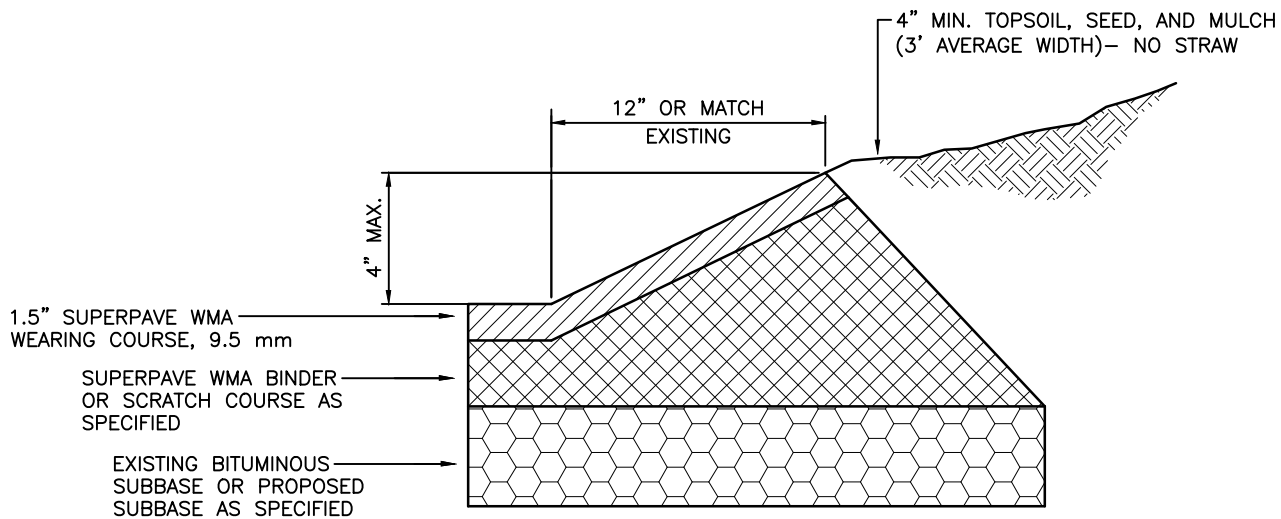


N:\PROJ\487\487-15 SALDO\details\Drawg South Beaver\ RD-01 Bituminous Wedge Curb.dwg layout = Bituminous Wedge Curb Username = chrism Date = Sep 30, 2021 -- 9:49pm



**NOTES:**

1. MATERIALS AND CONSTRUCTION SHALL MEET THE REQUIREMENTS OF PUBLICATION 408.
2. COORDINATE WEDGE CURB WITH DRIVEWAY REPLACEMENT.

**BITUMINOUS WEDGE CURB**  
N. T. S.

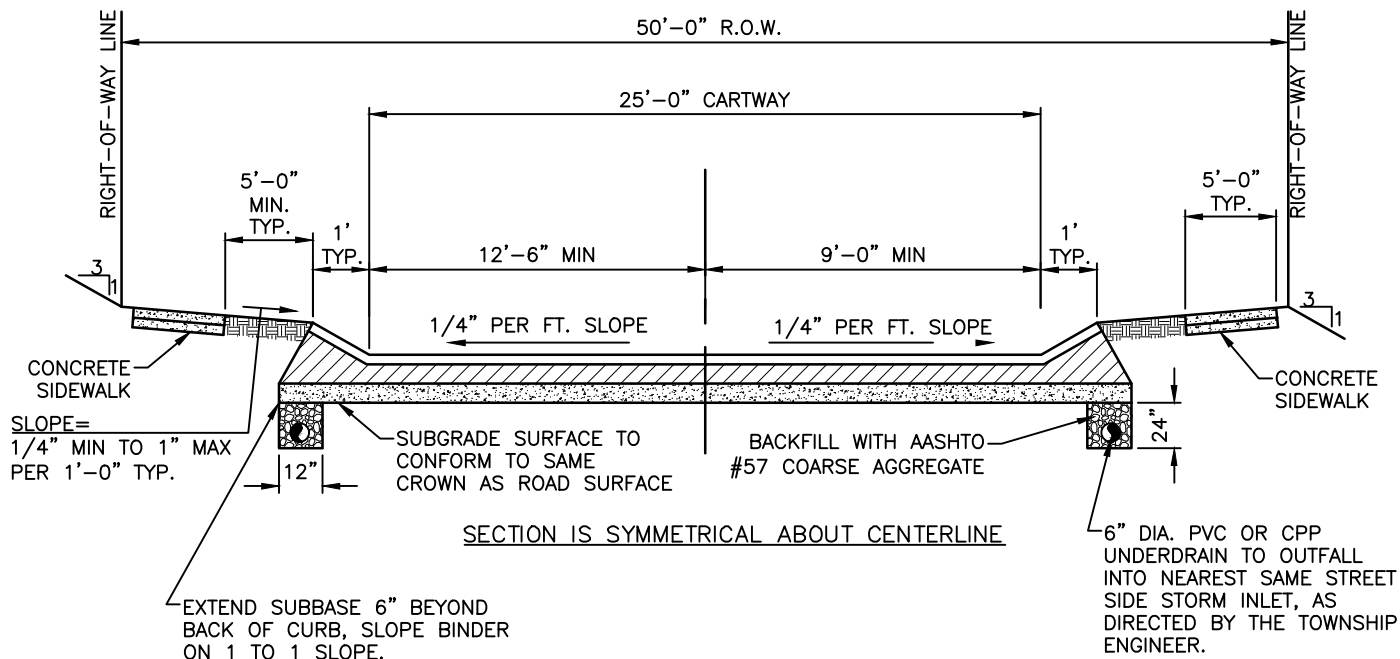
**SOUTH BEAVER TOWNSHIP**  
**Beaver County, Pennsylvania**

805 Blackhawk Road  
Beaver Falls, PA 15010  
Ph:(724)846-9320  
Fax:(724)843-8997

DATE:	October 2021
FILE NAME:	RD-01 Bituminous Wedge Curb.dwg
SCALE:	N.T.S.

**Bituminous Wedge Curb Detail**

RD-01



## COLLECTOR STREET

N. T. S.

PAVEMENT SECTION CONSISTS OF THE FOLLOWING:

- 10" - PENNDOT 2A AGGREGATE LIMESTONE BASE COURSE OR 8" AASHTO #1 CHOKED WITH 2" OF PENNDOT #2A (NO SLAG)
- 5" WMA SUPERPAVE BITUMINOUS BINDER COURSE
- 1" WMA SUPERPAVE BITUMINOUS WEARING COURSE, SRL-H (INITIAL)
- 1 1/2" WMA SUPERPAVE BITUMINOUS WEARING COURSE, SRL-H (FINAL)

### NOTES:

1. ALL DEPTHS INDICATED ARE AFTER COMPACTION.
2. BITUMINOUS WEDGE CURBS SHALL BE 12"x4" WIDE x 6" HIGH.
3. PREPARATION FOR AND INSTALLATION OF THE FINAL 1 1/2" OF WEARING SURFACE, INCLUDING ALL REPAIRS TO PAVEMENT SECTION REQUIRED BY THE TOWNSHIP, SHALL BE INSTALLED AFTER 90% OF THE DWELLINGS ARE COMPLETED AND CONSTRUCTION EQUIPMENT IS NOT USING THE ROADWAY IN CONFORMANCE WITH THE DEVELOPER'S AGREEMENT. THIS WORK ALSO INCLUDES BITUMINOUS LEVELING COURSE TO PROVIDE SMOOTH SURFACE FOR FINAL WEARING SURFACE TO BE INSTALLED. ALL MANHOLE LIDS, GRATES, VALVES SHALL BE ADJUSTED TO GRADE PRIOR TO INSTALLATION OF FINAL 1 1/2" WEARING COURSE.
4. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS SET FORTH IN PENNDOT PUBLICATION 408. ALL CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH BULLETIN 15 AND THE STANDARDS SET FORTH IN PENNDOT PUBLICATIONS 70, 72M, AND 408.
5. LOCATION AND INSTALLATION OF ALL STREET SIGNS (STREET IDENTIFICATION, STOP, SPEED LIMIT, ETC.) SHALL BE IN ACCORDANCE WITH THE CURRENT MUTCD REQUIREMENTS AND AS DIRECTED BY THE TOWNSHIP. DEVELOPER TO PROVIDE A SIGNAGE PLAN FOR REVIEW AND APPROVAL OF TOWNSHIP.
6. SIDEWALK, CROSSWALK, AND CURB RAMP INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT ADA STANDARDS FOR ACCESSIBLE DESIGN.
7. DEVELOPER'S TRAFFIC ENGINEER TO PROVIDE TRAFFIC COUNTS AND ESALs FOR MIX DESIGN WITH SHOP DRAWING SUBMITTAL.
8. R.O.W. AND ROAD WIDTHS SHOWN ARE MINIMUM. ACTUAL R.O.W. ROAD WIDTHS SHALL BE DETERMINED BY A TRAFFIC STUDY AND APPROVAL BY ENGINEER.

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DATE:

October 2021

FILE

NAME:

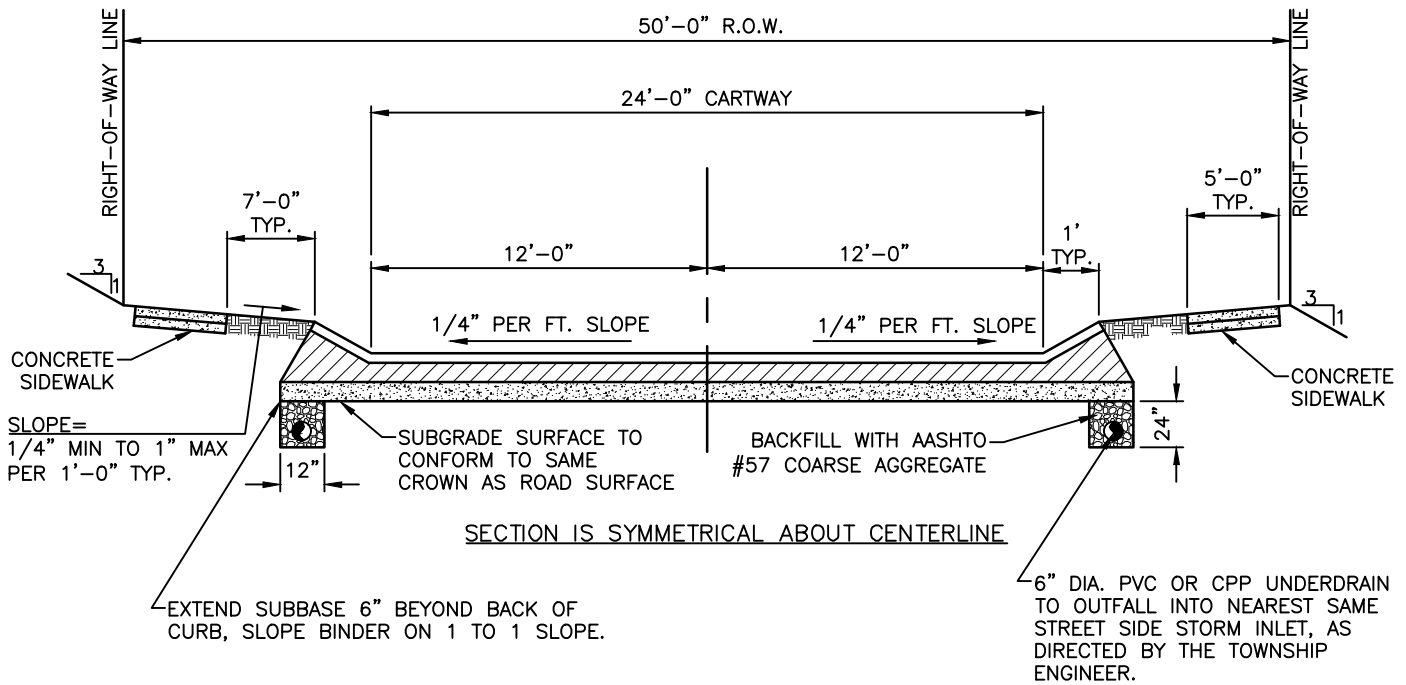
RD-02 Collector Street.dwg

SCALE:

N.T.S.

## Collector Street Detail

RD-02



## LOCAL RESIDENTIAL STREET

N. T. S.

PAVEMENT SECTION CONSISTS OF THE FOLLOWING:

- 8" - PENNDOT 2A AGGREGATE LIMESTONE BASE COURSE  
OR 6" AASHTO #1 CHOKED WITH 2" OF PENNDOT #2A (NO SLAG)
- 3" WMA SUPERPAVE BITUMINOUS BINDER COURSE
- 1" WMA SUPERPAVE BITUMINOUS WEARING COURSE, SRL-H (INITIAL)
- 1 1/2" WMA SUPERPAVE BITUMINOUS WEARING COURSE, SRL-H (FINAL)

### NOTES:

1. ALL DEPTHS INDICATED ARE AFTER COMPACTION.
2. BITUMINOUS WEDGE CURBS SHALL BE 12"x4" WIDE x 6" HIGH
3. PREPARATION FOR AND INSTALLATION OF THE FINAL 1 1/2" OF WEARING SURFACE, INCLUDING ALL REPAIRS TO PAVEMENT SECTION REQUIRED BY THE BOROUGH, SHALL BE INSTALLED AFTER 90% OF THE DWELLINGS ARE COMPLETED AND CONSTRUCTION EQUIPMENT IS NOT USING THE ROADWAY IN CONFORMANCE WITH THE DEVELOPER'S AGREEMENT. THIS WORK ALSO INCLUDES BITUMINOUS LEVELING COURSE TO PROVIDE SMOOTH SURFACE FOR FINAL WEARING SURFACE TO BE INSTALLED. ALL MANHOLE LIDS, GRATES, VALVES SHALL BE ADJUSTED TO GRADE PRIOR TO INSTALLATION OF FINAL 1 1/2" WEARING COURSE.
4. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS SET FORTH IN PENNDOT PUBLICATION 408. ALL CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH BULLETIN 15 AND THE STANDARDS SET FORTH IN PENNDOT PUBLICATIONS 70, 72M, AND 408.
5. LOCATION AND INSTALLATION OF ALL STREET SIGNS (STREET IDENTIFICATION, STOP, SPEED LIMIT, ETC.) SHALL BE IN ACCORDANCE WITH THE CURRENT MUTCD REQUIREMENTS AND AS DIRECTED BY THE TOWNSHIP. DEVELOPER TO PROVIDE A SIGNAGE PLAN FOR REVIEW AND APPROVAL OF TOWNSHIP.
6. SIDEWALK, CROSSWALK, AND CURB RAMP INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT ADA STANDARDS FOR ACCESSIBLE DESIGN.
7. DEVELOPER'S TRAFFIC ENGINEER TO PROVIDE TRAFFIC COUNTS AND ESALs FOR MIX DESIGN WITH SHOP DRAWING SUBMITTAL.

