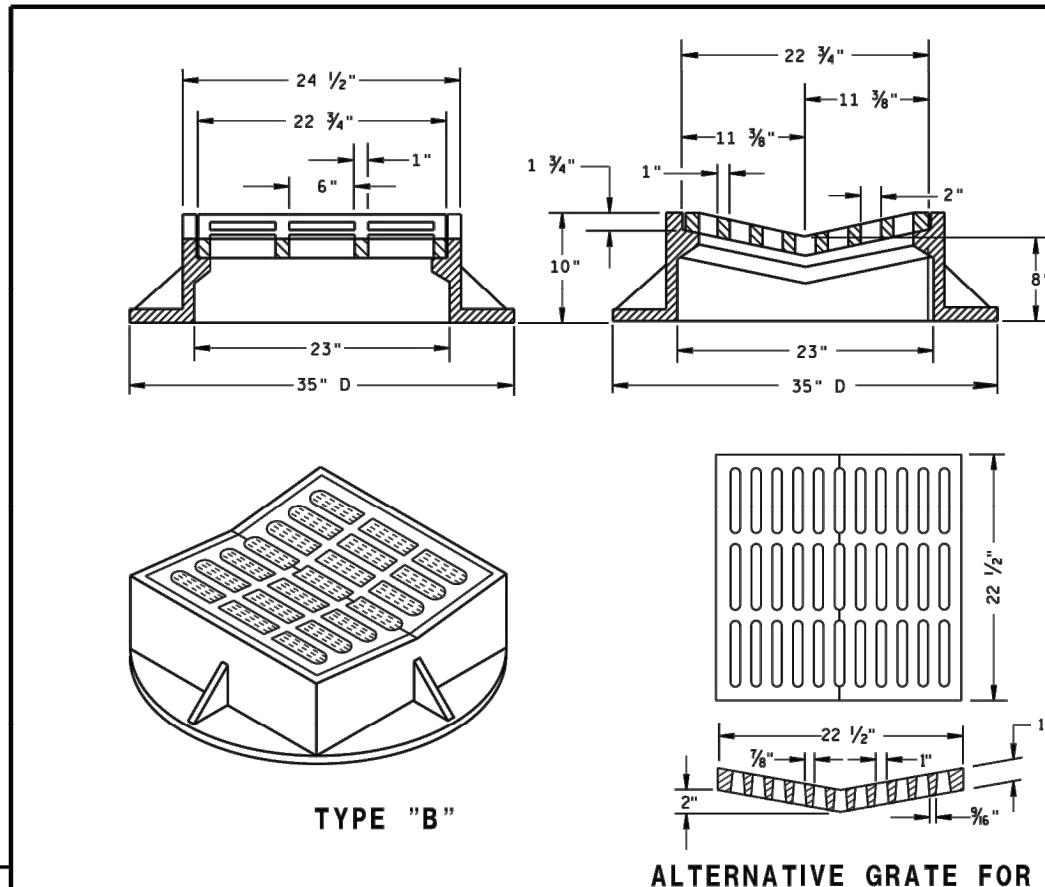


TRAIL AND HIGHWAY IMPROVEMENTS
KAUKAUNA, OUTAGAMIE COUNTY, WI
MISCELLANEOUS DETAILS

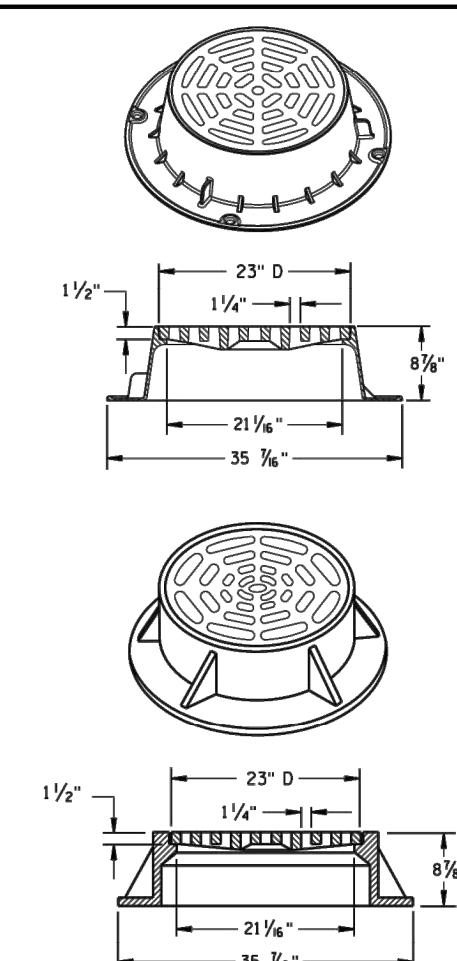
MISCELLANEOUS DETAILS

Mailing: P.O.BOX 1025 NEENAH, WI 54957-1025
PH 920.751.4200 FX 920.751.4284 MCGRPCO
Associates, Inc.



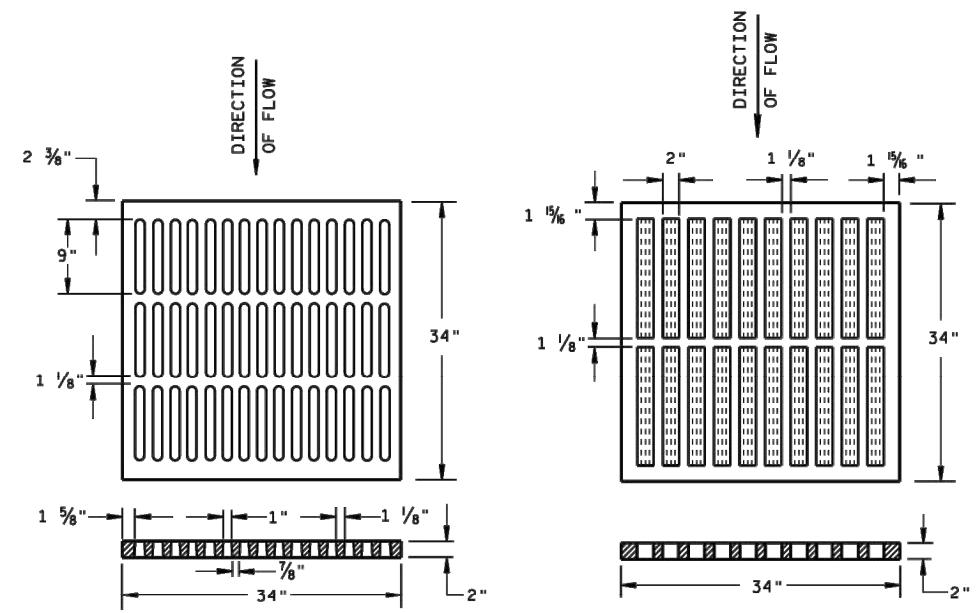
**ALTERNATIVE GRATE FOR
TYPE "B" COVER**

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE
NOTED AS TYPE B-A ON THE DRAINAGE TABLE



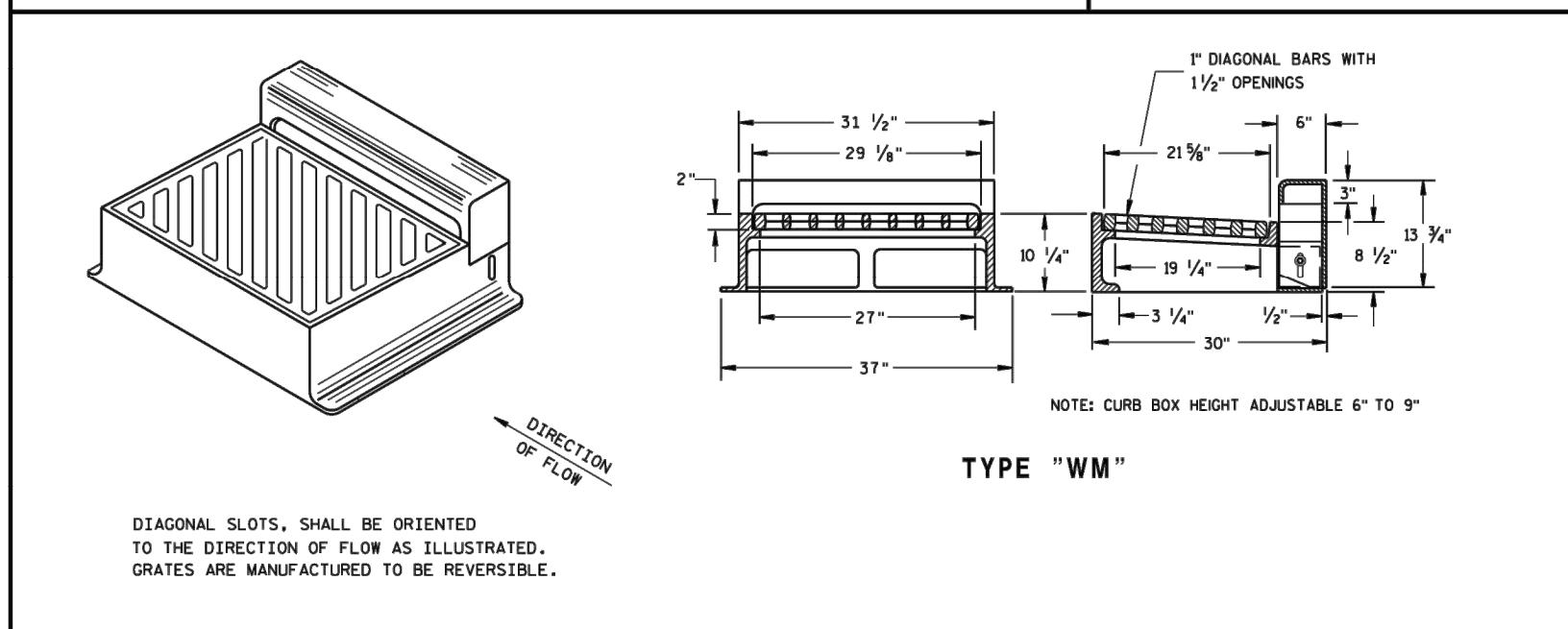
ALTERNATIVE TYPE "MS"

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED
NOTED AS TYPE MS-A ON THE DRAINAGE TABLE



TYPE "MS"

USE ON FREEWAYS AND EXPRESSWAYS
NOTED AS TYPE MS ON DRAINAGE TABLE

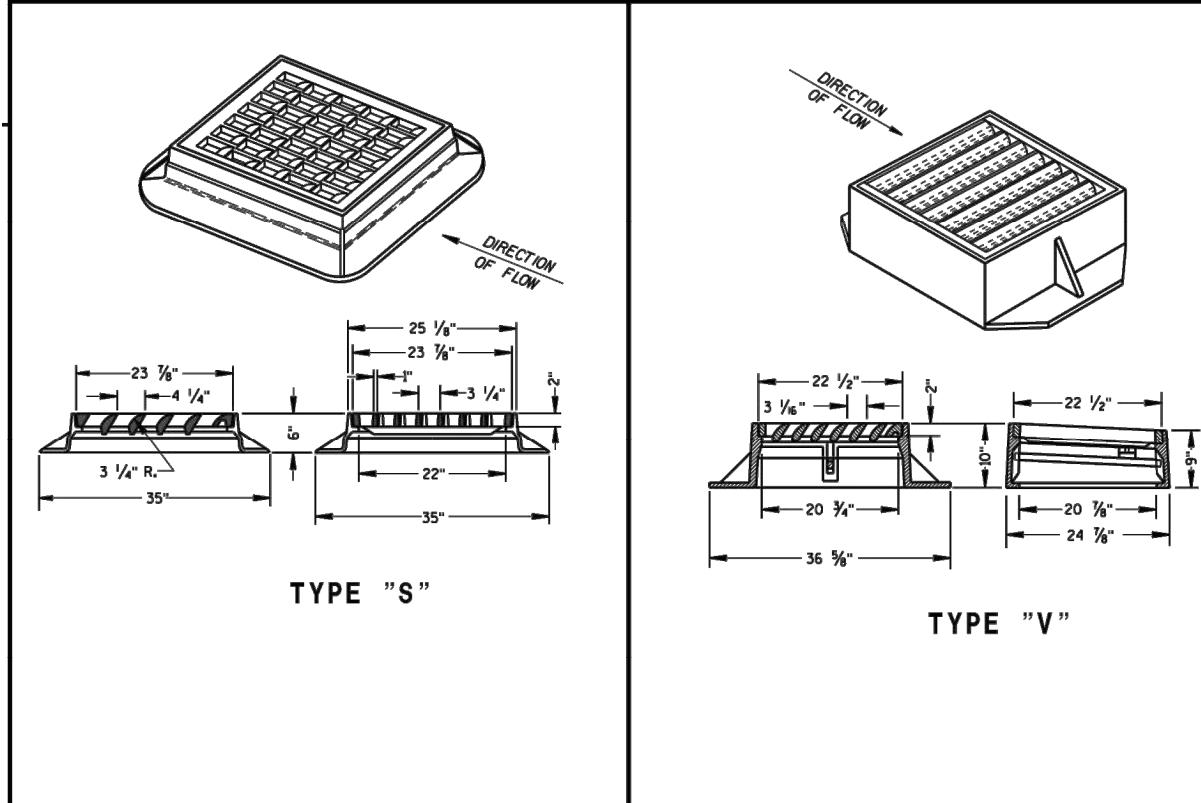
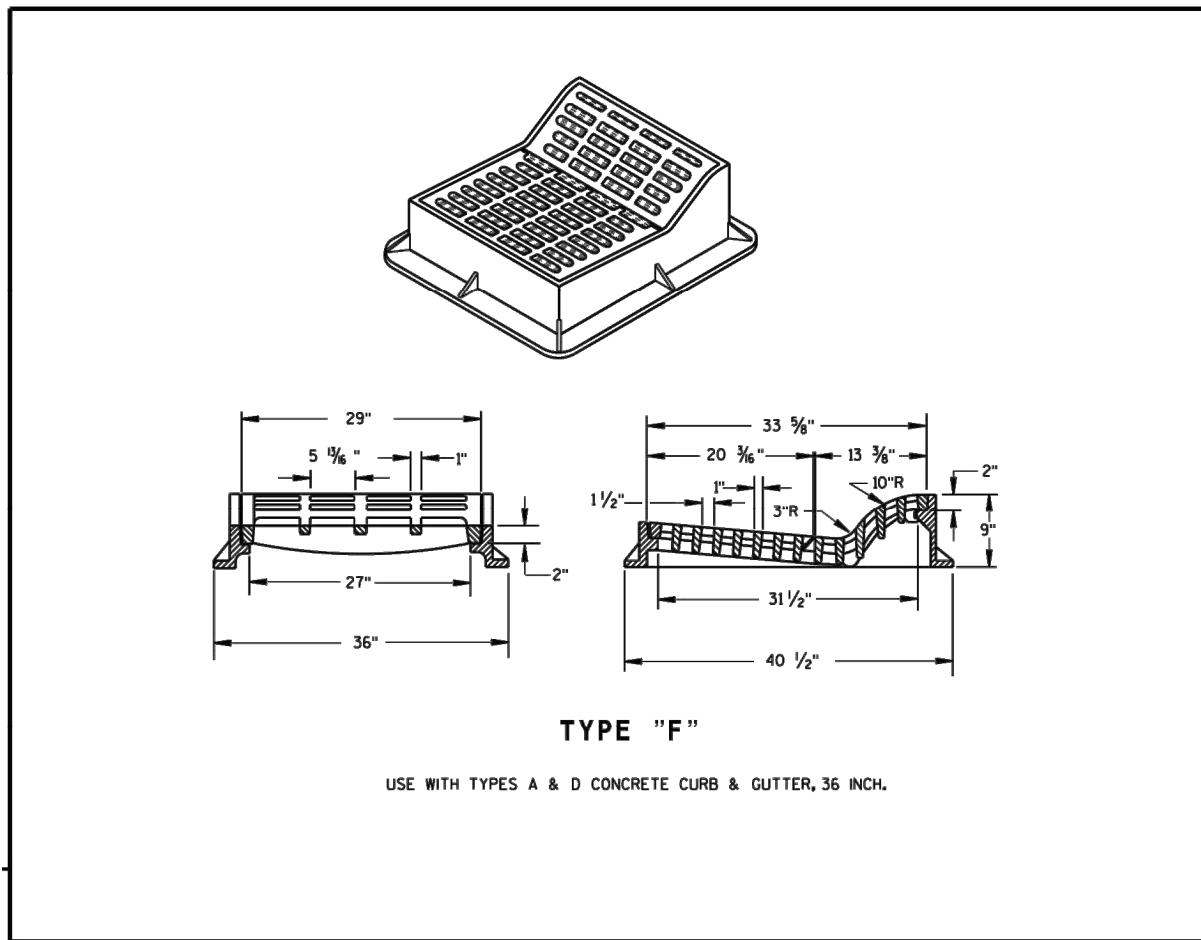


TYPE "WM

DIAGONAL SLOTS, SHALL BE ORIENTED
TO THE DIRECTION OF FLOW AS ILLUSTRATED.
GRATES ARE MANUFACTURED TO BE REVERSIBLE.

**INLET COVERS
TYPE B, B-A, C,
MS, MS-A, & WM**

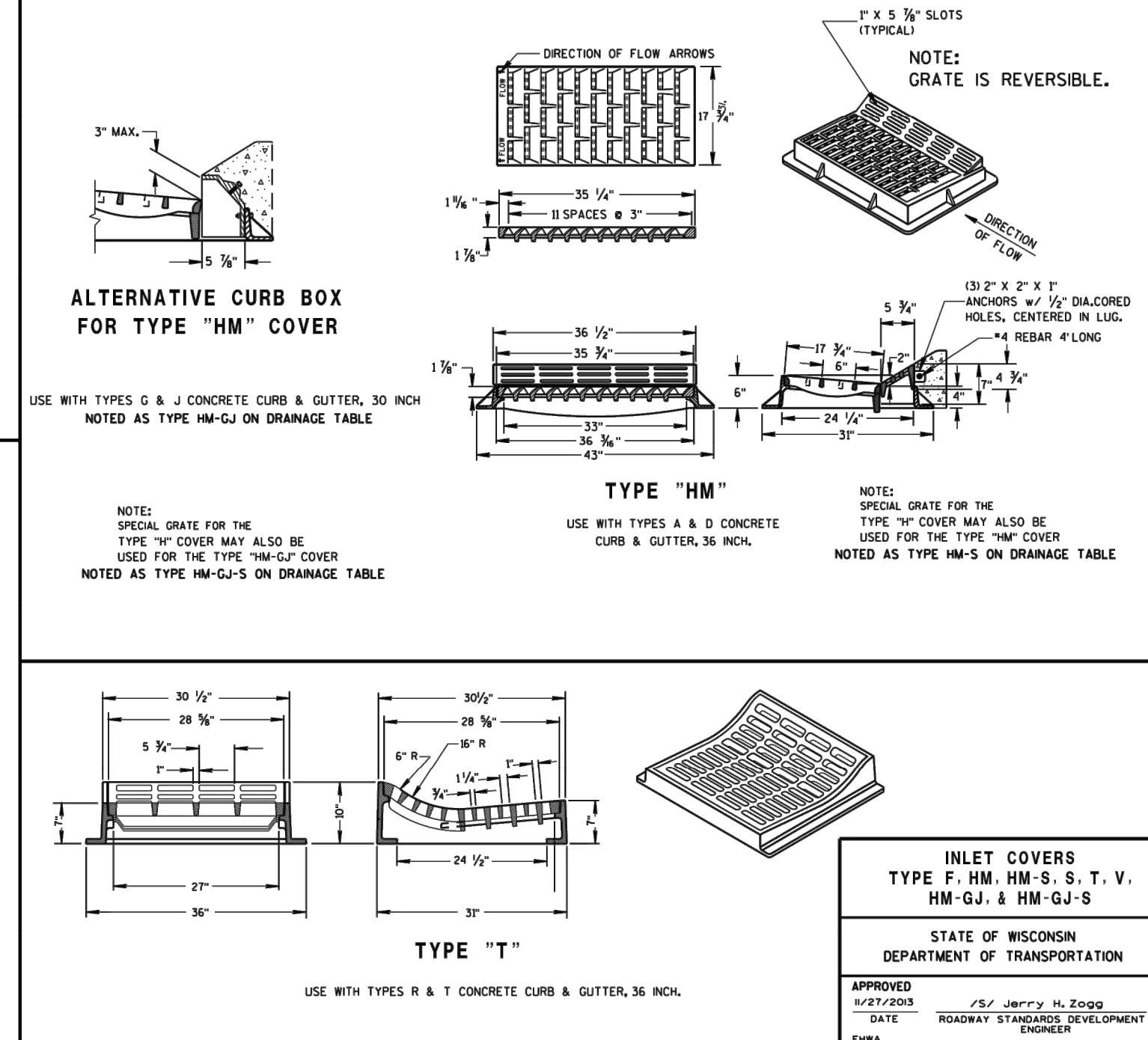
**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**



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.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.



