

APPLICATION/PERMIT FOR CONNECTION TO STATE TRUNK HIGHWAY

Wisconsin Department of Transportation (WisDOT)
DT1504 4/2009 s. 86.07(2) Wis. Stats. & Ch. Trans 231 Wis. Adm. Code

- This form is an application for permission for a STH Connection. If approved, the permit does **not** create a **right of access** or **access easement** for the property.
- If the property has any legal restrictions that prohibit access to a state trunk highway (STH), WisDOT cannot approve a STH connection permit for the property.
- **Please type or print neatly in ink.** Fill out the required information on **both sides** of this form per the instructions. One form is required per connection. For more information, visit: www.dot.wisconsin.gov/business/rules/property-permits.htm
- **Please provide a copy of the property deed with all applications.**

WISDOT OFFICE INFORMATION	Document Identification Number: 46-100253067 2018
	WisDOT-NW Region-Eau Claire
	Access Management Coordinator 718 W Clairemont Avenue Eau Claire, WI 54701

APPLICANT INFORMATION	1. Applicant Name and Mailing Address – Street/PO Box, City, State, ZIP Code Richard & Estella Bauer W5004 USH 10 Durand WI 54736		2. Property Owner Name / Address (If not applicant)		
			3. If Not Property Owner, Reason for Application		
CONNECTION LOCATION INFORMATION	4. Highway Number(s) USH 10	5. County Pepin	6. <input type="checkbox"/> City <input type="checkbox"/> Village <input checked="" type="checkbox"/> Town of: Durand		
	8. Located within the NE Quarter, of the NW Quarter, Section 25, Town 25 North, Range 13 West		7. Side of the Highway <input type="checkbox"/> North <input checked="" type="checkbox"/> South <input type="checkbox"/> East <input type="checkbox"/> West		
	10. Name of Nearest Side Road from Location Distance and Direction from Side Road Brunner Road 3,000 Feet East (Feet or Miles) (N, S, E, W)		9. Fire or Street Number (If applicable) W15923		
	11. How far is the location from the nearest non-side road connection on the same highway? 1642 (Feet or Miles)				
CONNECTION TYPE INFORMATION	Log Mile or Reference Point (Filled in by WisDOT):				
	12. Proposed Activity (Check one) <input type="checkbox"/> Construct New <input checked="" type="checkbox"/> Alter Existing <input type="checkbox"/> Remove Existing <input type="checkbox"/> Permit Existing	13. Proposed Use (Check one – See instructions for category description) <input type="checkbox"/> Urban – Commercial/Industrial <input checked="" type="checkbox"/> Rural – Agricultural <input type="checkbox"/> Urban – Residential <input type="checkbox"/> Public Road <input type="checkbox"/> Rural – Commercial/Industrial <input type="checkbox"/> Trail or Trail Crossing <input type="checkbox"/> Rural – Residential Is this a change of the existing use (If applicable)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		16. Proposed Trips Per Day (Check one) <input type="checkbox"/> Seasonal <input type="checkbox"/> 101-1000 <input checked="" type="checkbox"/> 1-50 <input type="checkbox"/> Over 1000 <input type="checkbox"/> 51-100 Peak hour traffic count: _____	
	14. Proposed Width: 35'	15. Proposed Surface: Gravel	QUESTIONS 17-27 on BACK PAGE		

All connections have restrictions, which include the information preprinted and filled-in on this application along with any conditions, covenants, supplemental provisions, superimposed notes, and detail drawings added by WisDOT. The applicant shall be responsible for complying with these restrictions along with the construction and maintenance of the connection. It is further understood that WisDOT's approval is subject to applicant's full compliance with relevant state statutes and administrative rules, plus any laws, codes, rules, regulations, ordinances and permit requirements of other jurisdictional agencies. The alteration of this form by the applicant is prohibited. Under s. 86.073 Wisconsin Statutes, WisDOT's permit denial or revocation may be appealed.

The applicant affirms that all information provided on and submitted with this form is correct and complete. Providing incorrect or incomplete information may result in permit denial or revocation as well as criminal prosecution under s. 946.32 Wisconsin Statutes.