**SOUTH BEAVER TOWNSHIP**  
**Beaver County, Pennsylvania**

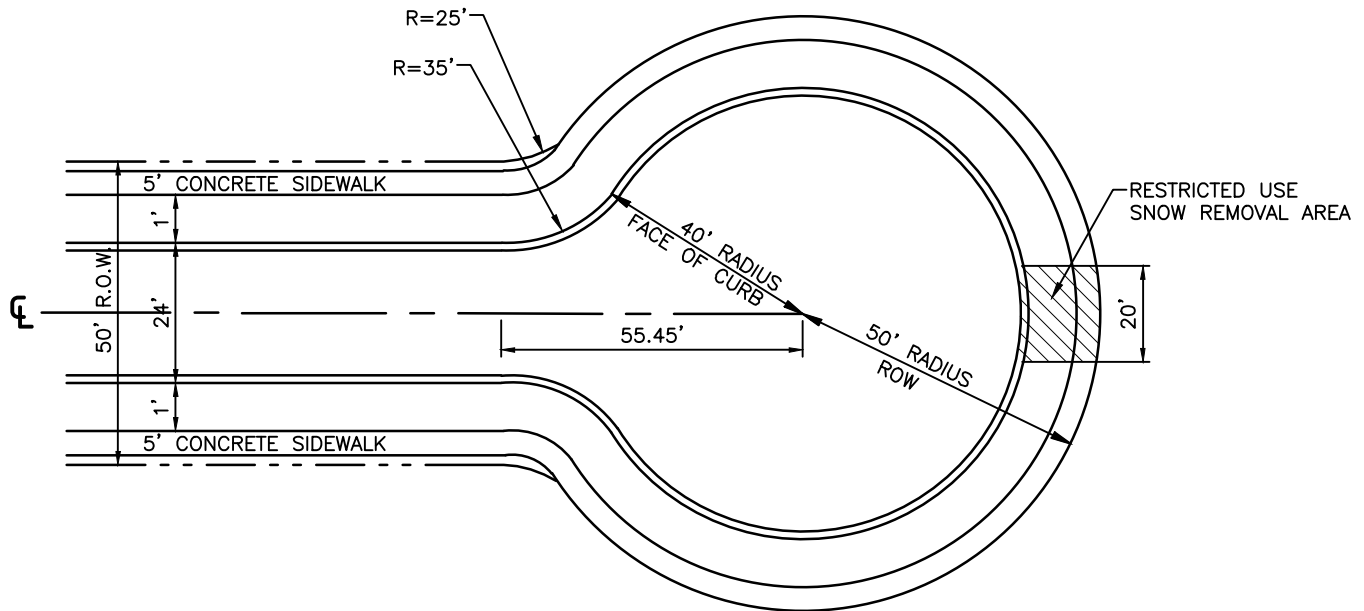
805 Blackhawk Road  
Beaver Falls, PA 15010  
Ph: (724) 846-9320  
Fax: (724) 843-8997

DATE: October 2021  
FILE NAME: RD-03 Local Residential Street.dwg  
SCALE: N.T.S.

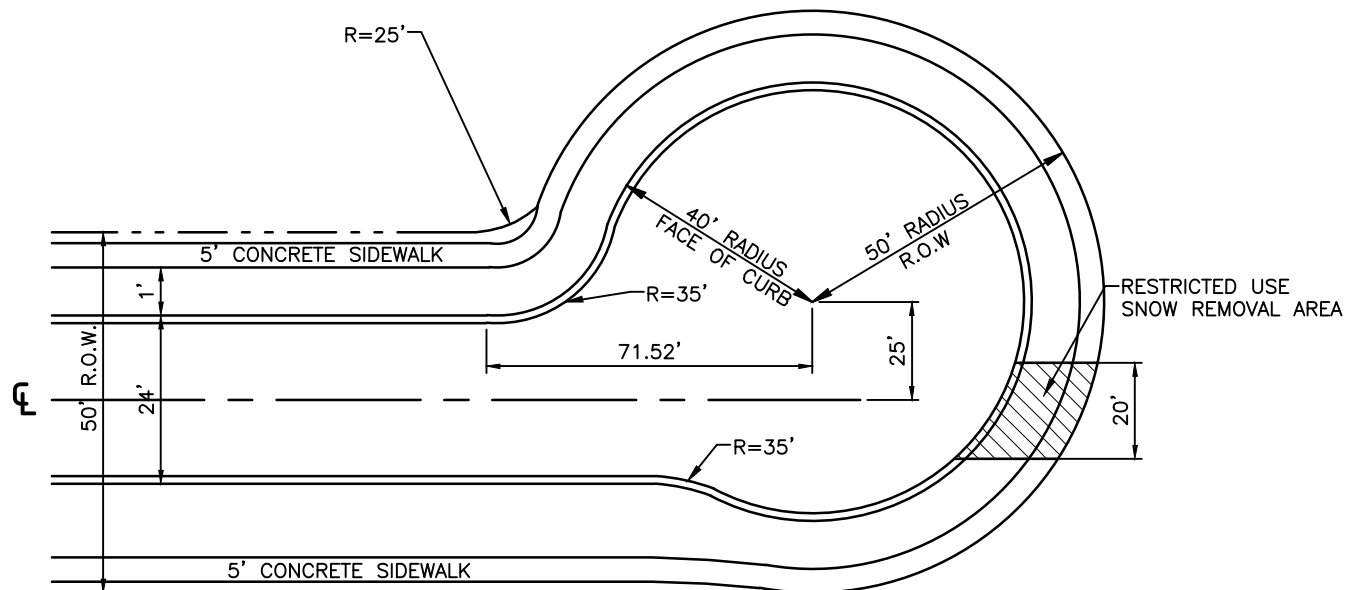
## Local Residential Street Detail

RD-03

# TYPICAL



# OFFSET



## RESIDENTIAL CUL-DE-SAC

N. T. S.

**SOUTH BEAVER TOWNSHIP**  
Beaver County, Pennsylvania

805 Blackhawk Road  
Beaver Falls, PA 15010  
Ph: (724) 846-9320  
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DATE: October 2021

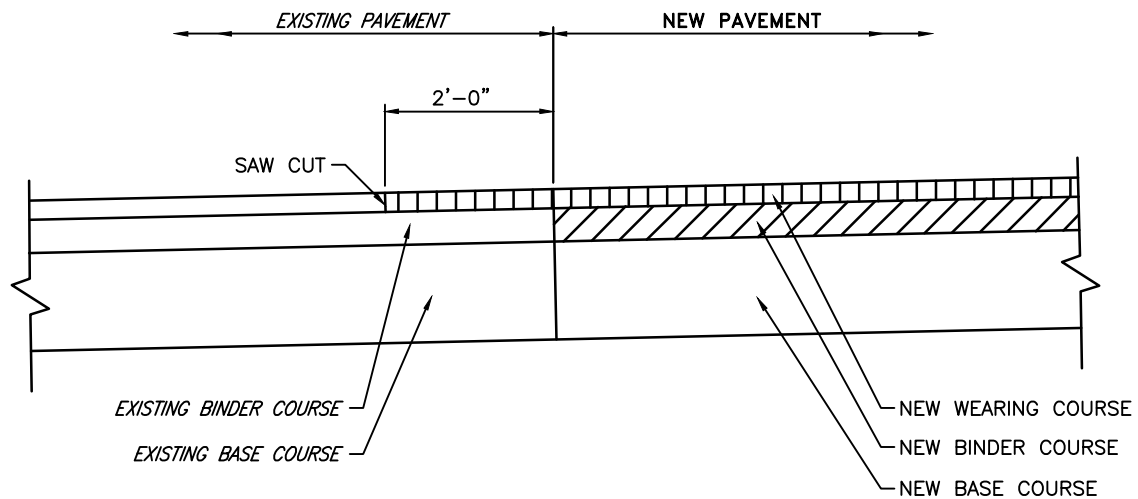
FILE NAME: RD-04 Residential Cul-de-sac.dwg

SCALE: N.T.S.

## Residential Cul-De-Sac Detail

RD-04

N:\PROJ\487\487-15 SALDO\details\Drawg South Beaver\ RD-05 Bituminous Keyway - revise.dwg RD-05 Bituminous Keyway - revise.dwg layout = Bituminous Keyway Username = chrism Date = Sep 30, 2021 - 10:23pm



**TYPICAL  
PAVING KEYWAY**  
N. T. S.

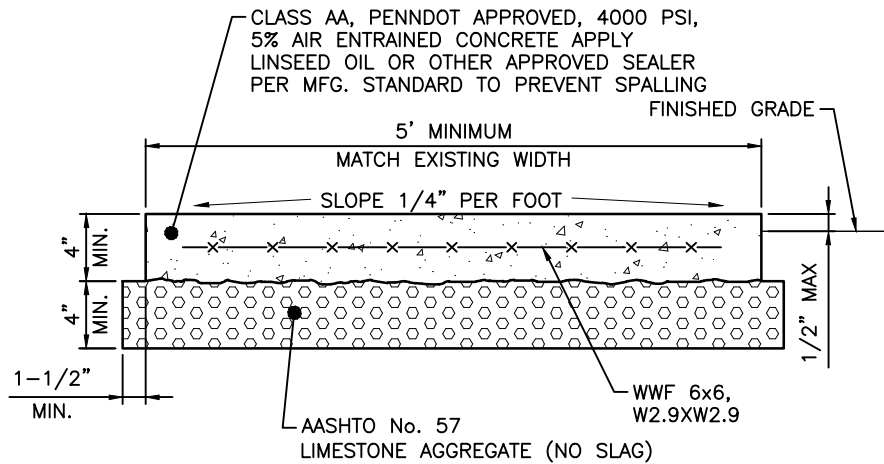
**SOUTH BEAVER TOWNSHIP**  
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Beaver Falls, PA 15010  
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Fax:(724)843-8997

DATE: October 2021  
FILE NAME: RD-05 Bituminous Keyway - revise.dwg  
SCALE: N.T.S.

**Paving Keyway Detail**

RD-05



**NOTES:**

1. WALK SHALL BE CROSS SCORED EVERY FIVE FEET (5'). 1/2" PREFORMED EXPANSION JOINTS EVERY 20 FEET. WALK SHALL HAVE TROWELED EDGES WITH A STIFF BROOM FINISH.
2. IF A DRIVEWAY IS TO BE CONSTRUCTED OVER A SIDEWALK, THE CONCRETE SHALL BE PLACED AT 6" DEPTH.
3. PROVIDE TWO (2) No. 4 DOWELS AT PROPERTY LINES.
4. EXCAVATION, DEMOLITION OF EXISTING WALKWAY (IF ANY) AND SUBBASE ARE INCIDENTAL TO CONCRETE WALK CONSTRUCTION.
5. PROVIDE ADA CURB RAMPS AT ALL INTERSECTIONS.

T Y P I C A L  
**CONCRETE SIDEWALK**  
N. T. S.

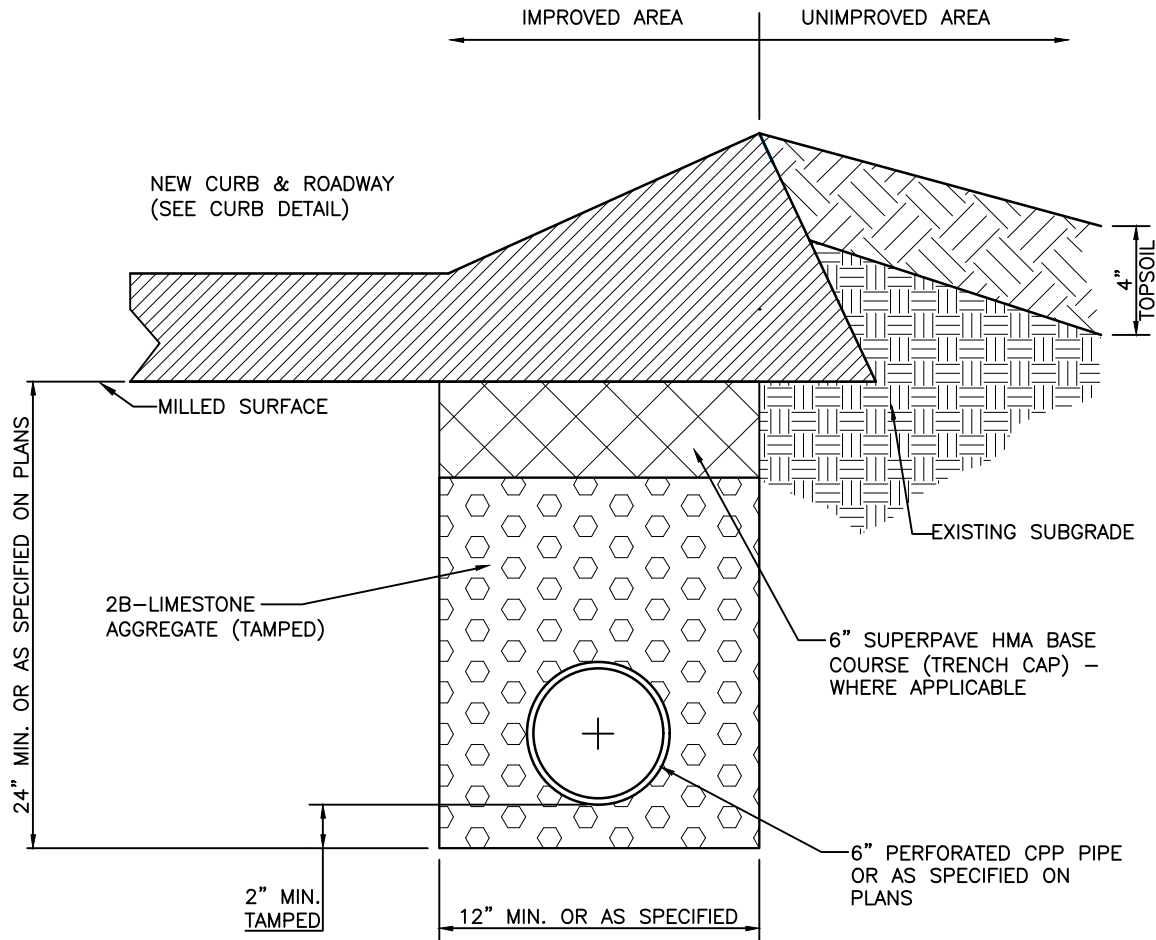
**SOUTH BEAVER TOWNSHIP**  
**Beaver County, Pennsylvania**

805 Blackhawk Road  
Beaver Falls, PA 15010  
Ph: (724) 846-9320  
Fax: (724) 843-8997

DATE: October 2021  
FILE NAME: RD-06 Concrete Sidewalk.dwg  
SCALE: N.T.S.

