

# Standard Details Plates

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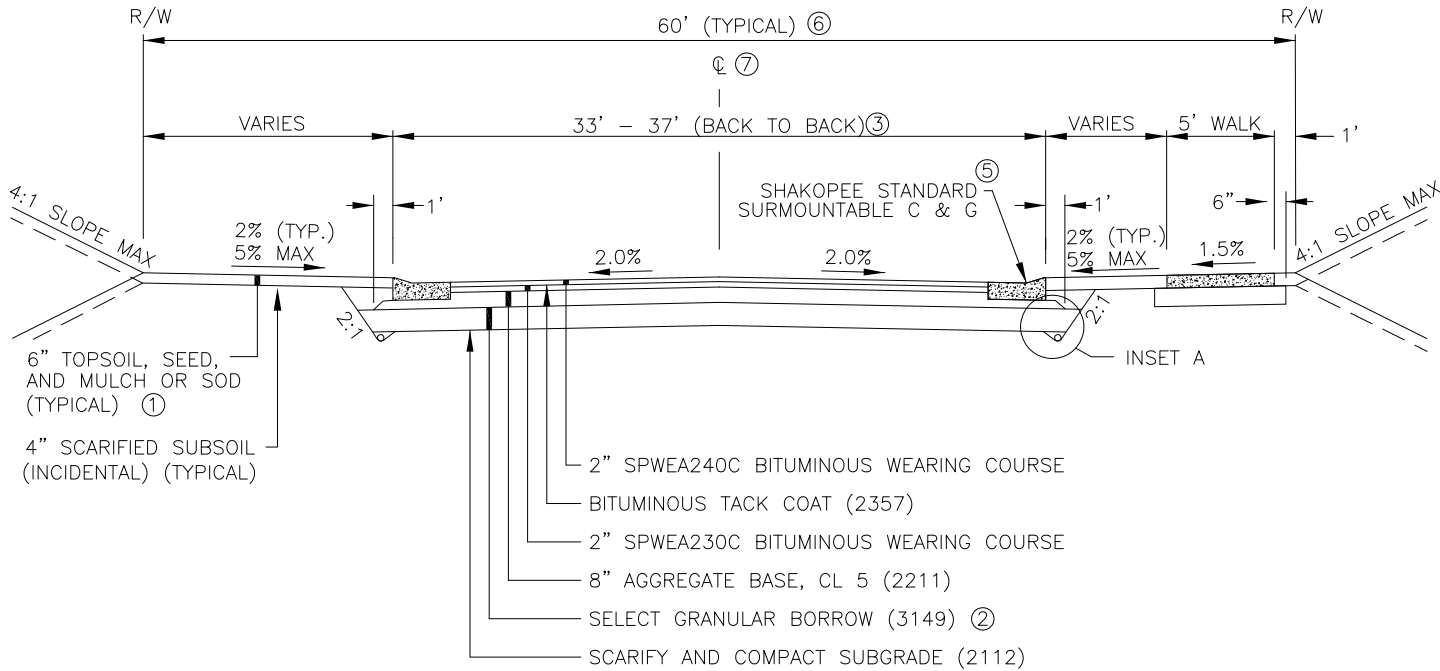
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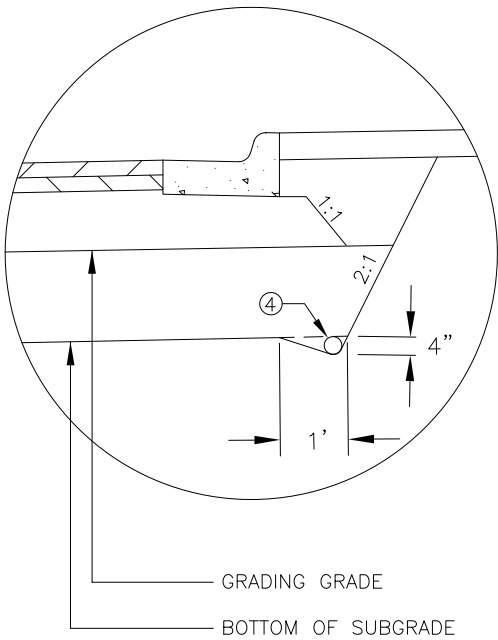
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INSET A



- ① SOD TO BE PLACED BEHIND CURB (36" MINIMUM).
- ② THE STANDARD SELECT GRANULAR SECTION IS 24". THE USE OF GEOTEXTILE FABRIC AND ADJUSTMENTS TO THE SELECT GRANULAR SECTION WILL BE CONSIDERED BY THE CITY ENGINEER, BASED ON EXISTING SUBSURFACE CONDITIONS AND THE PRESENCE AND ADEQUACY OF ON SITE GRANULAR SOILS THAT MEET THE SELECT GRANULAR SPECIFICATION.
- ③ STREET WIDTH AND RIGHT-OF-WAY WIDTH TO BE DETERMINED BY THE CITY ENGINEER. STREETS MUST BE PAVED IN NO MORE THAN TWO PASSES.
- ④ 4" PERFORATED PIPE WITH PROTECTIVE WRAP. INSTALL WHERE CLAY SOILS ARE ENCOUNTERED IN THE ROADWAY SUBGRADE AS DIRECTED BY THE CITY ENGINEER.
- ⑤ B618 CONCRETE CURB AND GUTTER IS REQUIRED AT ALL CURB RADII AND CATCH BASINS.
- ⑥ RIGHT-OF-WAY WIDTH TO BE DETERMINED AND COORDINATED WITH CITY ENGINEER (SEE COMPREHENSIVE PLAN).
- ⑦ CENTERLINE MUST BE CENTERED WITHIN RIGHT-OF-WAY.

NOTE:  
 1. THE PAVEMENT SECTION SHOWN IS A MINIMUM DESIGN. A BITUMINOUS PAVEMENT DESIGN MUST BE PERFORMED AND INCREASED ADJUSTMENTS WILL BE MADE BY THE CITY ENGINEER BASED ON THE TYPICAL DESIGN PARAMETERS AND OTHER CURRENT GUIDANCE (E.G. MNDOT RECOMMENDED PAVEMENT DESIGN STANDARDS).



TYPICAL STREET SECTION RESIDENTIAL

*Steven L. Lillibridge*

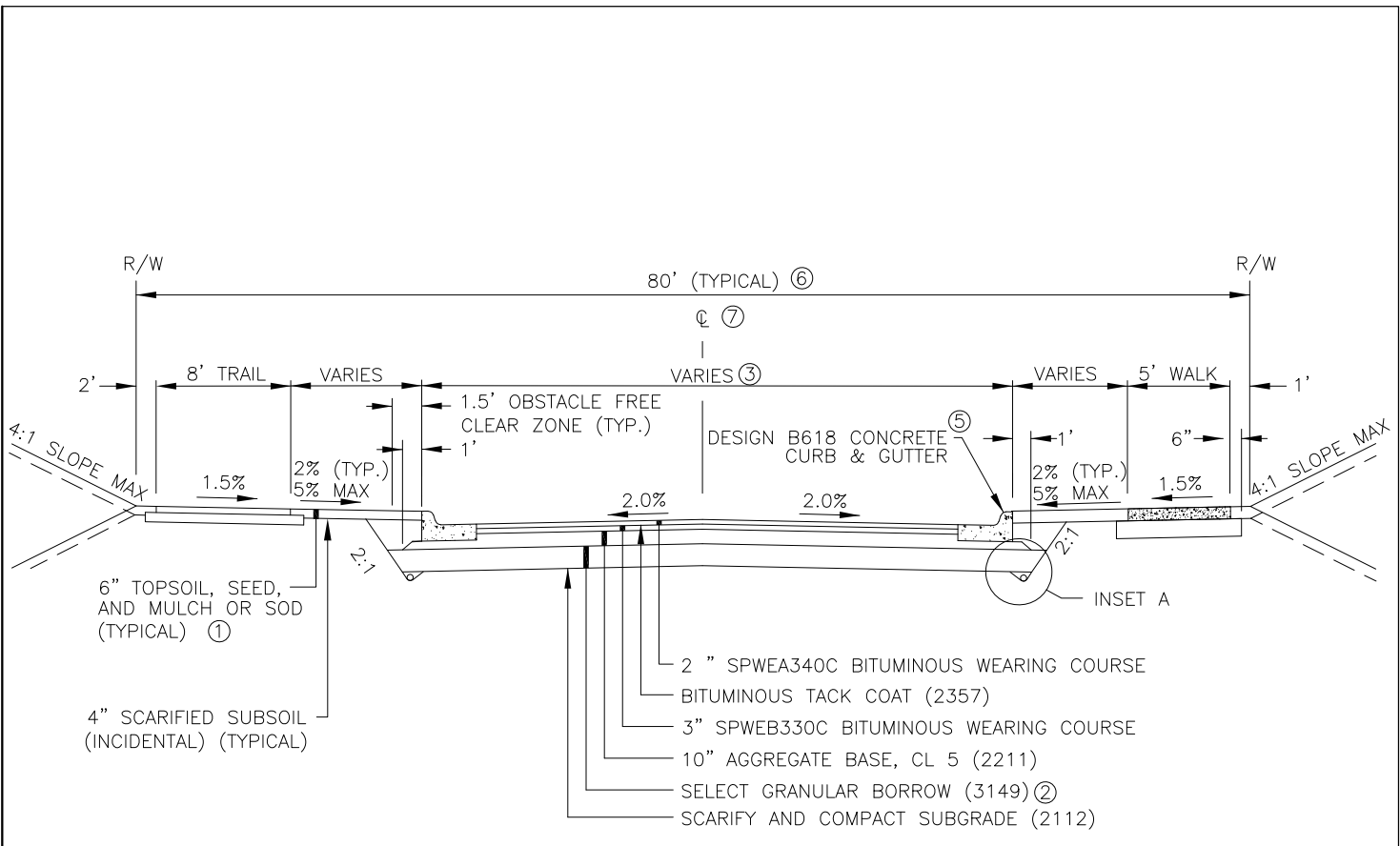
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DETAIL NO:

1001



6" TOPSOIL, SEED, AND MULCH OR SOD (TYPICAL) ①

4" SCARIFIED SUBSOIL (INCIDENTAL) (TYPICAL)

DESIGN B618 CONCRETE CURB & GUTTER ⑤

2" SPWEA340C BITUMINOUS WEARING COURSE

BITUMINOUS TACK COAT (2357)

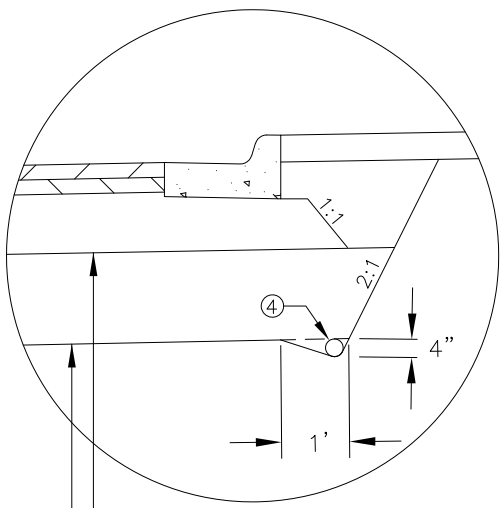
3" SPWEB330C BITUMINOUS WEARING COURSE

10" AGGREGATE BASE, CL 5 (2211)

SELECT GRANULAR BORROW (3149) ②

SCARIFY AND COMPACT SUBGRADE (2112)

INSET A



GRADING GRADE

BOTTOM OF SUBGRADE

- ① SOD TO BE PLACED BEHIND CURB (36" MINIMUM).
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- ⑦ CENTERLINE MUST BE CENTERED WITHIN RIGHT-OF-WAY.

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TYPICAL STREET SECTION COMMERCIAL

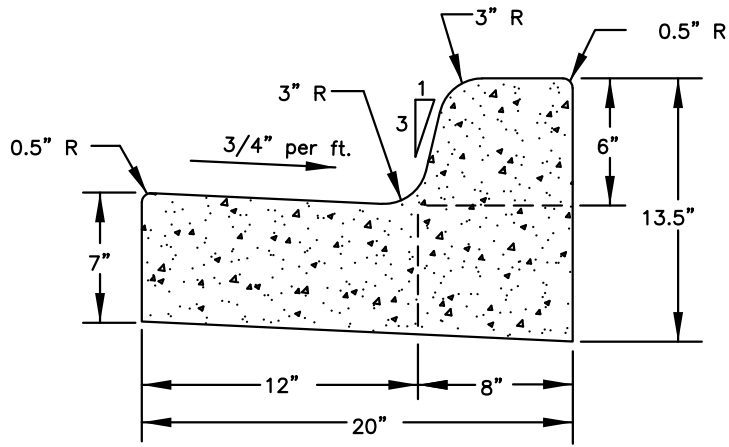
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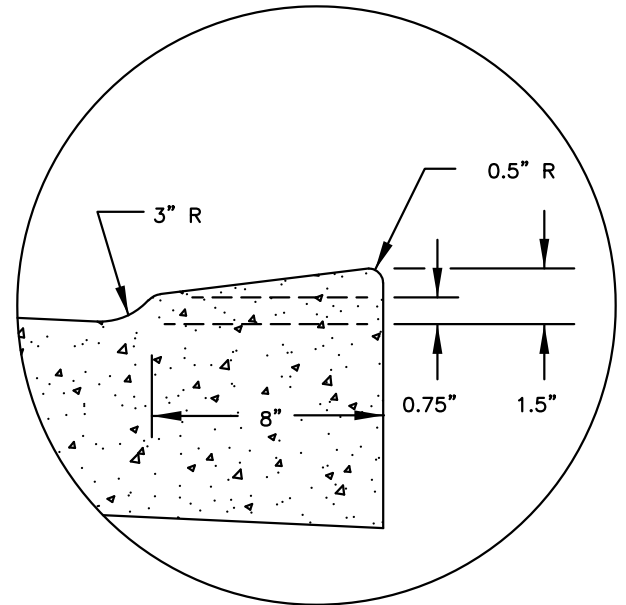
*Steven L. Lillibridge*

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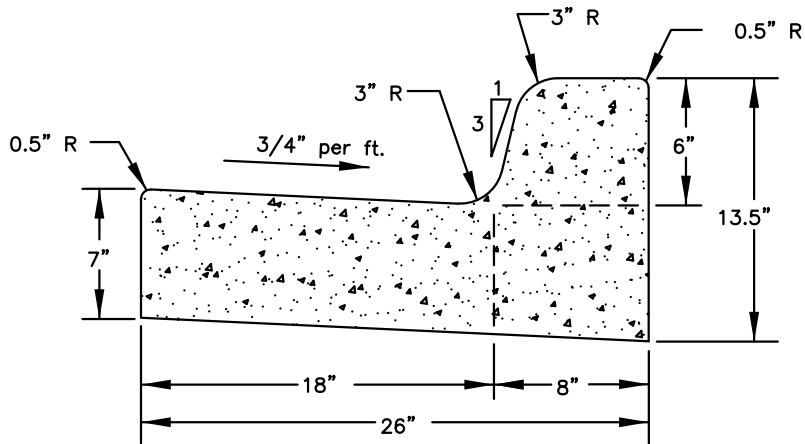
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1002



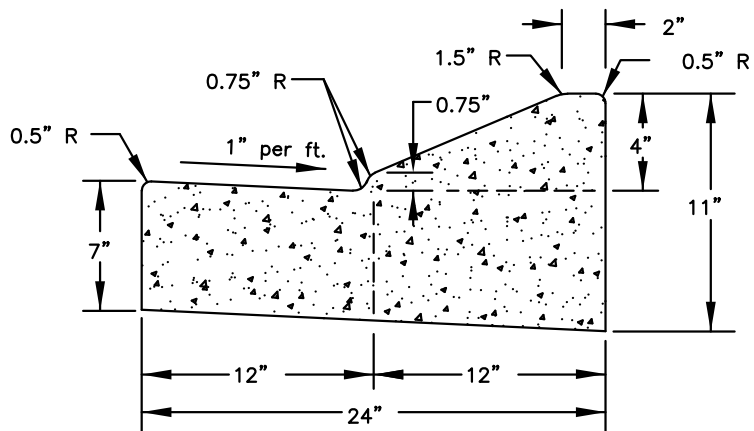
B-612



DETAIL OF TOP OF CURB AT DRIVEWAY OPENINGS.



B-618



SHAKOPEE  
STANDARD SURMOUNTABLE



CONCRETE CURB & GUTTER FOR STREETS

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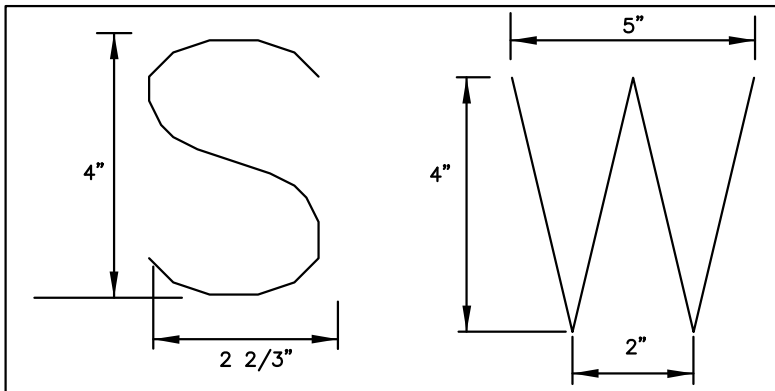
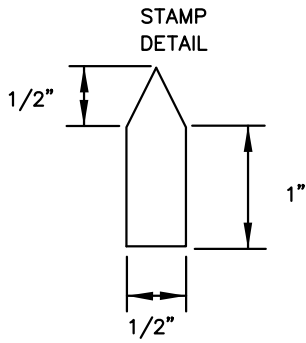
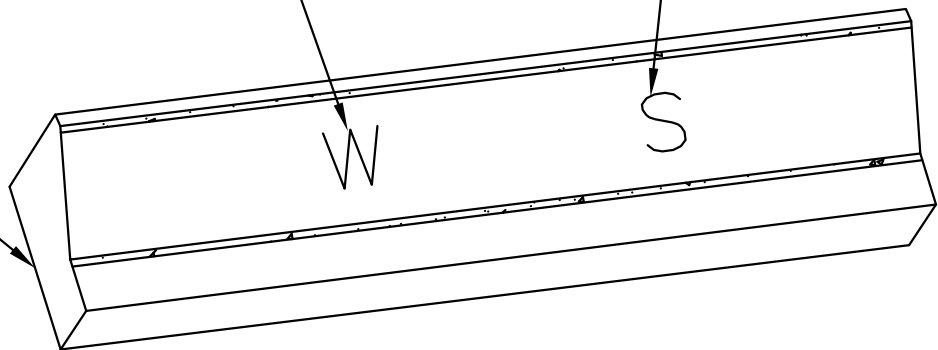
DETAIL NO:

1003

STAMP "W" IN THE FACE OF THE CURB  
LINE WITH CURB STOP LOCATION,  
PERPENDICULAR TO CURBLINE

STAMP "S" IN THE FACE OF THE THE  
CURB IN LINE WITH CLEANOUT LOCATION  
PERPENDICULAR TO THE CURBLINE.

SHAKOPEE STANDARD  
SURMOUNTABLE CURB



NOTE:

1. ALL NEW AND EXISTING WATER AND SEWER SERVICE LOCATIONS SHALL BE MARKED IN CURB AS SHOW. STAMPING OF SERVICE LOCATIONS SHALL BE CONSIDER INCIDENTAL TO THE PRICE OF CURB.
2. W'S AND S'S NOT PLACED BY SPECIFIED STAMP WILL NOT BE ACCEPTED AND THAT SECTION OF CURB MUST BE REMOVED AND REPLACED



SANITARY SEWER AND WATER SERVICE CURB STAMP

*Steven L. Lillibridge*

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DETAIL NO:

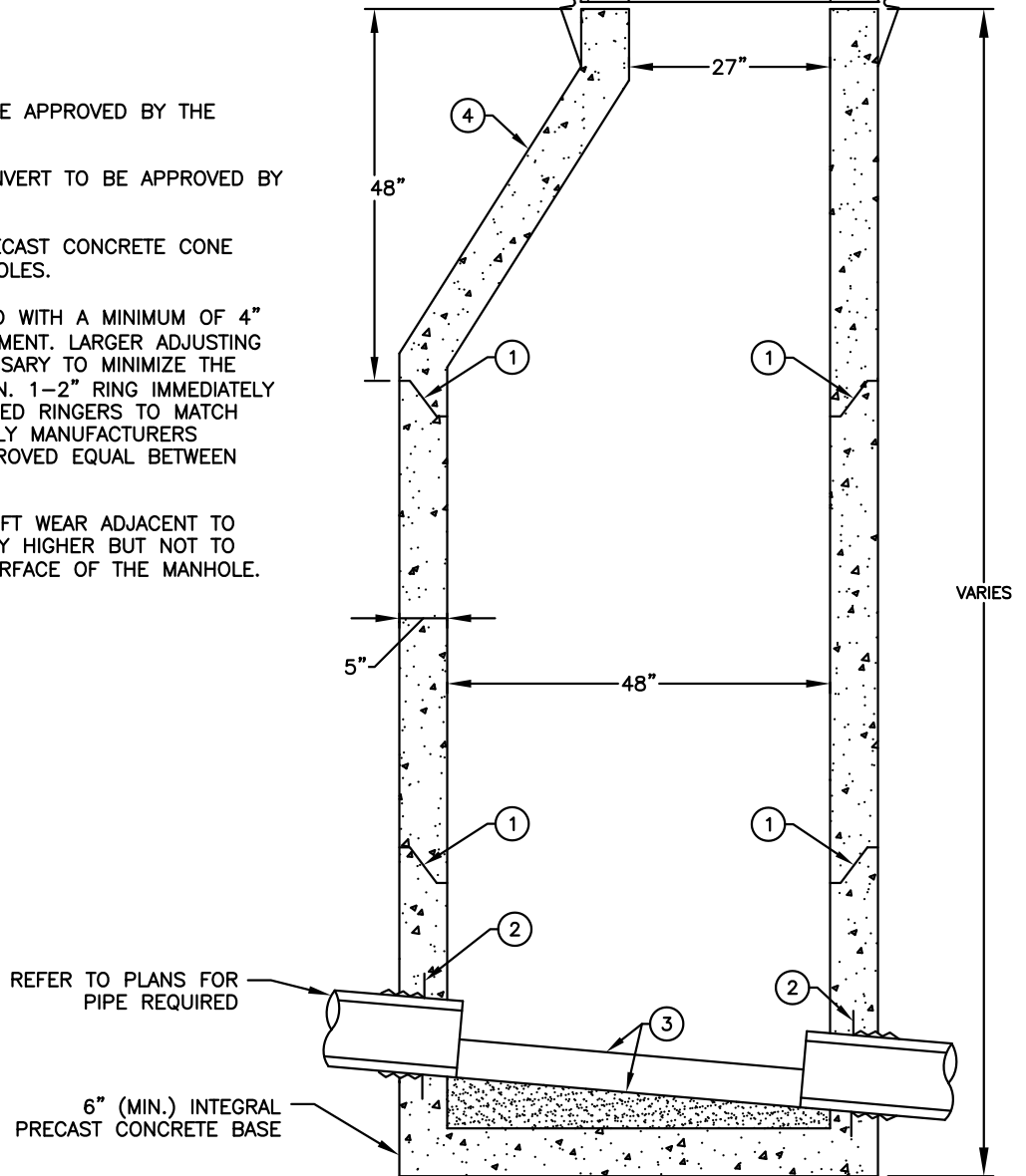
1004

NEENAH R-1642 (OR EQUAL) LETTERING TO READ  
SANITARY SEWER WITH CONCEALED PICKHOLES

AN APPROVED EXTERNAL SEAL MUST BE INSTALLED IN  
CONJUNCTION WITH ADJUSTING RINGS AND CASTING

HDPE OR EPP ADJUSTING RINGS

- ① RUBBER GASKET.
- ② FLEXIBLE WATERTIGHT SEAL TO BE APPROVED BY THE ENGINEER.
- ③ SHAPE, DEPTH AND SLOPE OF INVERT TO BE APPROVED BY THE ENGINEER.
- ④ MNDOT TYPE "B" ECCENTRIC PRECAST CONCRETE CONE SECTION TYPICAL FOR ALL MANHOLES.
- ⑤ ADJUSTING RINGS MUST BE USED WITH A MINIMUM OF 4" AND A MAXIMUM OF 12" ADJUSTMENT. LARGER ADJUSTING RINGS MUST BE USED AS NECESSARY TO MINIMIZE THE NUMBER OF JOINTS. INCLUDE MIN. 1-2" RING IMMEDIATELY UNDER THE CASTING. USE TAPERED RINGS TO MATCH CASTING TO STREET GRADE. APPLY MANUFACTURERS RECOMMENDED SEALANT OR APPROVED EQUAL BETWEEN EACH RING.
- ⑥ AFTER COMPACTION THE FINAL LIFT WEAR ADJACENT TO CATCH BASINS MUST BE SLIGHTLY HIGHER BUT NOT TO EXCEED 1/4 INCH THAN THE SURFACE OF THE MANHOLE.



