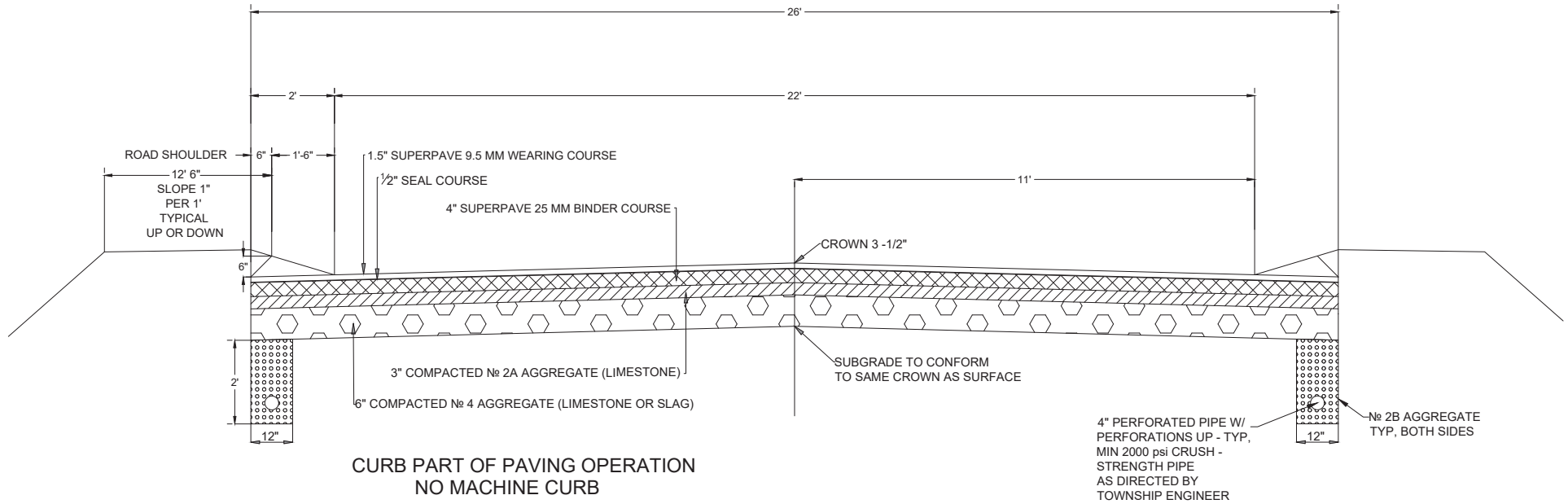


# APPENDIX A - CONSTRUCTION STANDARDS



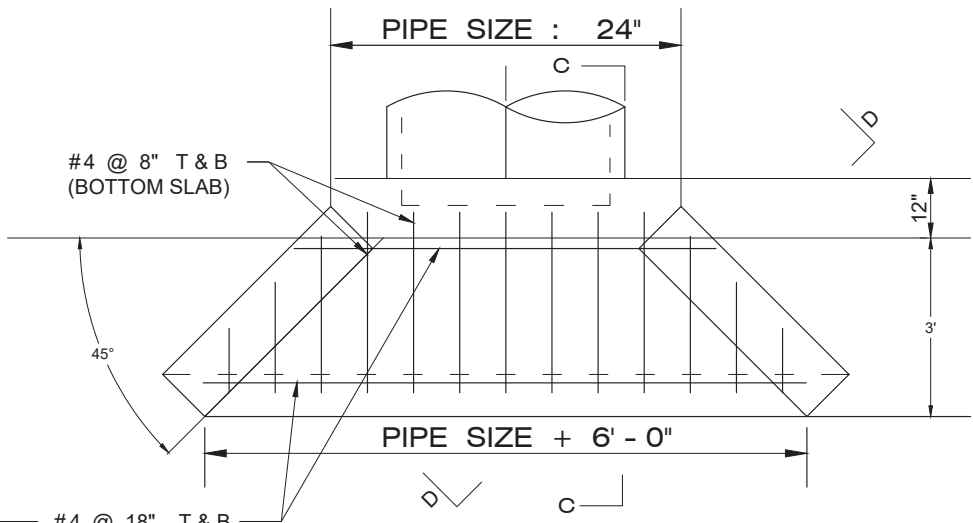
## NOTES:

1. 1.5" SUPERPAVE WEARING COURSE TO BE APPLIED IN 24 MONTH OR AT 90% COMPLETION OF BUILDING ACTIVITY, WHICHEVER OCCURS FIRST.
2. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO PENNDOT FORM 408 SPECIFICATIONS, LATEST REVISION.
3. TACK COAT MAY BE REQUIRED BETWEEN BINDER AND WEARING COURSES IF WEARING OR SEAL COURSE IS NOT PLACED IMMEDIATELY AFTER THE BINDER COURSE.

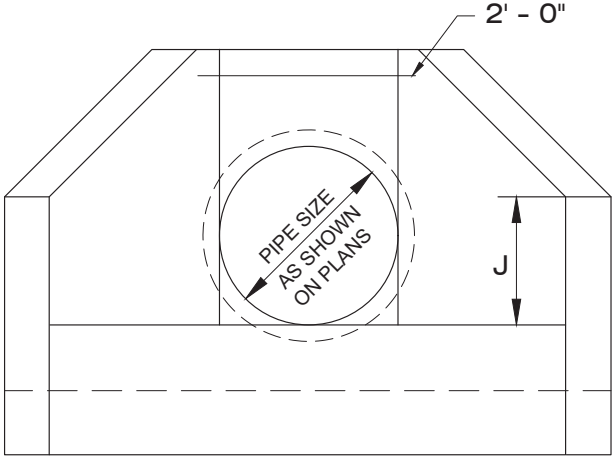
**MARSHALL TOWNSHIP**

CONSTRUCTION DETAIL STANDART No.1

**GROUNDWORK/CIVIL**  
ENGINEERING + DESIGN

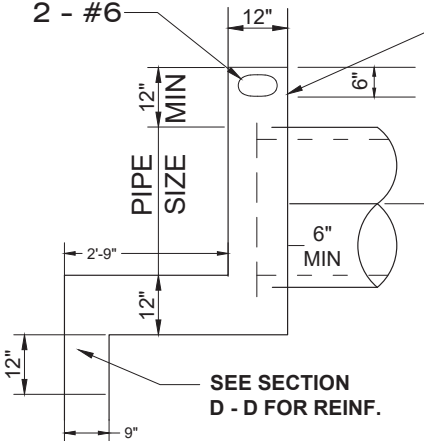


**PLAN**

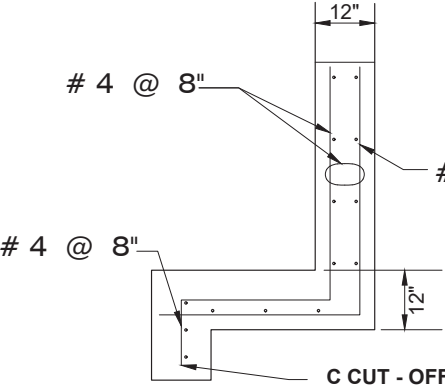


$J = 3/4 \times \text{PIPE DIA. (MIN.)}$

**FRONT ELEVATION**



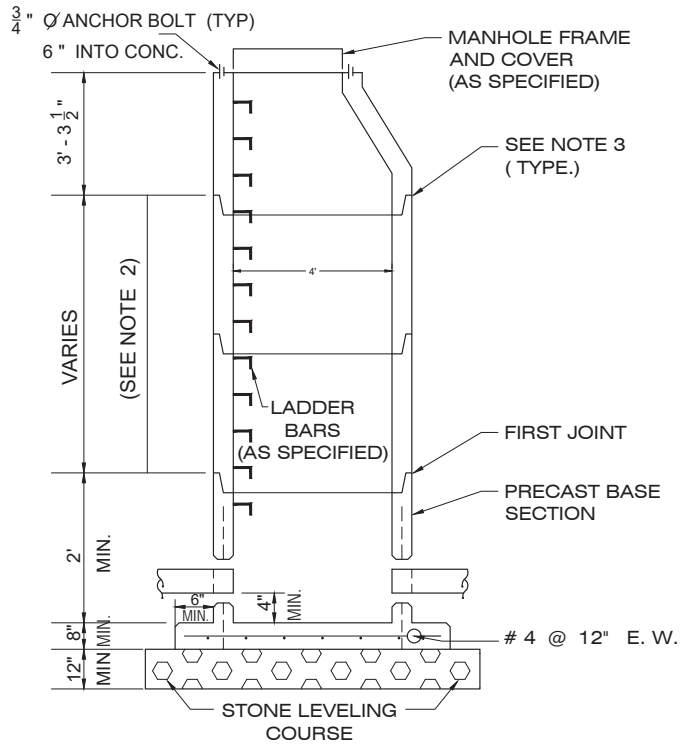
**SECTION C - C**



**SECTION D - D**

**NOTE:**  
 USE 3000 PSI CONC.  
 EXPOSED EDGES TO BE  
 CHAMFERED ONE INCH

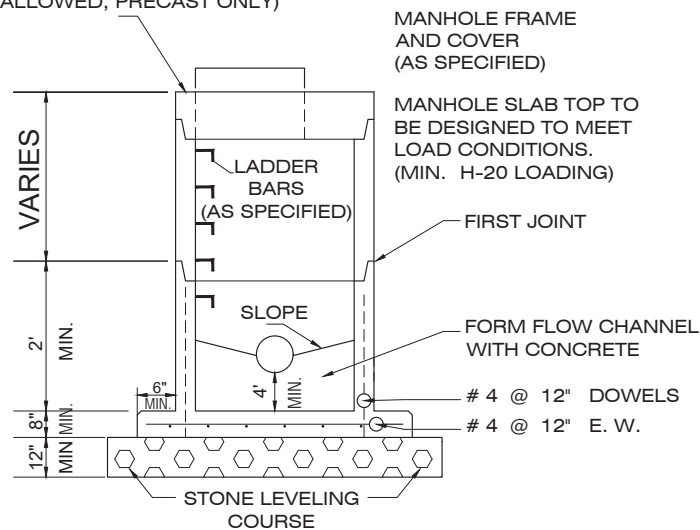
**MARSHALL TOWNSHIP**  
 CONSTRUCTION DETAIL STANDART No.2  
 STORM DRAINAGE DETAIL  
 TYPICAL HEADWALL AND ENDWALL



## NOTES:

1. PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM C-47B, LATEST REVISION.
2. IF THIS DIMENSION IS LESS THAN 3' - 3", USE A PRECAST CONCRETE SLAB TOP SHOWN AS BELOW.
3. JOINTS SHALL BE EQUIPPED WITH DOUBLE FLEXIBLE BUTYL RUBBER JOINT SEALANT APPROVED BY THE ENGINEER. (BOTH INNER AND OUTER JOINTS)
4. LIFTING HOLES SHALL BE POINTED WITH MORTAR, MADE WATERTIGHT AND LEFT NEAT AND SMOOTH.
5. BASE SLAB POURED MONOLITHICALLY WITH WALLS.
6. LADDER BAR TO BE ON 12" CENTERS (M.A. INDUSTRIES INC.). MODEL PSI 1 - PF OR EQUAL.
7. EXISTING MANHOLES ACCOMMODATING NEW SEWERLINES SHALL BE MACHINE CUT (HAMMERS SHALL NOT BE UTILIZED)

