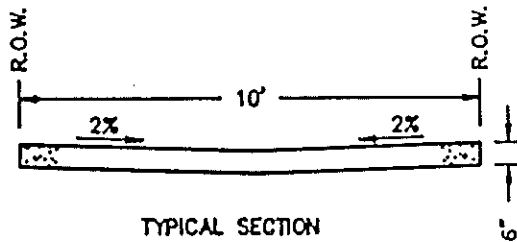
PLAN



SECT. A-A



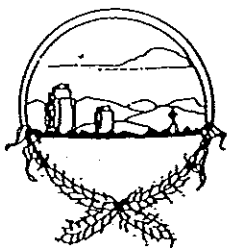
SECT. B-B



TYPICAL SECTION

NOTES:

1. The use of this pedestrian walkway will normally not be allowed on public walkways. It is intended to show how steps and handicap ramps will be used in conjunction with each other.
2. The concrete walkway shall be the full width of the tract.
3. The longitudinal slope shall not be less than 1% for terrain exceeding 6%, but less than 18%. A combination of step and landing can be incorporated into the left side of the walkway (facing downhill) in such a manner as to match grade with existing terrain as closely as is possible. Grades in excess of 18% shall require a special design to be approved by the Town Engineer.
4. The construction plans for the development shall include complete details for the walkway.
5. The walkway shall not be used for drainage overflow.
6. Contraction or weakened plain joint at 10' intervals and expansion joint per sidewalk construction.



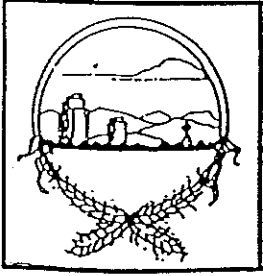
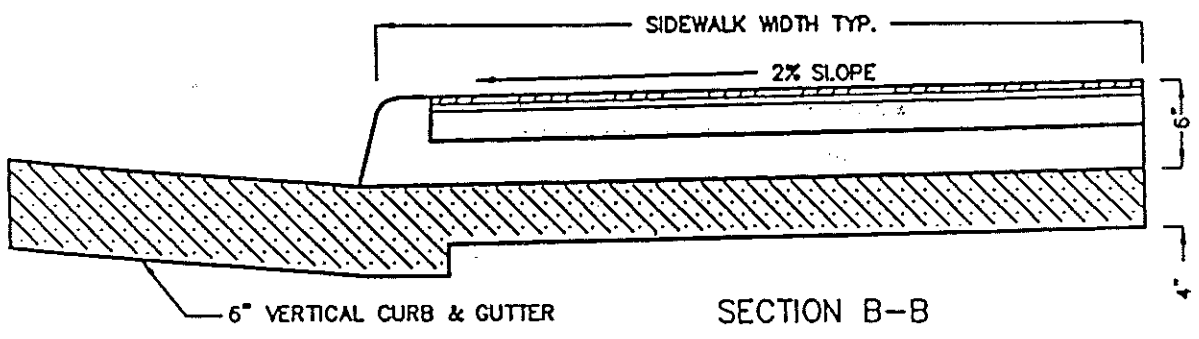
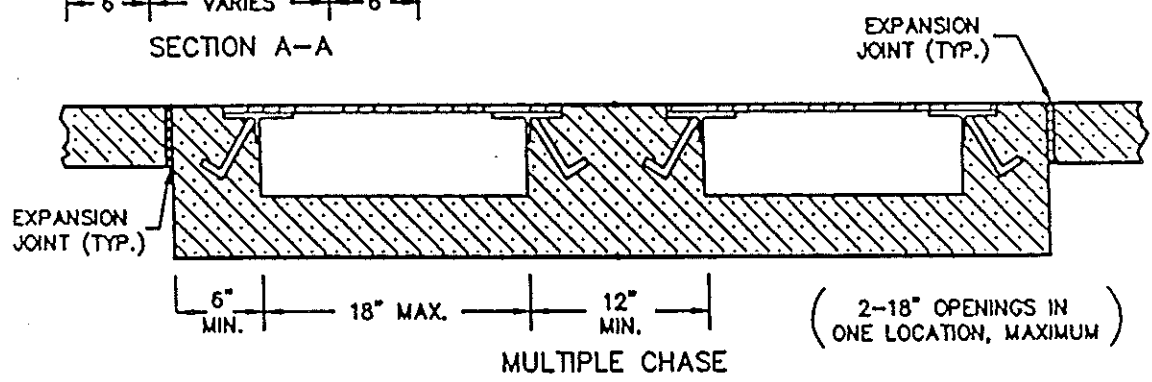
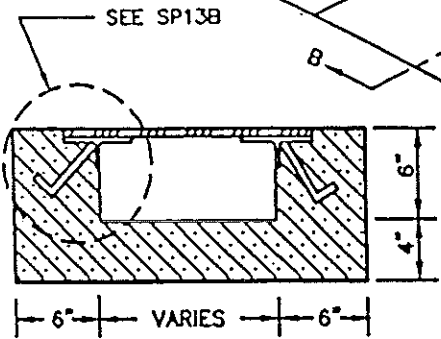
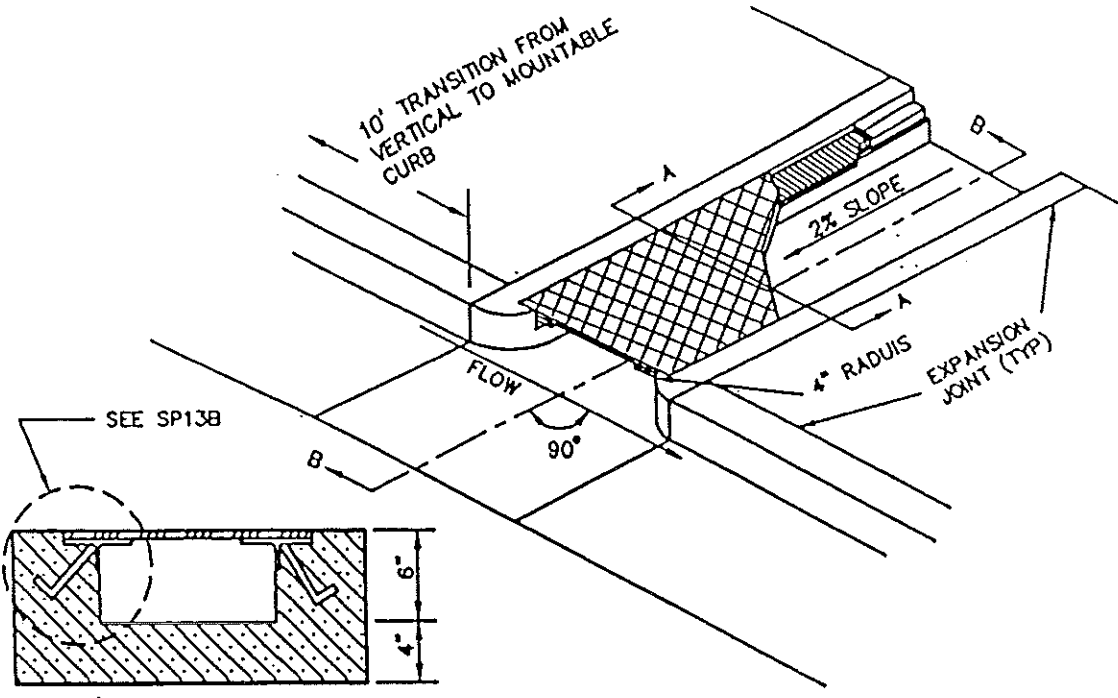
PEDESTRIAN WALKWAY
RAMP & STEP DETAILS

Town of Bennett

Issued: _____

Revised: _____

Drawing No. 14



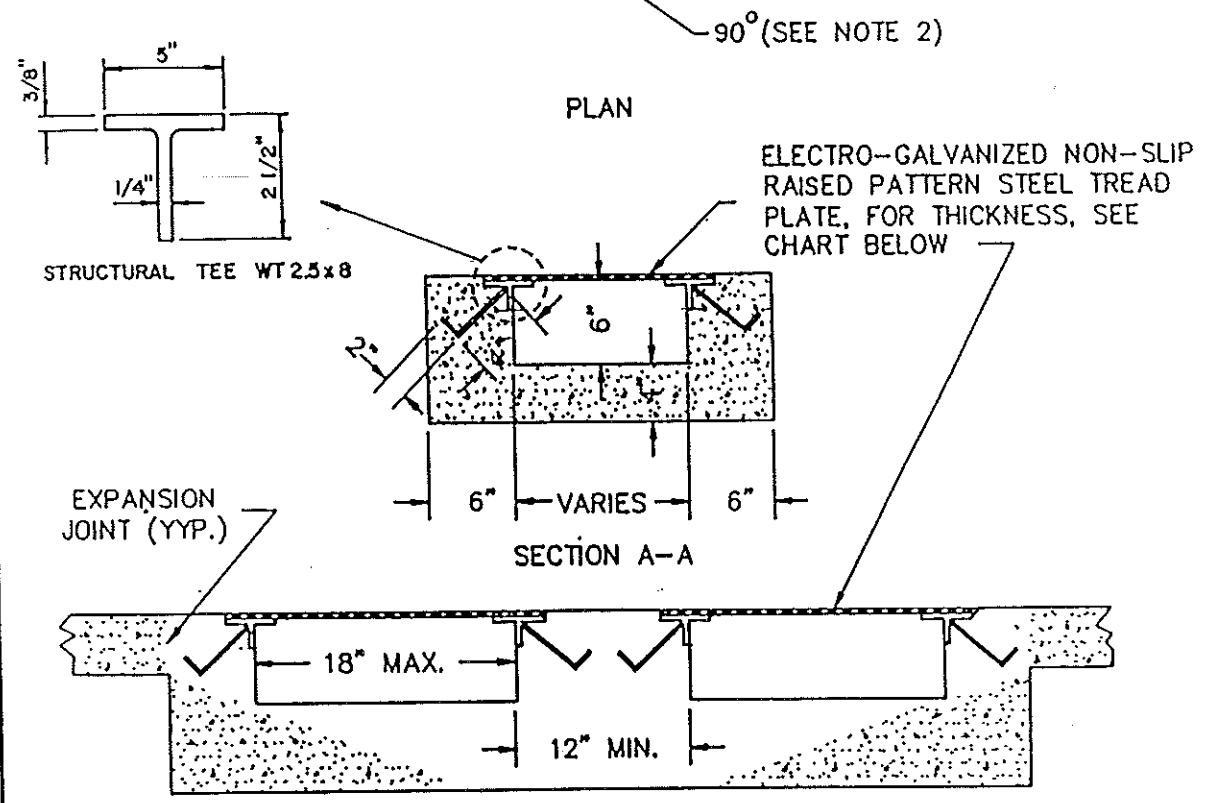
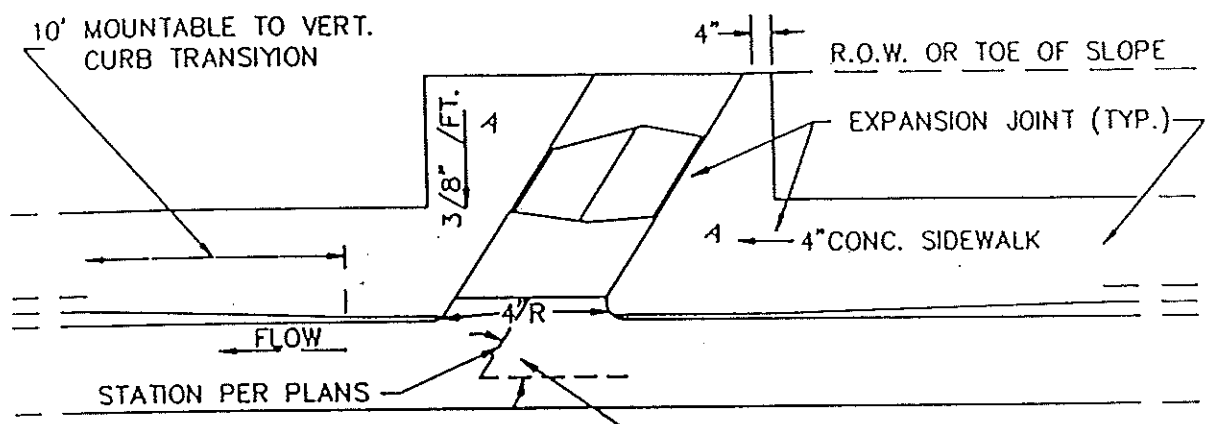
SIDEWALK CURB CHASE

Town of Bennett

Issued: _____

Revised: _____

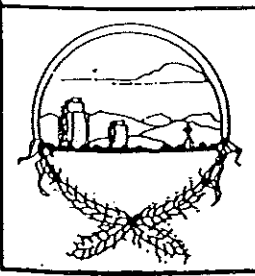
Drawing No. 15



NOTES: MULTIPLE CHASE

1. Maximum 2 - 18" openings in one location.
2. Angle may be > 90 in some cases.

WIDTH OF OPENING	THREADPLATE THICKNESS
6"	3/8"
6" - 12"	1/2"
12" - 18"	5/8"



SIDEWALK CURB CHASE

Town of Bennett

Issued: _____

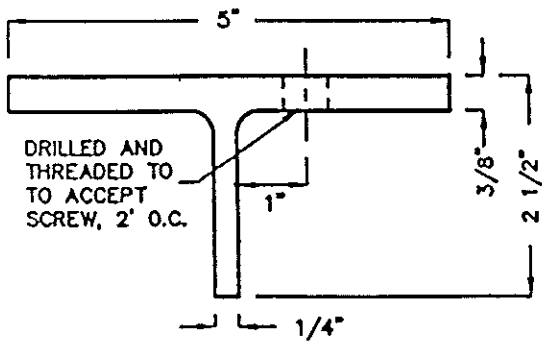
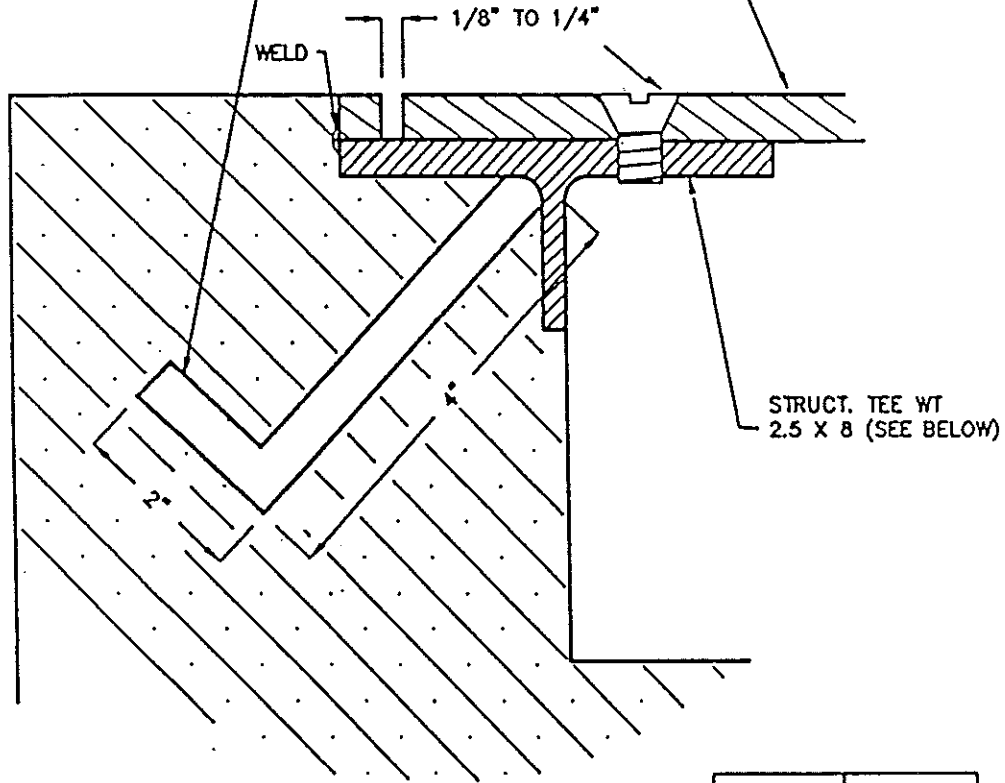
Revised: _____

Drawing No. 16

#3 BAR 6" LONG WELDED TO STRUCT. TEE AT 18" O.C. EACH SIDE (1/2" ANCHOR BOLT MAY BE USED)

1/2" X 1" SCREW (SEE NOTE 1)

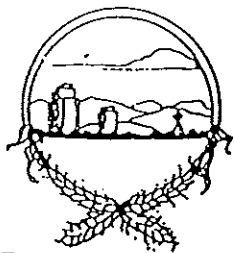
ELECTRO-GALVANIZED NON-SUP RAISED PAT-TERN STEEL TREAD PLATE. (FOR THICKNESS SEE CHART BELOW)



WIDTH OF OPENING	TREAD PLATE THICKNESS
6"	3/8"
6"-12"	1/2"
12"-18"	5/8"

NOTES:

1. STARHEAD SCREW BRASS OR ELECTRO-GALVANIZED FINISH (RECESS HEAD)



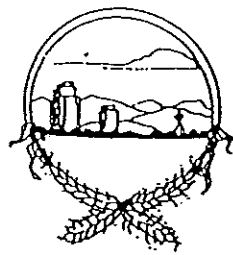
SIDEWALK CURB CHASE

Town of Bennett

Issued: _____

Revised: _____

Drawing No. 17



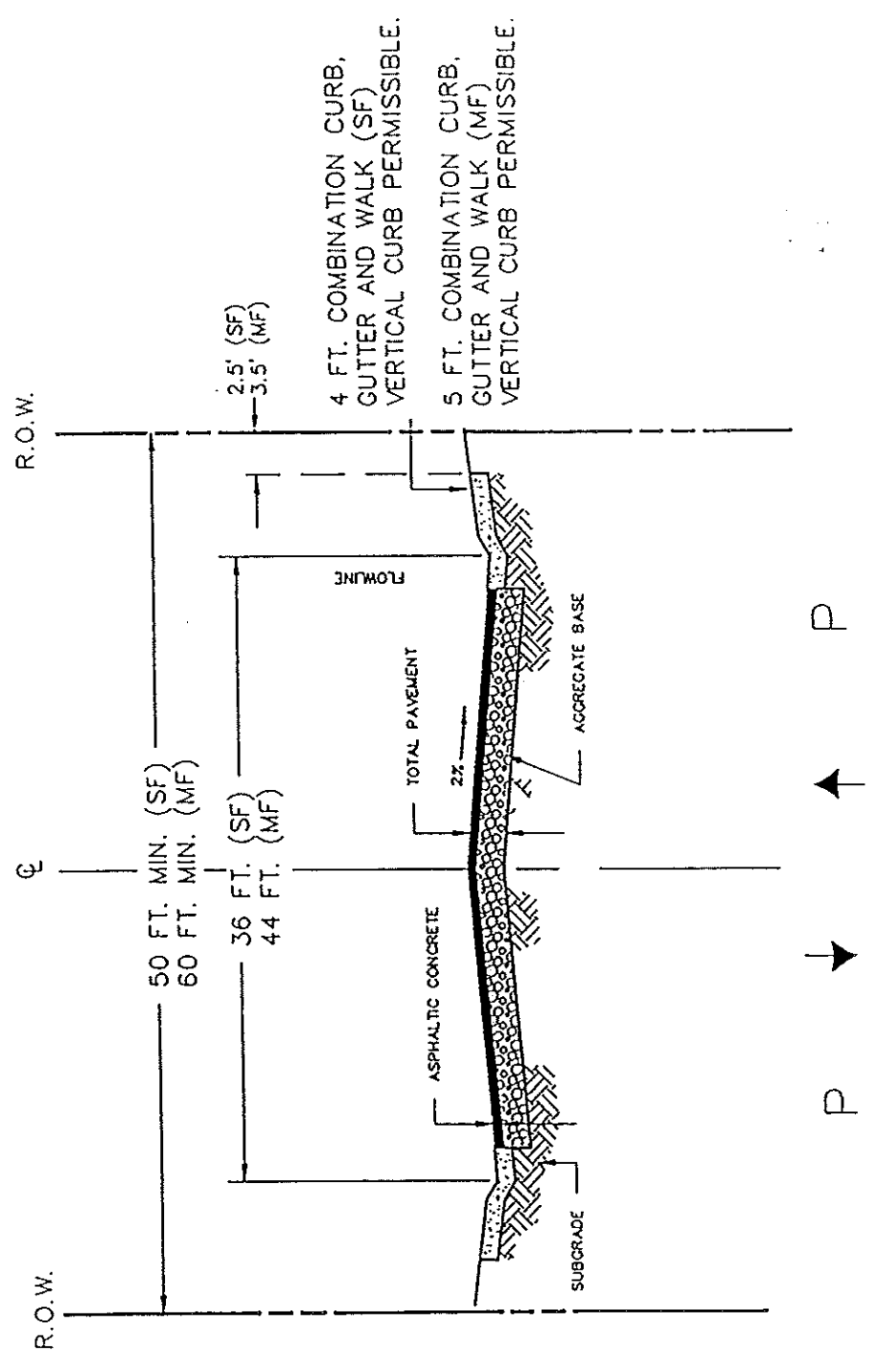
LOCAL
TYPE I & TYPE II

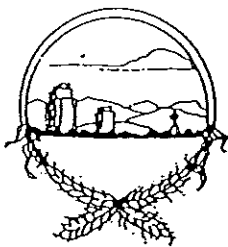
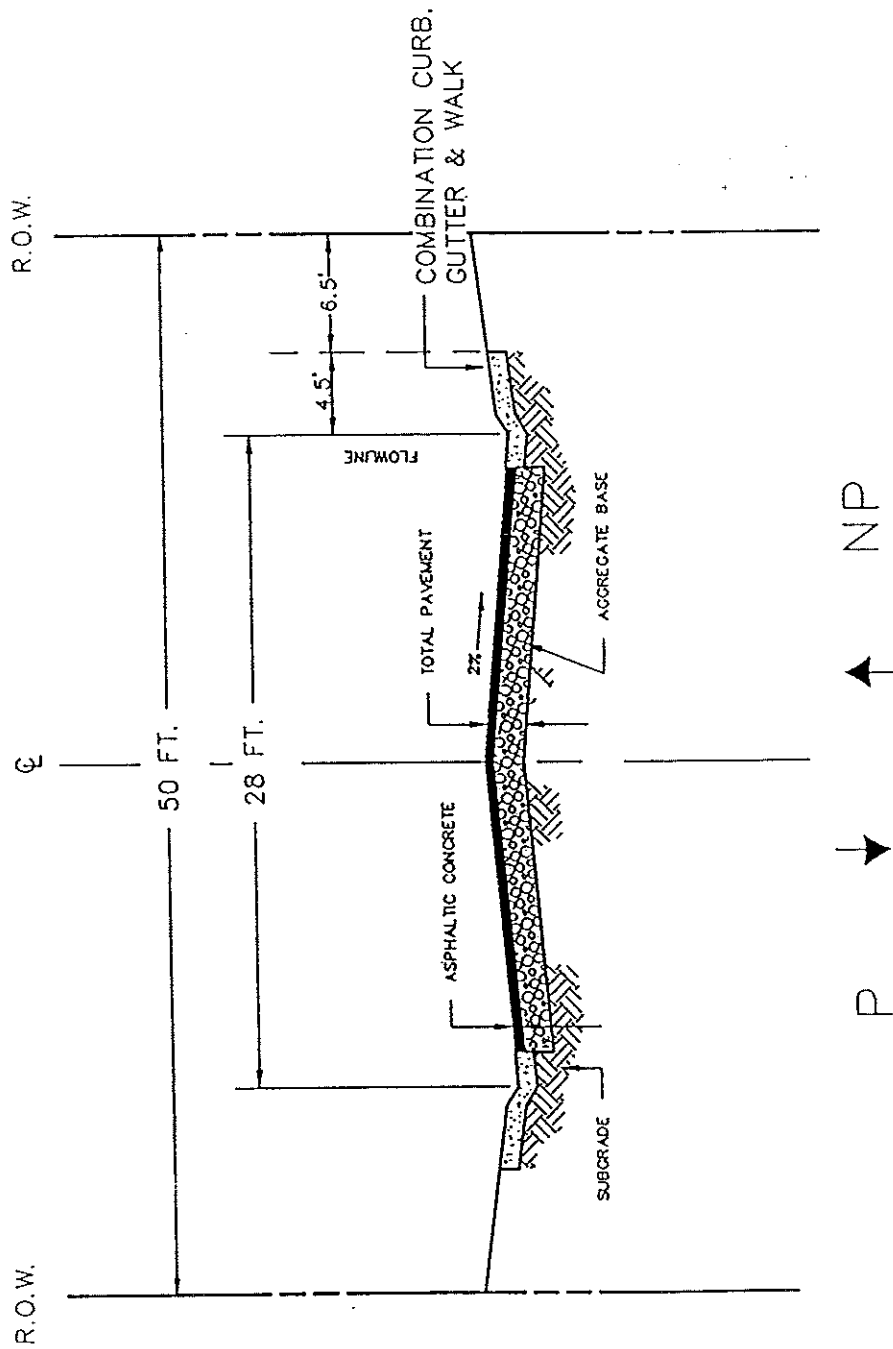
Town of Bennett