STANDARD SANITARY MANHOLE

*Steven L. Lillibridge*

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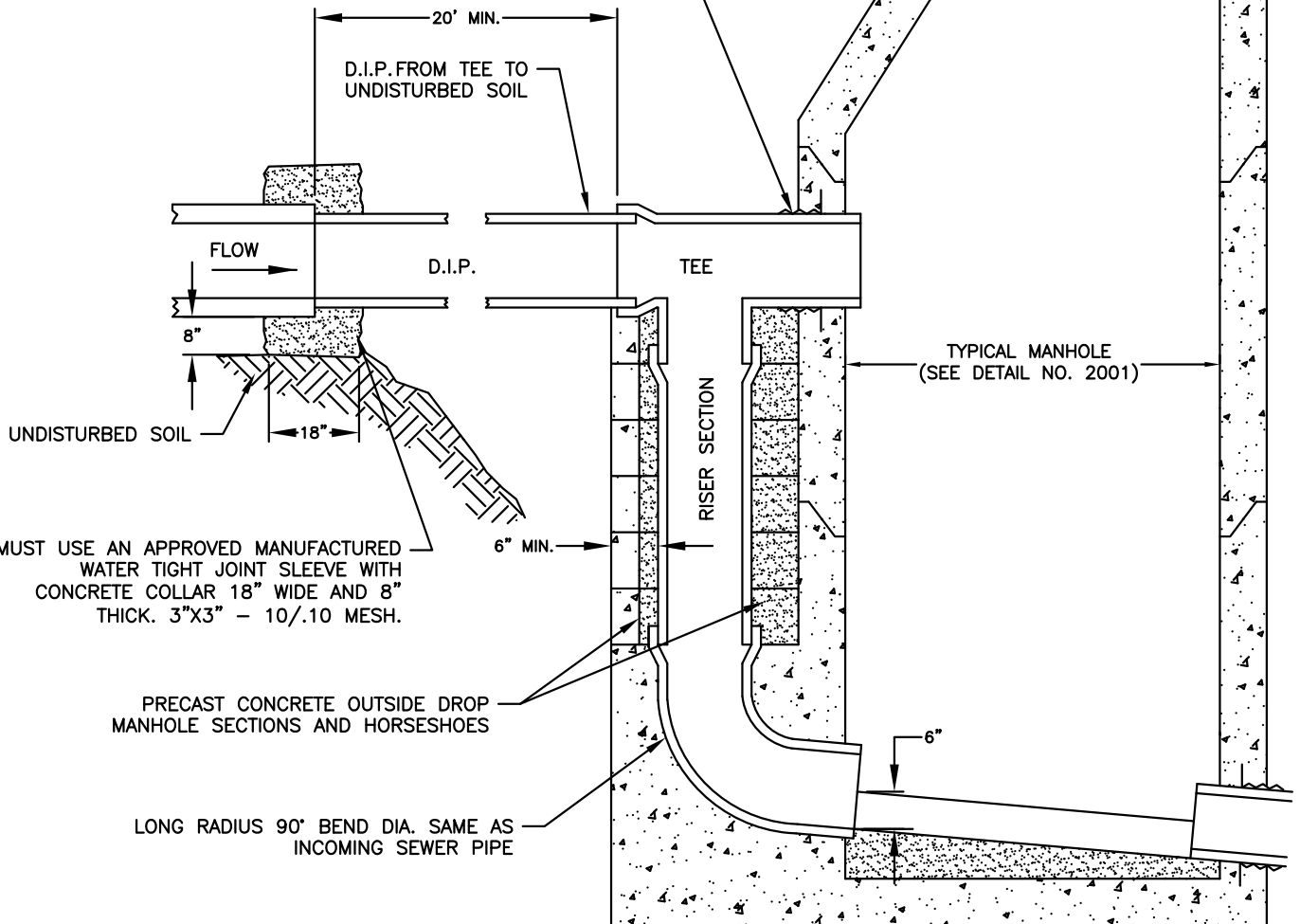
2001

AFTER COMPACTION THE FINAL LIFT WEAR ADJACENT TO CATCH BASINS MUST BE SLIGHTLY HIGHER BUT NOT TO EXCEED 1/4 INCH THAN THE SURFACE OF THE CATCH BASIN.

HDPE, OR EPP ADJUSTING RINGS

ADJUSTING RINGS MUST BE USED WITH A MINIMUM OF 4" AND A MAXIMUM OF 12" ADJUSTMENT. LARGER ADJUSTING RINGS MUST BE USED AS NECESSARY TO MINIMIZE THE NUMBER OF JOINTS. INCLUDE MIN. 1-2" RING IMMEDIATELY UNDER THE CASTING. USE TAPERED RINGERS TO MATCH CASTING TO STREET GRADE. APPLY MANUFACTURERS RECOMMENDED SEALANT OR APPROVED EQUAL BETWEEN EACH RING. AN APPROVED EXTERNAL SEAL MUST BE INSTALLED IN CONJUNCTION WITH ADJUSTING RINGS AND CASTING

FLEXIBLE WATER TIGHT SEAL TO BE APPROVED BY THE ENGINEER.



OUTSIDE DROP SANITARY MANHOLE

*Steven L. Lillibridge*

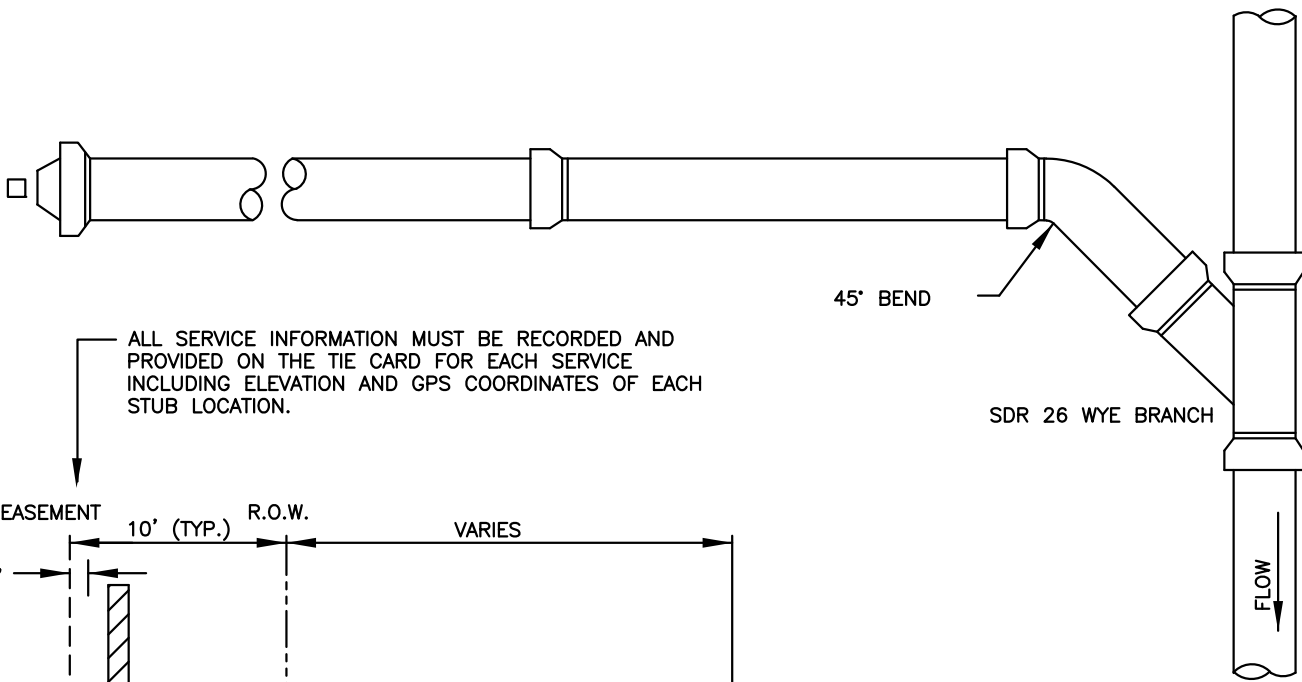
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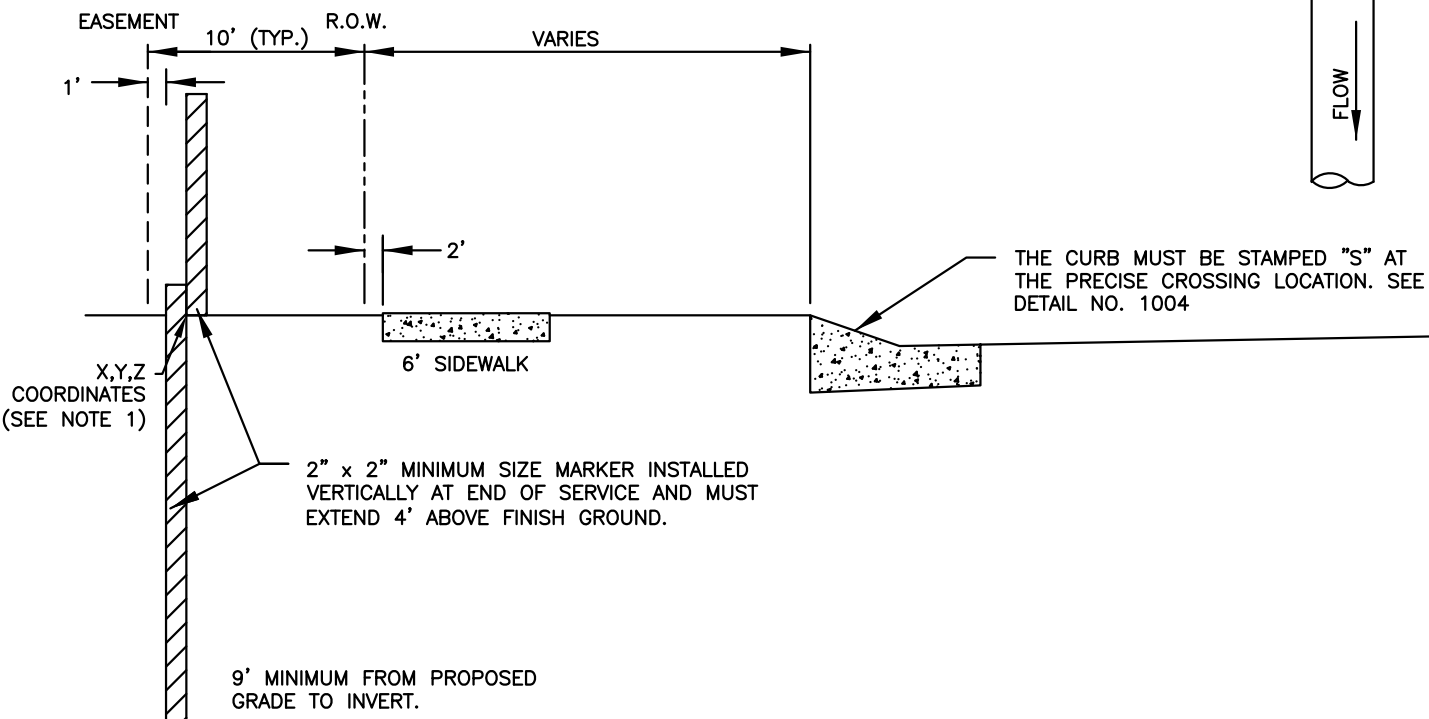
REVISED: 01/2023

DETAIL NO:

2002



ALL SERVICE INFORMATION MUST BE RECORDED AND PROVIDED ON THE TIE CARD FOR EACH SERVICE INCLUDING ELEVATION AND GPS COORDINATES OF EACH STUB LOCATION.

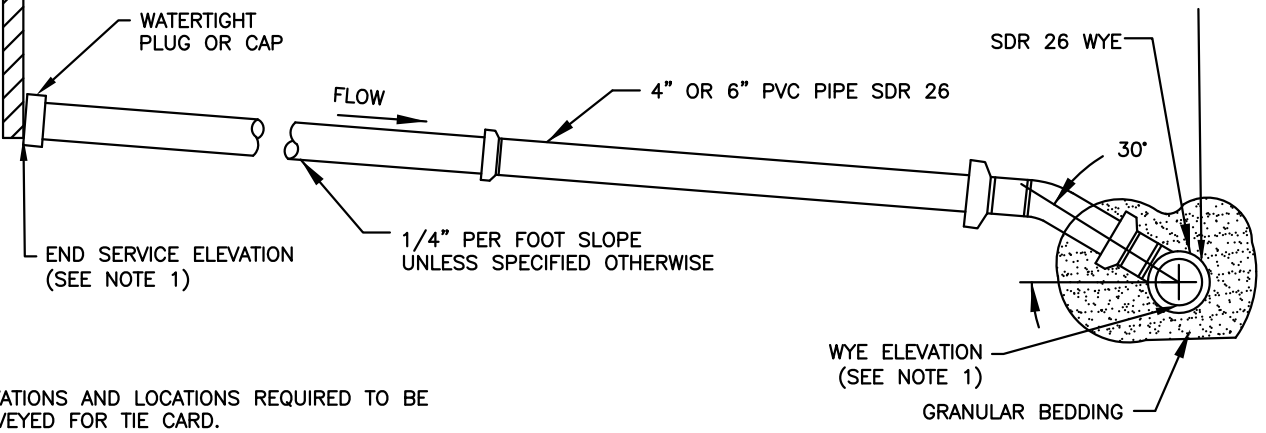


THE CURB MUST BE STAMPED "S" AT THE PRECISE CROSSING LOCATION. SEE DETAIL NO. 1004

X,Y,Z COORDINATES (SEE NOTE 1)

2" x 2" MINIMUM SIZE MARKER INSTALLED VERTICALLY AT END OF SERVICE AND MUST EXTEND 4' ABOVE FINISH GROUND.

9' MINIMUM FROM PROPOSED GRADE TO INVERT.



- NOTE:
1. ELEVATIONS AND LOCATIONS REQUIRED TO BE SURVEYED FOR TIE CARD.



SANITARY SEWER SERVICE

*Steven L. Lillibridge*

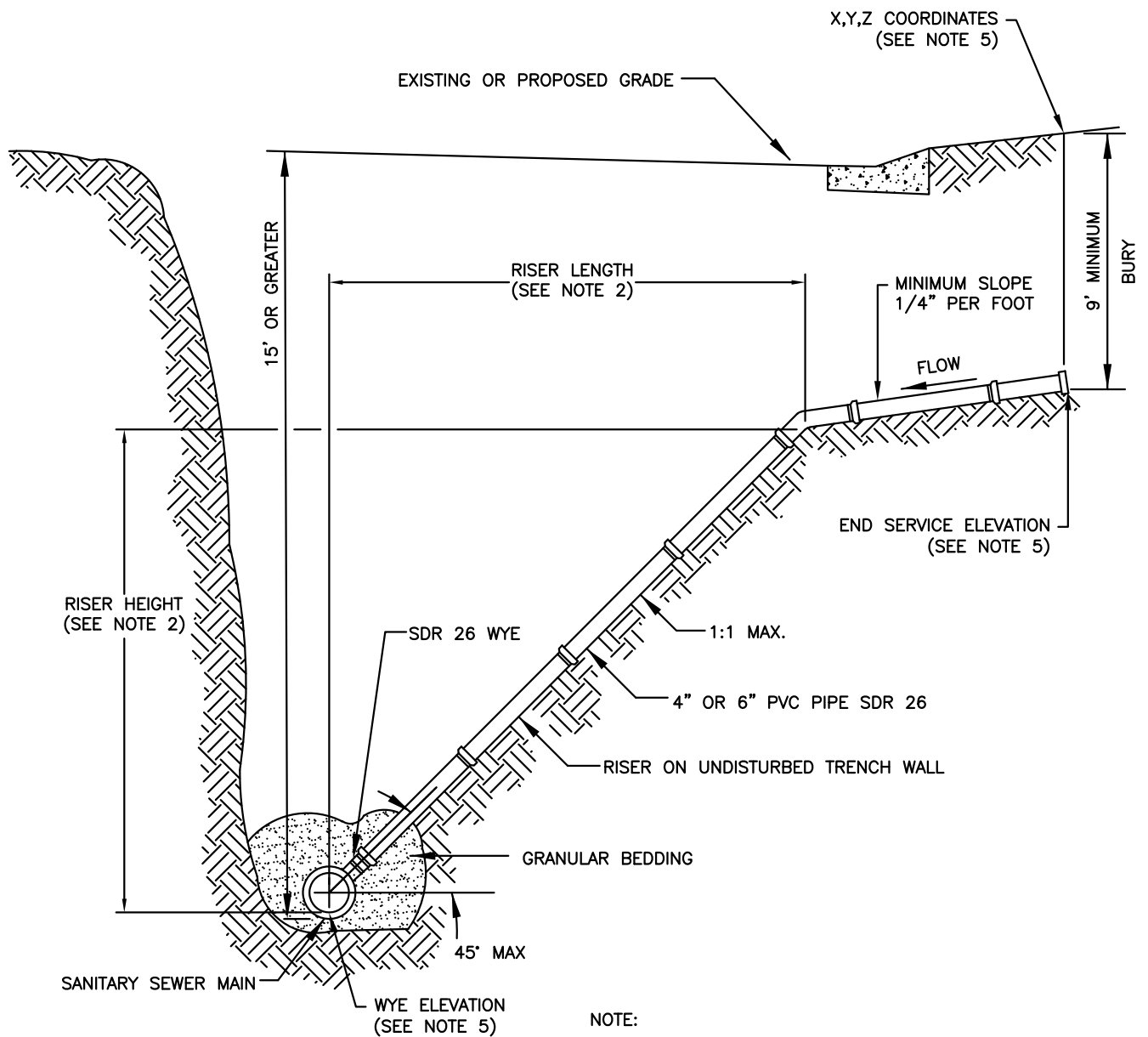
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DETAIL NO:  
2003





NOTE:

1. SEWER RISERS SHALL BE USED FOR SEWERS AT A DEPTH OF 15' OR GREATER
2. RISER INFORMATION MUST BE RECORDED AND PROVIDED ON THE TIE CARD.
3. WHEN THE SEWER MAIN IS DEEPER THAN 20' USE ROMAC COUPLER AT CONNECTION TO SANITARY SEWER MAIN.
4. STANDARD SEWER SERVICE REQUIREMENTS MUST ALSO BE MET PER DETAIL NO. 2003
5. ELEVATIONS AND LOCATIONS REQUIRED TO BE SURVEYED FOR TIE CARD.



SANITARY SEWER RISER

*Steven L. Lillibridge*

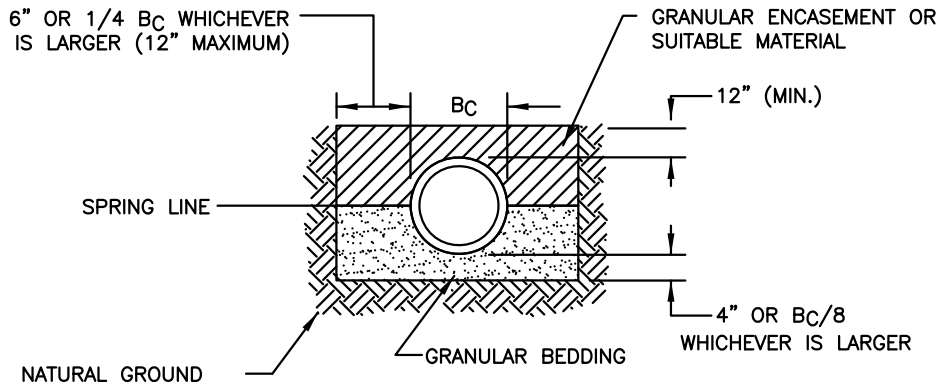
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DETAIL NO:

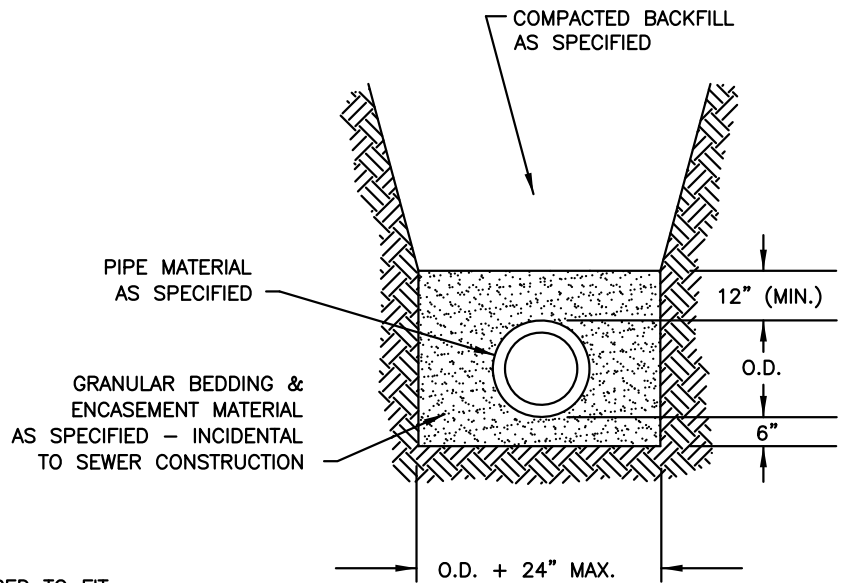
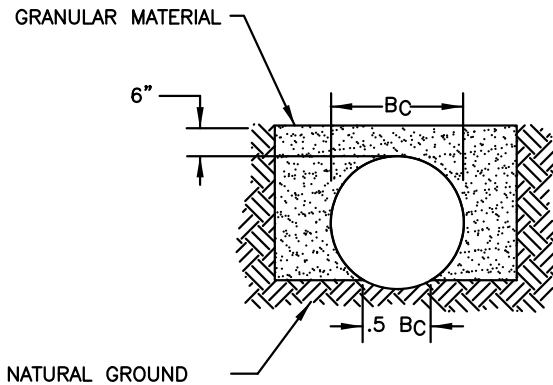
2004



NOTE:

1. ALL COSTS OF EXCAVATION BELOW GRADE AND PLACEMENT OF GRANULAR BEDDING SHALL BE INCLUDED IN THE BID PRICES FOR PIPE ITEMS UNLESS SPECIFIC BID QUANTITIES ARE LISTED FOR GRANULAR BEDDING.