**Concrete Sidewalk Detail**

RD-06



**NOTES:**

1. MATERIALS AND CONSTRUCTION SHALL CONFORM WITH THE REQUIREMENTS OF PENNDOT FORM 408, SECTIONS 610 AND 615.

**PAVEMENT BASE DRAIN**

N. T. S.

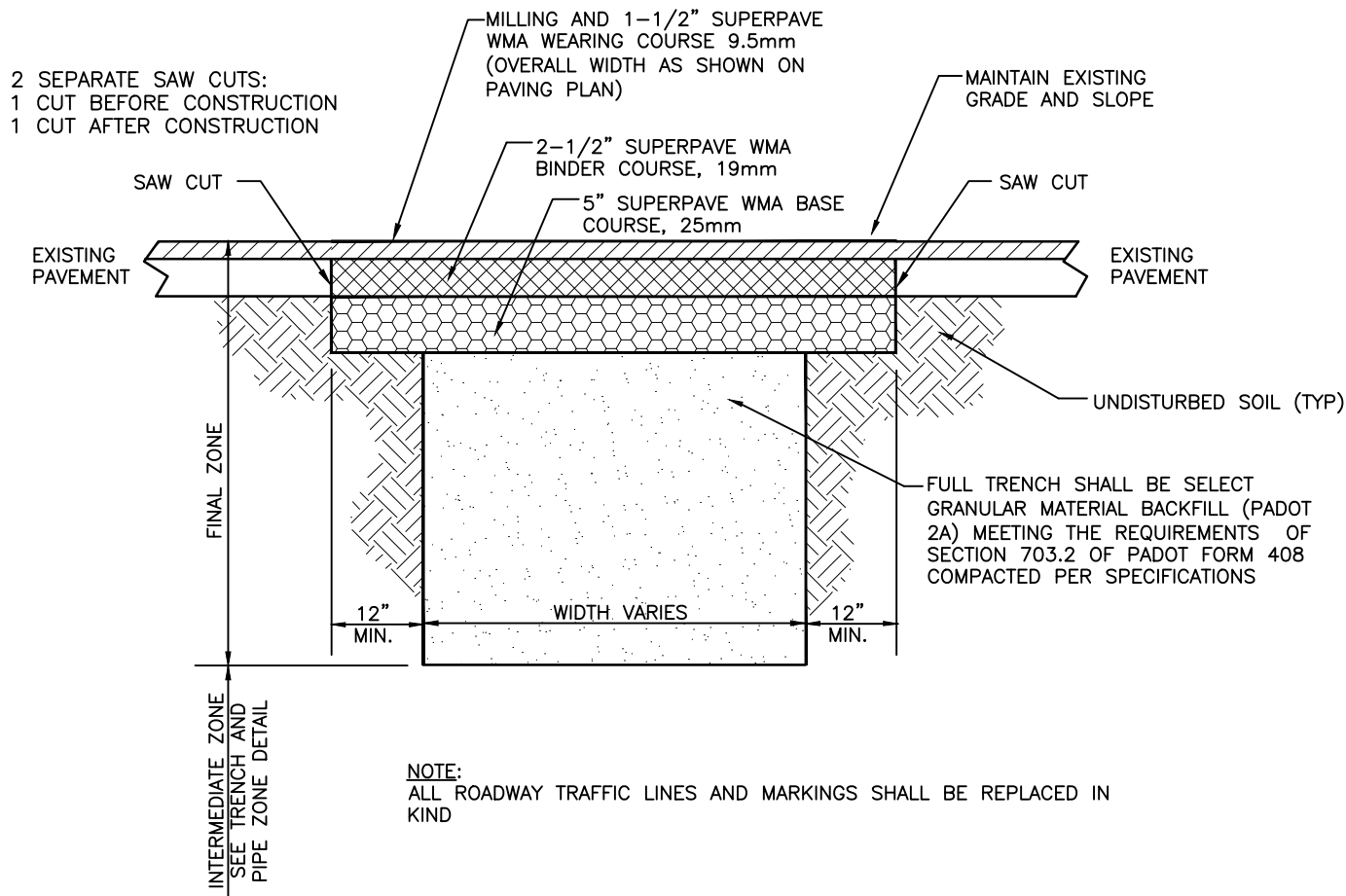
**SOUTH BEAVER TOWNSHIP**  
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805 Blackhawk Road  
Beaver Falls, PA 15010  
Ph:(724)846-9320  
Fax:(724)843-8997

DATE: October 2021  
FILE NAME: RD-07 Pavement Base Drain.dwg  
SCALE: N.T.S.

**Pavement Base Drain Detail**

RD-07



## BITUMINOUS PAVEMENT TRENCH RESTORATION

N. T. S.

**SOUTH BEAVER TOWNSHIP**  
Beaver County, Pennsylvania

805 Blackhawk Road  
Beaver Falls, PA 15010  
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DATE:  
October 2021

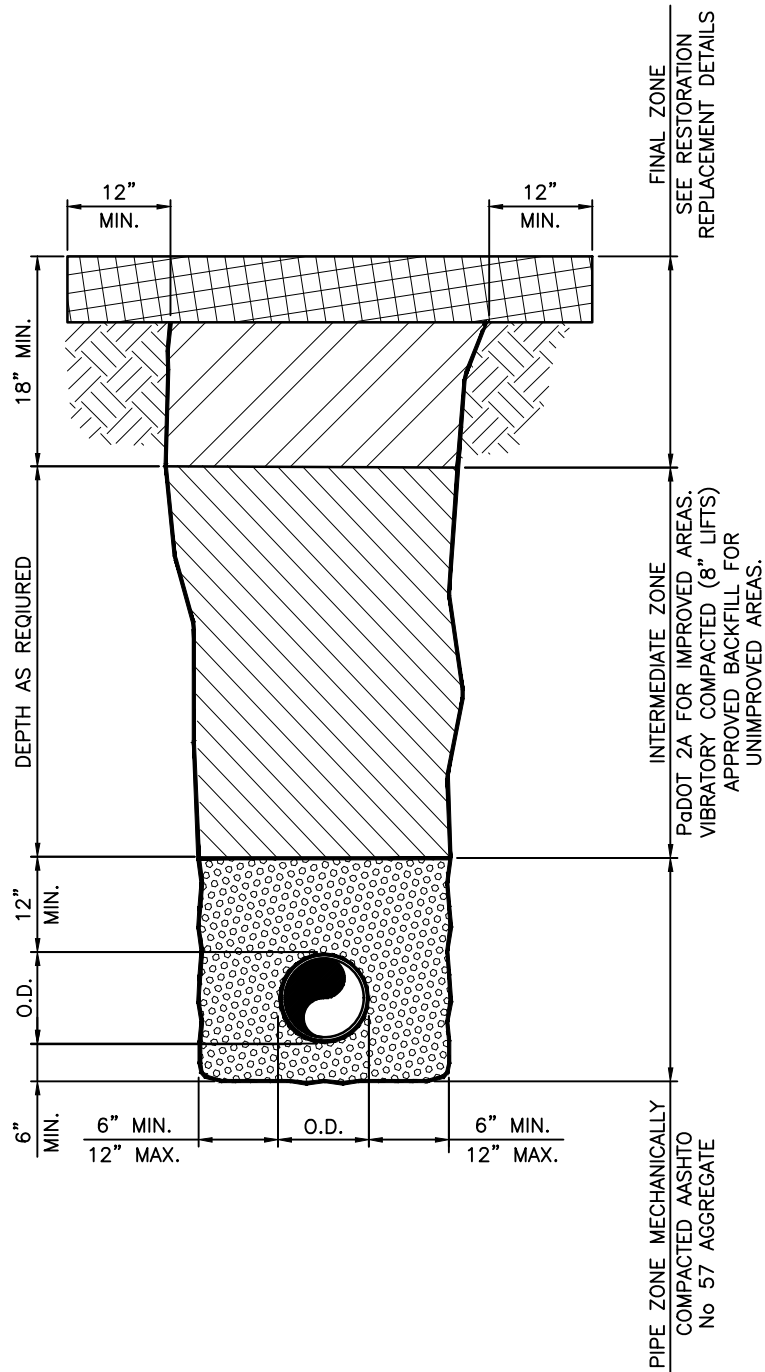
FILE  
NAME:  
RD-08 Bituminous Pavement Trench Restoration.dwg

SCALE:  
N.T.S.

## **Bituminous Pavement Trench Restoration Detail**

RD-08





# **STORM SEWER TRENCH DETAIL-WITHN R.O.W.** N. T. S.

**SOUTH BEAVER TOWNSHIP**  
Beaver County, Pennsylvania

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Fax:(724)843-8997

DATE: October 2021  
FILE NAME: SS-01 Typ Trench and Pipe Zones.dwg  
SCALE: N.T.S.

**Storm Sewer Trench Detail-Within R.O.W.**

SS-01



TABLE A  
2:1 EMBANKMENT SLOPES

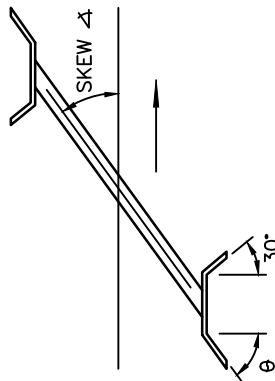
PIPE DIA.	SKEW Δ=90° TO 60° θ = 30°			SKEW Δ=55° θ = 35°			SKEW Δ=50° θ = 40°			SKEW Δ=45° θ = 45°			SKEW Δ=40° θ = 50°			SKEW Δ=30° θ = 60°			SKEW Δ=20° θ = 70°			SKEW Δ=10° θ = 80°			X	
d (in)	L (ft)	ℓ (ft)	W <sub>1</sub> (ft)	L (ft)	ℓ (ft)	W <sub>1</sub> (ft)	L (ft)	ℓ (ft)	W <sub>1</sub> (ft)	L (ft)	ℓ (ft)	W <sub>1</sub> (ft)	L (ft)	ℓ (ft)	W <sub>1</sub> (ft)	L (ft)	ℓ (ft)	W <sub>1</sub> (ft)	L (ft)	ℓ (ft)	W <sub>1</sub> (ft)	L (ft)	ℓ (ft)	W <sub>1</sub> (ft)	W <sub>2</sub> (ft)	A (in)
18	3.6	0	3.0	4.8	0.33	2.5	4.9	0.5	2.6	5.1	0.67	2.9	5.8	0.75	3.1	6.3	1.33	4.0	7.4	1.75	5.8	13.9	5.0	11.2	2.3	12
24	5.2	0	3.8	5.4	0.33	3.7	5.6	0.5	3.9	5.8	0.67	4.3	6.2	0.75	4.7	7.3	1.33	6.0	9.9	1.75	8.7	16.8	5.0	17.1	3.5	12
36	5.8	0	4.6	6.0	0.33	4.9	6.2	0.5	5.2	6.5	0.67	5.7	7.0	0.75	6.2	8.3	1.33	8.0	11.1	1.75	11.7	19.6	5.0	23.0	4.6	12
42	6.3	0	5.8	6.6	0.33	6.1	6.9	0.5	6.5	7.3	0.67	7.1	7.8	0.75	7.8	9.3	1.33	10.0	12.5	1.75	14.6	22.5	5.0	28.8	5.8	12
48	6.9	0	6.9	7.2	0.33	7.3	7.5	0.5	7.8	8.0	0.67	8.5	8.5	0.75	9.4	10.3	1.33	12.0	14.0	1.75	17.5	25.3	5.0	34.6	6.9	12
54	7.5	0	8.0	7.8	0.33	8.5	8.2	0.5	9.1	8.7	0.67	9.9	9.3	0.75	10.9	11.3	1.33	14.0	15.5	1.75	20.5	28.2	5.0	40.3	8.0	12
60	8.1	0	9.2	8.4	0.33	9.8	8.8	0.5	10.4	9.4	0.67	11.3	10.1	0.75	12.5	12.3	1.33	16.0	16.9	1.75	23.4	31.1	5.0	46.0	9.2	15
72	9.2	0	11.5	9.6	0.33	12.2	10.1	0.5	13.0	10.8	0.67	14.1	11.7	0.75	15.6	14.3	1.33	20.0	19.8	1.75	29.2	36.9	5.0	57.6	11.5	15

$$SD = \frac{d}{\cos \theta} = \frac{d}{\sin \text{SKEW } \Delta}$$

$$L = SD + 2.3'$$

$$W_1 = \frac{2d-2'}{\cos \theta} \text{ (FOR 2:1 SLOPE)}$$

$$W_1 = \frac{X}{\cos \theta} \left( d - 0.5 - \frac{1.0}{X} \right) \text{ (FOR VARIABLE SLOPE WHEN X EQUALS HORIZONTAL DIMENSION OF THE SLOPE DESIGNATION)}$$



NOTES:

1. CONSTRUCT ENDWALL IN ACCORDANCE WITH THE REQUIREMENTS OF PENNDOT PUBLICATION 408, SECTION 605, FOR CAST-IN-PLACE UNITS AND SECTION 714 FOR PRECAST CEMENT CONCRETE UNITS.
2. FURNISH AND INSTALL ENDWALLS IN ACCORDANCE WITH PENNDOT PUBLICATION 72M STANDARDS FOR ROADWAY CONSTRUCTION, LATEST EDITION -- RC-31M.
3. ONLY PRECAST ENDWALLS SUPPLIED BY MANUFACTURER LISTED IN PENNDOT BULLETIN 15 WILL BE PERMITTED.
4. USE CLASS A CEMENT CONCRETE OR BETTER.
5. CHAMFER EXPOSED EDGES ONE INCH.
6. FOOTINGS SHALL BE DOWELED TO TOP.
7. SEE TABLE A BELOW FOR DIMENSIONS NOT INDICATED.

