



Standard Detail Plates

City of Farmington

April 2019

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REFERENCES ON CITY PLATES ARE TO MnDOT 2018 EDITION SPECIFICATIONS

NOTE:

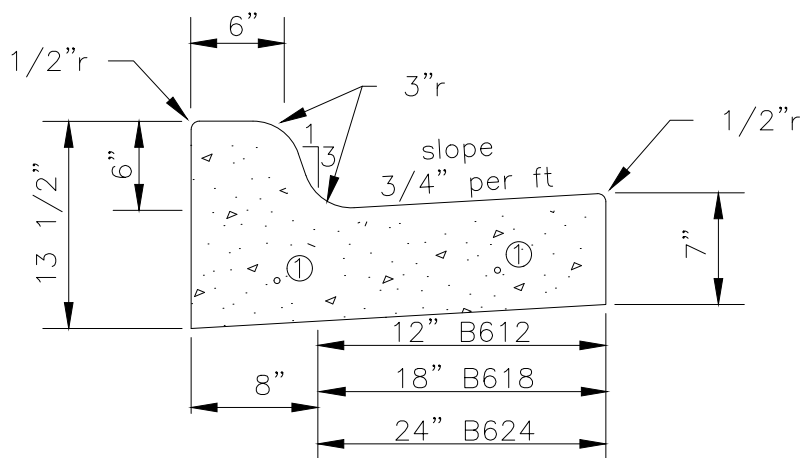


STANDARD DETAILS INDEX

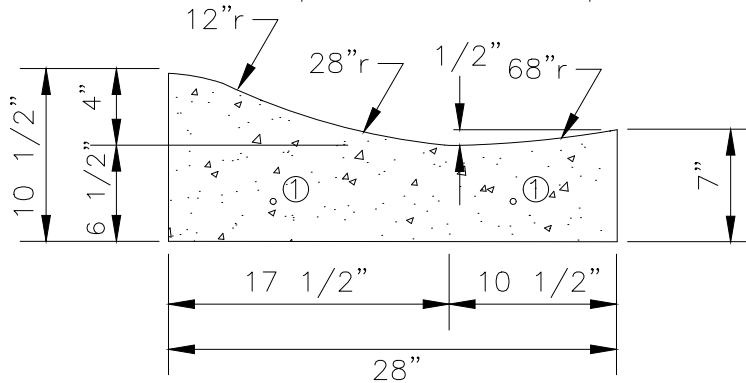
Last Revision:
APR 2017

City Plate No.
INDEX1
2019

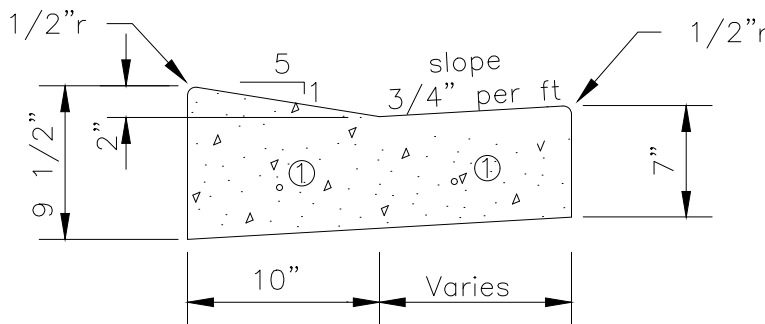
FARMINGTON, MINNESOTA



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.

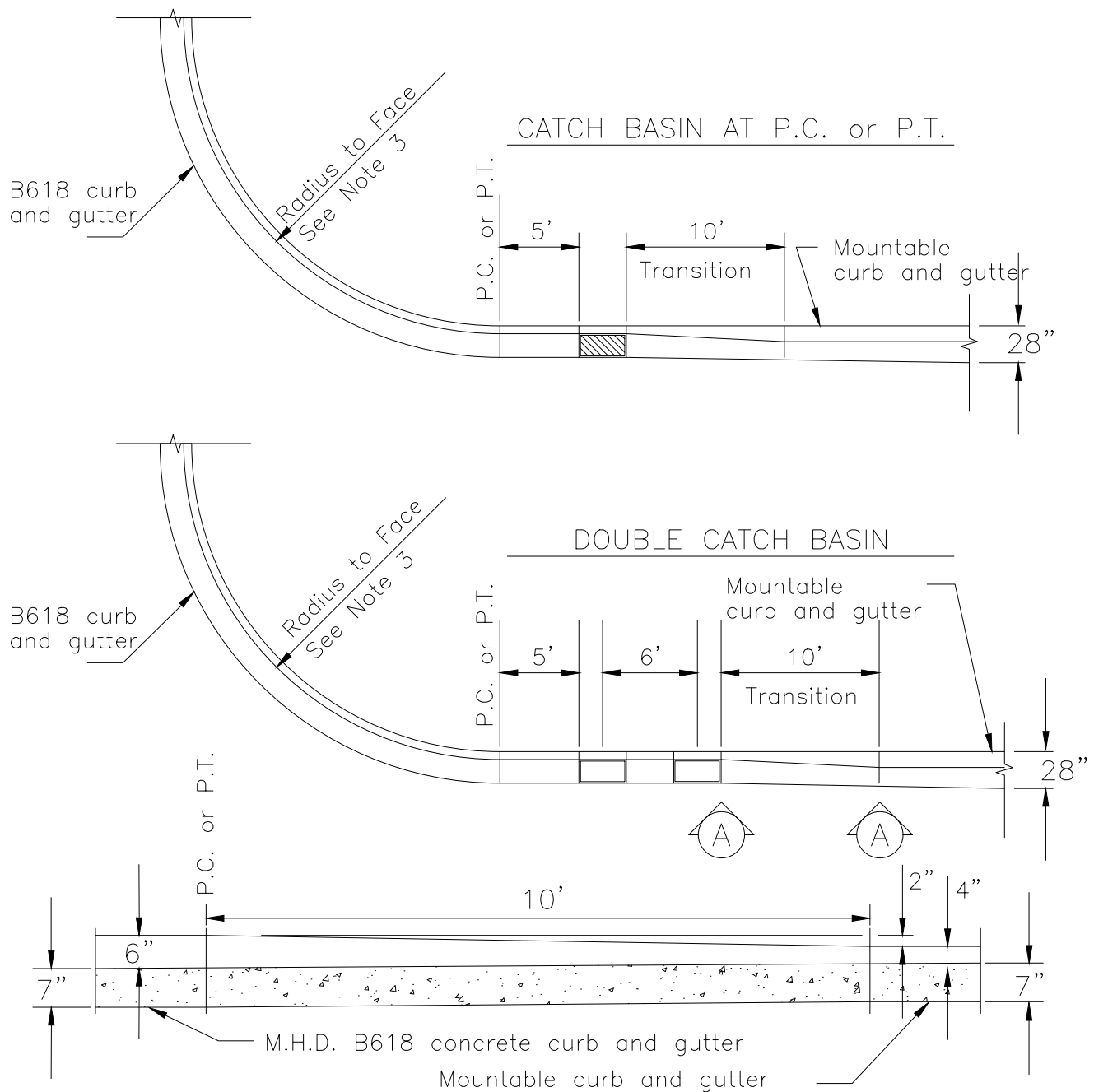


STANDARD DETAILS CURB AND GUTTER

FARMINGTON, MINNESOTA

Last Revision:
MAR 2017

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.

SECTION A-A



STANDARD DETAILS
CONCRETE CURB AND GUTTER
TRANSITIONS

FARMINGTON, MINNESOTA

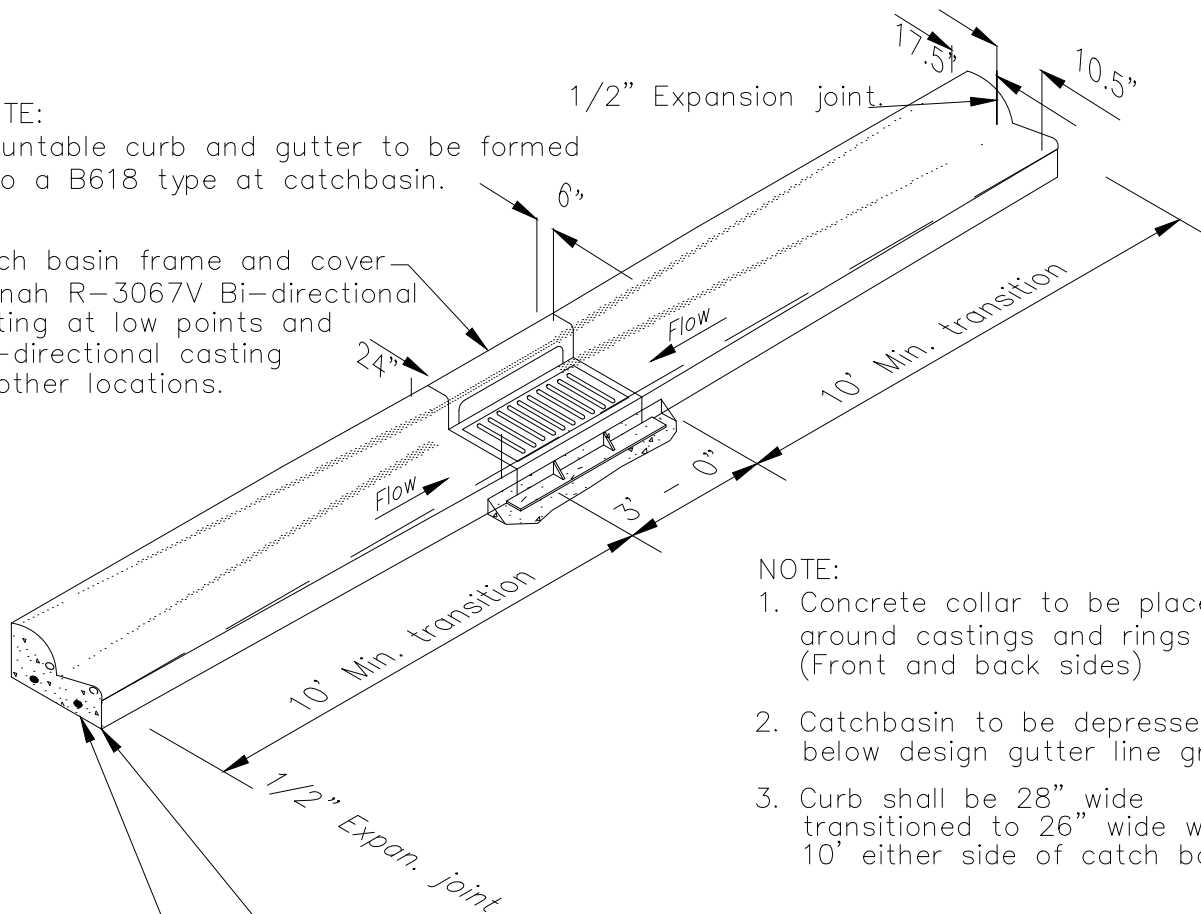
Last Revision:
FEB 2017

City Plate No.
STR-02
2019

NOTE:

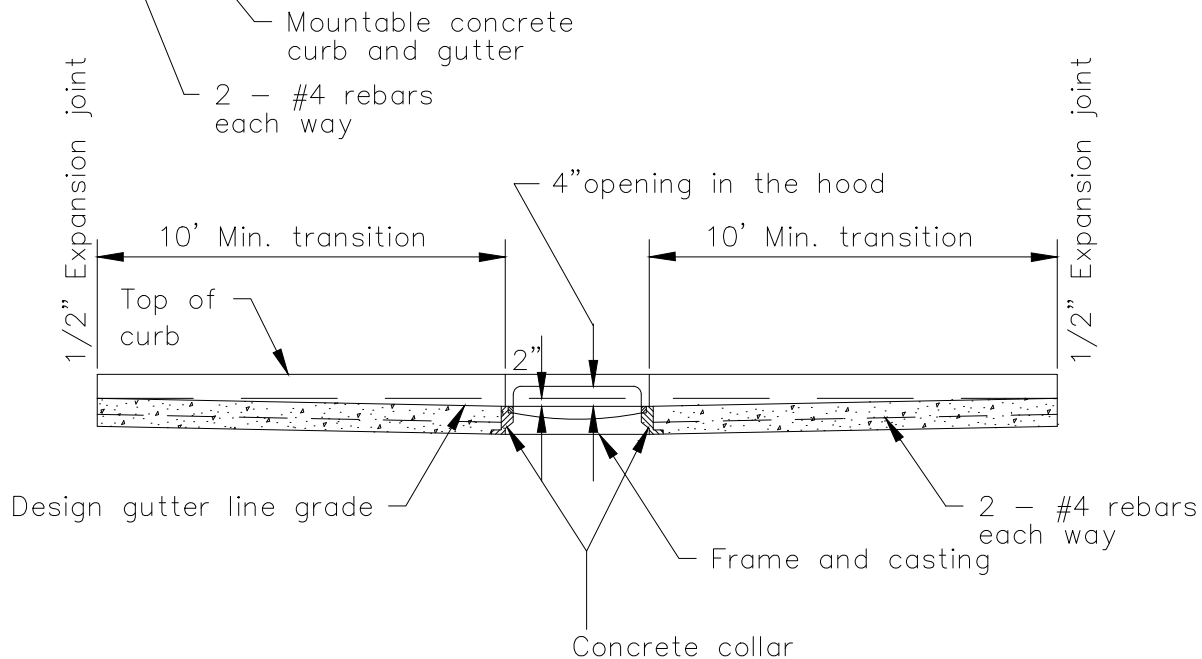
Mountable curb and gutter to be formed into a B618 type at catchbasin.

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



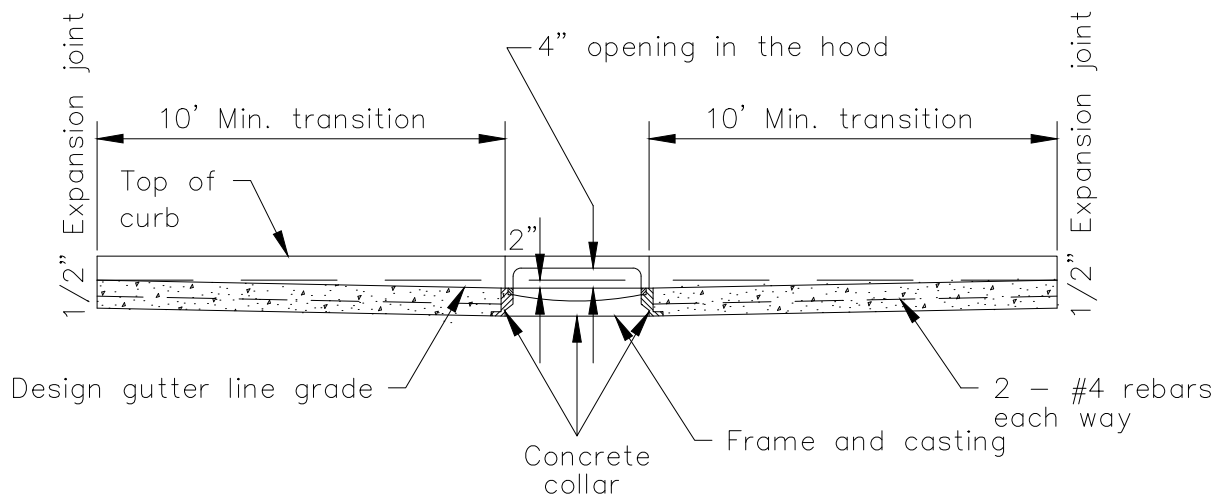
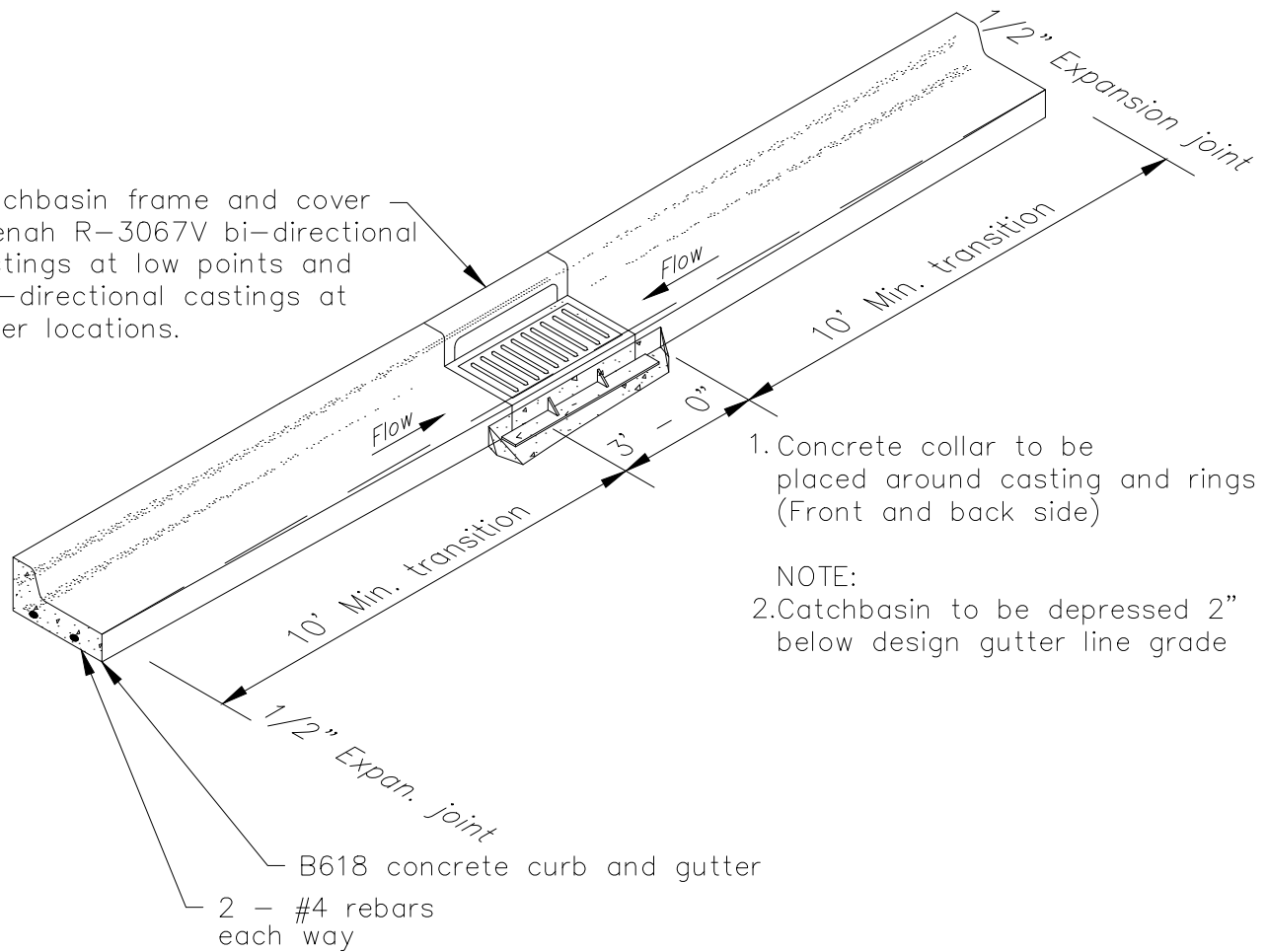
STANDARD DETAILS
MOUNTABLE CURB AND GUTTER
CONSTRUCTION AT CATCH BASINS

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

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

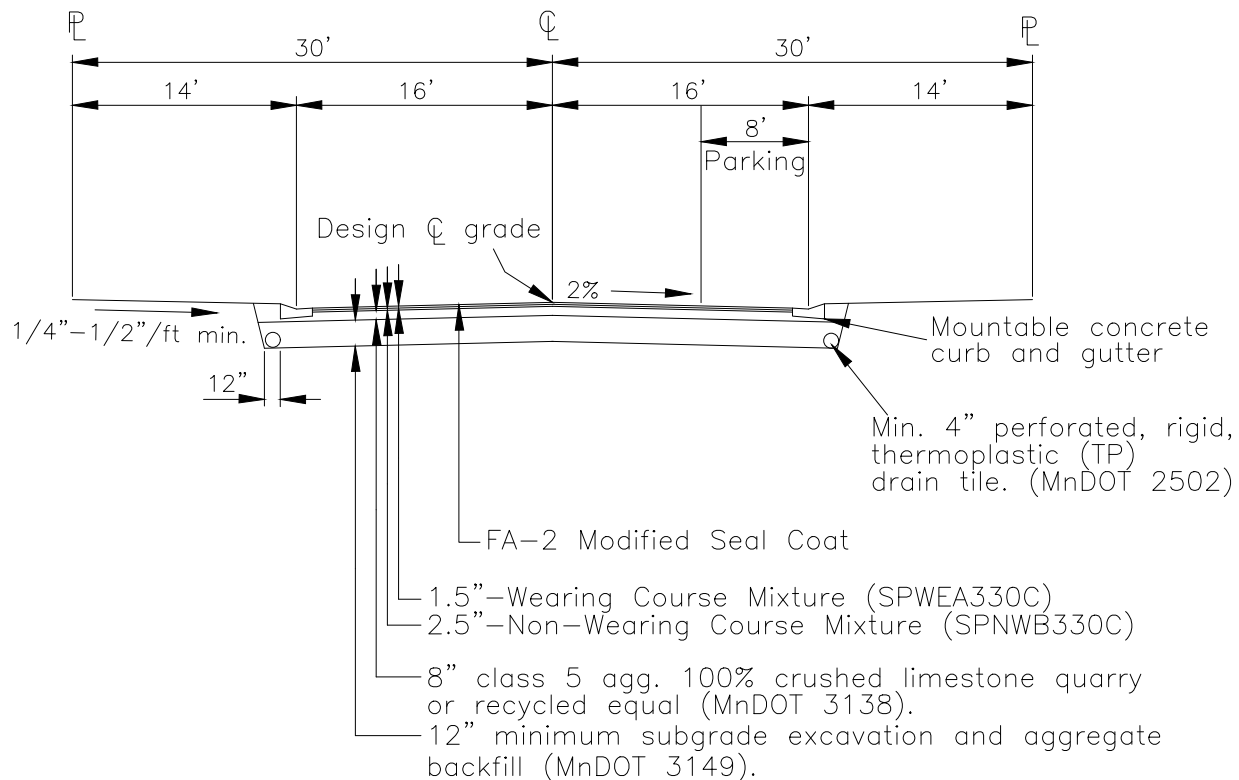


STANDARD DETAILS
B618 CURB AND GUTTER
INSTALLATION AT CATCH BASINS

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

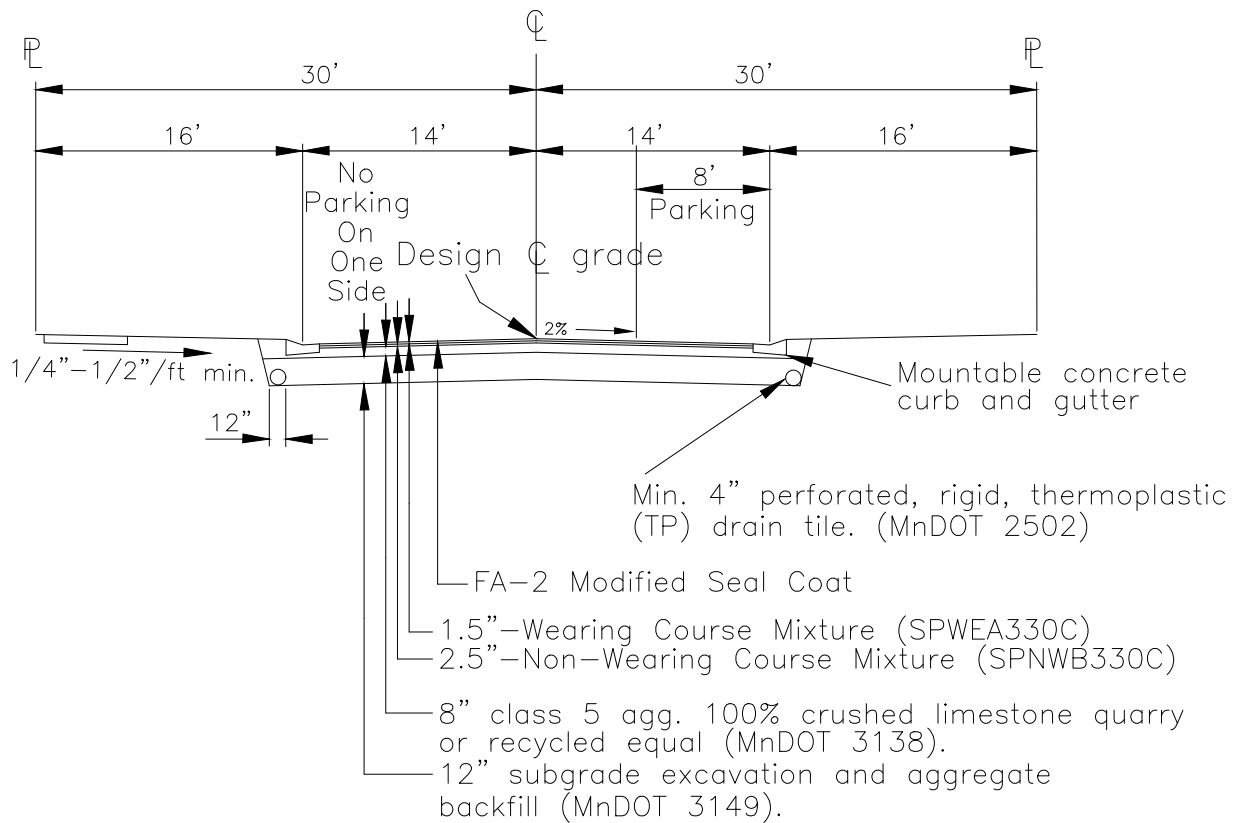


STANDARD DETAILS
RESIDENTIAL STREET SECTION

FARMINGTON, MINNESOTA

Last Revision:
APR 2017

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

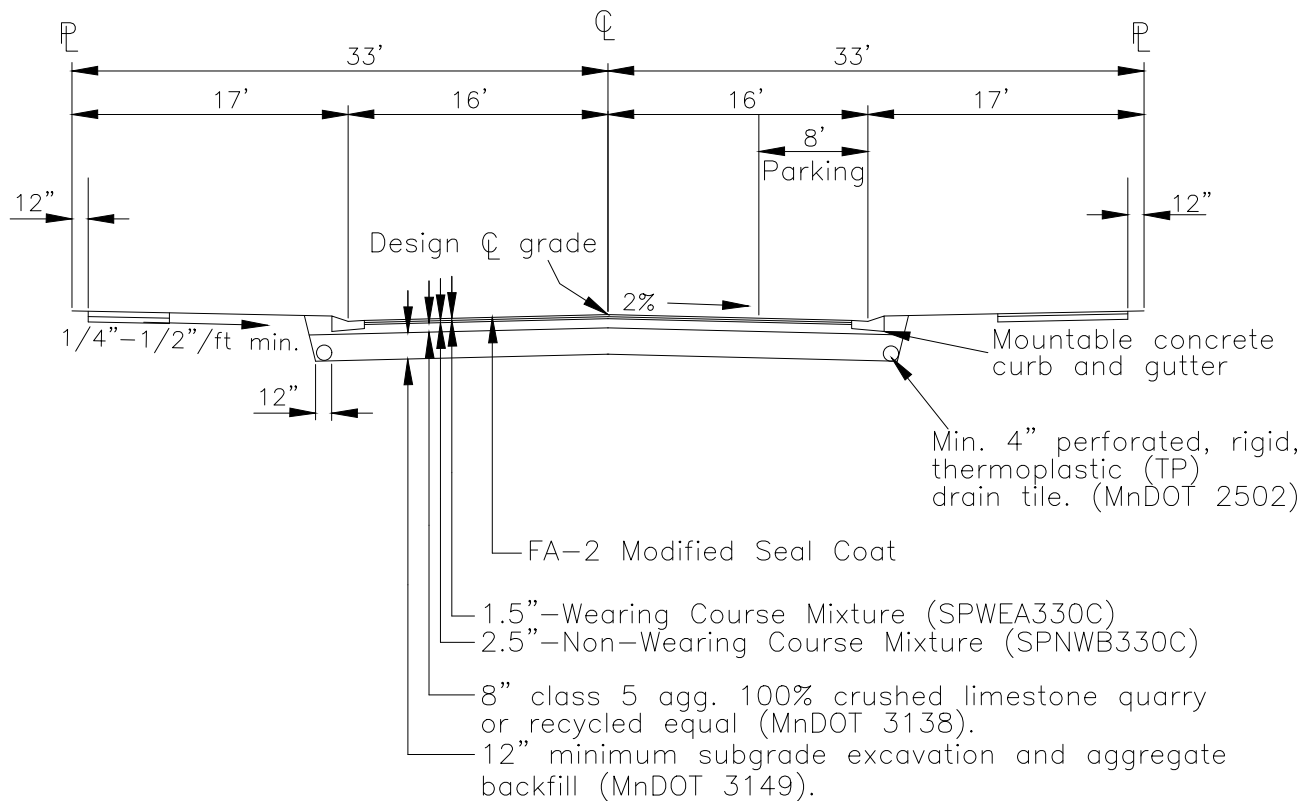


STANDARD DETAILS
28-FOOT RESIDENTIAL STREET SECTION
WITH SIDEWALK

FARMINGTON, MINNESOTA

Last Revision:
APR 2017

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

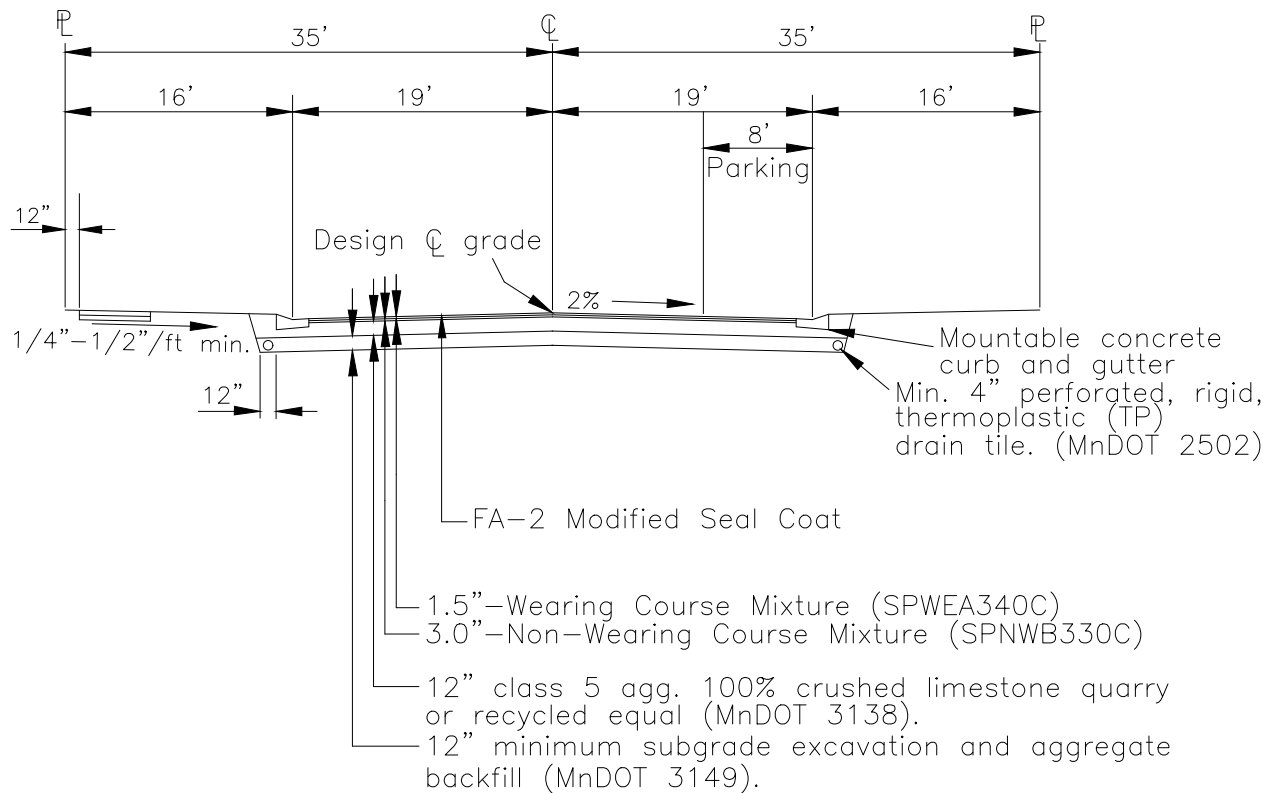


STANDARD DETAILS
32-FOOT RESIDENTIAL STREET SECTION
WITH SIDEWALK/TRAIL

FARMINGTON, MINNESOTA

Last Revision:
APR 2017

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.

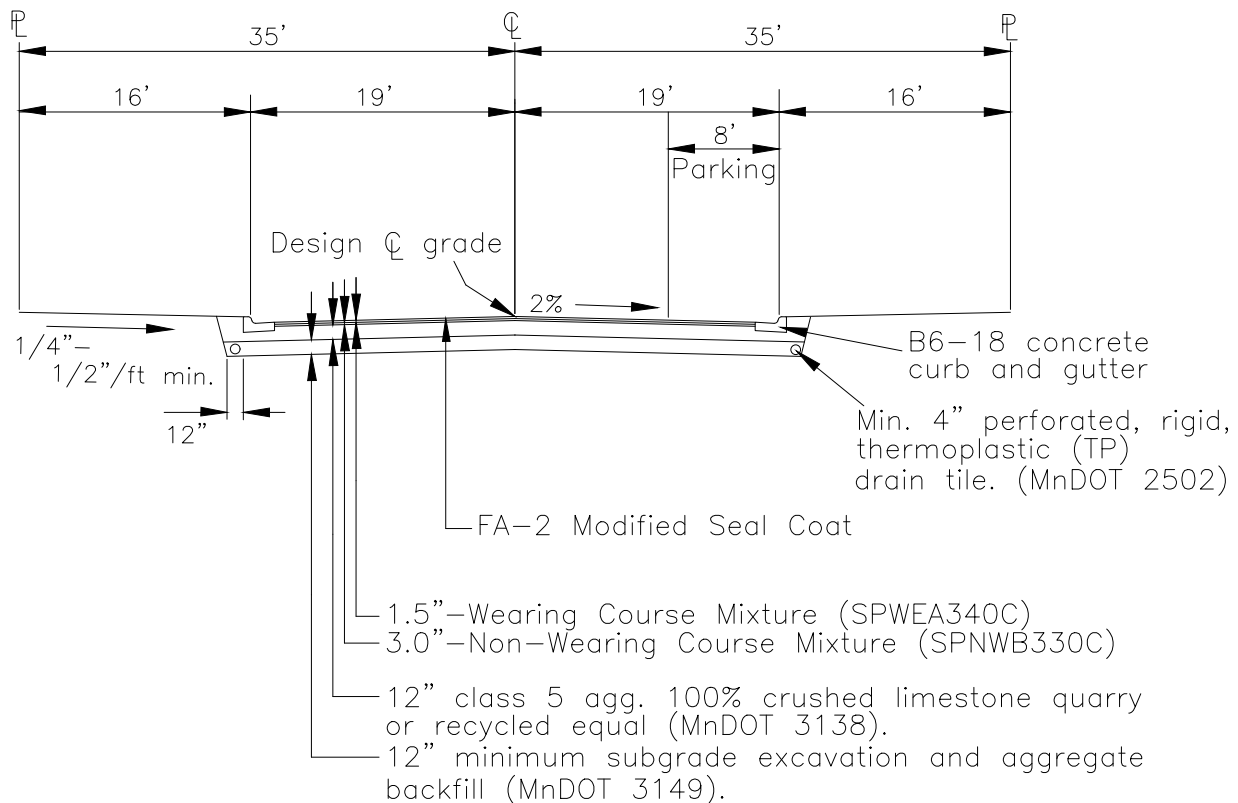


STANDARD DETAILS
RESIDENTIAL COLLECTOR
STREET SECTION WITH SIDEWALK

FARMINGTON, MINNESOTA

Last Revision:
APR 2017

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.

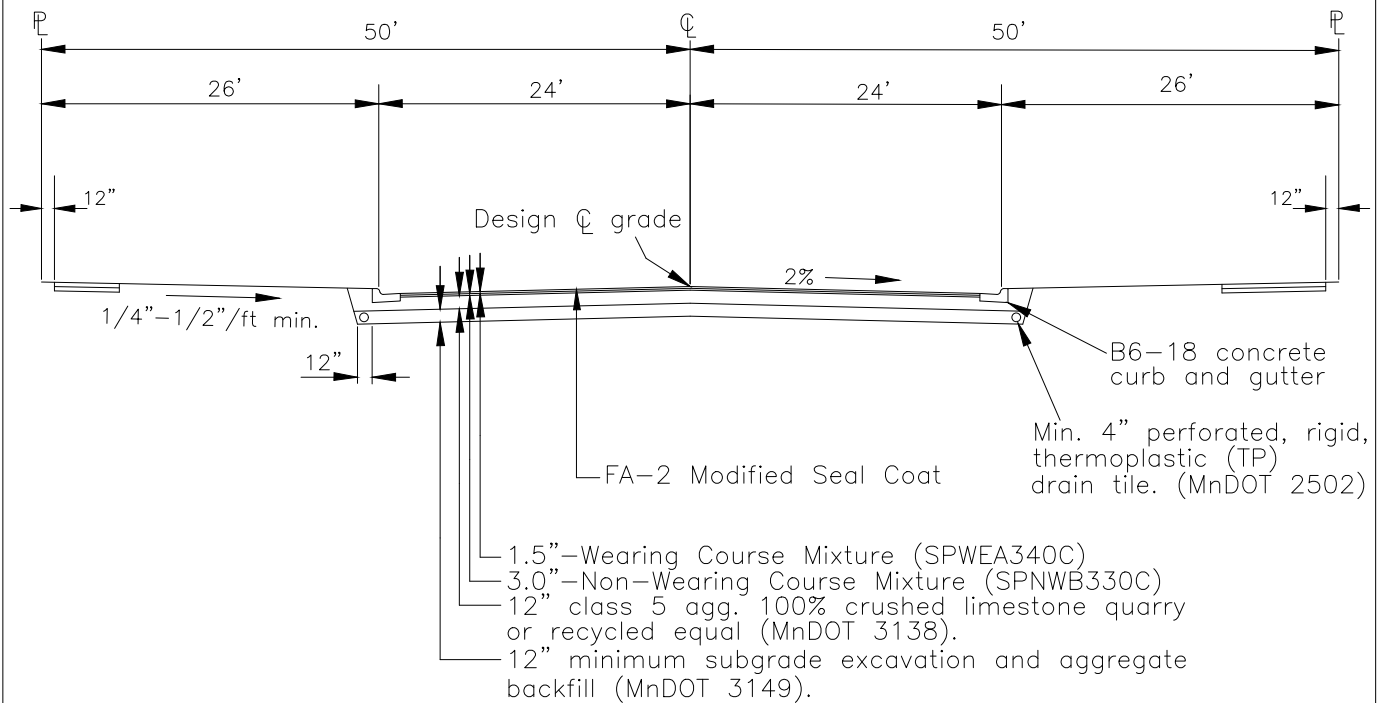


STANDARD DETAILS
INDUSTRIAL/COMMERCIAL
STREET SECTION

FARMINGTON, MINNESOTA

Last Revision:
APR 2017

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.

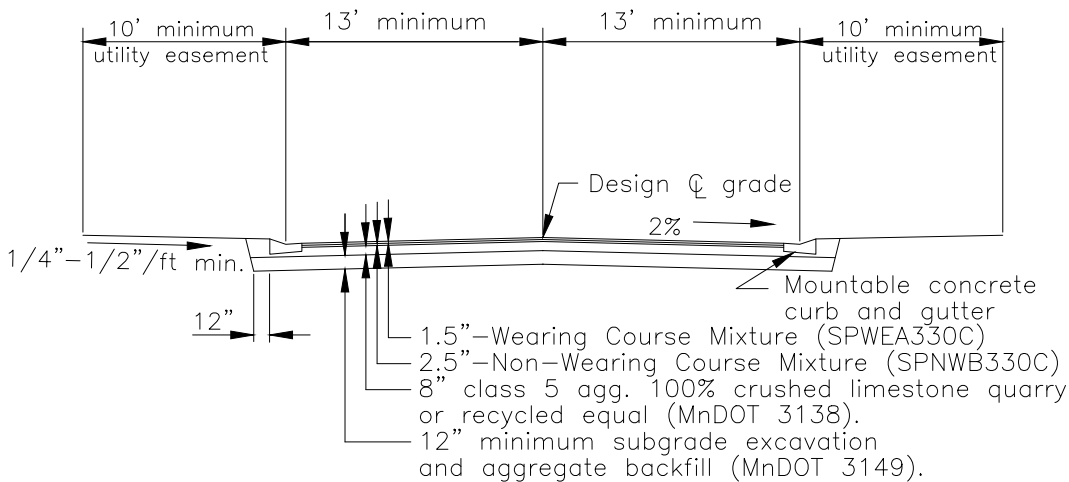


STANDARD DETAILS
4-LANE UNDIVIDED COLLECTOR
STREET SECTION WITH SIDEWALK/TRAIL

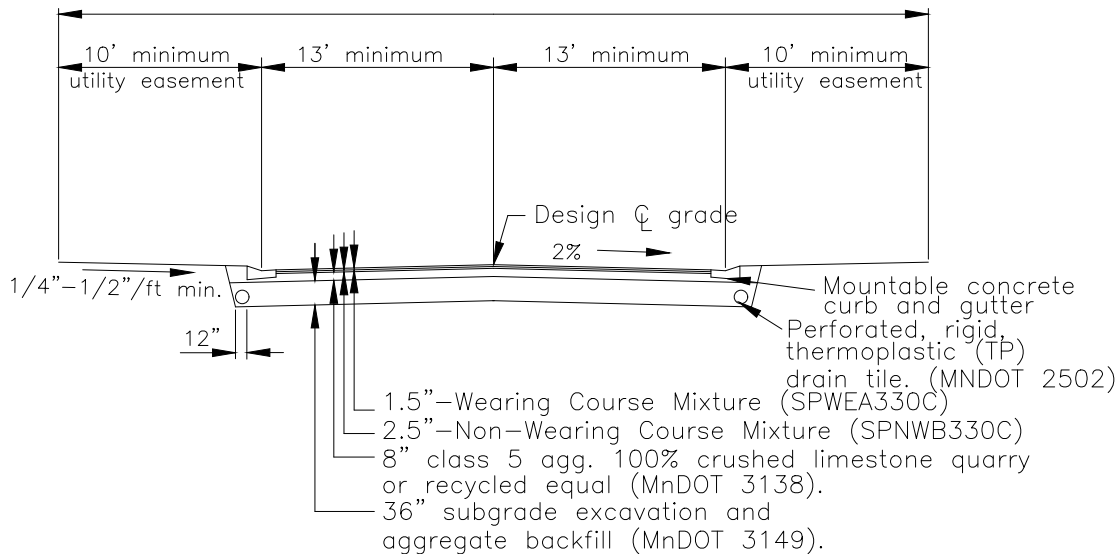
FARMINGTON, MINNESOTA

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.

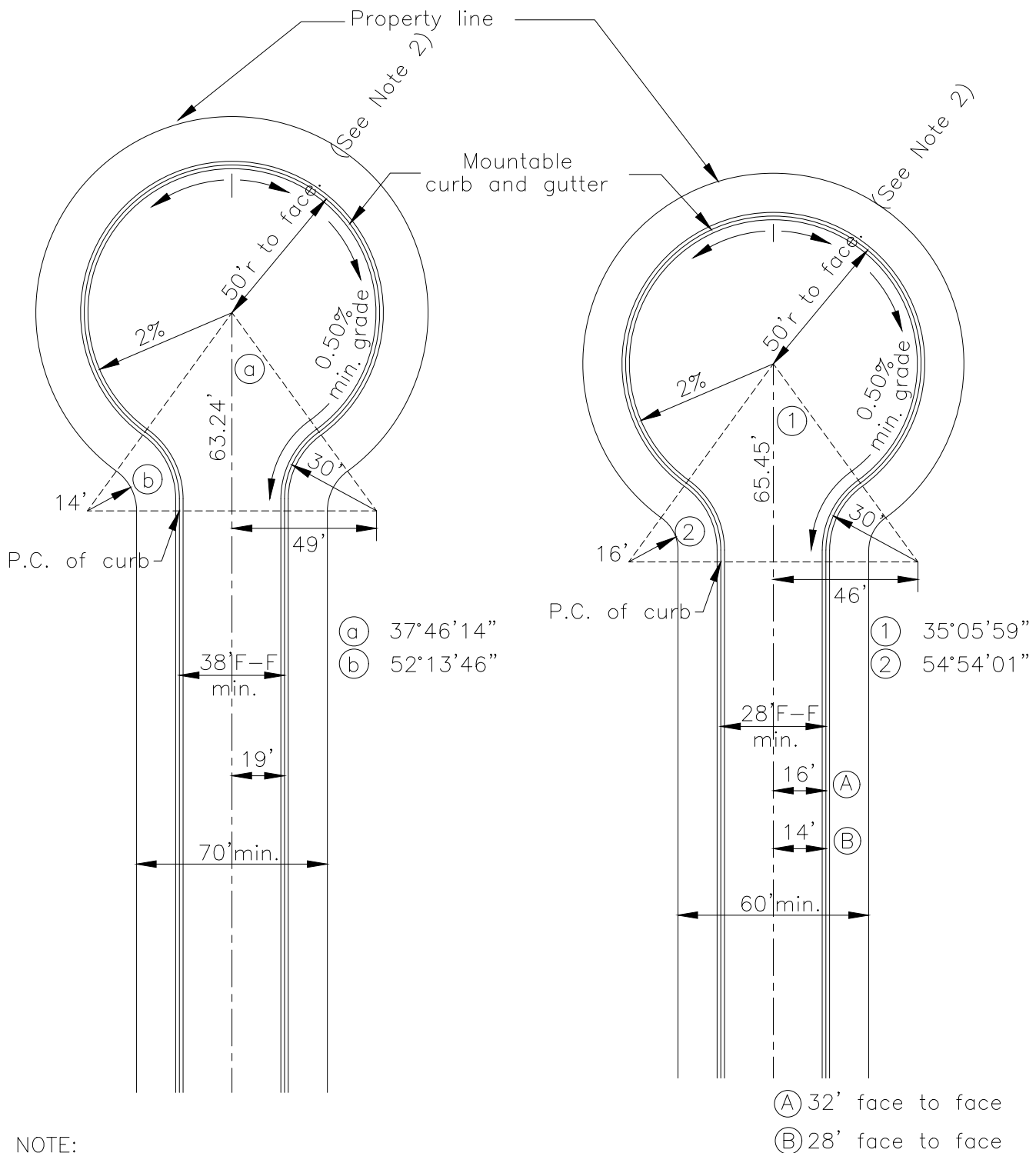


STANDARD DETAILS PRIVATE STREET SECTION NO PARKING

FARMINGTON, MINNESOTA

Last Revision:
APR 2017

City Plate No.
STR-07
2019



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.