Issued: _____

Revised: _____

Drawing No. 18





LOCAL
TYPE III

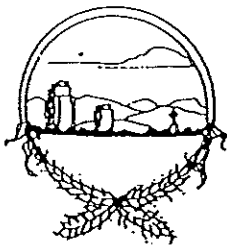
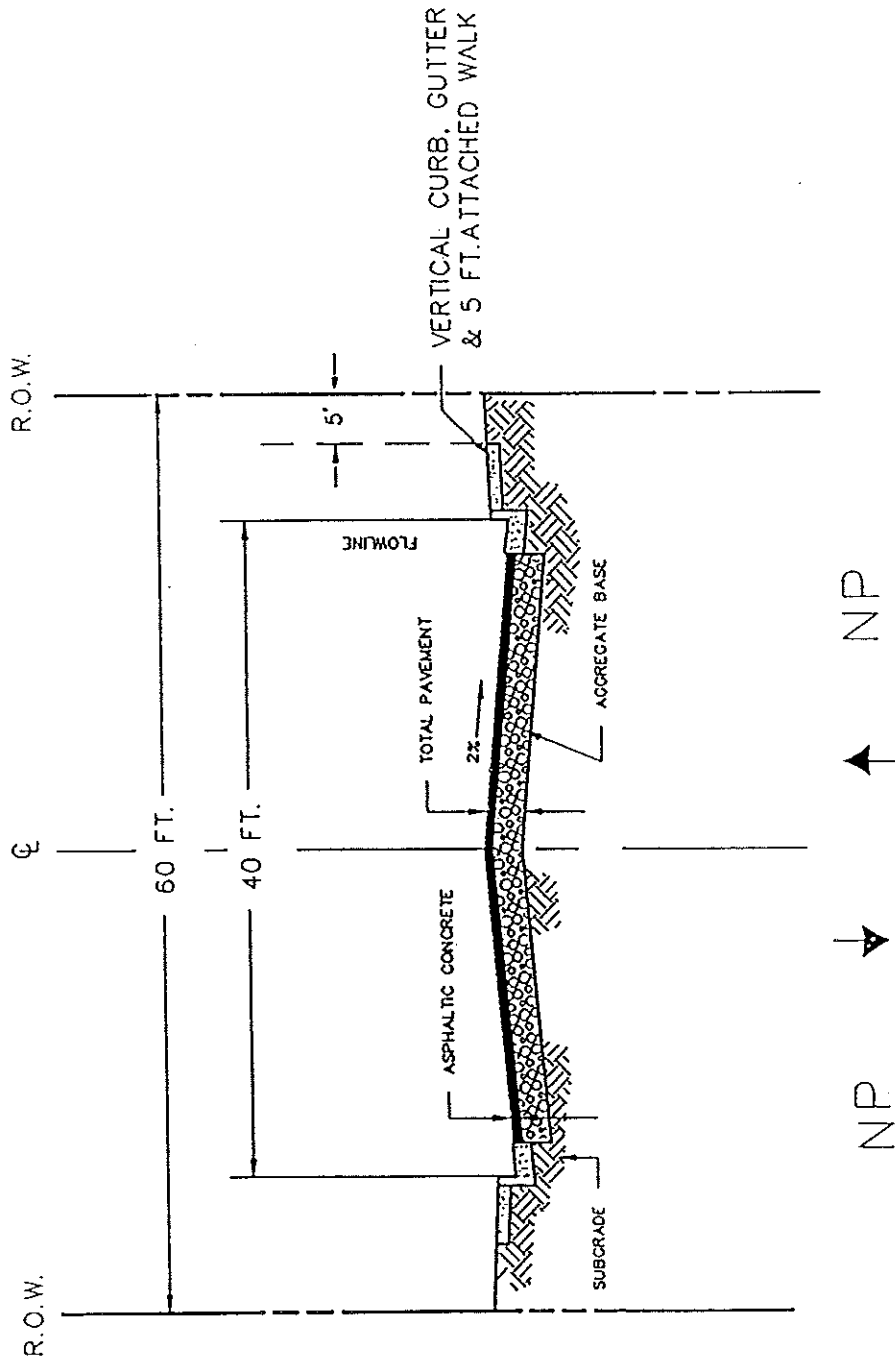
Town of Bennett

Issued: _____

Revised: _____

Drawing No.

19



LOCAL
TYPE IV
COMMERCIAL AND INDUSTRIAL



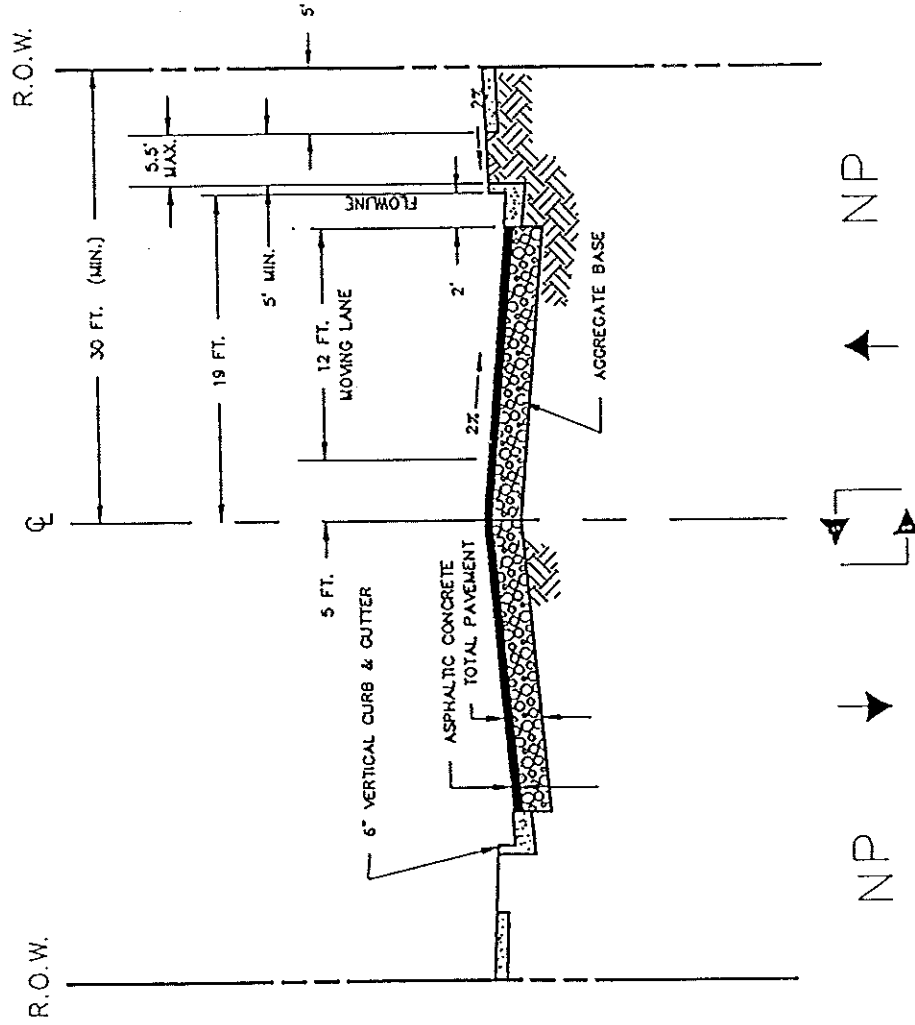
Town of Bennett

Issued: _____

Revised: _____

Drawing No.

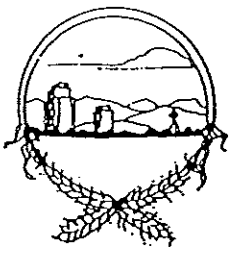
20



NP



NP



MINOR COLLECTOR

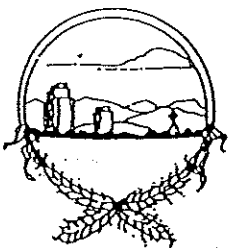
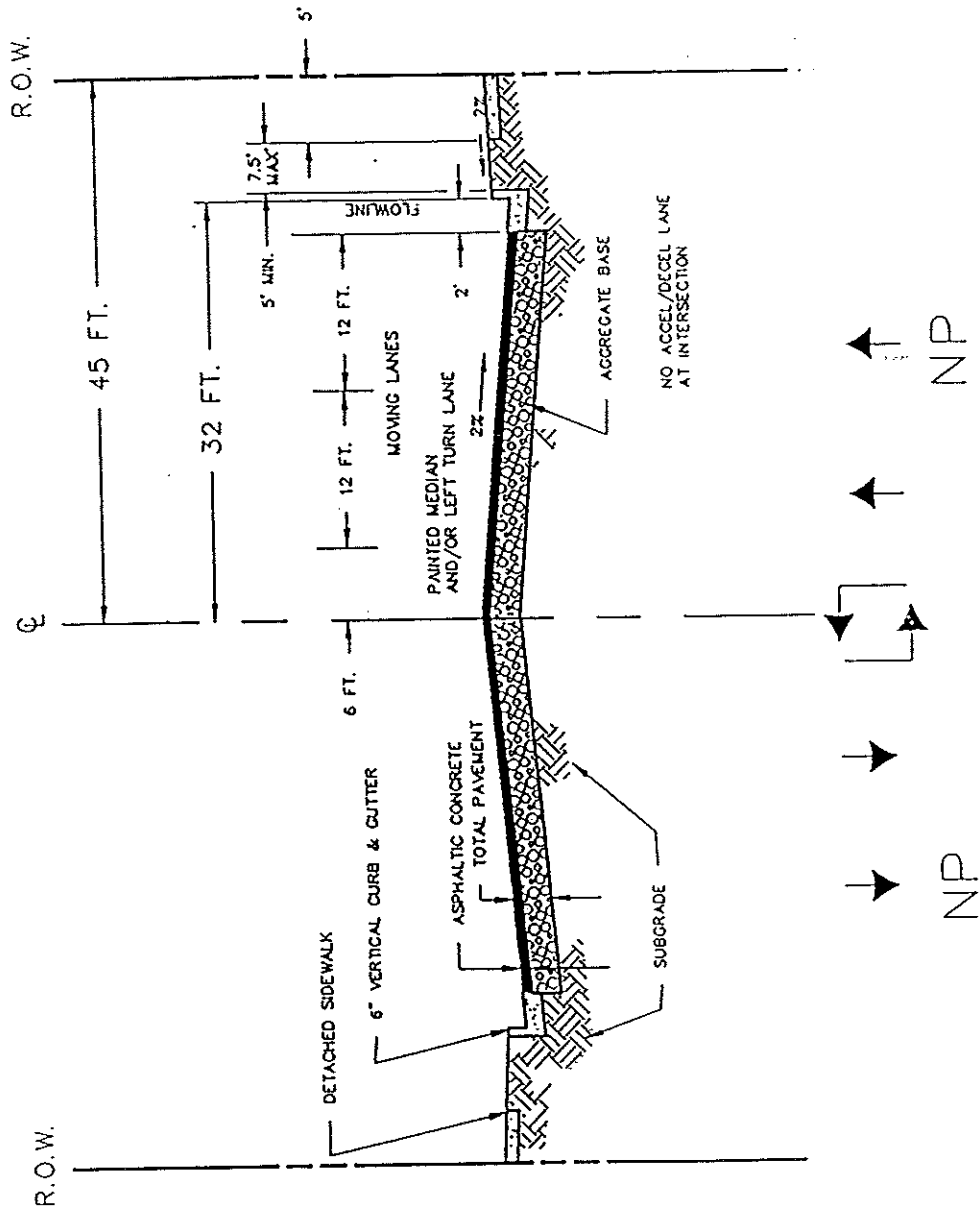
Town of Bennett

Issued: _____

Revised: _____

Drawing No. _____

21



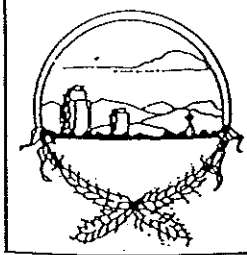
MAJOR COLLECTOR

Town of Bennett

Issued: _____

Revised: _____

Drawing No. 22



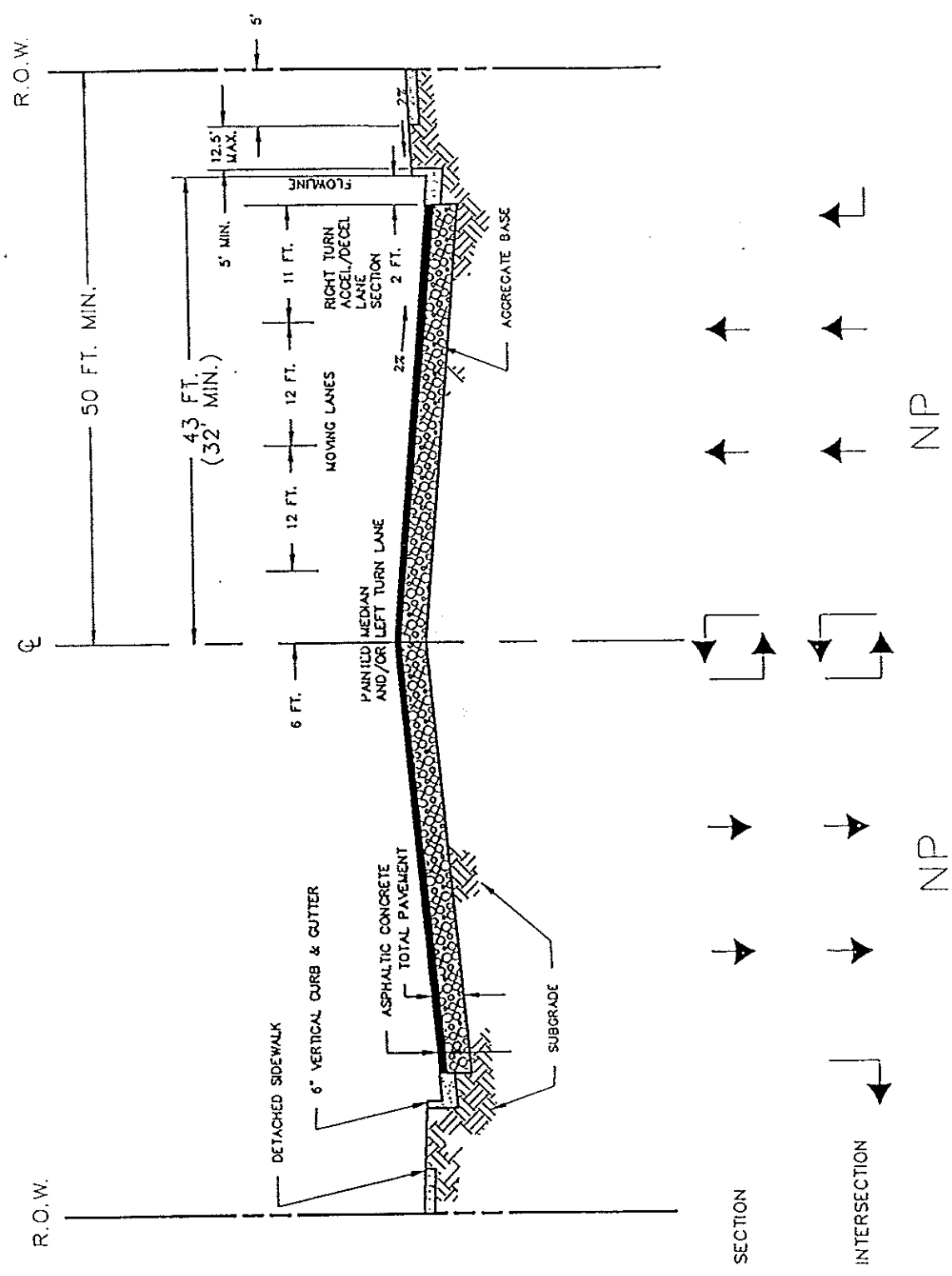
MINOR ARTERIAL

Town of Bennett

Issued: _____

Revised: _____

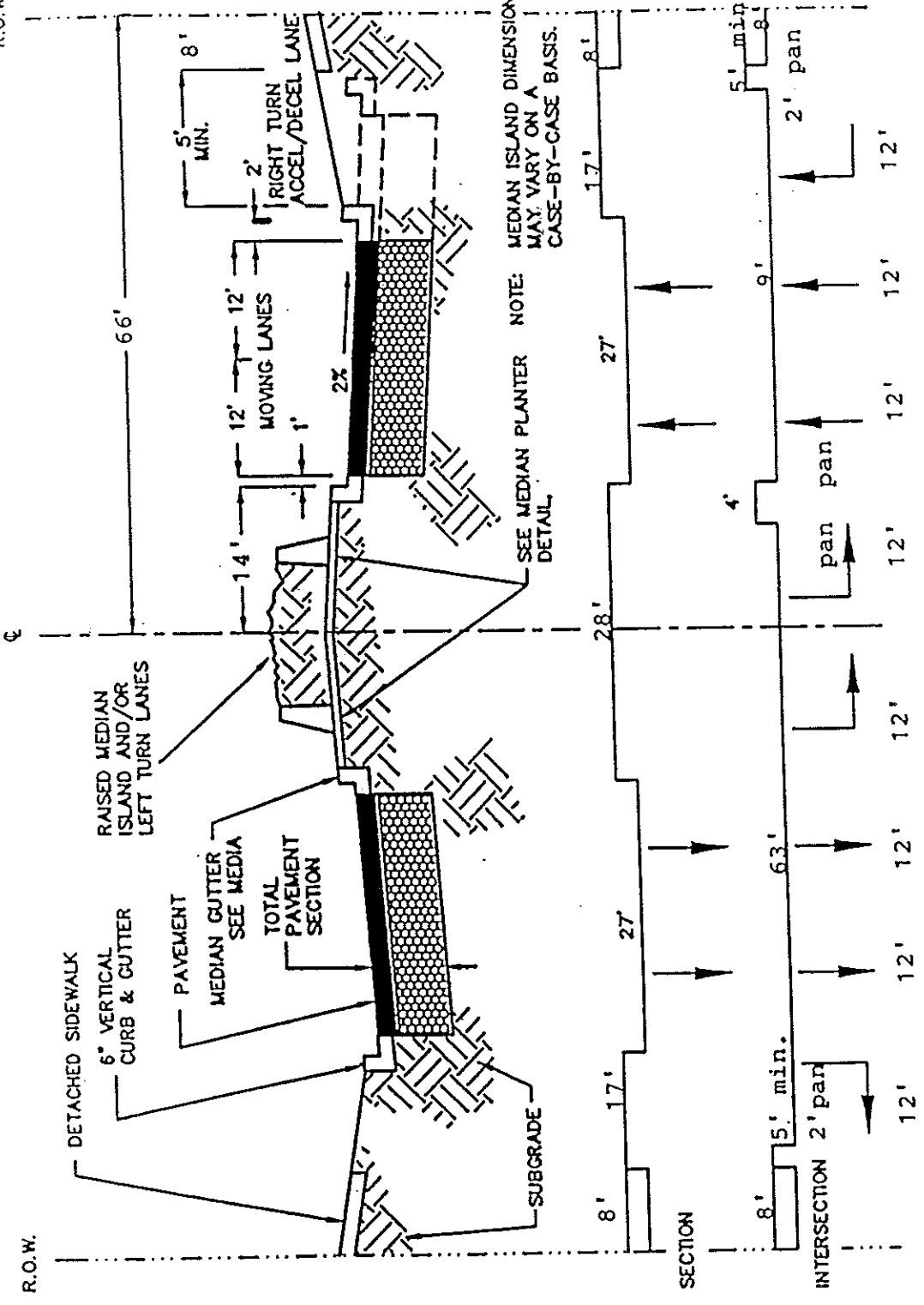
Drawing No. 23



SECTION

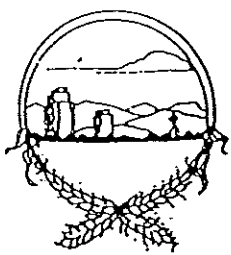
INTERSECTION

R.O.W.



NOTE: MEDIAN ISLAND DIMENSIONS MAY VARY ON A CASE-BY-CASE BASIS.

