



## Standard Detail Plates

City of Farmington

April 2019

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REFERENCES ON CITY PLATES ARE TO MnDOT 2018 EDITION SPECIFICATIONS

NOTE:

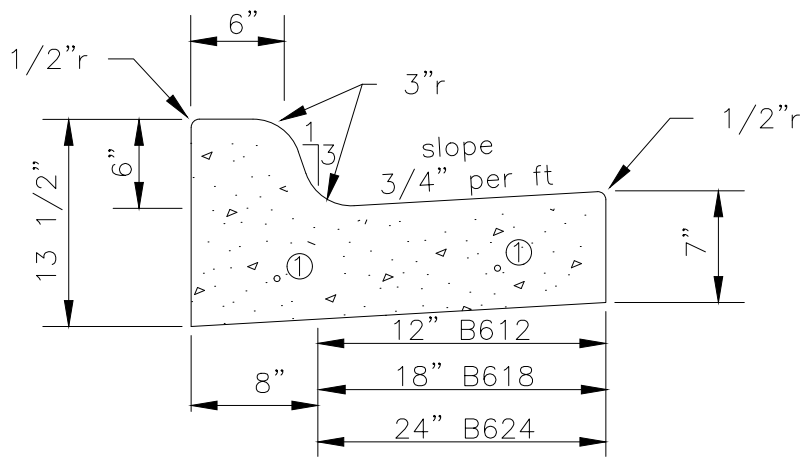


### STANDARD DETAILS INDEX

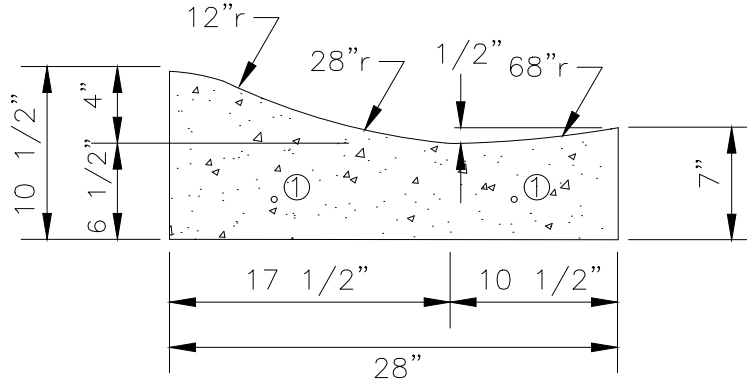
Last Revision:  
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City Plate No.  
INDEX1  
2019

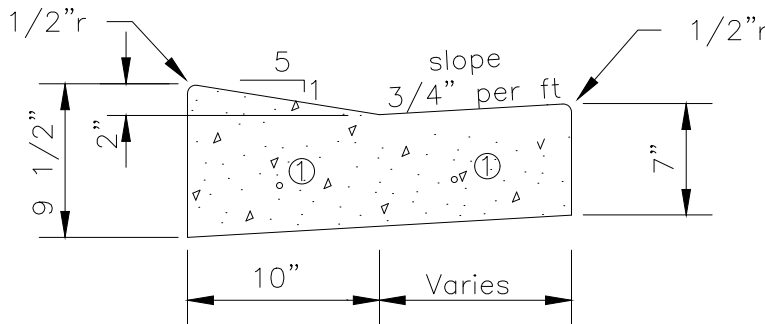
## FARMINGTON, MINNESOTA



MnDOT B612  
MnDOT B618  
MnDOT B624



MOUNTABLE



STANDARD SECTION  
THROUGH DRIVEWAY

NOTE:

- ① Place #4 rebar as shown, where curb crosses utility trenches with 1 1/2" of cover.
- ② Place a "W" stamp per City Plate No. STR-28 on face of curb where curb and gutter crosses a water service.
- ③ Place an "S" stamp per City Plate No. STR-28 on face of curb where curb and gutter crosses a sanitary sewer service.

MnDOT 3F32 concrete shall be used for curb and gutter.

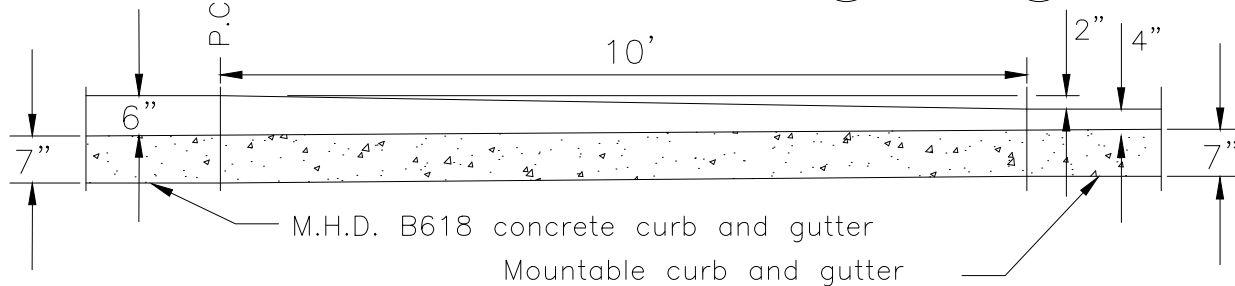
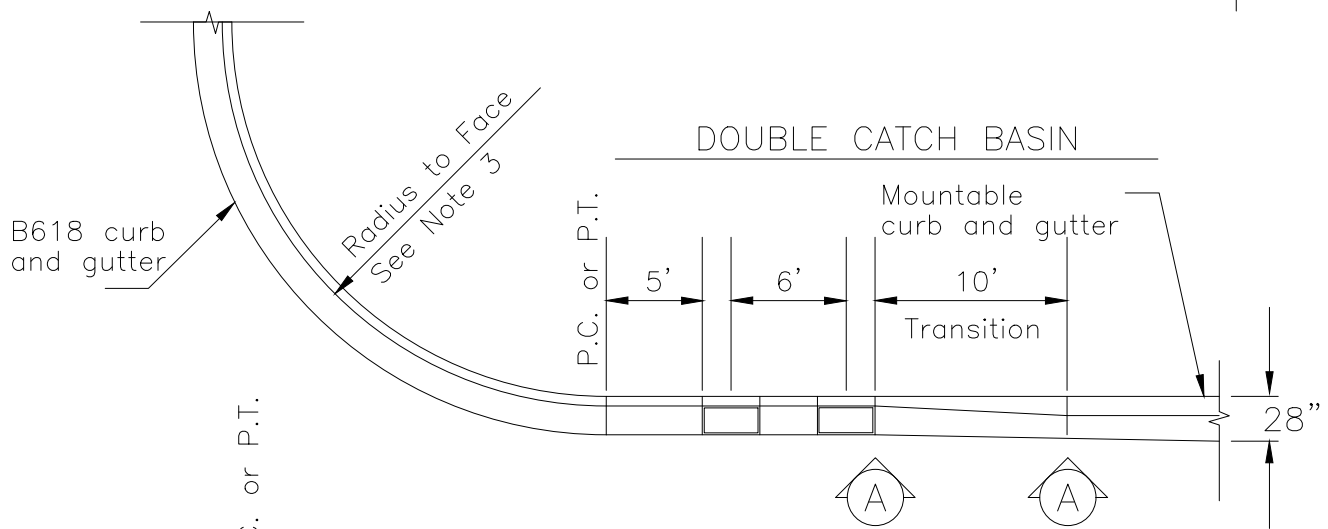
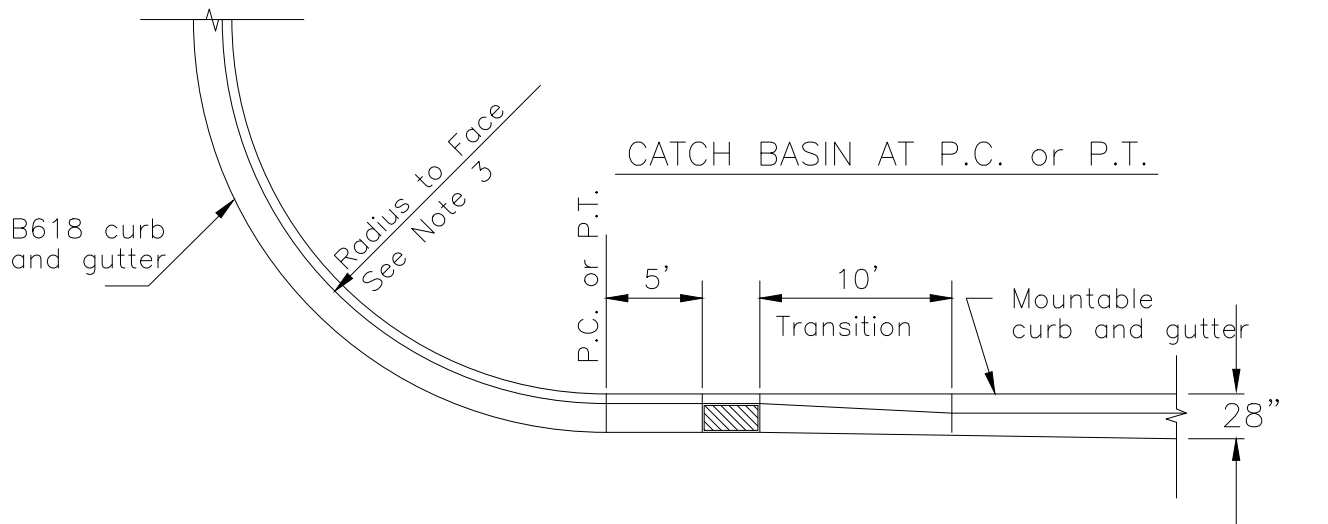


STANDARD DETAILS  
CURB AND GUTTER

Last Revision:  
MAR 2017

FARMINGTON, MINNESOTA

City Plate No.  
STR-01  
2019



NOTE:

1. All radii are measured to face of curb.
2. No catch basins will be constructed in the intersection radii.
3. 30' radii will be required at intersections of all collector to residential streets.  
20' radii will be required at intersections of all residential to residential streets.



STANDARD DETAILS  
CONCRETE CURB AND GUTTER  
TRANSITIONS

FARMINGTON, MINNESOTA

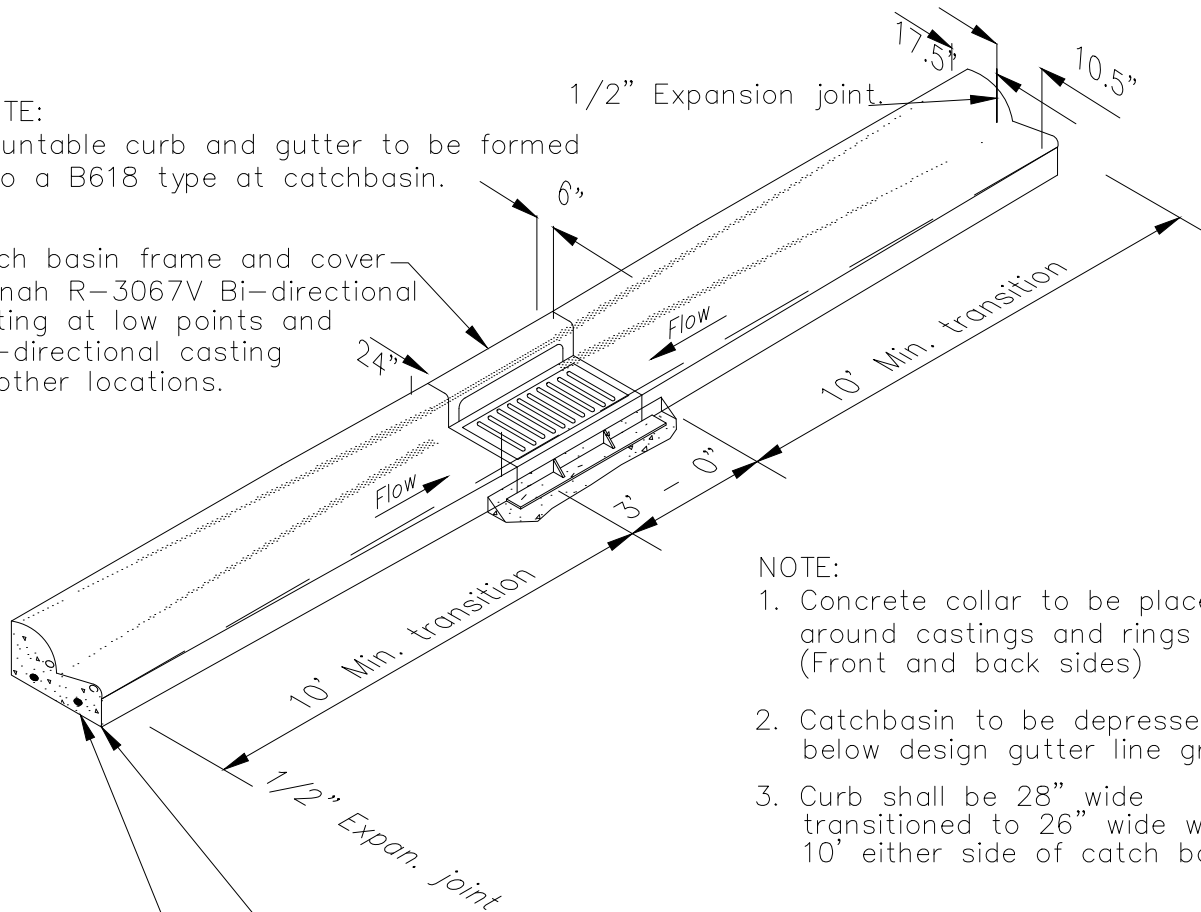
Last Revision:  
FEB 2017

City Plate No.  
STR-02  
2019

**NOTE:**

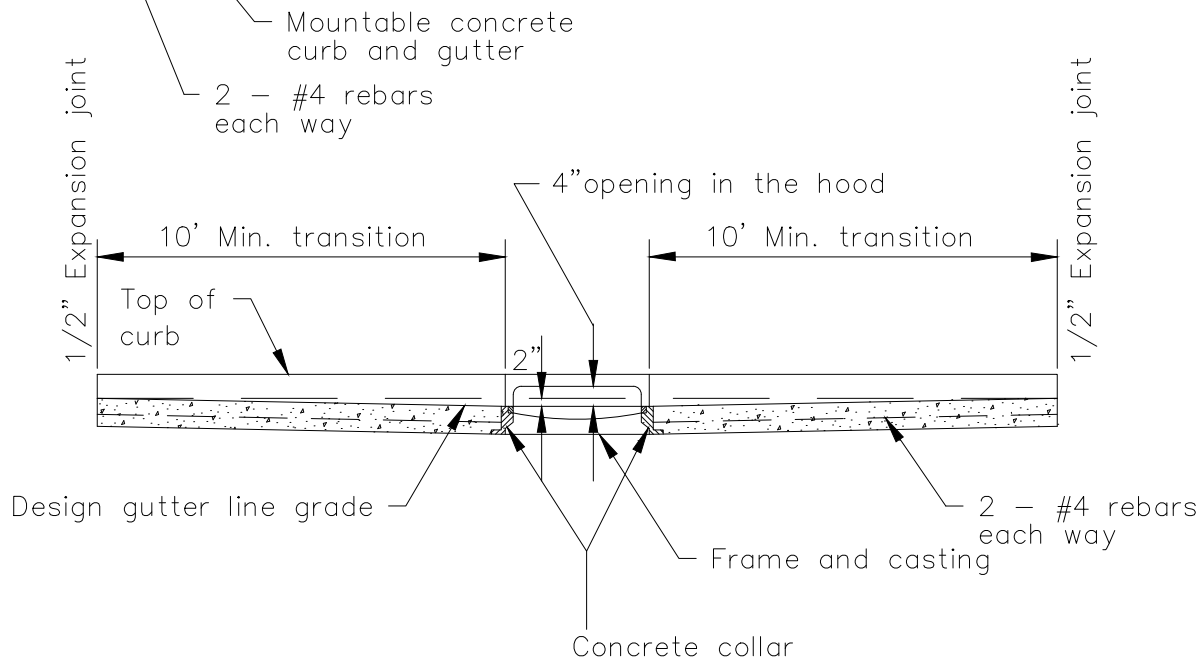
Mountable curb and gutter to be formed into a B618 type at catchbasin.

Catch basin frame and cover  
Neenah R-3067V Bi-directional casting at low points and uni-directional casting at other locations.



**NOTE:**

1. Concrete collar to be placed around castings and rings (Front and back sides)
2. Catchbasin to be depressed 2" below design gutter line grade.
3. Curb shall be 28" wide transitioned to 26" wide within 10' either side of catch basin.



No Scale



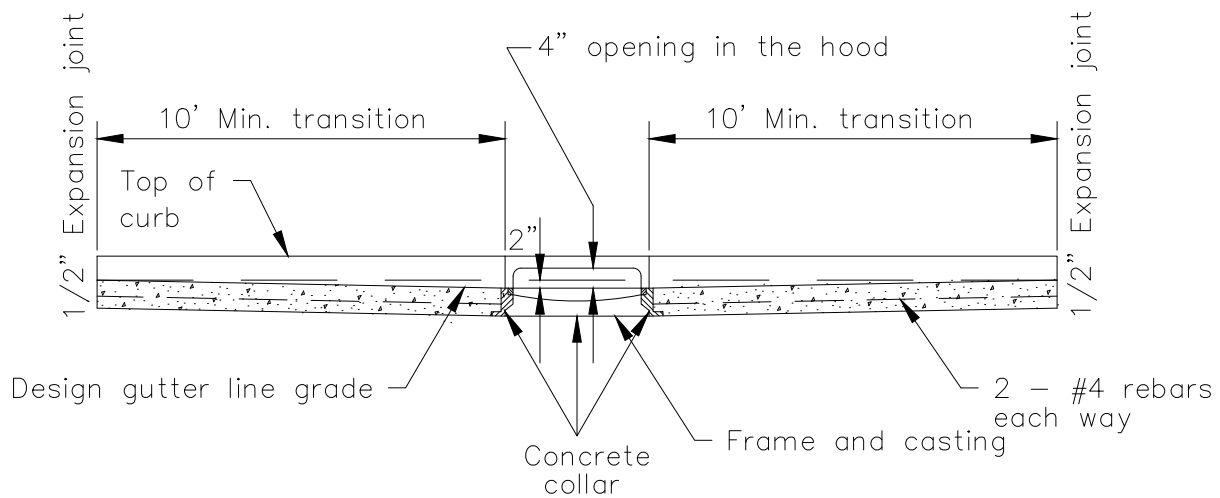
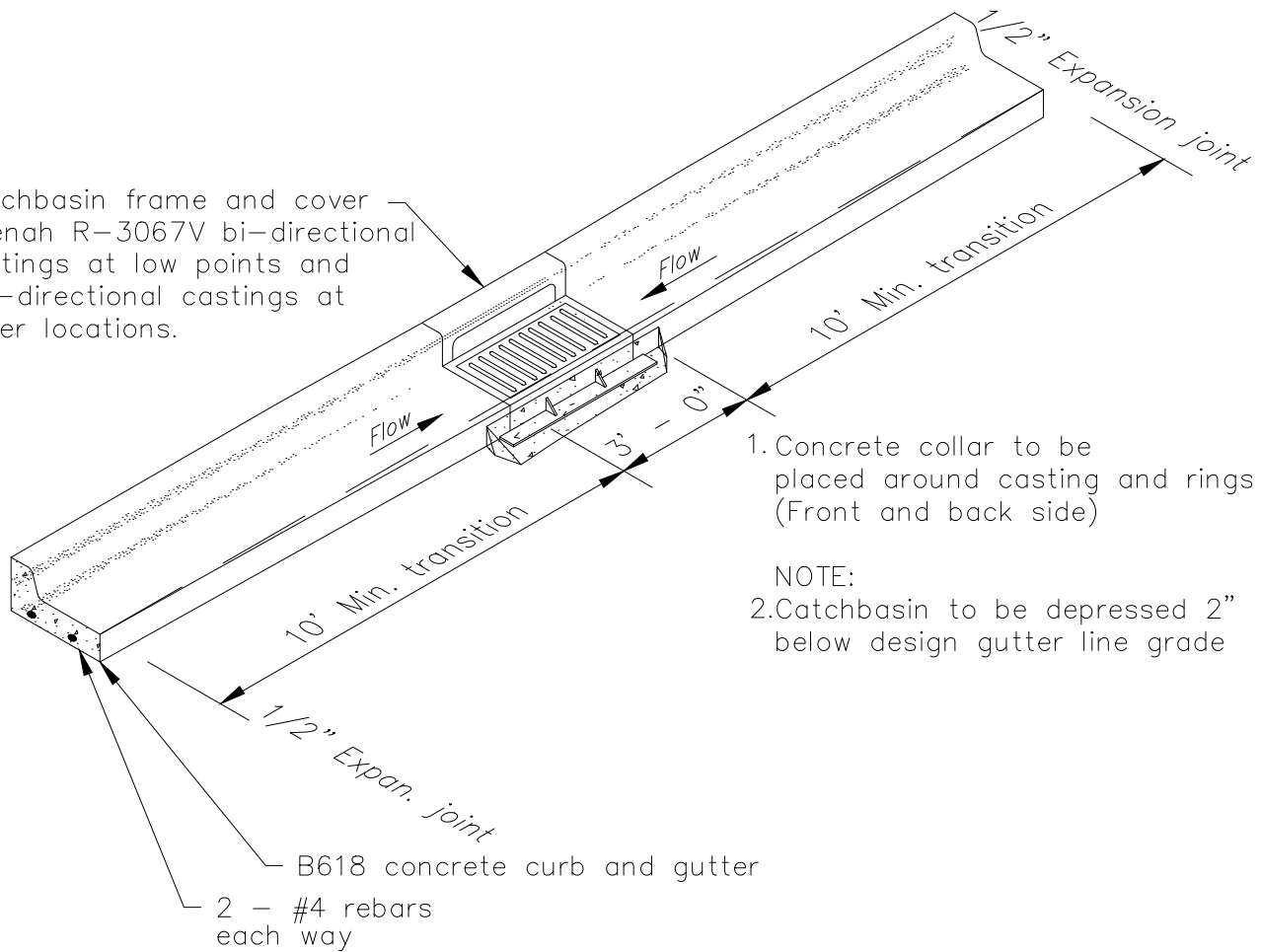
**STANDARD DETAILS**  
MOUNTABLE CURB AND GUTTER  
CONSTRUCTION AT CATCH BASINS

Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
STR-03  
2019

Catchbasin frame and cover  
Neenah R-3067V bi-directional  
castings at low points and  
uni-directional castings at  
other locations.



No Scale

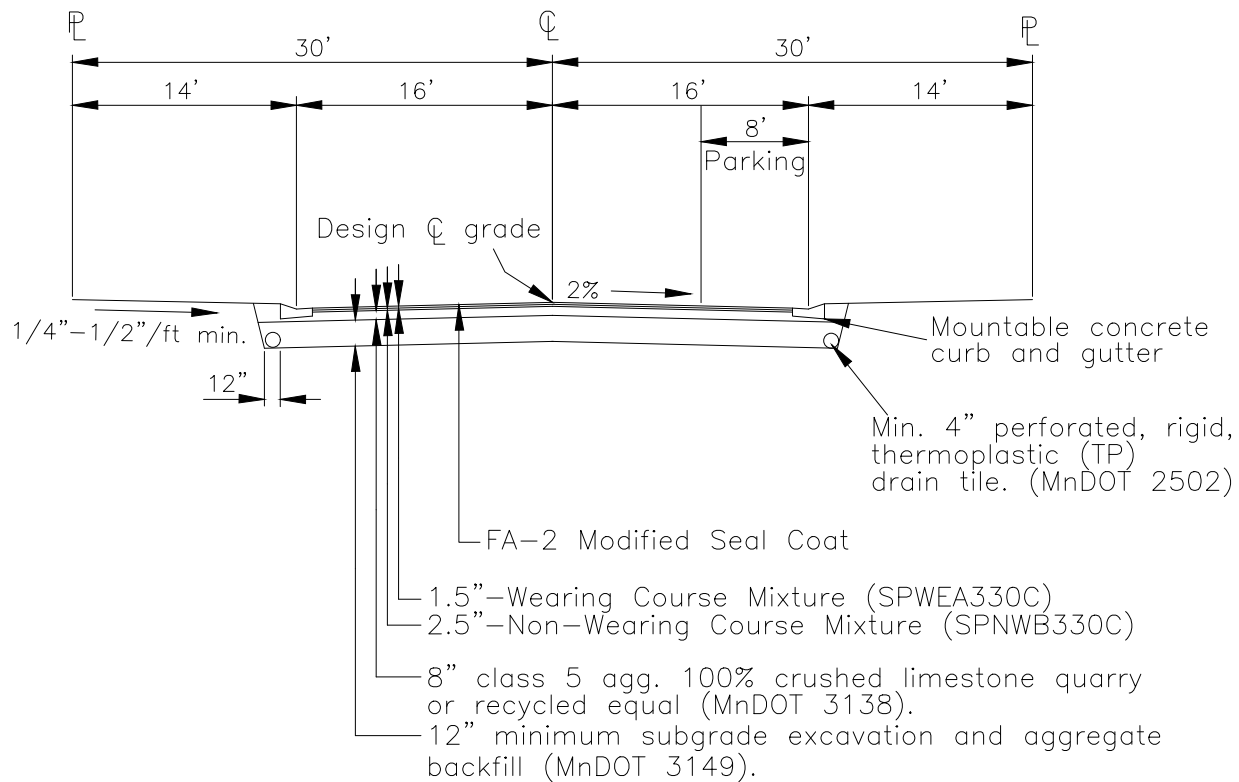


STANDARD DETAILS  
B618 CURB AND GUTTER  
INSTALLATION AT CATCH BASINS

FARMINGTON, MINNESOTA

Last Revision:  
FEB 2017

City Plate No.  
STR-04  
2019



NOTE:

1. Typical section shown is the minimum residential street requirement. See specifications for project specific details.
2. Top of curb is 0.01' below design centerline grade.
3. Drain tile shall be installed behind curb in all low points in roads and as determined by the City Engineer.
4. Street shall be designed for a 30 mph design speed with minimum .50% and maximum of 10.00% grade.
5. The City reserves the right to increase the street section based on soil conditions and geotechnical report.
6. A bituminous mix design must be submitted and approved by the City prior to placement.
7. No recycled bituminous mixes will be allowed.
8. CSS1H tack coat shall be applied between all bituminous layers.
9. FA-2 Modified Seal Coat to be applied 2 to 3 years after placement of the bituminous wear course. This seal coat is considered part of the construction of the roadway. As such, in new developments, costs associated with the initial seal coat application are the responsibility of the developer

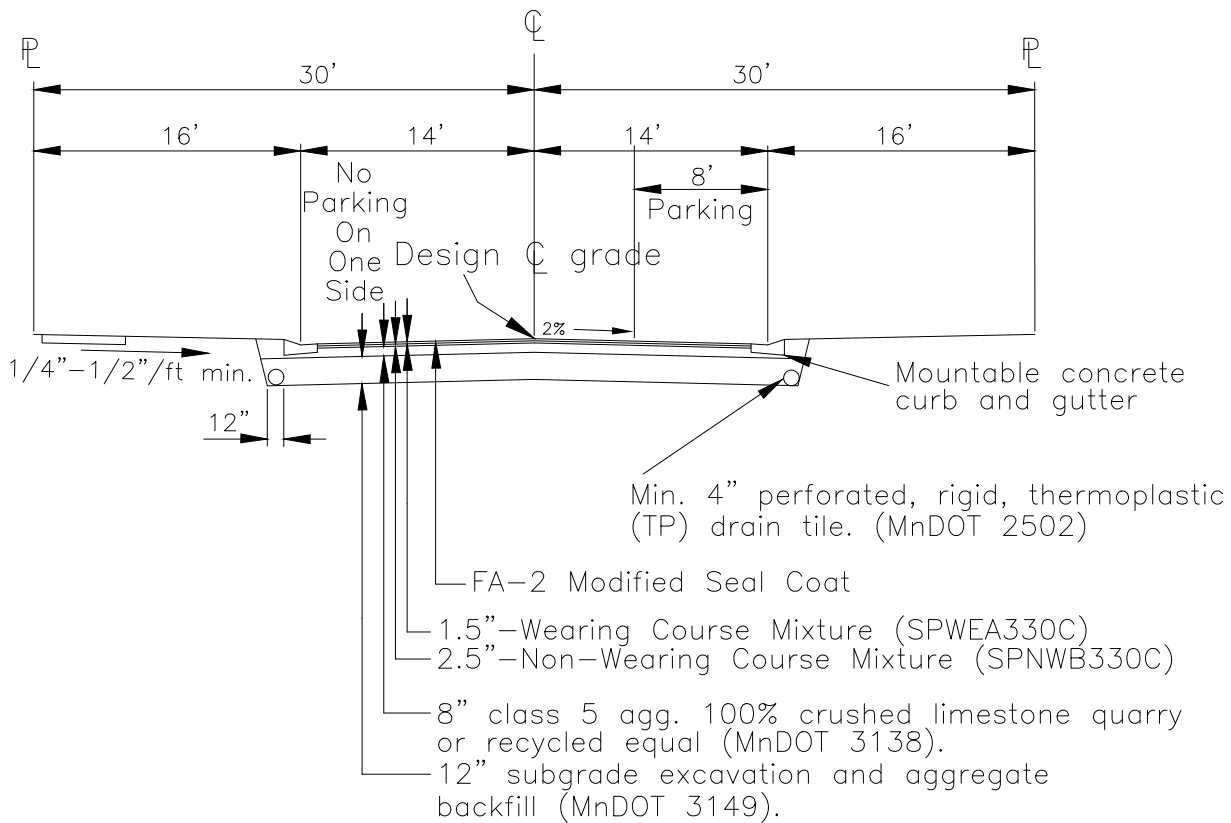


STANDARD DETAILS  
RESIDENTIAL STREET SECTION

Last Revision:  
APR 2017

FARMINGTON, MINNESOTA

City Plate No.  
STR-05  
2019



NOTE:

1. Typical section shown is the minimum residential street requirement. See specifications for project specific details.
2. Top of curb is 0.03' below design centerline grade.
3. Drain tile shall be installed behind curb in all low points in roads and as determined by the City Engineer.
4. Street shall be designed for a 30 mph design speed with minimum .50% and maximum of 10.00% grade.
5. The City reserves the right to increase the street section based on soil conditions and geotechnical report.
6. A bituminous mix design must be submitted and approved by the City prior to placement.
7. No recycled bituminous mixes will be allowed.
8. CSS1H tack coat shall be applied between all bituminous layers.
9. FA-2 Modified Seal Coat to be applied 2 to 3 years after placement of the bituminous wear course. This seal coat is considered part of the construction of the roadway. As such, in new developments, costs associated with the initial seal coat application are the responsibility of the developer



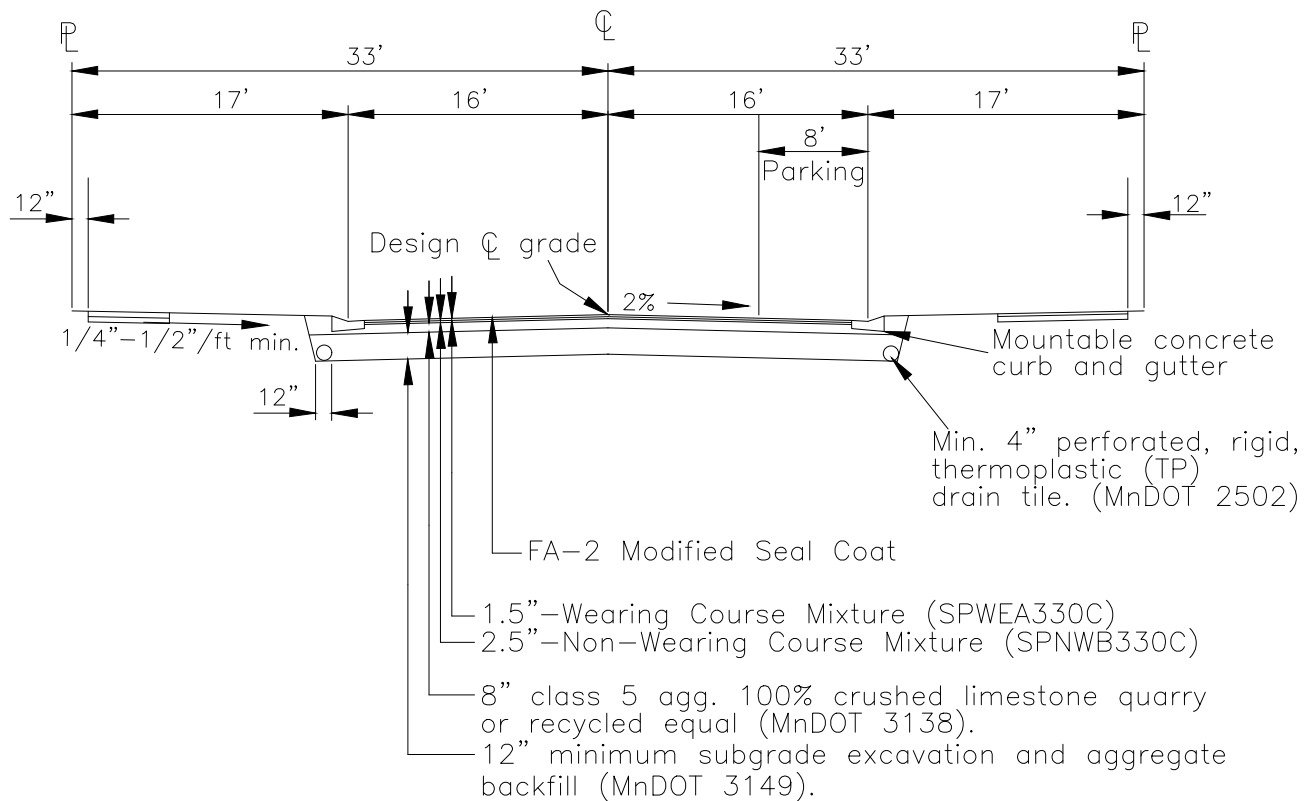
STANDARD DETAILS  
28-FOOT RESIDENTIAL STREET SECTION  
WITH SIDEWALK

Last Revision:  
APR 2017

FARMINGTON, MINNESOTA

City Plate No.  
STR-05A  
2019





NOTE:

1. Typical section shown is the minimum residential street requirement. See specifications for project specific details.
2. Top of curb is 0.01' below design centerline grade.
3. Drain tile shall be installed behind curb in all low points in roads and as determined by the City Engineer.
4. Street shall be designed for a 30 mph design speed with minimum .50% and maximum of 10.00% grade.
5. The City reserves the right to increase the street section based on soil conditions and geotechnical report.
6. A bituminous mix design must be submitted and approved by the City prior to placement.
7. No recycled bituminous mixes will be allowed.
8. CSS1H tack coat shall be applied between all bituminous layers.
9. FA-2 Modified Seal Coat to be applied 2 to 3 years after placement of the bituminous wear course. This seal coat is considered part of the construction of the roadway. As such, in new developments, costs associated with the initial seal coat application are the responsibility of the developer

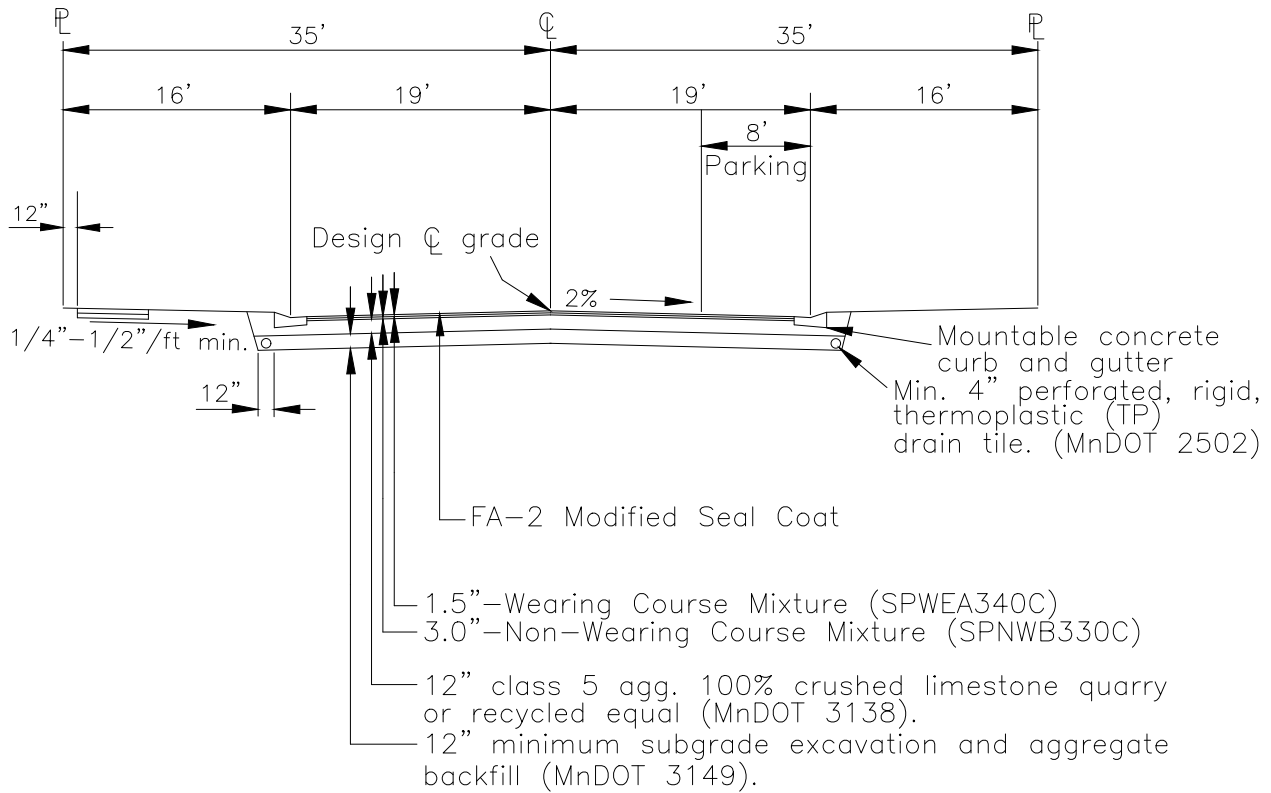


STANDARD DETAILS  
32-FOOT RESIDENTIAL STREET SECTION  
WITH SIDEWALK/TRAIL

Last Revision:  
APR 2017

FARMINGTON, MINNESOTA

City Plate No.  
STR-05B  
2019



NOTE:

1. Typical section shown is the minimum residential street requirement. See specifications for project specific details.
2. Top of curb is 0.07' below design centerline grade.
3. Drain tile shall be installed behind curb in all low points in roads and as determined by the City Engineer.
4. Street shall be designed for a 40 mph design speed with maximum of 7.00% grade.
5. The City reserves the right to increase the street section based on soil conditions and geotechnical report.
6. A bituminous mix design must be submitted and approved by the City prior to placement.
7. No recycled bituminous mixes will be allowed.
8. CSS1H tack coat shall be applied between all bituminous layers.
9. FA-2 Modified Seal Coat to be applied 2 to 3 years after placement of the bituminous wear course. This seal coat is considered part of the construction of the roadway. As such, in new developments, costs associated with the initial seal coat application are the responsibility of the developer.
10. Boulevard trees are only allowed in designated boulevard tree routes.

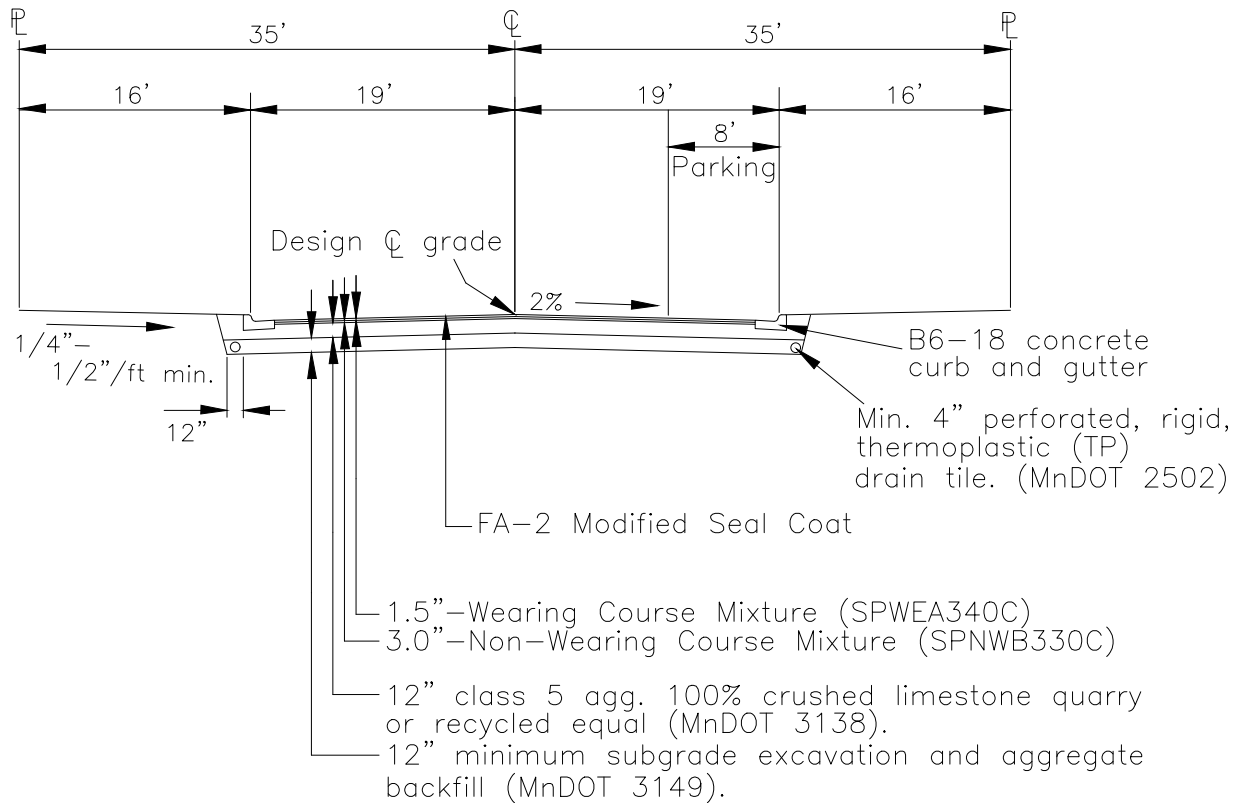


STANDARD DETAILS  
RESIDENTIAL COLLECTOR  
STREET SECTION WITH SIDEWALK

Last Revision:  
APR 2017

FARMINGTON, MINNESOTA

City Plate No.  
STR-06  
2019



NOTE:

1. Typical section shown is the minimum residential street requirement. See specifications for project specific details.
2. Top of curb is 0.06' below design centerline grade.
3. Drain tile shall be installed behind curb in all low points in roads and as determined by the City Engineer.
4. Street shall be designed for a 40 mph design speed with maximum of 7.00% grade.
5. The City reserves the right to increase the street section based on soil conditions and geotechnical report.
6. A bituminous mix design must be submitted and approved by the City prior to placement.
7. No recycled bituminous mixes will be allowed.
8. CSS1H tack coat shall be applied between all bituminous layers.
9. FA–2 Modified Seal Coat to be applied 2 to 3 years after placement of the bituminous wear course. This seal coat is considered part of the construction of the roadway. As such, in new developments, costs associated with the initial seal coat application are the responsibility of the developer.
10. Boulevard trees are only allowed in designated boulevard tree routes.

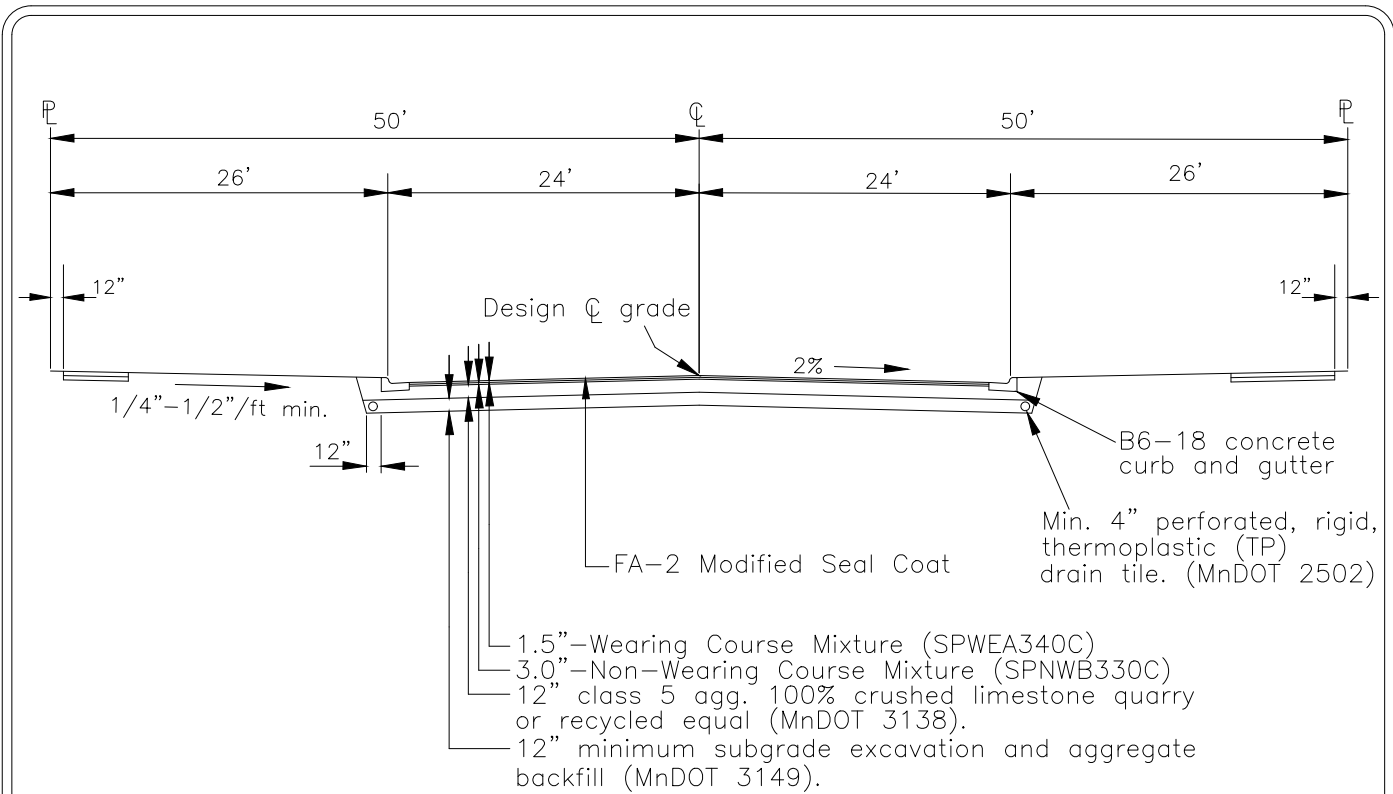


STANDARD DETAILS  
INDUSTRIAL/COMMERCIAL  
STREET SECTION

Last Revision:  
APR 2017

FARMINGTON, MINNESOTA

City Plate No.  
STR–06A  
2019



NOTE:

1. Typical section shown is the minimum 4-lane undivided collector street requirement. See specifications for project specific details.
2. Top of curb is 0.04' below design centerline grade.
3. Drain tile shall be installed behind curb in all low points in roads and as determined by the City Engineer.
4. Street shall be designed for a 40 mph design speed with maximum of 7.00% grade.
5. The City reserves the right to increase the street section based on soil conditions and geotechnical report.
6. A bituminous mix design must be submitted and approved by the City prior to placement.
7. No recycled bituminous mixes will be allowed.
8. CSS1H tack coat shall be applied between all bituminous layers.
9. FA-2 Modified Seal Coat to be applied 2 to 3 years after placement of the bituminous wear course. This seal coat is considered part of the construction of the roadway. As such, in new developments, costs associated with the initial seal coat application are the responsibility of the developer.
10. Boulevard trees are only allowed in designated boulevard tree routes.

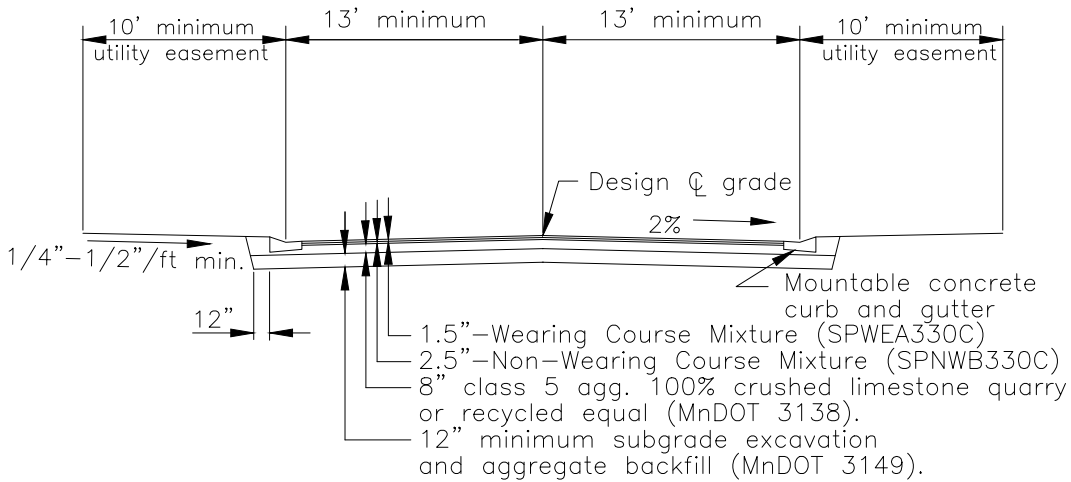


STANDARD DETAILS  
4-LANE UNDIVIDED COLLECTOR  
STREET SECTION WITH SIDEWALK/TRAIL

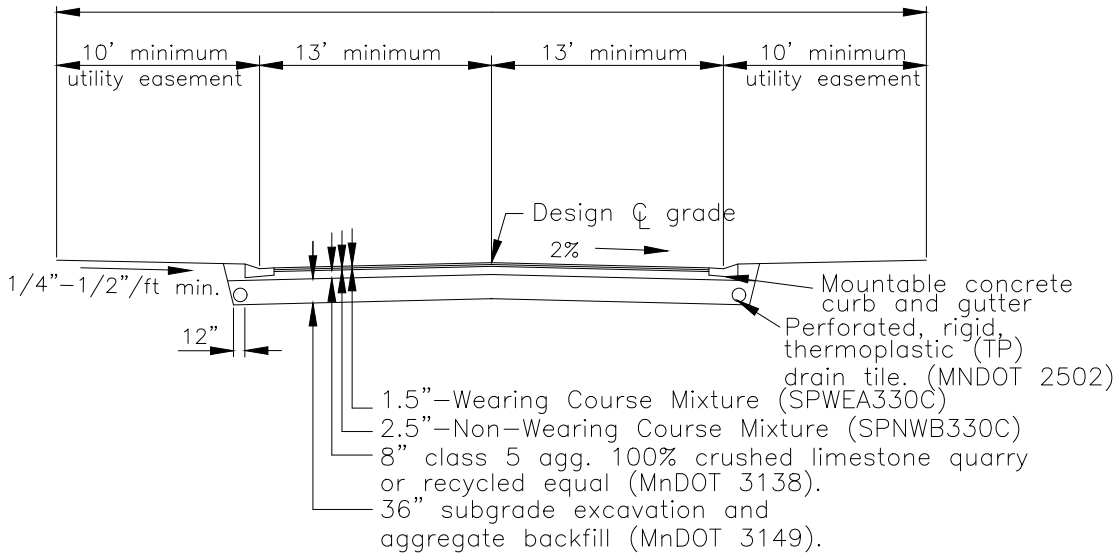
FARMINGTON, MINNESOTA

Last Revision:  
APR 2017

City Plate No.  
STR-06B  
2019



### SUBGRADE CORRECTION W/DRAINTILE



**NOTE:**

1. Typical section shown is the minimum residential street requirement. See specifications for project specific details.
2. Curb stops and cleanouts shall be installed 10' from back of curb.
3. Drain tile shall be installed behind curb in all silty, loamy, and sandy clay soils when rear lot corners are above street centerline. Drintile to be installed as required to adequately drain all select granular fill areas.
4. Catch basin allowed in mountable curb, as approved by the City Engineer Neenah Casting R3501V or equal.
5. The City reserves the right to increase the street section based on soil conditions.
6. A bituminous mix design must be submitted and approved by the City prior to placement.
7. No recycled bituminous mixes will be allowed.
8. CSS1H tack coat shall be applied between all bituminous layers.