Richard & Estella Bauer
X *Estella Bauer* 5-25-2018
(Property Owner or Authorized Representative) (Date)
(If Computer-filled, Brush Script Font)
715 672-5407 phbrook@nelson-tel.net
(Area Code and Telephone #) (E-mail address if available)

FOR OFFICIAL WISDOT USE ONLY – DO NOT WRITE BELOW THIS LINE

☒ THE FOLLOWING SUPPLEMENTAL PROVISIONS APPLY

(1) This driveway is for the purpose for ingress and egress of a single family residential home & Farming any other use shall require the permit holder to contact WisDOT. (2) Any proposed change in ownership land use, traffic volume, or type of vehicles utilizing this connection for purposes other than its permitted use will require the property owner(s) to contact WISDOT for an access determination. (3) To provide for proper drainage, the finished grade of the driveway shall be approximately 6 inches below the existing edge of the highway pavement approximately 15 feet from the edge of the highway pavement. (4) The fill slopes shall be 6:1 or flatter. An 18" x 50' corrugated culvert with 4:1 apron endwalls (5) Storage of items within the highway right of way is prohibited.
See attached exhibit "A" For more provisions.

<input checked="" type="checkbox"/> Permit APPROVED (THIS PERMIT IS REVOCABLE)
<input type="checkbox"/> Permit DENIED
<input type="checkbox"/> Application DISMISSED
X <i>Chris Michel</i> 6/1/2018 (WisDOT Authorized Representative) (Date) (If Computer-filled, Brush Script Font)
<input type="checkbox"/> Temporary permit. Expiration date:
<input type="checkbox"/> This permit voids / replaces permit #
<input checked="" type="checkbox"/> Shared connection
Co-user name: <i>Bechel / Asher</i> Related permit # <i>100253068</i>

17. ☒ Yes ☐ No Is the property zoned? Provide documentation from the jurisdictional zoning authority.

18. Explain how the land is currently being used: Ag

19. ☐ Yes ☒ No Are you aware of any plan to change the zoning or land use for the property? If yes, explain.

20. ☐ Yes ☒ No Is this connection for property that was part of a land division or assemblage created on or after 2/1/99? If yes, explain.

21. ☒ Yes ☐ No Do you own other property abutting the highway that is next to the property that this connection will serve? If yes, describe. Joining

Note 1: Answering "yes" to #20 or 21 may result in a Wis. Administrative Code Trans 233 review by WisDOT. If this is needed, the processing of your application may be delayed.

22. ☐ Yes ☒ No Does the property abut or border another public road? If yes, provide the road's name.

23. ☐ Yes ☒ No Are there any existing connections serving the property? If yes, how many? _____

24. ☐ Yes ☒ No Are there any restrictions on the number, use, or location of connections to the property?

25. ☒ Yes ☐ No Are there any access easements across the property (recorded or unrecorded)?

Note 2: If you answered "yes" to #24 or 25, provide a copy of all documents relevant to the restrictions and/or easements

26. Provide the property tax identification number: 39-1401365 / Parcel # ID 004-00316-0002

004-00323-0000
004-00311-0000
004-00322-0000

27. What is the proposed construction completion date for the connection? See Conditions of Issuance #9. Early June 2018
SP

FOR ANY NEW CONNECTION OR CONNECTION TO BE MOVED, APPLICANT SHALL PLACE A FLAG OR MARKER IN THE HIGHWAY DITCH OR FORESLOPE (VISIBLE FROM THE HIGHWAY) AT THE PROPOSED LOCATION.

CONDITIONS OF ISSUANCE

1. WisDOT reserves the right to make such changes, additions, repairs, relocations and removals within statutory limits to the connection or its appurtenances on the right-of-way as may at any time be considered necessary to facilitate relocation, reconstruction, widening, and maintenance of the highway, or to provide proper protection to life and property on or adjacent to the highway, or if alternative access to the property becomes available.

2. Except in cases where the indicated connection may be constructed by forces acting on behalf of WisDOT due to a highway improvement or maintenance project, the permittee shall do all of the following: (a) Furnish all materials, do all work, and pay all costs for the construction and maintenance of the connection and its appurtenances on the right-of-way. Materials used and the type and quality of the work shall be appropriate for the connection type specified in this permit; (b) Do all work without jeopardy to, or interference with, traffic using the highway; (c) Promptly restore to WisDOT's satisfaction and at least pre-existing conditions, highway surfaces, shoulders, ditches, vegetation, drainage appurtenances, guardrail, signs, electric conduits/cables, etc. disturbed by any work; (d) Maintain the connection and its appurtenances within the right-of-way limits, which includes keeping them in a proper state of repair, preventing the blockage or impairment of right-of-way drainage, and preventing aboveground obstacles to occur that could cause serious injury or death to a motorist in an errant vehicle; (e) Not disturb or cause the disturbance of any survey marker without the **prior written approval** of WisDOT.