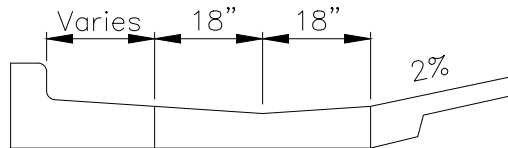
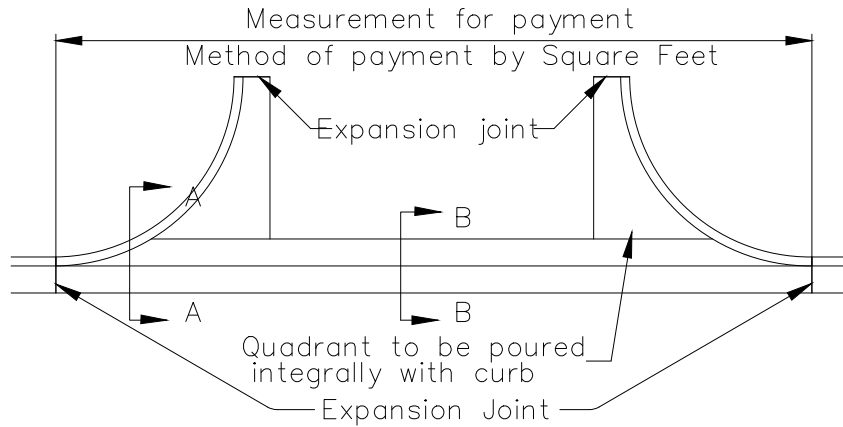


STANDARD DETAILS
TYPE I CUL-DE-SAC

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

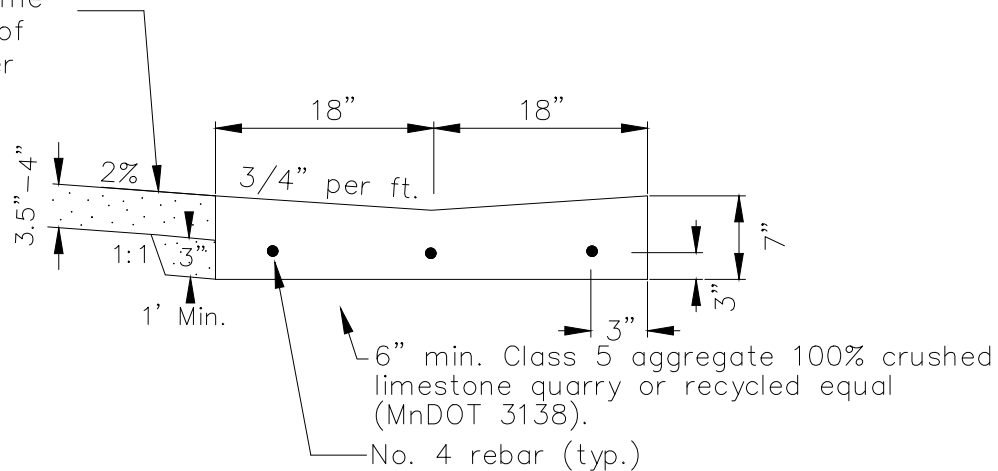
City Plate No.
STR-08
2019



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.

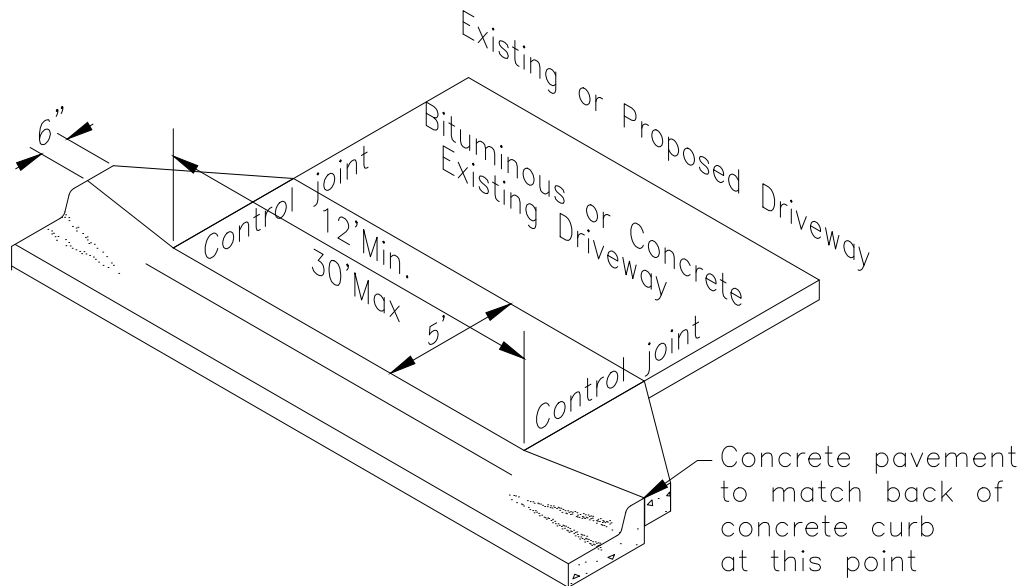
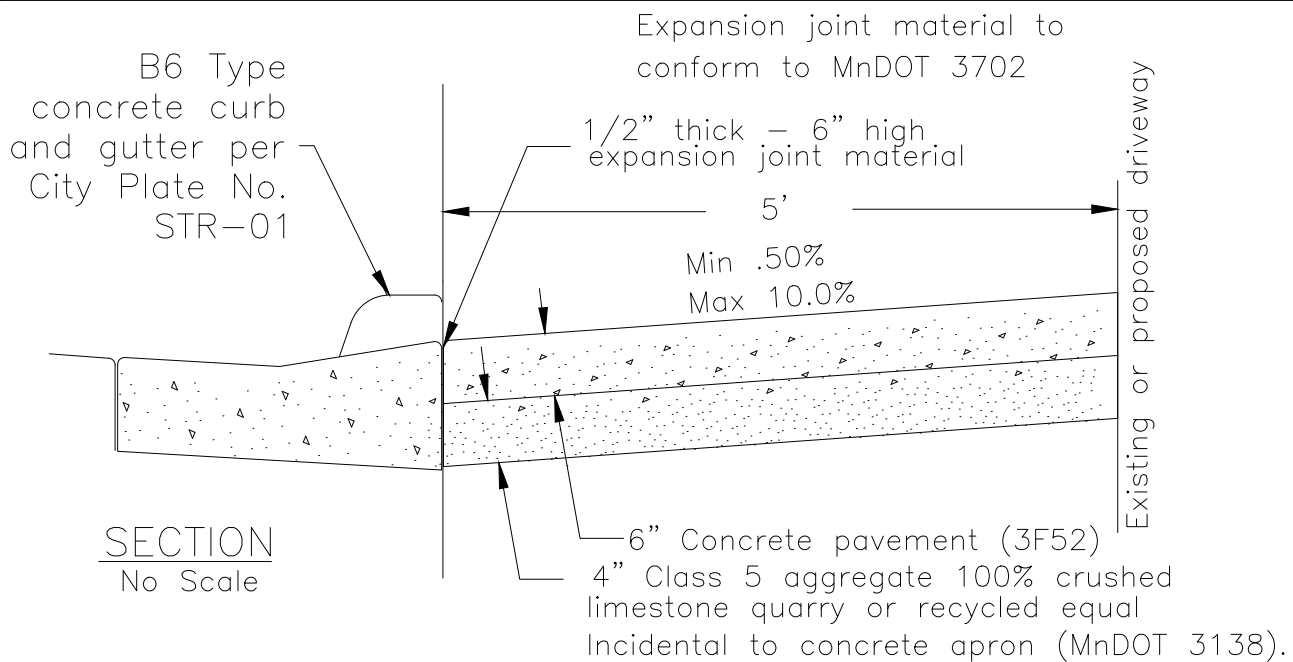


STANDARD DETAILS
CONCRETE VALLEY GUTTER

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)

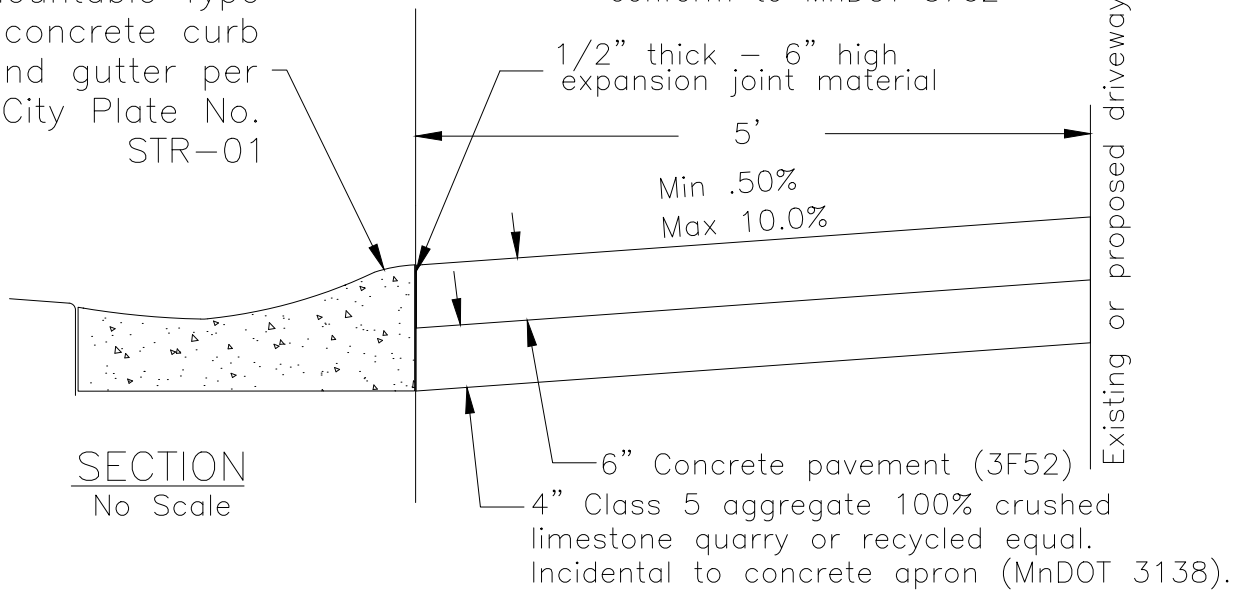
FARMINGTON, MINNESOTA

Last Revision:
MAR 2017

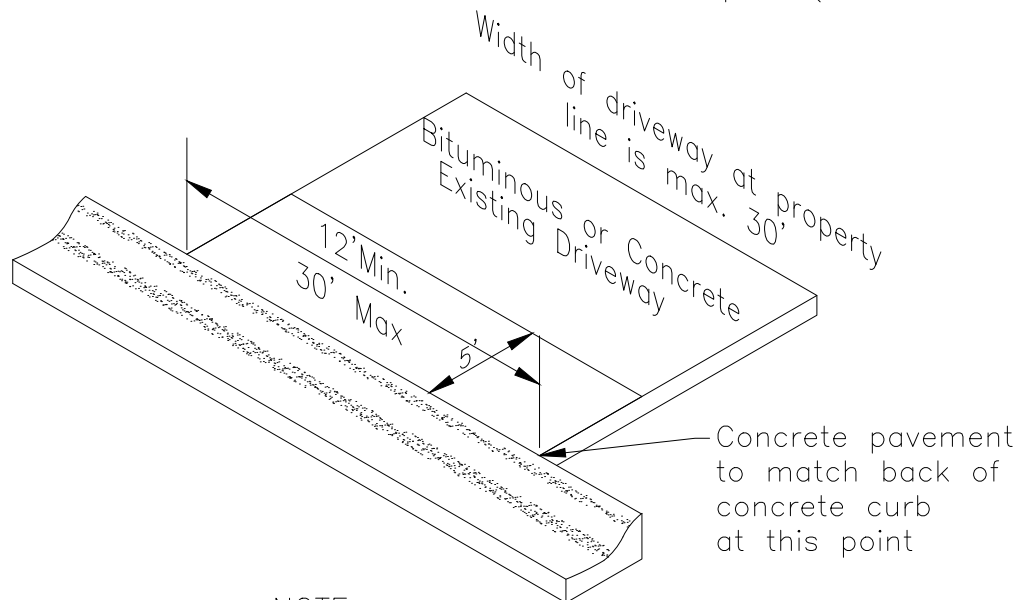
City Plate No.
STR-11
2019

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.

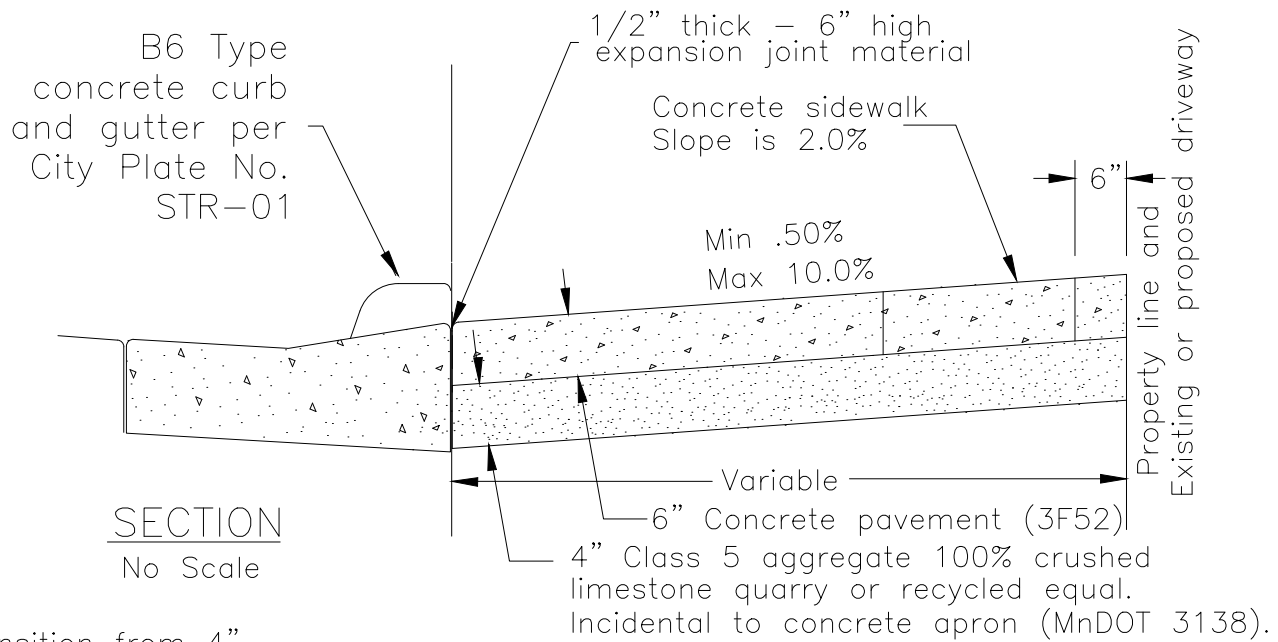


STANDARD DETAILS
RESIDENTIAL CONCRETE DRIVEWAY APRON
(MOUNTABLE TYPE CURB)

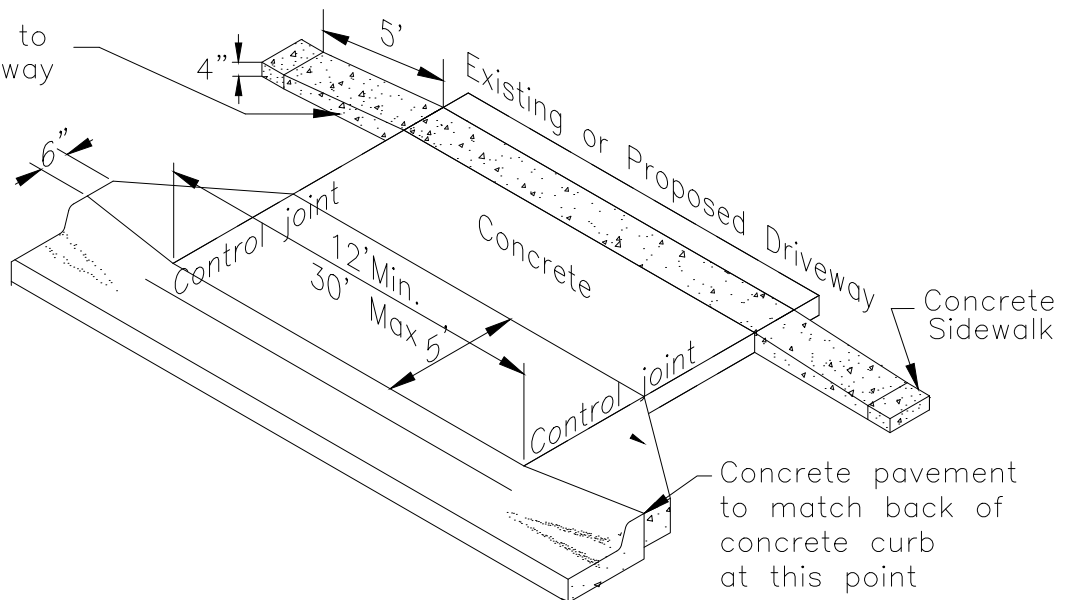
FARMINGTON, MINNESOTA

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)

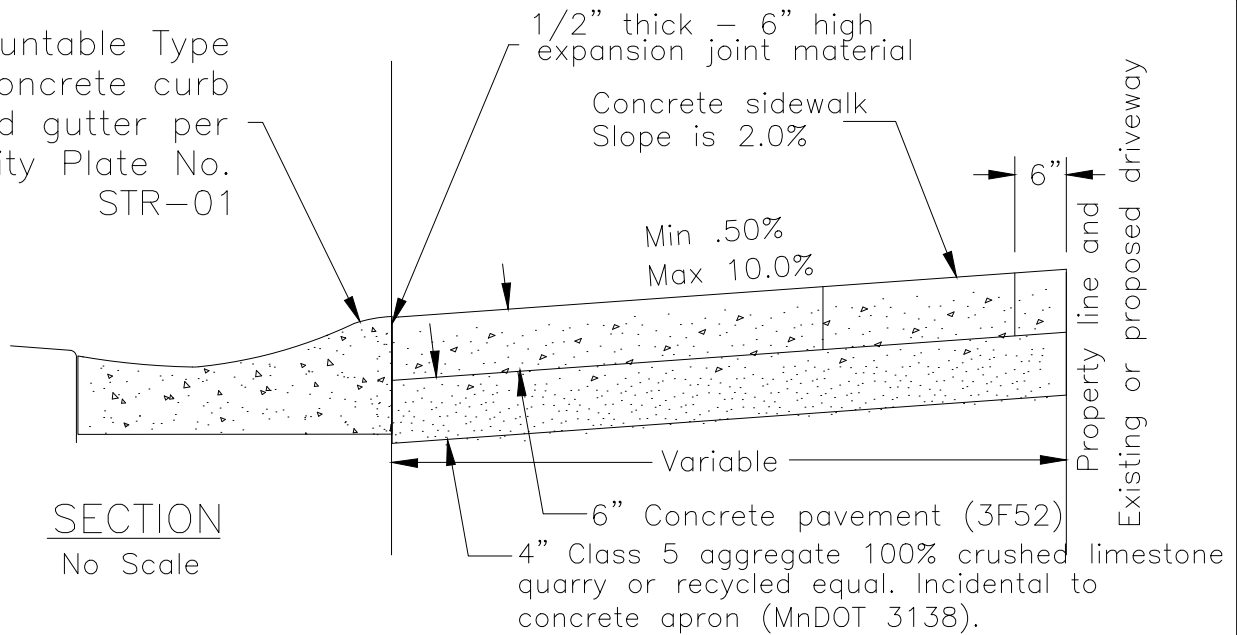
FARMINGTON, MINNESOTA

Last Revision:
MAR 2017

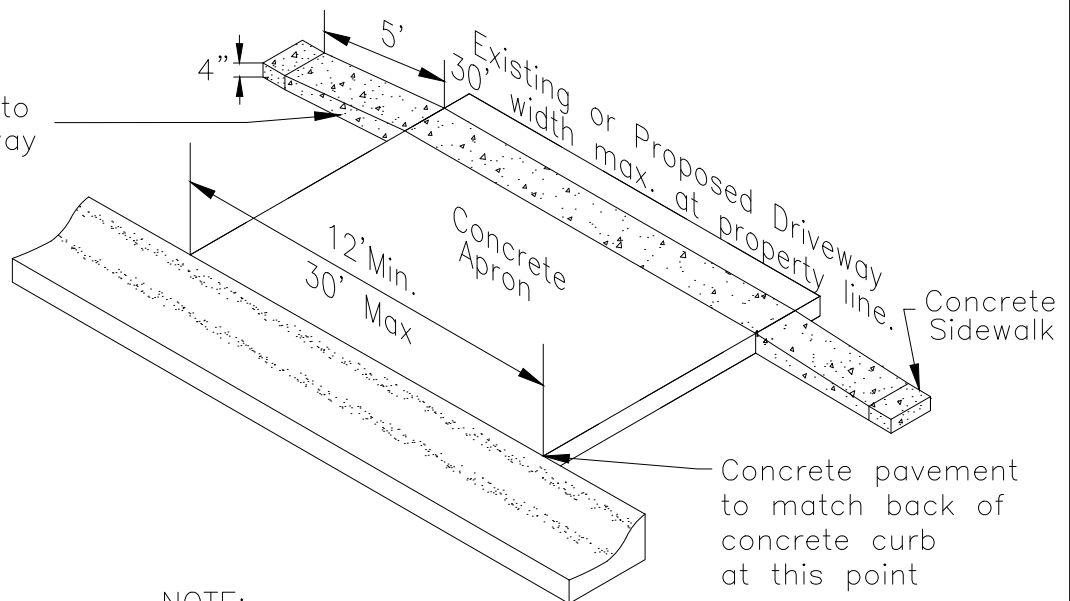
City Plate No.
STR-13
2019

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)



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'.

ISOMETRIC
No Scale

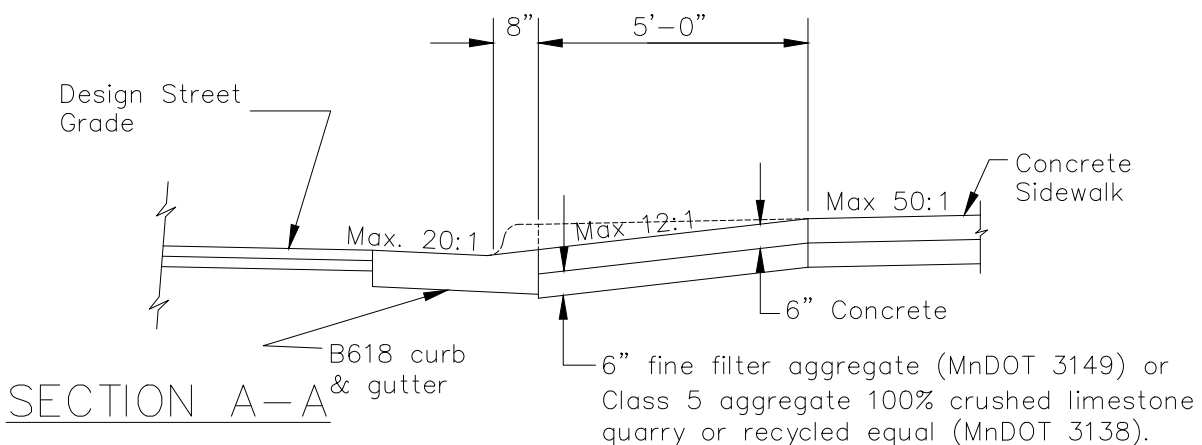
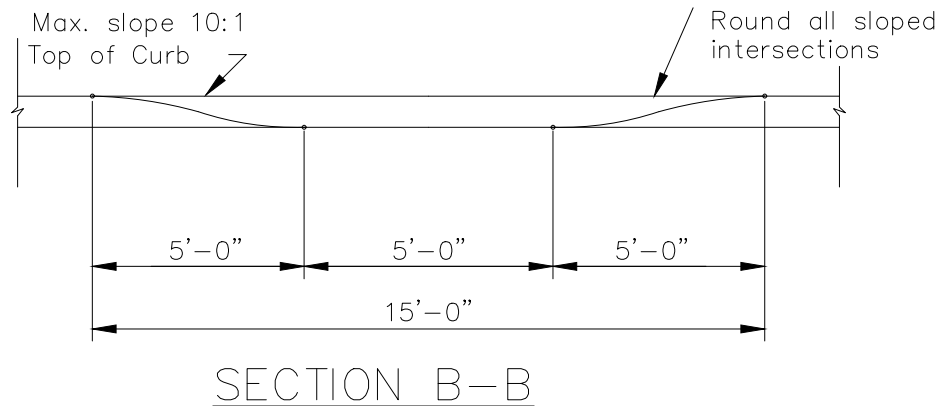
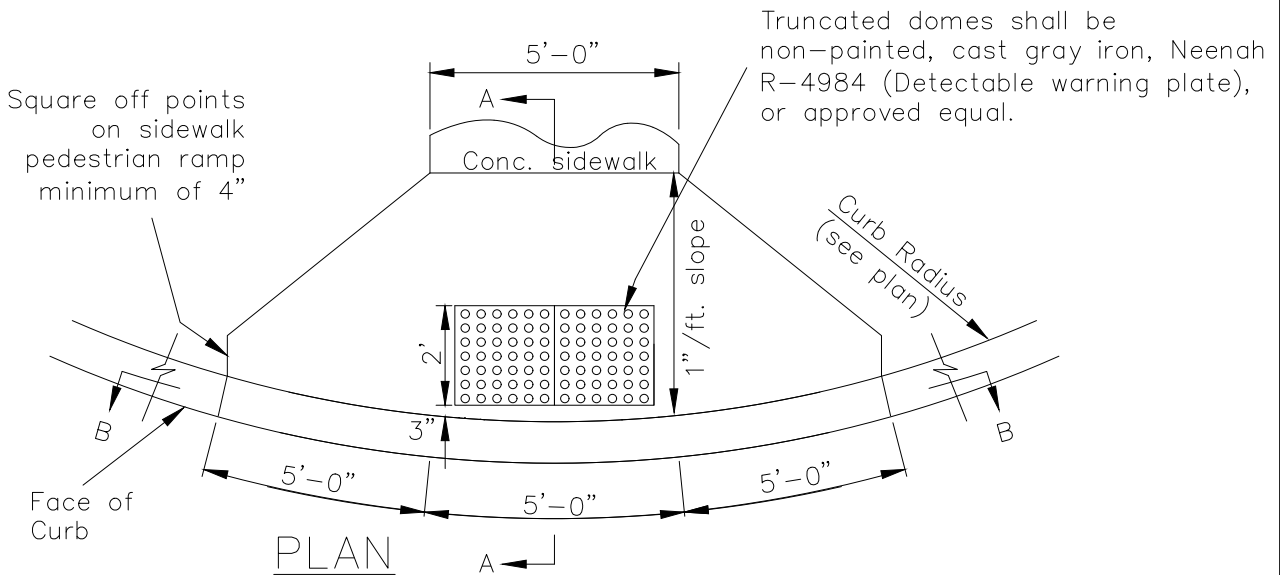


STANDARD DETAILS
RESIDENTIAL CONCRETE DRIVEWAY APRON
WITH SIDEWALK (MOUNTABLE TYPE CURB)

FARMINGTON, MINNESOTA

Last Revision:
MAR 2017

City Plate No.
STR-14
2019



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



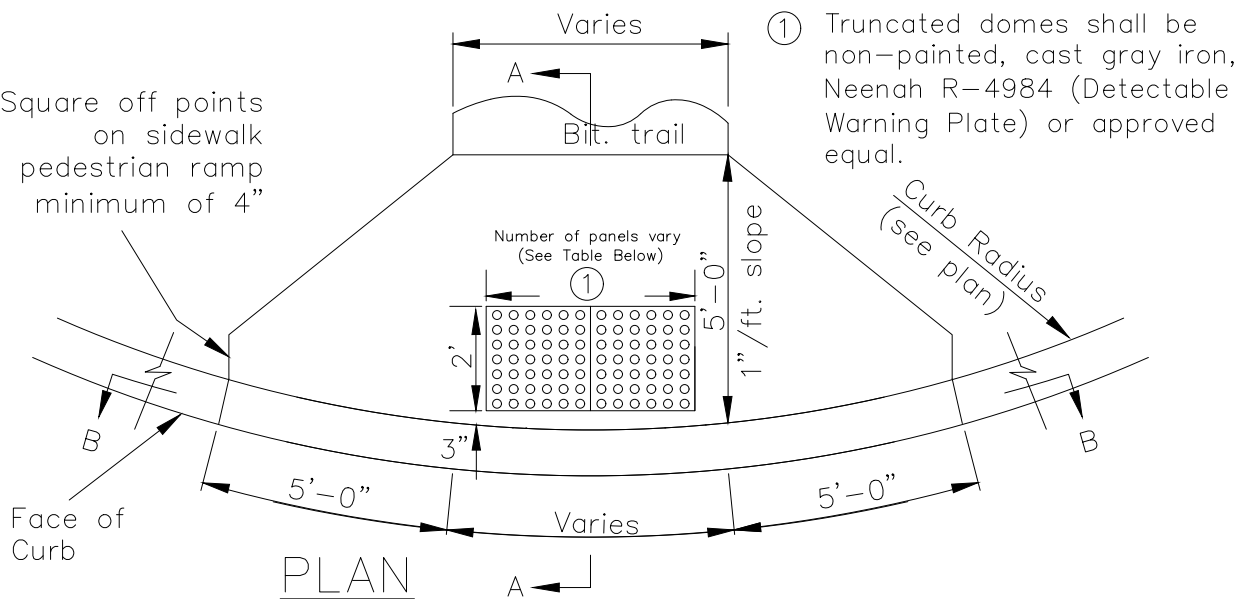
STANDARD DETAILS SIDEWALK PEDESTRIAN RAMP

FARMINGTON, MINNESOTA

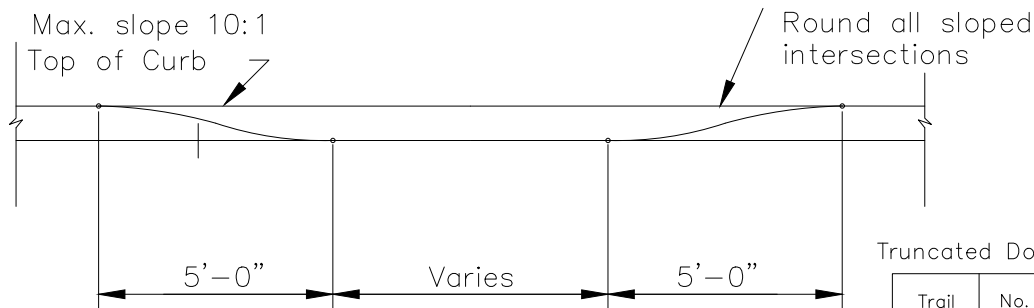
Last Revision:
FEB 2017

City Plate No.
STR-17
2019

Square off points
on sidewalk
pedestrian ramp
minimum of 4"

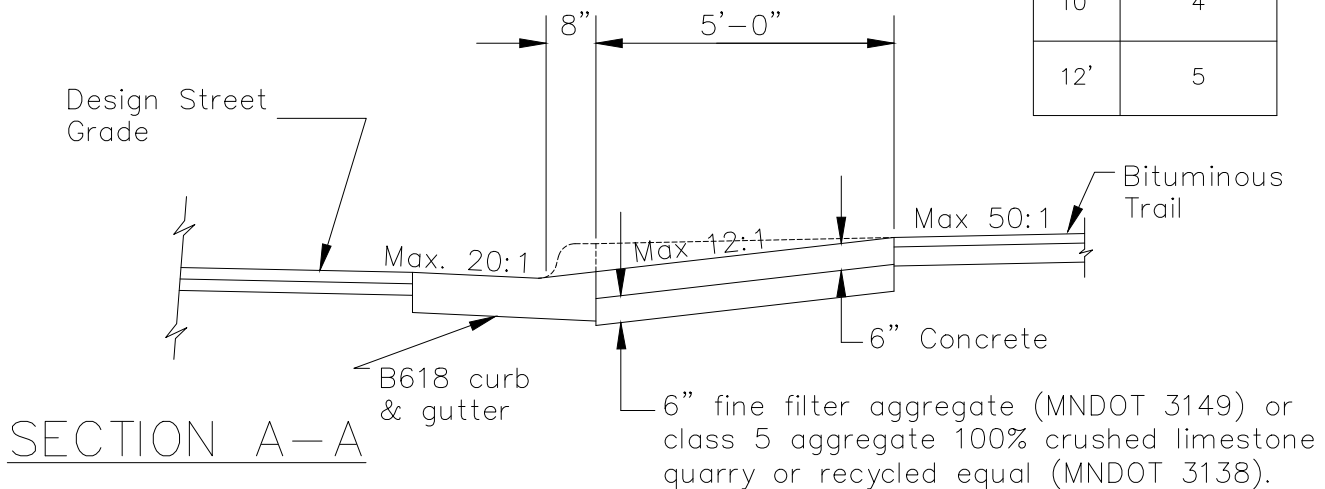


① Truncated domes shall be non-painted, cast gray iron, Neenah R-4984 (Detectable Warning Plate) or approved equal.



Truncated Dome Table

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



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

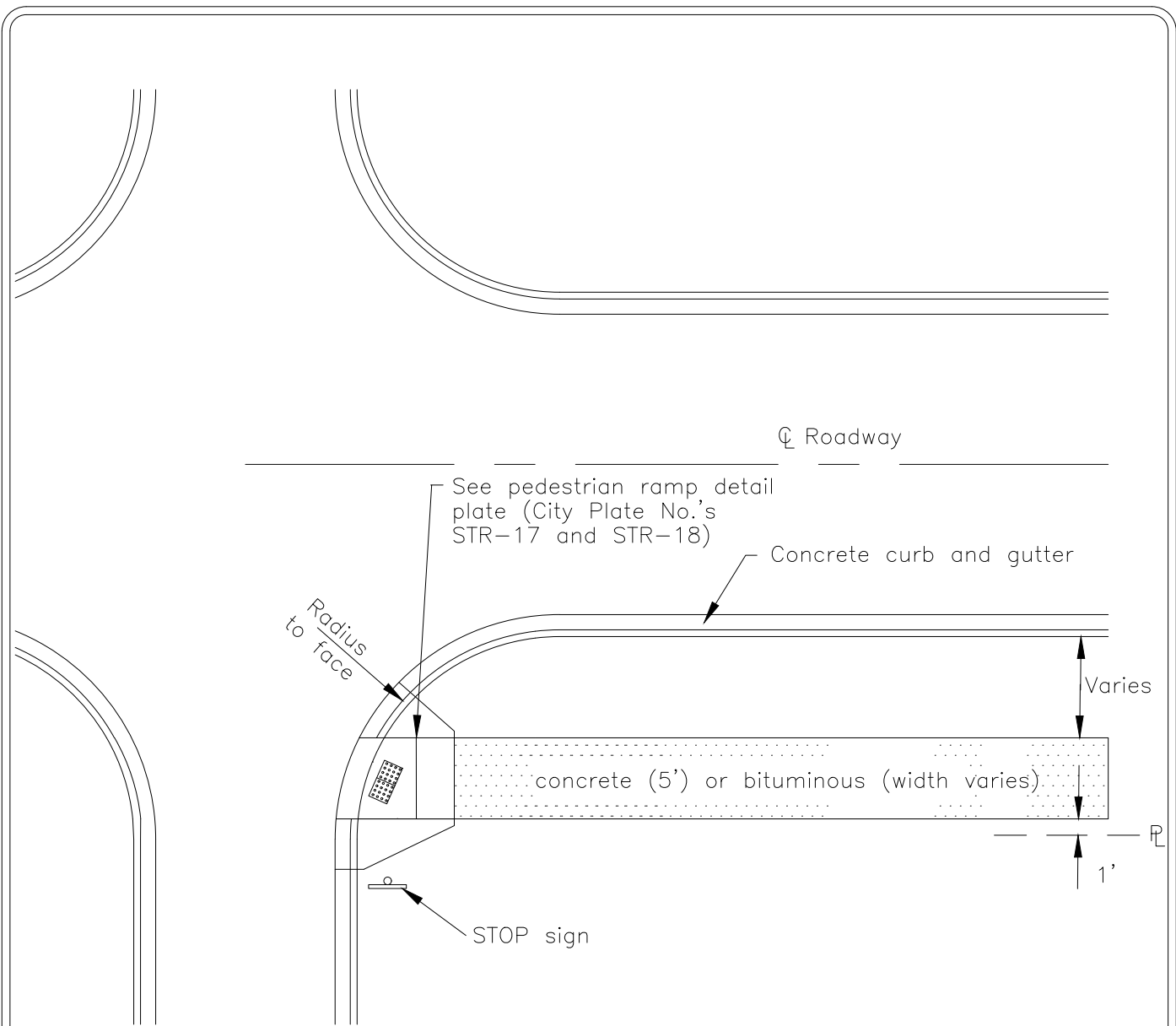


STANDARD DETAILS TRAIL PEDESTRIAN RAMP

Last Revision:
FEB 2017

City Plate No.
STR-18
2019

FARMINGTON, MINNESOTA



NOTE: Dimensions depend on type of trail or sidewalk.

No Scale



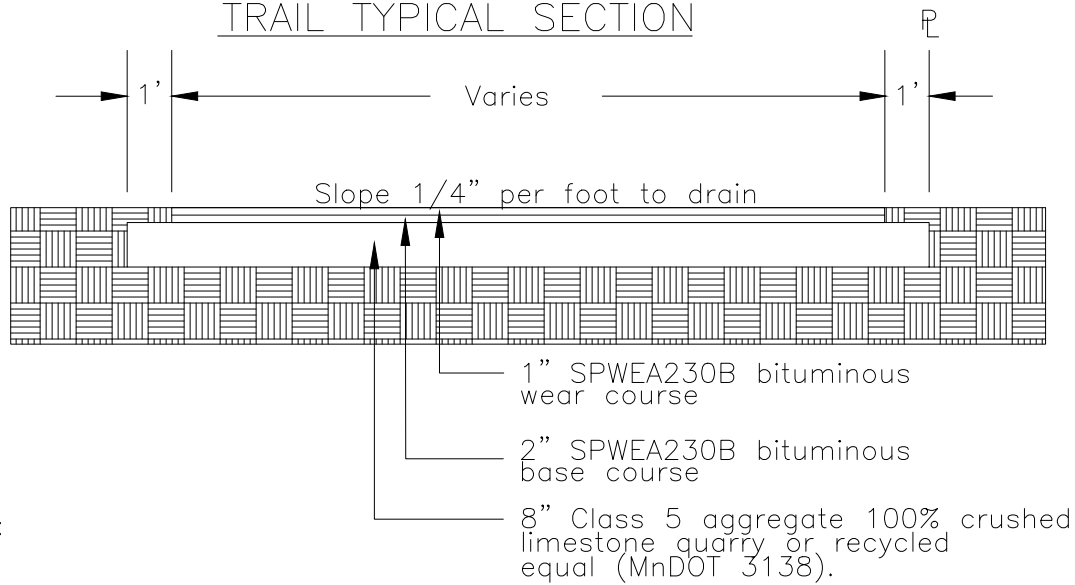
STANDARD DETAILS
SIDEWALK/TRAIL PEDESTRIAN RAMP
GENERAL LOCATION

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
STR-19
2019

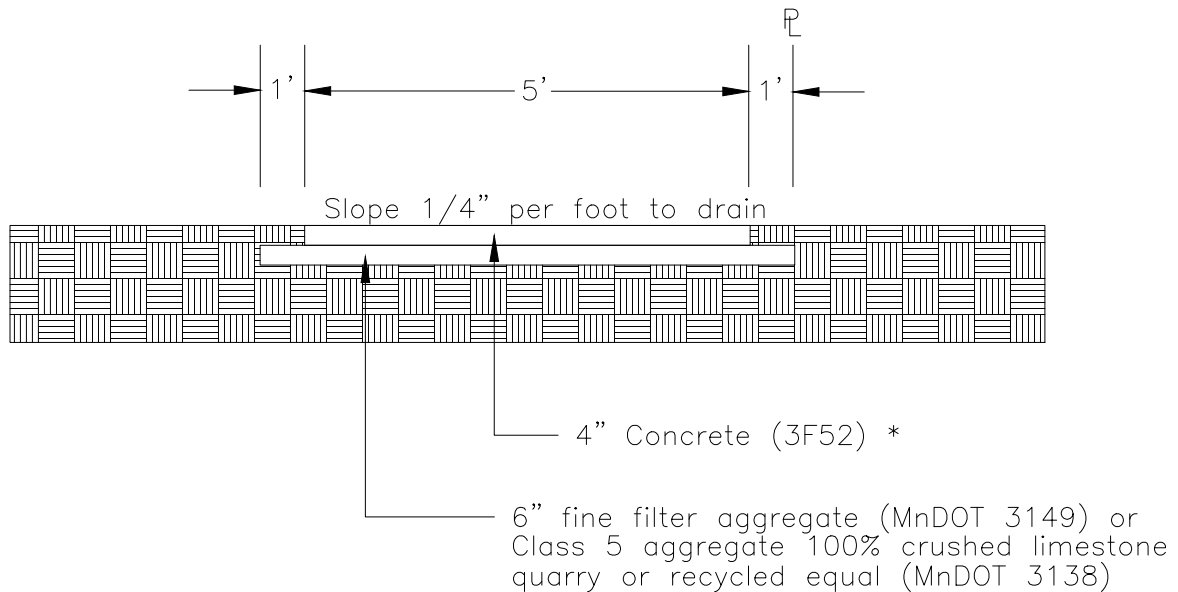
TRAIL TYPICAL SECTION



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)

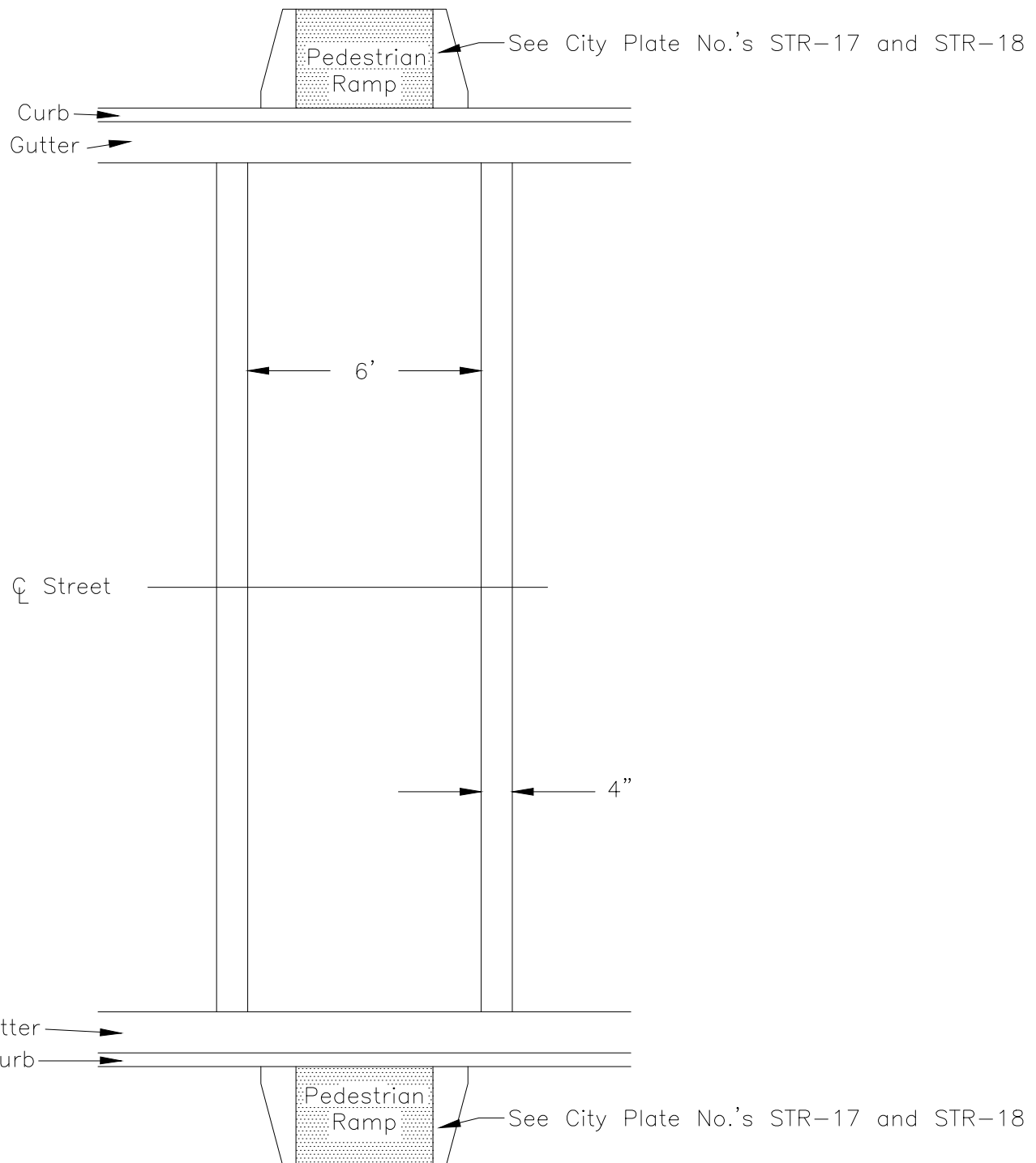


STANDARD DETAILS
TRAIL AND SIDEWALK SECTIONS

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)

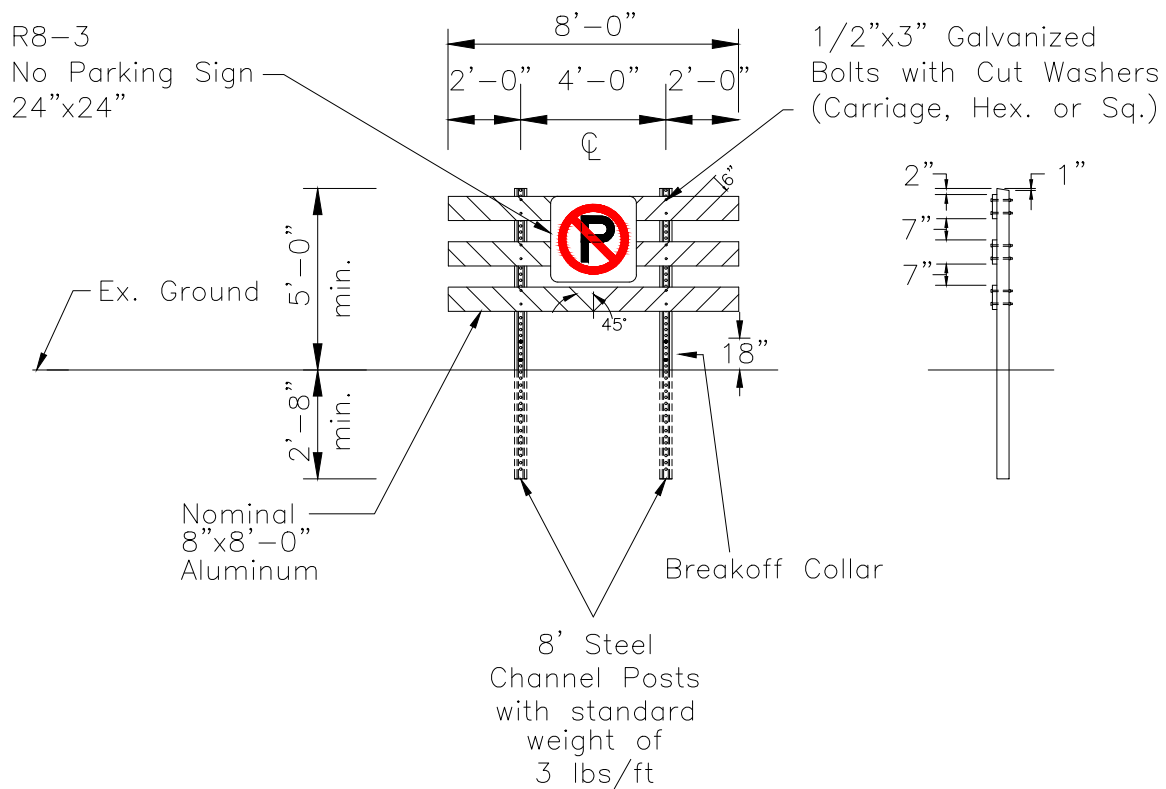


STANDARD DETAILS
CROSSWALK LAYOUT

FARMINGTON, MINNESOTA

Last Revision:
JAN 2019

City Plate No.
STR-22
2019



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.