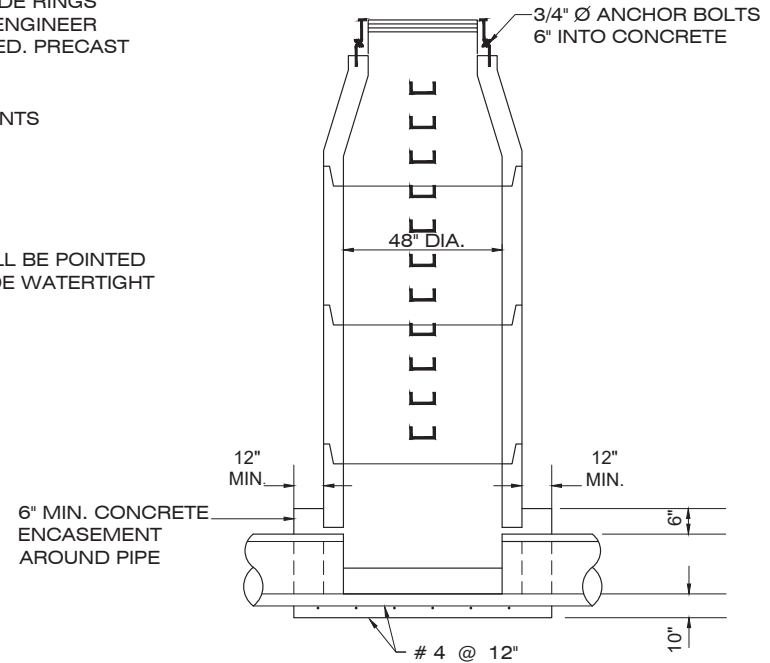
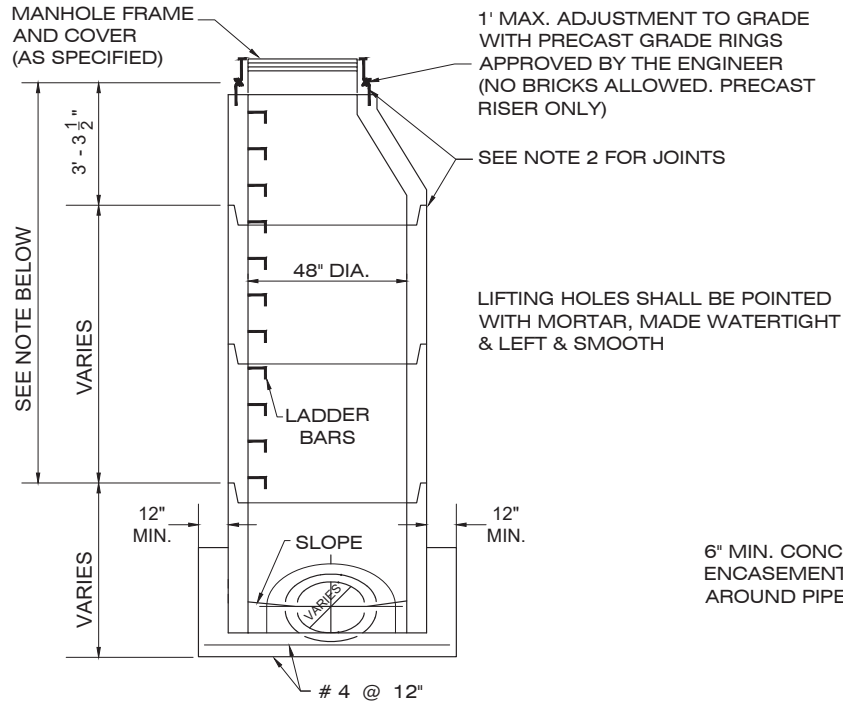
1' MAX. ADJUSTMENT TO GRADE WITH PRECAST GRADE RINGS APPROVED BY ENGINEER (NO BRICKS ALLOWED, PRECAST ONLY)



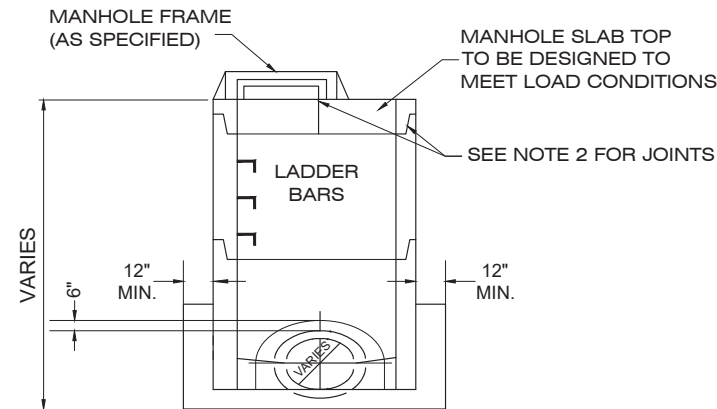
## MARSHALL TOWNSHIP

CONSTRUCTION DETAIL STANDART No.3  
PRECAST CONCRETE SEWERS  
8" TO 18" PRECAST BASE SECTION

**GROUNDWORK/CIVIL**  
ENGINEERING + DESIGN



IF THIS DIMENSION IS LESS THAN 3' 3" USE A PRECAST CONCRETE SLAB TOP SHOWN BELOW

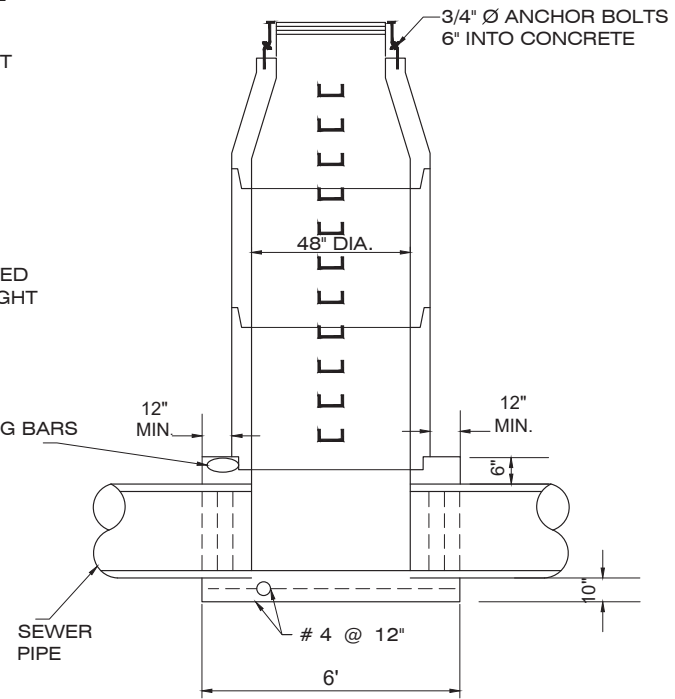
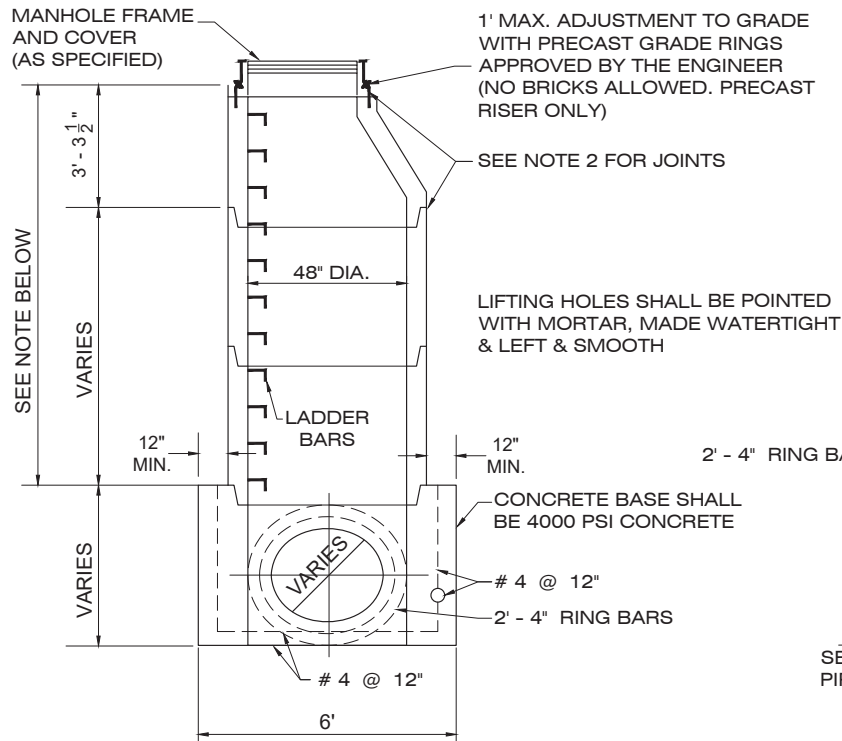


**NOTES:**

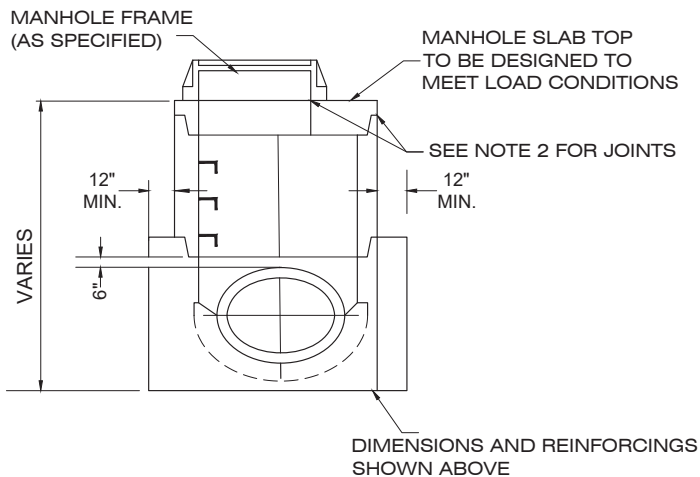
1. PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM C-47B, LATEST REVISION.
2. JOINTS SHALL BE EQUIPPED WITH DOUBLE FLEXIBLE BUTYL RUBBER JOINT SEALANT APPROVED BY THE ENGINEER. (BOTH INNER AND OUTER JOINTS)
3. EXISTING MANHOLES ACCOMMODATING NEW SEWERLINES SHALL BE MACHINE CUT (HAMMERS SHALL NOT BE UTILIZED)

**MARSHALL TOWNSHIP**

CONSTRUCTION DETAIL STANDART No.4  
CAST - IN - PLACE BASE  
PRECAST CONCRETE MANHOLE  
FOR SEWERS 8" TO 18"



