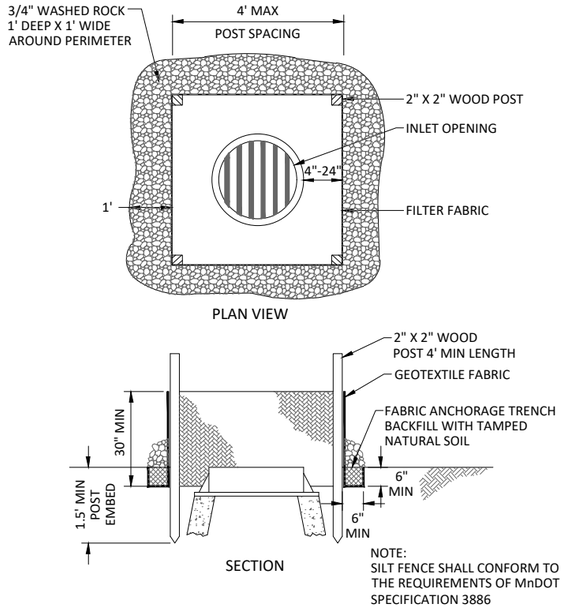
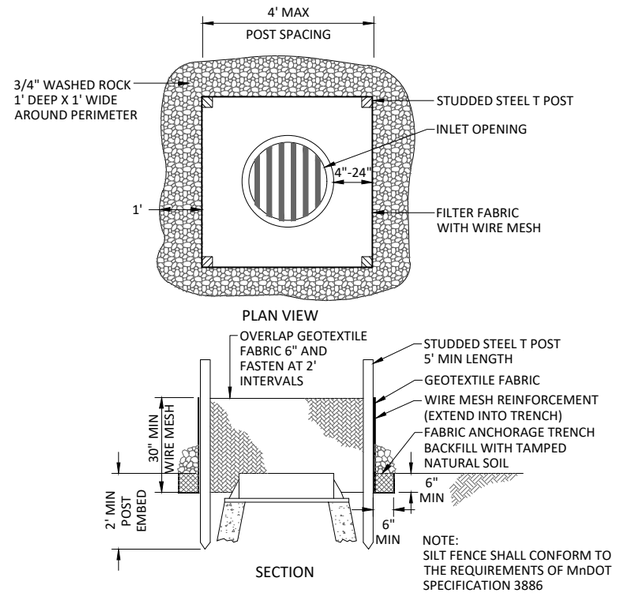
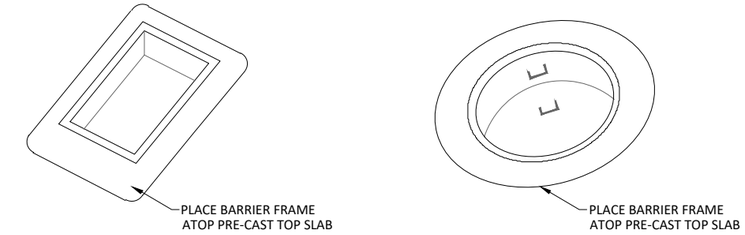
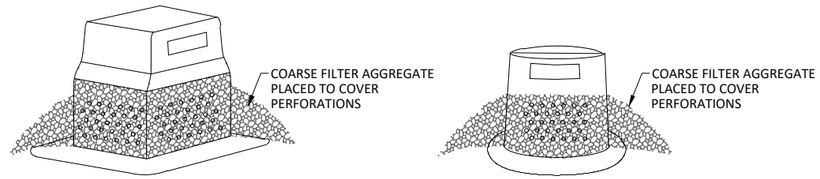


INLET PROTECTION
PREASSEMBLED SILT FENCE
NOT TO SCALE



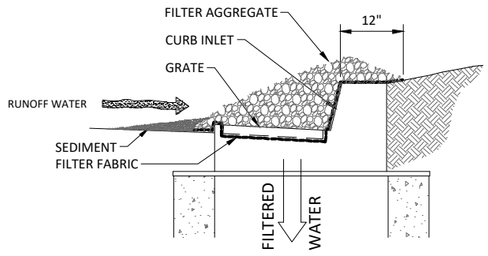
INLET PROTECTION
HEAVY DUTY SILT FENCE
NOT TO SCALE



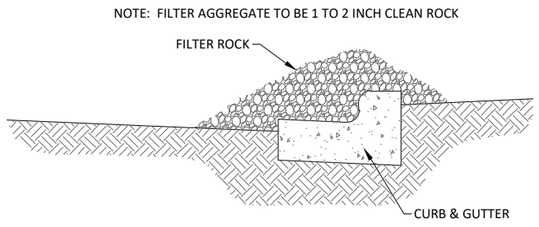


NOTES:

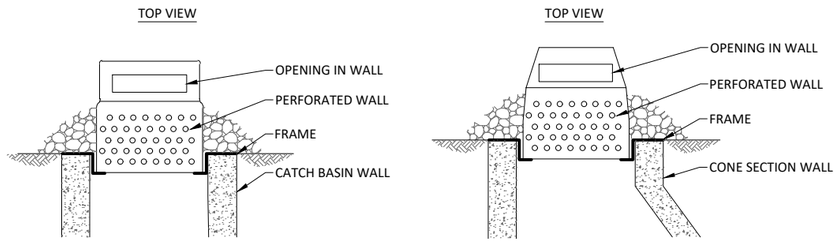
1. FILTER AGGREGATE TO BE 1 TO 2 INCH CLEAN ROCK
2. FILTER FABRIC SHALL MEET MnDOT SPECIFICATION 3733 GEOTEXTILE FABRIC TYPE 3



INLET PROTECTION
FILTER AGGREGATE
NOT TO SCALE



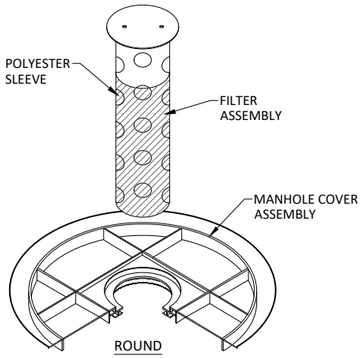
INLET PROTECTION
1-1/2" ROCK WEIR
NOT TO SCALE



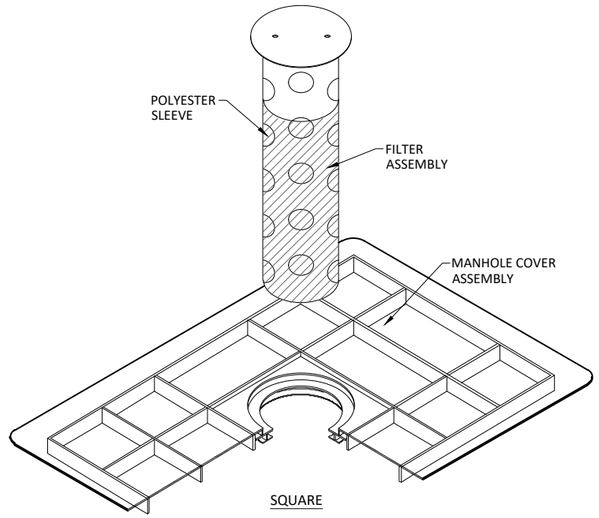
INLET PROTECTION
PERFORATED WALL
NOT TO SCALE

city of new ulm	DESIGNED BY: DRAWN BY: AS BUILT BY:	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. CERTIFIED BY _____ 49062 03/17/2025 JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER LIC. NO. DATE	OFFICE OF THE CITY ENGINEER CITY OF NEW ULM MINNESOTA	CITY OF NEW ULM STANDARD DETAILS INLET PROTECTION DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG	SHEET 1 OF 27

NOTES:
1. 1PLACE THE ROAD DRAIN-TOP SLAB MODEL DIRECTLY ON THE TOP OF STRUCTURE OR ON ENGINEER APPROVED ADJUSTING RINGS
2. INSTALL GASKET AND COVER CENTER OF GASKET WITH PIPE GREASE OR OTHER APPROVED LUBRICATION
3. PLACE THE FILTER MEDIA ONTO THE RISER PIPE
4. ADJUST FILTER MEDIA TO PROPER HEIGHT FOR OVERFLOW
5. CHECK RISER TUBE TO MAKE SURE IT IS FULLY EXTENDED AND ALL FILTER HOLES ARE EXPOSED
6. CHECK FILTER MEDIA AFTER EACH RAIN EVENT; CLEAN OR REPLACE IF SEDIMENT CLOGS FILTER
7. REMOVE SEDIMENT AND DEBRIS FROM THE BASE OF THE RISER PIPE

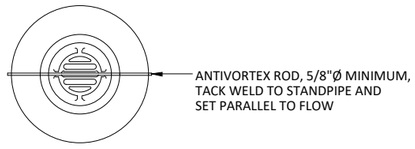


ROUND

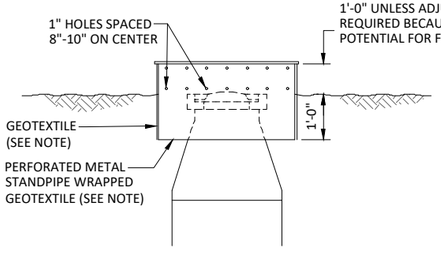


SQUARE

INLET PROTECTION
ROAD DRAIN
NOT TO SCALE



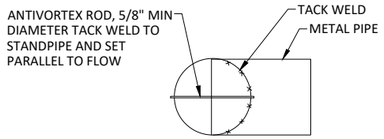
PLAN VIEW



ELEVATION

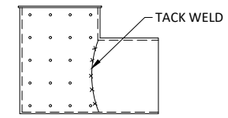
NOTE:
ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS

INLET PROTECTION
RISER STANDPIPE
NOT TO SCALE



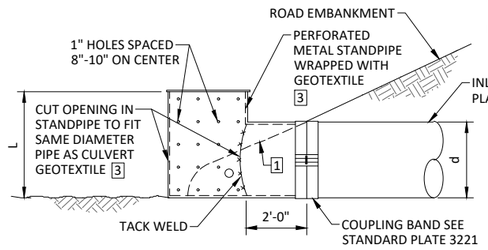
PLAN VIEW

NOTES:
1. FOR CSP, REMOVE TEMPORARY STANDPIPE AND INSTALL CULVERT APRON AFTER VEGETATION IS ESTABLISHED.
2. FOR RCP, INSTALL CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO RCP. AFTER VEGETATION IS ESTABLISHED, REMOVE TEMPORARY STANDPIPE.
3. ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS.

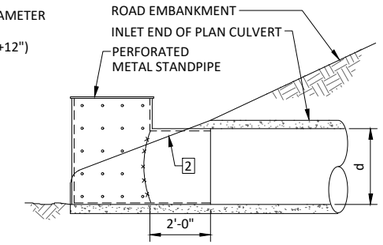


CULVERT STANDPIPE

FOR SEDIMENT CONTROL ON CULVERT INLET
(TYPE D SPEC. 3891)
CULVERT SIZE: 12"-36"
d = DIAMETER OF STANDPIPE EQUAL TO DIAMETER OF PLAN CULVERT
L = LENGTH OF PERFORATED STANDPIPE (d+12")

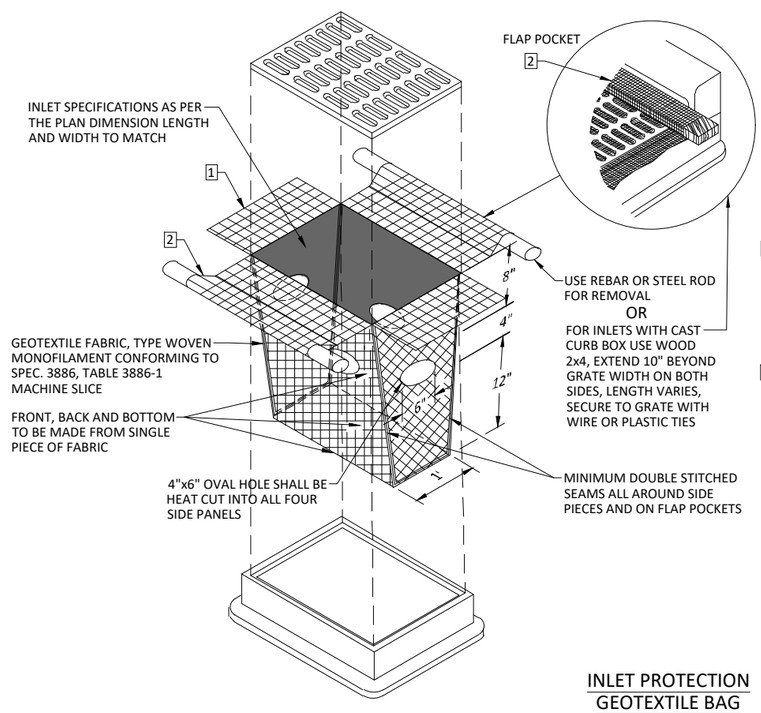


ELEVATION OF CSP INSTALLATION



ELEVATION OF RCP INSTALLATION

INLET PROTECTION
CULVERT STANDPIPE
NOT TO SCALE



NOTES:
1 INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER. MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENTS EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL IN THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

2 FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2x4.

INSTALLATION NOTES:
DO NOT INSTALL PROTECTION IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

INLET PROTECTION
GEOTEXTILE BAG
NOT TO SCALE

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

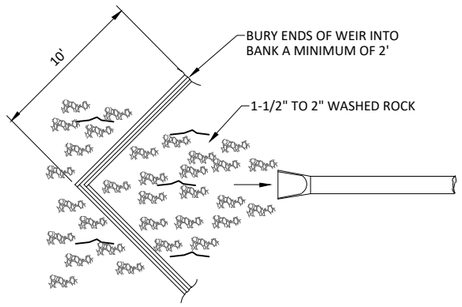
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CERTIFIED BY _____ JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER | 49062 LIC. NO. | 03/17/2025 DATE

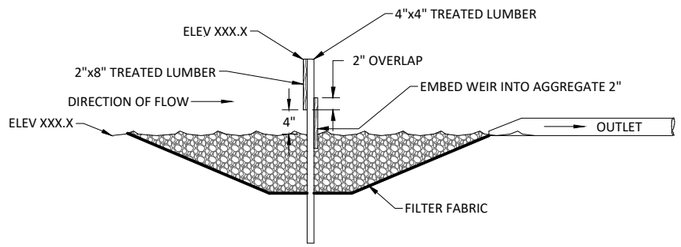
OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

CITY OF NEW ULM STANDARD DETAILS
INLET PROTECTION

DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG

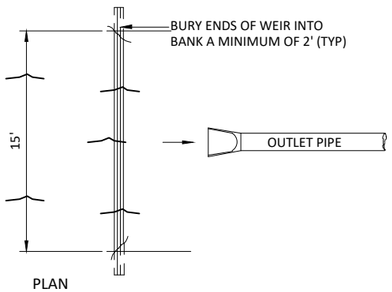


PLAN

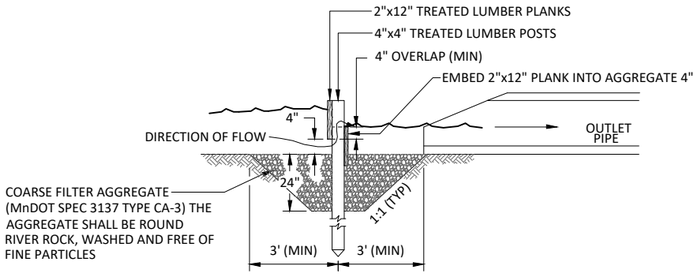


XX / X.XX — SKIMMER WEIR (POND OR WIDE CHANNEL)

NOT TO SCALE

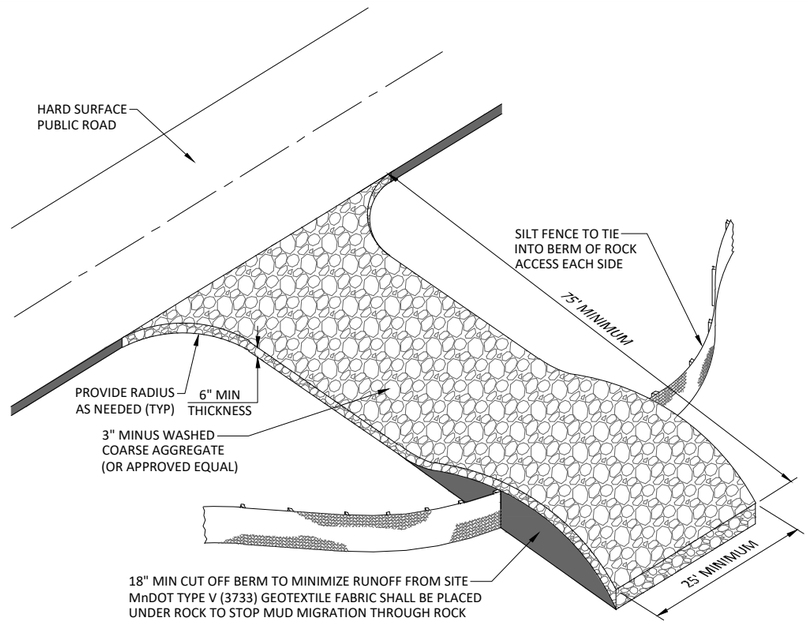


PLAN



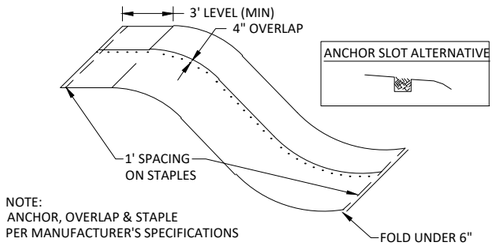
XX / X.XX — SKIMMER WEIR NARROW CHANNEL)

NOT TO SCALE



ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE

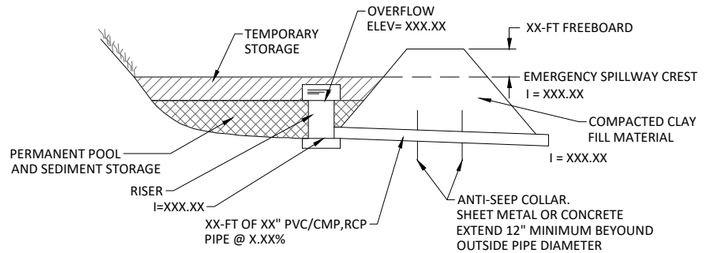


NOTE:
ANCHOR, OVERLAP & STAPLE
PER MANUFACTURER'S SPECIFICATIONS

EROSION CONTROL BLANKET INSTALLATION

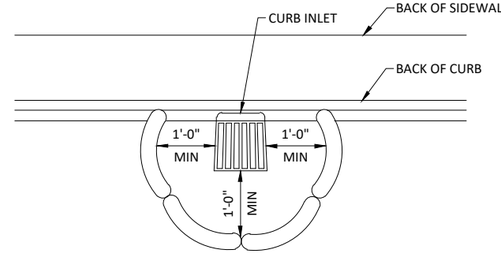
NOT TO SCALE

NOTE: SEE PLANS FOR SEDIMENT BASIN GRADING



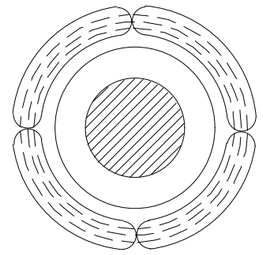
XX / X.XX — SEDIMENT BASIN CROSS SECTION

NOT TO SCALE



NOTE:
THIS INLET PROTECTION IS USED DURING
ROUGH GRADING ONLY, USE BEFORE ROAD
IS OPEN TO TRAFFIC OR IS PAVED

PAYMENT SHALL INCLUDE ALL MATERIALS, FILLING OF LOG, PLACEMENT, MAINTENANCE & REMOVAL;
80% OF BID PRICE SHALL BE PAID UPON PROPER PLACEMENT WITH THE FINAL 20% PAID UPON REMOVAL

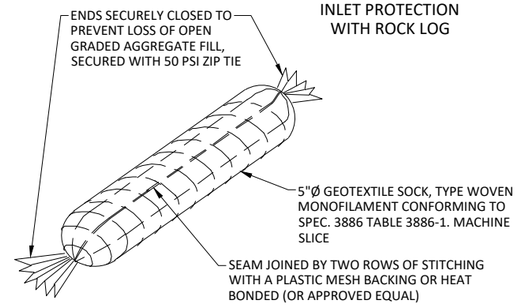


INLET PROTECTION
WITH ROCK LOG

FILL ROCK LOG WITH 45 LBS. OF OPEN GRADED AGGREGATE CONSISTING OF SOUND, DURABLE PARTICLES OF CRUSHED QUARRY ROCK OR GRAVEL CONFORMING TO THE FOLLOWING GRADATION.

GRADATION	
SIEVE SIZE	PERCENT PASSING
1 1/2"	100
1"	95-100
3/4"	65-95
3/8"	30-65
NO 4	10-35
NO 10	3-20
NO 40	0-8
NO 200	0-3

NOTE:
CRUSHED CONCRETE OR BITUMINOUS SHALL NOT BE USED FOR OPEN GRADED AGGREGATE.