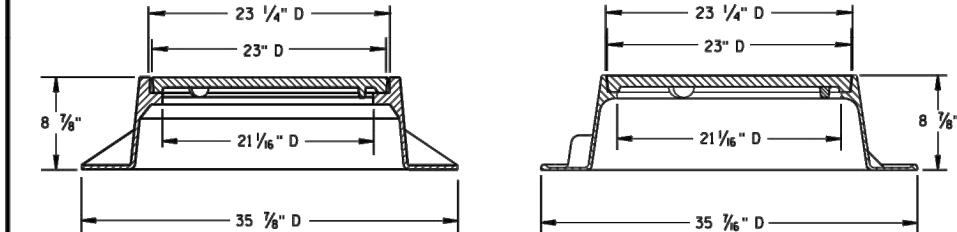
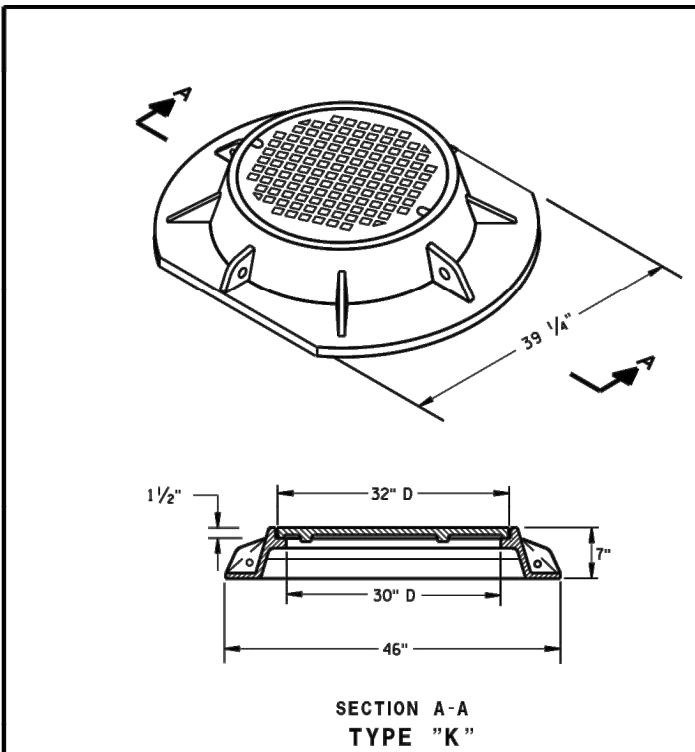
SCENIC TRAIL AND HIGHWAY IMPROVEMENTS
KAUKAUNA, OUTAGAMIE COUNTY, WI
MISCELLANEOUS DETAILS

MISCELLANEOUS DETAILS

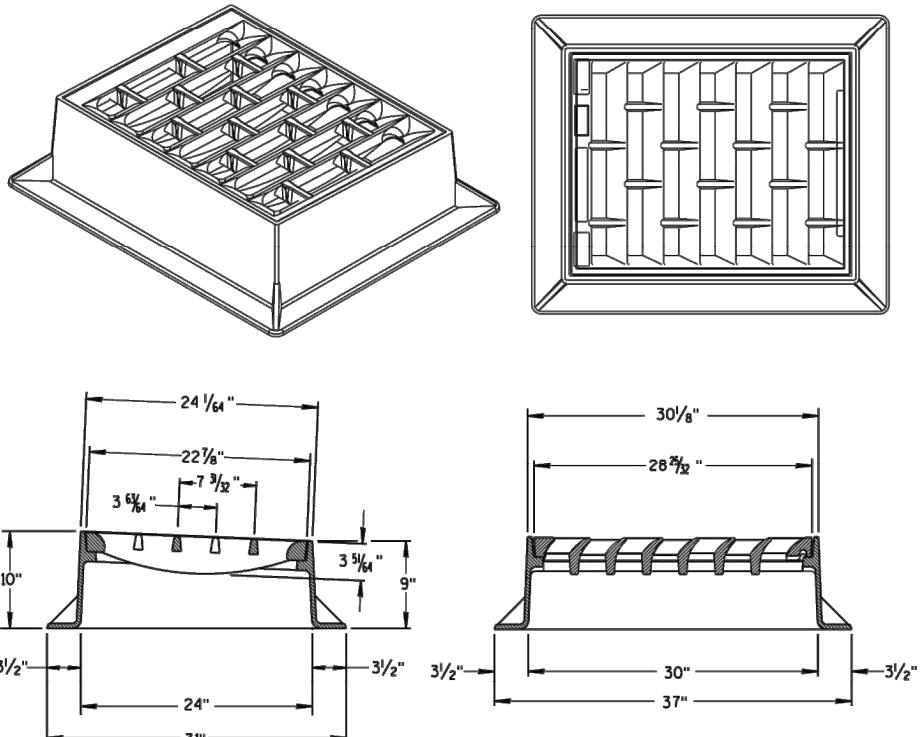
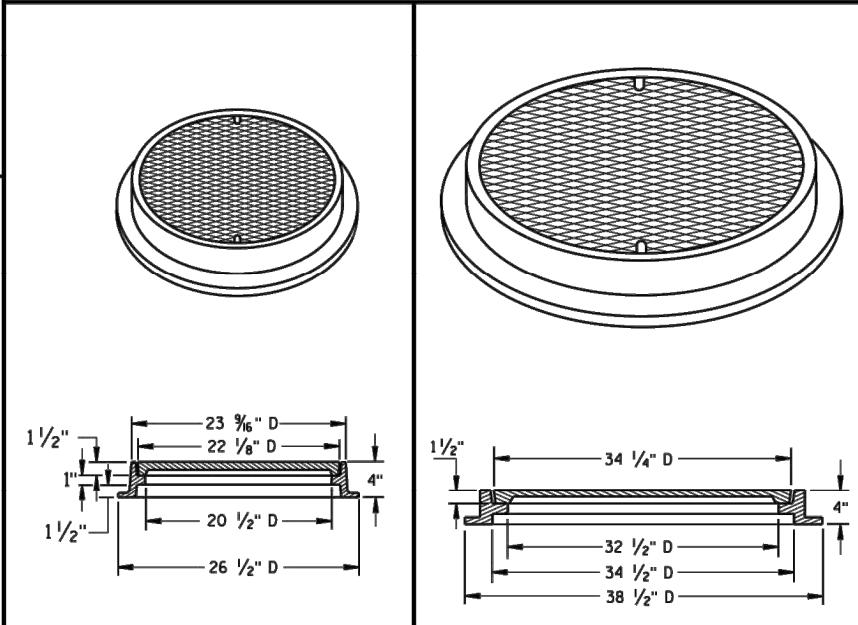
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DESIGNED	DRAWN
RJK	RJK
PROJECT NO.	
K0006 81700105	
DATE	
MAY 2020	
SHEET NO.	

52



NOTE: EITHER CASTING IS ACCEPTABLE



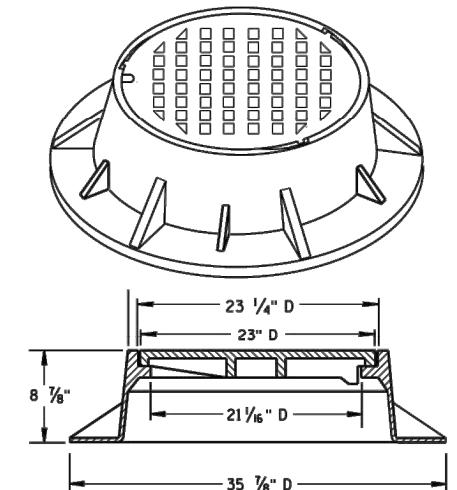
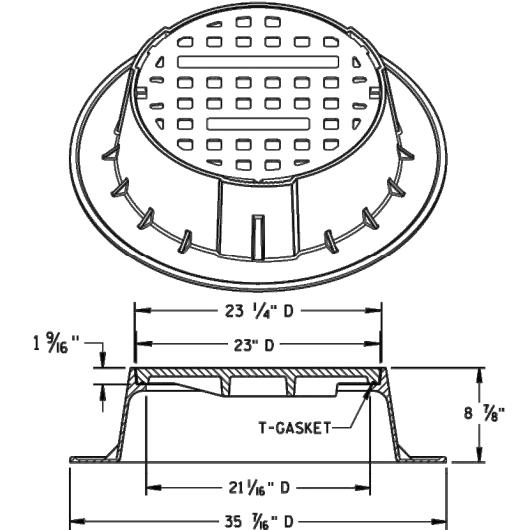
INLET COVER TYPE "BW"

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.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

NOTE: EITHER CASTING IS ACCEPTABLE

INLET COVER TYPE BW MANHOLE COVERS, TYPE K, J, J-S, L & M	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED II/27/2013 DATE FHWA	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER

S.D.D. 8 A 5-19d

CE TRAIL AND HIGHWAY IMPROVEMENTS
KAUKAUNA, OUTAGAMIE COUNTY, WI
MISCELLANEOUS DETAILS

DESIGNED RJK	DRAWN RJK
PROJECT NO. K0006 81700105	
DATE MAY 2020	

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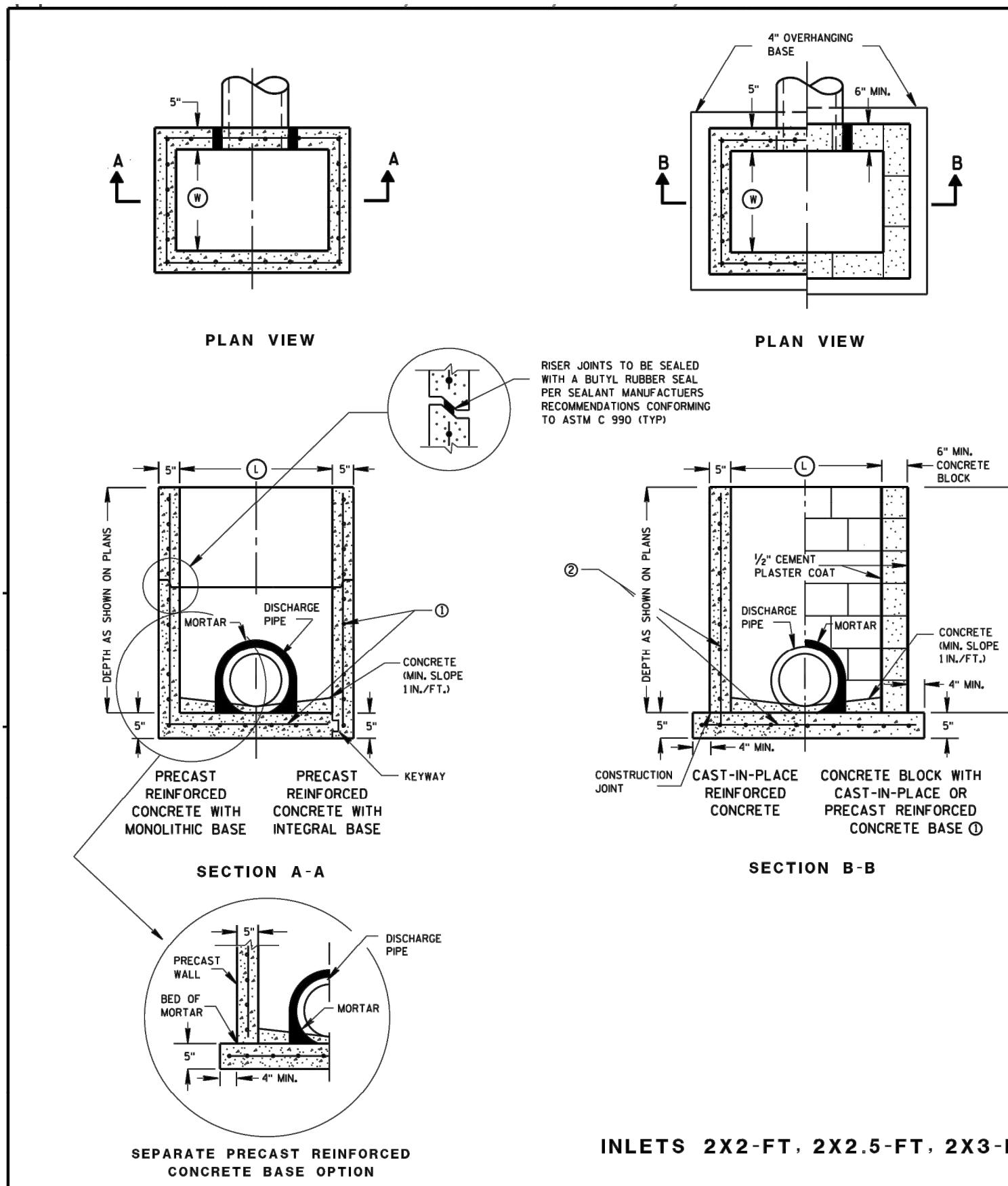
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GENERAL NOTES

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UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMprise THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL; THIS BEDDING SHALL BE COMPAKTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS.
4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED.
OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

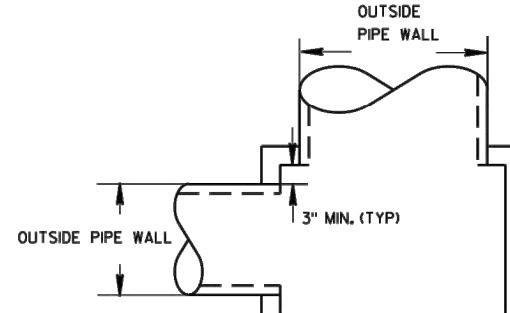
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE	INLET COVER TYPE		ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X					X		X	
2X2.5-FT	2	2.5		X				X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3					X				

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT,
2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR

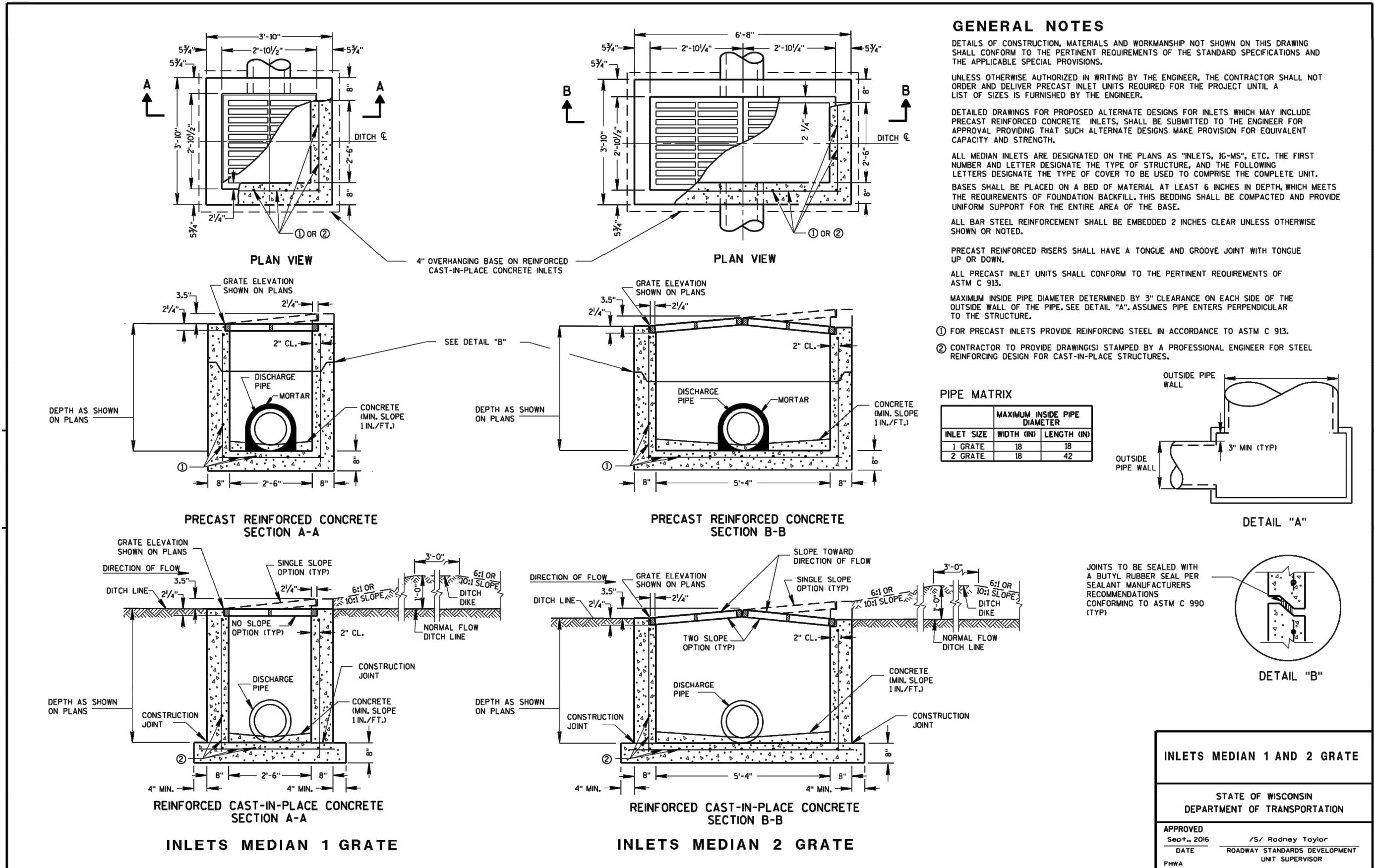
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DESIGNED RJK	DRAWN RJK
PROJECT NO. K0006 81700105	DATE MAY 2020
SHEET NO. 54	

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CE TRAIL AND HIGHWAY IMPROVEMENTS
KAUKAUNA, OUTAGAMIE COUNTY, WI
MISCELLANEOUS DETAILS



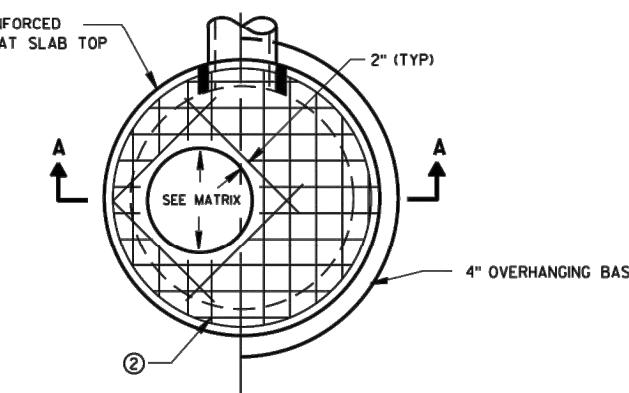
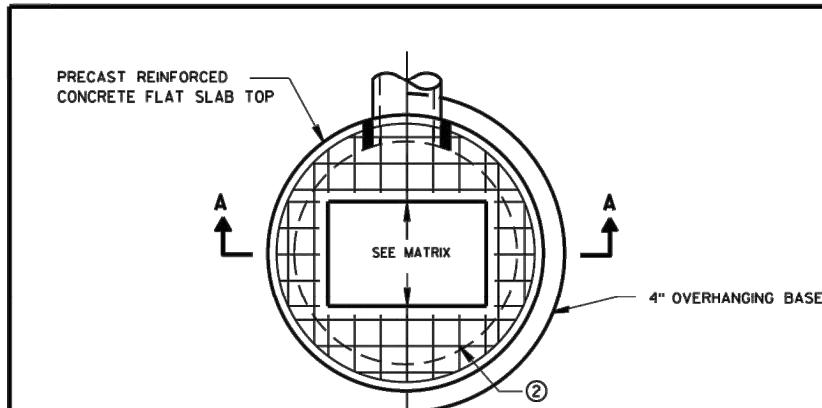
S.D.D. 8 C 8-2

 DESIGNED
 DRAWN
 RJK
 RJK
 PROJECT NO.
 K0006 81700105
 DATE
 MAY 2020
 SHEET NO.
 55

 CE TRAIL AND HIGHWAY IMPROVEMENTS
 KAUKAUNA, OUTAGAMIE COUNTY, WI
 MISCELLANEOUS DETAILS

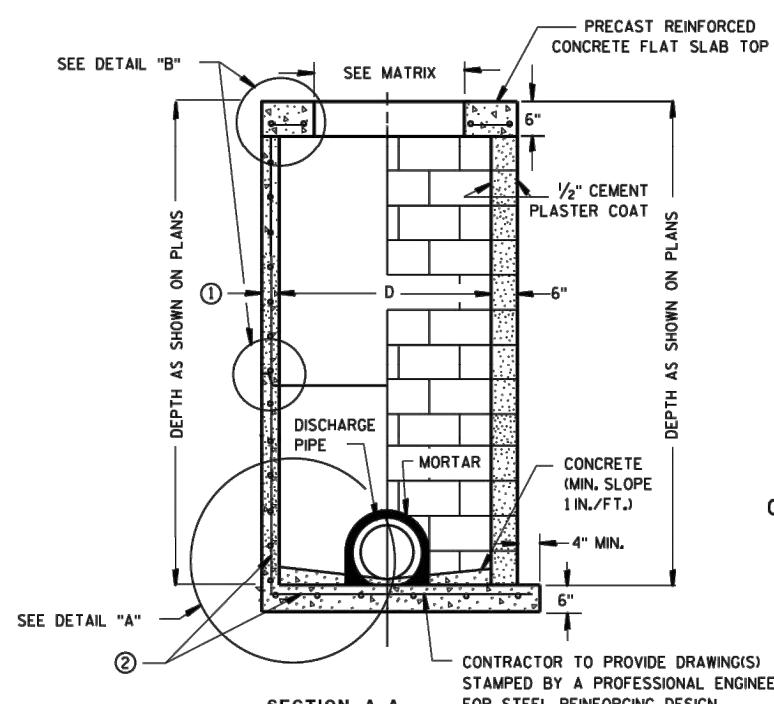
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 ENGINEERS AND H. L. T. C.
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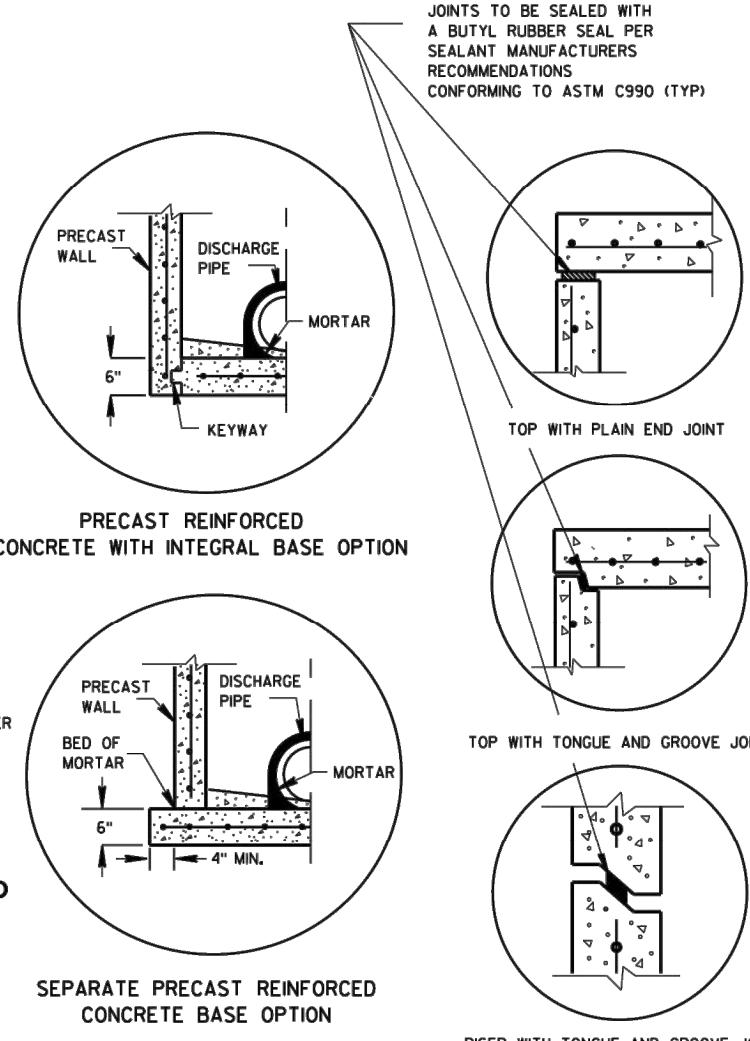
PLAN VIEW RECTANGULAR OPENING

PLAN VIEW CIRCULAR OPENING



PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE OR PRECAST REINFORCED CONCRETE BASE ②

CIRCULAR INLETS W/ FLAT TOP



INLETS 3-FT AND 4-FT DIAMETER

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.