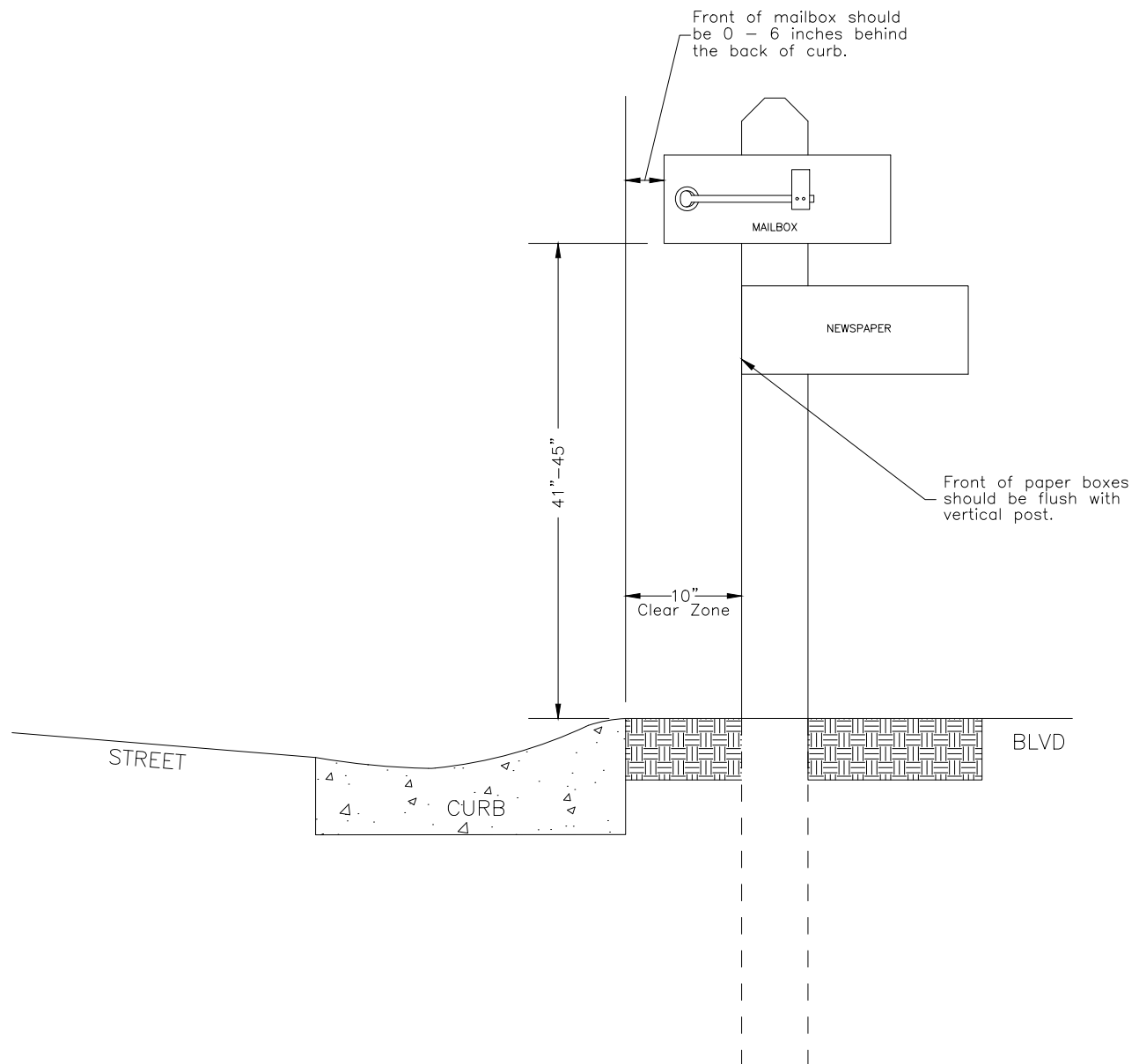


STANDARD DETAILS
PERMANENT BARRICADE

FARMINGTON, MINNESOTA

Last Revision:
JAN 2019

City Plate No.
STR-24
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.

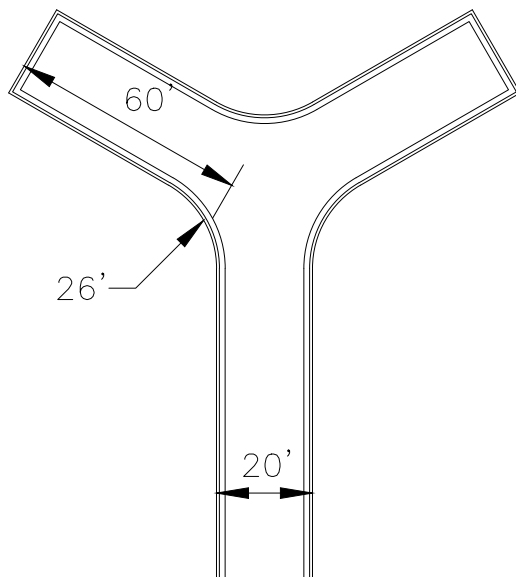
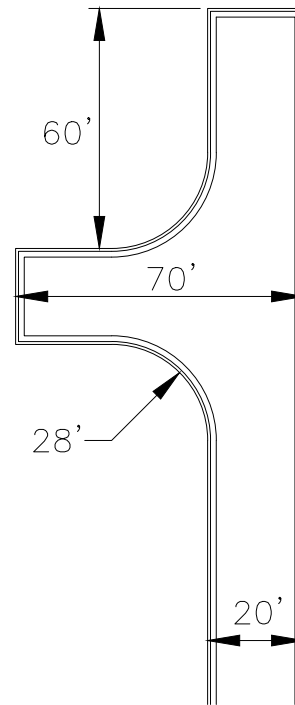
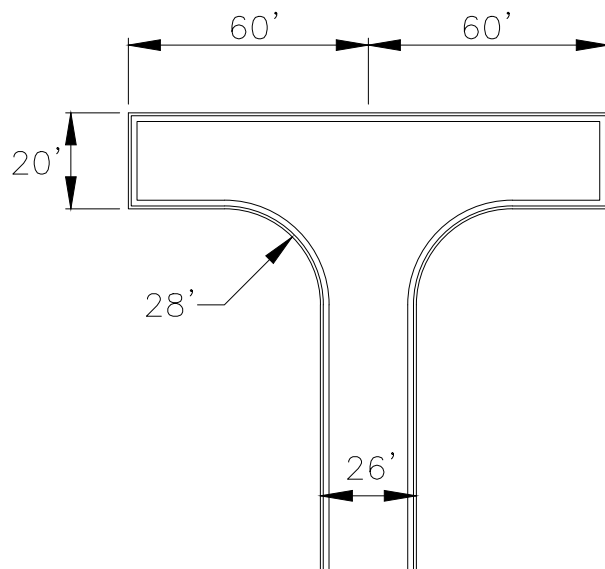


STANDARD DETAILS
MAILBOX INSTALLATION

FARMINGTON, MINNESOTA

Last Revision:
JAN 2019

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

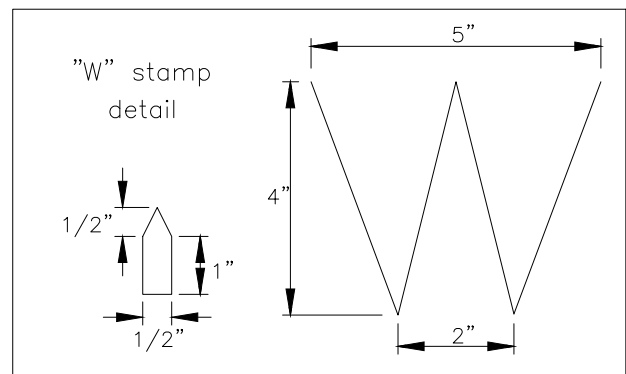
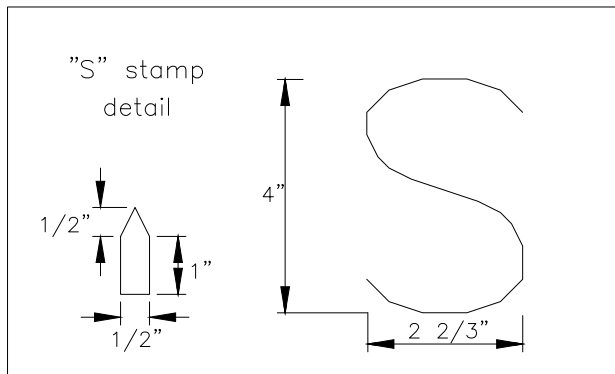
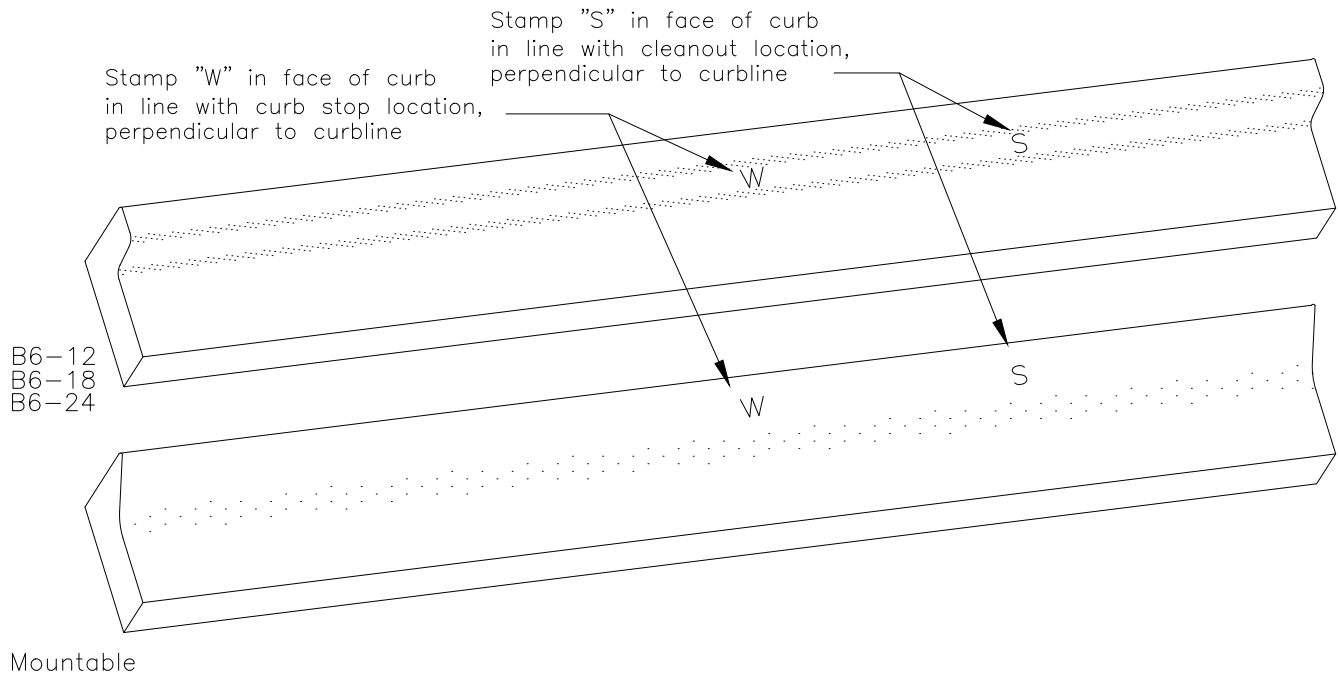
FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

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.

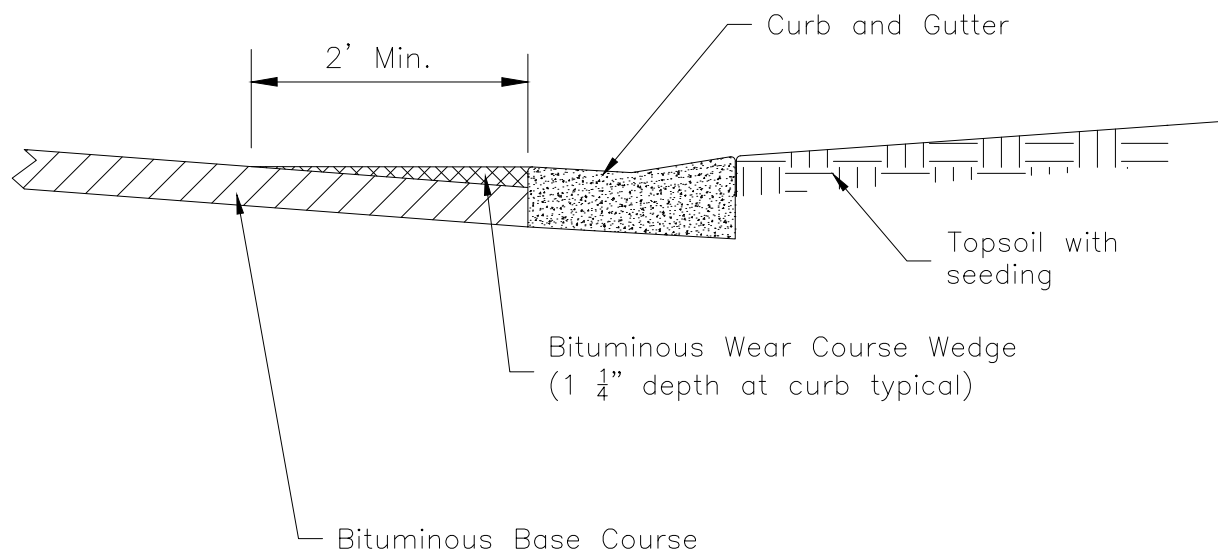


STANDARD DETAILS
WATER AND SANITARY SEWER SERVICE
LOCATION STAMP IN CURB

FARMINGTON, MINNESOTA

Last Revision:
FEB 2007

City Plate No.
STR-28
2019



STANDARD DETAILS
TEMPORARY BITUMINOUS WEDGING
FOR CURB PROTECTION

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
STR-29
2019

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

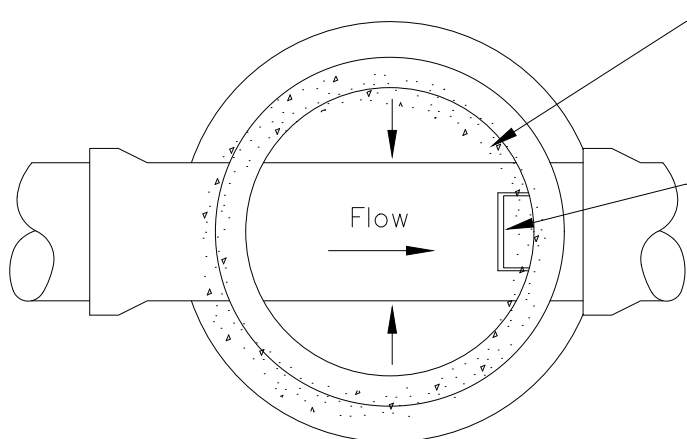


STANDARD DETAILS INDEX

FARMINGTON, MINNESOTA

Last Revision:
APR 2017

City Plate No.
INDEX
2019



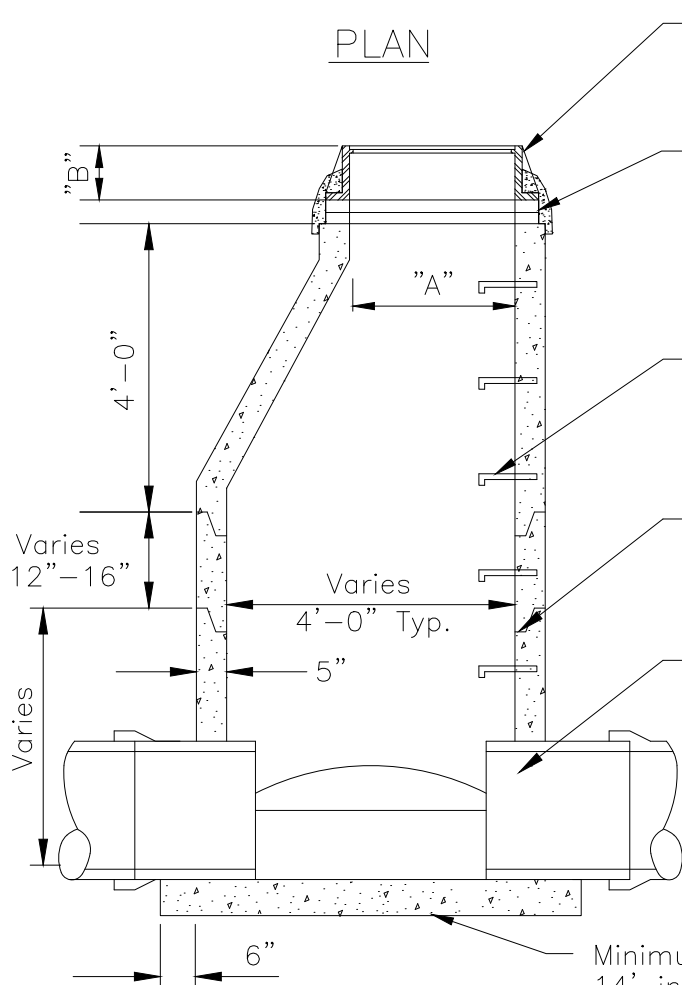
Grout bottom of manhole to 1/2 diameter of pipe and slope 2" toward invert.

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.

SECTION

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.



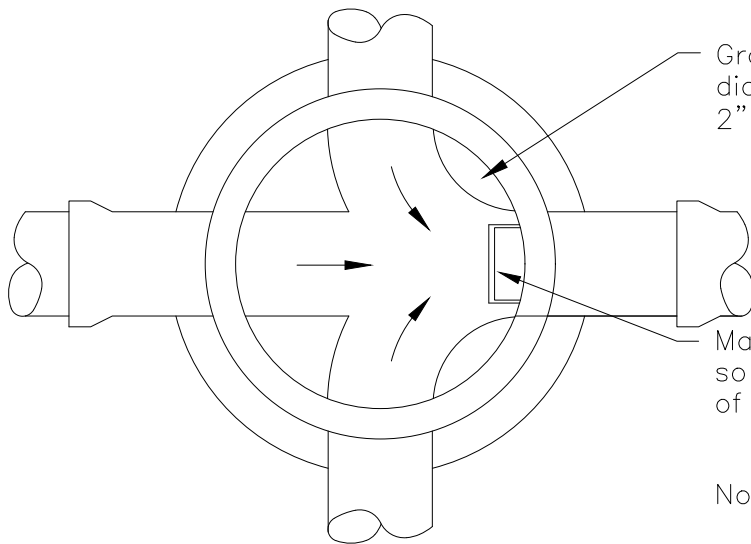
STANDARD DETAILS STORM SEWER MANHOLE

Last Revision:
JAN 2012

City Plate No.

STO-01
2019

FARMINGTON, MINNESOTA



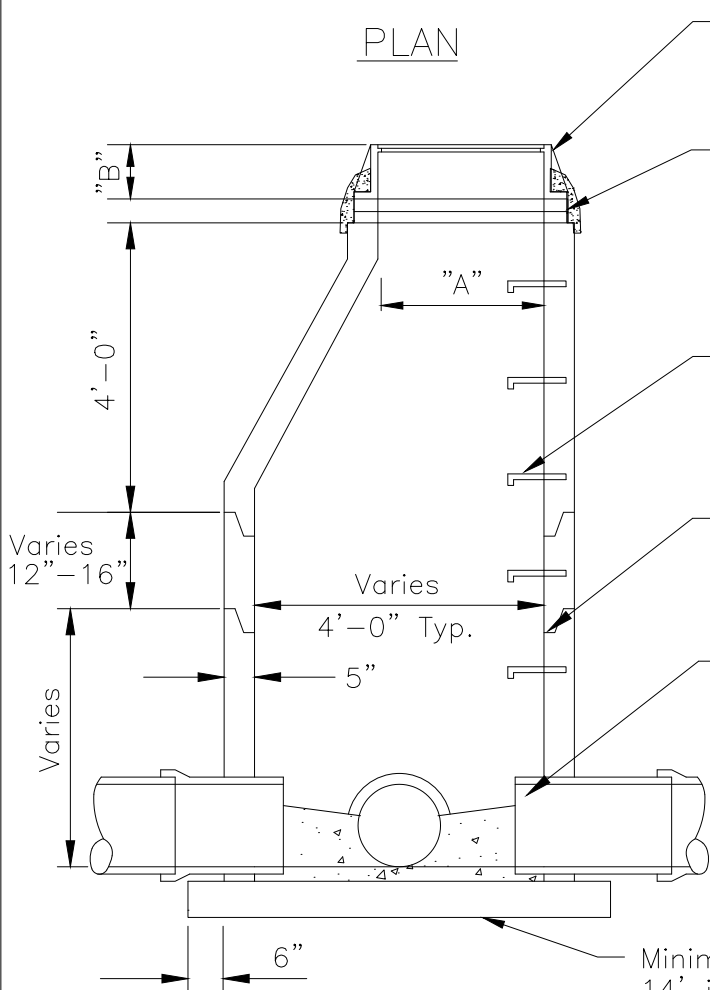
Grout bottom of Manhole to 1/2 diameter of pipe and slope 2" toward invert.

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.

SECTION

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.

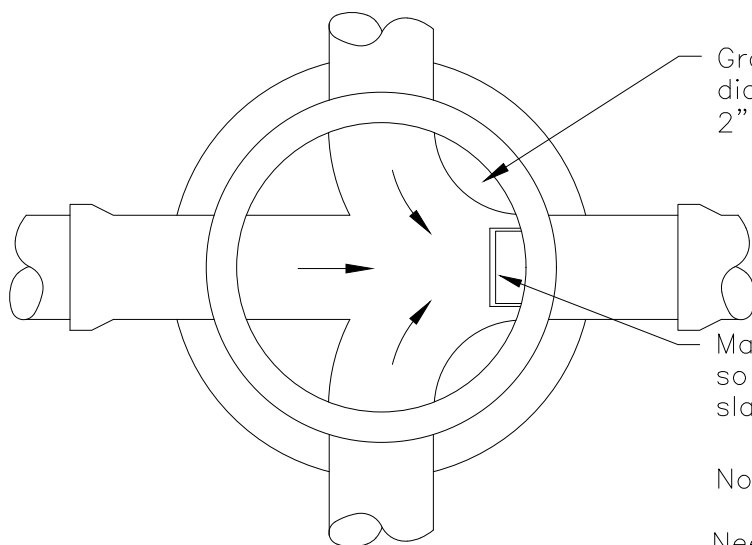


STANDARD DETAILS
STORM SEWER JUNCTION MANHOLE

FARMINGTON, MINNESOTA

Last Revision:
JAN 2012

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.

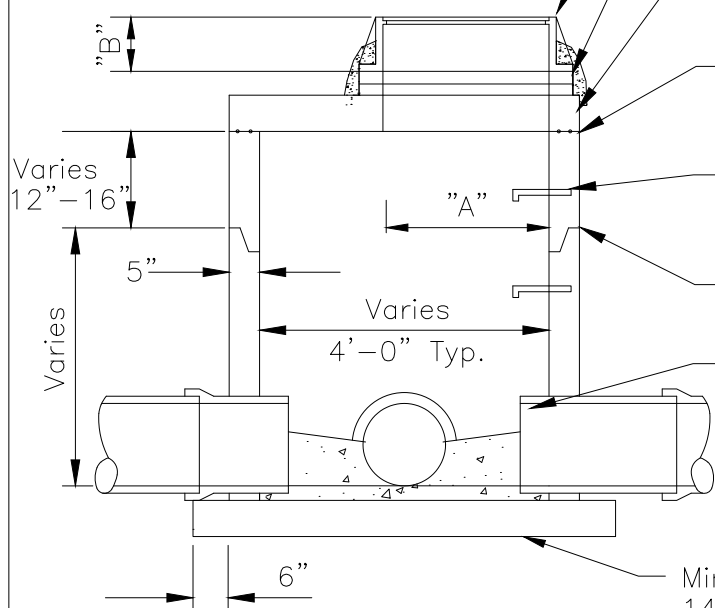
Pipe shall be cut off 3" to 6" from inside face of wall.

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

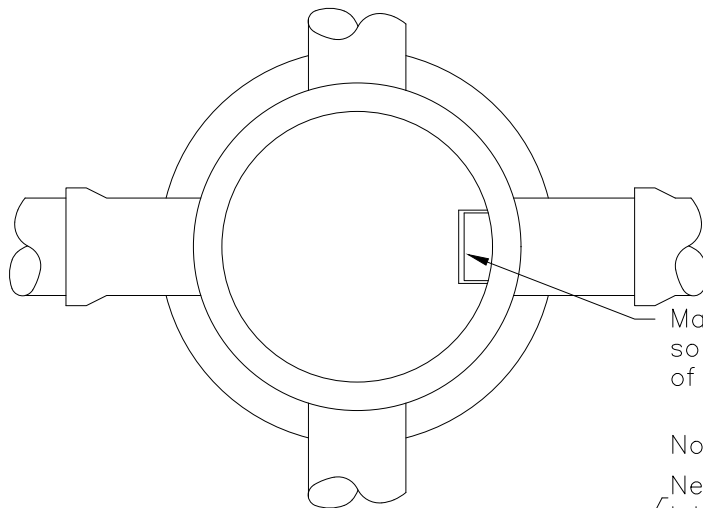


STANDARD DETAILS
STORM SEWER JUNCTION MANHOLE
WITH REINFORCED TOP SLAB

FARMINGTON, MINNESOTA

Last Revision:
JAN 2012

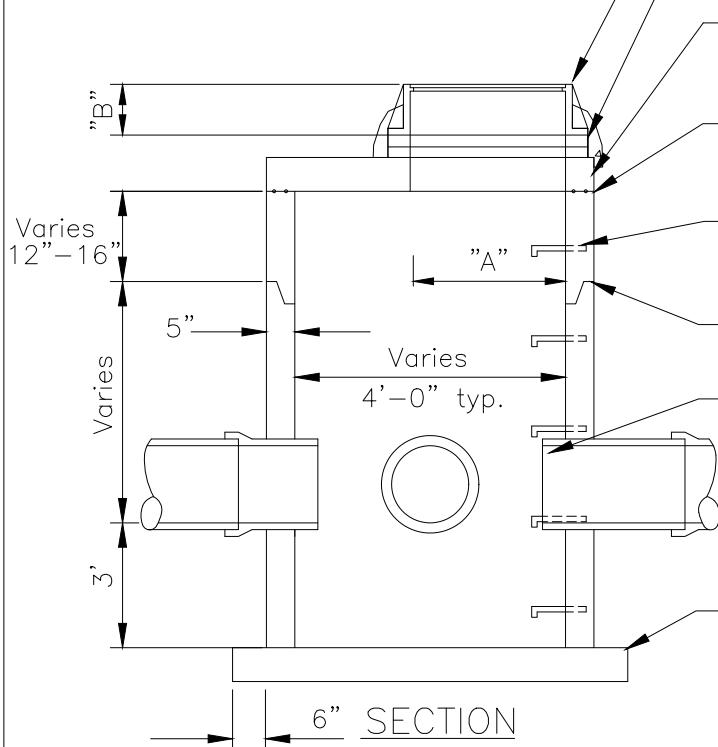
City Plate No.
STO-03
2019



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.

SECTION

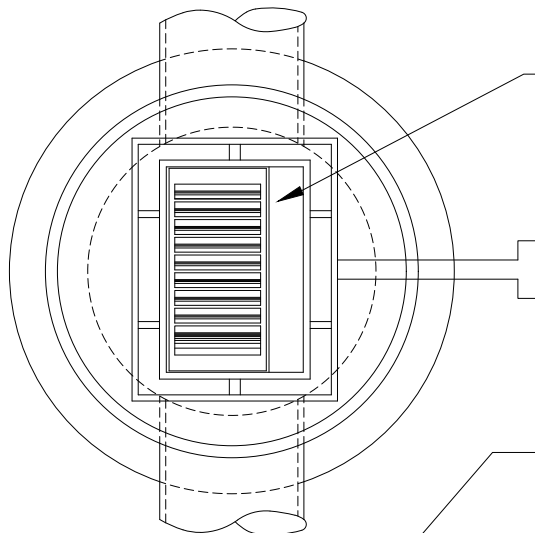


STANDARD DETAILS
STORM SEWER JUNCTION MANHOLE
WITH REINFORCED TOP SLAB AND SUMP

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

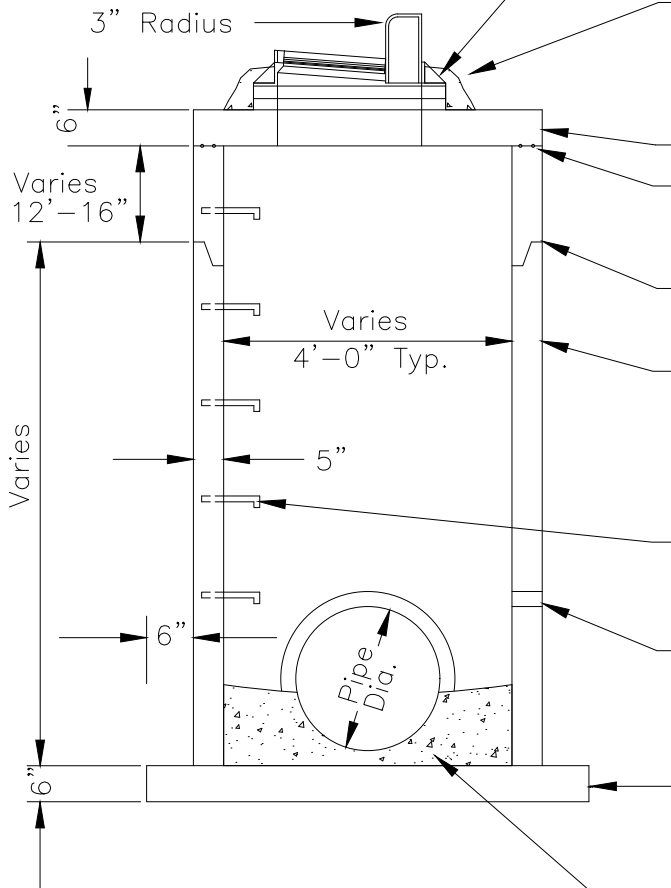
7' Dia. MH - 9" behind Back of Curb

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

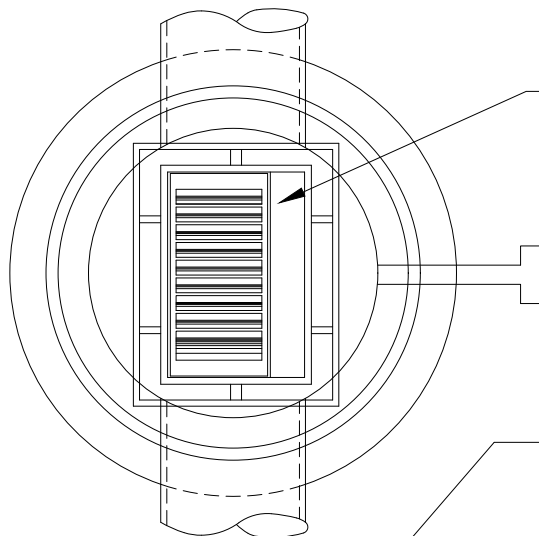


STANDARD DETAILS CATCH BASIN MANHOLE

Last Revision:
FEB 2017

City Plate No.
STO-05
2019

FARMINGTON, MINNESOTA



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").

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

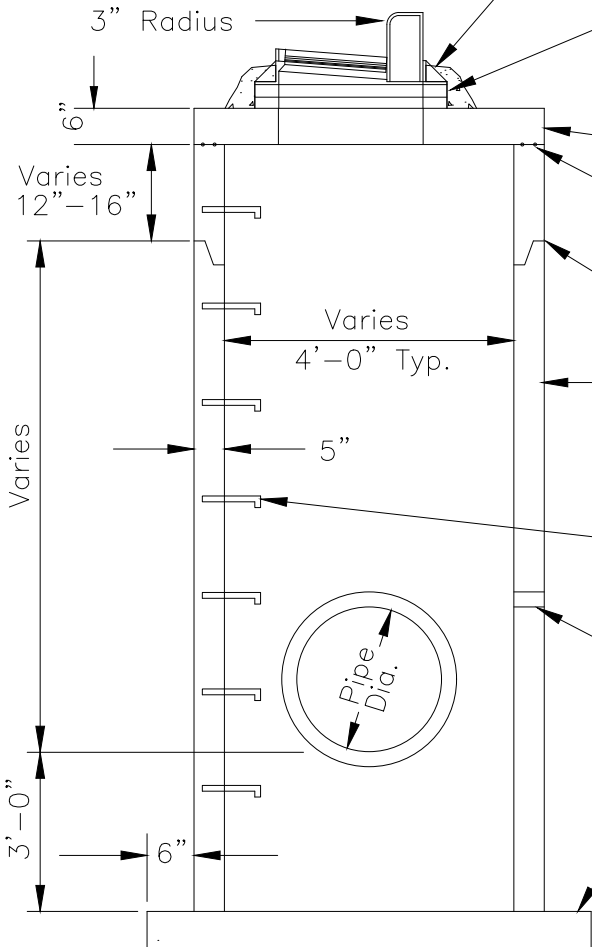
Doghouses shall be grouted on both the outside and inside.

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.



SECTION

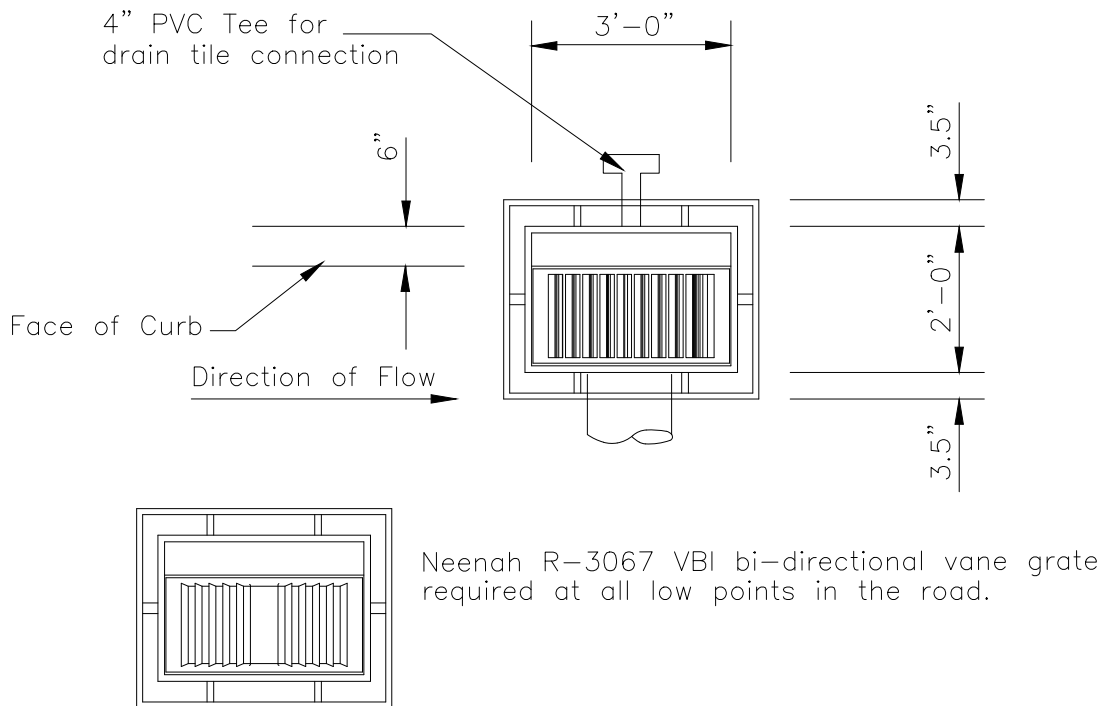


STANDARD DETAILS
CATCH BASIN MANHOLE WITH SUMP

FARMINGTON, MINNESOTA

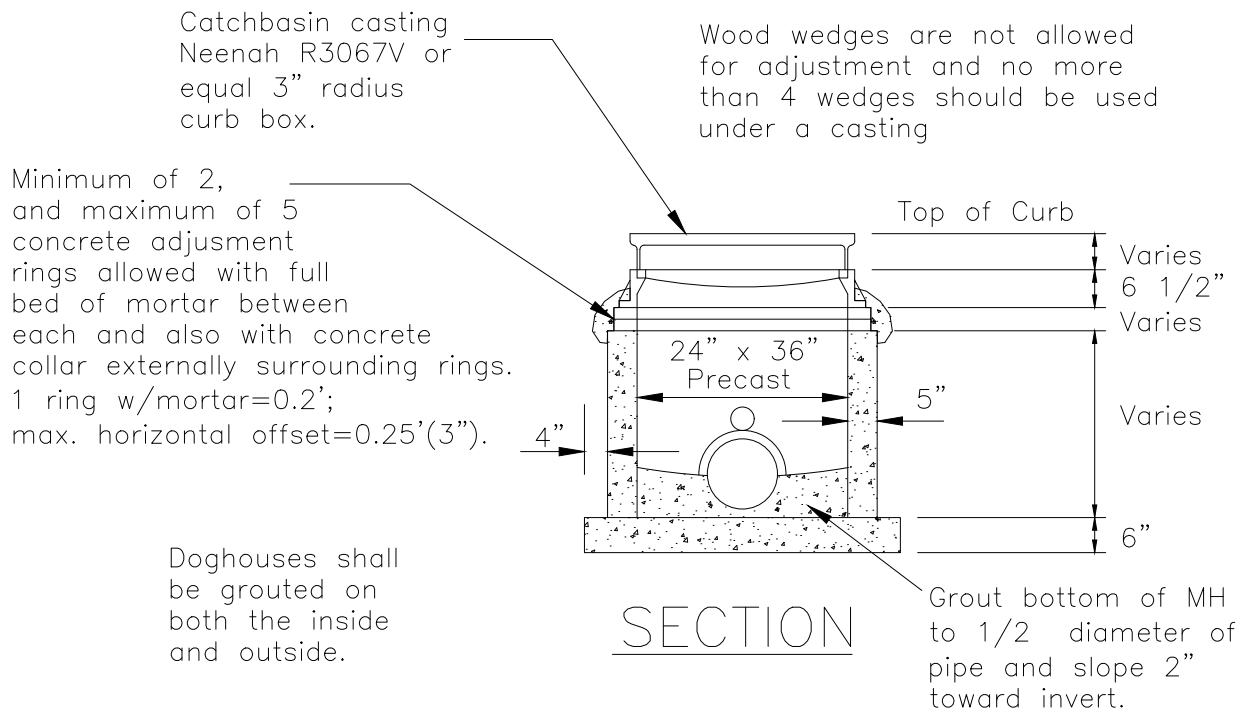
Last Revision:
FEB 2017

City Plate No.
STO-06
2019



PLAN

No block structures are allowed.

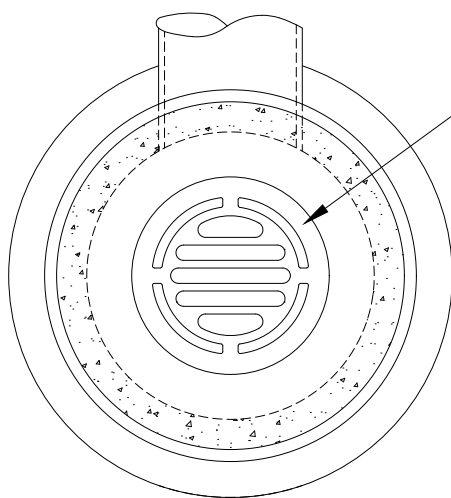


STANDARD DETAILS CATCH BASIN

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

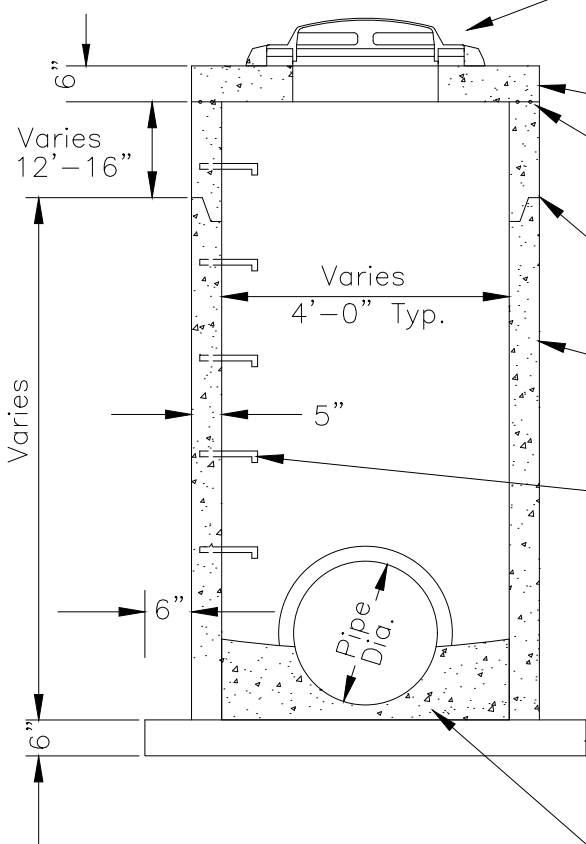
City Plate No.
STO-07
2019



Neenah R-4342 casting or approved equal

PLAN

3" Radius



SECTION

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.