3. The permittee, indicated on the reverse side, represents all parties in interest, and agrees that any connection or approach constructed by or for the permittee is for the purpose of obtaining access to the property (listed in #26) and not for the purpose of parking or servicing vehicles, or for advertising, storage, or merchandising of goods on the right-of-way.

4. The permittee shall not make any changes to the connection, its appurtenances, or adjacent right-of-way, including, without limitation, changes to the location (#4-11), use (#13), width (#14), surface (#15), or increase the number of trips per day (#16) approved by this permit without obtaining **prior written approval** from WisDOT. WisDOT will evaluate all potential highway impacts that may arise from the proposed change(s) and therefore, does not guarantee approval.

5. The permittee, successors or assigns agree to hold harmless the State of Wisconsin and its duly appointed agents and employees against any action for personal injury or property damage sustained by reason of the exercise of this permit.

6. WisDOT does not assume any responsibility for the removal or clearance of snow, ice or sleet, or the opening of windrows of such material upon any portion of any connection along any state trunk highway even though snow, ice or sleet is deposited or windrowed on said connection by its authorized representative engaged in normal winter maintenance operations.

7. Under Wisconsin Administrative Rule Trans 401, the permittee shall implement proper erosion control and storm water management measures at all times during work operations and upon completion of the connection to protect all restored areas until the replacement vegetation achieves sustained growth.

8. Rock, asphalt, concrete, timber or other embankment retention or marking treatments for the connection **are prohibited**.

9. If the permitted work has not been started by the construction completion date, this permit is **null and void**. If the work has been started but is not finished by the construction completion date, no additional work shall be done unless authorized through an approved written time extension or a subsequent permit from WisDOT. Accomplishment of any part of the work shall verify agreement by the permittee to conform to this permit and to be bound by all of its requirements, restrictions, and obligations, all of which shall continue to be in full force and effect. WisDOT does not guarantee the approval of a time extension or subsequent permit since the conditions WisDOT based its permit approval upon may have changed between the permit approval date and time extension request date.

Exhibit A

An exemption for width was allowed because of the angle of the driveway is to the highway and the large farm machinery using the driveway. The added width will allow for wider and longer farm machinery to maneuver in and out of the driveway in a safer manner. This will allow longer equipment to pull up to the highway at more of a 90-degree angle while allowing the trailer or rear implement to not drop off the edge of the driveway. This additional width will allow for larger equipment to turn into the driveway without crossing over the center line or at a reduced amount. The exception was done in accordance the WisDOT maintenance manual [09-10-10 8.0 Throat Width, Driveway Return Radius, and Throat Length](#) and WI SS Trans 231.01 (5), Trans 231.05 (1) & (2)

The permit holder is required to update both sides of the driveway to a 6to1 side slope and place a 4to1 endwall on each end of the culvert.

The required diameter of culvert is 18" and the overall length of culvert cannot exceed 100' in length.



8F1: Apron Endwalls for Culvert Pipe

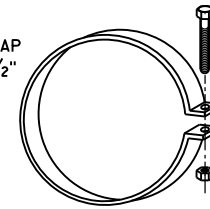
METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1/2")	L (±1 1/2")	L1 ①	L2 ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.	
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.	
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.	
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.	
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.	
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.	
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.	
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.	
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.	
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.	
60	.109 x	.105 x	18	33	12	87	—	—	114	2 to 1	3 Pc.	
66	.109 x	.105 x	18	36	12	87	—	—	120	2 to 1	3 Pc.	
72	.109 x	.105 x	18	39	12	87	—	—	126	2 to 1	3 Pc.	
78	.109 x	.105 x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.	
84	.109 x	.105 x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.	
90	.109 x	.105 x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.	
96	.109 x	.105 x	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.	