SEE MEDIAN PLANTER DETAIL



4 LANE
MAJOR ARTERIAL

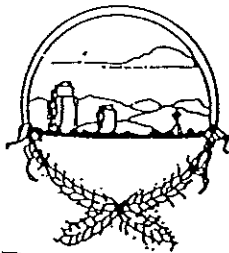
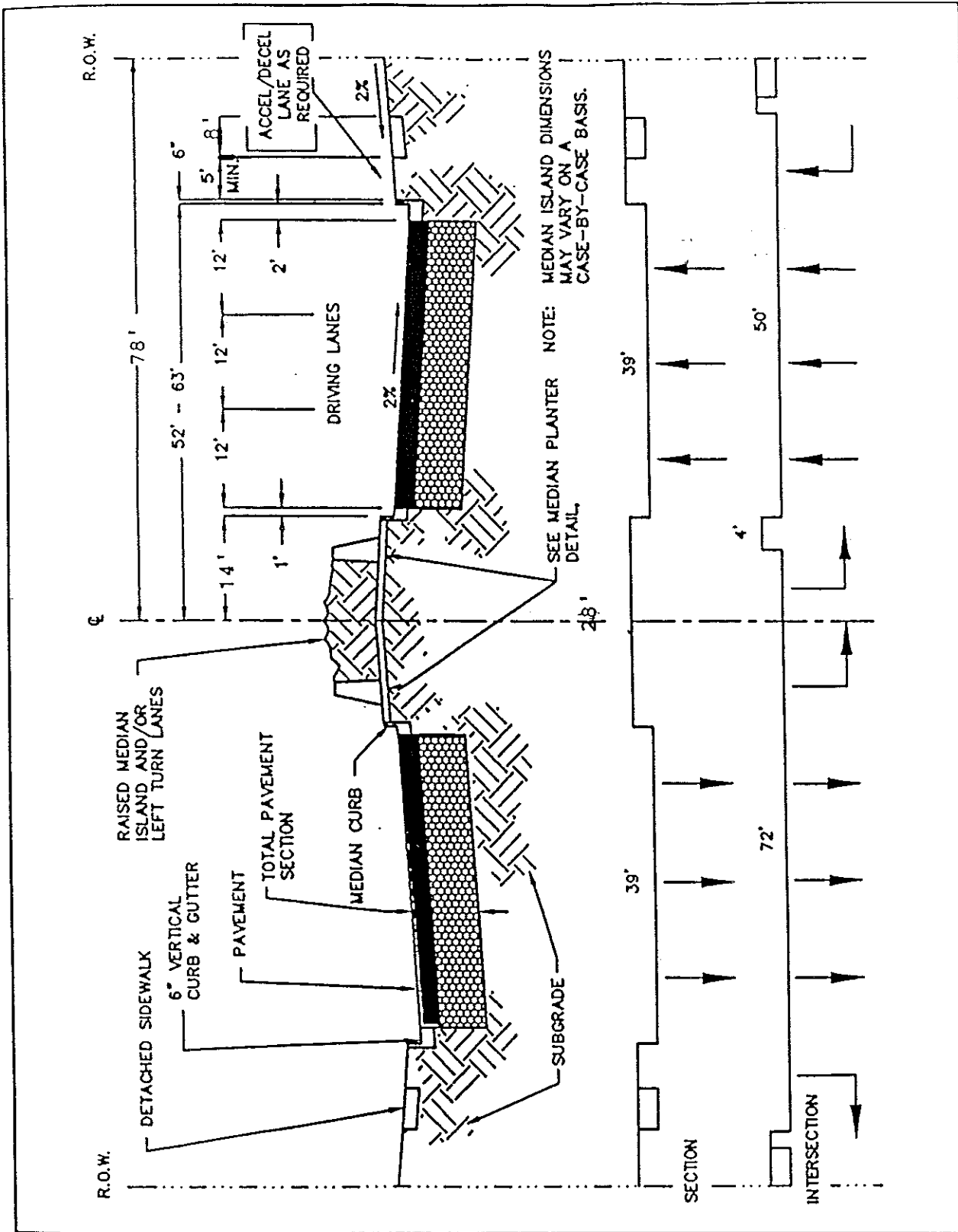
Town of Bennett

Issued: _____

Revised: _____

Drawing No. _____

24



6 LANE
MAJOR ARTERIAL

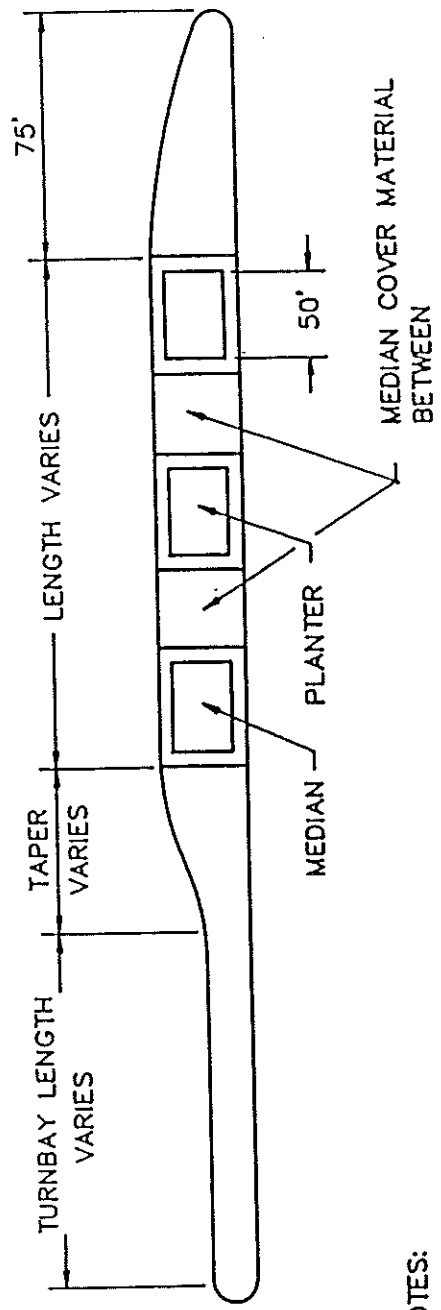
Town of Bennett

Issued: _____

Revised: _____

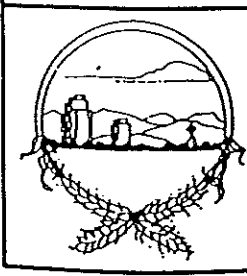
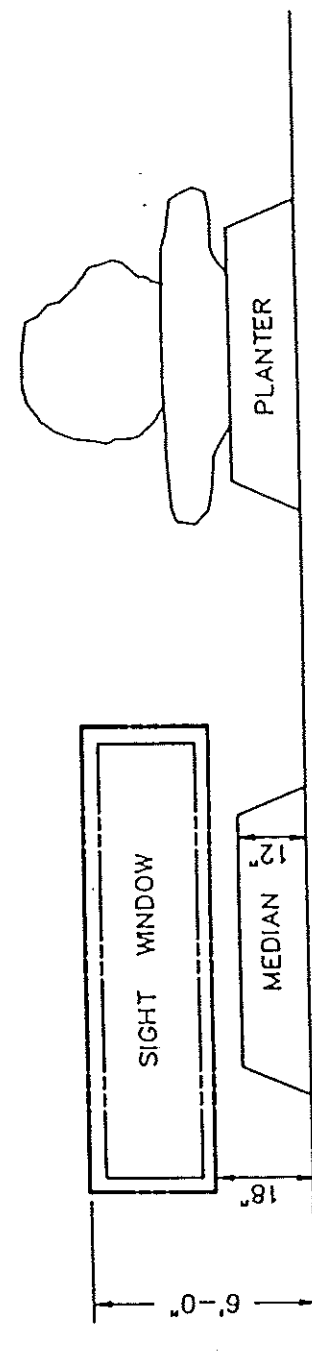
Drawing No.

25



- NOTES:
1. RESTRICTED PLANTING - LOW SHRUBS AND GROUND COVER
 2. PLANTERS SHALL BE 50' LONG.
 3. PLANTERS SHALL BE SPACED TO PROVIDE SAFE SIGHT DISTANCE.

UNRESTRICTED PLANTING



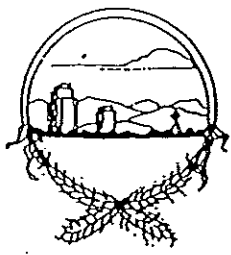
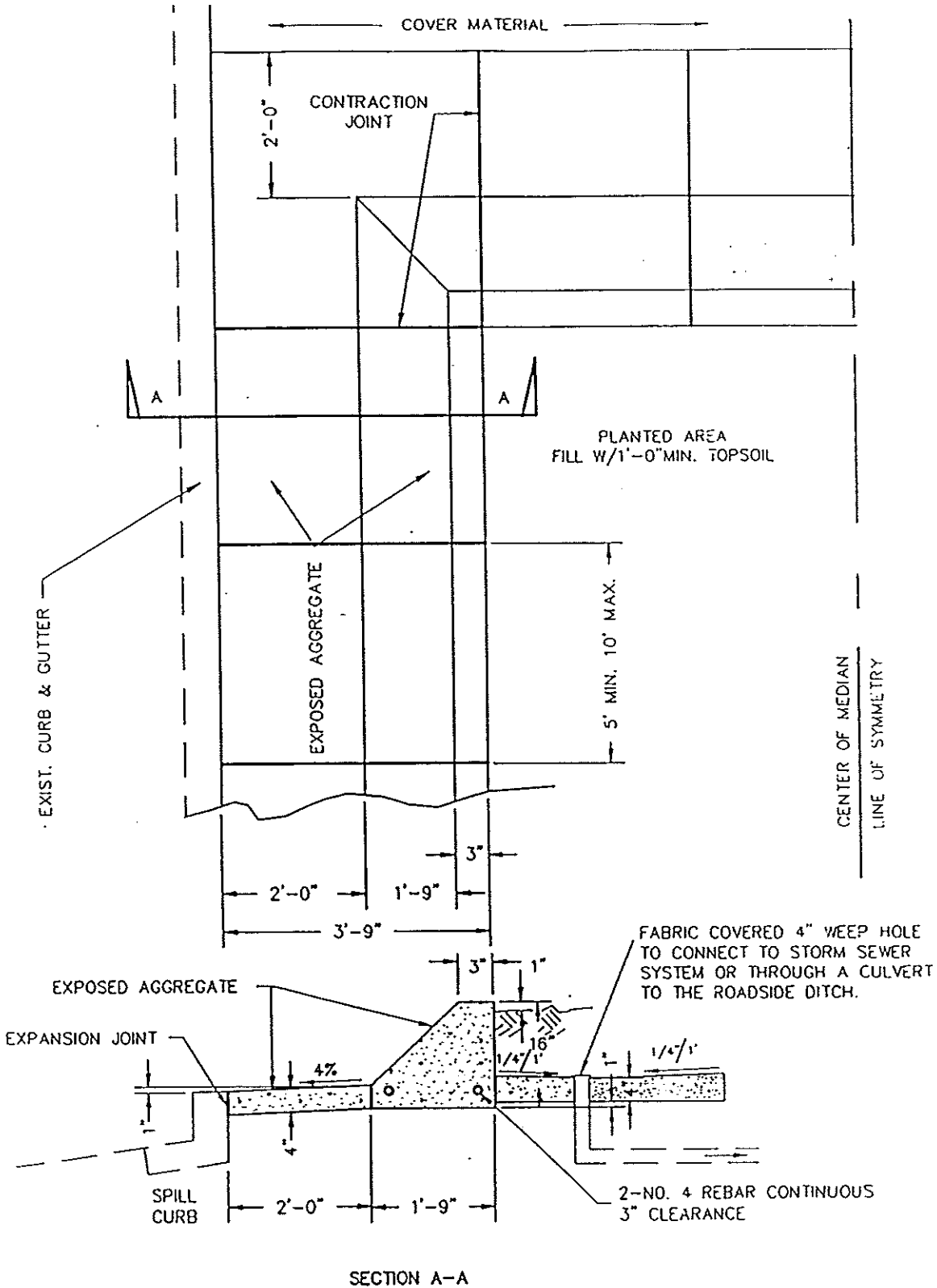
MEDIAN PLANTER

Town of Bennett

Issued: _____

Revised: _____

Drawing No. 26



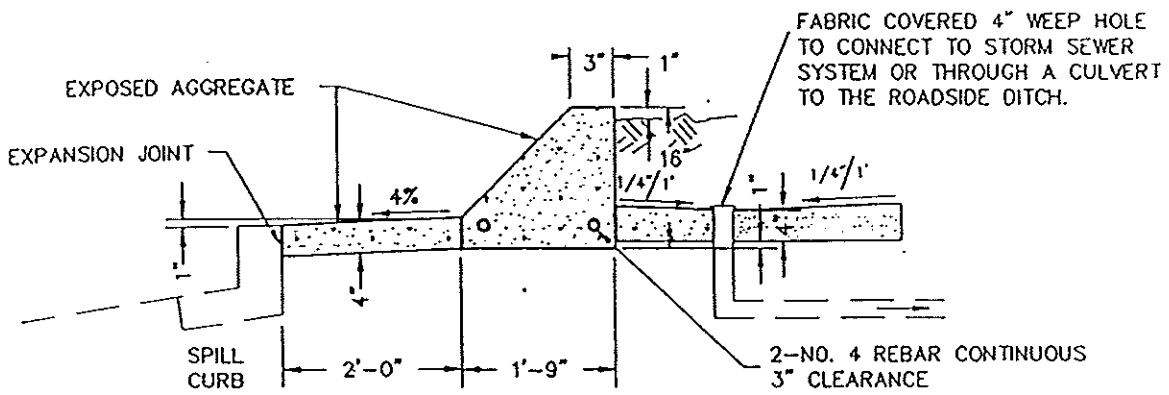
MEDIAN PLANTER

Town of Bennett

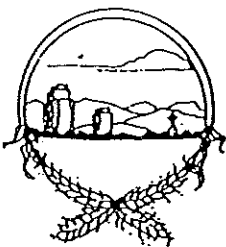
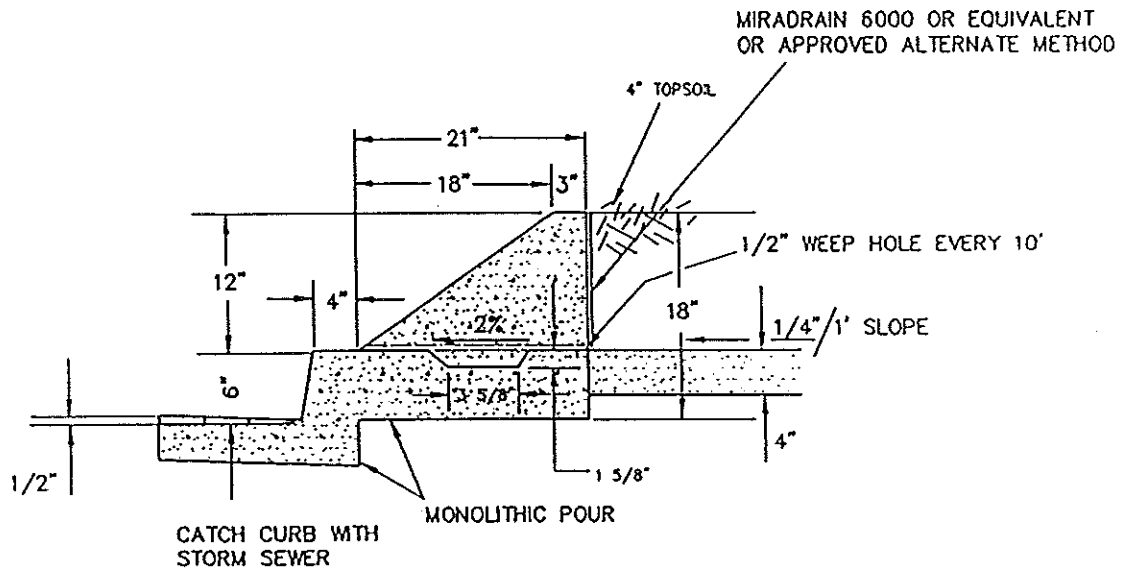
Issued: _____

Revised: _____

Drawing No. 27



THERE IS NO SETBACK REQUIREMENT FOR MEDIAN LANDSCAPING IF THE SLOPED PAVING DETAILS SHOWN HERE ARE USED.



MEDIAN PLANTER

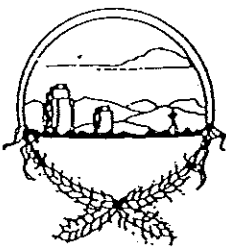
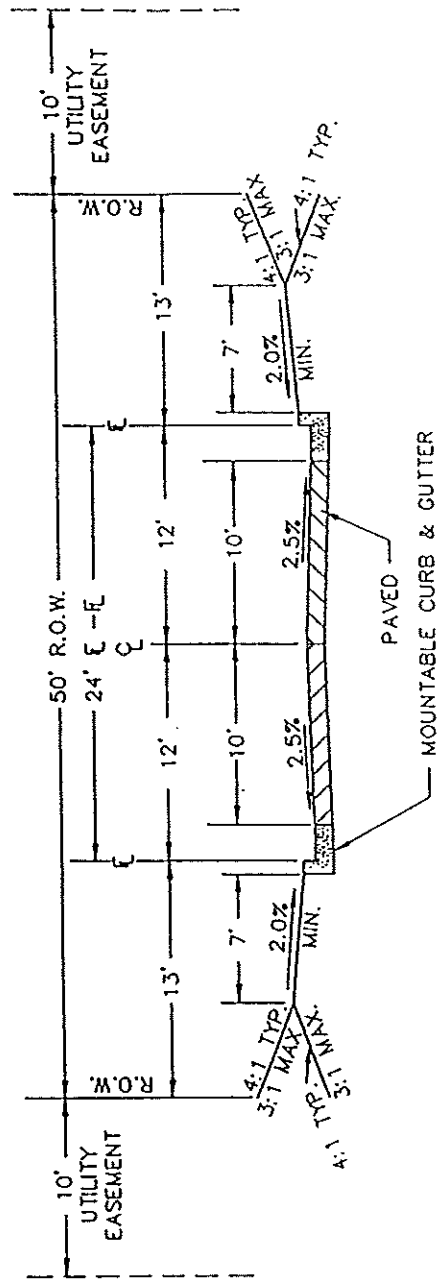
Town of Bennett

Issued: _____

Revised: _____

Drawing No.

28



RURAL LOCAL ROAD
(MOUNTABLE CURB & GUTTER) TYPE V

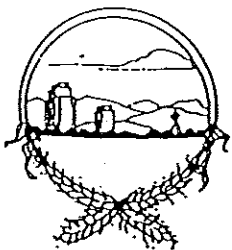
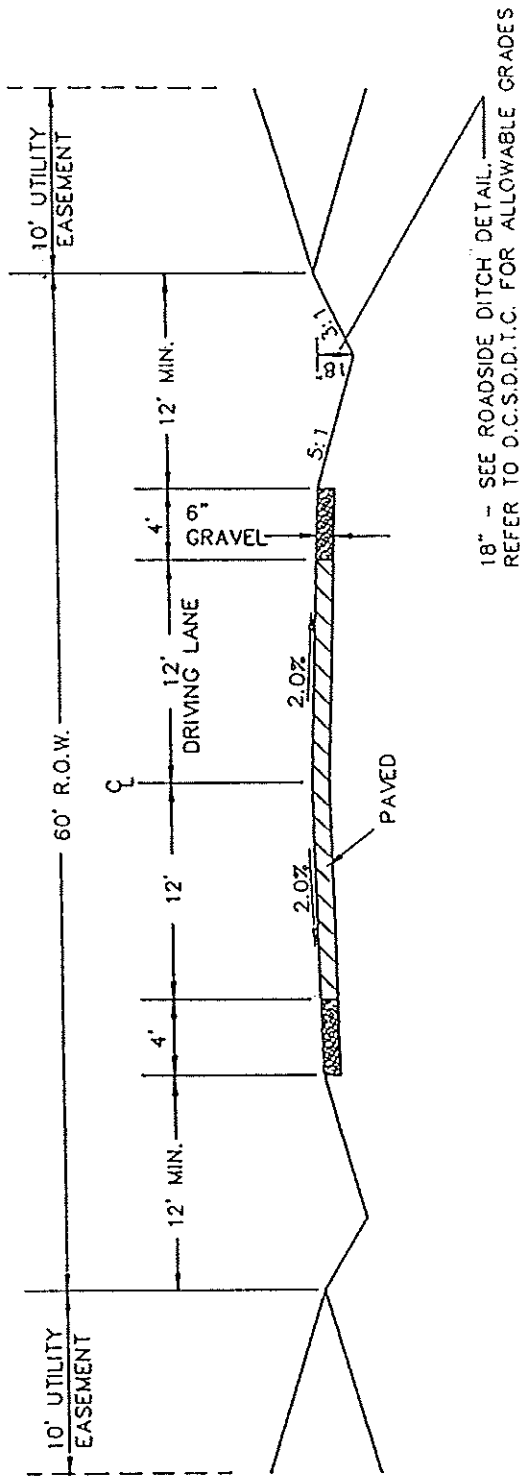
Town of Bennett

Issued: _____

Revised: _____

Drawing No.

29



RURAL LOCAL ROAD
(GRAVEL SHOULDERS) TYPE VI

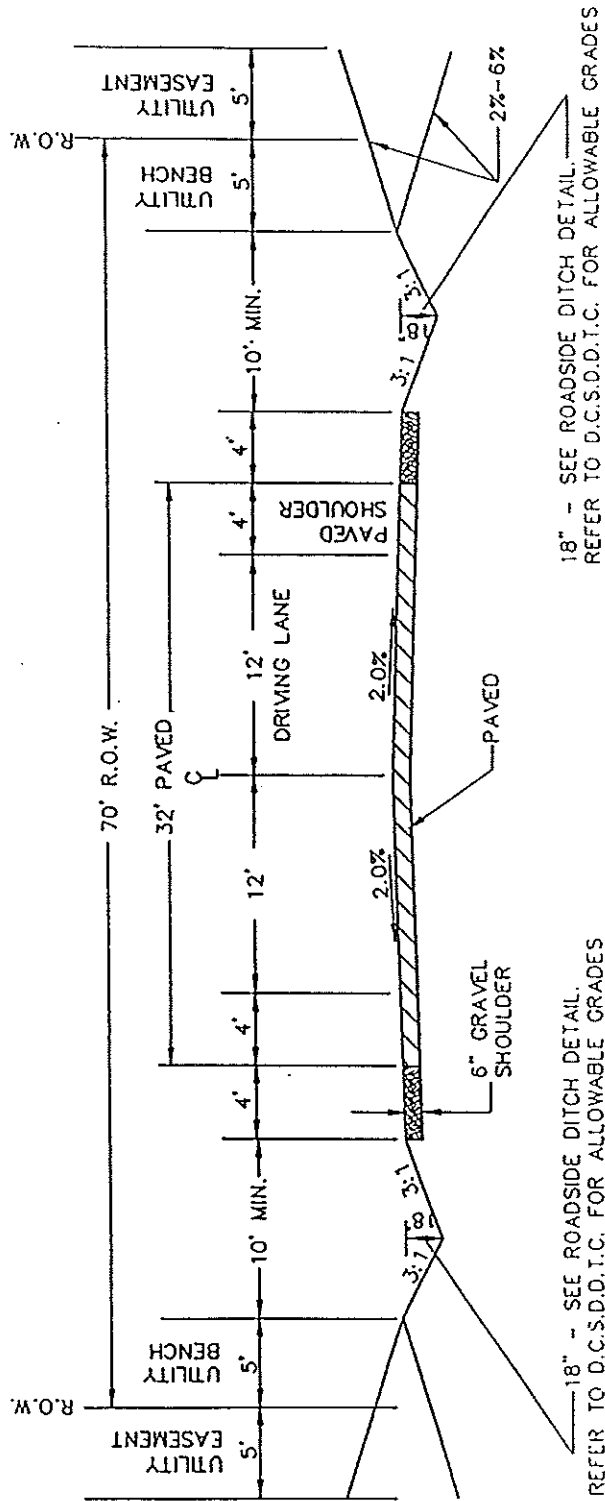
Town of Bennett

Issued: _____

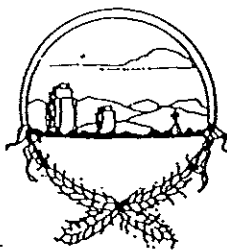
Revised: _____

Drawing No. _____

30



NOTE: 6" CURB AND GUTTER MAY BE SUBSTITUTED FOR 4' GRAVEL SHOULDER.



RURAL LOCAL COLLECTOR
(NO PRIVATE DRIVE ACCESS)



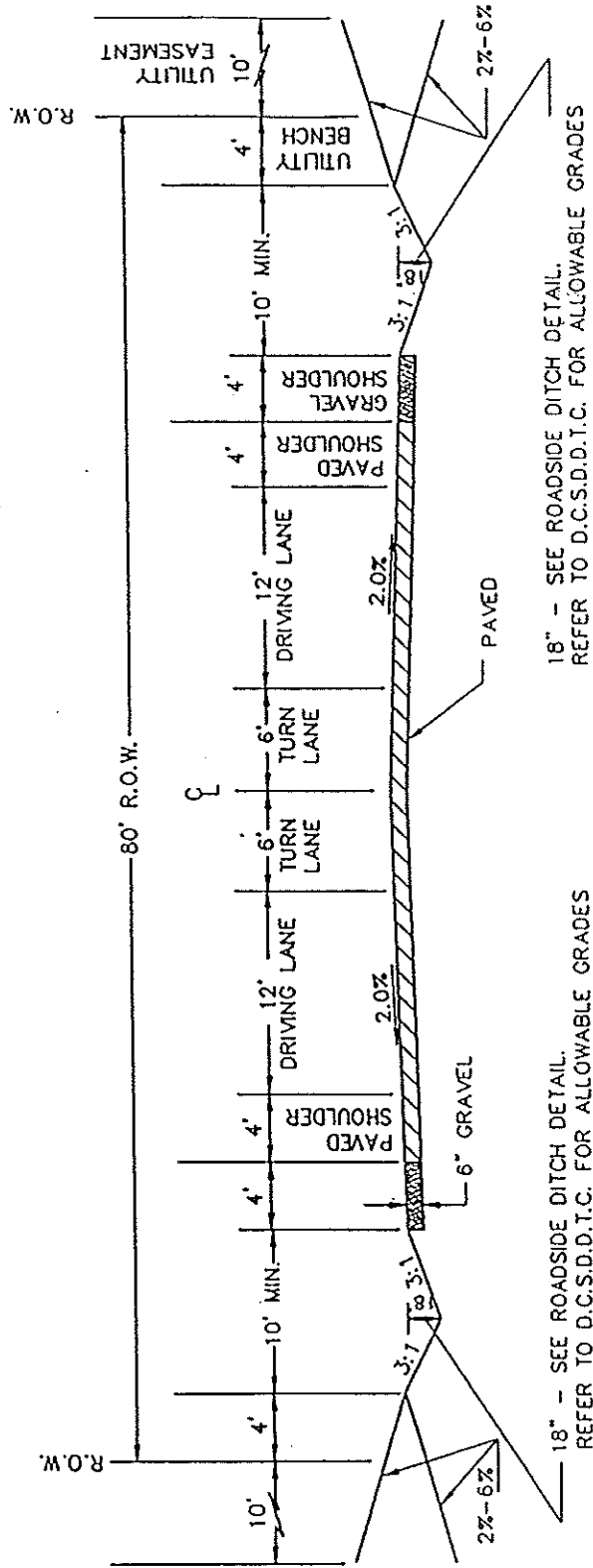
Town of Bennett

Issued: _____

Revised: _____

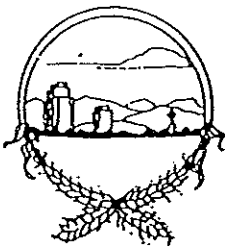
Drawing No.