CLASS "B" PIPE BEDDING (RCP STORM PIPE)



PVC SANITARY SEWER

NOTES:

1. THE BOTTOM OF THE TRENCH SHALL BE SHAPED TO FIT THE PIPE BARREL FOR AT LEAST 50% OF THE OUTSIDE DIAMETER. THE REMAINDER OF THE PIPE IS SURROUNDED TO HEIGHT OF AT LEAST 6" ABOVE IT'S TOP BY SELECT FILL MATERIALS, PLACED BY HAND TOOLS AND COMPACTED TO COMPLETELY FILL ALL SPACES UNDER AND ADJACENT TO THE PIPE.
2. ALL COSTS OF EXCAVATION BELOW GRADE AND PLACEMENT OF GRANULAR BEDDING SHALL BE INCLUDED IN THE BID PRICES FOR PIPE ITEMS.

CLASS "C" PIPE BEDDING (RCP STORM PIPE)



PIPE BEDDING

*Steven L. Lillibridge*

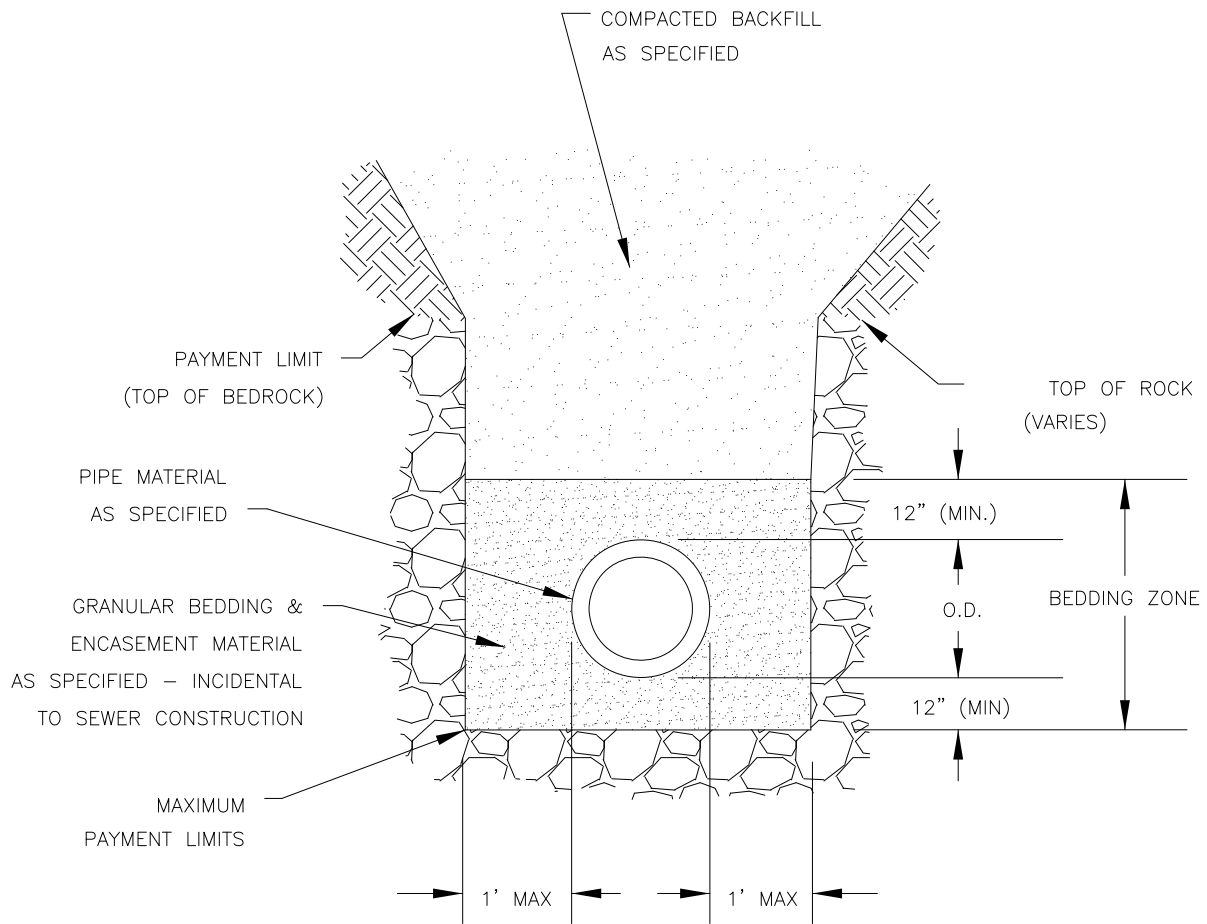
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REVISED: 03/2020

DETAIL NO:

2005



ROCK EXCAVATION

*Steven L. Lillibridge*

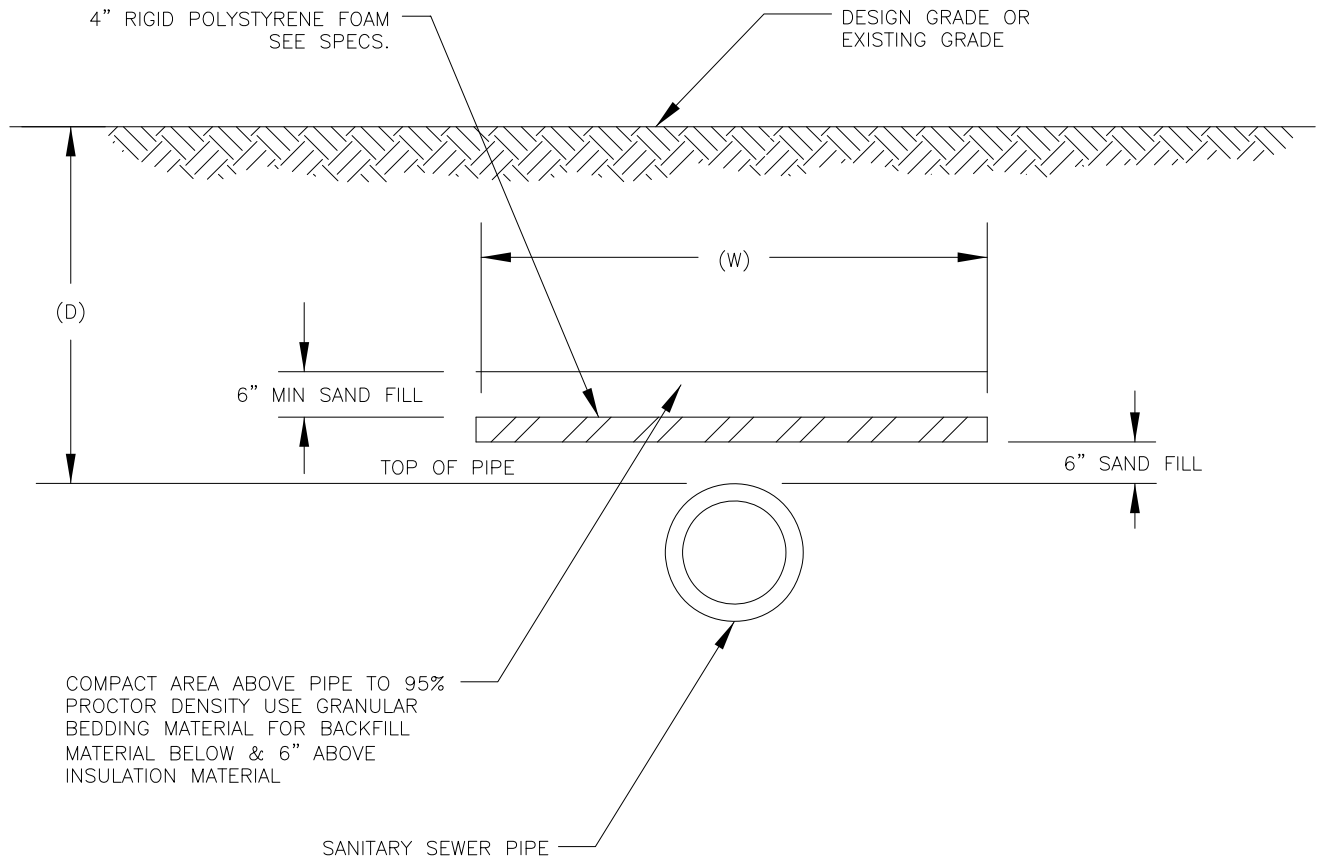
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REVISED: 03/2020

DETAIL NO:

2006



(D) DEPTH OF PIPE	(W) WIDTH OF INSULATION
2'	12'
3'	10'
4'	8'
5'	6'
6'	4'
7'	4'

NOTE:

1. THIS DETAIL IS NOT FOR NEW CONSTRUCTION. THIS IS FOR RETROFIT CONDITIONS BASED ON EXISTING SHALLOW DEPTH UTILITY CONDITIONS. IT SHALL NOT BE USED WITHOUT THE WRITTEN PERMISSION OF THE CITY ENGINEER.
2. ALL INSULATION SHALL HAVE A MINIMUM COMPRESSION STRENGTH OF 35 PSI.



INSULATION

*Steven L. Lillibridge*

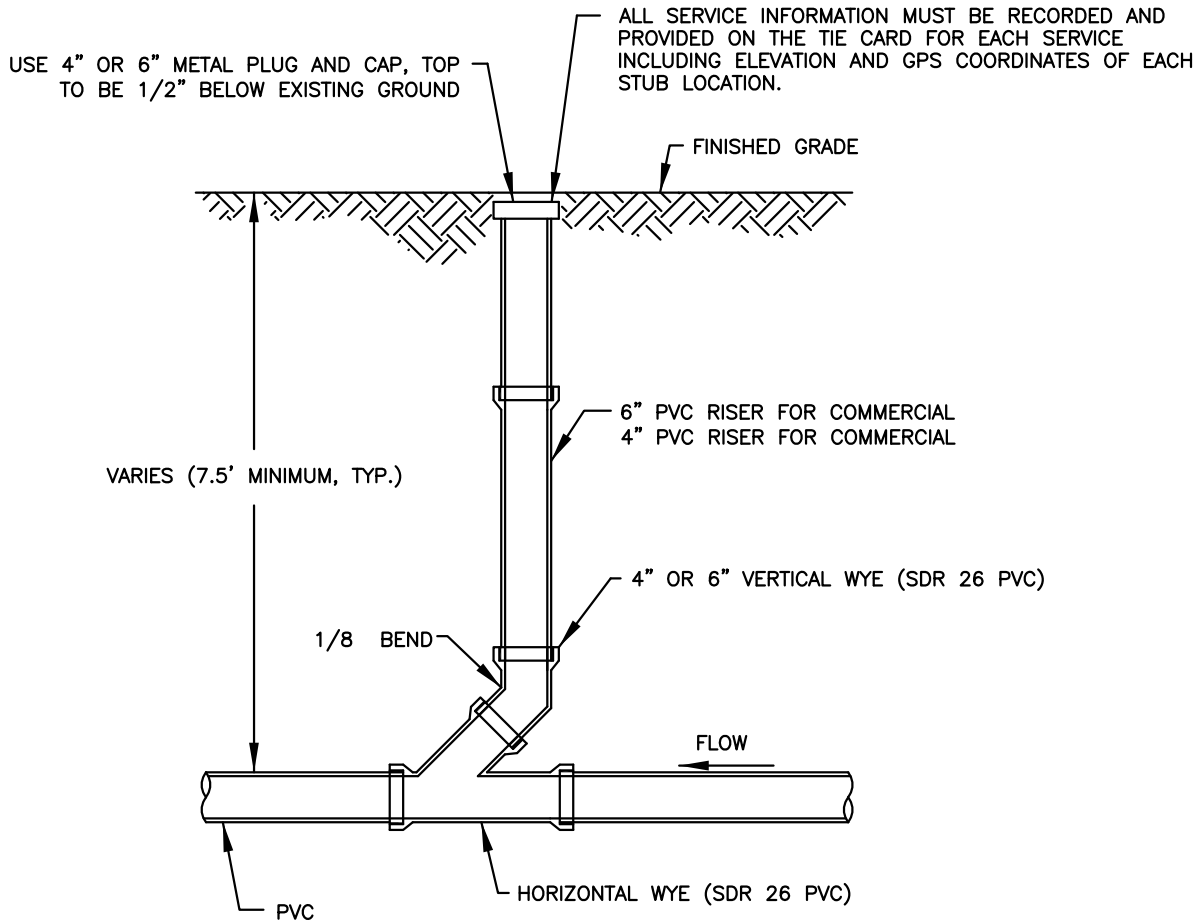
PUBLIC WORKS DIRECTOR/CITY ENGINEER

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REVISED: 03/2020

DETAIL NO:

2007



NOTE:

1. CLEAN OUTS REQUIRED AT MAXIMUM 70' INTERVALS FROM MAIN SEWER LINE



SANITARY SEWER SERVICE CLEAN OUT

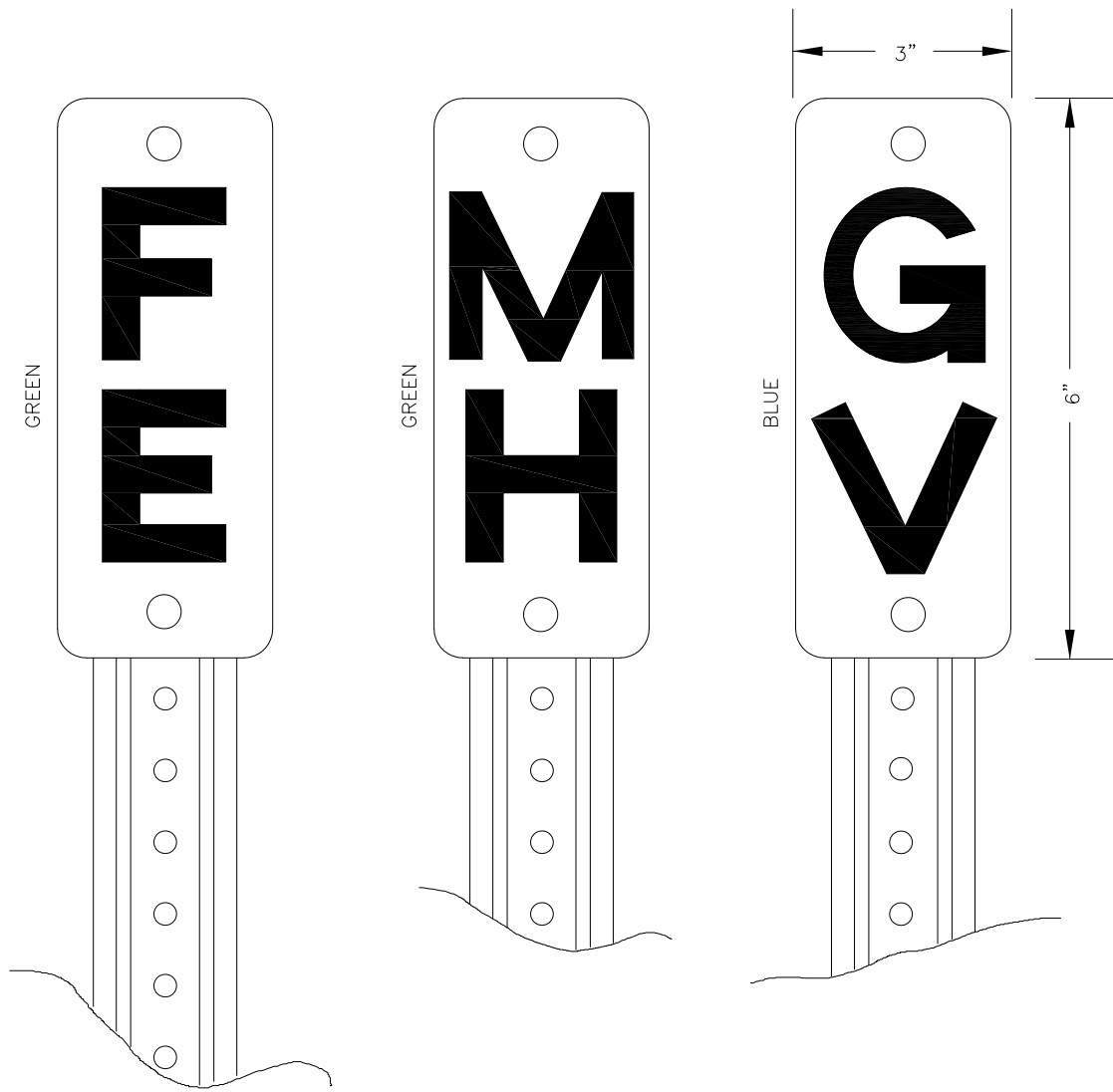
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PUBLIC WORKS DIRECTOR/CITY ENGINEER

APPROVED: 01/2023

REVISED: 03/2020

DETAIL NO:  
2008



NOTE:

1. 3" X 6" STRUCTURE MARKER SIGNS SHALL BE FURNISHED AND INSTALLED FOR ALL STRUCTURES LOCATED OUTSIDE THE STREET RIGHT OF WAY AND SHALL BE CONSIDERED INCIDENTAL.
2. 0.063" THICK ALUMINUM SIGN. BLACK LETTERS ON GREEN OR BLUE HIGH INTENSITY REFLECTORIZED BACKGROUND.
3. U-CHANNEL POST. MINIMUM 1.2 LB./FT 6'-6" LONG, PAINTED GREEN.
4. FLARED END SECTION POST SHALL NOT BE POSITIONED IN A WAY THAT WILL BLOCK FLOW.



STRUCTURE MARKER SIGN

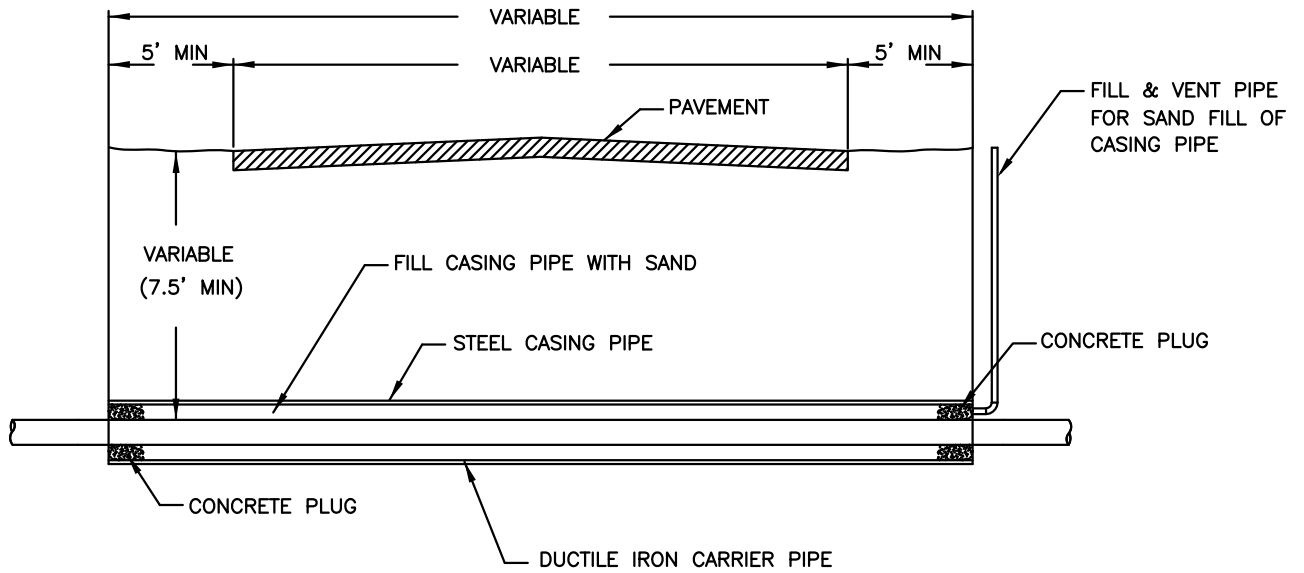
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REVISED: 03/2020

DETAIL NO:  
2009



NOTE:

1. CASING PIPE SHALL BE INSTALLED AT THE SAME GRADE AS CARRIER PIPE TO AVOID THE USE OF SHIMS. TO BE VERIFIED PRIOR TO INSTALLATION OF THE CARRIER PIPE.
2. GPS COORDINATES AND TIES TO ENDS OF CASING PIPE SHALL BE RECORDED.

PIPE SIZE CHART

CARRIER PIPE	CASING DIAMETER	CASING THICKNESS
6"	18"	0.250
8"	22"	0.250
10"	22"	0.250
12"	26"	0.250
16"	30"	0.250
18"	30"	0.250



STEEL CASING

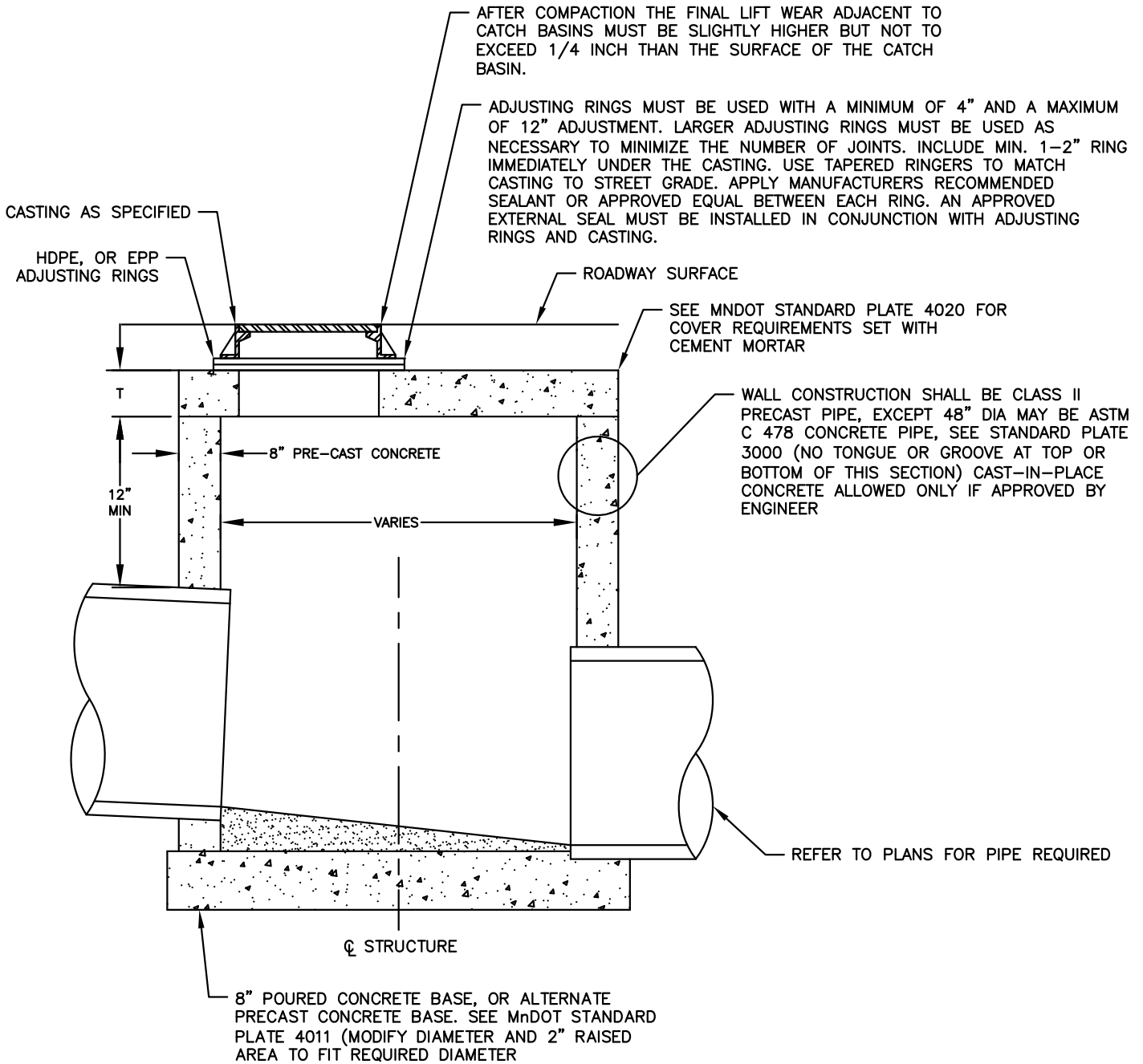
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APPROVED: 01/2023

REVISED: 03/2020

DETAIL NO:  
2010



NOTES:

1. REFER TO STANDARD PLANS FOR HEIGHT AND DIAMETER REQUIRED.
2. REINFORCEMENT AS PER SPEC. 3301, GRADE 60.
3. DOGHOUSES SHALL BE GROUTED ON BOTH THE OUTSIDE AND INSIDE AND HAVE A MINIMUM OF 12" THICK CONCRETE COLLAR.