IF THIS DIMENSION IS LESS THAN 3' 3" USE A PRECAST CONCRETE SLAB TOP SHOWN BELOW



#### NOTES:

1. PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM C-47B, LATEST REVISION.
2. JOINTS SHALL BE EQUIPPED WITH DOUBLE FLEXIBLE BUTYL RUBBER JOINT SEALANT APPROVED BY THE ENGINEER. (BOTH INNER AND OUTER JOINTS)
3. EXISTING MANHOLES ACCOMMODATING NEW SEWERLINES SHALL BE MACHINE CUT (HAMMERS SHALL NOT BE UTILIZED)

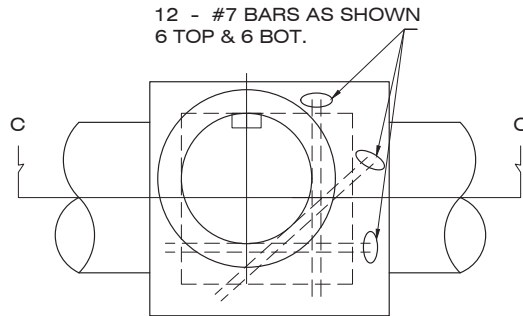
#### MARSHALL TOWNSHIP

CONSTRUCTION DETAIL STANDART No.5  
 CAST - IN - PLACE BASE  
 PRECAST CONCRETE MANHOLE  
 FOR SEWERS 20" TO 33"

**GROUNDWORK/CIVIL**  
 ENGINEERING + DESIGN

**NOTES:**

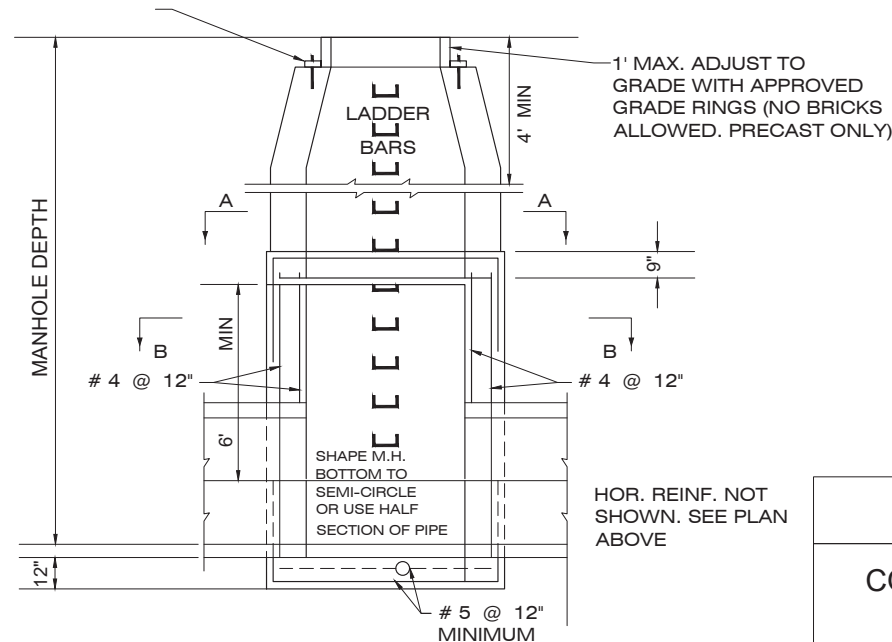
1. PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM C-47B, LATEST REVISION.
2. JOINTS SHALL BE EQUIPPED WITH DOUBLE FLEXIBLE BUTYL RUBBER JOINT SEALANT APPROVED BY THE ENGINEER. (BOTH INNER AND OUTER JOINTS)



**PLAN A - A**

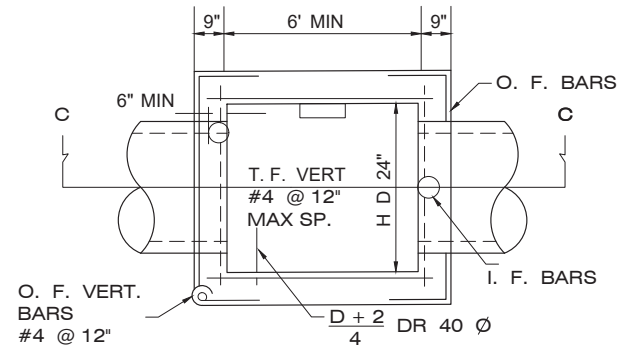
STANDART MANHOLE  
FRAME AND COVER  
(AS SPECIFIED)

3/4" O ANCHOR BOLTS  
6" INTO CONCRETE



**SECTION C - C**

NOTE WHEN DEPTH OF MANHANDLE IS LESS THAN 11', EXTEND CONCRETE WALLS AND TOP SLAB TO WITHIN 7" OF FINISHED GRADE



**PLAN B - B**

H - DEPTH FROM GROUND SURFACE TO POINT OF CONSIDERATION

D - INSIDE DIAMETER OF SEWER

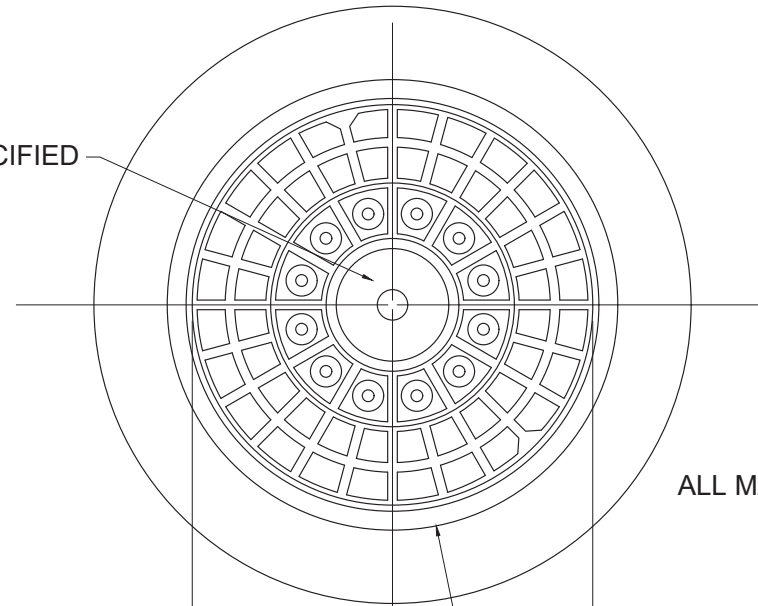
WALL REINFORCING	H	D	36	42	48	54	60	66	72
	10								
12									
14			#4 @ 12" O. F.						
16			#4 @ 12" I. F.						
18									
20									
22									
24									
26			#4 @ 12" O. F.						
28			#4 @ 12" I. F.			#4 @ 12" O. F.			
30						#4 @ 12" I. F.			
32									
34									
36						#4 @ 6" O. F.		#4 @	
38						#4 @ 8" I. F.		7 O. F.	
40									
42								#4 @ 12" I. F.	

WALL REINFORCING	H	D	36	42	48	54	60	66	72
	10								#6 @ 4 1/2"
12			#5 @ 6"			#6 @ 5"		#5 @ 6"	
14			#4 @ 10"			#4 @ 8"		#5 @ 6"	
16			#4 @ 8"					#5 @ 6"	
18						#5 @ 6"		#5 @ 6"	
20			#4 @ 8"					#5 @ 6"	
22						#5 @ 6"			
24									
26									
28			#5 @ 6"			#5 @ 6"			
30									
32								#6 @ 4 1/2"	
34									
36			#5 @ 6"			#6 @ 4 1/2"		#6 @ 4 1/2"	
38									
40									
42			#5 @ 4 1/2"			#5 @ 4"		10" SLAB	

**MARSHALL TOWNSHIP**

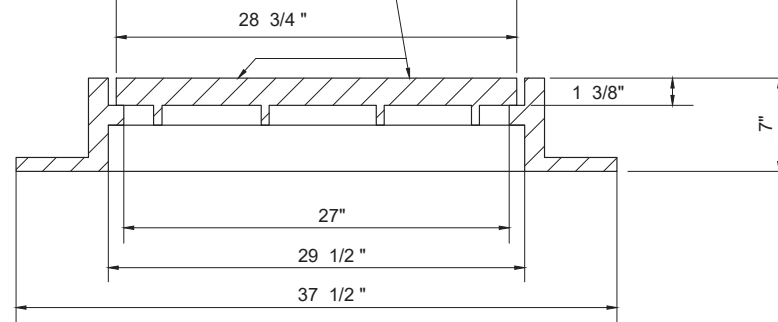
CONSTRUCTION DETAIL STANDART No.6  
SEWER MANHOLE FOR  
PIPES 36" TO 72"

LETTERING AS SPECIFIED  
'MARSHALL STORM'



ALL MANHOLES MACHINED

WHEN VENTILATED COVERS ARE DESIRED  
12 - 1 " HOLES CORED AS SHOWN IN DOTTED LINES

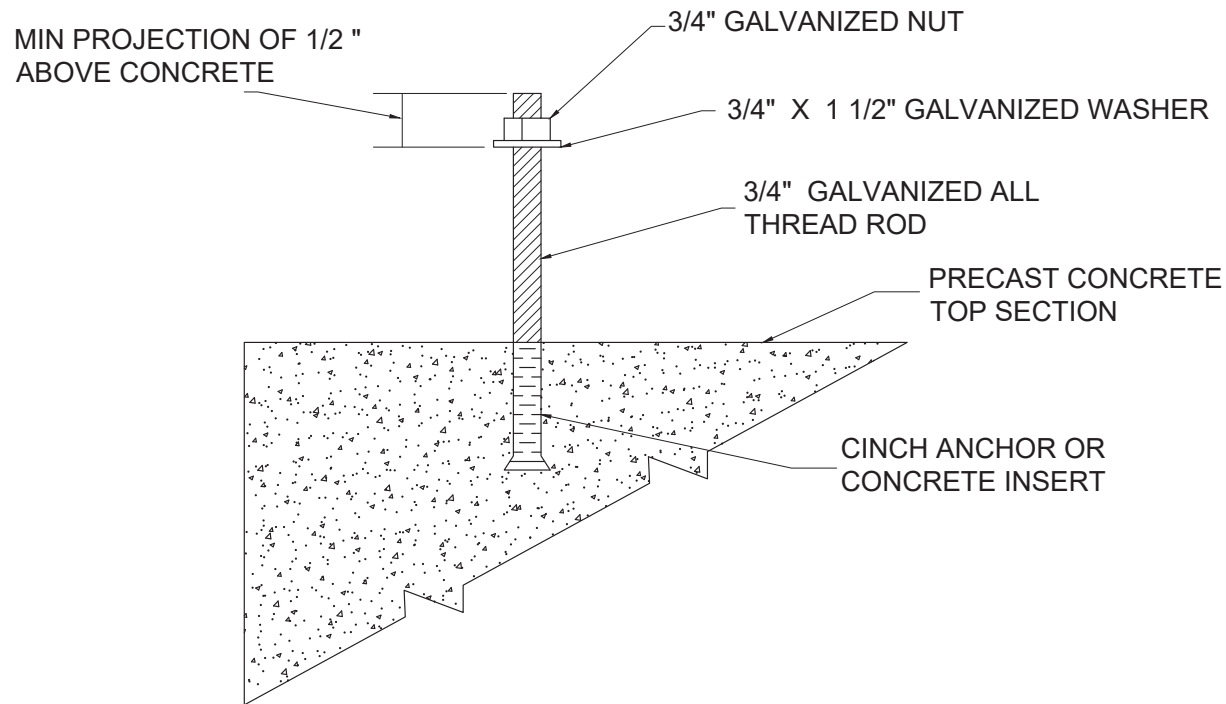


WATER TIGHT MANHOLE, FRAME AND  
COVER WHERE REQUIRED, BY ENGINEER,  
SHALL BE ALLEGHENY FOUNDRY CO.  
OR APPROVED EQUAL  
FRAME 109W  
COVER 110  
SEAL 12 300