31



18" - SEE ROADSIDE DITCH DETAIL.
REFER TO D.C.S.D.D.T.C. FOR ALLOWABLE GRADES

18" - SEE ROADSIDE DITCH DETAIL.
REFER TO D.C.S.D.D.T.C. FOR ALLOWABLE GRADES



RURAL MAJOR COLLECTOR
(NO PRIVATE DRIVE ACCESS)

Town of Bennett

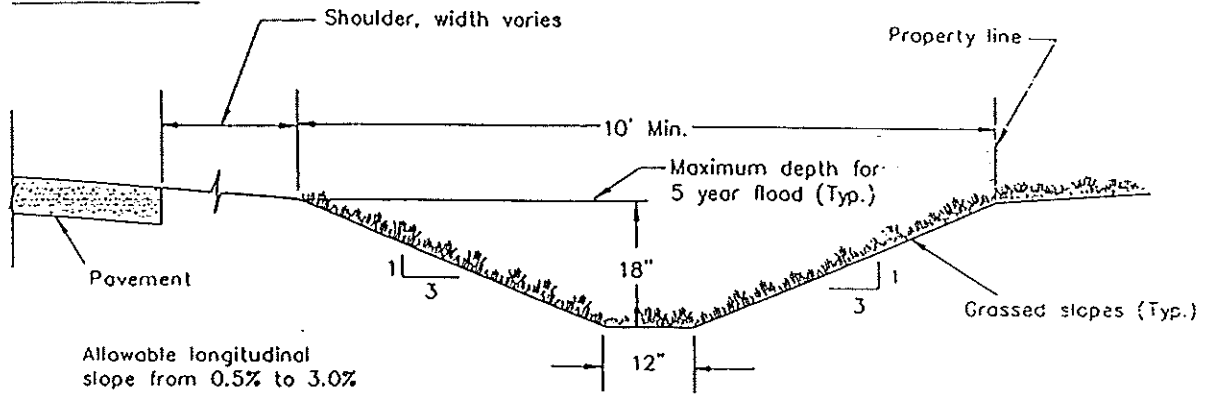
Issued: _____

Revised: _____

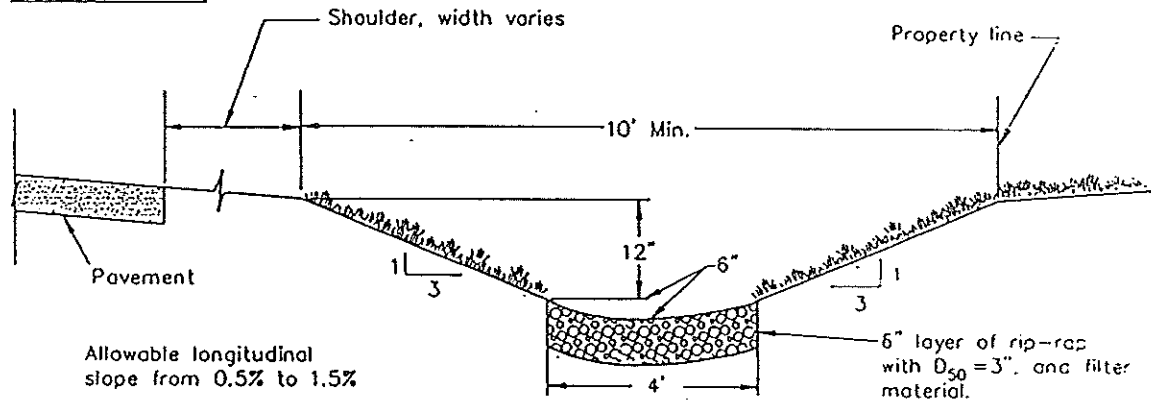
Drawing No.

32

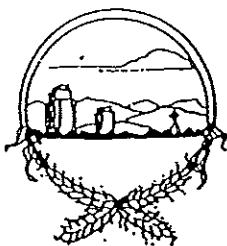
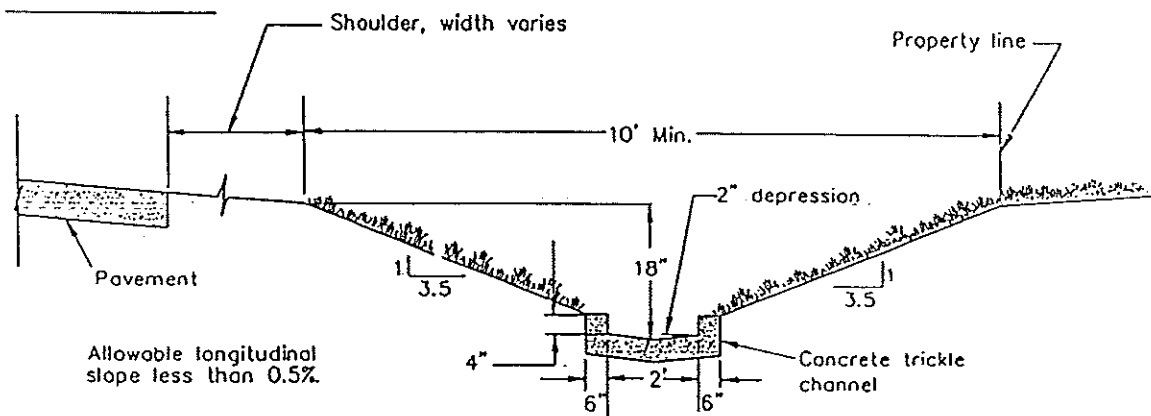
DITCH TYPE I



DITCH TYPE II



DITCH TYPE III



ROADSIDE
DITCH SECTIONS

Town of Bennett

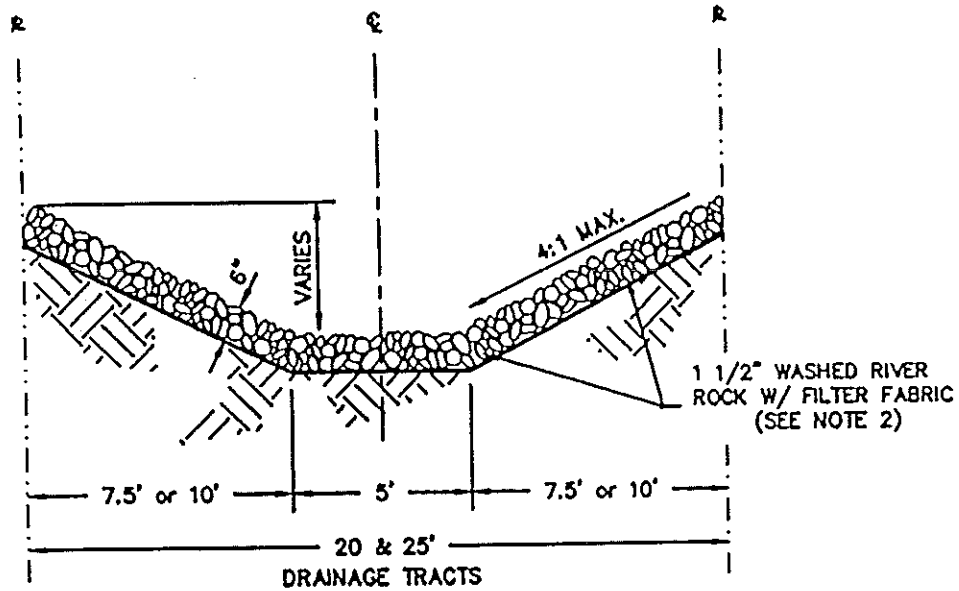
Issued: _____

Revised: _____

Drawing No.

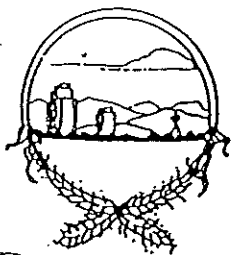
33

TYPICAL CROSS SECTION



NOTES:

1. FILTER FABRIC IS TARABOND #1112-12-4 OR EQUIVALENT.
2. LONGITUDINAL SLOPE SPECIFICATION, MIN. 2%, MAX. 25%



EMERGENCY OVERFLOW CHANNEL
(IN DRAINAGE TRACT)

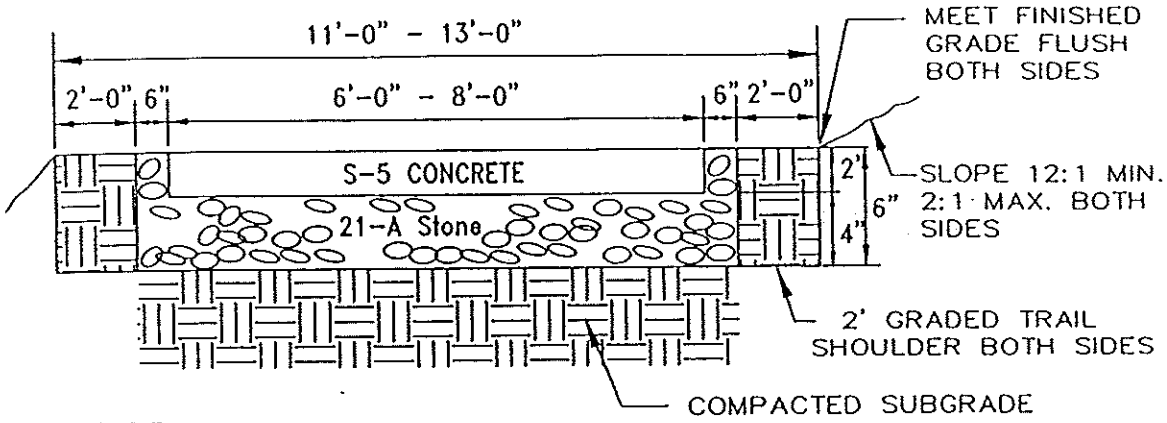
Town of Bennett

Issued: _____

Revised: _____

Drawing No.

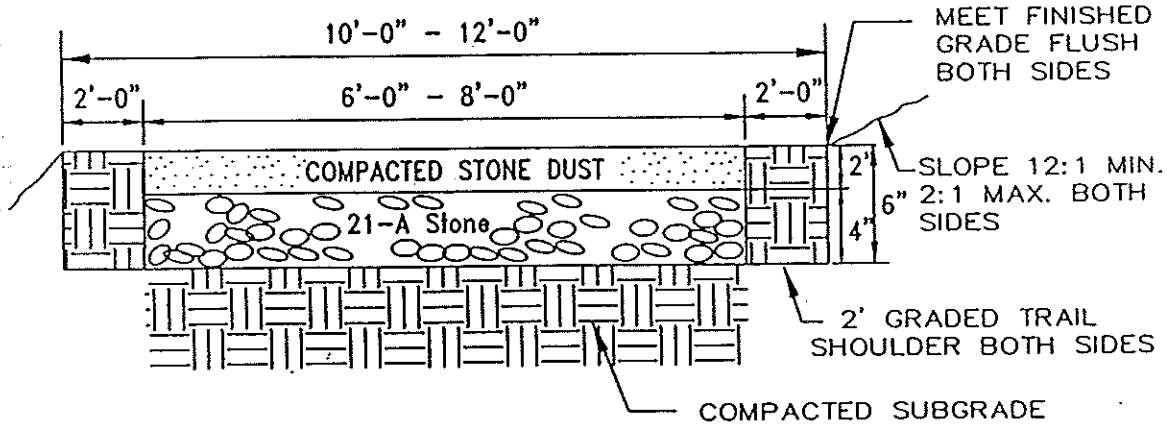
34



TYPE I

Suitable for bicycle and general pedestrian use. Eight feet is the required minimum width for bikeways and six feet the required minimum for walkways. Wider sections may be required in heavily travelled areas.

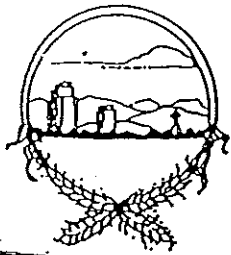
Where soil is well drained and compactable, the stone base may be eliminated and this section replaced by a 3 1/2" full-depth asphalt section. Construction of this substitute section is subject to the approval of the Director.



TYPE II

Suitable for equestrian use, hiking and all-terrain (mountain) bicycle use in gently sloped topography. Susceptible to washout and sheet erosion on slopes greater than 5%.

Depth of stone base depends on soil type, stability and drainage.



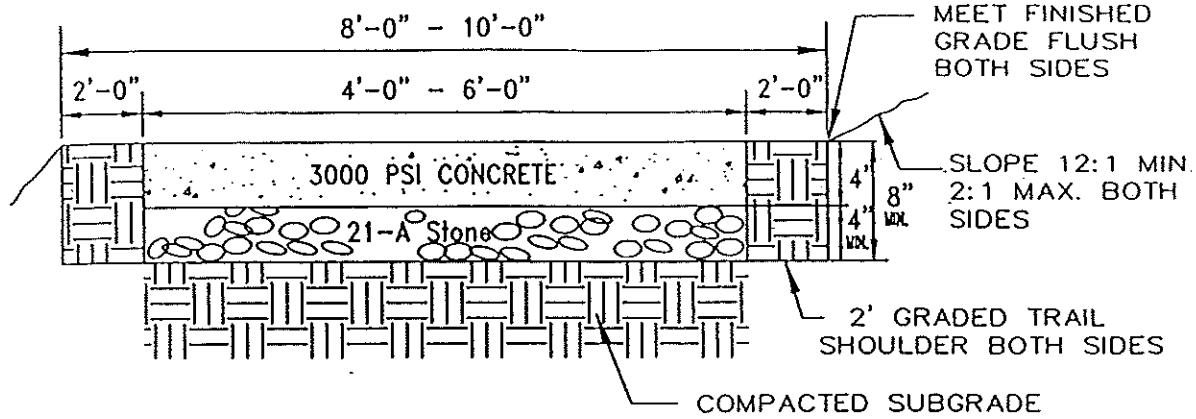
TRAILS CROSS SECTIONS

Town of Bennett

Issued: _____

Revised: _____

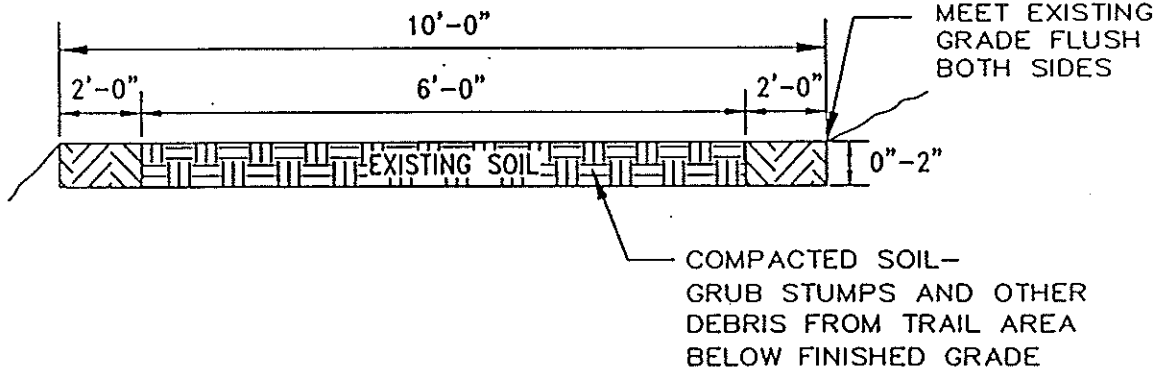
Drawing No. _____



TYPE III

Suitable for general pedestrian use. Unsuitable for bikeways. Acceptable for VDH&T maintenance.

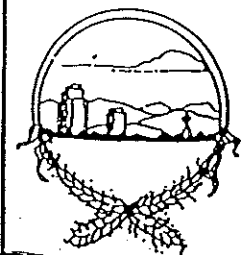
Subgrade for all sidewalks shall be compacted to minimum 95% density at optimum moisture to full width of right-of-way or easement in accordance with AASHTO T99.



TYPE IV

Suitable for equestrian use, hiking and all-terrain (mountain) bicycle use in low density areas. Construction of this section is subject to the approval of the Director.

Alignment of this trail should be such that there is minimal ground disturbance during clearing.



TRAILS CROSS SECTIONS

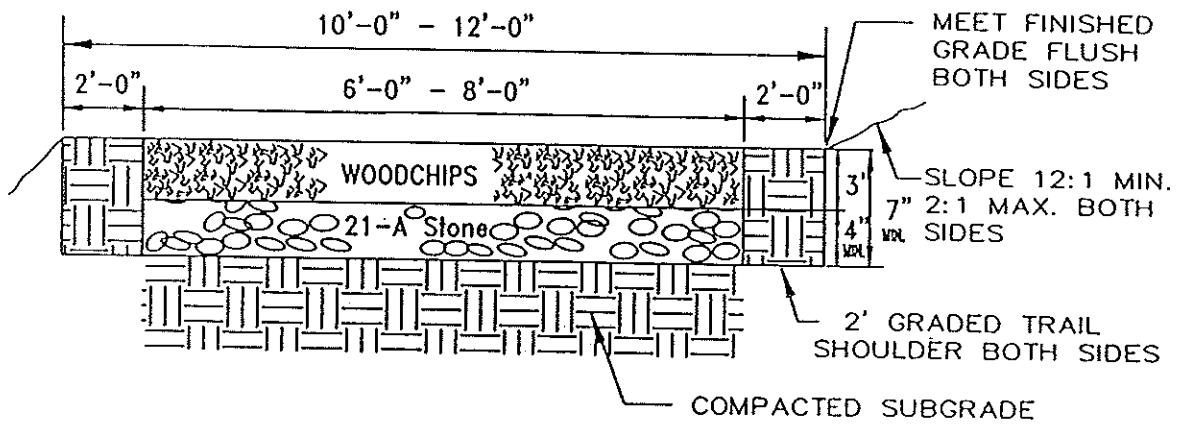
Town of Bennett

Issued: _____

Revised: _____

Drawing No.

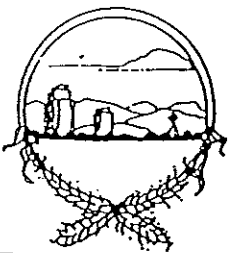
36



TYPE V

Suitable for equestrian use and hiking.

Depth of stone base dependent on soil type, stability and drainage. Chip walks require edging as determined by the site inspector.



TRAILS CROSS SECTIONS

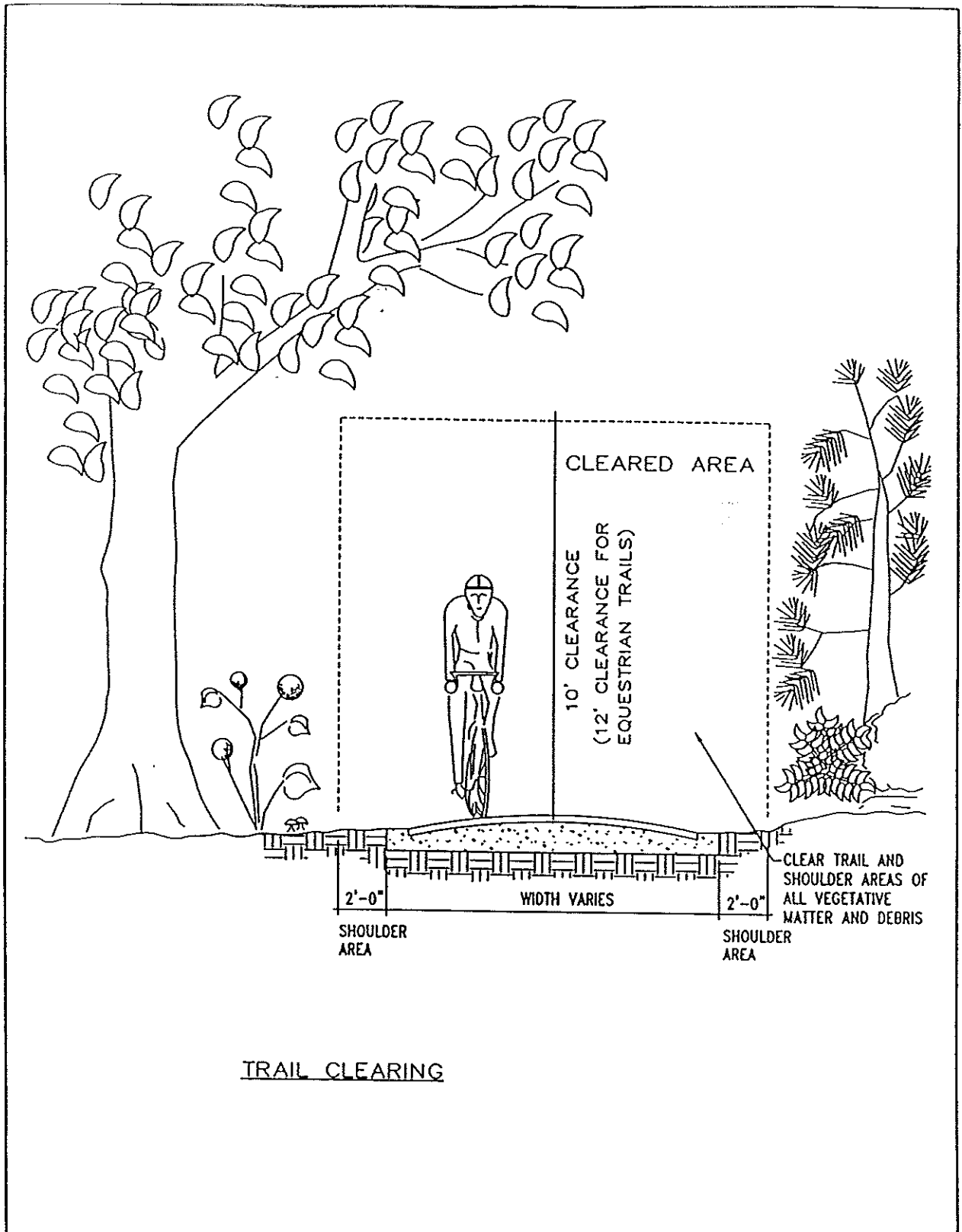
Town of Bennett

Issued: _____

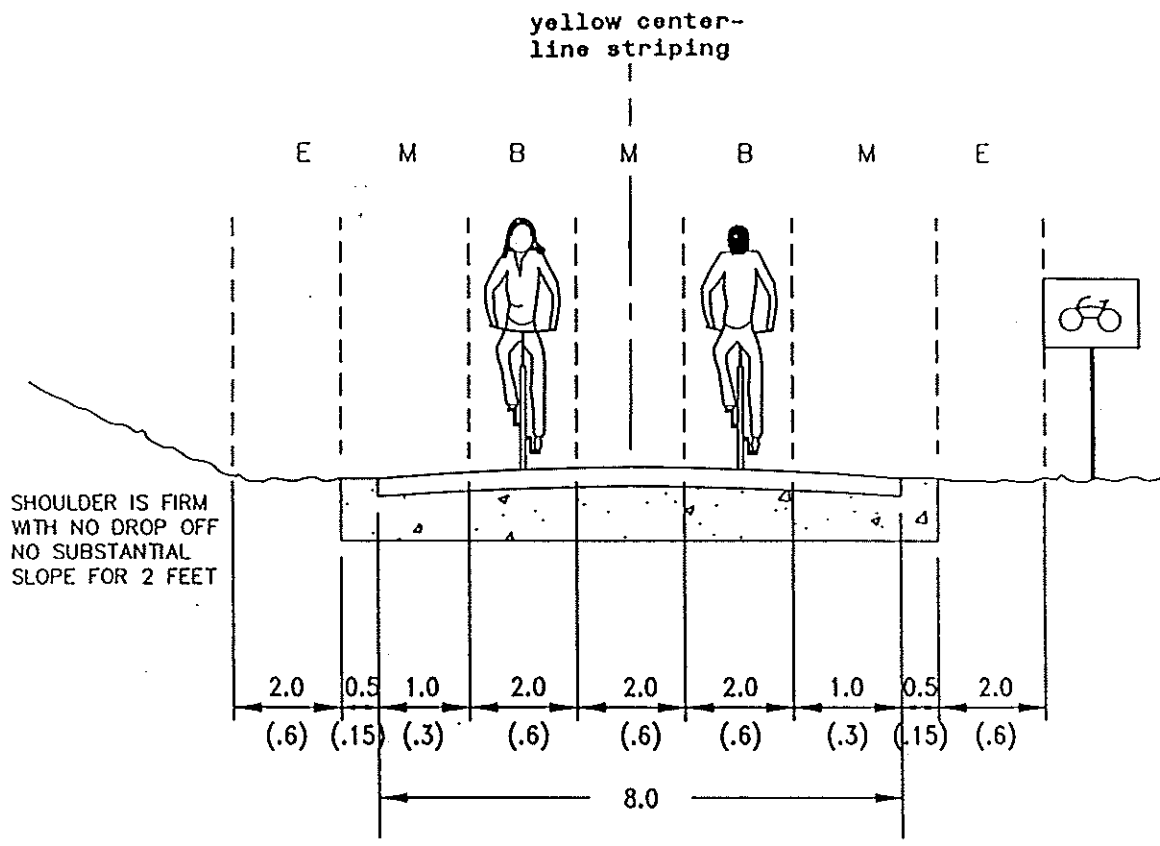
Revised: _____

Drawing No.