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



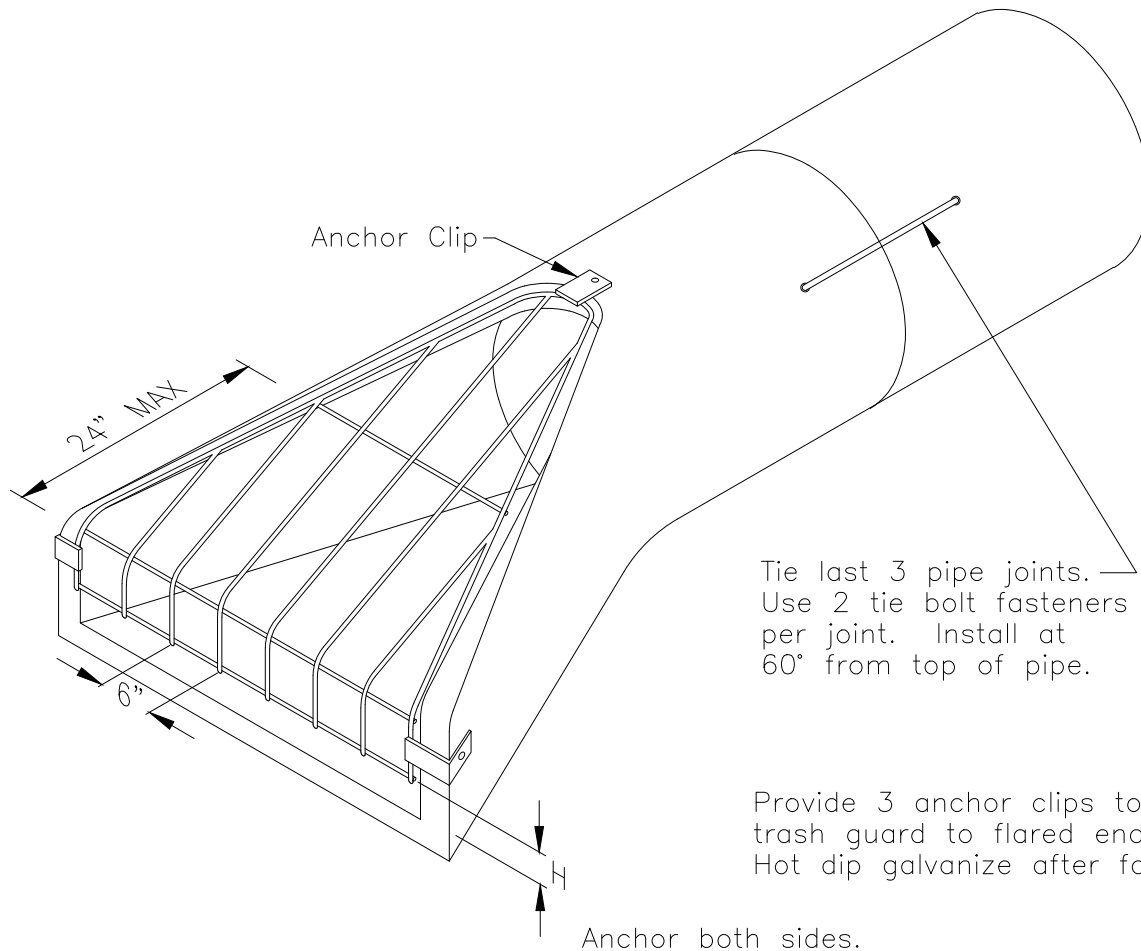
STANDARD DETAILS
CATCH BASIN MANHOLE
TYPE II

FARMINGTON, MINNESOTA

Last Revision:
JAN 2012

City Plate No.
STO-09
2019

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



ISOMETRIC

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

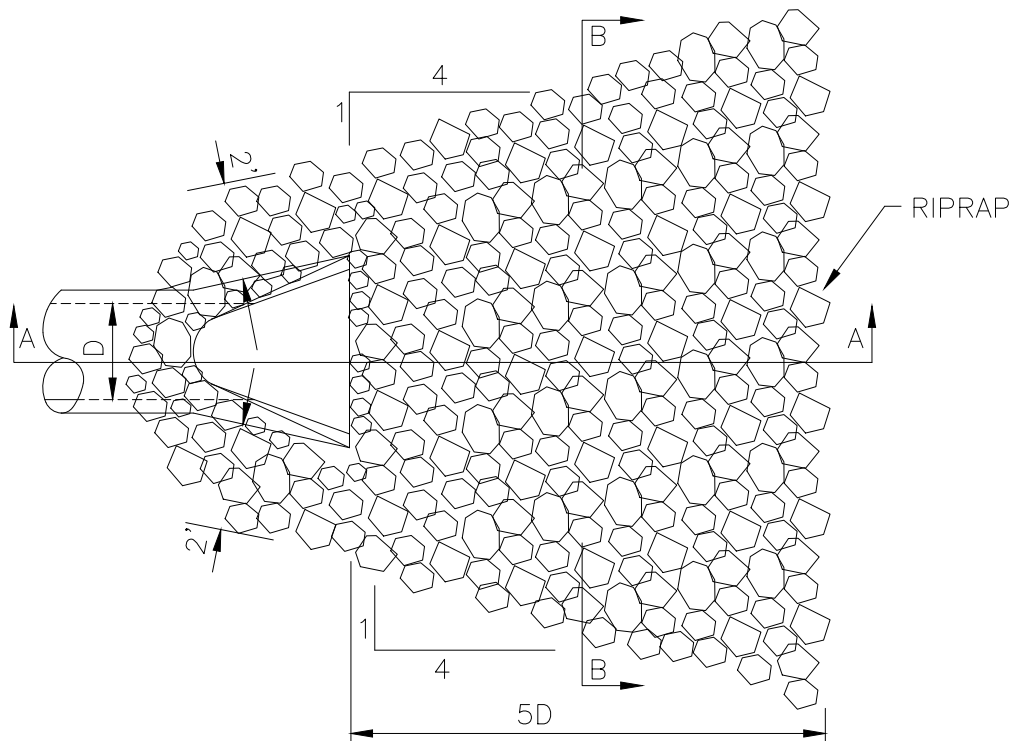


STANDARD DETAILS
FLARED END SECTION
AND TRASH GUARD

FARMINGTON, MINNESOTA

Last Revision:
JAN 2012

City Plate No.
STO-10
2019



RIPRAP REQUIREMENTS (MnDOT 3601.2A)

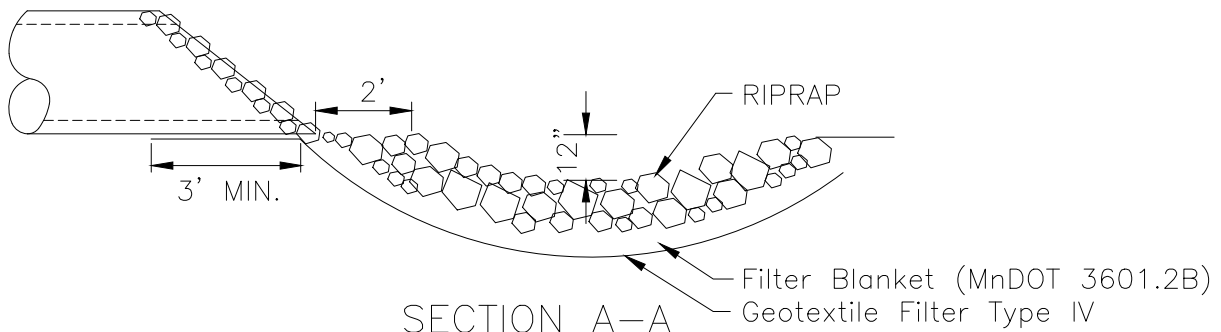
12" TO 24"	8 to 12 CY	CL.3
27" TO 33"	14 to 20 CY	CL.3
36" TO 48"	23 to 38 CY	CL.3
54" AND UP	62 CY and up	CL.4

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

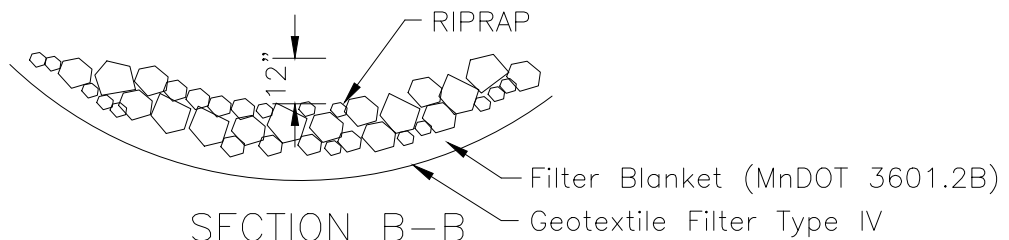
PLAN

NOTE

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



SECTION A-A



SECTION B-B

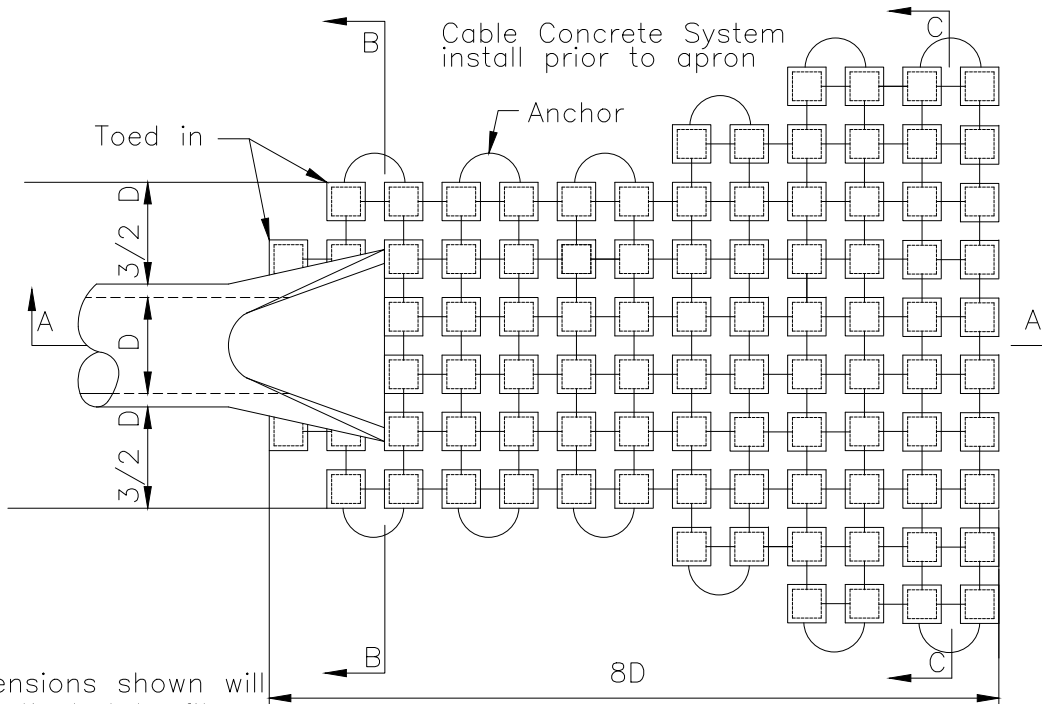


STANDARD DETAILS RIPRAP AT OUTLETS

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

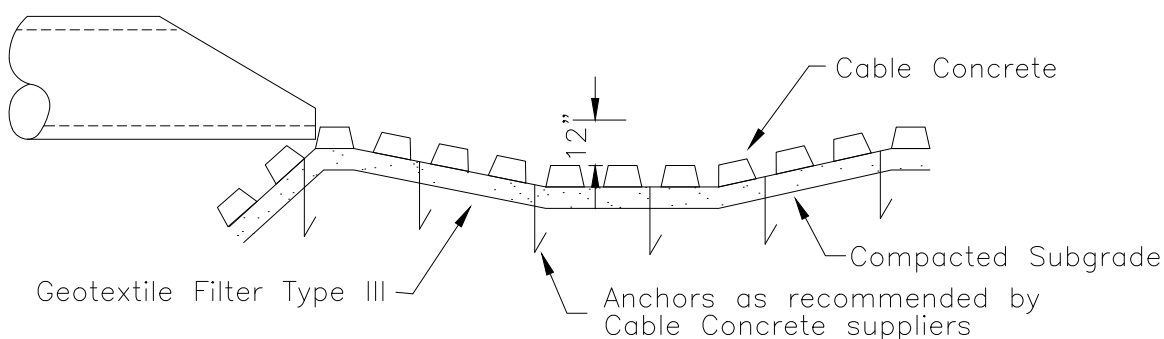
City Plate No.
STO-11
2019



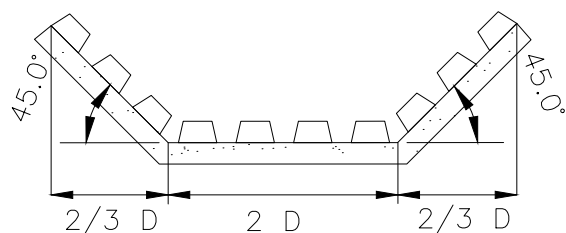
NOTE:

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

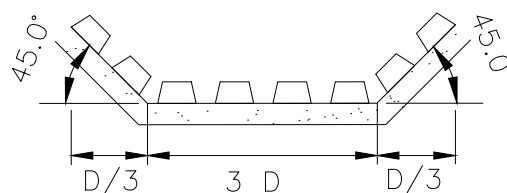
PLAN



SECTION A-A



SECTION B-B



SECTION C-C

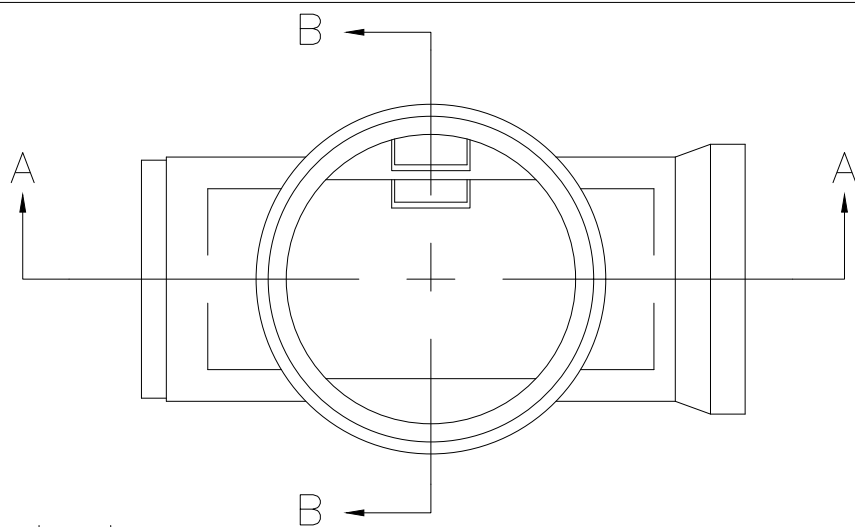


STANDARD DETAILS
CABLE CONCRETE AT OUTLETS

FARMINGTON, MINNESOTA

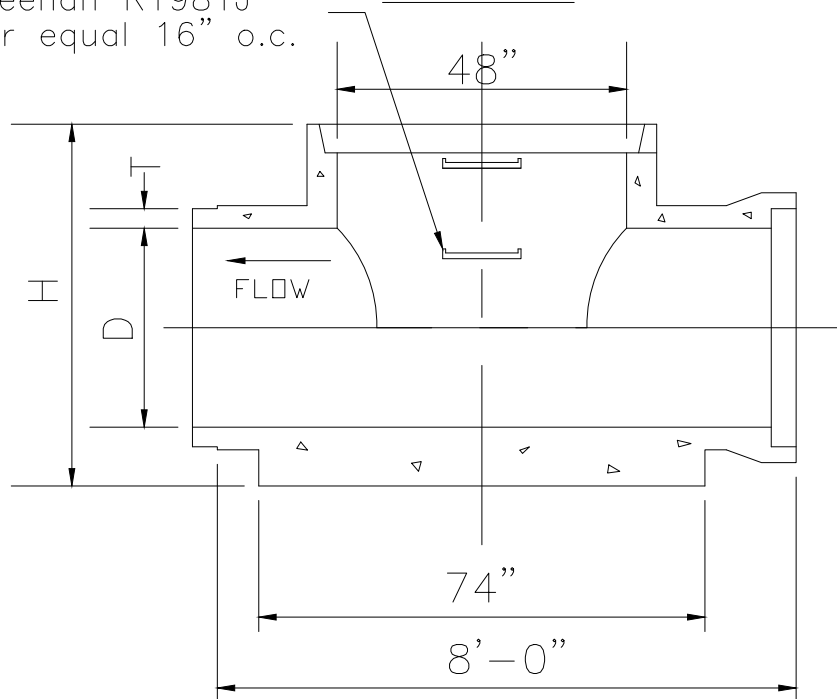
Last Revision:
FEB 2017

City Plate No.
STO-12
2019

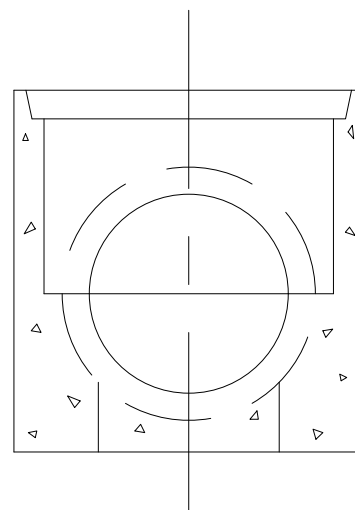


TOP VIEW

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.

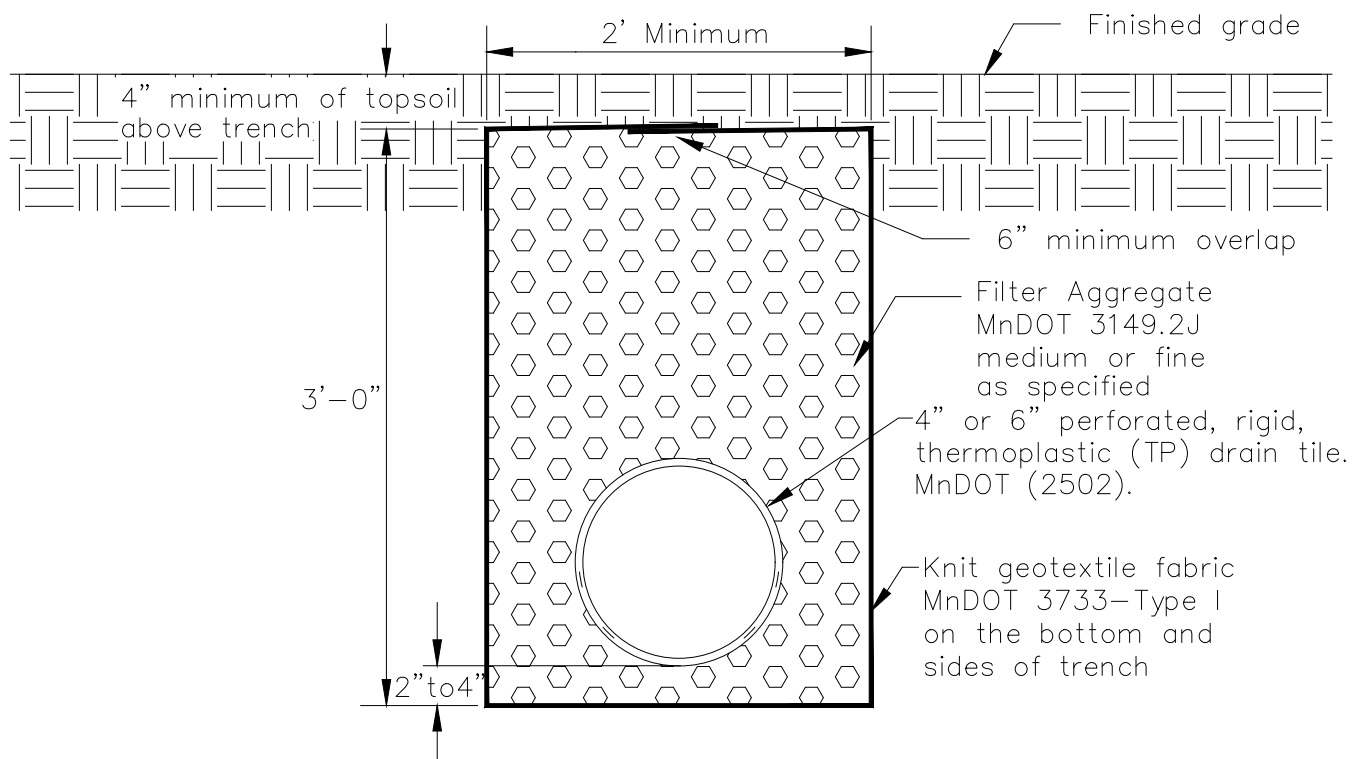


STANDARD DETAILS
"MINI-TEE" MANHOLE

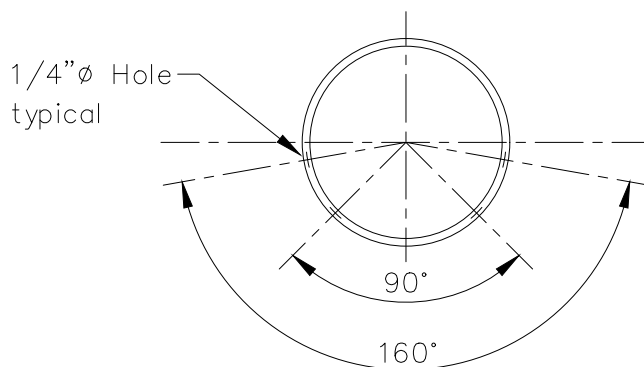
FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
STO-14
2019



TRENCH DETAIL



PIPE DETAIL



STANDARD DETAILS
PVC (RIGID) PERFORATED PIPE

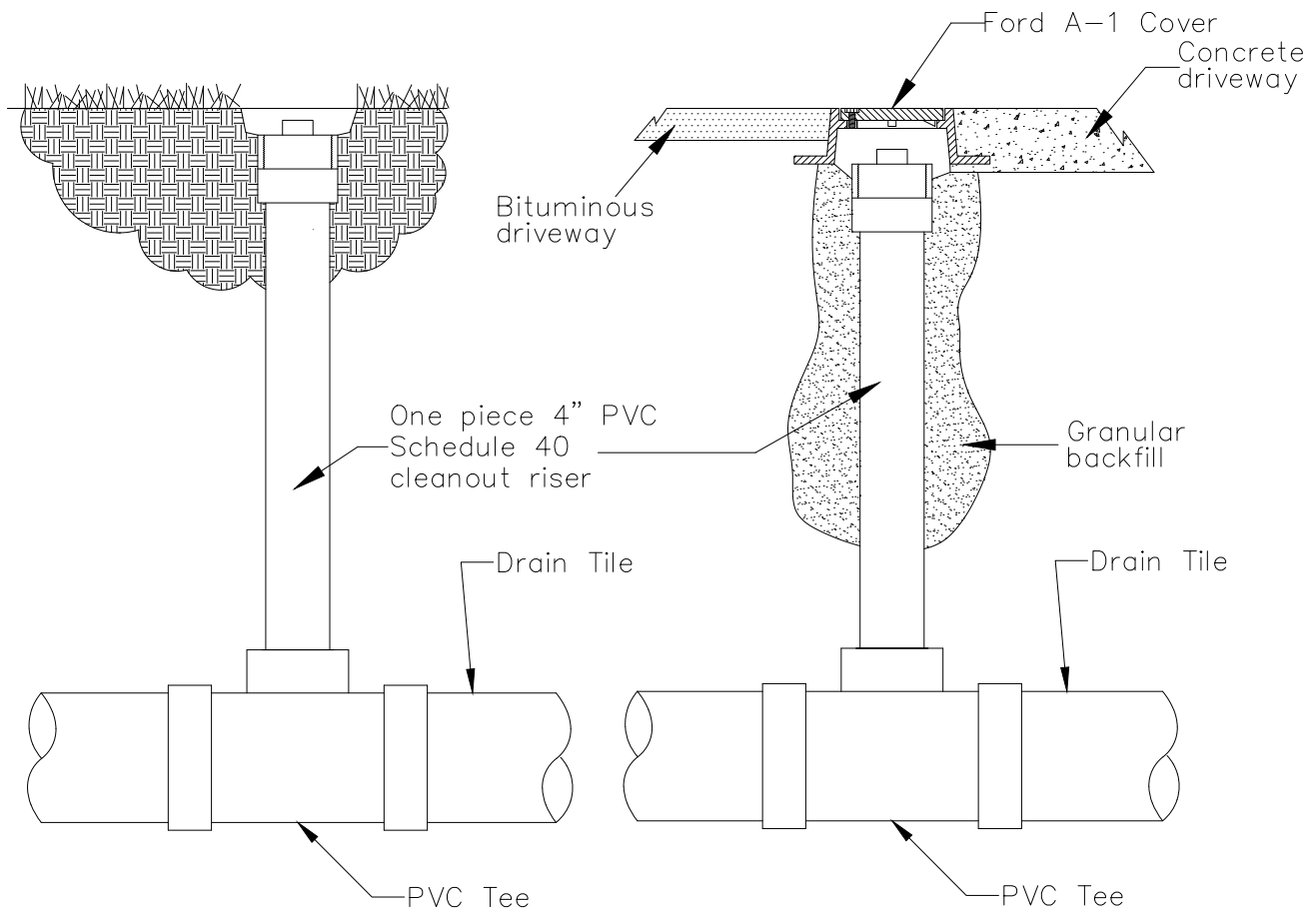
FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

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.



CLEANOUT IN TURF

CLEANOUT IN DWY

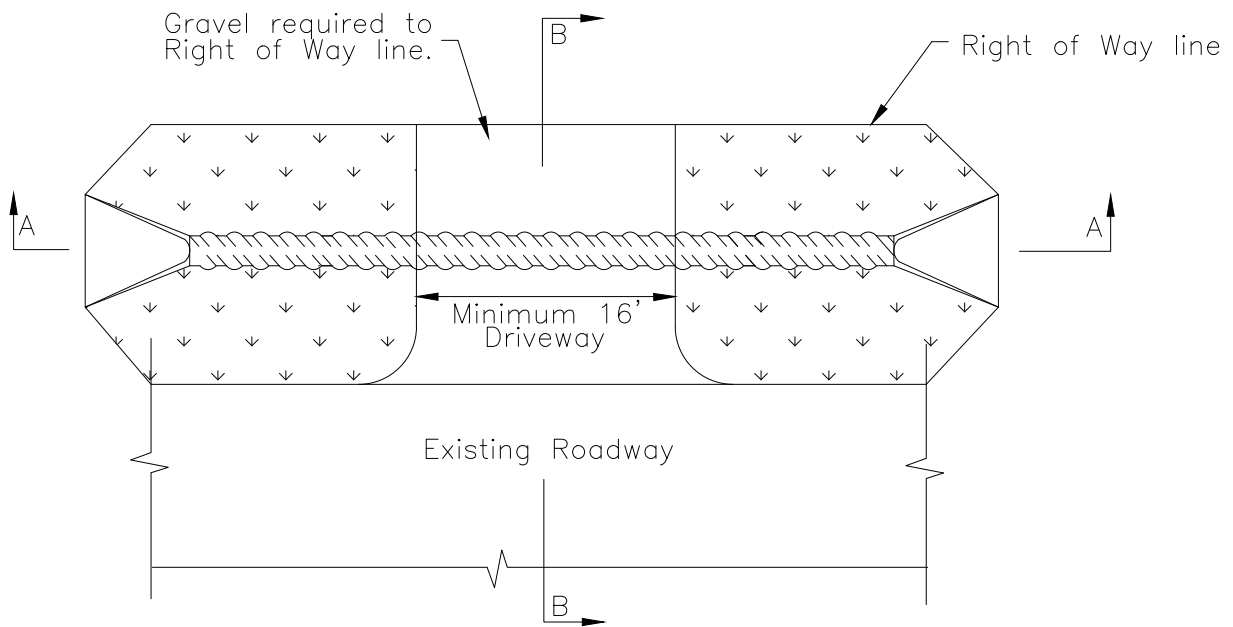


STANDARD DETAILS
DRAIN TILE CLEANOUT

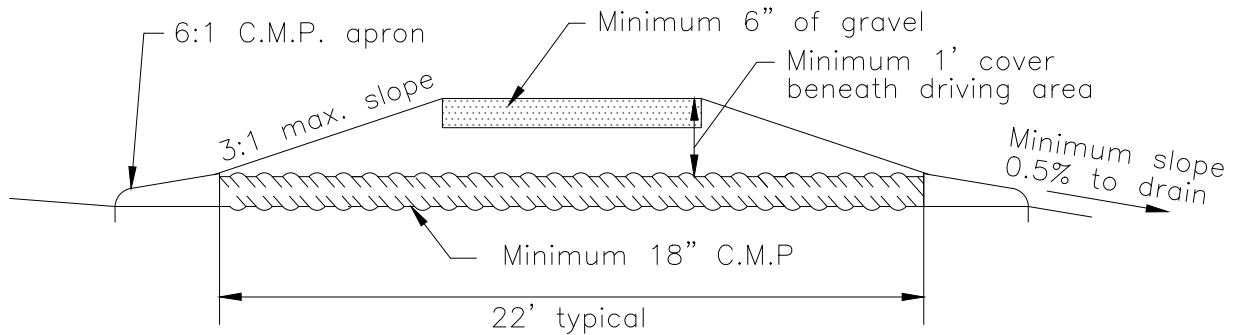
FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

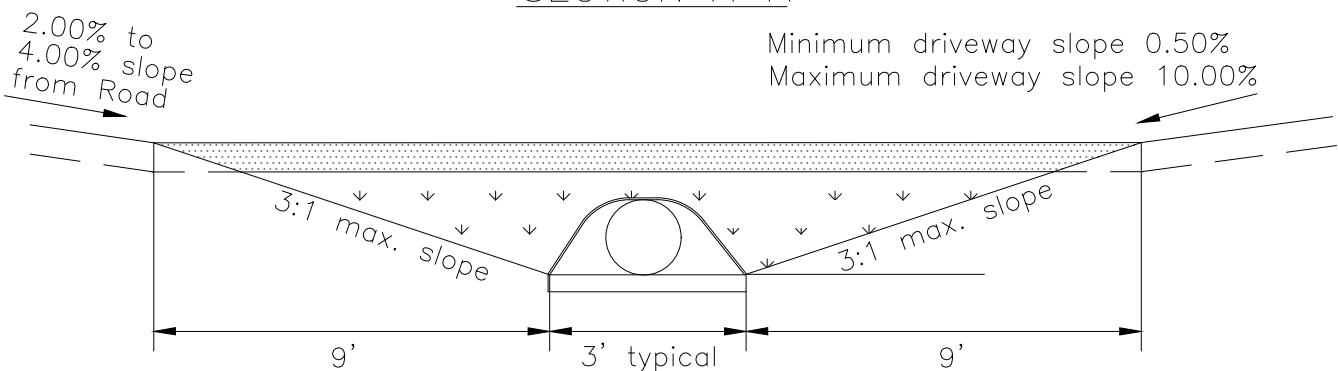
City Plate No.
STO-15A
2019



PLAN



SECTION A-A



SECTION B-B

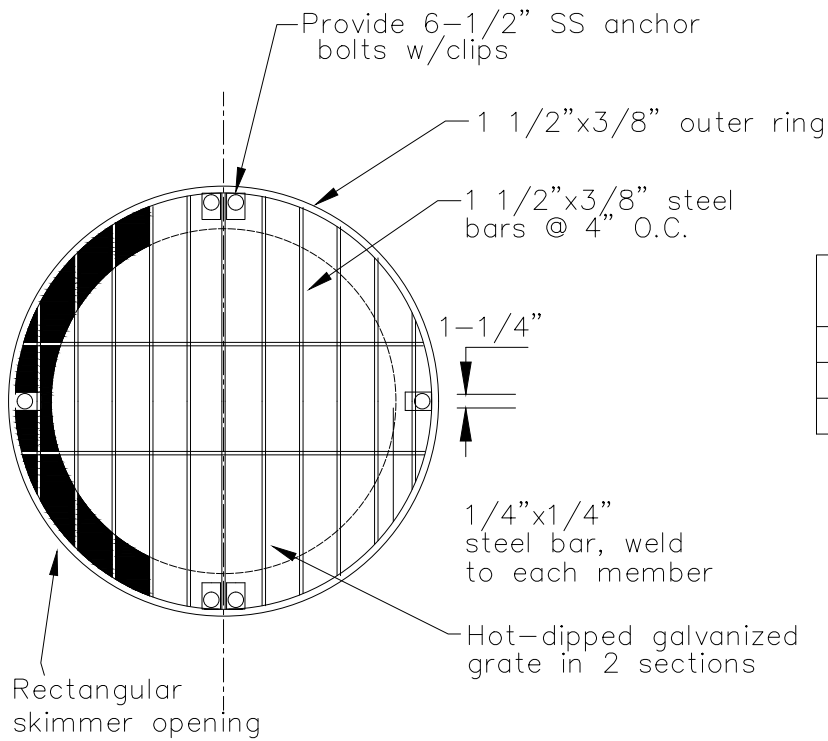


STANDARD DETAILS
RURAL RESIDENTIAL DRIVEWAY

FARMINGTON, MINNESOTA

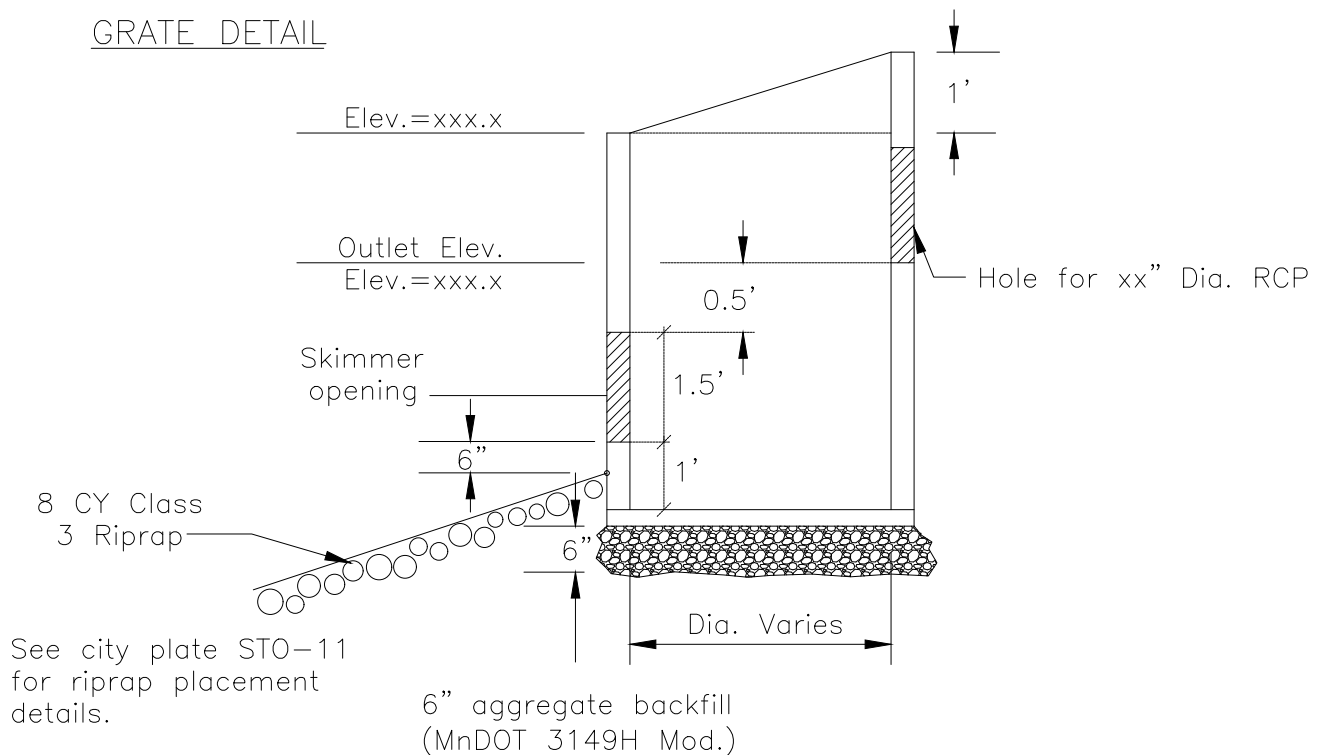
Last Revision:
JAN 2012

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

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
STO-17
2019

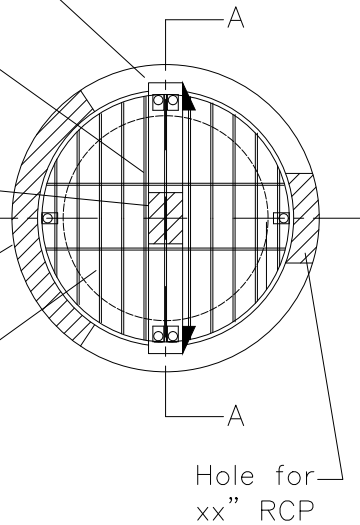
2"x6" keyway
cast into wall
by supplier

Baffle wall
must be
poured in
place

xx" Dia. hole
in baffle wall

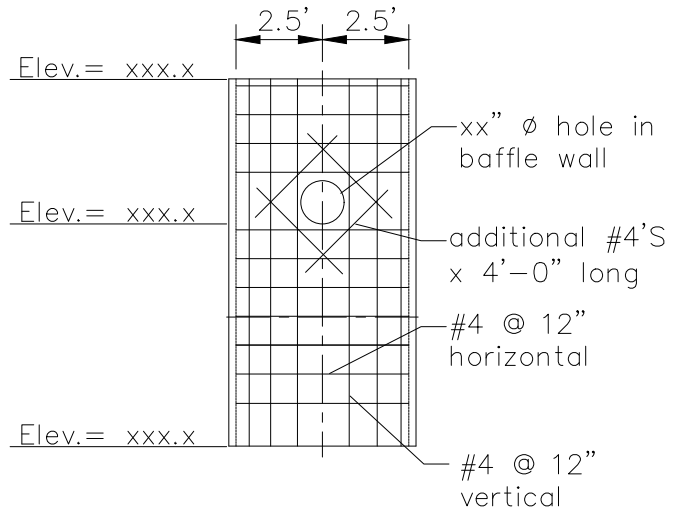
Skimmer
opening
See STO-17

For grate
design see
City Plate
No. STO-17

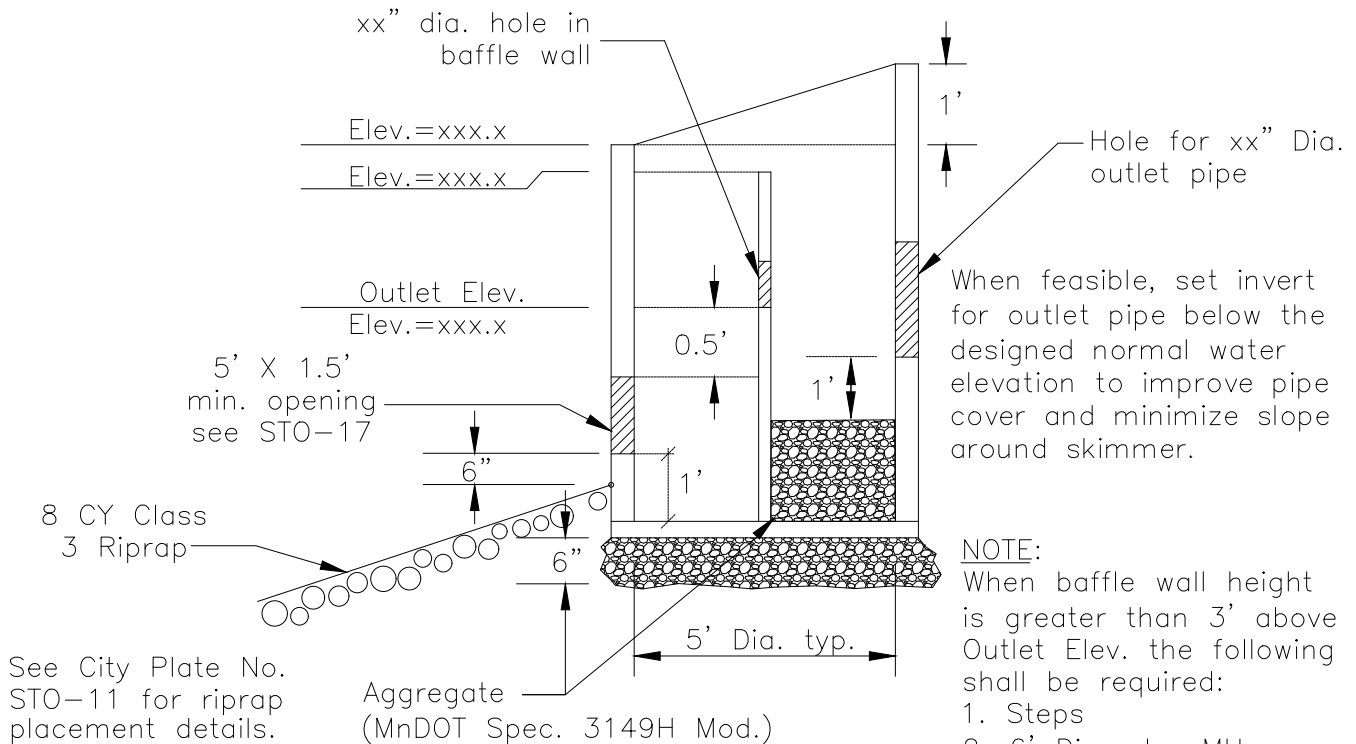


SKIMMER
GRATE

Hole for
xx" RCP



SECTION A-A
CONCRETE BAFFLE WALL

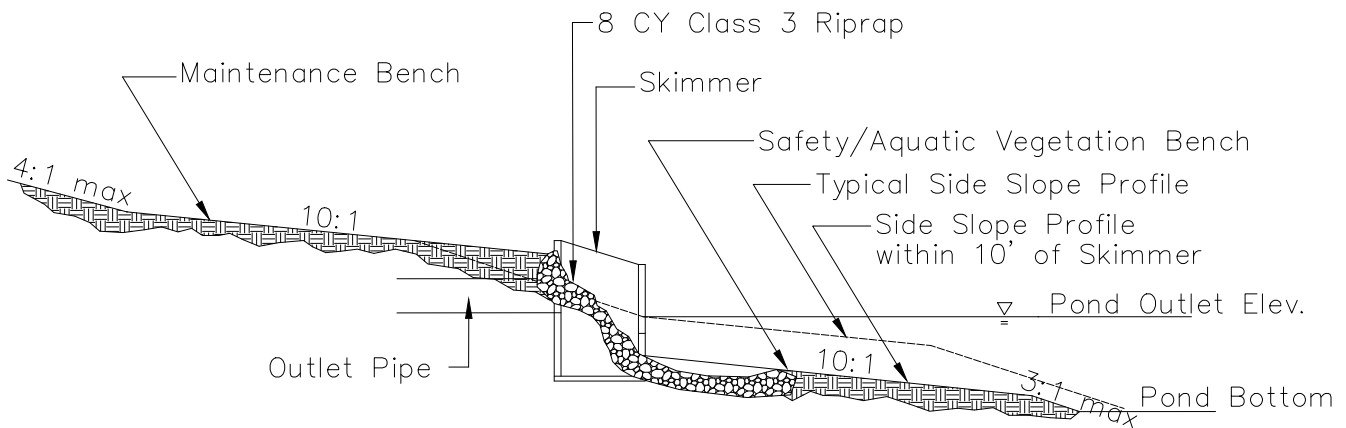


STANDARD DETAILS
STORM SEWER SKIMMER STRUCTURE
WITH CONCRETE BAFFLE WALL

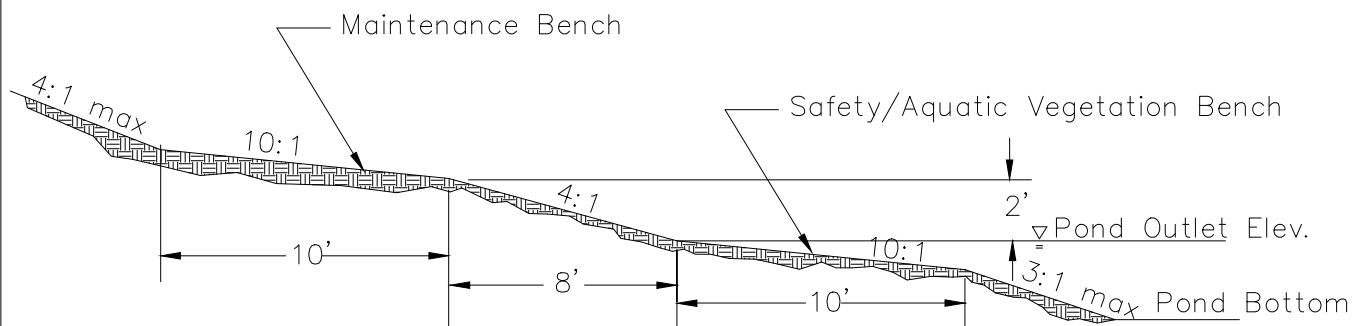
FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
STO-19
2019



TYPICAL BENCH DETAIL
WITHIN 10' OF SKIMMER OUTLET



TYPICAL BENCH DETAIL

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



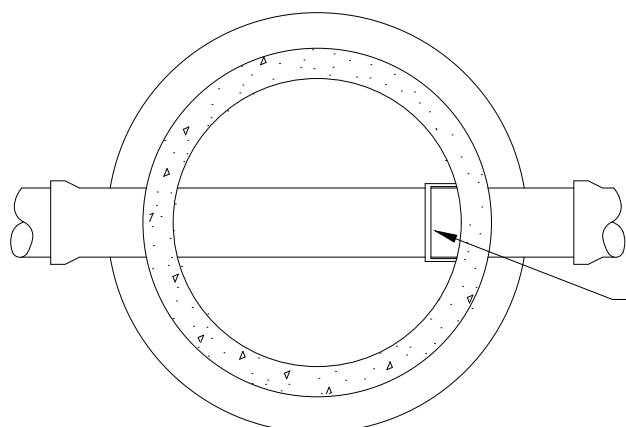
STANDARD DETAILS
POND BENCH

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
STO-21
2019

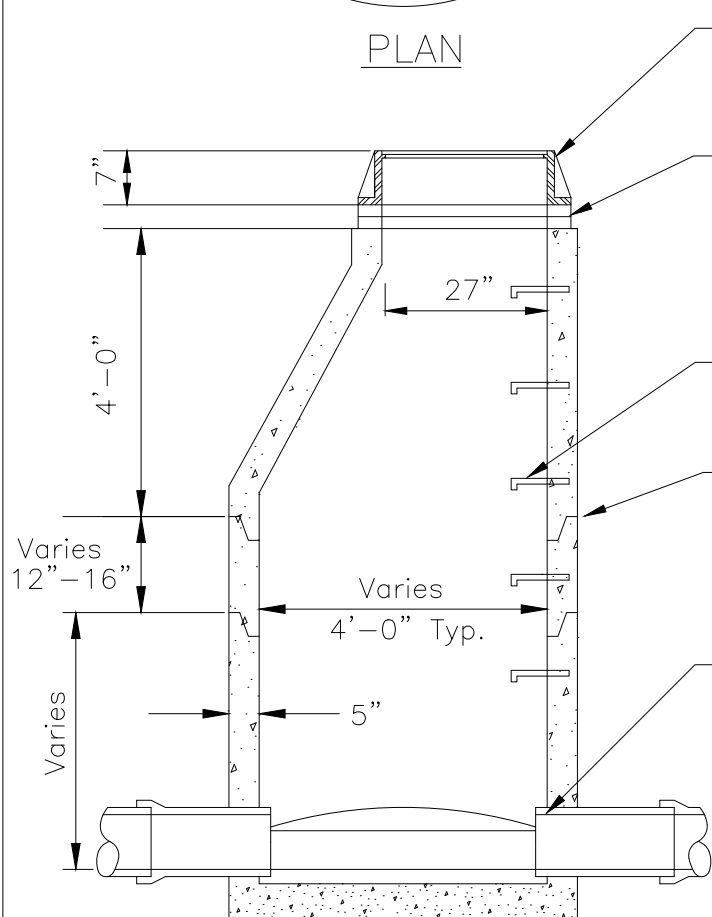
Precast invert must be be 1/2 diameter of the pipe and benches sloped 2" toward the invert.