INLET PROTECTION
ROCK BAG

NOT TO SCALE

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

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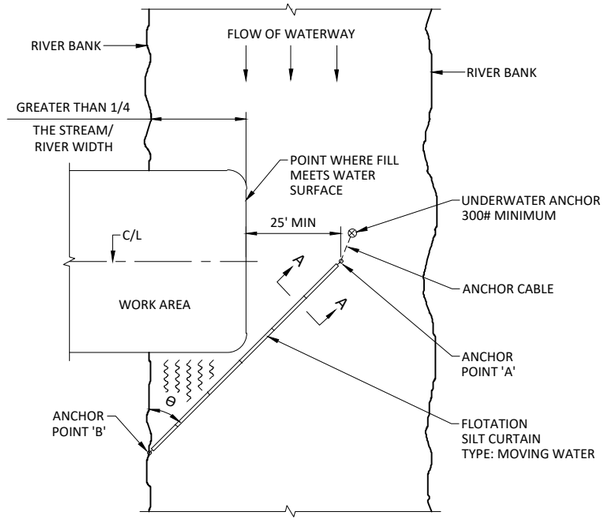
CERTIFIED BY _____ 49062 LIC. NO. 03/17/2025 DATE

JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER

OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

CITY OF NEW ULM STANDARD DETAILS
EROSION & SEDIMENT CONTROL DETAILS
INLET PROTECTION

DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG

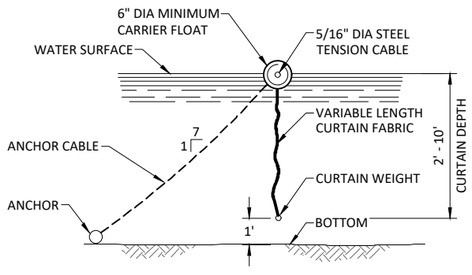


∠ θ	RIVER VELOCITY
45°	SLOW, LESS THAN 3 FT/SEC
35°	MODERATE, 3 - 5 FT/SEC

PLAN VIEW

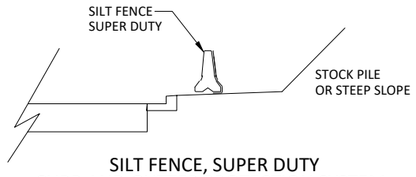
DESIGN GUIDELINES:
WHEN TEMPORARY FILL ENCROACHES MORE THAN 1/4 BUT LESS THAN 1/3 THE WIDTH OF THE STREAM

MAXIMUM WATER DEPTH: 11 FT
MINIMUM WATER DEPTH: 3 FT
MAXIMUM WATER VELOCITY: 5 FT/SEC

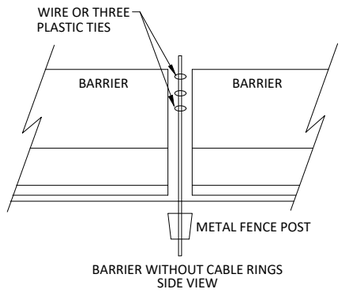


SECTION A-A

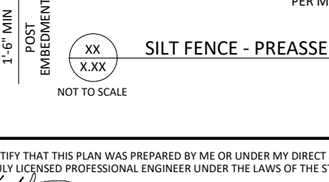
XX / X.XX — SILT FENCE
FLOTATION SILT CURTAIN
NOT TO SCALE



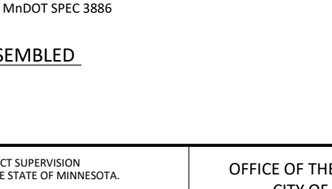
SILT FENCE, SUPER DUTY
CURB AND GUTTER PROTECTION SYSTEM



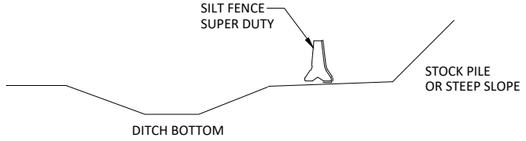
BARRIER WITHOUT CABLE RINGS
SIDE VIEW



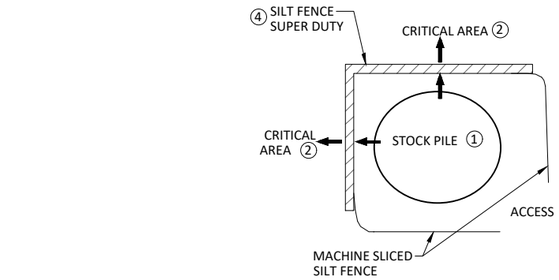
BARRIER WITHOUT CABLE RINGS
TOP VIEW

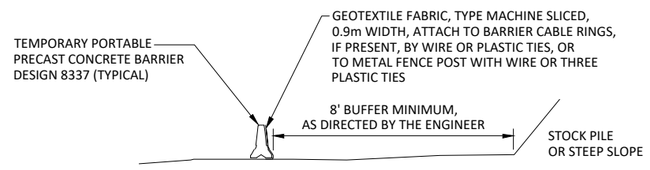


BARRIER WITH CABLE RINGS
TOP VIEW

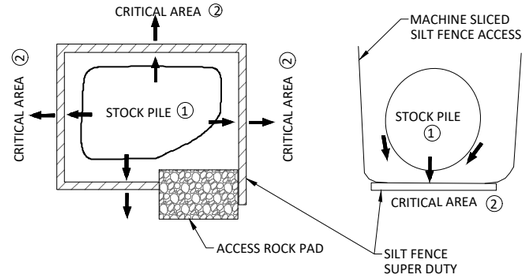


SILT FENCE, SUPER DUTY
DITCH PROTECTION SYSTEM

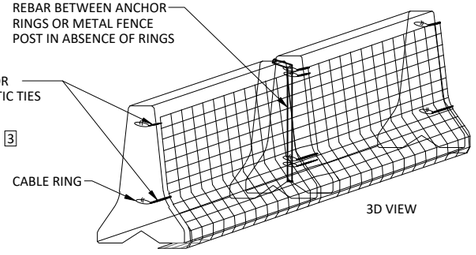




SILT FENCE, SUPER DUTY
STOCKPILE SEDIMENT CONTROL



SILT FENCE, SUPER DUTY
STOCK PILE CONTAINMENT

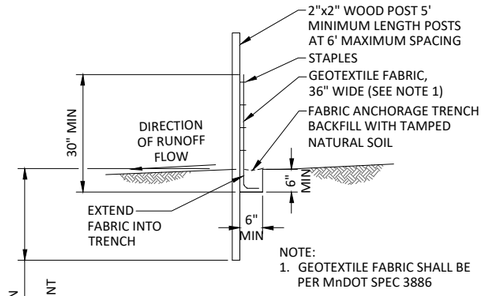


3D VIEW

NOTES:

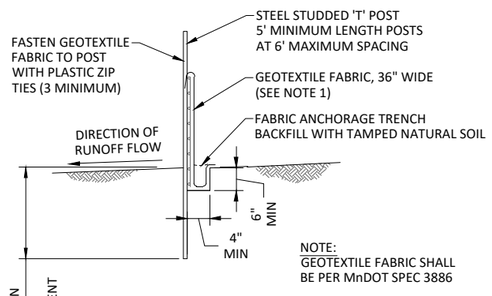
1. PLACING STOCK PILES NEXT TO AN ENVIRONMENTALLY SENSITIVE AREA IS NOT RECOMMENDED. WHEN THERE ARE NO FEASIBLE ALTERNATIVES, THE SUPER DUTY SILT FENCE IS TO BE USED AS SHOWN OR AS DIRECTED BY THE ENGINEER.
2. CRITICAL AREAS INCLUDE WETLANDS, JUDICIAL DITCHES, STREAMS, WATER BODIES, AND OTHER AREAS REQUIRING PROTECTION.
3. GEOTEXTILE FABRIC, TYPE WOVEN MONOFILAMENT CONFORMING TO SPEC 3886, TABLE 3886-1.
4. INSTALL TO FIT LAND FORM AND ITEM TO PROTECT.

XX / X.XX — SILT FENCE
TEMPORARY SEDIMENT CONTROL
NOT TO SCALE



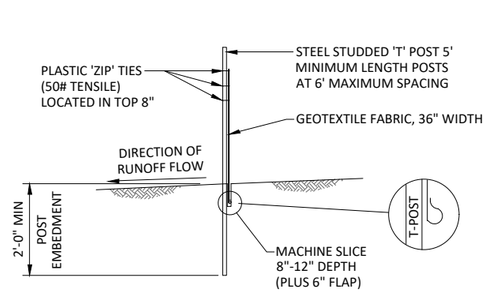
NOTE:
1. GEOTEXTILE FABRIC SHALL BE PER MnDOT SPEC 3886

XX / X.XX — SILT FENCE - PREASSEMBLED
NOT TO SCALE



NOTE:
GEOTEXTILE FABRIC SHALL BE PER MnDOT SPEC 3886

XX / X.XX — SILT FENCE - HEAVY DUTY
NOT TO SCALE



SILT FENCE - MACHINE SLICED
NOT TO SCALE

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

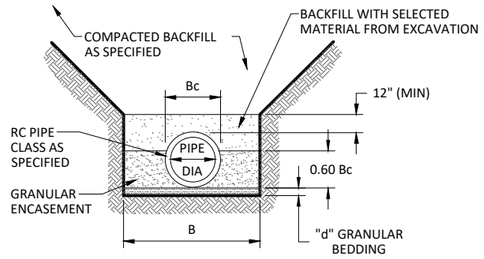
CERTIFIED BY _____ JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER | 49062 LIC. NO. | 03/17/2025 DATE

OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

CITY OF NEW ULM STANDARD DETAILS
EROSION & SEDIMENT CONTROL DETAILS

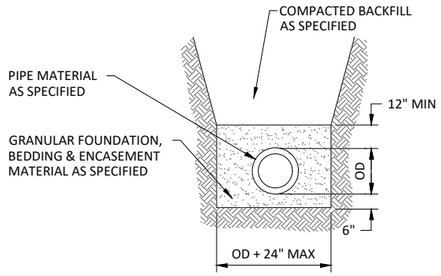
DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG

SHEET 4 OF 27

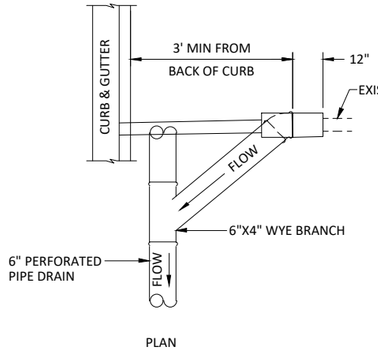


PIPE DIA	d	B
27" OR LESS	3"	Bc + 24"
30" TO 60"	4"	1.5 x Bc
66" OR OVER	6"	Bc + 36"

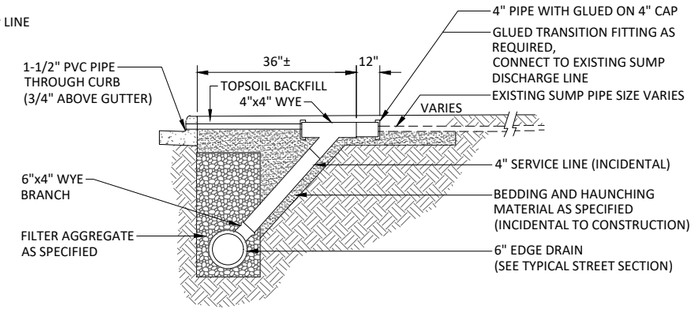
RC PIPE CLASS "B"
BEDDING-SQUARE TRENCH
NOT TO SCALE



STORM SEWER TRENCH
NOT TO SCALE



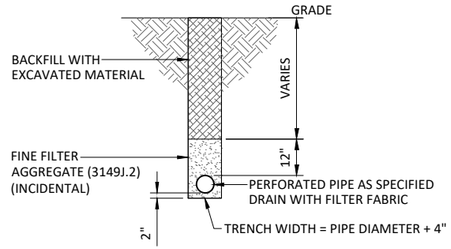
PLAN



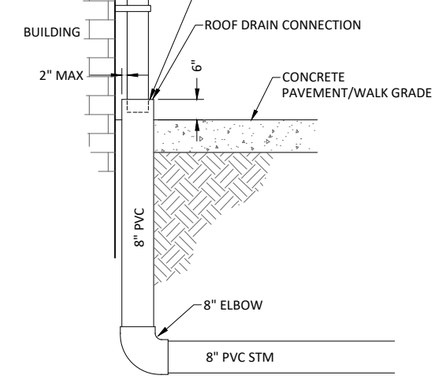
PROFILE

NOTES:
1. ALL FITTINGS REQUIRED ARE CONSIDERED INCIDENTAL TO THE PIPE INSTALLATION

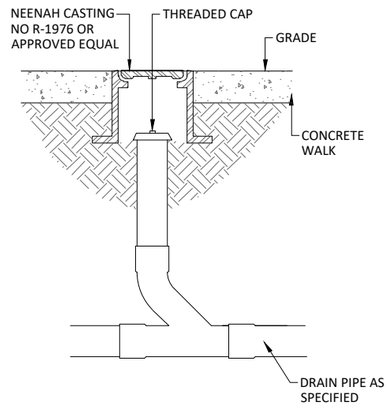
XX / X.XX SUBSURFACE DRAIN SUMP PUMP SERVICE LINE
NOT TO SCALE



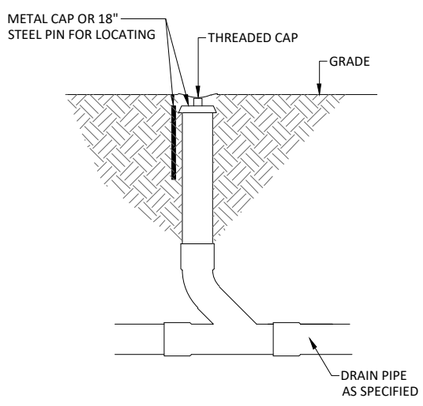
XX / X.XX SUBSURFACE PIPE DRAIN
NOT TO SCALE



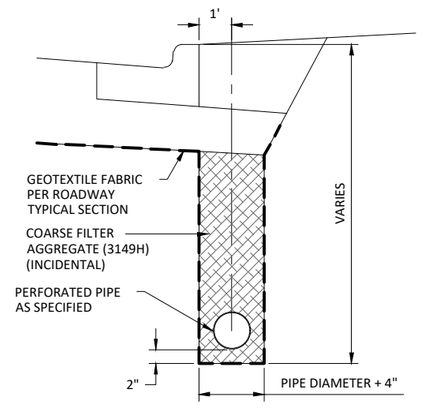
XX / X.XX SUBSURFACE ROOF DRAIN CONNECTION
NOT TO SCALE



XX / X.XX SUBSURFACE DRAIN CLEANOUT UNDER SIDEWALK
NOT TO SCALE



XX / X.XX SUBSURFACE DRAIN CLEANOUT
NOT TO SCALE



XX / X.XX SUBSURFACE ROADWAY EDGE DRAIN COURSE AGGREGATE
NOT TO SCALE

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

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CERTIFIED BY _____ 49062 03/17/2025
JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER — LIC. NO. — DATE

OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

CITY OF NEW ULM STANDARD DETAILS
STORM SEWER

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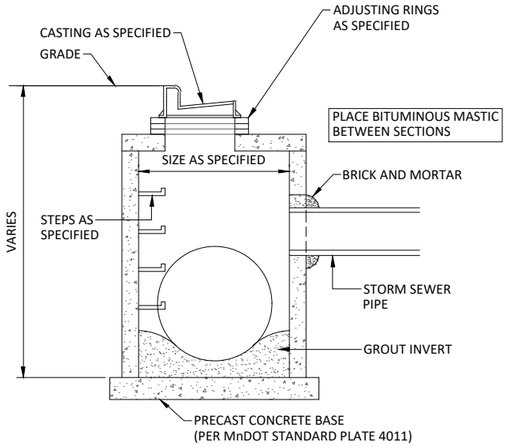
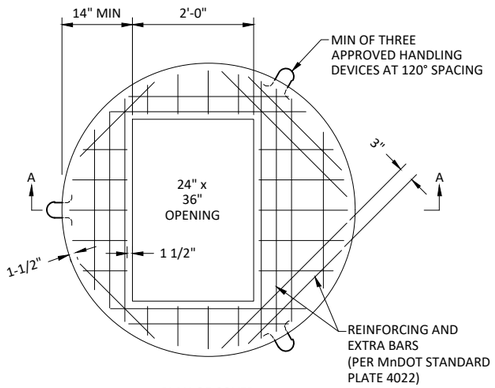
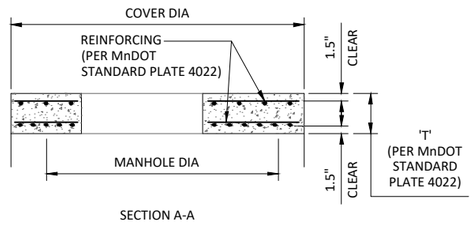


TYPICAL DESIGN 4022 CATCH BASIN



PLAN OF COVER
TOP BARS NOT SHOWN



SECTION A-A

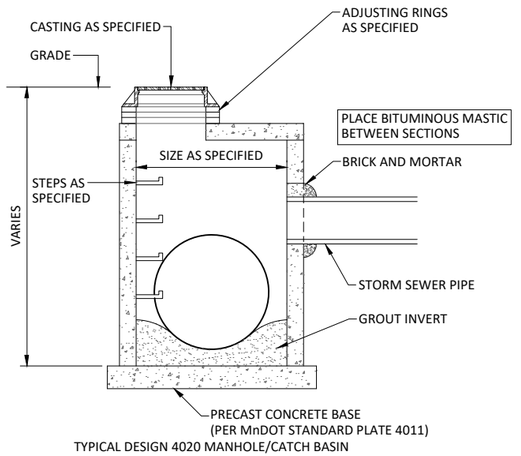
NOTES:

1. AASHTO HS 25 LOADING MAX FILL HEIGHT 15'
2. THE # 4022 SHALL BE PERMANENTLY MARKED ON THE TOP COVER
3. EQUIVALENT STEEL AREAS IN WIRE MESH MAY BE USED
4. REINFORCEMENT PER SPEC 3301, GRADE 60 A SINGLE HOOP OF 8ga STEEL WIRE

DESIGNATION:
DESIGN DIAMETER - STANDARD PLATE #
DESIGN 48-4020

XX / X.XX — STORM SEWER STRUCTURE
DESIGN 4022

NOT TO SCALE

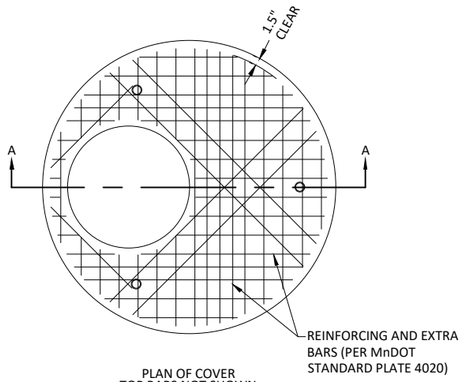


TYPICAL DESIGN 4020 MANHOLE/CATCH BASIN

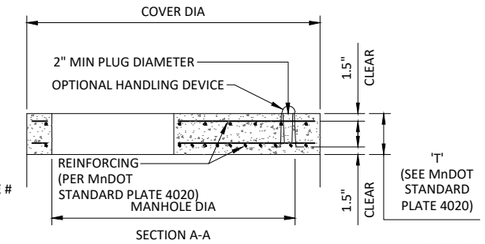
NOTES:

1. AASHTO HS 25 LOADING MAX FILL HEIGHT 15'
2. THE # 4020 SHALL BE PERMANENTLY MARKED ON THE TOP COVER
3. EQUIVALENT STEEL AREAS IN WIRE MESH MAY BE USED
4. REINFORCEMENT PER SPEC 3301, GRADE 60 A SINGLE HOOP OF 8ga STEEL WIRE

DESIGNATION:
DESIGN DIAMETER - STANDARD PLATE #
DESIGN 48-4020



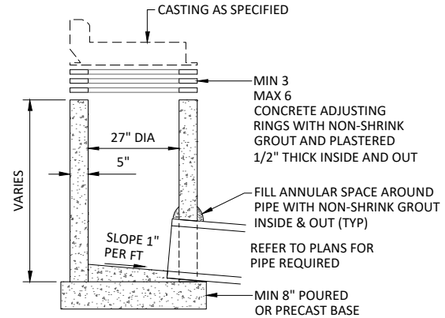
PLAN OF COVER
TOP BARS NOT SHOWN



SECTION A-A

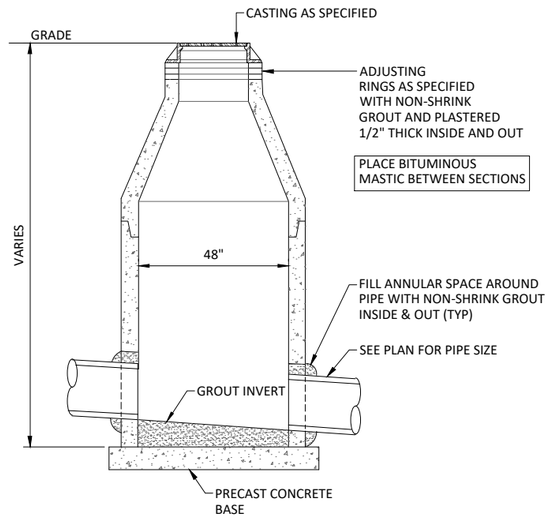
XX / X.XX — STORM SEWER STRUCTURE
DESIGN 4020

NOT TO SCALE



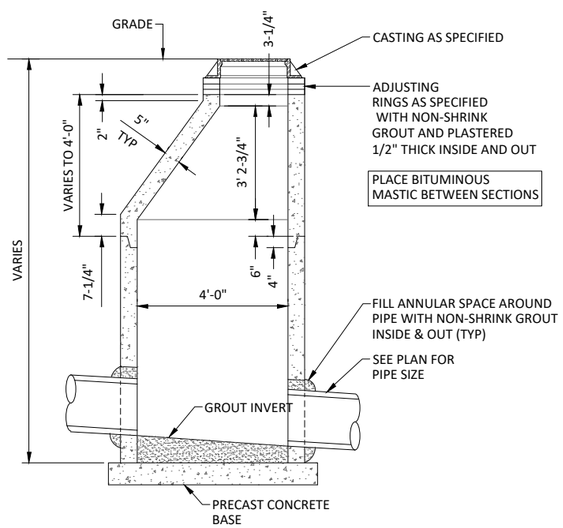
CATCH BASIN
DESIGN H

NOT TO SCALE



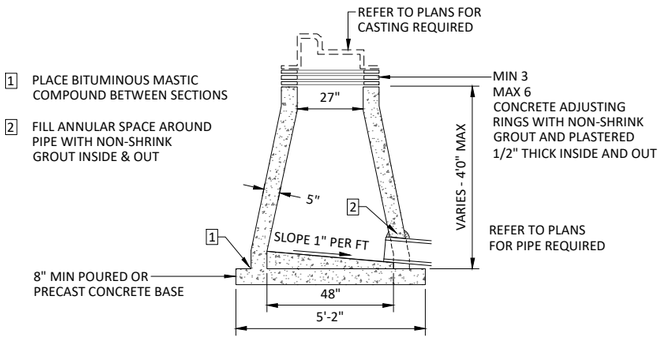
XX / X.XX — STORM SEWER STRUCTURE
DESIGN F, TYPE "A" CONE

NOT TO SCALE



XX / X.XX — STORM SEWER STRUCTURE
DESIGN F, TYPE "B" CONE

NOT TO SCALE



CATCH BASIN
DESIGN G

NOT TO SCALE

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

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CITY OF NEW ULM STANDARD DETAILS
STORM SEWER

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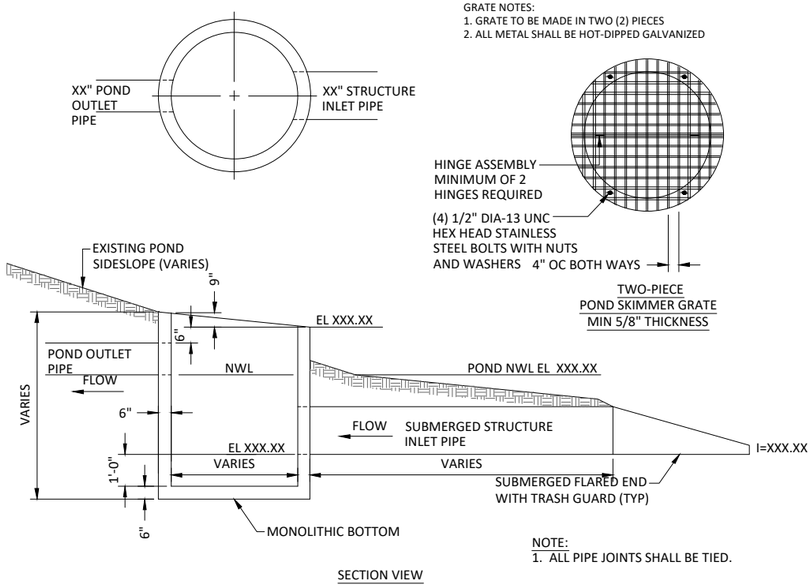
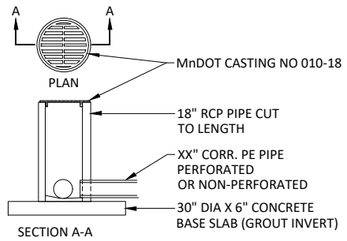
SHEET 6 OF 27



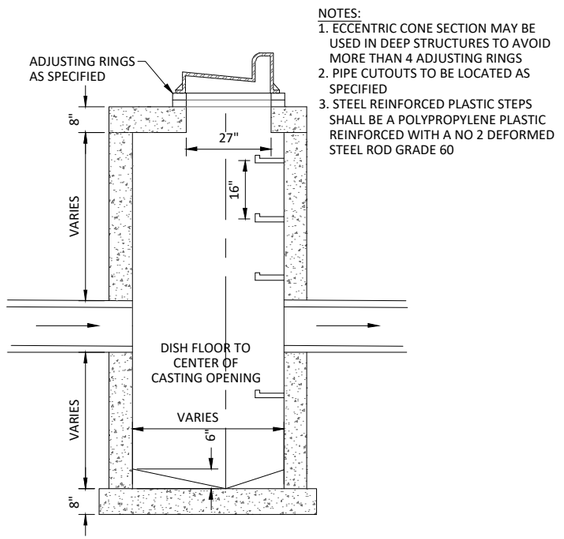
XX / X.XX — PRECAST CONCRETE POND SKIMMER STRUCTURE