37



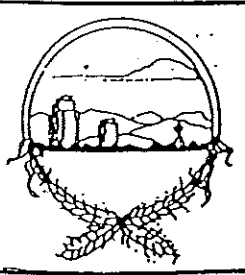
	<p>TRAIL CLEARING</p>	<p>Issued: _____</p>
	<p>Town of Bennett</p>	<p>Revised: _____</p> <p>Drawing No. 38</p>



DIMENSION CODE

B = BICYCLE
M = MANEUVERING
CLEARANCE
E = EDGE CLEARANCE
(SHOULDLER)

NOTE: DIMENSIONS WITHOUT BRACKETS ARE IN FEET:
THOSE WITH BRACKETS ARE IN METERS.



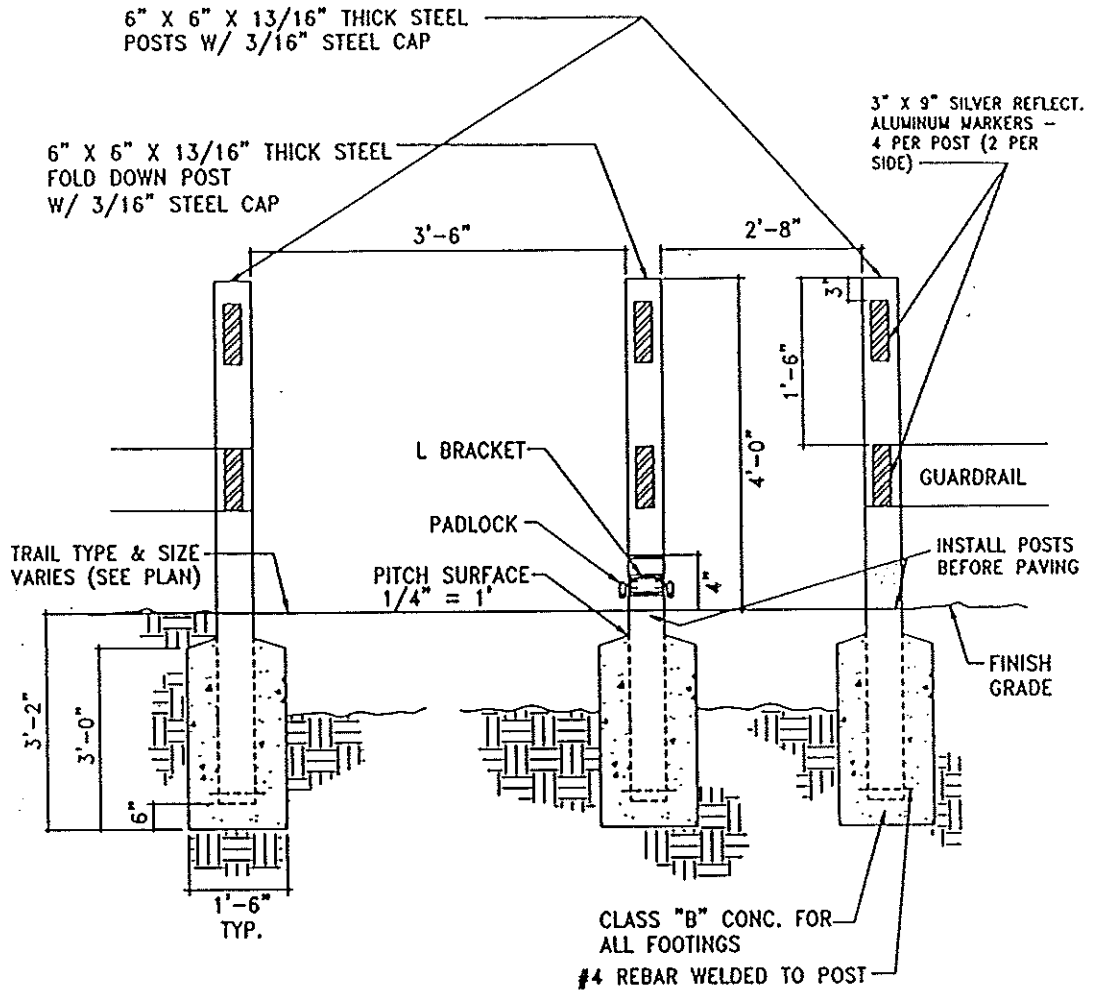
TWO-WAY BIKE PATH IN
OFF-STREET LOCATION

Town of Bennett

Issued: _____

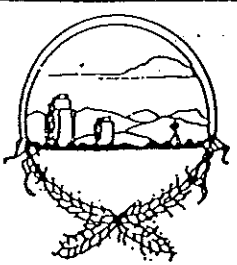
Revised: _____

Drawing No. **39**



NOTES:

- IF WOOD POSTS, COUNTERSINK NUT AND WASHER ON 3/8" Ø 6" EYE BOLTS
- MOUNT 3" RED REFLECTORS W. 1/2" CABLE CLAMPS. 2 EACH SIDE OF WIRE ROPE.
- FOLD DOWN POST WILL BE INSTALLED IN CENTER. PADLOCKS AND L BRACKETS WILL HOLD POST IN PLACE WHEN IN THE UP POSITION.
- 3/16" STEEL CAP SHALL BE PLATE WELDED ON TOP - SMOOTH ALL ROUGH EDGES AND FINISH W. 1 SHOP OR PRIME COAT AND 3 FIELD COATS USING AN ALKYD PAINT SYSTEM. FINISH COAT IS TO BE FLAT BLACK, ALL SURFACES OF ALL STEEL POSTS.



TRAIL ACCESS THROUGH BARRICADE

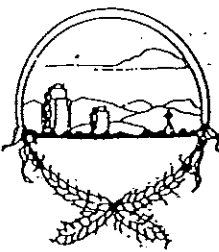
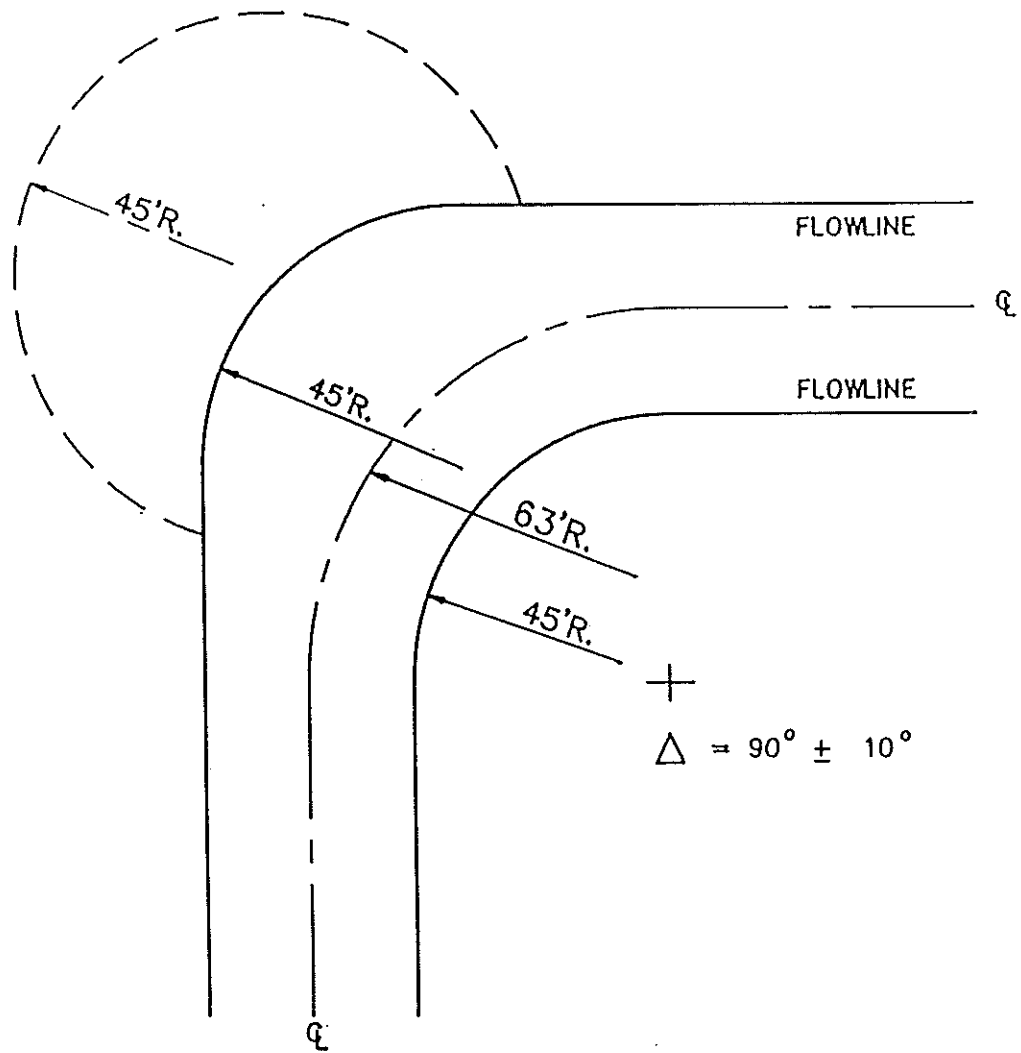
Town of Bennett

Issued: _____

Revised: _____

Drawing No. _____

40



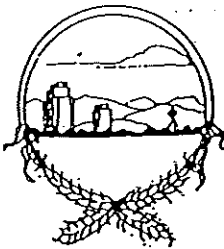
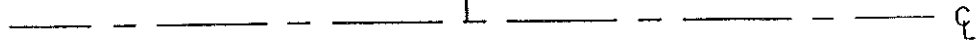
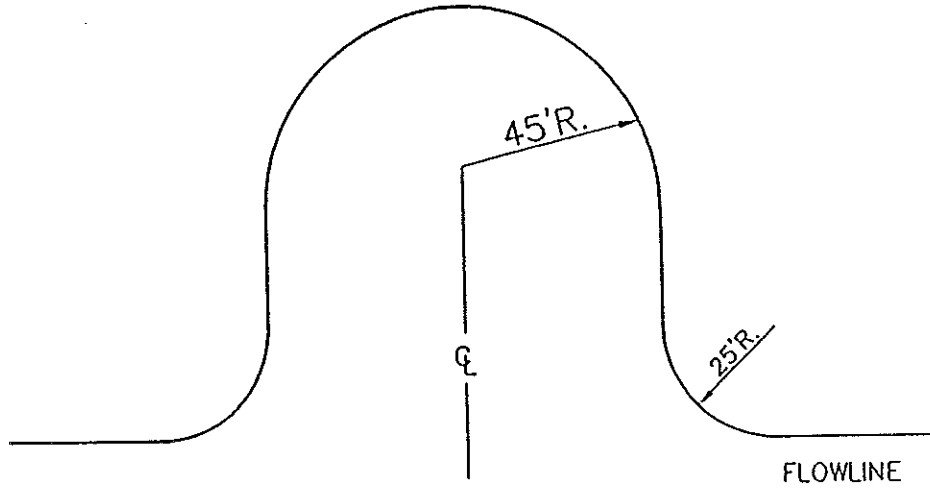
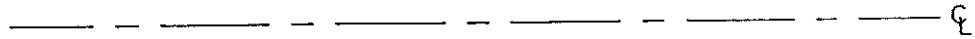
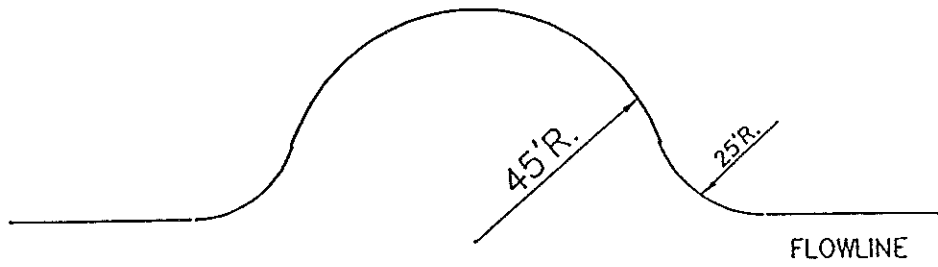
KNUCKLES

Town of Bennett

Issued: _____

Revised: _____

Drawing No. 41



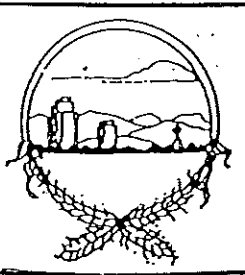
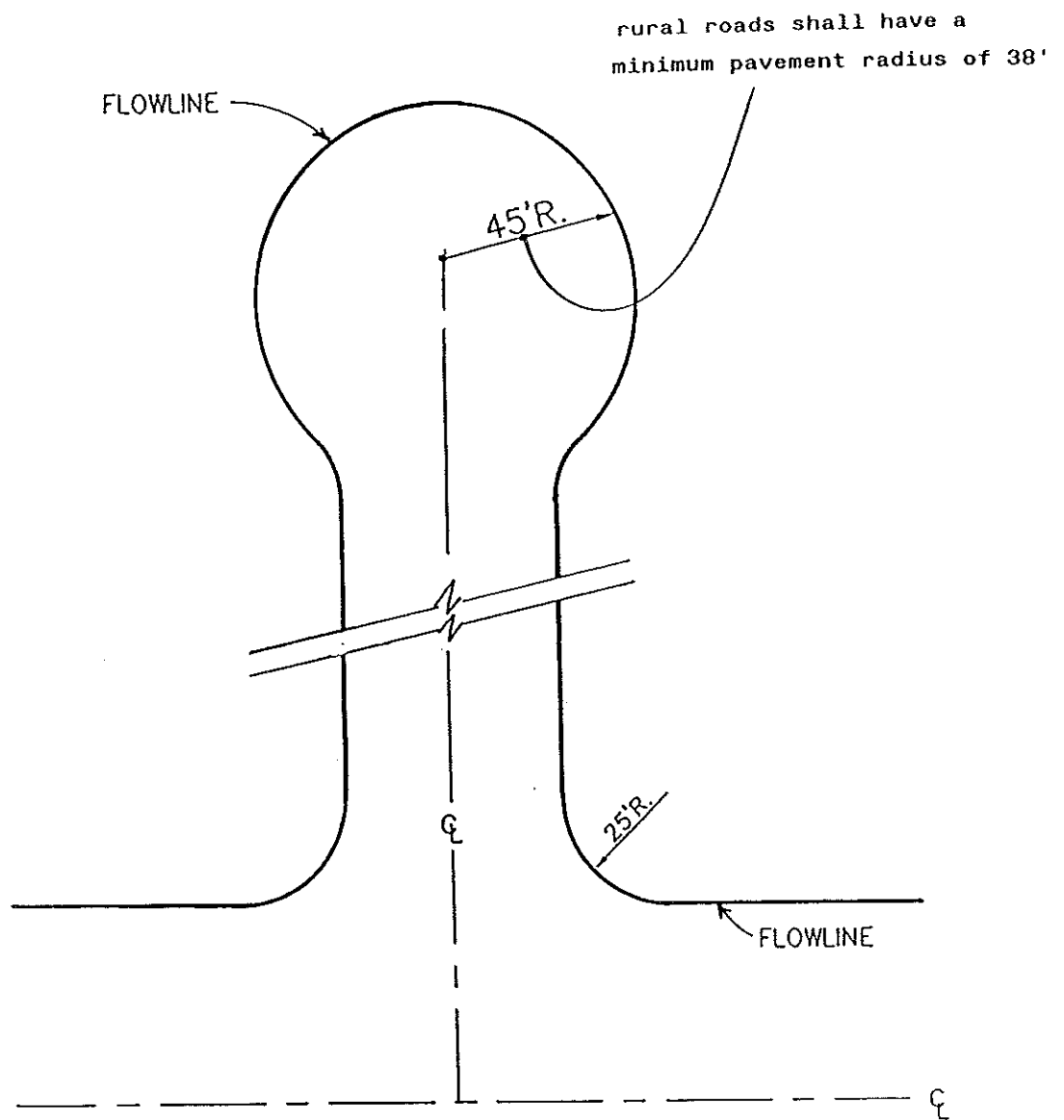
EYEBROWS

Town of Bennett

Issued: _____

Revised: _____

Drawing No. 42



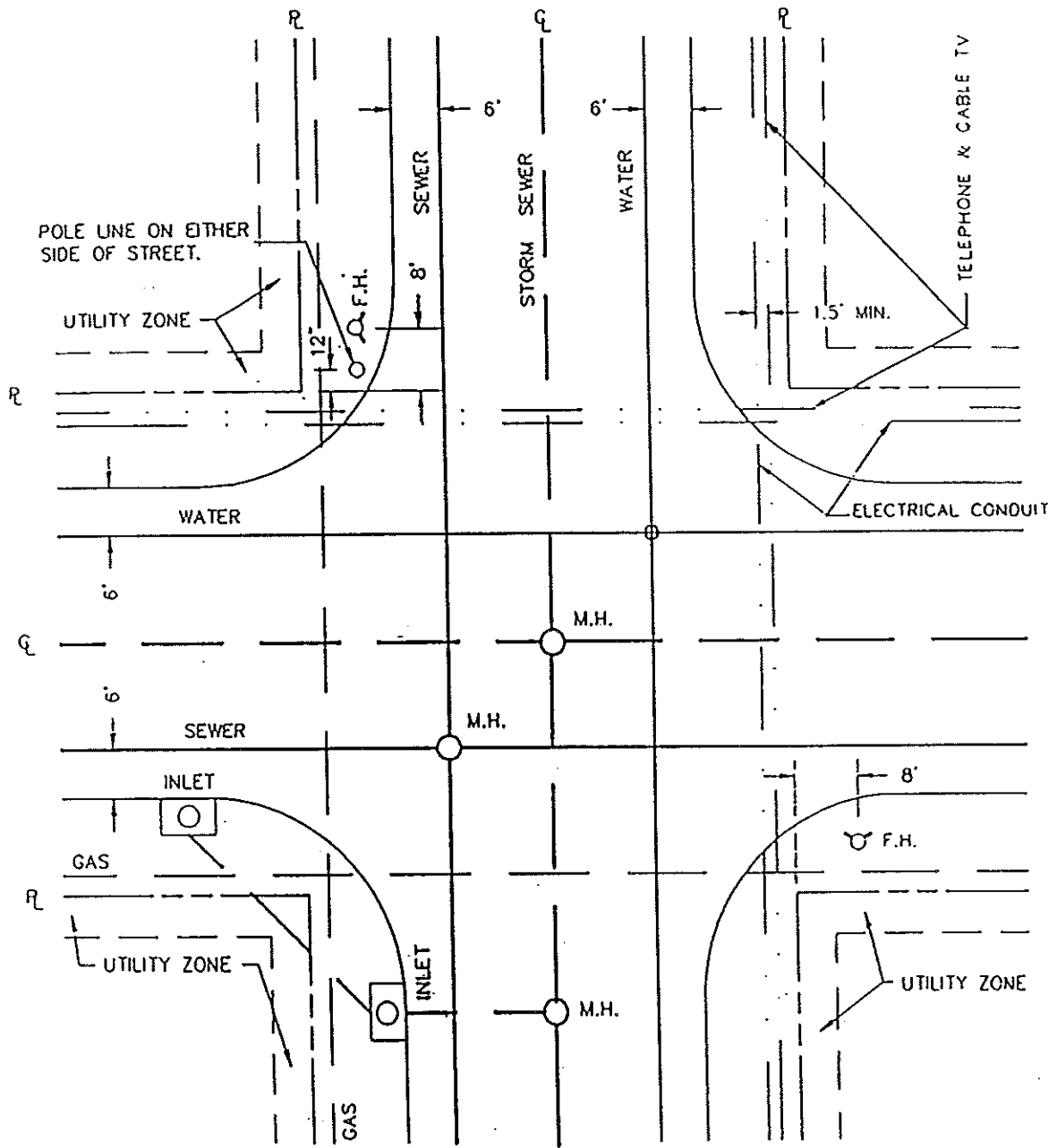
CUL - DE - SAC

Town of Bennett

Issued: _____

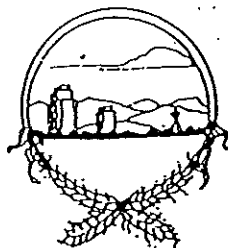
Revised: _____

Drawing No. 43



NOTE: This standard is a guide only and deviations may be acceptable where conditions dictate. Dimensions shown are desirable but do not govern. The intention is to show the relative position of all utilities. This does not preclude the use of utilities in easements in other locations (i.e. back lot lines).