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DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMprise THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPAKTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

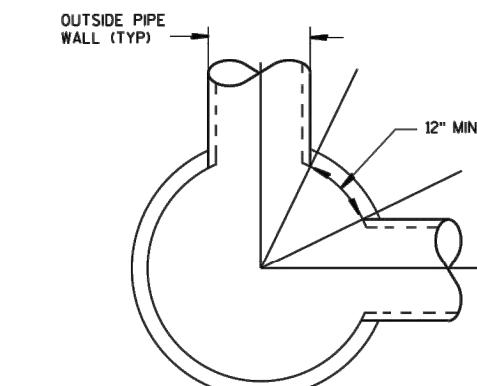
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-Ft DIAMETER AND 5-IN FOR 4-Ft DIAMETER PRECAST INLETS.

② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

INLET COVER OPENING MATRIX

INLET SIZE	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
3-FT	2 DIA.											
	2X2											
4-FT	2 DIA.											
	2X2											
	2X2.5											
	2X3											
	2.5X3											



PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

DETAIL "C"

INLETS 3-FT AND 4-FT DIAMETER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	/S/ Rodney Taylor
Sept., 2016	ROADWAY STANDARDS DEVELOPMENT
DATE	UNIT SUPERVISOR
FHWA	

S.D.D. 8 C 6-2

DESIGNED

DRAWN

RJK

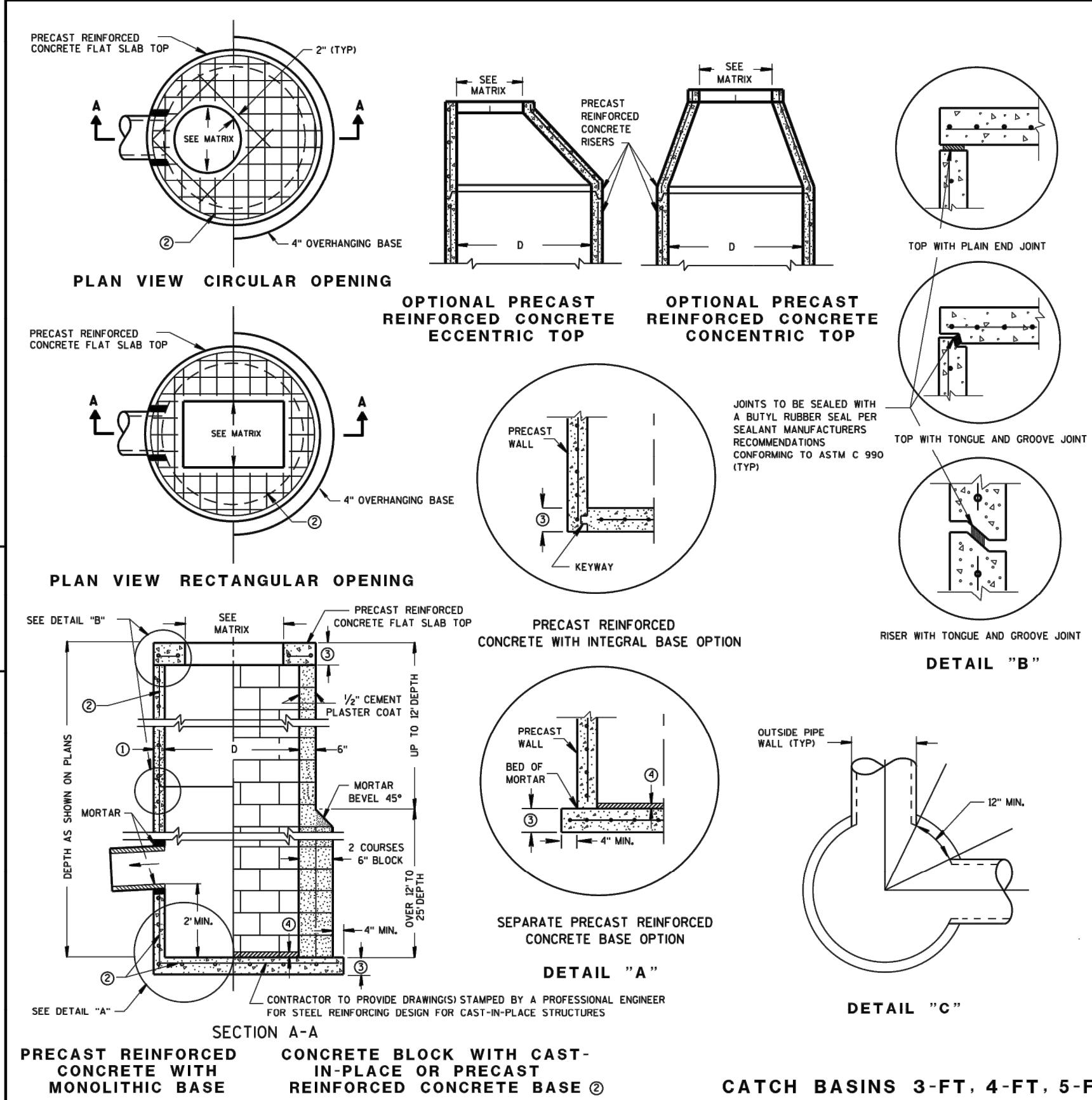
PROJECT NO.

K0006 81700105

DATE

MAY 2020

SHEET NO.



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. UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST CATCH BASIN UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMprise THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPAKTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONCRETE CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO MI99 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF $\frac{1}{2}$ INCH AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION MI99.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

- ① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT AND 7 INCHES FOR 6-FT DIAMETER PRECAST CATCH BASINS.
- ② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO MI99.
- ③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".
- ④ 1" CONCRETE KEY POURED AFTER INSTALLATION. 2' SUMP MEASURED FROM TOP OF KEY.

CATCH BASIN COVER OPENING MATRIX

CATCH BASIN SIZE	INLET COVER TYPE OPENING SIZE (FT)	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
3-FT	2X2	X										
	2 DIA.		X									X
4-FT- 6-FT	2X2	X	X									
	2X2.5			X								
5-FT	2 DIA.				X							
	2X3					X						
6-FT	2.5X3						X					

PIPE MATRIX

CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	30

CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

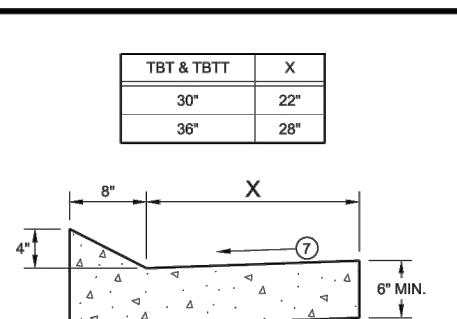
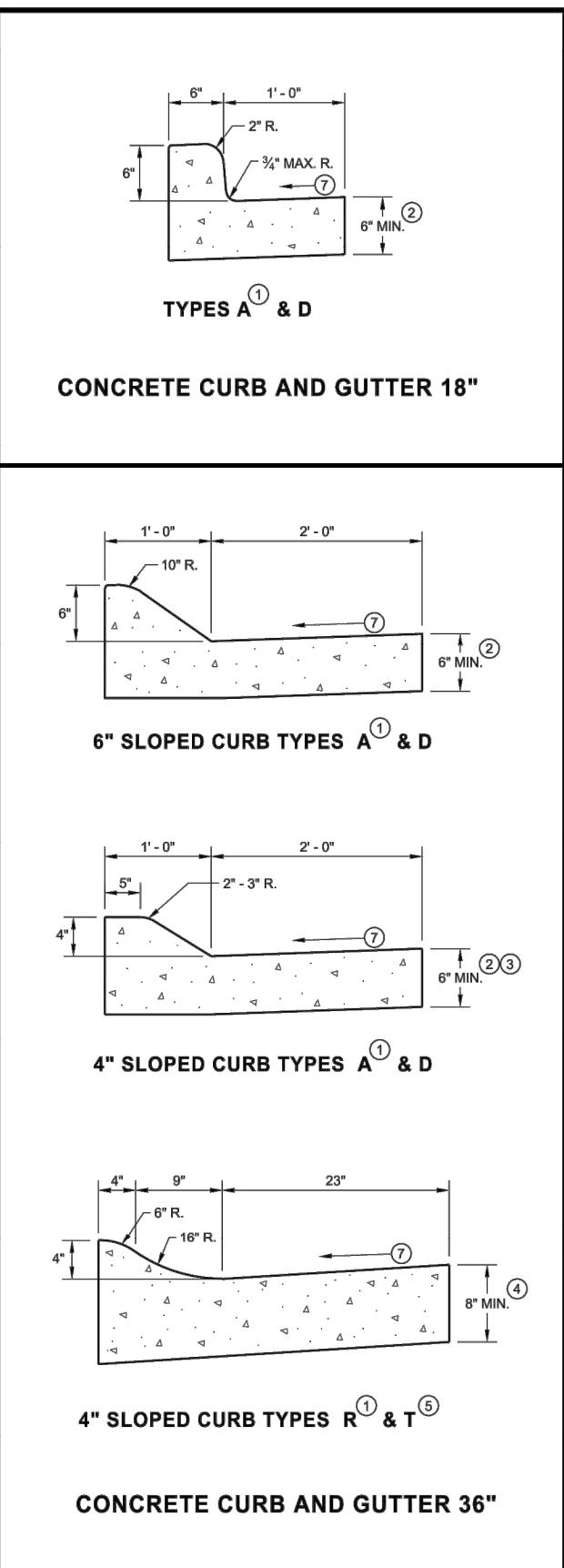
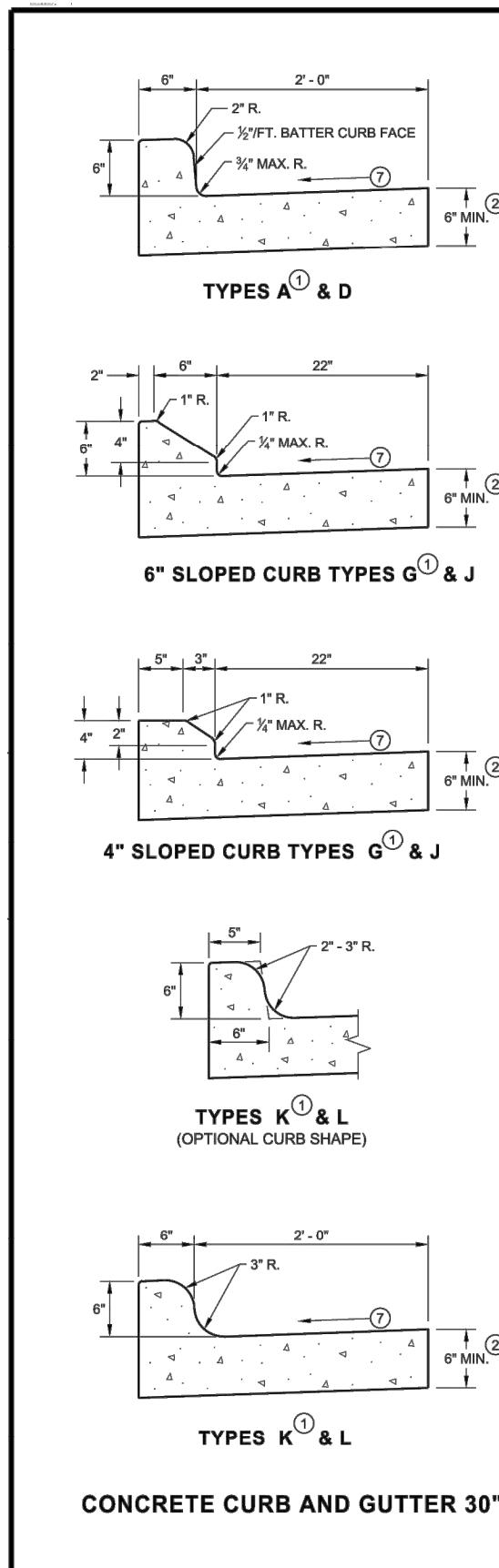
APPROVED
Sept., 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR
MAY 2020

S.D.D. 8 A 8-2

CE TRAIL AND HIGHWAY IMPROVEMENTS
KAUKAUNA, OUTAGAMIE COUNTY, WI
MISCELLANEOUS DETAILS

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14455 McMahon Drive, Neenah, WI 54956
Mailing: P.O. Box 1025 Neenah, WI 54956
Phone: 920-751-4284 MCGRFCOM



CONCRETE CURB AND GUTTER

GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

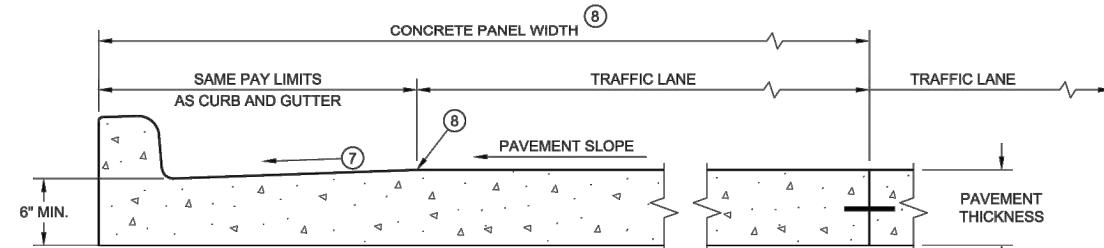
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

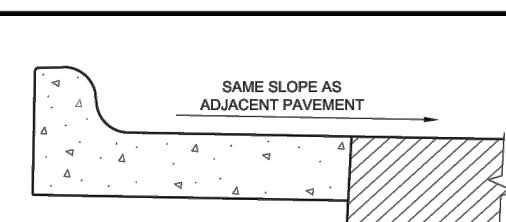
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER^⑥
(TYPICAL FOR ALL CURB & GUTTER TYPES)

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD08D01 - 21a

**CE TRAIL AND HIGHWAY IMPROVEMENTS
KAUKAUNA, OUTAGAMIE COUNTY, WI**

MISCELLANEOUS DETAILS

DESIGNED
RJK

DRAWN
RJK

PROJECT NO.
K0006 81700105

DATE
MAY 2020

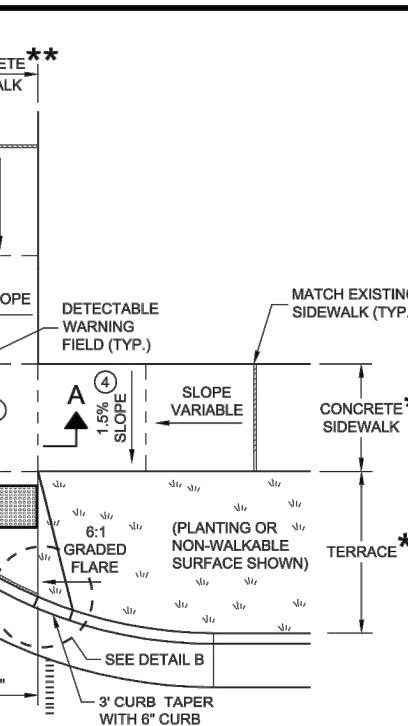
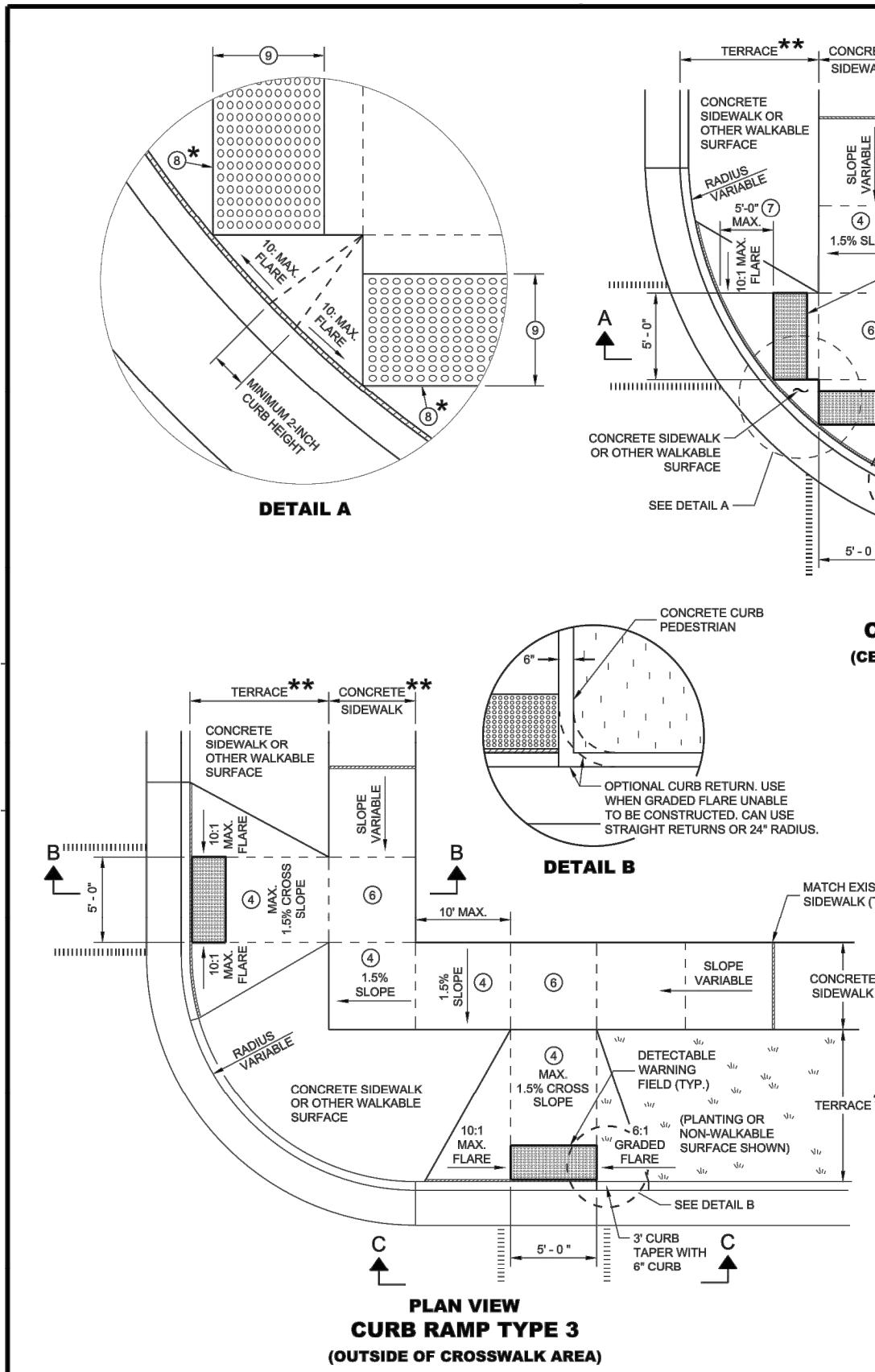
SHEET NO.