**MARSHALL TOWNSHIP**

CONSTRUCTION DETAIL STANDART No.7  
MANHOLE COVER AND FRAME

**GROUNDWORK/CIVIL**  
ENGINEERING + DESIGN

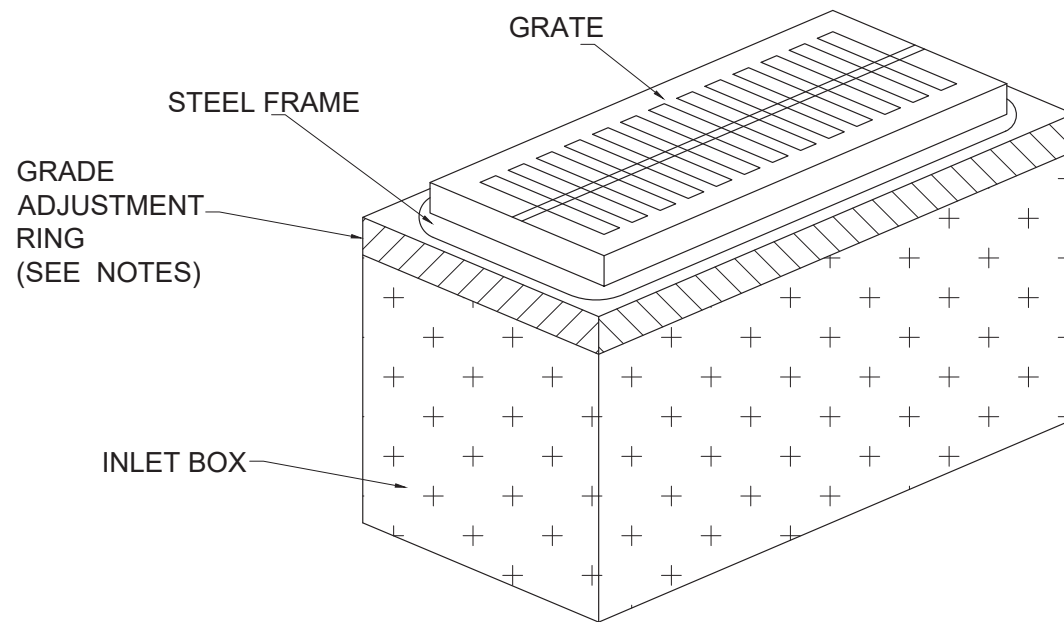


NOTE: 2 REQUIRED PER MANHOLE

**PRECAST MANHOLE ANCHOR BOLT**

<b>MARSHALL TOWNSHIP</b>
CONSTRUCTION DETAIL STANDART No.8 MANHOLE COVER AND FRAME ANCHOR BOLT DETAILS
<b>GROUNDWORK/CIVIL</b> ENGINEERING + DESIGN





**NOTES:**

1. CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 605, LATEST EDITION. FOR INLET ASSEMBLIES.
2. GRATE ADJUSTMENT RINGS SHALL BE MASONRY OR PRECAST CONCRETE CONSTRUCTION
3. PROVIDE 1 1/4" X 1 1/4" ANGLES EMBEDDED IN THE CONCRETE AS A BEARING AREA FOR THE CRATE FOR TOP UNITS.

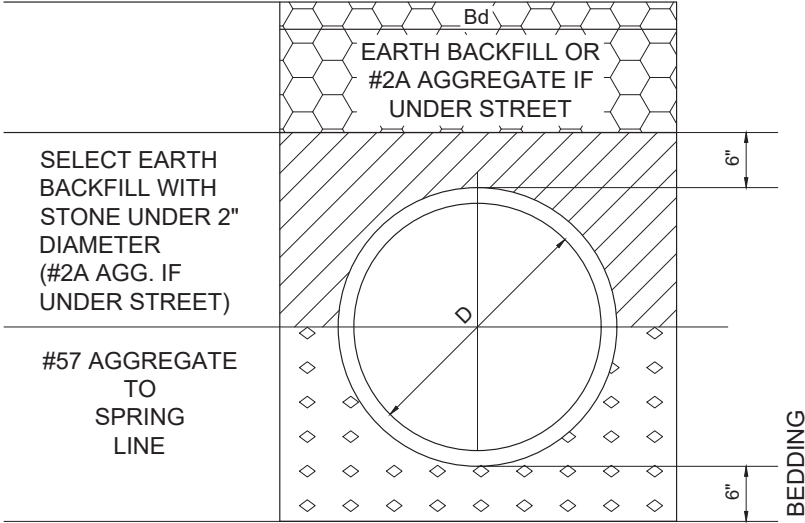
Concrete frames are not allowed.

**MARSHALL TOWNSHIP**

CONSTRUCTION DETAIL STANDART No.9  
TYPE M STORM INLET

**GROUNDWORK/CIVIL**  
ENGINEERING + DESIGN

# HDPE PIPE INSTALLATION



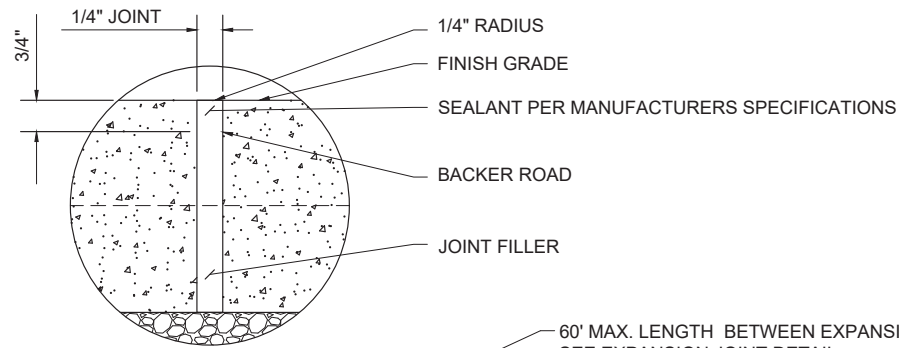
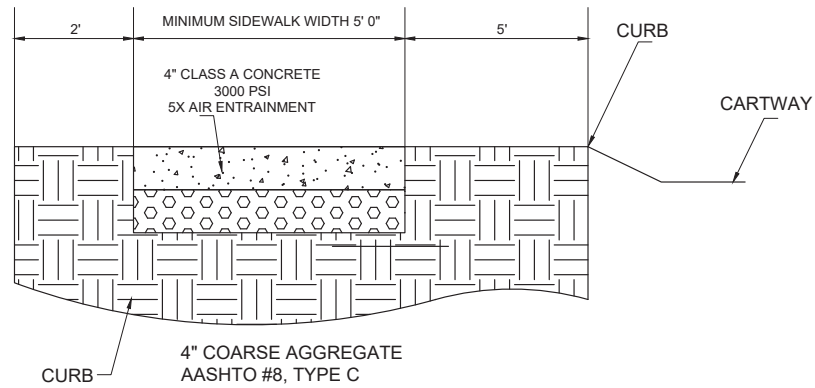
## MINIMUM TRENCH WIDTH

NOMINAL PIPE SIZE	UNSUPPORTED TRENCH WIDTH, MINIMUM - Bd	SUPPORTED TRENCH WIDTH, MINIMUM - Bd
6"	18"	36"
8"	24"	36"
10"	25"	42"
12"	30"	42"
15"	30"	48"

**MARSHALL TOWNSHIP**

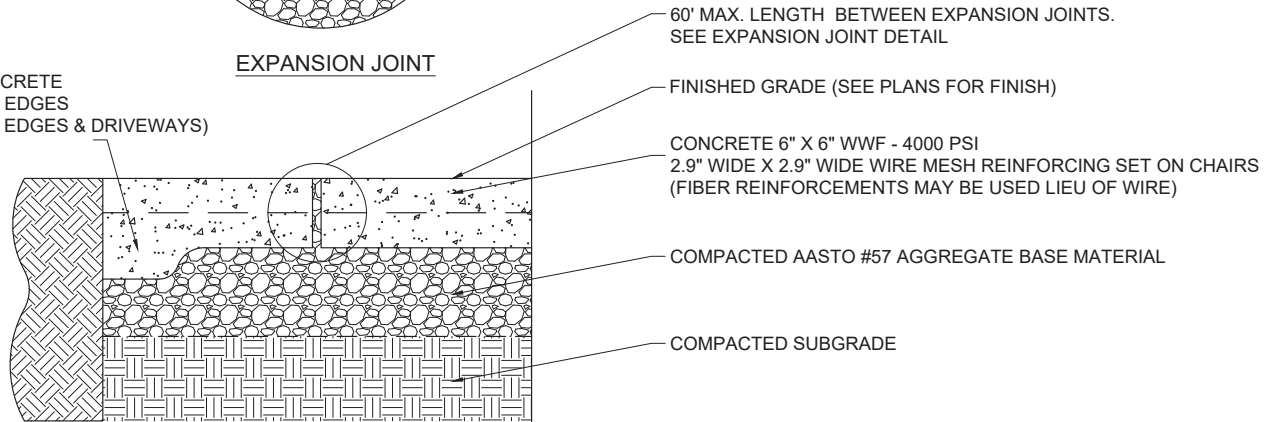
CONSTRUCTION DETAIL STANDART No.10  
TRENCH DETAIL FOR HDPE PIPE

**GROUNDWORK/CIVIL**  
ENGINEERING + DESIGN



**EXPANSION JOINT**

HEAVY DUTY CONCRETE  
TICKEN SLAB AT EDGES  
(8" THICKNESS AT EDGES & DRIVEWAYS)



60' MAX. LENGTH BETWEEN EXPANSION JOINTS.  
SEE EXPANSION JOINT DETAIL

FINISHED GRADE (SEE PLANS FOR FINISH)

CONCRETE 6" X 6" WWF - 4000 PSI  
2.9" WIDE X 2.9" WIDE WIRE MESH REINFORCING SET ON CHAIRS  
(FIBER REINFORCEMENTS MAY BE USED LIEU OF WIRE)