• UTILITY ZONE EASEMENT IF REQUIRED



UTILITY LINE LOCATION GENERAL

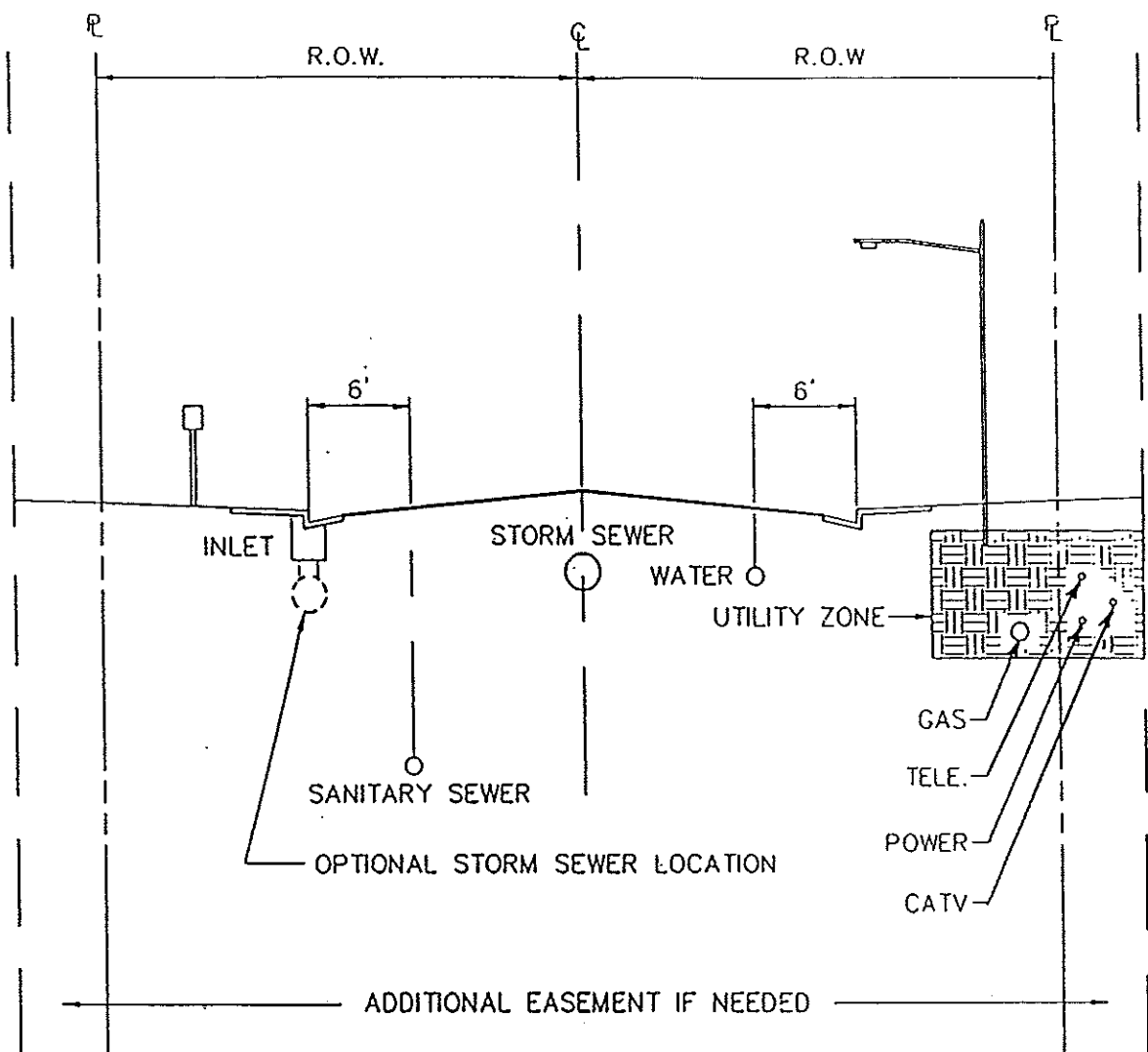
Town of Bennett

Issued: _____

Revised: _____

Drawing No.

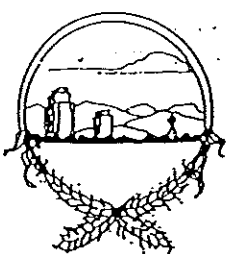
44



NORMAL DEPTHS

Street Lights	30"
Gas	30"
Telephone	*
Electric Power	*
Storm Sewer	40" Min.
Storm sewer	60
CATV	24" Urban (30" rural)
Water	54" Min.
Fiber Optic (with tracer wire 1' above the line)	48" min.
Other	30"

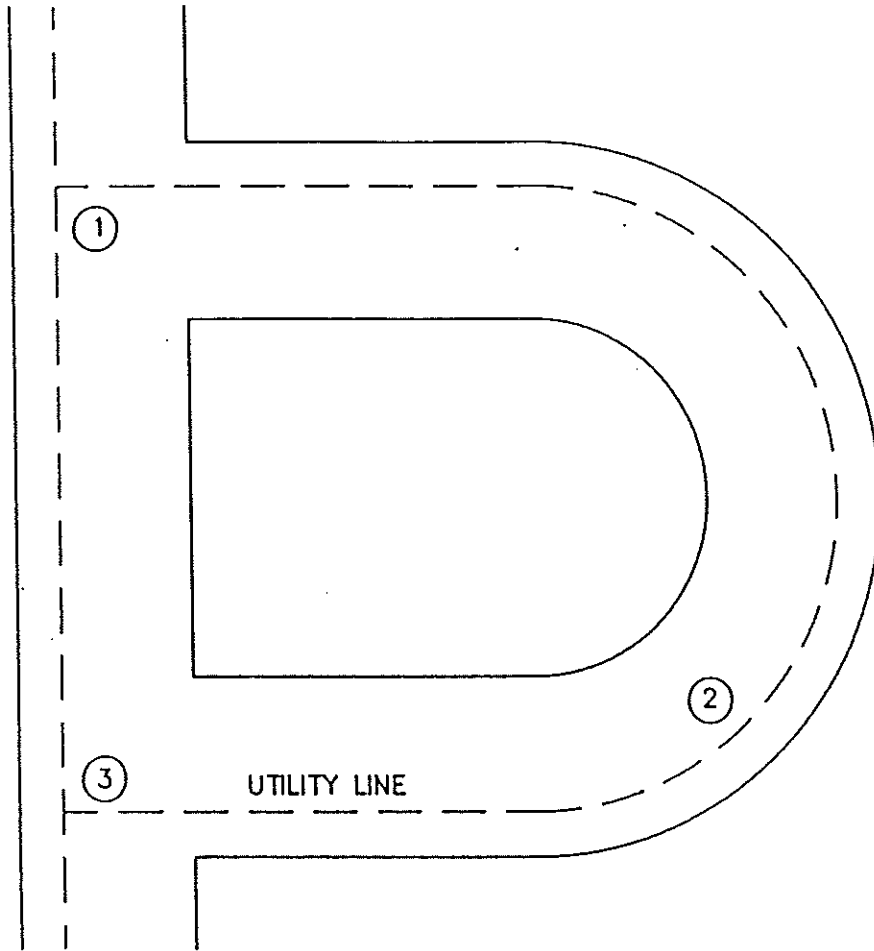
* Electric and Telephone lines per latest edition of National Electric Safety Code



UTILITY LOCATION
GENERAL

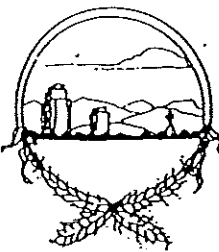
Town of Bennett

Issued: _____
 Revised: _____
 Drawing No. **45**



EXAMPLE OF A UTILITY RELOCATION
TO A NORMAL POSITION AT AN INTERSECTION

1. Carry Utility around corner.
2. Stay on same side of street.
3. Return Utility to normal side of street at intersection.



UTILITY LOCATION
GENERAL

Town of Bennett

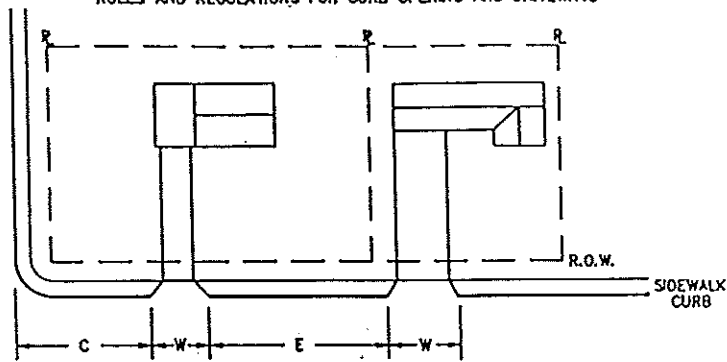
Issued: _____

Revised: _____

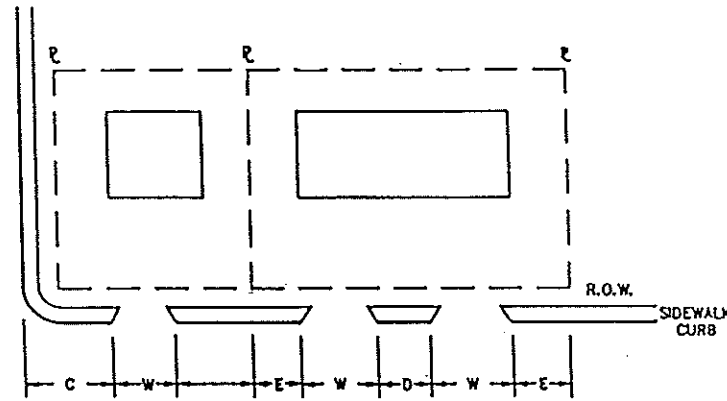
Drawing No. _____

46

RULES AND REGULATIONS FOR CURB OPENING AND DRIVEWAYS



RESIDENTIAL



COMMERCIAL

WIDTH OF CURB OPENINGS (W)

	RESIDENTIAL SF	HF	COMMERCIAL	SERVICE STATION	INDUSTRIAL
FREEWAY	N/A	N/A	N/A	N/A	N/A
MAJOR ARTERIAL	N/A	IF ALLOWED UNDER 13.2.3.2.c	DESIGN AS COLLECTOR		
MINOR ARTERIAL	N/A	IF ALLOWED UNDER 13.2.3.2.c	DESIGN AS COLLECTOR		
MAJOR COLLECTOR	N/A	30-35	40	40	40
MINOR COLLECTOR	N/A	30-35	40	40	40
LOCAL	22	30-35	40	40	40

Note: Curb openings of 30' or more must be constructed as a radius curb return.

Edge Clearance (E)

Residential

Arterial - None (May not exceed the property line extended)

Local - None (May not exceed the property line extended)

Commercial and Service Stations

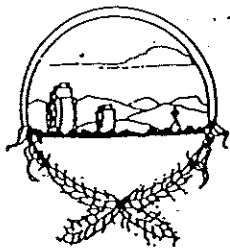
Arterial - 25 feet minimum

Local - 25 feet minimum

Note: Joint access with adjoining property is encouraged. Joint access shall be the only justification for reducing the minimum edge clearance dimension.

Corner Clearance (C)

It is important to locate driveways away from major intersections. This constraint is as much for the ability to enter and leave the property as for the benefit of intersection safety and operations. Exiting a driveway during peak-hour conditions at traffic signals is difficult where the queue of standing or slow-moving vehicles never allows a sufficient gap for entry from the driveway. Corner clearances are specified in Figure 43 and are measured from the curb line.



CURB OPENING AND DRIVEWAYS

Town of Bennett

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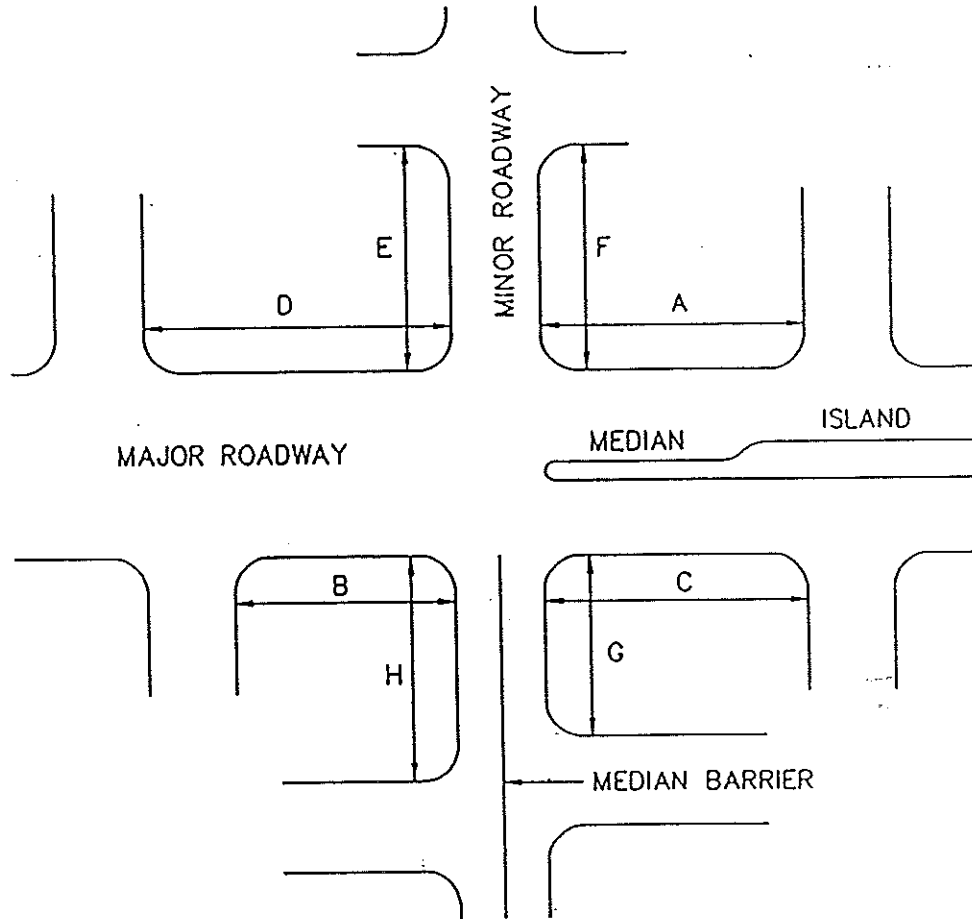
47

CORNER CLEARANCES

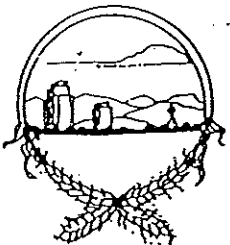
MINIMUM CORNER CLEARANCES			
ITEM	CLASS OF MAJOR ROADWAY		
	ARTERIAL	COLLECTOR	LOCAL
A	115	75	50
B	85	85	50
C	115	75	50
D	115	75	50
E	210	115	50
F	210	115	50
G	50	50	50
H	210	115	50

NOTE:

This table does not apply to single family residential driveways. Single family residential driveways must access on the street of the lowest classification and at the side of the lot furthest away from the intersection.



TAKEN FROM THE URBAN SYSTEM TRANSPORTATION MANUAL, FIGURE 7.12



CORNER CLEARANCES
FOR DRIVEWAYS

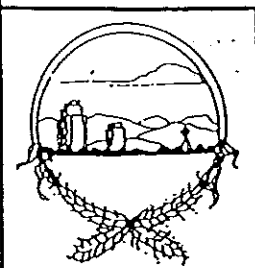
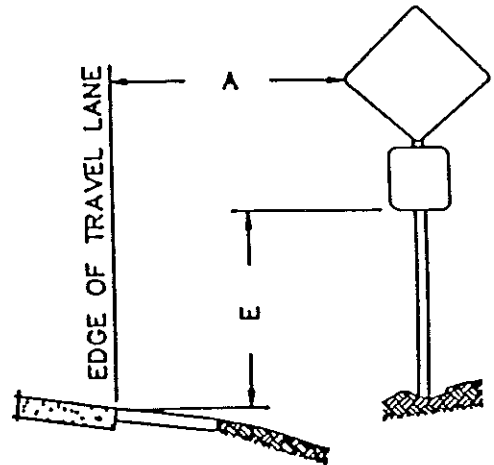
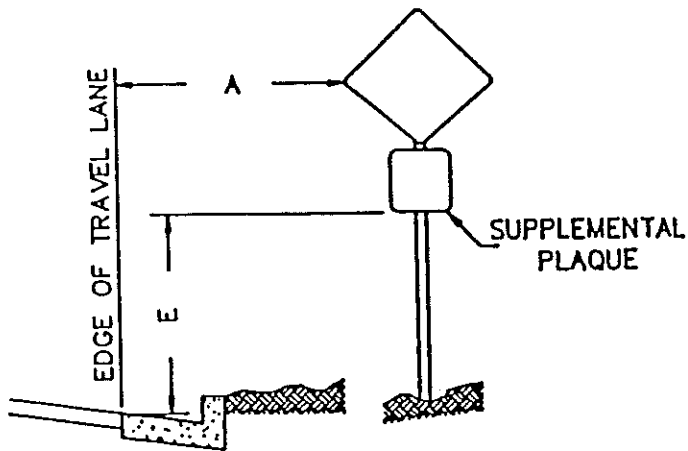
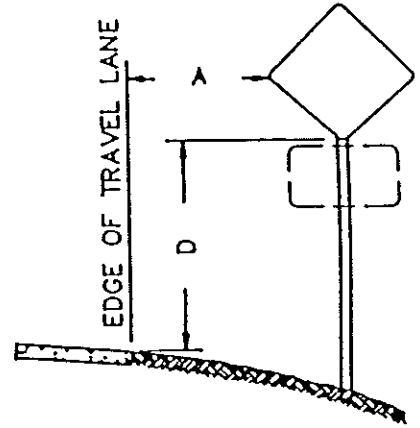
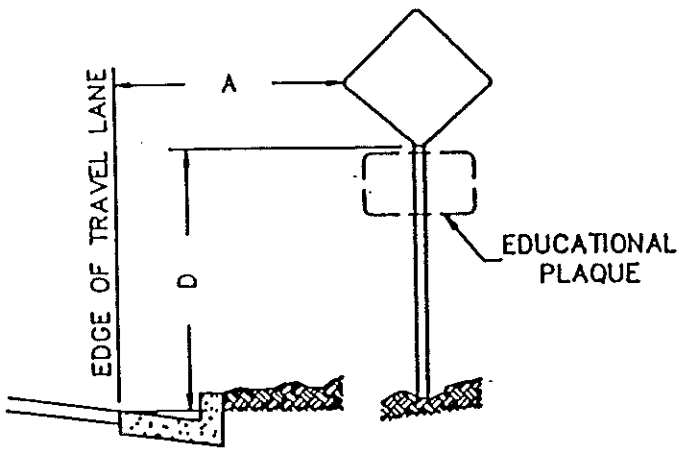
Town of Bennett

Issued: _____

Revised: _____

Drawing No.

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WARNING SIGN PLACEMENT

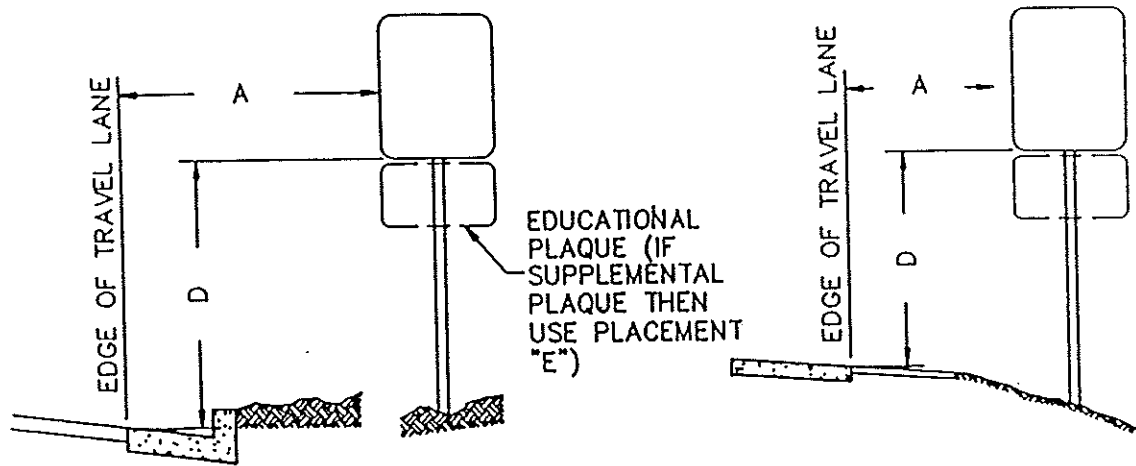
Town of Bennett

Issued: _____

Revised: _____

Drawing No. _____

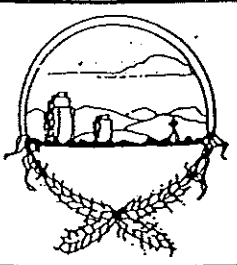
49



REGULATORY SIGN PLACEMENT

LATERAL PLACEMENT				
KEY	LOCAL STREETS		COLLECTORS & ATERIALS	
	MINIMUM	NORMAL	MINIMUM	NORMAL
A	8'-0"	12'-0"	10'-0"	14'-0"

VERTICAL PLACEMENT (MINIMUM)				
KEY	URBAN		RURAL	
	WITH SIDEWALKS	W/OUT SIDEWALKS	WITH SIDEWALKS	W/OUT SIDEWALKS
D	7'-0"	7'-0"	N/A	5'-0"
E	7'-0"	6'-0"	N/A	4'-0"



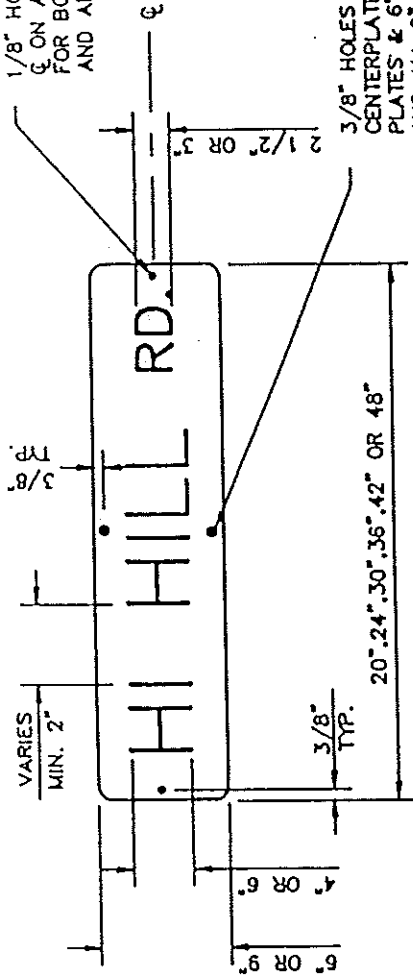
REGULATORY SIGN PLACEMENT

Town of Bennett

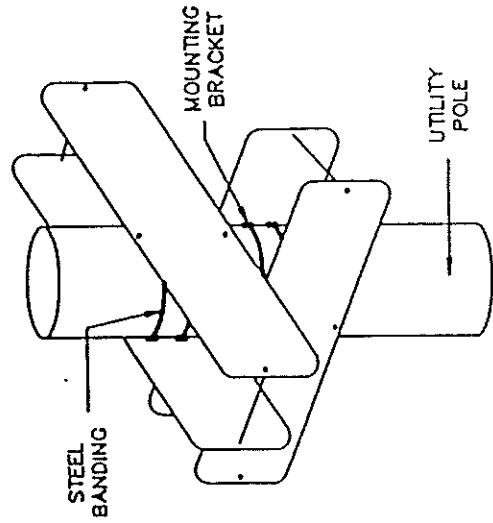
Issued: _____
 Revised: _____

Drawing No. 50

1/8" HOLES WILL BE PUNCHED
 ON ALL 30" AND OVER PLATES
 FOR BOLTING ENDS TOGETHER
 AND ALL 9" PLATES

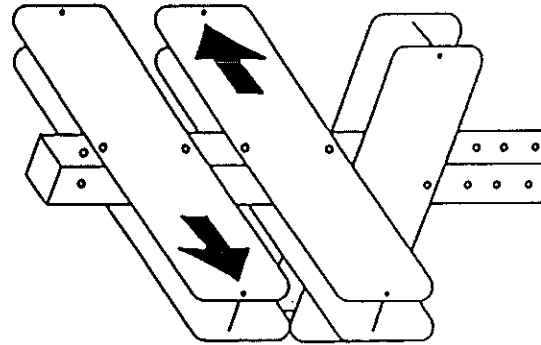


3/8" HOLES WILL BE PUNCHED
 CENTERPLATE ON ALL PUNCHED
 PLATES & 6" x 36" AND OVER
 AND ALL 9" PLATES



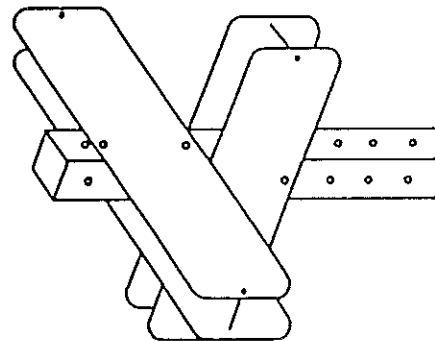
STREET SIGN ASSEMBLY
 ON UTILITY POLE

DETAIL 2

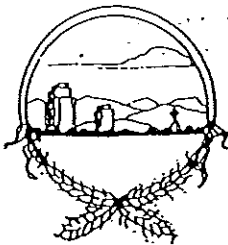


STREET SIGN ASSEMBLY
 WHEN STREET NAMES CHANGE

DETAIL 3



STANDARD
 STREET SIGN ASSEMBLY



STREET SIGN ASSEMBLY

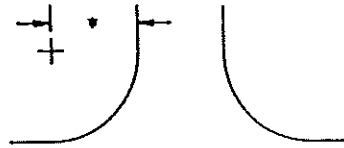
Town of Bennett

Issued: _____

Revised: _____

Drawing No. _____

T-INTERSECTION

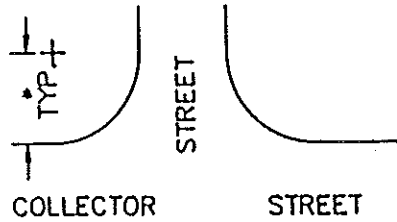


ASSEMBLY MUST BE PLACED AT THIS LOCATION

NOTE:

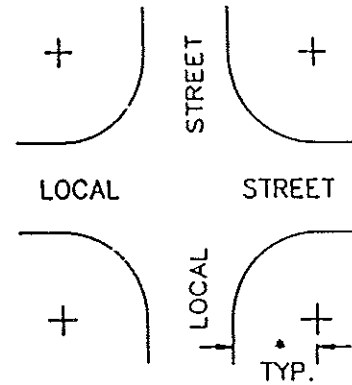
★SEE SPECIFICATION S-10 ON THIS SHEET FOR DISTANCE

LOCAL-COLLECTOR STREET INTERSECTION

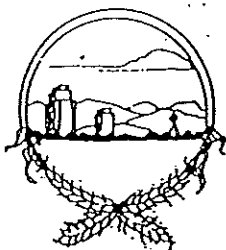


ASSEMBLY CAN BE LOCATED AT EITHER LOCATION

LOCAL-LOCAL STREET INTERSECTION



ASSEMBLY CAN BE LOCATED AT ANY OF THESE LOCATIONS



STREET NAME ASSEMBLY LOCATIONS

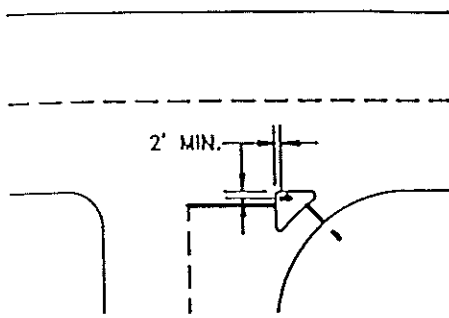
Town of Bennett

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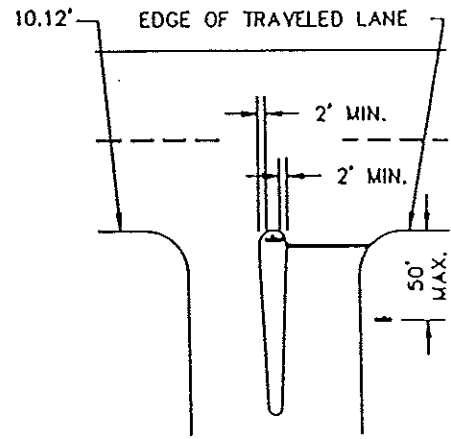
Revised: _____

Drawing No.