STANDARD MANHOLE FOR STORM SEWER

*Steven L. Lillibridge*

PUBLIC WORKS DIRECTOR/CITY ENGINEER

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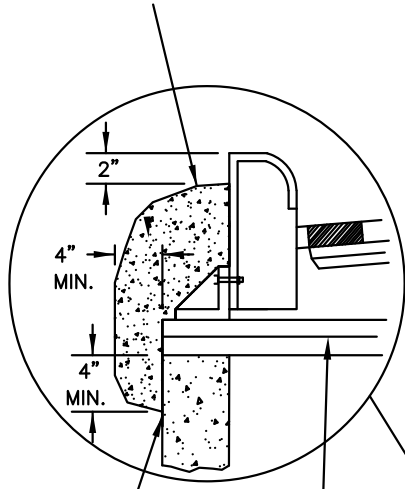
DETAIL NO:

3001



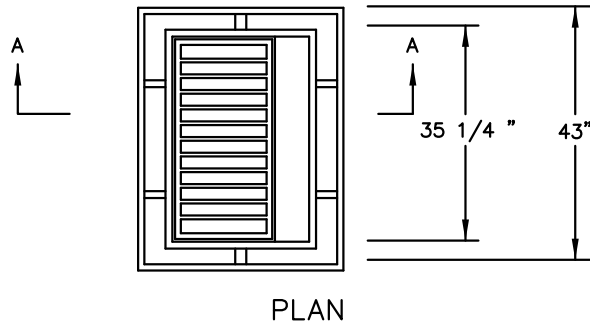
AN APPROVED EXTERNAL SEAL MUST BE INSTALLED IN CONJUNCTION WITH ADJUSTING RINGS, CASTING, AND PROVIDE AN INTEGRAL 4" CONCRETE COLLAR TO BE POURED DURING CURB AND GUTTER INSTALLATION. EXTERNAL SEAL MUST BE INSTALLED PRIOR TO THE CONCRETE COLLAR AND MUST BE OVERLAPPED ON THE CASTING AND ON THE STRUCTURE.

CURB INLET FRAME AND CURB BOX  
 24"x36" SLAB OPENING FOR NEENAH R3067V  
 OR ESS. BROS. 330 HIGH CAPACITY OR EQUAL.  
 INSTALL R3290L FOR DRIVEWAYS AND VALLEY  
 GUTTERS. VANE GRATE SHOWN

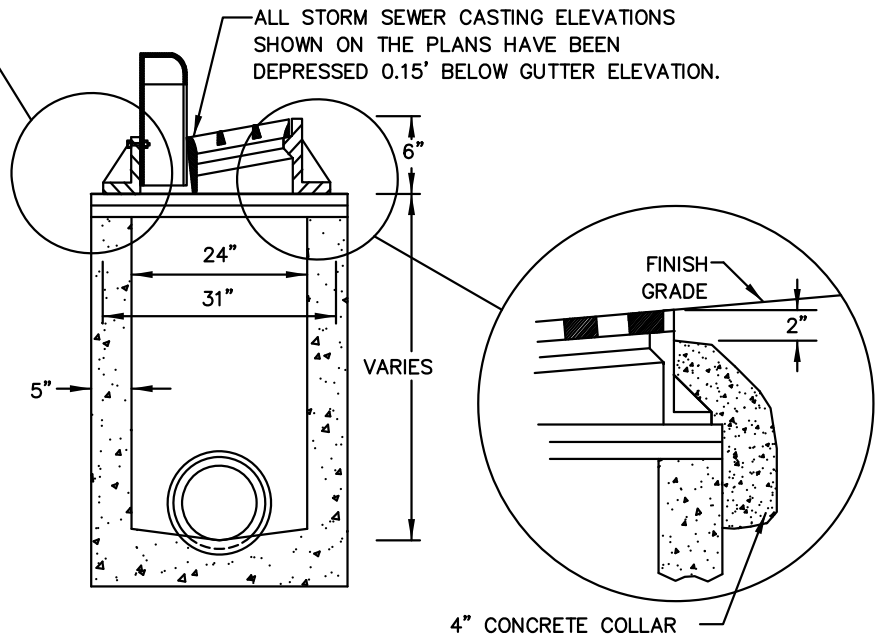


EXTERNAL SEAL MUST BE INSTALLED PRIOR TO THE CONCRETE COLLAR AND MUST BE OVERLAPPED ON THE CASTING AND ON THE STRUCTURE.

PRECAST CONCRETE, HDPE, OR EPP ADJUSTING RINGS



PLAN



SECTION A-A

NOTES:

1. PRECAST CONCRETE ADJUSTING RINGS MUST USE 2 RINGS (4") MIN, 18" MAX (INCLUDING CASTING). ENCASE IN CONCRETE COLLAR USING CURB MIX. EACH RING SHALL BE BEDDED WITH 1/2" MORTAR BETWEEN RINGS, CASTING, AND MANHOLE. WIPE CLEAN AND FINISH SMOOTH ON THE INSIDE.
2. DOGHOUSES SHALL BE GROUTED ON BOTH THE OUTSIDE AND INSIDE AND HAVE A MINIMUM OF 12" THICK CONCRETE COLLAR.
3. PRECAST CONCRETE ADJUSTING RINGS SHALL BE STACKED WITH NO MORE THAN 2" STAGGER PER RING, 6" TOTAL STAGGER FROM THE TOP SLAB OF STRUCTURE TO THE CASTING.
4. HDPE AND EPP ADJUSTING RINGS SHALL BE STACKED WITH NO MORE THAN 1" STAGGER PER RING, WITH A MAX OF 4" STAGGER FROM THE TOP SLAB OF STRUCTURE TO THE CASTING.
5. HDPE AND EPP ADJUSTING RINGS SHALL BE INSTALLED WITH MANUFACTURERS RECOMMENDED SEALANT OR APPROVED EQUAL BETWEEN EACH RING.
6. POUR A 3" TO 4" CONCRETE COLLAR AROUND RINGS EXTENDING FROM THE CASTING TO THE PRECAST SECTION.
7. REFER TO PLANS FOR THE PIPE REQUIRED.
8. AFTER COMPACTION THE FINAL LIFT WEAR ADJACENT TO CATCH BASINS MUST BE SLIGHTLY HIGHER BUT NOT TO EXCEED 1/4 INCH THAN THE SURFACE OF THE CATCH BASIN.



2' X 3' CATCH BASIN

*Steven L. Lillibridge*

PUBLIC WORKS DIRECTOR/CITY ENGINEER

APPROVED: 01/2023

REVISED: 01/2023

DETAIL NO:

3002

24"x36" SLAB OPENING FOR NEENAH R3067V OR  
 ESS. BROS. 330 HIGH CAPACITY OR EQUAL.  
 INSTALL R3290L FOR DRIVEWAYS AND VALLEY  
 GUTTERS. VANE GRATE SHOWN

AN APPROVED EXTERNAL SEAL MUST  
 BE INSTALLED IN CONJUNCTION WITH  
 ADJUSTING RINGS, AND CASTING.  
 PROVIDE AN INTEGRAL 4" CONCRETE  
 COLLAR TO BE POURED DURING CURB  
 AND GUTTER INSTALLATION

PRECAST CONCRETE, HDPE,  
 OR EPP ADJUSTING RINGS

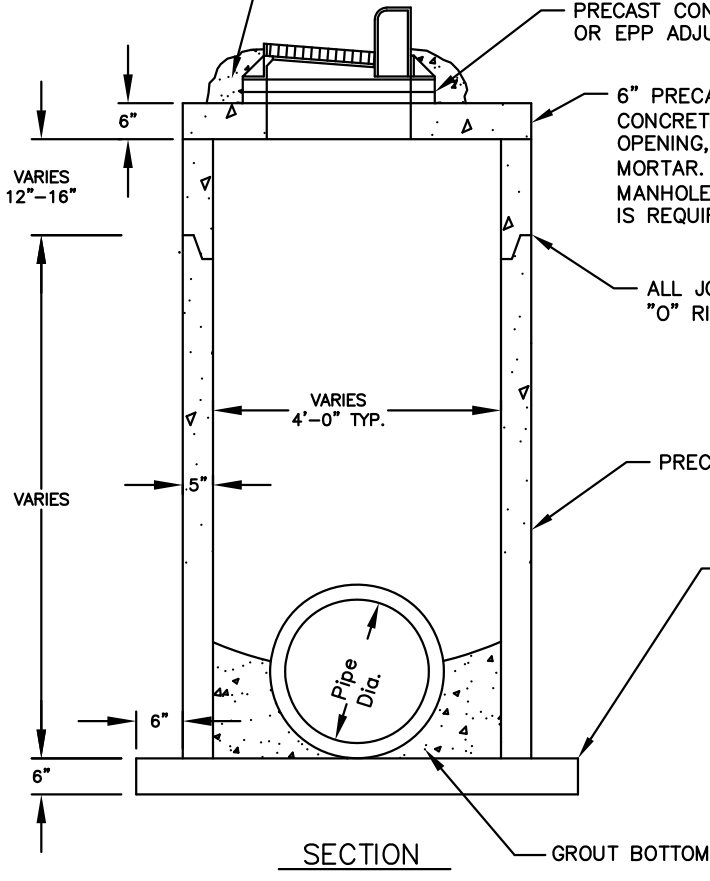
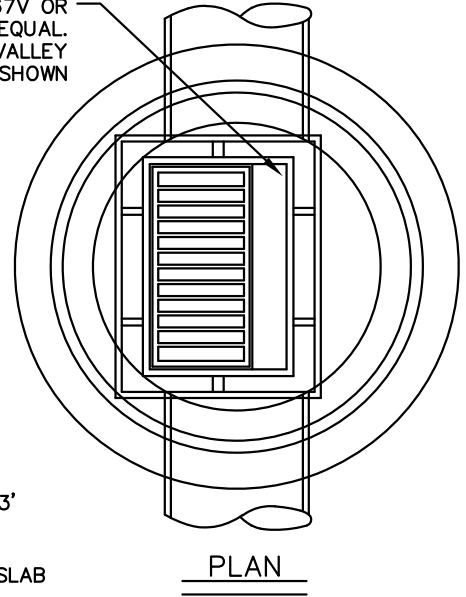
6" PRECAST REINFORCED  
 CONCRETE SLAB WITH 2' X 3'  
 OPENING, SET WITH CEMENT  
 MORTAR. FOR 6' DIA.  
 MANHOLE, AN 8" PRECAST SLAB  
 IS REQUIRED.

ALL JOINTS IN MANHOLE TO HAVE  
 "O" RING RUBBER GASKETS.

PRECAST CONCRETE SECTION

CONCRETE CATCH BASIN MANHOLE AND BASE  
 TO BE CRETEX TYPE 433B OR APPROVED  
 EQUAL. MINIMUM SLAB THICKNESS, 6" FOR  
 14' DEPTH. INCREASE THICKNESS 1" FOR  
 EACH 4' OF DEPTH GREATER THAN 14', AND  
 REINFORCE WITH 6"x6" 10/10 MESH.

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



GROUT BOTTOM

NOTES:

1. BASE TO BE GROUTED TO FORM A SMOOTH INVERT TO OUTLET. PIPE CUT-OUTS TO BE LOCATED WHERE REQUIRED.
2. ALL STORM SEWER ELEVATIONS SHOWN ON THE PLANS HAVE BEEN DEPRESSED 0.15' BELOW GUTTER ELEVATION.
3. DOGHOUSES SHALL BE GROUTED ON BOTH THE OUTSIDE AND INSIDE AND HAVE A MINIMUM OF 12" THICK CONCRETE COLLAR.
4. PRECAST CONCRETE ADJUSTING RINGS MUST USE 2 RINGS (4") MIN, 18" MAX (INCLUDING CASTING). ENCASE IN CONCRETE COLLAR USING CURB MIX. EACH RING SHALL BE BEDDED WITH 1/2" MORTAR BETWEEN RINGS, CASTING, AND MANHOLE. WIPE CLEAN AND FINISH SMOOTH ON THE INSIDE.
5. PRECAST CONCRETE ADJUSTING RINGS SHALL BE STACKED WITH NO MORE THAN 2" STAGGER PER RING, 6" TOTAL STAGGER FROM THE TOP SLAB OF STRUCTURE TO THE CASTING.
6. HDPE AND EPP ADJUSTING RINGS SHALL BE STACKED WITH NO MORE THAN 1" STAGGER PER RING, WITH A MAX OF 4" STAGGER FROM THE TOP SLAB OF STRUCTURE TO THE CASTING.
7. HDPE AND EPP ADJUSTING RINGS SHALL BE INSTALLED WITH MANUFACTURERS RECOMMENDED SEALANT OR APPROVED EQUAL BETWEEN EACH RING.
8. REFER TO PLANS FOR THE PIPE REQUIRED.
9. AFTER COMPACTION THE FINAL LIFT WEAR ADJACENT TO CATCH BASINS MUST BE SLIGHTLY HIGHER BUT NOT TO EXCEED 1/4 INCH THAN THE SURFACE OF THE CATCH BASIN.



CATCH BASIN MANHOLE

*Steven L. Lillibridge*

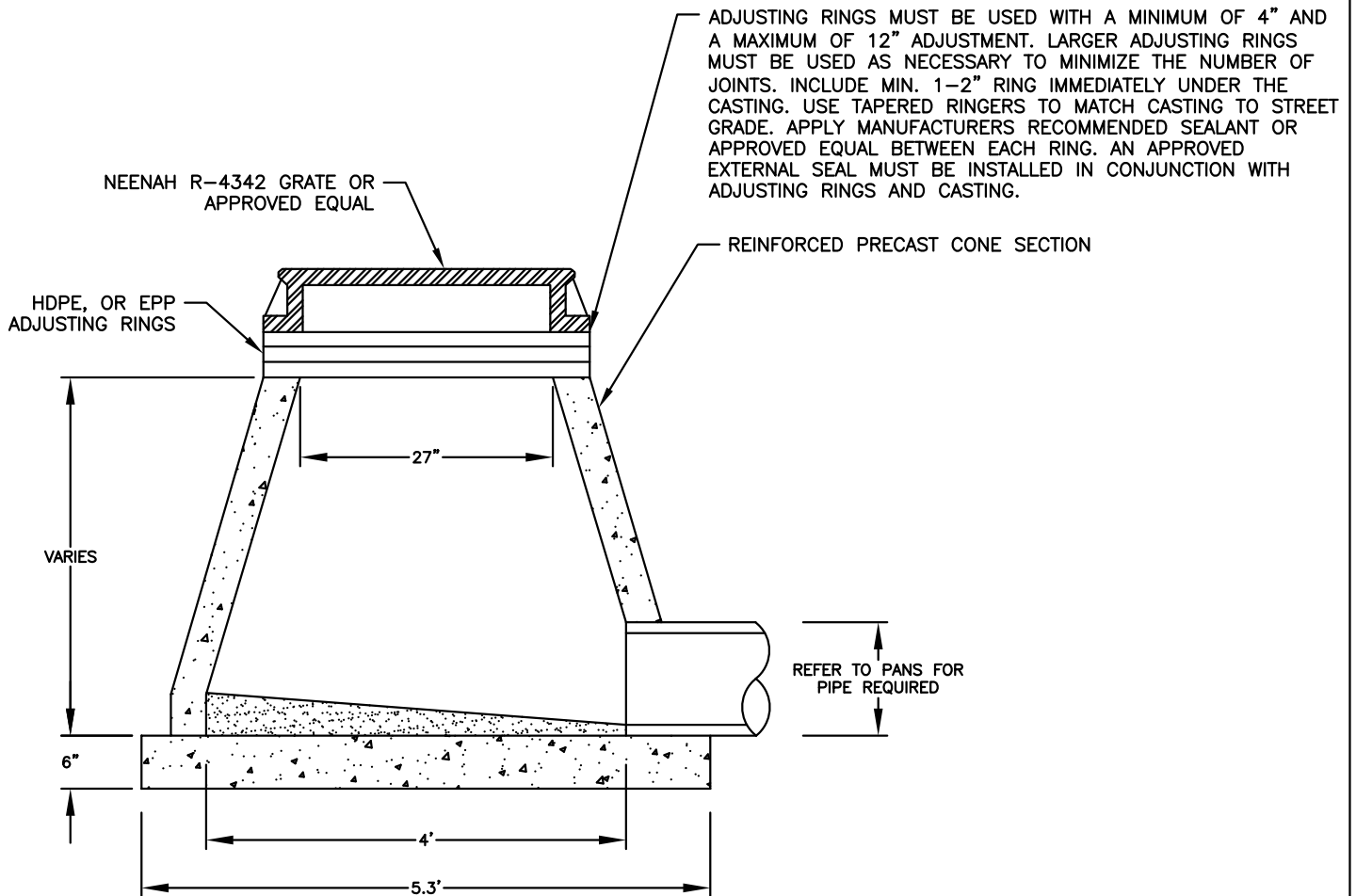
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APPROVED: 01/2023

REVISED: 01/2023

DETAIL NO:

3003



NOTES:

1. FOR MANHOLES THAT ARE BURIED WITH ADDITIONAL DEPTH PAYMENT SHALL BE FROM LOWEST INVERT TO TOP OF CASTING. ADDITIONAL BURIED DEPTH SHALL BE INCIDENTAL.
2. REFER TO STANDARD PLANS FOR HEIGHT AND DIAMETER REQUIRED.
3. DOGHOUSES SHALL BE GROUTED ON BOTH THE OUTSIDE AND INSIDE AND HAVE A MINIMUM OF 12" THICK CONCRETE COLLAR.



27" CATCH BASIN

*Steven L. Lillibridge*

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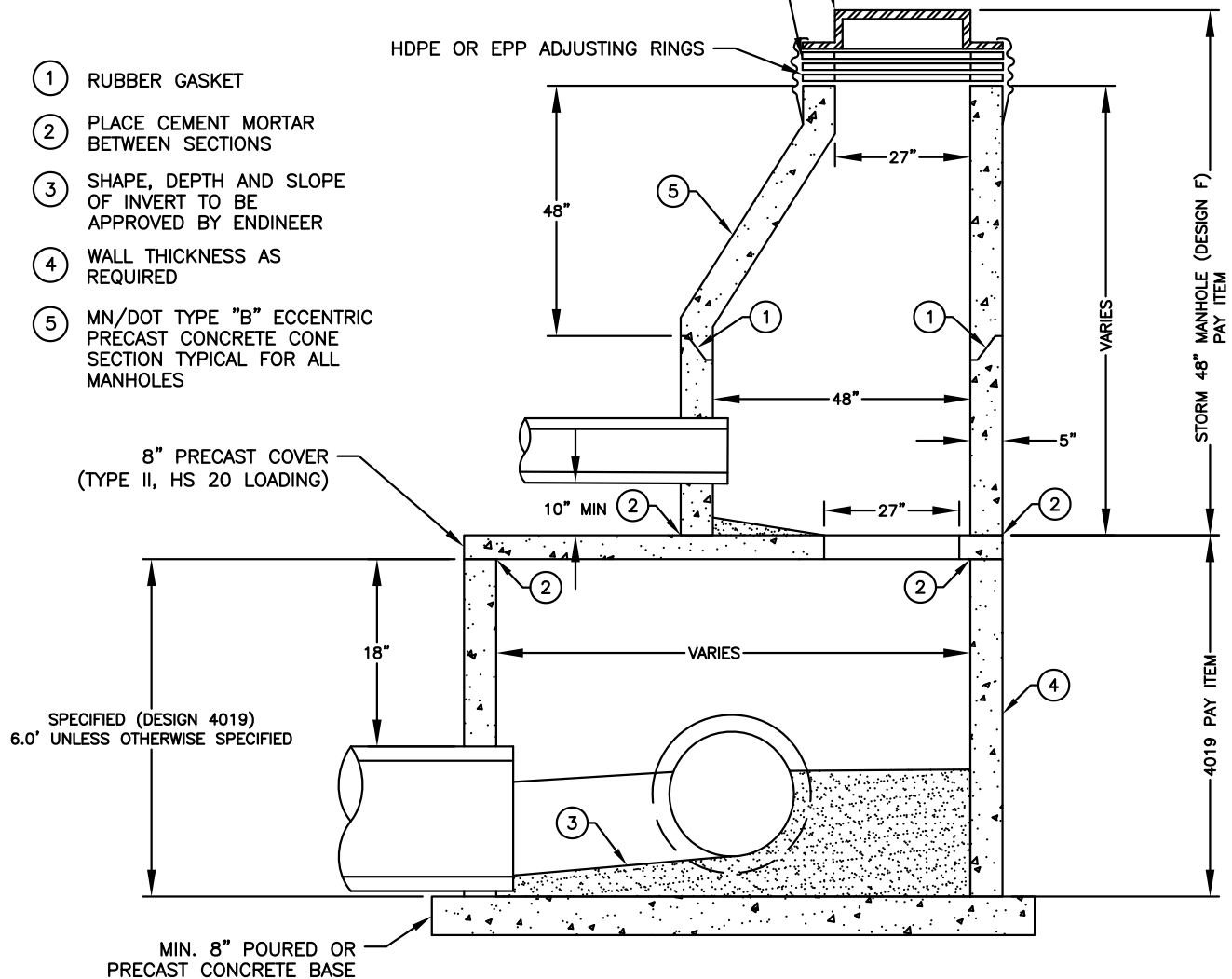
APPROVED: 01/2023

REVISED: 01/2023

DETAIL NO:  
3004

AFTER COMPACTION THE FINAL LIFT WEAR ADJACENT TO CATCH BASINS MUST BE SLIGHTLY HIGHER BUT NOT TO EXCEED 1/4 INCH THAN THE SURFACE OF THE CATCH BASIN.