* EXCEPT CENTER PANEL
SEE GENERAL NOTES

REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ¹ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43 ¹ / ₂	30	73 ¹ / ₂	48	3	3 to 1
27	3 ¹ / ₄	10 ¹ / ₂	49 ¹ / ₂	24	73 ¹ / ₂	54	3 ¹ / ₄	3 to 1
30	3 ¹ / ₂	12	54	19 ³ / ₄	73 ¹ / ₂	60	3 ¹ / ₂	3 to 1
36	4	15	63	34 ³ / ₄	97 ³ / ₄	72	4	3 to 1
42	4 ¹ / ₂	21	63	35	98	78	4 ¹ / ₂	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 ¹ / ₂	27	65	33 ¹ / ₄ -35	98 ¹ / ₄ -100	90	5 ¹ / ₂	2 ¹ / ₂ to 1
60	6	30-35	60	39	99	96	5	2 to 1
66	6 ¹ / ₂	24-30	72-78	21-27	99	102	5 ¹ / ₂	2 to 1
72	7	24-36	78	21	99	108	6	2 to 1
78	7 ¹ / ₂	24-36	78	21	99	114	6 ¹ / ₂	2 to 1
84	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂ to 1
90	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	1 ¹ / ₂ to 1

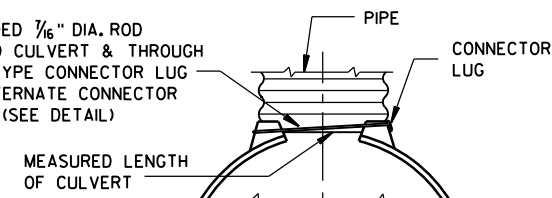
* MINIMUM
** MAXIMUM

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



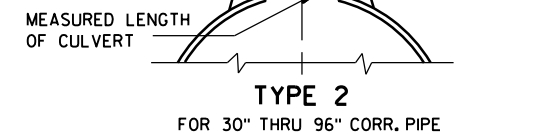
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP

THREADED 1/8" DIA. ROD AROUND CULVERT & THROUGH TANK TYPE CONNECTOR LUG OR ALTERNATE CONNECTOR STRAP (SEE DETAIL)

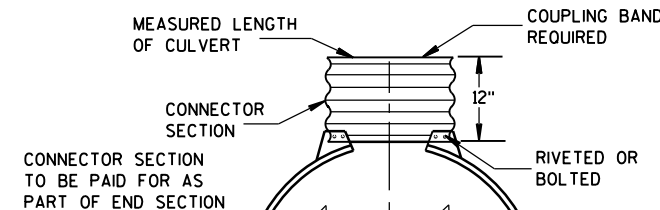


TYPE 1
FOR 12" THRU 24" CORR. PIPE

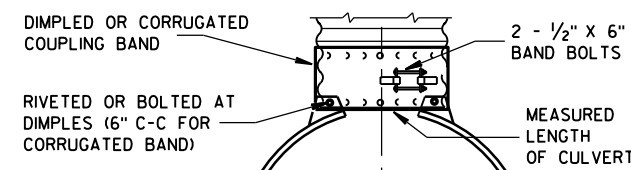
THREADED 1/8" DIA. ROD OVER TOP OF APRON, SIDE LUGS TO BE RIVETED TO APRON



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

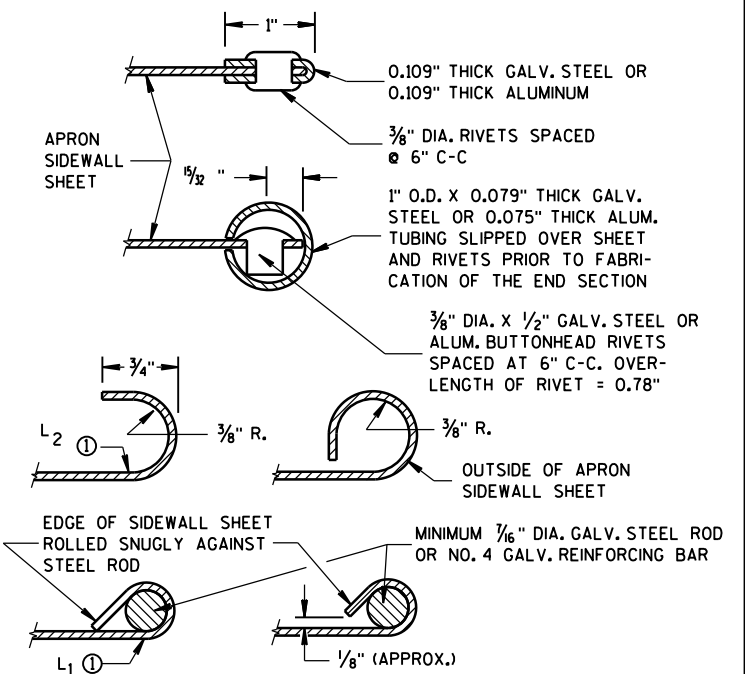
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