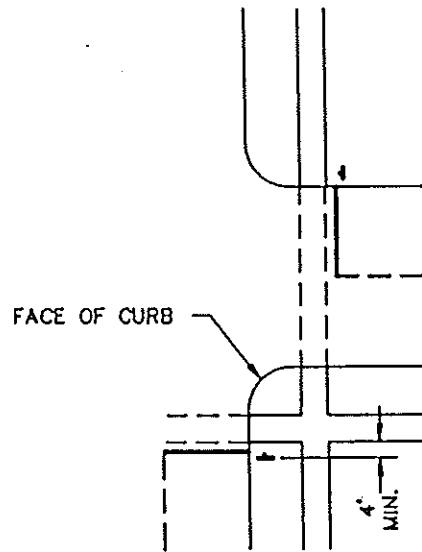
52



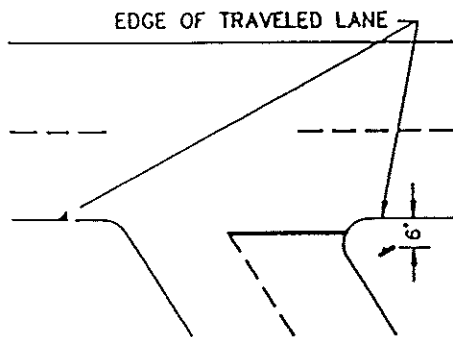
CHANNELIZED INTERSECTION



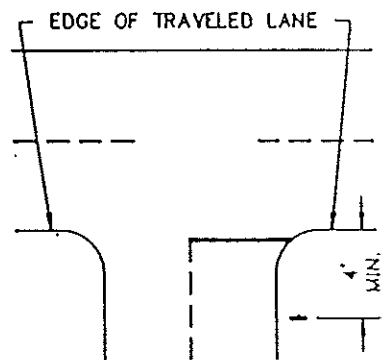
DIVISIONAL ISLAND



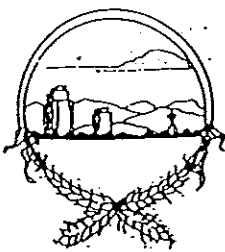
URBAN INTERSECTION



ACUTE ANGLE INTERSECTION



WIDE THROAT INTERSECTION



TYPICAL LOCATIONS—STOP SIGNS
AND YIELD SIGNS

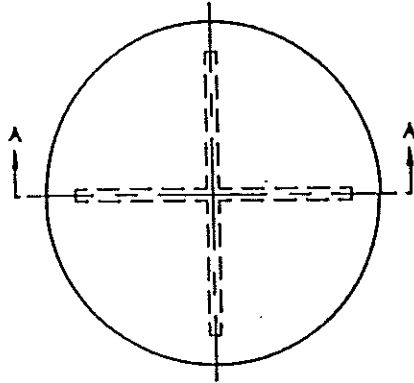
Town of Bennett

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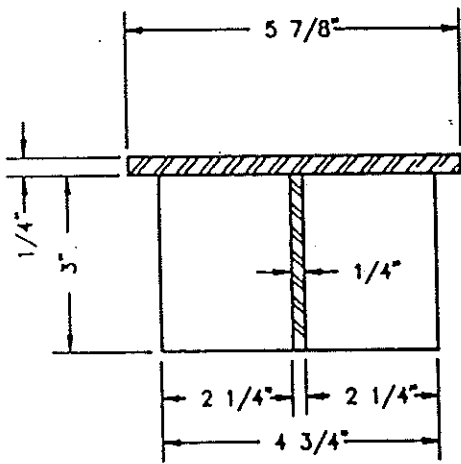
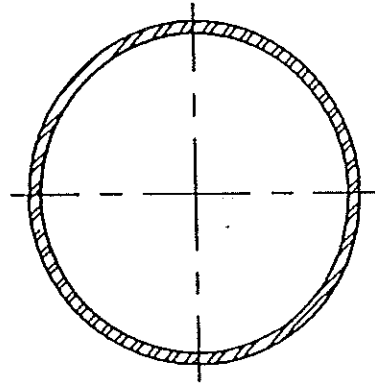
Revised: _____

Drawing No. _____

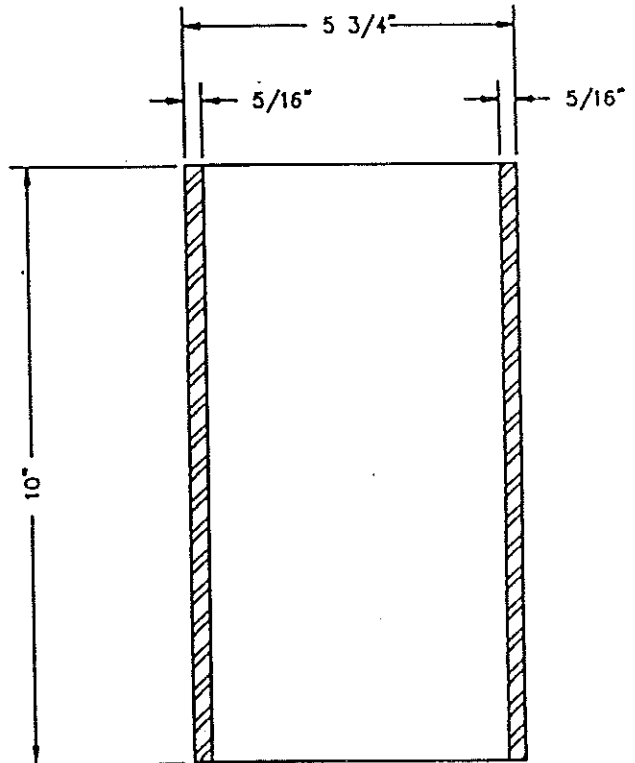
53



TOP



SECTION A - A

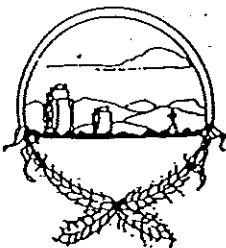


NOTE:

TOP OF BOX SHALL BE DEPRESSED
1/4" TO 1/2" BELOW ADJACENT FINISHED
STREET GRADE.

LETTERS SHALL BE NOT LESS THAN
5/8" HIGH & RAISED 1/8" ABOVE SURFACE.

ALL FILLETS & ROUNDS RADII = 1/8"



RANGE BOX

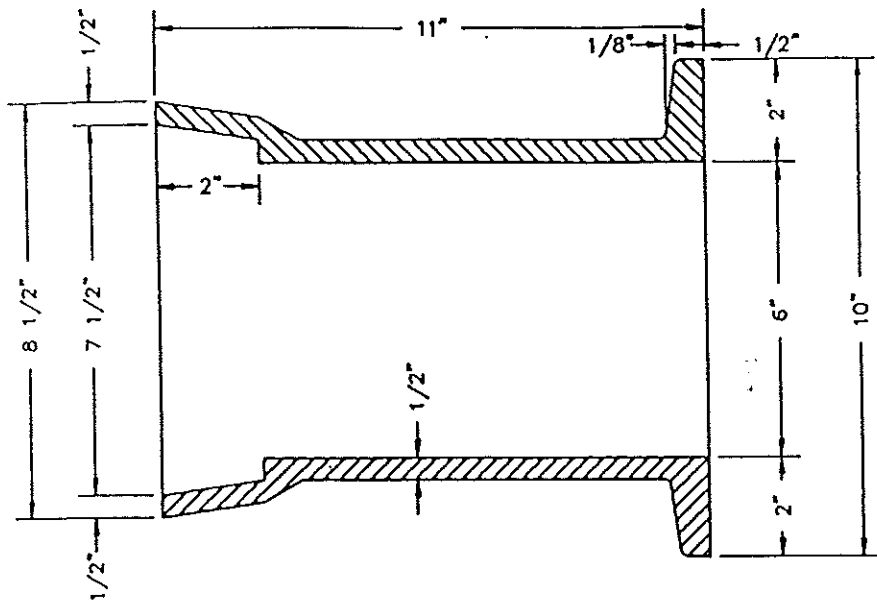
Town of Bennett

Issued: _____

Revised: _____

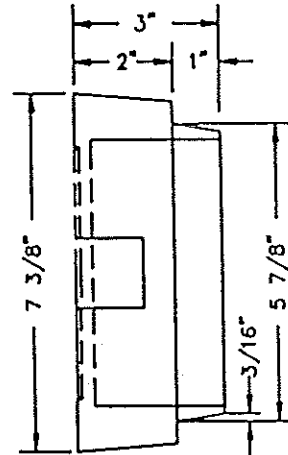
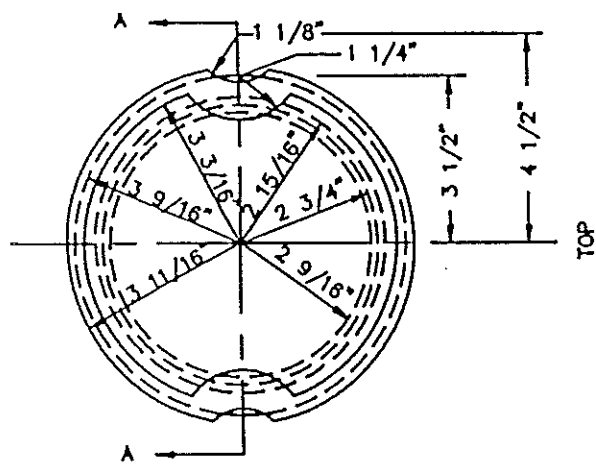
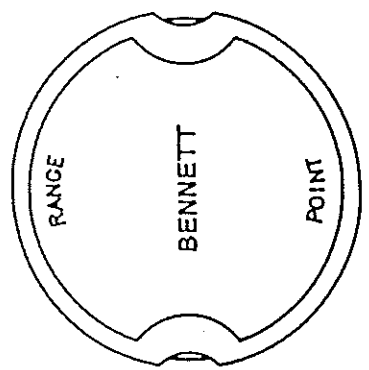
Drawing No.

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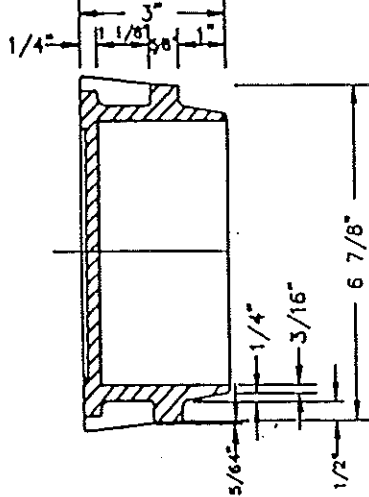


NOTES.

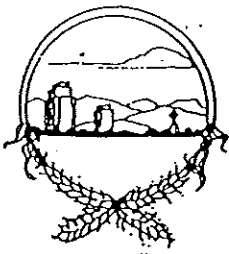
LETTERS SHALL BE NOT LESS THAN 5/8" HIGH & RAISED 1/8" ABOVE SURFACE
 ALL FILLETS & ROUNDS RADII = 1/8"



SIDE



SECTION A-A



RANGE BOX

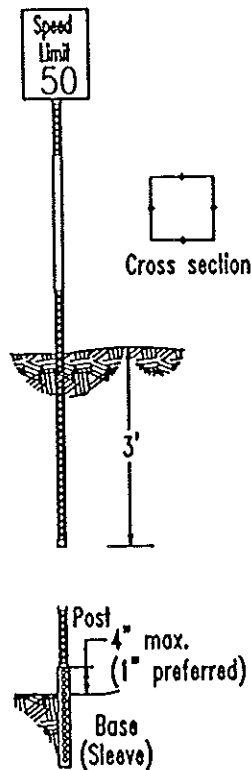
Town of Bennett

Issued: _____

Revised: _____

Drawing No. _____

Square Steel Tube (Perforated)



Post Support. Posts can be driven into the ground. Do not place concrete around the post. A broken or damaged post is easier to remove if it is not driven or set into the ground more than three feet.

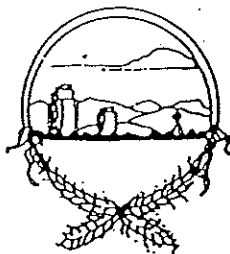
Breakaway Devices. Sleeve assemblies like the one shown in the lower drawing will increase the safety of a sign when it is hit and make it easier to repair. After the sign has been hit, the broken stub of the post can be removed from the base sleeve and a new sign post put back in place.

Maximum Post Size

Max. Sign Panel	Post Size
30" x 30"	2.25" x 2.25" x 0.105"

Sign Panels. Attach the sign panels lightly to the post and use oversized washers to keep the sign from breaking loose from the post when a vehicle hits it. Sign panels should be mounted a minimum of 7 feet above the pavement or ground.

There are many other products available commercially for sign supports. Use depends on local requirements and costs. This publication only shows four of the most common types of small sign supports.



SIGN POST

Town of Bennett

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Revised: _____

Drawing No.

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The following notes are applicable to all roadway sections identified on preceding pages (local, minor collector, major collector, minor arterial and major arterial), unless modifications are approved in writing by the Director of Public Works.

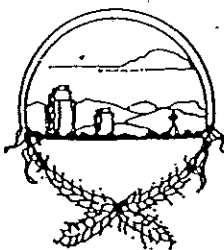
NOTES:

1. Gutters shall be at least 6" thick.
2. All combination curb, gutter and sidewalks to be 6" thick (min.). Sidewalks with vertical curb and gutter may be 4" thick.
3. Total pavement thickness to be determined by pavement design procedures of this Manual.
4. Placement, moisture and density control for subgrade, subbase and surfacing materials shall be in conformance with the requirements of Chapter of the Roadway Design and Construction Standards.
5. Non-landscaped median islands shall be covered with an acceptable impermeable surface.
6. Arterial right turn accel/decel lanes can be eliminated, with inclusion of appropriate tapers, if the distance between intersecting streets and/or curb cuts is 1/2 mile or greater.
7. Legend

P = Parking Allowed

NP = No Parking Allowed

↑ = Laneage



NOTES

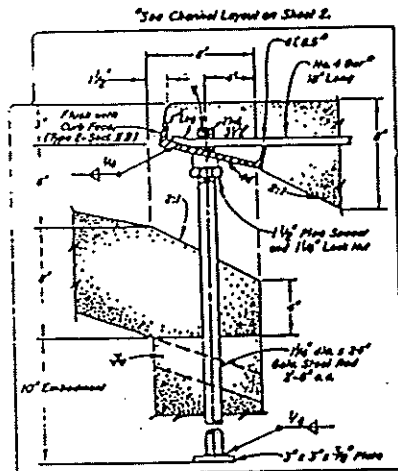
Town of Bennett

Issued: _____

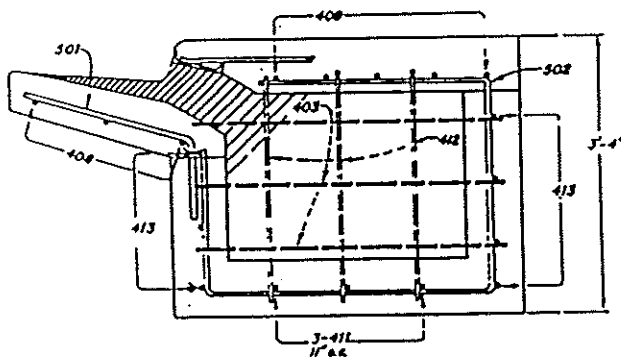
Revised: _____

Drawing No.

57 (

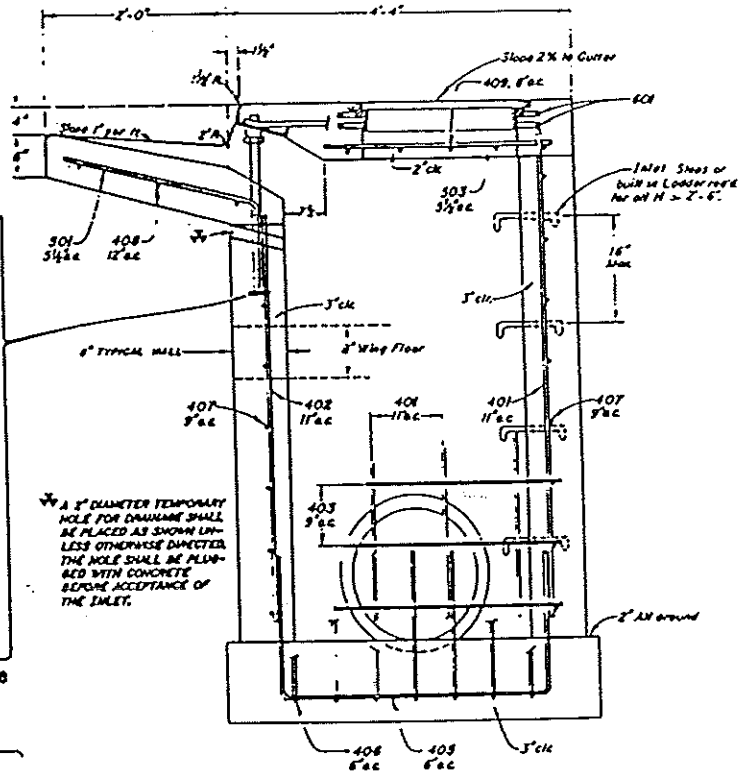


CURB FACE ASSEMBLY, Place Entire Assembly Before Pouring Concrete.



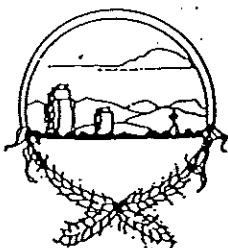
(Dotted Bars are in Section d-d)

SECTIONS G-G & d-d



SECTION B-B
TYPICAL END VIEW

NOTE: MANHOLE RING & COVER, STATION POINT AND OUTFLOW PIPE ARE TO BE LOCATED AT THE SAME END OF THE INLET.