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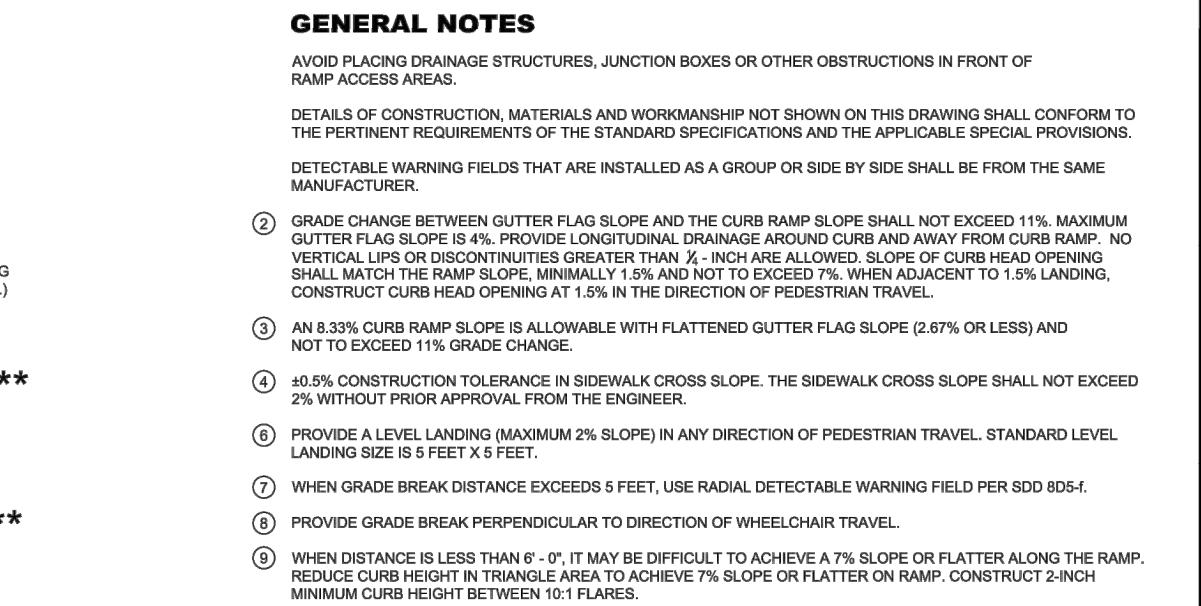
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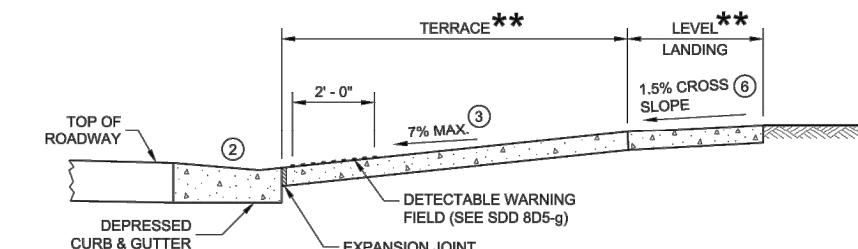
**PLAN VIEW
CURB RAMP TYPE 2
(CENTER OF CORNER RADIUS)**



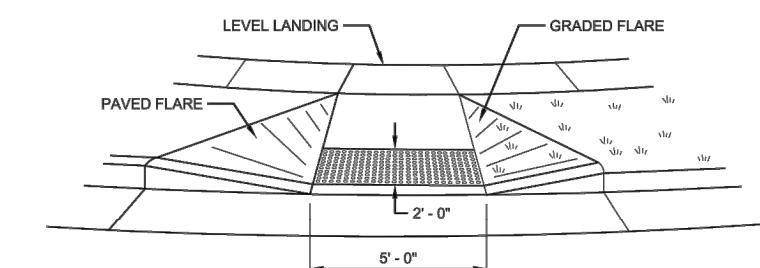
MAXIMUM 2.0% SLOPE
IN ALL DIRECTIONS IN
FRONT OF GRADE BREAK

* WIDTH SHOWN ELSEWHERE
IN THE PLANS

SECTION A - A FOR TYPE 2



SECTION B - B FOR TYPE 3



VIEW C - C FOR TYPE 3

CURB RAMPS TYPE 2 AND 3

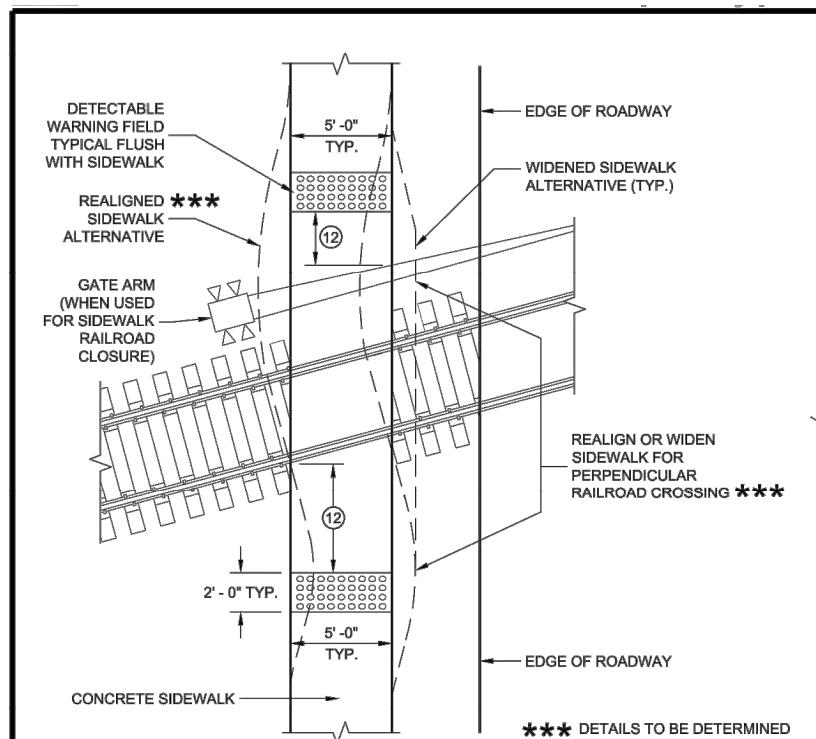
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

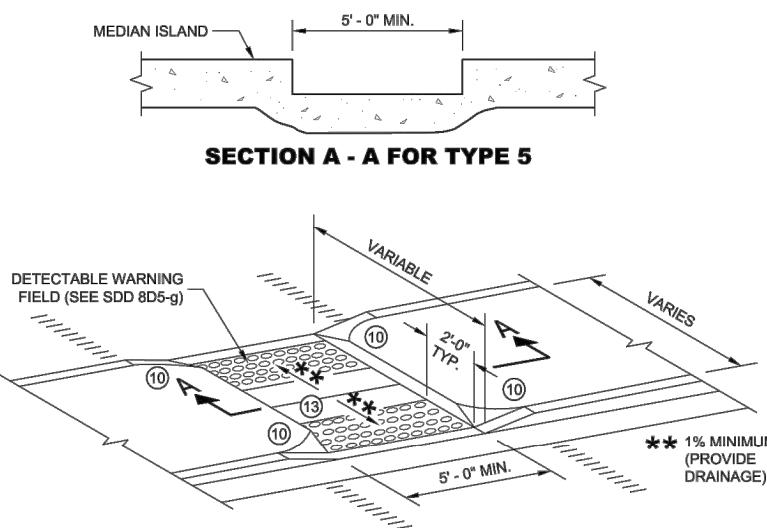
TRAIL AND HIGHWAY IMPROVEMENTS
KAUKAUNA, OUTAGAMIE COUNTY, WI
MISCELLANEOUS DETAILS

McMAHON
ENGINEERS & ARCHITECTS
McMAHON ASSOCIATES, INC.
1445 McMAHON DRIVE NEENAH WI 54966
Mailbox: PO BOX 1025 NEENAH WI 54957-1025

DESIGNED	DRAW
RJK	RJK
PROJECT NO.	
K0006 81700105	
DATE	
MAY 2020	



**CURB RAMP TYPE 8
DETECTABLE WARNINGS
AT RAILROAD CROSSINGS**



**CURB RAMP TYPE 5
MEDIAN ISLAND
NON-ELEVATED PEDESTRIAN CROSSING**



AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

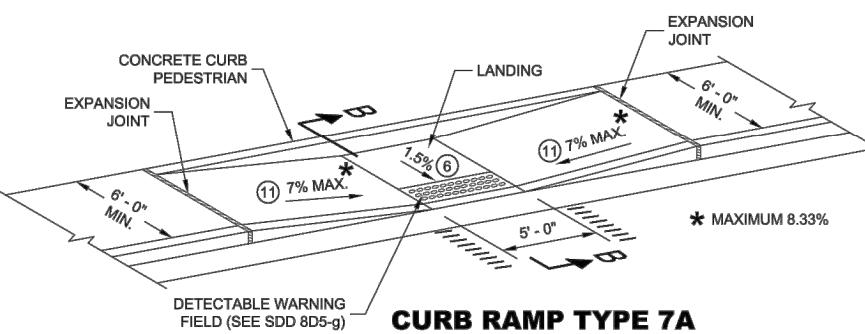
SIDEWALK CROSS SLOPE SHALL NOT EXCEED

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

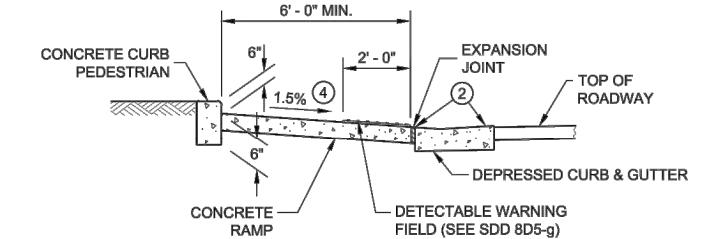
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN $\frac{1}{4}$ INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ $\pm 0.5\%$ CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑩ INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.
- ⑪ SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- ⑫ THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET $\pm 0.1'$ FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.
- ⑯ DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STEET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2 FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.