## TYPE 'DW' ENDWALL

N. T. S.

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Beaver County, Pennsylvania

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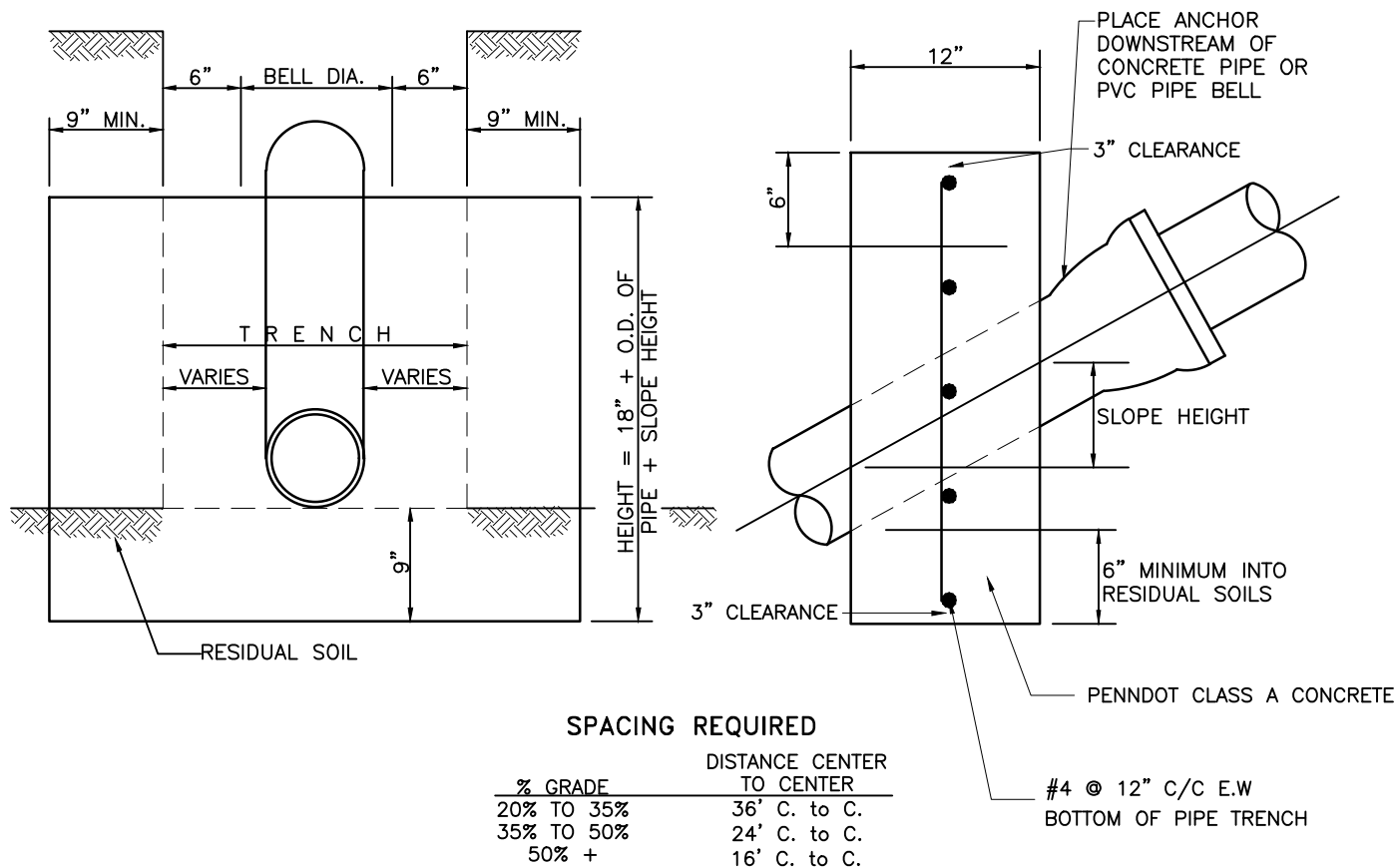
DATE:  
October 2021

FILE NAME:  
SS-02 Type DW Endwall.dwg

SCALE:  
N.T.S.

'DW' Endwall/Headwall Detail

SS-02A



## CONCRETE ANCHOR

N. T. S.

**SOUTH BEAVER TOWNSHIP**  
Beaver County, Pennsylvania

805 Blackhawk Road  
Beaver Falls, PA 15010  
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Fax: (724) 843-8997

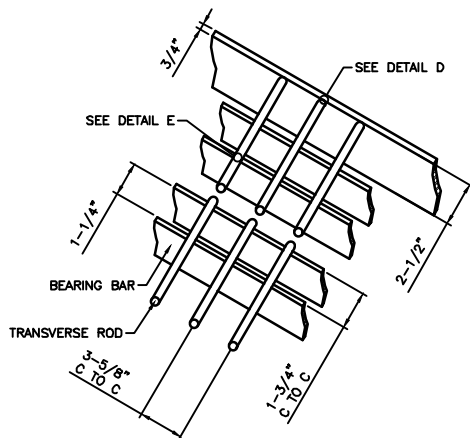
DATE: October 2021

FILE NAME: SS-03 Concrete Anchor.dwg

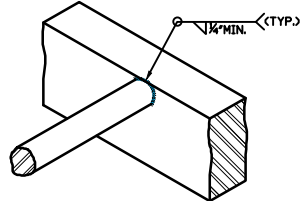
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## Concrete Anchor Detail

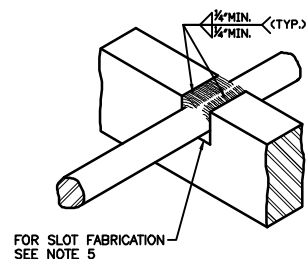
SS-03



BAR AND ROD SPACING DETAIL

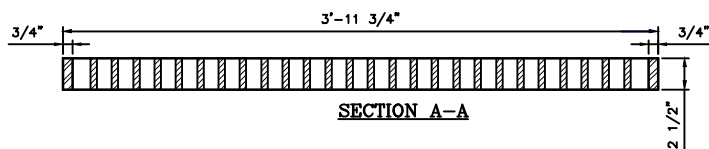


DETAIL D



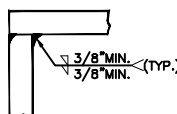
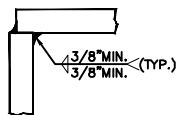
FOR SLOT FABRICATION  
SEE NOTE 5

DETAIL E

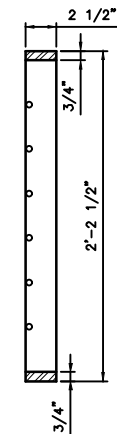
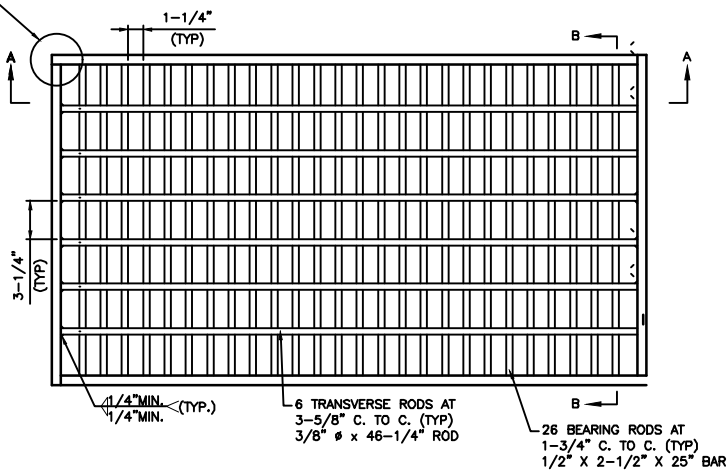


SECTION A-A

SEE TYPICAL CORNER  
DETAILS, THIS SHEET.



TYPICAL CORNER DETAILS



SECTION B-B

**STRUCTURAL STEEL GRATE - BICYCLE SAFE**

N. T. S.

**SOUTH BEAVER TOWNSHIP**  
Beaver County, Pennsylvania

805 Blackhawk Road  
Beaver Falls, PA 15010  
Ph: (724) 846-9320  
Fax: (724) 843-8997

DATE: October 2021  
FILE NAME: SS-04 Structural Steel Grate Bicycle Safe.dwg  
SCALE: N.T.S.

**Structural Steel Bicycle Safe Grate Detail**

SS-04

\\192.168.10.13\N-share\PROJ\487\487-15 SALDO\details\Draw South Beaver\SS-04 Structural Steel Grate Bicycle Safe.dwg    SS-04 Structural Steel Grate Bicycle Safe.dwg    Layout = Struc Steel Grate Bicycle Safe.dwg    User name = cad03    Date = Oct 02, 2021 - 8:16am

**GENERAL NOTES**

- 1. THIS SHEET DEPICTS THE DIMENSIONS REQUIRED FOR UNIFORMITY AND INTERCHANGEABILITY. IT DOES NOT INCLUDE DETAILS REQUIRED FOR FABRICATION OR MANUFACTURING. ONLY GRATES SUPPLIED BY A MANUFACTURER LISTED IN BULLETIN 15 SHALL BE PERMITTED. FOR A BULLETIN 15 LISTING, SUBMIT A 22" X 36" REPRODUCIBLE SHOP DRAWING TO THE BUREAU OF CONSTRUCTION AND MATERIALS, MATERIALS AND TESTING DIVISION FOR REVIEW AND APPROVAL.
- 2. WELD STRUCTURAL STEEL GRATES IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 1105.03 (R).
- 3. PROVIDE TRANSVERSE BARS, MEETING THE REQUIREMENT OF PUBLICATION 408.
- 4. PROVIDE BICYCLE-SAFE, STRUCTURAL STEEL OR CAST IRON VANE GRATES FOR INSTALLATION ONLY WHERE BICYCLE TRAFFIC IS ANTICIPATED, SUCH AS CURBED ROADWAYS IN URBAN AREAS OR ROADWAYS SPECIFICALLY ESTABLISHED AND SIGNED AS BIKEWAYS OR BIKE LANES. ALTERNATE BICYCLE-SAFE GRATE DESIGNS SHALL REQUIRE A SHOP DRAWING SUBMISSION, AS SPECIFIED IN NOTE 1, AND SHALL CONFORM TO THE DIMENSIONAL REQUIREMENTS FOR PROPER INSTALLATION WITH THE CURRENT CONCRETE TOP UNITS.
- 5. FABRICATE SLOTS BY BURNING, DRILLING, SHEARING OR PUNCHING. HAVE THE BOTTOM OF ALL BURNED OR DRILLED SLOTS CONFORM TO THE SHAPE OF THE ROD.
- 6. PROVIDE STRUCTURAL STEEL GRATES WITH THE GRATE SPACERS LOCATED FLUSH ALONG THE TOP SURFACE OF THE GRATE.
- 7. DO NOT USE CAST IRON GRATES WITHIN THE TRAVEL LANES. THESE GRATES ARE PERMITTED AT THE EDGE OF OUTSIDE SHOULDERS, SWALES, WIDE MEDIAN SWALES AND INFIELD AREAS THAT ARE OUTSIDE THE TRAVEL LANES OR CURB TO CURB ROADWAYS.

**SOUTH BEAVER TOWNSHIP**  
**Beaver County, Pennsylvania**

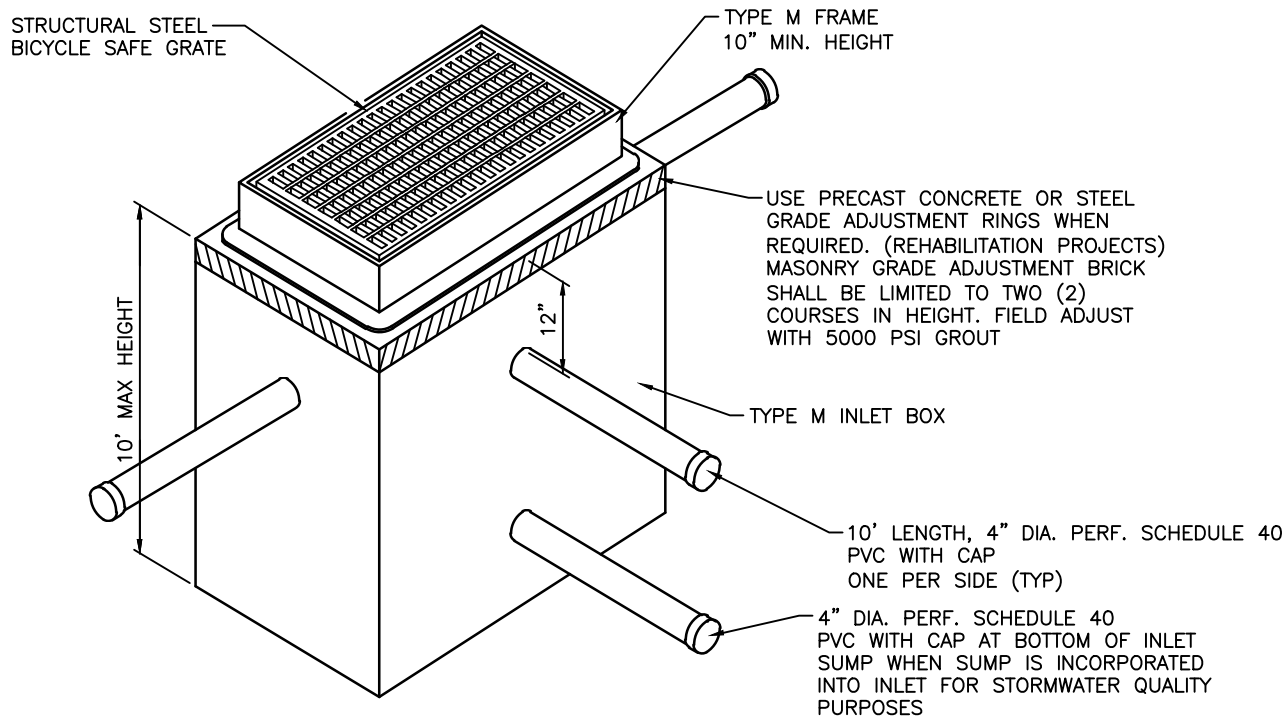
805 Blackhawk Road  
Beaver Falls, PA 15010  
Ph:(724)846-9320  
Fax:(724)843-8997

DATE:	October 2021
FILE NAME:	SS-04 Structural Steel Grate Bicycle Safe.dwg
SCALE:	N.T.S.