COMPACTED AASHTO #57 AGGREGATE BASE MATERIAL

COMPACTED SUBGRADE

**NOTES:**

1. SCORE LINES TO BE 1/8" WIDE X 1" DEEP
2. EXPANSION JOINT PATTERN AS APPROVED BY ENGINEER.

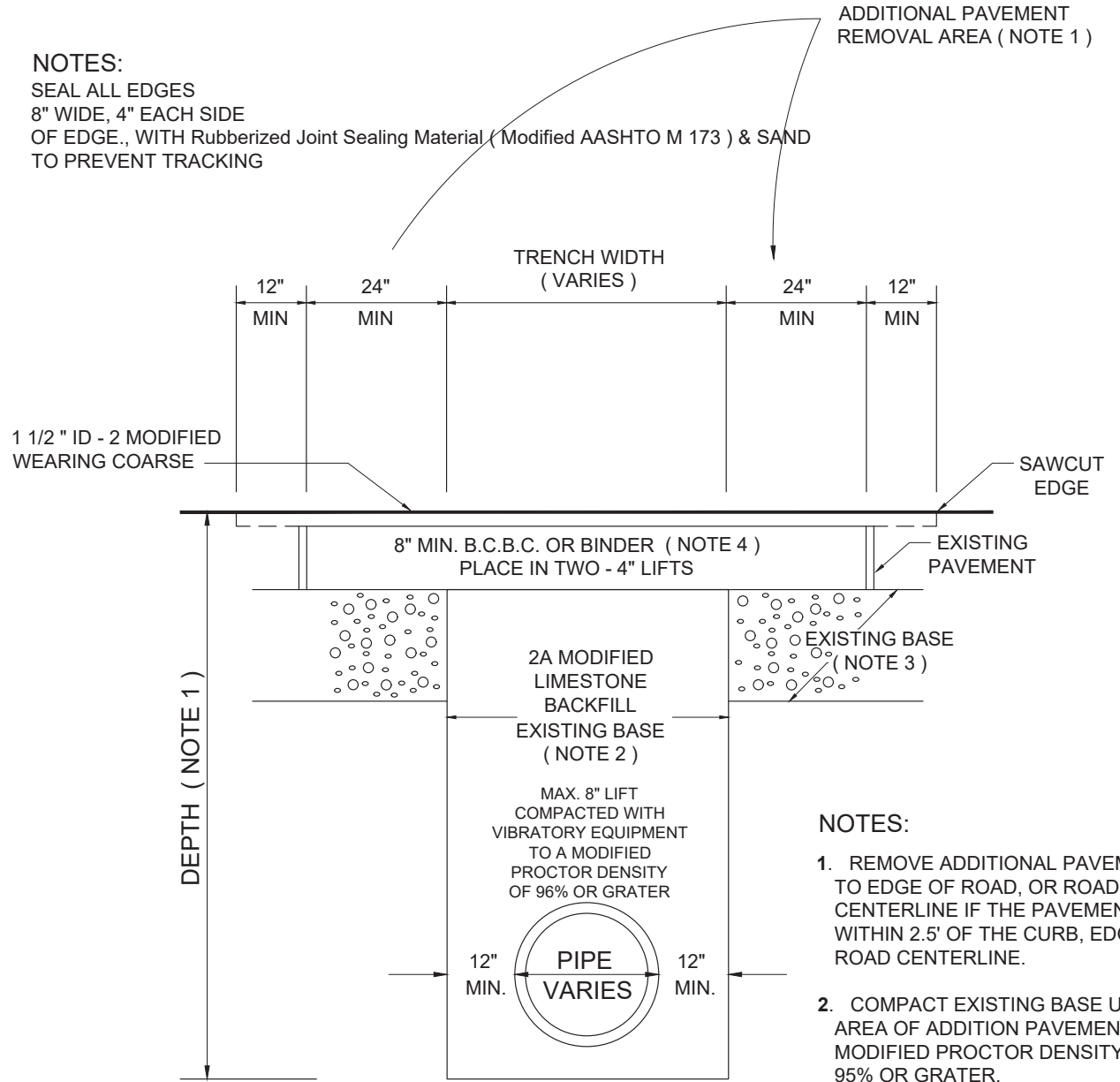
CONCRETE TYPE	SIDEWALK PAVING	VEHICULAR PAVING
CONCRETE TICHNESS	4"	6"
CRUSHED COMPACTED AGGREGATE BASE MATERIAL	6"	8"

○ CONCRETE SIDEWALK  
NOT TO SCALE

**MARSHALL TOWNSHIP**

**CONSTRUCTION DETAIL STANDART No.11  
SIDEWALK SECTION**

NOTES:  
 SEAL ALL EDGES  
 8" WIDE, 4" EACH SIDE  
 OF EDGE., WITH Rubberized Joint Sealing Material ( Modified AASHTO M 173 ) & SAND  
 TO PREVENT TRACKING



- NOTES:
1. REMOVE ADDITIONAL PAVEMENT TO EDGE OF ROAD, OR ROAD CENTERLINE IF THE PAVEMENT IS CUT WITHIN 2.5' OF THE CURB, EDGE OF ROAD CENTERLINE.
  2. COMPACT EXISTING BASE UNDER AREA OF ADDITION PAVEMENT TO A MODIFIED PROCTOR DENSITY OF 95% OR GRATER.
  3. ALL ASPHALT MATERIAL TO CONFORM TO THE REQUIREMENT CONTAINED IN PENN DOT PUBLICATION 408.

**MARSHALL TOWNSHIP**

CONSTRUCTION DETAIL STANDART No.12  
 CARTWAY TRENCH RESTORATION

PREPARED BY ART GAZDIK, PE  
 MARSHALL TOWNSHIP ENGINEER

**GROUNDWORK/CIVIL**  
 ENGINEERING + DESIGN

8.0' MIN. WIDTH OR WIDER AS NOTED ON SECTION DETAILS

1'-2'  
MIN  
SHDR.

6' Width (Typ.)

1'-2'  
MIN  
SHDR.

3" SUPERPAVE HMA  
MODIFIED WEARING COURSE

2%

4" COMPACTED PENNDOT  
2A COARSE AGGREGATE

**ASPHALT TRAIL DETAIL**

N.T.S.

**CONSTRUCTION DETAIL No. 13**

**ASPHALT SIDEWALK -TRAIL**

**GROUNDWORK/CIVIL**  
ENGINEERING + DESIGN

# APPENDIX B - APPROVED PLANT LIST

## Marshall Township Ordinance Approved Plant List

RECOMMENDED TREES										
These are required species for tree plantings in Marshall Township. Native species should be used whenever possible. Cultivated varieties of the species listed are acceptable.										
Common Name	Botanical Name	Mature Height (ft)	Mature Width (ft)	Native	Shade Tree	Large Street Tree	Small Street Tree*	Evergreen Tree	Parking Lot Trees	Notes
Japanese Maple	<i>Acer palmatum</i>	15-25'	10-25'				X			Colorful leaves, fall color
Red Maple	<i>Acer rubrum</i>	40-60'	30-50'	X	X	X			X	Fall color
Silver Maple	<i>Acer saccharinum</i>	50-80'	35-70'	X	X	X				Fall color
Sugar Maple	<i>Acer saccharum</i>	40-80'	30-60'	X	X					Fall color
Freeman Maple	<i>Acer x freemanii</i>	50-70'	10-15'		X	X			X	Red maple and silver maple hybrid
Allegheny Serviceberry	<i>Amelanchier laevis</i>	15-25'	15-20'	X			X			Spring flower, fall color, winter fruit, wildlife value
Eastern Serviceberry	<i>Amelanchier canadensis</i>	15-25'	15-20'	X			X			Spring flower, fall color, winter fruit, wildlife value
Apple Serviceberry	<i>Amelanchier x grandifolia</i>	15-25'	15-25'	X			X			Spring flower, fall color, winter fruit, wildlife value
Gray Birch	<i>Betula populifolia</i>	20-30'	10-20'	X			X			Winter interest
River Birch	<i>Betula nigra</i>	30-70'	40-60'	X	X					Fall color, can tolerate wet soils
American Hornbeam	<i>Carpinus caroliniana</i>	20-30'	20-35'	X			X		X	Fall color
Pignut Hickory	<i>Carya glabra</i>	60-80'	25-40'	X	X	X				Wildlife value, fall color
Shagbark Hickory	<i>Carya ovata</i>	70-90'	50-70'	X	X					Wildlife value
Mockernut Hickory	<i>Carya tomentosa</i>	60-80'	40-60'	X	X					Wildlife value, fall color
Hackberry	<i>Celtis occidentalis</i>	40-100'	40-60'	X	X	X			X	Wildlife value
Eastern Redbud	<i>Cercis canadensis</i>	20-30'	25-35'	X			X		X	Spring flower
White Fringetree	<i>Chionanthus virginicus</i>	12-30'	12-20'	X			X			Spring flower
Yellowwood	<i>Cladrastis kentukea</i>	30-45'	40-45'	X	X					Wildlife value, fall color
Flowering Dogwood	<i>Cornus florida (Benthamidia florida)</i>	15-25'	15-30'	X			X			Spring flower, fall color, prefers partial shade
Thornless Hawthorn	<i>Crataegus crus-galli inermis</i>	20-30'	20-35'	X					X	Thornless variety, spring flower, fall color, winter fruit, wildlife value
Ginkgo	<i>Ginkgo biloba</i>	50-80'	30-40'		X	X			X	Fall color, only plant male varieties like Magyar
Honeylocust	<i>Gleditsia triacanthos inermis</i>	60-80'	60-80'	X	X	X			X	Thornless & fruitless varieties like Skyline, Sunburst, Harve
Kentucky Coffeetree	<i>Gymnocladus dioicus</i>	60-80'	40-55'	X	X	X				Male varieties more desirable due to seed pods
Carolina Silverbell	<i>Halesia carolina</i>	10-30'	25-35'	X			X			Spring flower, interesting seed pod, fall color
American Holly	<i>Ilex opaca</i>	15-30'	10-20'	X				X		Winter interest
Eastern Red Cedar	<i>Juniperus virginiana</i>	30-40'	10-20'	X				X	X	Winter interest
American Sweetgum	<i>Liquidambar styraciflua</i>	60-80'	40-50'	X	X					Fall color
Tulip Tree	<i>Liriodendron tulipifera</i>	60-90'	30-50'	X	X	X				Spring/summer flowers, fall color
Cucumbertree	<i>Magnolia acuminata</i>	40-70'	20-35'	X	X					Spring/summer flowers, fall color