CASTING	A	B
R1642B	27"	7"

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. 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'.

SECTION

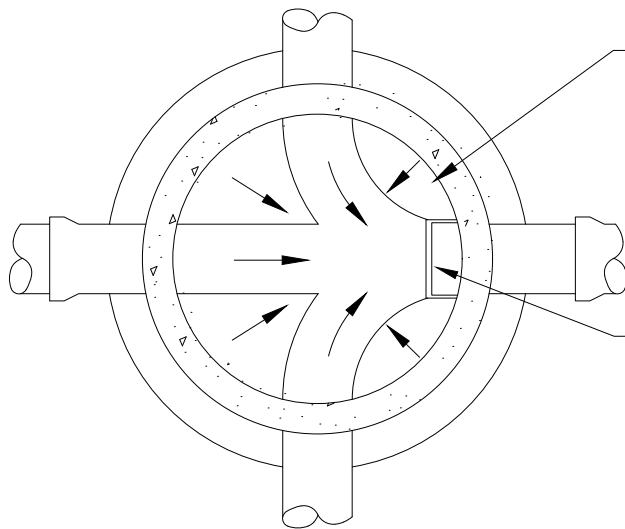


STANDARD DETAILS
SANITARY SEWER MANHOLE

FARMINGTON, MINNESOTA

Last Revision:
JAN 2019

City Plate No.
SAN-01
2019

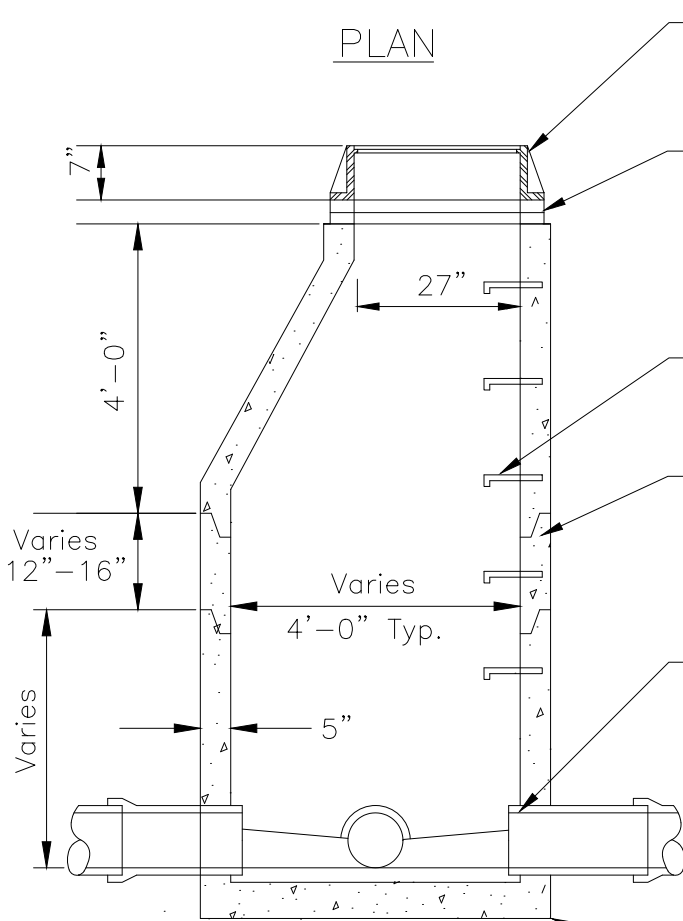


Precast invert must be $\frac{1}{2}$ diameter of pipe and benches should be sloped 2" toward invert.

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

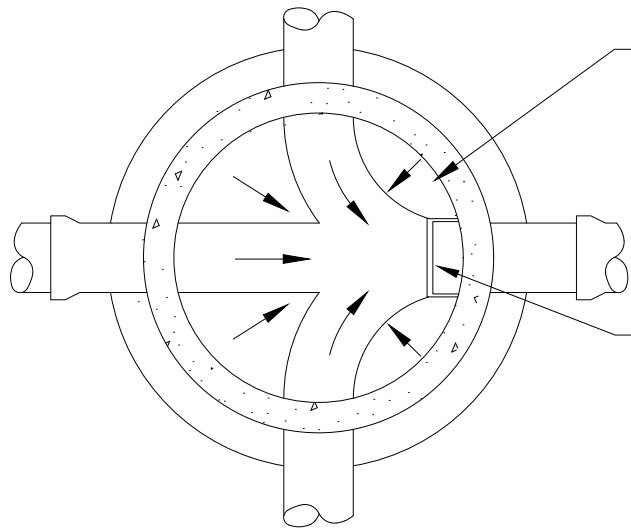


STANDARD DETAILS
SANITARY SEWER JUNCTION MANHOLE

FARMINGTON, MINNESOTA

Last Revision:
JAN 2019

City Plate No.
SAN-02
2019

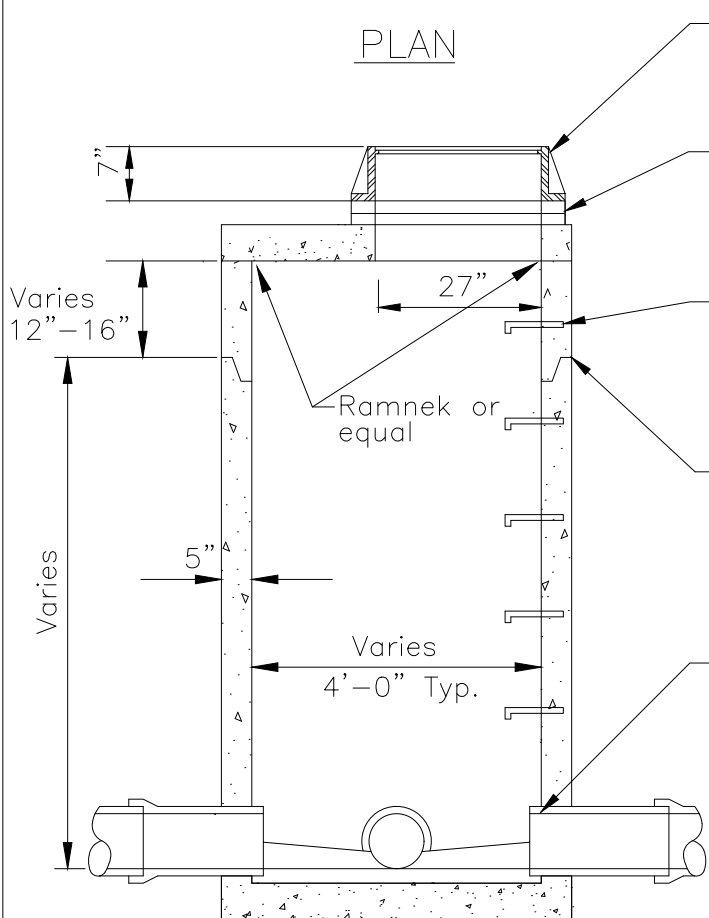


Precast invert must be 1/2 diameter of the pipe and the benches sloped 2" toward invert.

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

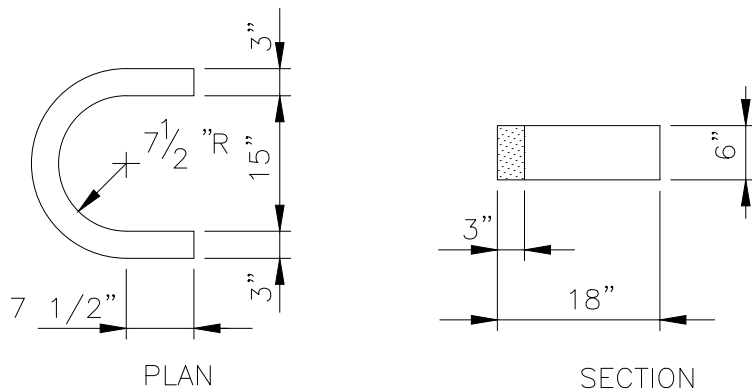


STANDARD DETAILS
SANITARY SEWER JUNCTION MANHOLE
WITH REINFORCED TOP SLAB

FARMINGTON, MINNESOTA

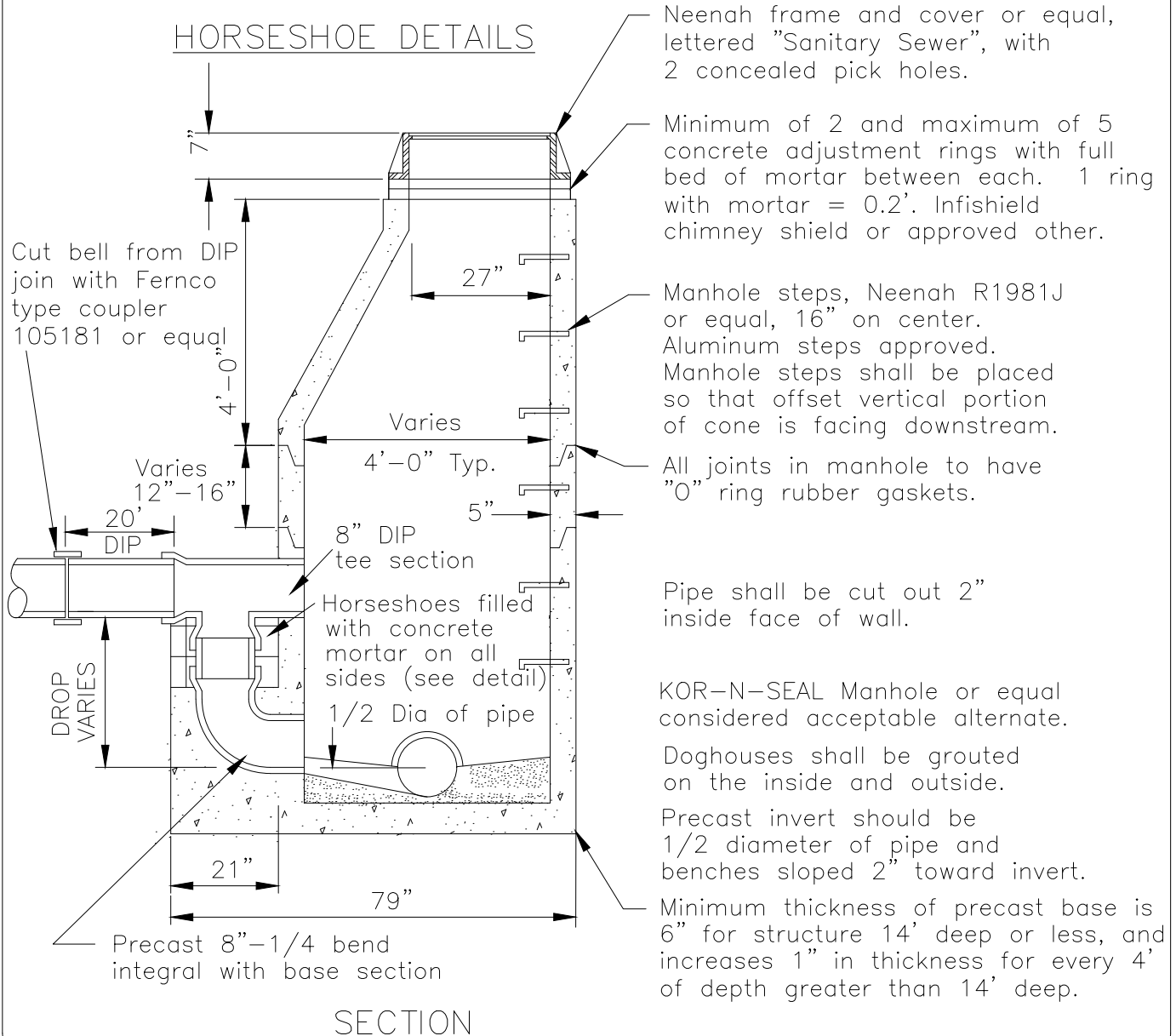
Last Revision:
JAN 2019

City Plate No.
SAN-03
2019



CASTING	A	B
R1642B	27"	7"

HORSESHOE DETAILS

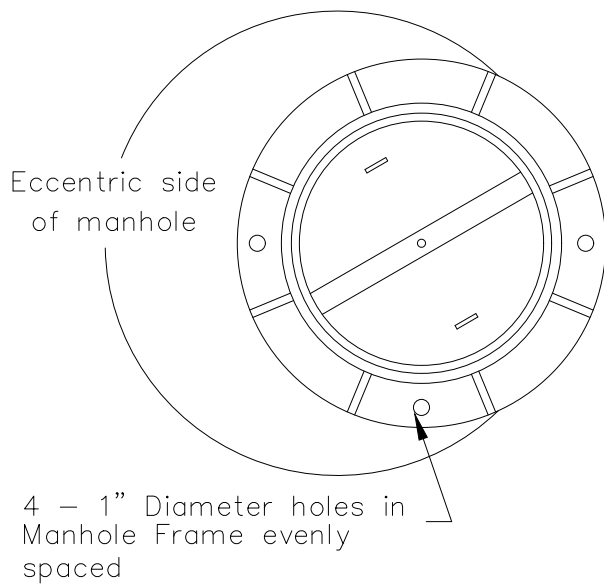


STANDARD DETAILS SANITARY SEWER DROP INLET MANHOLE

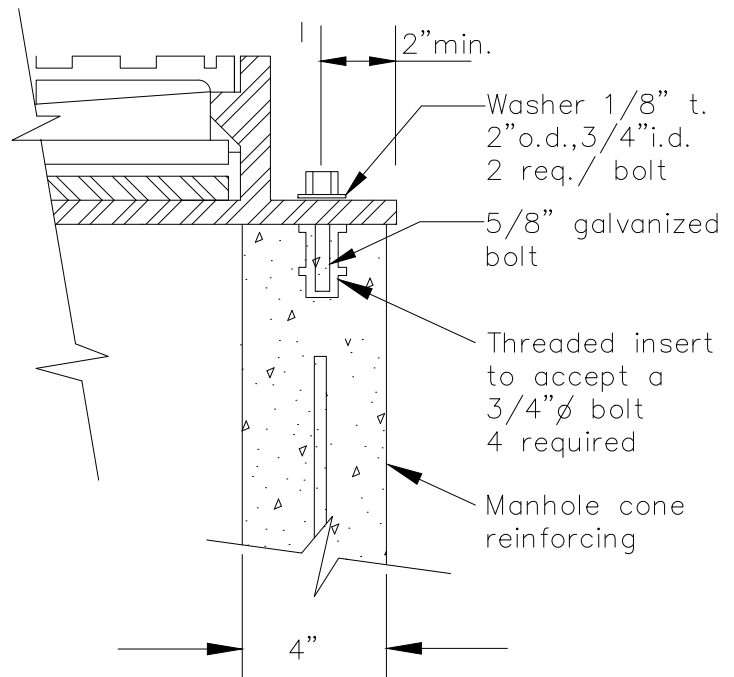
FARMINGTON, MINNESOTA

Last Revision:
JAN 2019

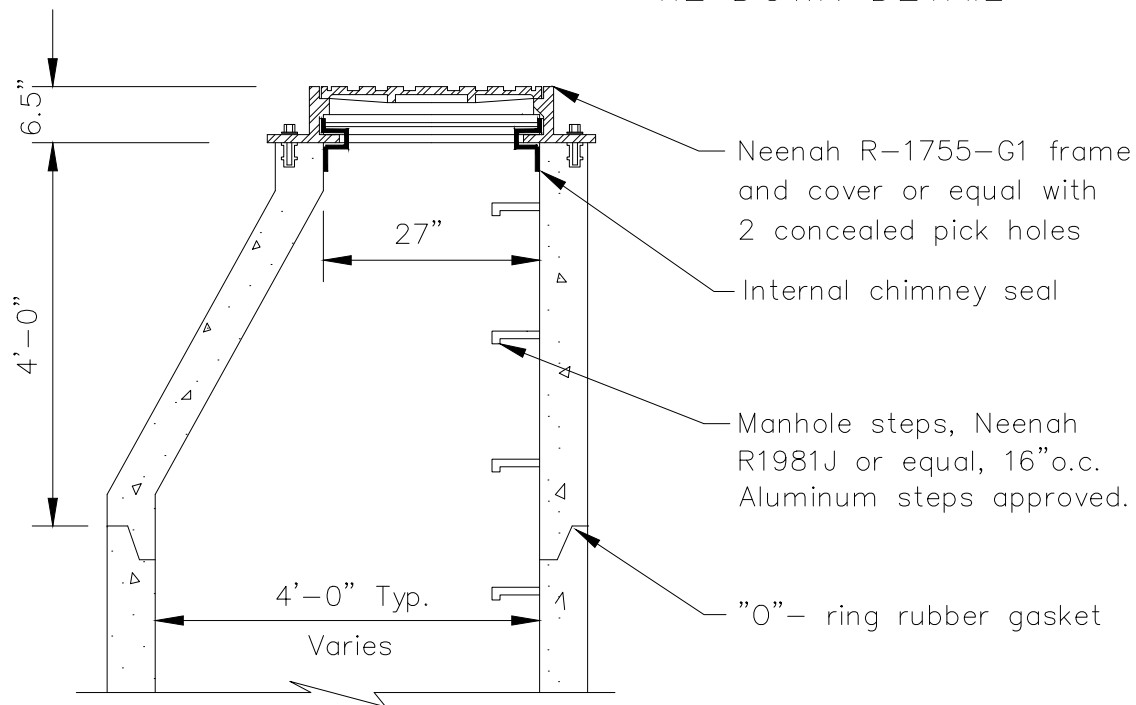
City Plate No.
SAN-04
2019



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

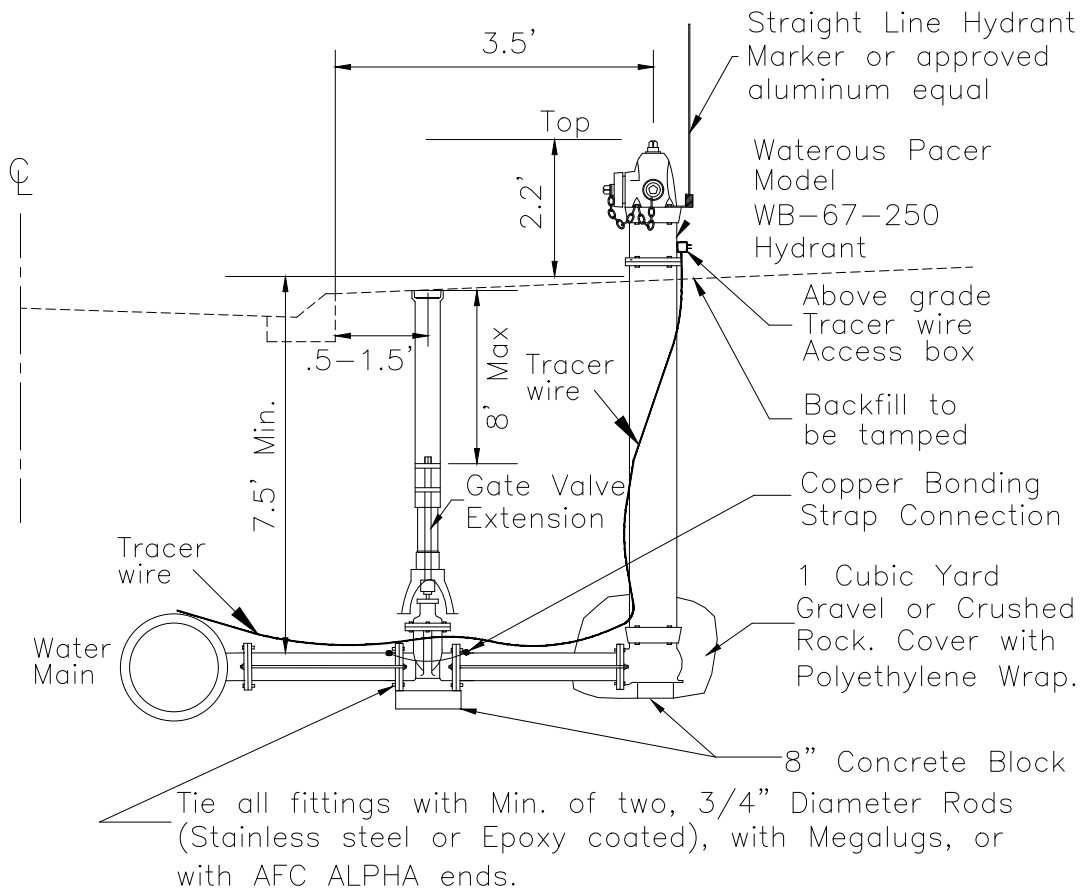
FARMINGTON, MINNESOTA

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

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
WAT-01
2019

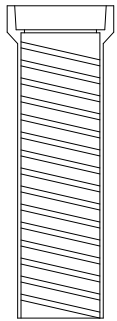


DROP LID
Power Seal

No. 6860

7.5' minimum cover required
over top of water main.

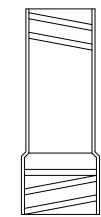
Adjust top to 1/2" below
grade. Box to be set to
provide 12" of adjustment.



TOP
C.I.P.

No. 6860

26"



EXTENSION
D.I.P.

No. 58

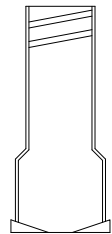
14"

No. 59

18"

No. 60

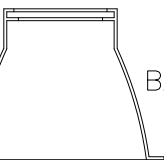
24"



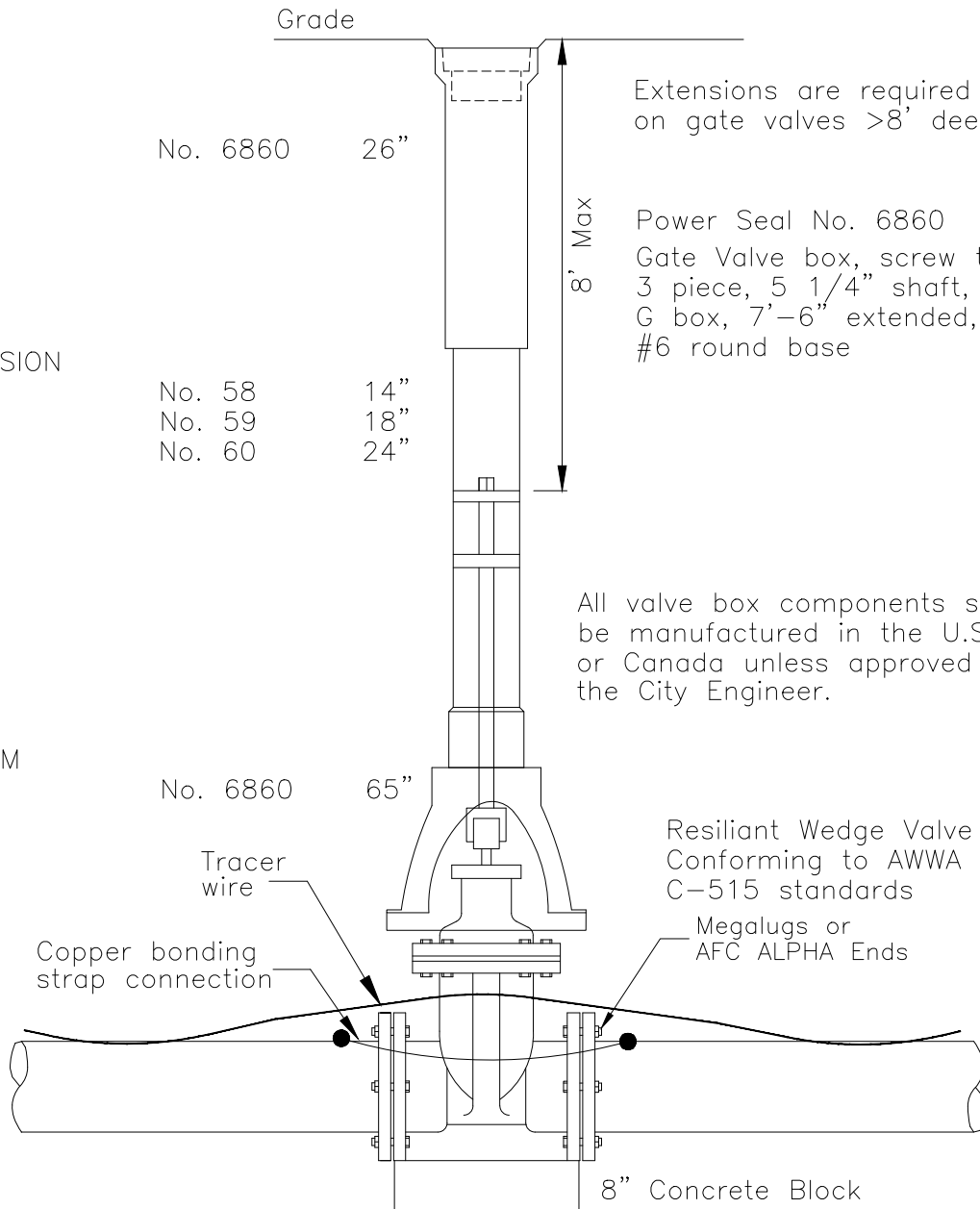
BOTTOM
D.I.P.

No. 6860

65"



BASE



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

8" Concrete Block

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



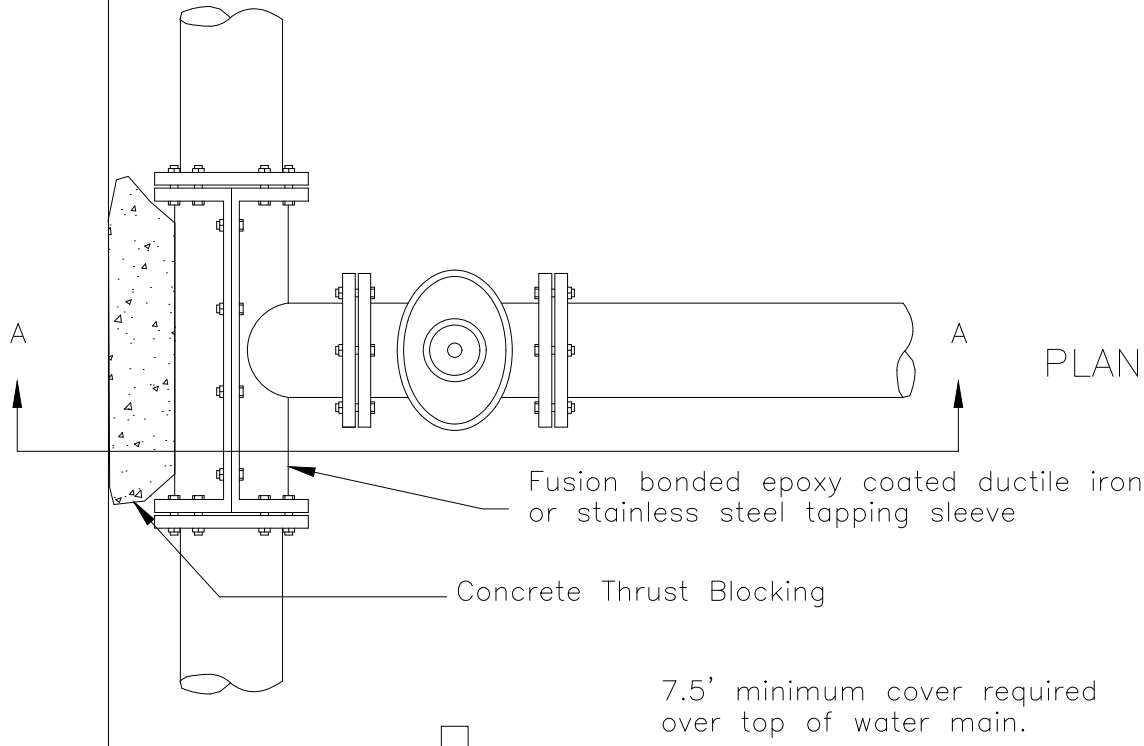
STANDARD DETAILS
GATE VALVE AND BOX

Last Revision:
FEB 2017

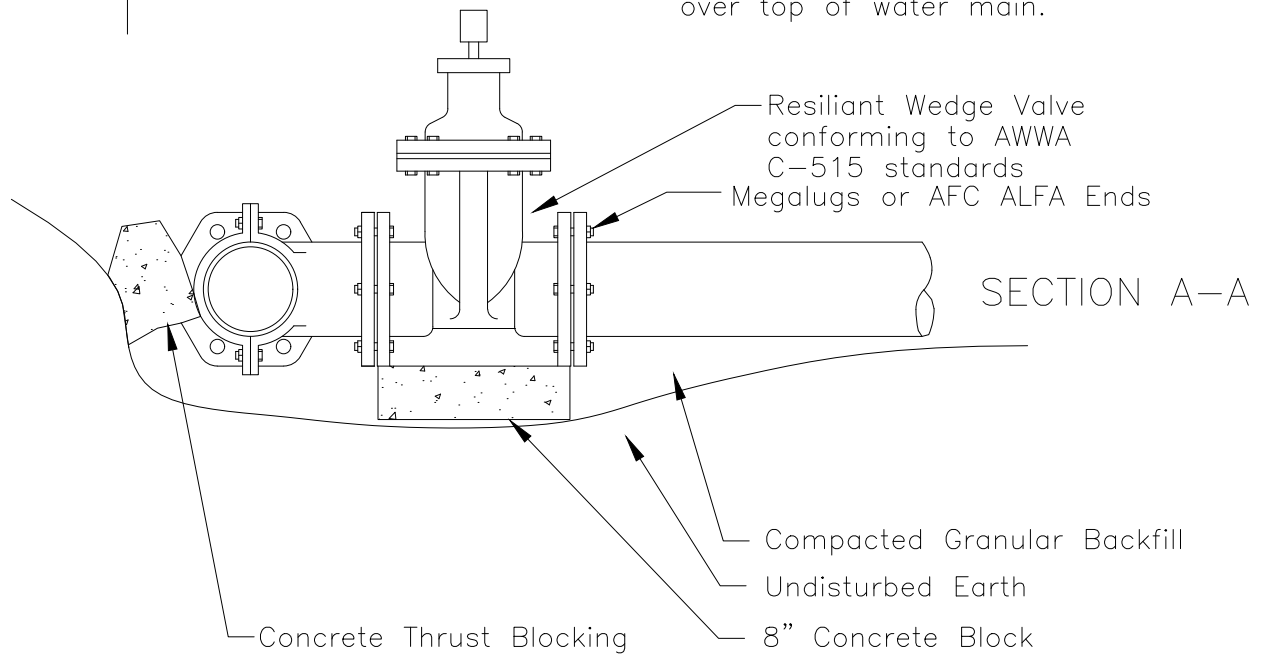
FARMINGTON, MINNESOTA

City Plate No.
WAT-02
2019

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



7.5' minimum cover required
over top of water main.



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



STANDARD DETAILS
WATER MAIN WET TAP

FARMINGTON, MINNESOTA

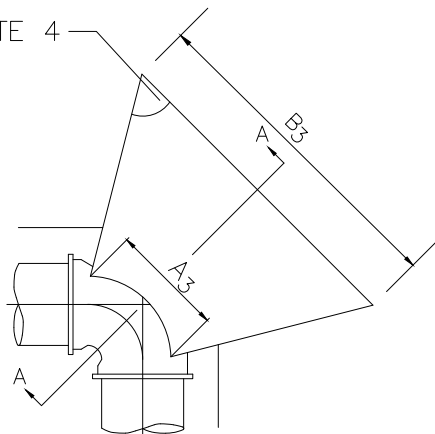
Last Revision:
FEB 2017

City Plate No.
WAT-04
2019

NOTES:

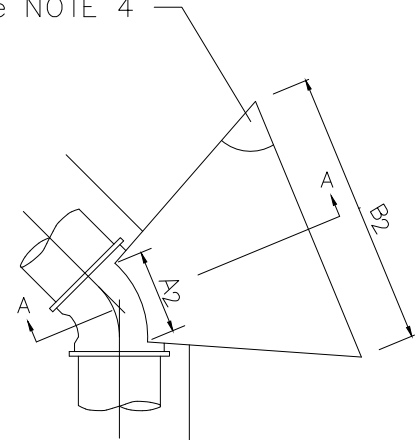
1. Shape of back of buttress may vary as long as poured against firm undisturbed earth.
2. Dimension C1,C2,C3 should be large enough to make angle θ equal to or larger than 45° .
3. Dimension A1,A2,A3 should be as large as possible without interfering with MJ bolts.
4. $\theta = 45^\circ$ Minimum.
5.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

θ - See NOTE 4



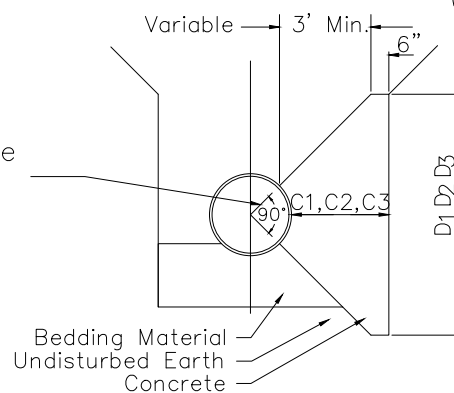
PLAN 90° BENDS

θ - See NOTE 4



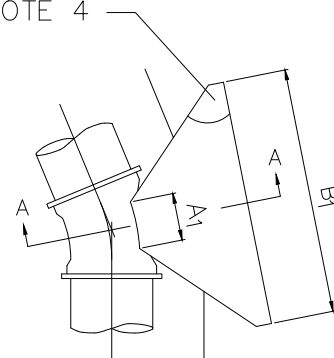
PLAN 45° BENDS

Concrete shall be in contact with this quadrant of pipe



SECTION A-A

θ - See NOTE 4



PLAN 22 1/2° BENDS

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

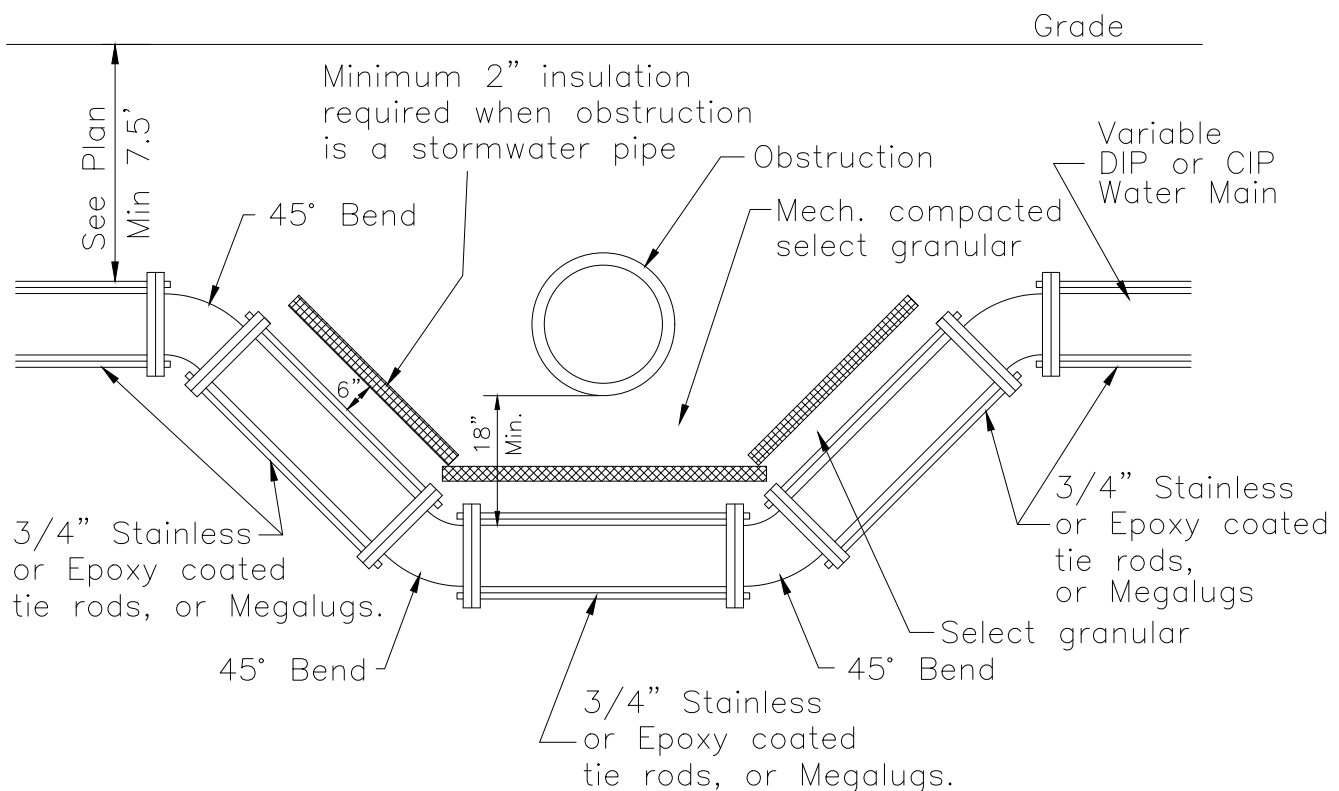
STANDARD DETAILS CONCRETE THRUST BLOCKING

Last Revision:
FEB 2002

City Plate No.
WAT-05
2019

FARMINGTON, MINNESOTA





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.

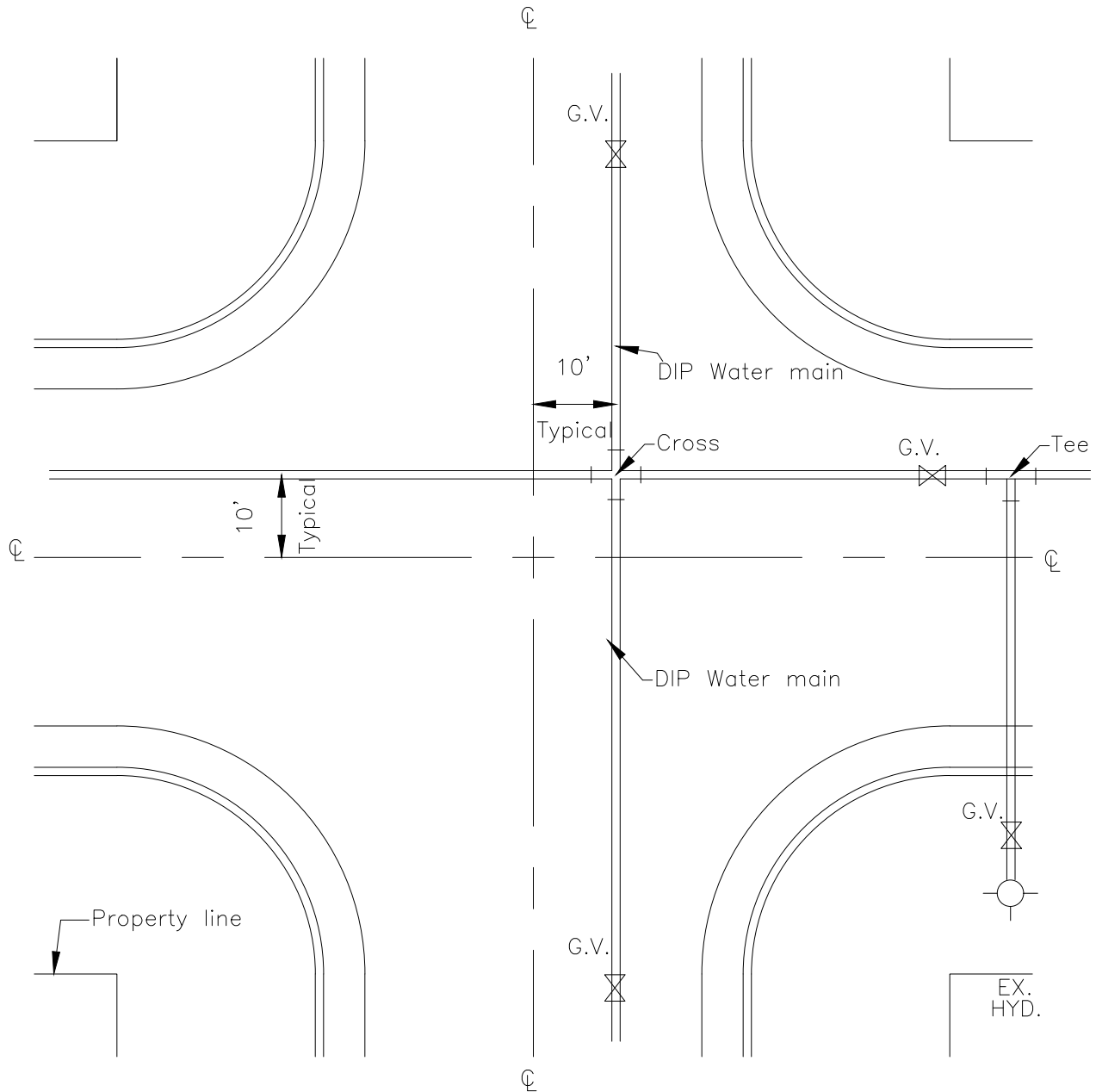


STANDARD DETAILS
WATER MAIN OFFSET

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

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.