NOT TO SCALE



XX / X.XX — DRAINAGE INLET (18" RCP PIPE)

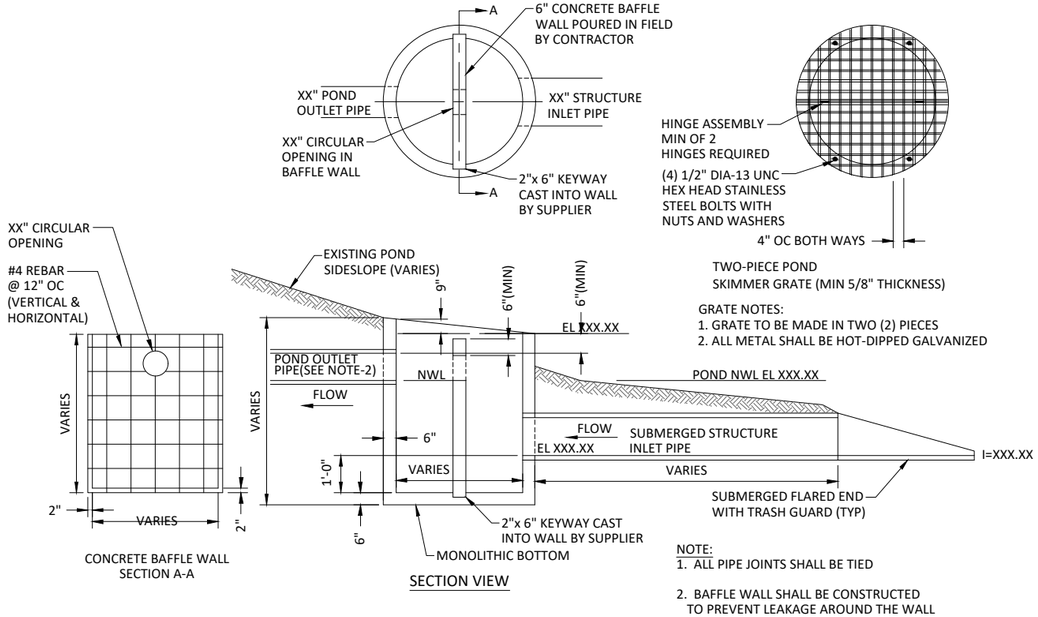
NOT TO SCALE



SECTIONAL VIEW

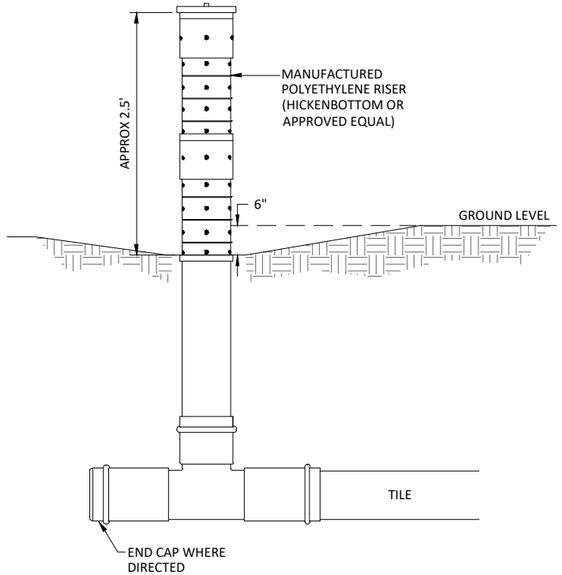
XX / X.XX — DRAINAGE STRUCTURE WITH SUMP

NOT TO SCALE



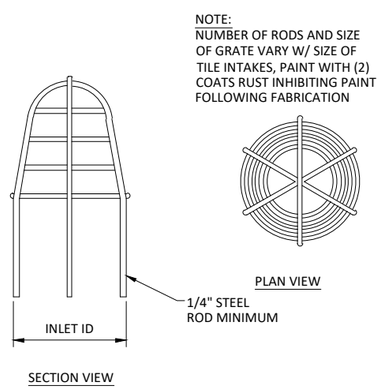
XX / X.XX — PRECAST CONCRETE POND SKIMMER STRUCTURE WITH RATE CONTROL BAFFLE

NOT TO SCALE



SURFACE WATER INTAKE RISER

NOT TO SCALE



BEEHIVE INLET GRATE-STEEL BARS

NOT TO SCALE

DESIGNED BY:

DRAWN BY:

AS BUILT BY:

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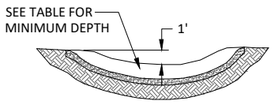
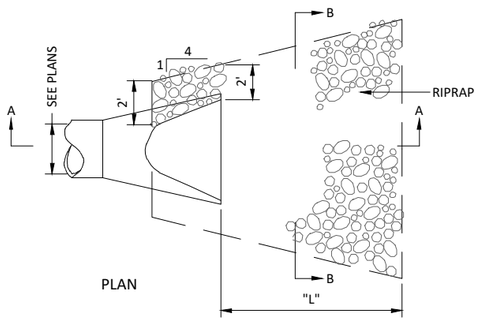
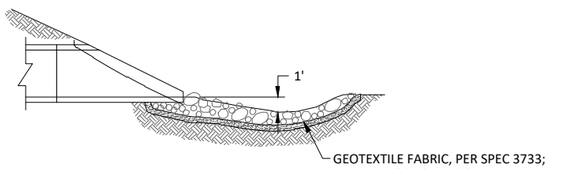
SHEET 7 OF 27



SECTION B-B



PLAN



SECTION A-A

XX
X.XX

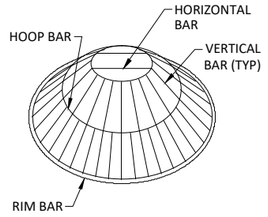
RIPRAP AT RCP CULVERT END

NOT TO SCALE

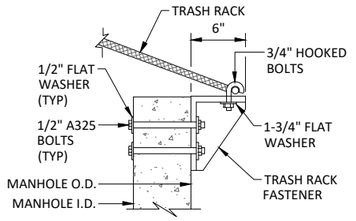
		CLASS II d50=6"	CLASS III d50=9"	CLASS IV d50=12"
ROUND PIPE DIA (IN)	L (FT)	12" DEPTH RIPRAP (CU YD)	18" DEPTH RIPRAP (CU YD)	24" DEPTH RIPRAP (CU YD)
12	8	5	8	10
15	8	5	8	10
18	10	6	10	15
21	10	8	15	15
24	12	10	15	20
27	12	10	15	20
30	14	15	20	25
36	16	18	25	30
42	18	20	30	40
48	20	20	40	50

NOTE:
1. ALL BARS TO BE GALV 3/4"

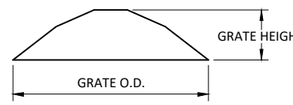
2. VERT & HORIZ BARS TO BE 6" OC



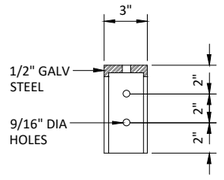
TRASH RACK DETAIL



TRASH RACK
FASTENER ATTACHMENT



TRASH RACK DIMENSIONS

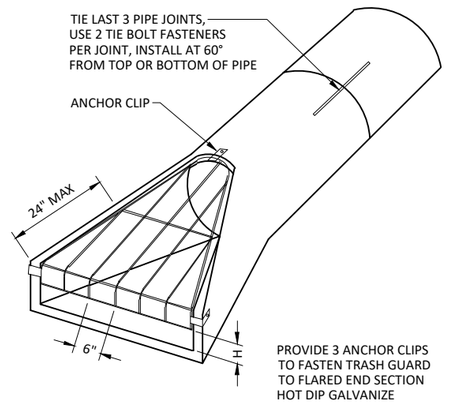


TRASH RACK FASTENER

Dimensional Table					
Manhole ID	Manhole OD	Grate OD	Bar Thickness	Grate Height	Mounting Brackets
30	37	46	0.75	12	4
33	37.5	50	0.75	12	4
36	44	54.5	0.75	12	4
42	51	61	0.75	12	4
48	58	70	0.75	12	4
54	65	77	0.75	18	4
60	72	84	0.75	18	6
66	79	92	0.75	18	8
72	86	98	0.75	18	8
78	93	101	0.75	24	8
84	100	110	0.75	24	8
96	114	126	0.75	24	8
108	128	140.5	1	36	8
120	140	154	1	36	8

MANHOLE INTAKE TRASH RACK
(STEEL BARS)

NOT TO SCALE



ANCHOR BOTH SIDES

PROVIDE 3 ANCHOR CLIPS
TO FASTEN TRASH GUARD
TO FLARED END SECTION
HOT DIP GALVANIZE
AFTER FABRICATION

TRASH GUARD SIZES			
PIPE SIZE	BARS	"H"	BOLTS
12"-18"	3/4"Ø	4"	5/8"
21"-42"	1"Ø	6"	3/4"
42"-72"	1 1/4"Ø	12"	1"

RC APRON TRASH RACK
(STEEL BARS)

NOT TO SCALE

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

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JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER — LIC. NO. — DATE

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STORM SEWER

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RAIN GARDEN PLANT LIST:

THE FOLLOWING RAIN GARDEN MIX SHALL BE APPLIED AT A RATE OF 10 LBS/AC (1 LB/4,400 SF) TO EACH RAIN GARDEN UP TO THE PROPOSED HIGH WATER ELEVATION:

20% WILDFLOWERS THAT INCLUDES:

ALLIUM CERNUUM	NODDING PINK ONION
ASCLEPIAS INCARNATA	SWAMP MILKWEED
ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED *
ASTER LAEVIS	SMOOTH BLUE ASTER
ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER
ECHINACEA PURPUREA	PURPLE CONEFLOWER *
EUPATORIUM MACULATUM	JOE PYE WEED *
HELIANTHUS HELIANTHOIDES	FALSE SUNFLOWER
LIATRIS PYCNOSTACHYA	THICK SPIKED BLAZINGSTAR
LIATRIS SPICATA	DENSE BLAZINGSTAR
LOBELIA SIPHILITICA	GREAT BLUE LOBELIA
MONARDA FISTULOSA	WILD BERGAMOT
RATIBIDA PINNATA	YELLOW CONEFLOWER
RUDBECKIA HIRTA	BLACK-EYED SUSAN *
RUDBECKIA SUBTOMENTOSA	SWEET BLACK-EYED SUSAN
VERBENA HASTATA	BLUE VERVAIN
VERNONIA FASCICULATA	COMMON IRONWEED
VERONICASTRUM VIRGINICUM	CULVER'S ROOT
ZIZIA AUREA	GOLDEN ALEXANDER *

80% PRAIRIE GRASS AND SEDGE THAT INCLUDES:

ANDROPOGON GERARDI	BIG BLUESTEM
ANDROPOGON SCOPARIUS	LITTLE BLUESTEM *
CAREX VULPINOIDEA	FOX SEDGE
ELYMUS VIRGINICUS	VIRGINIA WILD RYE
HYSTRIX PATULA	BOTTLE BRUSH GRASS
PANICUM VIRGATUM	SWITCH GRASS
SORGHASTRUM NUTANS	INDIAN GRASS

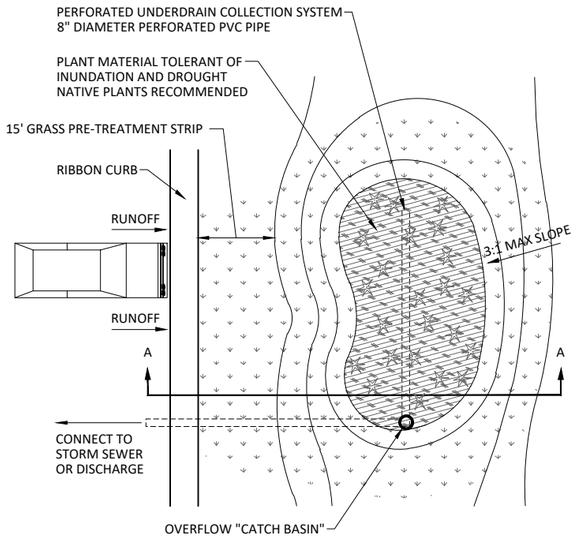
* SALT TOLERANT PLANTS - THESE PLANTS ARE TO BE UTILIZED IN RAIN GARDENS TAKING RUNOFF FROM STREET/PARKING AREAS DIRECTLY

** CONTRACTOR WILL CHOOSE 5 WILDFLOWERS FROM THIS MIX AS WELL AS 3 GRASSES

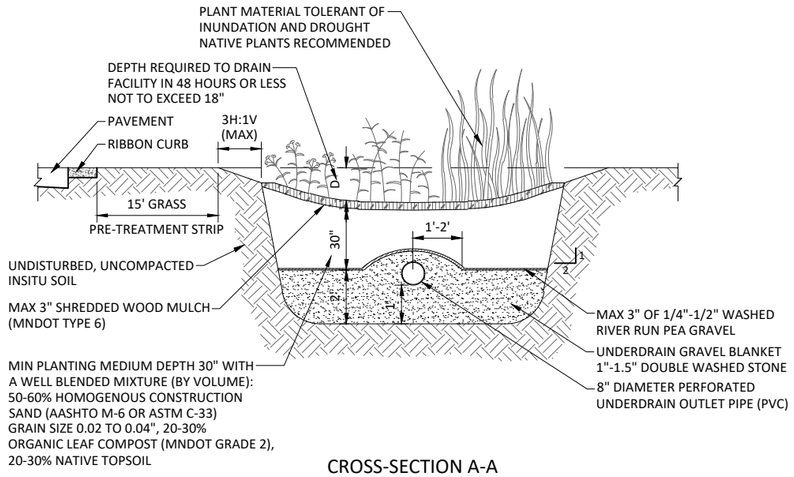
RAIN GARDEN NOTES:

1. RAIN GARDEN AREA SHALL BE GRADED TO A DEPTH OF 6"-18"; SEE PLANS FOR ACTUAL GRADING DEPTHS; RAIN GARDEN AREA ADJACENT TO WALL OR WALK SHALL HAVE 10" MIN FREEBOARD
2. CONTRACTOR SHALL TO AVOID COMPACTING SOILS ADJACENT TO PROPOSED RAIN GARDEN AREA; IF COMPACTION HAS OCCURRED CONTRACTOR SHALL RIP AREAS TO A DEPTH OF 18" AND TILL IN 6" OF ORGANIC COMPOST PRIOR TO ANY PLANTINGS
3. CONTRACTOR SHALL MAINTAIN RAIN GARDEN AREA FREE FROM WEEDS AND OTHER INVASIVE PLANT MATERIAL
4. LANDSCAPE ARCHITECT WILL INSPECT CONDITION OF RAIN GARDEN UPON COMPLETION OF INSTALLATION AND GIVE WRITTEN PROVISIONAL ACCEPTANCE; FOLLOWING ANNIVERSARY DATE, LANDSCAPE ARCHITECT WILL INSPECT RAIN GARDEN AREA FOR FINAL ACCEPTANCE; INSPECTION WILL INCLUDE OVERALL CONDITION OF PLANTINGS, INDICATION OF ANY WEEDS AND MONITORING OF ANY SEDIMENTATION; FINAL ACCEPTANCE WILL BE OFFERED TO CONTRACTOR AFTER ANY COMMENTS ARE ADDRESSED UPON THIS INSPECTION
5. AFTER FIRST GROWING SEASON, CONTRACTOR SHALL REMOVE ALL DEAD PLANT DEBRIS FROM PREVIOUS GROWING SEASON AND PRUNE SHRUB MATERIAL AS NECESSARY FOR OVERALL APPEARANCE OF RAIN GARDEN
6. CONTRACTOR SHALL MONITOR AND CONTROL SEDIMENTATION IN SPREADER STRIP, PRETREATMENT AREAS (TURF) AND IN RAIN GARDEN FOR ONE FULL YEAR; TURF ON PRETREATMENT AREAS SHALL BE MOWED WITH LOW GROUND PRESSURE EQUIPMENT (TO AVOID SOIL COMPACTION) TO 3-4" HEIGHT
7. CONTRACTOR SHALL MONITOR MOISTURE IN ALL RAIN GARDEN AREAS FOR ONE FULL YEAR; CONTRACTOR SHALL SUPPLEMENT WATER IF THERE IS INSUFFICIENT RAINFALL PER WEEK (ONE INCH PER WEEK)
8. MULCH IS TO BE 4"-5" OF MNDOT TYPE 6 SHREDDED HARDWOOD BARK MULCH IN RAIN GARDEN; CONTRACTOR SHALL MAINTAIN 4" CLEARING AROUND BASE OF SHRUBS AND 3" CLEARING AROUND PERENNIALS, FREE FROM MULCH; CONTRACTOR SHALL MAINTAIN INITIAL DEPTH OF MULCH FOR ONE FULL YEAR IN RAIN GARDEN AREAS TO REDUCE WEED INFESTATION
9. RAIN GARDEN AREAS ARE TO RECEIVE 4' DEPTH OF PLANTING SOIL; PLANTING SOIL IS TO CONSIST OF 20% ORGANIC MATERIAL, 50% SANDY SOIL AND 30% TOPSOIL; CLAY CAN BE PRESENT TO A MAXIMUM OF 10% OF OVERALL MIX; ALL AMENDED NATIVE SOILS SHALL MEET SOIL MIXTURE SPECIFICATIONS; CONTRACTOR SHALL INSURE PERCOLATION RATE OF AMENDED SOIL GREATER THAN ONE INCH PER HOUR
10. SEE SPECIFICATION BOOKLET FOR ADDITIONAL INFORMATION

RAIN GARDEN NOTES



GENERAL PLAN

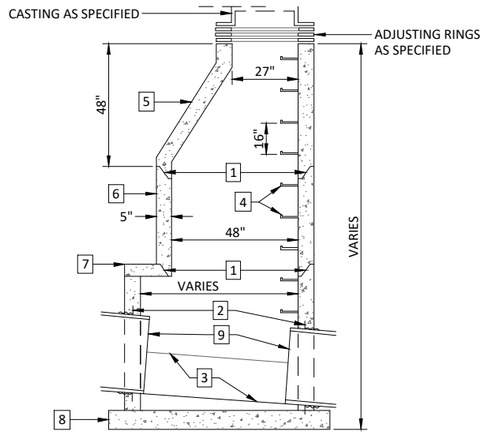


CROSS-SECTION A-A

1 BIORETENTION FACILITIES

NOT TO SCALE

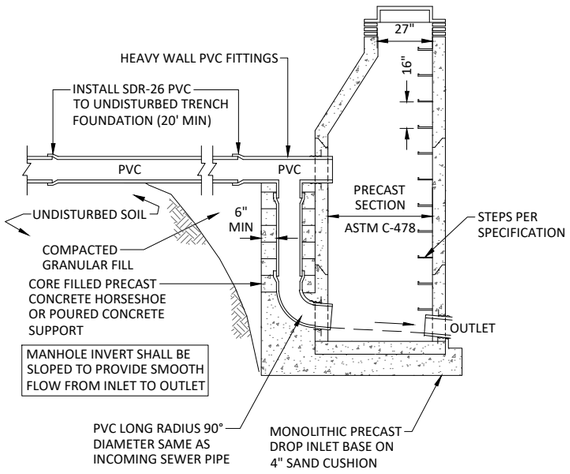
DESIGNED BY:	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	OFFICE OF THE CITY ENGINEER CITY OF NEW ULM MINNESOTA	CITY OF NEW ULM STANDARD DETAILS STORM SEWER		SHEET 9 OF 27
DRAWN BY:					
AS BUILT BY:	CERTIFIED BY JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER — 49062 LIC. NO. — 03/17/2025 DATE		DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG		



1. RUBBER GASKET
2. FLEXIBLE WATERTIGHT SEAL TO BE APPROVED BY ENGINEER
3. SHAPE, DEPTH & SLOPE OF INVERT TO BE APPROVED BY ENGINEER, GROUT TO BE MIX 3A34
4. STEEL REINFORCED PLASTIC STEPS SHALL BE A POLYPROPYLENE PLASTIC REINFORCED WITH NO 2 DEFORMED STEEL ROD GRADE 60
5. MnDOT TYPE "B" ECCENTRIC PRECAST CONCRETE CONE SECTION TYPICAL FOR ALL MANHOLES
6. 48" DIAMETER PRECAST RISER SECTIONS AS REQUIRED
7. PRECAST SLAB WITH ECCENTRIC 48" OPENING DESIGN -HS20 PLUS EARTH LOAD
8. 80" PRECAST BASE SLAB, DIAMETER DEPENDENT ON DIAMETER OF LOWER MANHOLE SECTION
9. REFER TO PLANS FOR PIPE REQUIRED

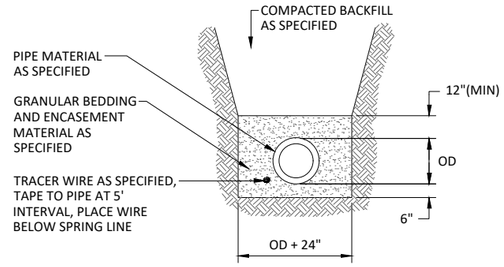
SANITARY MANHOLE, DESIGN SPECIAL

NOT TO SCALE



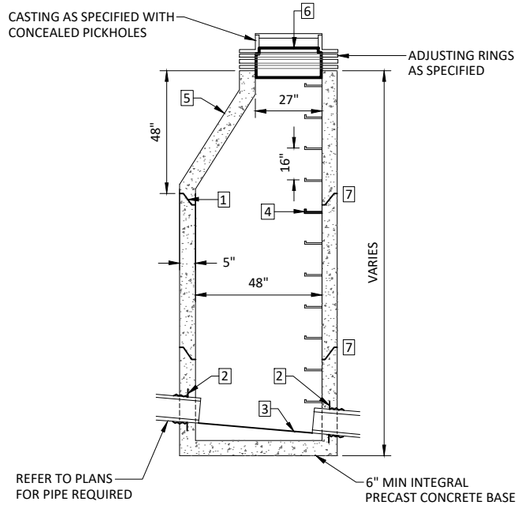
SANITARY MANHOLE WITH OUTSIDE DROP

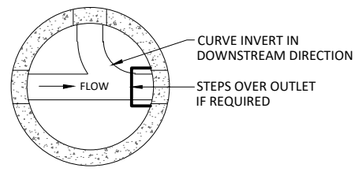
NOT TO SCALE



NON-RIGID SANITARY SEWER TRENCH

NOT TO SCALE





PLAN VIEW

1. RUBBER GASKET (TYPICAL)
2. FLEXIBLE WATERTIGHT SEAL TO BE APPROVED BY ENGINEER
3. SHAPE, DEPTH AND SLOPE OF INVERT TO BE APPROVED BY ENGINEER
4. STEEL REINFORCED PLASTIC STEPS SHALL BE A POLYPROPYLENE PLASTIC REINFORCED WITH A NO. 2 DEFORMED STEEL ROD GRADE 60
5. MnDOT TYPE "B" ECCENTRIC PRECAST CONCRETE CONE SECTION TYPICAL FOR ALL MANHOLES
6. PLACE INTERIOR CHIMNEY SEAL (WHEN SPECIFIED)
7. 8" WIDE, ¼" THICK BITUMINOUS MASTIC WRAP FULL CIRCUMFERENCE (WHEN SPECIFIED)