LEGEND

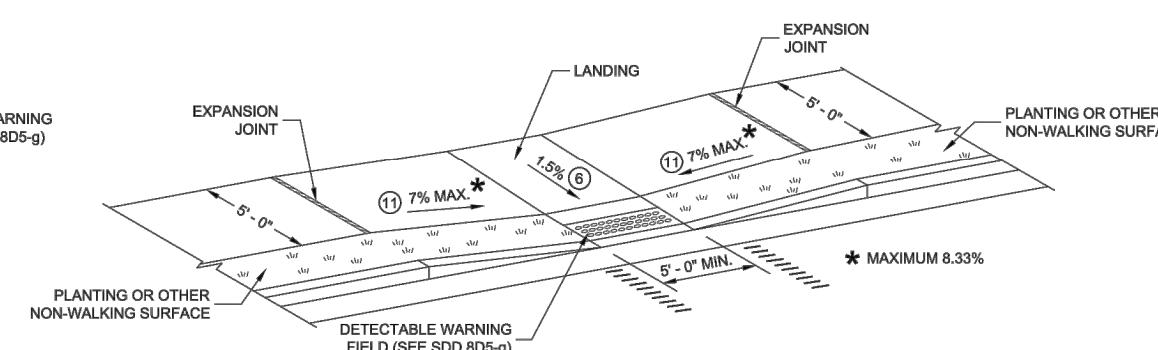
~~~~~  **$\frac{1}{2}$ " EXPANSION JOINT SIDEWALK**  
- - - - **CONTRACTION JOINT FIELD LOCATED**  
||||| **PAVEMENT MARKING CROSSWALK (WHITE)**



## **CURB RAMP TYPE 7A MID-BLOCK CROSSING**



**SECTION B - B FOR TYPE 7A**

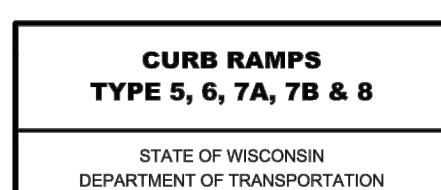


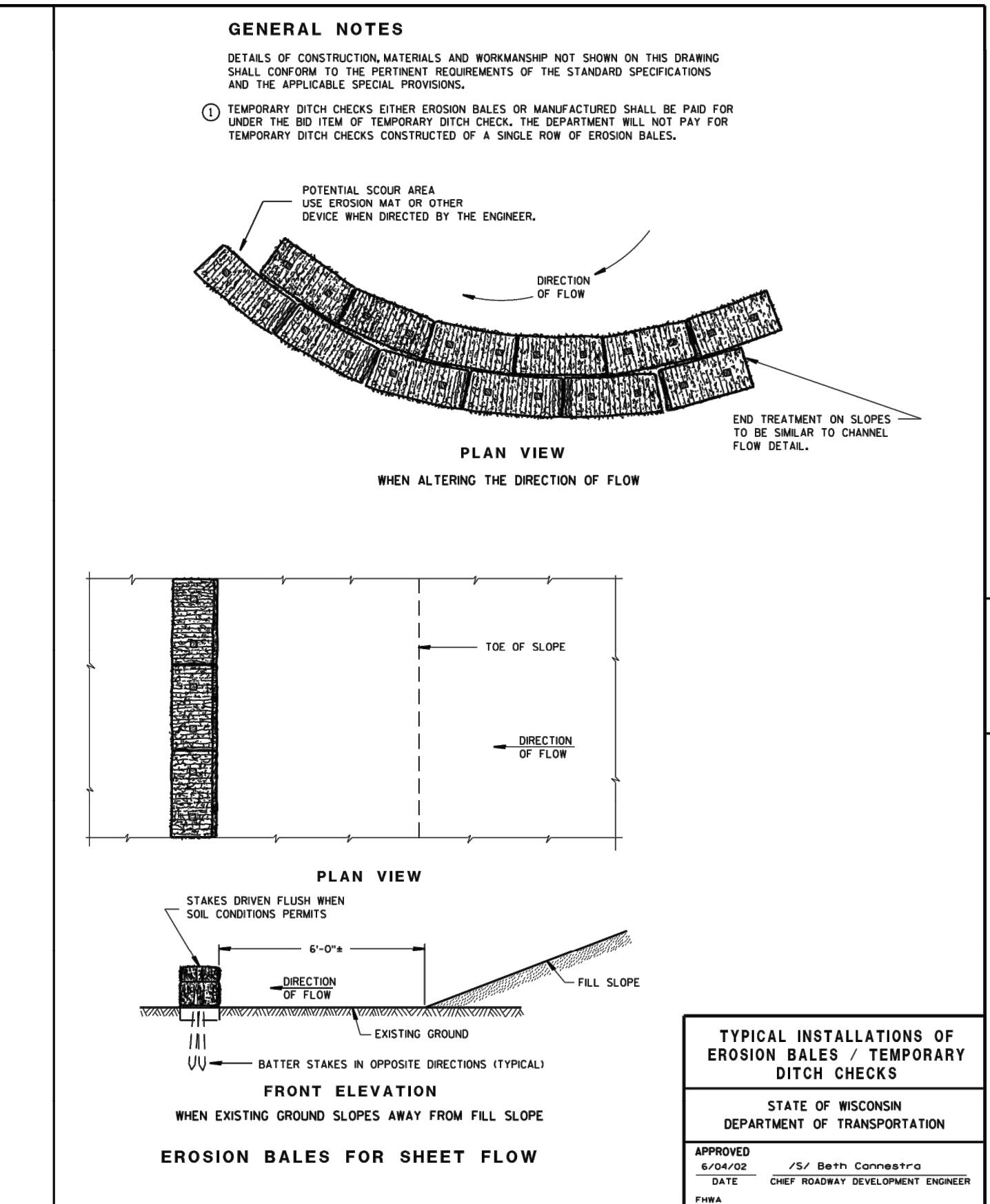
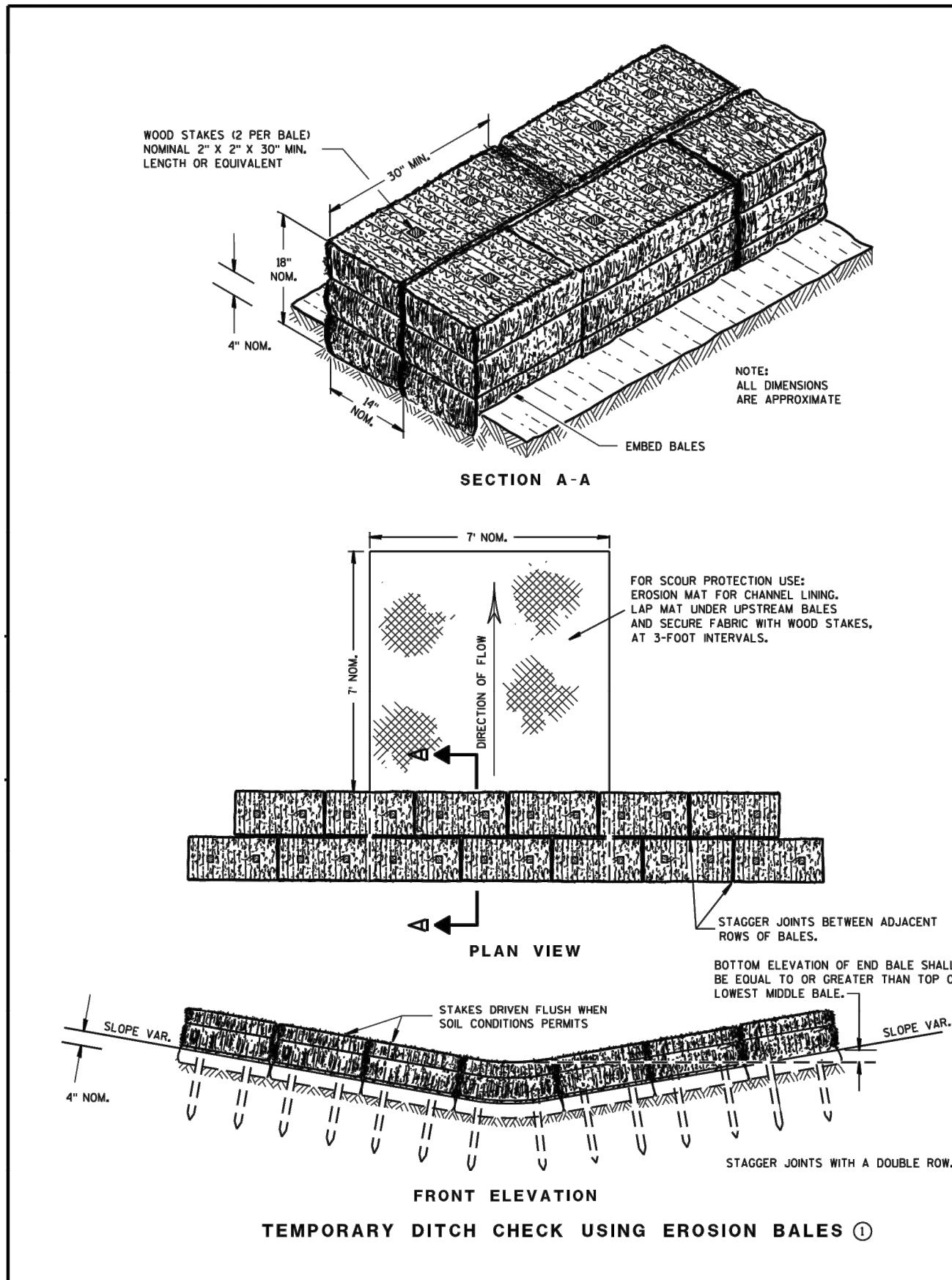
## **CURB RAMP TYPE 7B MID BLOCK CROSSING**

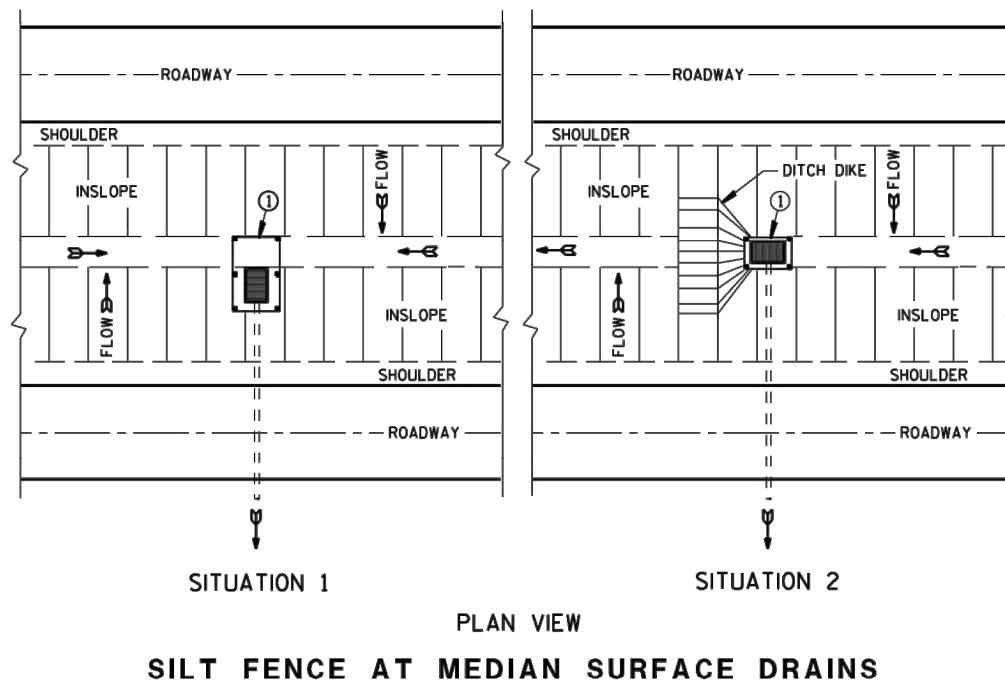
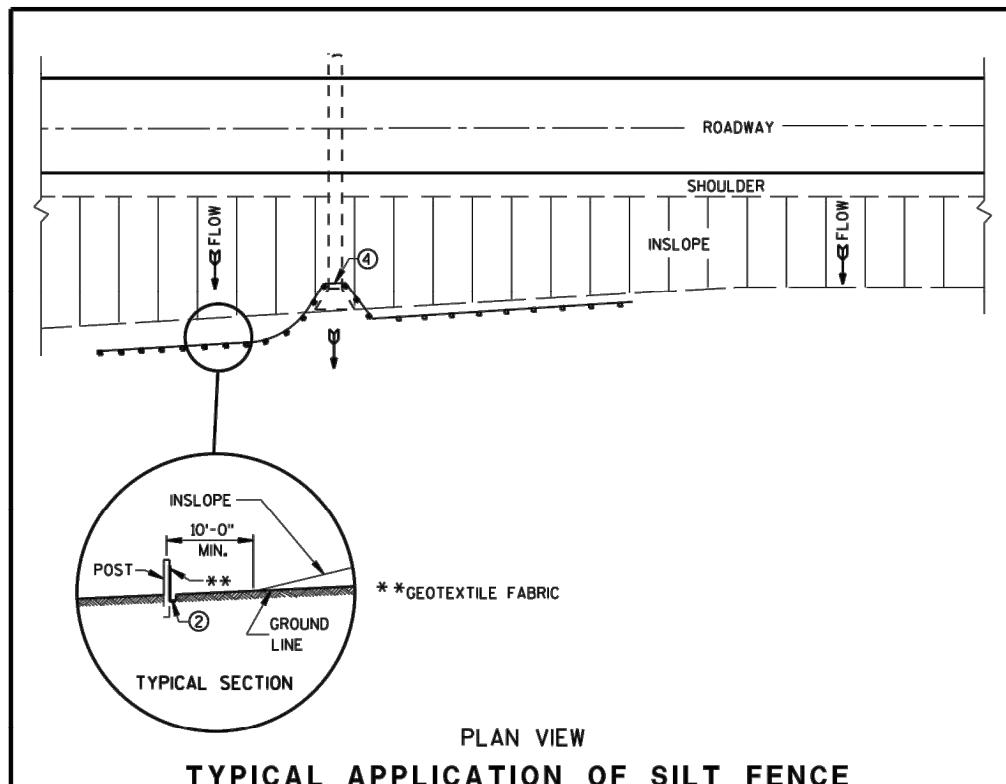
NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS  
MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

## **CURB RAMP TYPE 6**

REFER TO GENERAL NOTES ② AND ③  
FOR ALL ISLAND CURB RAMPS



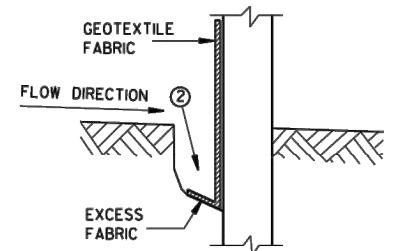




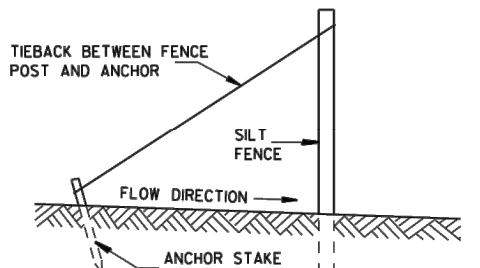
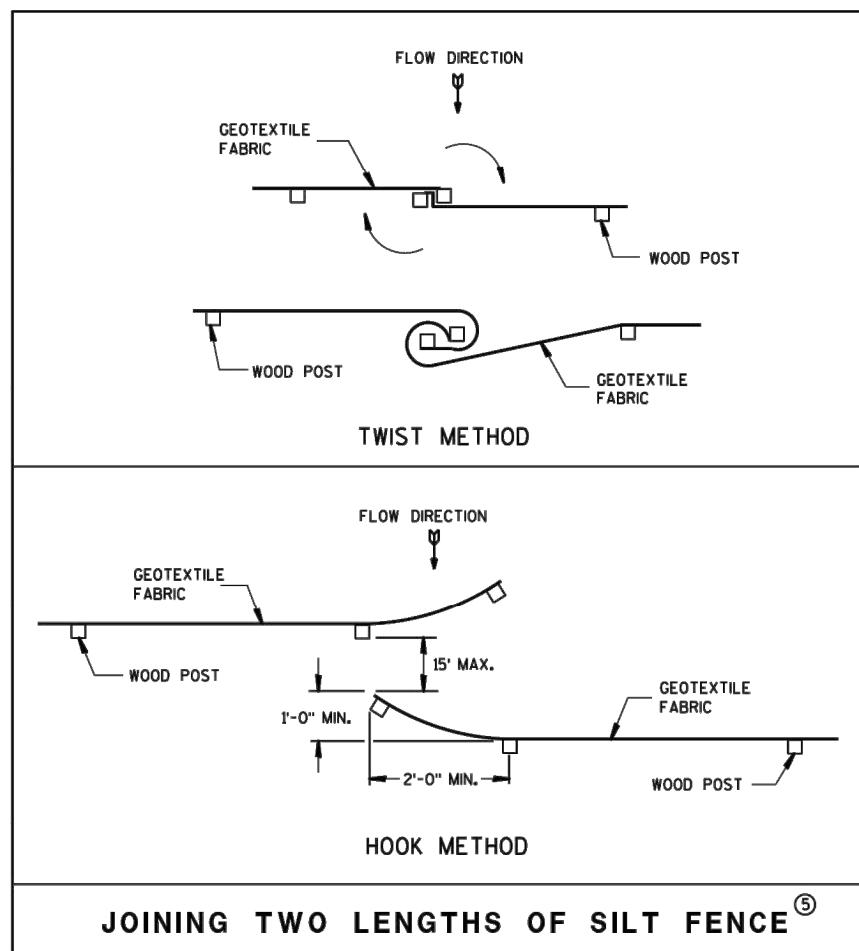
### GENERAL NOTES

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

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1/8" X 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



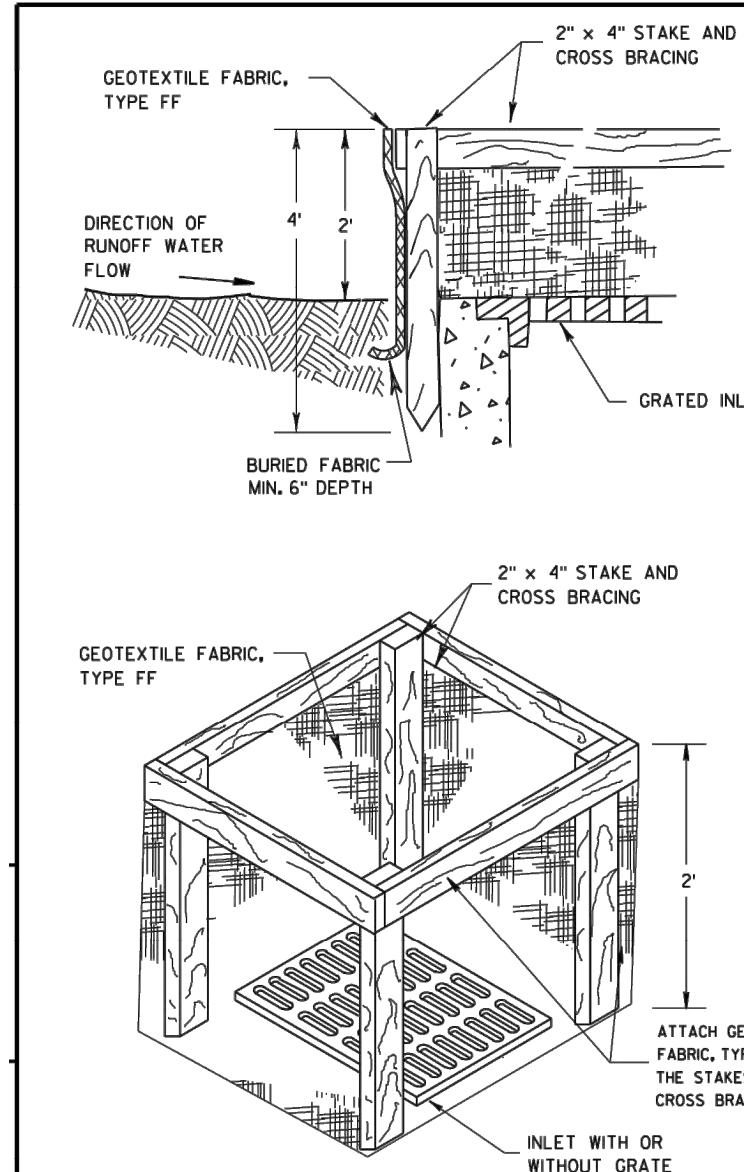
TRENCH DETAIL



SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

|                                                    |                                                                                  |
|----------------------------------------------------|----------------------------------------------------------------------------------|
| SILT FENCE                                         |                                                                                  |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                                                  |
| APPROVED<br>4-29-05<br>K0006 81700105              | DRAWN<br>RJK<br>/S/ Beth Connestra<br>CHIEF ROADWAY DEVELOPMENT ENGINEER<br>FHWA |
| PROJECT NO.<br>DATE<br>MAY 2020                    |                                                                                  |

S.D.D. 8 E 9-6



### INLET PROTECTION, TYPE A

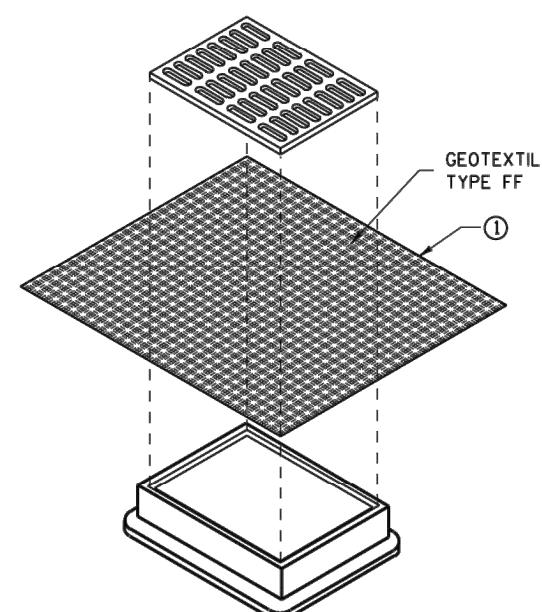
#### GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

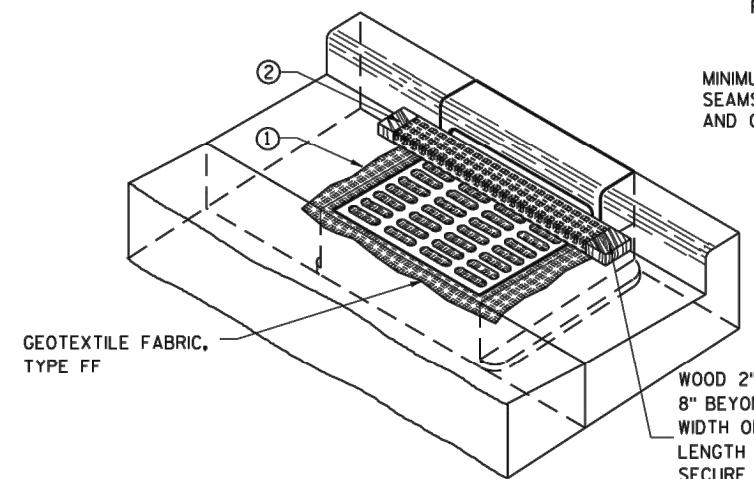
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



### INLET PROTECTION, TYPE B (WITHOUT CURB BOX)

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



### INLET PROTECTION, TYPE C (WITH CURB BOX)

#### INSTALLATION NOTES

##### TYPE B & C

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

THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

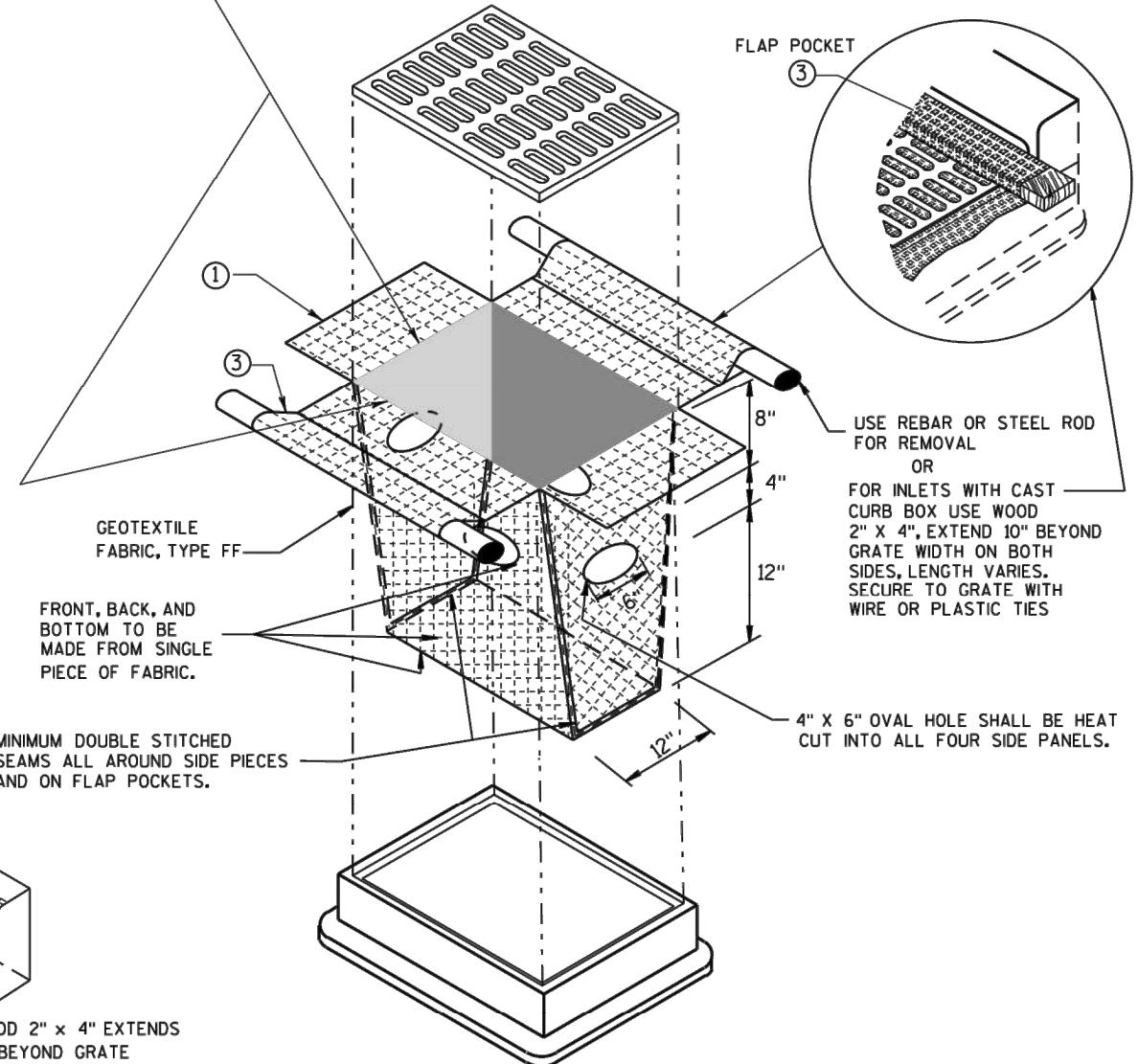
##### TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D 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 WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH 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 SPECIFICATIONS AS PER THE PLAN  
DIMENSION LENGTH AND WIDTH TO MATCH

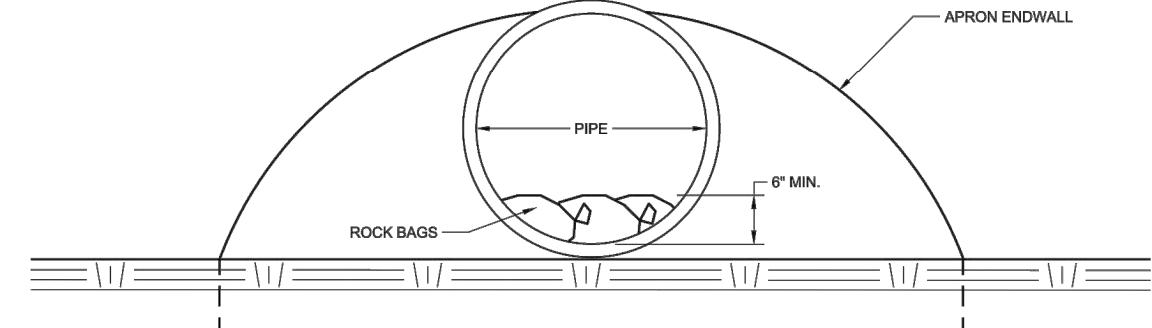


### INLET PROTECTION, TYPE D

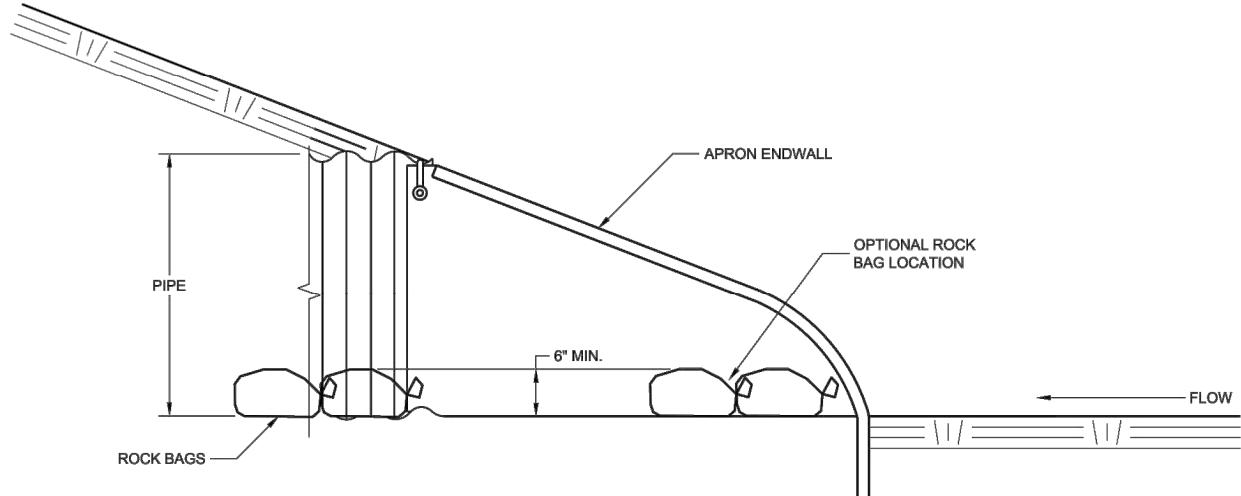
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE (2))

| INLET PROTECTION<br>TYPE A, B, C, AND D                                |                  |
|------------------------------------------------------------------------|------------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION                     |                  |
| APPROVED<br>ID-16-02 /S/ Beth Cannestra<br>DATE K0006 81700105<br>FHWA |                  |
| DESIGNED<br>RJK                                                        | DRAWN<br>RJK     |
| PROJECT NO.<br>K0006 81700105                                          | DATE<br>MAY 2020 |

S.D.D. 8 E 10-2



END VIEW



SIDE VIEW

**CULVERT PIPE CHECK**

(INSTALL ON INLET END ONLY)

**CULVERT PIPE CHECK**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2019 /S/ Daniel Schave

DATE  
MAY 2020

EROSION CONTROL ENGINEER

FHWA

**SDD 08E15 - 01**

6

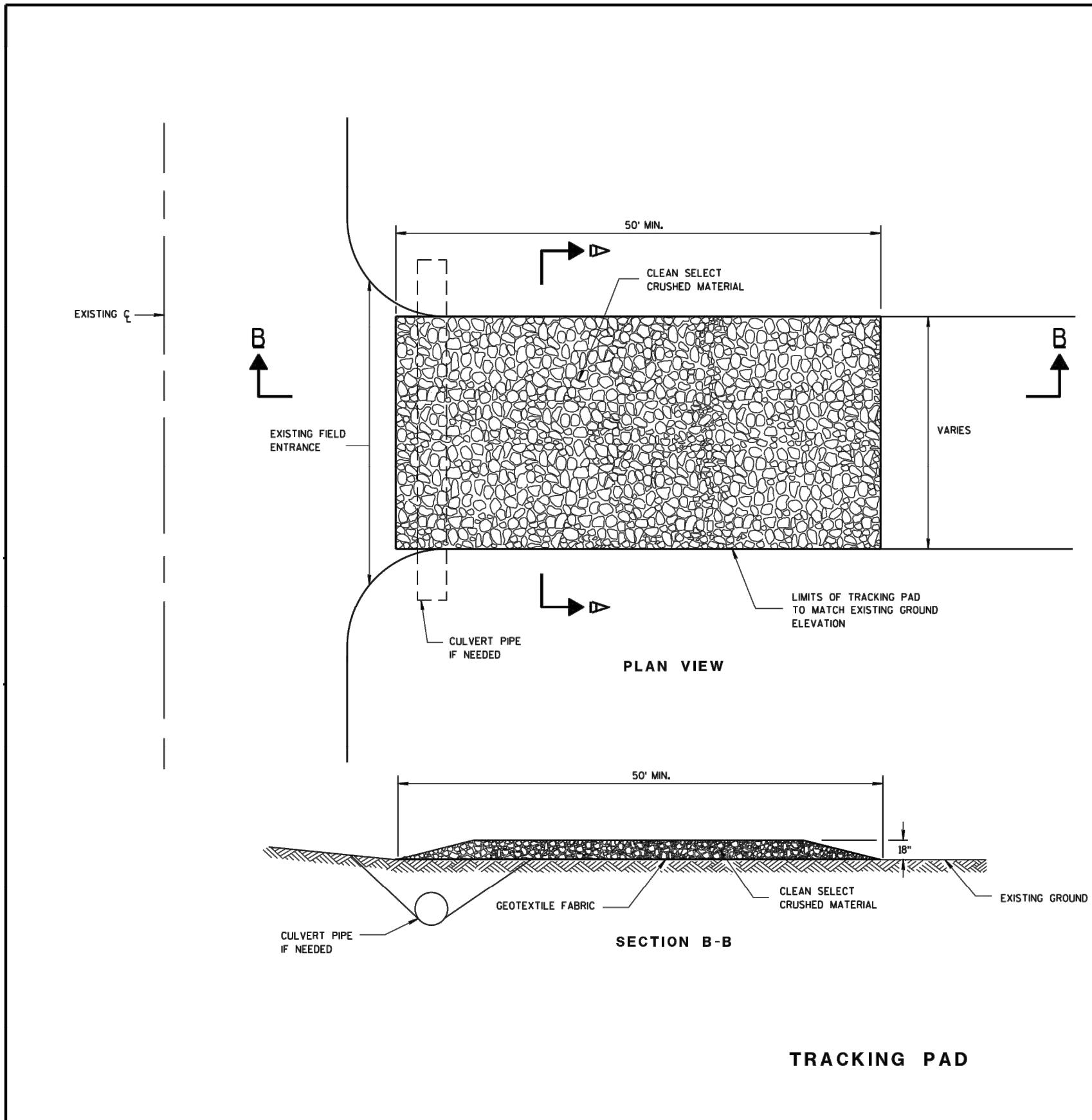
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KAUKAUNA, OUTAGAMIE COUNTY, WI**

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Mailing: P.O. BOX 1025, NEENAH, WI 54957-1025  
PH 920/751-4200 FAX 920/751-4284 MCMAHON@COMCAST.NET

cclemens, W:\PROJECTS\K00601\81700105\CADD\Civil3D\Plan Sheets\CTH CE SDD's.dwg, 68 det. Plot Date: 5/8/2020 12:23 PM, xrefs: (x-ce-trail-pronetwork-43.dwg, x-ce-trail-existpo)



## 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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

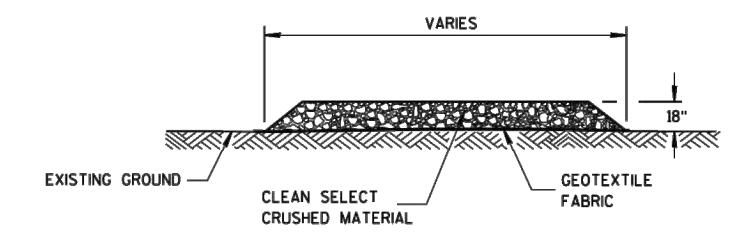
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



**SECTION A-A**

## TRACKING PAD

**TRACKING PAD**

---

**STATE OF WISCONSIN**  
**DEPARTMENT OF TRANSPORTATION**

---

**APPROVED**

3-24-2011      */S/ Jerry H. Zogg*

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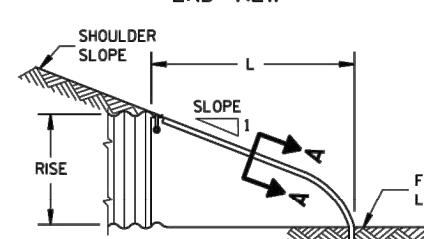
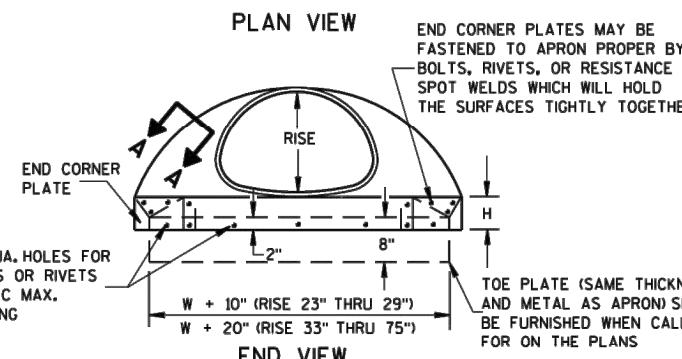
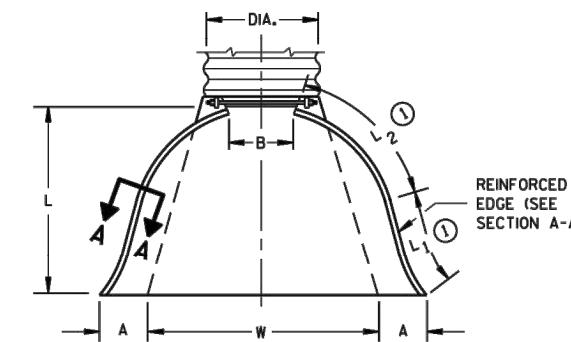
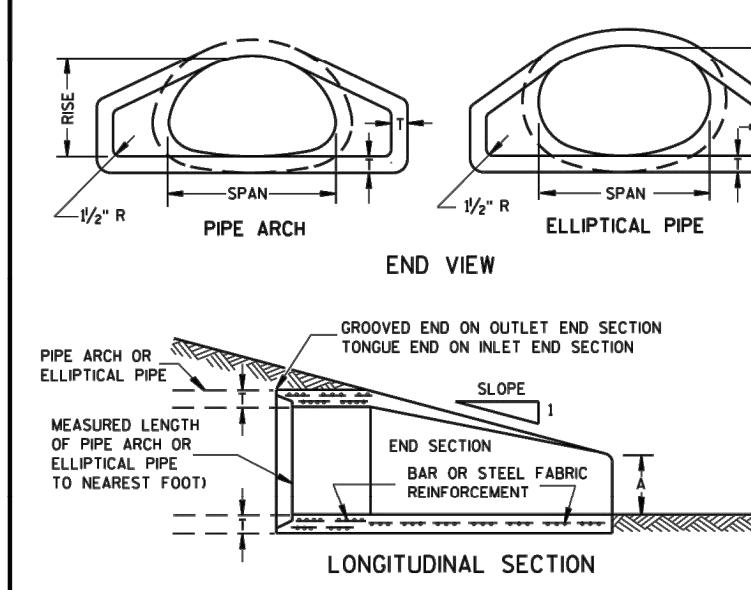
DATE      ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

FHWA

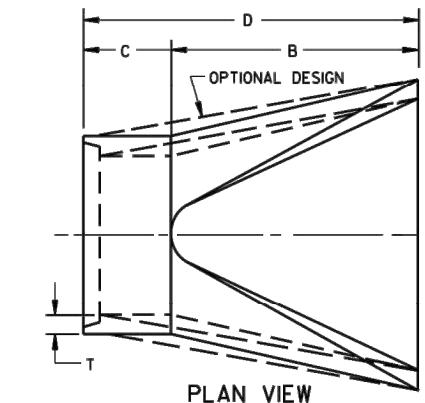
ICE TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI  
MISCELLANEOUS DETAILS

**RAIL AND HIGHWAY IMPROVEMENTS  
LAUNA, OUTAGAMIE COUNTY, WI  
MISCELLANEOUS DETAILS**

|                 |           |
|-----------------|-----------|
| DESIGNED<br>RJK | DRA<br>RJ |
| PROJECT NO.     |           |
| K0006 817001C   |           |
| DATE            |           |
| MAY 2020        |           |
| SHEET NO.       |           |



SIDE ELEVATION  
METAL ENDWALLS



SECTION A-A

| 2- 2 1/2" X 1/2" CORRUGATIONS |          |      |                                  |                     |                      |            |                |            |                       |                       |            |            |      |