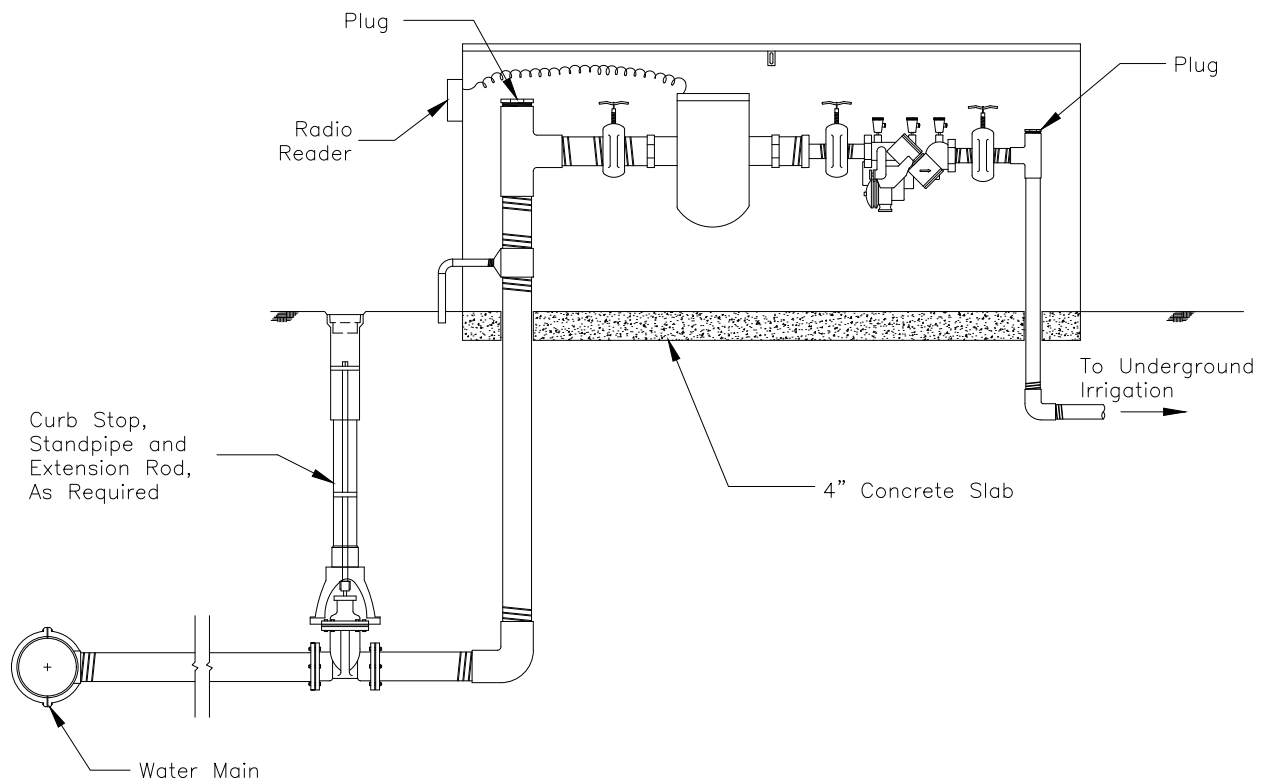


STANDARD DETAILS
TYPICAL GATE VALVE LAYOUT

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

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.

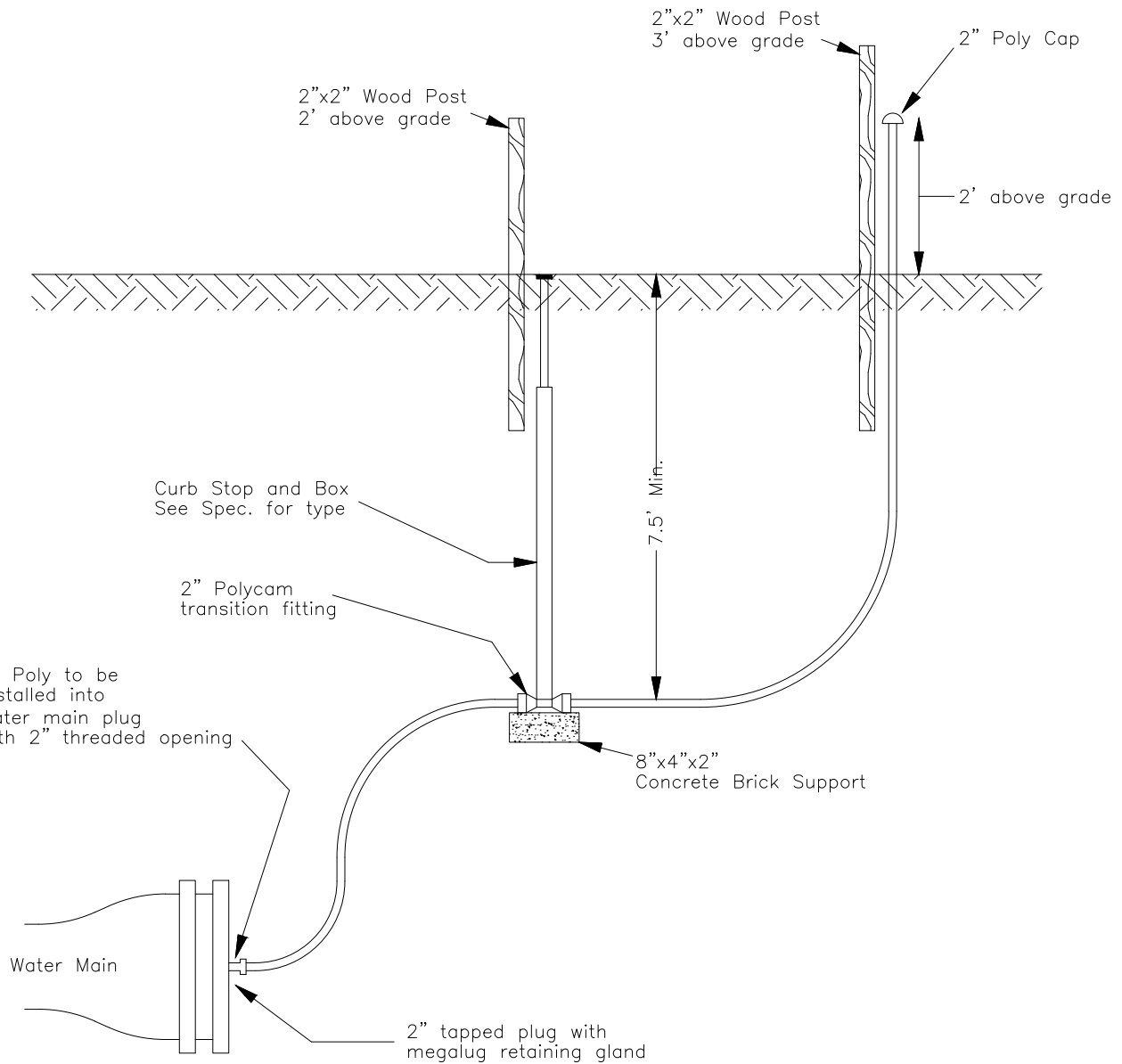


STANDARD DETAILS
IRRIGATION SYSTEM TAP, METER, AND
BACKFLOW PREVENTOR ASSEMBLY

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
WAT-08
2019

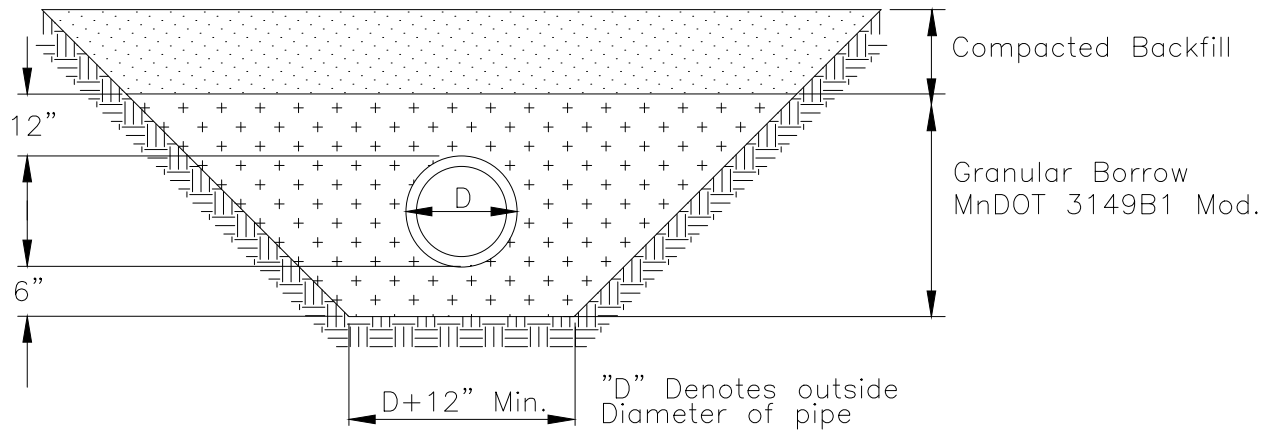


STANDARD DETAILS AIR BLEED

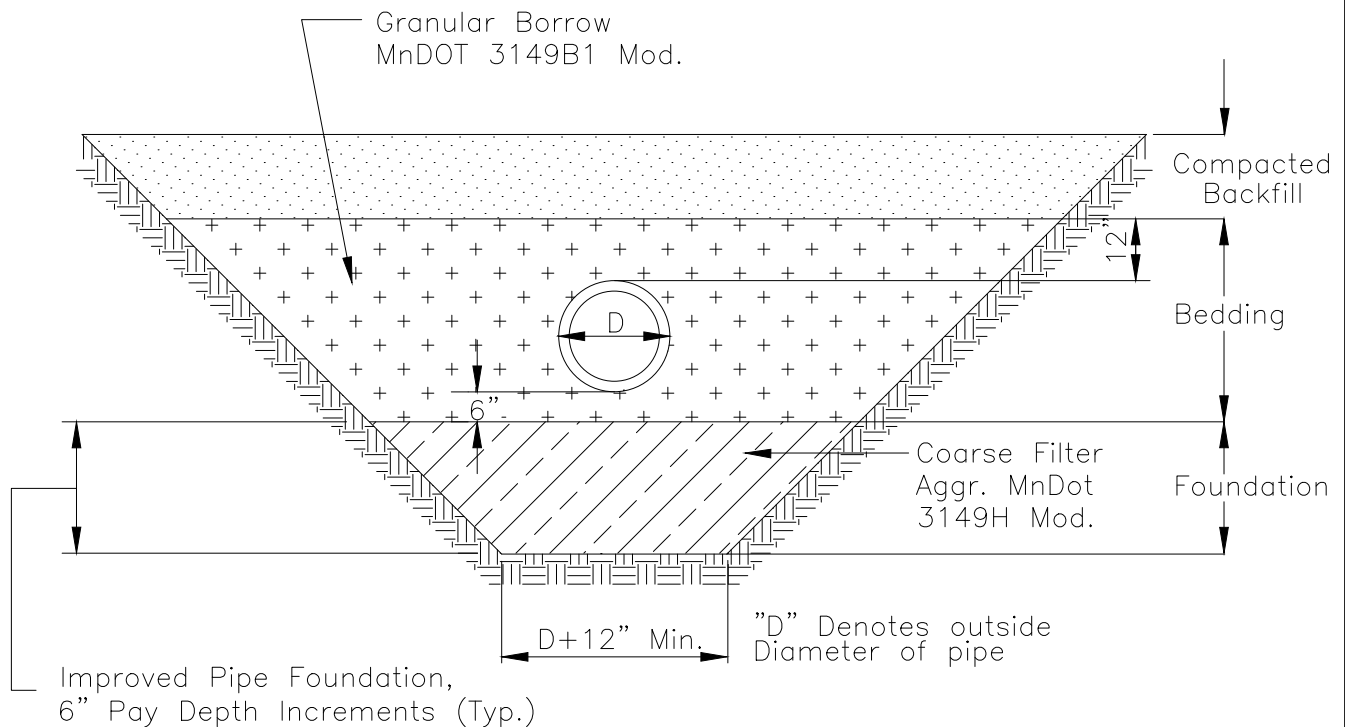
FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
WAT-09
2019



PIPE FOUNDATION & BEDDING IN GOOD SOILS



PIPE FOUNDATION & BEDDING IN POOR SOILS

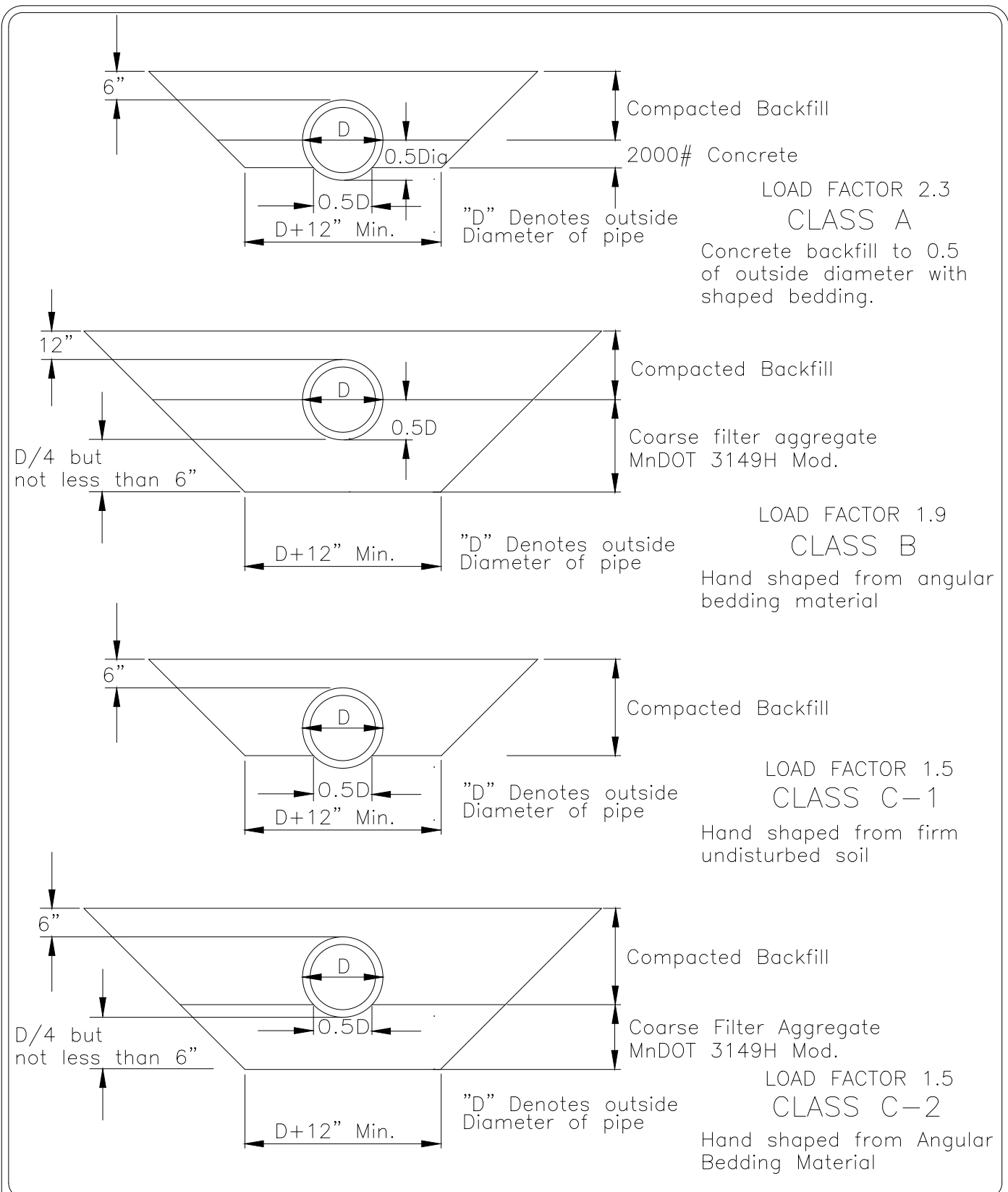


STANDARD DETAILS BEDDING METHODS FOR PVC

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
BED-01
2019



STANDARD DETAILS
BEDDING METHODS
FOR RCP AND DIP

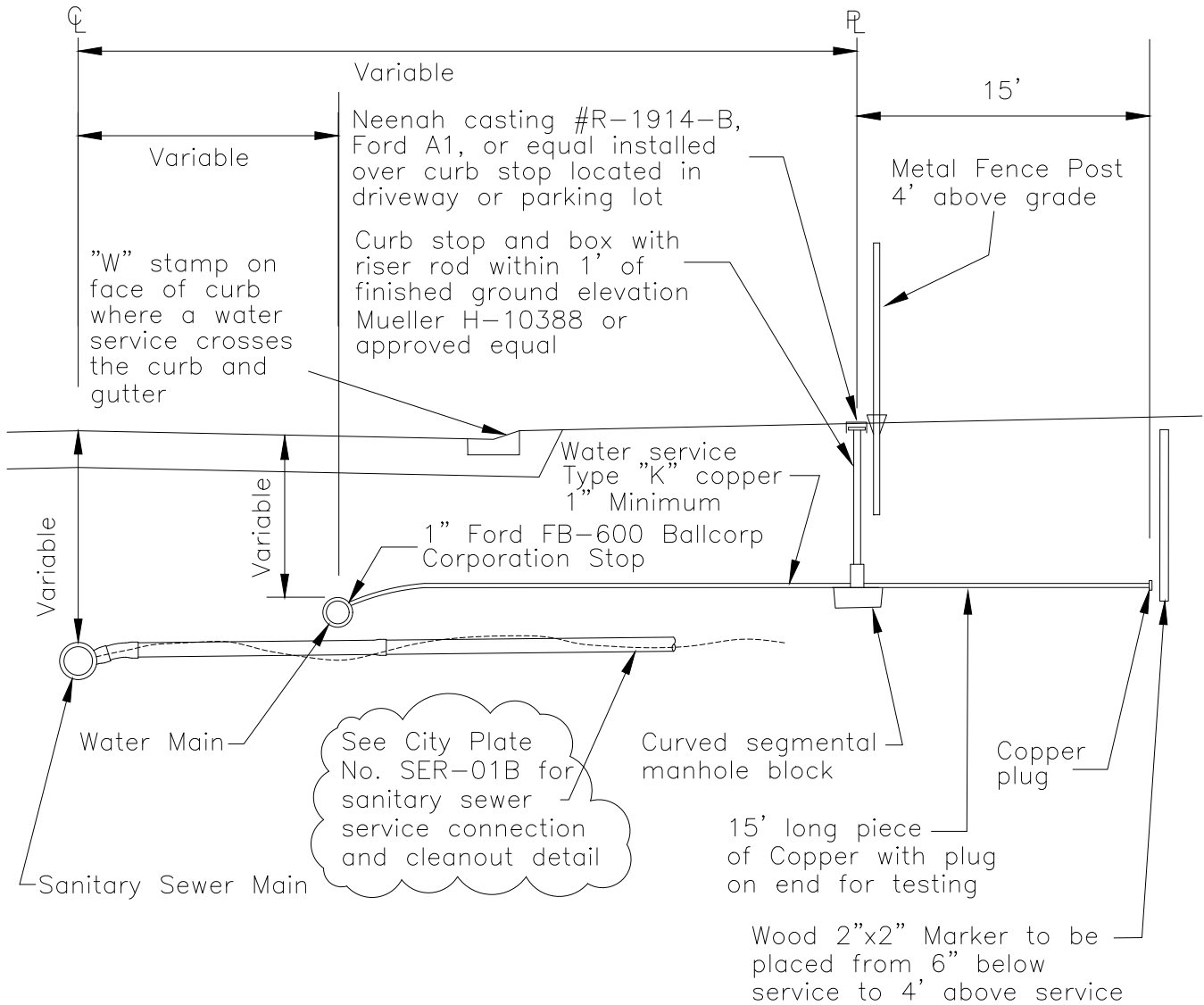
FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

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:

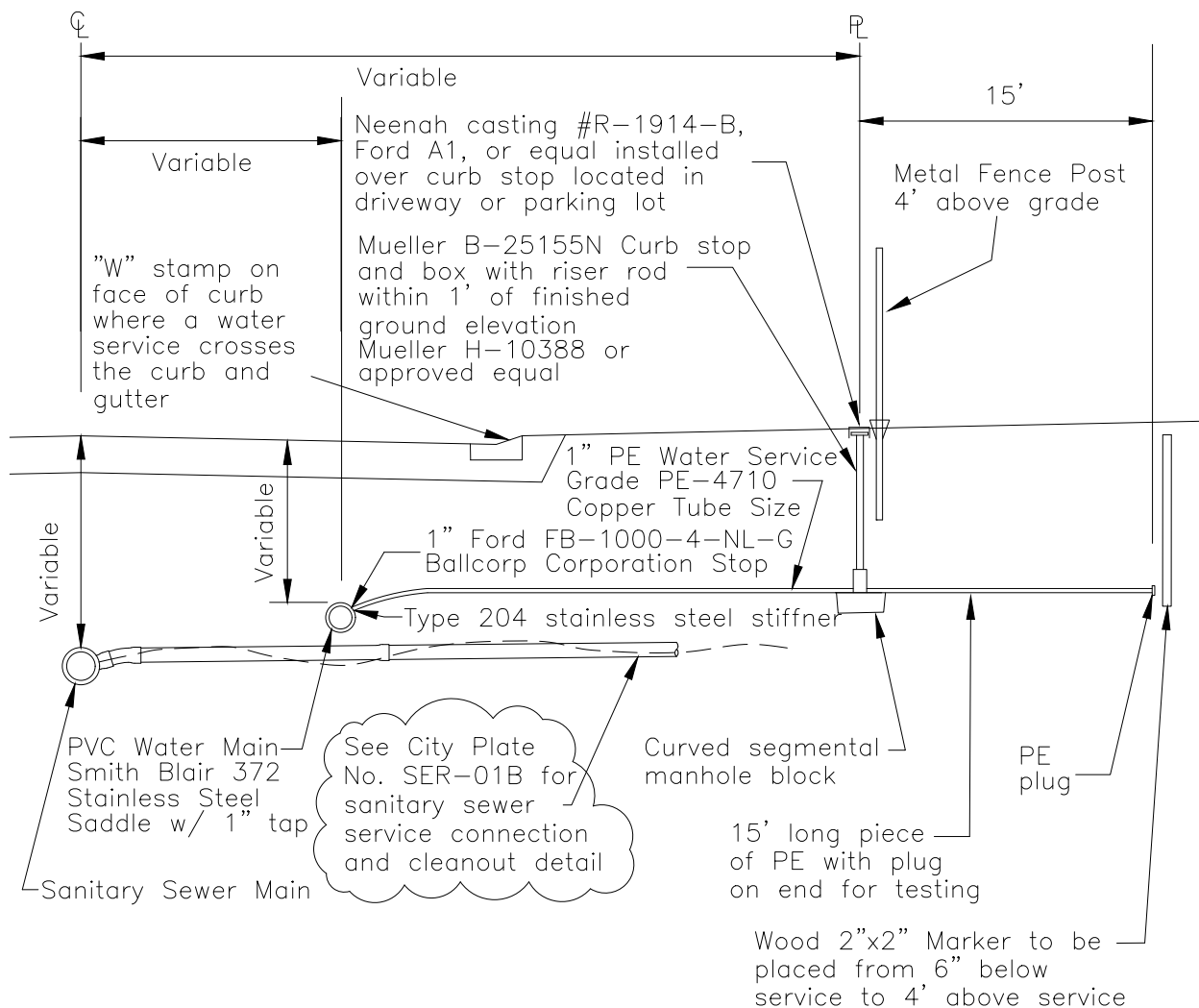
JAN 2019

City Plate No.

SER-01A
2019

NOTE:

1. 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
PE WATER SERVICE CONNECTION
to PVC WATERMAIN

FARMINGTON, MINNESOTA

Last Revision:

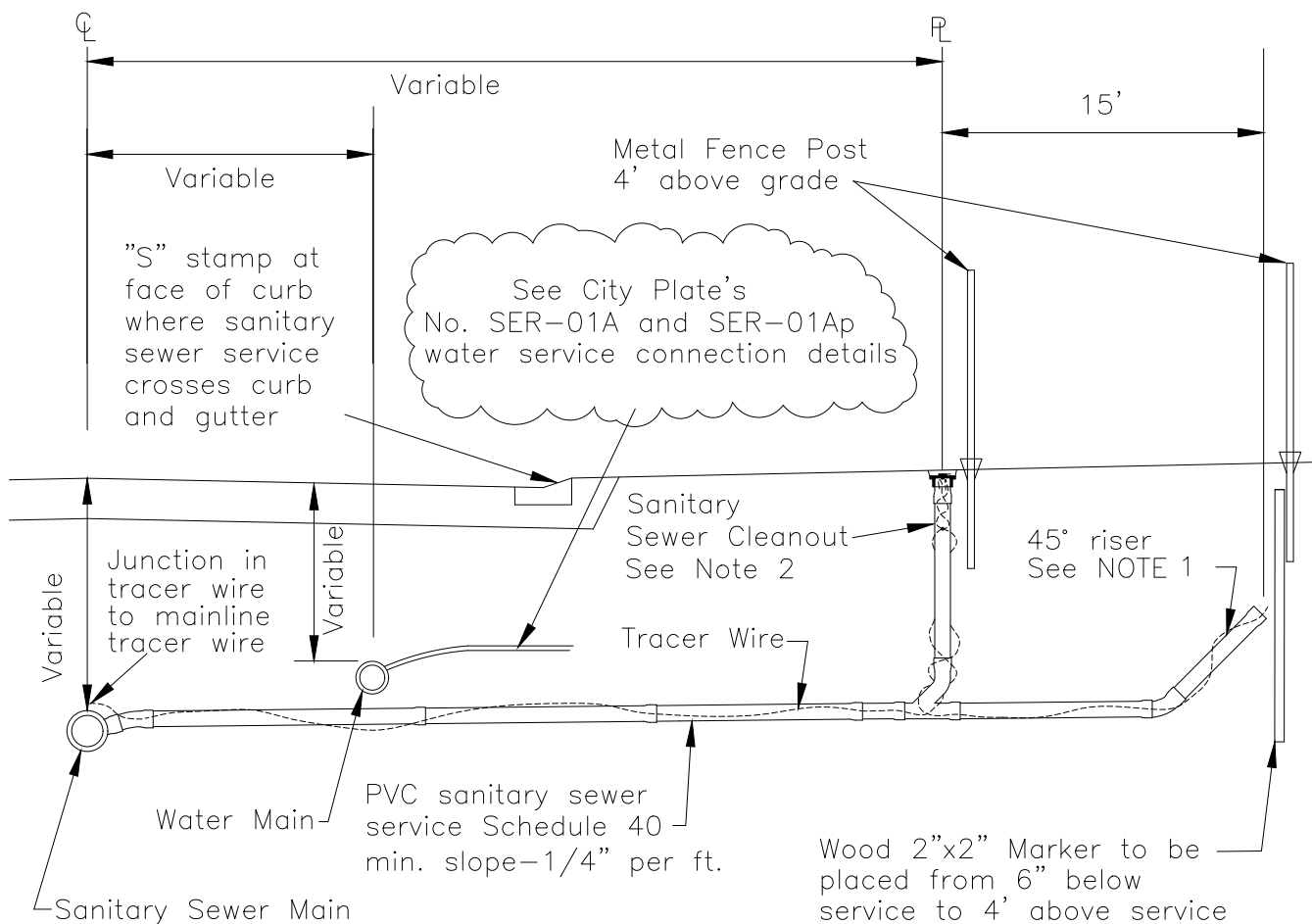
JAN 2019

City Plate No.

SER-01Ap
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

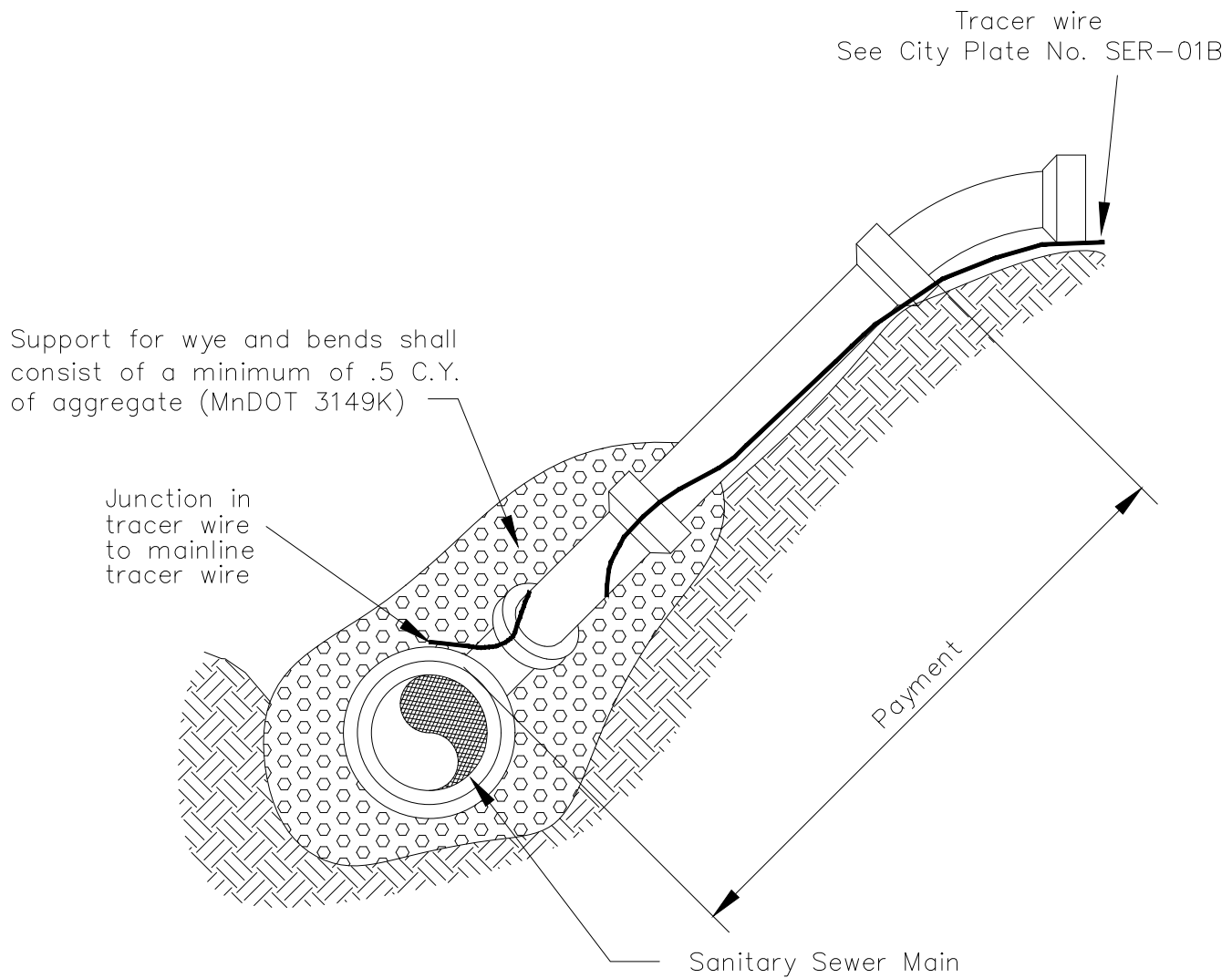
FARMINGTON, MINNESOTA

Last Revision:

JAN 2019

City Plate No.

SER-01B
2019



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:

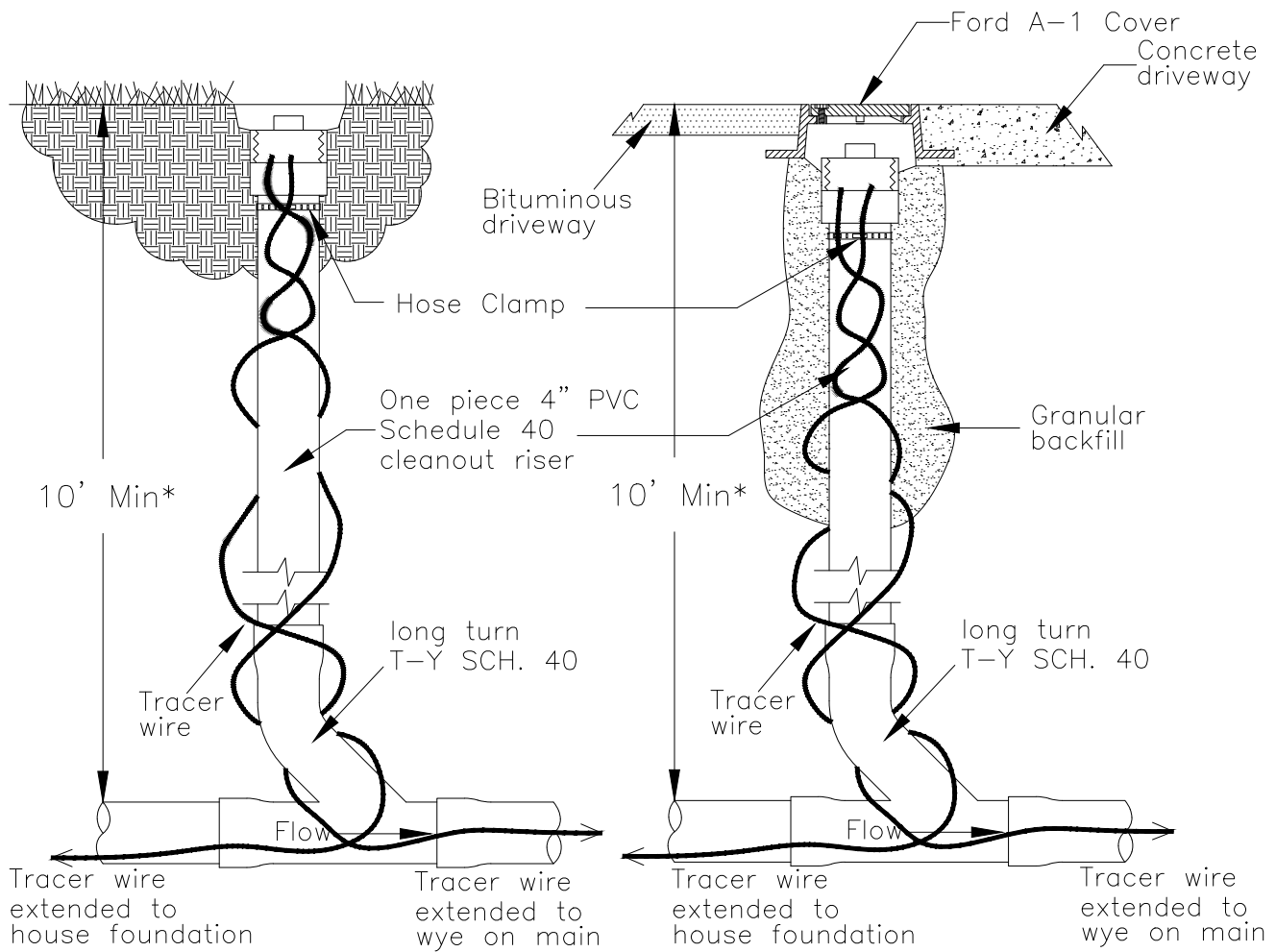
JAN 2019

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

FARMINGTON, MINNESOTA

Last Revision:

FEB 2017

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

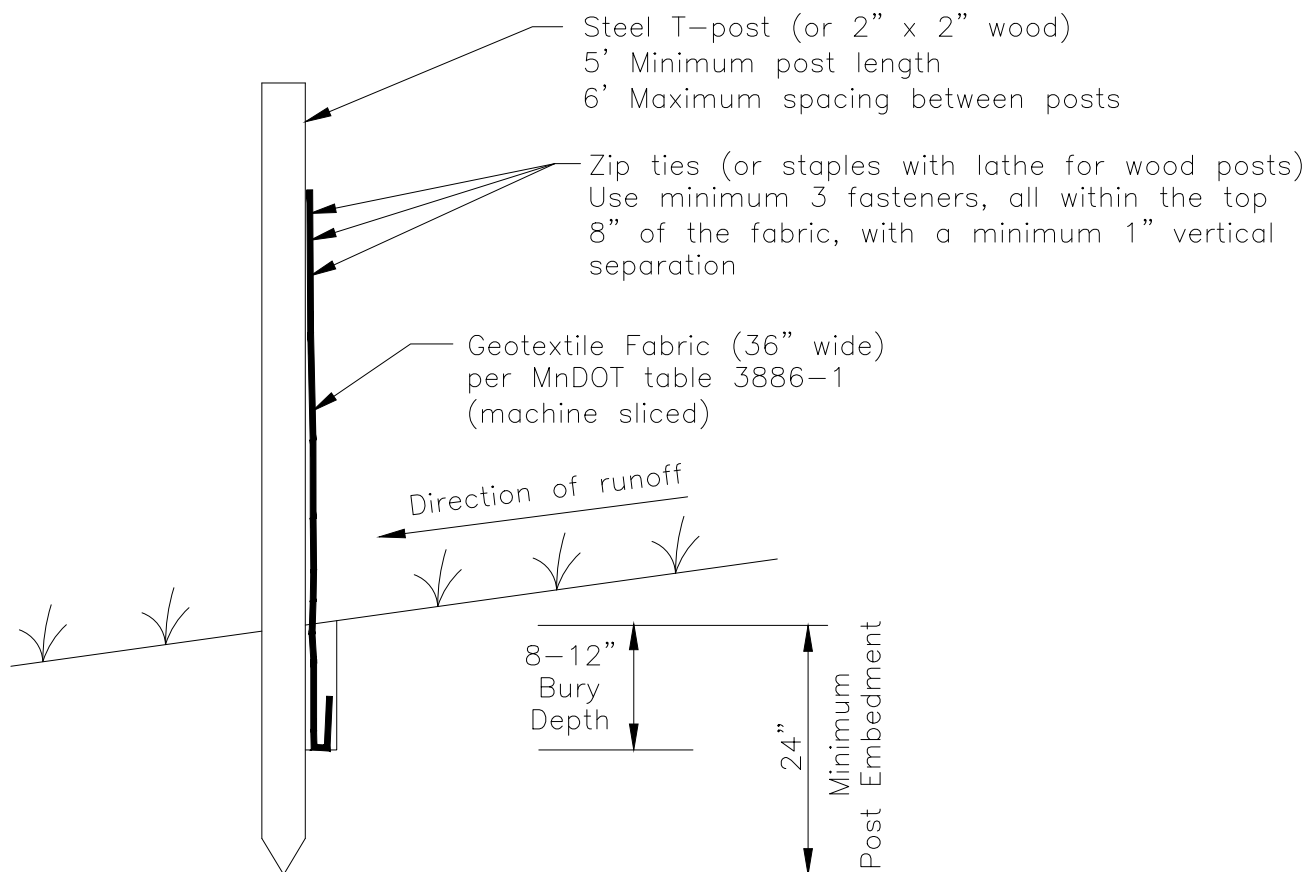
FARMINGTON, MINNESOTA

Last Revision:

APR 2017

City Plate No.

INDEX4
2019



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.

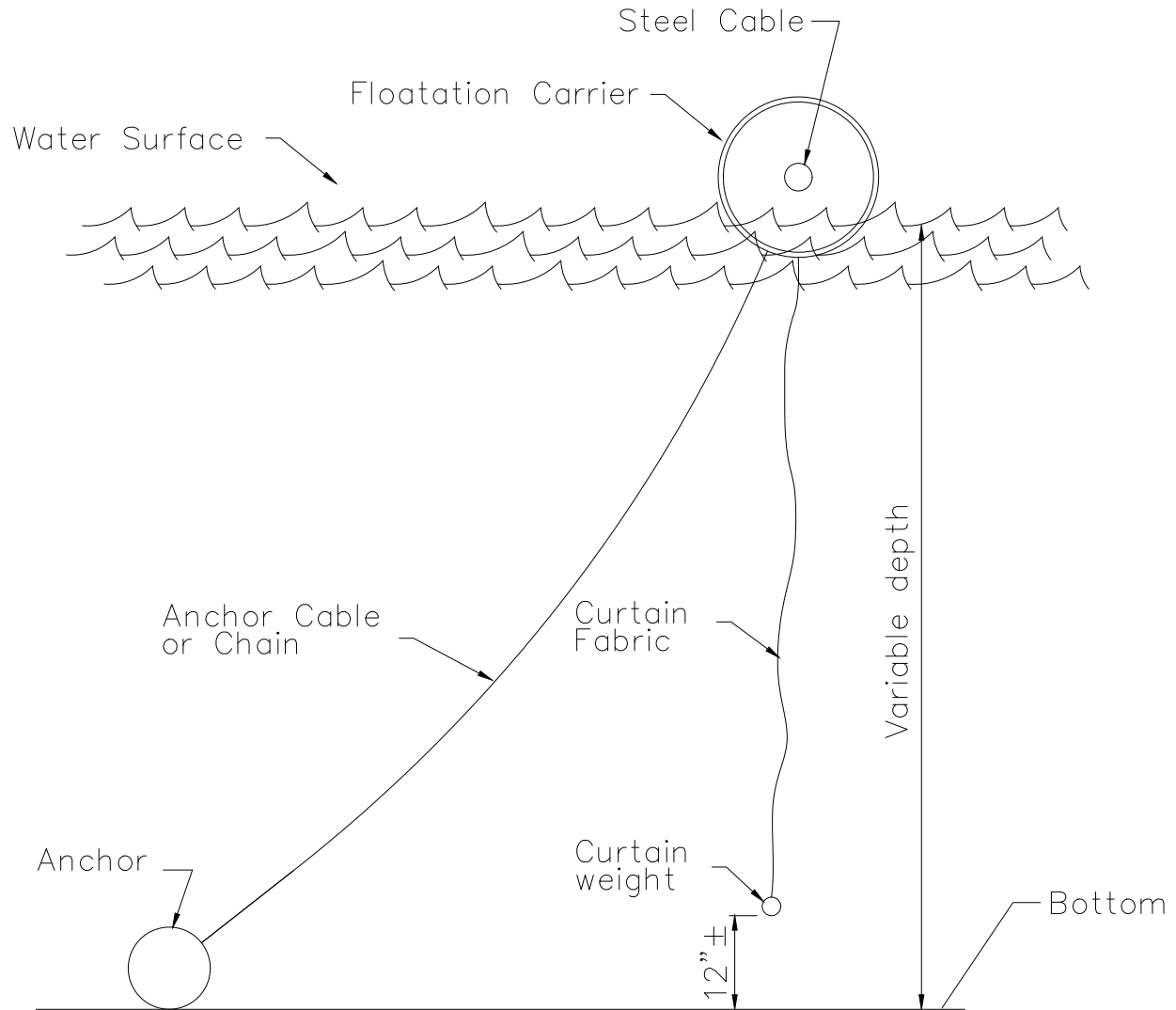


STANDARD DETAILS
SILT FENCE
MACHINE SLICED

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
ERO-01A
2019



STANDARD DETAILS
SILT CURTAIN

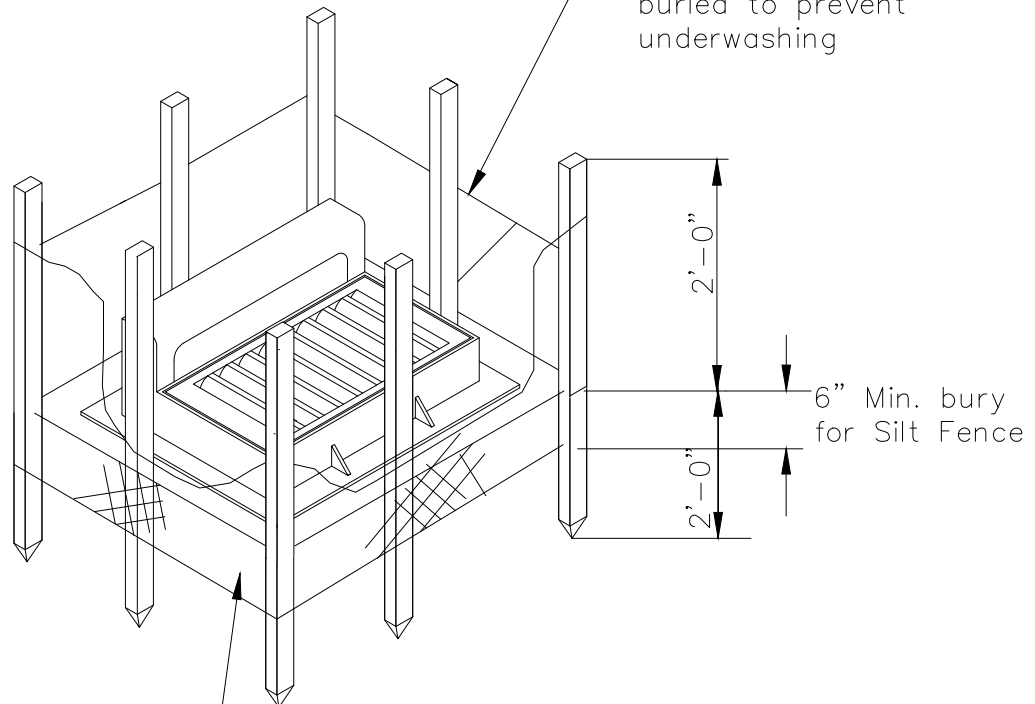
FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

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.