**Structural Steel Bicycle Safe Grate Detail**

SS-04A

N:\PROJ\487\487-15 SALDO\details\Drawg South Beaver\ SS-05 Type M Inlet.dwg SS-05 Type M Inlet.dwg layout = Type M Inlet Username = chrism Date = Sep 30, 2021 -- 11:25pm



## TYPE 'M' INLET

N. T. S.

**SOUTH BEAVER TOWNSHIP**  
Beaver County, Pennsylvania

805 Blackhawk Road  
Beaver Falls, PA 15010  
Ph: (724) 846-9320  
Fax: (724) 843-8997

DATE:	October 2021
FILE NAME:	SS-05 Type M Inlet.dwg
SCALE:	N.T.S.

## Type 'M' Inlet Detail

SS-05

N:\PROJ\487\487-15 SALDO\details\Drawg South Beaver\ SS-05 Type M Inlet.dwg layout = Type M Inlet A Username = chrism Date = Sep 30, 2021 11:28pm

INLET BOX NOTES:

1. CONSTRUCT INLET BOX IN ACCORDANCE WITH THE REQUIREMENTS OF PENNDOT PUBLICATION 408, SECTION 605, FOR CAST-IN-PLACE UNITS AND SECTION 714 FOR PRECAST CEMENT CONCRETE UNITS.
2. FURNISH AND INSTALL INLET BOXES, CONNECTIONS, JOINTS, STEPS, AND OTHER APPURTENANCES AND DETAILS IN ACCORDANCE WITH PENNDOT PUBLICATION 72M STANDARDS FOR ROADWAY CONSTRUCTION, LATEST EDITION – RC-46M, INLET BOX WITH TYPE M FRAME. PROVIDE INLET TYPE OF SMALLEST DIMENSION TO ACCOMMODATE CONNECTED PIPE OPENINGS IN ACCORDANCE WITH THIS PUBLICATION.
3. ONLY PRECAST INLET BOXES SUPPLIED BY A MANUFACTURER LISTED IN PENNDOT BULLETIN 15 WILL BE PERMITTED.
4. INLETS THAT EXCEED THE MAXIMUM HEIGHT, AS SHOWN, ARE NOT PERMITTED WITHOUT APPROVAL BY THE MUNICIPALITY. A SPECIFIC DESIGN WILL BE REQUIRED FOR REVIEW AND APPROVAL.
5. DO NOT EXTEND PIPE BLOCK-OUTS INTO THE BASE WHEN BASE IS NOT MONOLITHIC WITH THE INLET WALLS.
6. LOCATE PIPE OR PIPES, AS REQUIRED, WITH THE INLET BOTTOM SHAPED TO CHANNEL THE FLOW TOWARD THE OUTLET PIPE.
7. BRICK OR CONCRETE BLOCK INLETS SHALL NOT BE PERMITTED.
8. STORM SEWER DROP CONNECTIONS FROM INVERT OF OUTFLOW PIPE TO INVERT OF INFLOW PIPES SHALL BE A MAXIMUM OF 2 FT.

TYPE M FRAME NOTES:

1. FURNISH AND INSTALL CAST IRON OR STRUCTURAL STEEL TYPE M FRAMES IN ACCORDANCE WITH THE REQUIREMENTS OF PENNDOT PUBLICATION 72M STANDARDS FOR ROADWAY CONSTRUCTION, LATEST EDITION – RC-45M, TYPE M FRAME, EXCEPT THAT THE FRAME MUST HAVE A MINIMUM 10" HEIGHT.
2. ONLY FRAMES SUPPLIED BY A MANUFACTURER LISTED IN PENNDOT BULLETIN 15 WILL BE PERMITTED.
3. CONCRETE FRAMES ARE PERMITTED ONLY OUTSIDE OF PAVED AREAS. PROVIDE CONCRETE FRAMES PER PENNDOT PUBLICATION 72M, RC-45M.

INLET GRATE NOTES:

1. FURNISH AND INSTALL STRUCTURAL STEEL BICYCLE SAFE INLET GRATES IN ACCORDANCE WITH THE REQUIREMENTS OF PENNDOT PUBLICATION 72M STANDARDS FOR ROADWAY CONSTRUCTION, LATEST EDITION – RC-45M, STRUCTURAL STEEL GRATE BICYCLE SAFE.
2. VANE GRATES MAY BE USED ONLY WITH PERMISSION FROM THE MUNICIPALITY. VANE GRATES (IF PERMITTED) MUST BE TYPE "L" ONLY (BICYCLE SAFE). IF PERMISSION TO USE VANE GRATES IS GRANTED BY THE MUNICIPALITY, FURNISH AND INSTALL VANE GRATES IN ACCORDANCE WITH THE REQUIREMENTS OF PENNDOT PUBLICATION 72M STANDARDS FOR ROADWAY CONSTRUCTION, LATEST EDITION – RC-45M, CAST IRON VANE GRATE.
3. CAST IRON GRATES MAY BE USED ONLY WITH PERMISSION FROM THE MUNICIPALITY. DO NOT USE CAST IRON GRATES WITHIN THE TRAVEL LANES. IF THESE GRATES ARE PERMITTED BY THE MUNICIPALITY, THEY MUST BE LOCATED AT THE EDGE OF OUTSIDE SHOULDERS, SWALES, WIDE MEDIAN SWALES AND INFIELD AREAS THAT ARE OUTSIDE THE TRAVEL LANES OR CURB TO CURB ROADWAYS.
4. ONLY GRATES SUPPLIED BY A MANUFACTURER LISTED IN PENNDOT BULLETIN 15 WILL BE PERMITTED.

**TYPE 'M' INLET**  
N. T. S.

**SOUTH BEAVER TOWNSHIP**  
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DATE:	October 2021
FILE NAME:	SS-05 Type M Inlet.dwg
SCALE:	N.T.S.

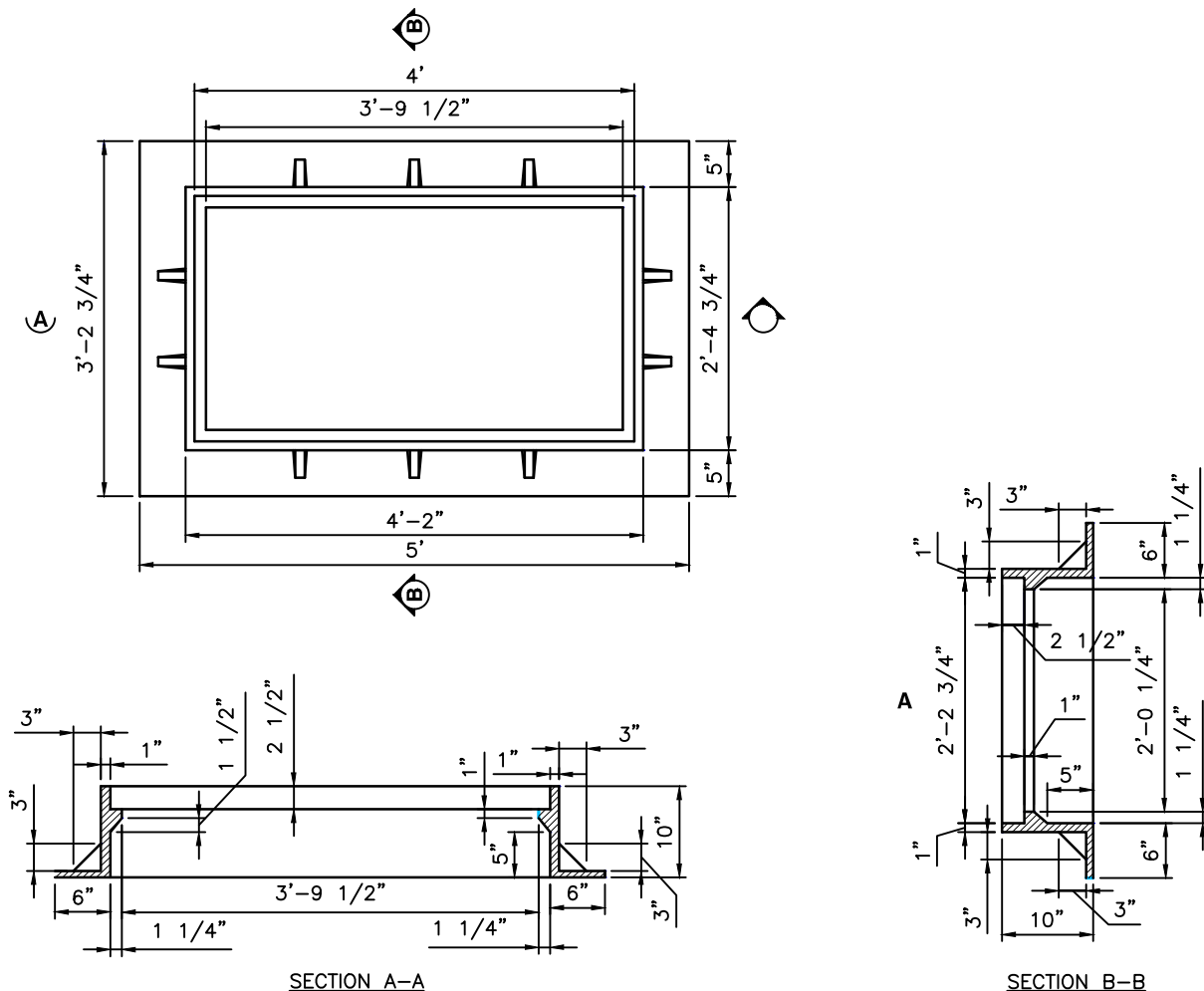
**Type 'M' Inlet Detail**

SS-05A



**NOTES:**

1. THIS STANDARD DEPICTS THE DIMENSIONS REQUIRED FOR UNIFORMITY AND INTERCHANGEABILITY. IT DOES NOT INCLUDE DETAILS REQUIRED FOR FABRICATION AND MANUFACTURING. ONLY ITEMS SUPPLIED BY A MANUFACTURER LISTED IN BULLETIN 15 WILL BE PERMITTED.
2. PROVIDE EITHER GRAY, MALLEABLE OR DUCTILE IRON CASTINGS OR STRUCTURAL STEEL FRAMES.
3. WELD STRUCTURAL STEEL GRATES IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 1105.03(r). WELDING SHOPS ARE NOT REQUIRED TO BE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) CERTIFIED.
4. FURNISH AND INSTALL FRAMES IN ACCORDANCE WITH THE REQUIREMENTS OF PennDOT PUBLICATION 72M STANDARDS FOR ROADWAY CONSTRUCTION, LATEST EDITION – RC-45M.
5. CONCRETE FRAMES ARE NOT PERMITTED.
6. SOURCE: PA DOT STANDARDS FOR ROADWAY CONSTRUCTION (LATEST EDITION).



**TYPE 'M' INLET FRAME - 10" HEIGHT**

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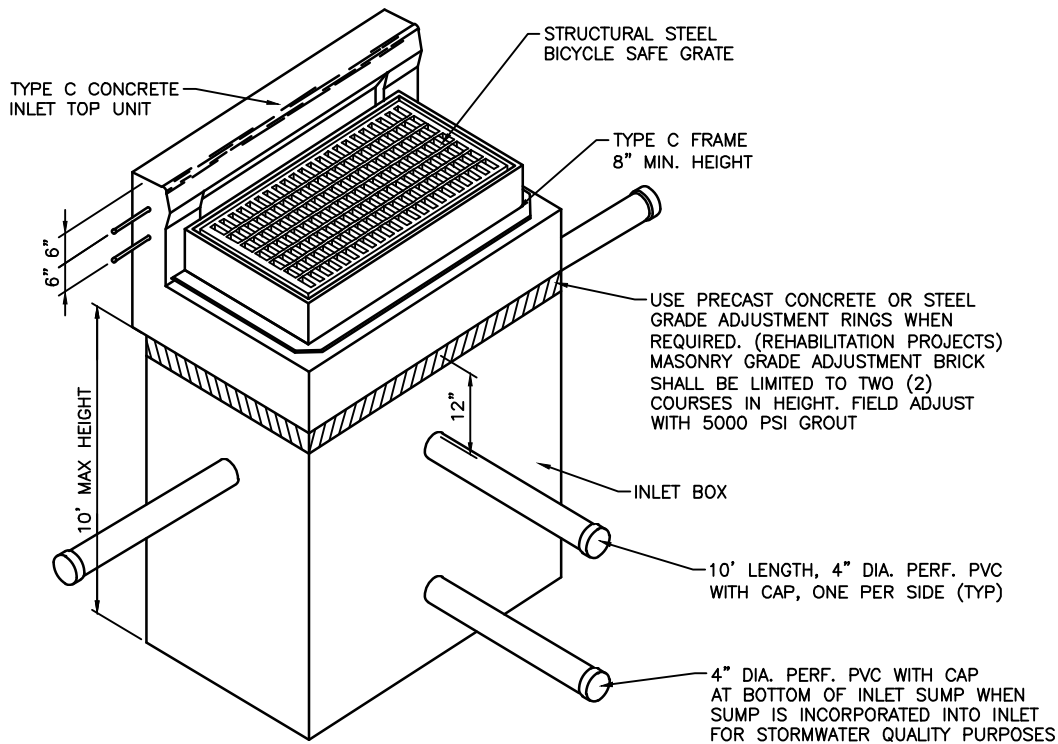
DATE: October 2021

FILE NAME: SS-05B Type 'M' Inlet Frame 10 inch Ht.dwg

SCALE: N.T.S.