SANITARY MANHOLE

NOT TO SCALE

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

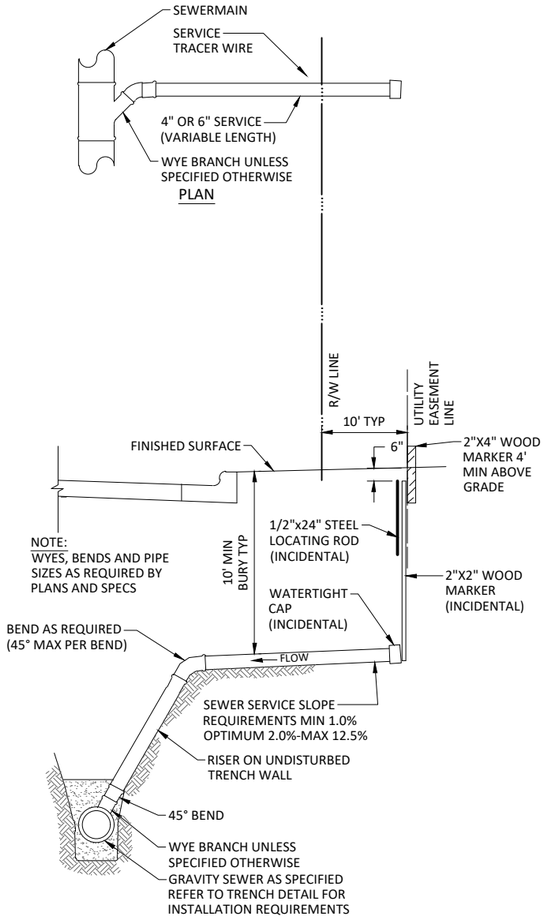
CERTIFIED BY _____ 49062 (LIC. NO.) 03/17/2025 (DATE)

JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER

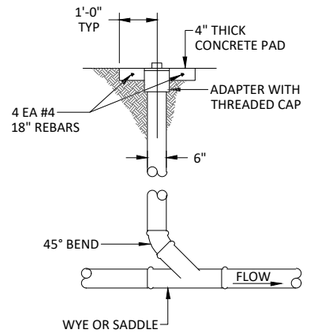
OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

CITY OF NEW ULM STANDARD DETAILS
SANITARY SEWER

DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG

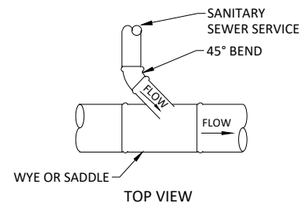


SANITARY SEWER SERVICE
NEW CONSTRUCTION
NOT TO SCALE

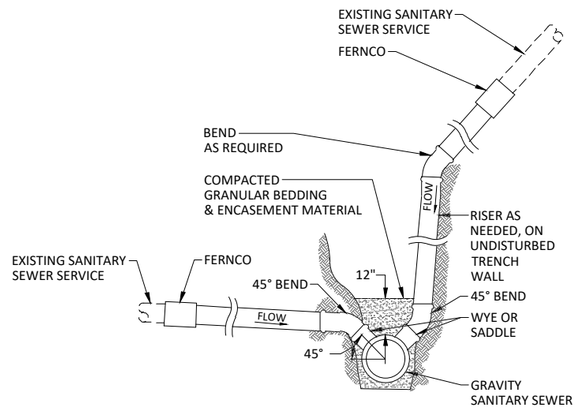


SANITARY SEWER CLEANOUT
NOT TO SCALE

SEWER SERVICE REQUIREMENTS
-GRADES-
MINIMUM - 1.0% (1/8" PER FT)
OPTIMUM - 2.0% (1/4" PER FT)
MAXIMUM - 12.5%



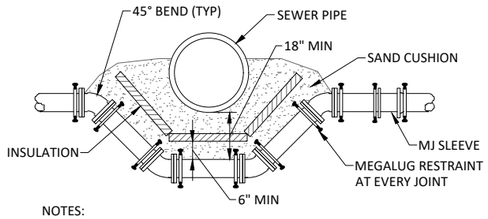
TOP VIEW



NOTE:
1. WYES, BENDS AND PIPE SIZES AS REQUIRED BY PLANS AND SPECS
2. WHERE NO EXISTING SEWER IS INPLACE, INSTALL PVC CAP AND MARK LOCATION WITH 4"X4"X6' TIMBER & 3/8" X 4' STEEL ROD BURY 6" BELOW FINISHED GRADE

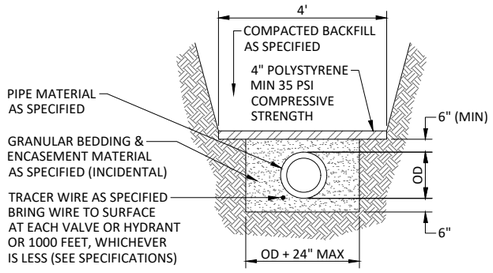
SANITARY SEWER SERVICE
AND SERVICE RISER, RECONSTRUCTION
NOT TO SCALE

	DESIGNED BY: DRAWN BY: AS BUILT BY:	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. CERTIFIED BY _____ JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER — 49062 LIC. NO. — 03/17/2025 DATE	OFFICE OF THE CITY ENGINEER CITY OF NEW ULM MINNESOTA	CITY OF NEW ULM STANDARD DETAILS SANITARY SEWER DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG	SHEET 11 OF 27

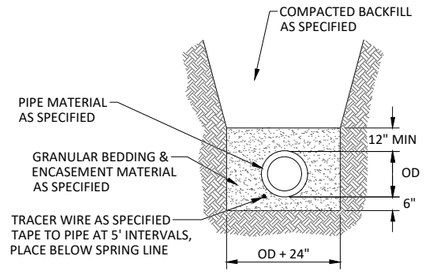


NOTES:
1. PROVIDE MEGALUG RESTRAINT AT JOINT ON BENDS AND AS SHOWN THIS DETAIL
2. COAT ALL ANCHORAGE AS PER SPECS
3. PROVIDE SAND CUSHION BETWEEN TOP OF WATERMAIN AND BOTTOM OF SEWER PIPE, MIN DIMENSIONS AS SHOWN THIS DETAIL (INCIDENTAL)
4. INSULATION TO BE 2" THICK POLYSTYRENE

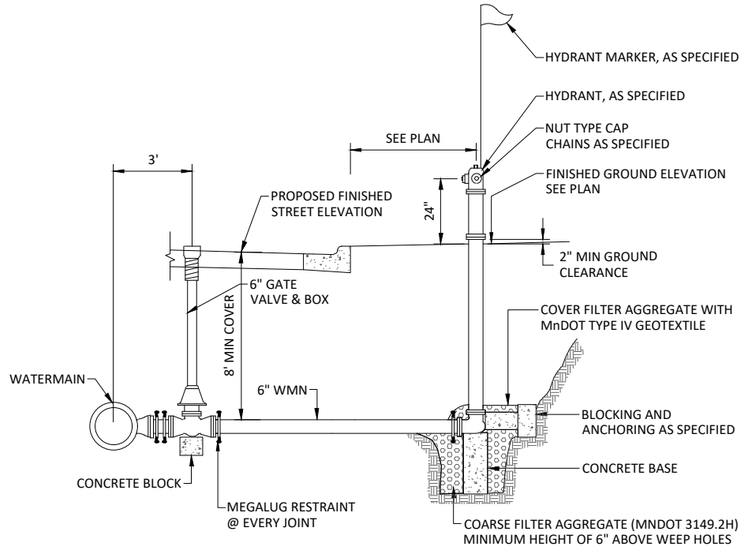
WATERMAIN OFFSET
NOT TO SCALE



WATERMAIN INSULATION
NOT TO SCALE

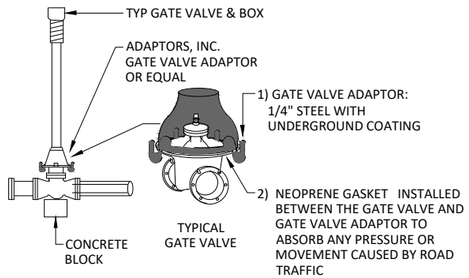


PVC WATERMAIN TRENCH
NOT TO SCALE



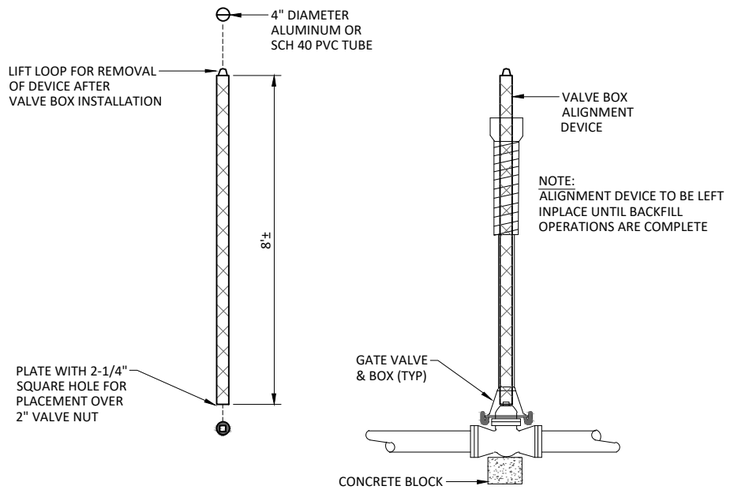
HYDRANTS LOCATED WHERE THE GROUNDWATER TABLE IS ABOVE THE DRAIN OUTLET SHALL HAVE THE OUTLET DRAIN PLUGGED AND SHALL BE EQUIPPED WITH A TAG STATING "PUMP AFTER USE"

HYDRANT INSTALLATION
NOT TO SCALE

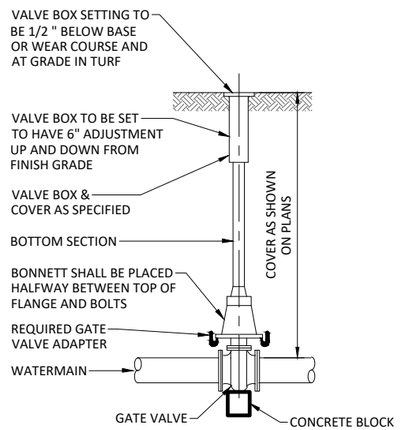


GATE VALVE ADAPTOR
NOT TO SCALE

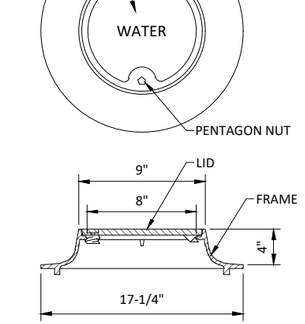
NOTES:
1. VALVE BOX SHALL BE CENTERED ON OPERATING NUTS, STRAIGHT, FREE FROM DEBRIS, AND ALL SECTIONS UNBROKEN
2. VALVES IN EASEMENTS SHALL HAVE CHANNEL POST WITNESS MARKERS WITH REFLECTIVE "GV" SIGN
3. DEEP VALVES SHALL HAVE NUT EXTENSIONS INSTALLED TO ELEVATION TO ACCOMMODATE STANDARD 10' KEY; BOTTOM NUT SHALL BE BOLTED TO VALVE NUT AND ONLY ONE SECTION
4. COMPACTION WITH MECHANICAL TAMPER AROUND VALVE BOX SHALL BE PLACED AND COMPACTED WITH 2' LIFTS TO ACHIEVE 95% COMPACTION
5. GATE VALVES LOCATED WITHIN THE CONCRETE SIDEWALK SHALL INCLUDE A METAL SEPARATOR BETWEEN THE VALVE BOX AND THE CONCRETE



GATE VALVE BOX ALIGNMENT DEVICE
NOT TO SCALE

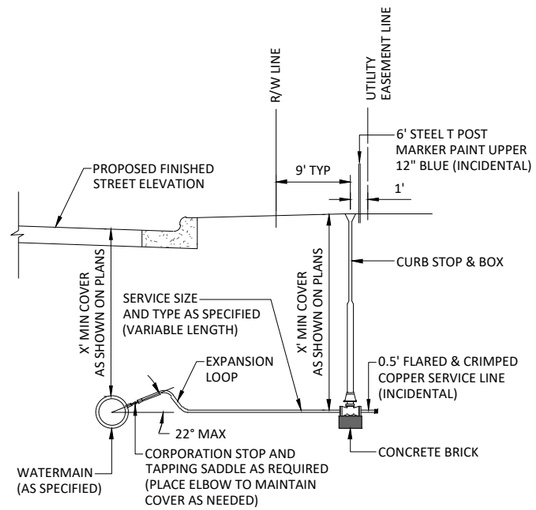


GATE VALVE BOX INSTALLATION
NOT TO SCALE



NOTES:
1. FURNISH AND INSTALL ON CURB STOPS THAT ARE WITHIN CONCRETE OR BITUMINOUS SURFACING
2. CASTING ASSEMBLY TO BE FORD METER BOX MODEL A1 OR APPROVED EQUAL

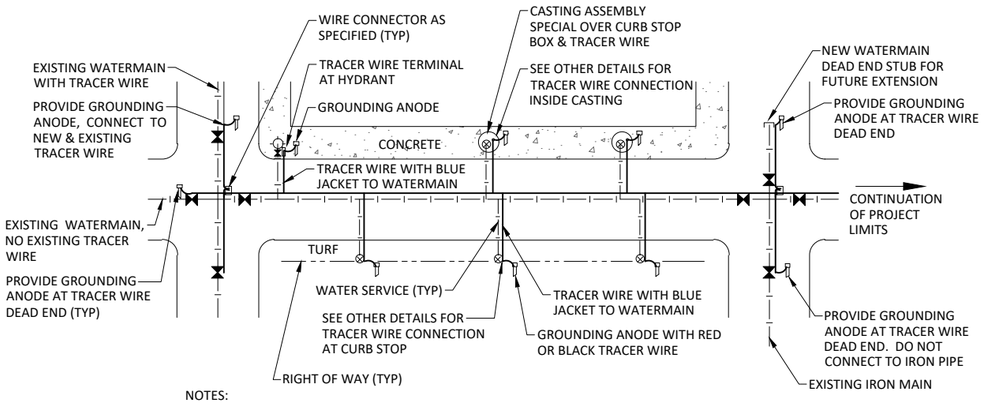
CASTING ASSEMBLY SPECIAL
NOT TO SCALE



XX / X.XX

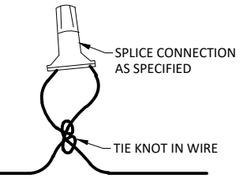
WATER SERVICE INSTALLATION NEW CONSTRUCTION
NOT TO SCALE

city of new ulm	DESIGNED BY: DRAWN BY: AS BUILT BY:	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. CERTIFIED BY _____ JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER — 49062 LIC. NO. — 03/17/2025 DATE	OFFICE OF THE CITY ENGINEER CITY OF NEW ULM MINNESOTA	CITY OF NEW ULM STANDARD DETAILS WATERMAIN DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG	SHEET 12 OF 27



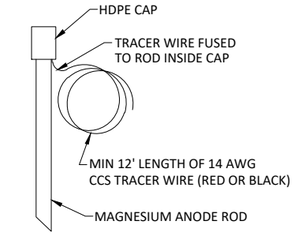
NOTES:
1. NUMBER OF SERVICES, CASTINGS AND TRACER WIRE ACCESS BOXES REQUIRED PER BLOCK VARIES. REFER TO UTILITY PLAN SHEETS.
2. CONNECTIONS TO EXISTING WATERMAINS AND TRACER WIRES VARY BY LOCATION.
3. DO NOT CAD WELD TRACER WIRE TO DUCTILE IRON PIPE.

TRACER WIRE SYSTEM SCHEMATIC - WATER DISTRIBUTION
NOT TO SCALE



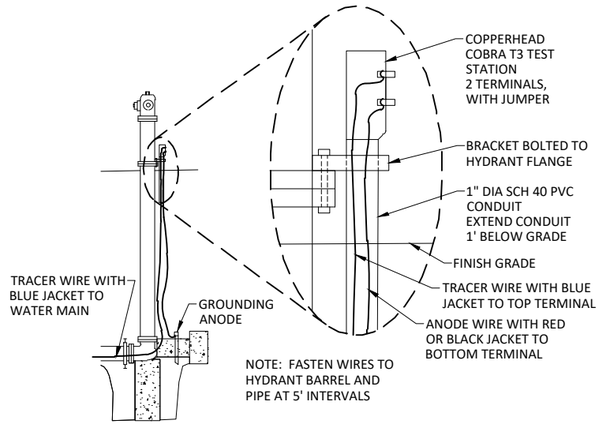
WHERE IN-LINE SPLICES ARE REQUIRED ALONG PIPES, THE TRACER WIRE SHALL BE KNOTTED PRIOR TO INSERTION INTO THE SPLICE CONNECTION.

IN-LINE TRACER WIRE SPLICE
NOT TO SCALE

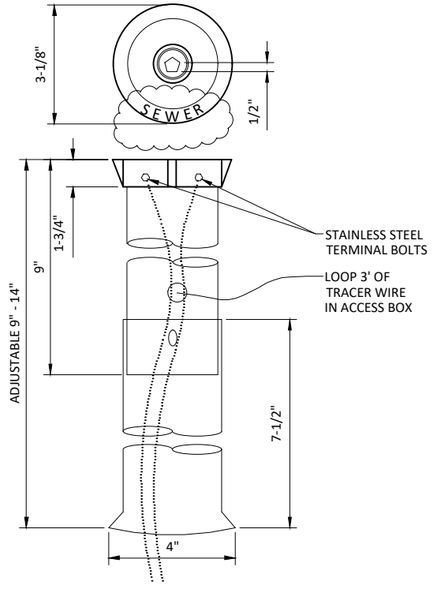


NOTE: MAGNESIUM ROD DIMENSIONS SHALL BE APPROX 18" LONG BY 1.3" DIA, AND APPROX 1 LB IN WEIGHT.

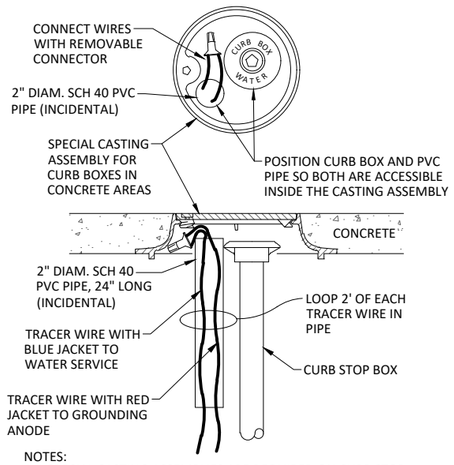
GROUNDING ANODE
NOT TO SCALE



TRACER WIRE AT HYDRANT
NOT TO SCALE



ADJUSTABLE TRACER WIRE ACCESS BOX
NOT TO SCALE



NOTES:
1. SPECIAL CASTING ASSEMBLIES ARE REQUIRED ON CURB STOP BOXES THAT ARE WITHIN CONCRETE OR BITUMINOUS SURFACING.
2. TRACER WIRE ACCESS BOXES ARE NOT REQUIRED WHERE A SPECIAL CASTING ASSEMBLY IS INSTALLED.

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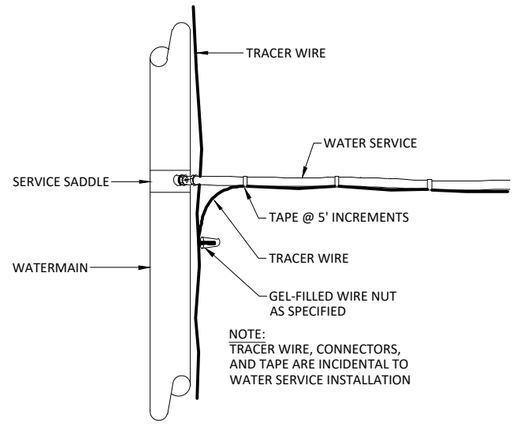
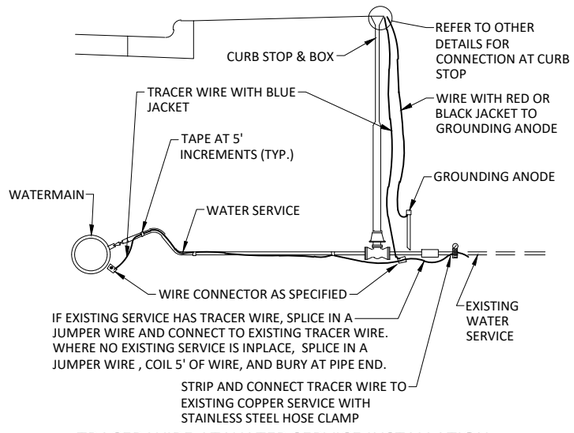
TRACER WIRE AT CURB BOX, INSIDE CASTING ASSEMBLY SPECIAL
NOT TO SCALE



WATER SERVICE TRACER WIRE CONNECTION
NOT TO SCALE



TRACER WIRE AT WATER SERVICE INSTALLATION RECONSTRUCTION
NOT TO SCALE

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

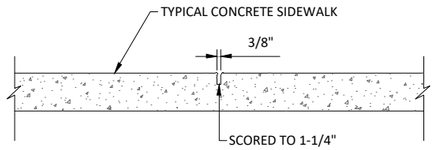
CERTIFIED BY _____ JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER | 49062 LIC. NO. | 03/17/2025 DATE

OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

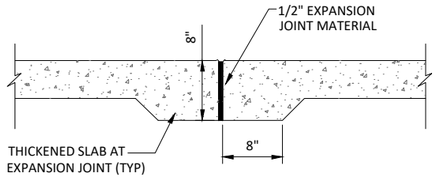
CITY OF NEW ULM STANDARD DETAILS
TRACER WIRE

DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG

SHEET 13 OF 27



CONTRACTION JOINT
NOT TO SCALE



EXPANSION JOINT
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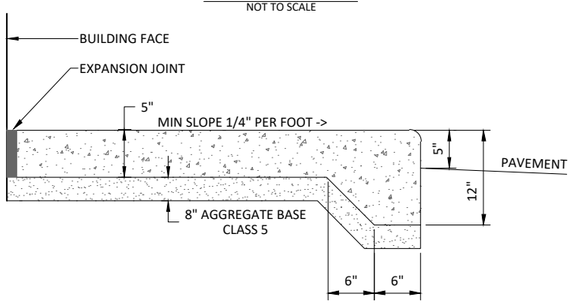
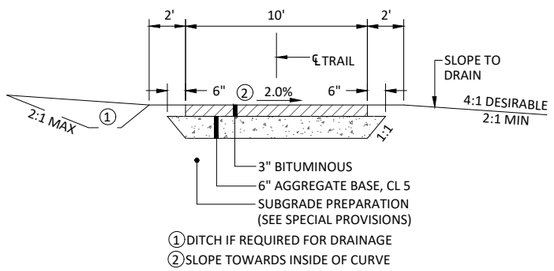