ADJUSTING RINGS MUST BE USED WITH A MINIMUM OF 4" AND A MAXIMUM OF 12" ADJUSTMENT. LARGER ADJUSTING RINGS MUST BE USED AS NECESSARY TO MINIMIZE THE NUMBER OF JOINTS. INCLUDE MIN. 1-2" RING IMMEDIATELY UNDER THE CASTING. USE TAPERED RINGERS TO MATCH CASTING TO STREET GRADE. APPLY MANUFACTURERS RECOMMENDED SEALANT OR APPROVED EQUAL BETWEEN EACH RING. AN APPROVED EXTERNAL SEAL MUST BE INSTALLED IN CONJUNCTION WITH ADJUSTING RINGS AND CASTING.



REFER TO PLANS FOR PIPE REQUIRED

NOTES:

1. BASE TO BE GROUTED TO FORM A SMOOTH INVERT TO OUTLET. PIPE CUT-OUTS TO BE LOCATED WHERE REQUIRED.
2. DOGHOUSES SHALL BE GROUTED ON BOTH THE OUTSIDE AND INSIDE AND HAVE A MINIMUM OF 12" THICK CONCRETE COLLAR.



MANHOLE DESIGN 4019/F

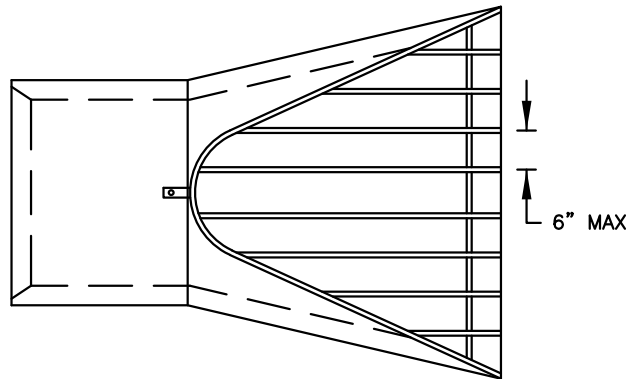
*Steven L. Lillibridge*

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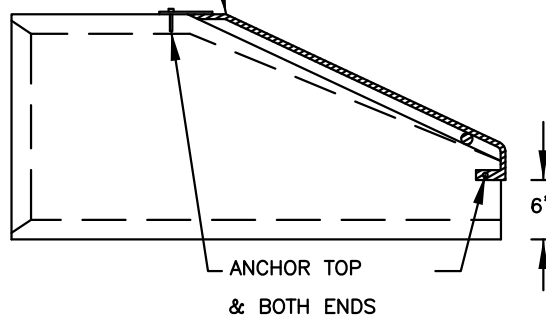
APPROVED: 01/2023

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DETAIL NO:  
3005



TRANSVERSE & LONGITUDINAL BARS  
 1" FOR 24" TO 42" APRONS  
 1 1/4" FOR 42" & LARGER APRONS.



NOTES:

1. REFERENCE MNDOT STANDARD PLATE 3133D FOR RIPRAP DETAILS. ALL RIPRAP SHALL BE FIELDSTONE.
2. TRASH GUARD SHALL BE USED FOR 24" OR GREATER FLARED END.
3. ALL TRASH GUARDS SHALL BE GALVANIZED AFTER FABRICATION PER MNDOT SPEC. 3392 & 3394.
4. TIE LAST 3 PIPE JOINTS. USE 2 GALVANIZED TIE BOLT FASTENERS PER JOINT. INSTALL AT 60' FROM TOP TO BOTTOM OF PIPE.



TRASH GUARD FOR FLARED END SECTION

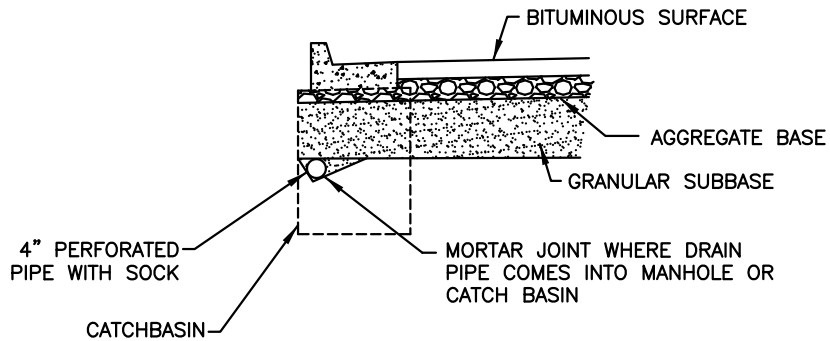
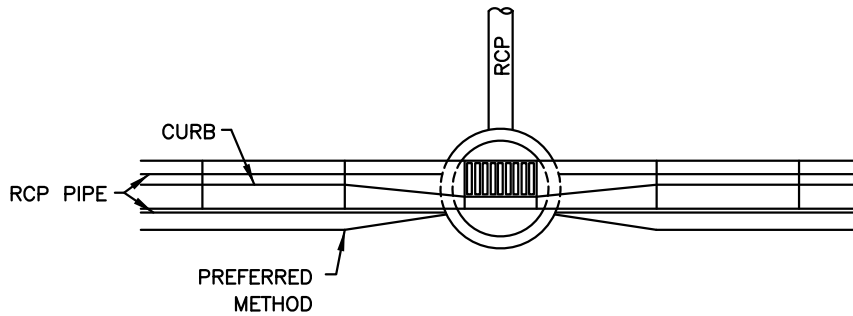
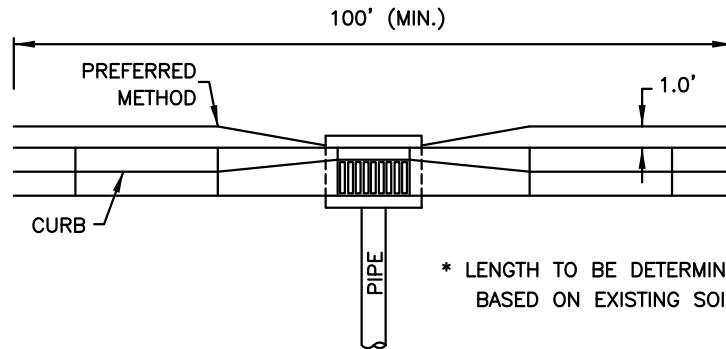
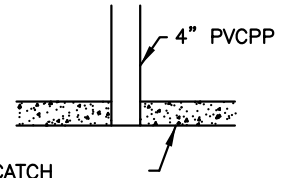
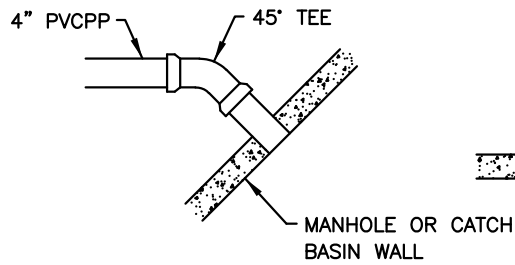
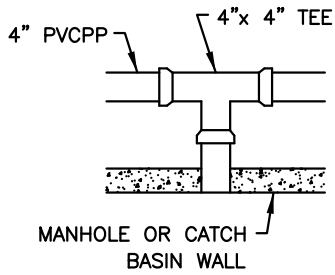
*Steven L. Lillibridge*

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3006



PERFORATED DRAINTILE

*Steven L. Lillibridge*

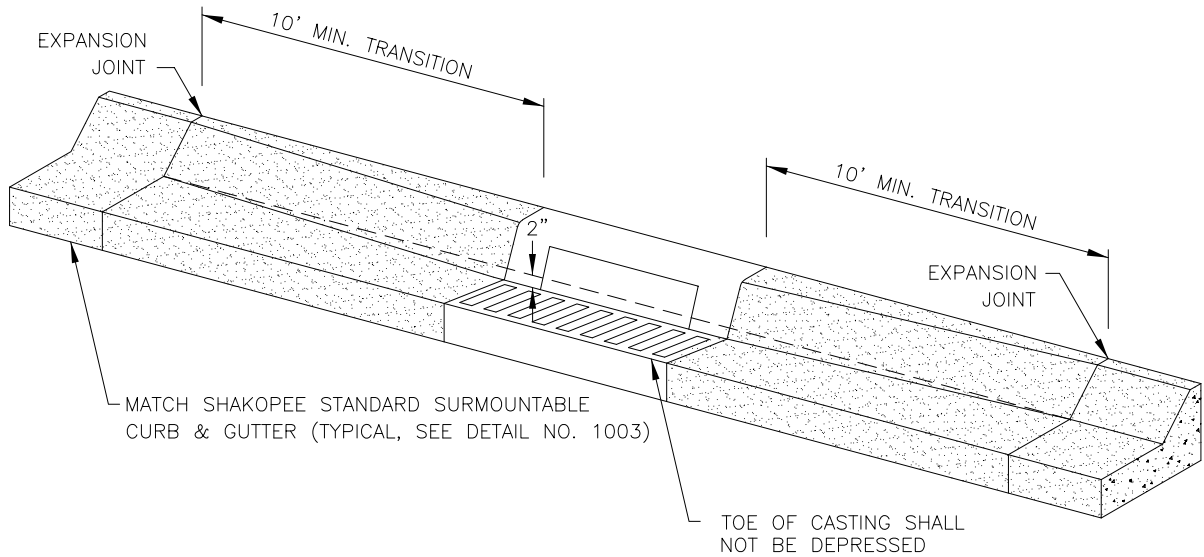
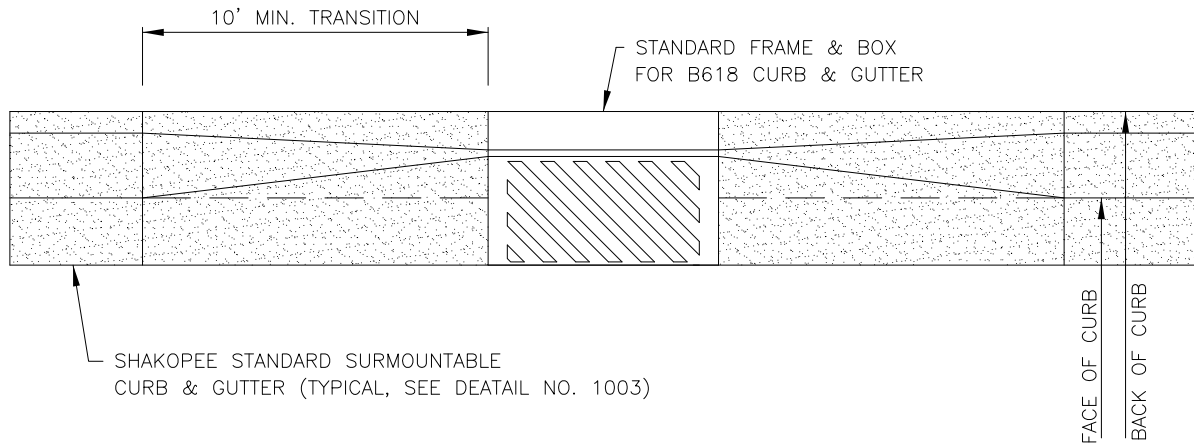
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APPROVED: 01/2023

REVISED: 03/2020

DETAIL NO:

3007



NOTE:

1. STORM SEWER TOP OF CASTING ELEVATION SHOWN ON THE PLANS INCLUDES A 0.15' DEPRESSION FROM THE PROPOSED GUTTER GRADE. THE CONCRETE CURB SHOULD BE TRANSITIONED FROM THE PROPOSED GUTTER GRADE TO THE CASTING ELEVATION 10' ON EACH SIDE OF THE CASTING.



TRANSITION TO B618 CURB AT CATCH BASIN

*Steven L. Lillibridge*

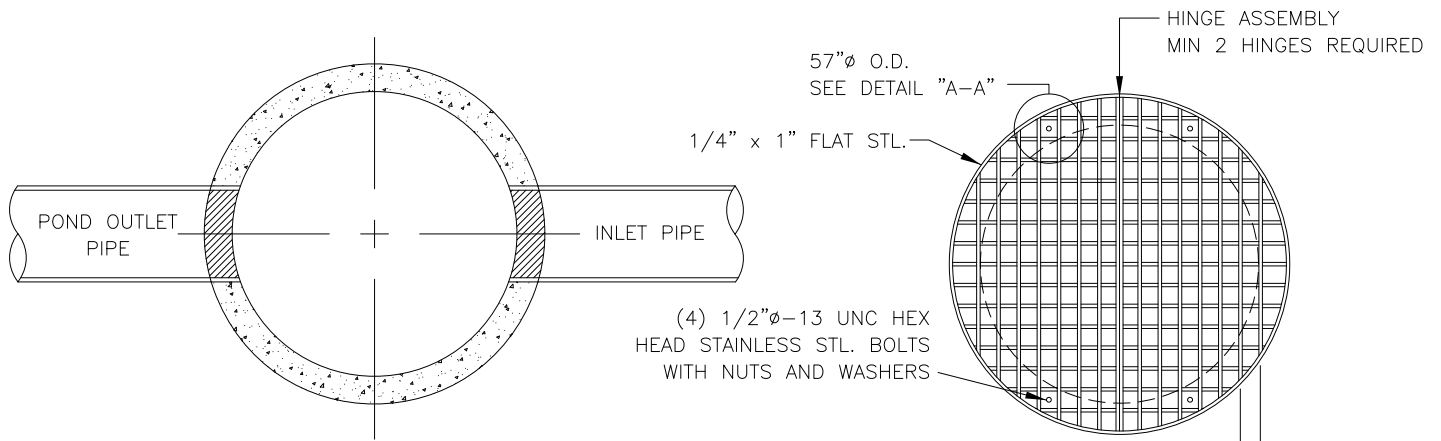
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APPROVED: 01/2023

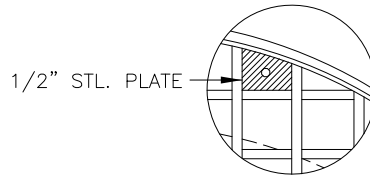
REVISED: 03/2020

DETAIL NO:

3008



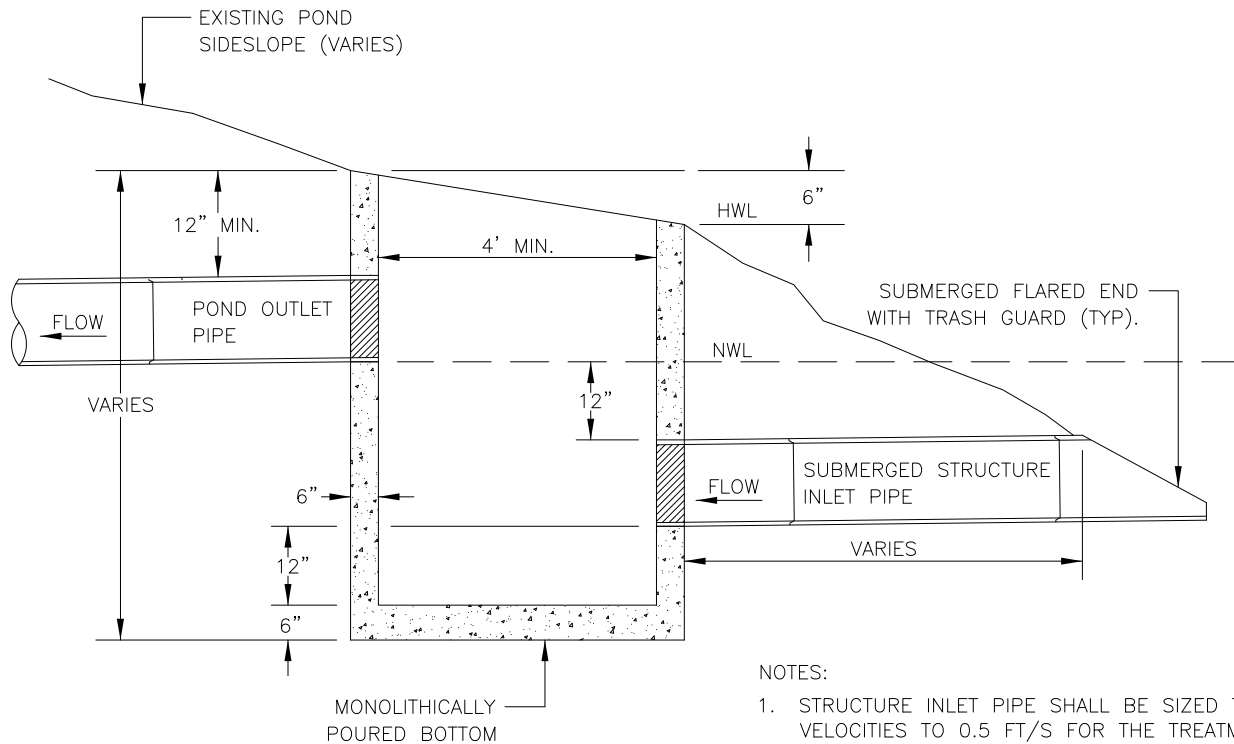
DETAIL "A-A"



NOTES:

1. GRATE TO BE MADE IN (2) PIECES.
2. ALL METAL SHALL BE HOT-DIPPED GALVANIZED.
3. SEE PLAN FOR ALL ELEVATIONS.

TOP VIEW



NOTES:

1. STRUCTURE INLET PIPE SHALL BE SIZED TO LIMIT VELOCITIES TO 0.5 FT/S FOR THE TREATMENT STORM EVENT.
2. POND OUTLET SHALL BE SIZED TO MEET RATE CONTROL REQUIREMENTS.
3. TIE THE LAST 3 PIPE JOINTS. USE 2 TIE BOLT FASTENERS PER JOINT.

SECTION VIEW



POND SKIMMER STRUCTURE

*Steven L. Lillibridge*

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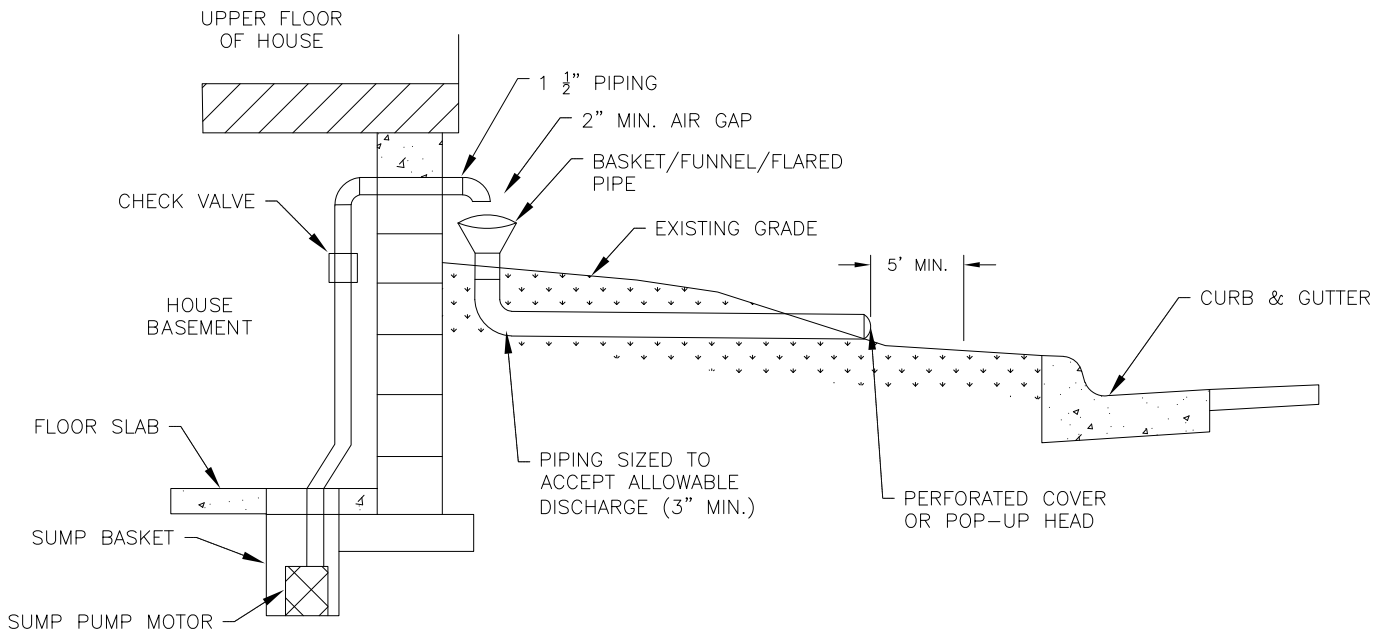
REVISED: 03/2020

DETAIL NO:

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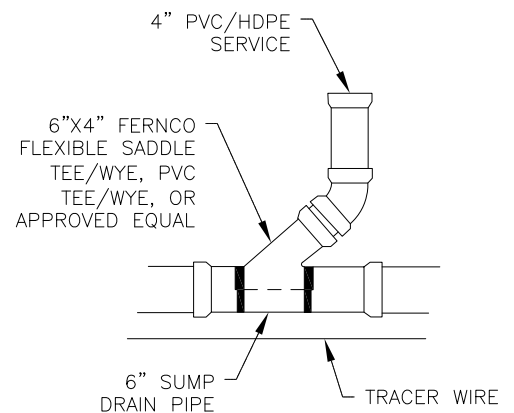
UNCONNECTED SUMP DRAIN SERVICE



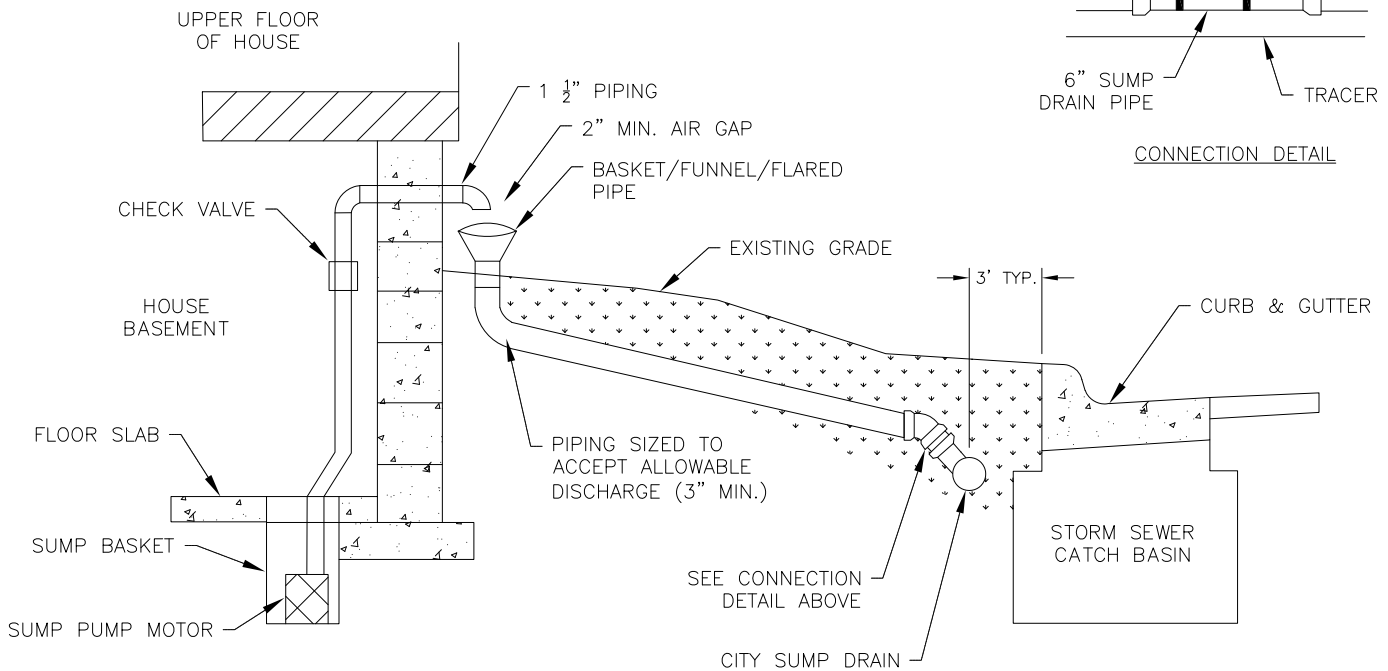
CONNECTED SUMP DRAIN SERVICE

NOTES:

1. SUMP PUMP CONNECTION PERMIT REQUIRED PRIOR TO EXCAVATION.
2. CONNECTION SHALL BE INSPECTED AND APPROVED BY CITY STAFF PRIOR TO BACKFILLING.