**Type 'M' Inlet Frame Detail**

SS-05B



#### INLET BOX NOTES:

1. CONSTRUCT INLET BOX IN ACCORDANCE WITH THE REQUIREMENTS OF PENNDOT PUBLICATION 408, SECTION 605, FOR CAST-IN-PLACE UNITS AND SECTION 714 FOR PRECAST CEMENT CONCRETE UNITS.
2. FURNISH AND INSTALL INLET BOXES, CONNECTIONS, JOINTS, STEPS, AND OTHER APPURTENANCES AND DETAILS IN ACCORDANCE WITH PENNDOT PUBLICATION 72M STANDARDS FOR ROADWAY CONSTRUCTION, LATEST EDITION - RC-46M, INLET BOX WITH CONCRETE TOP UNIT - TYPE C ALTERNATE WITH TYPE C FRAME. PROVIDE INLET TYPE OF SMALLEST DIMENSION TO ACCOMMODATE CONNECTED PIPE OPENINGS IN ACCORDANCE WITH THIS PUBLICATION.
3. ONLY PRECAST INLET BOXES SUPPLIED BY A MANUFACTURER LISTED IN PENNDOT BULLETIN 15 WILL BE PERMITTED.
4. INLETS THAT EXCEED THE MAXIMUM HEIGHT, AS SHOWN, ARE NOT PERMITTED WITHOUT APPROVAL BY THE TOWNSHIP. A SPECIFIC DESIGN WILL BE REQUIRED FOR REVIEW AND APPROVAL.
5. DO NOT EXTEND PIPE BLOCK-OUTS INTO THE BASE WHEN BASE IS NOT MONOLITHIC WITH THE INLET WALLS.
6. LOCATE PIPE OR PIPES, AS REQUIRED, WITH THE INLET BOTTOM SHAPED TO CHANNEL THE FLOW TOWARD THE OUTLET PIPE.
7. BRICK OR CONCRETE BLOCK INLETS SHALL NOT BE PERMITTED.
8. STORM SEWER DROP CONNECTIONS FROM INVERT OF OUTFLOW PIPE TO INVERT OF INFLOW PIPES SHALL BE A MAXIMUM OF 2 FT.

#### TYPE C FRAME NOTES:

1. FURNISH AND INSTALL TYPE C ALTERNATE CONCRETE TOP UNIT AND CAST IRON OR STRUCTURAL STEEL TYPE C FRAMES IN ACCORDANCE WITH THE REQUIREMENTS OF PENNDOT PUBLICATION 72M STANDARDS FOR ROADWAY CONSTRUCTION, LATEST EDITION - RC-45M.
2. ONLY TOP UNITS AND FRAMES SUPPLIED BY A MANUFACTURER LISTED IN PENNDOT BULLETIN 15 WILL BE PERMITTED.

#### INLET GRATE NOTES:

1. FURNISH AND INSTALL STRUCTURAL STEEL BICYCLE SAFE INLET GRATES IN ACCORDANCE WITH THE REQUIREMENTS OF PENNDOT PUBLICATION 72M STANDARDS FOR ROADWAY CONSTRUCTION, LATEST EDITION - RC-45M, STRUCTURAL STEEL GRATE BICYCLE SAFE.
2. VANE GRATES MAY BE USED ONLY WITH PERMISSION FROM THE TOWNSHIP. IF PERMISSION TO USE VANE GRATES IS GRANTED BY THE TOWNSHIP, FURNISH AND INSTALL VANE GRATES IN ACCORDANCE WITH THE REQUIREMENTS OF PENNDOT PUBLICATION 72M STANDARDS FOR ROADWAY CONSTRUCTION, LATEST EDITION - RC-45M, CAST IRON VANE GRATE.
3. CAST IRON GRATES MAY BE USED ONLY WITH PERMISSION FROM THE TOWNSHIP. DO NOT USE CAST IRON GRATES WITHIN THE TRAVEL LANES. IF THESE GRATES ARE PERMITTED BY THE TOWNSHIP, THEY MUST BE LOCATED AT THE EDGE OF OUTSIDE SHOULDERS, SWALES, WIDE MEDIAN SWALES AND INFILTRATION AREAS THAT ARE OUTSIDE THE TRAVEL LANES OR CURB TO CURB ROADWAYS.
4. ONLY GRATES SUPPLIED BY A MANUFACTURER LISTED IN PENNDOT BULLETIN 15 WILL BE PERMITTED.

## TYPE 'C' INLET

N. T. S.

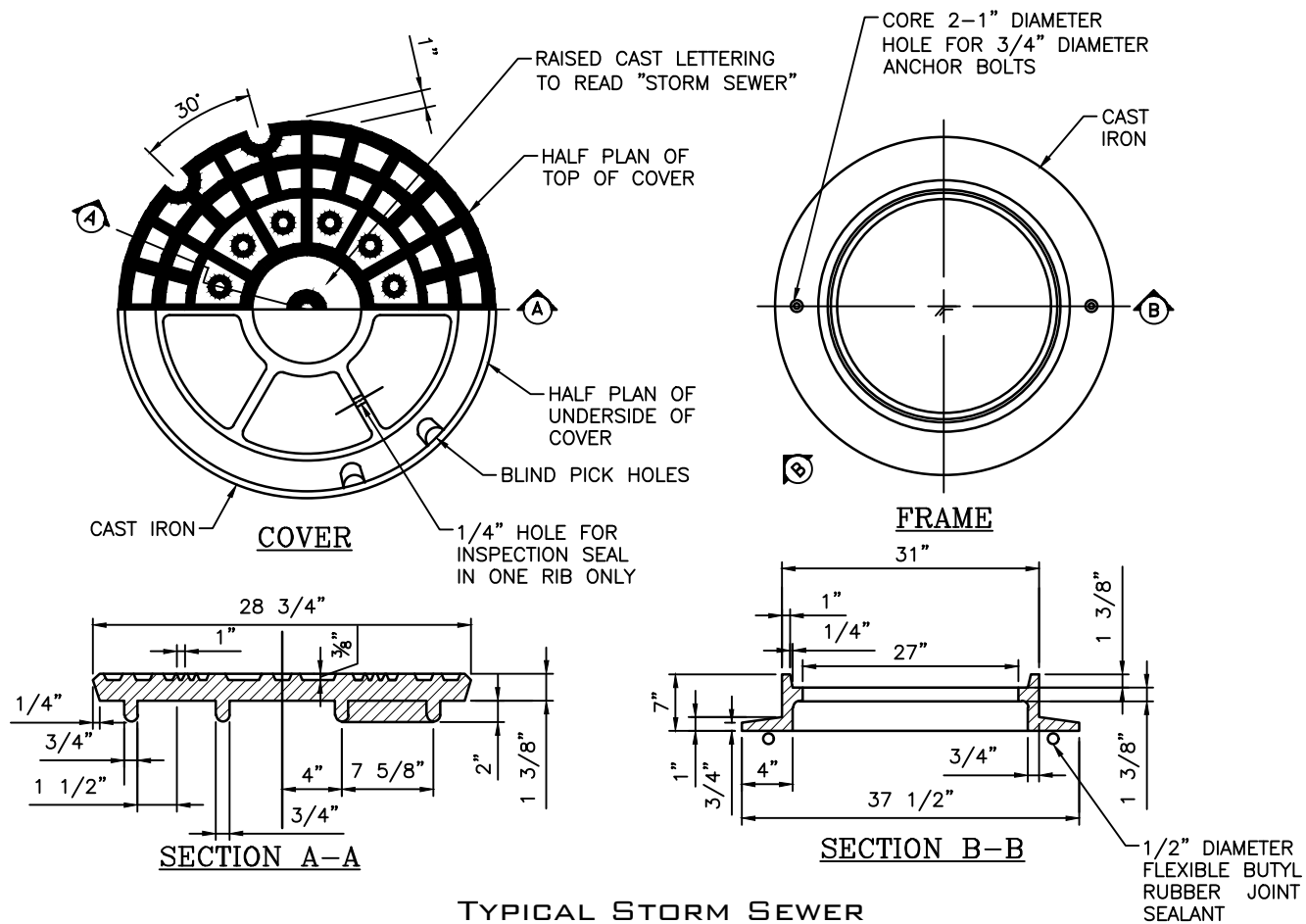
**SOUTH BEAVER TOWNSHIP**  
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DATE: October 2021  
FILE NAME: SS-06 Type C Inlet.dwg  
SCALE: N.T.S.

**Type 'C' Inlet Detail**

SS-06



# TYPICAL STORM SEWER MANHOLE FRAME COVER

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October 2021

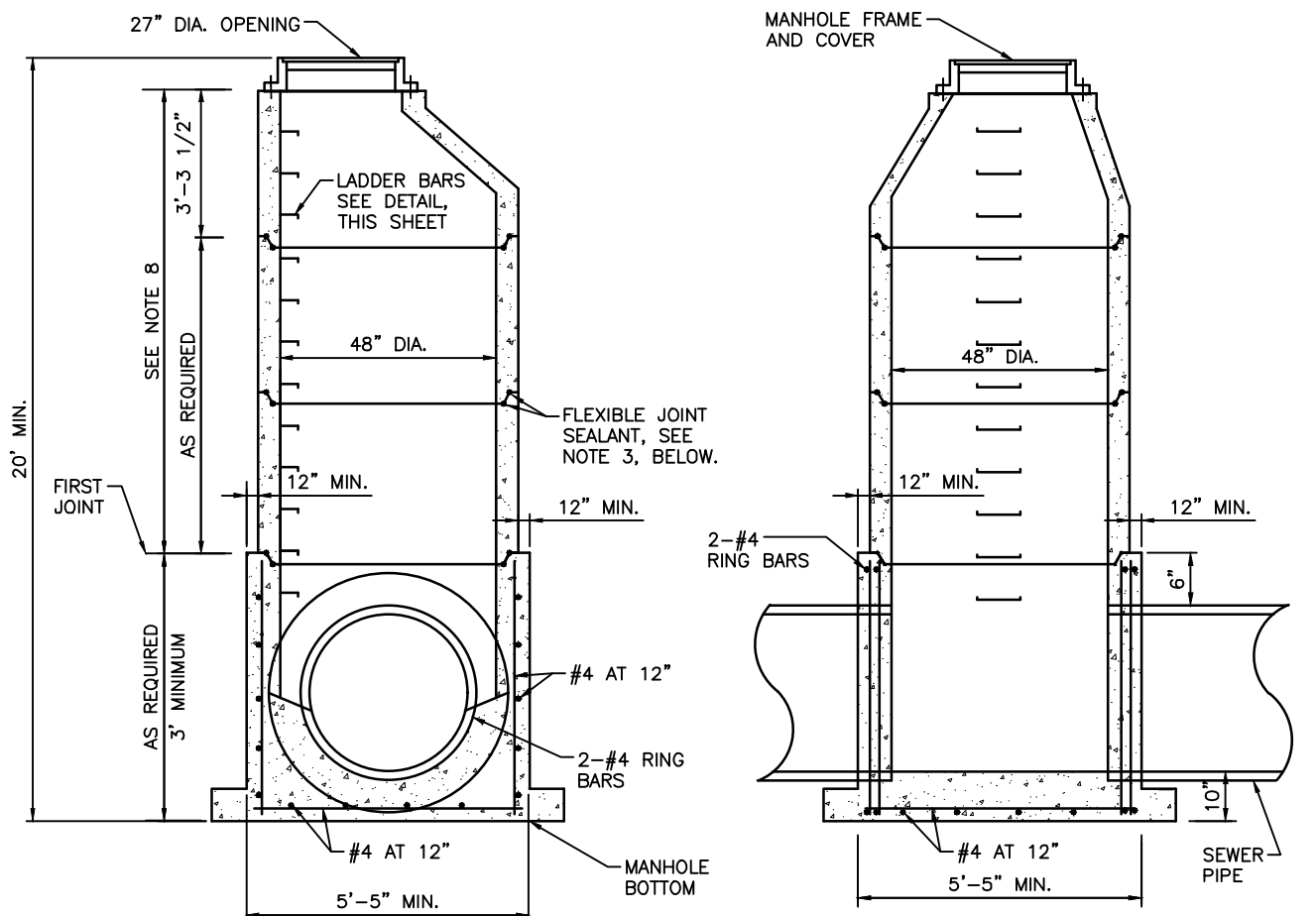
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SCALE:  
N.T.S.