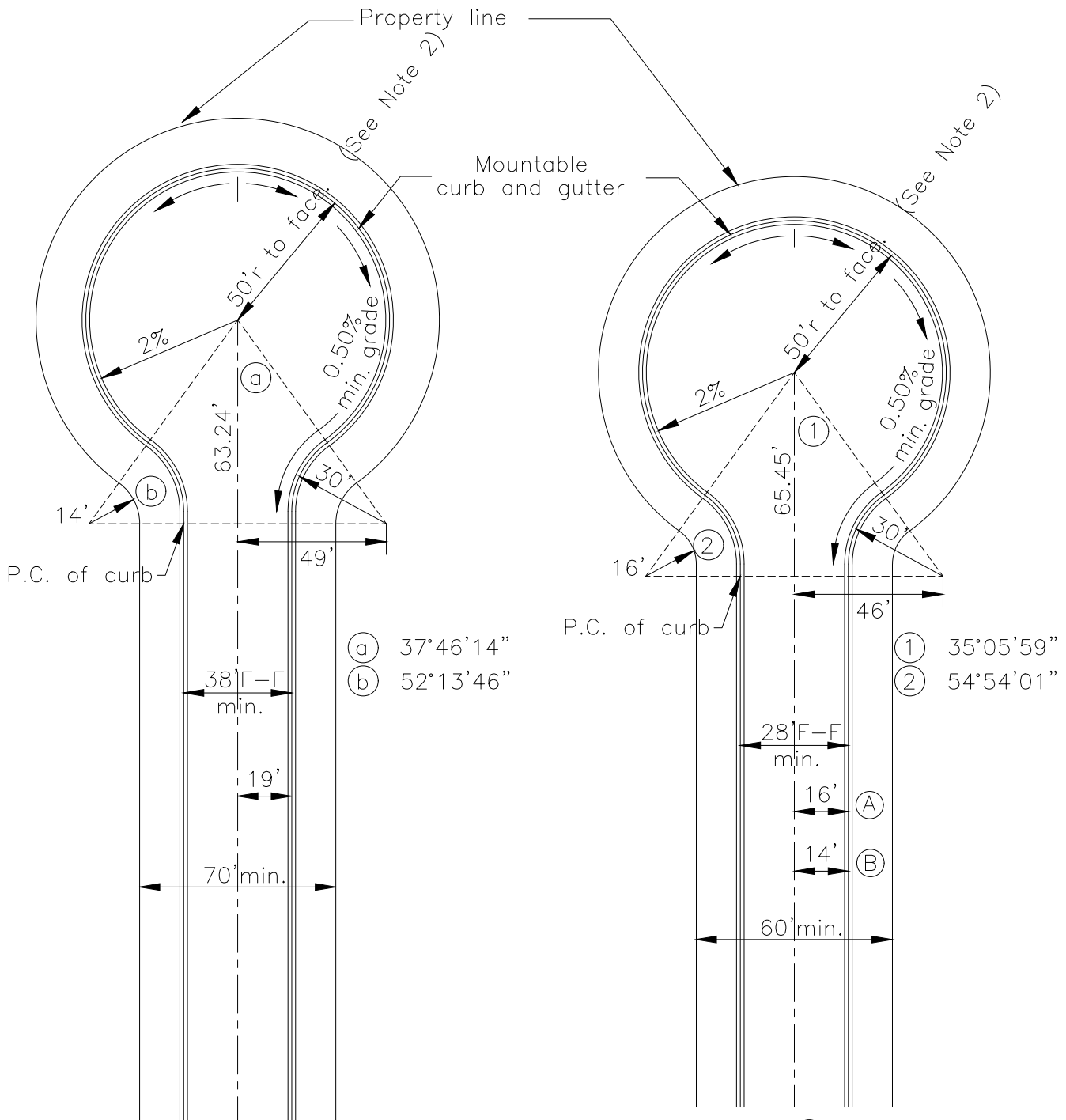


STANDARD DETAILS  
PRIVATE STREET SECTION  
NO PARKING

Last Revision:  
APR 2017

FARMINGTON, MINNESOTA

City Plate No.  
STR-07  
2019



(a) 37°46'14"  
 (b) 52°13'46"

(1) 35°05'59"  
 (2) 54°54'01"

(A) 32' face to face  
 (B) 28' face to face

NOTE:

1. All radius measurements taken from face of curb.
2. Cul-de-sac radius shall be 50' unless otherwise approved by the City Engineer.

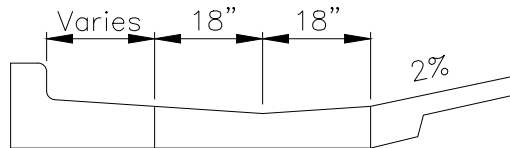
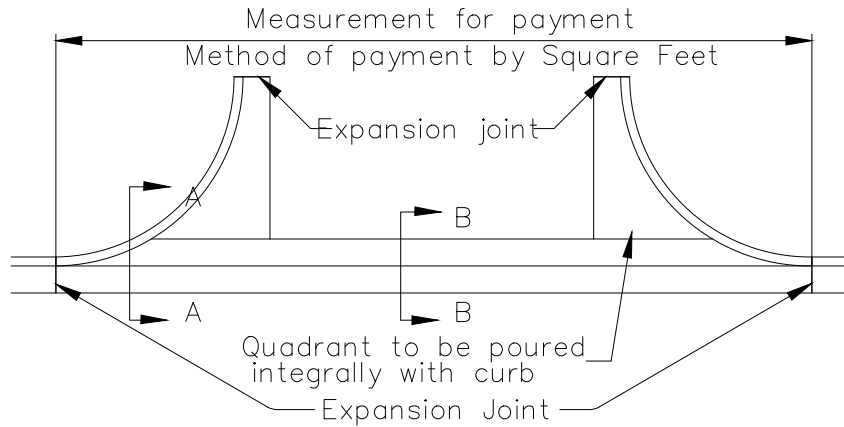


STANDARD DETAILS  
 TYPE I CUL-DE-SAC

Last Revision:  
 FEB 2017

FARMINGTON, MINNESOTA

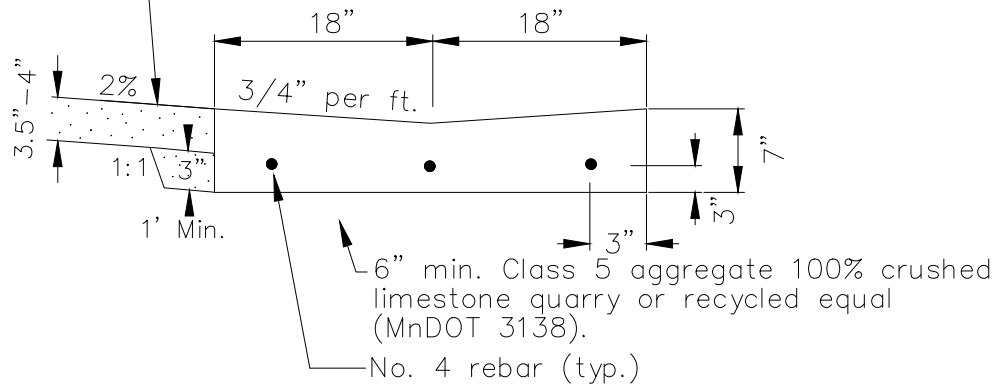
City Plate No.  
 STR-08  
 2019



SECTION A-A

THRU B618 CURB AND GUTTER

This bituminous detail is the same for both sides of the valley gutter



SECTION B-B

THRU CONCRETE GUTTER

MnDOT 3F52 concrete shall be used for valley gutter and wing apron.

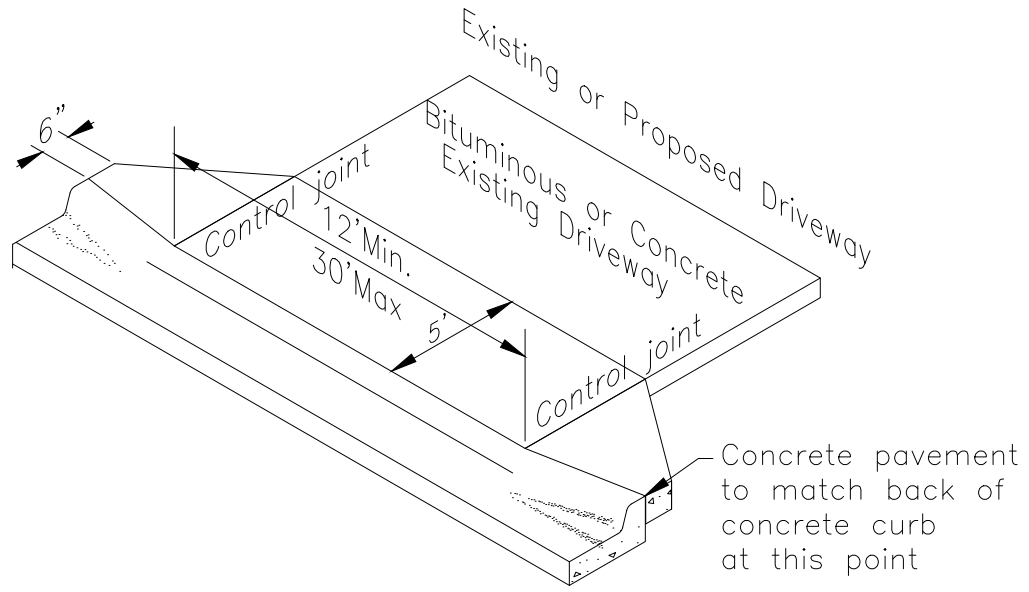
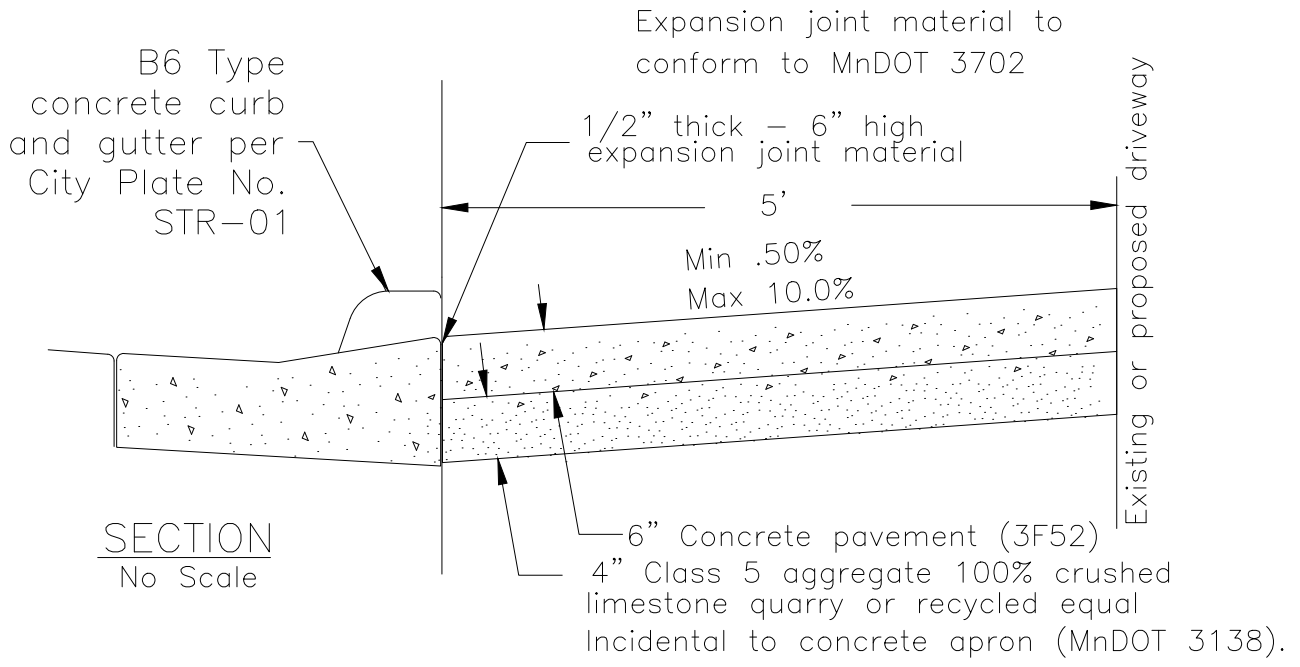


STANDARD DETAILS  
CONCRETE VALLEY GUTTER

Last Revision:  
MAR 2017

FARMINGTON, MINNESOTA

City Plate No.  
STR-10  
2019



ISOMETRIC  
No Scale

- NOTE:
1. Control joints in concrete curb not to exceed 10' spacing through driveway section.
  2. Driveway wings are required with the B6 style curbing.
  3. Maximum width of driveway at property line is 30'.



STANDARD DETAILS  
RESIDENTIAL CONCRETE DRIVEWAY APRON  
(B6 TYPE CURB)

FARMINGTON, MINNESOTA

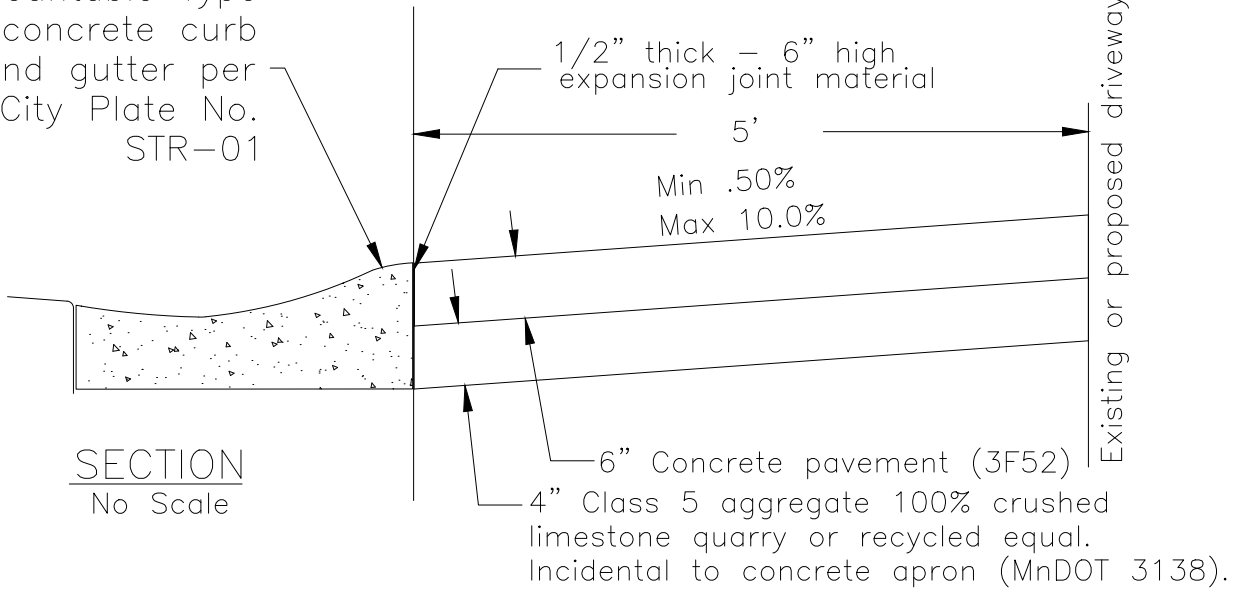
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MAR 2017

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2019

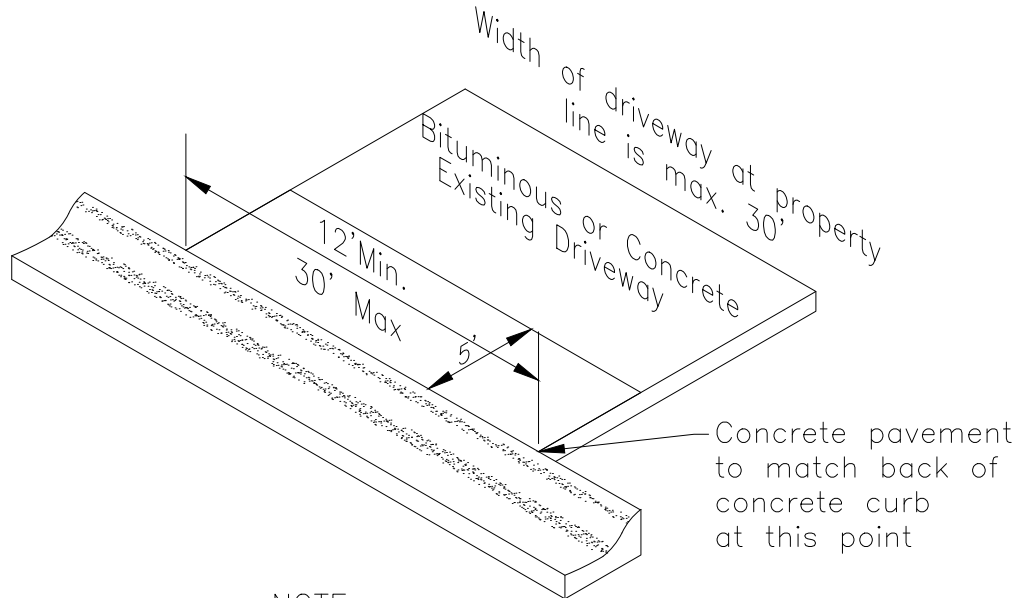


Mountable Type  
concrete curb  
and gutter per  
City Plate No.  
STR-01

Expansion joint material to  
conform to MnDOT 3702



SECTION  
No Scale



ISOMETRIC  
No Scale

NOTE:

1. Control joints in concrete curb not to exceed 10' spacing through driveway section.
2. Driveway wings are not required with the mountable style curbing.

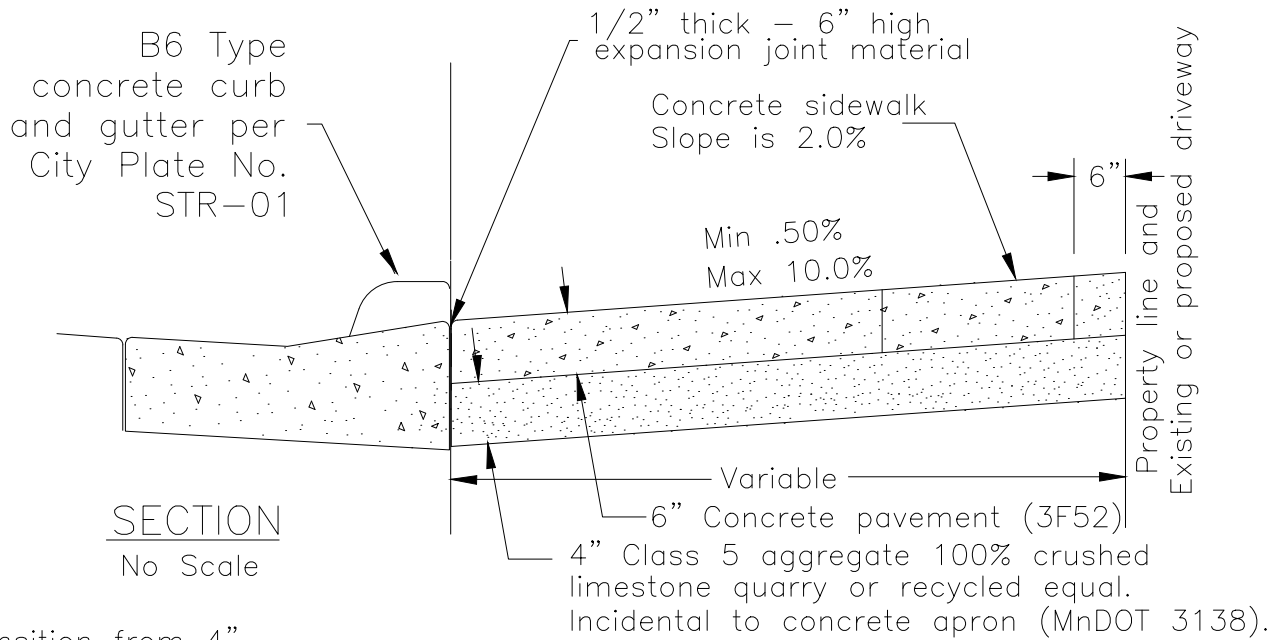


STANDARD DETAILS  
RESIDENTIAL CONCRETE DRIVEWAY APRON  
(MOUNTABLE TYPE CURB)

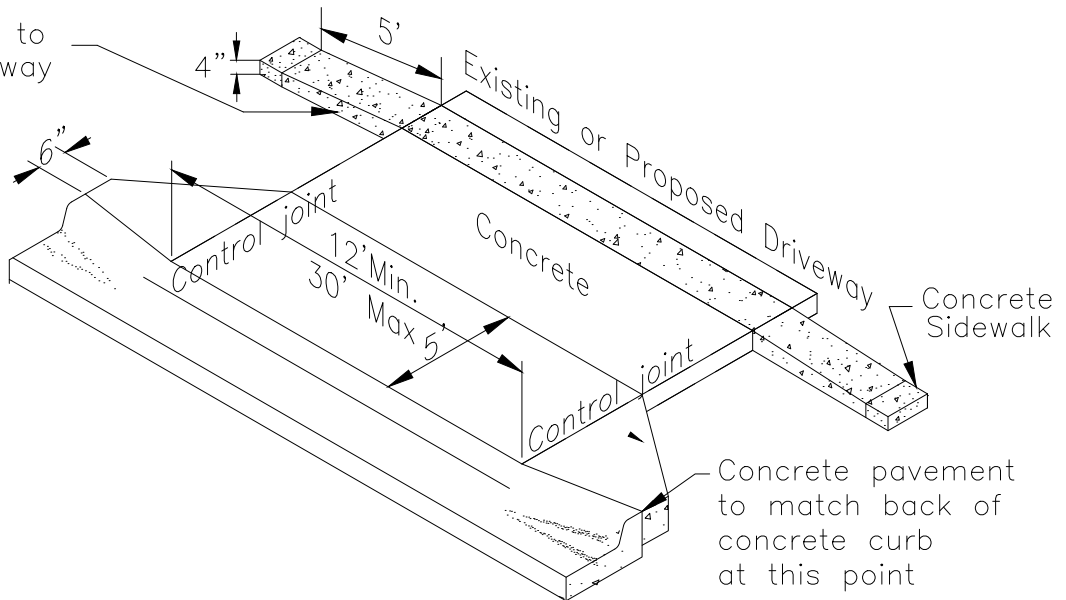
FARMINGTON, MINNESOTA

Last Revision:  
MAR 2017

City Plate No.  
STR-12  
2019



Transition from 4" concrete sidewalk to 6" concrete driveway (Both sides of driveway)



**NOTE:**

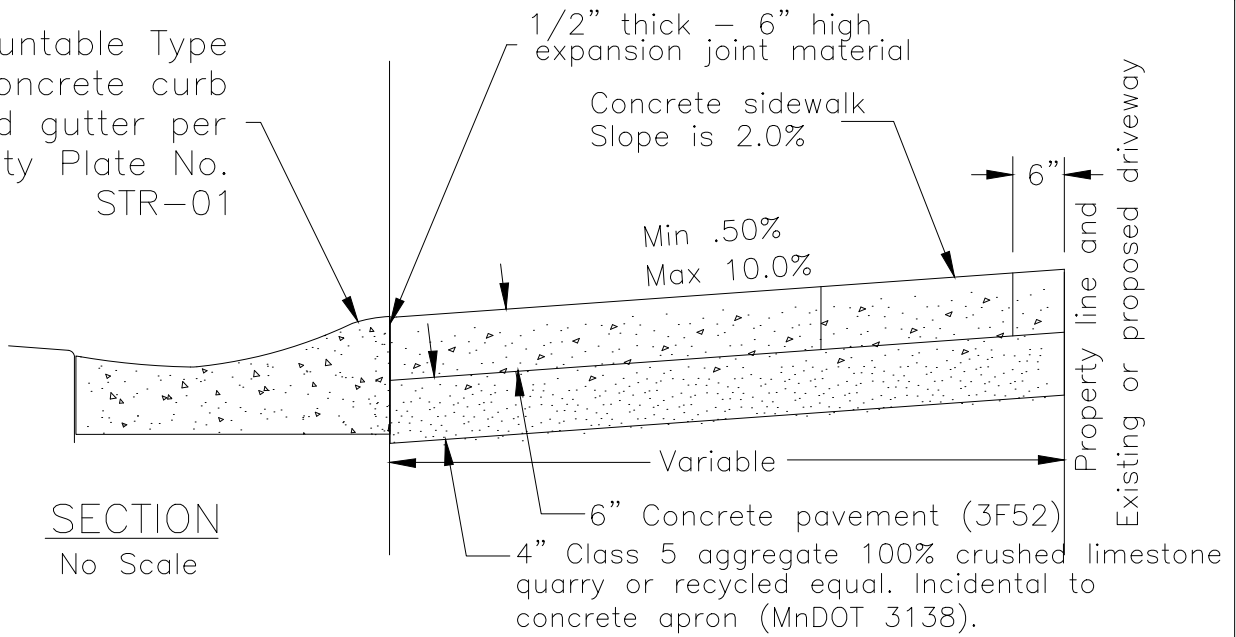
1. Control joints in concrete curb not to exceed 10' spacing through driveway section.
2. Concrete must be constructed between sidewalk and driveway apron.
3. Concrete sidewalk through driveway is 6" thick.
4. Driveway wings are required with the B6 style curbing.
5. Maximum width of driveway at property line is 30'.



**STANDARD DETAILS**  
RESIDENTIAL CONCRETE DRIVEWAY APRON  
WITH SIDEWALK (B6 TYPE CURB)  
**FARMINGTON, MINNESOTA**

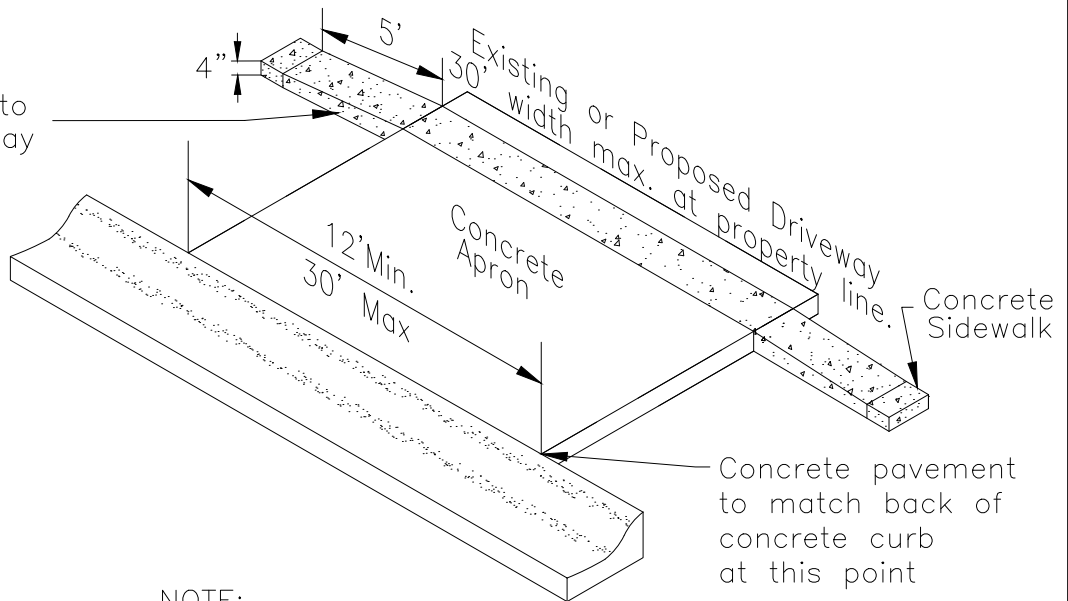
Last Revision:  
MAR 2017  
  
City Plate No.  
STR-13  
2019

Mountable Type  
concrete curb  
and gutter per  
City Plate No.  
STR-01



SECTION  
No Scale

Transition from 4"  
concrete sidewalk to  
6" concrete driveway  
(Both sides of  
driveway)



ISOMETRIC  
No Scale

NOTE:

1. Control joints in concrete curb not to exceed 10' spacing through driveway section.
2. Concrete must be constructed between sidewalk and driveway apron.
3. Concrete sidewalk through driveway is 6" thick.
4. Driveway wings are not required with the mountable style curbing.
5. Maximum width of driveway at the property line is 30'.

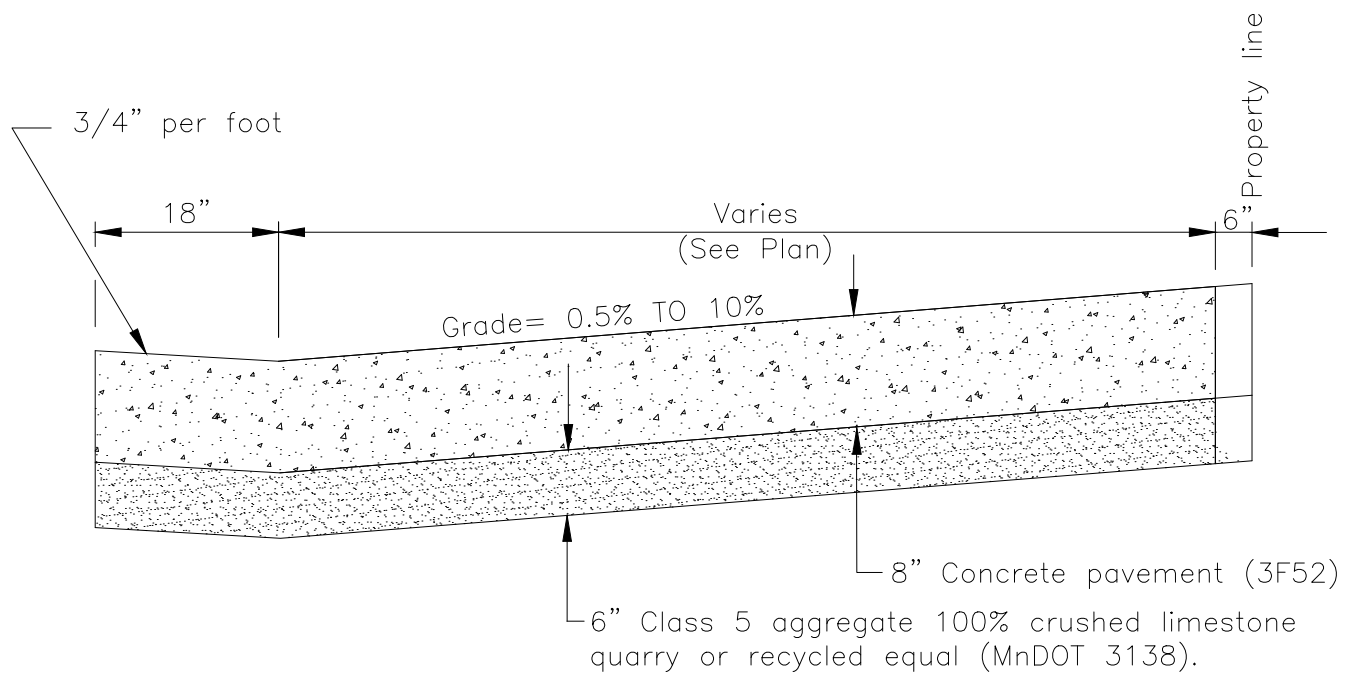


STANDARD DETAILS  
RESIDENTIAL CONCRETE DRIVEWAY APRON  
WITH SIDEWALK (MOUNTABLE TYPE CURB)

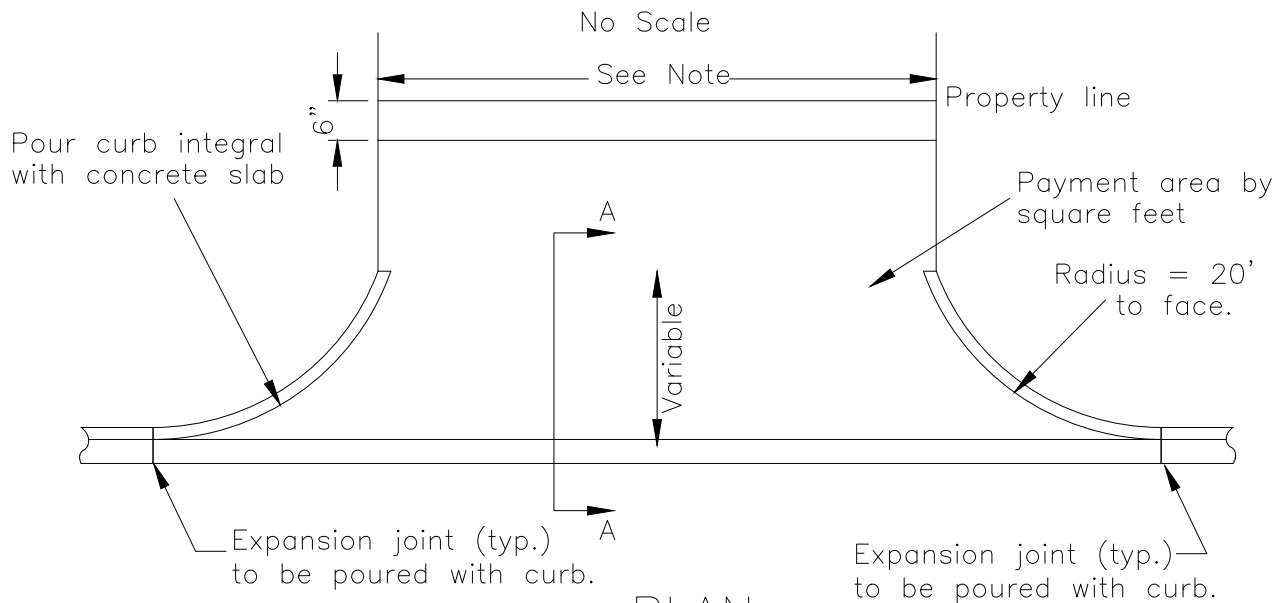
FARMINGTON, MINNESOTA

Last Revision:  
MAR 2017

City Plate No.  
STR-14  
2019



SECTION A-A



PLAN  
No Scale

NOTE:

1. Access for truck off-street loading areas in industrial districts shall be 32' at the street Right-of-Way line along collector streets and 60' at the street Right-of-Way line along local streets.

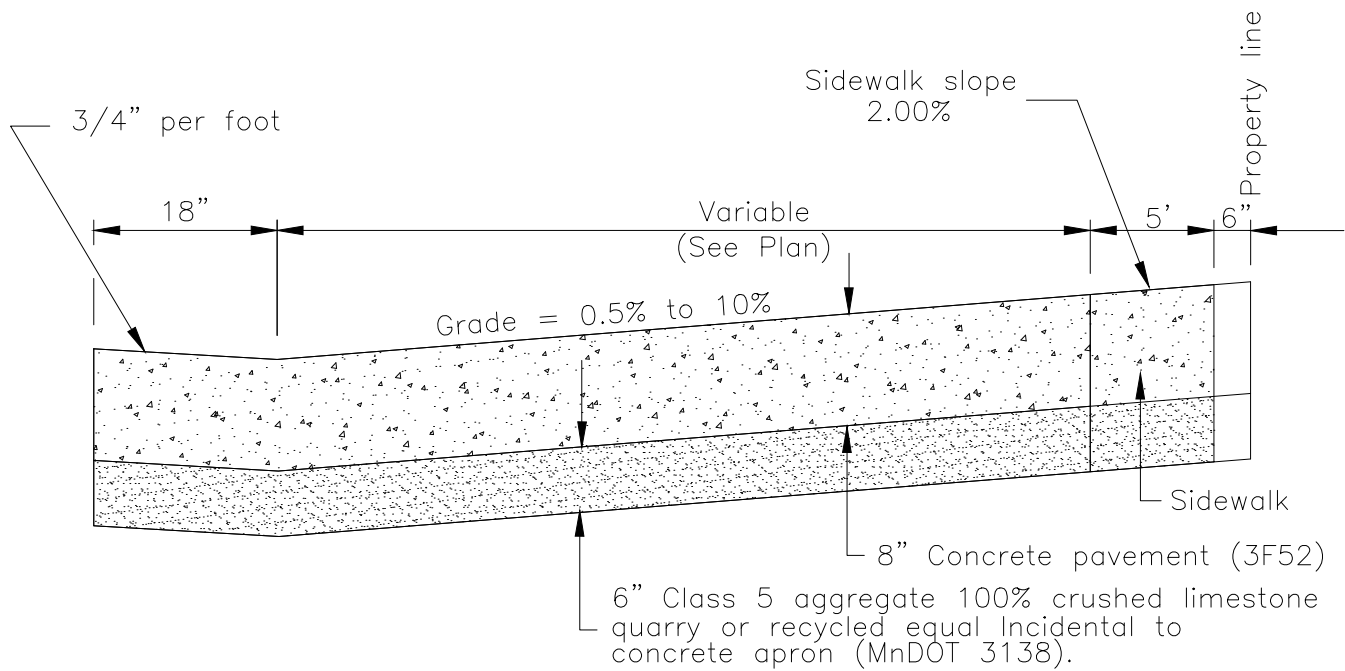


STANDARD DETAILS  
COMMERCIAL CONCRETE DRIVEWAY APRON

Last Revision:  
MAR 2017

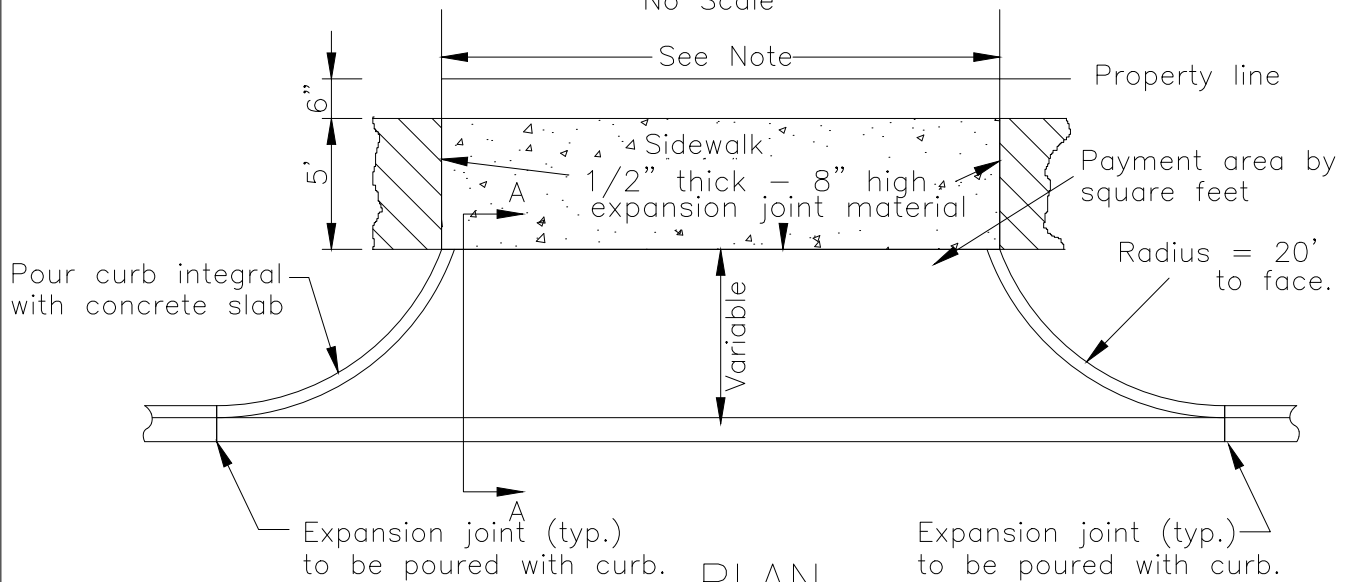
FARMINGTON, MINNESOTA

City Plate No.  
STR-15  
2019



SECTION A-A

No Scale



PLAN

No Scale

NOTE:

1. Access for truck off-street loading areas in industrial districts shall be 32' at the street Right-of-Way line along collector streets and 60' at the street Right-of-Way line along local streets.

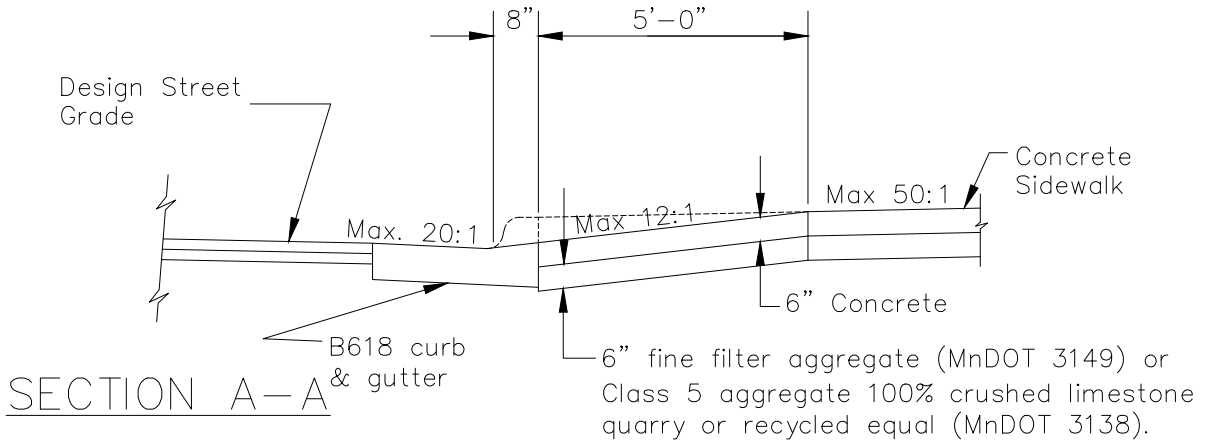
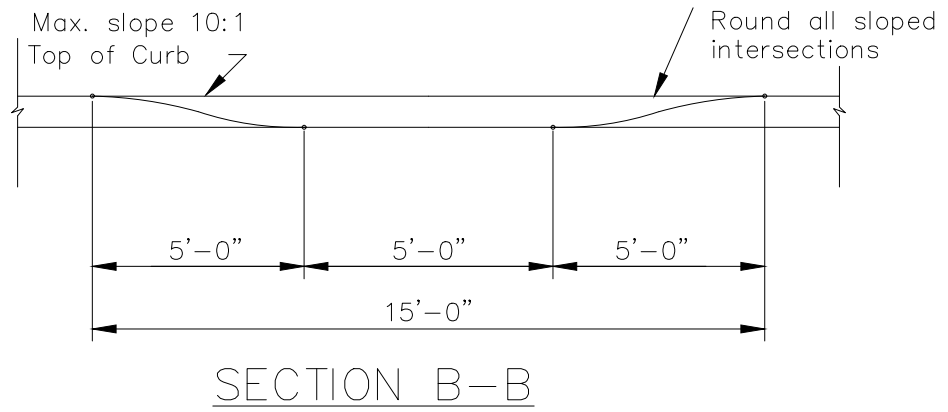
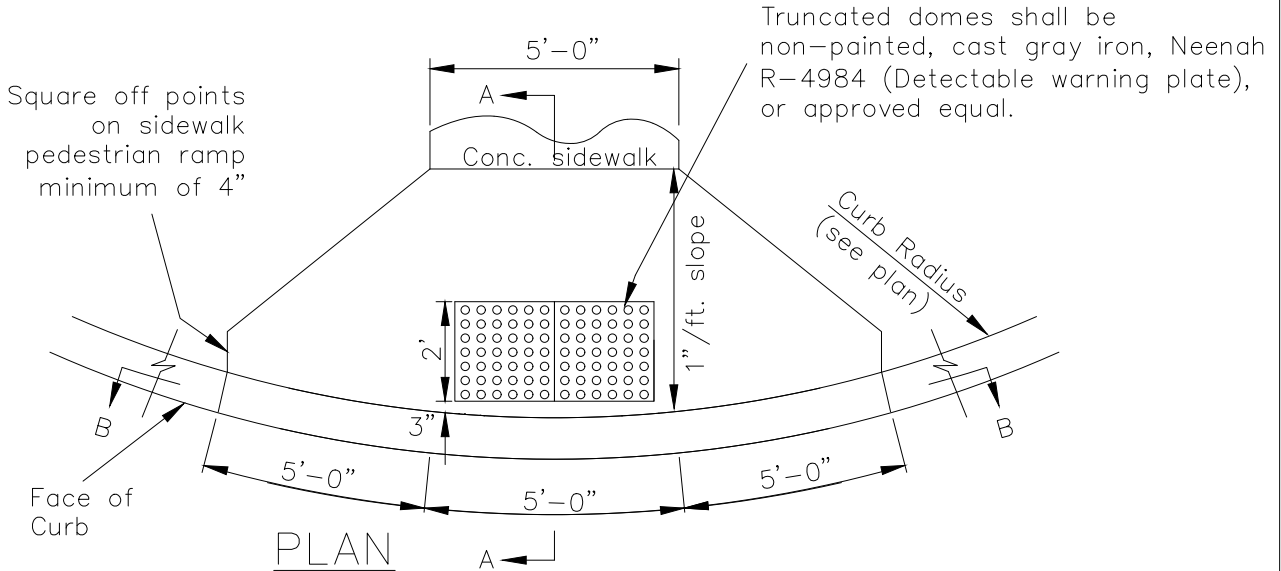


STANDARD DETAILS  
COMMERCIAL CONCRETE DRIVEWAY  
APRON WITH SIDEWALK

Last Revision:  
MAR 2017

FARMINGTON, MINNESOTA

City Plate No.  
STR-16  
2019



Pedestrian ramps shall be constructed in accordance with current ADA standards.

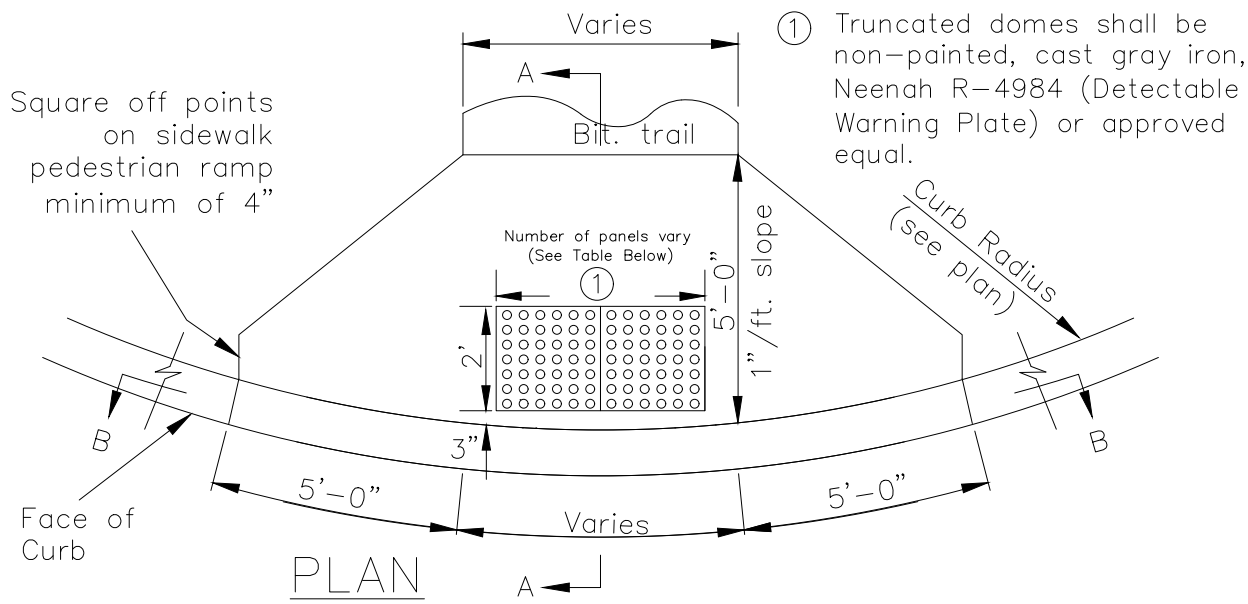


STANDARD DETAILS  
SIDEWALK PEDESTRIAN RAMP

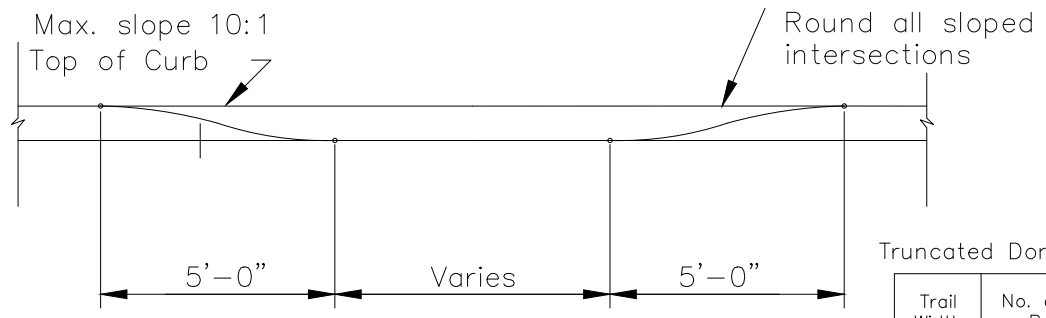
FARMINGTON, MINNESOTA

Last Revision:  
FEB 2017

City Plate No.  
STR-17  
2019



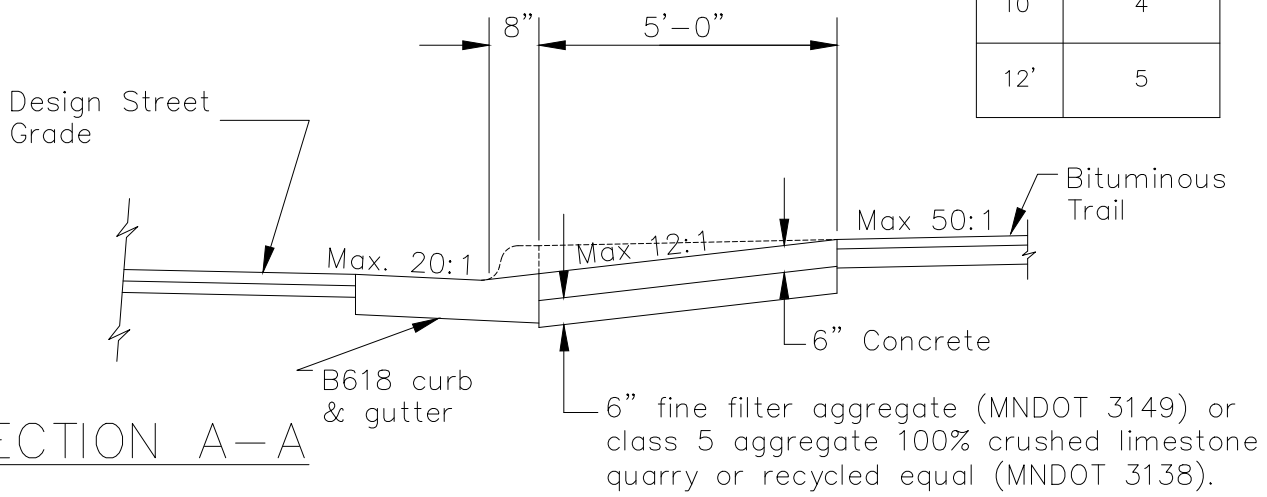
① Truncated domes shall be non-painted, cast gray iron, Neenah R-4984 (Detectable Warning Plate) or approved equal.



SECTION B-B

Truncated Dome Table

Trail Width	No. of 2'x2' Panels
8'	3
10'	4
12'	5



SECTION A-A

Pedestrian ramps shall be constructed in accordance with current ADA standards.

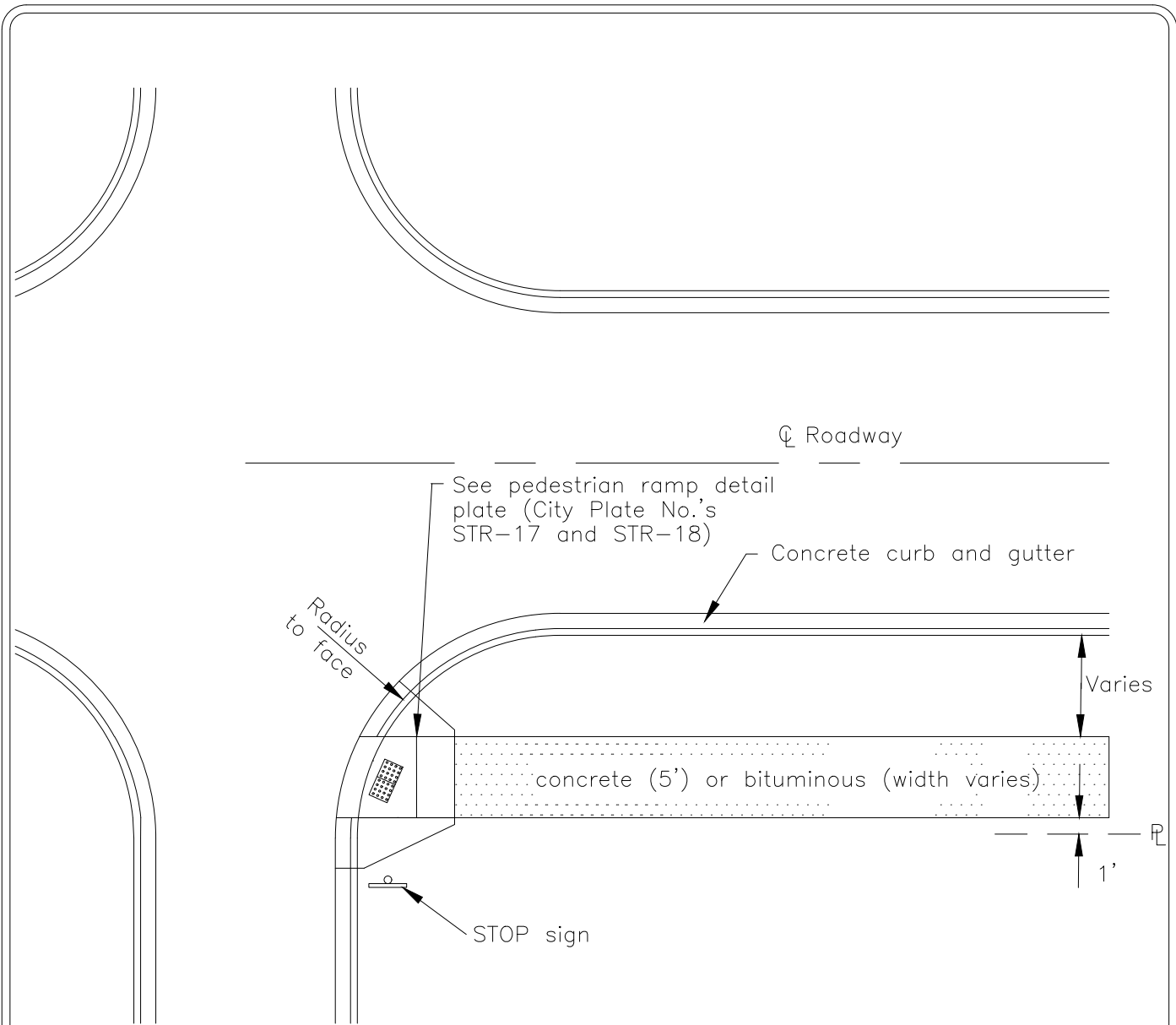


STANDARD DETAILS  
TRAIL PEDESTRIAN RAMP

Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
STR-18  
2019



NOTE: Dimensions depend on type of trail or sidewalk.