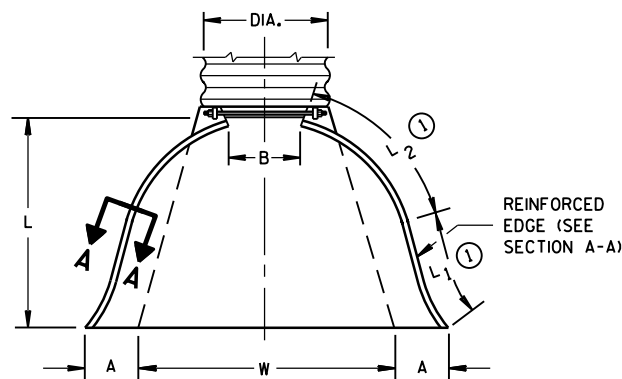
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

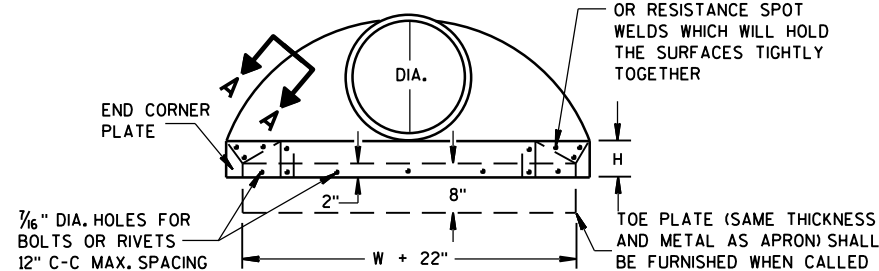
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-30-94
DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

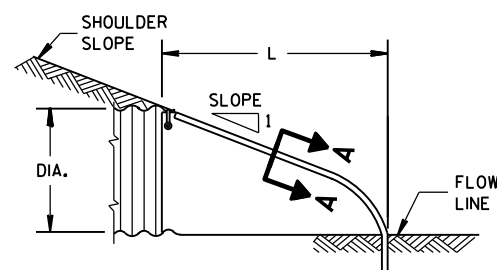


PLAN VIEW

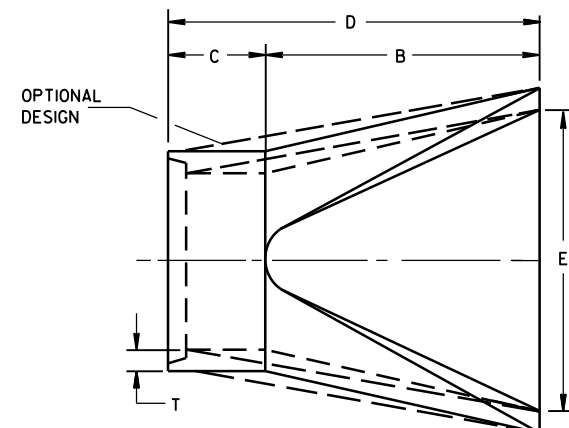
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



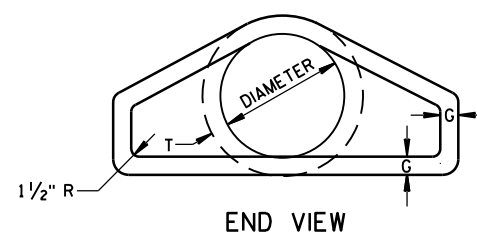
END VIEW



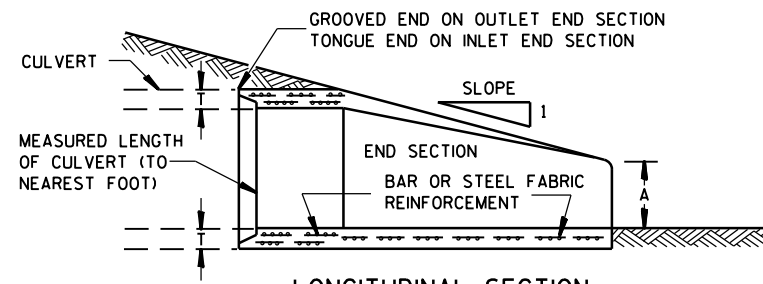
SIDE ELEVATION
METAL ENDWALLS



PLAN



END VIEW



LONGITUDINAL SECTION
CONCRETE ENDWALLS

*Apron Endwalls for Culvert Pipe***References:**[FDM 19-15-70](#)[FDM 13-1-15](#)[FDM 13-1-17](#)**Bid items associated with this drawing:**