THICKENED EDGE CONCRETE SIDEWALK
NOT TO SCALE



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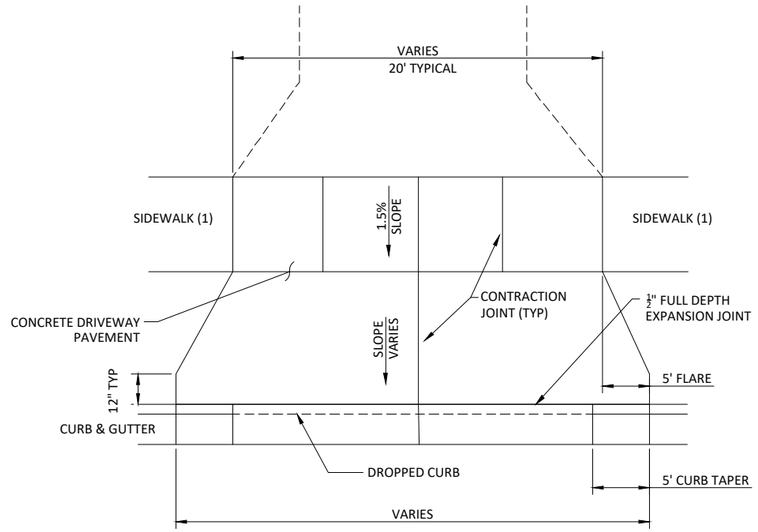
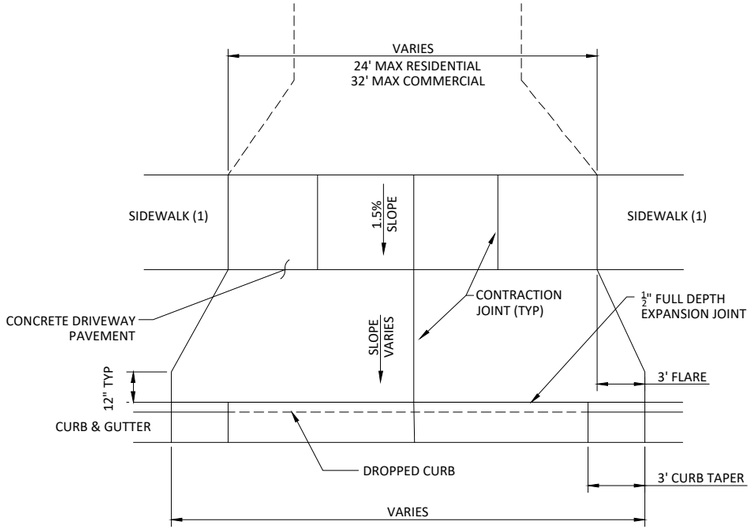
BITUMINOUS TRAIL
NOT TO SCALE



NOTE:

1. TRANSITION DRIVEWAY CONCRETE THICKNESS TO SIDEWALK THICKNESS (TO BE PAID AS CONCRETE WALK)

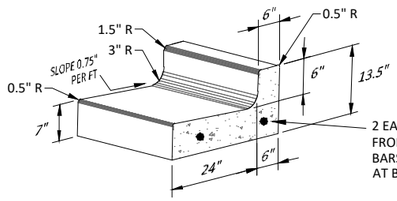
CONCRETE ALLEY APPROACH DETAIL
NOT TO SCALE



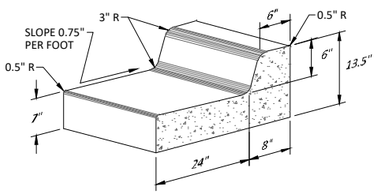
NOTE:

1. TRANSITION DRIVEWAY CONCRETE THICKNESS TO SIDEWALK THICKNESS (TO BE PAID AS CONCRETE WALK)

CONCRETE DRIVEWAY APPROACH DETAIL
NOT TO SCALE

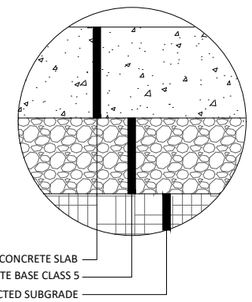


CONCRETE CURB & GUTTER DESIGN V624
NOT TO SCALE

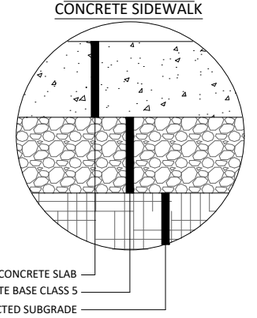


CONCRETE CURB & GUTTER DESIGN B624
NOT TO SCALE

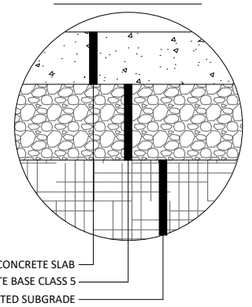
CONCRETE DRIVEWAY



PEDESTRIAN RAMP CONCRETE SIDEWALK



CONCRETE SIDEWALK



DESIGNED BY:
DRAWN BY:
AS BUILT BY:

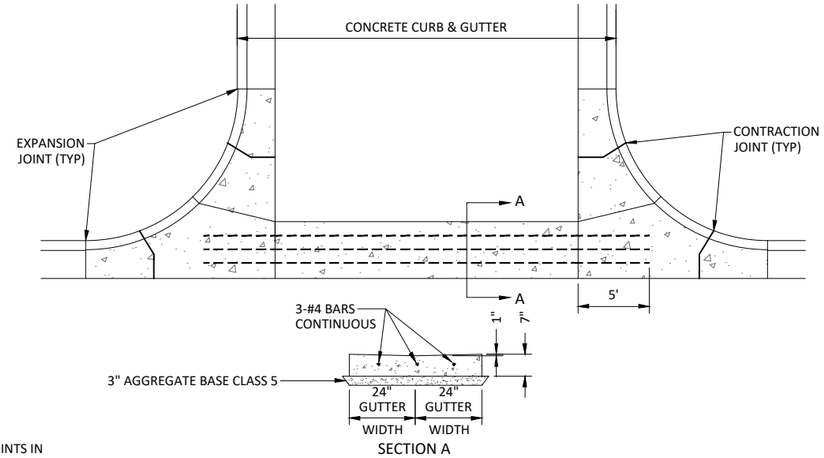
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CERTIFIED BY _____ JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER | 49062 LIC. NO. | 03/17/2025 DATE

OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

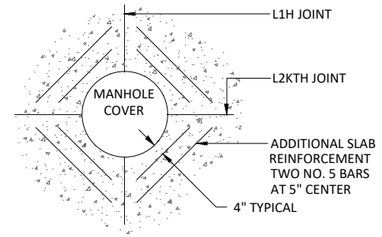
CITY OF NEW ULM STANDARD DETAILS
CONCRETE CURB & GUTTER, SIDEWALK AND DRIVEWAY DETAILS

DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG

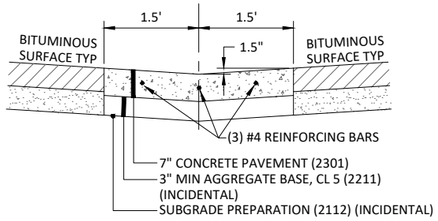


NOTE:
1. NO CONTRACTION JOINTS IN VALLEY GUTTER
2. THE CONCRETE VALLEY GUTTER SHALL BE CONSTRUCTED ON 3" AGGREGATE BASE, CLASS 5

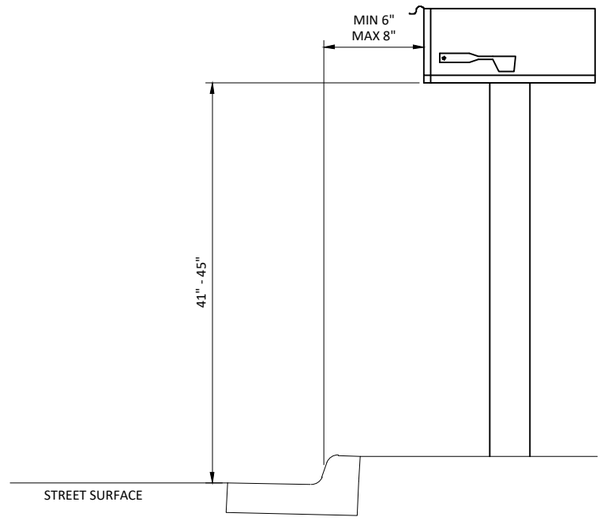
CONCRETE VALLEY GUTTER
NOT TO SCALE



CONCRETE REINFORCEMENT AT MANHOLES
NOT TO SCALE



CONCRETE DRAINAGE PAN
NOT TO SCALE



MAILBOX INSTALLATION
NOT TO SCALE

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

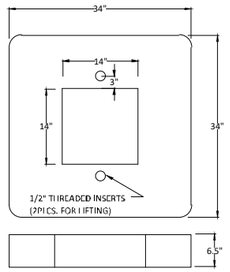
CERTIFIED BY _____ 49062 03/17/2025
JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER — LIC. NO. — DATE

OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

CITY OF NEW ULM STANDARD DETAILS
CONCRETE CURB & GUTTER, SIDEWALK AND DRIVEWAY DETAILS

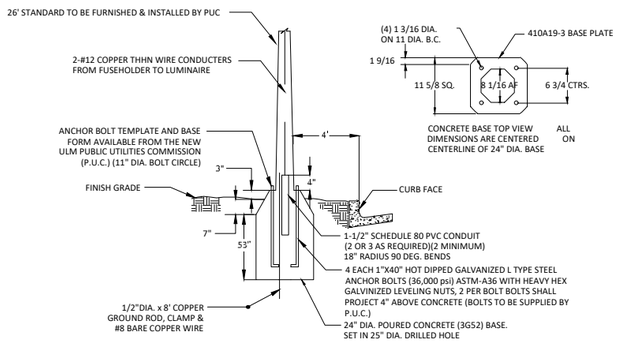
DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG

STREET LIGHTING DETAILS



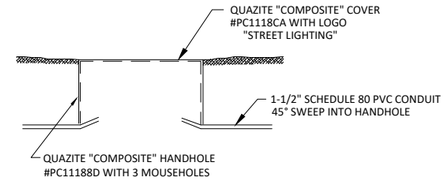
CONTROLLER PAD CONCAST
FLAT PAD PART NUMBER:
FP-34-34-6.5

(FURNISHED BY THE NEW ULM PUBLIC UTILITIES COMMISSION)
NO SCALE



24" CONCRETE STREET LIGHT BASE

NO SCALE



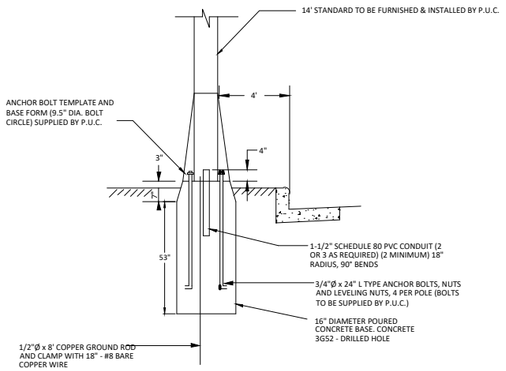
HANDHOLE DETAIL

(NO SCALE)

NOTE: CONTRACTOR TO FURNISH AND INSTALL ALL CONDUITS, WIRES AND GROUND RODS. CONTRACTOR SHALL CONSTRUCT ALL CONCRETE LIGHT BASES AND INSTALL HANDHOLES (PULL BOXES) AND CONTROLLER PADS (HANDHOLES AND CONTROLLER PADS FURNISHED BY NUPUC). CONTRACTOR SHALL INSTALL ALL WIRES IN CONDUIT SYSTEM BUT IS NOT REQUIRED TO MAKE WIRING CONNECTIONS AT THE LIGHT STANDARDS, PULL BOXES OR SOURCE OF POWERS.

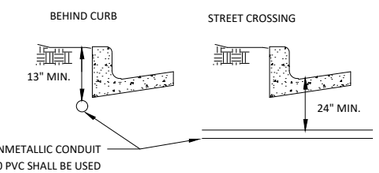
CONTRACTOR SHALL PROVIDE THE CITY WITH AS-BUILT DRAWINGS UPON COMPLETION OF WORK.

CONTRACTOR SHALL SUPPLY ALL SONOTUBES FOR FORMING THE CONCRETE LIGHT BASES.



16" CONCRETE STREET LIGHT BASE

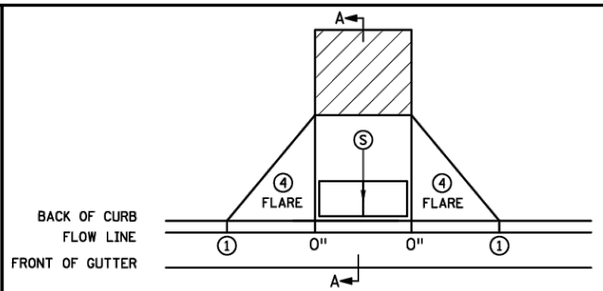
NO SCALE



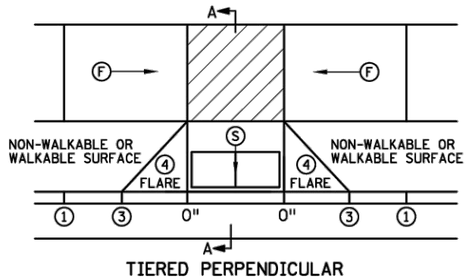
CONDUIT INSTALLATION

NO SCALE

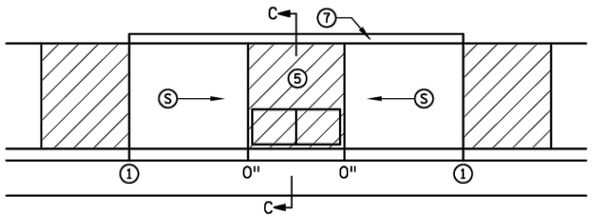
city of new ulm	DESIGNED BY: DRAWN BY: AS BUILT BY:	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. CERTIFIED BY _____ 49062 03/17/2025 JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER — LIC. NO. — DATE	OFFICE OF THE CITY ENGINEER CITY OF NEW ULM MINNESOTA	CITY OF NEW ULM STANDARD DETAILS STREET LIGHTING DETAILS DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG	SHEET 16 OF 27



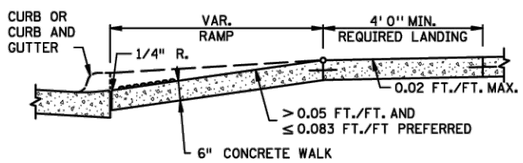
PERPENDICULAR



TIERED PERPENDICULAR

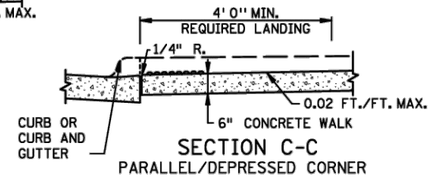


PARALLEL



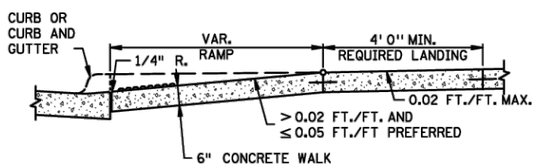
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



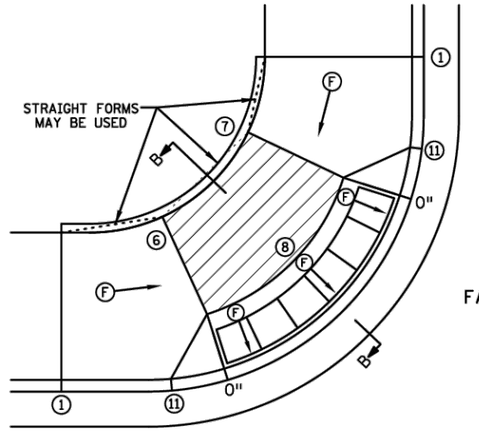
SECTION C-C

PARALLEL/DEPRESSED CORNER

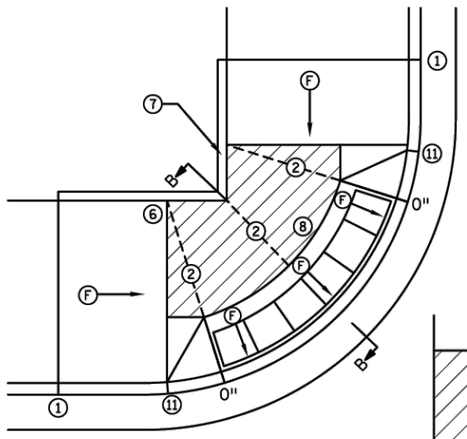


SECTION B-B

FAN

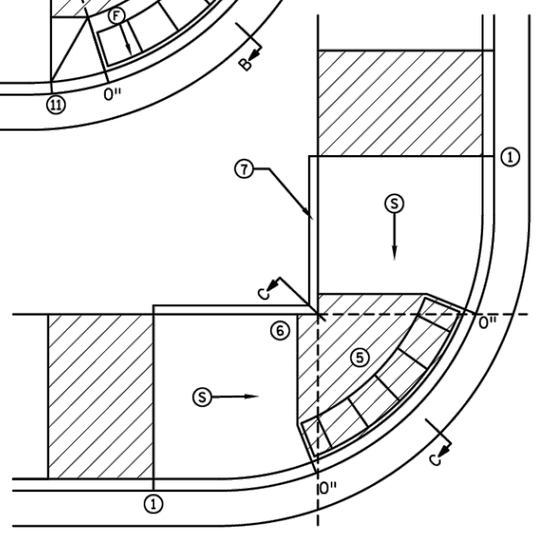


FAN⑩

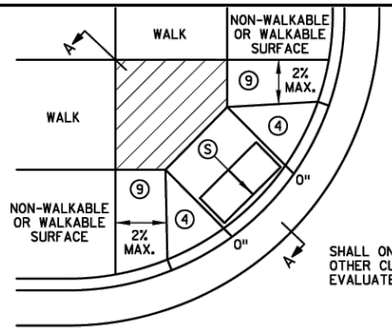


MODIFIED FAN⑩

USED WHEN RIGHT-OF-WAY
IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

SHALL ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN ⑥ BELOW.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.

WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

① MATCH FULL HEIGHT CURB.

② 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.

③ 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.

④ SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.

⑤ DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.

⑥ THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)

⑦ WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

⑧ A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.

⑨ PAVE FULL WALK WIDTH.

⑩ "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

⑪ INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

Ⓕ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 1 OF 6

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. | (TH) | SHEET NO. OF SHEETS

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

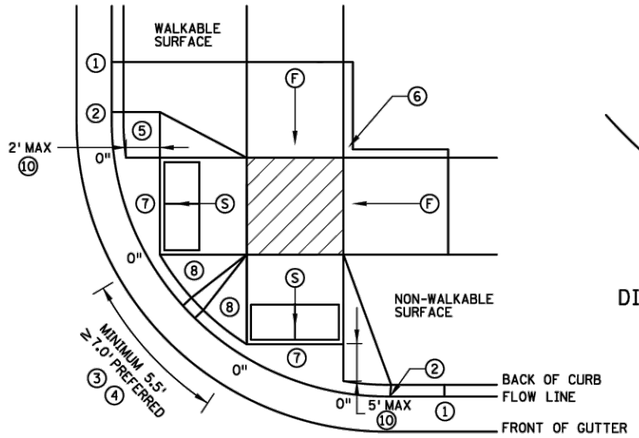
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CERTIFIED BY _____ 49062 03/17/2025
JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER LIC. NO. DATE

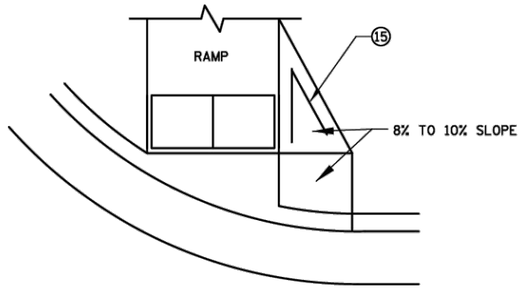
OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

CITY OF NEW ULM STANDARD DETAILS
Mn/DOT PEDESTRIAN CURB RAMP DETAILS

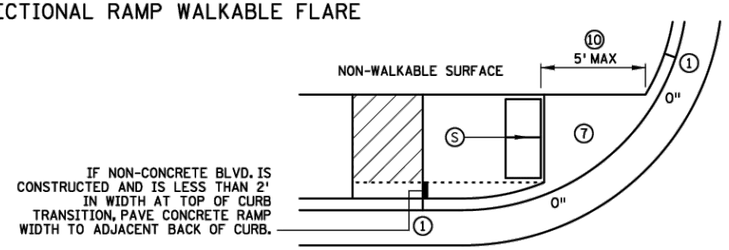
DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG



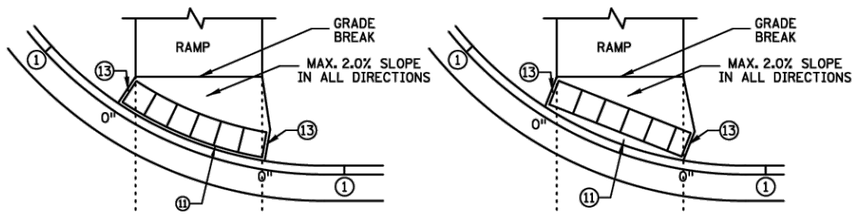
COMBINED DIRECTIONAL



DIRECTIONAL RAMP WALKABLE FLARE

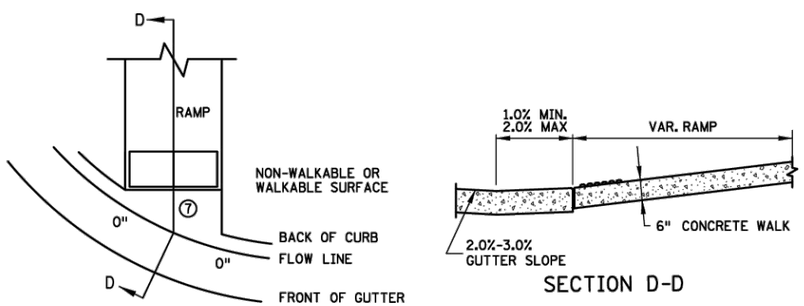


STANDARD ONE-WAY DIRECTIONAL ⑨



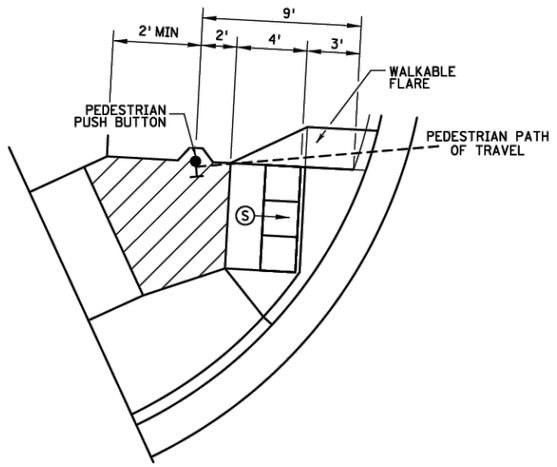
DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



SECTION D-D

CURB FOR DIRECTIONAL RAMPS ⑭



SEMI-DIRECTIONAL RAMP ③④⑨

3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB

PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.

TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISION (PROSECUTION OF WORK).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES ⑩ & ⑪ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

① MATCH FULL CURB HEIGHT.

② 3" HIGH CURB WHEN USING A 3' LONG RAMP
4" HIGH CURB WHEN USING A 4' LONG RAMP.

③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).

④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.

⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.

⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.

⑧ 8% TO 10% WALKABLE FLARE.

⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.

⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.

⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.

⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.