No Scale



STANDARD DETAILS  
 SIDEWALK/TRAIL PEDESTRIAN RAMP  
 GENERAL LOCATION

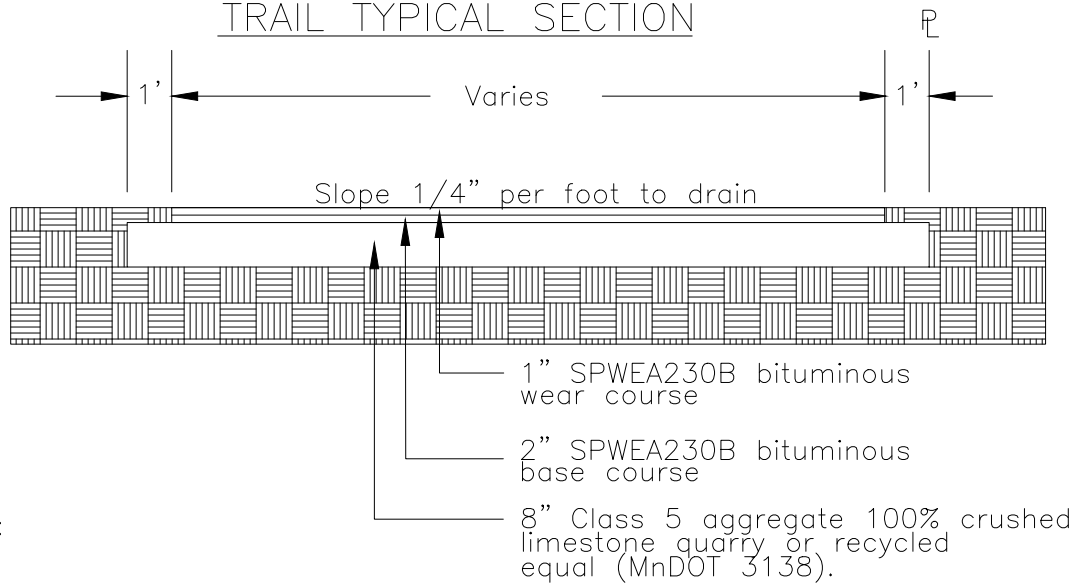
Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
 STR-19  
 2019



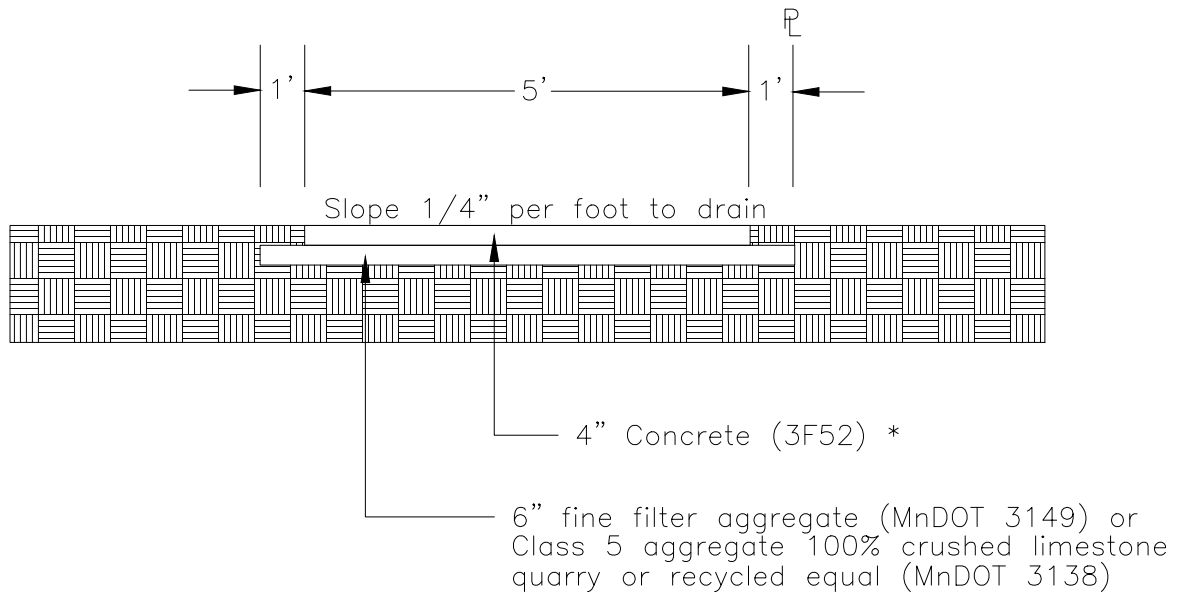
## TRAIL TYPICAL SECTION



NOTE:

- The final wear coarse lift should be placed upon 90–95% completion of all home construction.
- Trail may be placed in one 3" lift of bituminous wear if driveways will not cross trail.

## SIDEWALK TYPICAL SECTION



\*NOTE: 6" thick sidewalk is required through driveway areas.  
(See City Plate No.'s STR-13 and STR-14)

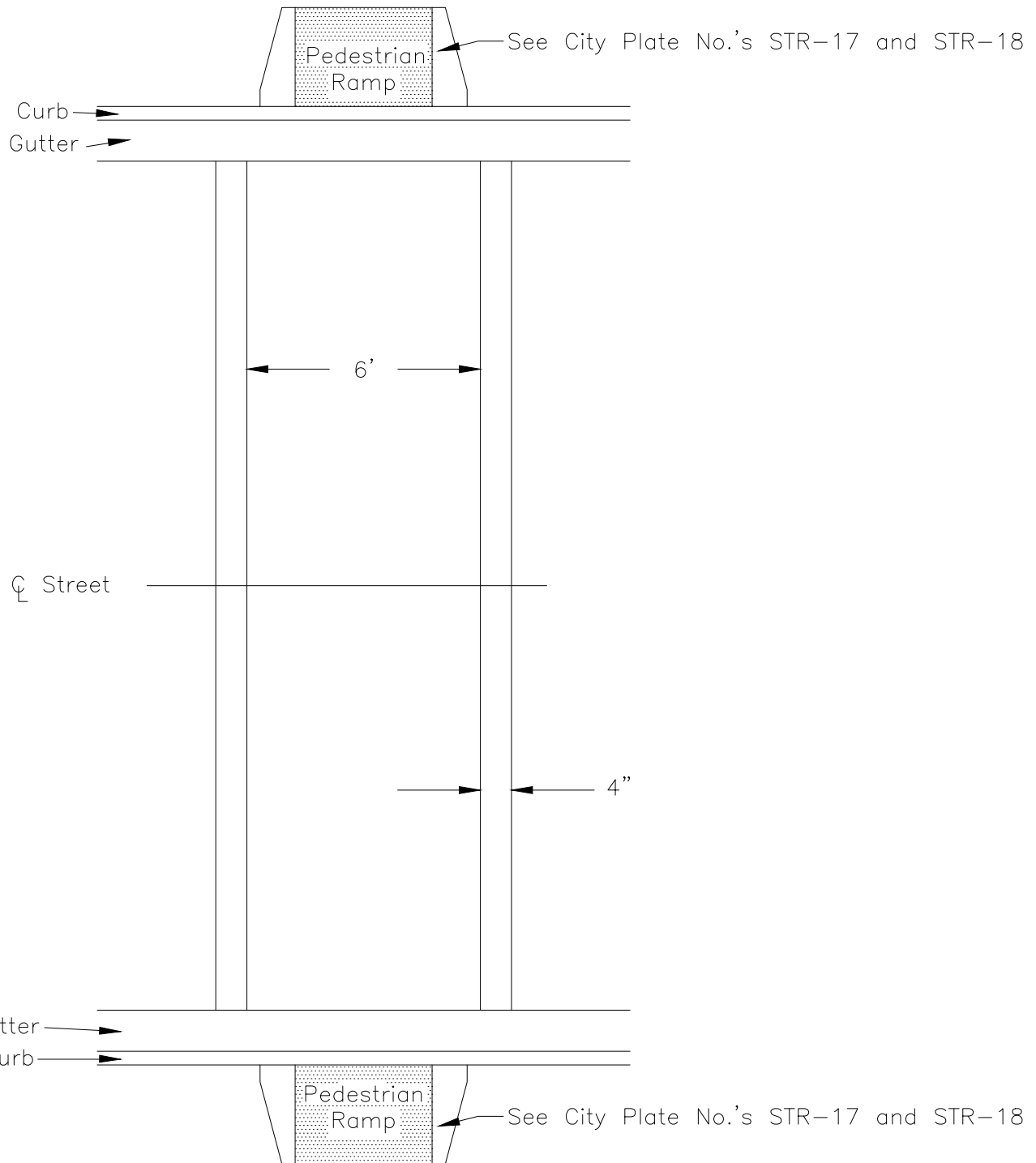


### STANDARD DETAILS TRAIL AND SIDEWALK SECTIONS

## FARMINGTON, MINNESOTA

Last Revision:  
APR 2017

City Plate No.  
STR-21  
2019



NOTE:

1. Crosswalk lines shall be solid white epoxy.
2. All pavement markings shall be per Standard Specifications of 2018 Minnesota Manual on Uniform Traffic Control Devices (MMUTCD)

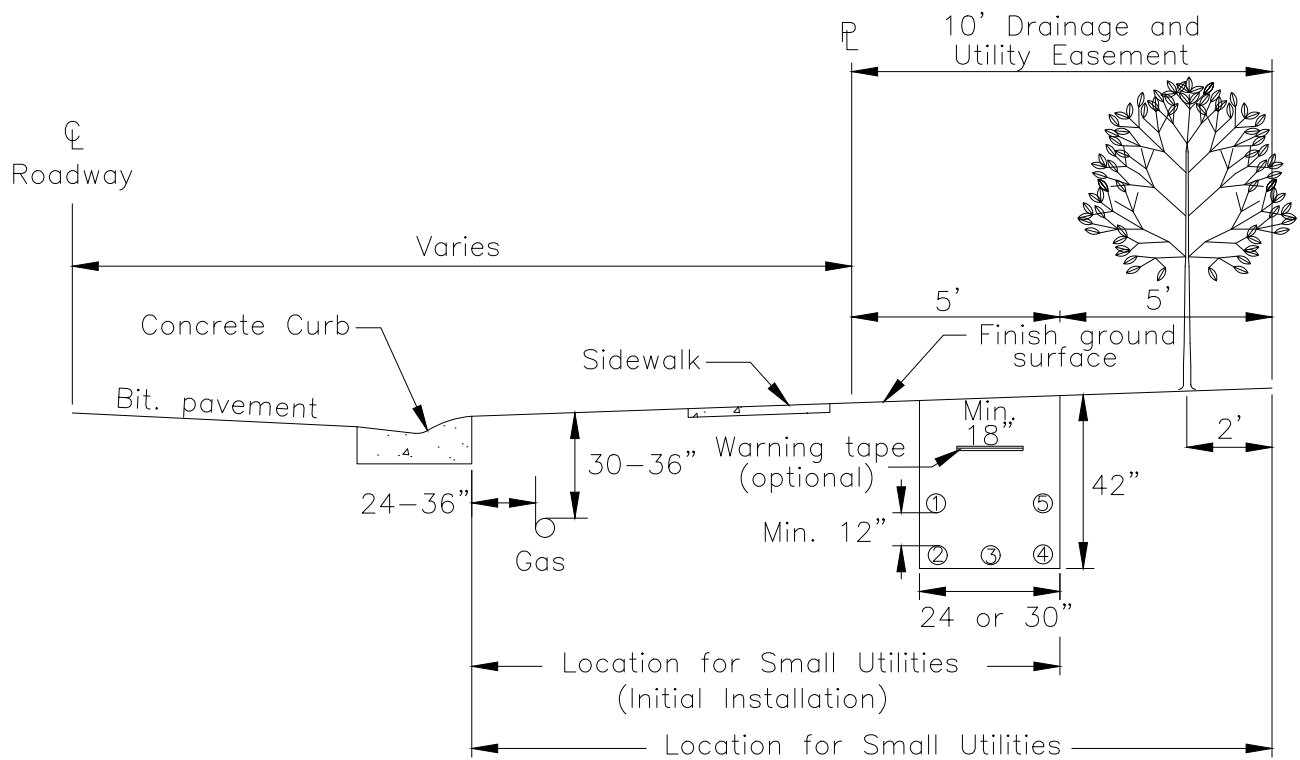


STANDARD DETAILS  
CROSSWALK LAYOUT

FARMINGTON, MINNESOTA

Last Revision:  
JAN 2019

City Plate No.  
STR-22  
2019



## CROSS SECTION

Not to Scale

- ① Street lighting
- ② Electric
- ③ Cable TV
- ④ Telephone
- ⑤ Gas optional

**NOTE:**

1. All conduit crossings under roadways shall be the contractors responsibility to install the correct size and number for all utilities. The contractor shall also install one additional conduit crossing for future use.
2. The City recommends joint trenching for installation of utilities within City right of way and utility easements. Gas can be placed in a separate trench located behind the curb. All trench backfill shall be compacted.
3. All curb stops, boxes, and sewer cleanouts will be located on the front property line with a 15' tail beyond the property line on all public streets (See City Plate No.'s SER-01A, SER-01B and SER-01Ap).
4. All curb stops, boxes and sewer cleanouts shall be placed 10' from back of curb or private streets that have no City right of way beyond the curb.
5. Street lights shall be placed as close to 300' intervals as possible in residential areas and located on property corners. All street light electrical lines shall be ruggedized type wiring or encased in conduit and placed within the joint trench.
6. Center of utility trench in private streets shall be 7' from back of curb. Gas can be placed 2-3' from back of curb.
7. All utility boxes shall be placed further than 1 ft from common property corners (on the house side of the corner).

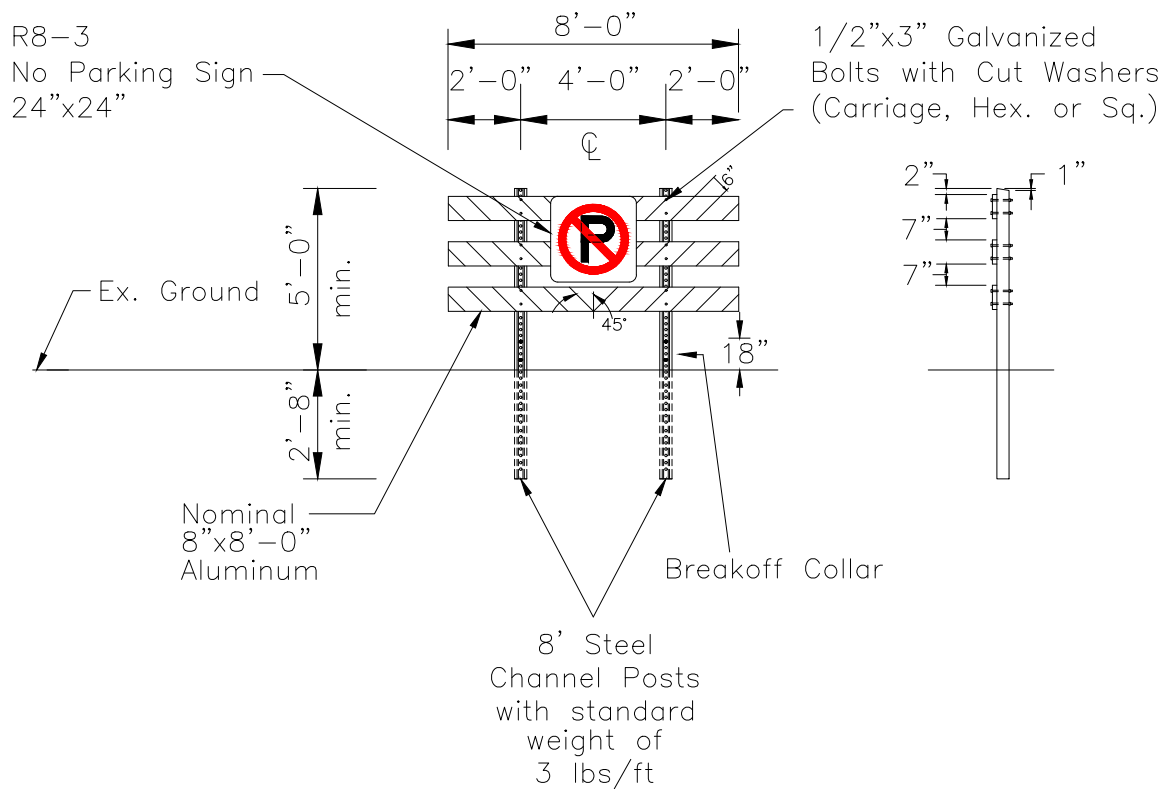


### STANDARD DETAILS UTILITY LAYOUT

Last Revision:  
JAN 2019

## FARMINGTON, MINNESOTA

City Plate No.  
STR-23  
2019



NOTES:

1. The barricade signs shall be fully reflectorized in alternate silver-white and red striping, using reflective sheeting conforming to the requirements of MnDOT Sign Sheeting Type XI
2. The placement of the barricades shall be 10'-0" from the end of the bituminous road with the barricade centered on the roadway facing the flow of traffic.

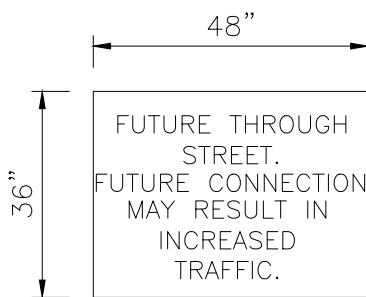
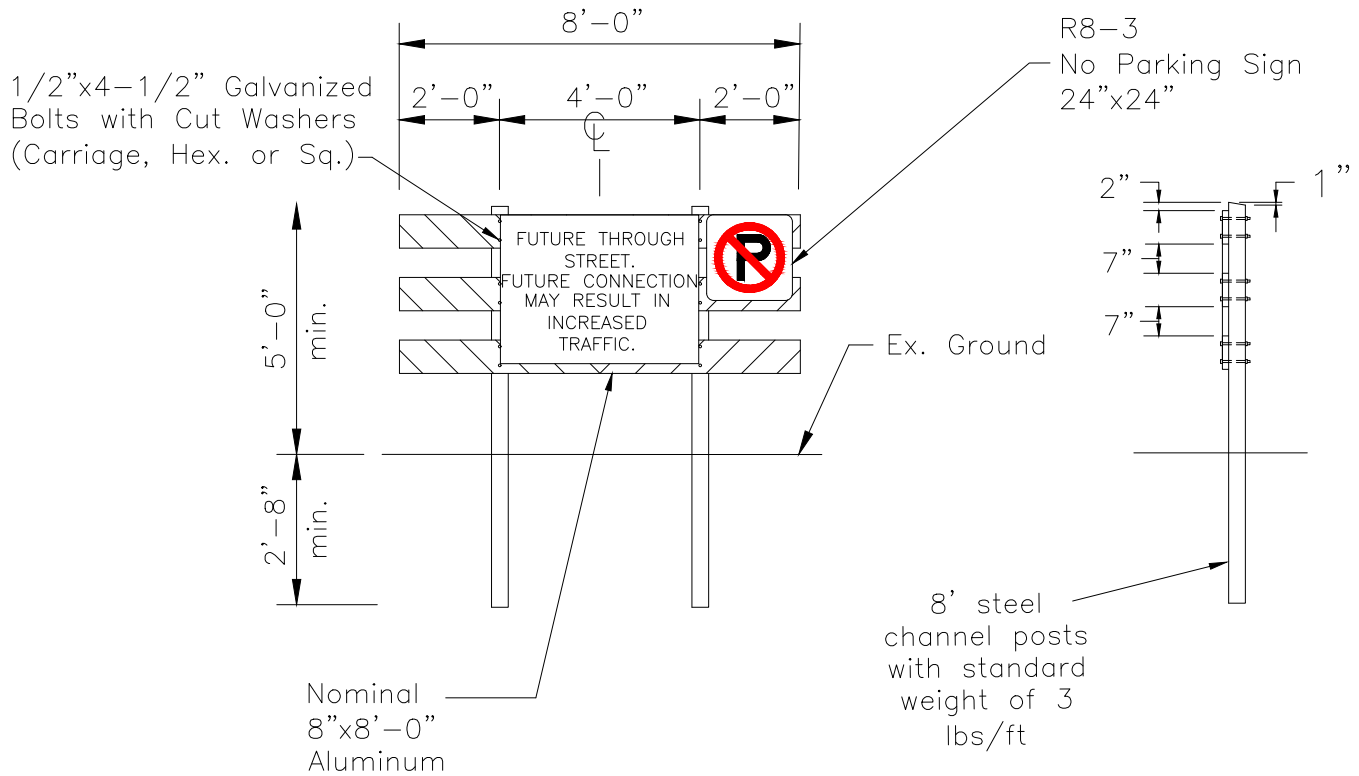


STANDARD DETAILS  
PERMANENT BARRICADE

Last Revision:  
JAN 2019

FARMINGTON, MINNESOTA

City Plate No.  
STR-24  
2019



NOTES:

1. Design shall conform to these requirements except as otherwise approved by the city engineer.
2. Sign shall be reflectorized as per MnDOT Sign Sheeting Type XI
3. Sign shall be constructed of aluminum per MnDOT 3352.2A1, black on white with 4" letters.
4. Barricade as per City Plate No. STR-24

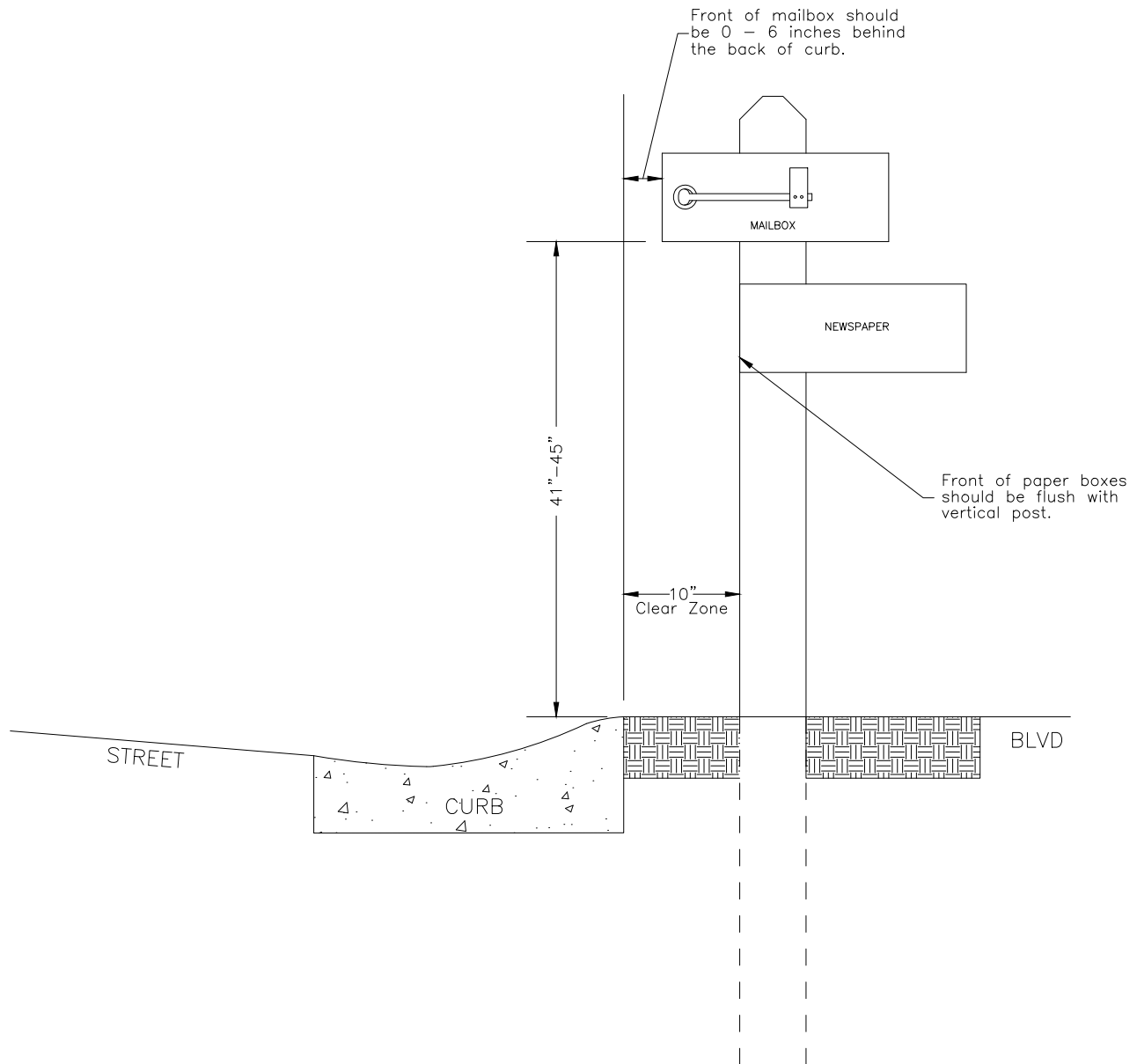


STANDARD DETAILS  
FUTURE THROUGH STREET BARRICADE

Last Revision:  
JAN 2019

FARMINGTON, MINNESOTA

City Plate No.  
STR-24A  
2019



NOTES:

1. Mailbox should not extend beyond the back of curb.
2. Address must be on side of box from which carrier approaches in letters about 1" high (or on front where boxes are grouped).
3. Box must be located so carrier can serve without leaving vehicle.
4. Mailboxes within cul-de-sacs shall be placed on the straight away only.
5. Supports comprised of materials other than solely wood or metal (such as brick structures, etc.) shall not be allowed.

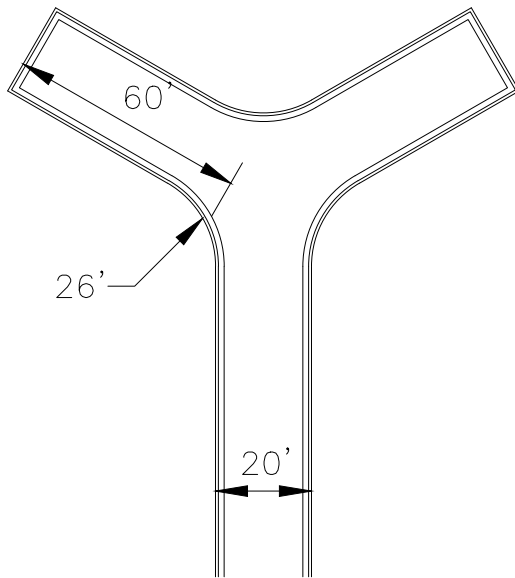
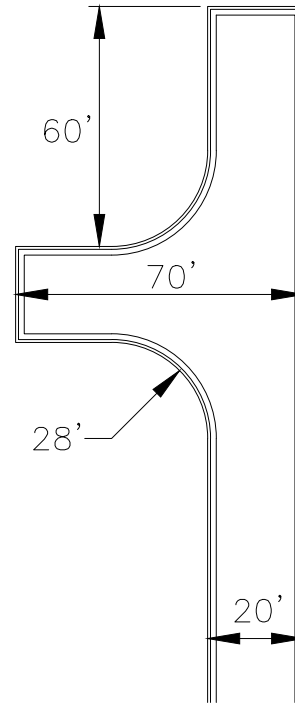
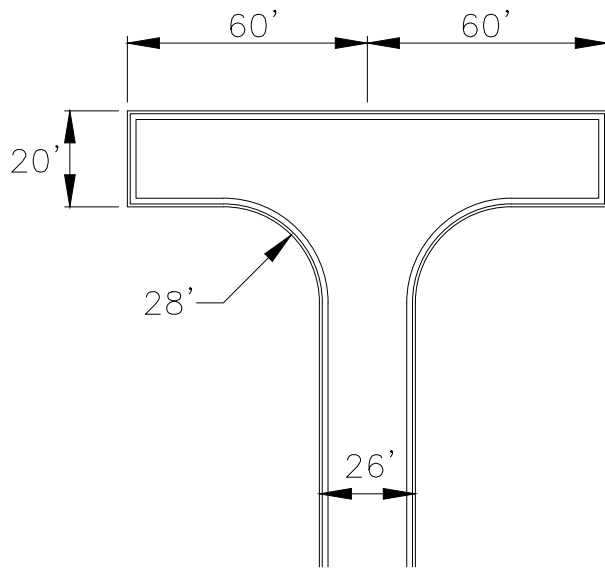


STANDARD DETAILS  
MAILBOX INSTALLATION

Last Revision:  
JAN 2019

FARMINGTON, MINNESOTA

City Plate No.  
STR-25  
2019



NOTES:

1. Fire Department requirements for approved alternate turnarounds on Fire Department access roads, as required by Minnesota State Fire Code, 2015 Edition, Appendix D.
2. Turnarounds may be substituted for cul-de-sacs in private developments with the City Engineer's approval.



STANDARD DETAILS  
PRIVATE DEVELOPMENT TURNAROUND

Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

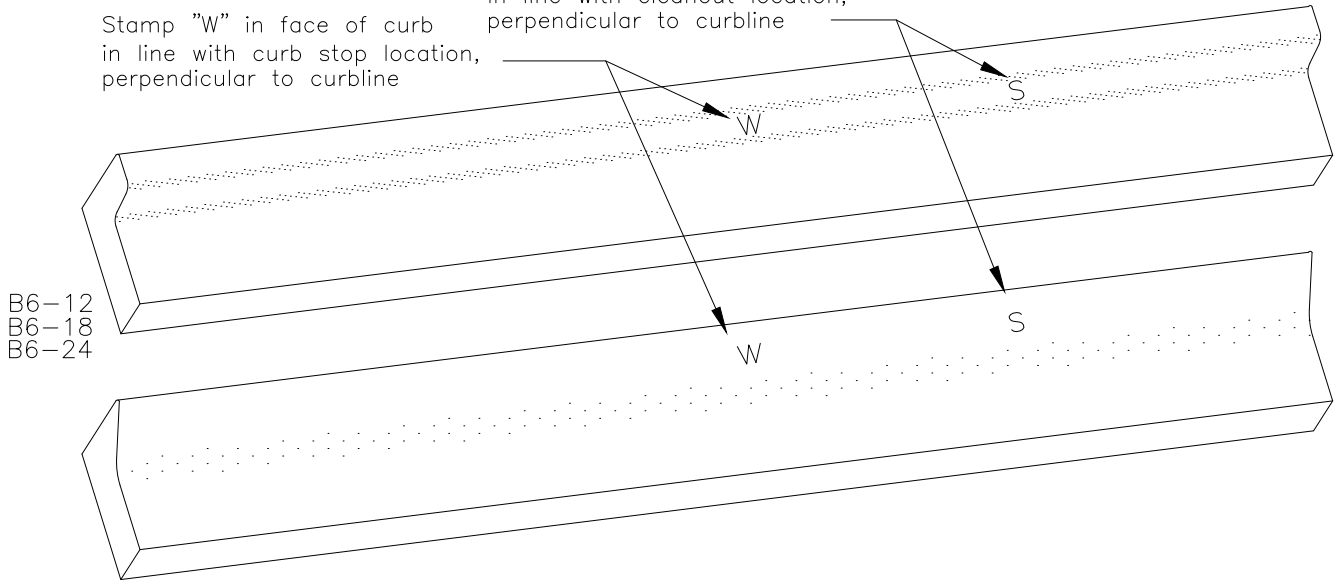
City Plate No.  
STR-26  
2019

NOTES:

1. All new and existing water and sanitary sewer service locations shall be marked in curb as shown. Stamping of service locations shall be considered incidental to the price of the curb.
2. Stamps may be borrowed from the City for a refundable security deposit of \$250 each.
3. W's and S's not placed by specified stamp will not be accepted and that section of curb must be removed and replaced.

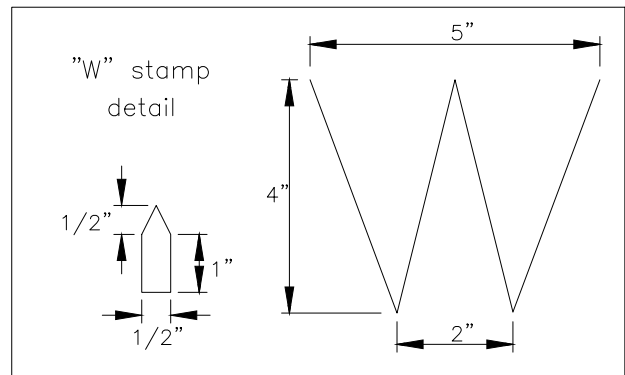
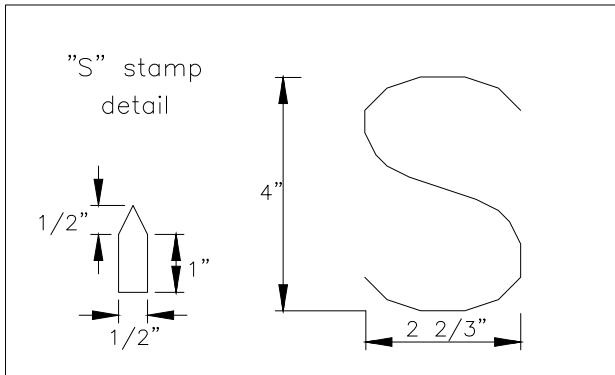
Stamp "W" in face of curb  
in line with curb stop location,  
perpendicular to curbline

Stamp "S" in face of curb  
in line with cleanout location,  
perpendicular to curbline



B6-12  
B6-18  
B6-24

Mountable



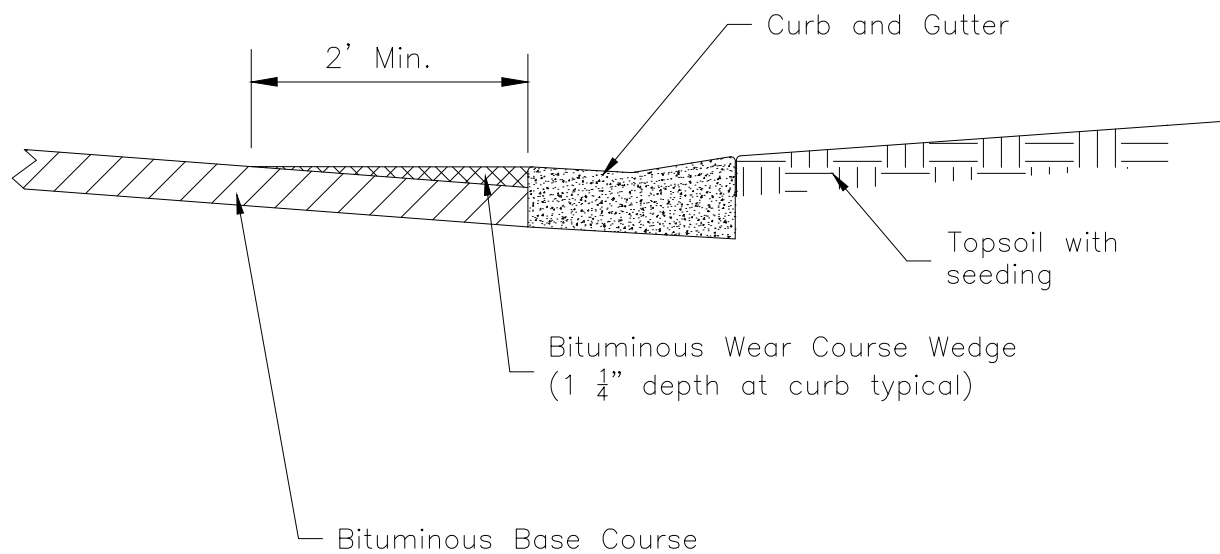
STANDARD DETAILS  
WATER AND SANITARY SEWER SERVICE  
LOCATION STAMP IN CURB

FARMINGTON, MINNESOTA

Last Revision:  
FEB 2007

City Plate No.  
STR-28  
2019





STANDARD DETAILS  
TEMPORARY BITUMINOUS WEDGING  
FOR CURB PROTECTION

Last Revision:  
FEB 2017

City Plate No.  
STR-29  
2019

FARMINGTON, MINNESOTA

# INDEX

## SECTION 2 – STORM SEWER

<u>PLATE</u>	<u>DESCRIPTION</u>
STO-01	STORM SEWER MANHOLE
STO-02	STORM SEWER JUNCTION MANHOLE
STO-03	STORM SEWER JUNCTION MANHOLE WITH REINFORCED TOP SLAB
STO-04	STORM SEWER JUNCTION MANHOLE WITH REINFORCED TOP SLAB AND SUMP
STO-05	CATCH BASIN MANHOLE
STO-06	CATCH BASIN MANHOLE WITH SUMP
STO-07	CATCH BASIN
STO-08	DOUBLE CATCH BASIN (CBMH WITH CB)
STO-09	CATCH BASIN MANHOLE TYPE II
STO-10	FLARED END SECTION AND TRASH GUARD
STO-11	RIPRAP AT OUTLETS
STO-12	CABLE CONCRETE AT OUTLETS
STO-14	"MINI-TEE" MANHOLE
STO-15	PVC (RIGID) PERFORATED PIPE
STO-15A	DRAIN TILE CLEANOUT
STO-16	RURAL RESIDENTIAL DRIVEWAY
STO-17	STORM SEWER SKIMMER STRUCTURE
STO-19	STORM SEWER SKIMMER STRUCTURE WITH CONCRETE BAFFLE WALL
STO-21	POND BENCH

## SECTION 3 – SANITARY SEWER

<u>PLATE</u>	<u>DESCRIPTION</u>
SAN-01	SANITARY SEWER MANHOLE
SAN-02	SANITARY SEWER JUNCTION MANHOLE
SAN-03	SANITARY SEWER JUNCTION MANHOLE WITH REINFORCED TOP SLAB
SAN-04	SANITARY SEWER DROP INLET MANHOLE
SAN-05	WATERTIGHT CASTING FOR SANITARY SEWER MANHOLE

NOTE: REFERENCES ON CITY PLATES ARE TO MnDOT 2018 EDITION SPECIFICATIONS

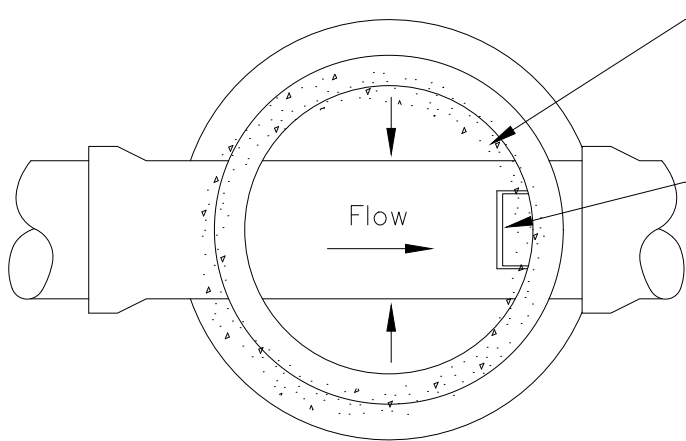


### STANDARD DETAILS INDEX

Last Revision:  
APR 2017

City Plate No.  
INDEX  
2019

FARMINGTON, MINNESOTA



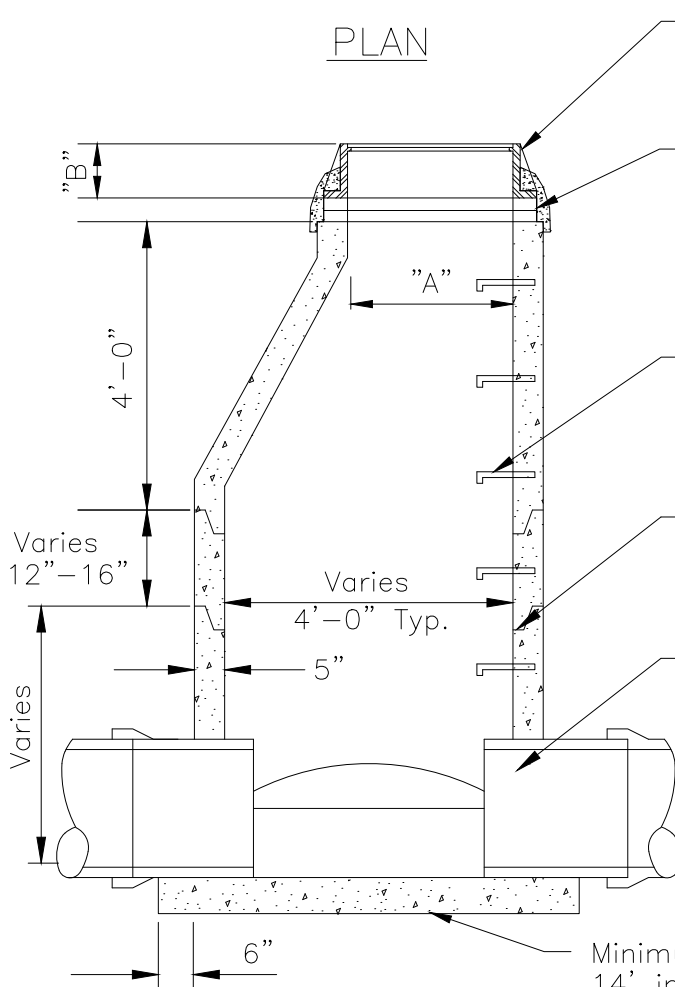
Grout bottom of manhole to 1/2 diameter of pipe and slope 2" toward invert.

Manhole Steps shall be placed so that offset vertical portion of cone is facing downstream.

CASTING	A	B
R1642	27"	7"

No block structures are allowed.

PLAN



Neenah frame and cover or equal lettered, "Storm Sewer", with 2 concealed pick holes.

Minimum of 2 and maximum of 5 concrete adjustment rings with full bed of mortar between each. 1 ring with mortar = 0.2'. Concrete collar required around all adjusting rings.

Manhole steps, Neenah R1981J or equal, 16" on center. Aluminum steps approved.

All joints in manhole to have "O" ring rubber gaskets.

Pipe shall be cut off 3" to 6" from inside face of wall.

Doghouses shall be grouted on both the inside and outside.

Minimum slab thickness is 6" for structure 14' in depth or less. Increase thickness 1" for every 4' of depth greater than 14' and reinforce with 6" x 6" Mesh.

SECTION

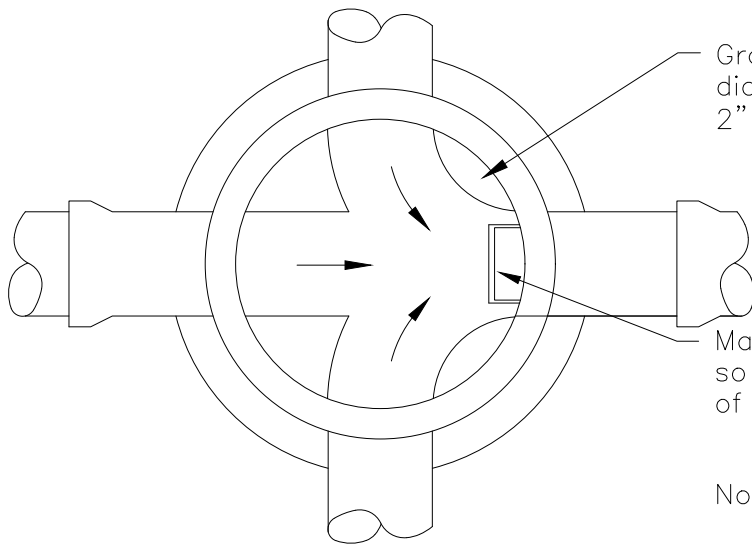


STANDARD DETAILS  
STORM SEWER MANHOLE

Last Revision:  
JAN 2012

FARMINGTON, MINNESOTA

City Plate No.  
STO-01  
2019



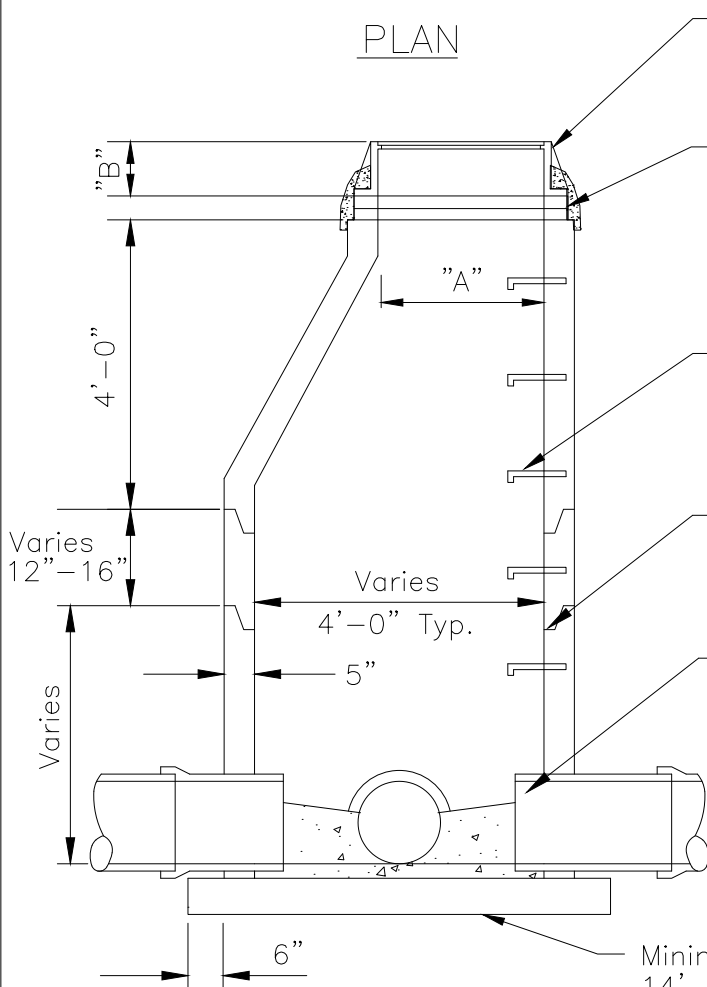
Grout bottom of Manhole to 1/2 diameter of pipe and slope 2" toward invert.

CASTING	A	B
R1642	27"	7"

Manhole steps shall be placed so that offset vertical portion of cone is facing downstream.

No block structures are allowed.

PLAN



Neenah frame and cover or equal, lettered, "Storm Sewer", with 2 concealed pick holes.

Minimum of 2 and maximum of 5 concrete adjustment rings with full bed of mortar between each. 1 ring with mortar = 0.2'. Concrete collar required around all adjusting rings.

Manhole steps, Neenah R1981J or equal, 16" on center. Aluminum steps approved.

All joints in Manhole to have "O" ring rubber gaskets.

Pipe shall be cut off 3" to 6" from inside face of wall.

Doghouses shall be grouted on both the inside and outside.

Minimum slab thickness is 6" for structures 14' in depth or less. Increase thickness 1" for every 4' of depth greater than 14', and reinforce with 6" x 6" 10/10 mesh.

SECTION

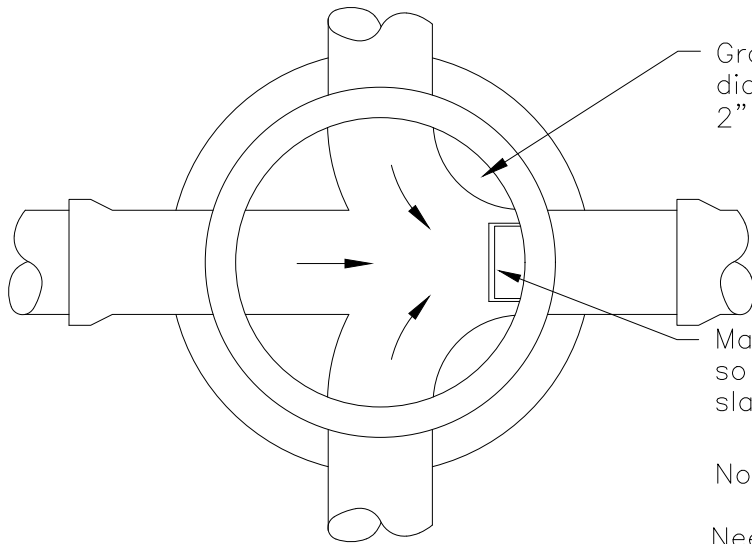


STANDARD DETAILS  
STORM SEWER JUNCTION MANHOLE

Last Revision:  
JAN 2012

FARMINGTON, MINNESOTA

City Plate No.  
STO-02  
2019



Grout bottom of manhole to 1/2 diameter of pipe and slope 2" toward invert.

CASTING	A	B
R1642	27"	7"

Manhole steps shall be placed so that offset hole in top slab is facing downstream.

No block structures are allowed.

Neenah frame and cover or equal lettered, "Storm Sewer", with 2 concealed pick holes.

Minimum of 2 and maximum of 5 concrete adjustment rings with full bed of mortar between each. 1 ring with mortar = 0.2'. Concrete collar required on all adjusting rings. 6" precast reinforced concrete manhole slab with #4 bars at 5" o.c. each way and 2-#4 bars at all sides of opening.

Top of barrel section below top Slab to have flat top edge sealed with 2 beads of Ramnek or equal.

Manhole steps, Neenah R1981J or equal, 16" on center. Aluminum steps approved.

All joints in manhole to have "O" ring rubber gaskets.

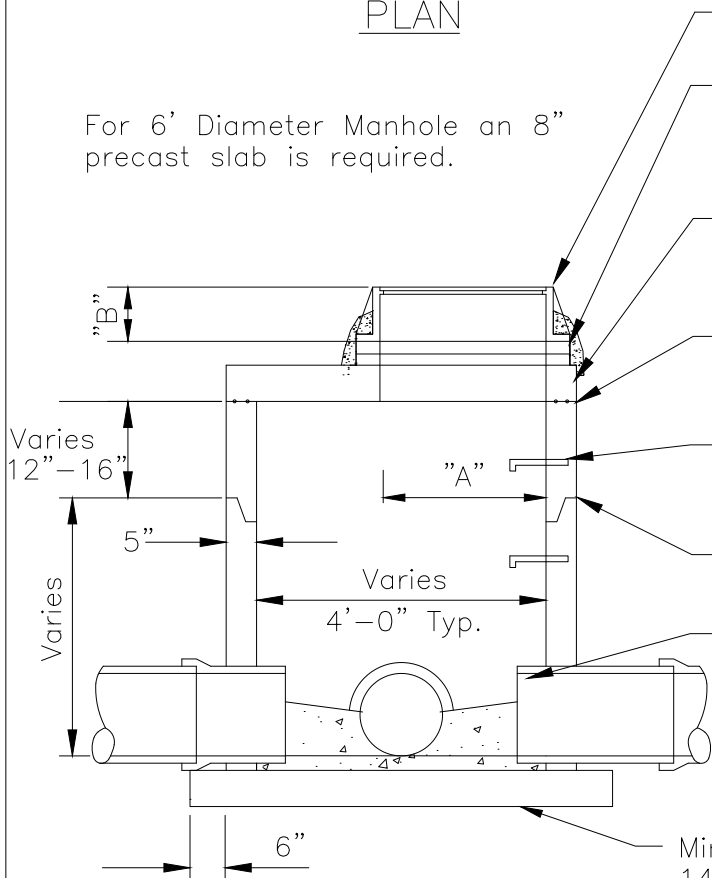
Pipe shall be cut off 3" to 6" from inside face of wall.

Doghouses shall be grouted on both inside and outside.

Minimum slab thickness is 6" for structures 14' in depth or less. Increase thickness 1" for every 4' of depth greater than 14', and reinforce with 6" x 6" 10/10 mesh.

PLAN

For 6' Diameter Manhole an 8" precast slab is required.



SECTION

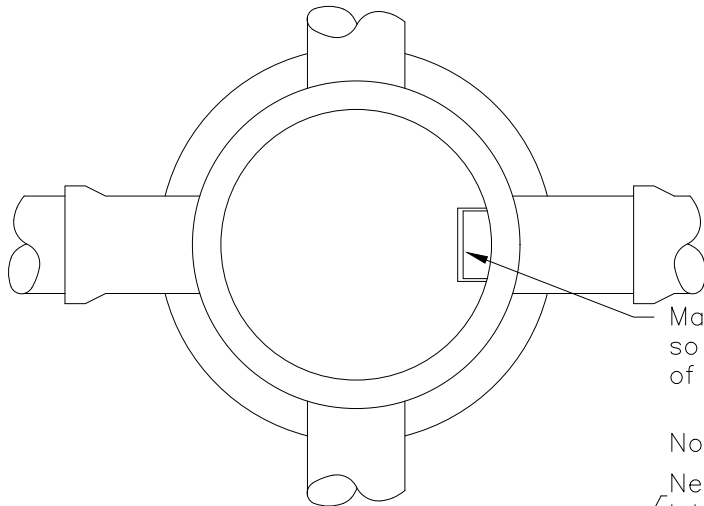


STANDARD DETAILS  
STORM SEWER JUNCTION MANHOLE  
WITH REINFORCED TOP SLAB

FARMINGTON, MINNESOTA

Last Revision:  
JAN 2012

City Plate No.  
STO-03  
2019



CASTING	A	B
R1642	27"	7"

PLAN

For 6' diameter manhole an 8" precast slab is required.

Manhole steps shall be placed so that offset vertical portion of cone is facing downstream.

No block structures are allowed.

Neenah frame and cover or equal lettered, "Storm Sewer", with 2 concealed pick holes.

Minimum of 2 and maximum of 5 concrete adjustment rings with full bed of mortar between each. 1 ring with mortar = 0.2'. Concrete collar required around all adjusting rings.

6" precast reinforced concrete manhole slab with #4 bars at 5" o.c. each way and 2-#4 bars at all sides of opening.

Top of barrel section below top slab to have flat top edge sealed with 2 beads of Ramnek or equal.

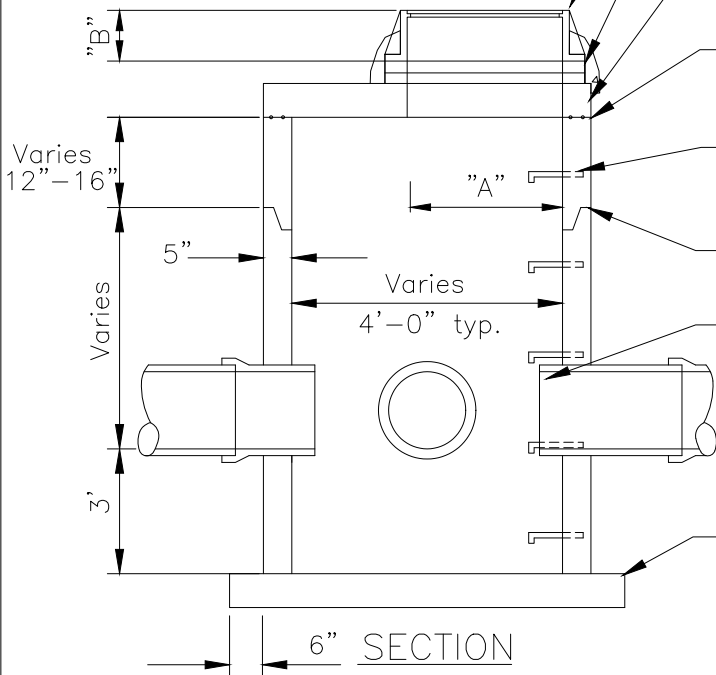
Manhole steps, Neenah R1981J or equal, 16" on center. Aluminum steps approved.

All joints in manhole to have "O" ring rubber gaskets.

Pipe shall be cut off 3" to 6" from inside face of wall.

Doghouses shall be grouted on both inside and outside.

Minimum slab thickness is 6" for structure 14' in depth or less. Increase thickness 1" for every 4' of depth greater than 14', and reinforce with 6" x 6" 10/10 mesh.