**Standard Manhole Frame Cover**

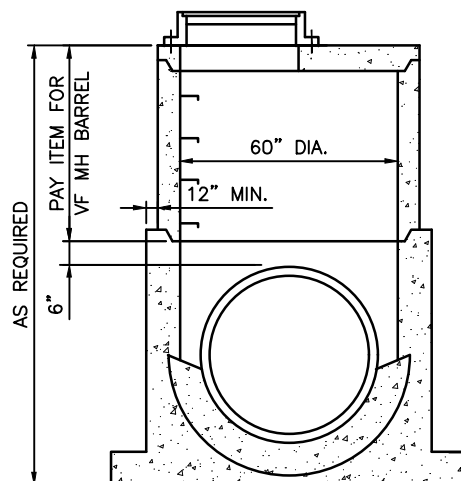
SS-07

N:\PROJ\487\487-15 SALDO\details\Drawg South Beaver\ SS-08 Storm Manhole.dwg layout = Storm Manhole Username = chrism Date = Sep 30, 2021 11:37pm



#### NOTES:

1. ALL CONCRETE TO BE CLASS 'AAA' CONCRETE, 4500 PSI, 5%  $\pm$  1% AIR ENTRAINED.
2. ONLY PRECAST MANHOLES SUPPLIED BY A MANUFACTURER LISTED IN BULLETIN 15 WILL BE PERMITTED.
3. SEAL MANHOLE BARREL JOINTS WITH 2- 1"  $\phi$  FLEXIBLE BUTYL RUBBER JOINT SEALANT, USE 1/2"  $\phi$  FOR FRAME AND COVER.
4. ANCHOR FRAME AND COVER WITH 2-3/4" DIA. S.S. ANCHOR BOLTS SET PERMANENTLY ANCHORED INTO CONCRETE.
5. POINT LIFTING HOLES WITH NON-SHRINK GROUT, AND LEFT WATERTIGHT, NEAT AND SMOOTH.
6. MAXIMUM ADJUSTMENT TO FINISHED GRADE USING PRECAST GRADE RINGS SHALL NOT EXCEED SIX INCHES (6").
7. CONFORM PRECAST SECTIONS TO ASTM C-478 AS REVISED.
8. IF THIS DIMENSION IS LESS THAN 3'-3" USE PRECAST SLAB TOP DESIGNED TO MEET LOAD CONDITIONS (H-20 MIN).
9. COAT EXTERIOR OF ALL MANHOLE BARREL SECTIONS WITH APPROVED BITUMINOUS COATING.
10. CAST LADDER BARS INTO BARREL SECTIONS AND SHALL CONFORM TO ASTM C-478, AS REVISED.
11. WHERE MANHOLES ARE INSTALLED IN IMPROVED AREAS, THE ENTIRE EXCAVATED AREA SHALL BE BACKFILLED WITH PENNDOT 2A OR AASHTO 57 CRUSHED AGGREGATE.
12. WHERE MANHOLES ARE CONSTRUCTED IN UNIMPROVED AREAS, BACKFILL THE ENTIRE EXCAVATED AREA WITH PENNDOT 2A OR AASHTO 57 CRUSHED AGGREGATE FROM THE BOTTOM OF THE EXCAVATED AREA TO 12 INCHES ABOVE THE HIGHEST PIPE ENTERING THE MANHOLE. PROVIDE FLANGED BASE.



### CAST-IN PLACE OR PRECAST CONCRETE STORM MANHOLE

N. T. S.

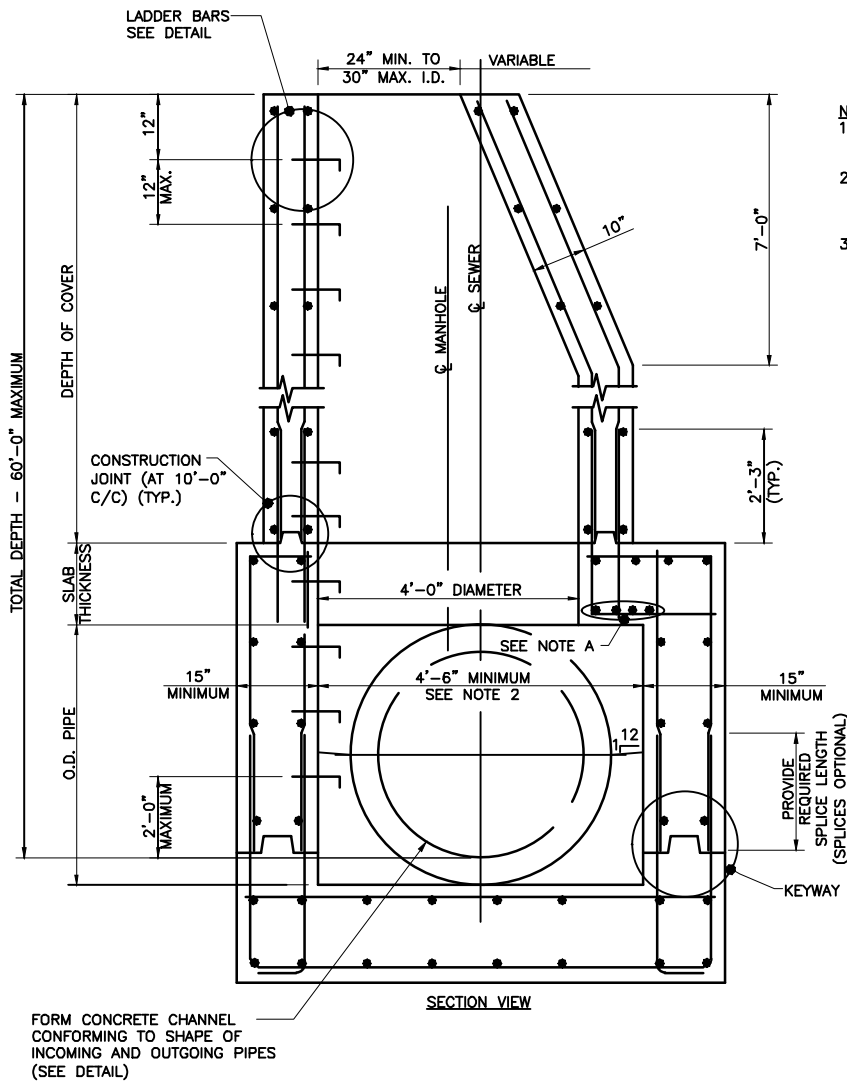
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DATE: October 2021  
FILE NAME: SS-08 Storm Manhole.dwg  
SCALE: N.T.S.

**Storm Manhole Detail**

SS-08



#### NOTES:

1. FOR CONSTRUCTION REQUIREMENTS SEE PENNDOT RC-39 FOR DESIGN REQUIREMENTS SEE PENNDOT RC-39.
2. INCREASE BOX SIZE WHEN REQUIRED TO KEEP WALLS OF MANHOLE BOX SECTION FLUSH WITH THE OPENING FOR PIPES LARGER THAN 42 INCHES I.D.
3. DESIGN PROCEDURE FOR MANHOLE BOX SECTION.

DESIGN ALL MEMBERS FOR MOMENT, CRACK CONTROL & SHEAR AT DISTANCE  $d$  (EFFECTIVE DEPTH OF MEMBER) FROM FACE OF SUPPORT. ALL SPAN LENGTHS ARE CALCULATED FROM THE CENTER OF THE SUPPORTS.

#### A. TOP SLAB

- DESIGN A 12" WIDE SLAB STRIP FOR ONE-WAY ACTION TO CARRY DEAD LOAD, LIVE LOAD, AND WEIGHT OF EARTH. SPAN THE STRIP, SIMPLY SUPPORTED, ACROSS THE WIDTH OF THE BOX OR IN THE SHORT DIRECTION.

- PLACE ADDITIONAL BARS IN THE SLAB AT 45 DEGREES AROUND THE MANHOLE OPENING. FFF - 1/85

#### B. "EDGE BEAM"

- "EDGE BEAMS" TO BE THE SAME DEPTH AS THE TOP SLAB. TO ACHIEVE REQUIRED CAPACITY WHERE NECESSARY, INCREASE DEPTH OF "EDGE BEAM" BY PROVIDING ADDITIONAL CLEARANCE BETWEEN THE SLAB AND TOP OF OPENING. LOCATE HORIZONTAL STEEL FOR BEAM ABOVE THE SOFFIT OF THE OPENING.

- DESIGN THE "EDGE BEAMS", SPANNING THE LENGTH OF THE BOX, TO CARRY A UNIFORMLY DISTRIBUTED LOAD EQUAL TO THE REACTION FROM THE SLAB.

#### C. WALLS

- DESIGN THE WALLS TO CARRY THE AXIAL LOAD, DUE TO EARTH LOAD, LIVE LOAD, AND DEAD LOAD APPLIED DIRECTLY TO THE WALL, IN ADDITION TO REACTIONS FROM THE "EDGE BEAMS", AND THE VERTICAL MOMENT CAUSED BY SATURATED AT REST EARTH PRESSURE. CONSIDER THE WALL SIMPLY SUPPORTED BETWEEN TOP SLAB AND FOOTING. PROVIDE THE SAME REINFORCEMENT ON THE OUTSIDE FACE.

#### D. FOOTING

- DESIGN SPAN NORMAL TO PIPE TO CARRY POSITIVE MOMENT OF  $1/10$  WL AND NEGATIVE MOMENT OF  $1/12$  WL WHERE  $W$  IS THE UNIFORM BEARING PRESSURE. DO NOT TAKE INTO ACCOUNT THE CONCRETE IN THE CHANNEL WHEN CALCULATING CAPACITY OF THE FOOTING.

- AS A MINIMUM, PROVIDE NO. 4 BARS AT 12" CENTERS, TOP AND BOTTOM OF SLAB IN THE OPPOSITE DIRECTION.

### MODIFIED MANHOLE

For Pipes Greater Than 36 Inches To 84 Inches Inside Diameter  
N. T. S.

**SOUTH BEAVER TOWNSHIP**  
Beaver County, Pennsylvania

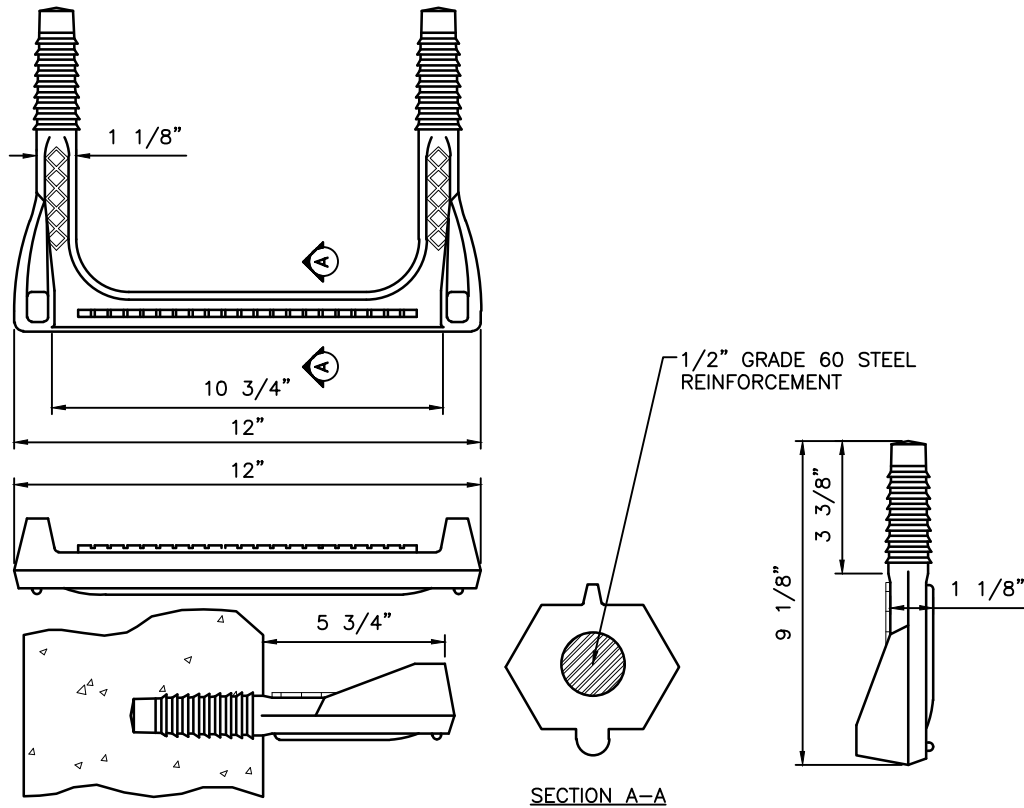
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DATE: October 2021  
FILE NAME: SS-09 Modified Manhole.dwg  
SCALE: N.T.S.

**Modified Manhole Detail**

SS-09

N:\PROJ\487\487-15 SALDO\details\Drawg South Beaver\ SS-10 Typical Ladder Bars For Inlet.dwg layout = Typical Ladder Bars For Inlet.dwg Username = chrism Date = Sep 30, 2021 -- 11:42pm



TYPICAL  
**LADDER BARS FOR INLET**  
N. T. S.

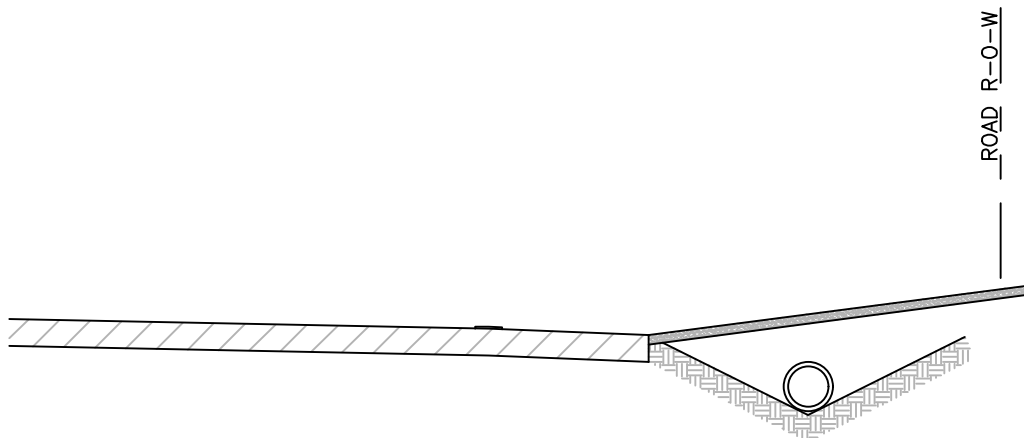
**SOUTH BEAVER TOWNSHIP**  
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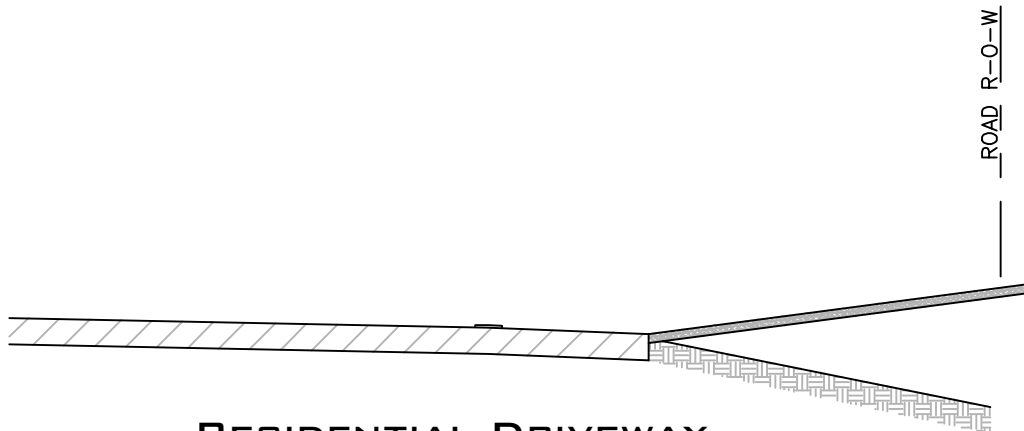
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FILE NAME: SS-10 Typical Ladder Bars For Inlet.dwg  
SCALE: N.T.S.