⑮ PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

(F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 2 OF 6

APPROVED: 11-04-2021
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (T.H.) SHEET NO. OF SHEETS

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

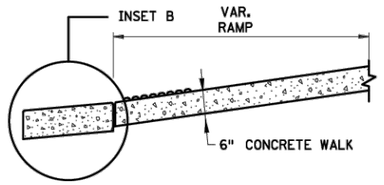
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

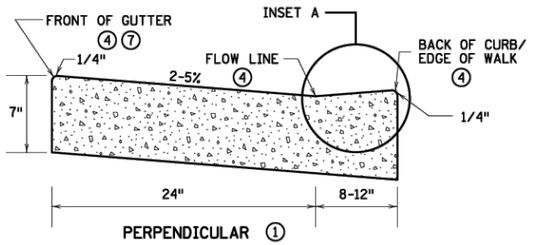
CERTIFIED BY JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER | 49062 LIC. NO. | 03/17/2025 DATE

OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

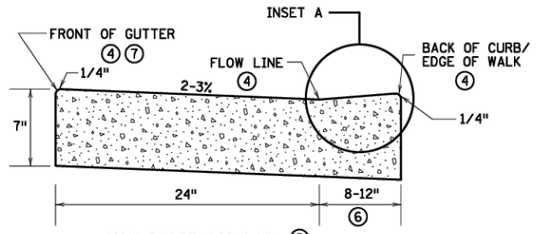
CITY OF NEW ULM STANDARD DETAILS
Mn/DOT PEDESTRIAN CURB RAMP DETAILS

DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG

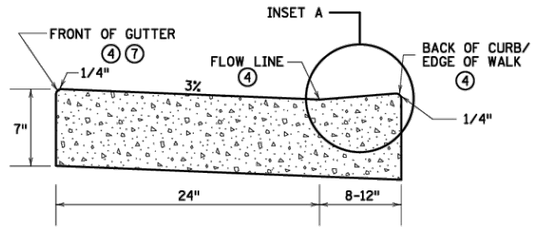




PERPENDICULAR ①

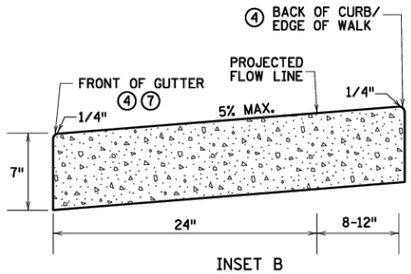


NON PERPENDICULAR ②

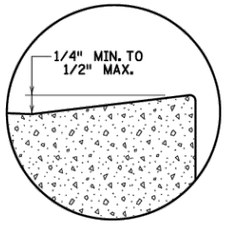


FOR CURB MACHINE PLACEMENT AROUND RADIUS ③
(REGARDLESS OF RAMP TYPE)

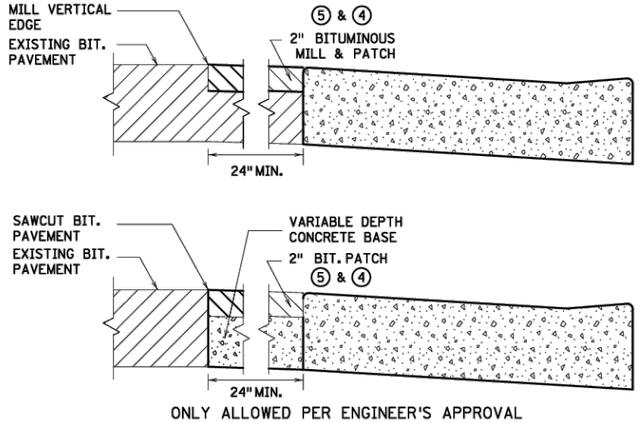
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



INSET B
OUTFLOW GUTTER ⑧



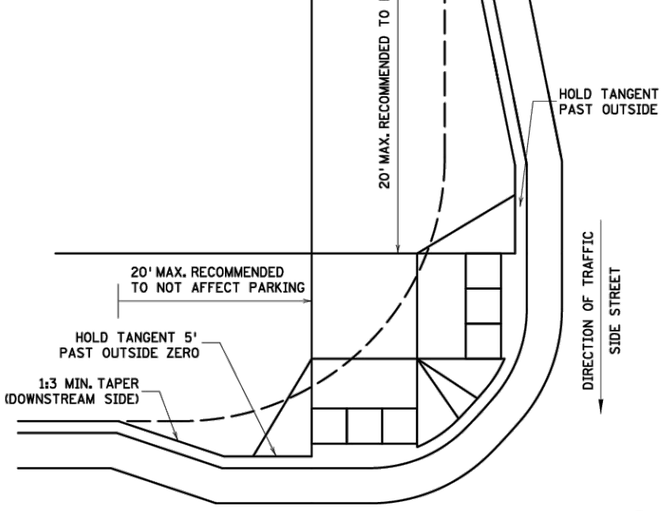
INSET A



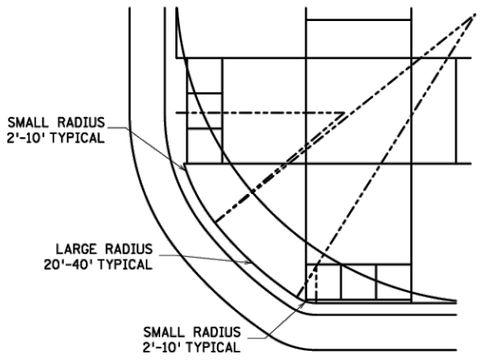
ONLY ALLOWED PER ENGINEER'S APPROVAL

PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) ⑪



COMBINED DIRECTIONAL ⑩
(COMPOUND RADIUS)

NOTES:

POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.
NO PONDING SHALL BE PRESENT IN THE PAR.
ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.

① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.
② FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.
③ BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.
④ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".
⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.
⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.
⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.
⑧ SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.
⑨ DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.
⑩ HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.
⑪ CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.

REVISION:
APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 3 OF 6

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

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OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
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CITY OF NEW ULM STANDARD DETAILS
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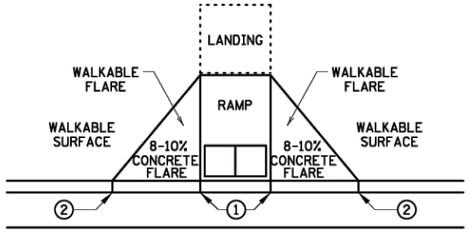
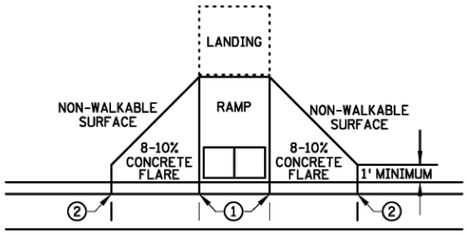
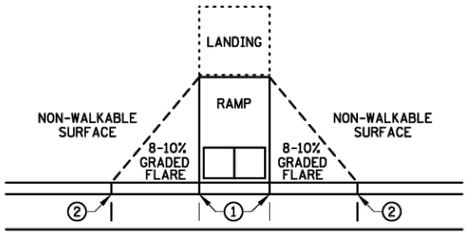


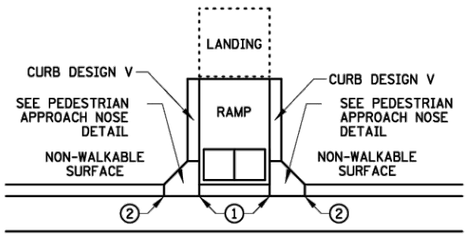
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

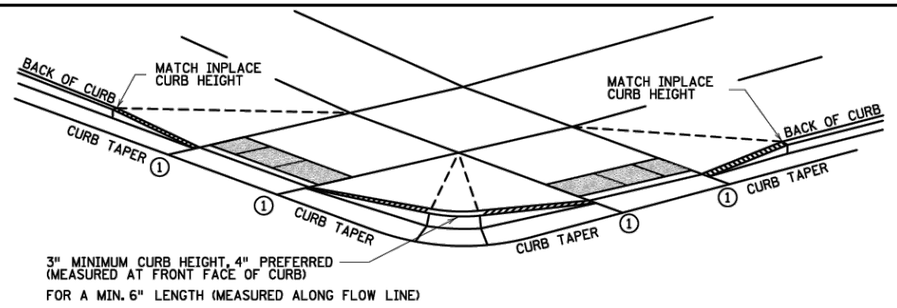


GRADED FLARES

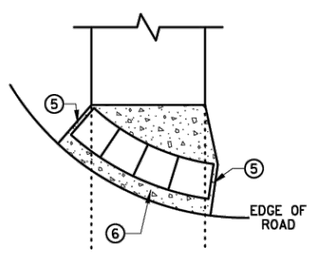


RETURNED CURB ④

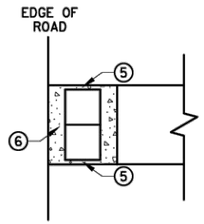
TYPICAL SIDE TREATMENT OPTIONS ③ ⑩



DETECTABLE EDGE WITH ⑦
CURB AND GUTTER

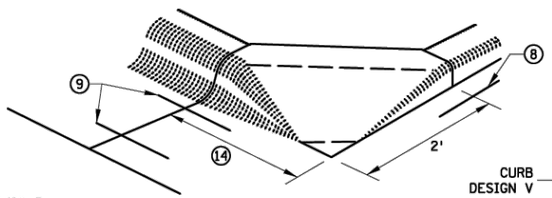


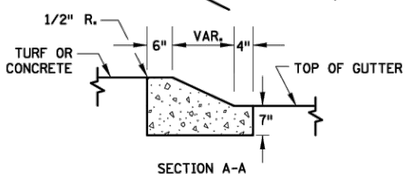
RADIAL DETECTABLE WARNING



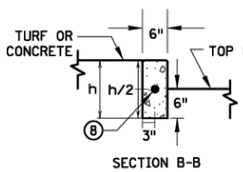
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

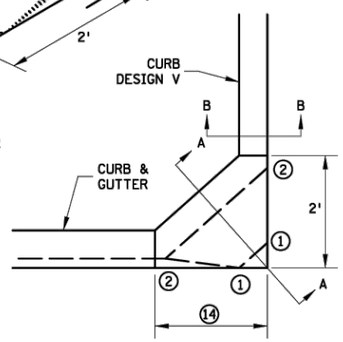




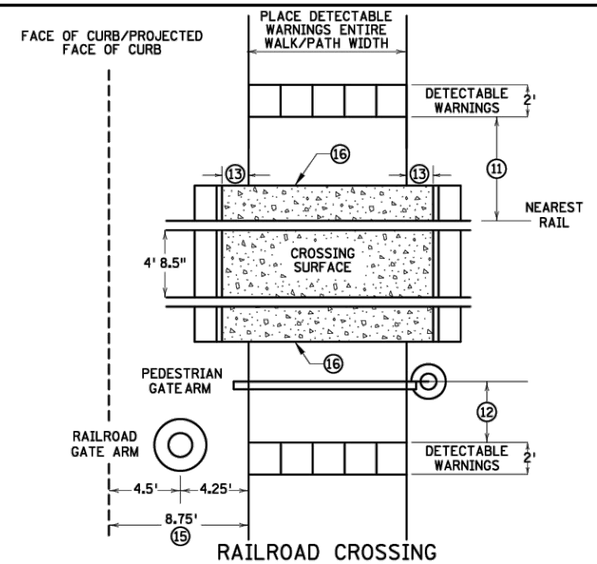
SECTION A-A



SECTION B-B



PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



RAILROAD CROSSING
PLAN VIEW

NOTES:

INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3 INCH CURB HEIGHT. INCREASE CURB TAPER LENGTH AT LESS THAN 8% OR REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

① 0" CURB HEIGHT. SEE INSET A ON SHEET 3 OF 6.

② FULL CURB HEIGHT.

③ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.

④ TYPICALLY USED FOR MEDIANS AND ISLANDS.

⑤ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑥ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.

⑦ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS. AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

⑧ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.

⑨ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.

⑩ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE. CONSTRUCT THESE TAPERS AT 0"-3" AT 8-10%, THEN LESS THAN 5% FROM 3" CURB TO FULL CURB HEIGHT.

⑪ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.

⑫ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE ⑪.

⑬ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.

⑭ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.

⑮ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.

⑯ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

REVISION:

APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 4 OF 6

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

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CERTIFIED BY
JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER
49062 LIC. NO.
03/17/2025 DATE

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CITY OF NEW ULM
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CITY OF NEW ULM STANDARD DETAILS
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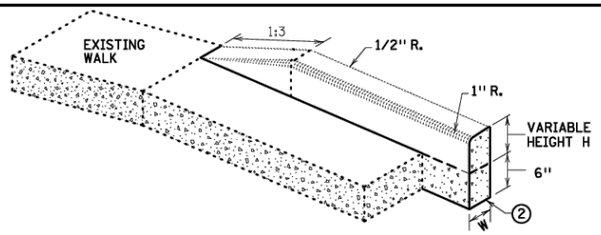
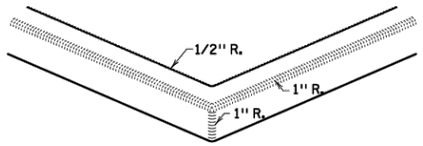
DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG

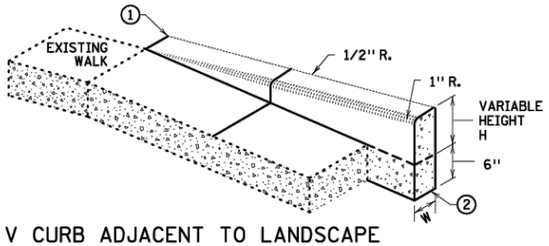


V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS

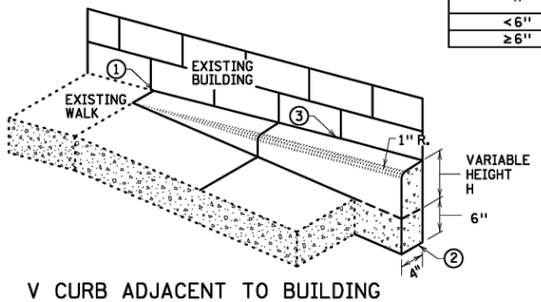


V CURB INTERSECTION

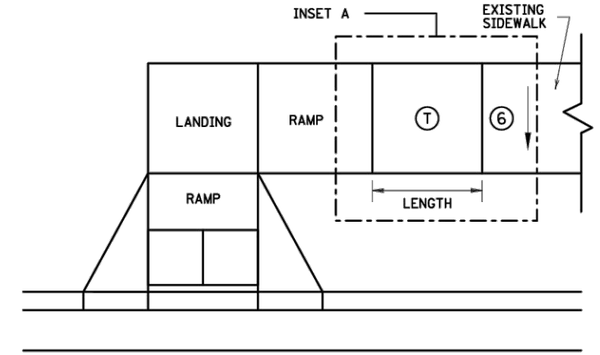
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"

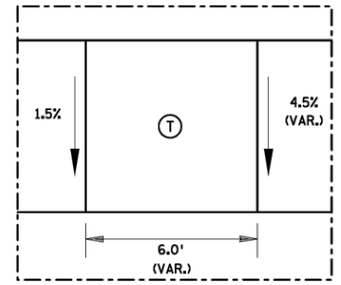


V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS



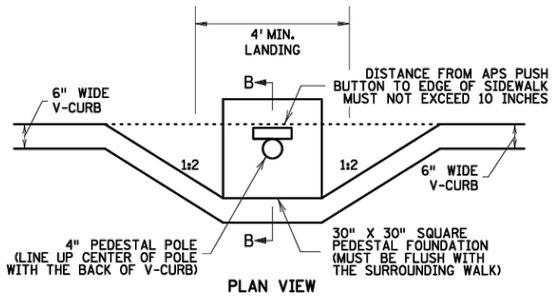
V CURB ADJACENT TO BUILDING OR BARRIER



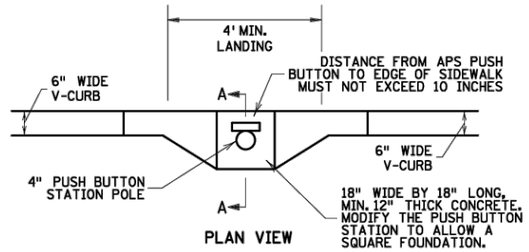


TRANSITION PANEL ④⑤

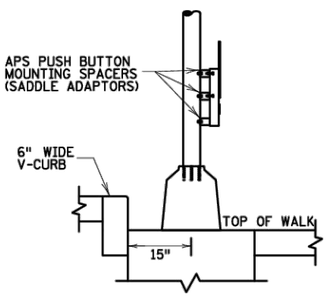
INSET A



PLAN VIEW

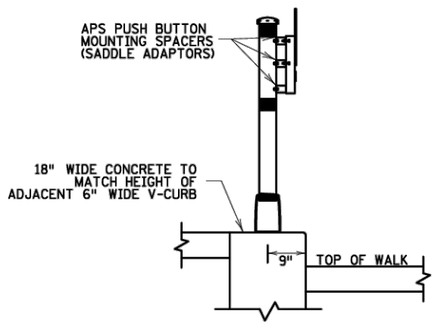


PLAN VIEW



SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



SECTION A-A

PUSH BUTTON STATION (V-CURB)

NOTES:

A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.

② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

③ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM ½" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.

④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.

⑤ TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).

⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

Ⓣ TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

REVISION:

APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 5 OF 6

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

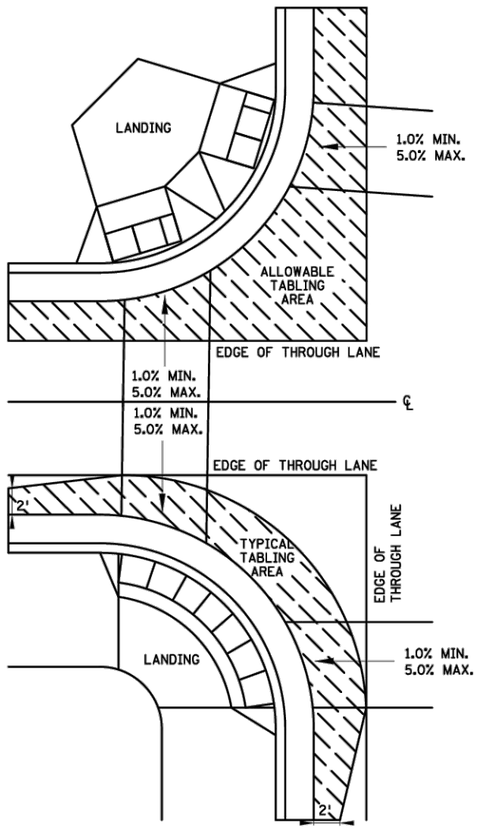
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CERTIFIED BY _____ 49062 03/17/2025
JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER LIC. NO. DATE

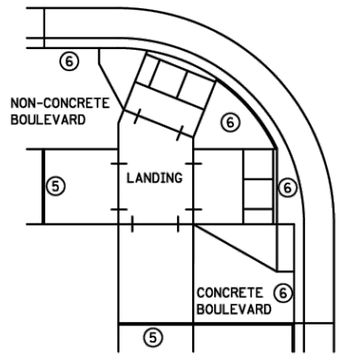
OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

CITY OF NEW ULM STANDARD DETAILS
Mn/DOT PEDESTRIAN CURB RAMP DETAILS

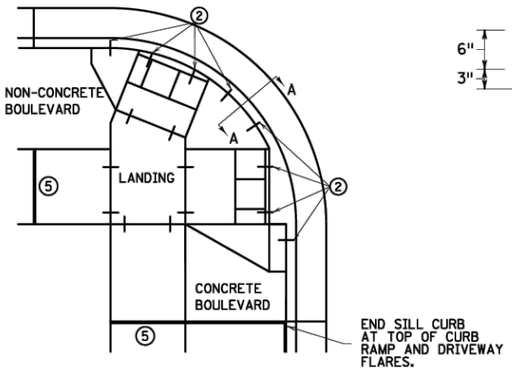
DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG



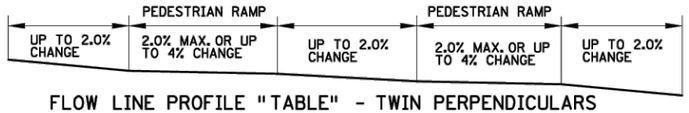
CURB LINE AND ROAD CROSSING ADJUSTMENTS



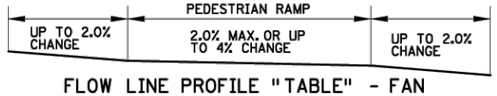
EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS



CURB LINE REINFORCEMENT ④ PLACEMENT ON BITUMINOUS ROADWAYS

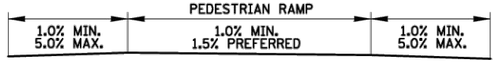


FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS

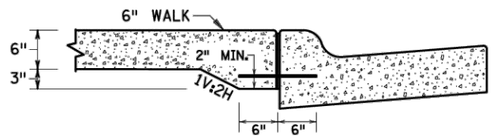


FLOW LINE PROFILE "TABLE" - FAN

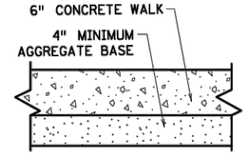
FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



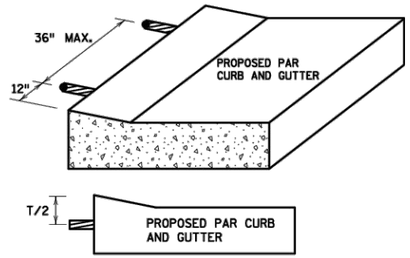
FLOW LINE PROFILE RAISE - FAN

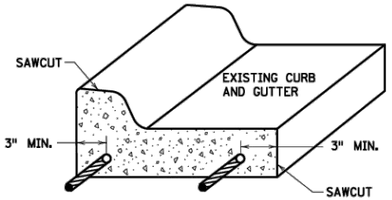


SECTION VIEW A-A
THICKENED SECTION
THROUGH CURB RAMP FLARES



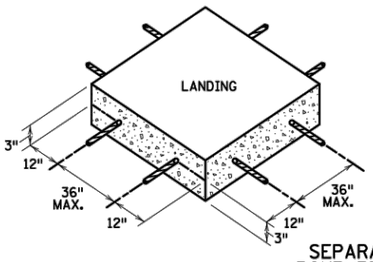
TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER

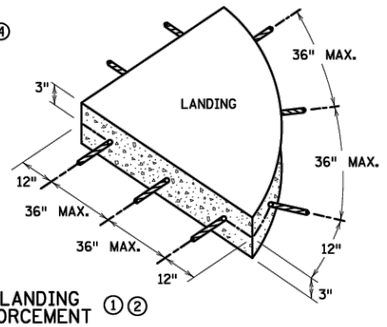




CURB AND GUTTER ③ REINFORCEMENT

CURB RAMP REINFORCEMENT DETAILS ②④





SEPARATE LANDING POUR REINFORCEMENT ①②

GENERAL NOTES:

"TABLING" OF CROSSWALKS MEANS MAINTAINING LESS THAN 2% CROSS SLOPE WITHIN A CROSSWALK, IS REQUIRED WHEN A ROADWAY IS IN A STOP OR YIELD CONDITION AND THE PROJECT SCOPE ALLOWS.

RECONSTRUCTION PROJECTS: ON FULL PAVEMENT REPLACEMENT PROJECTS "TABLING" OF ENTIRE CROSSWALK SHALL OCCUR WHEN FEASIBLE.

MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

1) 1.0% MIN. CROSS-SLOPE OF THE ROAD
2) 5.0% MAX. CROSS-SLOPE OF THE ROAD
3) "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
4) UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEYOND THE PEDESTRIAN CURB RAMP

STAND-ALONE ADA RETROFITS: FOLLOW MILL & OVERLAY CRITERIA ABOVE HOWEVER ALL PAVEMENT WARPING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

RAISING OF CURB LINES SHOULD OCCUR IN VERTICALLY CONSTRAINED AREAS. RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
3) 5.0% RECOMMENDED MAX. FLOW LINE
4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL

NOTES:

① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.

② DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) AT 36" MAXIMUM CENTER TO CENTER MINIMUM 12" SPACING FROM CONSTRUCTION JOINTS. BARS TO BE ADJUSTED TO MATCH RAMP GRADE. BARS TO BE PAID BY EACH.

③ DRILL AND GROUT 2 - NO. 4 X 12" LONG (6" EMBEDDED) REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS. BARS TO BE PAID BY EACH.

④ THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS. FOR CONCRETE ROADWAYS, SEE NOTE 6.

⑤ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

⑥ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

REVISION:

APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.250	6 OF 6
APPROVED: 11-04-2021	
REVISED:	

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

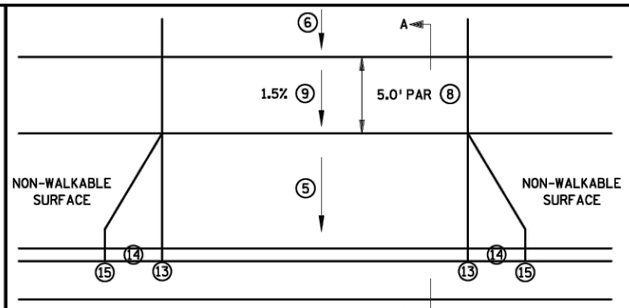
CERTIFIED BY JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER — 49062 LIC. NO. — 03/17/2025 DATE

OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

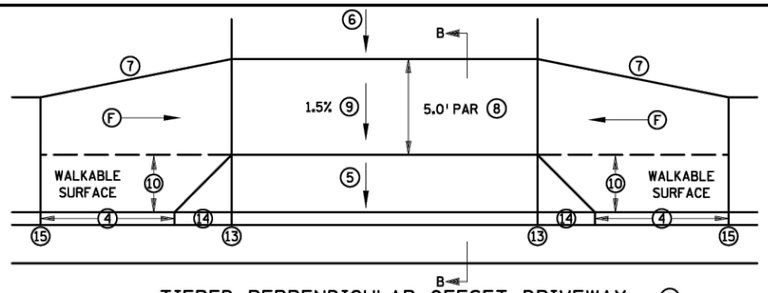
CITY OF NEW ULM STANDARD DETAILS
Mn/DOT PEDESTRIAN CURB RAMP DETAILS

DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG

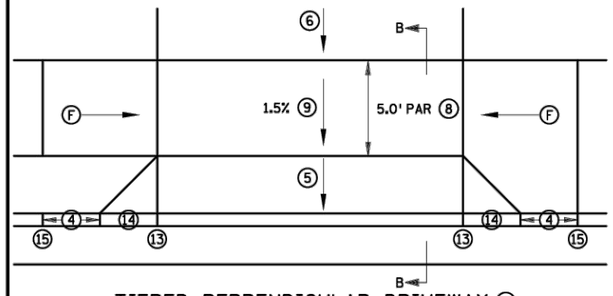
SHEET 22 OF 27



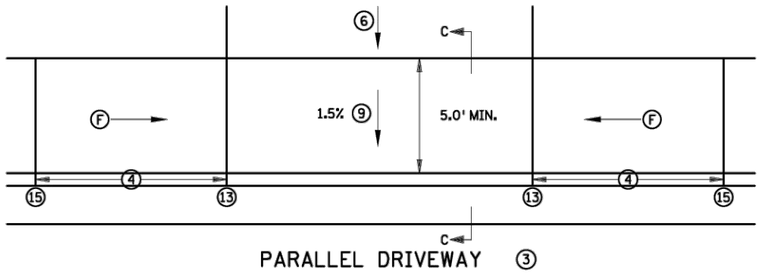
PERPENDICULAR DRIVEWAY ①



TIERED PERPENDICULAR OFFSET DRIVEWAY ②



TIERED PERPENDICULAR DRIVEWAY ②



PARALLEL DRIVEWAY ③

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURE FROM BACK OF CURB.

IN URBAN ROADWAY SECTIONS, 6" CURB HEIGHT SHOULD BE USED WHEN 6' OR GREATER BOULEVARD WIDTH IS PROPOSED. WHEN BOULEVARD IS LESS THAN 6' WIDE, 4" CURB HEIGHT SHOULD BE USED.

MAINTAIN EXISTING DRAINAGE PATTERNS FLOWING TO PUBLIC RIGHT OF WAY.

ACQUIRE ADEQUATE L3 TO ALLOW FOR A CONTINUOUS PAR PROFILE (UNIFORM TYPICAL SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.

IN NO CASE SHALL SIDEWALK PROFILES EXCEED 5.0%, EXCEPT SIDEWALK PROFILES CAN MATCH ROADWAY GRADE IF ROADWAY GRADE IS GREATER THAN 5.0%. RAMPS FOR DRIVEWAYS ARE REQUIRED TO FOLLOW THE ABOVE SIDEWALK CRITERIA.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PEDESTRIAN ACCESS ROUTE (PAR). 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

DRIVEWAY TYPES FROM MOST PREFERRED TO LEAST PREFERRED ARE AS FOLLOWS: PERPENDICULAR, TIERED PERPENDICULAR, TIERED PERPENDICULAR OFFSET & PARALLEL.

① PERPENDICULAR DRIVEWAYS ARE THE STANDARD AND STARTING POINT FOR ALL DRIVEWAY DESIGN AND CONSTRUCTION. SHOULD BE USED TO ACHIEVE CONTINUOUS PAR PROFILE THROUGH THE DRIVEWAY. OBTAINING A PERPENDICULAR DRIVEWAY DESIGN BECOMES MORE CRITICAL WITH STEEP ROADWAY PROFILES.

② TO BE USED WHEN PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED, THE DRIVEWAY PAR IS BELOW ROADWAY CURB HEIGHT. THIS DRIVEWAY TYPE CAN BE USED FOR BOTH PAVED (AS SHOWN) AND GRASS BOULEVARDS.

③ TO BE USED WHEN PERPENDICULAR AND TIERED PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED. CAN BE USED FOR STEEP NEGATIVE SLOPED DRIVEWAYS. DW CURB TYPE 2 SHOULD BE USED TO RAISE PAR ABOVE GUTTER AND REDUCE "ROLLER COASTER" EFFECT. 4" HIGH ROADWAY CURB SHOULD BE USED TO REDUCE "ROLLER COASTER" EFFECT ESPECIALLY WHEN MULTIPLE DRIVEWAYS ARE PRESENT.

④ TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

⑤ 8% STANDARD, 10% MAX. FOR COMMERCIAL AND 12% MAX. FOR RESIDENTIAL. SEE GENERAL NOTES ON SHEET 2 FOR MORE INFORMATION.

⑥ S3 8% MAXIMUM, IF THE SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. IF EXISTING DRIVEWAY IS NEGATIVELY DRAINING, S3 CAN BECOME SLIGHTLY MORE NEGATIVE TO ACHIEVE PERPENDICULAR DRIVEWAY DESIGN IF THE VERTICAL CLEARANCE IS ACHIEVED IN VEHICLE TEMPLATES.

⑦ 1:3 MIN. 1:5 PREFERRED FOR DRIVEWAY RETROFIT PROJECTS. 1:10 PREFERRED FOR SIDEWALK REPLACEMENT PROJECTS.

⑧ 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED.

⑨ THE PEDESTRIAN ACCESS ROUTE, MAY NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.

⑩ SIDEWALK OFFSET TO BE LESS THAN OR EQUAL TO HALF THE APPROACHING SIDEWALK WIDTH.

⑪ INTEGRAL DRIVEWAY APRON TO BE POURED MONOLITHICALLY/INTEGRAL WITH THE CURB AND GUTTER. SEE SHEET 2 FOR MORE INFORMATION.

⑫ SEE SHEET 2 FOR CURB TYPE INFORMATION.

⑬ 0" CURB IS AT FLOW LINE. SEE DRIVEWAY TABLE FOR BACK OF CURB HEIGHTS.

⑭ 3' LONG AT 8-10% PREFERRED FOR INITIAL CURB TAPER. REDUCE CURB TAPER SLOPE IF NECESSARY TO MATCH ADJACENT SIDEWALK GRADES.

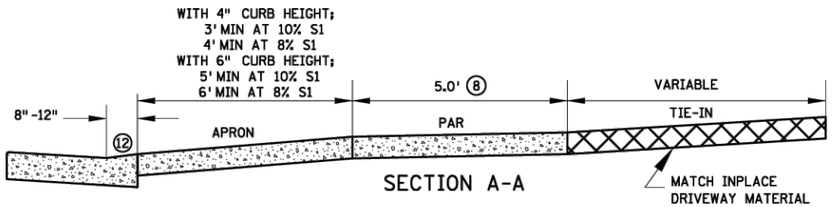
⑮ MATCH FULL CURB HEIGHT.

⑯ 1:2 TAPER RATE ON INTEGRAL DRIVEWAY APRONS.

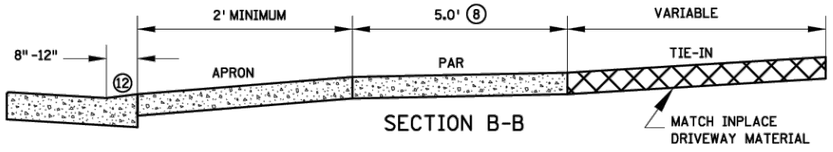
⑰ SEE SHEET 4 FOR WHEN 6" WALK IS REQUIRED.

LEGEND

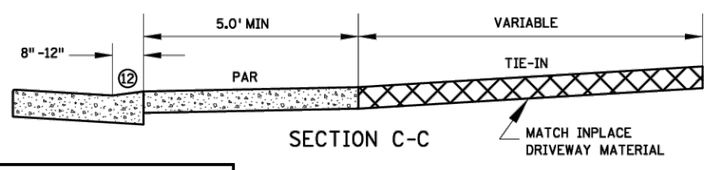
Ⓕ INDICATES DRIVEWAY RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%



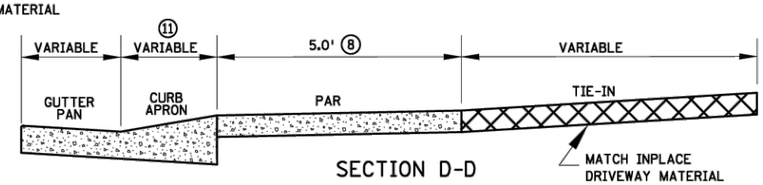
SECTION A-A



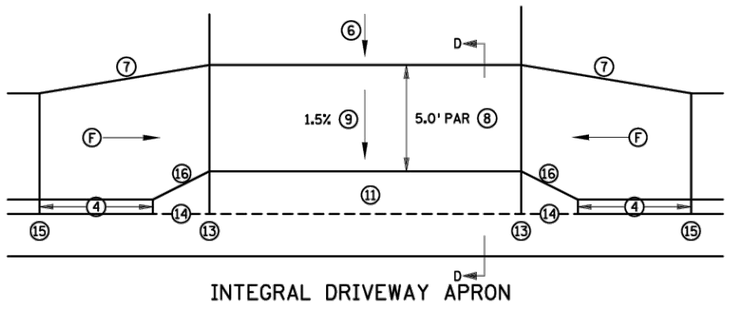
SECTION B-B



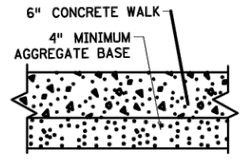
SECTION C-C



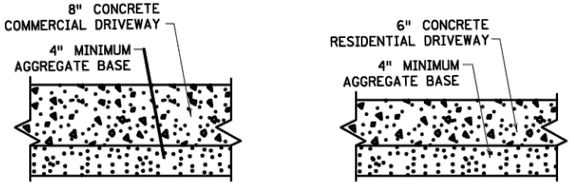
SECTION D-D



INTEGRAL DRIVEWAY APRON



TYPICAL SIDEWALK SECTION ⑰



TYPICAL DRIVEWAY SECTIONS

REVISION:

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS CZYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.254 | 1 OF 4

APPROVED: 11-04-2021
REVISED:

DRIVEWAY AND SIDEWALK DETAILS

STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CERTIFIED BY JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER | 49062 LIC. NO. | 03/17/2025 DATE

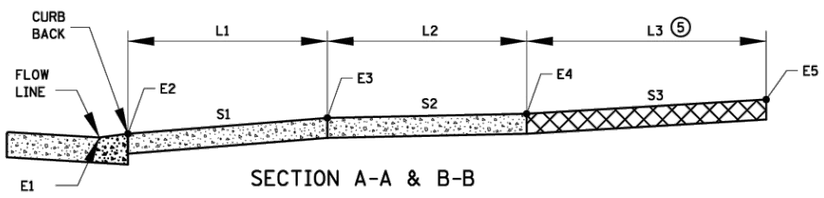
OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

CITY OF NEW ULM STANDARD DETAILS
Mn/DOT DRIVEWAY AND SIDEWALK DETAILS

DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG

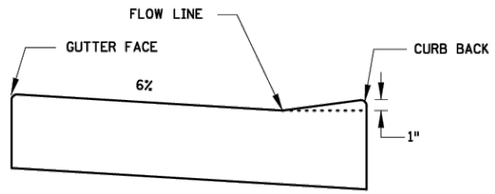
DRIVEWAY TABLE ①

STATION	SIDE	DRIVEWAY TYPE ②	CURB TYPE ③	E1	E2	L1 FT	S1 %	E3	L2 FT	S2 ④ %	E4	L3 ⑤ FT	S3 %	EXISTING ⑥ %	E5	COMMENTS



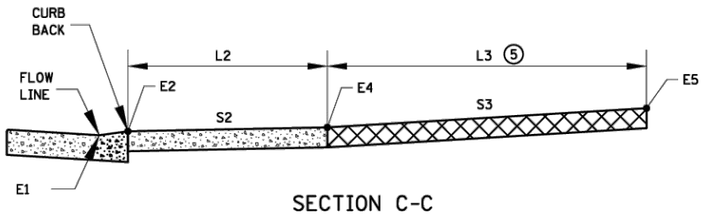
SECTION A-A & B-B

(REFER TO PREVIOUS SHEET)



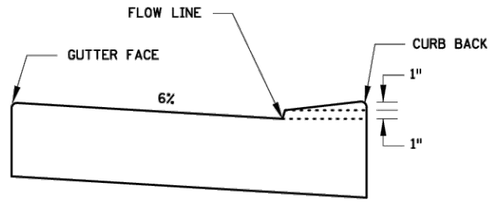
DW CURB TYPE 1

STANDARD CURB AT DRIVEWAY



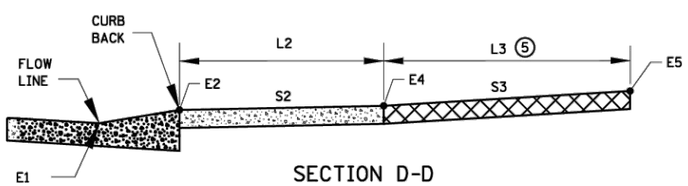
SECTION C-C

(REFER TO PREVIOUS SHEET)



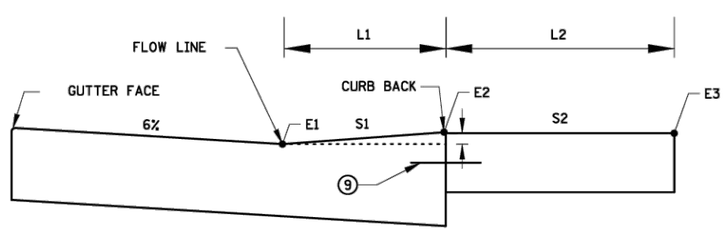
DW CURB TYPE 2

VERTICALLY CONSTRAINED



SECTION D-D

(REFER TO PREVIOUS SHEET)



INTEGRAL DRIVEWAY APRON (IDA)

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

DW CURB TYPE 1 SHALL BE USED WHEN THE DRIVEWAY ACTS AS A PEDESTRIAN RAMP. THE MAX. APRON SLOPE MUST ADHERE TO ADA CRITERIA AS WELL. DW CURB TYPE 1 SHOULD BE USED IF THERE IS ON STREET PARKING.

WHERE ROADWAY DRAINAGE IS A CONCERN (NEGATIVE SLOPED APRON) DW CURB TYPE 2 CAN BE USED TO HELP KEEP THE WATER ON PUBLIC RIGHT OF WAY.

S1 8% STANDARD, 10% MAX. COMMERCIAL AND 12% MAX. RESIDENTIAL. IF EXISTING GRADES ARE STEEPER DO NOT MAKE GRADES APPRECIABLY WORSE BY USING BEST PRACTICES SUCH AS DRIVEWAY CURB HEIGHTS, EXTENDING L3 AND/OR STEEPEN S3.

S3 8% MAXIMUM, IF THIS SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGNS OF DRIVEWAYS.

① EXAMPLE SHOWN TO BE INCLUDED IN PLAN FOR EACH DRIVEWAY THAT HAS PAR THROUGH IT.

② REFERS TO THE FOLLOWING TYPES; PERPENDICULAR DRIVEWAY, TIERED PERPENDICULAR OFFSET DRIVEWAY, TIERED PERPENDICULAR DRIVEWAY, PARALLEL DRIVEWAY, AND INTEGRAL DRIVEWAY APRON.

③ DW CURB TYPE 1 IS THE STANDARD AND SHALL BE THE STARTING POINT FOR ALL PERPENDICULAR AND TIERED DRIVEWAYS. DW CURB TYPE 2 SHALL ONLY BE USED AFTER UTILIZING BEST PRACTICES SUCH AS MAXIMIZING S1, S3, AND L3.

④ SHOULD BE DESIGNED AT 1.5%.

⑤ ACQUIRE ADEQUATE L3 TO ALLOW FOR CONTINUOUS PAR PROFILE (UNIFORM SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.

⑥ PROVIDE INPLACE TIE-IN SLOPE INFORMATION AT BACK OF PROPOSED WALK (S3 AREA).

⑦ INFORMATION TO BE INCORPORATED INTO DRIVEWAY TABLE WHEN INTEGRAL DRIVEWAY APRON IS USED. OTHER CURB HEIGHTS & CURB APRON LENGTHS CAN BE USED.

⑧ L1 & S1 FOR INTEGRAL DRIVEWAY APRON IS TO FLOWLINE. 12.5% IS MAXIMUM PREFERRED SLOPE.

⑨ TIE ADJACENT SECTIONS. CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINT.

TYPICAL INTEGRAL DRIVEWAY APRON ⑦

CURB TYPE	L1 FT	E2	S1 ⑧ %
IDA 216	1.33	+0.16	12.5
IDA 220	1.67	+0.16	10
IDA 324	2	+0.24	12.5
IDA 432	2.67	+0.33	12.5

REVISION:

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.254 | 2 OF 4

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

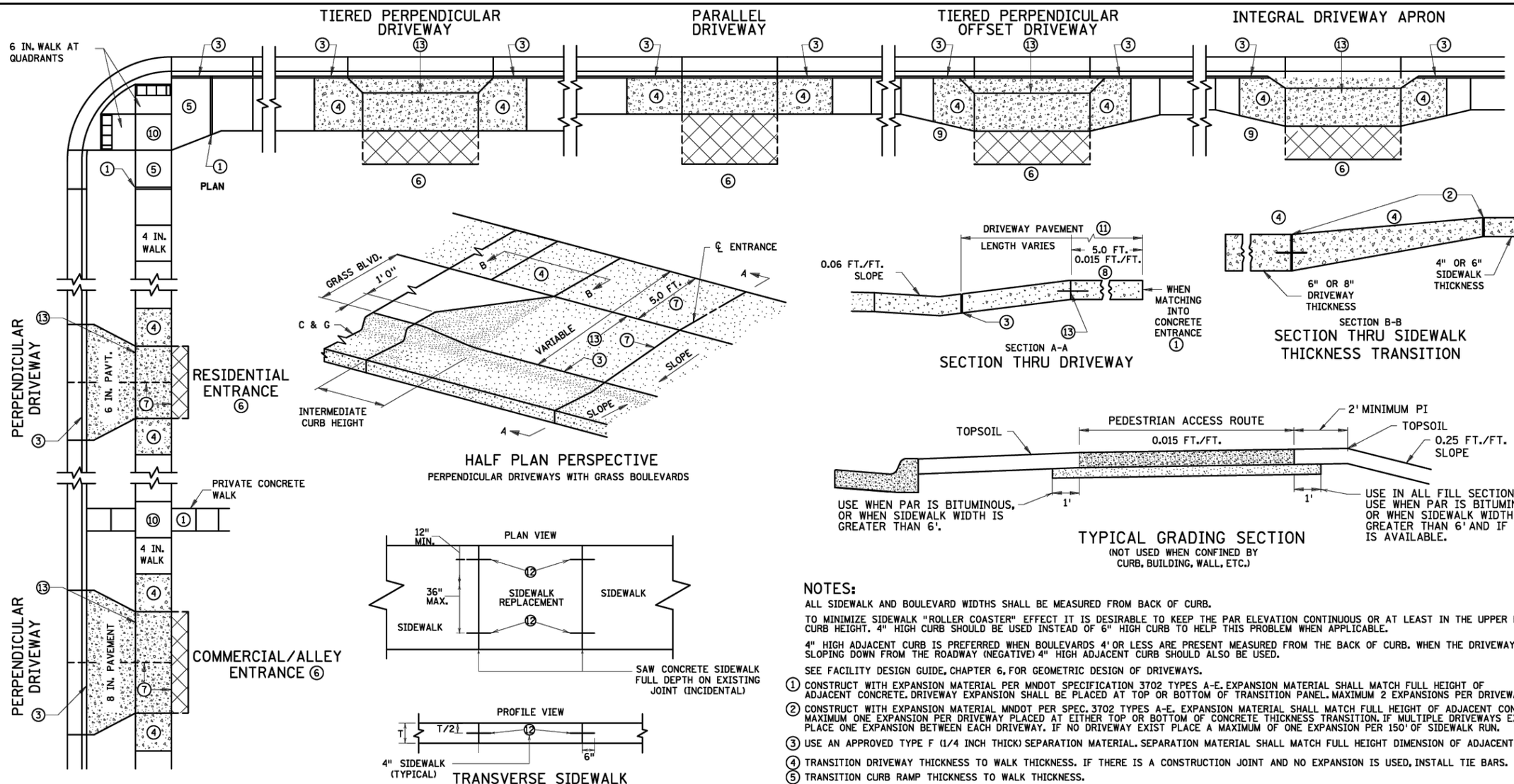
CERTIFIED BY _____ 49062 LIC. NO. 03/17/2025 DATE

JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER

OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

CITY OF NEW ULM STANDARD DETAILS
Mn/DOT DRIVEWAY AND SIDEWALK DETAILS

DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG



SIDEWALK LONGITUDINAL JOINT TIE BAR TABLE				
SIDEWALK WIDTH, W	SIDEWALK THICKNESS, T	TIE BAR SIZE	LENGTH	SPACING
> 7'	4"	No. 4	12"	24"
>10'	6"	No. 4	12"	36"

FOR 4" CONCRETE ONLY: CAST IN PLACE BARS MUST BE SUPPORTED WITH P-STAKES OR REINFORCEMENT BASKETS FOR FULL WIDTH CONCRETE PLACEMENTS.

FOR 6" CONCRETE ONLY: DRILL AND GROUT OR CAST IN PLACE THROUGH HOLES IN THE FORMS REQUIRED FOR STAGED ADJACENT CONCRETE PLACEMENTS.

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

TO MINIMIZE SIDEWALK "ROLLER COASTER" EFFECT IT IS DESIRABLE TO KEEP THE PAR ELEVATION CONTINUOUS OR AT LEAST IN THE UPPER HALF OF CURB HEIGHT. 4" HIGH CURB SHOULD BE USED INSTEAD OF 6" HIGH CURB TO HELP THIS PROBLEM WHEN APPLICABLE.

4" HIGH ADJACENT CURB IS PREFERRED WHEN BOULEVARDS 4' OR LESS ARE PRESENT MEASURED FROM THE BACK OF CURB. WHEN THE DRIVEWAY IS SLOPING DOWN FROM THE ROADWAY (NEGATIVE) 4" HIGH ADJACENT CURB SHOULD ALSO BE USED.

SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGN OF DRIVEWAYS.

① CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. DRIVEWAY EXPANSION SHALL BE PLACED AT TOP OR BOTTOM OF TRANSITION PANEL. MAXIMUM 2 EXPANSIONS PER DRIVEWAY.

② CONSTRUCT WITH EXPANSION MATERIAL MNDOT PER SPEC. 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. MAXIMUM ONE EXPANSION PER DRIVEWAY PLACED AT EITHER TOP OR BOTTOM OF CONCRETE THICKNESS TRANSITION. IF MULTIPLE DRIVEWAYS EXIST PLACE ONE EXPANSION BETWEEN EACH DRIVEWAY. IF NO DRIVEWAY EXIST PLACE A MAXIMUM OF ONE EXPANSION PER 150' OF SIDEWALK RUN.

③ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

④ TRANSITION DRIVEWAY THICKNESS TO WALK THICKNESS. IF THERE IS A CONSTRUCTION JOINT AND NO EXPANSION IS USED, INSTALL TIE BARS.

⑤ TRANSITION CURB RAMP THICKNESS TO WALK THICKNESS.

⑥ MATCH INPLACE DRIVEWAY WIDTH, MATERIAL TYPE AND THICKNESS.

⑦ FORM CONTRACTION JOINT AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANELS. CONCRETE PANEL SIZE SHOULD NOT EXCEED 1 1/2 : 1 LENGTH X WIDTH. 81 SF FOR 6" CONCRETE DRIVEWAY WITH 9'X9' MAXIMUM PANEL SIZE. 144 SF FOR 8" CONCRETE DRIVEWAY WITH 12'X12' MAXIMUM PANEL SIZE. MATCH DRIVEWAY APRON AND SIDEWALK JOINTS.

⑧ THE PEDESTRIAN ACCESS ROUTE CROSS-SLOPE, SHALL NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.

⑨ 1:10 MIN. SIDEWALK OFFSET TAPER REQUIRED FOR SIDEWALK REPLACEMENT PROJECTS. 1:3 MIN. AND 1:5 MIN. PREFERRED SIDEWALK OFFSET TAPER FOR DRIVEWAY REPLACEMENT.

⑩ LANDING REQUIRED, SEE NEXT SHEET FOR MORE INFORMATION.

⑪ CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SECTIONS SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. ENGINEER'S APPROVAL REQUIRED FOR MONOLITHIC PLACEMENTS.

⑫ DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS. BARS TO BE ADJUSTED TO MATCH SIDEWALK GRADES. TO BE PAID BY EACH.

⑬ DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

REVISION:

APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.254 | 3 OF 4

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

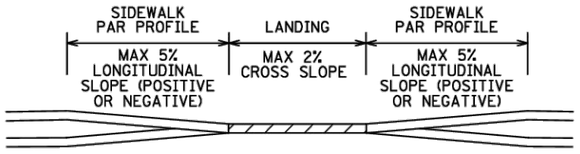
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CERTIFIED BY JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER — 49062 LIC. NO. — 03/17/2025 DATE

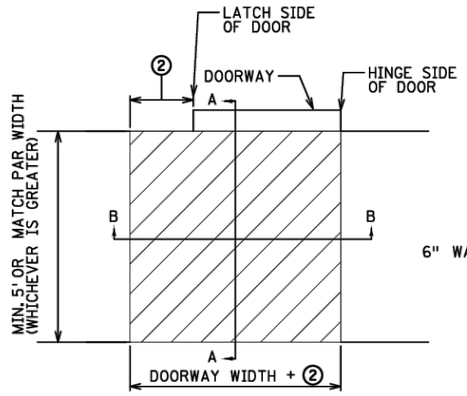
OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

CITY OF NEW ULM STANDARD DETAILS
Mn/DOT DRIVEWAY AND SIDEWALK DETAILS

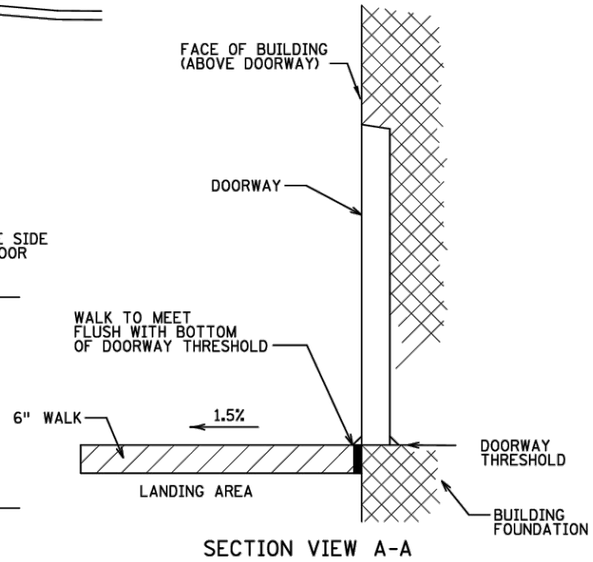
DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG



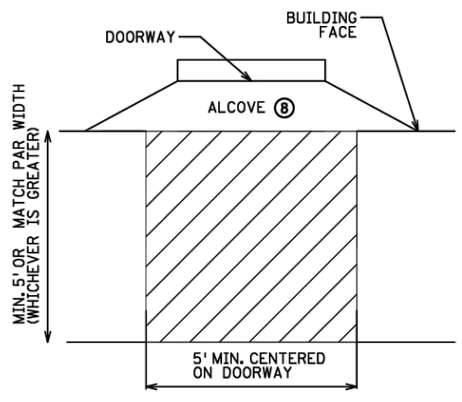
SECTION VIEW B-B



PLAN VIEW DOORWAY

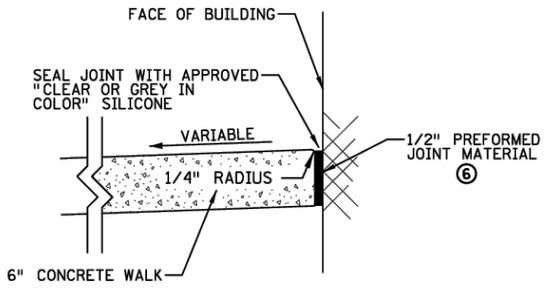


SECTION VIEW A-A

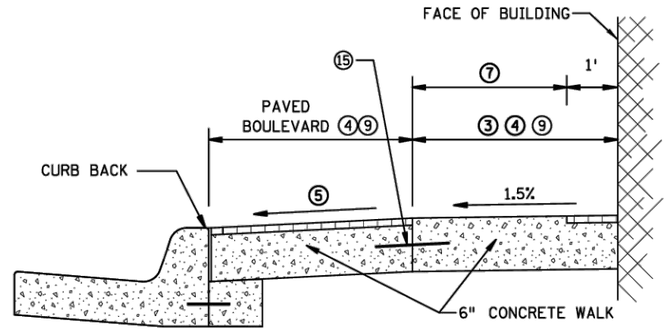


PLAN VIEW DOORWAY WITH ALCOVE

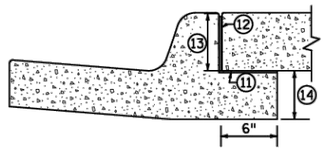
SIDEWALK LANDING REQUIREMENTS ①



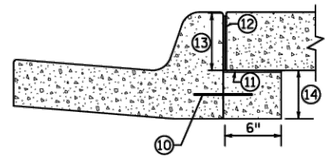
BUILDING JOINT SEAL (INCIDENTAL)



DOWNTOWN SIDEWALK TYPICAL SECTION



SLIP FORM SILL



FIXED FORM SILL

SILL CURB SHOULD BE USED AT ALL LOCATIONS WHEN CONCRETE WALK IS AT BACK OF CURB, INCLUDING PAVED BOULEVARD.

SILL CURB SHALL NOT BE USED IN CURB RAMP AND DRIVEWAY AREAS, INCLUDING CONCRETE FLARES.

SILL CURB WITH 4" WALK CAN USE FIXED OR SLIP FORM OPTIONS.

NOTES:

6" WALK IS REQUIRED:
1) IN ALL SIDEWALK LOCATIONS WHERE VARIABLE SLOPED CONCRETE BOULEVARDS ARE PAVED, SUCH AS COMMERCIAL (STORE FRONT, DOWNTOWN) AREAS.
2) ANYTIME DRILL AND REINFORCEMENT IS USED TO TIE LONGITUDINAL JOINTS TOGETHER.
3) TO ELIMINATE LONGITUDINAL JOINT WHEN INCREASING PANEL SIZE OVER 36SF.
4) AT LOCATIONS WHERE MAINTENANCE EQUIPMENT WILL SUBJECT CONCRETE TO HEAVY LOADS.

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

FIELD ADJUST SIDEWALK PROFILES TO MEET ALL DOORWAY THRESHOLDS.

SIDEWALK MUST MAINTAIN POSITIVE DRAINAGE AWAY FROM THE BUILDING TO THE ROADWAY.

SEE SPECIAL PROVISIONS FOR SILICONE SPECIFICATIONS.

① LANDING CRITERIA IS REQUIRED FOR ALL DOORS, STEPS, AND PRIVATE WALKS. FEASIBILITY DECREASES WITH NARROWER BOULEVARDS AND STEEPER SIDEWALK PROFILES.
② 18" MIN. WHEN DOOR SWINGS OUTWARD FROM BUILDING. 12" MIN WHEN DOOR SWINGS INWARD FROM BUILDING.
③ 6' MIN. PAR REQUIRED WHEN ADJACENT TO BUILDINGS.
④ 2/3 PAR TO 1/3 BOULEVARD SHOULD BE USED WHEN FEASIBLE. HOLD UNIFORM BOULEVARD WIDTH. 4' PREFERRED MINIMUM BOULEVARD.
⑤ 1%-5% FOR THE MAJORITY OF THE BLOCK, WITH EXCEPTIONS UP TO 8% IN CONSTRAINED AREAS.
⑥ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM ½" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.
⑦ TO MINIMIZE VIBRATION AND ROLLING RESISTANCE, AREA SHALL BE FREE OF PAVERS, STAMPED CONCRETE, AND/OR EXCESSIVE JOINTING.
⑧ 2% MAX. PER BUILDING CODE. IF GREATER THAN 2%, FLATTEN AS FEASIBLE.
⑨ FORM CONTRACTION JOINTS AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANEL SIZE. CONRETE PANEL SIZE SHOULD NOT EXCEED 1½ : 1 LENGTH X WIDTH.
⑩ DRILL AND GROUT NO. 4 X 8" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS. TIE BARS SHALL BE EMBEDDED 4" WITH 2" MINIMUM CONCRETE COVER AND ARE INCIDENTAL TO SILL PLACEMENT.
⑪ FURNISH AND INSTALL THE FULL WIDTH OF THE TOP OF SILL A MINIMUM 2ML THICK POLYTHENE SHEETING.
⑫ USE AN APPROVED TYPE F (¼ INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.
⑬ DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4" MIN.
⑭ 6" WALK: 5" MIN. FOR B424; 7" MIN. FOR B624
4" WALK: 7" MIN. FOR B424; 9" MIN. FOR B624
⑮ DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

REVISION:

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.254 | 4 OF 4

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

city of new ulm

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

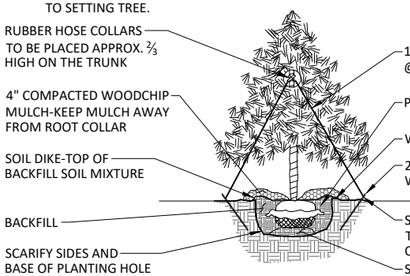
CERTIFIED BY JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER — 49062 LIC. NO. — 03/17/2025 DATE

OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

CITY OF NEW ULM STANDARD DETAILS
Mn/DOT DRIVEWAY AND SIDEWALK DETAILS

DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG

1. PROVIDE AND INSTALL HEALTHY PLANT MATERIALS THAT MEET ALL SPECIFICATIONS AND ARE OF THE SIZE, TYPE AND SPECIES NAMED ON THE PLANT SCHEDULE AND SHOWN ON THE PLANS.
2. DIG PLANT HOLE 1'-0" MINIMUM LARGER ON ALL SIDES THAN ROOT BALL.
3. PRIOR TO PLACING TREE, SCARIFY BOTTOM AND SIDES OF THE PLANTING HOLE.
4. TEST SOIL ABSORPTION.
5. FILL HOLE PARTIALLY WITH SUPPLEMENTED SOIL MIXTURE, ADD WATER AND ALLOW TO PUDDLE AND SETTLE PRIOR TO SETTING TREE.
6. AFTER PUDDLING HAS SETTLED, SET TREE AND BACK FILL WITH SUPPLEMENTED SOIL MIXTURE.
7. WATER THOROUGHLY AND ADD BACK FILL AS NEEDED AFTER MOISTURE IS ABSORBED.
8. BUILD SOIL DIKE AROUND PERIPHERY OF TREE TO HOLD WATER.
9. AFTER SETTLEMENT, MULCH WITH MINIMUM 4" LAYER SHREDDED BARK, WOOD CHIPS OR AS OTHERWISE SPECIFIED. DO NOT PLACE MULCH OVER THE ROOT COLLAR.
10. REMOVE DEAD OR DAMAGED BRANCHES RETAINING THE NATURAL FORM OF THE TREE.



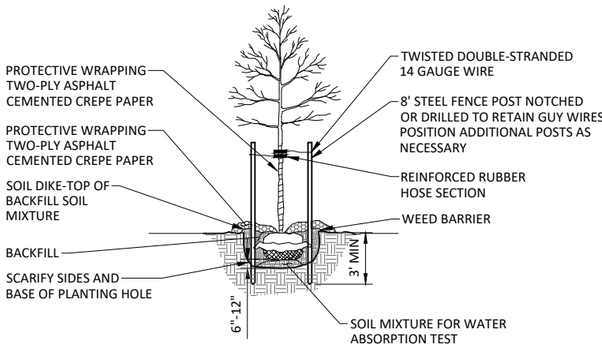
CONIFEROUS TREE PLANTING

NOT TO SCALE

BAG & BALL PLANTING NOTE:
1. REMOVE WRAPPING AND ALL TIES OR STRAPS. IF ROOT BALL IS WRAPPED IN BURLAP THE LOWER PORTION OF THE FABRIC MAY BE LEFT AT THE BOTTOM OF THE HOLE. SYNTHETIC WRAP MUST BE REMOVED AND PROPERLY DISPOSED.
2. LOOSEN ROOTS TO ENSURE THEY ARE NOT GIRDLING THE ROOT BALL.
3. SALVAGE AND REUSE ALL SOIL THAT CAME WITH THE ROOT BALL.
4. WATER THE ROOT BALL PRIOR TO PLACING IT IN THE HOLE.
5. IF TREE IS CONTAINER GROWN, SALVAGE ALL SOIL AND MIX WITH SUPPLEMENTED SOIL FOR BACK FILL.

BARE ROOT PLANTING NOTE:
IF BARE ROOT MATERIAL IS SPECIFIED THESE ADDITIONAL REQUIREMENTS MUST BE MET:

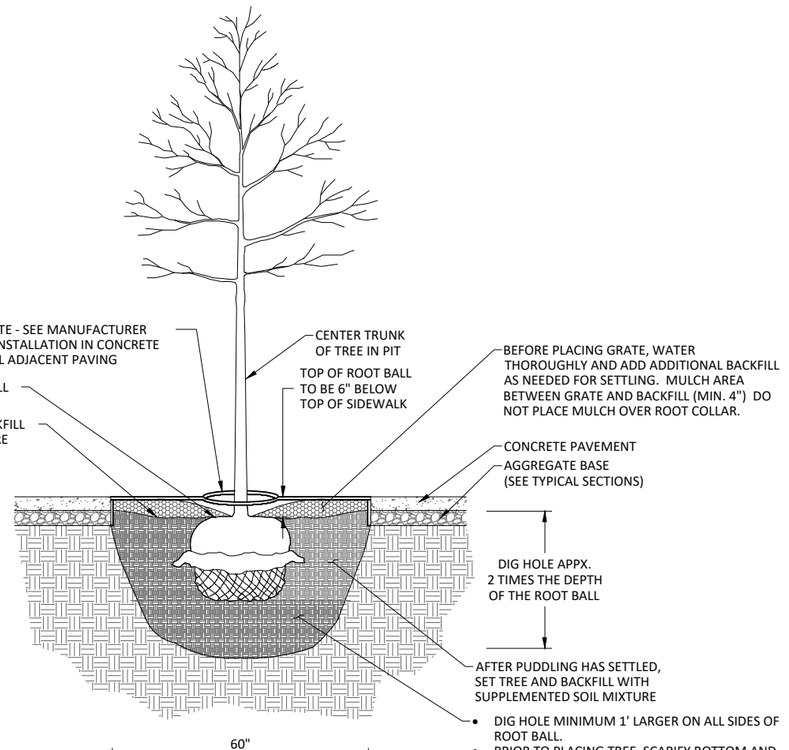
1. ROOTS MUST BE SOAKED OVERNIGHT THE NIGHT BEFORE PLANTING.
2. ROOTS MUST BE PROTECTED FROM DRYING OUT DURING THE INSTALLATION PROCESS.
3. ALL DAMAGED, DISEASED OR DESIGNATED ROOTS AND ROOT ENDS MUST BE CLEANLY PRUNED. TREE SHALL NOT HAVE GIRDLING ROOTS.



DECIDUOUS TREE PLANTING

NOT TO SCALE

1. PROVIDE AND INSTALL HEALTHY PLANT MATERIALS THAT MEET ALL SPECIFICATIONS AND ARE OF THE SIZE, TYPE AND SPECIES NAMED ON THE PLANT SCHEDULE AND SHOWN ON THE PLANS.
2. DIG PLANT HOLE 1'-0" MINIMUM LARGER ON ALL SIDES THAN ROOT BALL.
3. PRIOR TO PLACING TREE, SCARIFY BOTTOM AND SIDES OF THE PLANTING HOLE.
4. TEST SOIL ABSORPTION. FILL HOLE PARTIALLY WITH SUPPLEMENTED SOIL MIXTURE, ADD WATER AND ALLOW TO PUDDLE AND SETTLE PRIOR TO SETTING TREE.
5. AFTER PUDDLING HAS SETTLED, SET TREE AND BACK FILL WITH SUPPLEMENTED SOIL MIXTURE.
6. WATER THOROUGHLY AND ADD BACK FILL AS NEEDED AFTER MOISTURE IS ABSORBED.
7. BUILD SOIL DIKE AROUND PERIPHERY OF TREE TO HOLD WATER.
8. AFTER SETTLEMENT, MULCH WITH MINIMUM 4" LAYER SHREDDED BARK, WOOD CHIPS OR AS OTHERWISE SPECIFIED. DO NOT MULCH UP AGAINST THE TRUNK.
9. REMOVE DEAD OR DAMAGED BRANCHES. RETAIN THE NATURAL FORM OF THE TREE.

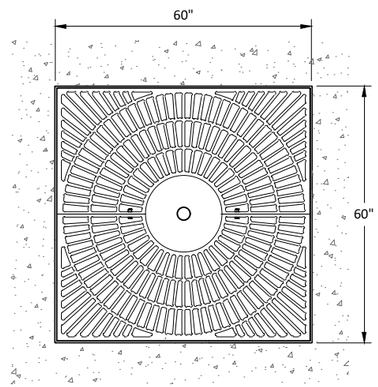


ROOT BALL:
1. REMOVE WRAPPING AND ALL TIES OR STRAPS. IF ROOT BALL IS WRAPPED IN BURLAP THE LOWER PORTION OF THE FABRIC MAY BE LEFT AT THE BOTTOM OF THE HOLE. SYNTHETIC WRAP MUST BE REMOVED AND PROPERLY DISPOSED.
2. LOOSEN ROOTS TO ENSURE THEY ARE NOT CIRCLING THE ROOT BALL.
3. SALVAGE AND REUSE ALL SOIL THAT CAME WITH THE ROOT BALL.
4. WATER ROOT BALL PRIOR TO PLACING IT IN THE HOLE.
5. IF TREE IS CONTAINER GROWN, SALVAGE ALL SOIL AND MIX WITH SUPPLEMENTED SOIL FOR BACKFILL.

- DIG HOLE MINIMUM 1' LARGER ON ALL SIDES OF ROOT BALL.
- PRIOR TO PLACING TREE, SCARIFY BOTTOM AND SIDES OF THE PLANTING HOLE.
- FILL HOLE PARTIALLY WITH SUPPLEMENTED SOIL MIXTURE,
- ADD WATER AND ALLOW TO PUDDLE AND SETTLE PRIOR TO SETTING TREE.

BAG & BALL PLANTING NOTE:
1. REMOVE WRAPPING AND ALL TIES OR STRAPS. IF ROOT BALL IS WRAPPED IN BURLAP THE LOWER PORTION OF THE FABRIC MAY BE LEFT AT THE BOTTOM OF THE HOLE. SYNTHETIC WRAP MUST BE REMOVED AND PROPERLY DISPOSED.
2. LOOSEN ROOTS TO ENSURE THEY ARE NOT GIRDLING THE ROOT BALL.
3. SALVAGE AND REUSE ALL SOIL THAT CAME WITH THE ROOT BALL.
4. WATER THE ROOT BALL PRIOR TO PLACING IT IN THE HOLE.
5. IF TREE IS CONTAINER GROWN, SALVAGE ALL SOIL AND MIX WITH SUPPLEMENTED SOIL FOR BACK FILL.

1. PROVIDE AND INSTALL HEALTHY PLANT MATERIALS THAT MEET ALL SPECIFICATIONS AND ARE OF THE SIZE, TYPE AND SPECIES NAMED ON THE PLANT SCHEDULE AND SHOWN ON THE PLANS.
2. DIG PLANT HOLE 1'-0" MINIMUM LARGER ON ALL SIDES THAN ROOT BALL.
3. PRIOR TO PLACING TREE, SCARIFY BOTTOM AND SIDES OF THE PLANTING HOLE.
4. TEST SOIL ABSORPTION. FILL HOLE PARTIALLY WITH SUPPLEMENTED SOIL MIXTURE, ADD WATER AND ALLOW TO PUDDLE AND SETTLE PRIOR TO SETTING TREE.
5. AFTER PUDDLING HAS SETTLED, SET TREE AND BACK FILL WITH SUPPLEMENTED SOIL MIXTURE.
6. WATER THOROUGHLY AND ADD BACK FILL AS NEEDED AFTER MOISTURE IS ABSORBED.
7. BUILD SOIL DIKE AROUND PERIPHERY OF TREE TO HOLD WATER.
8. AFTER SETTLEMENT, MULCH WITH MINIMUM 4" LAYER SHREDDED BARK, WOOD CHIPS OR AS OTHERWISE SPECIFIED. DO NOT PLACE MULCH OVER THE ROOT COLLAR.
9. REMOVE DEAD OR DAMAGED BRANCHES RETAINING THE NATURAL FORM OF THE TREE.



PLAN VIEW OF TREE PIT WITH GRATE

TREE INSTALLATION IN SIDEWALK WITH GRATE

NOT TO SCALE

DESIGNED BY:
DRAWN BY:
AS BUILT BY:

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CERTIFIED BY _____ 49062 03/17/2025
JOSEPH E. STADHEIM LICENSED PROFESSIONAL ENGINEER — LIC. NO. — DATE

OFFICE OF THE CITY ENGINEER
CITY OF NEW ULM
MINNESOTA

CITY OF NEW ULM STANDARD DETAILS
TREE PLANTING DETAILS

DRAWING LOCATION: Z:\DATA\CIVIL 3D\2025\DETAILS\ENGINEERING DETAILS.DWG

SHEET 27 OF 27