RECOMMENDED TREES (cont.)										
Common Name	Botanical Name	Mature Height (ft)	Mature Width (ft)	Native	Shade Tree	Large Street Tree	Small Street Tree*	Evergreen Tree	Parking Lot Trees	Notes
Star Magnolia	<i>Magnolia stellata</i>	15-20'	10-15'				X			Spring flower
Sweetbay Magnolia	<i>Magnolia virginiana</i>	10-30'	10-35'	X			X		X	Spring/summer flower, semi-evergreen
Crabapple	<i>Malus spp.</i>	varies	varies				X		X	Cultivars: Adirondack, Cardinal, Prairie Fire, Tina, Sargent
Blackgum	<i>Nyssa sylvatica</i>	30-50'	20-30'	X	X	X				Wildlife value, fall color
American Hophornbeam	<i>Ostrya virginiana</i>	20-30'	15-30'	X	X		X		X	Wildlife value
Norway Spruce	<i>Picea abies</i>	40-60'	25-30'					X		Winter interest
Colorado Blue Spruce	<i>Picea pungens</i>	30-60'	10-20'					X		Native to western United States, winter interest
White Spruce	<i>Picea glauca</i>	40-60'	10-20'	X				X		Winter interest
Eastern White Pine	<i>Pinus strobus</i>	50-80'	20-40'	X				X		Winter interest
London Planetree	<i>Platanus x acerifolia</i>	75-100'	75-100'		X					Wildlife value
American Sycamore	<i>Platanus occidentalis</i>	70-100'	60-75'	X	X					Winter interest
Sargent Cherry	<i>Prunus sargentii</i>	20-30'	20-30'		X		X			Spring flower, fall color, wildlife value
Flowering Cherry	<i>Prunus x yedoensis</i>	30-40'	20-50'		X		X			Spring flower, fall color, wildlife value
White Oak	<i>Quercus alba</i>	50-80'	50-80'	X	X	X				Wildlife value, fall color
Swamp White Oak	<i>Quercus bicolor</i>	50-60'	50-60'	X	X	X			X	Wildlife value, fall color
Scarlet Oak/Black Oak	<i>Quercus coccinea</i>	50-80'	45-60'	X	X	X			X	Wildlife value, fall color
Shingle Oak/Laurel Oak	<i>Quercus imbricaria</i>	50-70'	50-60'	X	X	X				Wildlife value, fall color
Bur Oak	<i>Quercus macrocarpa</i>	60-80'	60-80'	X	X					Wildlife value, fall color, spring plant only
Chinkapin Oak	<i>Quercus muehlenbergii</i>	40-60'	50-70'	X	X				X	Wildlife value, fall color
Pin Oak	<i>Quercus palustris</i>	50-70'	40-60'	X	X	X			X	Wildlife value, fall color
Red Oak	<i>Quercus rubra</i>	50-70'	50-75'	X	X					Wildlife value, fall color
Bald Cypress	<i>Taxodium distichum</i>	50-70'	20-45'	X	X					Prefers wet soils
American Linden/Basswood	<i>Tilia americana</i>	50-80'	30-50'	X	X	X				Fragrant flowers, wildlife value
Littleleaf Linden	<i>Tilia cordata</i>	50-70'	35-50'	X	X	X			X	Fragrant flowers, wildlife value
Giant Arborvitae/Western Redcedar	<i>Thuja plicata</i>	40-60'	12-18'					X		Susceptible to deer damage
Arborvitae	<i>Thuja spp.</i>	varies	varies				X	X		Small tree varieties can be used in screening and as an evergreen street tree
Elm hybrids	<i>Ulmus</i>	50-60'	30-40'		X	X			X	Dutch Elm Disease resistant; cultivars: Accolade, Frontier, Triumph
Blackhaw Viburnum	<i>Viburnum prunifolium</i>	12-15'	6-12'	X			X			Tree form, spring flower, fall color, winter fruit, wildlife value
Zelkova	<i>Zelkova serrata</i>	50-80'	50-80'		X	X			X	Fall color

\* For the purposes of this ordinance, Small Street Trees are also referred to as Ornamental Trees for the Special Conservation Bufferyard.

**Marshall Township Ordinance Approved Plant List**

**RECOMMENDED SHRUBS**

These are suggested species for shrub plantings in Marshall Township. Native species should be used whenever possible. Cultivated varieties of the species listed are acceptable.

Common Name	Botanical Name	Mature Height (ft)	Mature Width (ft)	Small Shrub (under 4')	Large Shrub (over 4')	Groundcover	Flower	Fruit	Fall Color	Deer Resistant	Salt Tolerance	Evergreen	Native	Notes
Bottlebrush Buckeye	<i>Aesculus parviflora</i>	8-12'	8-15'		X		X	X	X	X			X	Partial to full shade
Running Serviceberry	<i>Amelanchier stolonifera</i>	4-5'	4-5'		X		X	X	X				X	Full sun to partial shade
Red Chokeberry	<i>Aronia arbutifolia</i>	6-10'	3-6'		X		X	X	X	X	X		X	Full sun to partial shade
Black Chokeberry	<i>Aronia melanocarpa</i>	3-6'	3-6'		X		X	X	X		X		X	Full sun to partial shade
Lowscape Mound Black Chokeberry	<i>Aronia melanocarpa</i> 'UCONNAM165'	1-2'	3-4'	X			X	X	X		X		X	Full sun to partial shade
Ground Hog Black Chokeberry	<i>Aronia melanocarpa</i> 'UCONNAM012'	.75'-1'	2-3'	X		X	X	X	X		X		X	Full sun to partial shade
Green Gem Boxwood	<i>Buxus</i> 'Green Gem'	3-4'	3-4'	X						X		X		Full sun to partial shade
Green Mound Boxwood	<i>Buxus</i> 'Green Mound'	2-3'	2-3'	X						X		X		Full sun to partial shade
Green Mountain Boxwood	<i>Buxus</i> 'Green Mountain'	3-5'	2-3'		X					X		X		Full sun to partial shade
Joy Boxwood	<i>Buxus sempervirens</i> 'Joy'	3-6'	3-5'		X					X		X		Full sun to partial shade
American Beautyberry	<i>Callicarpa americana</i>	3-6'	3-6'		X		X	X	X	X			X	Full sun to partial shade
Carolina Allspice/Sweetshrub	<i>Calycanthus floridus</i>	6-10'	6-12'		X		X			X			X	Full sun to full shade
New Jersey Tea	<i>Ceanothus americanus</i>	3-4'	3-5'	X			X		X	X				Full sun to partial shade
Buttonbush	<i>Cephalanthus occidentalis</i>	5-12'	4-8'		X		X	X						Full sun to partial shade
Summersweet	<i>Clethra alnifolia</i>	3-8'	4-6'		X		X		X	X	X		X	Full sun to partial shade
Crystalina Summersweet	<i>Clethra alnifolia</i> 'Crystalina'	2-3'	3-4'	X			X		X	X	X		X	Full sun to partial shade
Hummingbird Summersweet	<i>Clethra alnifolia</i> 'Hummingbird'	2-4'	3-5'	X			X		X	X	X		X	Full sun to partial shade
Ruby Spice Summersweet	<i>Clethra alnifolia</i> 'Ruby Spice'	4-6'	3-5'		X		X		X	X	X		X	Full sun to partial shade
Silky Dogwood	<i>Cornus amomum</i>	6-12'	6-12'		X		X		X				X	Full sun to full shade
Gray Dogwood	<i>Cornus racemosa</i>	10-15'	10-15'		X		X		X				X	Full sun to full shade
Red Twig Dogwood	<i>Cornus sericea</i>	6-9'	7-10'		X		X		X	X			X	Winter interest, full sun to partial shade
Isanti Red Twig Dogwood	<i>Cornus sericea</i> 'Isanti'	4-5'	4-7'		X		X		X	X			X	Winter interest, full sun to partial shade
Arctic Fire Red Twig Dogwood	<i>Cornus sericea</i> 'Farrow'	3-4'	3-4'	X			X		X	X			X	Winter interest, full sun to partial shade
Yellow Twig Dogwood	<i>Cornus sericea</i> 'Flaviramea'	5-6'	5-6'		X		X		X	X			X	Winter interest, full sun to partial shade
Northern Bush Honeysuckle	<i>Diervilla lonicera</i>	2-3'	2-4'	X			X		X		X		X	Full sun to partial shade
Fothergilla	<i>Fothergilla major/latifolia</i>	6-10'	5-9'		X		X		X	X	X		X	Full sun to partial shade
Blue Mist Fothergilla	<i>Fothergilla</i> 'Blue Mist'	2-3'	2-3'	X			X		X	X	X		X	Full sun to partial shade
Blue Shadow Fothergilla	<i>Fothergilla</i> 'Blue Shadow'	4-6'	4-6'		X		X		X	X	X		X	Full sun to partial shade
Mt. Airy Fothergilla	<i>Fothergilla</i> 'Mt. Airy'	3-5'	3-5'	X			X		X	X	X		X	Full sun to partial shade
Ozark Witchhazel	<i>Hamamelis vernalis</i>	6-10'	8-15'		X		X		X	X	X		X	Full sun to partial shade
Common Witchhazel	<i>Hamamelis virginiana</i>	15-20'	15-20'		X		X		X	X	X		X	Full sun to partial shade
Smooth Hydrangea	<i>Hydrangea arborescens</i>	3-5'	3-5'		X		X				X		X	Full sun to partial shade
Incrediball Smooth Hydrangea	<i>Hydrangea arborescens</i> 'Abetwo'	4-5'	4-5'		X		X				X		X	Full sun to partial shade



**RECOMMENDED SHRUBS (cont.)**

Common Name	Botanical Name	Mature Height (ft)	Mature Width (ft)	Small Shrub (under 4')	Large Shrub (over 4')	Groundcover	Flower	Fruit	Fall Color	Deer Resistant	Salt Tolerance	Evergreen	Native	Notes
Annabelle Smooth Hydrangea	<i>Hydrangea arborescens 'Annabelle'</i>	3-5'	4-6'		X		X				X		X	Full sun to partial shade
Invincibelle Wee White Hydrangea	<i>Hydrangea arborescens 'NCHA5'</i>	1-2.5'	2-3'	X			X				X		X	Full sun to partial shade
Invincibelle Spirit Hydrangea	<i>Hydrangea arborescens 'NCHA1'</i>	3-4'	3-4'	X			X				X		X	Full sun to partial shade
Oakleaf Hydrangea	<i>Hydrangea quercifolia</i>	6-8'	6-8'		X		X		X		X		X	Full sun to partial shade
Snow Queen Oakleaf Hydrangea	<i>Hydrangea quercifolia 'Flemygea'</i>	4-6'	6-8'		X		X		X		X		X	Full sun to partial shade
Pee Wee Oakleaf Hydrangea	<i>Hydrangea quercifolia 'Pee Wee'</i>	3-4'	2.5-3'	X			X		X		X		X	Full sun to partial shade
Ruby Slippers Oakleaf Hydrangea	<i>Hydrangea quercifolia 'Ruby Slippers'</i>	3-4'	3-4'	X			X		X		X		X	Full sun to partial shade
St.Johnswort	<i>Hypericum calycinum</i>	1-1.5'	1.5-2'	X		X	X	X		X	X			Semi-evergreen, full sun to partial shade
Kalm St.Johnswort	<i>Hypericum kalmianum</i>	2-3'	2-3'	X			X	X		X	X		X	Semi-evergreen, full sun to partial shade
Inkberry Holly	<i>Ilex glabra</i>	5-8'	5-8'		X			X		X	X	X	X	Full sun to partial shade
Compact Inkberry	<i>Ilex glabra 'Shamrock' or 'Compacta'</i>	3-4'	3-4'	X				X		X	X	X	X	Full sun to partial shade
Afterglow Winterberry Holly	<i>Ilex verticillata 'Afterglow'</i>	3-6'	3-6'		X			X	X	X	X		X	Female, winter interest, full sun to full shade, plant with male for berries ( <i>Ilex verticillata 'Jim Dandy'</i> )
Red Sprite Winterberry Holly	<i>Ilex verticillata 'Nana'</i>	2.5-3'	2.5-3'	X				X	X	X	X		X	Female, winter interest, full sun to full shade, plant with male for berries ( <i>Ilex verticillata 'Jim Dandy'</i> )
Winter Gold Winterberry Holly	<i>Ilex verticillata 'Winter Gold'</i>	5-8'	5-8'		X			X	X	X	X		X	Female, winter interest, full sun to full shade, plant with male for berries ( <i>Ilex verticillata 'Southern Gentleman'</i> )
Virginia Sweetspire	<i>Itea virginica</i>	3-5'	3-5'		X		X		X	X	X		X	Full sun to partial shade
Henry's Garnet Virginia Sweetspire	<i>Itea virginica 'Henry's Garnet'</i>	3-4'	4-6'	X			X		X	X	X		X	Full sun to partial shade
Little Henry Virginia Sweetspire	<i>Itea virginica 'Sprich'</i>	1.5-2'	2-2.5'	X			X		X	X	X		X	Full sun to partial shade
Juniper	<i>Juniperus spp.</i>	varies	varies	X	X	X					X	X	X	Some are native, most are non-native, vary in size, mostly full sun to partial shade
Creeping Juniper	<i>Juniperus horizontalis</i>	0.5-1.5'	5-8'	X		X					X	X	X	Full sun
Wilton Creeping Juniper	<i>Juniperus horizontalis 'Wiltonii'</i>	0.25-0.5'	6-8'	X		X					X	X	X	Full sun
Sea Green Juniper	<i>Juniperus x pfitzeriana 'Sea Green'</i>	4-6'	6-8'		X						X	X	X	Full sun
Kallay's Compact Juniper	<i>Juniperus x pfitzeriana 'Kallay's Compact'</i>	2-3'	3-6'	X							X	X	X	Full sun
Green Mound Juniper	<i>Juniperus procumbens 'Green Mound'</i>	0.5-0.75'	4-6'	X		X					X	X	X	Full sun
Blue Star Juniper	<i>Juniperus squamata 'Blue Star'</i>	1-3'	1-4'	X							X	X	X	Full sun
Grey Owl Juniper	<i>Juniperus virginiana 'Grey Owl'</i>	2-3'	4-6'	X							X	X	X	Full sun
Mountain Laurel	<i>Kalmia latifolia</i>	5-15'	5-15'		X		X					X	X	Full sun to partial shade
Northern Spicebush	<i>Lindera benzoin</i>	6-12'	6-12'		X		X	X	X	X	X		X	Partial shade
Northern Bayberry	<i>Myrica pensylvanica</i>	5-10'	5-10'		X			X		X	X		X	Full sun to partial shade
Dwarf Northern Bayberry	<i>Myrica pensylvanica 'Bobbee'</i>	5-6'	6-8'		X			X		X	X		X	Full sun to partial shade
Common Ninebark	<i>Physocarpus opulifolius</i>	5-8'	4-6'		X		X	X	X				X	Winter interest, full sun to partial shade