**Typical Ladder Bars For Inlet Detail**

SS-10



### DRIVEWAY ACROSS EXISTING DRAINAGE SWALE



### RESIDENTIAL DRIVEWAY

N. T. S.

#### NOTES:

1. THIS DETAIL IS INTENDED FOR USE WHEN DRIVEWAYS CONNECT TO TOWNSHIP ROADWAYS THAT HAVE SHOULDERS WITHOUT CURBS.
2. THE DRIVEWAY WITHIN THE RIGHT-OF-WAY SHALL NOT EXCEED 10%.
3. THE DRIVEWAY SHALL NOT ALTER GRADES IN THE SHOULDER AREA. IF THE SHOULDER IS UNPAVED, DRIVEWAY PAVEMENT MAY EXTEND TO THE EDGE OF THE ROADWAY BUT SHALL MAINTAIN THE EXISTING SHOULDER SLOPE AWAY FROM THE ROADWAY.
4. ALTERING THE ROADWAY DRAINAGE IS PROHIBITED. THE PERMITTEE SHALL NOT ALTER THE EXISTING DRAINAGE PATTERN OR THE EXISTING FLOW OF DRAINAGE WATER, OR DIRECT ADDITIONAL DRAINAGE OF SURFACE WATER ONTO OR INTO ROADWAY FACILITIES.
5. TOWNSHIP CODE ENFORCEMENT OFFICER CAN REQUIRE THAT RESIDENT PROVIDE ADDITIONAL ON LOT STORM WATER MANAGEMENT FOR DRIVEWAYS.
6. LOCATE DRIVEWAY TO PROVIDE MINIMUM SIGHT DISTANCES AS REQUIRED BY PENNDOT FORM M-950S.
7. PRIOR TO CONSTRUCTION, A DRIVEWAY PERMIT MUST BE SECURED IN ACCORDANCE WITH TOWNSHIP REQUIREMENTS.

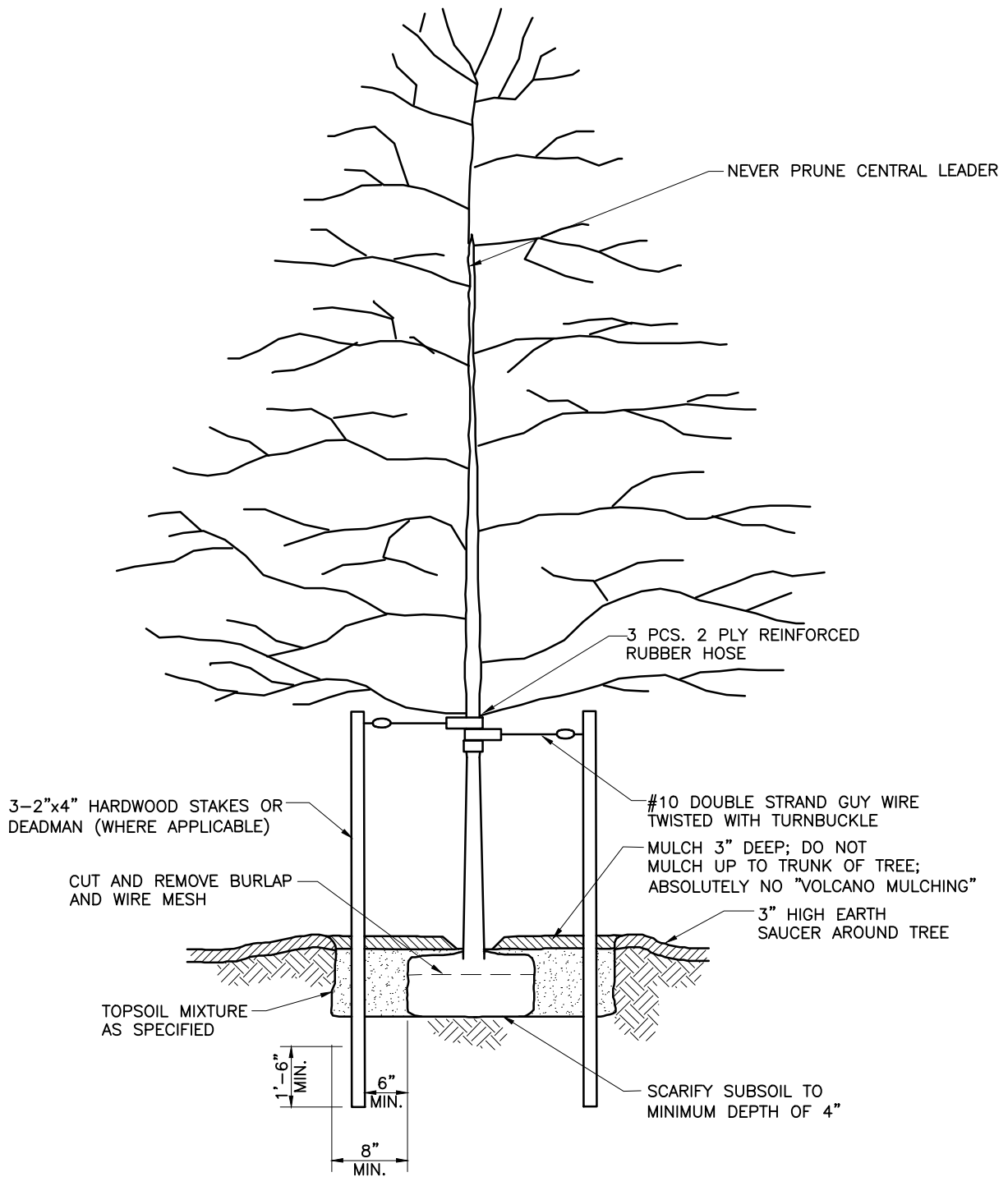
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DATE:	October 2021
FILE NAME:	SD-01 Residential Driveway.dwg
SCALE:	N.T.S.

## **Residential Driveway Detail**

SD-01



NOTE:  
TREE SHALL BEAR SAME RELATIONSHIP TO FINISH  
GRADE AS IT BORE TO PREVIOUS EXISTING GRADE.

## TREE PLANTING

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DATE:  
October 2021

FILE  
NAME:  
SD-02 Tree Planting.dwg

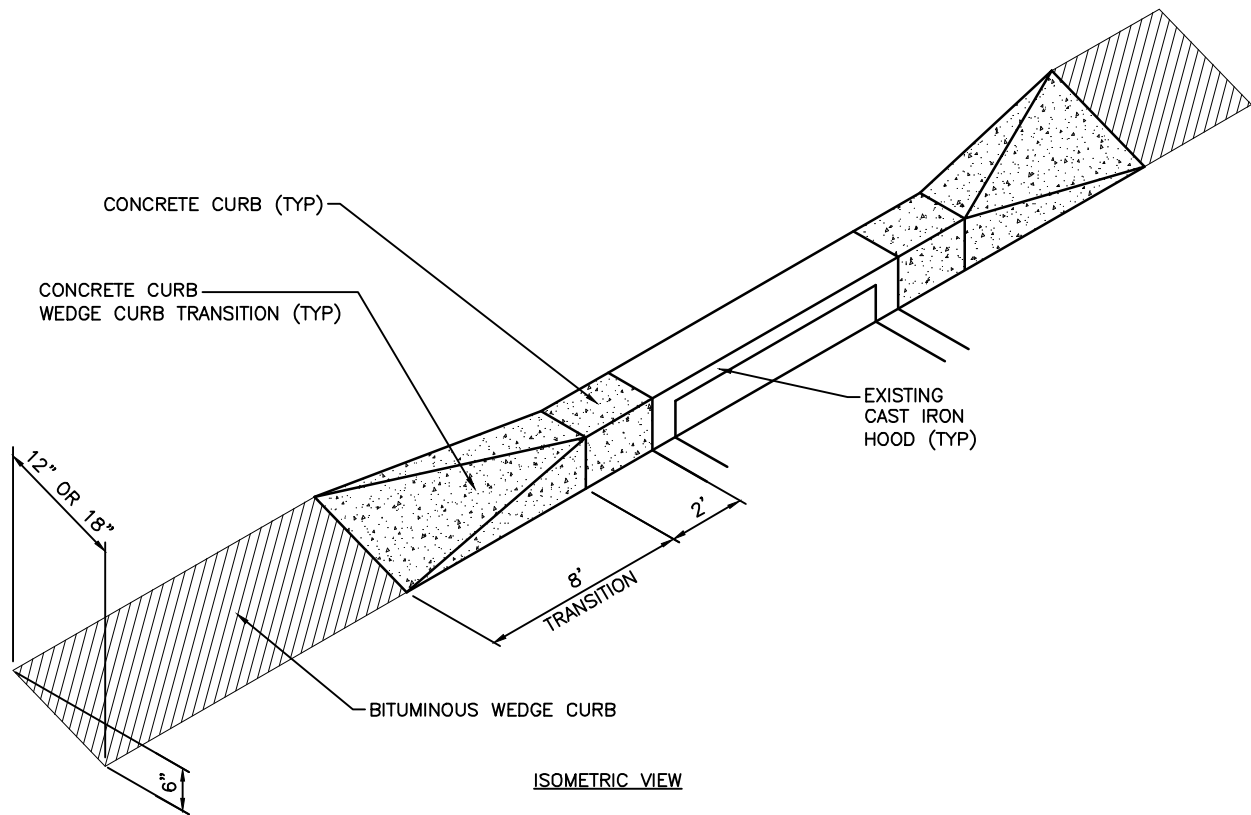
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## **Tree Planting Detail**

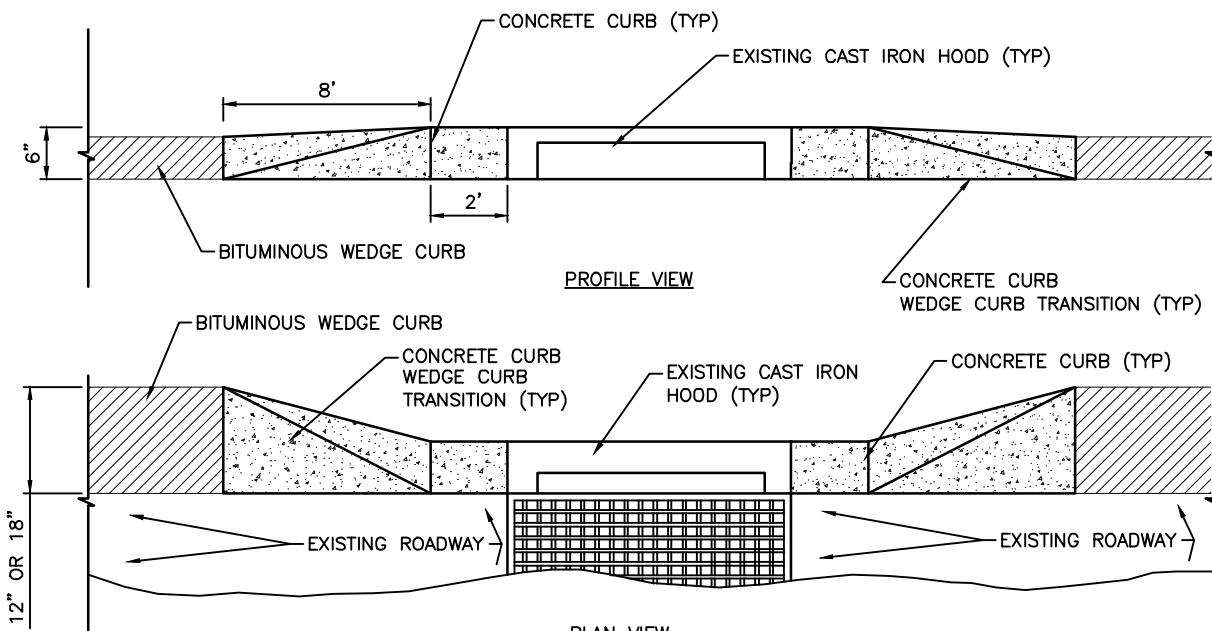
SD-02







ISOMETRIC VIEW



PROFILE VIEW

PLAN VIEW

**NOTES:**

1. DETAIL IS FOR PAVING WITH WEDGE CURBS AT EXISTING INLETS ONLY. NEW INLETS IN AREAS WITH WEDGE CURB ARE TO BE TYPE M INLETS.
2. MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH PENNDOT PUBLICATION 408.

**CONCRETE CURB FLARE TRANSITION**

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DATE: October 2021  
FILE NAME: SD-04 Concrete Curb Flare Transition.dwg  
SCALE: N.T.S.

**Concrete Curb Flare Transition Detail**

SD-04