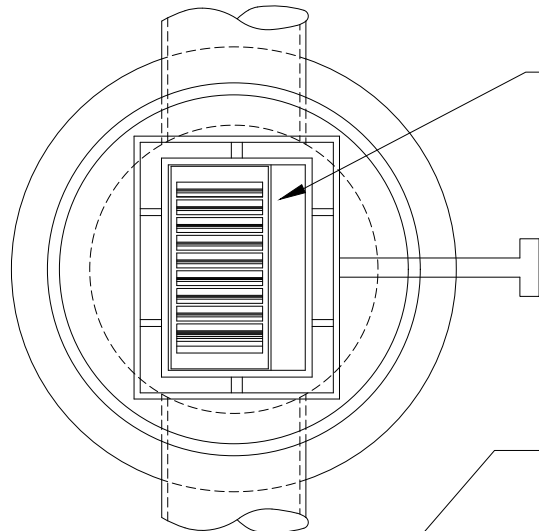


STANDARD DETAILS  
STORM SEWER JUNCTION MANHOLE  
WITH REINFORCED TOP SLAB AND SUMP

FARMINGTON, MINNESOTA

Last Revision:  
JAN 2012

City Plate No.  
STO-04  
2019



24"x36" slab opening for Neenah R3067V or preapproved equal.

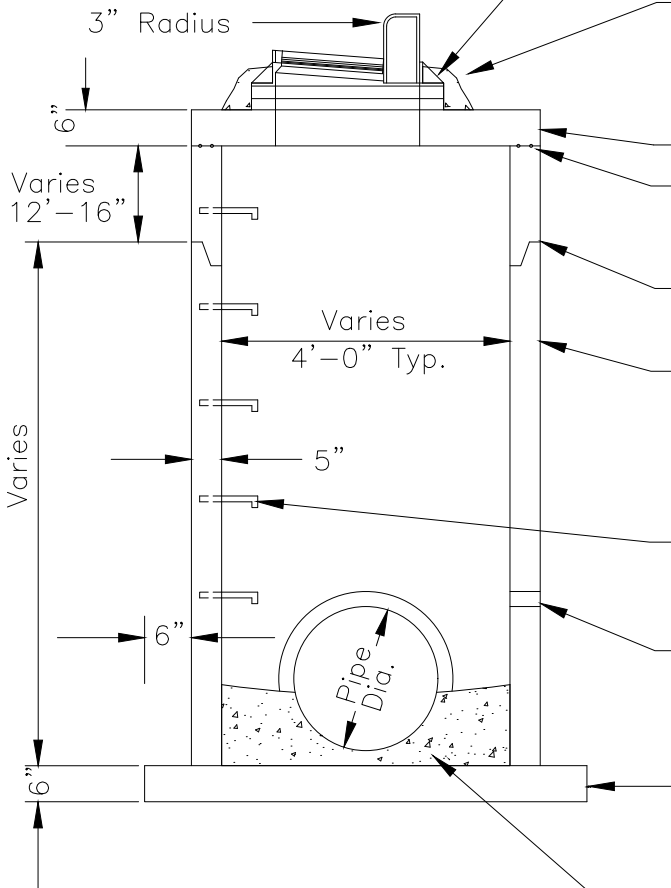
Dimension from back of curb to center of pipe.

- 4' Dia. MH - 9" in from Back of Curb
- 5' Dia. MH - 3" in from Back of Curb
- 6' Dia. MH - 3" behind Back of Curb
- 7' Dia. MH - 9" behind Back of Curb
- 8' Dia. MH - 15" behind Back of Curb

Wood wedges are not allowed for adjustment and no more than 4 wedges should be used under a casting

Minimum of 2 and maximum of 5 concrete adjustment rings with full bed of mortar between each concrete collar required around all adjusting rings. 1 ring w/mortar=0.2'; max. horizontal offset=0.25'(3").

PLAN



6" precast reinforced concrete slab.

Top of barrel section under top Slab to have flat top edge sealed with 2 beads of Ramnek or equal.

All joints in manhole to have "O" ring rubber gaskets.

Precast concrete section

Doghouses shall be grouted on both the outside and inside.

Manhole steps, Neenah R1981J or equal, 16" o.c., Aluminum steps approved.

4" PVC Tee for drain tile connection.

No block structures are allowed.

Minimum Slab thickness, 6" for structures 14' in depth. Increase thickness 1" for each 4' of depth greater than 14', and reinforce with 6"x6" 10/10 mesh.

Grout bottom of MH to 1/2 diameter of pipe and slope 2" toward invert.

SECTION

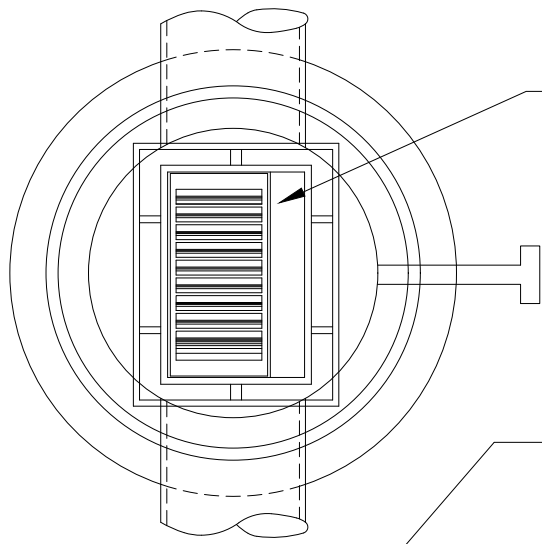


STANDARD DETAILS  
CATCH BASIN MANHOLE

Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
STO-05  
2019

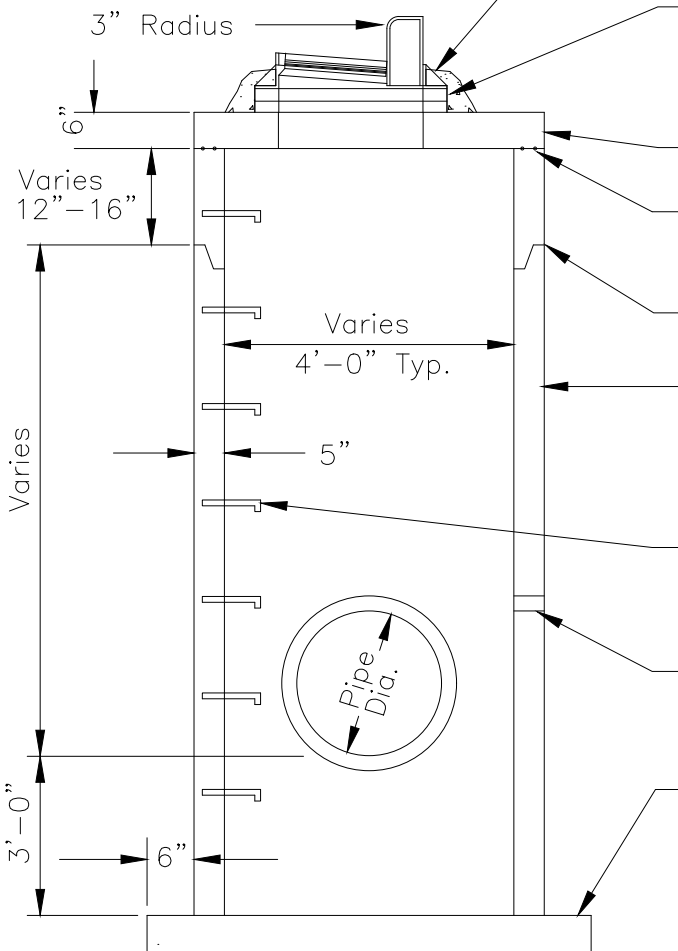


PLAN

24"x36" slab opening for Neenah R3067V or preapproved equal  
 Dimension from back of curb to center of pipe.  
 4' Dia. MH - 9" in from Back of Curb  
 5' Dia. MH - 3" in from Back of Curb  
 6' Dia. MH - 3" behind Back of Curb  
 7' Dia. MH - 9" behind Back of Curb  
 8' Dia. MH - 15" behind Back of Curb

Wood wedges are not allowed for adjustment and no more than 4 wedges should be used under a casting

Minimum of 2 and maximum of 5 concrete adjustment rings with full bed of mortar between each one. Concrete collar required around all adjusting rings. 1 ring w/mortar=0.2'; max. horizontal offset=0.25'(3").



SECTION

6" precast reinforced concrete slab.  
 Top of barrel section below top Slab to have flat top edge sealed with 2 beads of Ramnek or equal.  
 All joints in manhole to have "O" ring rubber gaskets.  
 Precast concrete section  
 Doghouses shall be grouted on both the outside and inside.  
 Manhole steps, Neenah R1981J or equal, 16" o.c., Aluminum steps approved.  
 4" PVC Tee for drain tile connection.  
 No block structures are allowed.  
 Minimum slab thickness, 6" for structures 14' in depth or less. Increase thickness 1" for each 4' of depth greater than 14', and reinforce with 6"x6" 10/10 mesh.

Varies 12"-16"

Varies 4'-0" Typ.

5"

Varies

3'-0"

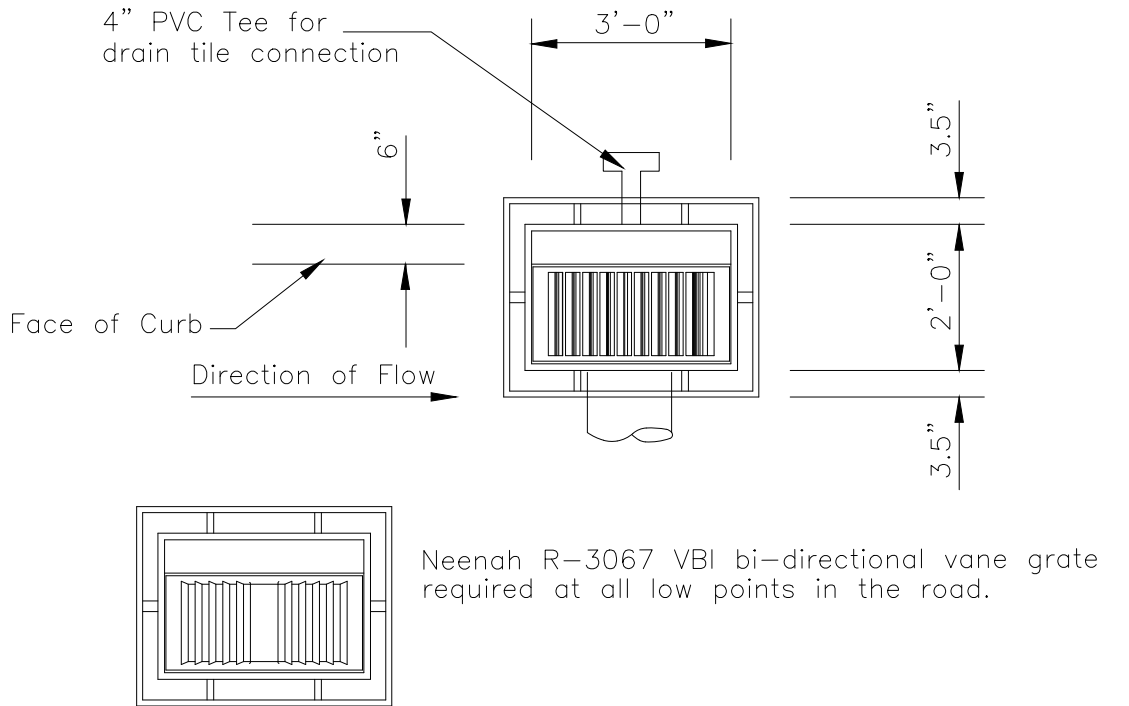
6"

STANDARD DETAILS  
 CATCH BASIN MANHOLE WITH SUMP  
 FARMINGTON, MINNESOTA



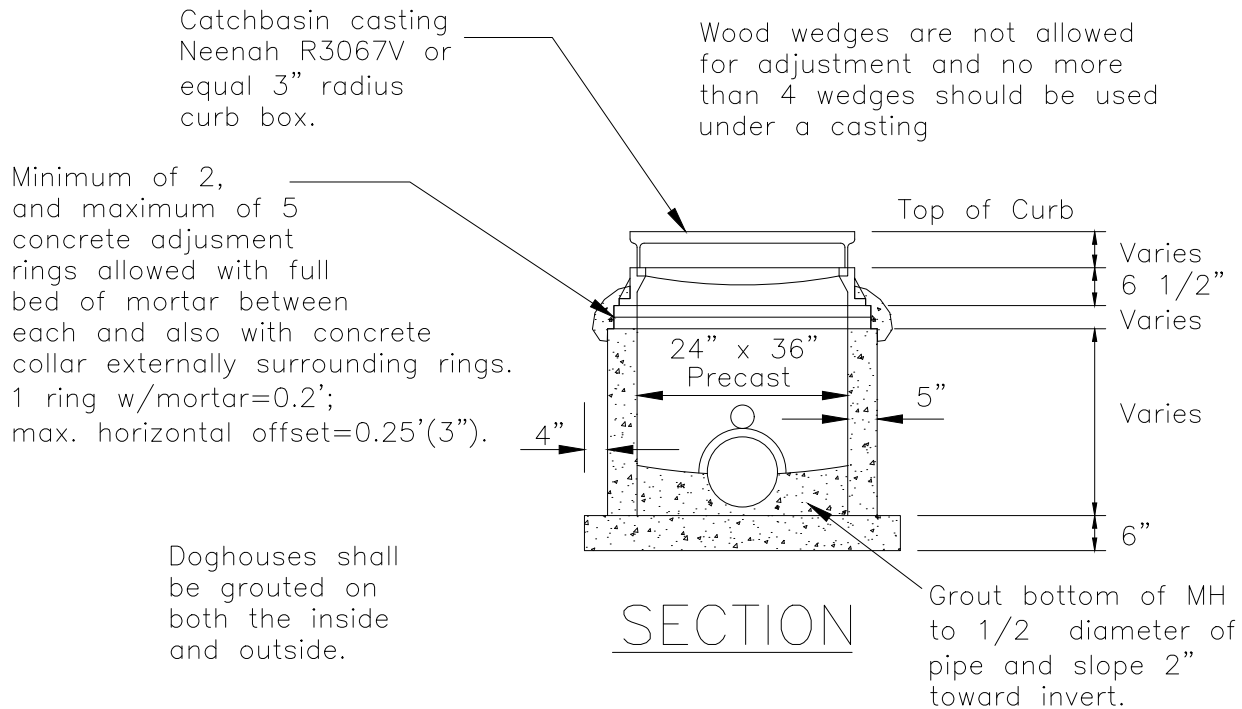
Last Revision:  
 FEB 2017  
 City Plate No.  
 STO-06  
 2019





PLAN

No block structures are allowed.



SECTION

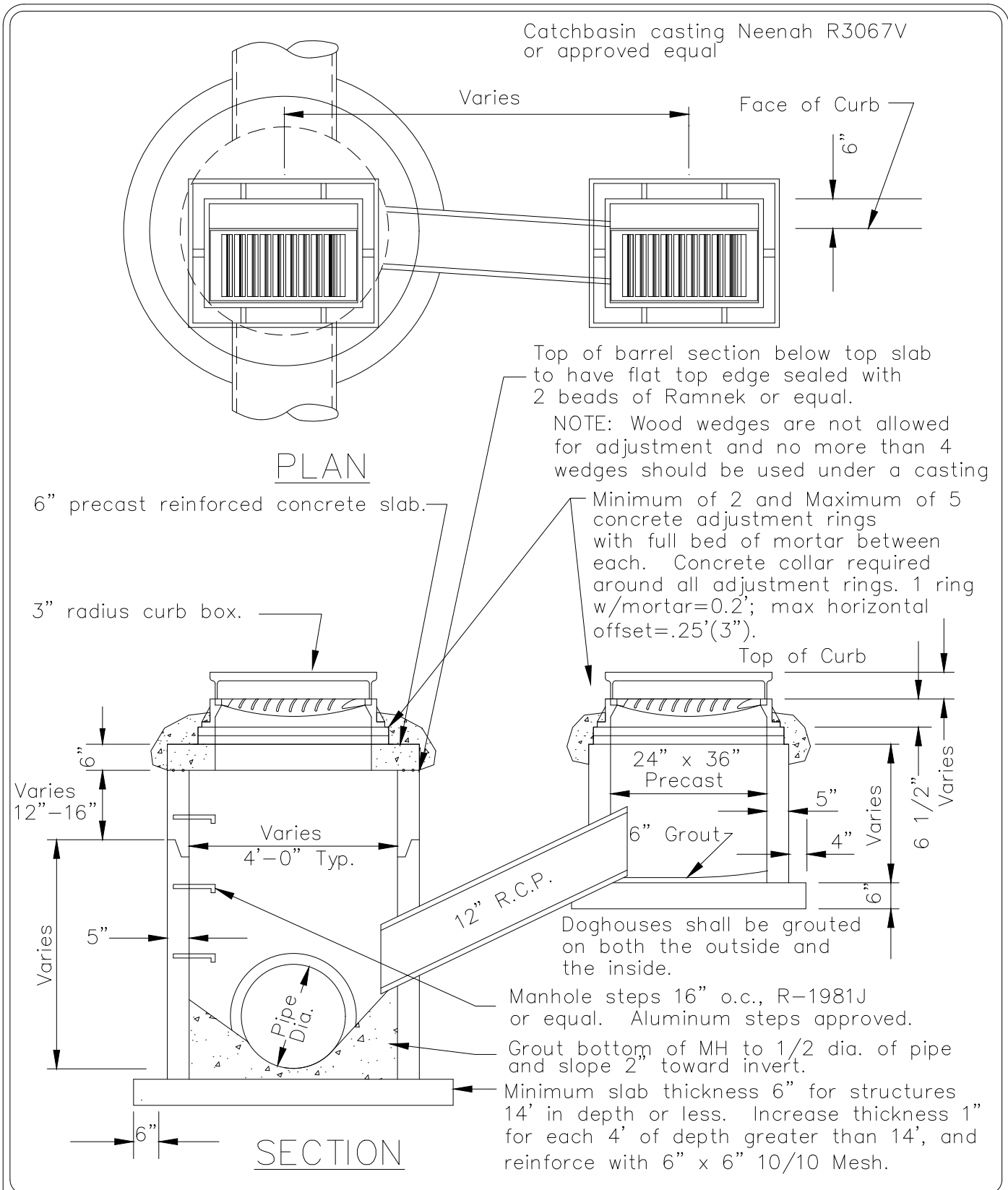


STANDARD DETAILS  
CATCH BASIN

Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
STO-07  
2019

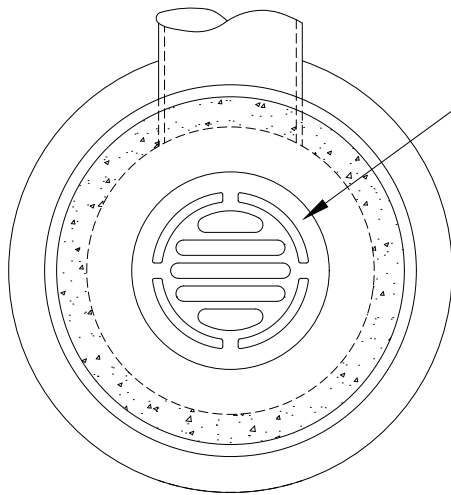


STANDARD DETAILS  
 DOUBLE CATCH BASIN  
 (CBMH WITH CB)

Last Revision:  
 JAN 2012

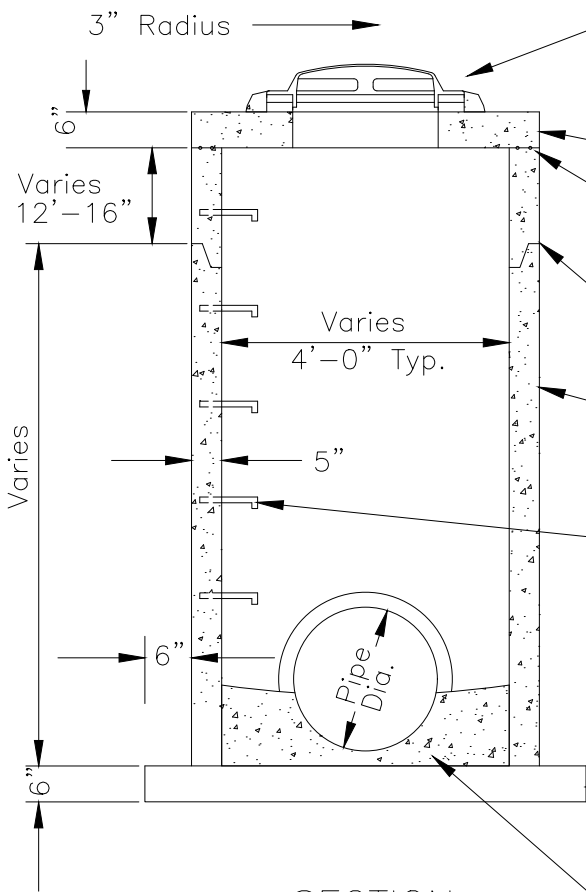
FARMINGTON, MINNESOTA

City Plate No.  
 STO-08  
 2019



Neenah R-4342 casting or approved equal

PLAN



concrete adjustment rings with full bed of mortar between each. Concrete Collar required around on all adjusting rings. 1 ring with mortar=0.2'; max horizontal offset=.25'(3").

6" precast reinforced concrete slab.

Top of barrel section under top slab to have flat top edge sealed with 2 beads of Ramnek or equal.

All joints in manhole to have "O" ring rubber gaskets.

Precast concrete section

Doghouses shall be grouted on both the outside and inside.

Manhole steps, Neenah R1981J or equal, 16" o.c., Aluminum steps approved.

No block structures are allowed.

Minimum slab thickness, 6" for structures 14" in depth or less. Increase thickness 1" for each 4' of depth greater than 14', and reinforce with 6"x6" 10/10 Mesh.

SECTION

Grout bottom of MH to 1/2 dia. of pipe and slope 2" toward invert.



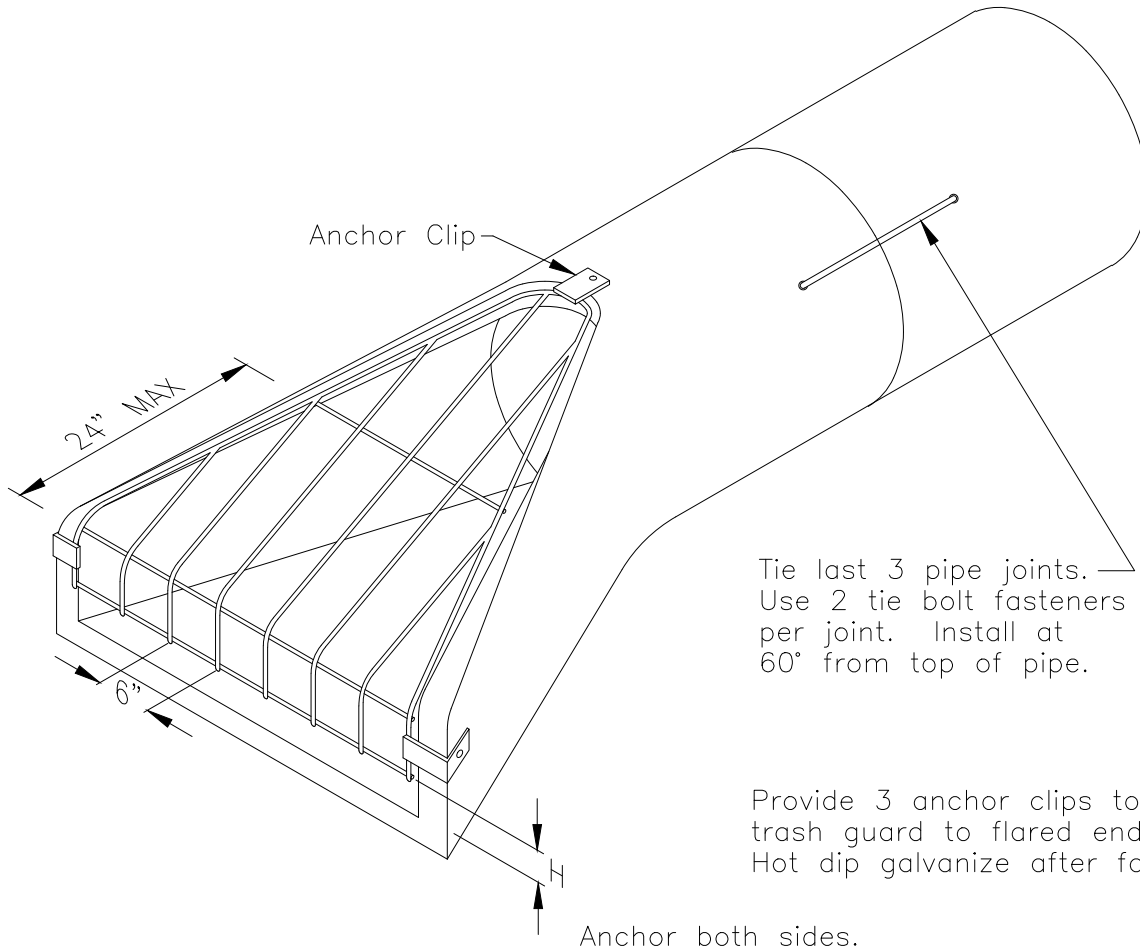
STANDARD DETAILS  
CATCH BASIN MANHOLE  
TYPE II

Last Revision:  
JAN 2012

City Plate No.  
STO-09  
2019

FARMINGTON, MINNESOTA

See City Plate No. STO-11 for RIPRAP placement.



Tie last 3 pipe joints. —  
Use 2 tie bolt fasteners  
per joint. Install at  
60° from top of pipe.

Provide 3 anchor clips to fasten  
trash guard to flared end section.  
Hot dip galvanize after fabrication.

Anchor both sides.

ISOMETRIC

Pipe Size	TRASH GUARD SIZING		
	Bars	'H'	Bolts
12"–18"	3/4"∅	4"	5/8"
21"–42"	1"∅	6"	3/4"
48"–72"	1 1/4"∅	12"	1"

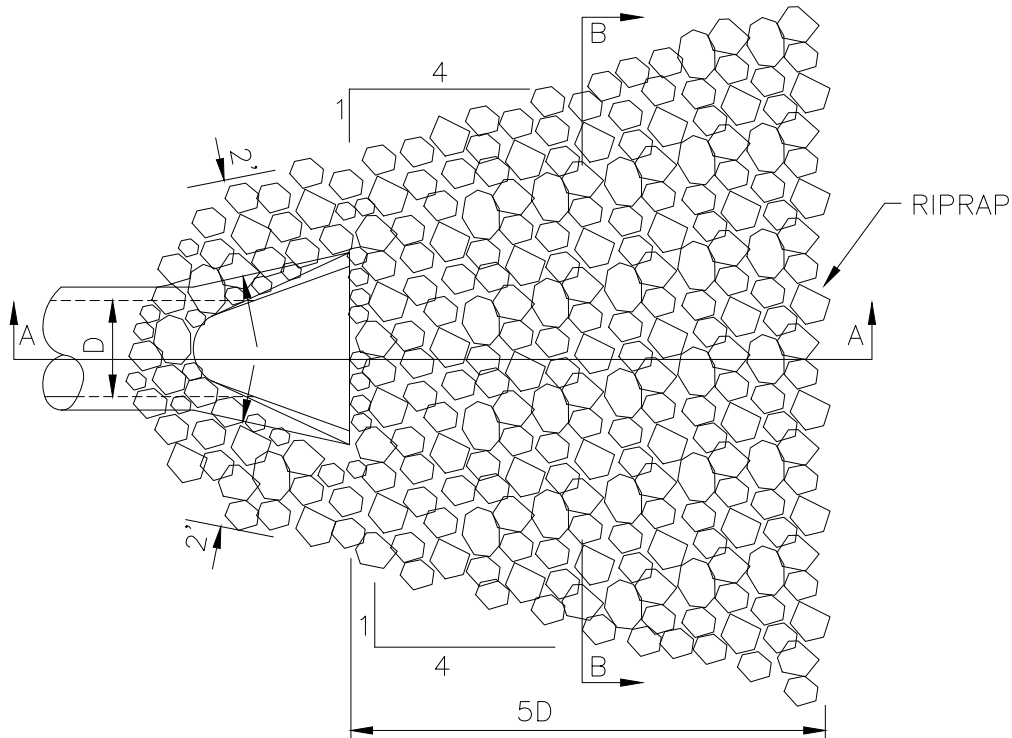


STANDARD DETAILS  
FLARED END SECTION  
AND TRASH GUARD

Last Revision:  
JAN 2012

FARMINGTON, MINNESOTA

City Plate No.  
STO-10  
2019

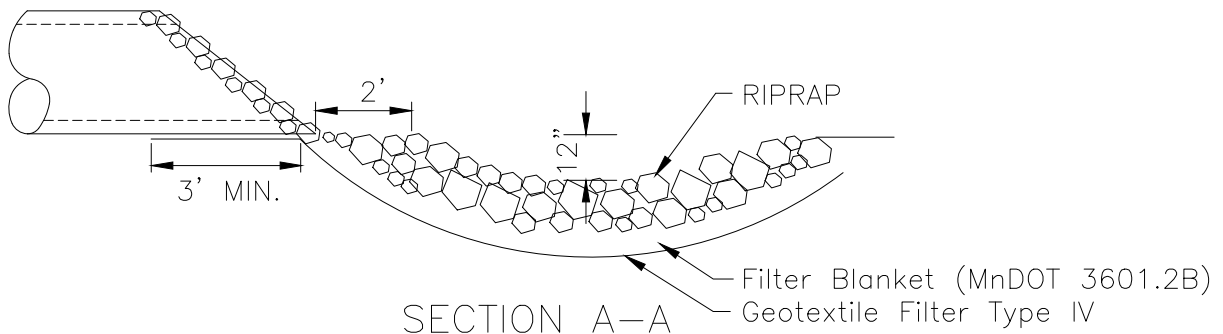


RIPRAP REQUIREMENTS (MnDOT 3601.2A)

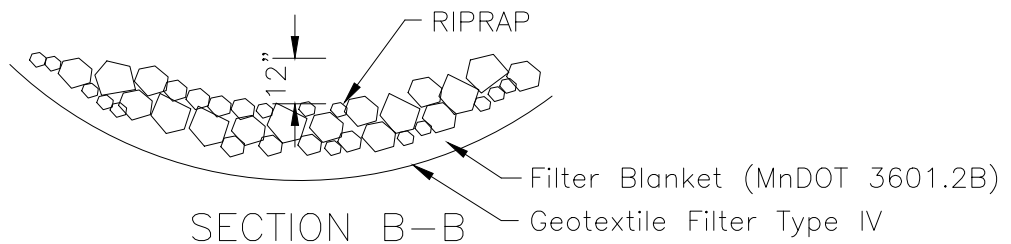
12" TO 24"	8 to 12 CY	CL.3	<u>PLAN</u>
27" TO 33"	14 to 20 CY	CL.3	
36" TO 48"	23 to 38 CY	CL.3	
54" AND UP	62 CY and up	CL.4	

(One Cubic Yard is approximately 2,800 lbs.)

NOTE  
Filter blanket required under RIPRAP or 2 layers of 500X Mirafi fabric or equal



SECTION A-A



SECTION B-B

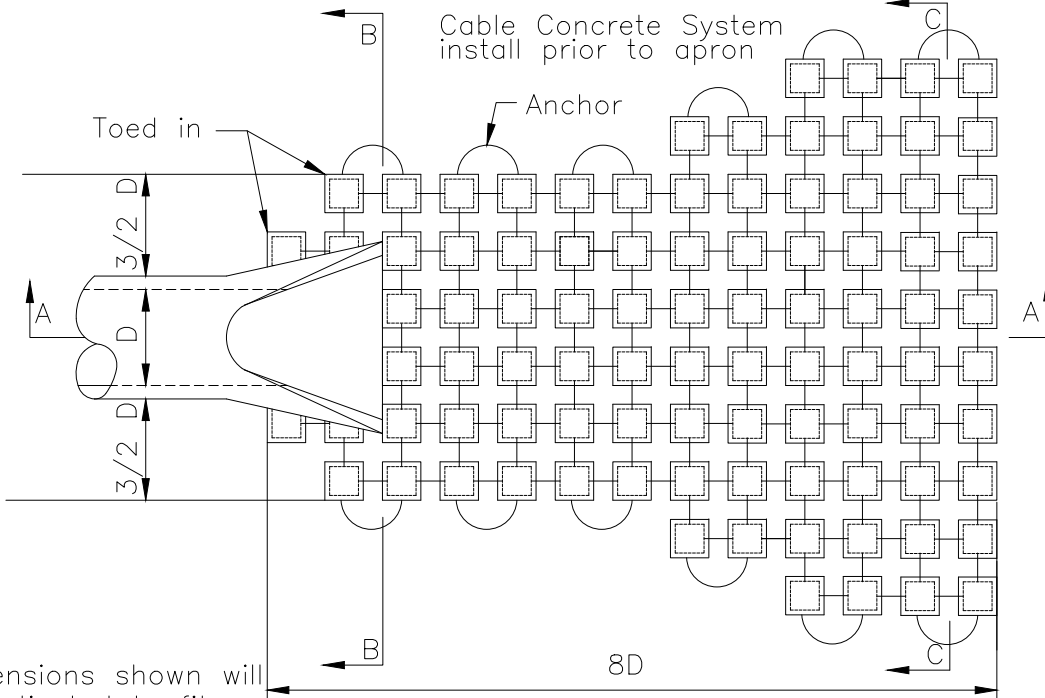


STANDARD DETAILS  
RIPRAP AT OUTLETS

FARMINGTON, MINNESOTA

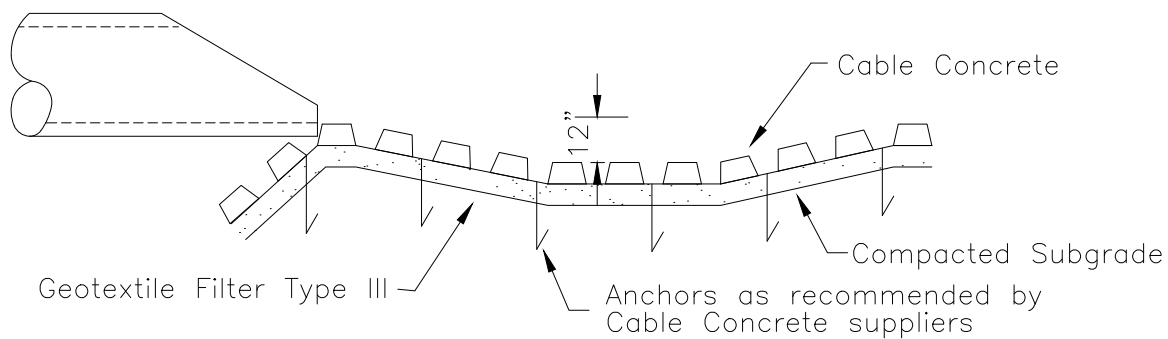
Last Revision:  
FEB 2017

City Plate No.  
STO-11  
2019

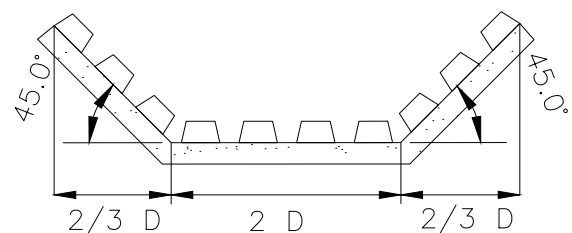


- NOTE:
1. Dimensions shown will be adjusted to fit standard panels
  2. Min. block weight=77PSF
  3. Min. cable Dia.=5/32" stainless steel

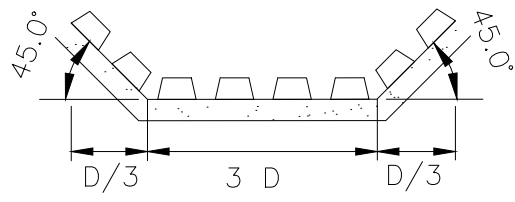
PLAN



SECTION A-A



SECTION B-B



SECTION C-C

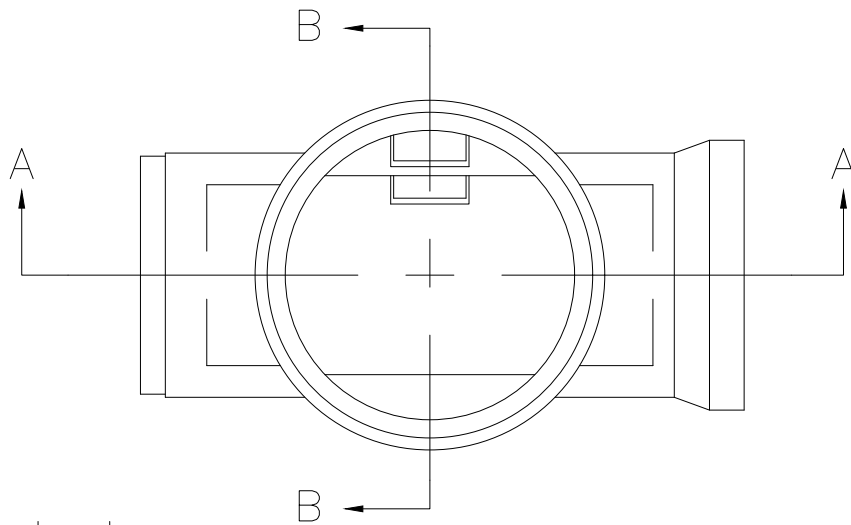


STANDARD DETAILS  
CABLE CONCRETE AT OUTLETS

Last Revision:  
FEB 2017

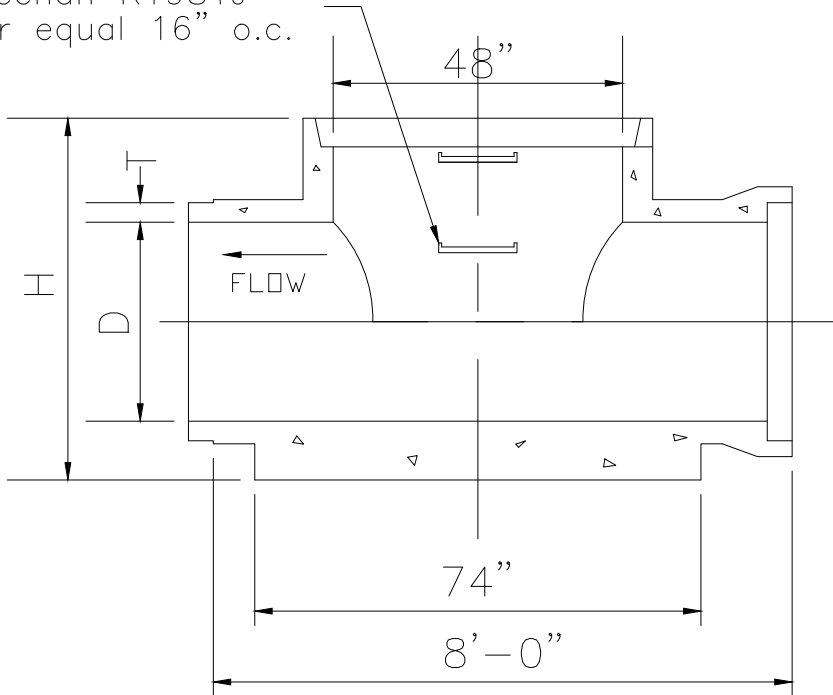
FARMINGTON, MINNESOTA

City Plate No.  
STO-12  
2019

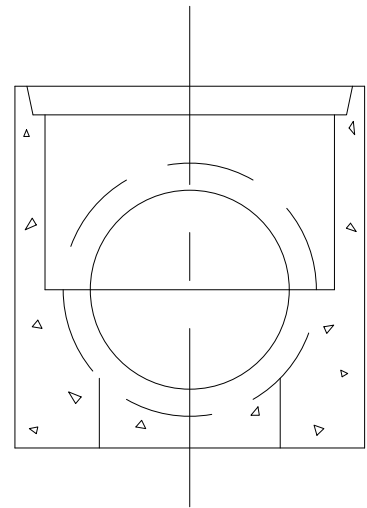


TOP VIEW

Manhole steps  
Neenah R1981J  
or equal 16" o.c.



SIDE VIEW



END VIEW

Pipe diameter "D"	"B" wall thickness "T"	"C" wall thickness "T"	"B" wall height "H"
12"	2"	2 3/4"	36"
15"	2 3/4"	3"	36"
18"	2 1/2"	3 1/4"	48"
21"	2 3/4"	3 1/2"	48"
24"	3"	3 3/4"	48"
27"	3 1/4"	4"	60"
30"	3 1/2"	4 1/4"	60"
33"	3 3/4"	4 1/2"	60"
36"	4"	4 3/4"	60"

NOTE:

1. All pipes shall have R-4 rubber gasket joint.
2. Horizontal pipe may be "B" wall or "C" wall.

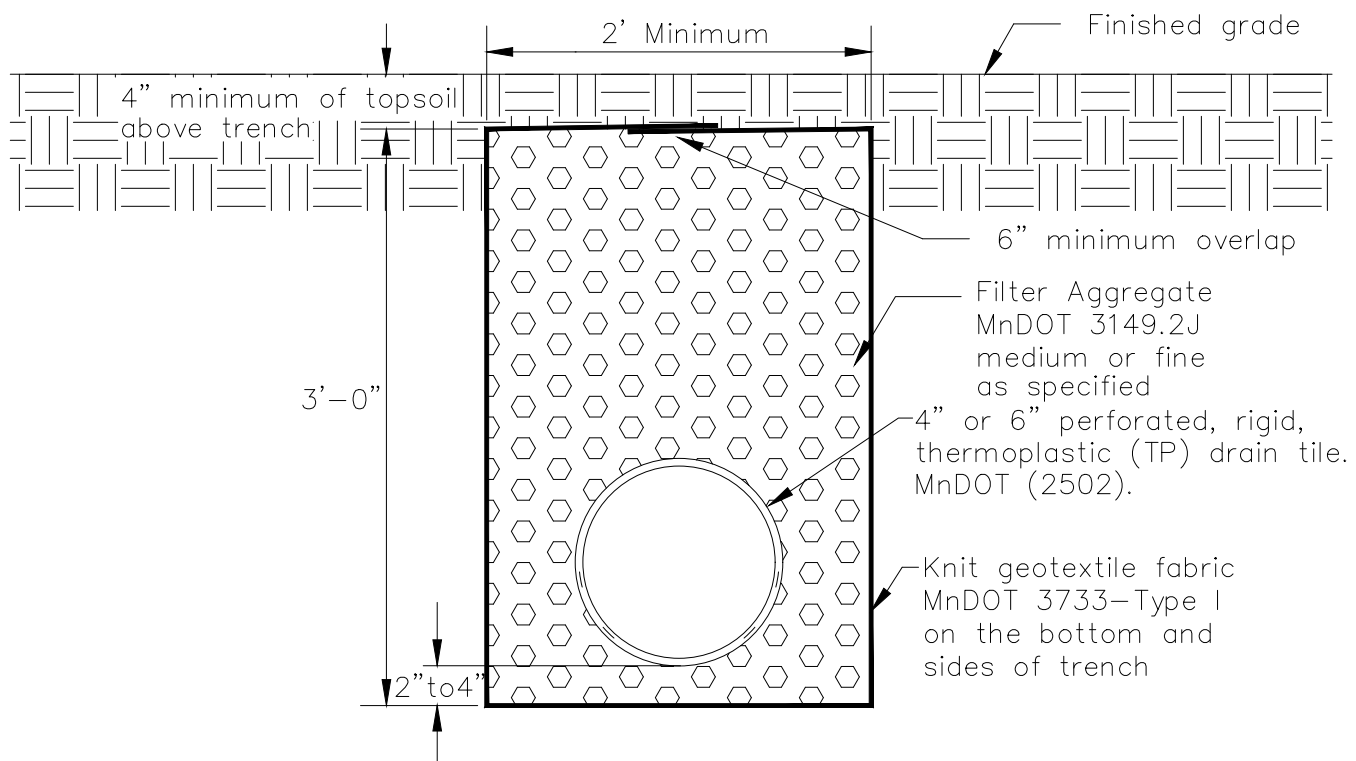


STANDARD DETAILS  
"MINI-TEE" MANHOLE

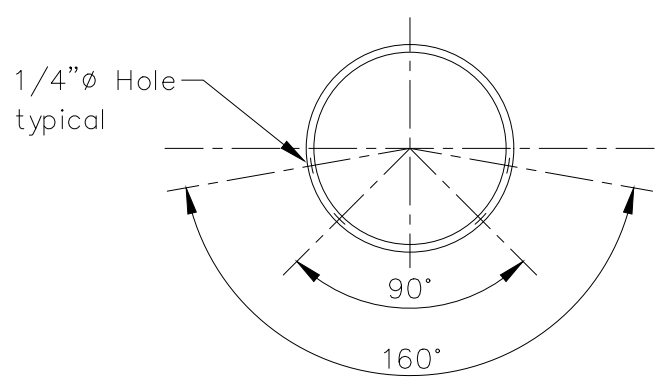
Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
STO-14  
2019



TRENCH DETAIL



PIPE DETAIL



STANDARD DETAILS  
PVC (RIGID) PERFORATED PIPE

Last Revision:  
FEB 2017

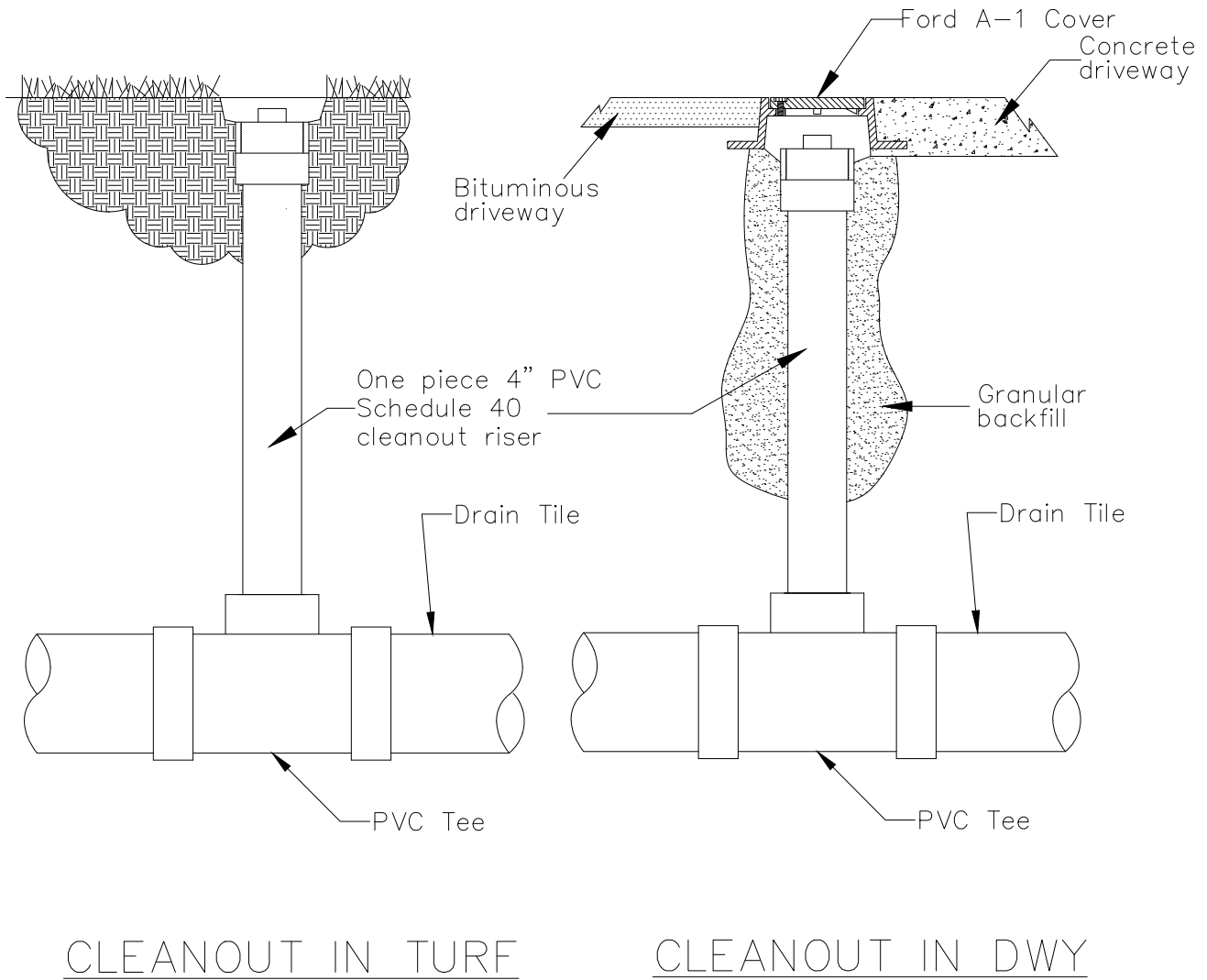
FARMINGTON, MINNESOTA

City Plate No.  
STO-15  
2019



NOTE:

3. Cleanouts shall be installed every 150' and at all dead ends for mainline drain tile.
4. Cleanouts shall be capped with a PVC sewer cleanout adapter and galvanized metal square head screw-in plug (Matco-Norca MGPL11 or approved equal).
5. Cleanouts in driveways shall require a Ford A-1 Cover or approved equal for access.