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
520.1000 - 1199	Apron Endwalls for Culvert Pipe (size)	EACH
521.1000 - 1199	Apron Endwalls for Culvert Pipe Steel (size)	EACH
522.1000 - 1199	Apron Endwalls for Culvert Pipe Reinforced Concrete (size)	EACH
525.0300 - 0399	Aluminum Apron Endwalls for Aluminum Culvert Pipe (size)	EACH
525.0400 - 0499	Steel Apron Endwalls for Aluminum Culvert Pipe (size)	EACH

Standardized Special Provisions associated with this drawing:STSP NUMBERTITLE

SPV.0060 if non-standard size is specified.

Other SDDs associated with this drawing:

SDD 8F4 Joint Ties for Concrete Pipe

Design Notes:

Joint ties are required for the apron endwall and the last 2 sections of culvert and storm sewer pipe installations. See Standard Specifications.

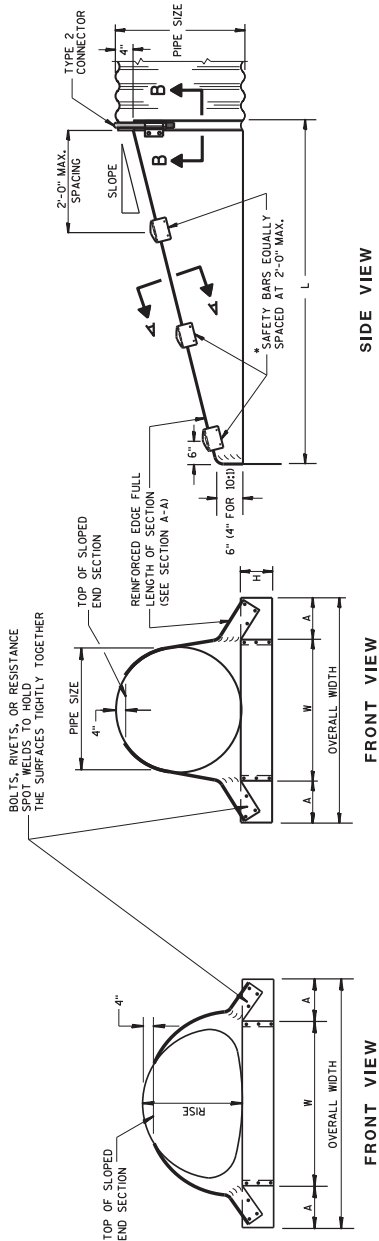
Contact Person:

Ann-Marie Kirsch (608) 267-3766



8F7: Steel Apron Endwalls for Culvert Pipe and Pipe Arch Sloped Side Drains

BOLTS, RIVETS, OR RESISTANCE
SPOT WELDS TO HOLD
THE SURFACES TIGHTLY TOGETHER



FRONT VIEW

FRONT VIEW

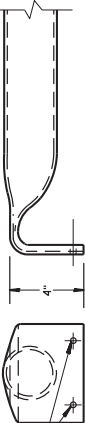
FRONT VIEW

FRONT VIEW

*NOTE: MINIMUM SAFETY BARS ARE SHOWN. ACTUAL NUMBER OF BARS REQUIRED AT A 2'-0" C-C MAX. SPACING WILL VARY DEPENDING ON THE LENGTH OF THE END SECTION.



DETAIL OF SAFETY BAR



SECTION A-A

SECTION A-A

SECTION A-A

SECTION A-A

DETAIL OF SAFETY BAR

SECTION A-A

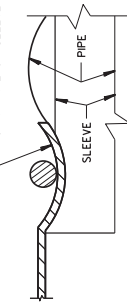
SECTION A-A

SECTION A-A

* MINIMUM THICKNESS OF ALL 1001 SLOPED SIDE DRAINS IS 0.109".