|-------------------------------|----------|------|----------------------------------|---------------------|----------------------|------------|----------------|------------|-----------------------|-----------------------|------------|------------|------|
| EQUIV.<br>DIA.<br>(inches)    | (Inches) |      | MIN. THICK.<br>(inches)<br>(±1") | DIMENSIONS (Inches) |                      |            |                |            | APPROX.<br>SLOPE      | BODY                  |            |            |      |
|                               | SPAN     | RISE | STEEL                            | ALUM.               | A<br>(MAX.)<br>(±1") | B<br>(±1") | H<br>(±1 1/2") | L<br>(±1") | L <sub>1</sub><br>(1) | L <sub>2</sub><br>(1) | W<br>(±2") |            |      |
| 15                            | 17       | 13   | .064                             | .060                | 7                    | 9          | 6              | 19         | 14                    | 16                    | .30        | 2 1/2 to 1 | 1PC. |
| 18                            | 21       | 15   | .064                             | .060                | 7                    | 10         | 6              | 23         | 14                    | 19 1/2                | .36        | 2 1/2 to 1 | 1PC. |
| 21                            | 24       | 16   | .064                             | .060                | 8                    | 12         | 6              | 26         | 18                    | 21 1/2                | .42        | 2 1/2 to 1 | 1PC. |
| 24                            | 26       | 20   | .064                             | .060                | 9                    | 14         | 6              | 32         | 18                    | 27 1/2                | .48        | 2 1/2 to 1 | 1PC. |
| 30                            | 35       | 24   | .079                             | .075                | 10                   | 16         | 6              | 39         | 18                    | 37 1/2                | .60        | 2 1/2 to 1 | 1PC. |
| 36                            | 42       | 29   | .079                             | .075                | 12                   | 18         | 6              | 46         | 24                    | 45 1/2                | .75        | 2 1/2 to 1 | 1PC. |
| 42                            | 49       | 33   | .109                             | .105                | 15                   | 21         | 9              | 53         | 24                    | 54 1/2                | .95        | 2 1/2 to 1 | 2PC. |
| 48                            | 57       | 38   | .109                             | .105                | 18                   | 26         | 12             | 63         | 24                    | 68                    | .90        | 2 1/2 to 1 | 3PC. |
| 54                            | 64       | 43   | .109                             | .105                | 18                   | 30         | 12             | 70         | 24                    | 72 1/2                | 1.02       | 2 1/2 to 1 | 3PC. |
| 60                            | 71       | 47   | .109*                            | .105*               | 18                   | 33         | 12             | 77         | 30                    | 82 1/4                | 1.14       | 2 1/2 to 1 | 3PC. |
| 66                            | 77       | 52   | .109*                            | .105*               | 18                   | 36         | 12             | 77         | —                     | —                     | 1.26       | 2 to 1     | 3PC. |
| 72                            | 83       | 57   | .109*                            | .105*               | 18                   | 39         | 12             | 77         | —                     | —                     | 1.38       | 2 to 1     | 3PC. |

| 3" X 1" CORRUGATIONS       |          |      |                                  |                     |                      |            |                |            |                       |                       |            |            |      |
|----------------------------|----------|------|----------------------------------|---------------------|----------------------|------------|----------------|------------|-----------------------|-----------------------|------------|------------|------|
| EQUIV.<br>DIA.<br>(inches) | (Inches) |      | MIN. THICK.<br>(inches)<br>(±1") | DIMENSIONS (Inches) |                      |            |                |            | APPROX.<br>SLOPE      | BODY                  |            |            |      |
|                            | SPAN     | RISE | STEEL                            | ALUM.               | A<br>(MAX.)<br>(±1") | B<br>(±1") | H<br>(±1 1/2") | L<br>(±1") | L <sub>1</sub><br>(1) | L <sub>2</sub><br>(1) | W<br>(±2") |            |      |
| 48                         | 53       | 41   | .109                             | .105                | 18                   | 26         | 12             | 63         | 24                    | 72 1/2                | .90        | 2 1/2 to 1 | 2PC. |
| 54                         | 60       | 46   | .109                             | .105                | 18                   | 30         | 12             | 70         | 30                    | 82 1/4                | 1.02       | 2 to 1     | 2PC. |
| 60                         | 66       | 51   | .109*                            | .105*               | 18                   | 33         | 12             | 77         | —                     | —                     | 1.14       | 1/2 to 1   | 3PC. |