CURB INLET
TYPE R

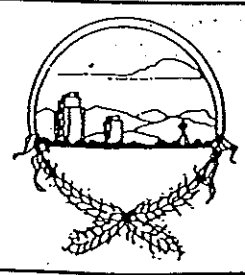
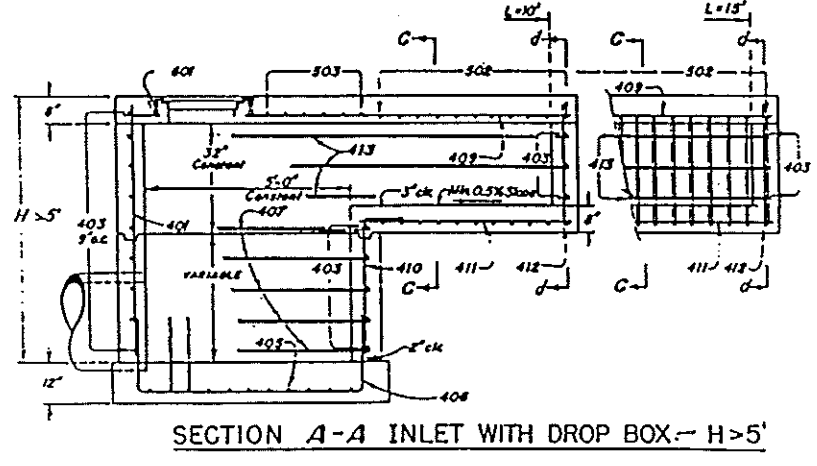
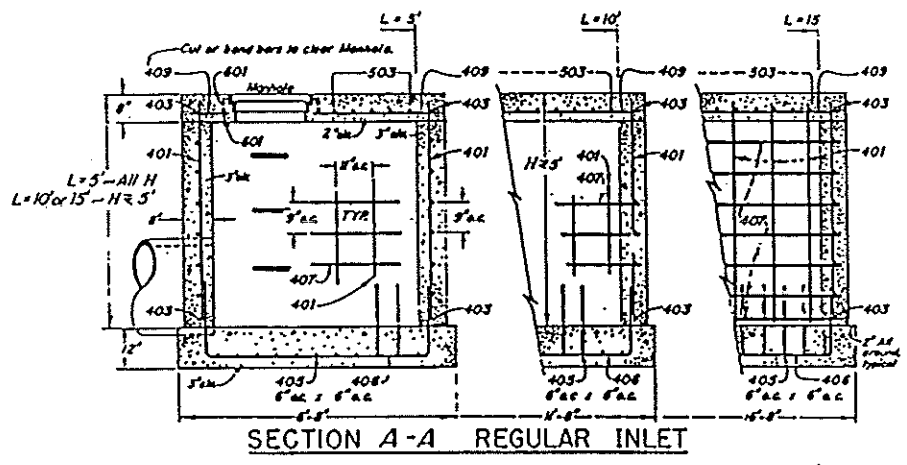
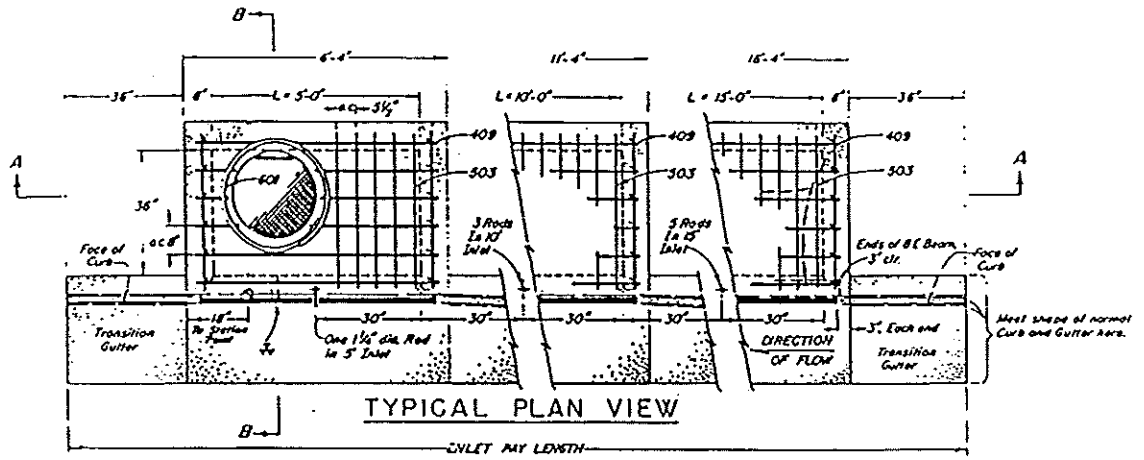
Town of Bennett

Issued: _____

Revised: _____

Drawing No. _____

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**CURB INLET
TYPE R**

Town of Bennett

Issued: _____

Revised: _____

Drawing No. **59**

TABLE ONE - BAR LIST FOR CURB INLETS, TYPE R

MARK	DIA in.	a.c. Spacing	TYPE	ALL INLETS		INLETS, H ≥ 5'		INLETS, H > 5'					
				L = 5'		10'		15'		10'		15'	
				No. Reqd.	Length	No. Reqd.	Length	No. Reqd.	Length	No. Reqd.	Length	No. Reqd.	Length
401	11"	11"	II	15	#	21	#	28	#	11	#	11	#
402	11"	11"	II	7	#	13	#	18	#	7	#	7	#
403	9"	11"	II	#	4'-0"	#	4'-0"	#	4'-0"	#	4'-0"	#	4'-0"
405	6"	VI	VI	11	6'-0"	21	6'-10"	31	6'-10"	11	6'-10"	11	6'-10"
406	6"	VII	VII	7	5'-0"	7	15'-10"	7	18'-10"	7	6'-10"	7	6'-10"
407	9"	II	II	#	5'-10"	#	10'-10"	#	15'-10"	#	5'-10"	#	5'-10"
408	12"	II	II	3	6'-0"	3	11'-0"	3	16'-0"	3	11'-0"	3	16'-0"
409	8"	II	II	6	5'-10"	6	10'-10"	6	15'-10"	6	10'-10"	6	15'-10"
410	11"	VII	VII							3	#	3	#
411	11"	II	II							3	5'-2"	3	10'-2"
412	11"	II	II							3	2'-9"	3	2'-9"
413	9"	II	II							7	10'-10"	7	15'-10"
501	5 1/2"	IV	IV	11	3'-6"	22	3'-6"	33	3'-6"	22	3'-6"	33	3'-6"
502	5 1/2"	III	III							11	11'-5"	22	11'-5"
503	5 1/2"	II	II	3	3'-6"	16	3'-6"	27	3'-6"	6	3'-6"	6	3'-6"
601	2 1/2"	V	V	2	6'-10"	2	6'-10"	2	6'-10"	2	6'-10"	2	6'-10"
REGS				1	5'-10"	1	10'-10"	1	15'-10"	1	10'-10"	1	15'-10"
F				2 Bars/Inch		4 Bars/Inch		4 Bars/Inch		4 Bars/Inch		4 Bars/Inch	

* Variable, refer to Table TWO.

† Include 1/8" No. 4 Bars (See Channel Layout Detail).

‡ See Curb Face Assembly on Sheet I and Channel Layout Details on M&E sheet.

REGULAR INLETS

DROP BOX INLETS

TABLE TWO - BARS AND QUANTITIES VARIABLE WITH H

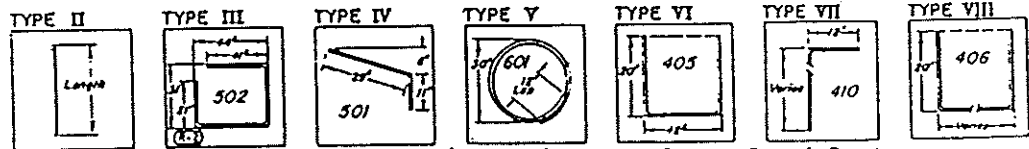
H	Length			No. Reqd. Regular		No. Reqd. Drop Box		L = 5'		L = 10'		L = 15'	
	401	402	410	403	407	403	407	Qty/Conc./Lb. Steel	Qty/Conc./Lb. Steel	Qty/Conc./Lb. Steel	Qty/Conc./Lb. Steel	Qty/Conc./Lb. Steel	Qty/Conc./Lb. Steel
3'-0"	2'-8"	1'-8"		10	7			3.2	283	5.3	437	7.4	708
3'-6"	3'-2"	2'-2"		10	7			3.4	303	5.7	328	7.9	747
4'-0"	3'-8"	2'-8"		12	9			3.7	328	6.0	359	8.4	788
4'-6"	4-2"	3'-2"		12	9			3.9	354	6.4	371	8.8	803
5'-0"	4-8"	3'-8"		14	11			4.1	354	6.7	602	9.3	844
5'-6"	5-2"	4-2"	3'-5"	18	13	15	6	4.4	372	6.0	607	7.5	840
6'-0"	5-8"	4-8"	3'-11"	18	13	18	6	4.6	382	6.2	818	7.7	850
6'-6"	6-2"	5'-2"	4'-5"	18	13	18	6	4.8	402	6.4	837	7.9	870
7'-0"	6-8"	5'-8"	4'-11"	20	17	19	10	5.0	423	6.6	654	8.1	887
7'-6"	7-2"	6'-2"	5'-5"	20	17	20	10	5.3	430	6.9	664	8.4	897
8'-0"	7-8"	6'-8"	5'-11"	22	19	22	12	5.5	451	7.1	684	8.6	917
8'-6"	8-2"	7'-2"	6'-5"	24	21	23	14	5.7	471	7.3	702	8.8	934
9'-0"	8-8"	7'-8"	6'-11"	24	21	24	14	6.0	479	7.6	711	9.1	944
9'-6"	9-2"	8'-2"	7'-5"	28	23	26	18	6.2	499	7.8	732	9.3	964
10'-0"	9-8"	8'-8"	7'-11"	28	23	27	18	6.4	520	8.0	749	9.5	982
10'-6"	10-2"	9'-2"	8'-5"	28	23	28	18	6.7	527	8.3	759	9.8	991
11'-0"	10-8"	9'-8"	8'-11"	30	27	30	20	6.9	547	8.5	779	10.0	1012

NOTE: For L=5, L=10 and L=15.

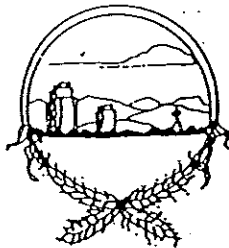
REGULAR INLETS: Total amount needed on OUTSIDE of the heavy black line.

DROP BOX INLETS: Total amount needed on INSIDE of the heavy black line.

STEEL WEIGHTS DO NOT INCLUDE STRUCTURAL STEEL.



BAR BENDING DIAGRAMS (Dimensions are Out-to-Out of Bar)



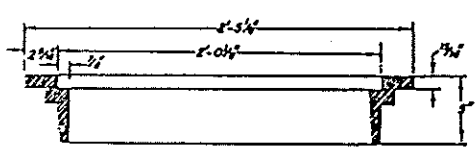
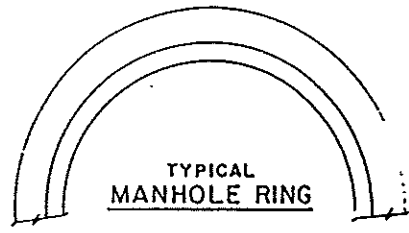
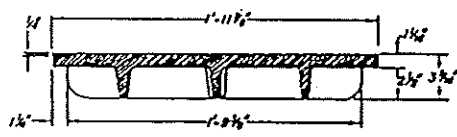
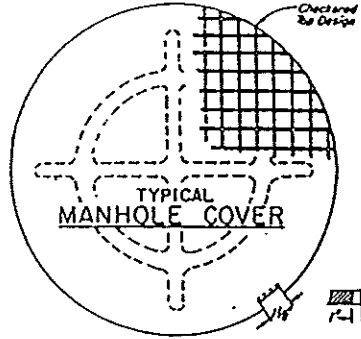
CURB INLET
TYPE R

Town of Bennett

Issued: _____

Revised: _____

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Approximate
Weights:

Cover	=	125 lbs.
Ring	=	135 lbs.
TOTAL	=	260 lbs.

GENERAL NOTES

All work shall be done in accordance with the Standard Specifications applicable to the project.

All concrete shall be Class A or B.

Concrete walls shall be formed on both sides and shall be 8" thick.

Inlet Steps shall be as shown on the applicable Division "N" Standard.

Curb Face Assembly shall be galvanized after casting.

Exposed concrete corners shall be beveled to 45° face. Curb and Gutter corners shall be finished to match the adjoining curb and gutter beyond the Transition Gutter.

All reinforcing bars shall be tagged with bar designation and station number.

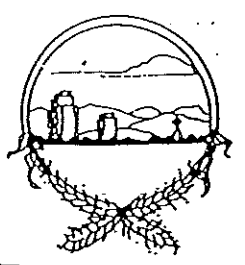
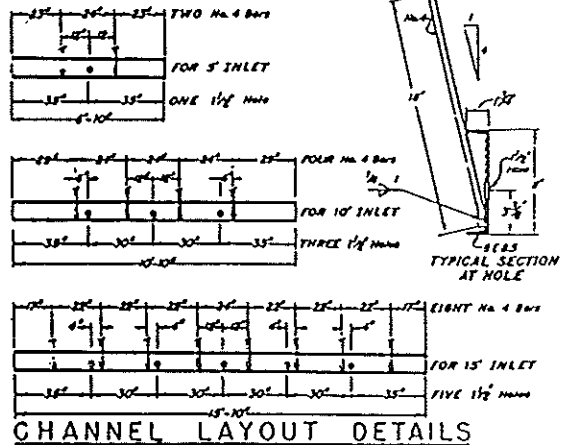
Reinforcing bars shall be deformed and shall be of intermediate grade steel.

Dimensions and weights of Typical Manhole Ring and Cover are nominal.

All bars shall be a minimum 2" clear.

Since pipe enters into the inlet are variable, the dimensions shown are typical. Actual dimensions and quantities for concrete and reinforcement shall be as required in the work. Quantities include volumes occupied by pipes.

Structural Steel shall be galvanized and shall conform to the requirements of Section 508.



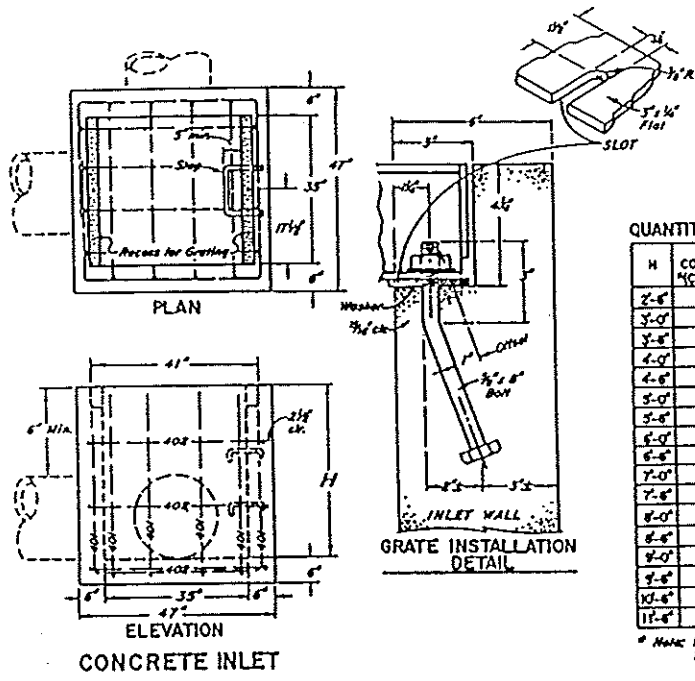
CURB INLET TYPE R

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Issued: _____

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Drawing No. _____



QUANTITIES FOR ONE INLET

H	CONCRETE (CU. YDS.)	REINF. STEEL (LBS.)	NO. STEPS REQ'D.
2'-6"	0.9	73	0
3'-0"	1.0	80	0
3'-6"	1.2	98	0
4'-0"	1.3	101	1
4'-6"	1.4	116	2
5'-0"	1.5	122	2
5'-6"	1.7	137	2
6'-0"	1.8	142	3
6'-6"	1.9	158	3
7'-0"	2.0	163	3
7'-6"	2.2	179	4
8'-0"	2.3	184	4
8'-6"	2.4	199	4
9'-0"	2.5	205	5
9'-6"	2.7	220	5
10'-0"	3.0	235	6
11'-0"	3.4	231	6

BAR LIST FOR 12'-6" AND BENDING DIAGRAM

MARK	NO. REQ'D.	HGT. "U"	LENGTH
401	2	2'-3"	7'-11"
401	6	2'-7"	8'-7"
402	3	2'-7"	15'-0"

Na 401 U

Na 402

Add one bar for each foot increase of H above 2'-6".

All bars to be 1/2" Dia. - Cut or bend around pipe as required.

* Note: Includes Volume occupied by pipe.

GENERAL NOTES

All work shall be done in accordance with the Standard Specifications applicable to the project.

All concrete shall be Class A or B.

For detail of Inlet Slot, see M-Standard "Steps for Manholes and Inlets".

All reinforcing bars shall be deformed, of intermediate grade, and shall be topped with the section number and bar designation.

All edge distances not marked "clear" are 10 E of box.

Concrete slope and ditch paving shall conform to Section 507.

Reinforcement for concrete slope paving shall be WWP 4 x 4 - W14 x W14 or WWP 6 x 6 - W21 x W21.

Grouting shall conform to Section 604.

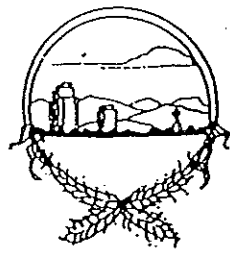
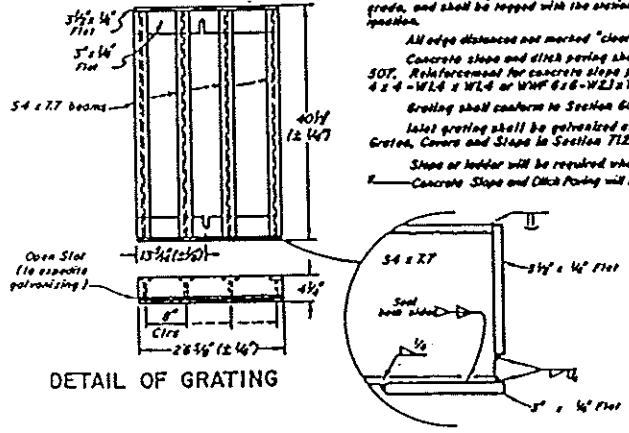
Latex grating shall be galvanized as described for Frames, Grates, Covers and Steps in Section 712.

Steps or ladders will be required when latex "N" exceeds 3'-6".

Concrete Slope and Ditch Paving will be required when shown on Plans.

STEEL GRATE QUANTITIES

NO. PIECES	DESCRIPTION	LENGTH	LB. WEIGHT per ft. (lbs.)
2	54 x 27 Beem	40'	2701 107
2	3 1/2" x 1/4" Flat	26 1/2'	2301 13
2	3" x 1/2" Flat	26 1/2'	2251 12
TOTAL 126 lbs.			



**INLET
TYPE C**

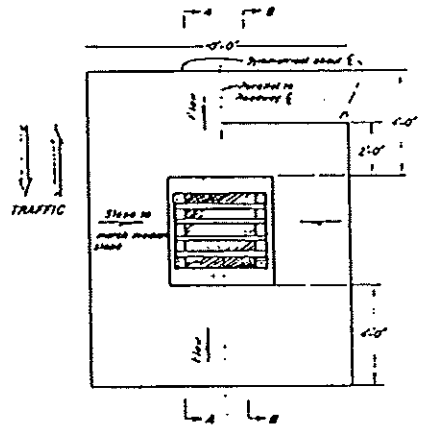
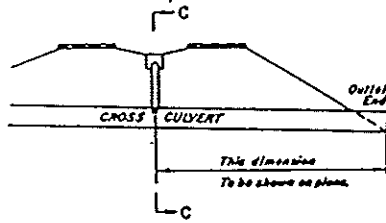
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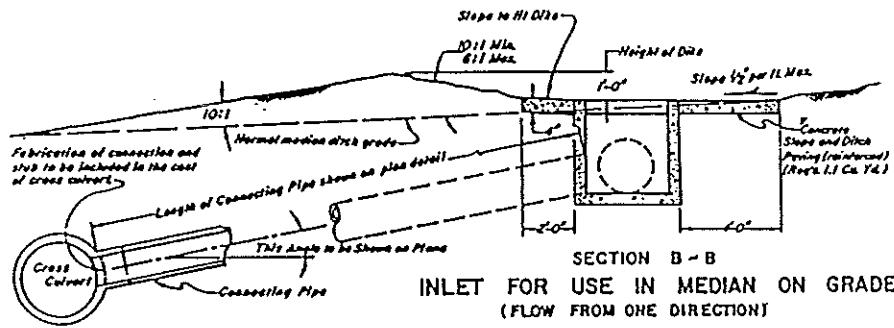
Revised: _____

Drawing No. _____

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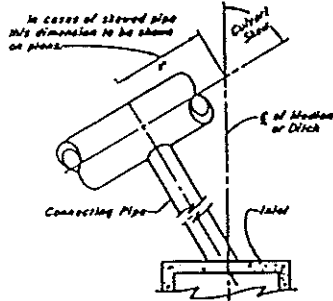


LAYOUT OF INLET IN MEDIAN DITCH

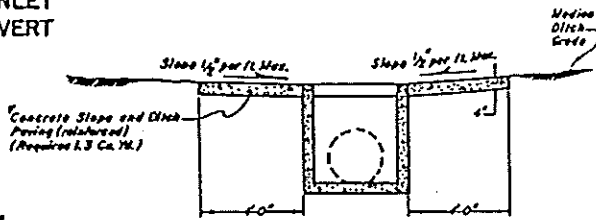


SECTION B - B
INLET FOR USE IN MEDIAN ON GRADE
(FLOW FROM ONE DIRECTION)

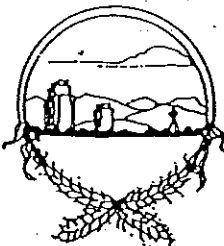
SECTION C - C
DETAIL SHOWING MEDIAN INLET
CONNECTED TO A CROSS CULVERT



DETAIL SHOWING MEDIAN INLET CONNECTED
TO A SKEWED CROSS CULVERT



SECTION A - A
INLET FOR USE IN MEDIAN
AT BOTTOM OF VERTICAL CURVE



INLET
TYPE C

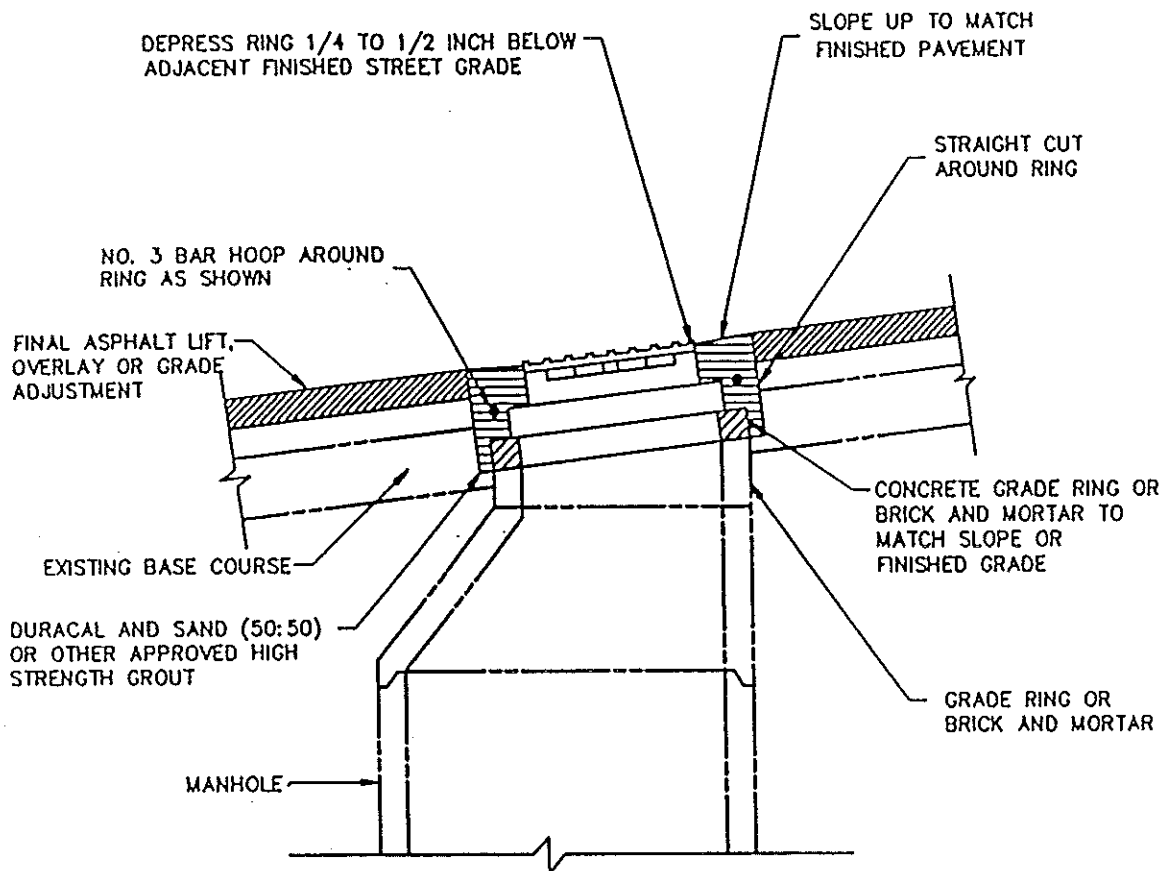
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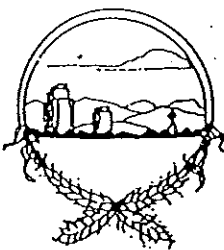
Drawing No. _____

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NOTES:

- 1 ADEQUATE BARRICADES SHALL BE PLACED AND MAINTAINED UNTIL THE COLLAR ATTAINS A COMPRESSIVE STRENGTH OF 3000 PSI.
- 2 DURACAL GROUT SHALL BE A MIXTURE OF 100 LBS. DURACAL, 26 LBS. WATER (3.12 GAL.), AND 100 LBS. OF SAND CONFORMING TO ASTM C-35.
- 3 MANHOLES SHALL NOT BE LOCATED IN CROSSPANS OR GUTTERS



MANHOLE RING AND COVER
ADJUSTMENT



Town of Bennett

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Drawing No. 64

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