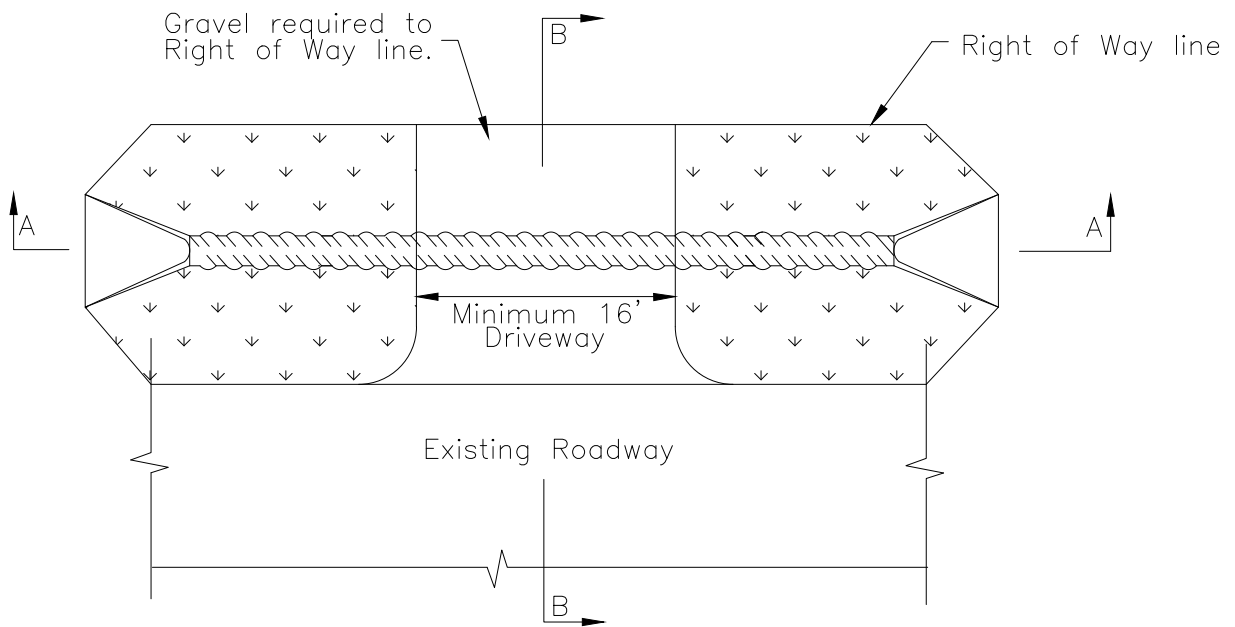


STANDARD DETAILS  
DRAIN TILE CLEANOUT

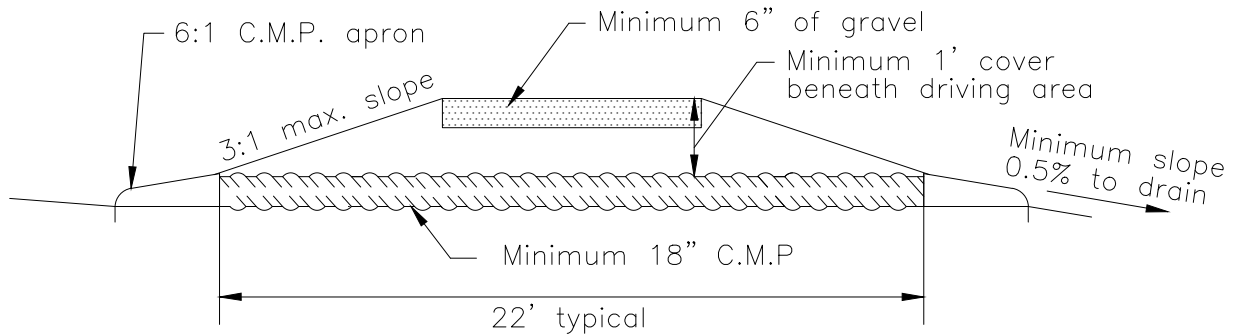
FARMINGTON, MINNESOTA

Last Revision:  
FEB 2017

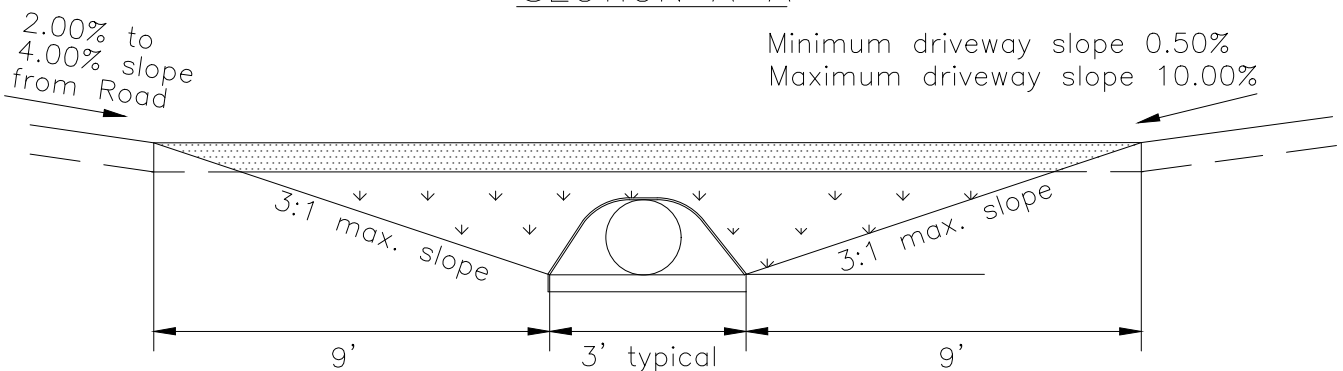
City Plate No.  
STO-15A  
2019



PLAN



SECTION A-A



SECTION B-B

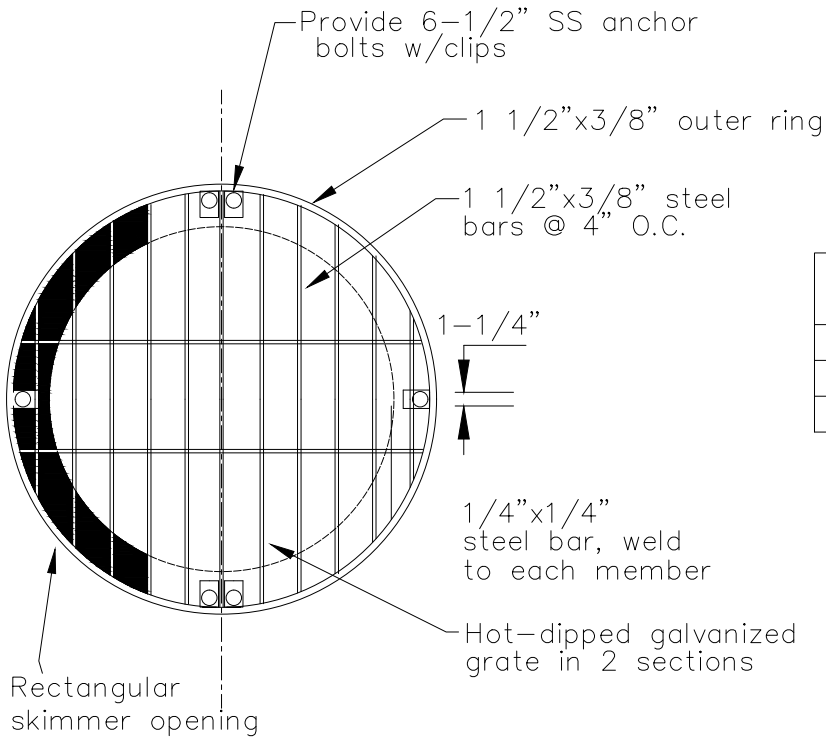


STANDARD DETAILS  
RURAL RESIDENTIAL DRIVEWAY

Last Revision:  
JAN 2012

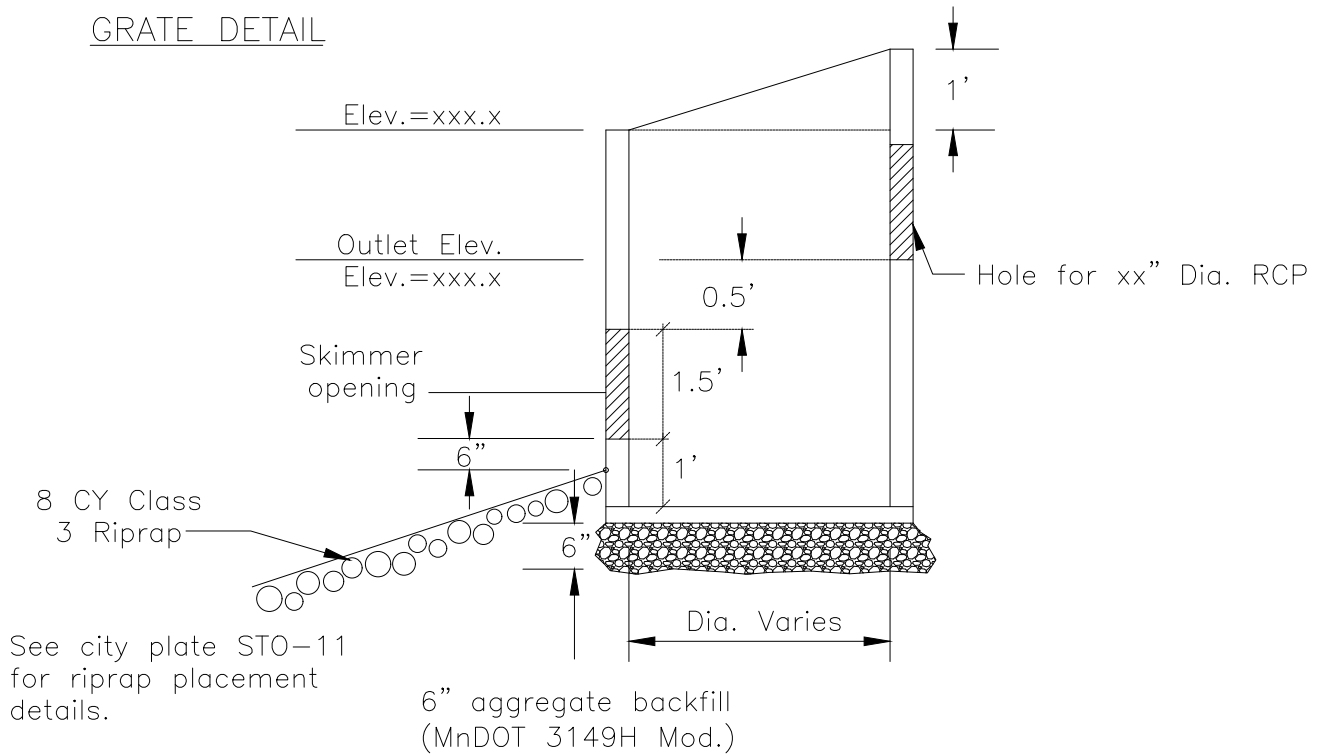
FARMINGTON, MINNESOTA

City Plate No.  
STO-16  
2019



MH DIAMETER	SKIMMER OPENING
4'	3'x1.5'
5'	4.5'x1.5'
6'	6'x1.5'

GRATE DETAIL

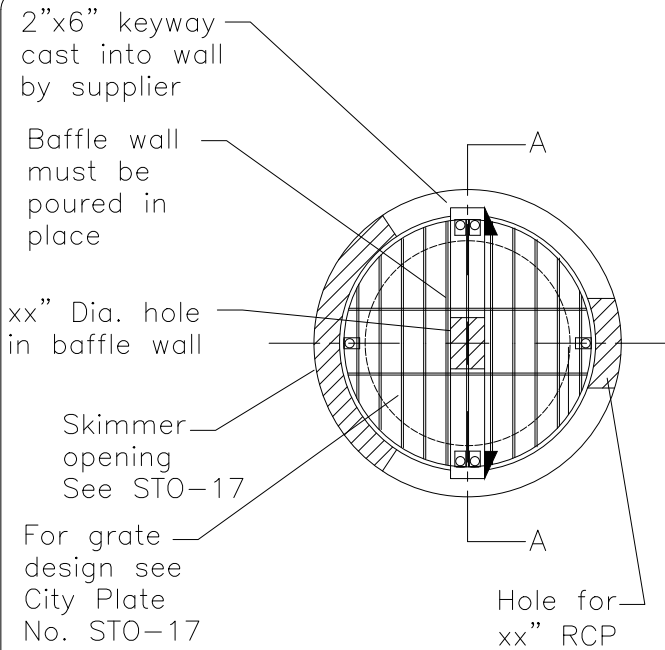


STANDARD DETAILS  
STORM SEWER SKIMMER STRUCTURE

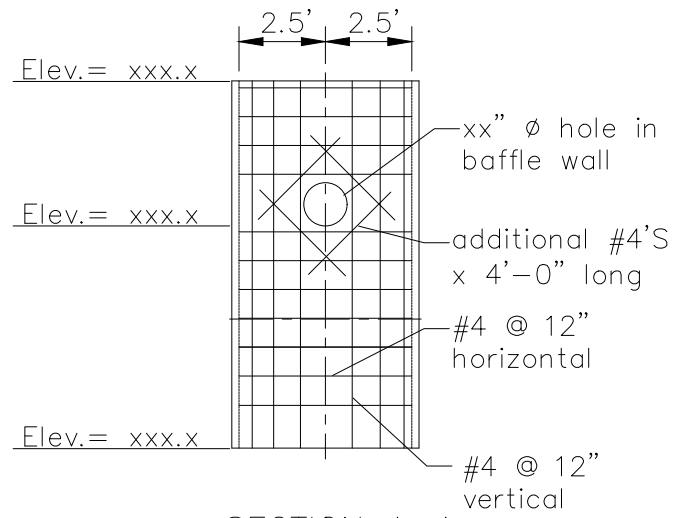
Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

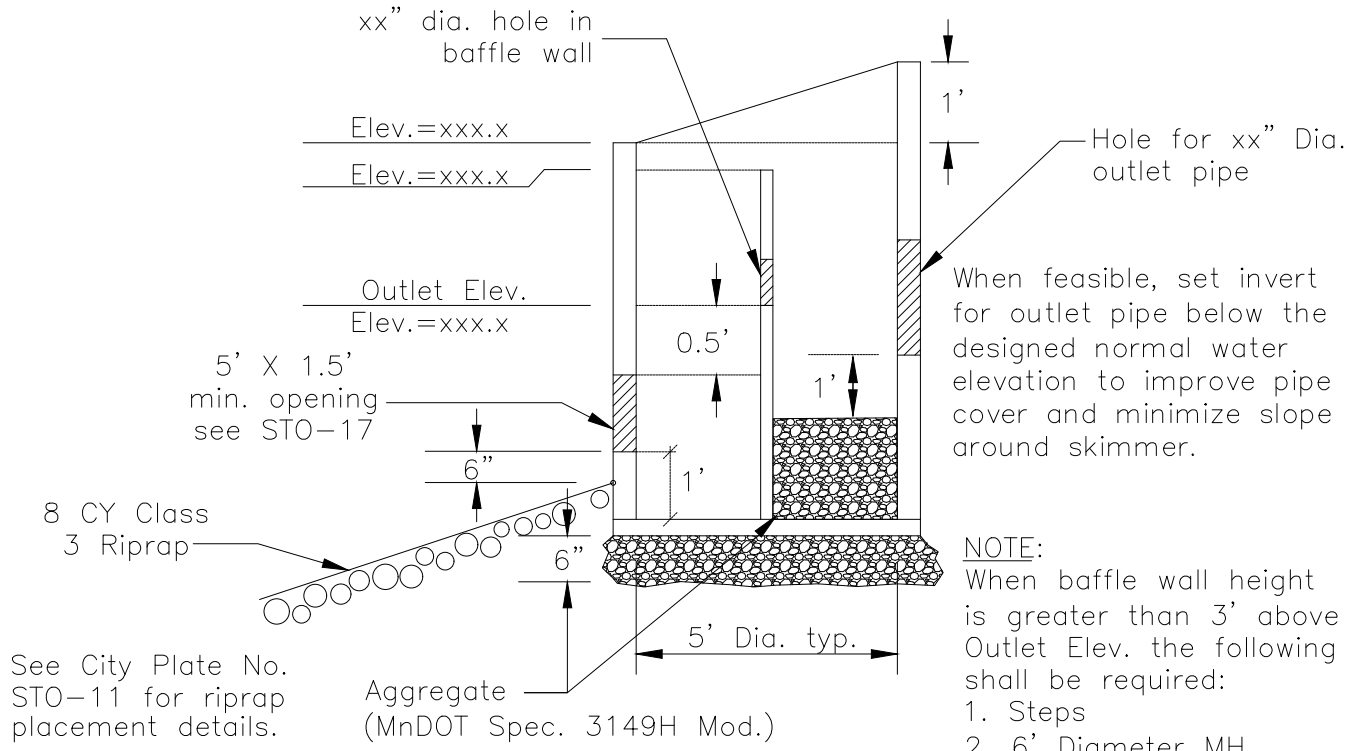
City Plate No.  
STO-17  
2019



SKIMMER GRATE



SECTION A-A  
CONCRETE BAFFLE WALL



**NOTE:**  
When baffle wall height is greater than 3' above Outlet Elev. the following shall be required:  
1. Steps  
2. 6' Diameter MH

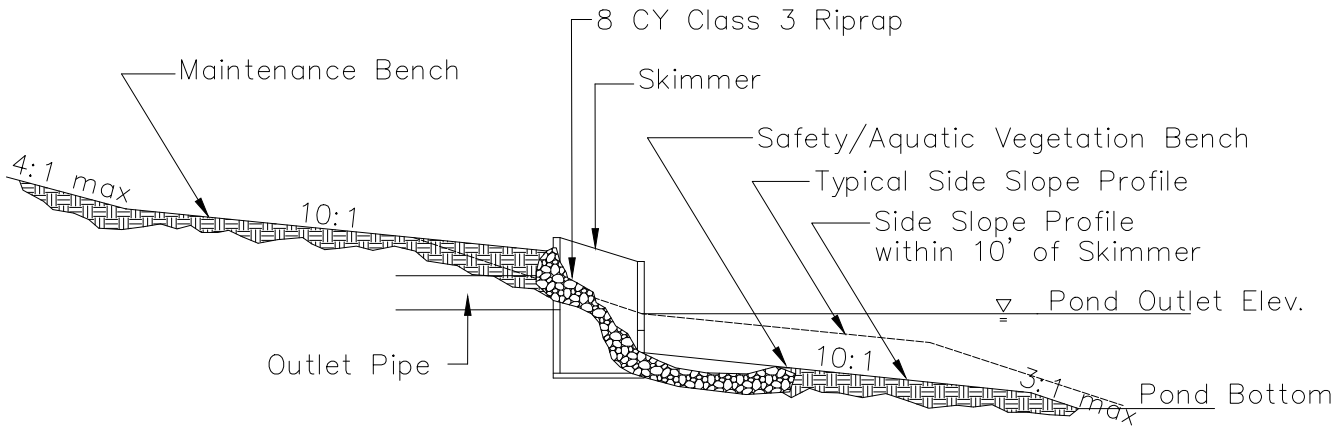


STANDARD DETAILS  
STORM SEWER SKIMMER STRUCTURE  
WITH CONCRETE BAFFLE WALL

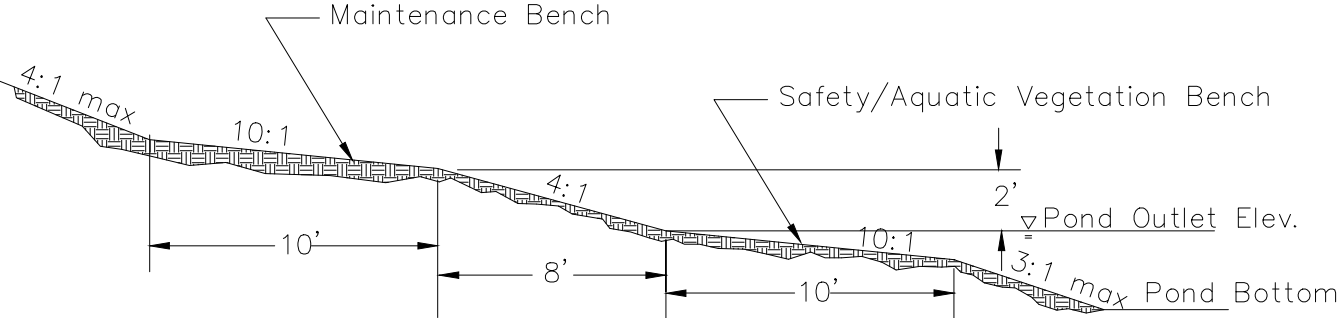
Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
STO-19  
2019



TYPICAL BENCH DETAIL  
WITHIN 10' OF SKIMMER OUTLET



TYPICAL BENCH DETAIL

NOTE: See City Plate No.'s ST0-17 or ST0-19 for specific skimmer structure details.



STANDARD DETAILS  
POND BENCH

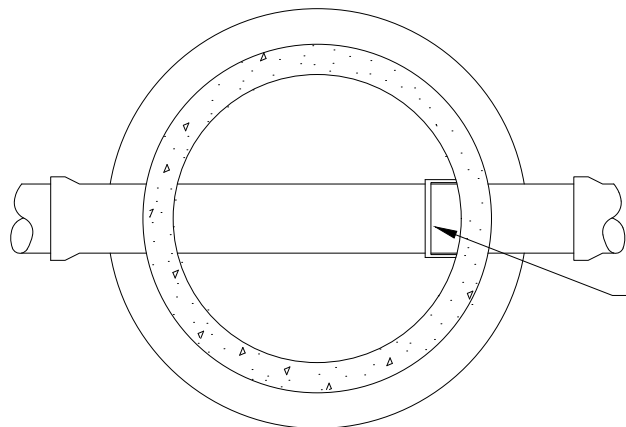
Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
ST0-21  
2019

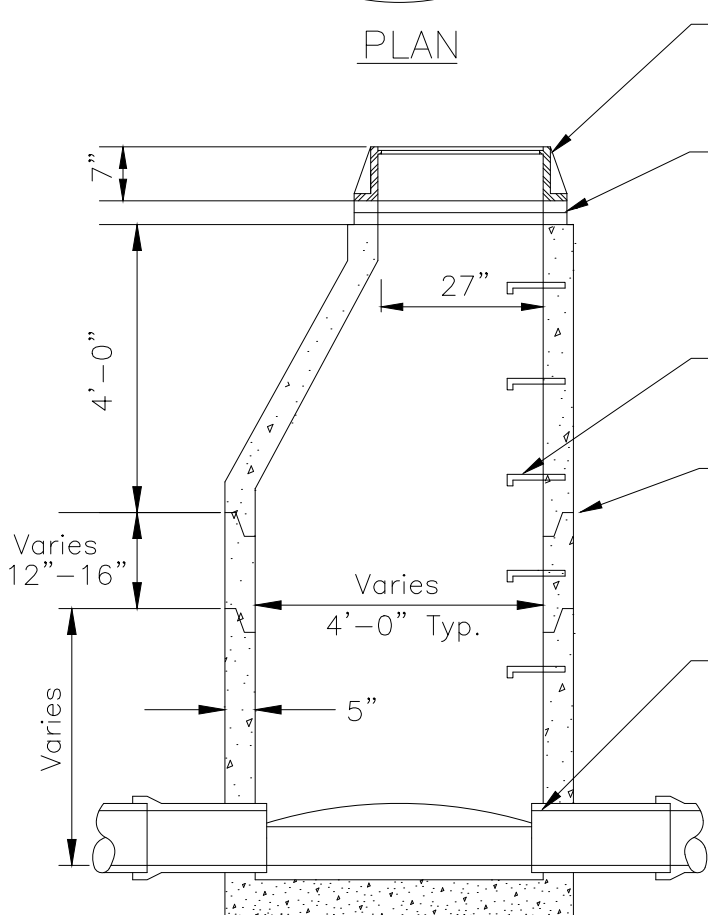
Precast invert must be be 1/2 diameter of the pipe and benches sloped 2" toward the invert.

CASTING	A	B
R1642B	27"	7"



PLAN

Manhole steps shall be placed so that offset vertical portion of cone is facing downstream.



SECTION

Neenah frame and cover or equal, lettered "Sanitary Sewer" with 2 concealed pick holes. See specification for casting number.

Minimum of 2 and maximum of 5 concrete adjustment rings with full bed of mortar between each. 1 ring with mortar = 0.2'. Infishield chimney seal or approved other.

Manhole steps, Neenah R1981J or equal, 16" on center. Aluminum steps approved.

All joints in manhole to have "O" ring rubber gaskets.

Pipe shall be cut out 2" inside face of wall.

KOR-N-SEAL manhole or equal considered acceptable alternate.

Doghouses shall be grouted on the inside and outside.

Minimum thickness of precast base is 6" for structure 14' deep or less, and increases 1" in thickness for every 4' of depth greater than 14'.

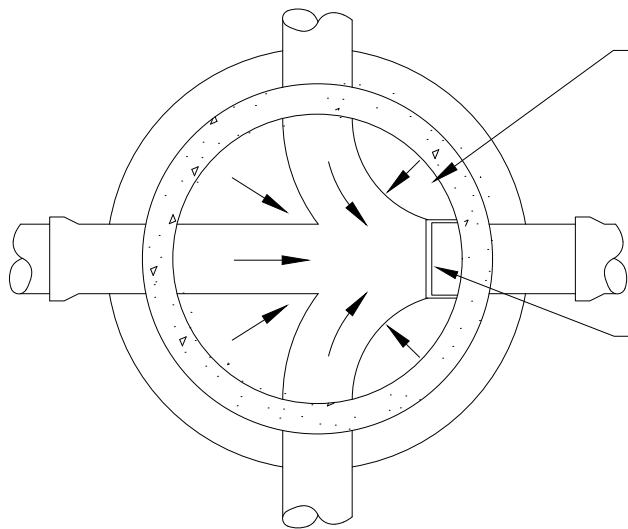


STANDARD DETAILS  
SANITARY SEWER MANHOLE

Last Revision:  
JAN 2019

FARMINGTON, MINNESOTA

City Plate No.  
SAN-01  
2019

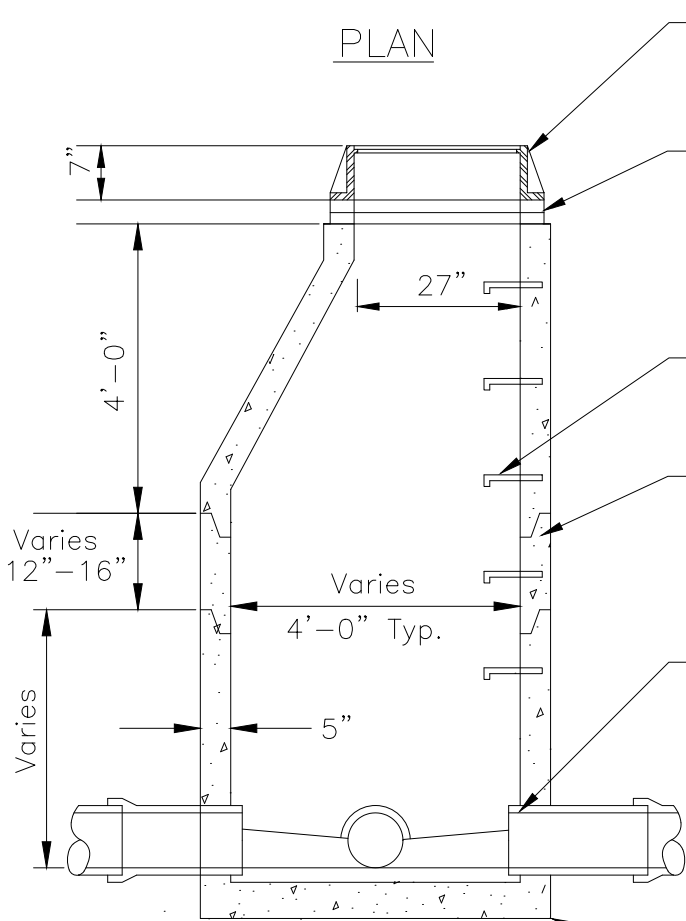


Precast invert must be 1/2 diameter of pipe and benches should be sloped 2" toward invert.

CASTING	A	B
R1642B	27"	7"

Manhole steps shall be placed so that offset vertical portion of cone is facing downstream.

PLAN



Neenah frame and cover or equal lettered "Sanitary Sewer" with 2 concealed pick holes

Minimum of 2 and maximum of 5 concrete adjustment rings with full bed of mortar between each. 1 ring with mortar = 0.2'. Infishield chimney seal or approved equal.

Manhole steps, Neenah R1981J or equal, 16" on center. Aluminum steps approved.

All joints in manhole to have "O" ring rubber gaskets.

Pipe shall be cut out 2" inside face of wall.

KOR-N-SEAL Manhole or equal considered acceptable alternate.

Doghouses shall be grouted on the inside and outside.

Minimum thickness of precast base is 6" for structures 14' deep or less, and increases 1" in thickness for every 4' of depth greater than 14'.

SECTION

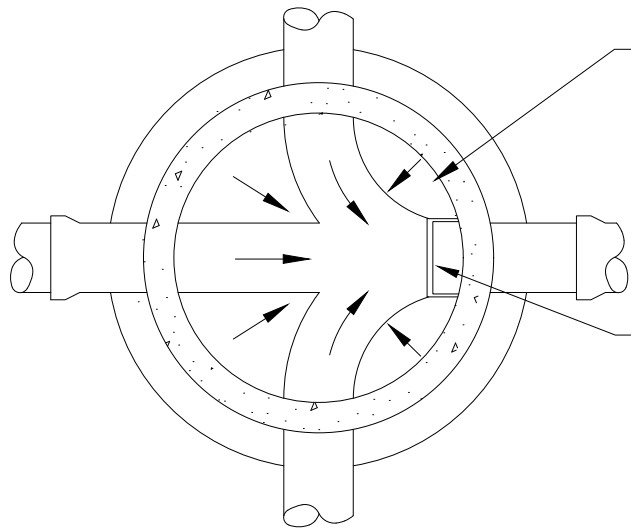


STANDARD DETAILS  
SANITARY SEWER JUNCTION MANHOLE

Last Revision:  
JAN 2019

FARMINGTON, MINNESOTA

City Plate No.  
SAN-02  
2019

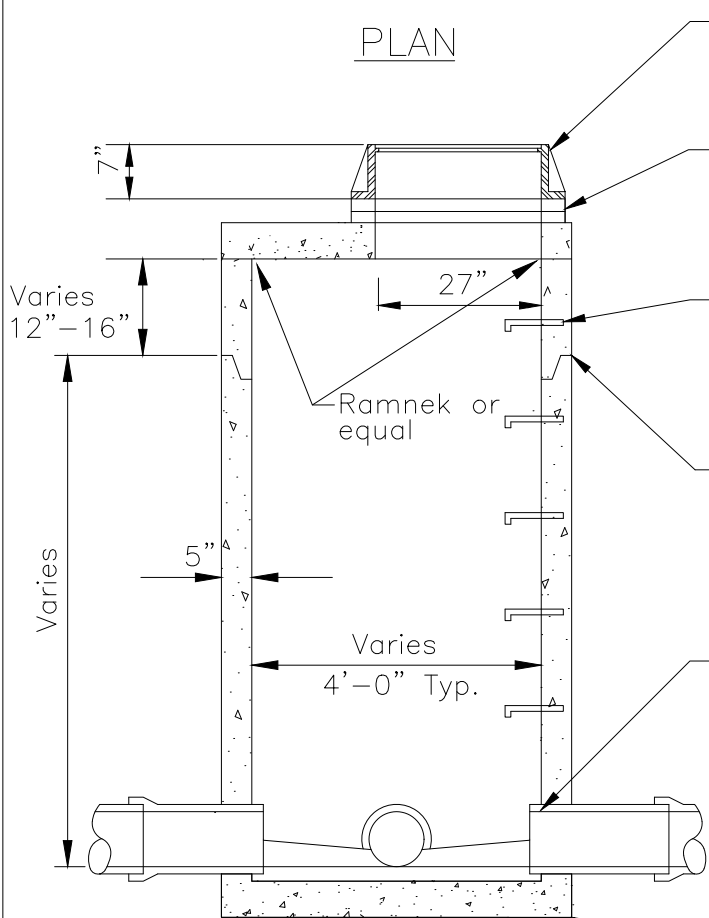


Precast invert must be 1/2 diameter of the pipe and the benches sloped 2" toward invert.

CASTING	A	B
R1642B	27"	7"

Manhole steps shall be placed so that offset vertical portion of cone is facing downstream.

PLAN



Neenah frame and cover or equal, lettered "Sanitary Sewer", with 2 concealed pick holes.

Minimum of 2 and maximum of 5 concrete adjustment rings with full bed of mortar between each. 1 ring with mortar = 0.2'. Infishield chimney seal or approved other.

Manhole steps, Neenah R1981J or equal, 16" on center. Aluminum steps approved.

All joints in manhole to have "O" ring rubber gaskets.

Pipe shall be cut out 2" inside face of wall.

KOR-N-SEAL manhole or equal considered acceptable alternate.

Doghouses shall be grouted on the inside and outside.

Minimum thickness of precast base is 6" for structures 14' deep or less, and increases 1" for every 4' of depth greater than 14' deep.

SECTION



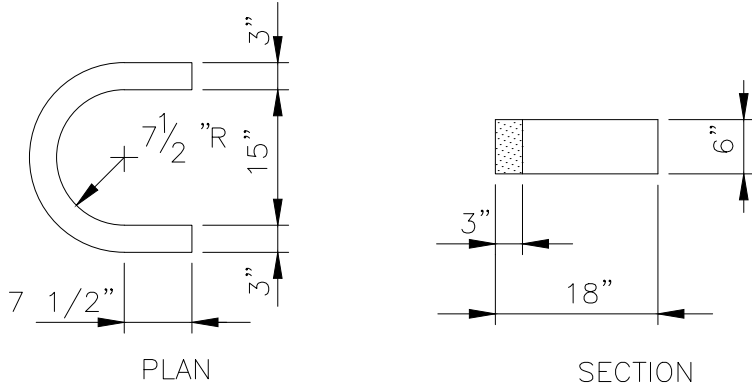
STANDARD DETAILS  
SANITARY SEWER JUNCTION MANHOLE  
WITH REINFORCED TOP SLAB

FARMINGTON, MINNESOTA

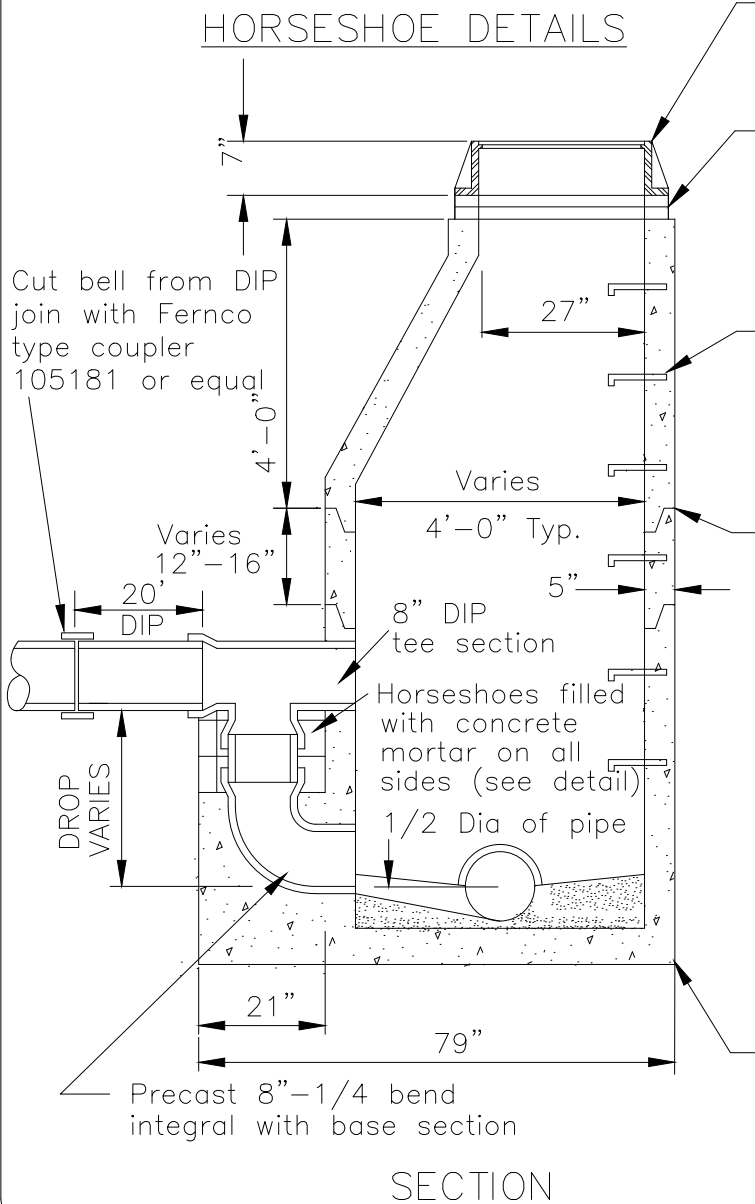
Last Revision:  
JAN 2019

City Plate No.  
SAN-03  
2019





CASTING	A	B
R1642B	27"	7"



- Neenah frame and cover or equal, lettered "Sanitary Sewer", with 2 concealed pick holes.
- Minimum of 2 and maximum of 5 concrete adjustment rings with full bed of mortar between each. 1 ring with mortar = 0.2'. Infishield chimney shield or approved other.
- Manhole steps, Neenah R1981J or equal, 16" on center. Aluminum steps approved. Manhole steps shall be placed so that offset vertical portion of cone is facing downstream.
- All joints in manhole to have "O" ring rubber gaskets.
- Pipe shall be cut out 2" inside face of wall.
- KOR-N-SEAL Manhole or equal considered acceptable alternate.
- Doghouses shall be grouted on the inside and outside.
- Precast invert should be 1/2 diameter of pipe and benches sloped 2" toward invert.
- Minimum thickness of precast base is 6" for structure 14' deep or less, and increases 1" in thickness for every 4' of depth greater than 14' deep.

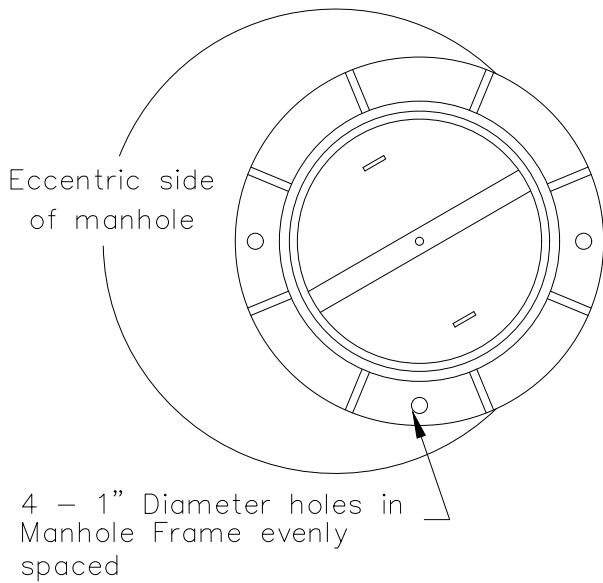


STANDARD DETAILS  
SANITARY SEWER DROP INLET MANHOLE

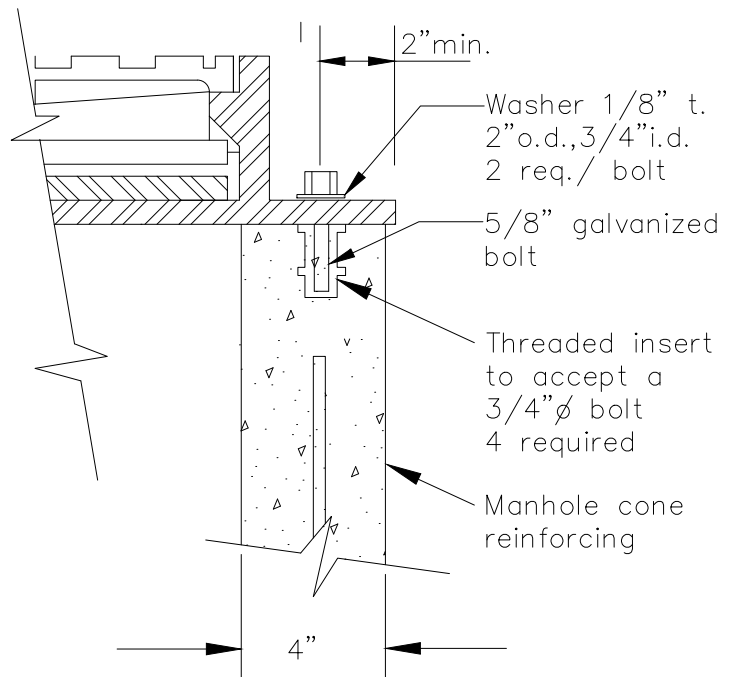
Last Revision:  
JAN 2019

FARMINGTON, MINNESOTA

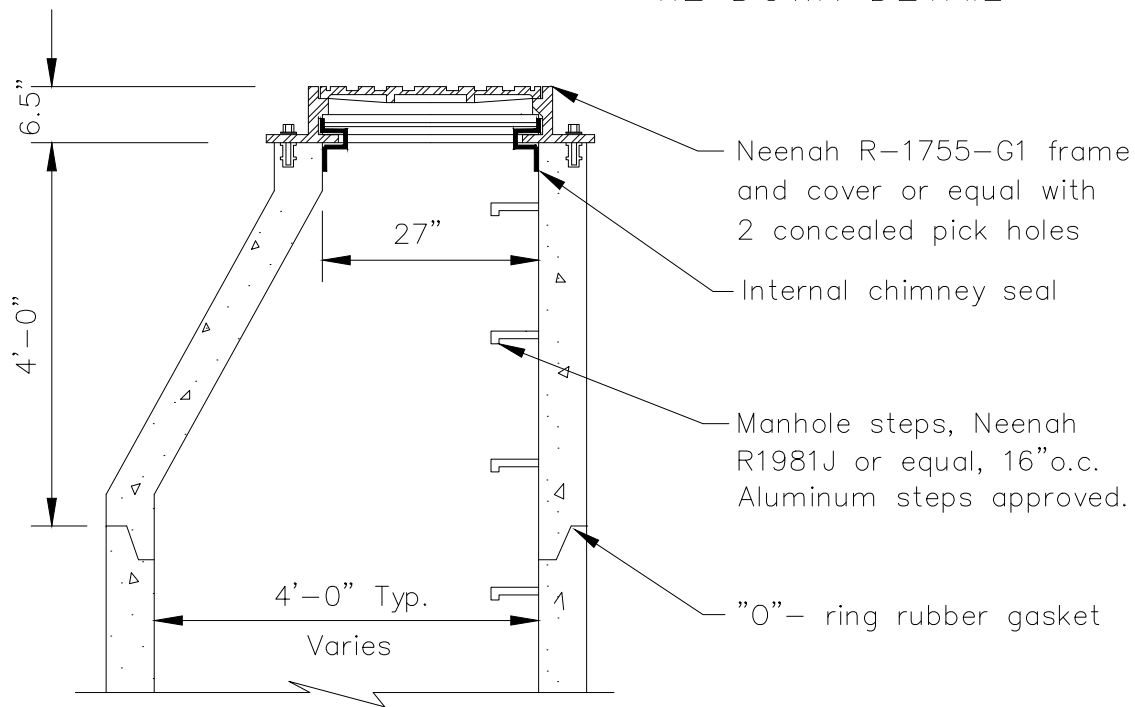
City Plate No.  
SAN-04  
2019



PLAN VIEW  
TOP COVER REMOVED



TIE DOWN DETAIL



ECCENTRIC  
WATERTIGHT MANHOLE



STANDARD DETAILS  
WATERTIGHT CASTING FOR  
SANITARY SEWER MANHOLE

FARMINGTON, MINNESOTA

Last Revision:  
JAN 2004

City Plate No.  
SAN-05  
2019

# INDEX

## SECTION 4 – WATER MAIN

<u>PLATE</u>	<u>DESCRIPTION</u>
WAT-01	HYDRANT
WAT-02	GATE VALVE AND BOX
WAT-04	WATER MAIN WET TAP
WAT-05	CONCRETE THRUST BLOCKING
WAT-06	WATER MAIN OFFSET
WAT-07	TYPICAL GATE VALVE LAYOUT
WAT-08	IRRIGATION SYSTEM TAP, METER, AND BACKFLOW PREVENTOR ASSEMBLY
WAT-09	AIR BLEED

## SECTION 5 – BEDDING

<u>PLATE</u>	<u>DESCRIPTION</u>
BED-01	BEDDING METHODS FOR PVC
BED-02	BEDDING METHODS FOR RCP AND DIP

## SECTION 6 – SERVICES

<u>PLATE</u>	<u>DESCRIPTION</u>
SER-01A	WATER SERVICE CONNECTION
SER-01Ap	WATER SERVICE CONNECTION TO PVC
SER-01B	SANITARY SEWER SERVICE CONNECTION
SER-02	SANITARY SEWER SERVICE RISER
SER-03	SANITARY SEWER SERVICE LINE CLEANOUT

NOTE: REFERENCES ON CITY PLATES ARE TO MnDOT 2018 EDITION SPECIFICATIONS

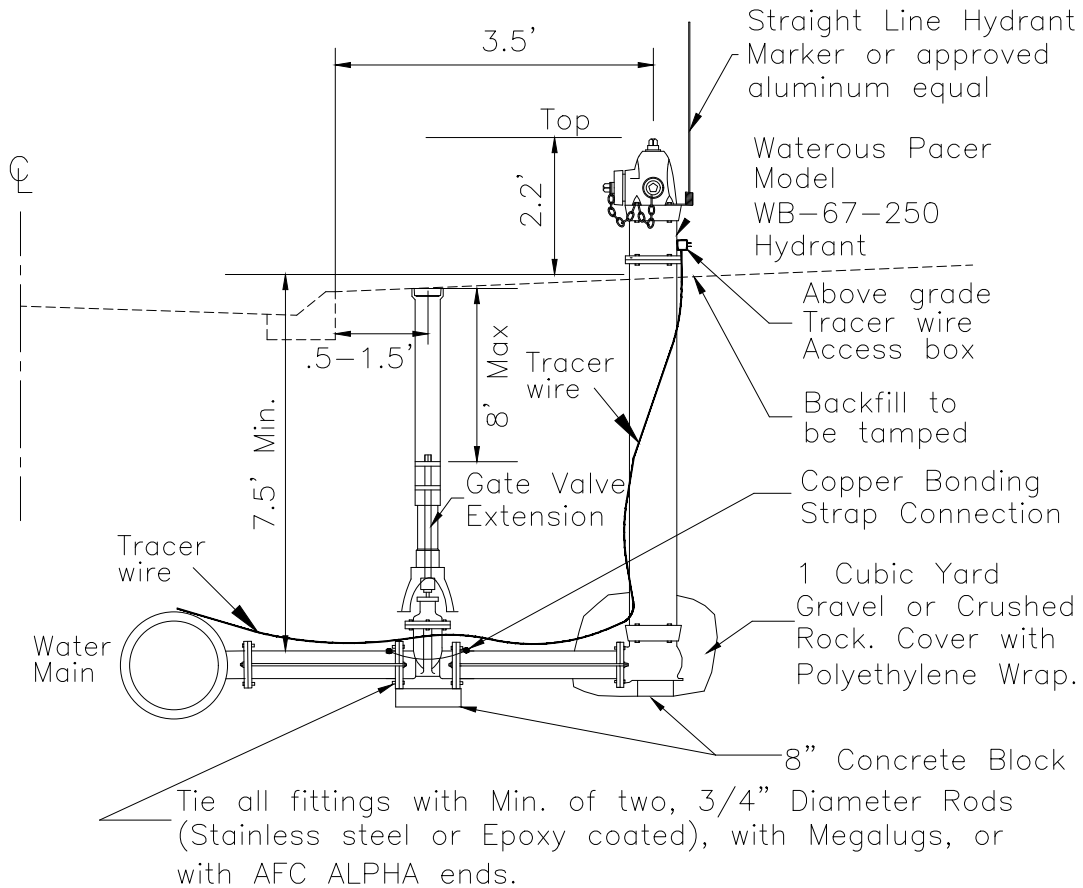


STANDARD DETAILS  
INDEX

FARMINGTON, MINNESOTA

Last Revision:  
JAN 2019

City Plate No.  
INDEX3  
2019



NOTES:

1. Factory installed plugs required whenever hydrants are installed in areas with high groundwater level, as determined by dewatering requirements and City Engineer. All nozzles should be painted black for all hydrants with plugged drain holes. Hydrants with no plugs shall be painted all red.
2. All ductile iron watermain fittings shall be fusion bonded epoxy coated.
3. Hydrants shall be marked with stainless steel tag from factory.
4. All watermain bolts shall be core-blue or approved equal.
5. Hydrants must be stamped for the year installed or up to one year previous.
6. Extensions are required on gate valves >8' deep.
7. Gate valve shall be installed in accordance with City Plate No. WAT-02.
8. Tracer wire shall be 12 gage copper clad steel, extra high strength with minimum 450 lb break load, with minimum 30 mil HDPE insulation thickness.
9. Connections between wires shall be installed with 3-way lockable connectors with dielectric silicon fill to seal out moisture and corrosion.



STANDARD DETAILS  
HYDRANT

Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
WAT-01  
2019

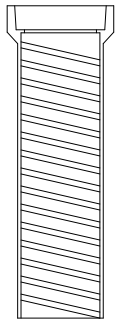


DROP LID  
Power Seal

No. 6860

7.5' minimum cover required  
over top of water main.

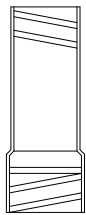
Adjust top to 1/2" below  
grade. Box to be set to  
provide 12" of adjustment.



TOP  
C.I.P.

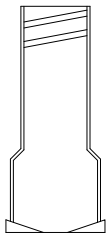
No. 6860 26"

EXTENSION  
D.I.P.

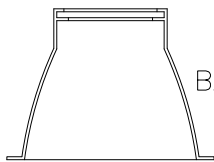


No. 58 14"  
No. 59 18"  
No. 60 24"

BOTTOM  
D.I.P.



No. 6860 65"



BASE

Grade

8' Max

Extensions are required on  
on gate valves >8' deep.

Power Seal No. 6860  
Gate Valve box, screw type,  
3 piece, 5 1/4" shaft, size  
G box, 7'-6" extended,  
#6 round base

All valve box components shall  
be manufactured in the U.S.  
or Canada unless approved by  
the City Engineer.

Resilient Wedge Valve  
Conforming to AWWA  
C-515 standards

Megalugs or  
AFC ALPHA Ends

Copper bonding  
strap connection

Tracer  
wire

8" Concrete Block

Note: All water main bolts are to be core-blue or approved equal.



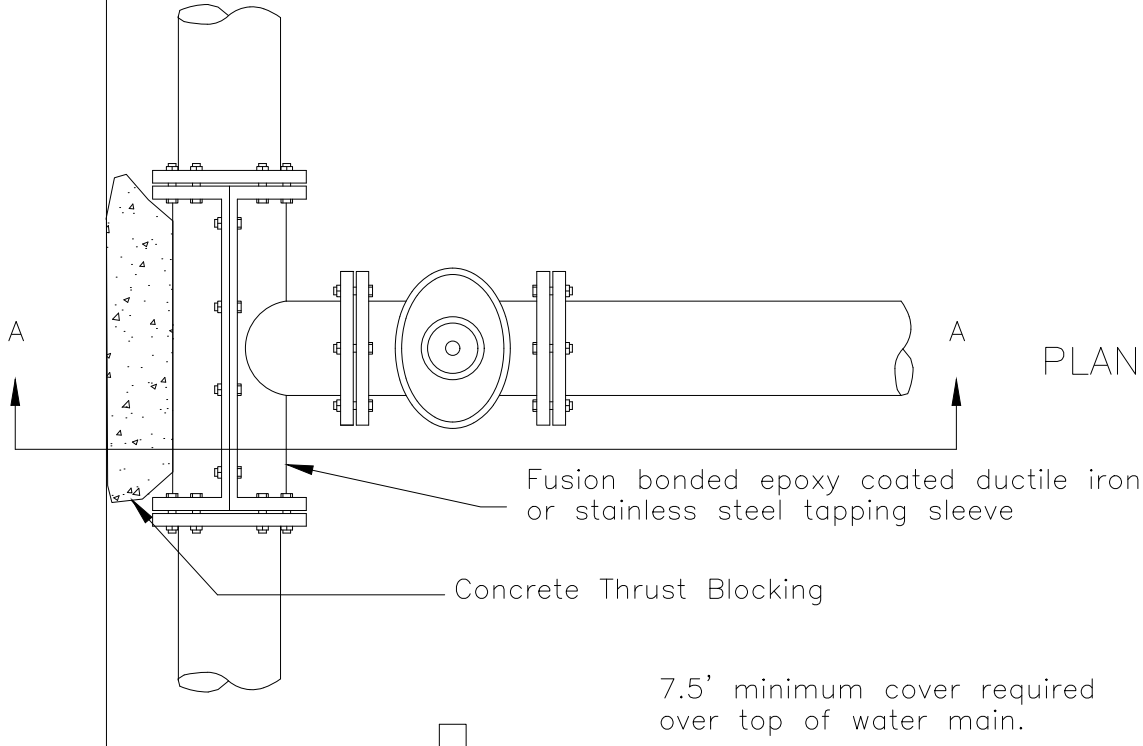
STANDARD DETAILS  
GATE VALVE AND BOX

Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

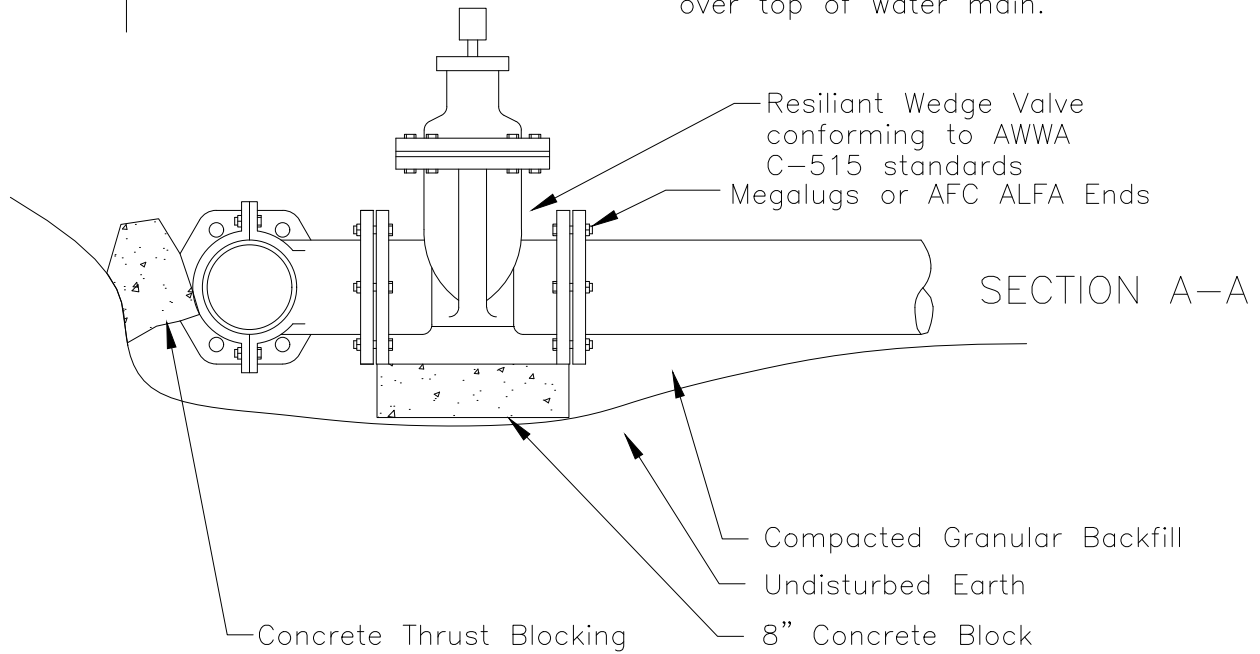
City Plate No.  
WAT-02  
2019

Powersel, Romac, or approved equal fusion bonded epoxy coated ductile iron or stainless steel tapping sleeve.



PLAN

7.5' minimum cover required over top of water main.



SECTION A-A

Note: All water main bolts shall be core-blue or approved equal.



STANDARD DETAILS  
WATER MAIN WET TAP

Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

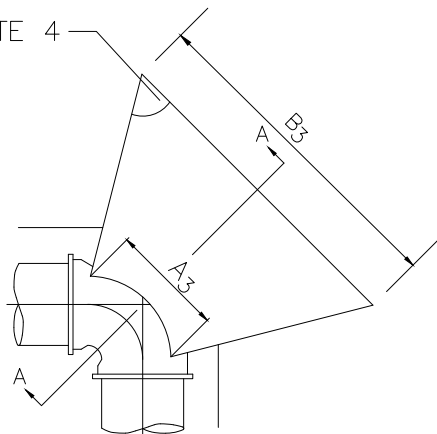
City Plate No.  
WAT-04  
2019

NOTES:

1. Shape of back of buttress may vary as long as poured against firm undisturbed earth.
2. Dimension C1,C2,C3 should be large enough to make angle  $\theta$  equal to or larger than 45°.
3. Dimension A1,A2,A3 should be as large as possible without interfering with MJ bolts.
4.  $\theta = 45^\circ$  Minimum.
5. Place polyethylene between Concrete & pipe.
5. Megalugs shall be installed on all bends.

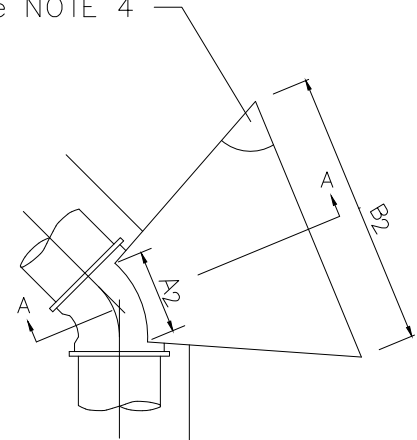
BUTTRESS DIMENSIONS						
PIPE SIZE	22 1/2° BEND		45° BEND		90° BEND	
	B1	D1	B2	D2	B3	D3
6"	1'-5"	1'-5"	1'-5"	1'-5"	2'-1"	1'-6"
8"	1'-5"	1'-5"	2'-1"	1'-6"	2'-8"	2'-0"
12"	1'-10"	1'-10"	3'-4"	2'-0"	4'-9"	2'-6"
16"	3'-0"	2'-0"	3'-10"	3'-0"	6'-2"	3'-6"
20"	3'-6"	2'-8"	5'-6"	3'-4"	8'-4"	4'-0"
24"	4'-4"	3'-0"	6'-10"	3'-10"	9'-8"	5'-0"
30"	-	-	9'-3"	6'-0"	17'-0"	6'-0"

$\theta$  - See NOTE 4



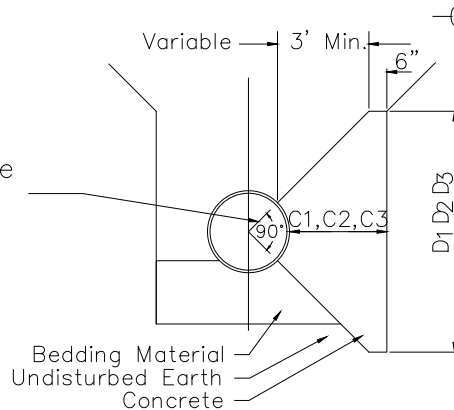
PLAN 90° BENDS

$\theta$  - See NOTE 4



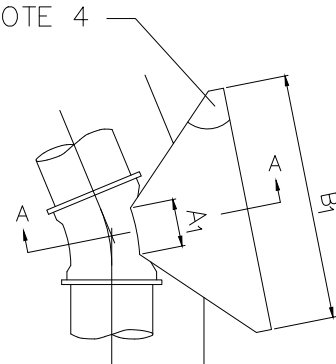
PLAN 45° BENDS

Concrete shall be in contact with this quadrant of pipe



SECTION A-A

$\theta$  - See NOTE 4



PLAN 22 1/2° BENDS

Note: All water main bolts shall be core-blue or approved equal.