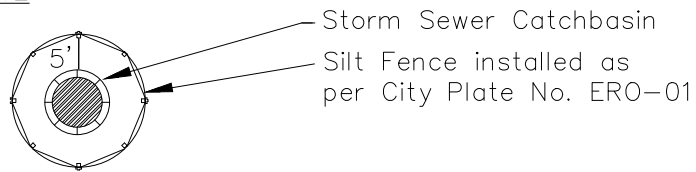
STANDARD DETAILS EROSION CONTROL AROUND CATCH BASIN

FARMINGTON, MINNESOTA

Last Revision:
MAY 2000

City Plate No.
ERO-04
2019

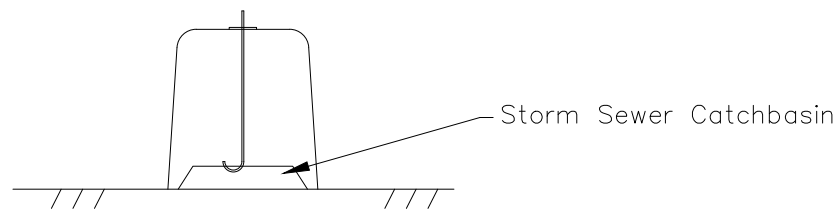
A. SILT FENCE AROUND BEEHIVE



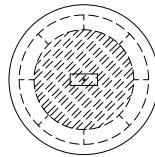
NOTE:

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



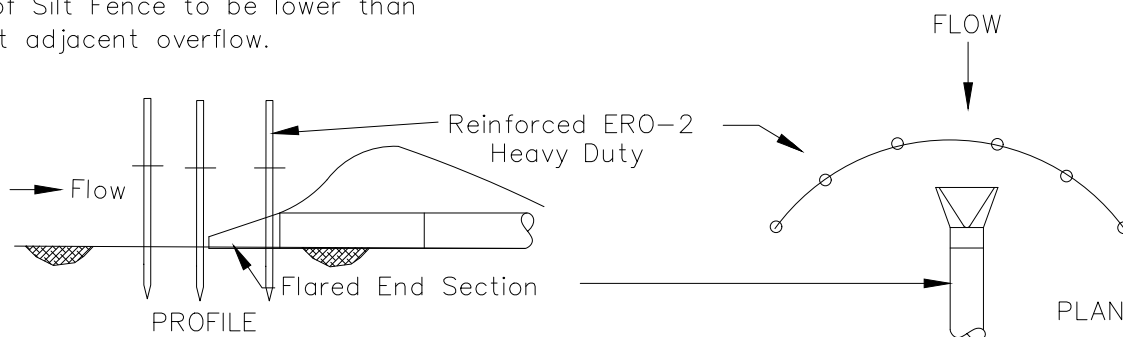
PROFILE



PLAN

C. SILT FENCE AT FLARED END SECTION

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



STANDARD DETAILS
BEEHIVE CASTING AND
FLARED END SECTION EROSION CONTROL

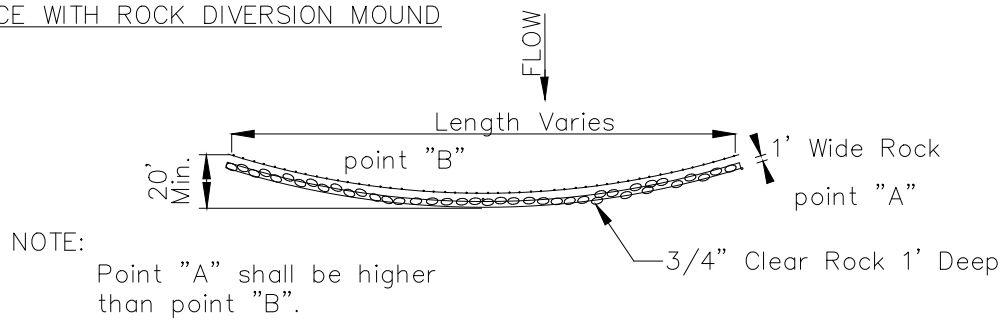
FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
ERO-05
2019

PLAN VIEW

SILT FENCE WITH ROCK DIVERSION MOUND



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

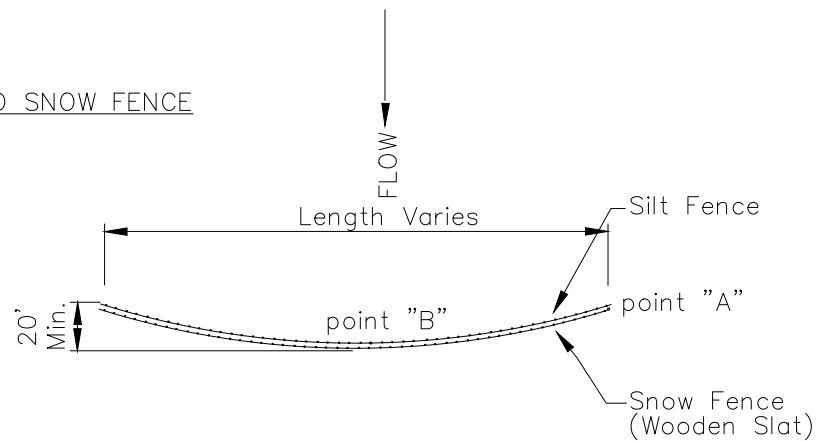
Last Revision:
MAY 2000

City Plate No.
ERO-06
2019

FARMINGTON, MINNESOTA

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

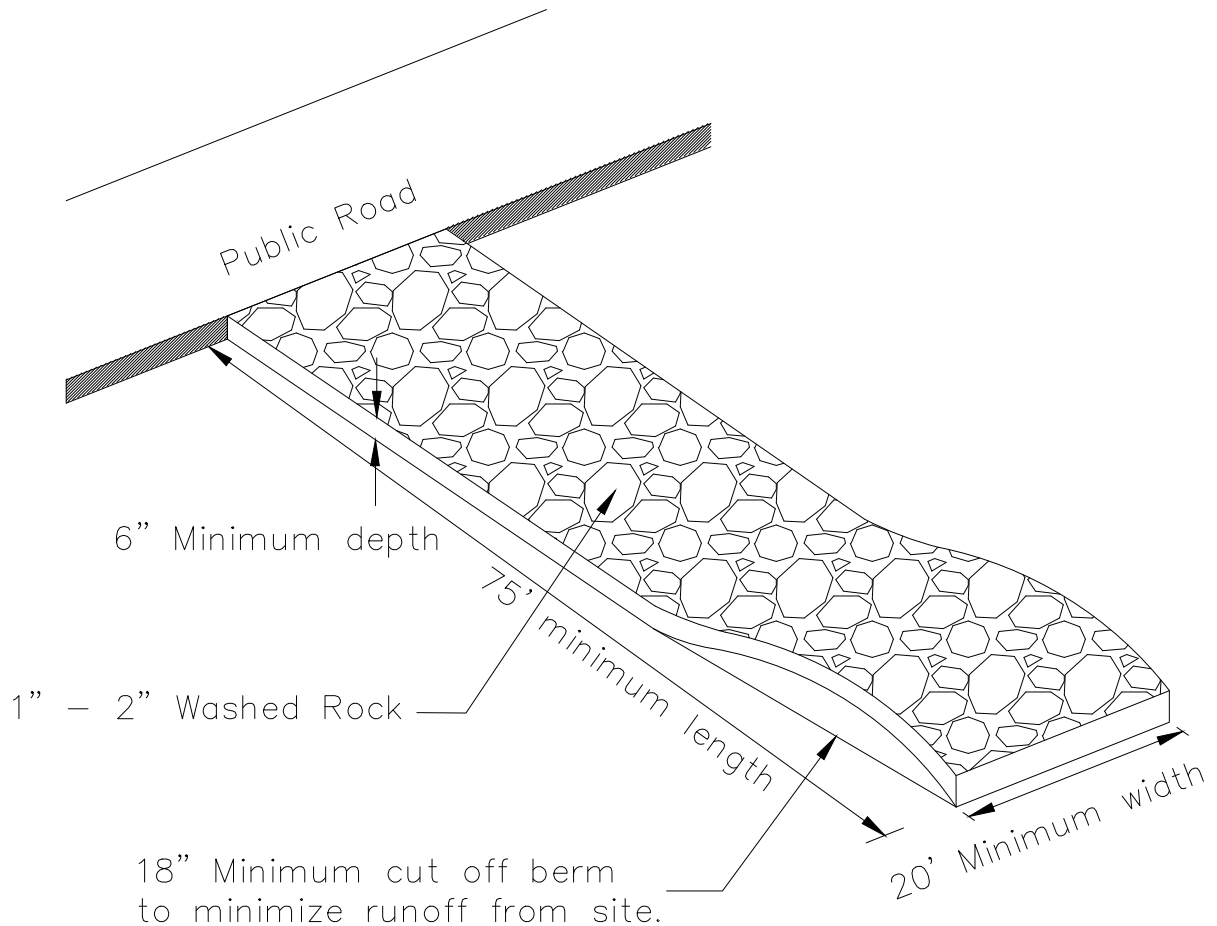


STANDARD DETAILS
SHEET DRAINAGE EROSION CONTROL

Last Revision:
JAN 2004

FARMINGTON, MINNESOTA

City Plate No.
ERO-07
2019



18" Minimum cut off berm
to minimize runoff from site.

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

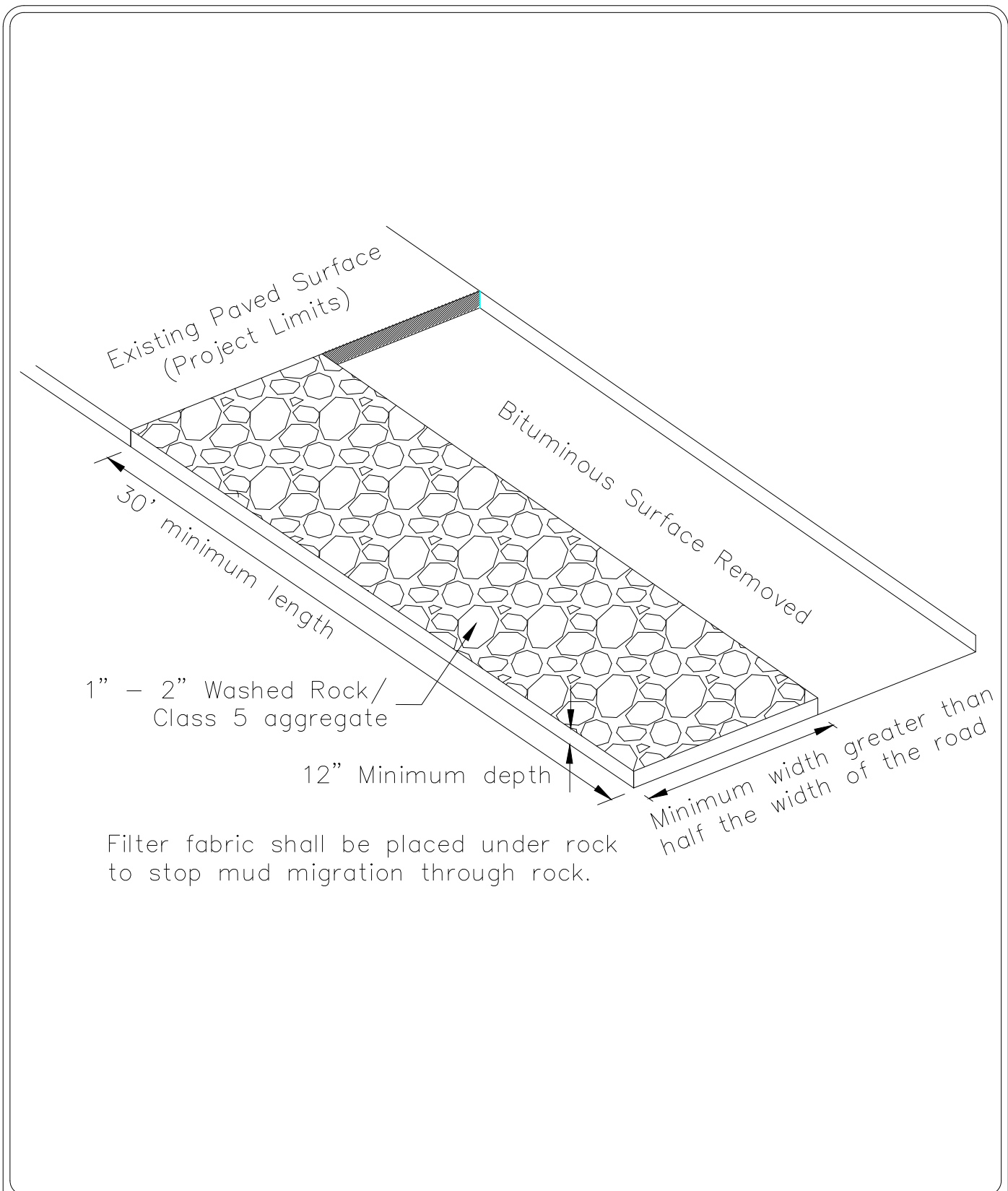


STANDARD DETAILS
DEVELOPMENT
STABILIZED CONSTRUCTION EXIT

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
ERO-08A
2019

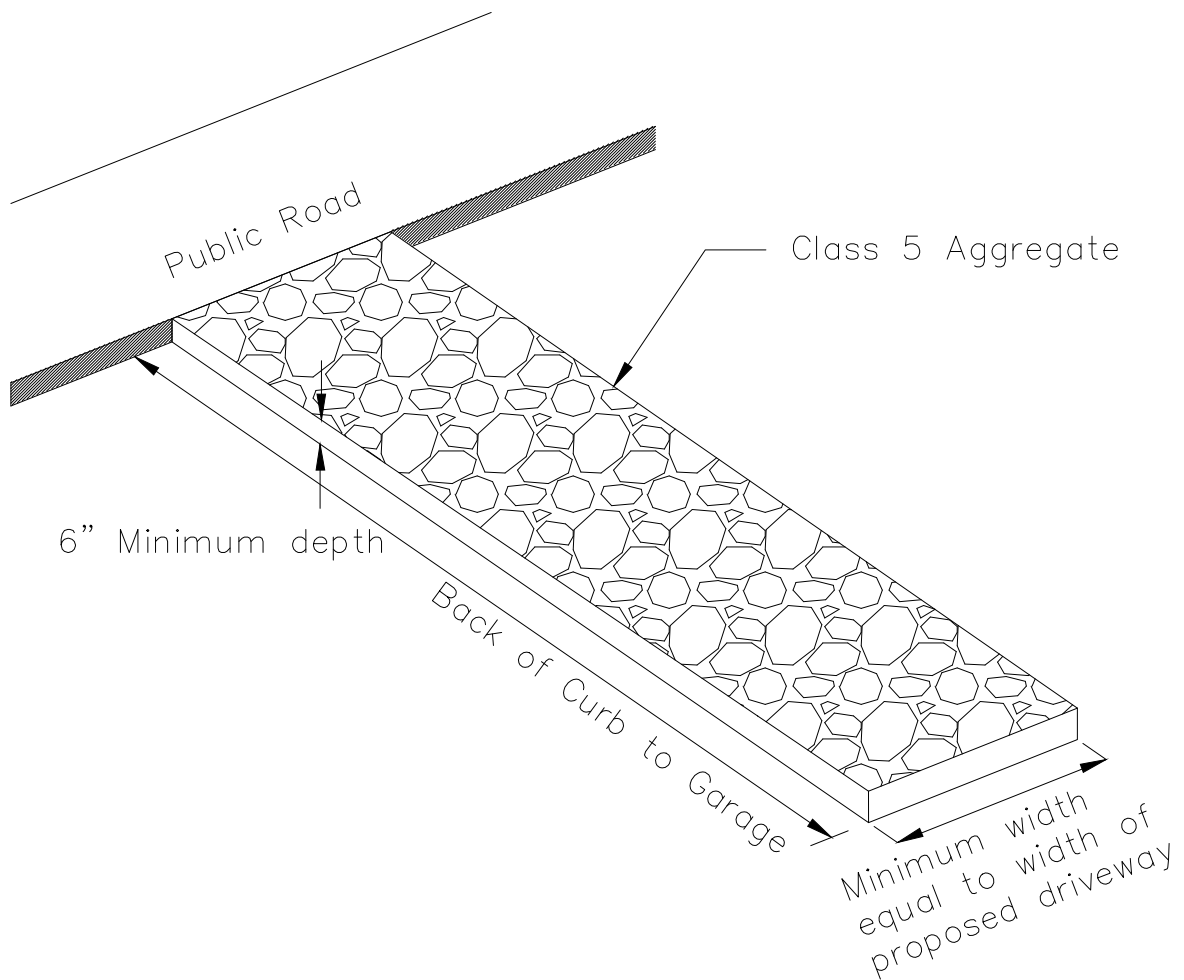


STANDARD DETAILS
RECONSTRUCTION PROJECT
STABILIZED CONSTRUCTION EXIT

Last Revision:
FEB 2017

City Plate No.
ERO-08B
2019

FARMINGTON, MINNESOTA

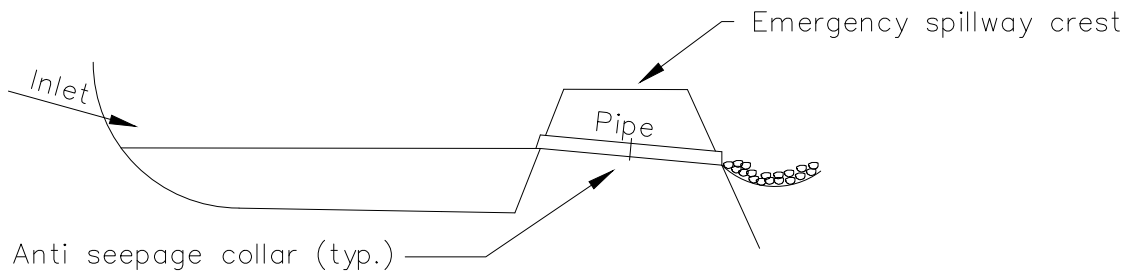


STANDARD DETAILS
RESIDENTIAL
STABILIZED CONSTRUCTION EXIT

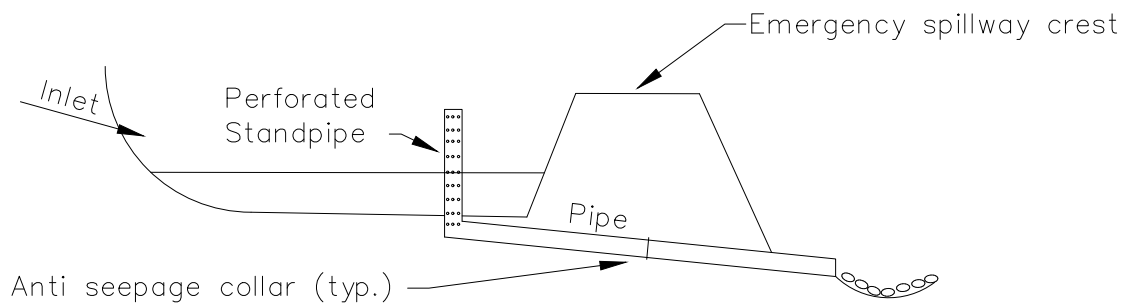
FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

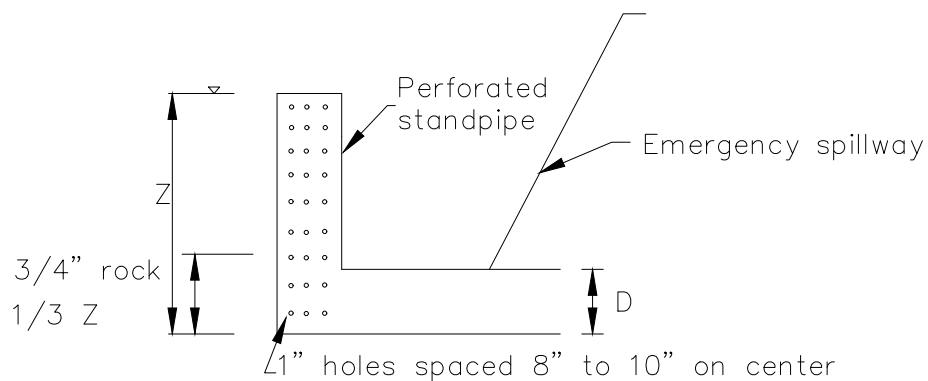
City Plate No.
ERO-09
2019



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

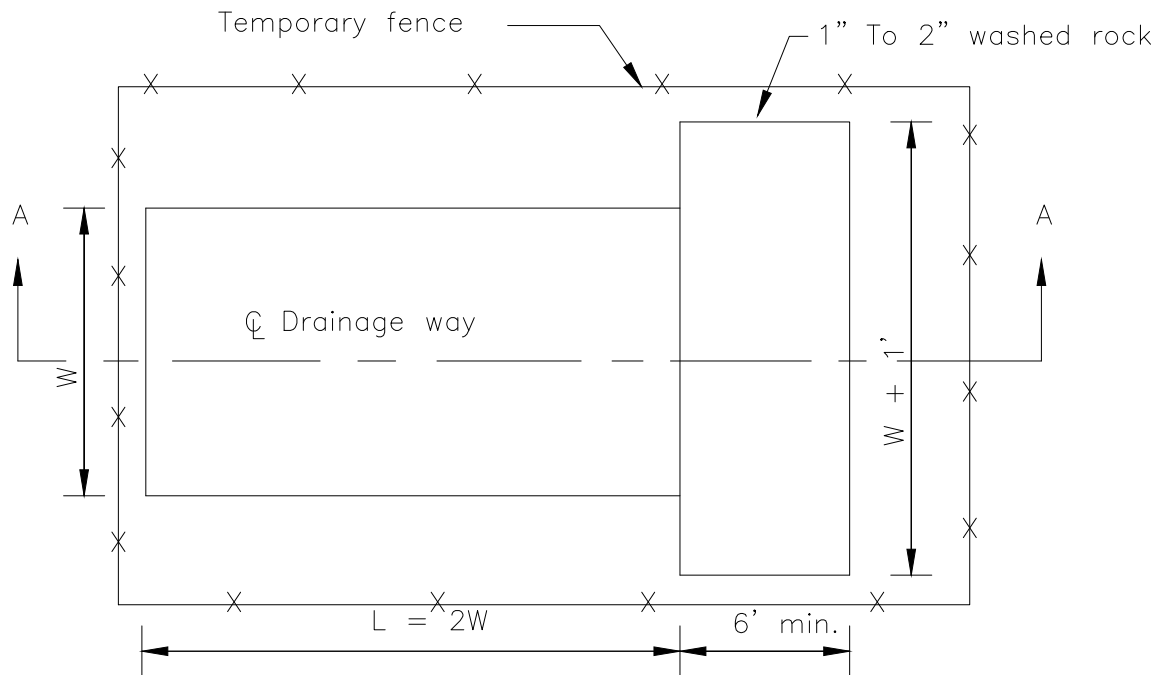


STANDARD DETAILS
TEMPORARY SEDIMENTATION BASIN
WITH OUTLET PIPE

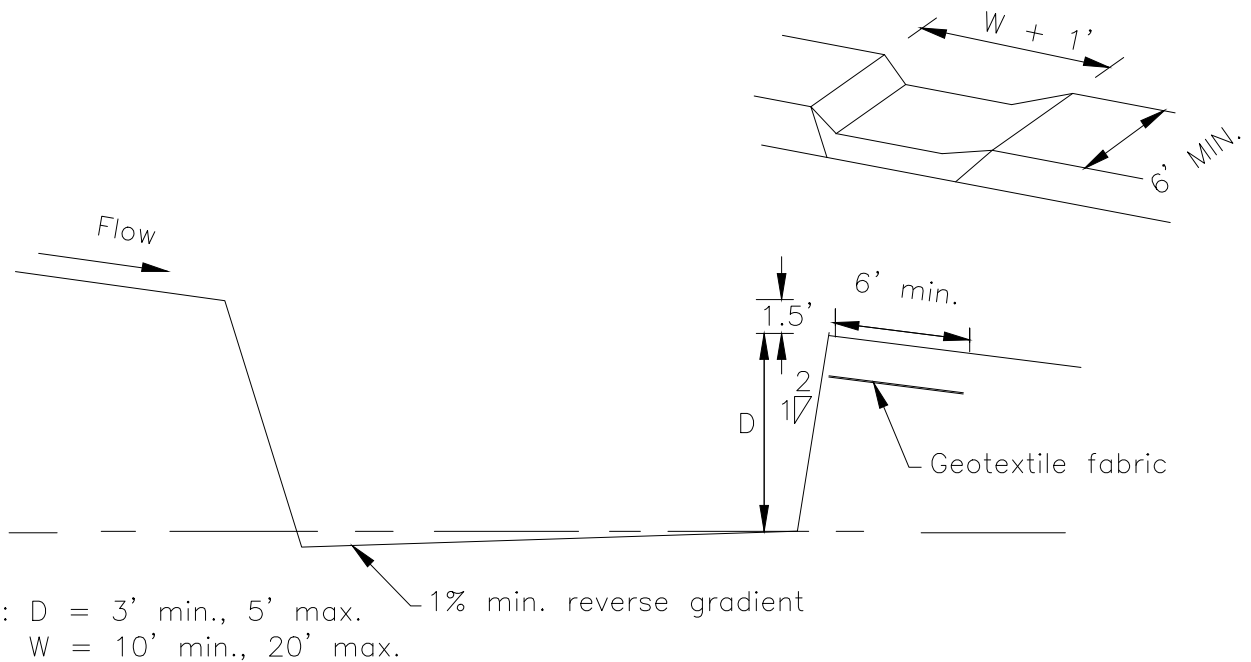
FARMINGTON, MINNESOTA

Last Revision:
FEB 2007

City Plate No.
ERO-10
2019



PLAN VIEW



SECTION A-A



STANDARD DETAILS
 TEMPORARY SEDIMENTATION BASIN
 WITH OVERFLOW SPILLWAY

FARMINGTON, MINNESOTA

Last Revision:
 MAY 2000

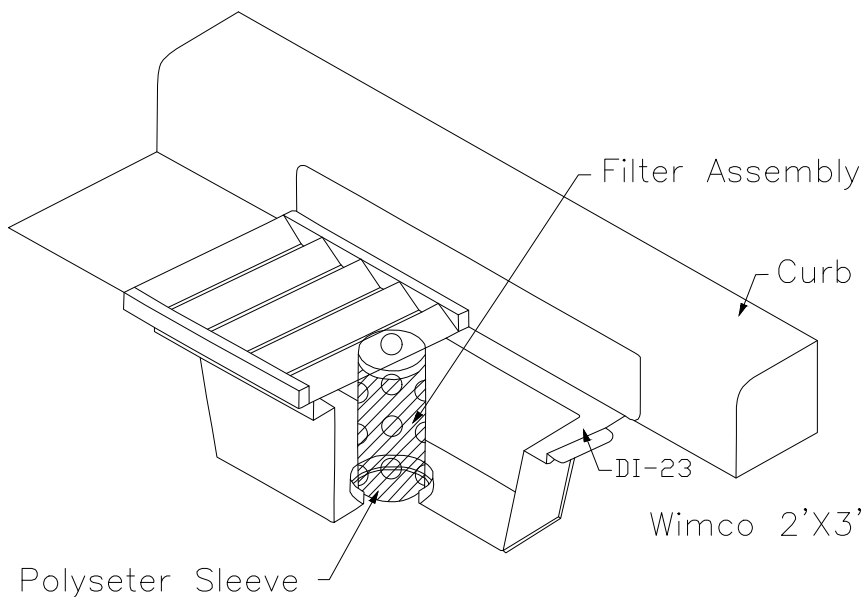
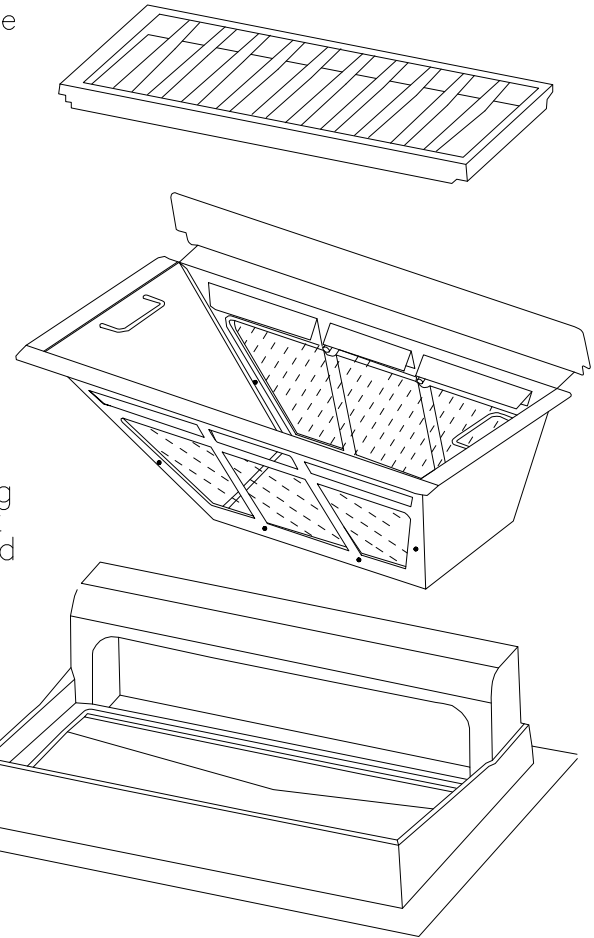
City Plate No.
 ERO-11
 2019

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



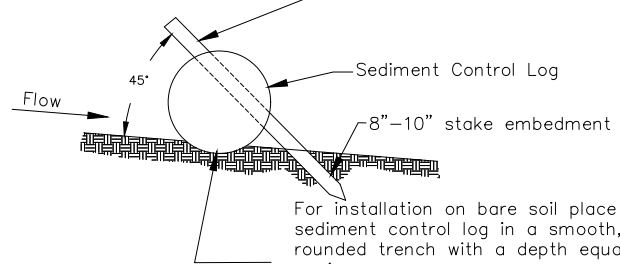
STANDARD DETAILS
INLET PROTECTION DEVICES

FARMINGTON, MINNESOTA

Last Revision:
JAN 2019

City Plate No.
ERO-12
2019

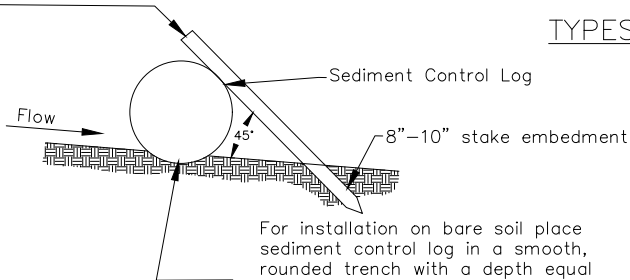
1" X 2" X 24" long wood stakes (no rebar) at 3' maximum spacing. Stakes shall be driven through back half of sediment log at a 45° angle with top of stake pointing upstream. Provide 8" to 10" of stake embedment



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

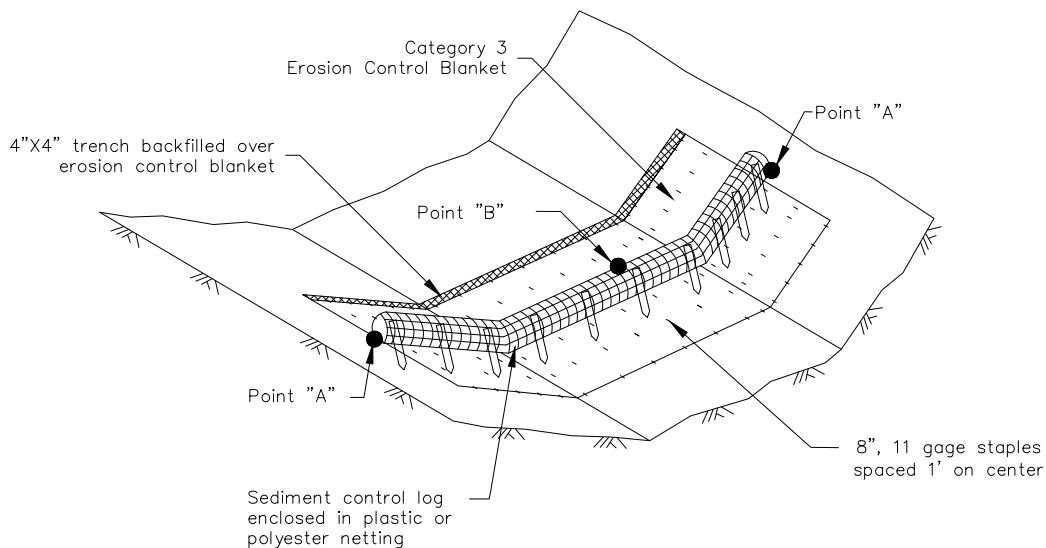
TYPES: STRAW, WOOD FIBER, OR COIR

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 $\frac{1}{4}$ 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:

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

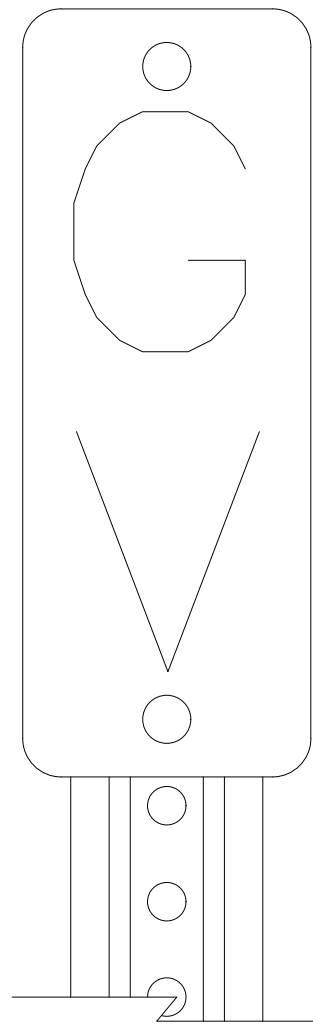
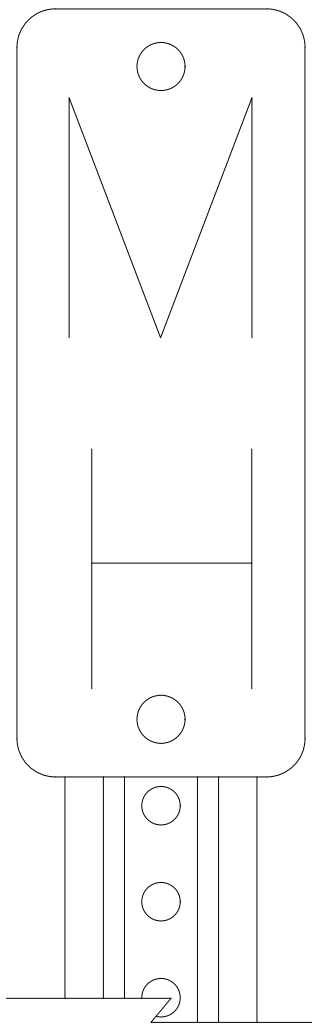
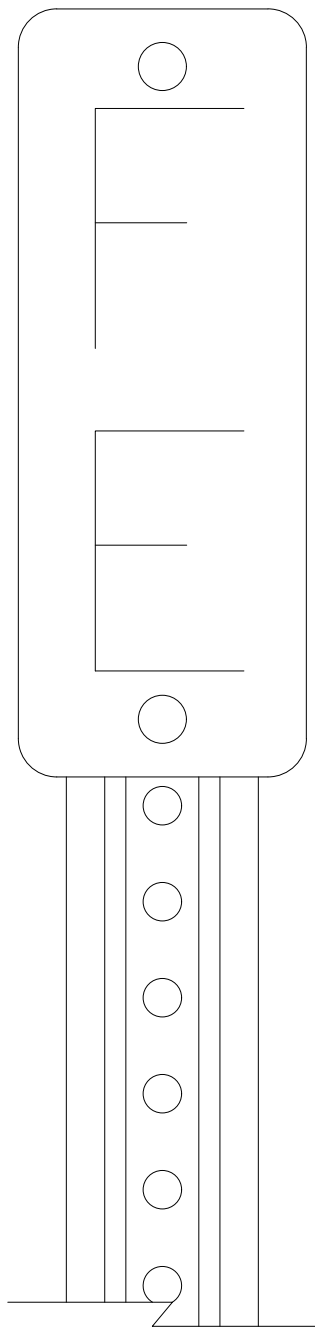


STANDARD DETAILS SEDIMENT CONTROL LOG

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

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

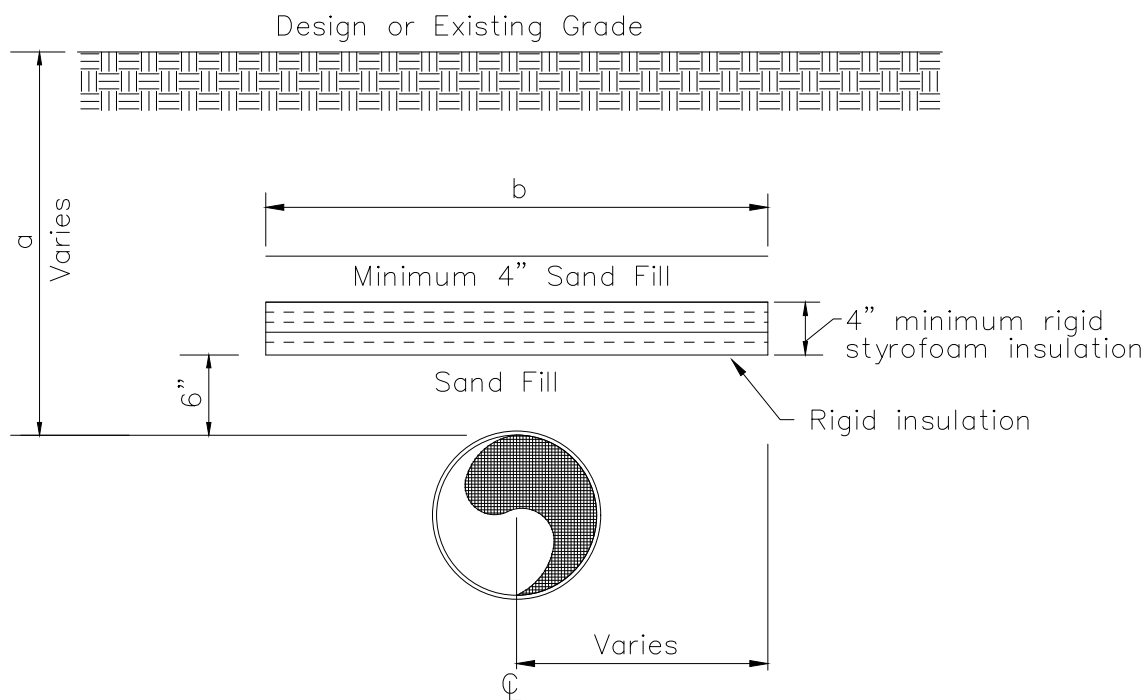


STANDARD DETAILS STRUCTURE MARKER SIGNS

FARMINGTON, MINNESOTA

Last Revision:
JAN 2004

City Plate No.
GEN-01
2019



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'

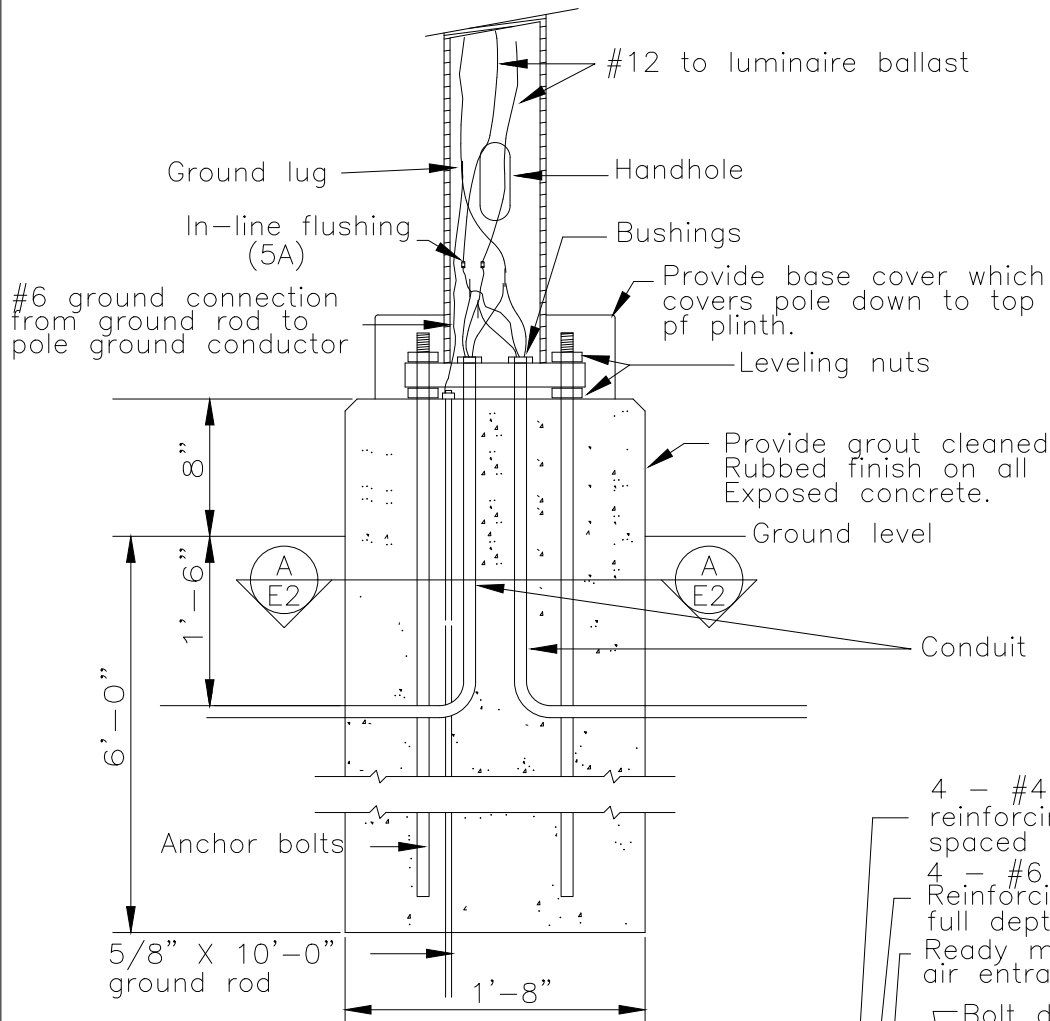


STANDARD DETAILS
INSULATION

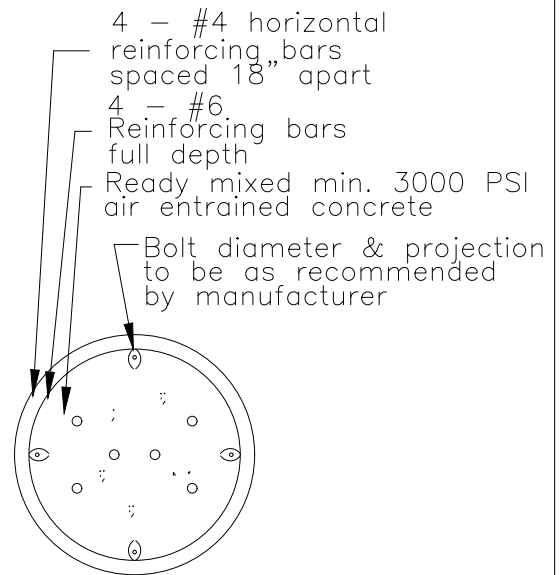
Last Revision:
MAY 2000

City Plate No.
GEN-02
2019

FARMINGTON, MINNESOTA



CONCRETE BASE DETAIL
FOR LIGHTING POLES
NO SCALE



SECTION
NO SCALE

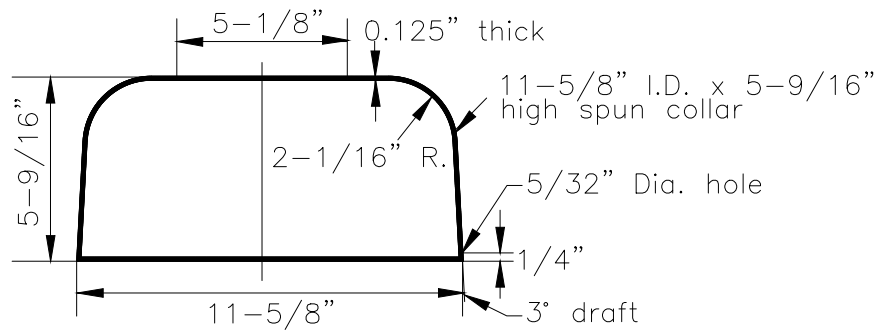


STANDARD DETAILS
CONCRETE BASE DETAIL
FOR LIGHTING POLES

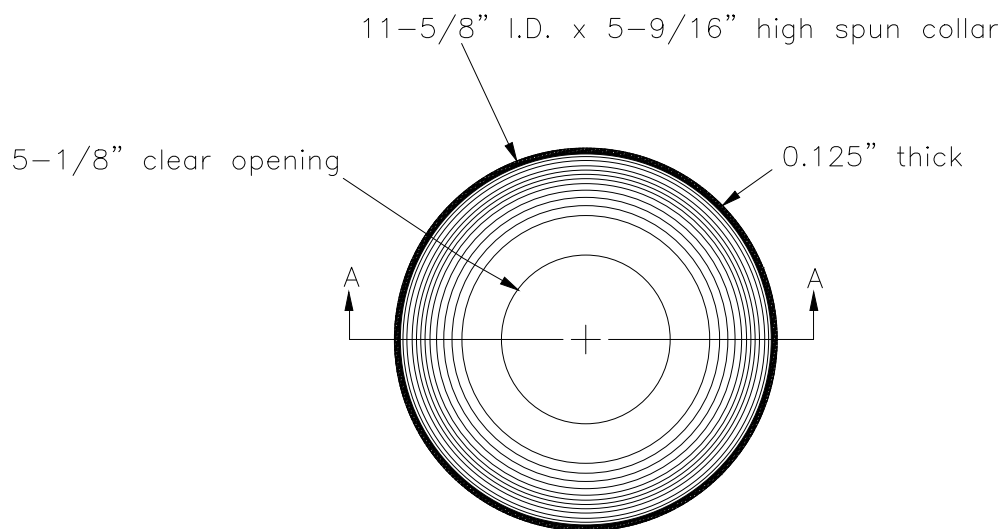
FARMINGTON, MINNESOTA

Last Revision:
MAY 2000

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)

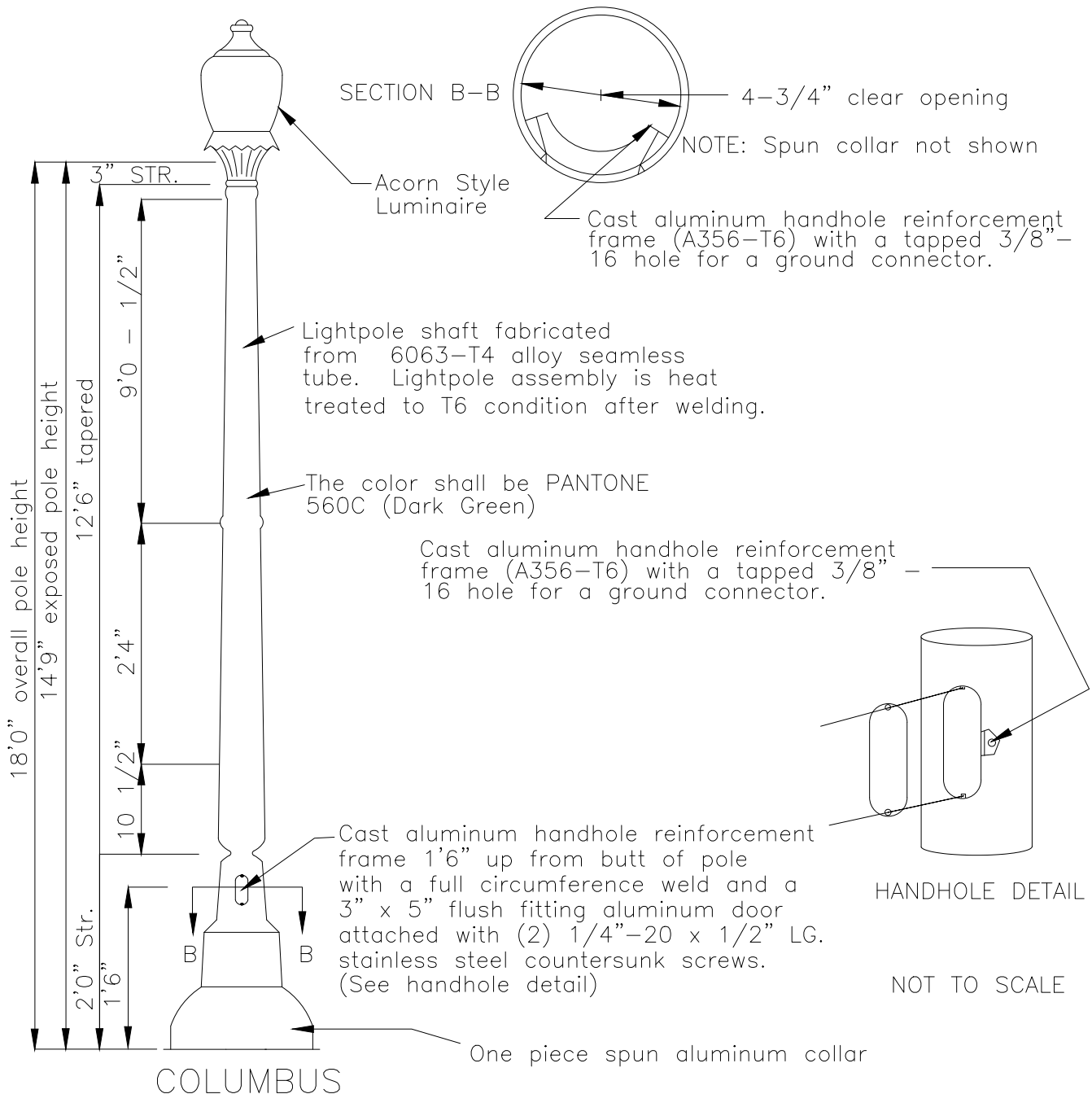


STANDARD DETAILS
SPUN ALUMINUM COLLAR
FOR RESIDENTIAL STREET LIGHT

FARMINGTON, MINNESOTA

Last Revision:
MAY 2000

City Plate No.
GEN-05
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.