**RECOMMENDED SHRUBS (cont.)**

Common Name	Botanical Name	Mature Height (ft)	Mature Width (ft)	Small Shrub (under 4')	Large Shrub (over 4')	Groundcover	Flower	Fruit	Fall Color	Deer Resistant	Salt Tolerance	Evergreen	Native	Notes
Diabolo Ninebark	<i>Physocarpus opulifolius 'Diabolo'</i>	4-8'	4-8'		X		X	X	X				X	Winter interest, full sun to partial shade
Amber Jubilee Ninebark	<i>Physocarpus opulifolius 'Jefam'</i>	5-6'	3-4'		X		X	X	X				X	Winter interest, full sun to partial shade
Summer Wine Ninebark	<i>Physocarpus opulifolius 'Seward'</i>	4-6'	4-6'		X		X	X	X				X	Winter interest, full sun to partial shade
Tiny Wine Ninebark	<i>Physocarpus opulifolius 'SMPOTW'</i>	3-4'	3-4'	X			X	X	X				X	Winter interest, full sun to partial shade
Mugo Pine	<i>Pinus mugo var. pumilio</i>	3-5'	6-10'		X					X	X	X		Winter interest, use only dwarf Mugo Pine varieties, straight species gets large
Fragrant Sumac	<i>Rhus aromatica 'Gro-Low'</i>	1.5-2'	6-8'	X		X		X	X	X	X		X	Full sun to partial shade
Smooth Sumac	<i>Rhus glabra</i>	9-15'	9-15'		X		X	X	X		X		X	Full sun to partial shade
Staghorn Sumac	<i>Rhus typhina</i>	15-25'	20-30'		X		X	X	X		X		X	Full sun
American Elderberry	<i>Sambucus canadensis</i>	5-12'	5-12'		X		X	X	X				X	Full sun to partial shade
Common Snowberry	<i>Symphoricarpos albus</i>	3-6'	3-6'		X		X	X	X	X	X		X	Full sun to partial shade
Highbush Blueberry	<i>Vaccinium corymbosum</i>	6-12'	8-12'		X		X	X	X				X	Full sun to partial shade
Aurora Highbush Blueberry	<i>Vaccinium corymbosum 'Aurora'</i>	4-6'	4-6'		X		X	X	X				X	Full sun to partial shade
Northland Highbush Blueberry	<i>Vaccinium corymbosum 'Northland'</i>	3-4'	4-5'	X			X	X	X				X	Full sun to partial shade
Bushel and Berry Highbush Blueberry	<i>Vaccinium corymbosum 'ZF06-043'</i>	1.5-2'	1.5-2'	X		X	X	X	X				X	Full sun to partial shade
Arrowwood Viburnum	<i>Viburnum dentatum</i>	6-10'	6-10'		X		X	X	X	X	X		X	Full sun to partial shade
Blue Muffin Arrowwood Viburnum	<i>Viburnum dentatum 'Christom'</i>	3-5'	3-4'	X			X	X	X	X	X		X	Full sun to partial shade
Little Joe Arrowwood Viburnum	<i>Viburnum dentatum 'KLMseventeen'</i>	4-5'	4-5'		X		X	X	X	X	X		X	Full sun to partial shade
Autumn Jazz Arrowwood Viburnum	<i>Viburnum dentatum 'Ralph Senior'</i>	6-10'	6-10'		X		X	X	X	X	X		X	Full sun to partial shade
Nannyberry Viburnum	<i>Viburnum lentago</i>	14-16'	6-12'		X		X	X	X	X			X	Full sun to partial shade
Blackhaw Viburnum	<i>Viburnum prunifolium</i>	12-15'	6-12'		X		X	X	X	X	X		X	Full sun to partial shade

**Marshall Township Ordinance Approved Plant List**

RECOMMENDED GROUND COVERS												
These are suggested species for ground cover plantings in Marshall Township. Native species should be used whenever possible. Cultivated varieties of the species listed are acceptable.												
Common Name	Botanical Name	Mature Height (ft)	Mature Width (ft)	Sun	Shade	Flower	Fall Color	Deer Resistant	Salt Tolerance	Evergreen	Native	Notes
Blue Ice Blue Star	<i>Amsonia tabernaemontana 'Blue Ice'</i>	1-1.5'	1-1.5'	X	X	X	X	X	X		X	Drought tolerant
Mountain Rockcress	<i>Arabis alpina</i>	0.5-1'	1-2'	X		X		X				Drought tolerant
Butterfly Weed	<i>Asclepias tuberosa</i>	1-2'	1-1.5'	X		X		X	X		X	Drought tolerant
Blue Gramma	<i>Bouteloua gracilis</i>	0.75-1.5'	1.5-2'	X		X		X			X	Drought tolerant
Blue Green Sedge	<i>Carex flacca</i>	0.5-1'	1-1.5'	X	X			X				Prefers moist soil
Pennsylvania Sedge	<i>Carex pennsylvanica</i>	0.5-1'	0.5-1'		X			X			X	Drought tolerant
Snow in Summer	<i>Cerastium tomentosum</i>	0.5-1'	0.75-1'	X		X		X				Drought tolerant
Plumbago	<i>Cerastostigma plumbaginoides</i>	0.75-1'	1-1.5'	X	X	X	X		X			Adaptable to range of soils
Goldenstar	<i>Chrysogonum virginianum</i>	0.5-1'	0.75-1.5'		X	X					X	Prefers moist soil
Lanceleaf Coreopsis	<i>Coreopsis lanceolata</i>	1-2'	1-1.5'	X		X		X	X		X	Drought tolerant
Hay-scented Fern	<i>Dennstaedtia punctilobula</i>	1.5'	2-3'		X		X	X			X	Adaptable to range of soils
Tufted Hair Grass	<i>Deschampsia cespitosa</i>	1.5-2.5'	1-2'	X		X						Prefers moist soil
Bishops Hat	<i>Epimedium grandiflorum</i>	0.75-1'	1-2'		X	X		X	X			Drought tolerant
Purple Lovegrass	<i>Eragrostis spectabilis</i>	1-1.5'	1-2'	X		X		X			X	Drought tolerant
Rozanne Cranesbill Geranium	<i>Geranium 'Gerwat'</i>	1-1.5'	1-2'	X	X	X		X	X			
Reblooming Daylilies	<i>Heemerocalis spp.</i>	Varies	Varies									Happy Returns, Rosy Returns, Stella d'Oro, Ruby Stella, Pardon Me, Apricot Sprinkles, etc.
Candytuft	<i>Iberis sempervirens</i>	0.5-1'	0.5-1.5'	X		X		X	X			Drought tolerant
Allegheny Spurge	<i>Pachysandra procumbens</i>	0.5-1'	1-2'		X			X	X		X	Semi-evergreen, prefers moist soil
Little Spire Russian Sage	<i>Perovskia atriplicifolia 'Little Spire'</i>	1.5-2'	1.5-2'	X		X		X	X			Drought tolerant
Moss Phlox	<i>Phlox subulata</i>	0.25-0.5'	1-2'	X		X		X			X	Semi-evergreen, drought tolerant
White Stonecrop	<i>Sedum album</i>	0.25-0.5'	1-1.5'	X		X		X		X		Drought tolerant
Stonecrop	<i>Sedum rupestre</i>	0.25-0.5'	1-2'	X		X		X				Drought tolerant
Stonecrops	<i>Sedum spp.</i>	Varies	Varies									
Three-Leaved Stonecrop	<i>Sedum ternatum</i>	0.25-0.5'	0.5-0.75'	X	X	X					X	Drought tolerant
Prairie Dropseed	<i>Sporobolus heterolepis 'Tara'</i>	1.5-2.5'	1.5-2.5'	X		X		X	X		X	Drought tolerant
Crowns of Rays Goldenrod	<i>Solidago 'Crowns of Rays'</i>	1.5-2'	1-1.5'	X		X		X			X	Drought tolerant
Golden Fleece Goldenrod	<i>Solidago sphacelata 'Golden Fleece'</i>	1-1.5'	1-1.5'	X		X		X			X	Drought tolerant
Lambs Ear	<i>Stachys bysantina</i>	0.75-1.5'	1-1.5'	X		X		X				Drought tolerant
Snow Flurry Aster	<i>Symphotrichum ericoides 'Snow Flurry'</i>	0.25-0.5'	0.25-1'	X		X		X	X		X	Drought tolerant
October Skies Aster	<i>Symphotrichum oblongifolium 'October Skies'</i>	1.5-2'	1.5-2'	X		X		X	X		X	Drought tolerant
Creeping Thyme	<i>Thymus praecox</i>	0.25-0.5'	0.25-0.5'	X		X		X	X	X		Drought tolerant
Mother of Thyme	<i>Thymus serpyllum</i>	0.25'	0.25-1'	X		X		X	X	X		Drought tolerant

**RECOMMENDED GROUND COVERS (cont.)**

Common Name	Botanical Name	Mature Height (ft)	Mature Width (ft)	Sun	Shade	Flower	Fall Color	Deer Resistant	Salt Tolerance	Evergreen	Native	Notes
Foam Flower	<i>Tiarella cordifolia</i>	0.75-1'	1-2'		X	X	X	X			X	Prefers moist soil
Prostrate Speedwell	<i>Veronica prostrata</i>	0.5-0.75'	0.5-1.5'	X	X	X		X	X			
Barren Strawberry	<i>Waldsteinia fragarioides</i>	0.25-.5'	0.5-1'	X	X	X		X			X	Adaptable to range of soils

**Marshall Township Ordinance Approved Plant List**

**Erosion control**

**RECOMMENDED TREES**

These are suggested species for tree plantings in Marshall Township. Native species should be used whenever possible. Cultivated varieties of the species listed are acceptable.