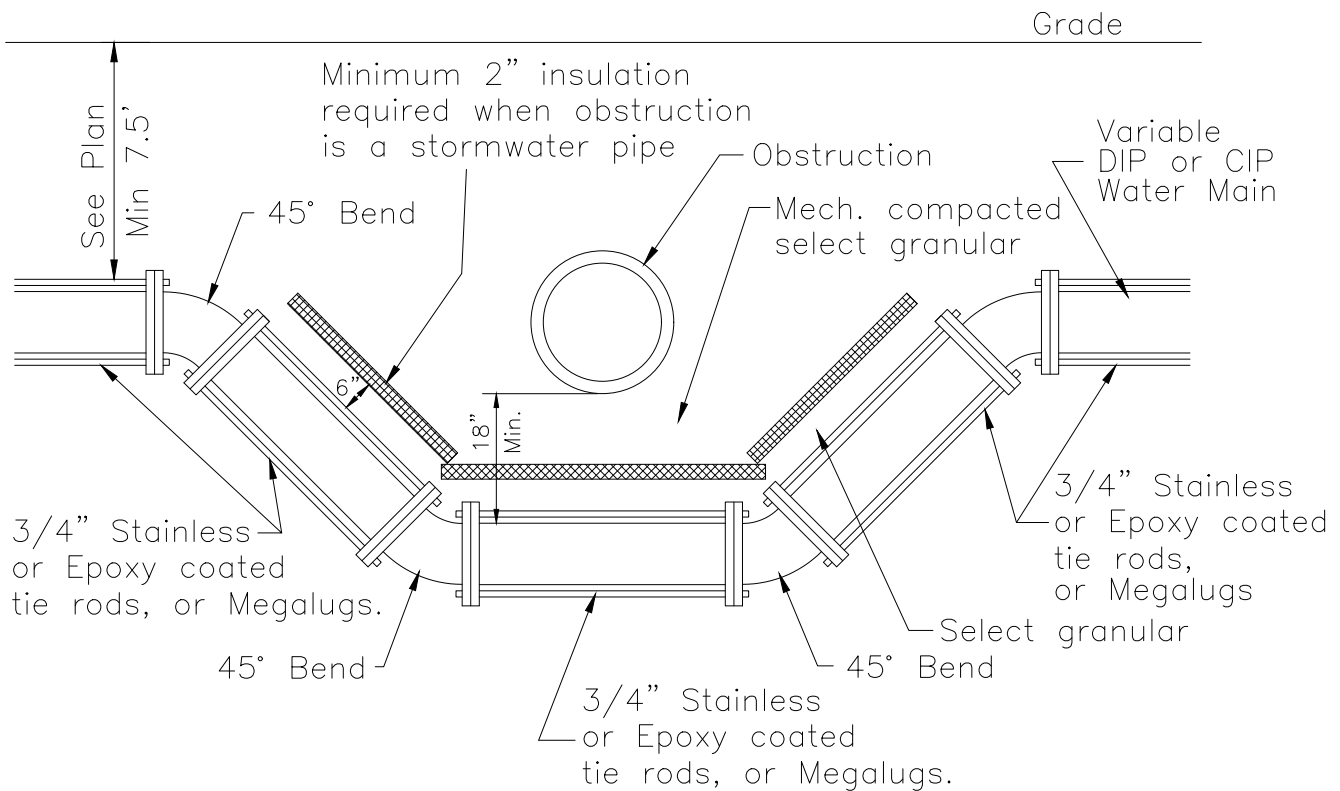


STANDARD DETAILS  
CONCRETE THRUST BLOCKING

FARMINGTON, MINNESOTA

Last Revision:  
FEB 2002

City Plate No.  
WAT-05  
2019



NOTE:

1. All fittings shall be fusion bonded epoxy coated ductile iron to meet or exceed ANSI/AWWA C550 and C116/A21.116 requirements.
2. Select granular will be required between insulation, water main, and obstruction.
3. All bends shall have megalugs or tie rods with blocking in accordance with City Plate No. WAT-05.
4. Copper bonding strap connections shall be used to connect all sections of pipe.
5. All water main bolts shall be core-blue or approved equal.



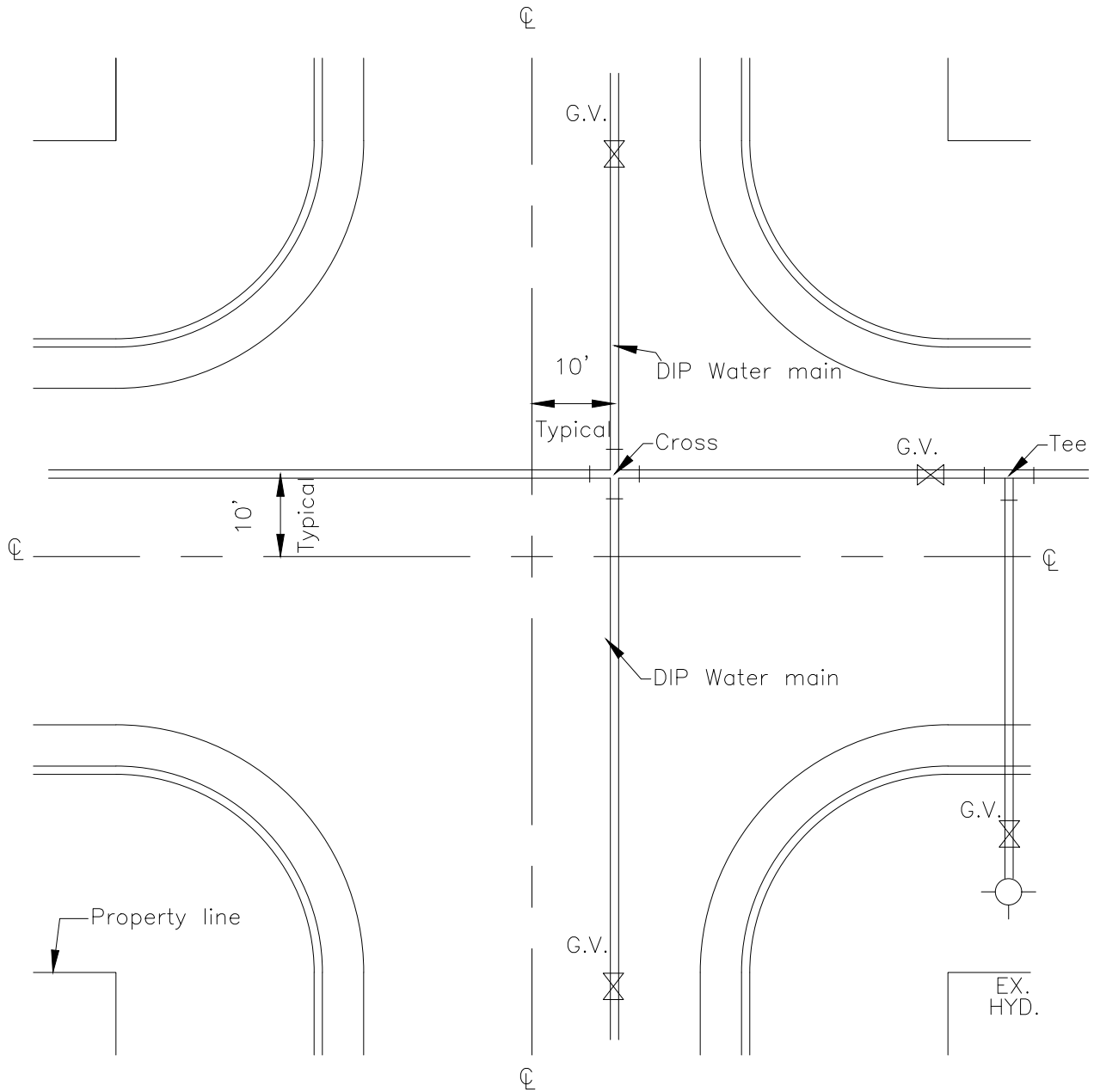
STANDARD DETAILS  
WATER MAIN OFFSET

Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
WAT-06  
2019





NOTE:

1. See City Plate No. WAT-01 for typical hydrant and gate valve layout.
2. See City Plate No. SER-01A and SER-01Ap for typical water service connection.
3. All water main shall be placed north and east of the center line of road.
4. All ductile iron water main fittings shall be fusion bonded epoxy coated.

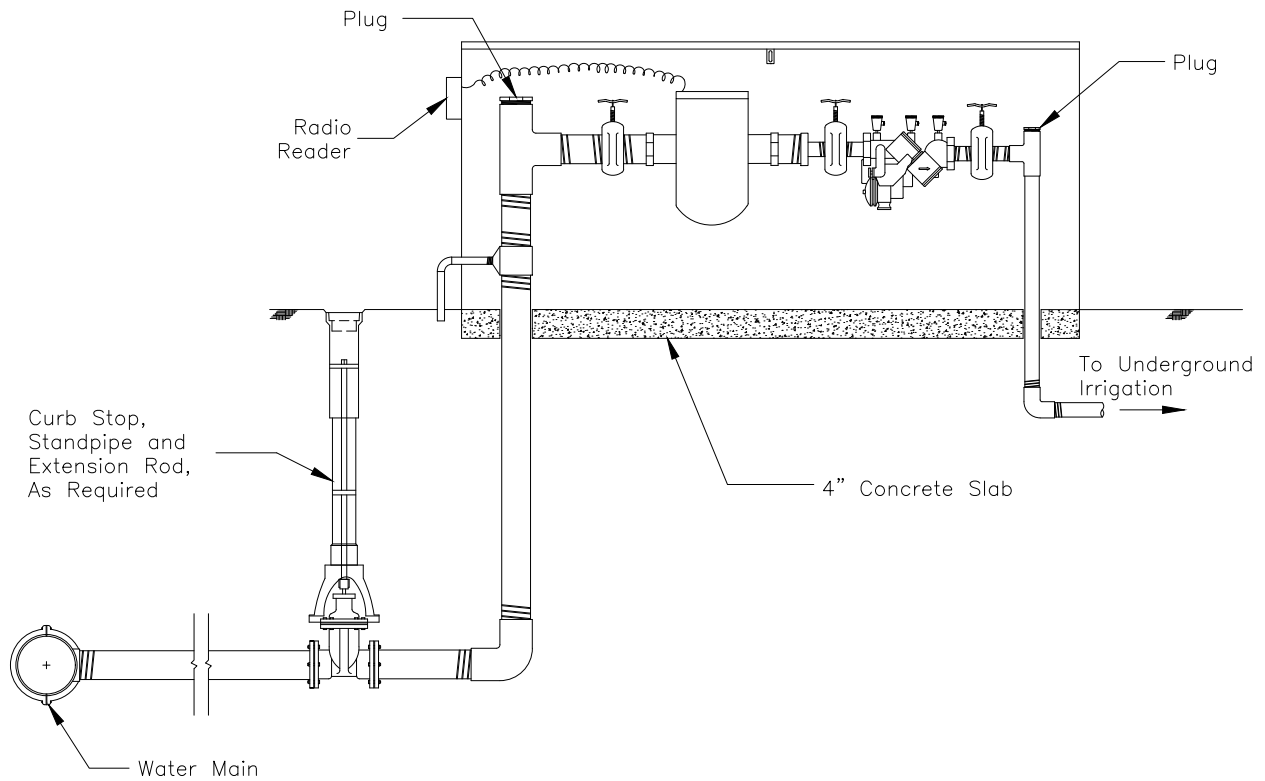


STANDARD DETAILS  
TYPICAL GATE VALVE LAYOUT

Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
WAT-07  
2019



NOTE:

1. To winterize, remove and drain meter, siphon water from feed line, blow out irrigation lines and reinstall meter.
2. Security box must be maintenance free protective enclosure, with hinged top.

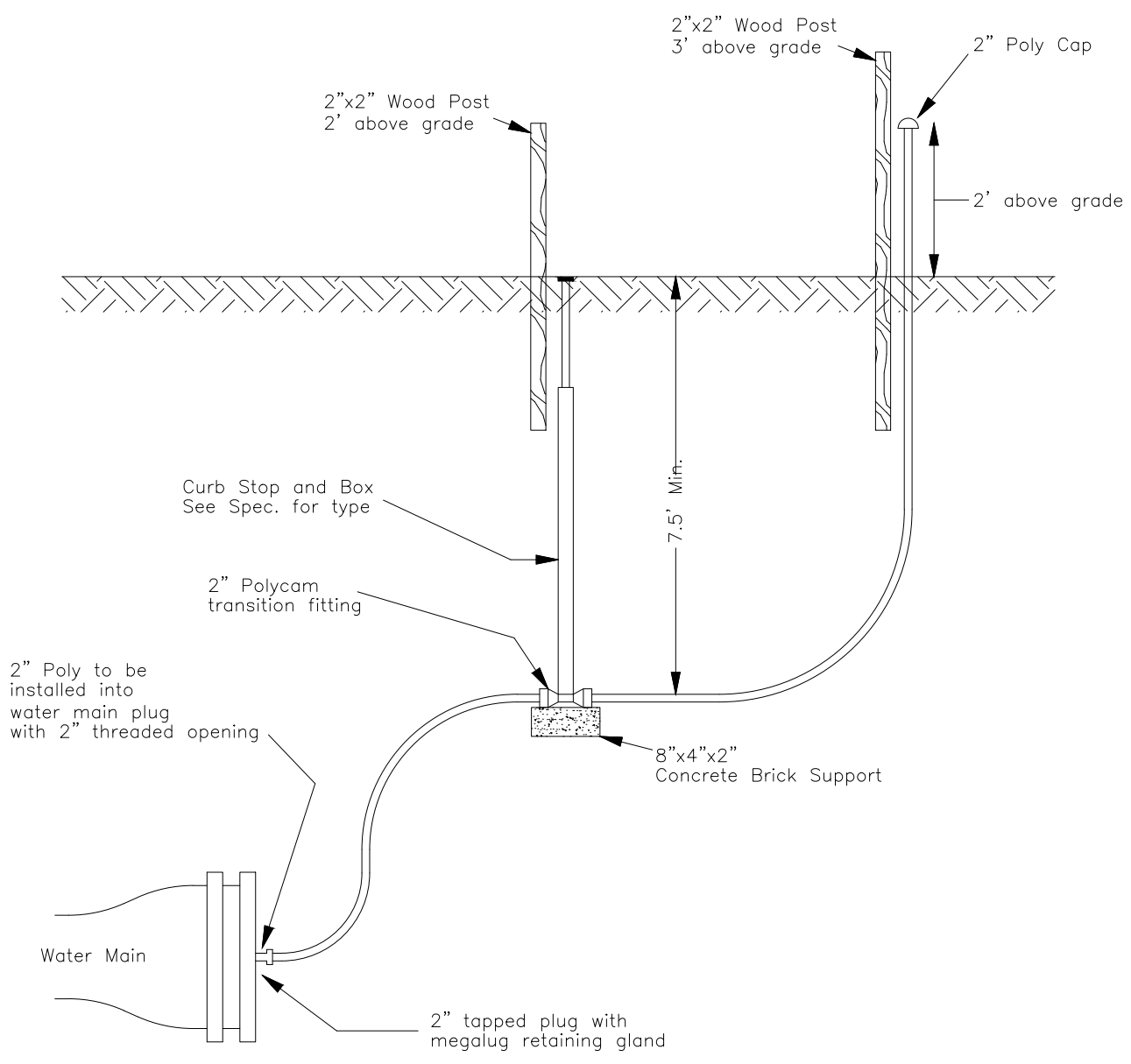


STANDARD DETAILS  
IRRIGATION SYSTEM TAP, METER, AND  
BACKFLOW PREVENTOR ASSEMBLY

Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
WAT-08  
2019

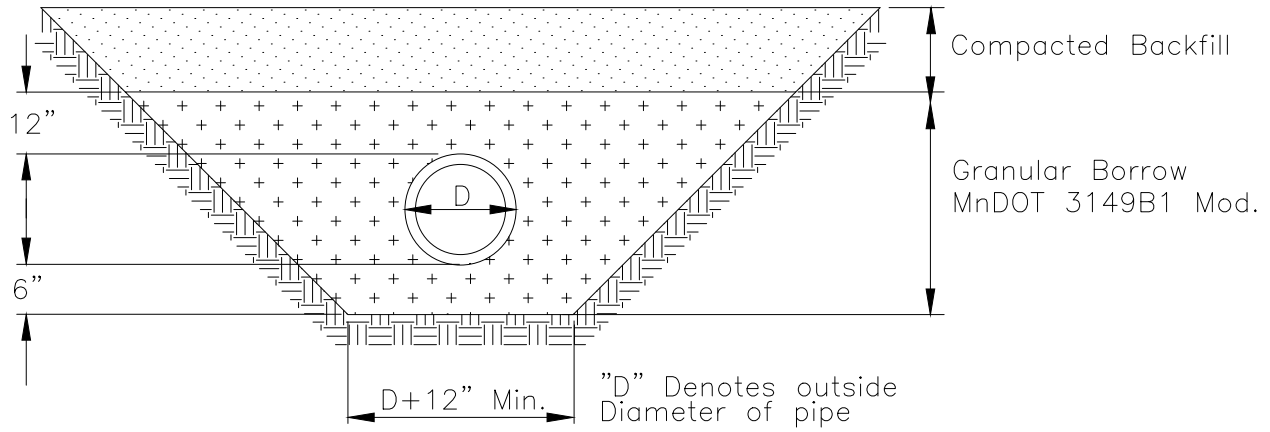


STANDARD DETAILS  
AIR BLEED

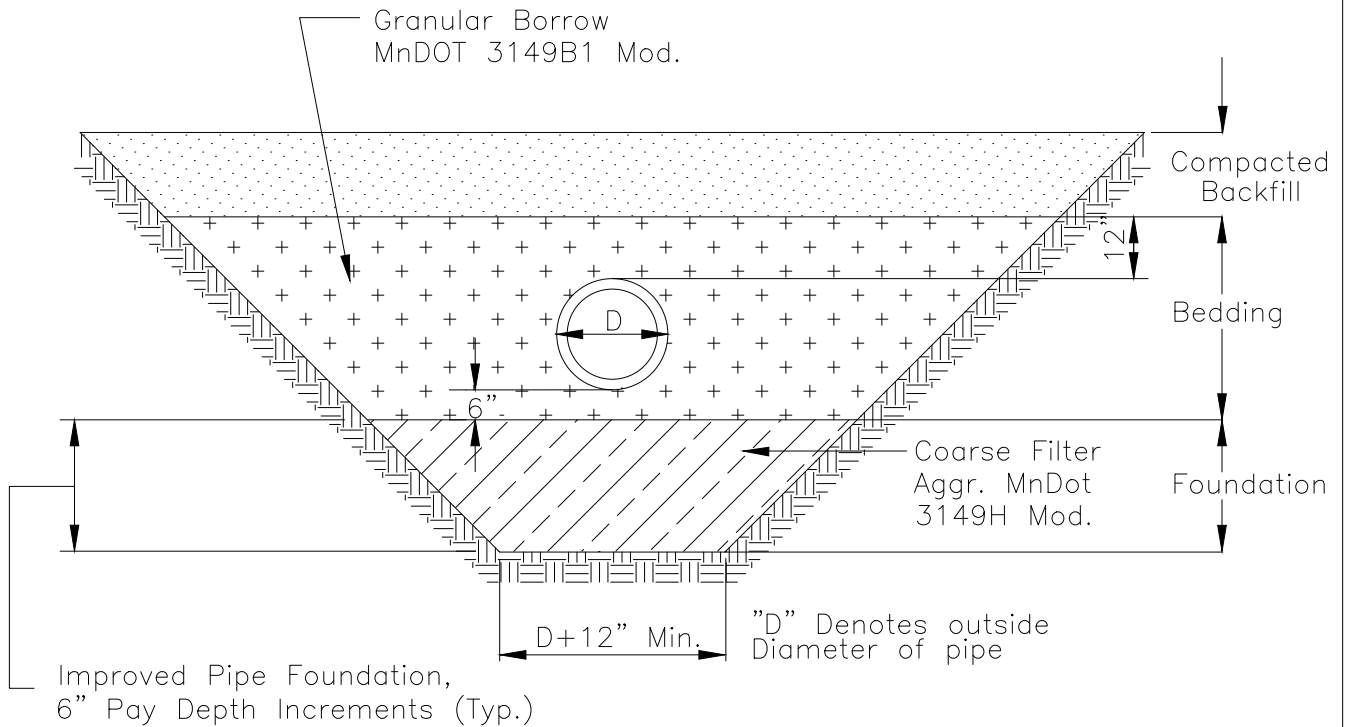
Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
WAT-09  
2019



PIPE FOUNDATION & BEDDING IN GOOD SOILS



PIPE FOUNDATION & BEDDING IN POOR SOILS

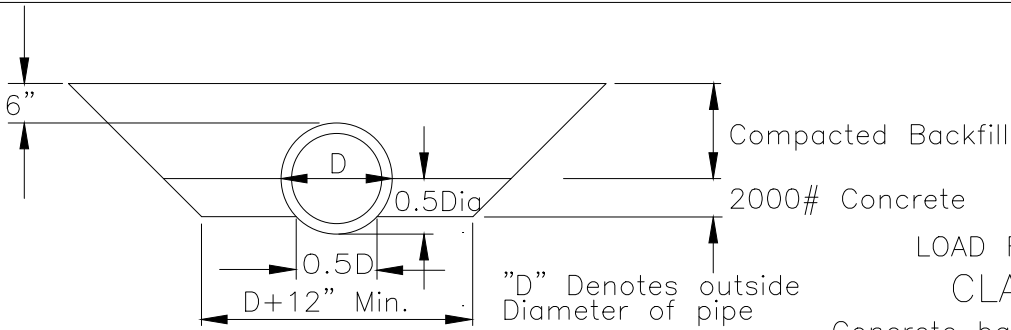


STANDARD DETAILS  
BEDDING METHODS  
FOR PVC

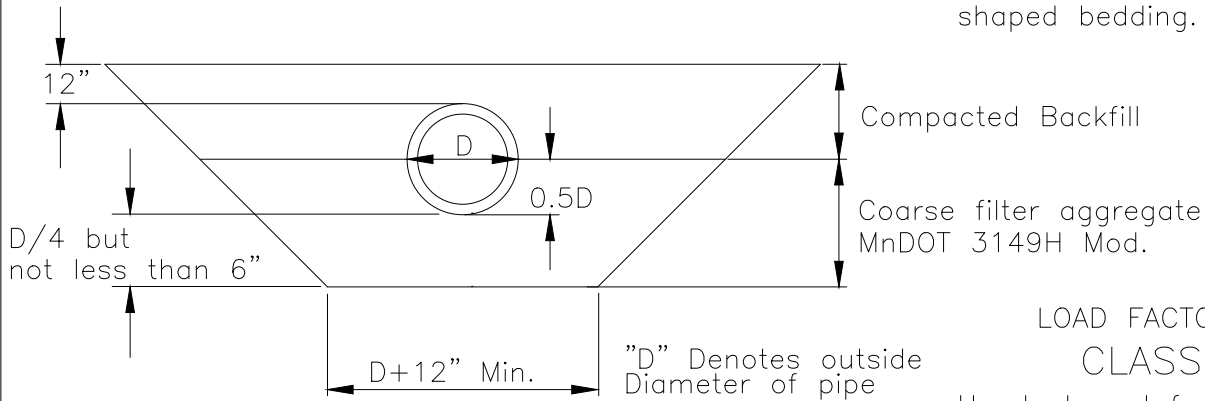
Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

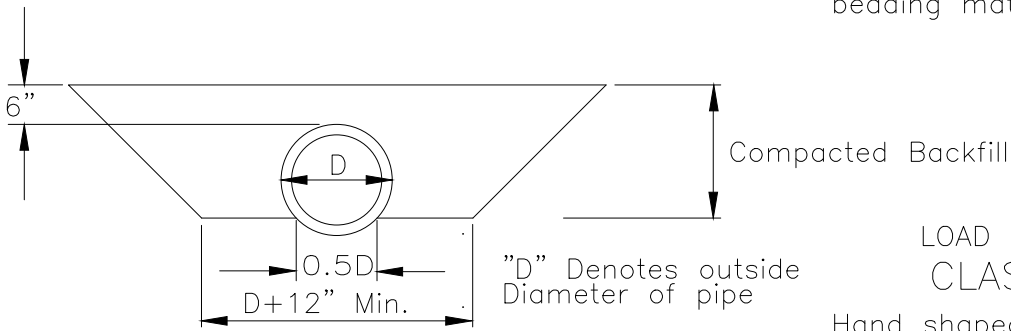
City Plate No.  
BED-01  
2019



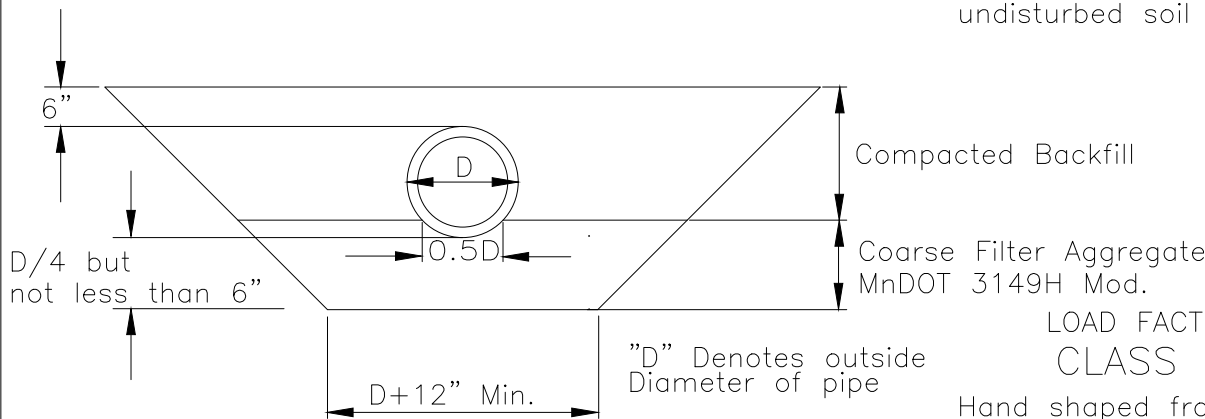
LOAD FACTOR 2.3  
**CLASS A**  
 Concrete backfill to 0.5 of outside diameter with shaped bedding.



LOAD FACTOR 1.9  
**CLASS B**  
 Hand shaped from angular bedding material



LOAD FACTOR 1.5  
**CLASS C-1**  
 Hand shaped from firm undisturbed soil



LOAD FACTOR 1.5  
**CLASS C-2**  
 Hand shaped from Angular Bedding Material



STANDARD DETAILS  
 BEDDING METHODS  
 FOR RCP AND DIP

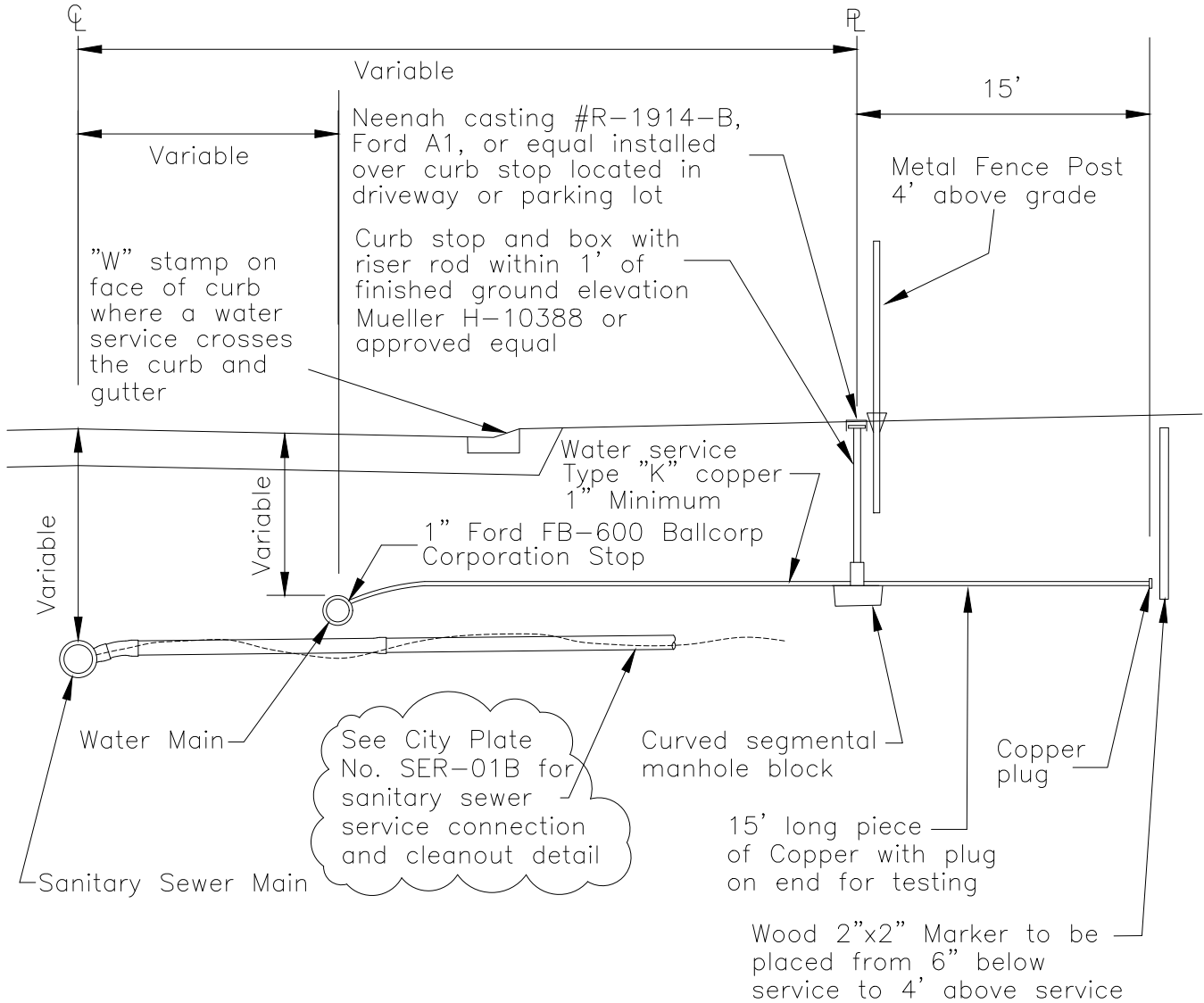
Last Revision:  
 FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
 BED-02  
 2019

NOTE:

1. All new curb boxes must have riser rods. When an existing curb box is on a construction or reconstruction project, riser rods shall be installed in all curb boxes on that project.
2. Placement of curb stop and box on private streets shall be 10' back of curb with no copper stubbed past the curb stop and box.
3. A "W" stamp per City Plate No. STR-28 must be placed on the face of curb wherever a water service crosses the curb and gutter.



STANDARD DETAILS  
 WATER SERVICE CONNECTION  
 COPPER SERVICE PIPE

FARMINGTON, MINNESOTA

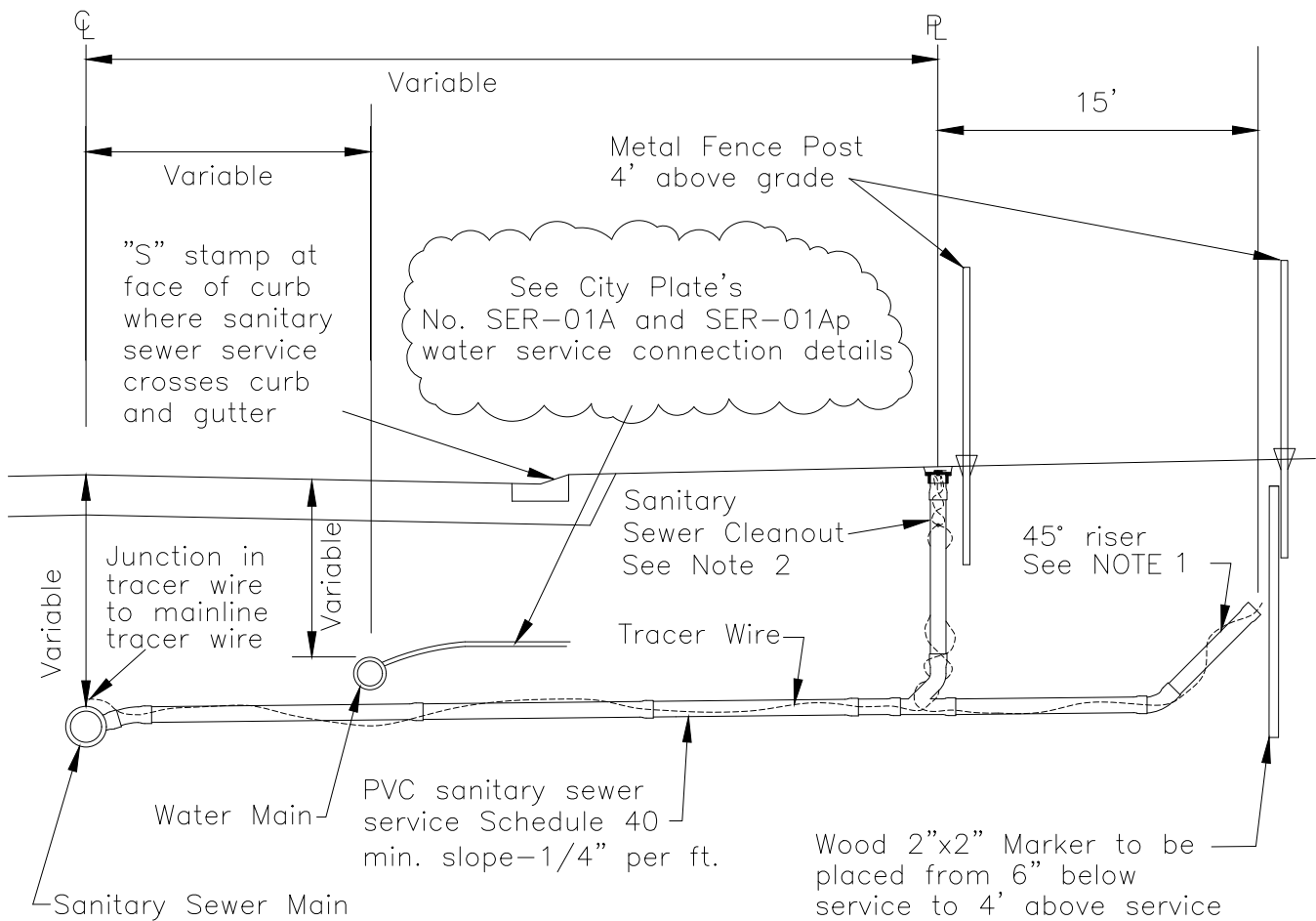
Last Revision:  
 JAN 2019

City Plate No.  
 SER-01A  
 2019



NOTE:

1. A 45° riser is required to bring the sanitary sewer service line to the same elevation as the water service (7.5' – 8') at 15' beyond the property line. Whenever sanitary sewer service lines are installed in areas of high groundwater, the service line riser shall extend above groundwater level.
2. A cleanout is required on all sewer sanitary service lines at the property line, per City Plate No. SER-03.
3. An "S" stamp per City Plate No. STR-28 must be placed on the face of curb wherever a sanitary sewer service crosses the curb and gutter.
4. Tracer wire shall be installed along the service line from the sanitary sewer main to the cleanout and from the service termination at the riser to the cleanout per City Plate No. SER-03.
5. Tracer wire shall be 12 gage copper clad steel, extra high strength with minimum 450 lb break load, with minimum 30 mil HDPE insulation thickness.
6. Connections between wires shall be installed with 3-way lockable connectors with dielectric silicon fill to seal out moisture and corrosion.
7. Provide 5 lb magnesium anode rod at the tracer wire end at the house foundation (Copperhead ANO-1005 or approved equal).
8. For private roads, a cleanout with a tracer wire must be placed as close to the building as possible as referenced in the City of Farmington Engineering Guidelines.



STANDARD DETAILS  
SANITARY SEWER SERVICE CONNECTION

Last Revision:  
JAN 2019

FARMINGTON, MINNESOTA

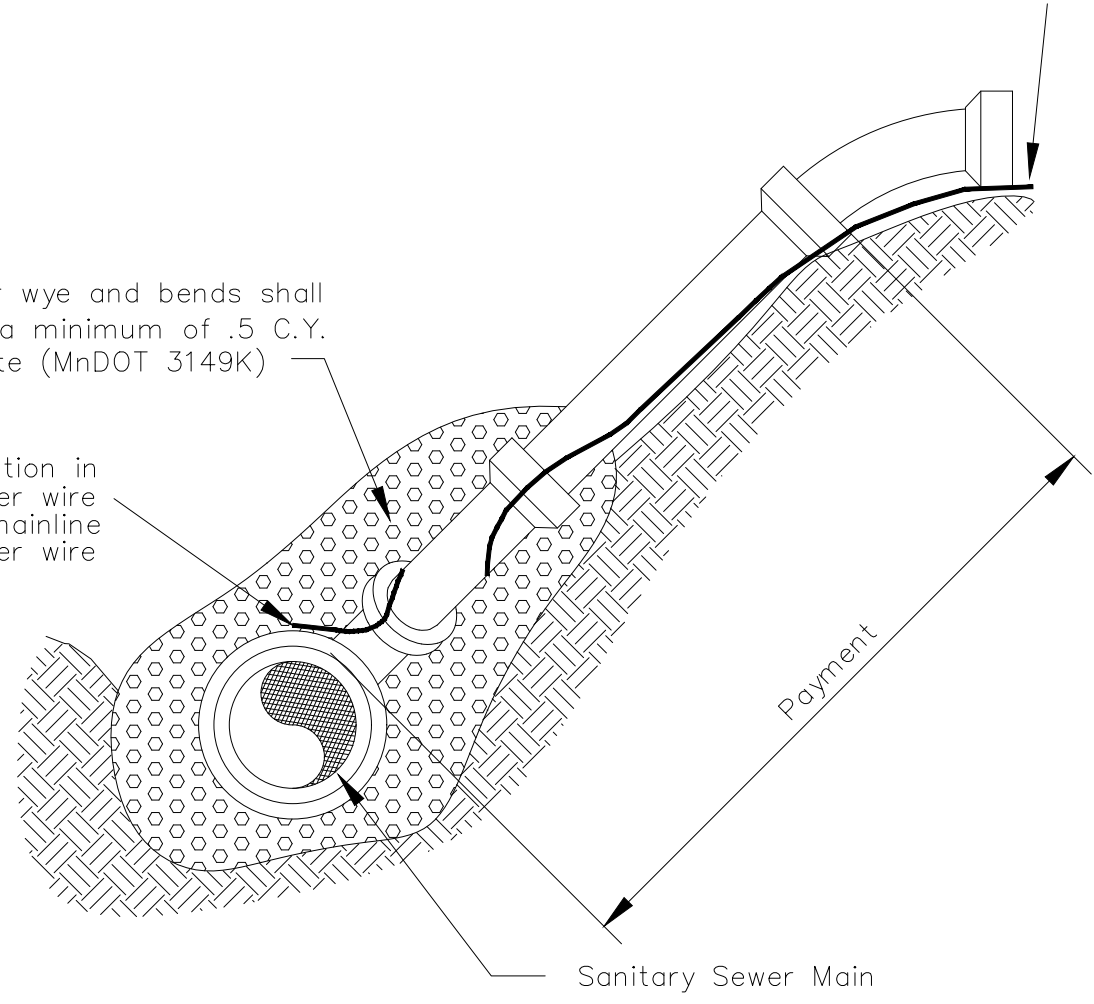
City Plate No.  
SER-01B  
2019



Tracer wire  
See City Plate No. SER-01B

Support for wye and bends shall consist of a minimum of .5 C.Y. of aggregate (MnDOT 3149K)

Junction in tracer wire to mainline tracer wire



NOTE:

1. Service shall be a minimum of 10' deep at the right of way or easement line unless otherwise approved by the City Engineer.
2. Provide 5 lb magnesium anode rod at tracer wire end at house foundation. (Copperhead ANO-1005 or approved equal).
3. Tracer wire shall be 12 gage copper clad steel, extra high strength with minimum 450 lb break load, with minimum 30 mil HDPE insulation thickness.
4. Connections between wires shall be installed with 3-way lockable connectors with dielectric silicon fill to seal out moisture and corrosion.
5. See Guildlines for details on deep service connection requirements.



STANDARD DETAILS  
SANITARY SEWER SERVICE RISER

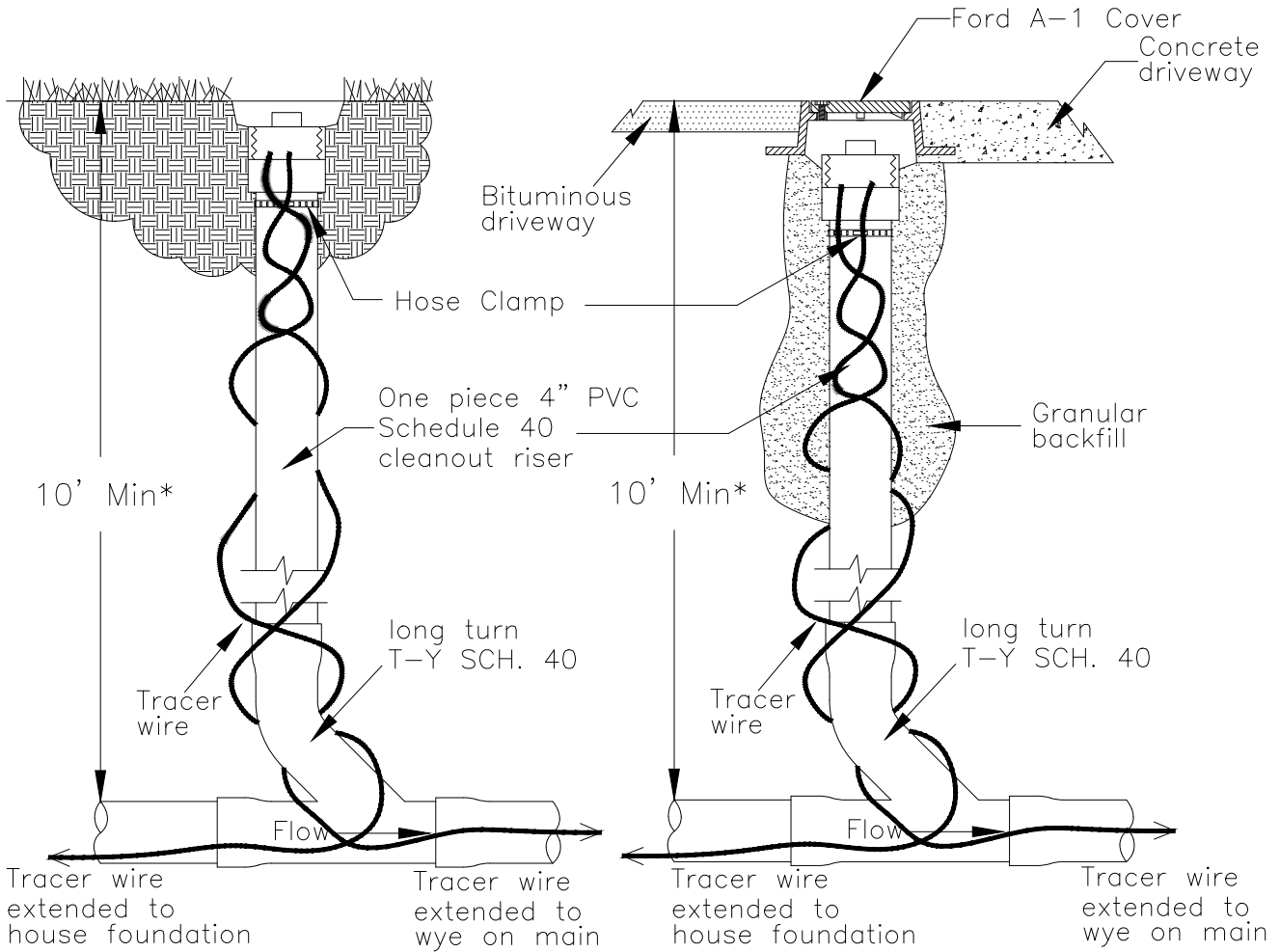
FARMINGTON, MINNESOTA

Last Revision:  
JAN 2019

City Plate No.  
SER-02  
2019

NOTE:

1. Cleanout shall be capped with a PVC sewer cleanout adapter and galvanized metal square head screw-in plug (Matco-Norca MGPL11 or approved equal).
2. Tracer wires shall be run outside of service from the street wye (with an anode rod) to the cleanout and from the cleanout to the house foundation.
3. Tracer wires shall extend 12" beyond the top of the cleanout cap and shall be secured to the riser with a stainless steel hose clamp.
4. Tracer wire shall be 12 gage copper clad steel, extra high strength with minimum 450 lb break load, with minimum 30 mil HDPE insulation thickness.
5. Connections between wires shall be installed with 3-way lockable connectors with dielectric silicon fill to seal out moisture and corrosion.
6. Cleanouts in driveways shall require a Ford A-1 Cover or approved equal for access.



CLEANOUT IN TURF

CLEANOUT IN DWY

\*Unless otherwise approved by the City Engineer.



STANDARD DETAILS  
SANITARY SEWER SERVICE LINE CLEANOUT

Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
SER-03  
2019

# INDEX

## SECTION 7 – EROSION CONTROL

<u>PLATE</u>	<u>DESCRIPTION</u>
ERO-01A	SILT FENCE MACHINE SLICED
ERO-02	SILT FENCE HEAVY DUTY
ERO-03	SILT CURTAIN
ERO-04	EROSION CONTROL AROUND CATCH BASIN
ERO-05	BEEHIVE CASTING AND FLARED END SECTION EROSION CONTROL
ERO-06	DITCH BLOCKING
ERO-07	SHEET DRAINAGE EROSION CONTROL
ERO-08A	DEVELOPMENT STABILIZED CONSTRUCTION EXIT
ERO-08B	RECONSTRUCTION PROJECT STABILIZED CONSTRUCTION EXIT
ERO-09	RESIDENTIAL STABILIZED CONSTRUCTION EXIT
ERO-10	TEMPORARY SEDIMENTATION BASIN WITH OUTLET PIPE
ERO-11	TEMPORARY SEDIMENTATION BASIN WITH OVERFLOW SPILLWAY
ERO-12	INLET PROTECTION DEVICES
ERO-13	SEDIMENT CONTROL LOG

## SECTION 8 – GENERAL

<u>PLATE</u>	<u>DESCRIPTION</u>
GEN-01	STRUCTURE MARKER SIGNS
GEN-02	INSULATION
GEN-04	CONCRETE BASE FOR LIGHTING POLES
GEN-05	SPUN ALUMINUM COLLAR FOR RESIDENTIAL STREET LIGHTING
GEN-06	STREET LIGHT RESIDENTIAL DISTRICT
GEN-07	STREET LIGHT DOWNTOWN DISTRICT
GEN-08	STREET LIGHT HERITAGE DISTRICT
GEN-09	REGULATORY SIGN
GEN-10	STREET SIGN
GEN-10A	PRIVATE STREET SIGN
GEN-11	SHRUB PLANTING
GEN-12A	TREE PLANTING; LOT FRONTAGE TREES
GEN-12B	TREE PLANTING; BOULEVARD TREE ROUTE
GEN-13	CITY NATURAL AREA, CONSERVATION AREA, AND WETLAND BUFFER SIGNS
GEN-14	TYPICAL PARKING DESIGNS
GEN-15	SUBGRADE CORRECTION
GEN-16	UTILITY CROSSINGS
GEN-17	CERTIFICATE OF SURVEY

NOTE: REFERENCES ON CITY PLATES ARE TO MnDOT 2018 EDITION SPECIFICATIONS

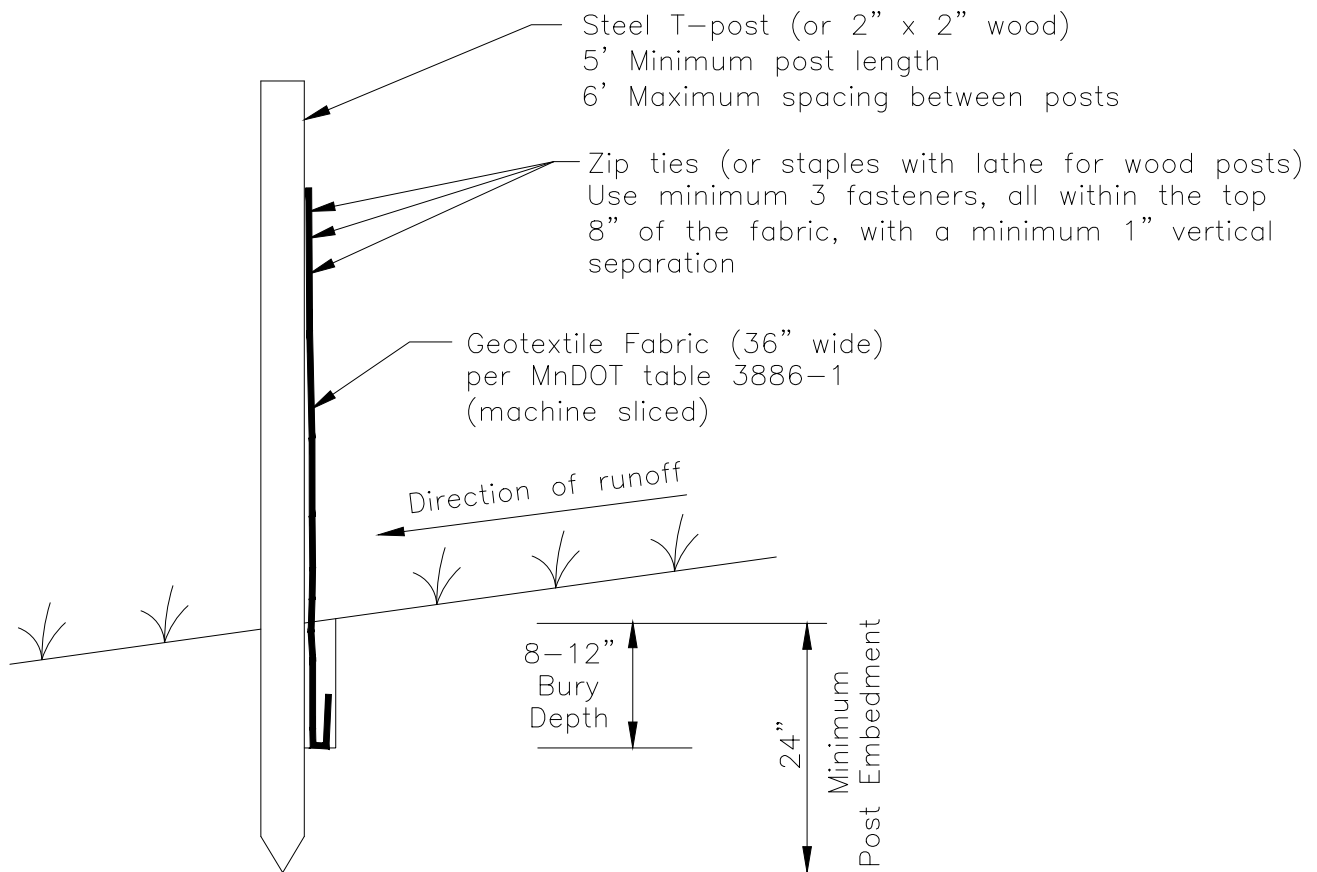


### STANDARD DETAILS INDEX

Last Revision:  
APR 2017

City Plate No.  
INDEX4  
2019

FARMINGTON, MINNESOTA



NOTE:

1. Following geotextile installation but prior to post installation, compact soil on both sides of geotextile fabric with tires of installation equipment or bobcat.
2. Machine sliced is the assumed standard installation method. Alternative methods require prior approval.

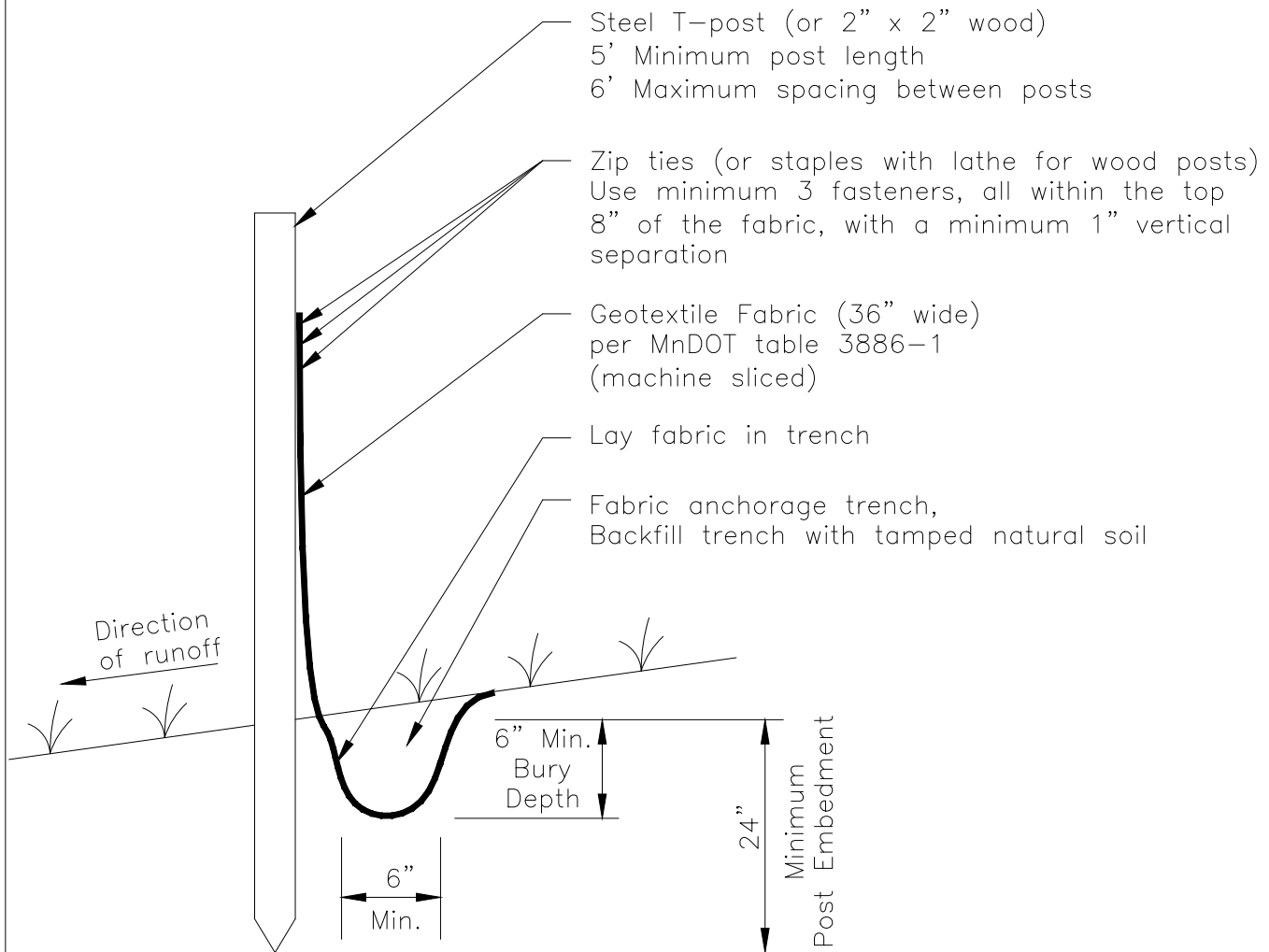


STANDARD DETAILS  
 SILT FENCE  
 MACHINE SLICED

Last Revision:  
 FEB 2017

City Plate No.  
 ERO-01A  
 2019

FARMINGTON, MINNESOTA



**NOTE:**

1. Following geotextile installation but prior to post installation, compact soil with light equipment.
2. Machine sliced (City Plate No. ERO-01A) is the assumed standard installation method. Alternative methods require prior approval.