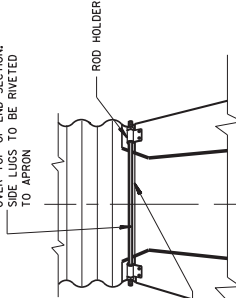
② ACTUAL SLOPE GREATER THAN 1001

CORRUGATION SIZED
TO FIT PIPE OR SLEEVE



SECTION B-B

THREADED 3/8" DIA. ROD
OVER TOP OF END SECTION.
SIDE LOGS TO BE INVERTED
TO APRON



TYPE 2

CONNECTION DETAIL

STEEL ADAPTER SLEEVE FOR
CONCRETE PIPE

ISOMETRIC VIEW

ISOMETRIC VIEW

ISOMETRIC VIEW

ISOMETRIC VIEW

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

SLOPED END SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, SECTION 521 FOR STEEL APRON ENDWALLS.

SAFETY BARS SHALL BE FABRICATED FROM GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL.

STEEL APRON ENDWALLS FOR CULVERT PIPE SLOPED SIDE DRAINS									
PIPE DIA. (IN.)	MIN. THICK. (INCHES)	DIMENSIONS (INCHES)			L DIMENSIONS				
		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
15	.064	8	6	21	37	4:1	20	6:1	30
18	.064	8	6	24	40	4:1	32	6:1	48
21	.064	8	6	27	43	4:1	44	6:1	66
24	.064	8	6	30	46	4:1	56	6:1	84
30	.109	12	9	36	60	4:1	80	6:1	120
36	.109	12	9	42	66	4:1	104	6:1	156
42	.109	16	12	48	80	4:1	128	6:1	192
48	.109	16	12	54	86	4:1	152	6:1	228
54	.109	16	12	60	92	4:1	176	6:1	264
60	.109	16	12	66	98	4:1	200	6:1	300

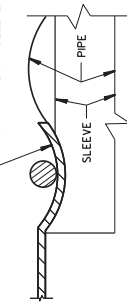
STEEL APRON ENDWALLS FOR PIPE ARCH SLOPED SIDE DRAINS

EQUIV. DIA. (INCHES)	SPAN (INCHES)	MIN. THICK. (INCHES)	RISE (INCHES)	DIMENSIONS (INCHES)			L DIMENSIONS				
				A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
15	17	.064	13	7	6	30	44	4:1	19	6:1	30
18	21	.064	15	8	6	27	43	4:1	20	6:1	30
21	24	.064	18	8	6	30	46	4:1	32	6:1	48
24	28	.064	20	8	6	34	50	4:1	40	6:1	60
30	35	.079	24	12	9	41	65	4:1	56	6:1	84
36	42	.079	29	12	9	48	72	4:1	76	6:1	114
42	49	.109	33	16	12	55	87	4:1	92	6:1	138
48	57	.109	38	16	12	63	95	4:1	112	6:1	168
54	64	.109	43	16	12	70	102	4:1	132	6:1	198

* MINIMUM THICKNESS OF ALL 1001 SLOPED SIDE DRAINS IS 0.109".