CONNECTION DETAIL



SUMP DRAIN SERVICE CONNECTION

*Steven L. Lillibridge*

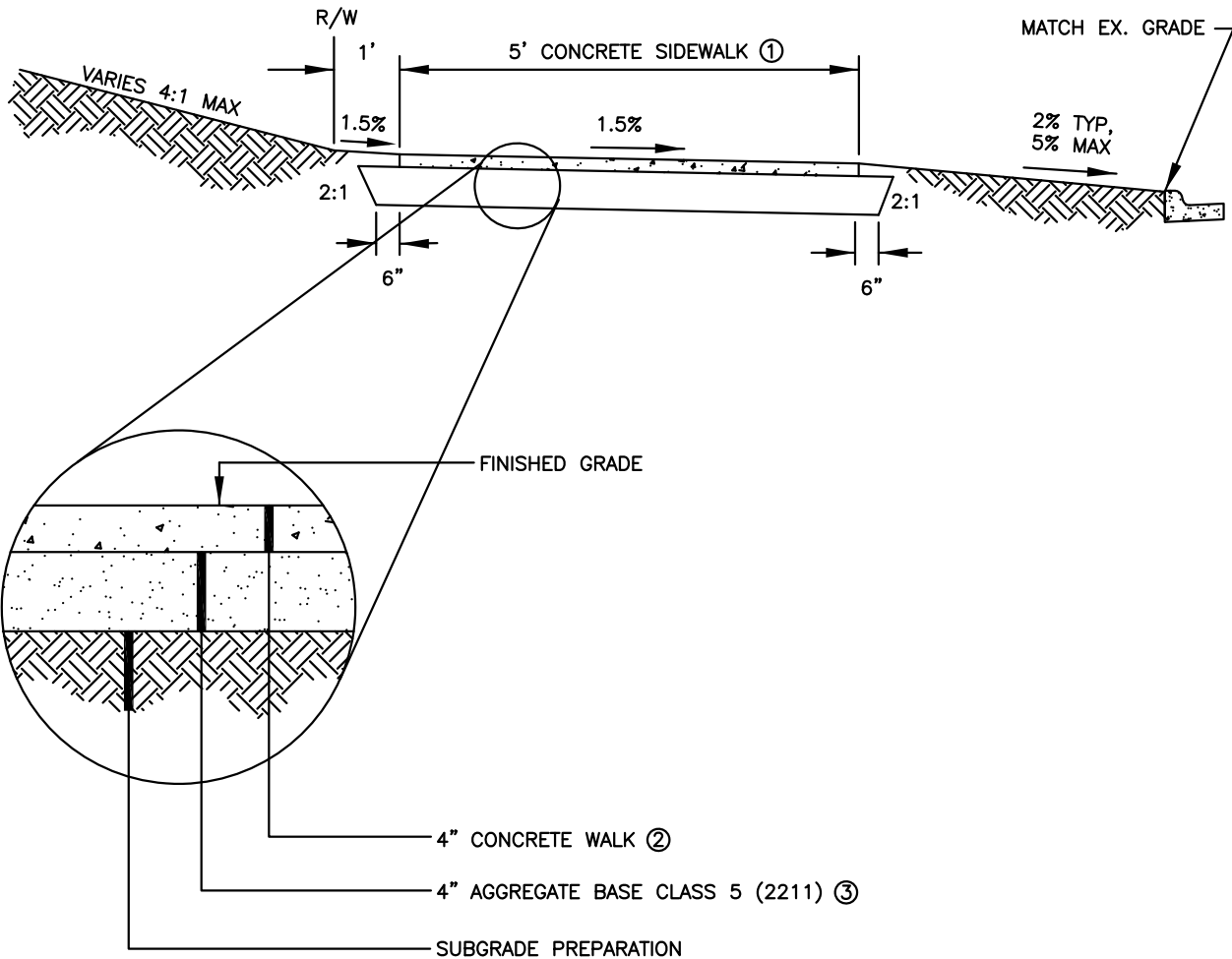
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APPROVED: 01/2023

REVISED: 02/2021

DETAIL NO:

3010



SIDEWALK DIMENSIONS:

- ① WIDTH - 5' (NEW) OR MATCH EXISTING (SPOT REPAIRS)
- ② DEPTH - 4" TYPICAL, 6" AT RESIDENTIAL DRIVEWAYS  
6" IN NEW DEVELOPMENTS WHERE SURMOUNTABLE CURB IS CONSTRUCTED AND RESIDENTIAL DRIVEWAYS COULD BE CONSTRUCTED.  
8" AT COMMERCIAL DRIVEWAYS
- ③ BASE DEPTH - 12" GRANULAR BORROW OR 4" OF CLASS 5 AGGREGATE
- ④ CONTRACTION JOINTS - 5' INTERVALS (APPROX.)
- ⑤ EXPANSION JOINTS - 100' INTERVALS (MAX.)



TYPICAL SIDEWALK

*Steven L. Lillibridge*

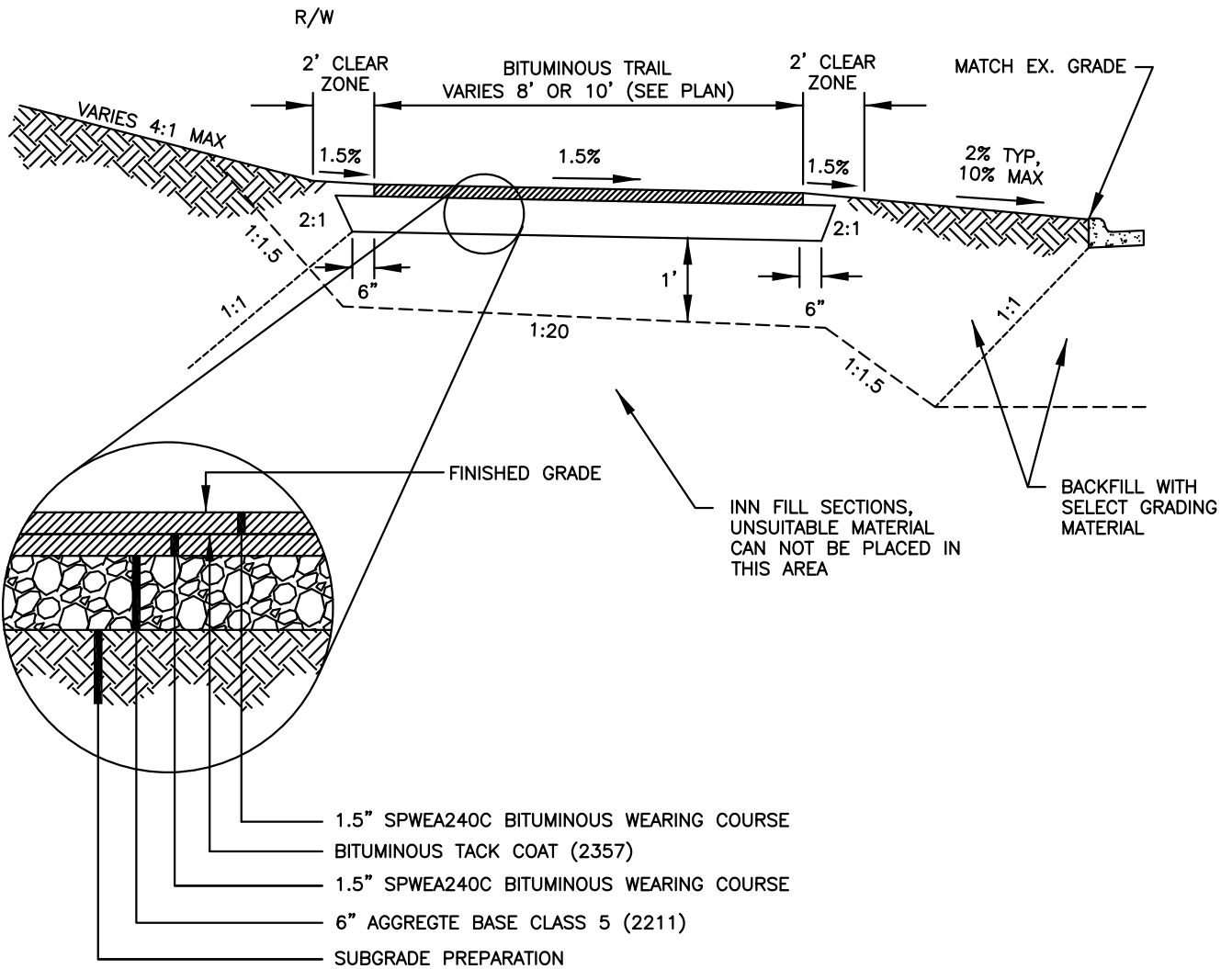
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APPROVED: 01/2023

REVISED: 05/2021

DETAIL NO:

4001



NOTE:

- SAND AND/OR GEOTEXTILE FABRIC TO BE INCLUDED AS REQUIRED BY THE CITY ENGINEER.



BITUMINOUS TRAIL

*Steven L. Lillibridge*

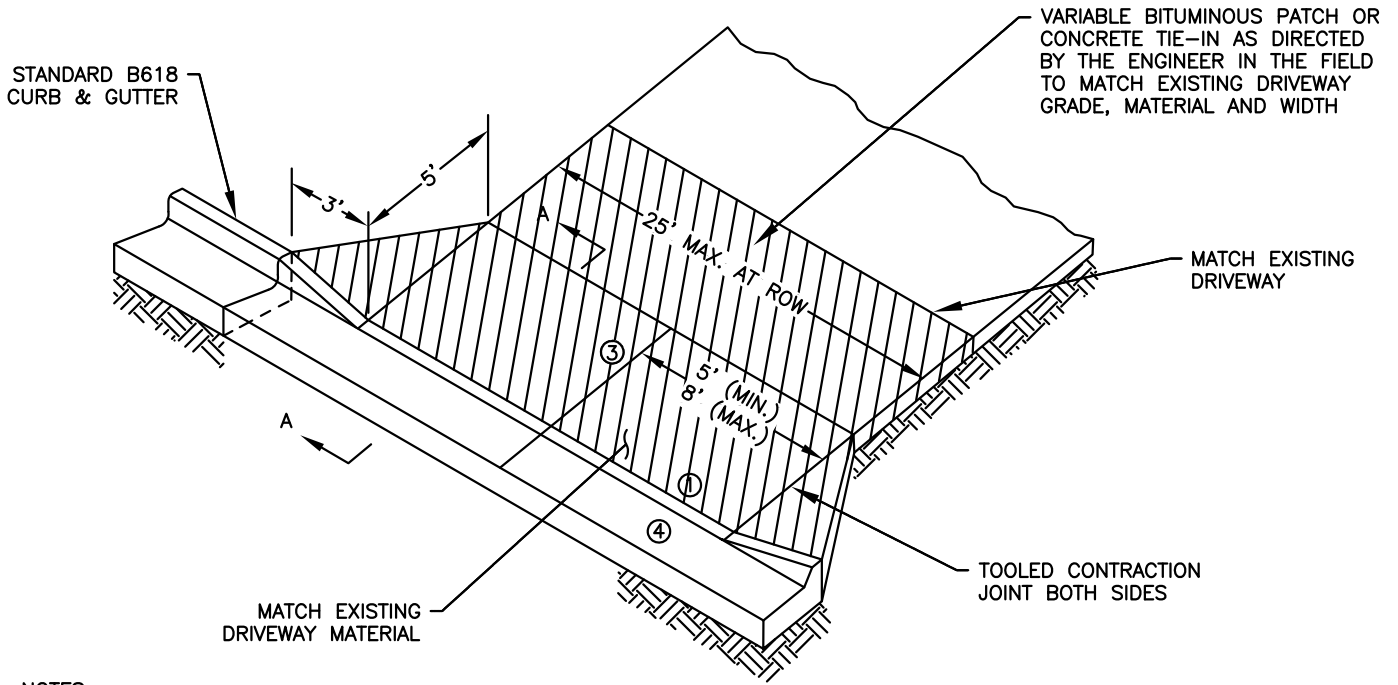
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APPROVED: 01/2023

REVISED: 03/2020

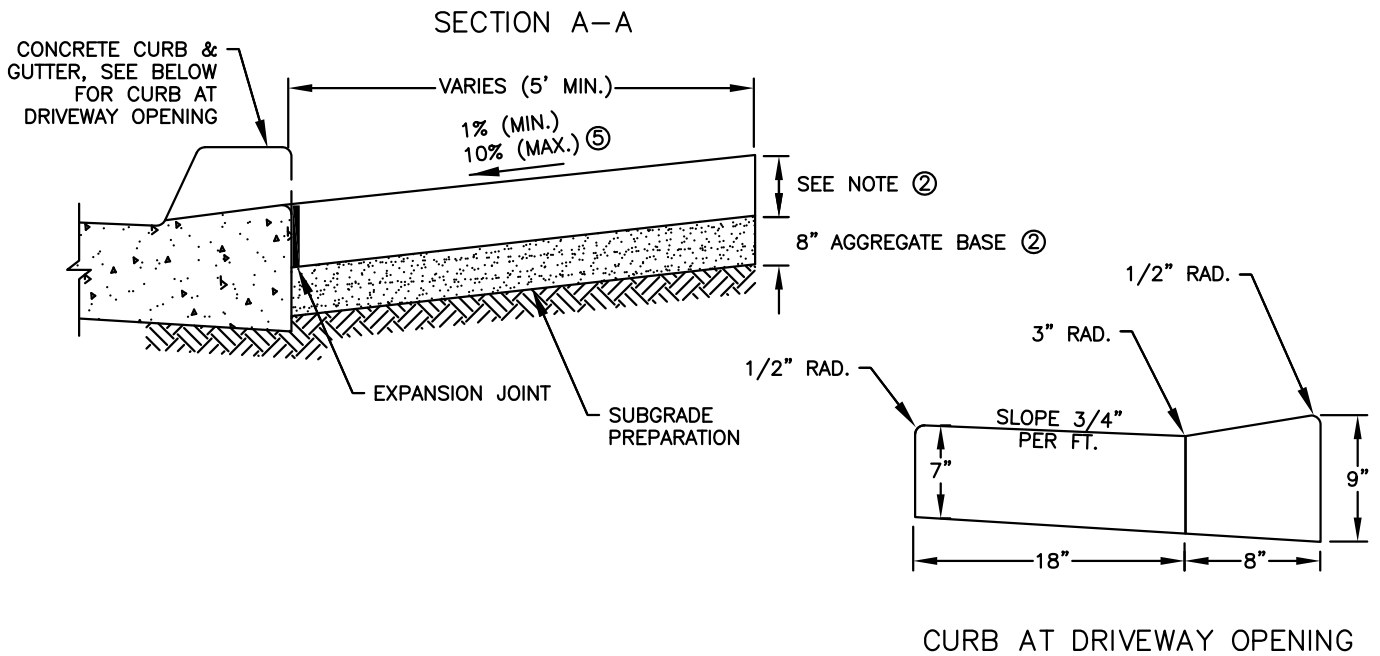
DETAIL NO:

4002



NOTES:

- ① IF DRIVEWAY MATERIAL IS CONCRETE SPACE CONTROL JOINTS SUCH THAT MAXIMUM PANEL DIMENSIONS ARE 8'X8'.
- ② PAVEMENT SECTION SHOWN MUST BE 6" MINIMUM DEPTH FOR CONCRETE AND 3" MINIMUM DEPTH FOR BITUMINOUS. MATCH THICKER SECTIONS AS DIRECTED BY THE ENGINEER. BITUMINOUS PAVEMENT SECTIONS MUST BE CONSTRUCTED IN MULTIPLE LIFTS 1.5" MINIMUM AND 2.5" MAXIMUM.
- ③ IF DRIVEWAY MATERIAL IS CONCRETE COORDINATE AND ALIGN JOINTS WITH APRON, SIDEWALK AND EXISTING CONCRETE DRIVEWAY.
- ④ CURB & GUTTER AT DRIVEWAY OPENINGS WILL BE PAID FOR AS CURB & GUTTER. REPLACEMENT OF DRIVEWAYS NEXT TO THE NEW CURB & GUTTER WILL BE PAID FOR AS THE SPECIFIED DRIVEWAY TYPE.
- ⑤ USE LESSER OF 10% OR EXISTING GRADE WHEN MATCHING EXISTING DRIVEWAY.



TYPICAL RESIDENTIAL DRIVEWAY

*Steven L. Lillibridge*

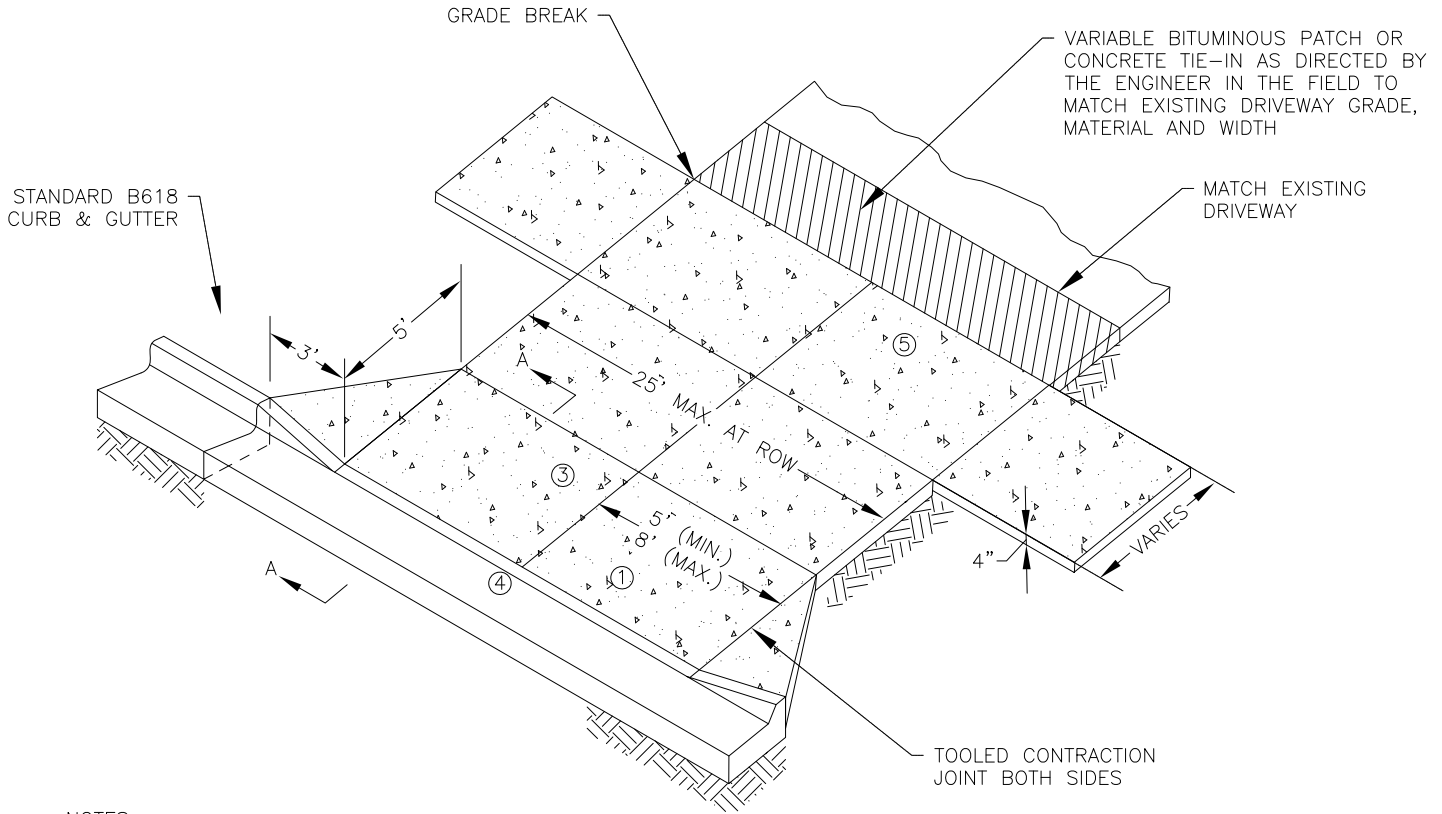
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APPROVED: 01/2023

REVISED: 02/2021

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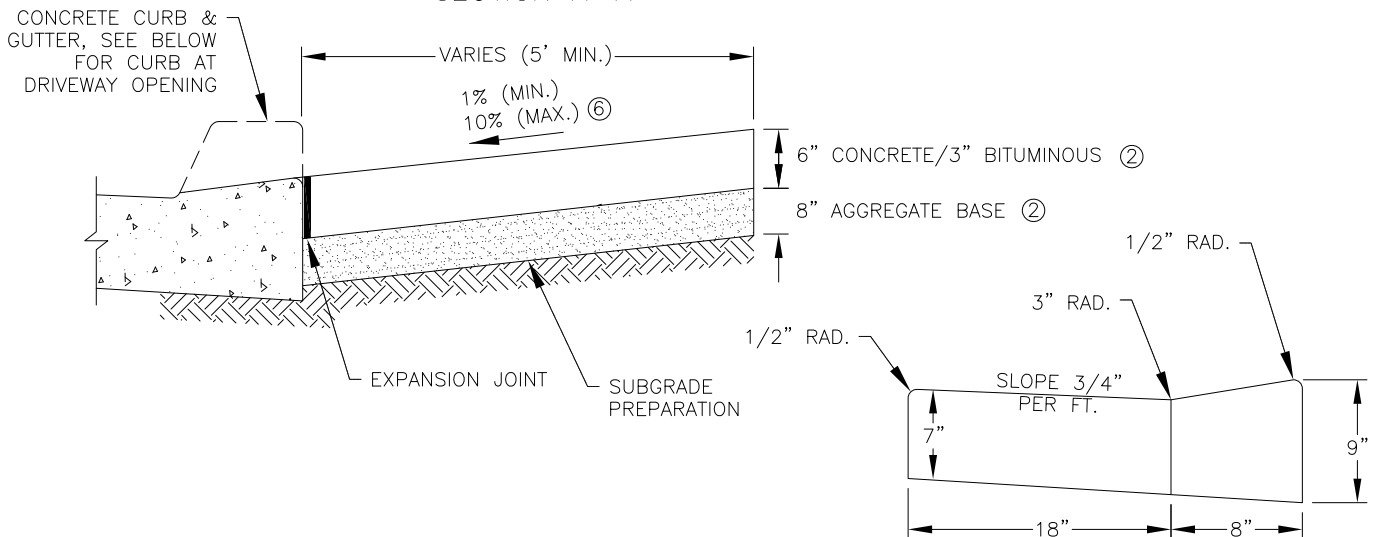
4003



NOTES:

- ① SPACE CONTROL JOINTS SUCH THAT MAXIMUM PANEL DIMENSIONS ARE 8'X8'.
- ② PAVEMENT SECTION SHOWN MUST BE MINIMUM DEPTHS. MATCH THICKER SECTIONS AS DIRECTED BY THE ENGINEER. BITUMINOUS PAVEMENT SECTIONS MUST BE CONSTRUCTED IN MULTIPLE LIFTS 1.5" MINIMUM AND 2.5" MAXIMUM.
- ③ COORDINATE AND ALIGN JOINTS WITH APRON, SIDEWALK AND EXISTING CONCRETE DRIVEWAY.
- ④ CURB & GUTTER AT DRIVEWAY OPENINGS WILL BE PAID FOR AS CURB & GUTTER. REPLACEMENT OF DRIVEWAYS NEXT TO THE NEW CURB & GUTTER WILL BE PAID FOR AS THE SPECIFIED DRIVEWAY TYPE.
- ⑤ SIDEWALK THROUGH THE DRIVEWAY SHALL BE 6" THICK AND WILL BE PAID FOR AS CONCRETE DRIVEWAY APRON.
- ⑥ USE LESSER OF 10% OR EXISTING GRADE WHEN MATCHING EXISTING DRIVEWAY.