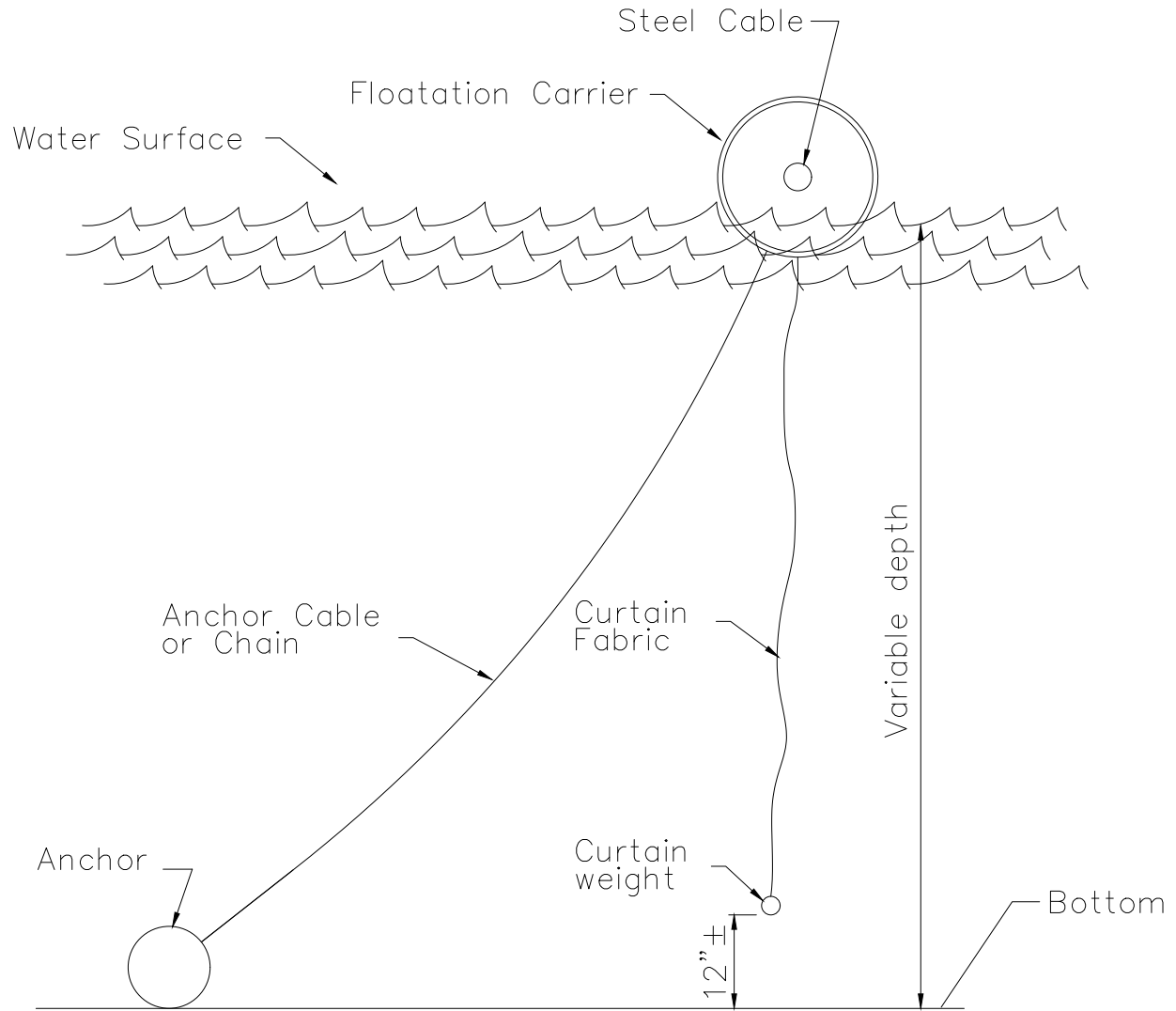


STANDARD DETAILS  
 SILT FENCE  
 HEAVY DUTY

Last Revision:  
 FEB 2017

City Plate No.  
 ERO-02  
 2019

FARMINGTON, MINNESOTA



STANDARD DETAILS  
SILT CURTAIN

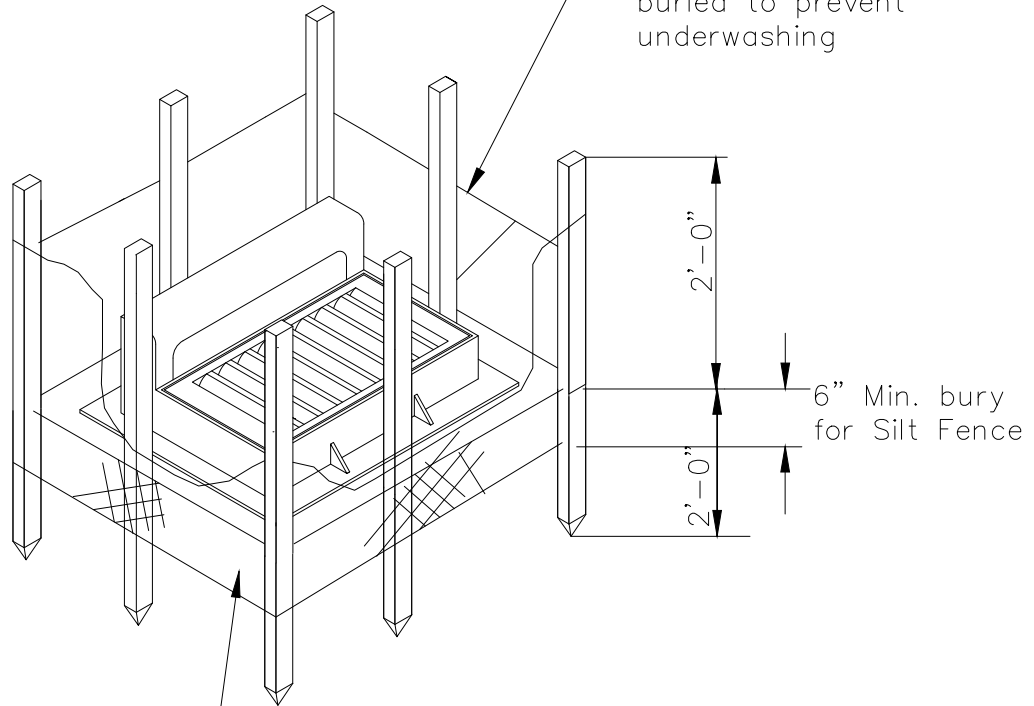
Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
ERO-03  
2019

2" X 4" X 4' long Wood Posts, 8 required

Silt (Geotextile) Fence, as specified. Bottom 6" of Fabric to be buried to prevent underwashing



3/4" washed river rock  
1' deep X 1' wide around  
outside perimeter of Silt Fencing.

NOTES:

Contractor to set posts and fabric around the basin during the backfilling operation. Size and shape of the barrier shall be modified to fit structure. Silt fence to be placed around entire perimeter. Top of silt fence to have 12" minimum clearance to existing grade.



STANDARD DETAILS  
EROSION CONTROL AROUND CATCH BASIN

Last Revision:  
MAY 2000

FARMINGTON, MINNESOTA

City Plate No.  
ERO-04  
2019

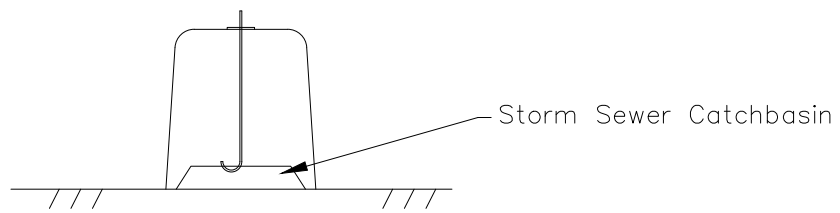
A. SILT FENCE AROUND BEEHIVE



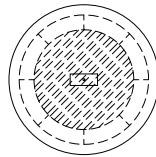
NOTE:

1. Minimum of 8 – 2" X 2" wood posts or steel posts are required
2. Install bracing at the top of the wood posts such that the posts are supported from outside forces

B. EROSION CONTROL SHROUD



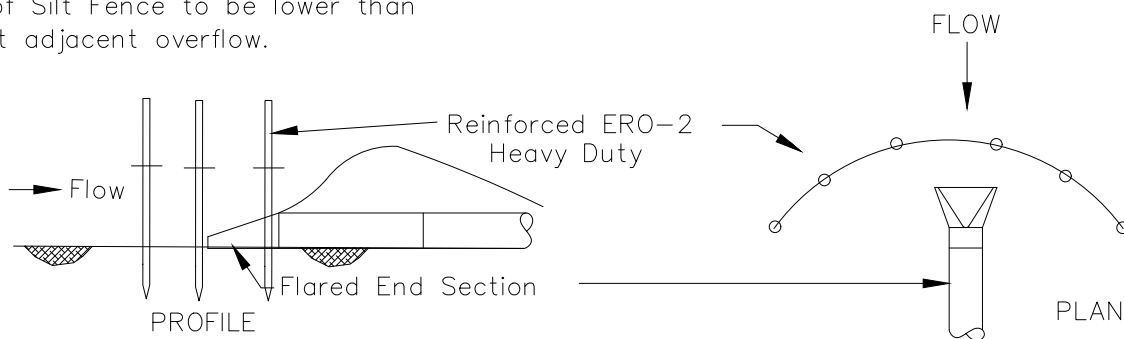
PROFILE



PLAN

C. SILT FENCE AT FLARED END SECTION

Top of Silt Fence to be lower than lowest adjacent overflow.



PROFILE

PLAN



STANDARD DETAILS  
BEEHIVE CASTING AND  
FLARED END SECTION EROSION CONTROL

FARMINGTON, MINNESOTA

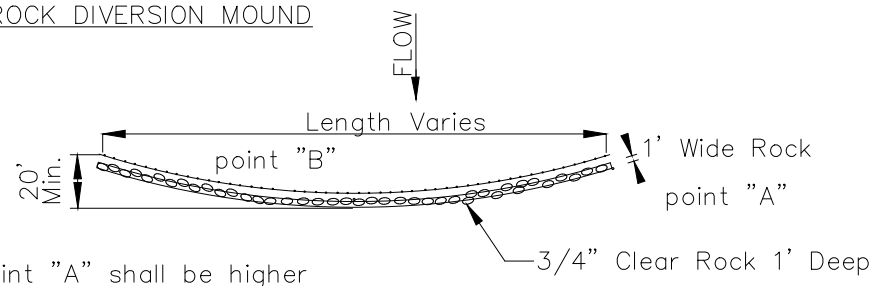
Last Revision:  
FEB 2017

City Plate No.  
ERO-05  
2019



## PLAN VIEW

### SILT FENCE WITH ROCK DIVERSION MOUND



NOTE:  
Point "A" shall be higher than point "B".

SPACING FOR ALL DITCH BLOCKS:	
DITCH GRADE (%)	SPACING (FT)
2	100
4	75
6	50
8	40
10	25
10+	25



### STANDARD DETAILS DITCH BLOCKING

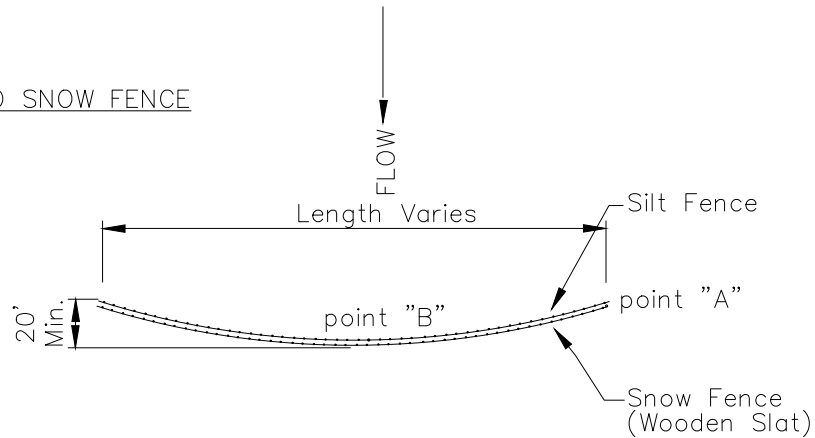
Last Revision:  
MAY 2000

## FARMINGTON, MINNESOTA

City Plate No.  
ERO-06  
2019

## LAYOUT PLAN

SILT FENCE AND SNOW FENCE



NOTE:  
point "A" shall be higher  
than point "B".

SPACING FOR ALL DRAINAGE BLOCKS: DITCH GRADE SPACING	
(%)	(FT)
2	100
4	75
6	50
8	40
10	25
10+	25

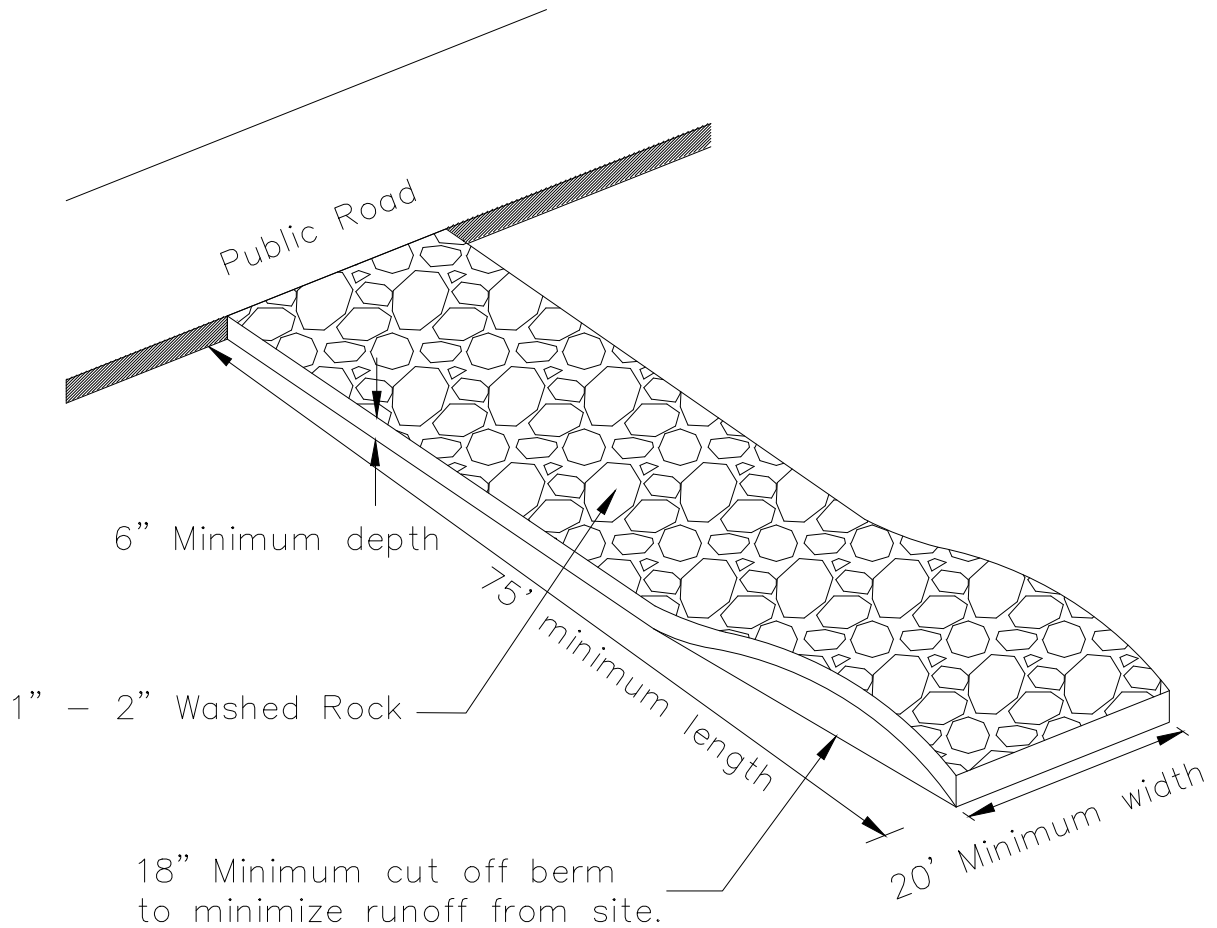


STANDARD DETAILS  
SHEET DRAINAGE EROSION CONTROL

Last Revision:  
JAN 2004

FARMINGTON, MINNESOTA

City Plate No.  
ERO-07  
2019



Filter fabric shall be placed under rock to stop mud migration through rock.

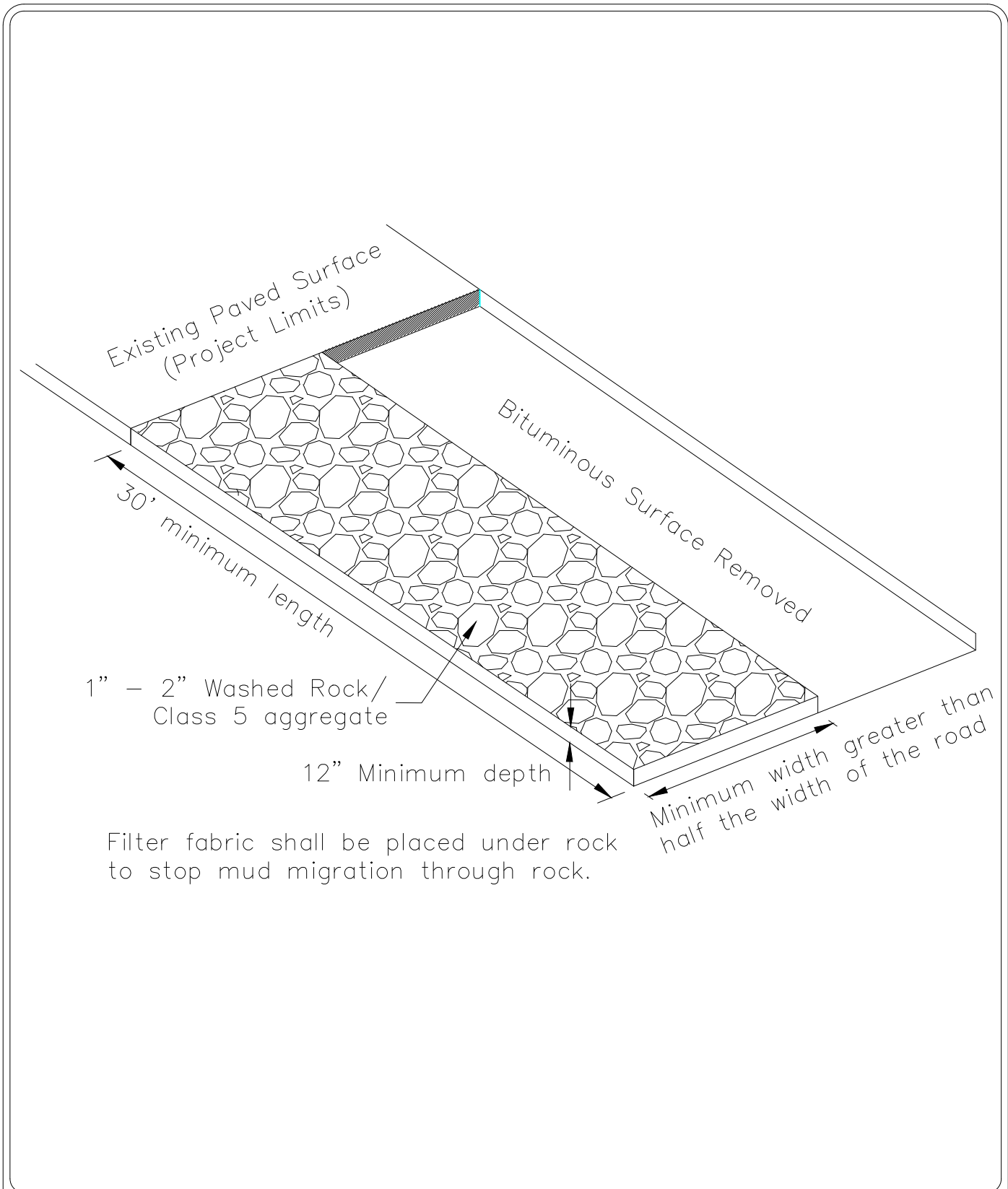


STANDARD DETAILS  
DEVELOPMENT  
STABILIZED CONSTRUCTION EXIT

Last Revision:  
FEB 2017

City Plate No.  
ERO-08A  
2019

FARMINGTON, MINNESOTA

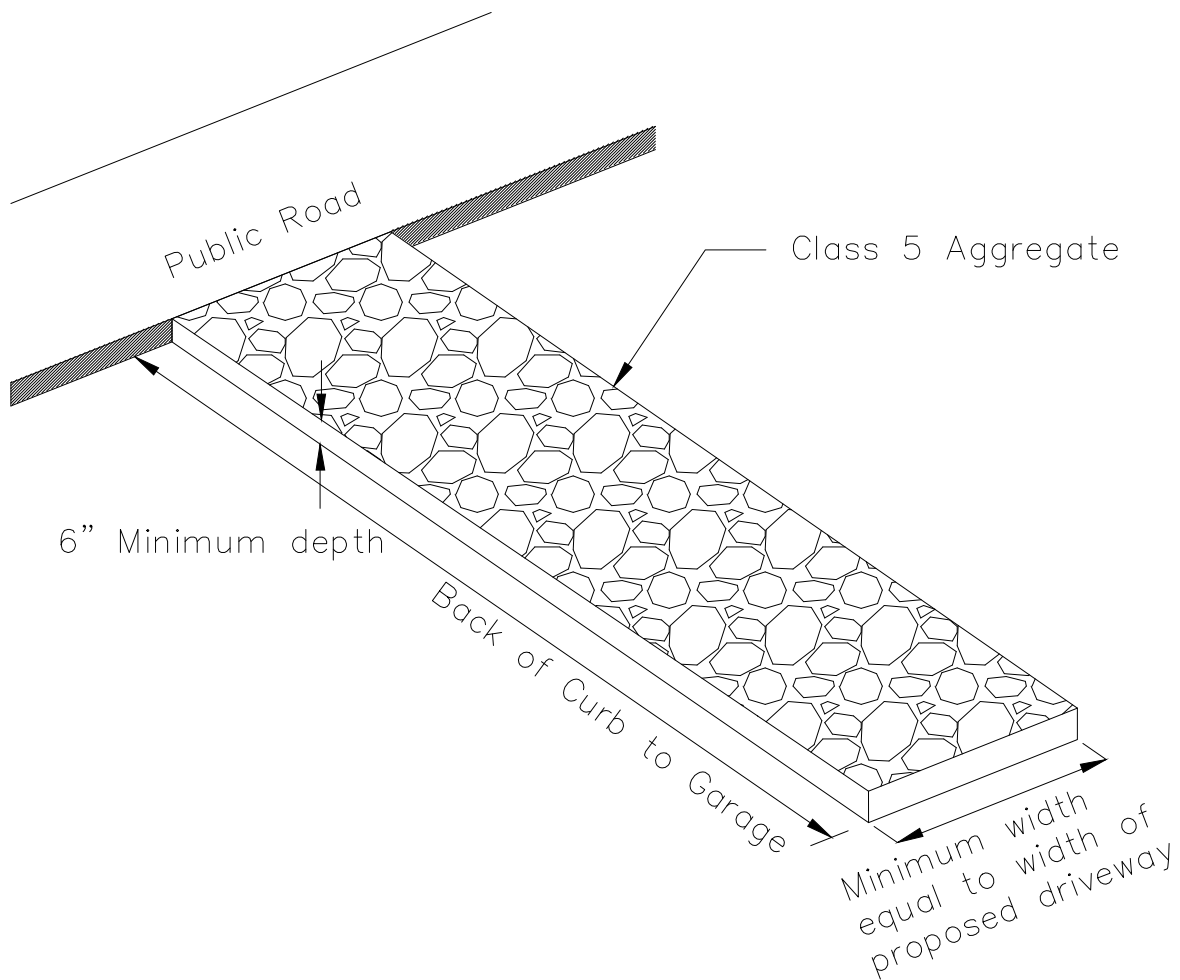


STANDARD DETAILS  
RECONSTRUCTION PROJECT  
STABILIZED CONSTRUCTION EXIT

FARMINGTON, MINNESOTA

Last Revision:  
FEB 2017

City Plate No.  
ERO-08B  
2019

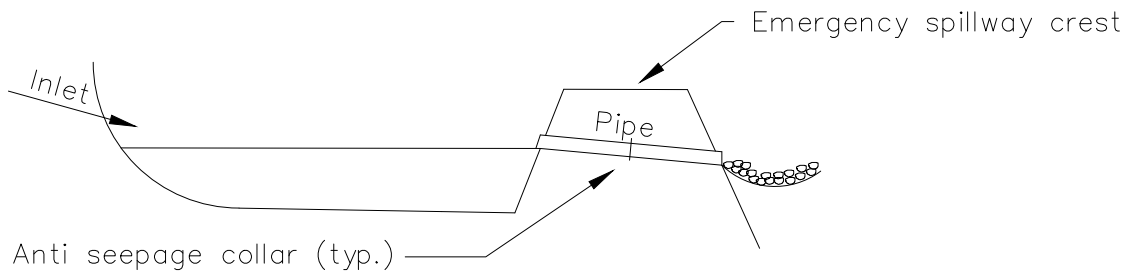


STANDARD DETAILS  
 RESIDENTIAL  
 STABILIZED CONSTRUCTION EXIT

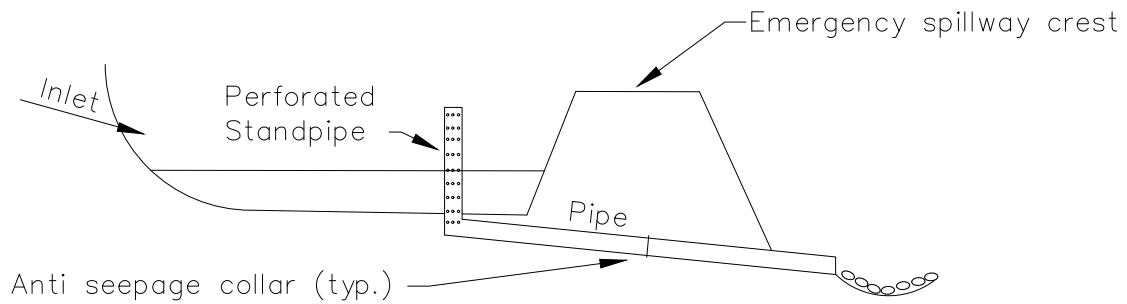
Last Revision:  
 FEB 2017

FARMINGTON, MINNESOTA

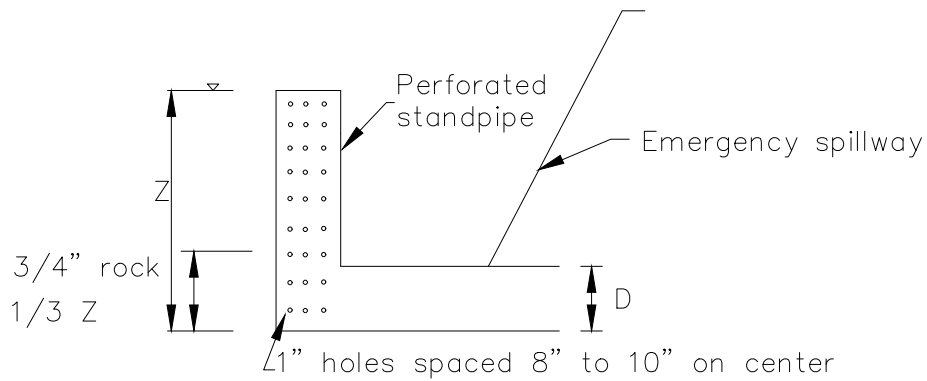
City Plate No.  
 ERO-09  
 2019



TEMPORARY SEDIMENTATION BASIN WITH OUTLET PIPE



TEMPORARY SEDIMENTATION BASIN  
WITH STAND PIPE OUTLET



D = diameter of standpipe equal to diameter of pipe.

NOTE: Pipe material must be rigid

STAND PIPE DETAIL

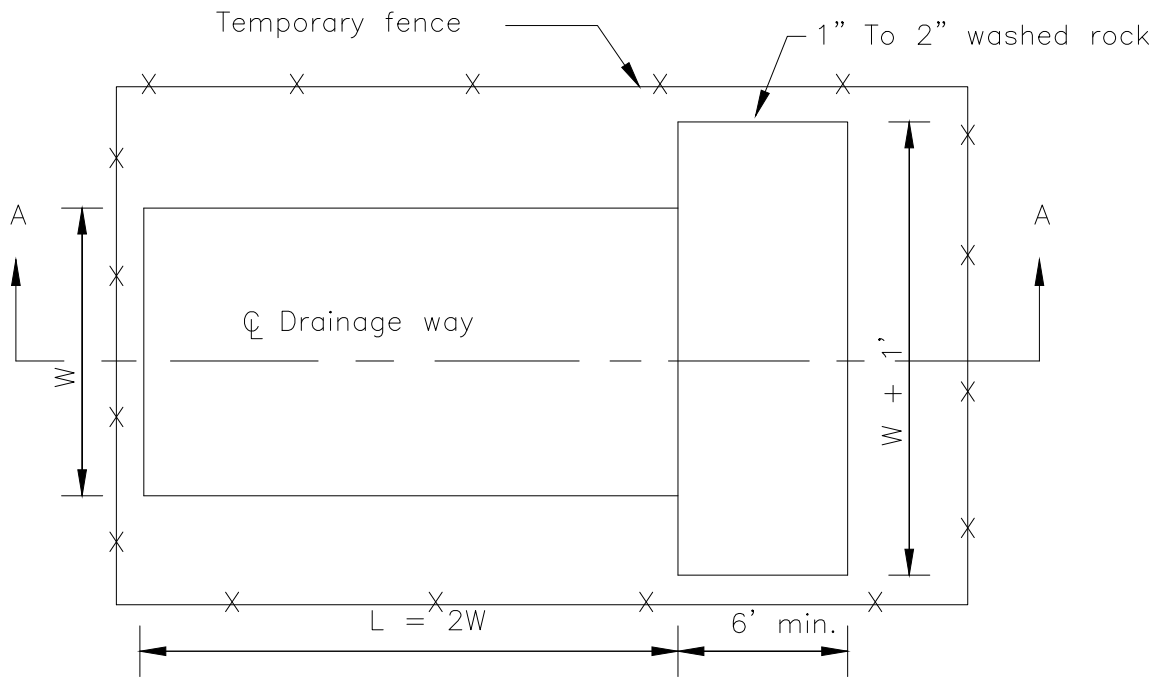


STANDARD DETAILS  
TEMPORARY SEDIMENTATION BASIN  
WITH OUTLET PIPE

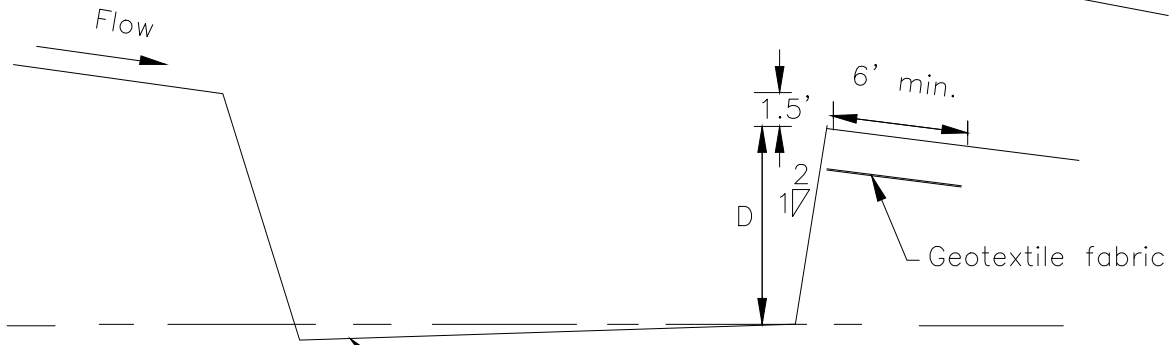
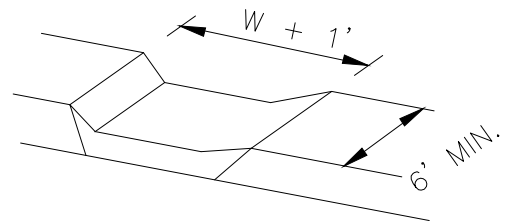
Last Revision:  
FEB 2007

FARMINGTON, MINNESOTA

City Plate No.  
ERO-10  
2019



PLAN VIEW



NOTE: D = 3' min., 5' max.  
 W = 10' min., 20' max.

SECTION A-A



STANDARD DETAILS  
 TEMPORARY SEDIMENTATION BASIN  
 WITH OVERFLOW SPILLWAY

FARMINGTON, MINNESOTA

Last Revision:  
 MAY 2000

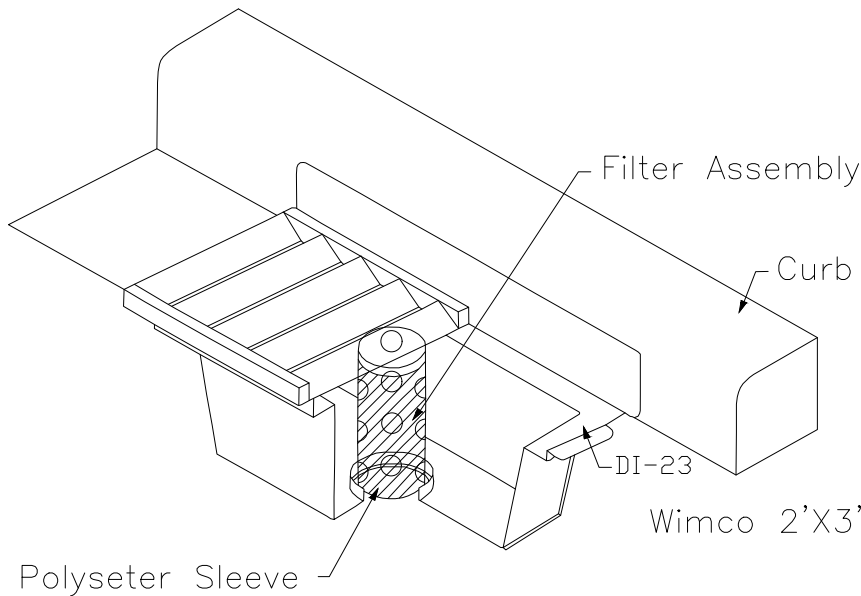
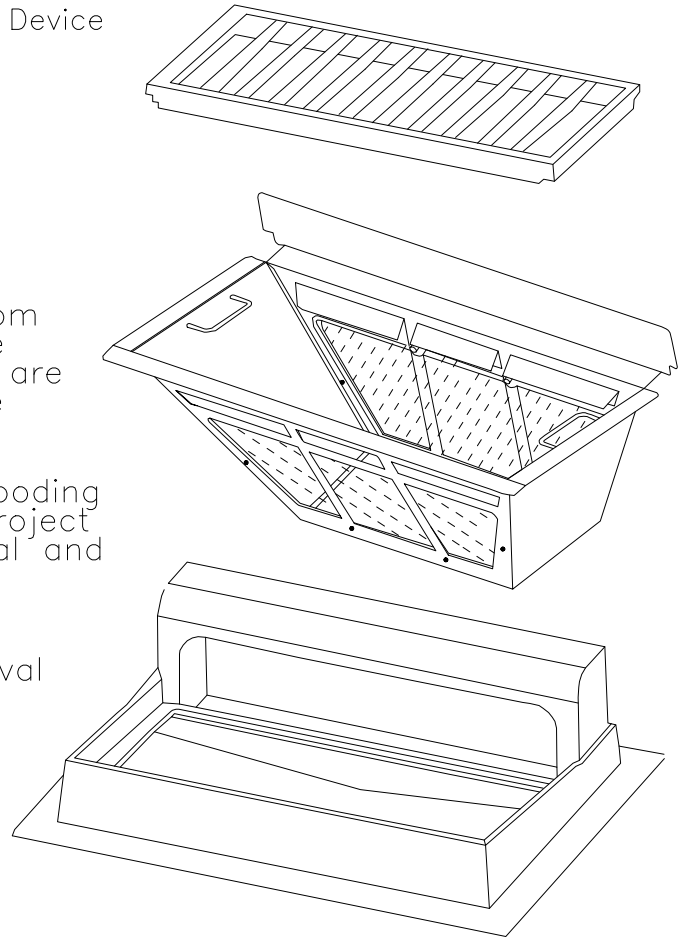
City Plate No.  
 ERO-11  
 2019

Lange Industries 2'x3' Debris Collection Device  
Model SC1735-S1

Each storm water inlet requires an approved inlet protection device from the time the casting and rings are placed until the surrounding areas are established or until directed by the City Engineer.

Devices may be removed during flooding or frozen ground. Reference the project SWPPP for the site specific removal and installation schedules.

The installer is responsible for the placement, maintenance, and removal of all inlet protection devices.



Wimco 2'x3' Debris Collection Device



STANDARD DETAILS  
INLET PROTECTION DEVICES

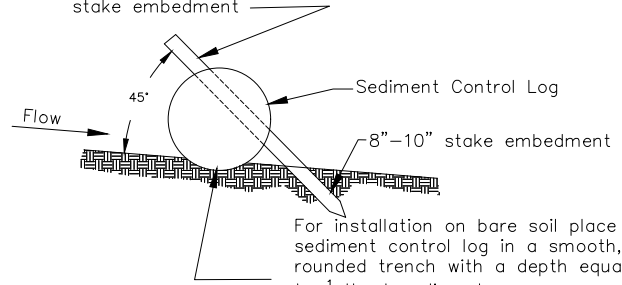
FARMINGTON, MINNESOTA

Last Revision:  
JAN 2019

City Plate No.  
ERO-12  
2019



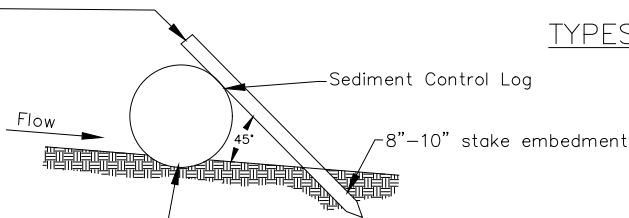
1" X 2" X 24" long wood stakes (no rebar) at 3' maximum spacing. Stakes shall be driven through back half of sediment log at a 45° angle with top of stake pointing upstream. Provide 8" to 10" of stake embedment



For installation on bare soil place sediment control log in a smooth, rounded trench with a depth equal to 1/4 the log diameter. Sediment control log must be in full contact with existing ground.

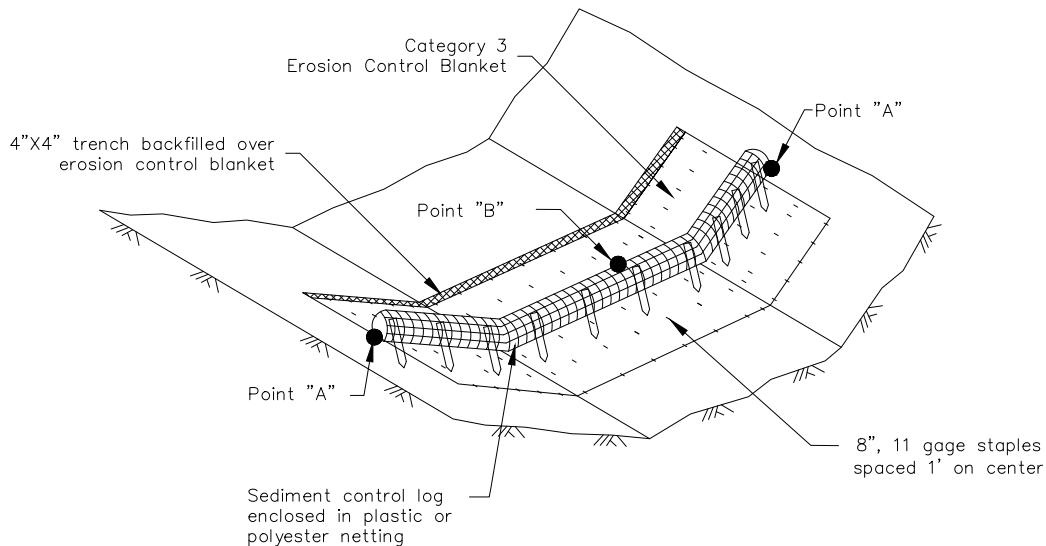
TYPES: STRAW, WOOD FIBER, OR COIR

1" X 2" X 24" long wood stakes (no rebar) at 3' maximum spacing. Stakes shall be driven over sediment control log at a 45° angle with top of stake pointing upstream. Provide 8" to 10" of stake embedment



For installation on bare soil place sediment control log in a smooth, rounded trench with a depth equal to 1/4 the log diameter. Sediment control log must be in full contact with existing ground.

TYPES: WOOD CHIP, COMPOST, OR ROCK



- Point 'A' shall higher than point 'B' by at least a distance equal to the diameter of the sediment control log to ensure water flows over the bioroll and does not flank the edges and cause erosion.
- Ditch check spacing shall be determined from the following formula:  

$$\text{Approximate Spacing of Ditch Checks (feet)} = \frac{\text{Sediment Control Log Diameter (feet)}}{\text{Channel Slope (\%)}} \times 100$$

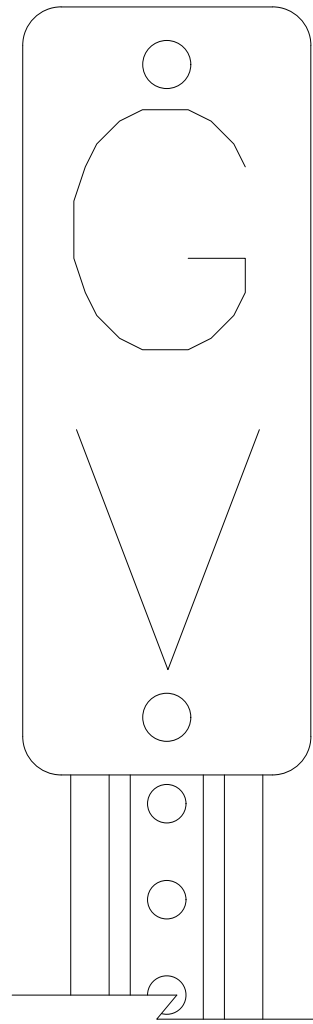
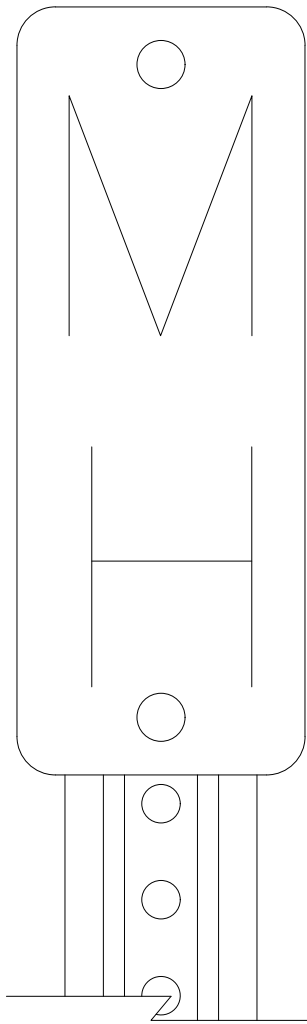
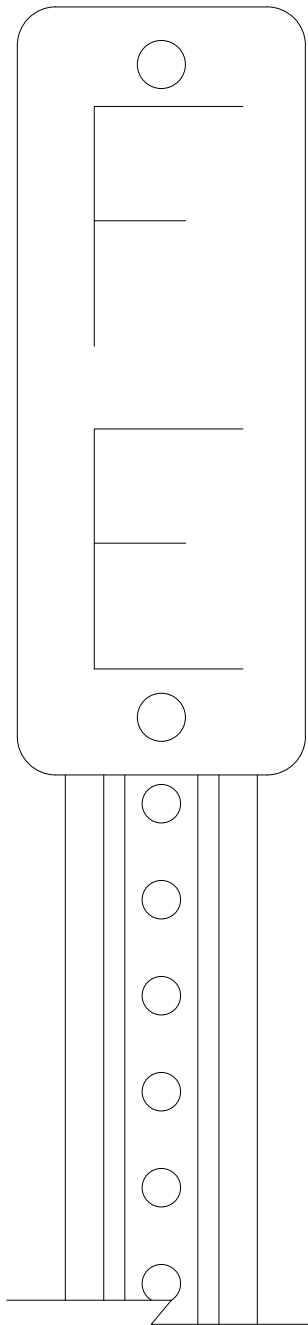


STANDARD DETAILS  
SEDIMENT CONTROL LOG

Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
ERO-13  
2019



0.063" thick aluminum sign.  
Black letters on white high intensity  
reflectorized background

U-channel post minimum 3lb/ft  
6'-6" long, painted green.

Placed as directed by City Engineer

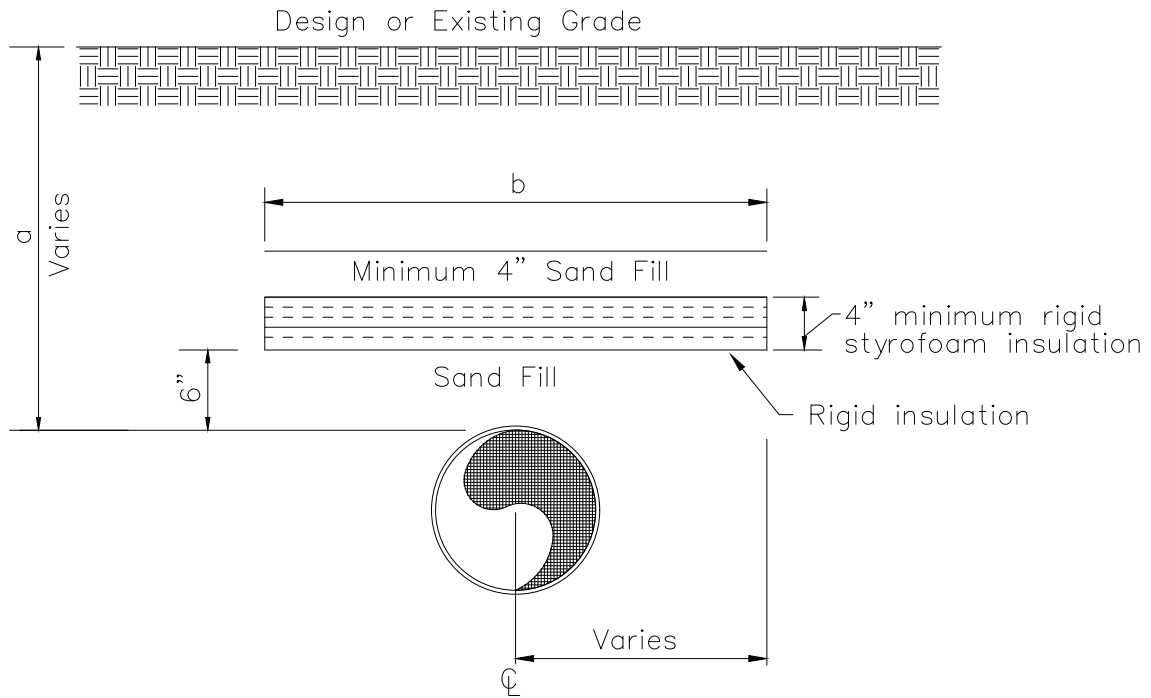


STANDARD DETAILS  
STRUCTURE MARKER SIGNS

Last Revision:  
JAN 2004

City Plate No.  
GEN-01  
2019

FARMINGTON, MINNESOTA



NOTE: Pipe shall be centered under Insulation unless otherwise specified.

<u>COVER OVER PIPE – a</u>	<u>WIDTH OF INSULATING BOARD – b</u>
2'	11'
3'	9'
4'	7'
5'	5'
6'	3'

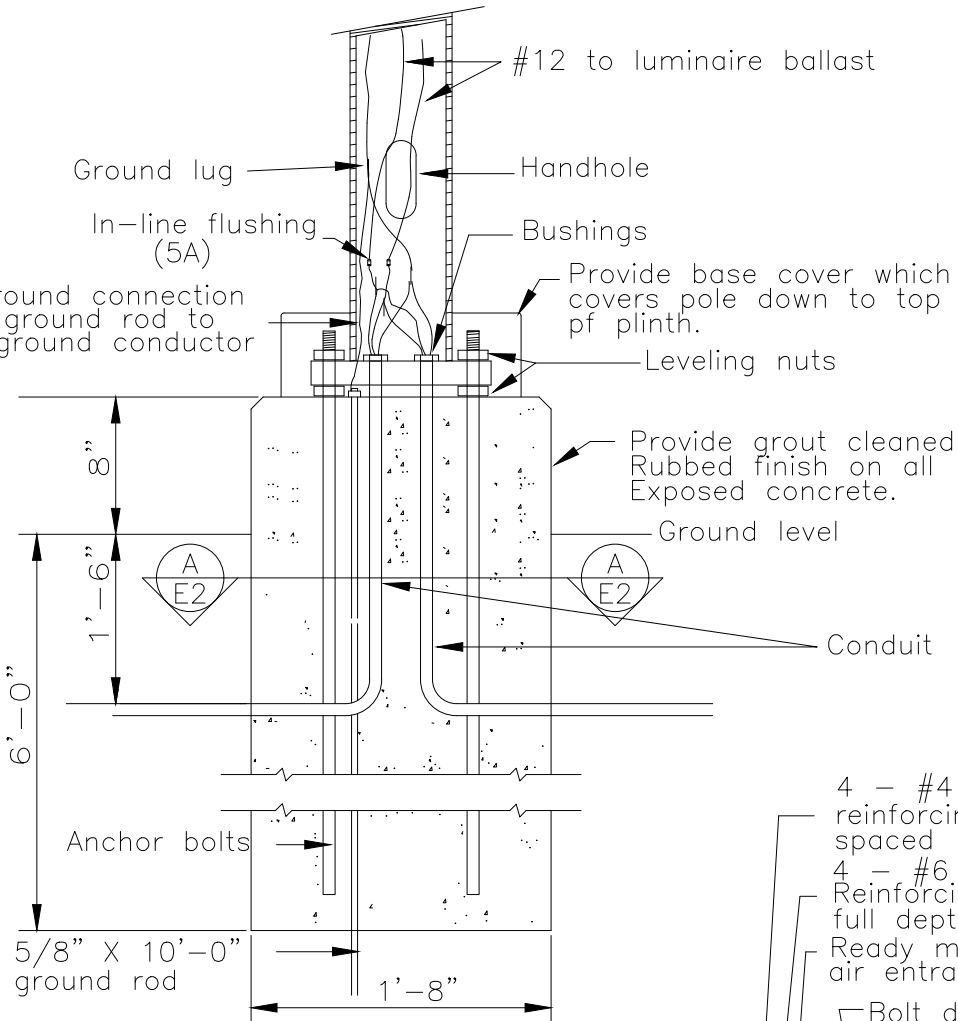


STANDARD DETAILS  
INSULATION

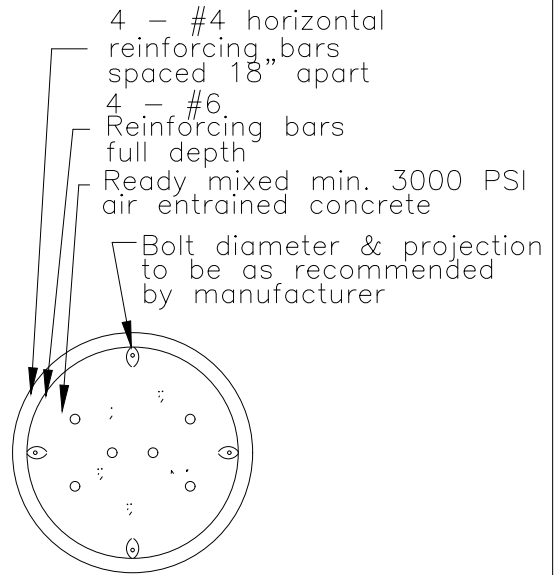
Last Revision:  
MAY 2000

FARMINGTON, MINNESOTA

City Plate No.  
GEN-02  
2019



CONCRETE BASE DETAIL  
FOR LIGHTING POLES  
NO SCALE



SECTION  
NO SCALE

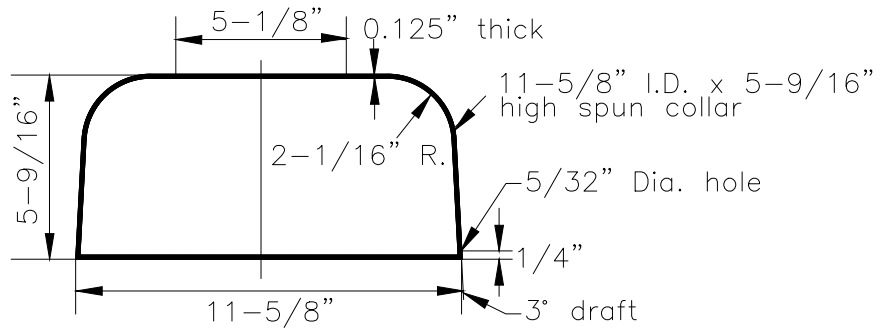


STANDARD DETAILS  
CONCRETE BASE DETAIL  
FOR LIGHTING POLES

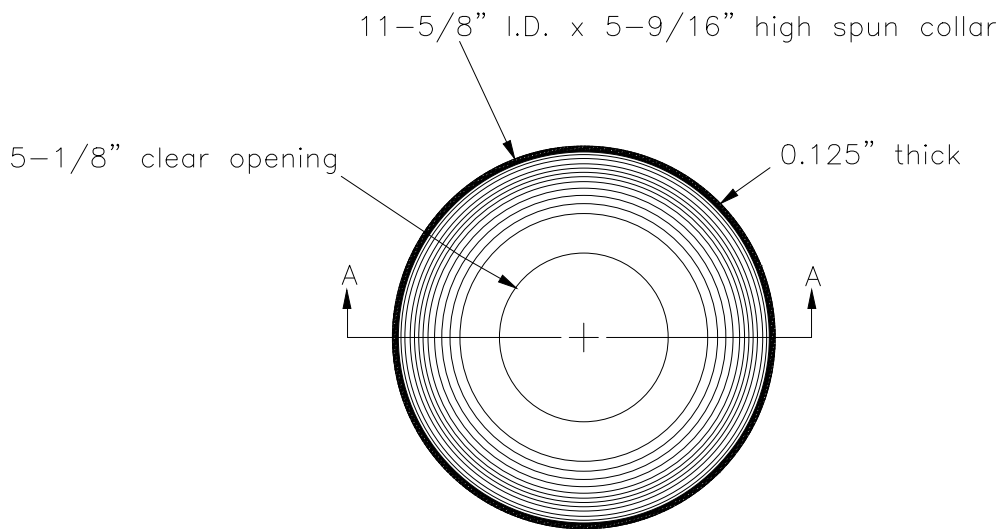
Last Revision:  
MAY 2000

FARMINGTON, MINNESOTA

City Plate No.  
GEN-04  
2019



SECTION A-A



TOP VIEW

NOTE:  
 Spun aluminum alloy 1100-0 temper  
 No uneven edges  
 Powder coat paint dark forest green  
 (PANTONE 560-C)

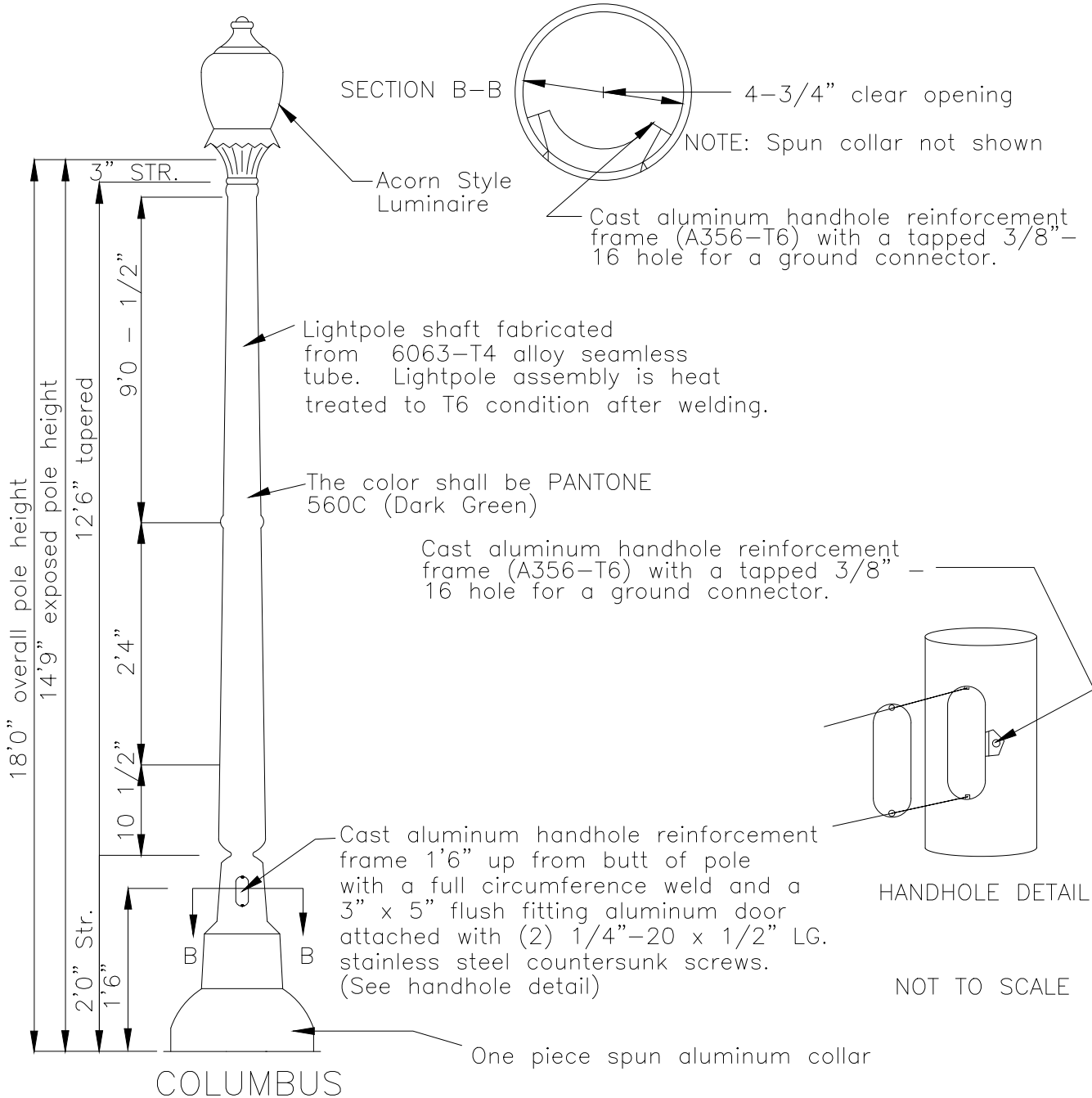


STANDARD DETAILS  
 SPUN ALUMINUM COLLAR  
 FOR RESIDENTIAL STREET LIGHT

Last Revision:  
 MAY 2000

City Plate No.  
 GEN-05  
 2019

FARMINGTON, MINNESOTA



NOTE:

1. Fixture—100W or 150W equivalent LED, Type III light distribution, as specified.
2. A tapered screw in base may be used as an alternate to the concrete base if approved by the City Engineer.