Common Name	Botanical Name	Mature Height (ft)	Mature Width (ft)	Native	Shade Tree	Large Street Tree	Small Street Tree*	Evergreen Tree	Parking Lot Trees	Notes
Allegheny Serviceberry	<i>Amelanchier laevis</i>	15-25'	15-20'	X			X			Spring flower, fall color, winter fruit, wildlife value
Eastern Serviceberry	<i>Amelanchier canadensis</i>	15-25'	15-20'	X			X			Spring flower, fall color, winter fruit, wildlife value
Apple Serviceberry	<i>Amelanchier x grandifolia</i>	15-25'	15-25'	X			X			Spring flower, fall color, winter fruit, wildlife value
Pignut Hickory	<i>Carya glabra</i>	60-80'	25-40'	X	X	X				Wildlife value, fall color
Shagbark Hickory	<i>Carya ovata</i>	70-90'	50-70'	X	X					Wildlife value
Mockernut Hickory	<i>Carya tomentosa</i>	60-80'	40-60'	X	X					Wildlife value, fall color
Eastern Redbud	<i>Cercis canadensis</i>	20-30'	25-35'	X			X		X	Spring flower
Eastern Red Cedar	<i>Juniperus virginiana</i>	30-40'	10-20'	X				X	X	Winter interest

**RECOMMENDED TREES (cont.)**

Common Name	Botanical Name	Mature Height (ft)	Mature Width (ft)	Native	Shade Tree	Large Street Tree	Small Street Tree*	Evergreen Tree	Parking Lot Trees	Notes
White Oak	<i>Quercus alba</i>	50-80'	50-80'	X	X	X				Wildlife value, fall color
Swamp White Oak	<i>Quercus bicolor</i>	50-60'	50-60'	X	X	X			X	Wildlife value, fall color
Scarlet Oak/Black Oak	<i>Quercus coccinea</i>	50-80'	45-60'	X	X	X			X	Wildlife value, fall color
Shingle Oak/Laurel Oak	<i>Quercus imbricaria</i>	50-70'	50-60'	X	X	X				Wildlife value, fall color
Bur Oak	<i>Quercus macrocarpa</i>	60-80'	60-80'	X	X					Wildlife value, fall color, spring plant only
Chinkapin Oak	<i>Quercus muehlenbergii</i>	40-60'	50-70'	X	X				X	Wildlife value, fall color
Pin Oak	<i>Quercus palustris</i>	50-70'	40-60'	X	X	X			X	Wildlife value, fall color
Red Oak	<i>Quercus rubra</i>	50-70'	50-75'	X	X					Wildlife value, fall color

\* For the purposes of this ordinance, Small Street Trees are also referred to as Ornamental Trees for the Special Conservation Bufferyard.

**Marshall Township Ordinance Approved Plant List**

**Erosion Control**

**RECOMMENDED SHRUBS**

These are suggested species for shrub plantings in Marshall Township. Native species should be used whenever possible. Cultivated varieties of the species listed are acceptable.

Common Name	Botanical Name	Mature Height (ft)	Mature Width (ft)	Small Shrub (under 4')	Large Shrub (over 4')	Groundcover	Flower	Fruit	Fall Color	Deer Resistant	Salt Tolerance	Evergreen	Native	Notes
Running Serviceberry	<i>Amelanchier stolonifera</i>	4-5'	4-5'		X		X	X	X				X	Full sun to partial shade
Red Chokeberry	<i>Aronia arbutifolia</i>	6-10'	3-6'		X		X	X	X	X	X		X	Full sun to partial shade
Black Chokeberry	<i>Aronia melanocarpa</i>	3-6'	3-6'		X		X	X	X		X		X	Full sun to partial shade
Lowscape Mound Black Chokeberry	<i>Aronia melanocarpa 'UCONNAM165'</i>	1-2'	3-4'	X			X	X	X		X		X	Full sun to partial shade
Ground Hog Black Chokeberry	<i>Aronia melanocarpa 'UCONNAM012'</i>	.75'-1'	2-3'	X		X	X	X	X		X		X	Full sun to partial shade
Summersweet	<i>Clethra alnifolia</i>	3-8'	4-6'		X		X		X	X	X		X	Full sun to partial shade
Crystalina Summersweet	<i>Clethra alnifolia 'Crystalina'</i>	2-3'	3-4'	X			X		X	X	X		X	Full sun to partial shade
Hummingbird Summersweet	<i>Clethra alnifolia 'Hummingbird'</i>	2-4'	3-5'	X			X		X	X	X		X	Full sun to partial shade
Ruby Spice Summersweet	<i>Clethra alnifolia 'Ruby Spice'</i>	4-6'	3-5'		X		X		X	X	X		X	Full sun to partial shade
Silky Dogwood	<i>Cornus amomum</i>	6-12'	6-12'		X		X		X				X	Full sun to full shade
Gray Dogwood	<i>Cornus racemosa</i>	10-15'	10-15'		X		X		X				X	Full sun to full shade
Red Twig Dogwood	<i>Cornus sericea</i>	6-9'	7-10'		X		X		X	X			X	Winter interest, full sun to partial shade
Isanti Red Twig Dogwood	<i>Cornus sericea 'Isanti'</i>	4-5'	4-7'		X		X		X	X			X	Winter interest, full sun to partial shade
Arctic Fire Red Twig Dogwood	<i>Cornus sericea 'Farrow'</i>	3-4'	3-4'	X			X		X	X			X	Winter interest, full sun to partial shade
Yellow Twig Dogwood	<i>Cornus sericea 'Flaviramea'</i>	5-6'	5-6'		X		X		X	X			X	Winter interest, full sun to partial shade
Northern Bush Honeysuckle	<i>Diervilla lonicera</i>	2-3'	2-4'	X			X		X		X		X	Full sun to partial shade

**RECOMMENDED SHRUBS (cont.)**

Common Name	Botanical Name	Mature Height (ft)	Mature Width (ft)	Small Shrub (under 4')	Large Shrub (over 4')	Groundcover	Flower	Fruit	Fall Color	Deer Resistant	Salt Tolerance	Evergreen	Native	Notes
Virginia Sweetspire	<i>Itea virginica</i>	3-5'	3-5'		X		X		X	X	X		X	Full sun to partial shade
Henry's Garnet Virginia Sweetspire	<i>Itea virginica 'Henry's Garnet'</i>	3-4'	4-6'	X			X		X	X	X		X	Full sun to partial shade
Little Henry Virginia Sweetspire	<i>Itea virginica 'Sprich'</i>	1.5-2'	2-2.5'	X			X		X	X	X		X	Full sun to partial shade
Juniper	<i>Juniperus spp.</i>	varies	varies	X	X	X				X	X	X		Some are native, most are non-native, vary in size, mostly full sun to partial shade
Creeping Juniper	<i>Juniperus horizontalis</i>	0.5-1.5'	5-8'	X		X				X	X	X	X	Full sun
Wilton Creeping Juniper	<i>Juniperus horizontalis 'Wiltonii'</i>	0.25-0.5'	6-8'	X		X				X	X	X	X	Full sun
Sea Green Juniper	<i>Juniperus x pfitzeriana 'Sea Green'</i>	4-6'	6-8'		X					X	X	X		Full sun
Kallay's Compact Juniper	<i>Juniperus x pfitzeriana 'Kallay's Compact'</i>	2-3'	3-6'	X						X	X	X		Full sun
Green Mound Juniper	<i>Juniperus procumbens 'Green Mound'</i>	0.5-0.75'	4-6'	X		X				X	X	X		Full sun

Blue Star Juniper	<i>Juniperus squamata</i> 'Blue Star'	1-3'	1-4'	X							X	X	X		Full sun
Grey Owl Juniper	<i>Juniperus virginiana</i> 'Grey Owl'	2-3'	4-6'	X							X	X	X	X	Full sun
RECOMMENDED SHRUBS (cont.)															
Common Name	Botanical Name	Mature Height (ft)	Mature Width (ft)	Small Shrub (under 4')	Large Shrub (over 4')	Groundcover	Flower	Fruit	Fall Color	Deer Resistant	Salt Tolerance	Evergreen	Native	Notes	
Fragrant Sumac	<i>Rhus aromatica</i> 'Gro-Low'	1.5-2'	6-8'	X		X		X	X	X	X		X	Full sun to partial shade	
Smooth Sumac	<i>Rhus glabra</i>	9-15'	9-15'		X		X	X	X		X		X	Full sun to partial shade	
Staghorn Sumac	<i>Rhus typhina</i>	15-25'	20-30'		X		X	X	X		X		X	Full sun	
Arrowwood Viburnum	<i>Viburnum dentatum</i>	6-10'	6-10'		X		X	X	X	X	X		X	Full sun to partial shade	
Blue Muffin Arrowwood Viburnum	<i>Viburnum dentatum</i> 'Christom'	3-5'	3-4'	X			X	X	X	X	X		X	Full sun to partial shade	
Little Joe Arrowwood Viburnum	<i>Viburnum dentatum</i> 'KLMseventeen'	4-5'	4-5'		X		X	X	X	X	X		X	Full sun to partial shade	
Autumn Jazz Arrowwood Viburnum	<i>Viburnum dentatum</i> 'Ralph Senior'	6-10'	6-10'		X		X	X	X	X	X		X	Full sun to partial shade	
Nannyberry Viburnum	<i>Viburnum lentago</i>	14-16'	6-12'		X		X	X	X	X			X	Full sun to partial shade	
Blackhaw Viburnum	<i>Viburnum prunifolium</i>	12-15'	6-12'		X		X	X	X	X	X		X	Full sun to partial shade	

#### ORNAMENTAL GRASSES

Big Bluestem	<i>Andropogon gerardii</i>
Sideoat Grama	<i>Boutaloua curtipendula</i>
River Oats	<i>Chasmanthium latifolium</i>
Switchgrass	<i>Panicum virgatum</i>
Little Bluestem	<i>Schizachyrium scoparium</i>
Prairie Dropseed	<i>Sporobolus heterolepis</i>
Indiangrass	<i>Sorghastrum nutans</i>