SECTION A-A



TYPICAL RESIDENTIAL DRIVEWAY WITH SIDEWALK

*Steven L. Lillibridge*

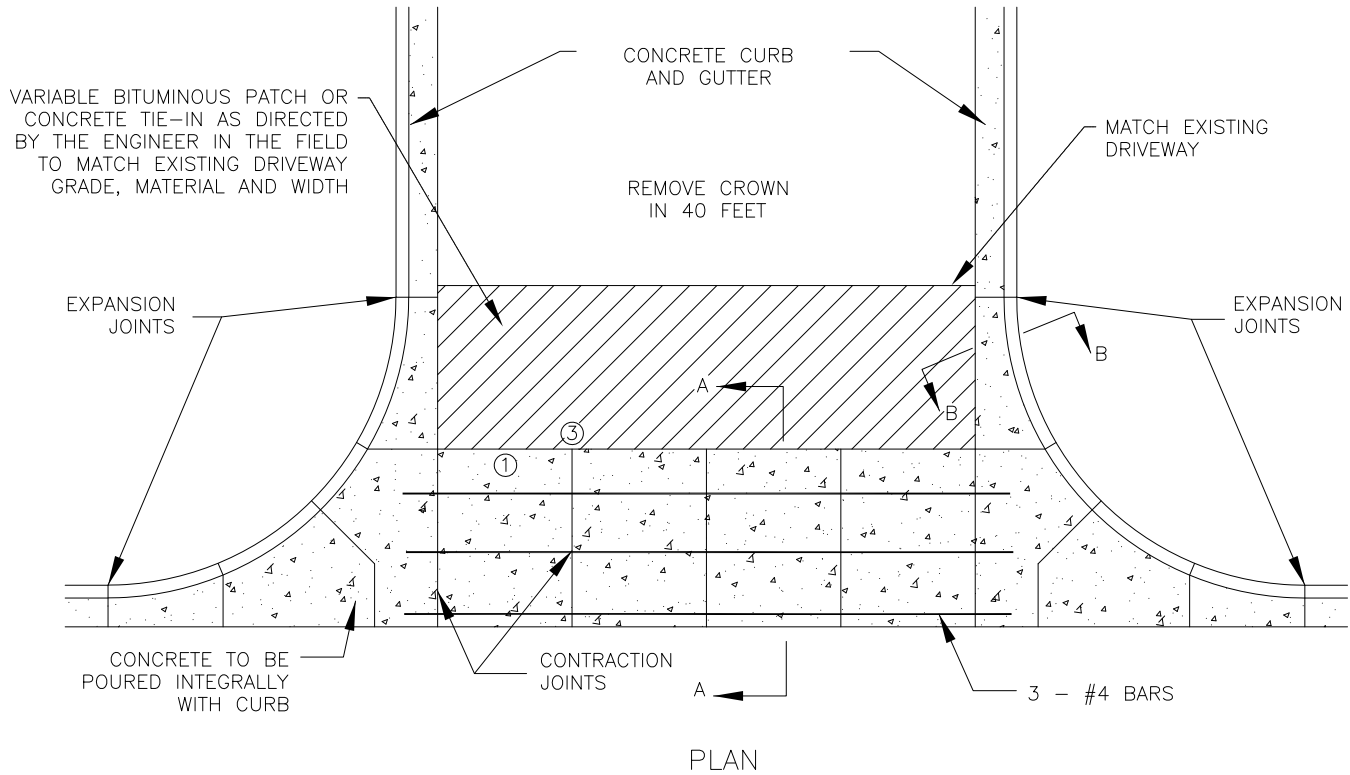
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APPROVED: 01/2023

REVISED: 02/2021

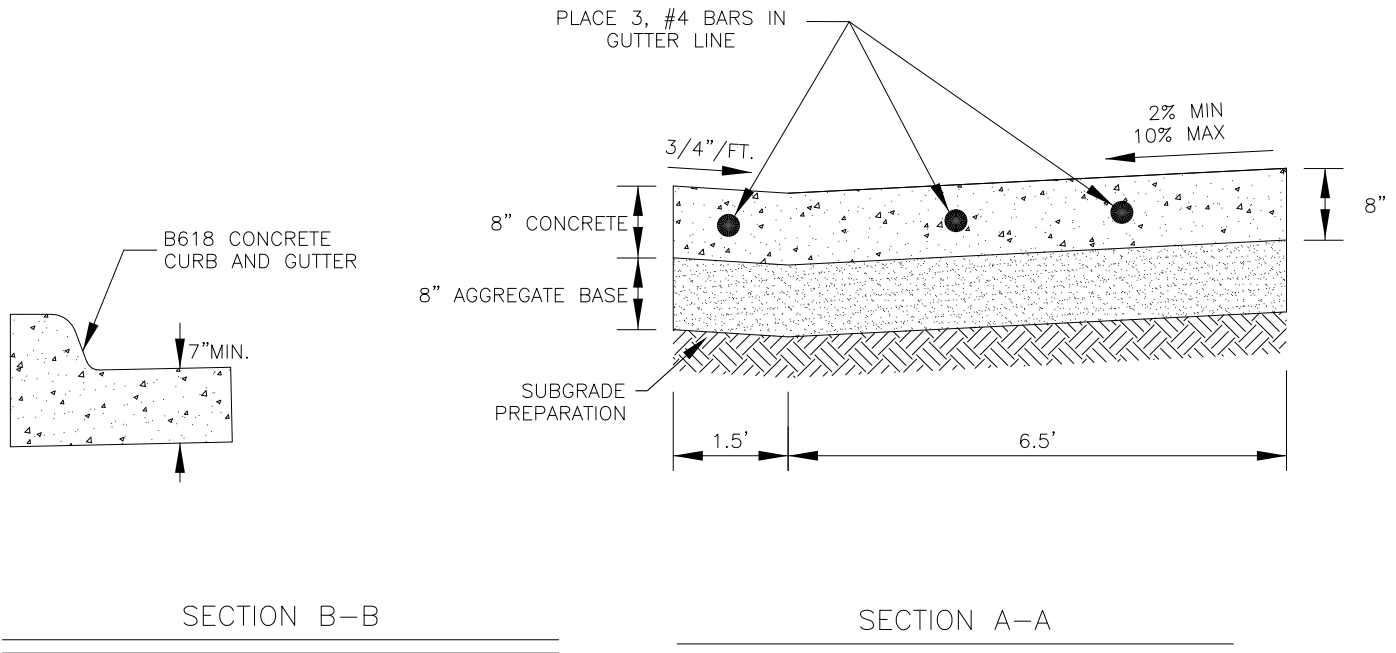
DETAIL NO:

4004



NOTES:

- ① SPACE CONTROL JOINTS SUCH THAT MAXIMUM PANEL DIMENSIONS ARE 8'X8'.
- ② PAVEMENT SECTION SHOWN MUST BE MINIMUM DEPTHS. MATCH THICKER SECTIONS AS DIRECTED BY THE ENGINEER. BITUMINOUS PAVEMENT SECTIONS MUST BE CONSTRUCTED IN MULTIPLE LIFTS 1.5" MINIMUM AND 2.5" MAXIMUM.
- ③ COORDINATE AND ALIGN JOINTS WITH APRON, SIDEWALK AND EXISTING CONCRETE DRIVEWAY.



TYPICAL COMMERCIAL DRIVEWAY

*Steven L. Lillibridge*

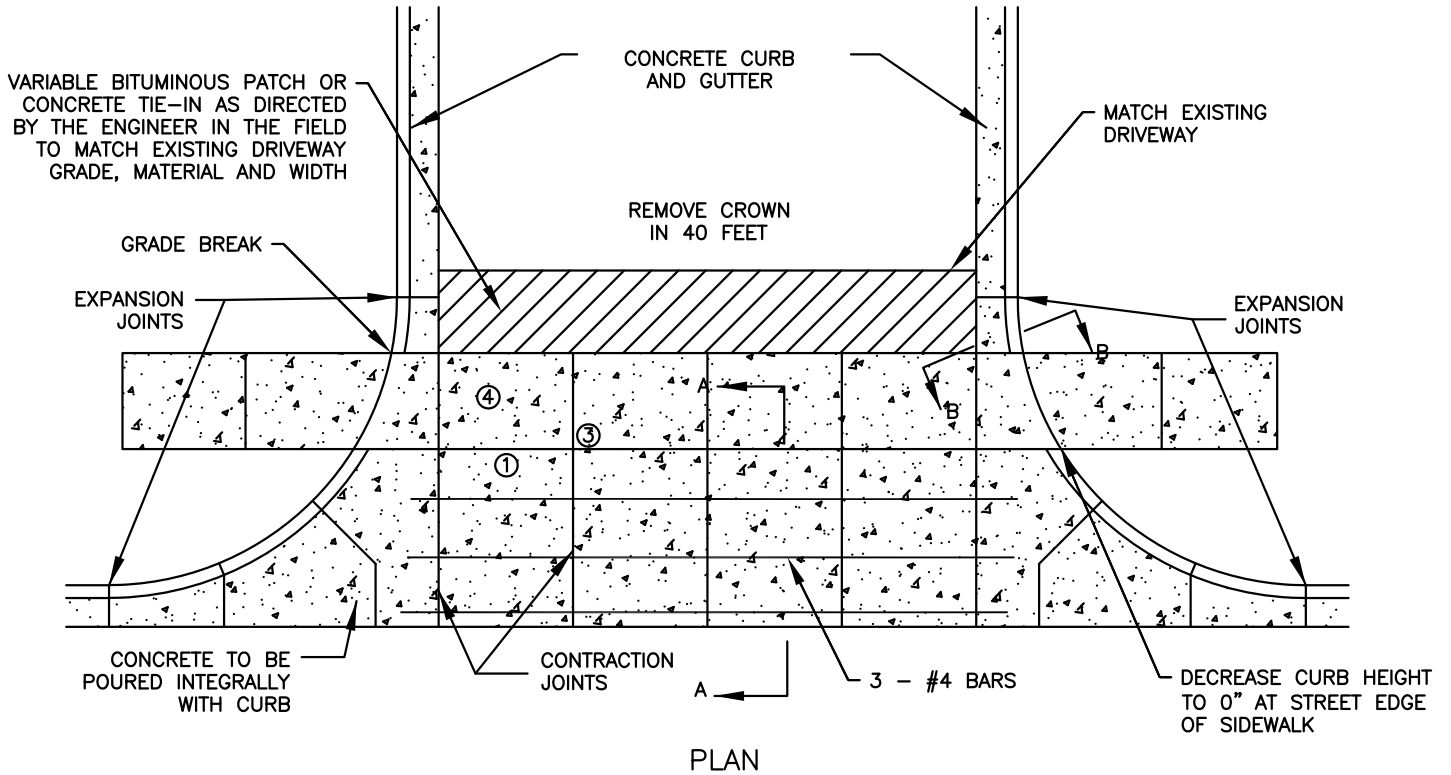
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APPROVED: 01/2023

REVISED: 02/2021

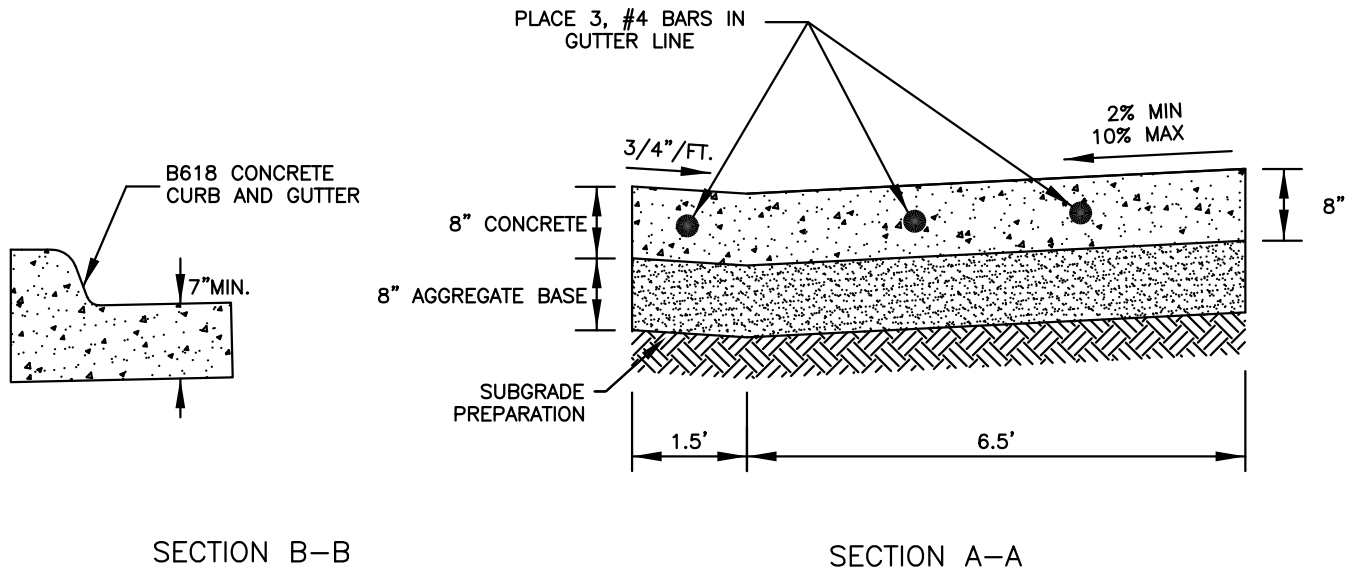
DETAIL NO:

4005



NOTES:

- ① SPACE CONTROL JOINTS SUCH THAT MAXIMUM PANEL DIMENSIONS ARE 8'X8'.
- ② PAVEMENT SECTION SHOWN MUST BE MINIMUM DEPTHS. MATCH THICKER SECTIONS AS DIRECTED BY THE ENGINEER. BITUMINOUS PAVEMENT SECTIONS MUST BE CONSTRUCTED IN MULTIPLE LIFTS 1.5" MINIMUM AND 2.5" MAXIMUM.
- ③ COORDINATE AND ALIGN JOINTS WITH APRON, SIDEWALK AND EXISTING CONCRETE DRIVEWAY.
- ④ SIDEWALK THROUGH THE DRIVEWAY SHALL BE 8" THICK AND NOT EXCEED 1.5% CROSS SLOPE.



TYPICAL COMMERCIAL DRIVEWAY WITH SIDEWALK

*Steven L. Lillibridge*

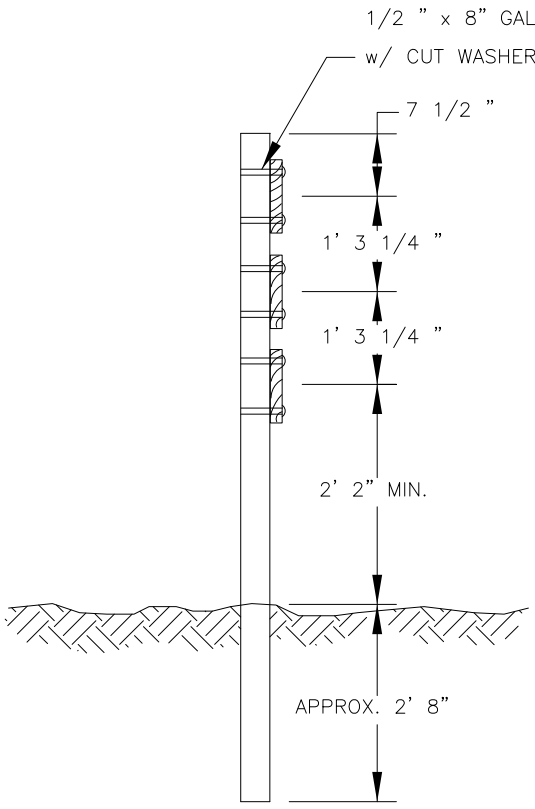
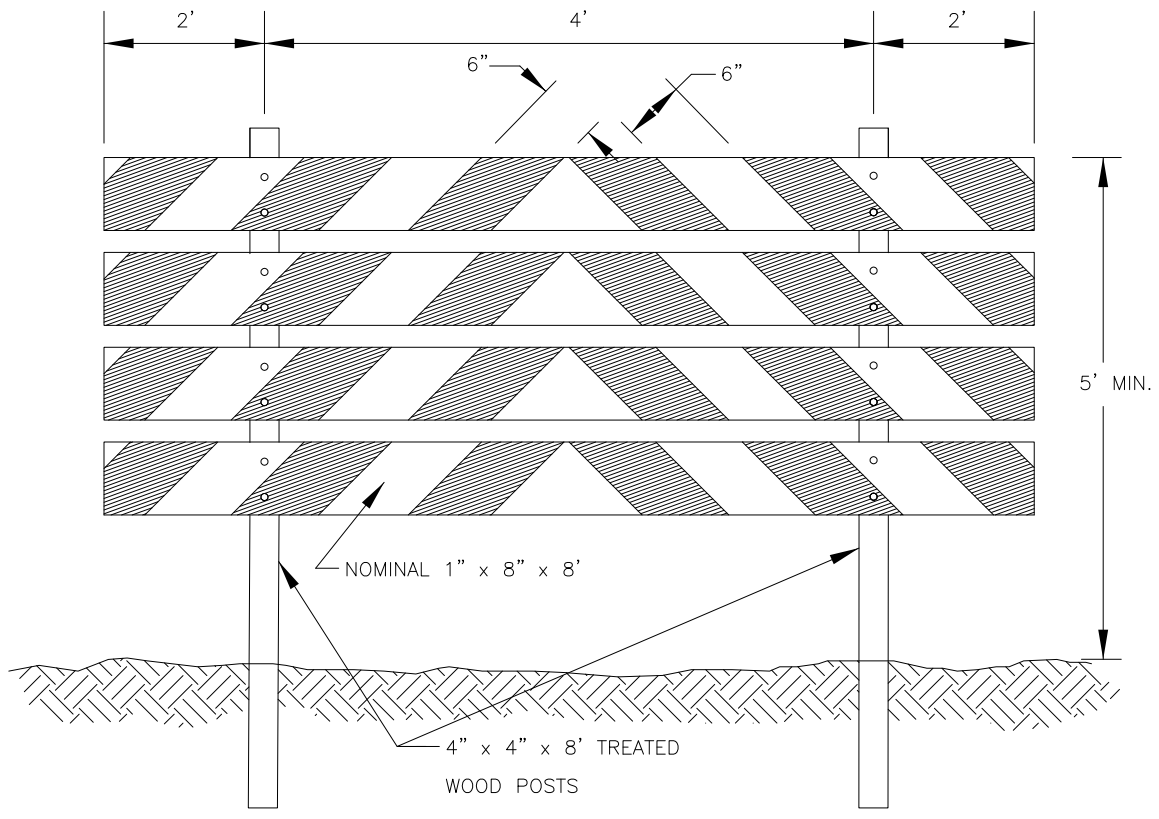
PUBLIC WORKS DIRECTOR/CITY ENGINEER

APPROVED: 01/2023

REVISED: 02/2021

DETAIL NO:

4006



NOTES:

1. THE BARRICADE FACE SURFACE SHALL BE RETROREFLECTIVITY IN ALTERNATE SILVER WHITE AND RED STRIPING. USING REFLECTIVE SHEETING CONFORMING TO THE REQUIREMENTS OF SPEC 3352.2A2<sub>6</sub> STANDARD NO. 1.
2. PRIOR TO INSTALLING THE REFLECTIVE SHEETING, THE BARRICADE BOARDS SHALL BE GIVEN A COMPLETE COAT OF WHITE WOOD PRIMER PAINT FOLLOWED BY A SECOND COAT OF WHITE EXTERIOR PAINT APPLIED ONLY TO THE SURFACE NOT COVERED WITH REFLECTIVE SHEETING.
3. THE BARRICADE BOARDS SHALL BE COMPLETELY PAINTED AND REFECTORIZED SHEETING APPLIED BEFORE INSTALLED ON THE POSTS.