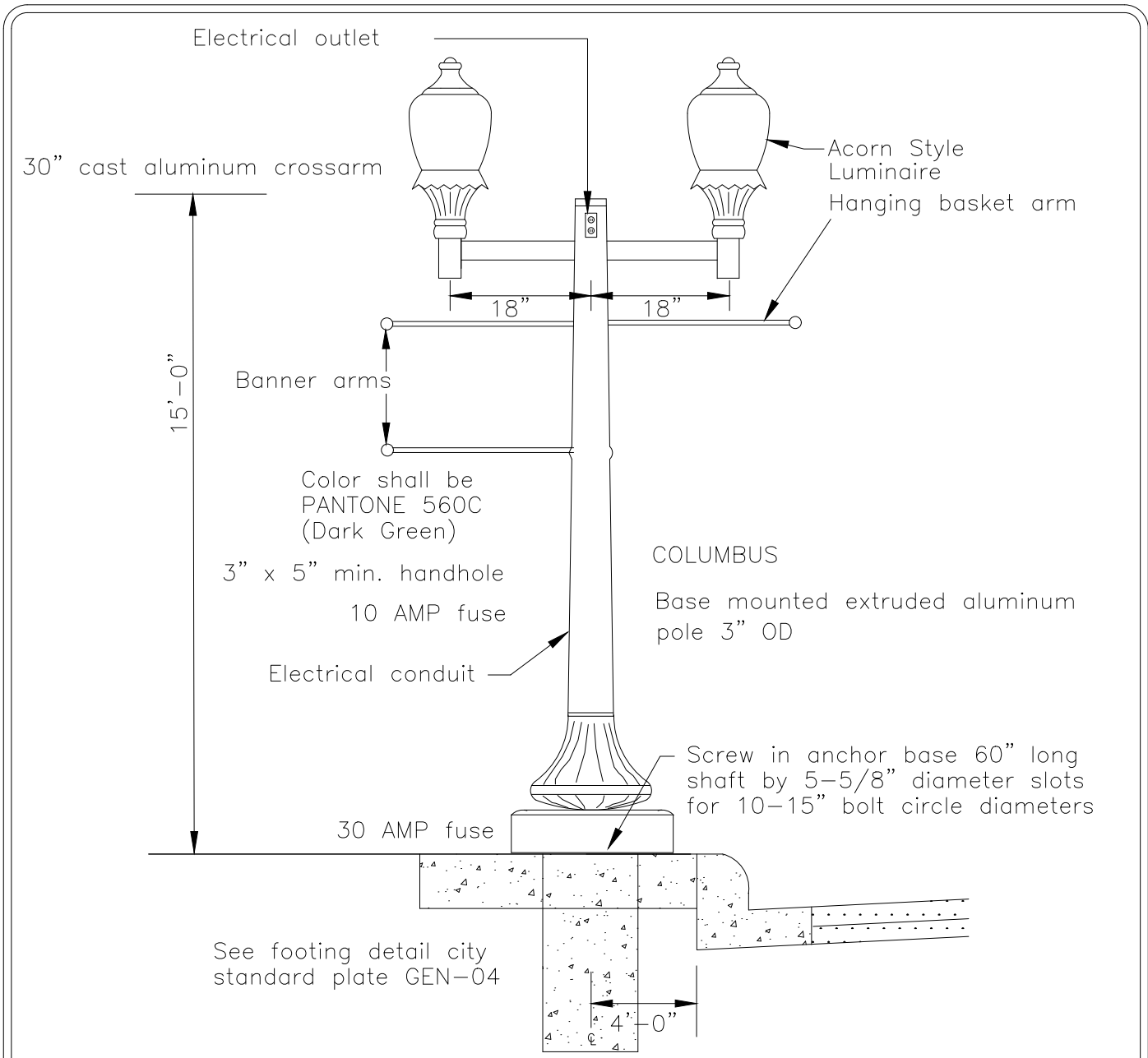


STANDARD DETAILS  
STREET LIGHT  
RESIDENTIAL DISTRICT

Last Revision:  
MAR 2017

FARMINGTON, MINNESOTA

City Plate No.  
GEN-06  
2019



NOTE:

1. Fixture—100W or 150W equivalent LED, Type III light distribution, as specified.
2. A tapered screw in base may be used as an alternate to the concrete base if approved by the City Engineer.
3. Banner arms and/or hanging basket arms shall be placed if shown in the approved plans.

NOT TO SCALE

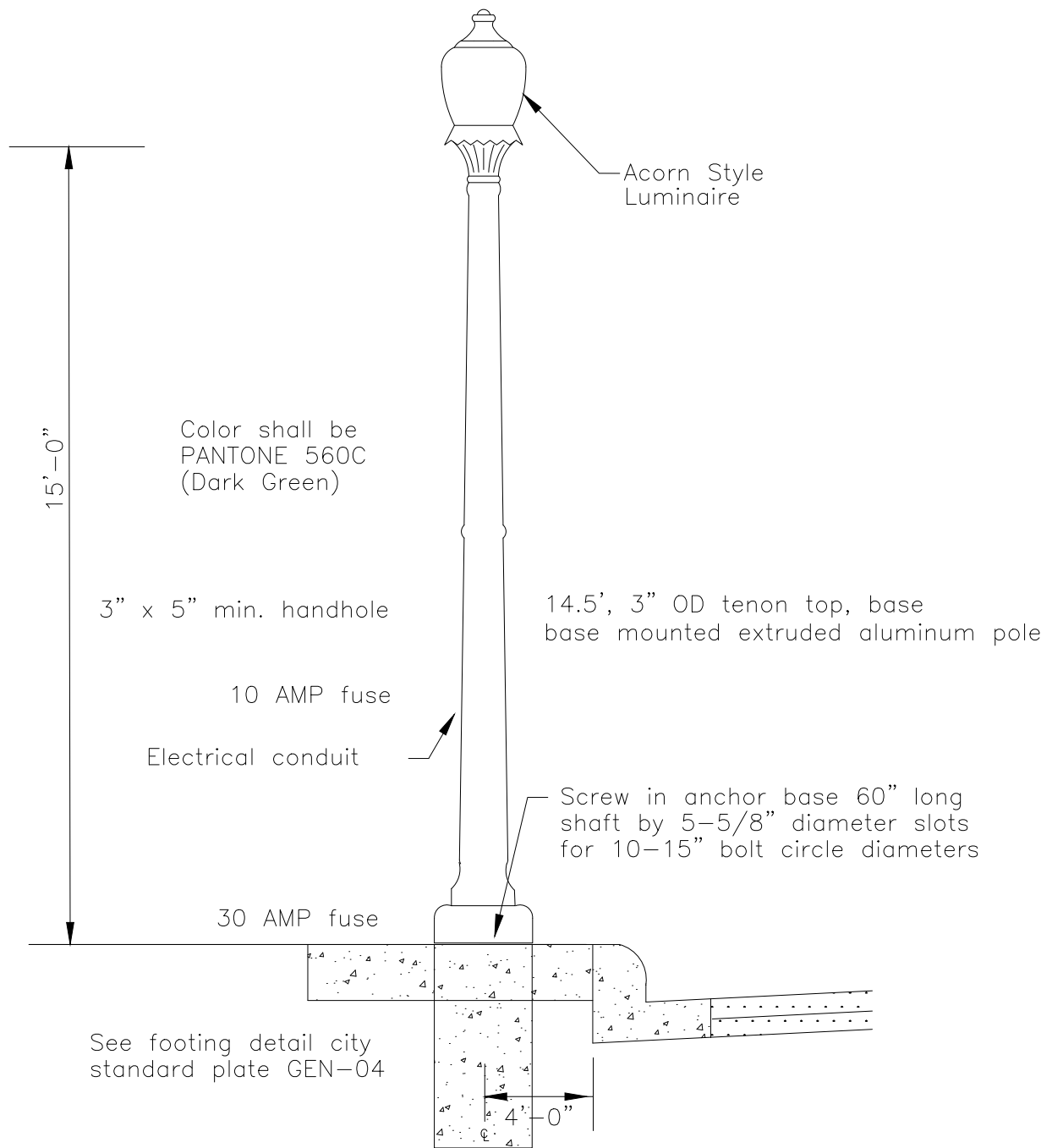


STANDARD DETAILS  
STREET LIGHT  
DOWNTOWN DISTRICT

FARMINGTON, MINNESOTA

Last Revision:  
MAR 2017

City Plate No.  
GEN-07  
2019



NOTE:

1. Fixture—100W or 150W equivalent LED, Type III light distribution, as specified.
2. A tapered screw in base may be used as an alternate to the concrete base if approved by the City Engineer.

NOT TO SCALE



STANDARD DETAILS  
STREET LIGHT  
HERITAGE DISTRICT

Last Revision:  
MAR 2017

City Plate No.  
GEN-08  
2019

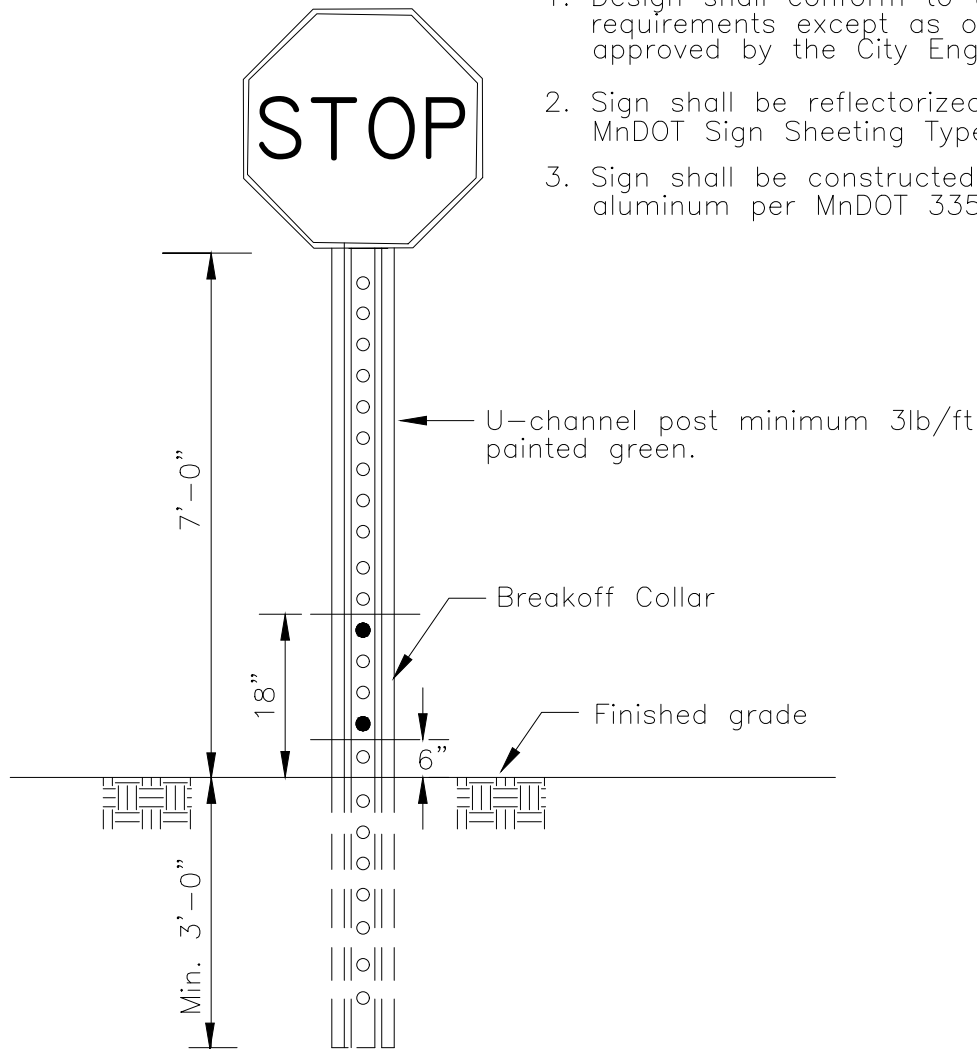
FARMINGTON, MINNESOTA



Sign Name	Designation	Size
STOP	R1-1	30"x30"
YIELD	R1-2	36"x36"x36"
SPEED LIMIT	R2-1	24"x30"
NO PARKING	R7-X	12"x18"

Notes:

1. Design shall conform to these requirements except as otherwise approved by the City Engineer.
2. Sign shall be reflectorized as per MnDOT Sign Sheeting Type XI
3. Sign shall be constructed of aluminum per MnDOT 3352.2A1



Installation shall be in compliance with the 2018 MMUTCD

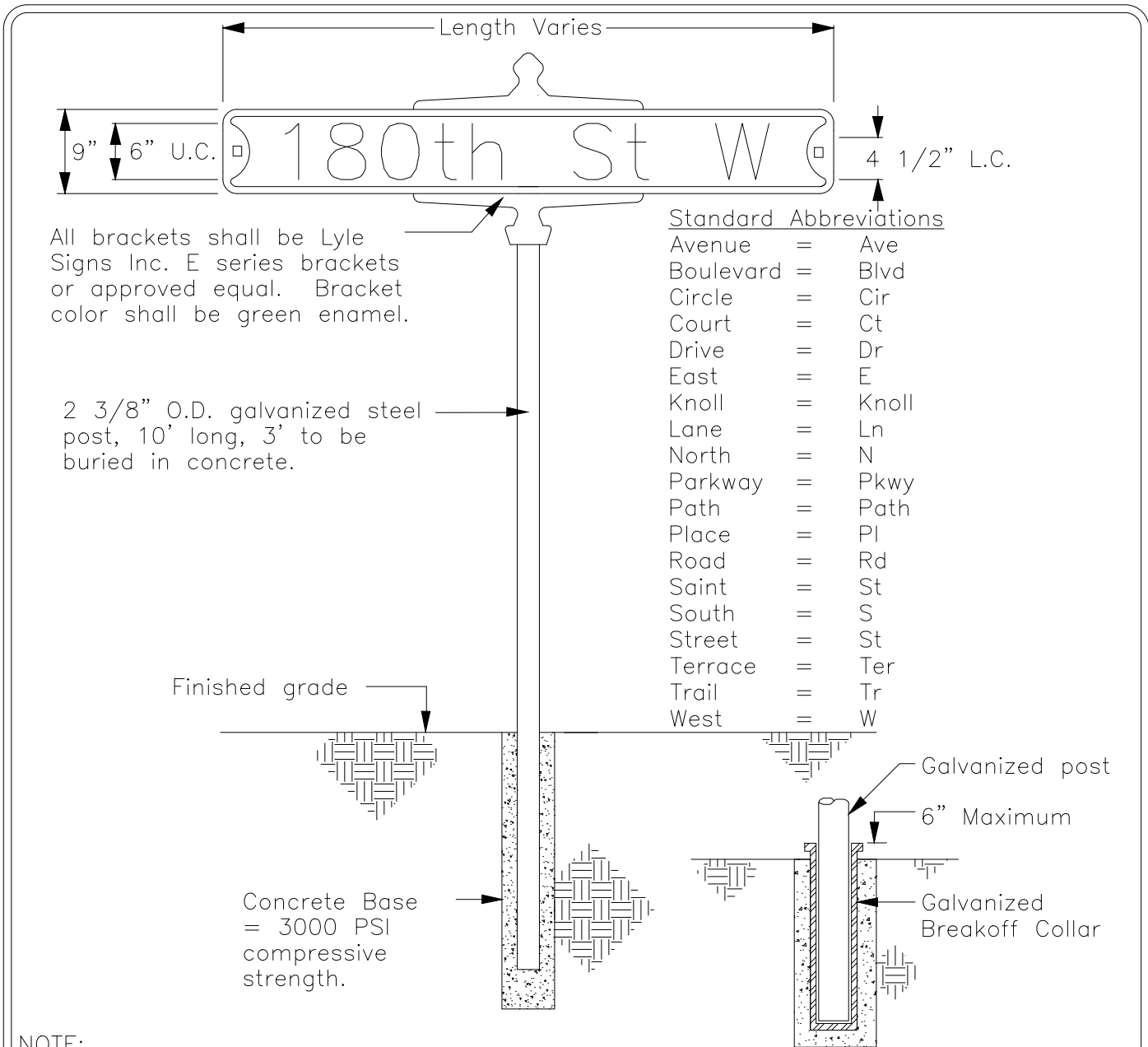


STANDARD DETAILS  
REGULATORY SIGN

Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
GEN-09  
2019



NOTE:

1. Numbered streets are to be written out when the number is nineteenth or less.
2. Installation shall be in compliance with the 2018 Minnesota Manual on Uniform Traffic Control Devices.
3. Sign blades shall be 0.08" thick aluminum plate (MnDOT 3352.2A1a) High Intensity Prismatic Reflective with 1" rounded corners.
4. Lettering for public streets shall consist of white letters on a green background. Lettering for private streets shall be in accordance with City Plate No. GEN-10A.
5. Border for public streets shall be white type E border style or approved equal. Border for private streets shall be in accordance with City Plate No. GEN-10A.
6. Typically installed at southwest corner of intersection. All equals must be approved by City Engineer before installation.

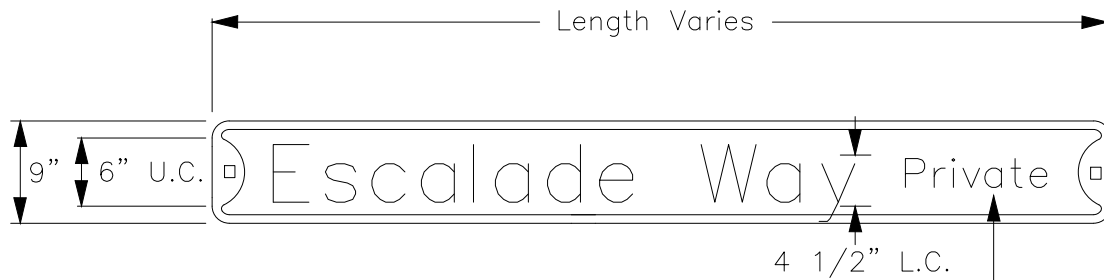


STANDARD DETAILS  
STREET SIGN

FARMINGTON, MINNESOTA

Last Revision:  
JAN 2019

City Plate No.  
GEN-10  
2019



"Private" shall be placed after the end of the street name

NOTE:

1. Installation and standard abbreviations shall be in accordance with City Plate No. GEN-10.
2. The word "Private" shall be placed after the end of the street name and shall consist of 3" black lettering with leading uppercase followed by lowercase.
3. Installation shall be in compliance with the 2018 Minnesota Manual on Uniform Traffic Control Devices.
4. Sign blades shall be 0.08" thick aluminum plate (MnDOT 3352.2A1a) High Intensity Prismatic Reflective with 1" rounded corners.
5. Lettering for private streets shall consist of black letters on a white background.
6. Border for private streets shall be black type E border style or approved equal.

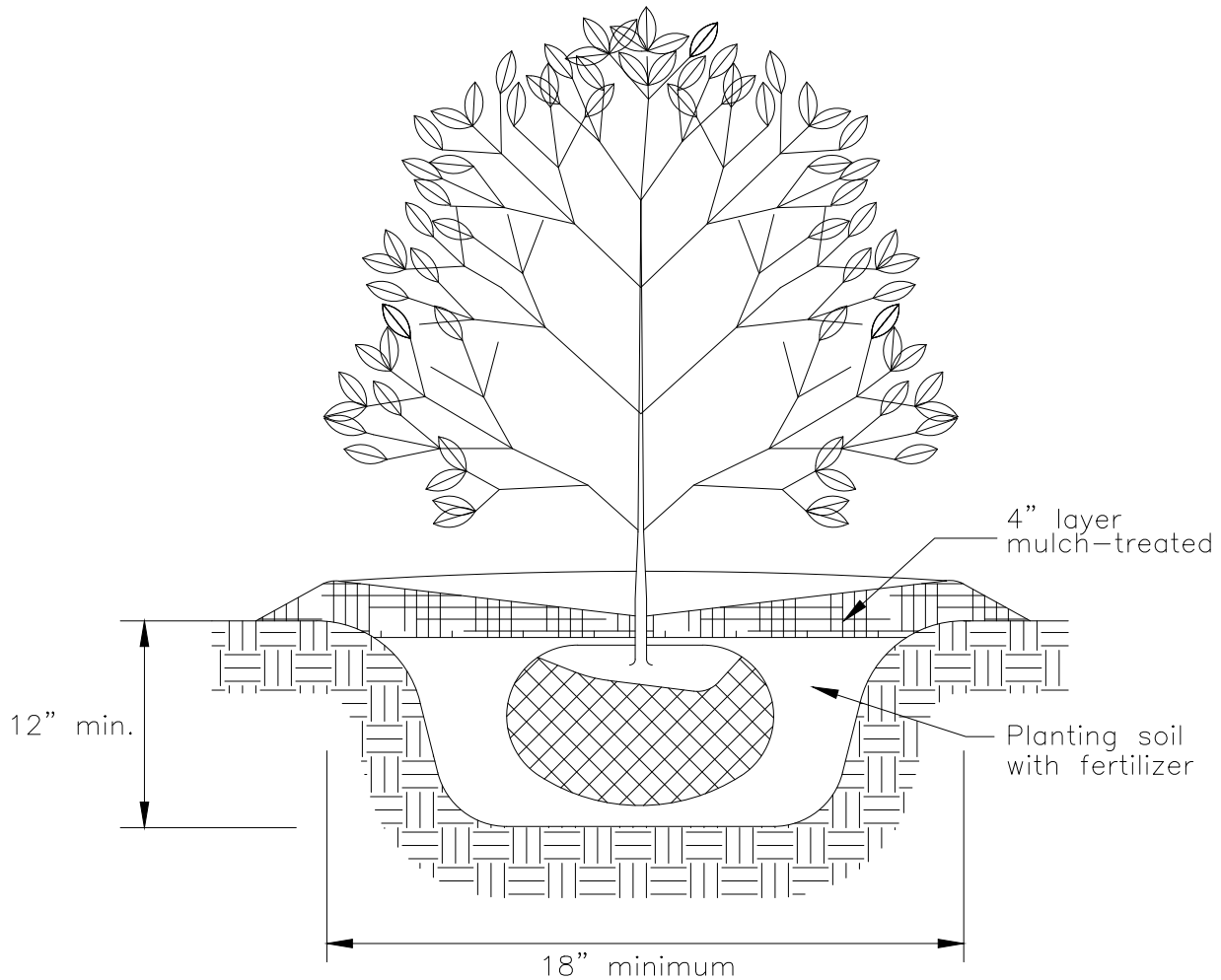


STANDARD DETAILS  
PRIVATE STREET SIGN

Last Revision:  
JAN 2019

FARMINGTON, MINNESOTA

City Plate No.  
GEN-10A  
2019



NOTE:

1. Turn back the top portion of the burlap to half the depth of root ball and remove any nails within this area.
2. Shrubs used as visual buffers near parking lots shall be a maximum of 3' in height.
3. Shrubs shall be installed at a minimum of 12-18" in height.
4. Cut away as much plastic or wire basket around root ball, still keeping root ball intact.
5. Scarify the bowl surfaces for easy root penetration.



STANDARD DETAILS  
SHRUB PLANTING

Last Revision:  
JAN 2012

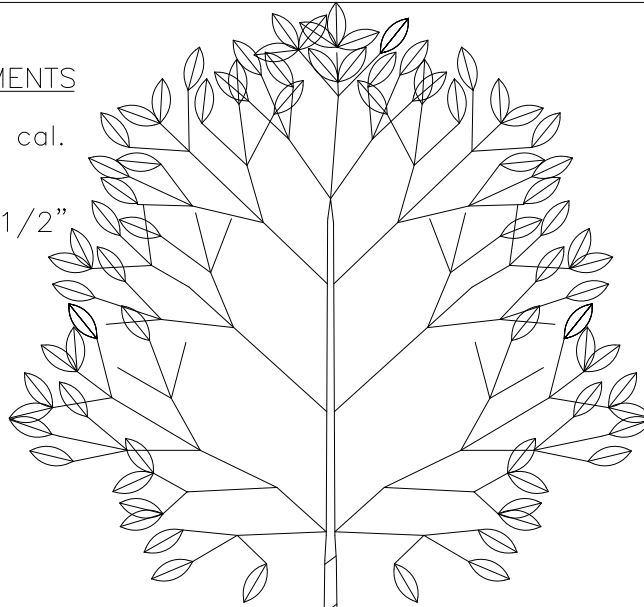
FARMINGTON, MINNESOTA

City Plate No.  
GEN-11  
2019

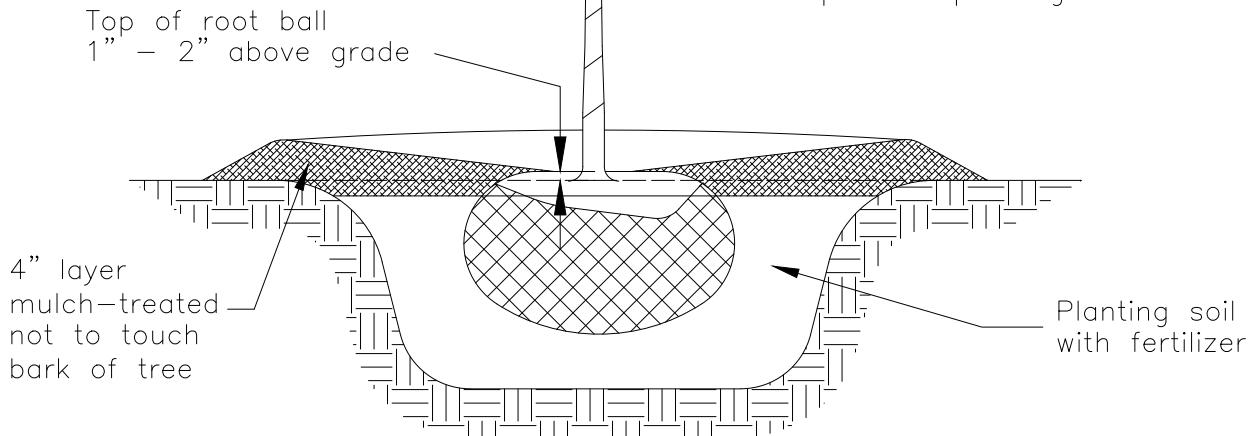
INSTALLATION REQUIREMENTS

Medium to large – 2” cal.  
deciduous trees

Small deciduous – 1 1/2”  
or ornamental



NOTE:  
– The City of Farmington Natural Resources Specialist shall be notified 48 hours prior to planting.



NOTE:

1. Turn back the top portion of the burlap to half the depth of root ball and remove any nails within this area.
2. Plant tree where the first roots flare out from the trunk.
3. Cut away as much plastic or wire basket around root ball, still keeping root ball intact.
4. Scarify the bowl surface for easy root penetration.
5. Lot Frontage trees to be planted on private property in the front yard at a minimum 40’ on center spacing. Trees to be planted in accordance with City’s landscape ordinance.
6. Trees shall be planted at least 8’ from the front property line and out of the side drainage and utility easements.
7. No tree shall be planted within 10 lateral feet of any underground water, sanitary or storm sewer line and 2’ from any other underground utility.
8. Do not cut leaders off the tree.
9. Staking of trees shall be done by contractor as needed.



STANDARD DETAILS  
TREE PLANTING:  
LOT FRONTAGE TREES

Last Revision:  
FEB 2017

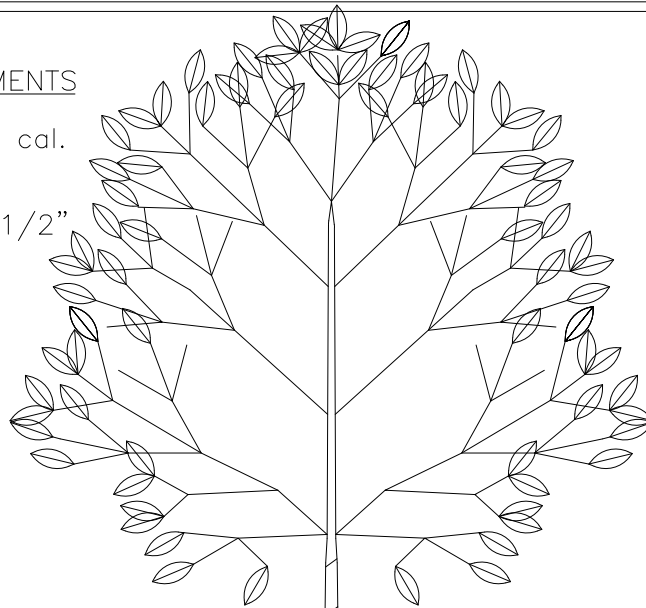
City Plate No.  
GEN-12A  
2019

FARMINGTON, MINNESOTA

INSTALLATION REQUIREMENTS

Medium to large – 2" cal.  
deciduous trees

Small deciduous – 1 1/2"  
or ornamental



Top of root ball  
1" – 2" above grade

NOTE:

– The City of Farmington Natural Resources Specialist shall be notified 48 hours prior to planting.

– A certified tree inspector shall be on site during planting.

4" layer  
mulch—treated  
not to touch  
bark of tree

Planting soil  
with fertilizer

NOTE:

1. Turn back the top portion of the burlap to half the depth of root ball and remove any nails within this area.
2. Plant tree where the first roots flare out from the trunk.
3. Cut away as much plastic or wire basket around root ball, still keeping root ball intact.
4. Scarify the bowl surface for easy root penetration.
5. Boulevard trees to be planted on both sides of the street at a minimum 40' on center spacing. Trees to be planted in accordance with City's landscape ordinance. Species must be approved by City.
6. Trees shall be planted in the center of the city boulevard width and out of the side drainage and utility easements. Minimum of 4' separation from all walks, curbs, trails, or pavement
7. No tree shall be planted within 10 lateral feet of any underground water, sanitary or storm sewer line and 2' from any other underground utility.
8. Do not cut leaders off the tree.
9. Staking of trees shall be done by contractor as needed.

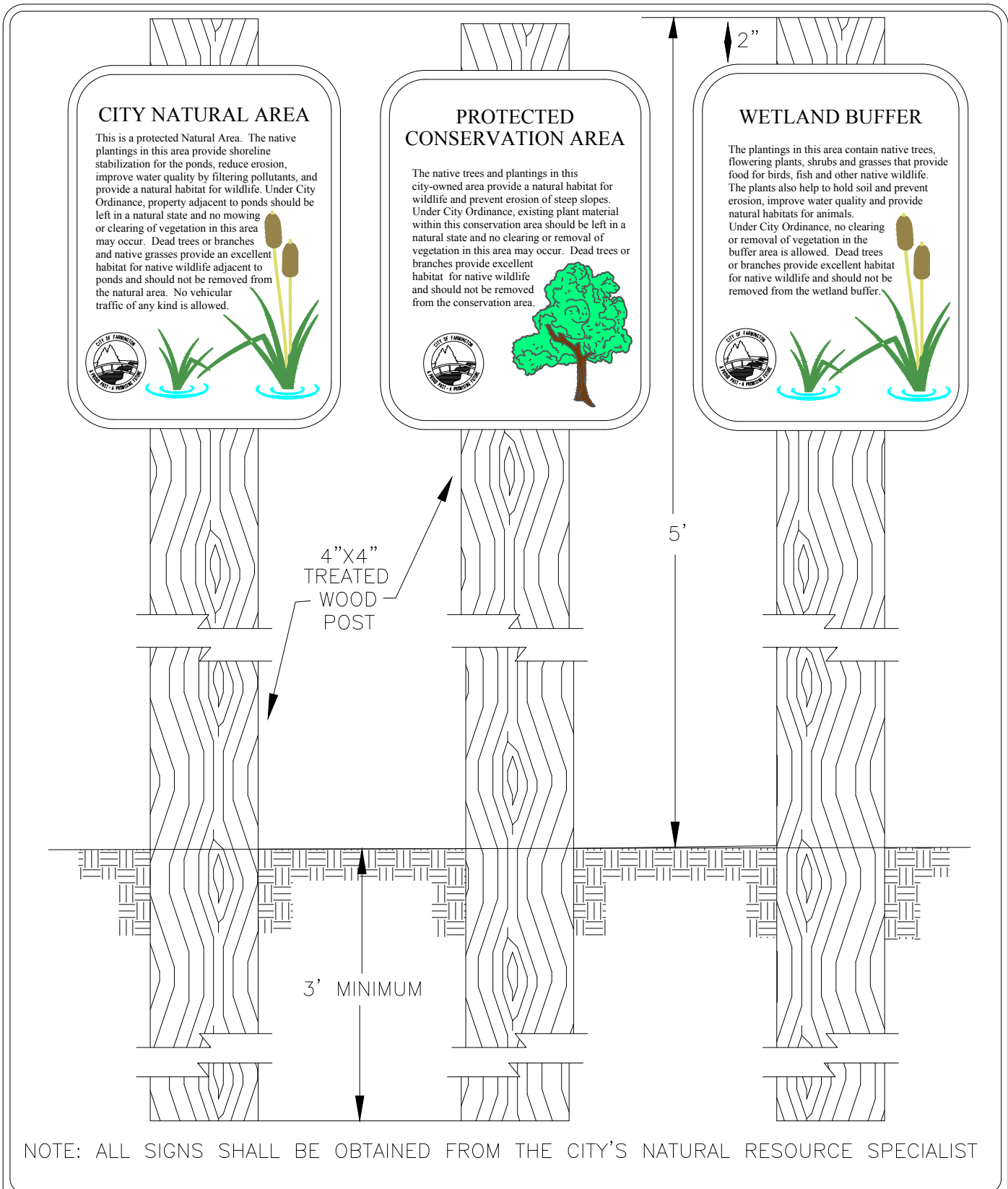


STANDARD DETAILS  
TREE PLANTING:  
BOULEVARD TREE ROUTE

Last Revision:  
JAN 2012

City Plate No.  
GEN-12B  
2019

FARMINGTON, MINNESOTA



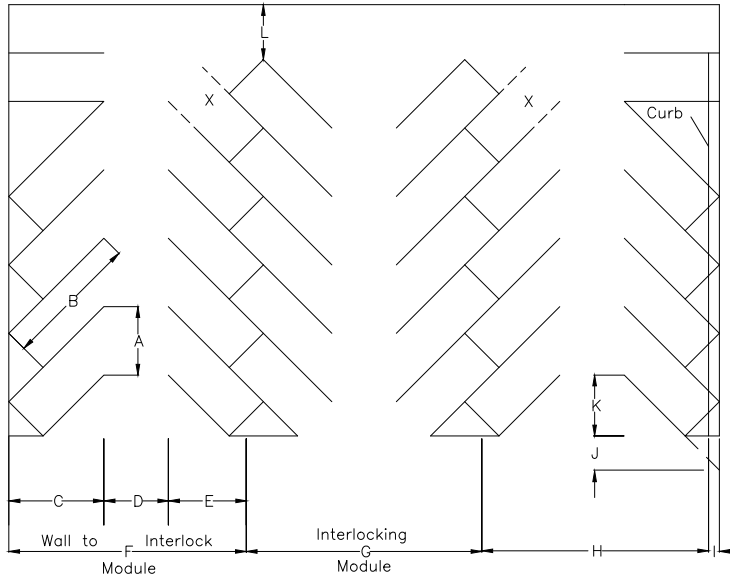
STANDARD DETAILS  
 CITY NATURAL AREA, CONSERVATION AREA,  
 AND WETLAND BUFFER SIGNS

Last Revision:  
 JAN 2012

FARMINGTON, MINNESOTA

City Plate No.  
 GEN-13  
 2019

# PARKING LOT DESIGN

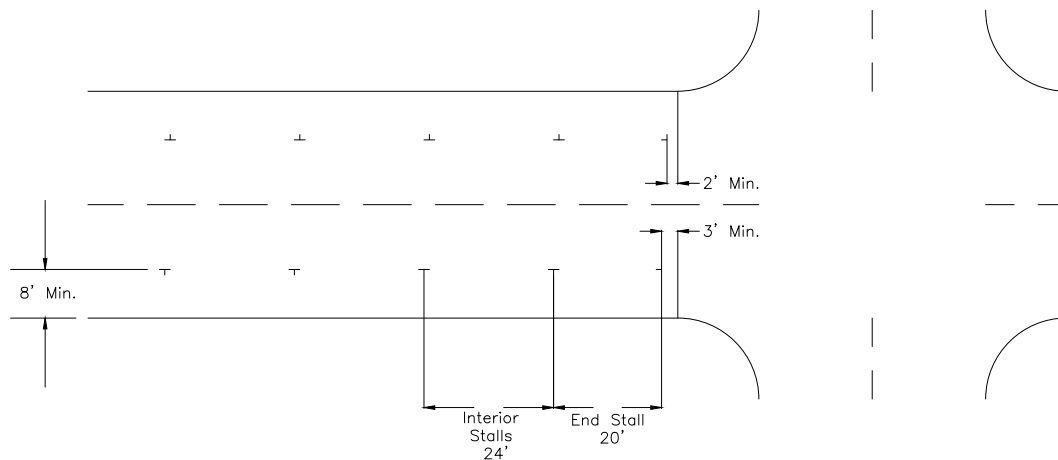


X = Stall not accessible in certain layouts

	On Diagram	Parking Angle			
		45	60	75	90
Stall Width, parallel to aisle	A	12.7	10.4	9.3	9.0
Stall length of line	B	25.0	22.0	20.0	18.5
Stall depth, to wall	C	17.5	19.0	19.5	18.5
Aisle width, between stall lines	D	12.0	16.0	23.0	26.0
Stall depth, interlock	E	15.3	17.5	18.8	18.5
Module, wall to interlock	F	44.8	52.5	61.3	63.0
Module, interlocking	G	42.6	51.0	61.0	63.0
Module, interlock to curb face	H	42.8	50.2	28.8	60.5
Bumper overhang (typical)	I	2.0	2.3	2.5	2.5
Offset	J	6.3	2.7	0.5	0.0
Setback	K	11.0	8.3	5.0	0.0
Cross aisle, one-way	L	14.0	14.0	14.0	14.0
Cross aisle, two-way	-	24.0	24.0	24.0	24.0

Parking Stall Layout Elements (Courtesy Transportation Research Board)

# PARALLEL PARKING DESIGN



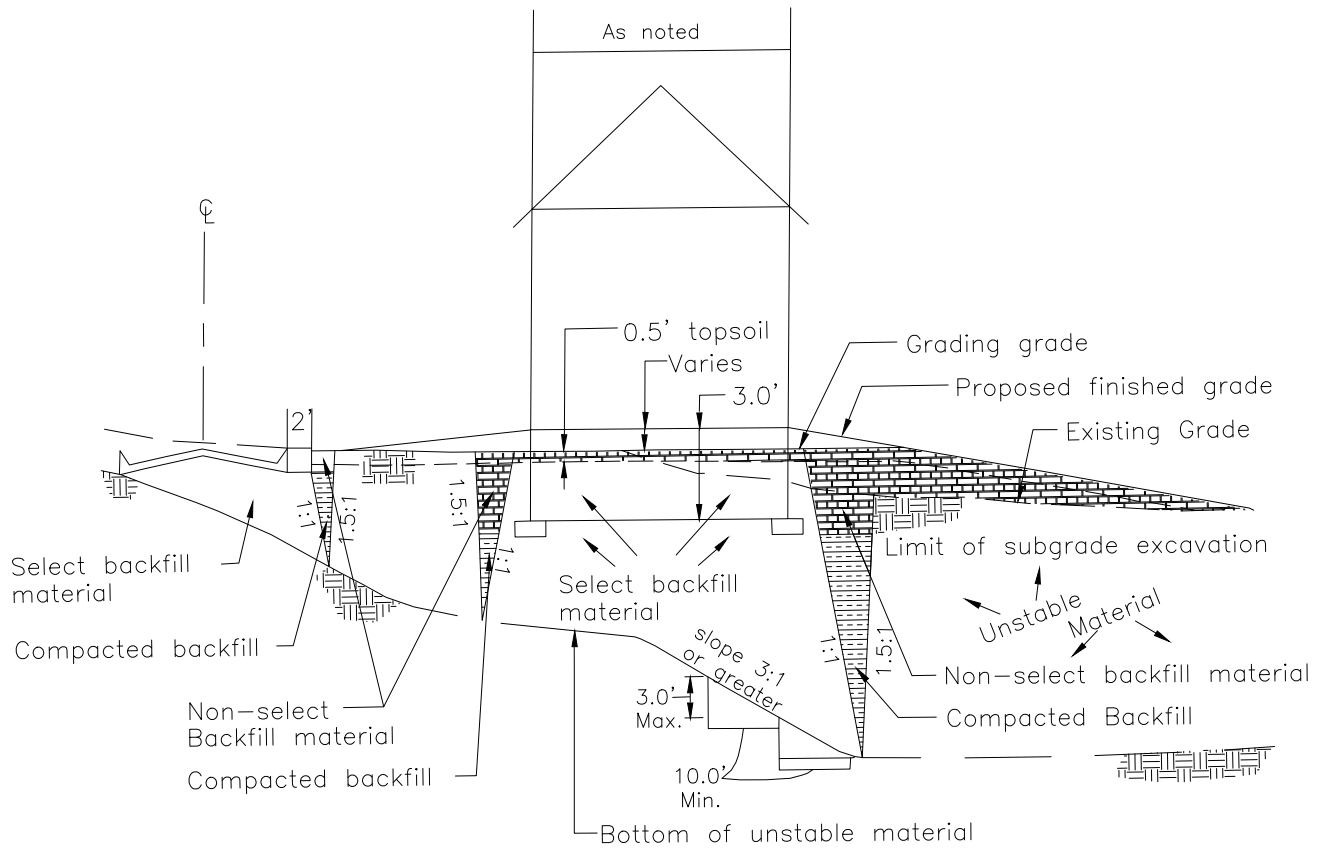
## STANDARD DETAILS TYPICAL PARKING DESIGNS

Last Revision:  
FEB 2017

# FARMINGTON, MINNESOTA

City Plate No.  
GEN-14  
2019





STANDARD DETAILS  
SUBGRADE CORRECTION

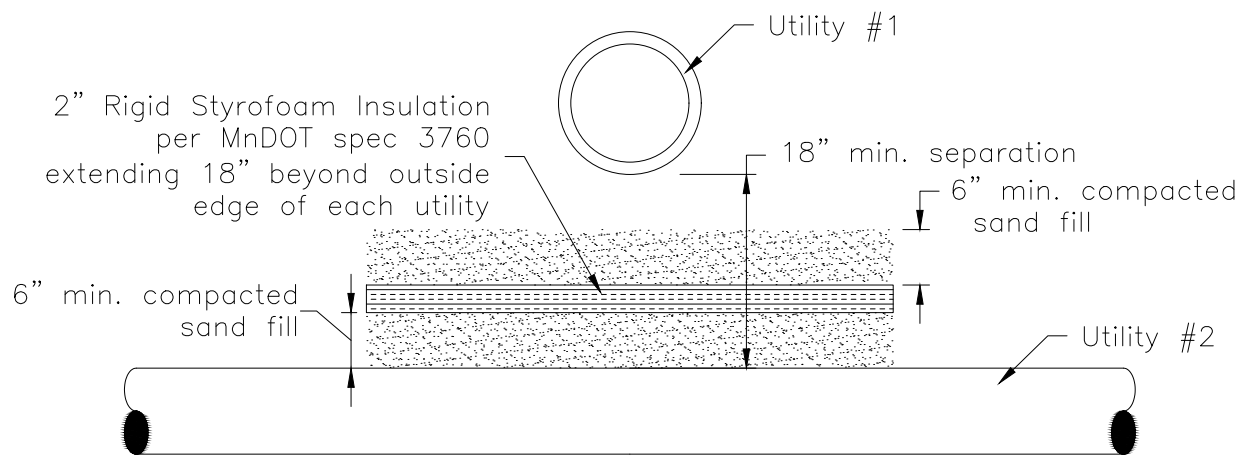
Last Revision:  
JUL 2004

FARMINGTON, MINNESOTA

City Plate No.  
GEN-15  
2019

UTILITY TABLE			
Utility #1	Utility #2	Minimum Vertical Separation	Insulation Needed?
WATER	SANITARY	18 IN	NO
STORM	WATER	18 IN	YES, < 3 FT
STORM	SANITARY	18 IN	YES, < 3 FT

GRADE



NOTE:

1. Any insulation seams shall be taped and overlap a minimum of 12"
2. Utility #1 to be insulated for cover per City Plate No. GEN-02.



STANDARD DETAILS  
UTILITY CROSSINGS

Last Revision:  
FEB 2017

FARMINGTON, MINNESOTA

City Plate No.  
GEN-16  
2019

# CERTIFICATE OF SURVEY

LOT\_\_\_\_, BLOCK\_\_\_\_  
 DEVELOPMENT NAME AND PHASE  
 SITE ADDRESS



STREET NAME

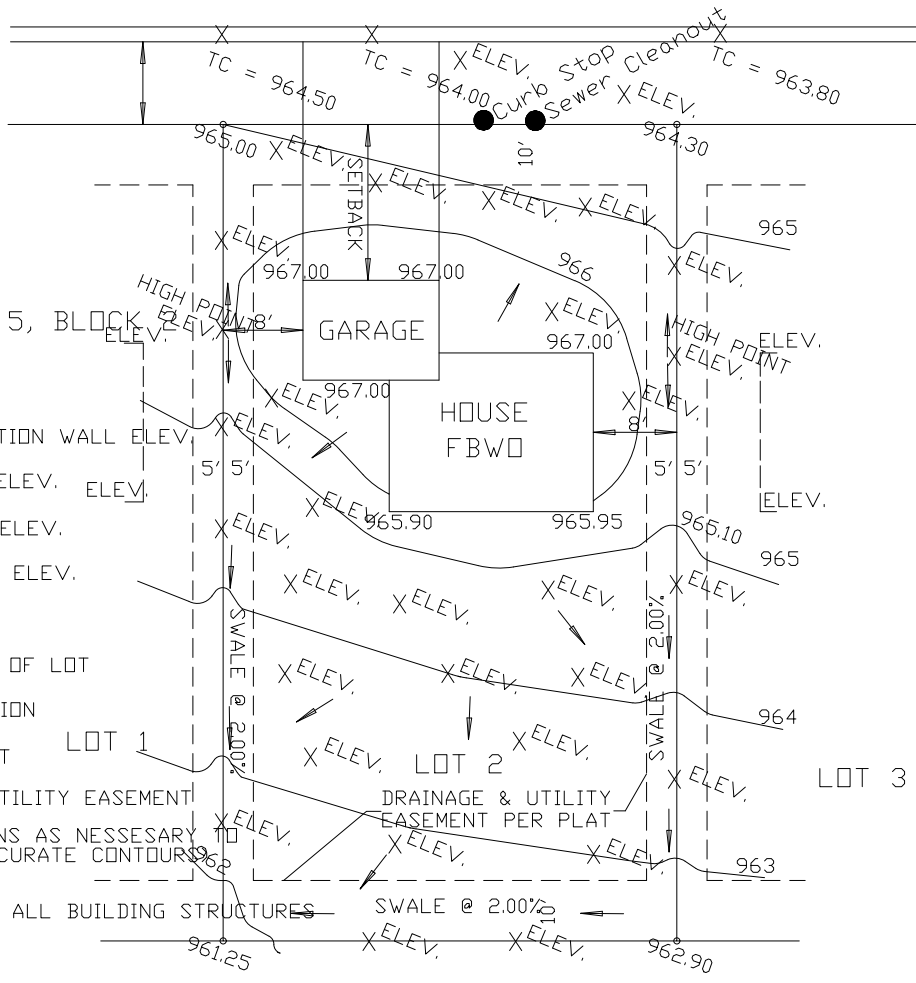
SCALE : 1" = 30'

**BENCHMARK**

TOP NUT OF HYDRANT  
 BETWEEN LOT 4 AND 5, BLOCK 5  
 ELEV. = 957.20

**NOTES**

- TOP OF FOUNDATION WALL ELEV. ELEV.
- GARAGE FLOOR ELEV. ELEV.
- LOWEST FLOOR ELEV.
- WALKOUT FLOOR ELEV.
- 915.03 EXIST. ELEV.
- SQUARE FOOTAGE OF LOT
- ← DRAINAGE DIRECTION
- IRON MONUMENT
- DRAINAGE & UTILITY EASEMENT
- X ELEV. (ELEVATIONS AS NECESSARY TO DETERMINE ACCURATE CONTOURS)



INCLUDE SQUARE FOOTAGE OF ALL BUILDING STRUCTURES

I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT REPRESENTATION OF THE PARCEL OF LAND SHOWN AND DESCRIBED HEREON. THIS PARCEL MATCHES THE APPROVED PLAT AND GRADING PLAN.

**NEED ORIGINAL SIGNATURE**

SURVEYOR NAME AND REG. NO. \_\_\_\_\_ DATE \_\_\_\_\_

HOME BUILDER COMPANY \_\_\_\_\_



STANDARD DETAILS  
 CERTIFICATE OF SURVEY

FARMINGTON, MINNESOTA

Last Revision:  
 FEB 2017

City Plate No.  
 GEN-17  
 2019