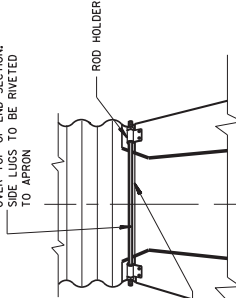
② ACTUAL SLOPE GREATER THAN 1001

CORRUGATION SIZED
TO FIT PIPE OR SLEEVE



SECTION B-B

THREADED 3/8" DIA. ROD
OVER TOP OF END SECTION.
SIDE LOGS TO BE INVERTED
TO APRON



TYPE 2

CONNECTION DETAIL

STEEL ADAPTER SLEEVE FOR
CONCRETE PIPE

ISOMETRIC VIEW

ISOMETRIC VIEW

ISOMETRIC VIEW

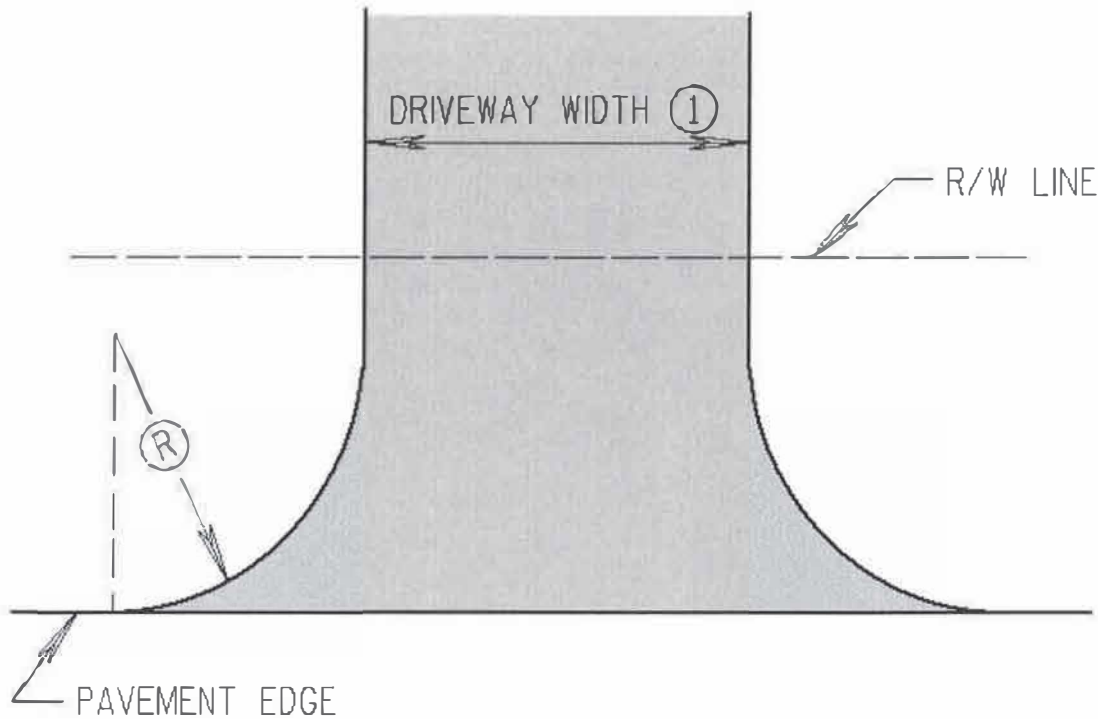
ISOMETRIC VIEW

STEEL APRON ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH
SLOPED SIDE DRAINS

DEPARTMENT OF TRANSPORTATION
STATE OF WISCONSIN

APPROVED
DATE 9/14/2022
JERRY H. ZOGG
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

DRIVEWAY CONSTRUCTION DETAILS



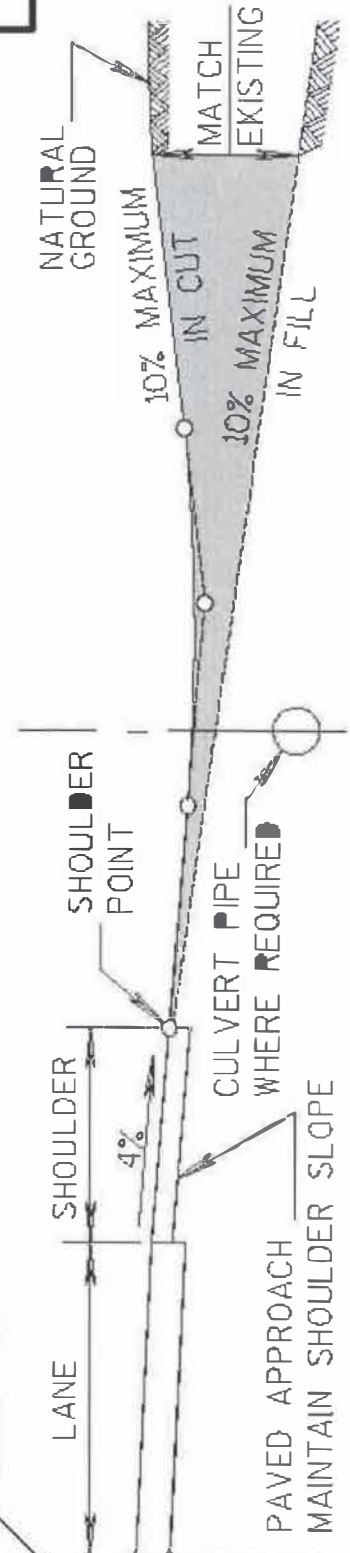
COMMERCIAL

- (1) DRIVEWAY WIDTH: 35' max, 12' min
- (R) RADII: 40' max,
(20' for inside angled driveway)

NON-COMMERCIAL

- (1) DRIVEWAY WIDTH: 35' max, 12' min
16' desirable
- (R) RADII: 8.5' normal, 30' max

ALL CURVILINEAR PRIVATE ENTRANCE OUTLINES SHALL BE CONTAINED WITHIN THE HIGHWAY RIGHT-OF-WAY



CROSS-SECTION