TYPICAL BARRICADE

*Steven L. Lillibridge*

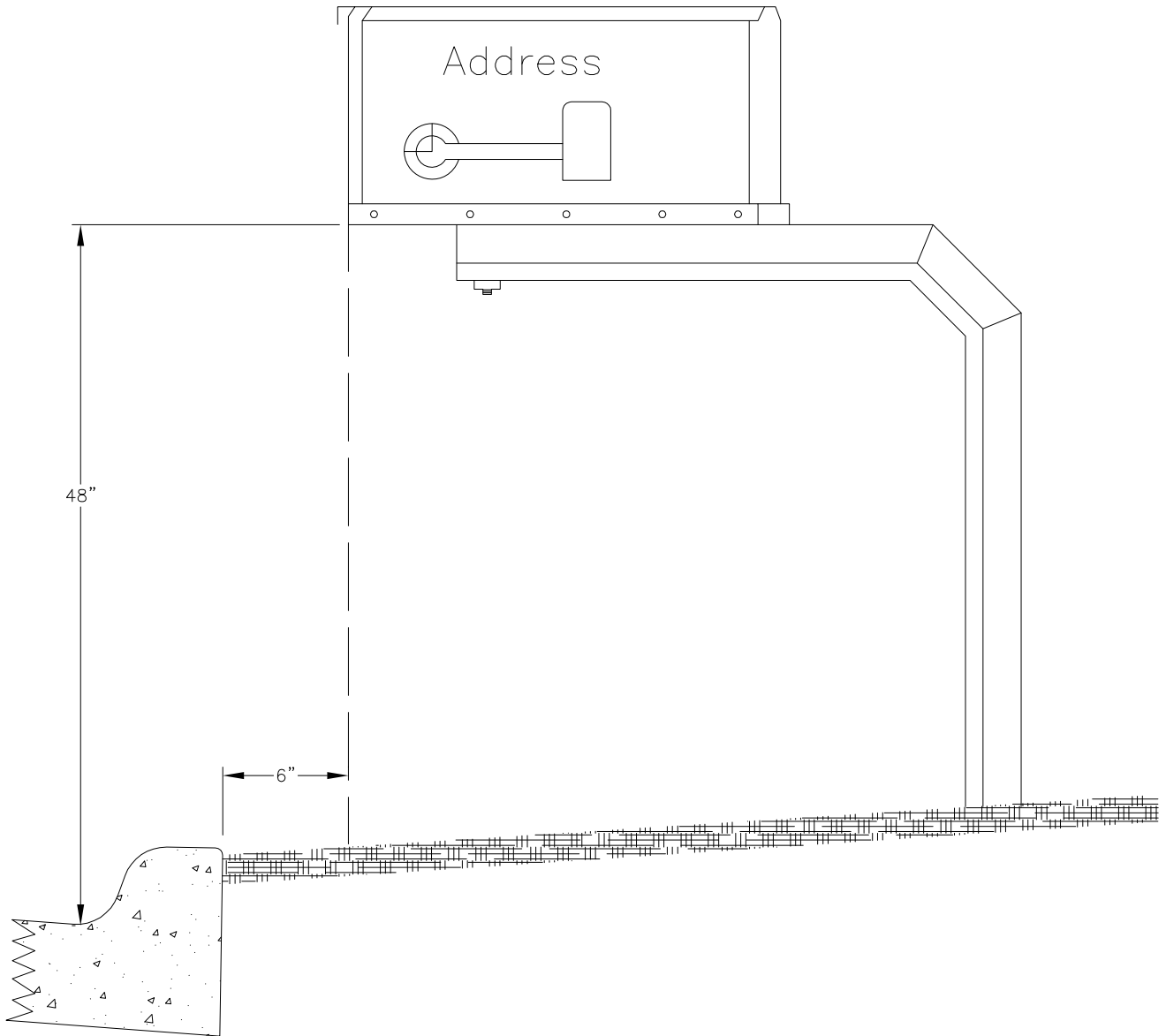
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DETAIL NO:  
4007





MAILBOX

*Steven L. Lillibridge*

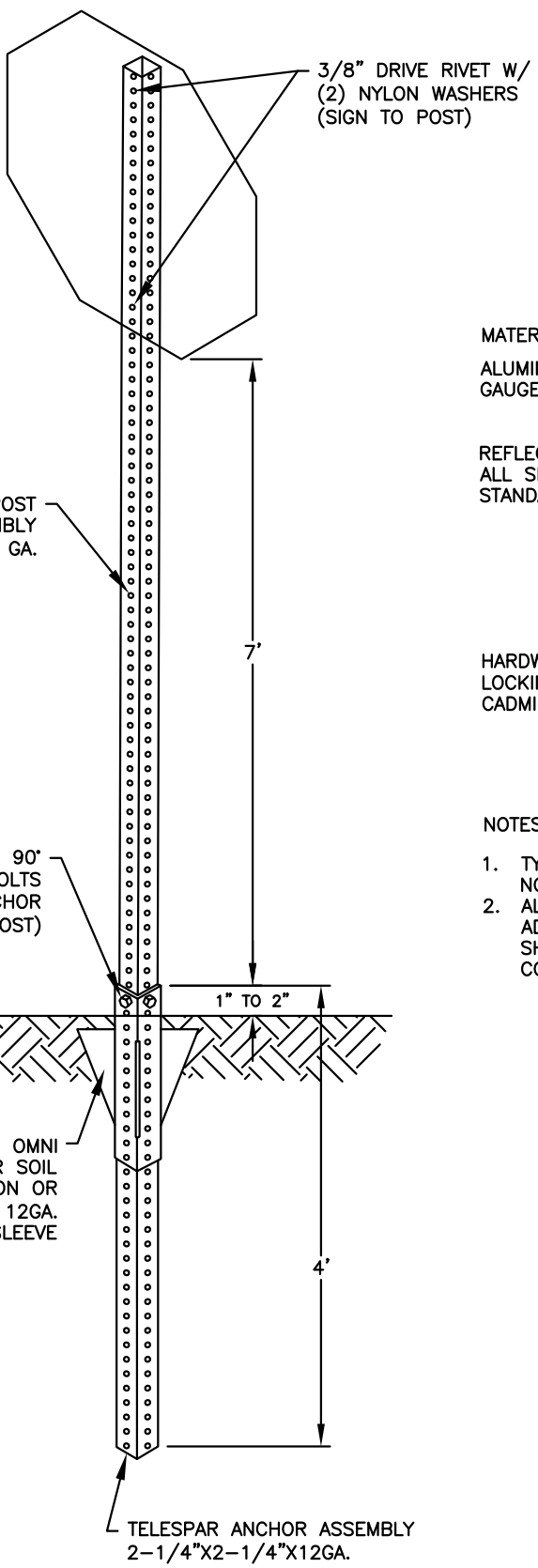
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PUBLIC WORKS DIRECTOR/CITY ENGINEER

APPROVED: 01/2023

REVISED: 03/2020

DETAIL NO:

4008



TRAFFIC SIGN SPECIFICATIONS

MATERIAL:

ALUMINUM SHALL BE 5052-H38 OR 6061-T6 ALLOY.  
 GAUGE SHALL BE: 0.080 ON THE LONGEST SIDE UP TO 30"  
 0.100 ON THE LONGEST SIDE OVER 30"

REFLECTING SHEETING SHALL BE HIGH PERFORMANCE (DG3).  
 ALL SIGNS CONFORM TO SECTION 3352, SIGNS AND MARKERS  
 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

BOLTS, NUTS, AND WASHERS

HARDWARE SHALL BE GRADE 5 STEEL BOLTS W/  
 LOCKING NUTS MINIMUM AND BE GALVANIZED OR  
 CADMIUM PLATED.

NOTES:

1. TYPICAL SIGN INSTALLATION WHEN STREET NAME SIGNS ARE NOT INSTALLED.
2. ALL SIGNS LOCATED IN CONCRETE MEDIANS SHALL HAVE AN ADDITIONAL BREAKAWAY SYSTEM APPROVED BY THE CITY OF SHAKOPEE PUBLIC WORKS DEPARTMENT PRIOR TO CONSTRUCTION.



TRAFFIC SIGN INSTALLATION

*Steven L. Lillibridge*

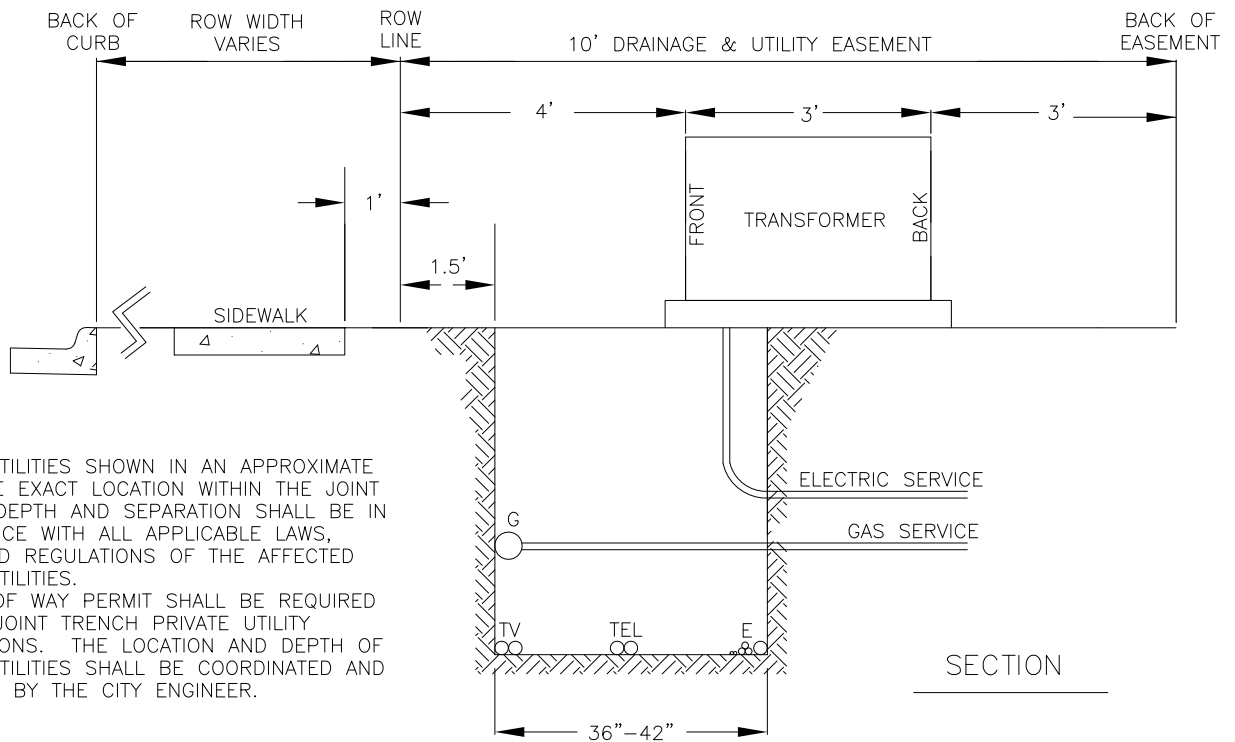
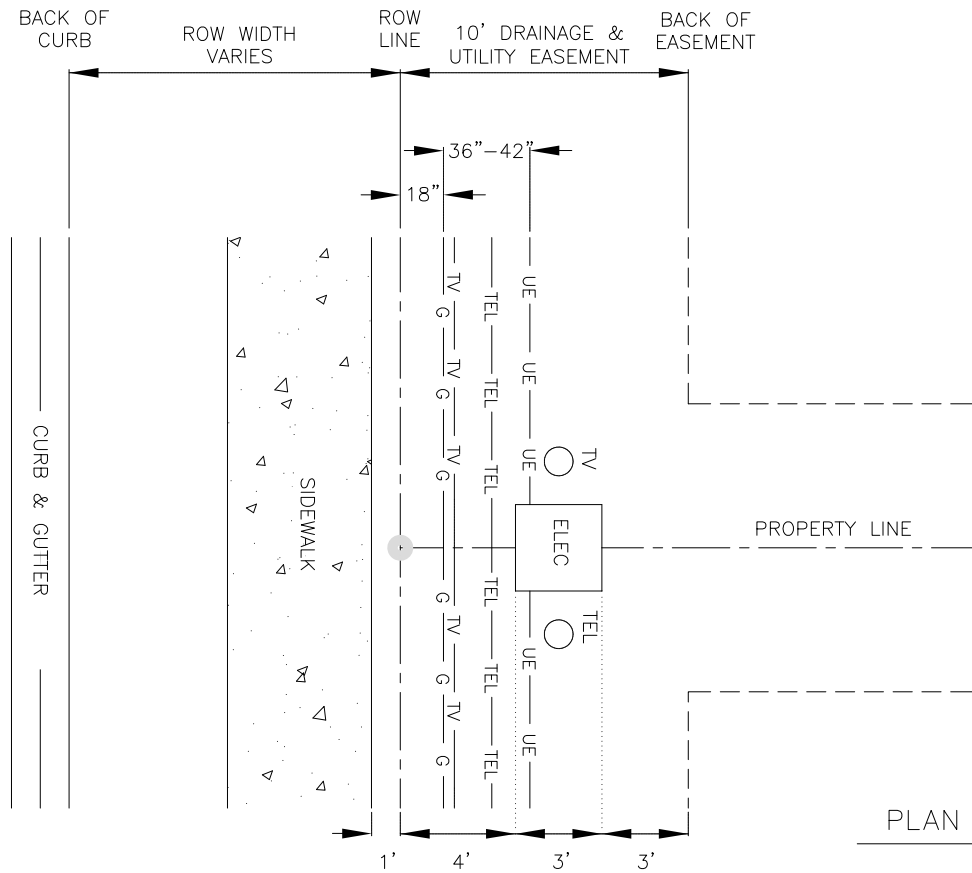
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APPROVED: 01/2023

REVISED: 03/2020

DETAIL NO:

4009



NOTES:

1. PRIVATE UTILITIES SHOWN IN AN APPROXIMATE WAY. THE EXACT LOCATION WITHIN THE JOINT TRENCH, DEPTH AND SEPARATION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LAWS, RULES AND REGULATIONS OF THE AFFECTED PRIVATE UTILITIES.
2. A RIGHT OF WAY PERMIT SHALL BE REQUIRED FOR ALL JOINT TRENCH PRIVATE UTILITY INSTALLATIONS. THE LOCATION AND DEPTH OF PRIVATE UTILITIES SHALL BE COORDINATED AND APPROVED BY THE CITY ENGINEER.



JOINT TRENCH FOR PRIVATE UTILITIES (GAS ROADSIDE)

*Steven L. Lillibridge*

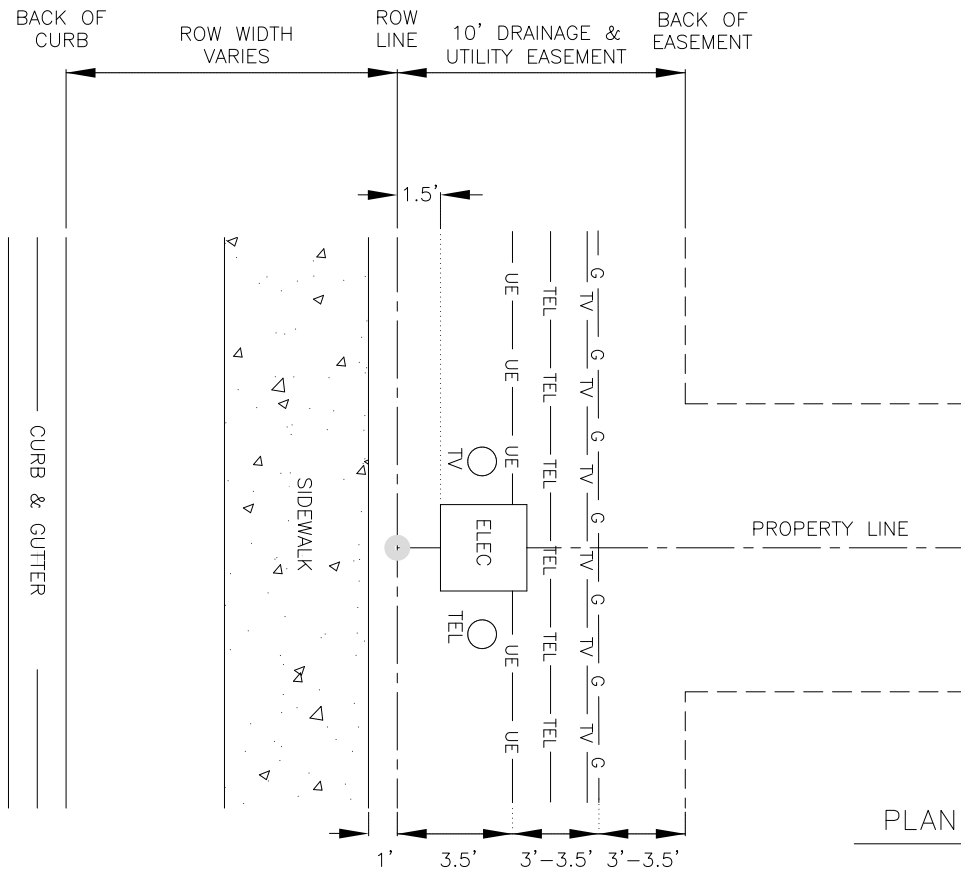
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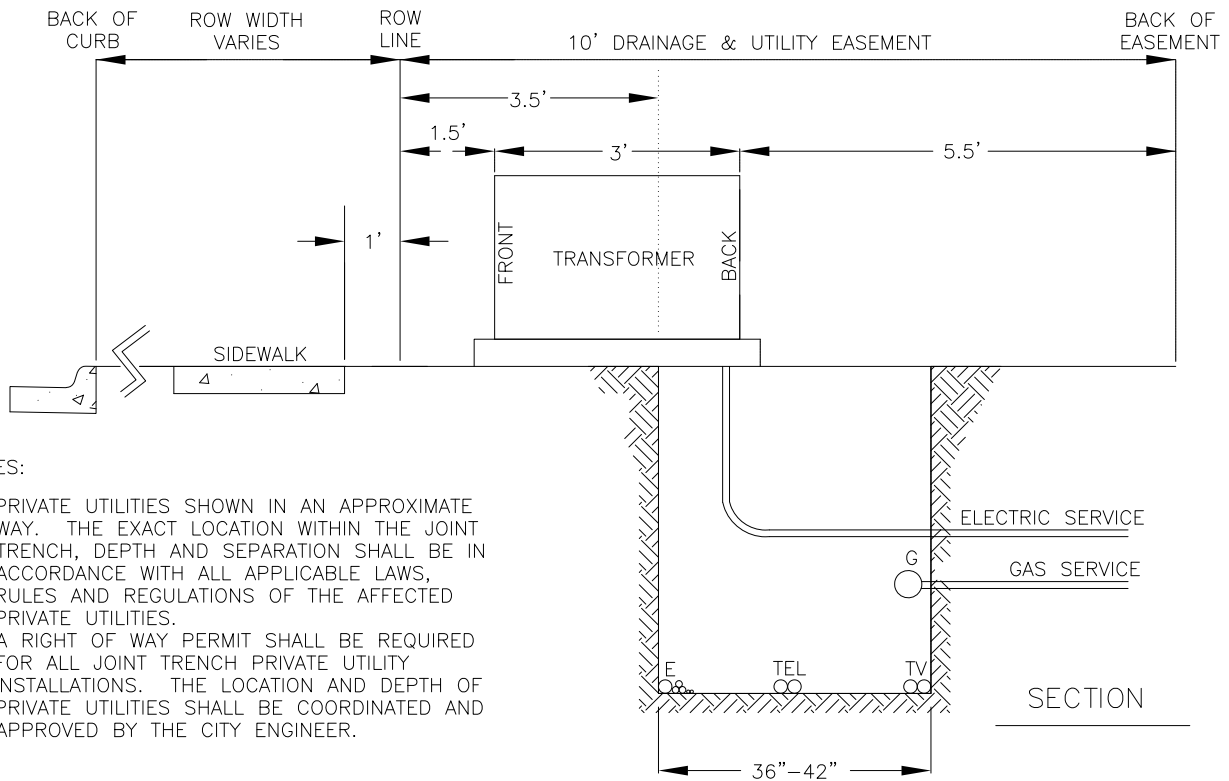
REVISED: 03/2020

DETAIL NO:

5009



PLAN



SECTION

NOTES:

1. PRIVATE UTILITIES SHOWN IN AN APPROXIMATE WAY. THE EXACT LOCATION WITHIN THE JOINT TRENCH, DEPTH AND SEPARATION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LAWS, RULES AND REGULATIONS OF THE AFFECTED PRIVATE UTILITIES.
2. A RIGHT OF WAY PERMIT SHALL BE REQUIRED FOR ALL JOINT TRENCH PRIVATE UTILITY INSTALLATIONS. THE LOCATION AND DEPTH OF PRIVATE UTILITIES SHALL BE COORDINATED AND APPROVED BY THE CITY ENGINEER.



JOINT TRENCH FOR PRIVATE UTILITIES (GAS HOUSE SIDE)

*Steven L. Lilling*

PUBLIC WORKS DIRECTOR/CITY ENGINEER

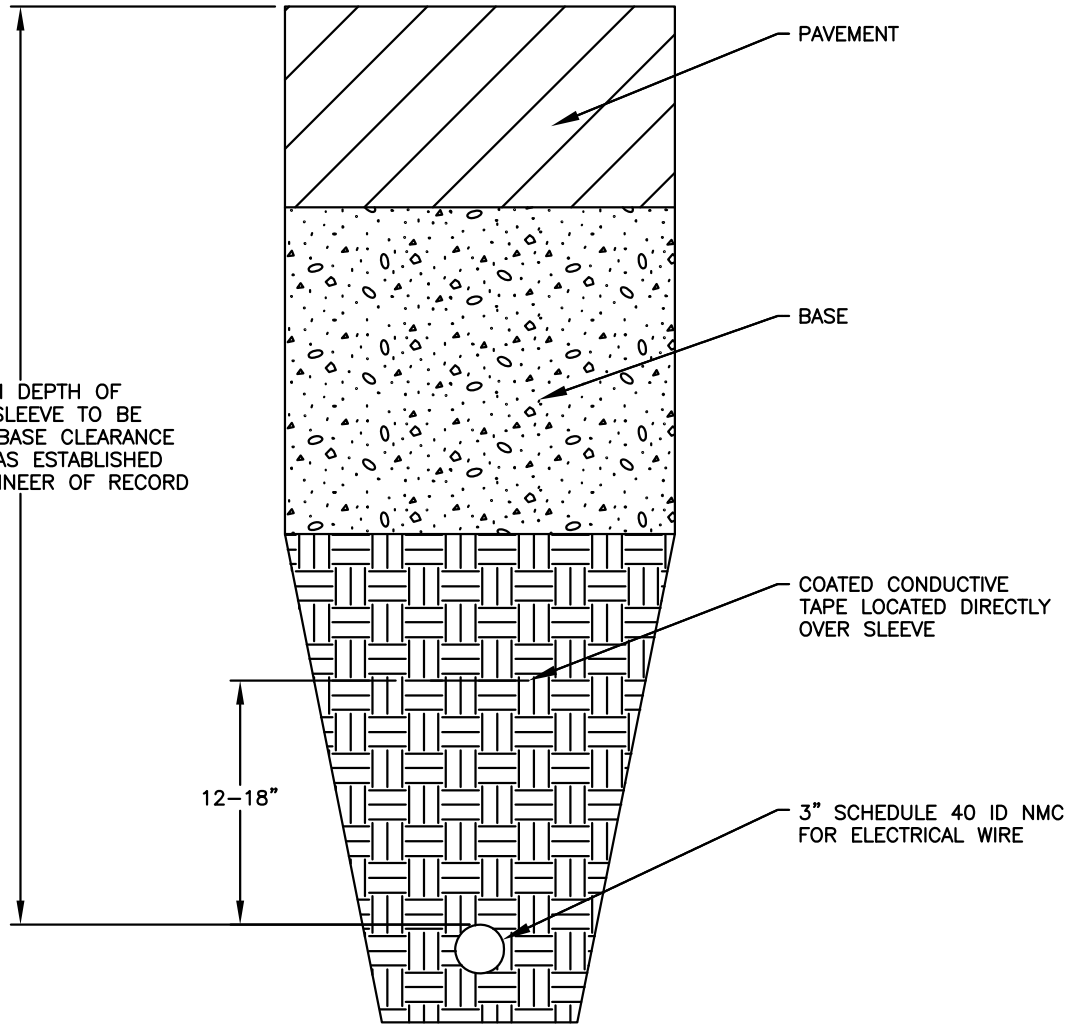
APPROVED: 01/2023

REVISED: 03/2020

DETAIL NO:

5010

MINIMUM DEPTH OF  
TOP OF SLEEVE TO BE  
BELOW THE BASE CLEARANCE  
ELEVATION AS ESTABLISHED  
BY THE ENGINEER OF RECORD



IRRIGATION CONDUIT AND STREET LIGHT CONDUIT

*Steven L. Lillibridge*

PUBLIC WORKS DIRECTOR/CITY ENGINEER

APPROVED: 01/2023

REVISED: 03/2020

DETAIL NO:

5011