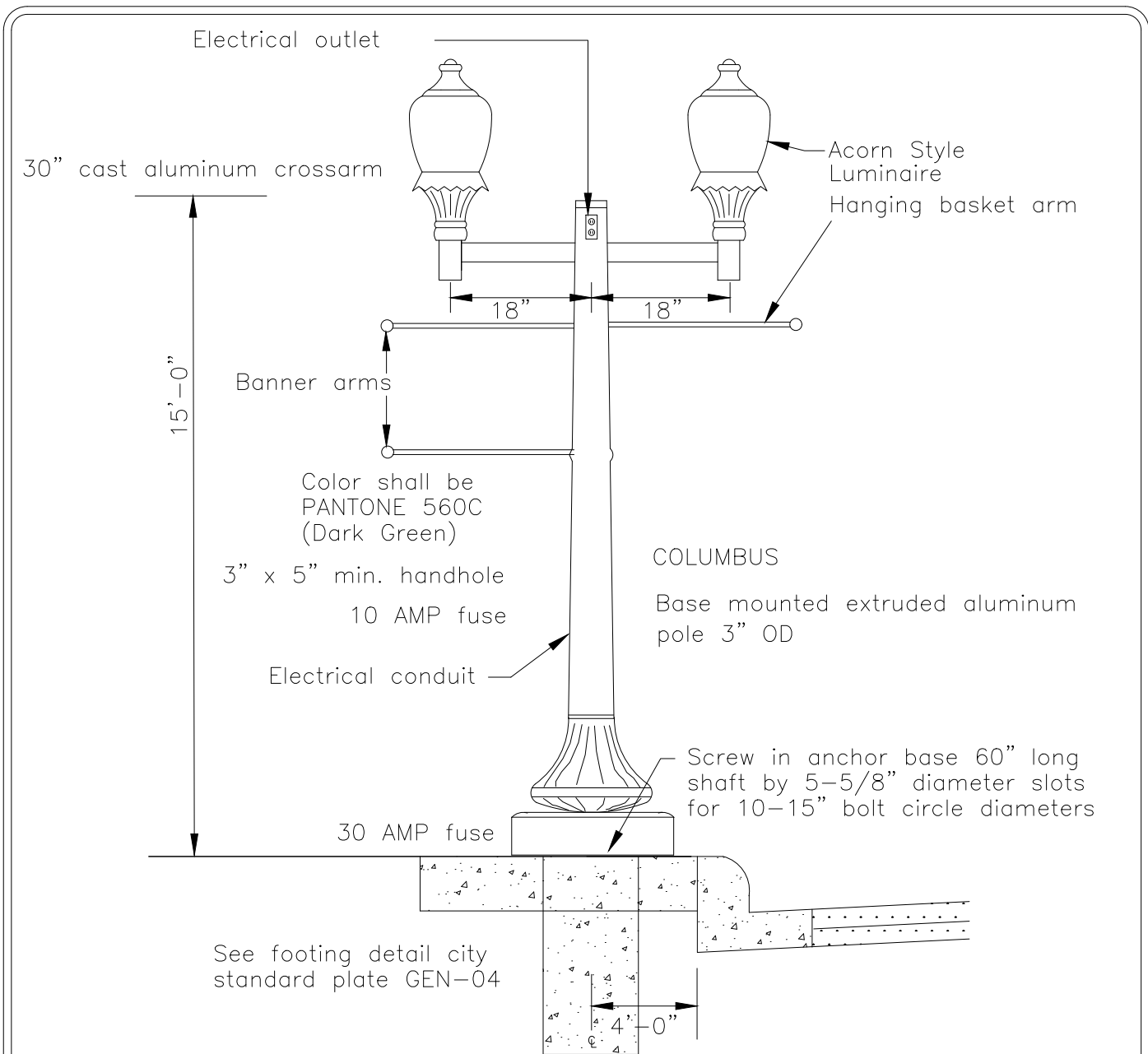


STANDARD DETAILS
STREET LIGHT
RESIDENTIAL DISTRICT

FARMINGTON, MINNESOTA

Last Revision:
MAR 2017

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

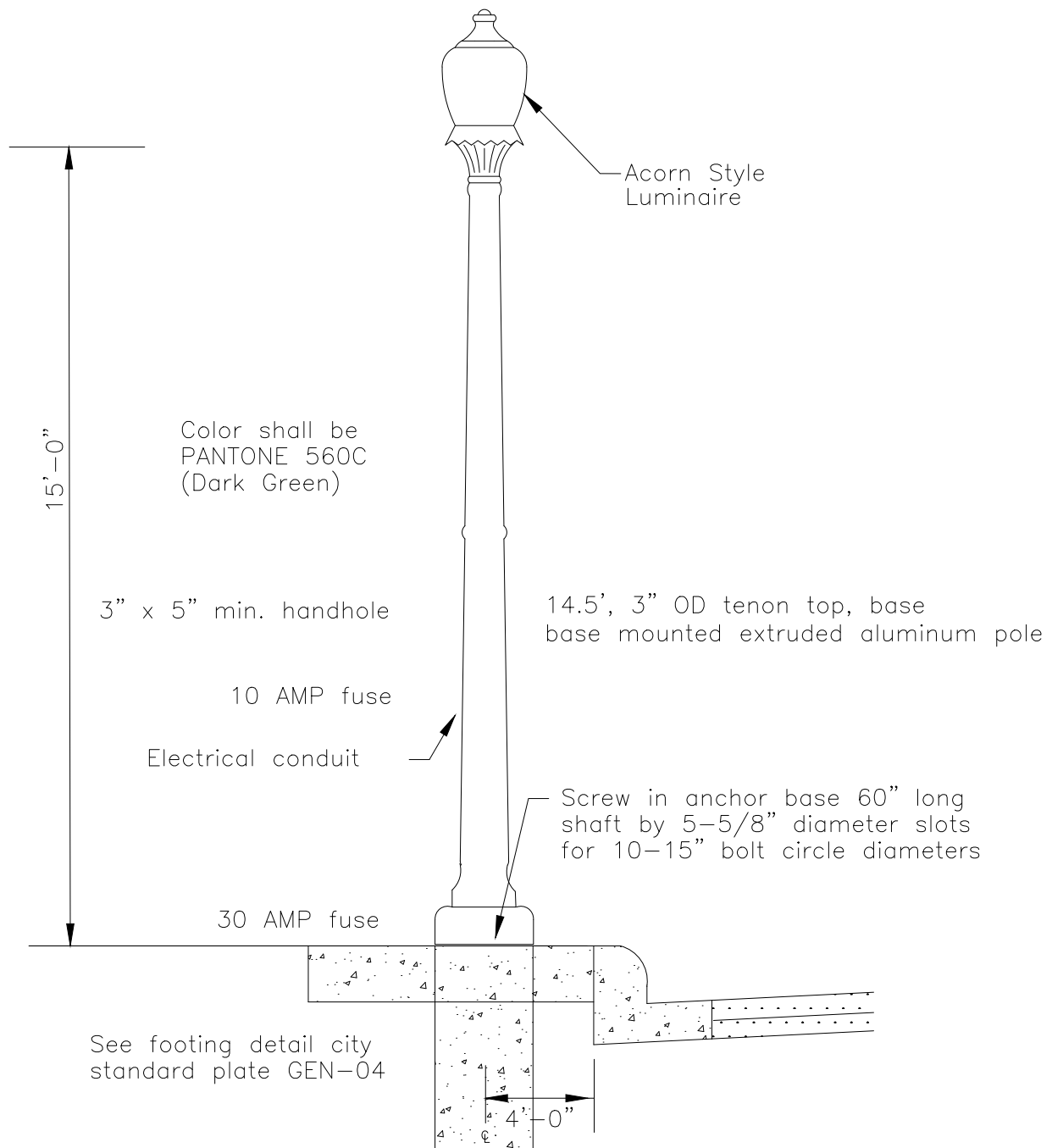


STANDARD DETAILS
STREET LIGHT
DOWNTOWN DISTRICT

Last Revision:
MAR 2017

City Plate No.
GEN-07
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.

NOT TO SCALE



STANDARD DETAILS
STREET LIGHT
HERITAGE DISTRICT

FARMINGTON, MINNESOTA

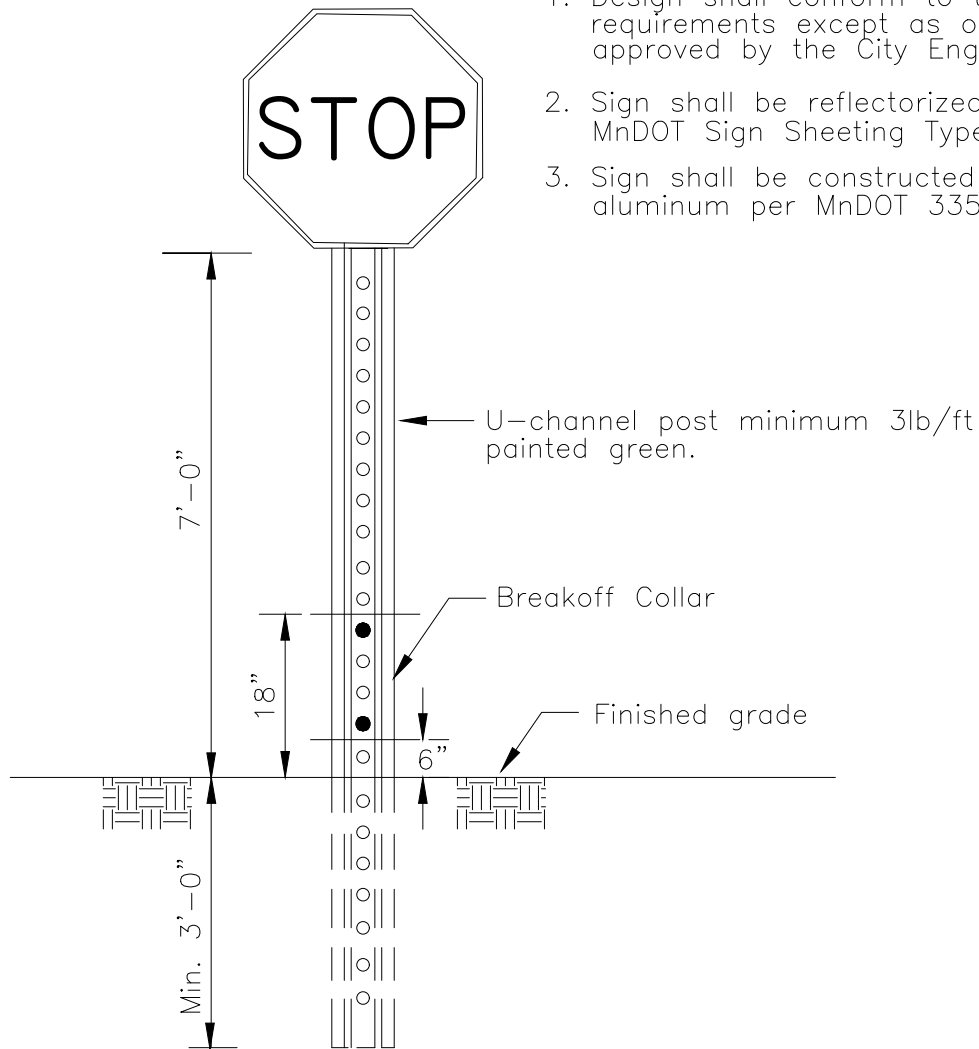
Last Revision:
MAR 2017

City Plate No.
GEN-08
2019

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

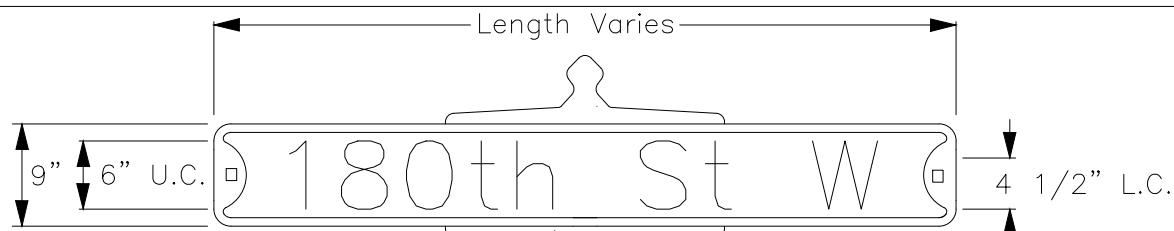


STANDARD DETAILS
REGULATORY SIGN

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
GEN-09
2019



All brackets shall be Lyle Signs Inc. E series brackets or approved equal. Bracket color shall be green enamel.

2 3/8" O.D. galvanized steel post, 10' long, 3' to be buried in concrete.

Standard Abbreviations

Avenue	=	Ave
Boulevard	=	Blvd
Circle	=	Cir
Court	=	Ct
Drive	=	Dr
East	=	E
Knoll	=	Knoll
Lane	=	Ln
North	=	N
Parkway	=	Pkwy
Path	=	Path
Place	=	Pl
Road	=	Rd
Saint	=	St
South	=	S
Street	=	St
Terrace	=	Ter
Trail	=	Tr
West	=	W

Finished grade

Concrete Base
= 3000 PSI
compressive
strength.

Galvanized post

6" Maximum

Galvanized
Breakoff Collar

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.

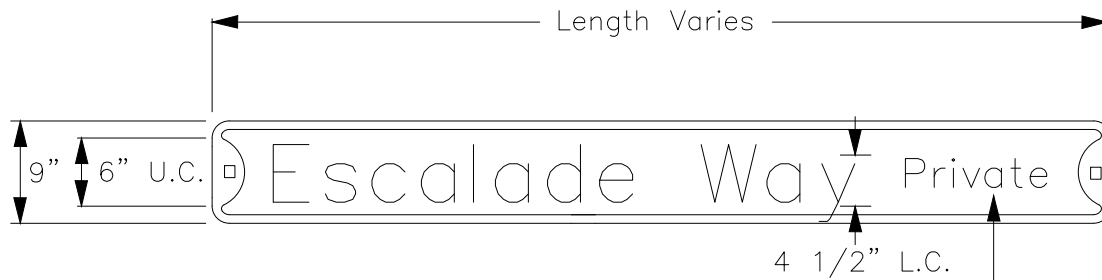


STANDARD DETAILS STREET SIGN

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.

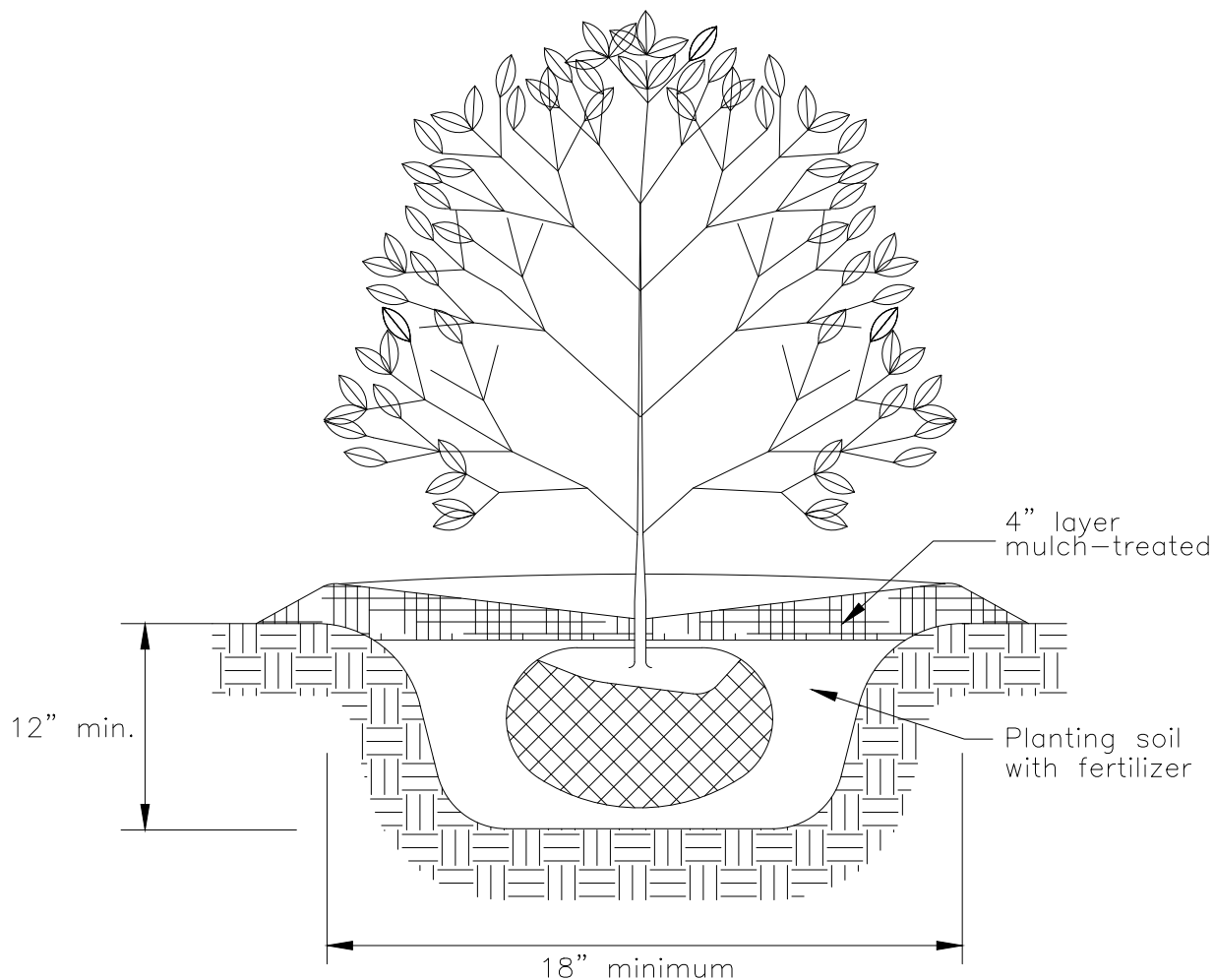


STANDARD DETAILS
PRIVATE STREET SIGN

FARMINGTON, MINNESOTA

Last Revision:
JAN 2019

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

FARMINGTON, MINNESOTA

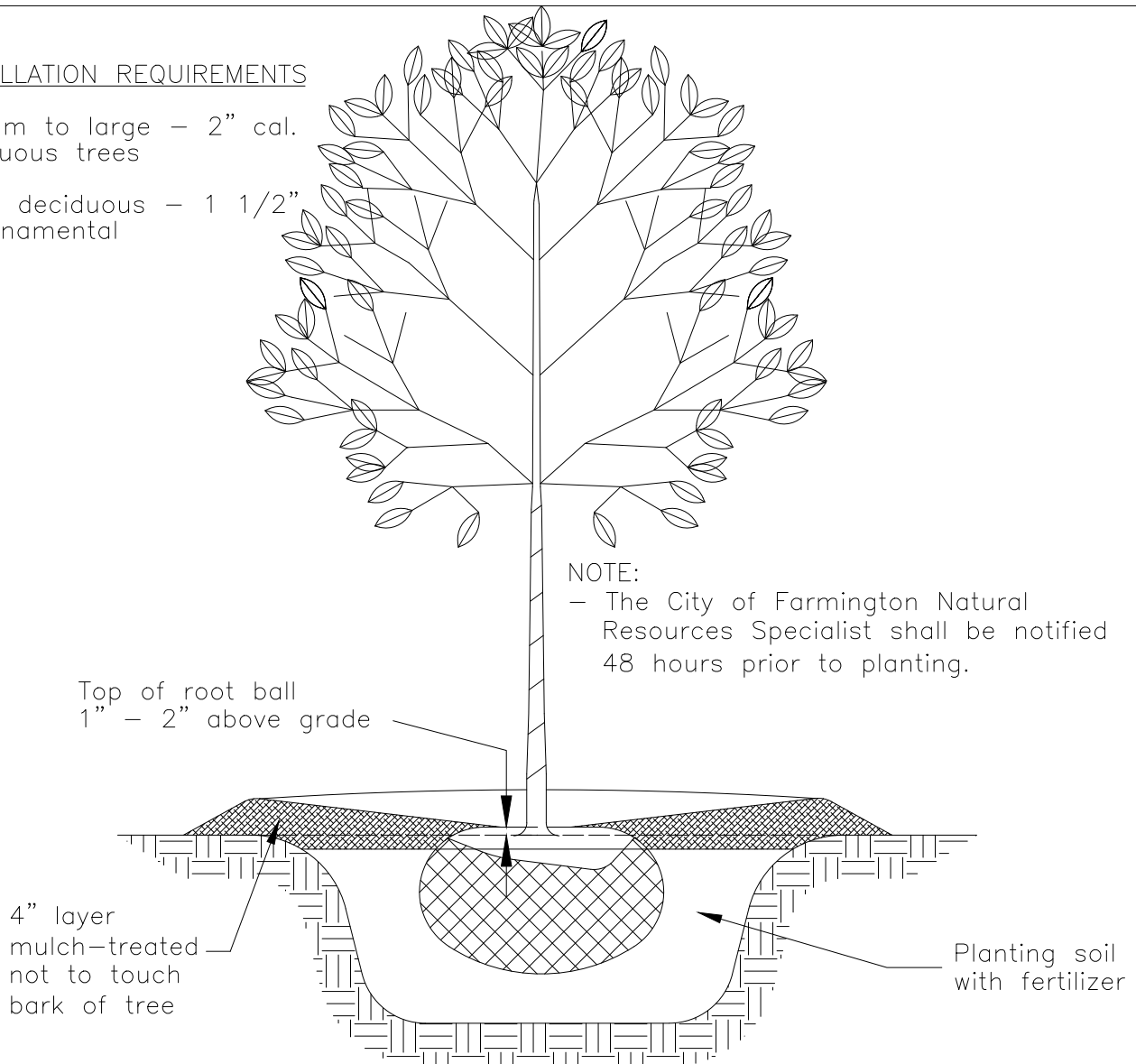
Last Revision:
JAN 2012

City Plate No.
GEN-11
2019

INSTALLATION REQUIREMENTS

Medium to large – 2" cal.
deciduous trees

Small deciduous – 1 1/2"
or ornamental



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

FARMINGTON, MINNESOTA

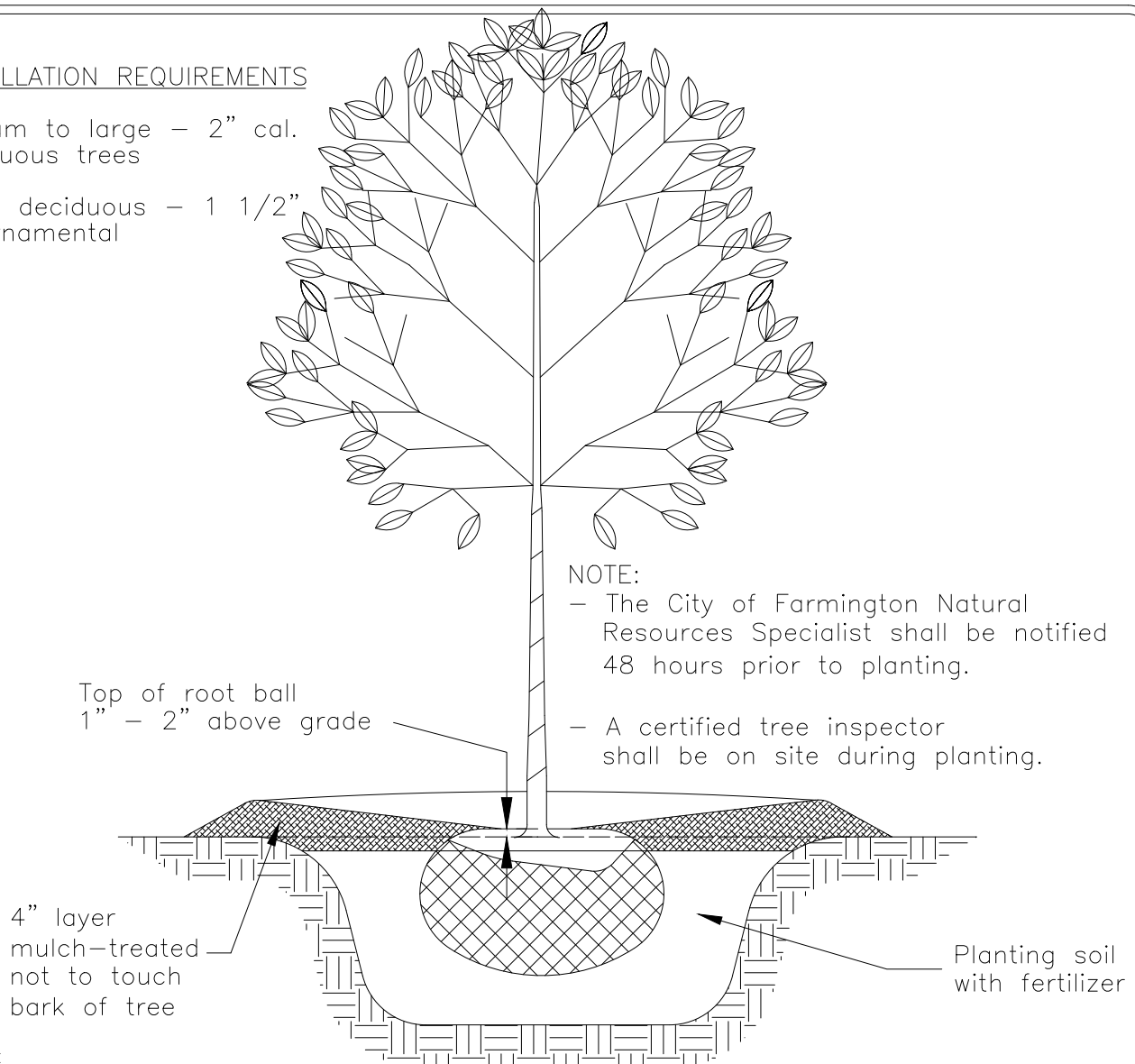
Last Revision:
FEB 2017

City Plate No.
GEN-12A
2019

INSTALLATION REQUIREMENTS

Medium to large – 2" cal.
deciduous trees

Small deciduous – 1 1/2"
or ornamental



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

FARMINGTON, MINNESOTA

Last Revision:
JAN 2012

City Plate No.
GEN-12B
2019

CITY NATURAL AREA

This is a protected Natural Area. The native plantings in this area provide shoreline stabilization for the ponds, reduce erosion, improve water quality by filtering pollutants, and provide a natural habitat for wildlife. Under City Ordinance, property adjacent to ponds should be left in a natural state and no mowing or clearing of vegetation in this area may occur. Dead trees or branches and native grasses provide an excellent habitat for native wildlife adjacent to ponds and should not be removed from the natural area. No vehicular traffic of any kind is allowed.



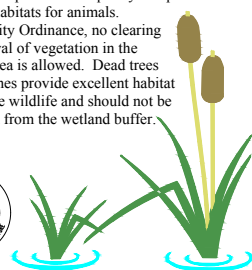
PROTECTED CONSERVATION AREA

The native trees and plantings in this city-owned area provide a natural habitat for wildlife and prevent erosion of steep slopes. Under City Ordinance, existing plant material within this conservation area should be left in a natural state and no clearing or removal of vegetation in this area may occur. Dead trees or branches provide excellent habitat for native wildlife and should not be removed from the conservation area.



WETLAND BUFFER

The plantings in this area contain native trees, flowering plants, shrubs and grasses that provide food for birds, fish and other native wildlife. The plants also help to hold soil and prevent erosion, improve water quality and provide natural habitats for animals. Under City Ordinance, no clearing or removal of vegetation in the buffer area is allowed. Dead trees or branches provide excellent habitat for native wildlife and should not be removed from the wetland buffer.



4"X4"
TREATED
WOOD
POST

3' MINIMUM

5'

NOTE: ALL SIGNS SHALL BE OBTAINED FROM THE CITY'S NATURAL RESOURCE SPECIALIST



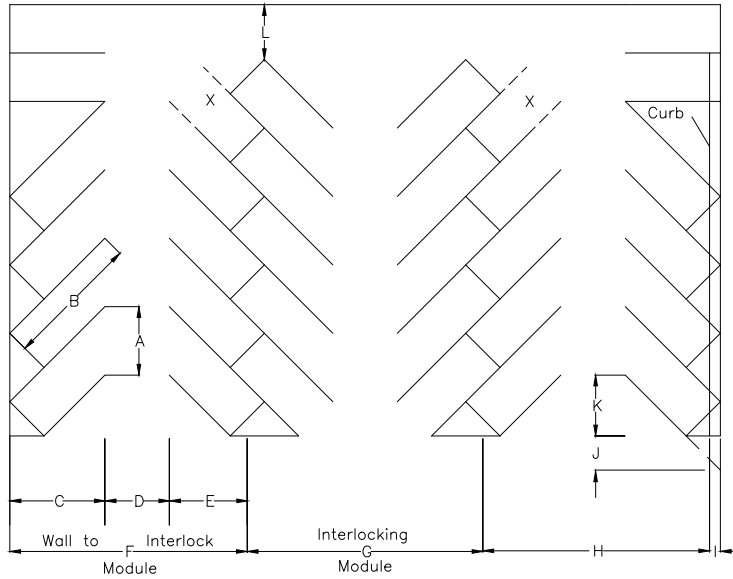
STANDARD DETAILS
CITY NATURAL AREA, CONSERVATION AREA,
AND WETLAND BUFFER SIGNS

FARMINGTON, MINNESOTA

Last Revision:
JAN 2012

City Plate No.
GEN-13
2019

PARKING LOT DESIGN



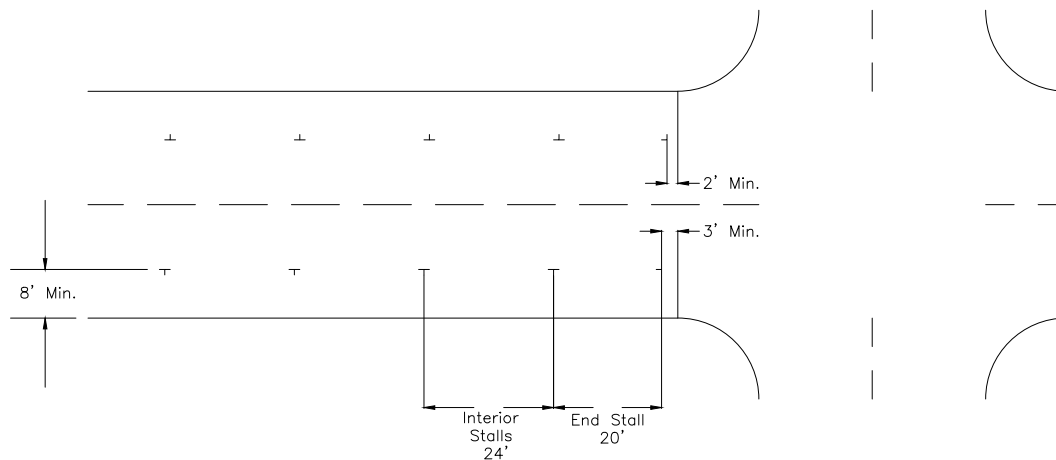
X = Stall not accessible in certain layouts

Parking Layout Dimensions (in feet)
for 9-ft Stalls at Various Angles

	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

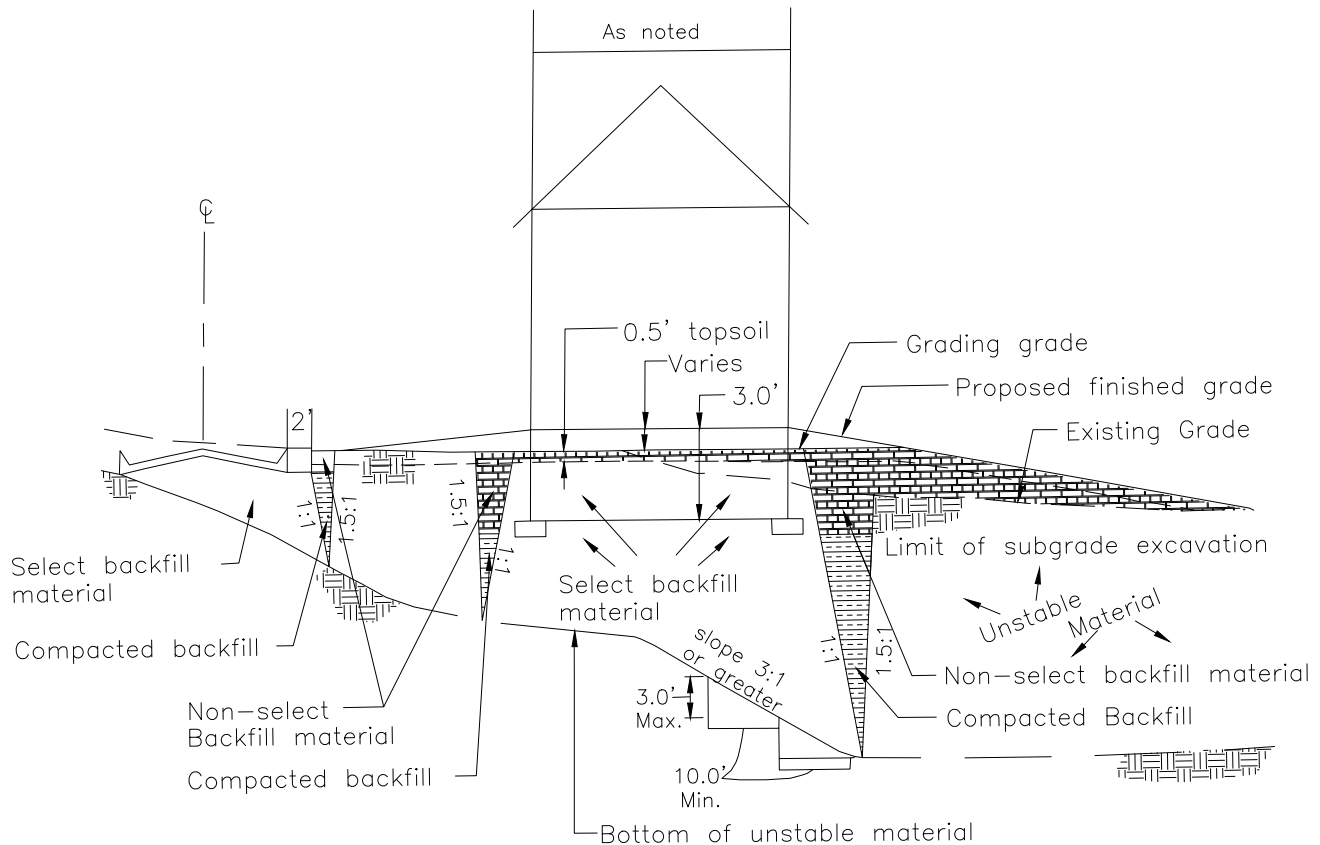


STANDARD DETAILS TYPICAL PARKING DESIGNS

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
GEN-14
2019



STANDARD DETAILS
SUBGRADE CORRECTION

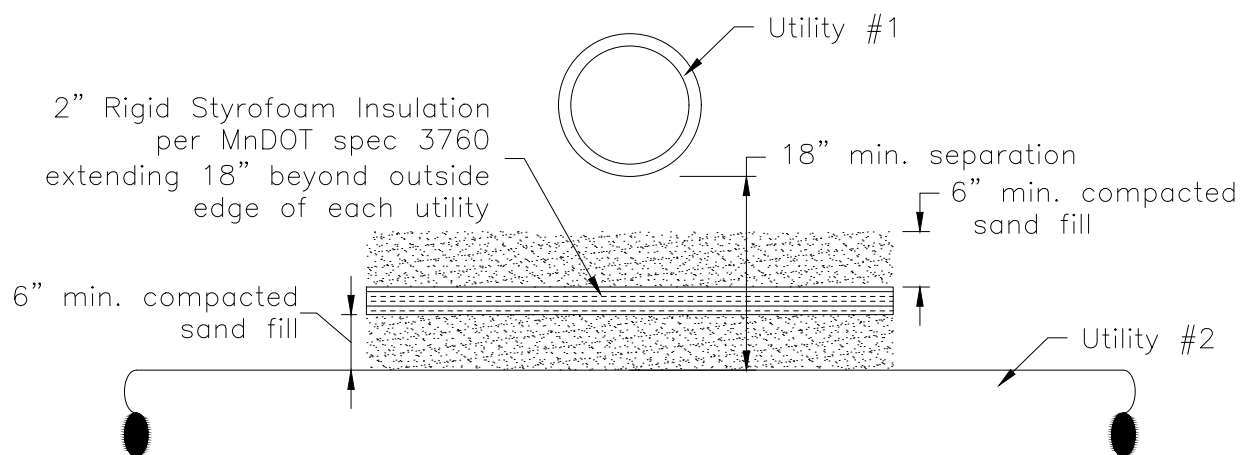
FARMINGTON, MINNESOTA

Last Revision:
JUL 2004

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

FARMINGTON, MINNESOTA

Last Revision:
FEB 2017

City Plate No.
GEN-16
2019

CERTIFICATE OF SURVEY

LOT____, BLOCK____
DEVELOPMENT NAME AND PHASE
SITE ADDRESS



SCALE : 1" = 30'

BENCHMARK

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

NOTES

- TOP OF FOUNDATION WALL ELEV.
- GARAGE FLOOR ELEV. ELEV.
- LOWEST FLOOR ELEV.
- WALKOUT FLOOR ELEV.

915.03 EXIST. ELEV.

——— SQUARE FOOTAGE OF LOT

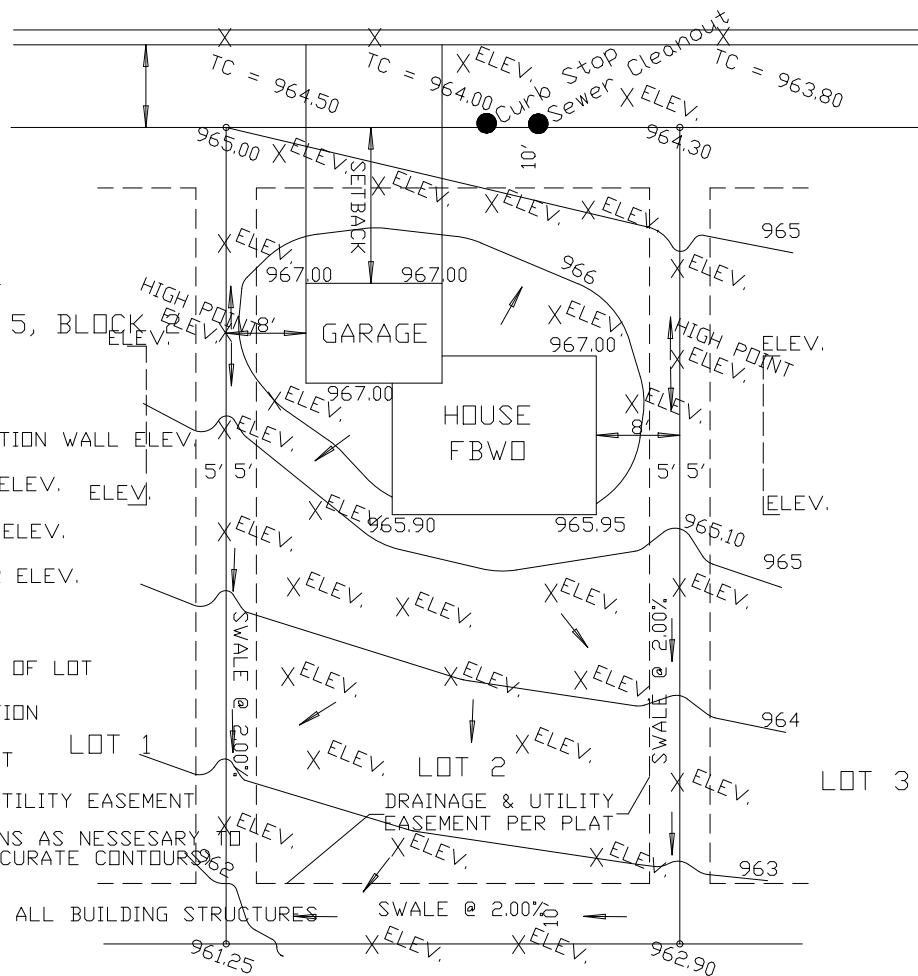
——— DRAINAGE DIRECTION

○ IRON MONUMENT

----- DRAINAGE & UTILITY EASEMENT

X ELEV. (ELEVATIONS AS NECESSARY TO
DETERMINE ACCURATE CONTOUR)

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

Last Revision:
FEB 2017

City Plate No.
GEN-17
2019

FARMINGTON, MINNESOTA