| 66                         | 73       | 55   | .109*                            | .105*               | 18                   | 36         | 12             | 77         | —                     | —                     | 1.26       | 1/2 to 1   | 3PC. |
| 72                         | 81       | 59   | .109*                            | .105*               | 18                   | 39         | 12             | 77         | —                     | —                     | 1.38       | 2 to 1     | 3PC. |
| 78                         | 87       | 63   | .109*                            | .105*               | 22                   | 38         | 12             | 77         | —                     | —                     | 1.48       | 1/2 to 1   | 3PC. |
| 84                         | 95       | 67   | .109*                            | .105*               | 22                   | 34         | 12             | 77         | —                     | —                     | 1.62       | 1/2 to 1   | 3PC. |
| 90                         | 103      | 71   | .109*                            | .105*               | 22                   | 38         | 12             | 77         | —                     | —                     | 1.74       | 1/2 to 1   | 3PC. |
| 96                         | 112      | 75   | .109*                            | .105*               | 24                   | 40         | 12             | 77         | —                     | —                     | 1.74       | 1/2 to 1   | 3PC. |

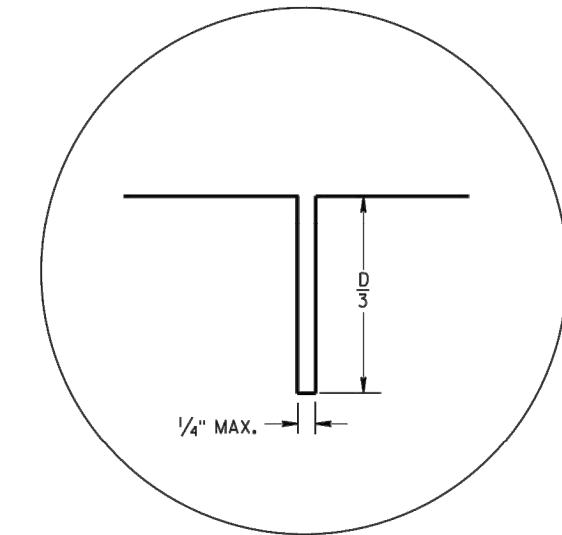
NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.  
\* EXCEPT CENTER PANEL  
SEE GENERAL NOTES

| REINFORCED CONCRETE PIPE ARCH |        |        |                     |        |    |    |     |                  |        |
|-------------------------------|--------|--------|---------------------|--------|----|----|-----|------------------|--------|
| EQUIV.<br>DIA.<br>(inches)    | **SPAN | **RISE | DIMENSIONS (Inches) |        |    |    |     | APPROX.<br>SLOPE |        |
|                               |        |        | T                   | A      | B  | C  | D   |                  |        |
| 24                            | 29     | 18     | 3                   | 8 1/2  | 39 | 33 | 72  | 48               | 3 to 1 |
| 30                            | 36     | 22     | 3 1/2               | 50     | 46 | 96 | 60  | 3 to 1           |        |
| 36                            | 44     | 27     | 4                   | 11 1/8 | 60 | 36 | 96  | 72               | 3 to 1 |
| 42                            | 51     | 31     | 4 1/2               | 60     | 36 | 96 | 78  | 72               | 3 to 1 |
| 48                            | 58     | 36     | 5                   | 21     | 60 | 36 | 96  | 84               | 3 to 1 |
| 54                            | 65     | 40     | 5 1/2               | 25/2   | 60 | 36 | 96  | 90               | 3 to 1 |
| 60                            | 73     | 45     | 6                   | 31     | 60 | 36 | 96  | 96               | 3 to 1 |
| 72                            | 86     | 54     | 7                   | 31     | 60 | 39 | 99  | 120              | 2 to 1 |
| 84                            | 102    | 62     | 8                   | 28 1/2 | 83 | 19 | 102 | 144              | 2 to 1 |

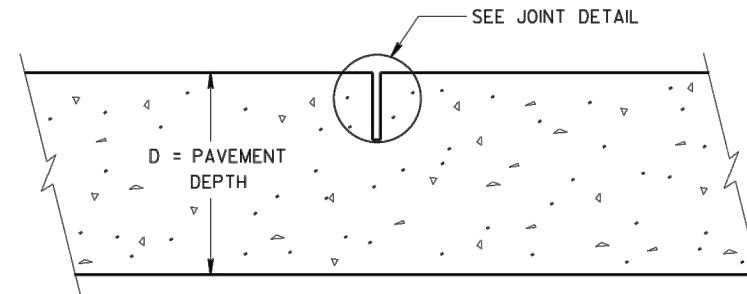
| REINFORCED CONCRETE ELLIPTICAL PIPE |        |        |                     |        |    |    |    |                  |            |
|-------------------------------------|--------|--------|---------------------|--------|----|----|----|------------------|------------|
| EQUIV.<br>DIA.<br>(inches)          | **SPAN | **RISE | DIMENSIONS (Inches) |        |    |    |    | APPROX.<br>SLOPE |            |
|                                     |        |        | T                   | A      | B  | C  | D  |                  |            |
| 24                                  | 30     | 19     | 3 1/4               | 8 1/2  | 39 | 33 | 72 | 48               | 3 to 1     |
| 30                                  | 38     | 24     | 3 3/4               | 9 1/2  | 54 | 18 | 72 | 60               | 3 to 1     |
| 36                                  | 45     | 29     | 4 1/2               | 11 1/8 | 60 | 24 | 84 | 72               | 2 1/2 to 1 |
| 42                                  | 53     | 34     | 5                   | 15 1/4 | 60 | 36 | 96 | 78               | 2 1/2 to 1 |
| 48                                  | 60     | 38     | 5 1/2               | 21     | 60 | 36 | 96 | 84               | 2 1/2 to 1 |
| 54                                  | 68     | 43     | 6                   | 25/2   | 60 | 36 | 96 | 90               | 2 1/2 to 1 |
| 60                                  | 76     | 48     | 6 1/2               | 30     | 60 | 36 |    |                  |            |



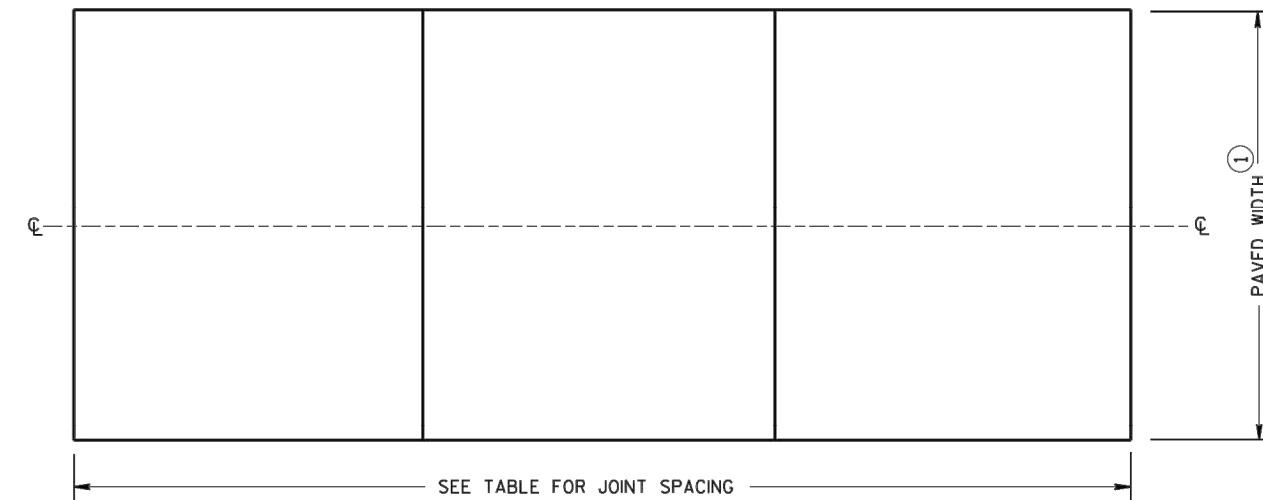




JOINT DETAIL



CONTRACTION JOINT



CONTRACTION JOINT LOCATIONS

PAVEMENT DEPTH AND JOINT SPACING TABLE

| PAVEMENT DEPTH (D) | CONTRACTION JOINT SPACING |
|--------------------|---------------------------|
| 6", 6 1/2"         | 12'                       |
| 7", 7 1/2"         | 14'                       |
| 8" & ABOVE         | 15'                       |

## GENERAL NOTES

## CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE.

LOCATE AND ORIENT CONTRACTION JOINTS THROUGH INTERSECTIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

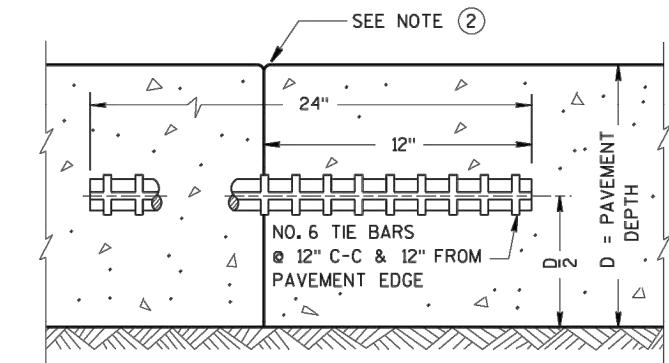
## CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO THE CONTRACTION JOINTS.

FORM OR SAW CONSTRUCTION JOINTS.

THE CONTRACTOR MAY INSERT TIE BARS THROUGH THE HEADER BOARD AFTER THE CONCRETE HAS BEEN PLACED.

- ① REFER TO TYPICAL CROSS SECTIONS FOR PAVED WIDTH AND LOCATION OF LONGITUDINAL JOINTS.
- ② PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.

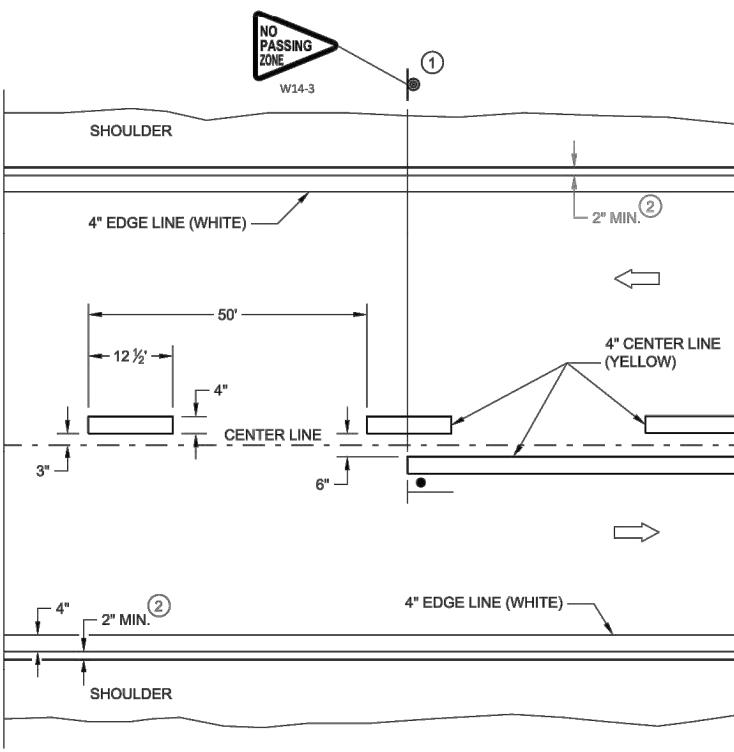


TIED TRANSVERSE CONSTRUCTION JOINT

|                                                                                   |  |
|-----------------------------------------------------------------------------------|--|
| URBAN<br>NON-DOWELED CONCRETE<br>PAVEMENT                                         |  |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION                                |  |
| APPROVED<br>March 2018 /S/ Peter Kemp, P.E.<br>PROJECT NO. K0006 81700105<br>DATE |  |
| PAVEMENT SUPERVISOR<br>FHWA                                                       |  |

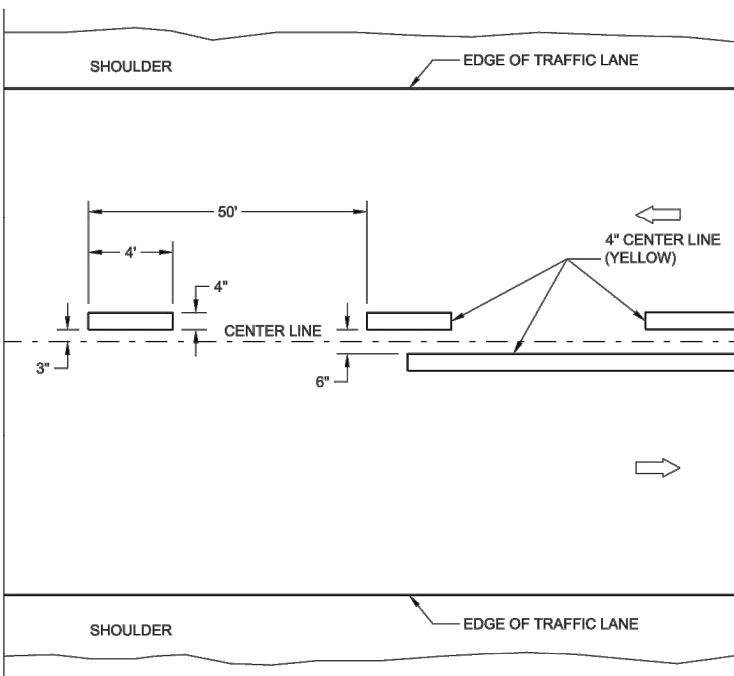
S.D.D. 13 C 4-17

CE TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WIMcMAHON  
ENGINEERS, INC.  
1445 McMAHON DRIVE, NEENAH, WI 54956  
Mailing: P.O. BOX 1025, NEENAH, WI 54956  
Phone: 920/751-4200 Fax: 920/751-4284 MCGRFCOM



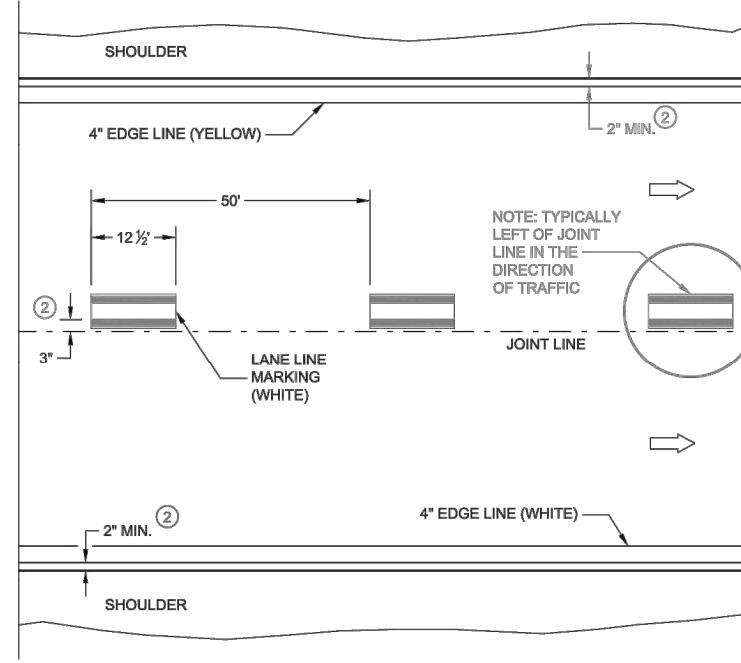
## **TWO WAY TRAFFIC**

## PERMANENT PAVEMENT MARKING

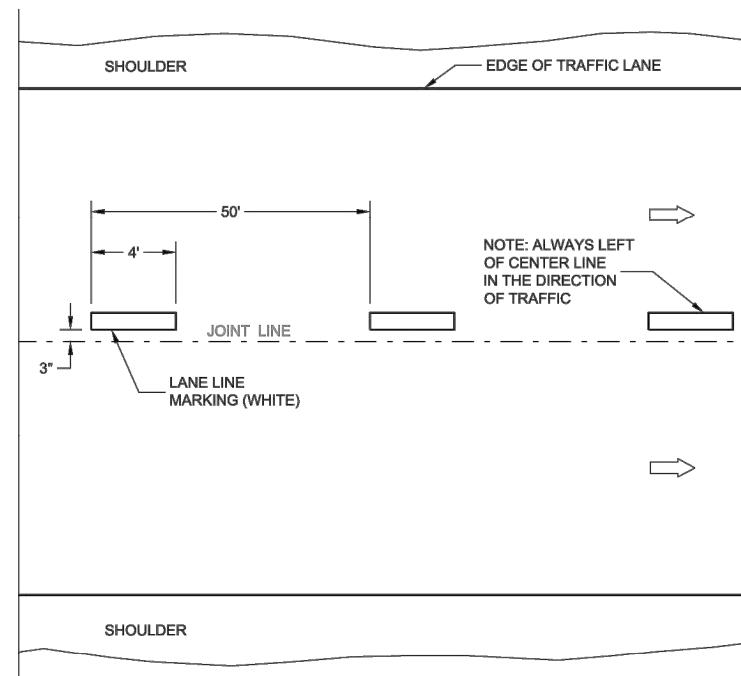


**TWO WAY TRAFFIC**

## TEMPORARY PAVEMENT MARKING



## ONE WAY TRAFFIC



#### **ONE WAY TRAFFIC**

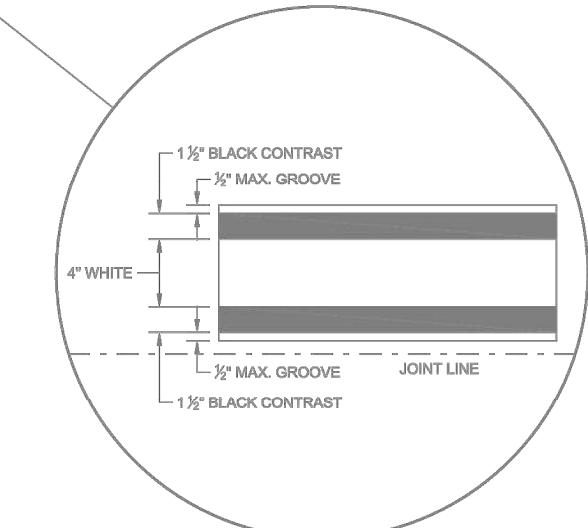
## **GENERAL NOTES**

DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITH 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

## LEGEND

- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



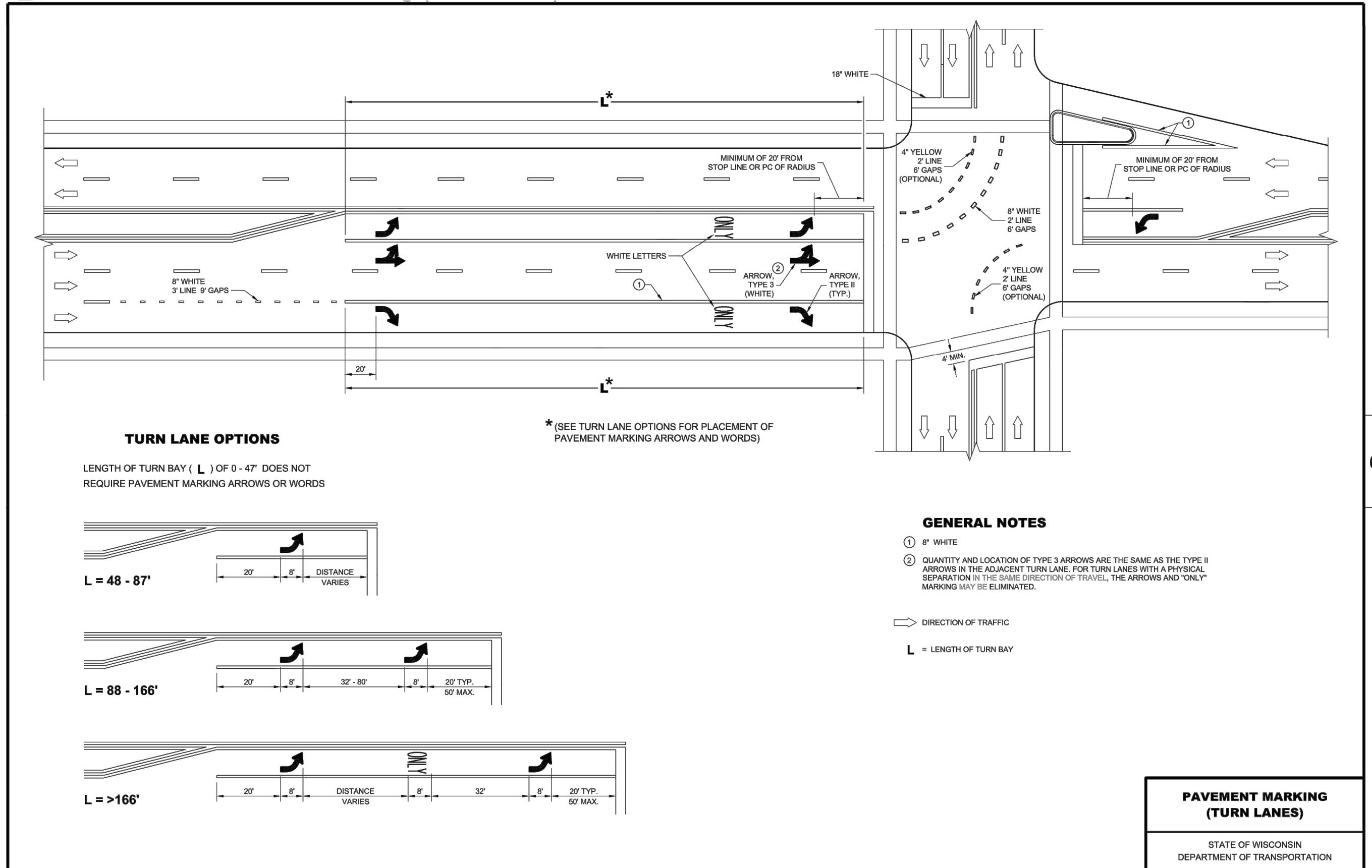
## LONGITUDINAL MARKING (MAIN LINE)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PROVED

January 2020 /S/ Matthew Rauch  
DATE STATEWIDE SIGNING AND MARKING  
ENGINEER

DE



**SDD15C08 - 20c**

**6**

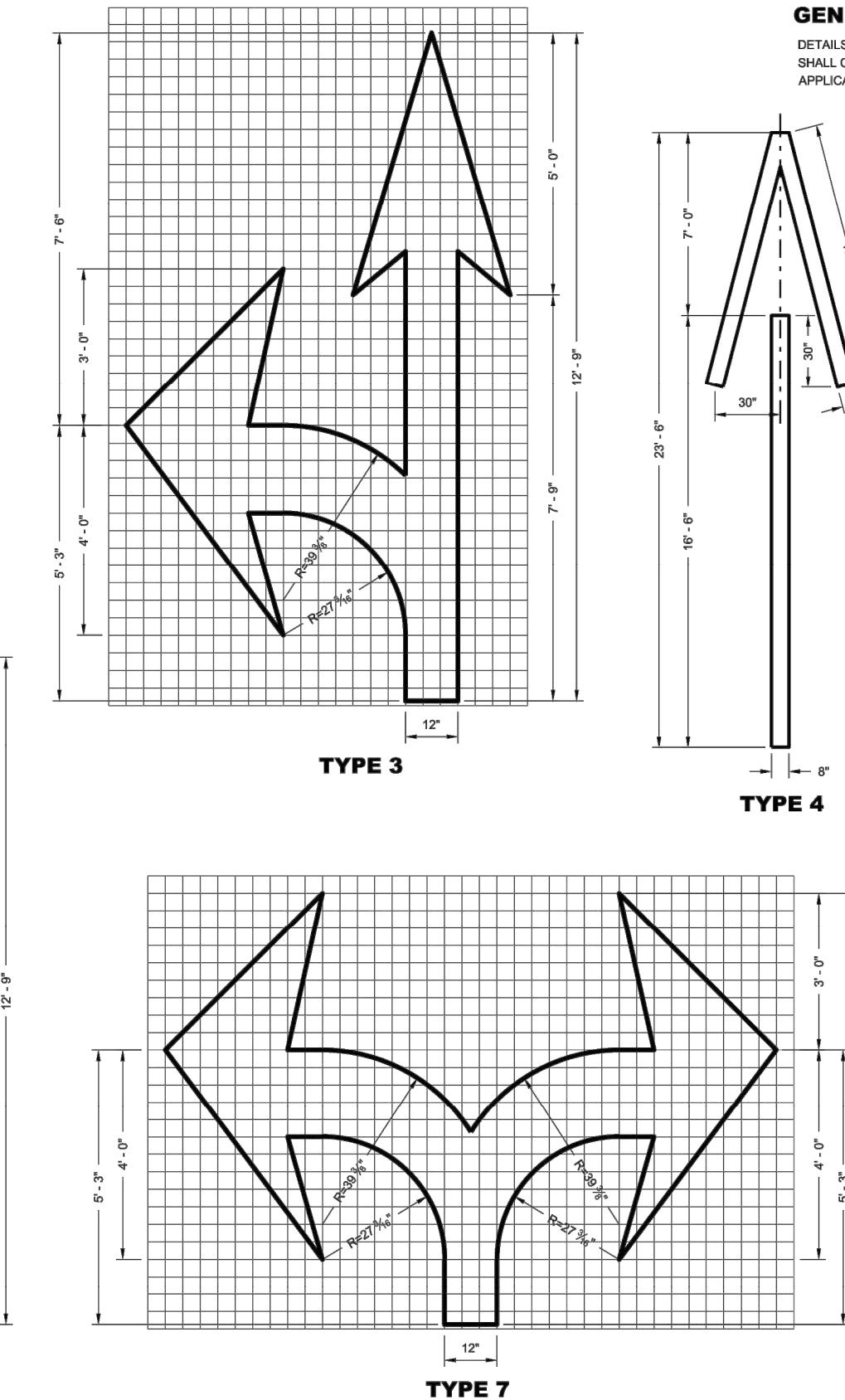
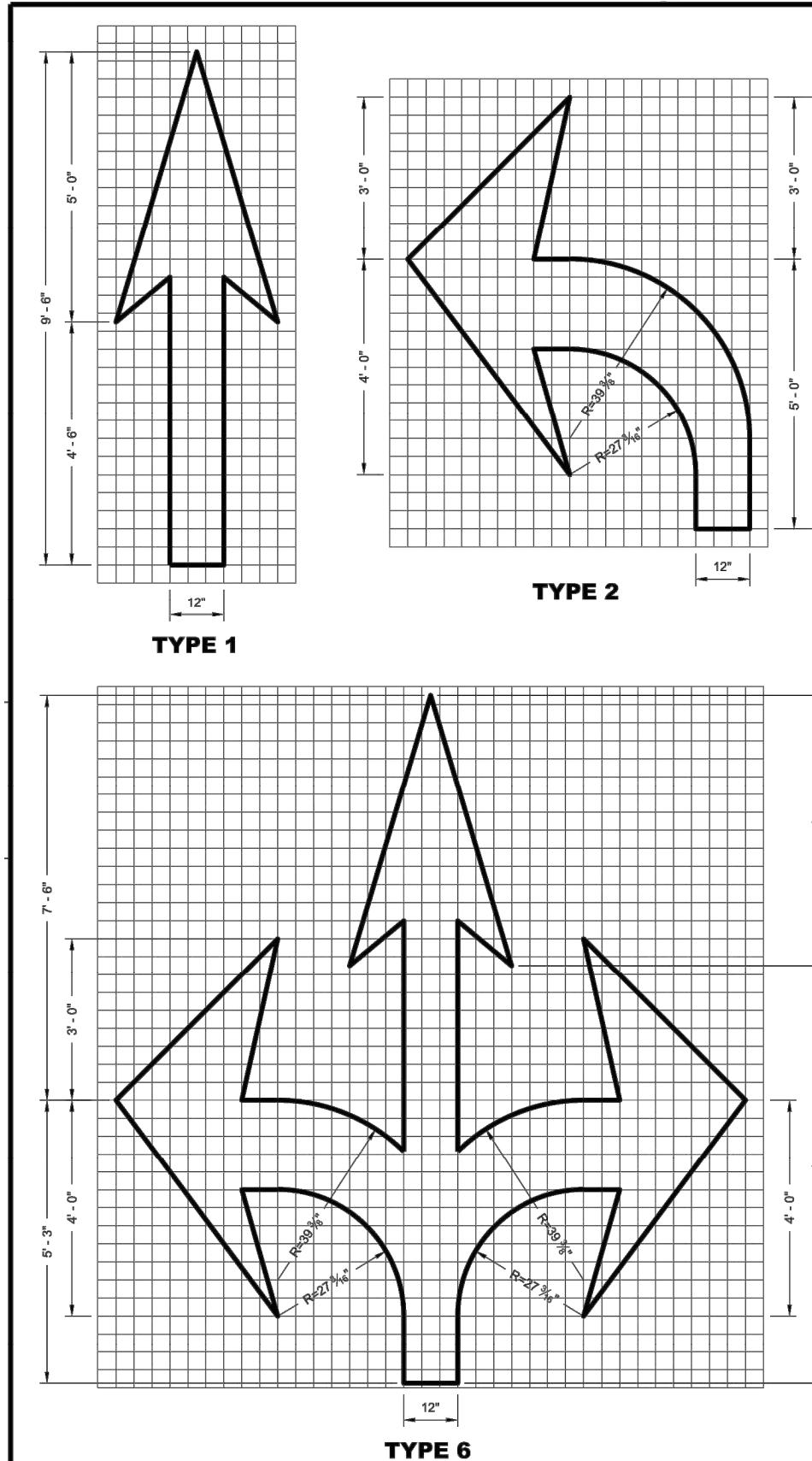
**74**

**CE TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI**

**MISCELLANEOUS DETAILS**

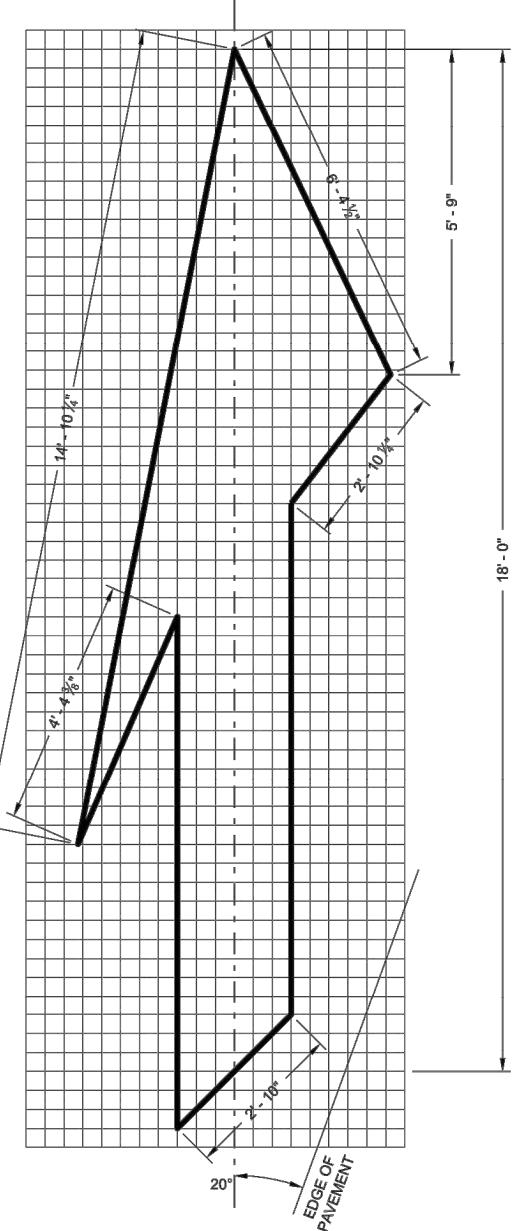
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Mailing: P.O. BOX 1025, NEENAH, WI 54957-1025  
PH 920/751-4200, FAX 920/751-4284, MCMAHON@COMCAST.NET



## **GENERAL NOTES**

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



## TYPE 5 LANE DROP ARROW

## PAVEMENT MARKING ARROWS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

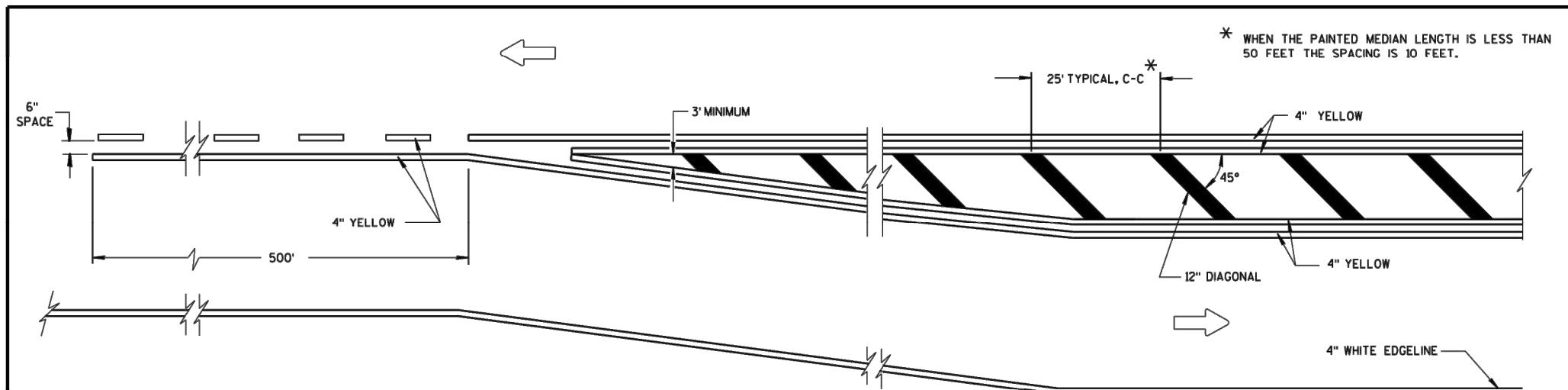
APPROVED  
November 2019 /S/ Matthew Rauch  
DATE STATE SIGNING AND MARKING  
FHWA ENGINEER

THE TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI  
MISCELLANEOUS DETAILS

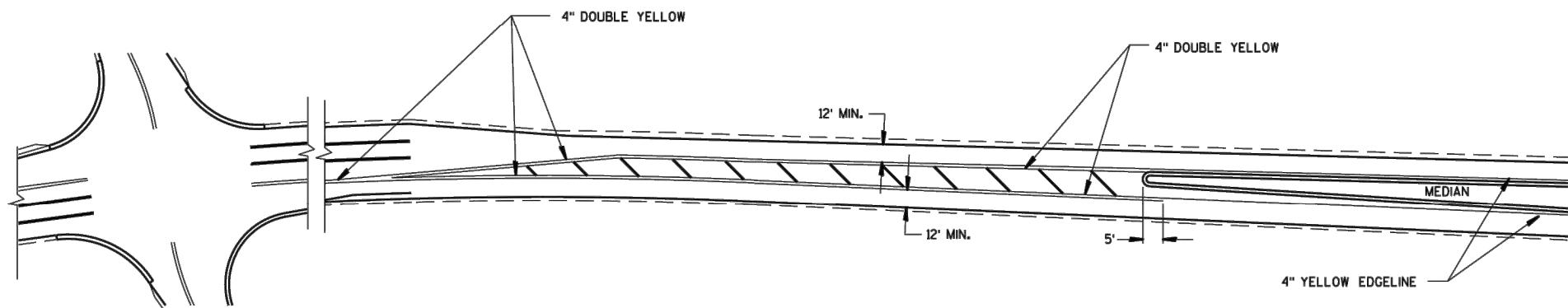
| NO. | DATE | REVISION |
|-----|------|----------|
|     |      |          |

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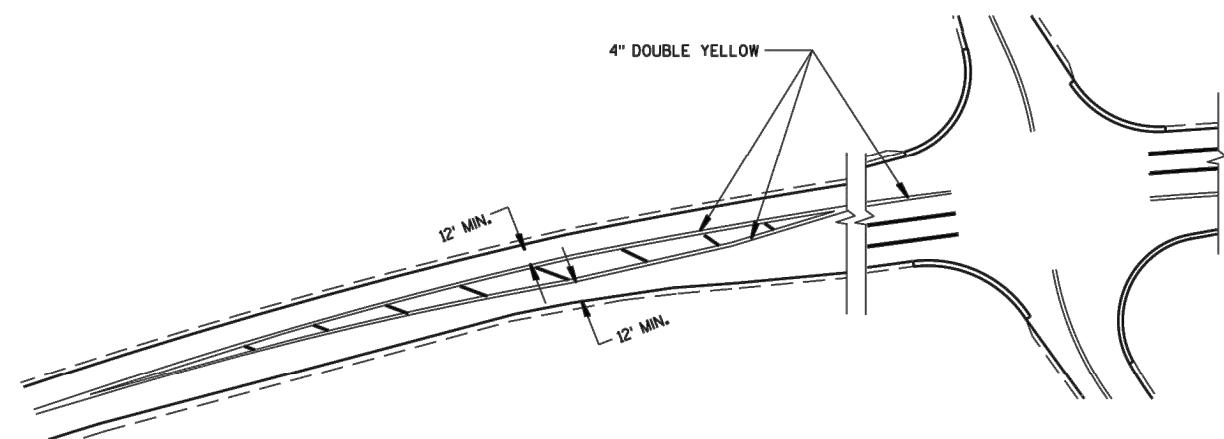
**CE TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI**



MEDIAN ISLAND DETAIL



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON APPROACH MARKINGS

|                                                    |                                    |
|----------------------------------------------------|------------------------------------|
| MEDIAN ISLAND MARKING                              |                                    |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                    |
| APPROVED                                           | S/ Matthew Rauch                   |
| June 2017                                          | STATE SIGNING AND MARKING ENGINEER |
| FHWA                                               |                                    |

S.D.D. 15 C 18-4

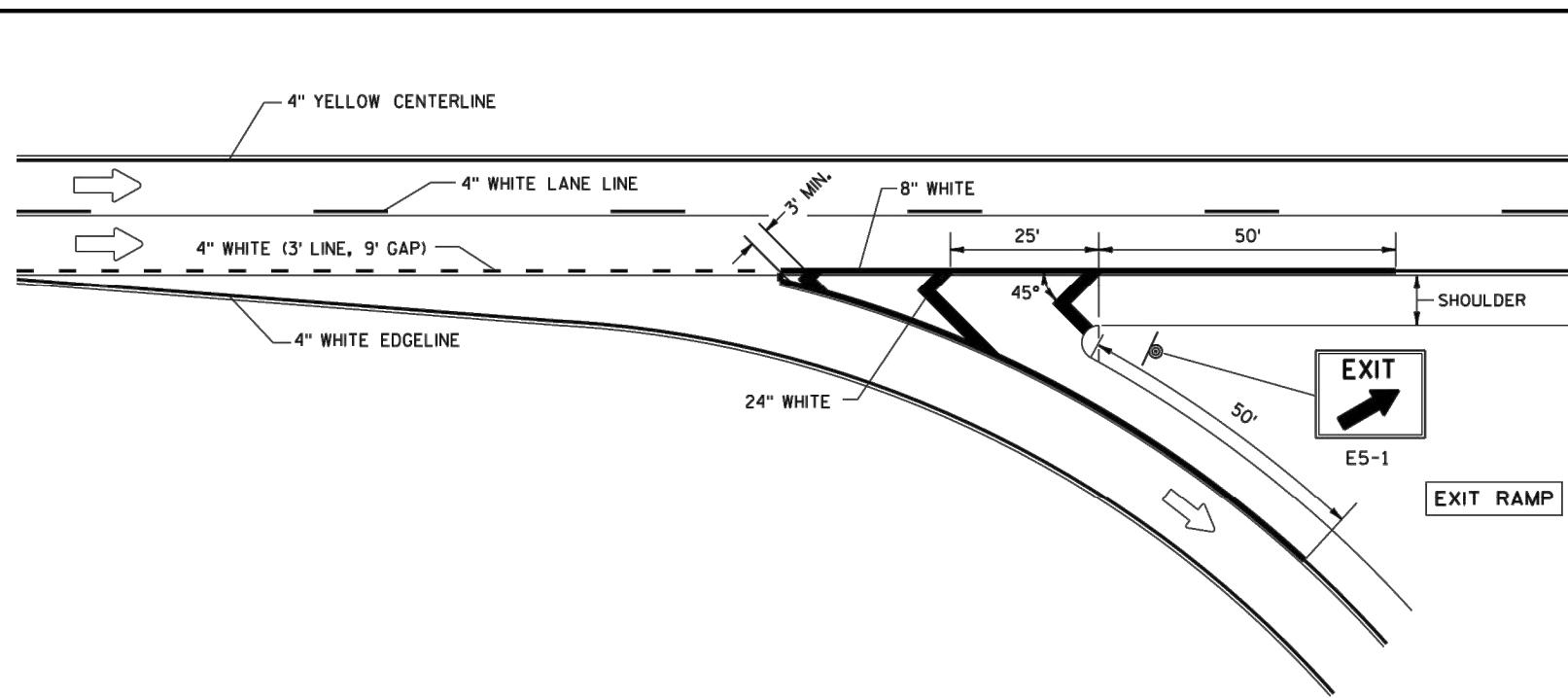
CE TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI

MISCELLANEOUS DETAILS

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McMAHON ASSOCIATES, INC.  
ENGINEERS AND PLANNERS

1445 McMAHON DRIVE, NEENAH, WI 54956  
Mailing: P.O. BOX 1025 NEENAH, WI 54956-1025  
PH 920/751-4200 FAX 920/751-4284 MCMAHON.COM

## PAVEMENT MARKING FOR EXIT RAMPS



## GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

## LEGEND

 DIRECTION OF TRAVEL

© SIGN ON PERMANENT SUPPORT

## SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL EXIT-RAMP

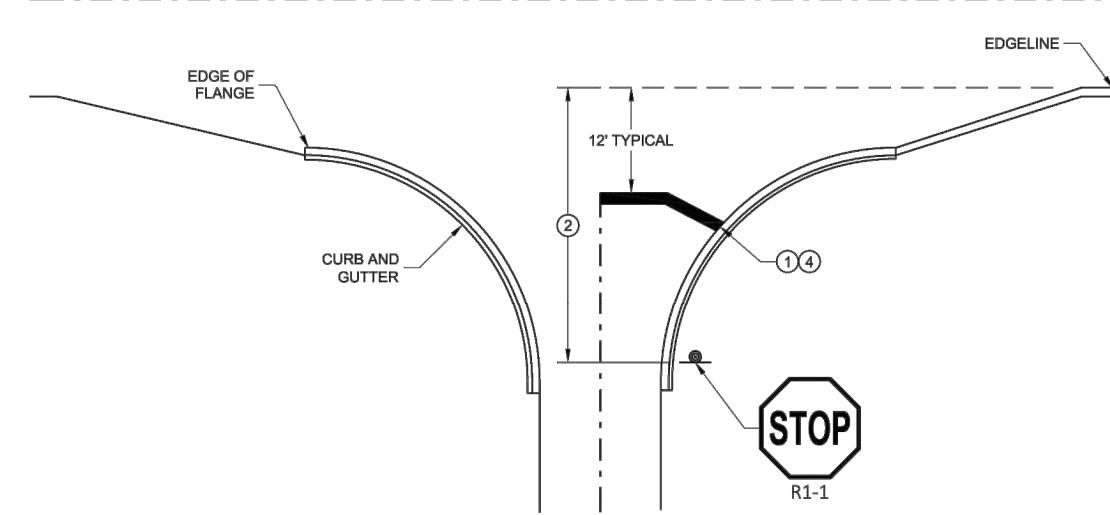
## PAVEMENT MARKING (RAMPS AND GORES)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

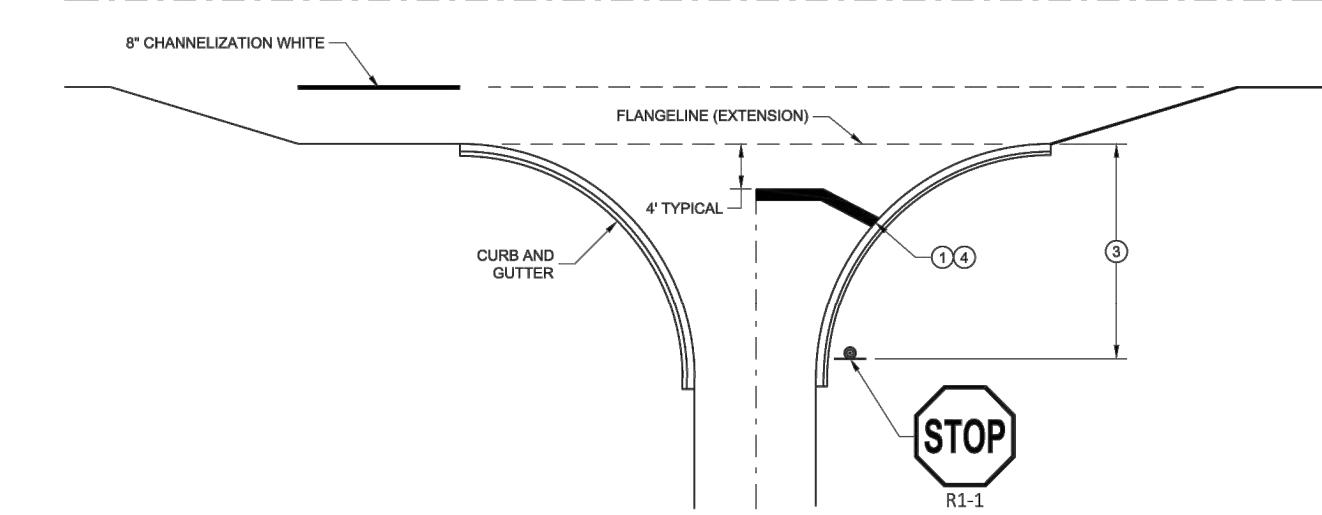
TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI  
MISCELLANEOUS DETAILS

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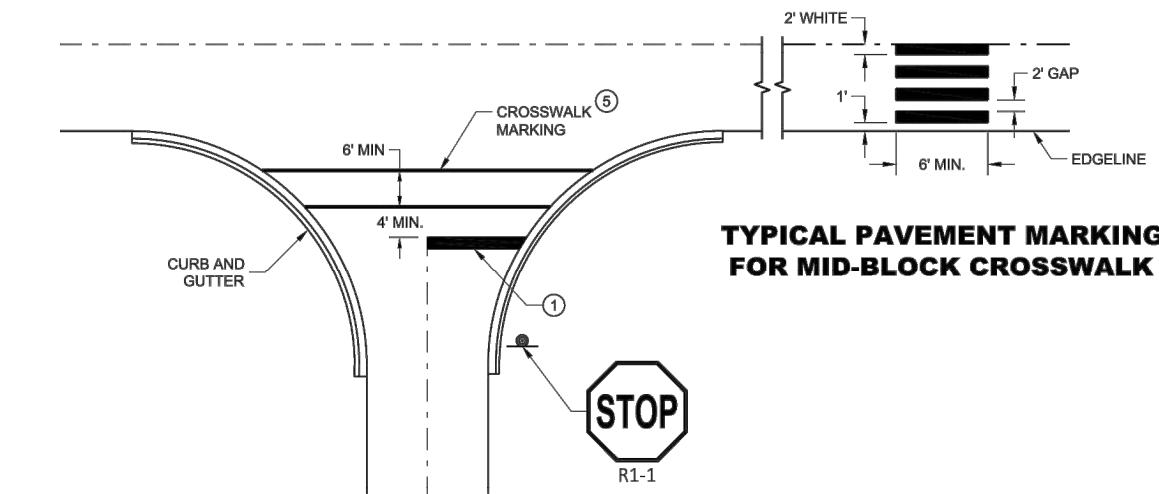
|               |     |
|---------------|-----|
| DESIGNED      | DRA |
| RJK           | RJ  |
| PROJECT NO.   |     |
| K0006 8170010 |     |
| DATE          |     |
| MAY 2020      |     |



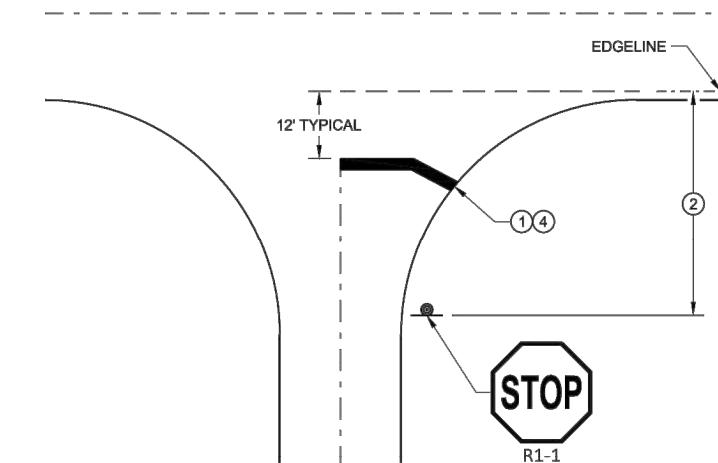
## **TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER**



## **TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS WITH RIGHT TURN LANE**



## **TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS WITH CROSSWALK MARKING**



## **TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER**

**STOP LINE AND CROSSWALK  
PAVEMENT MARKING**

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STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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APPROVED  
November 2019  
DATE \_\_\_\_\_

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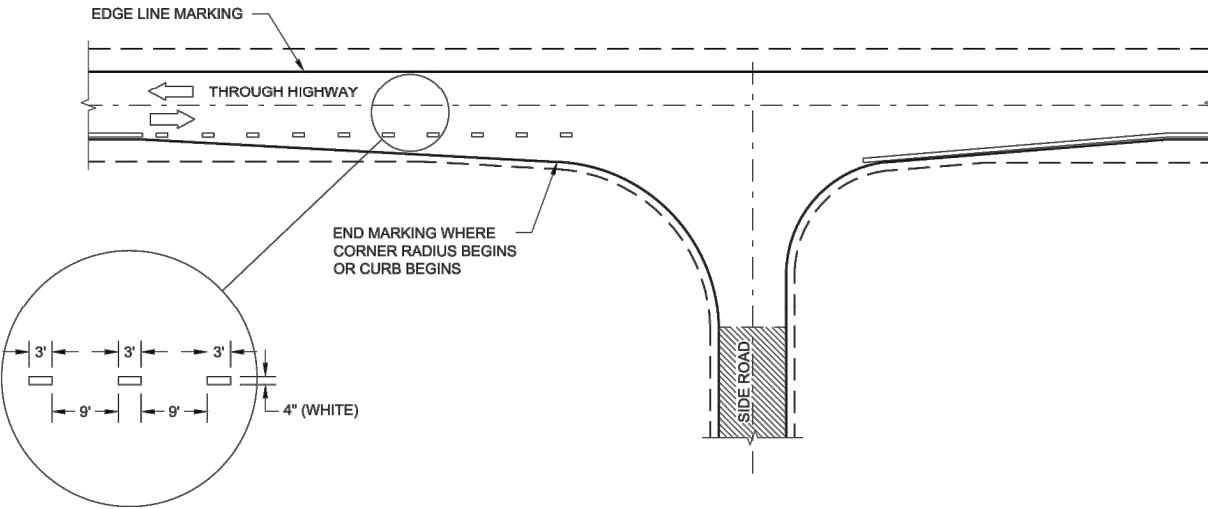
*S/I* Matthew Rauch  
STATE SIGNING AND MARKING  
ENGINEER

SDD 15C33 - 04

## 6 TRAIL AND HIGHWAY IMPROVEMENTS KAUKAUNA, OUTAGAMIE COUNTY, WI

**McMAHON**  
McMAHON ASSOCIATES, INC.  
1445 McMAMON DRIVE NEENAH, WI 54956  
Mailing: P.O. BOX 1025 NEENAH, WI 54957-1025

## MINOR INTERSECTION



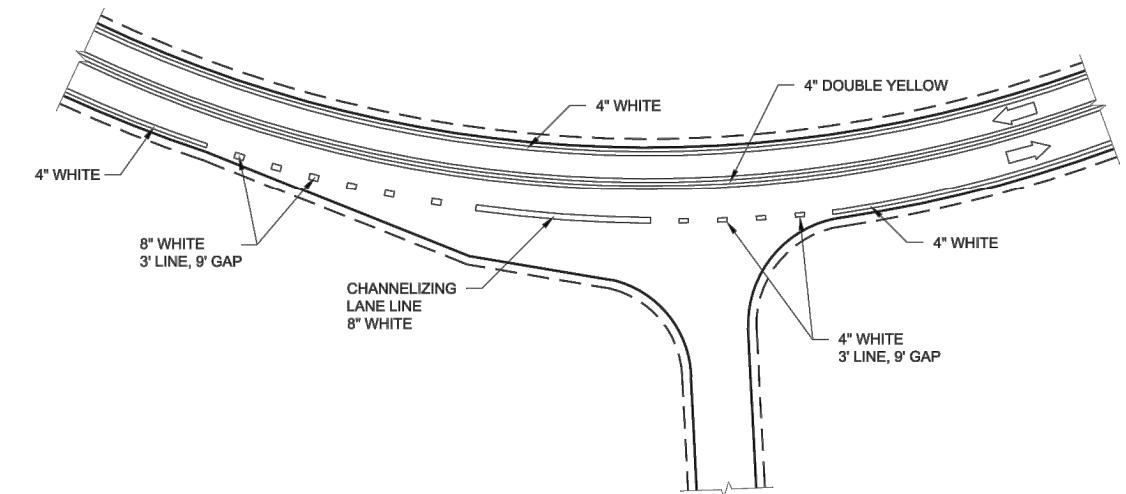
## **GENERAL NOTES**

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

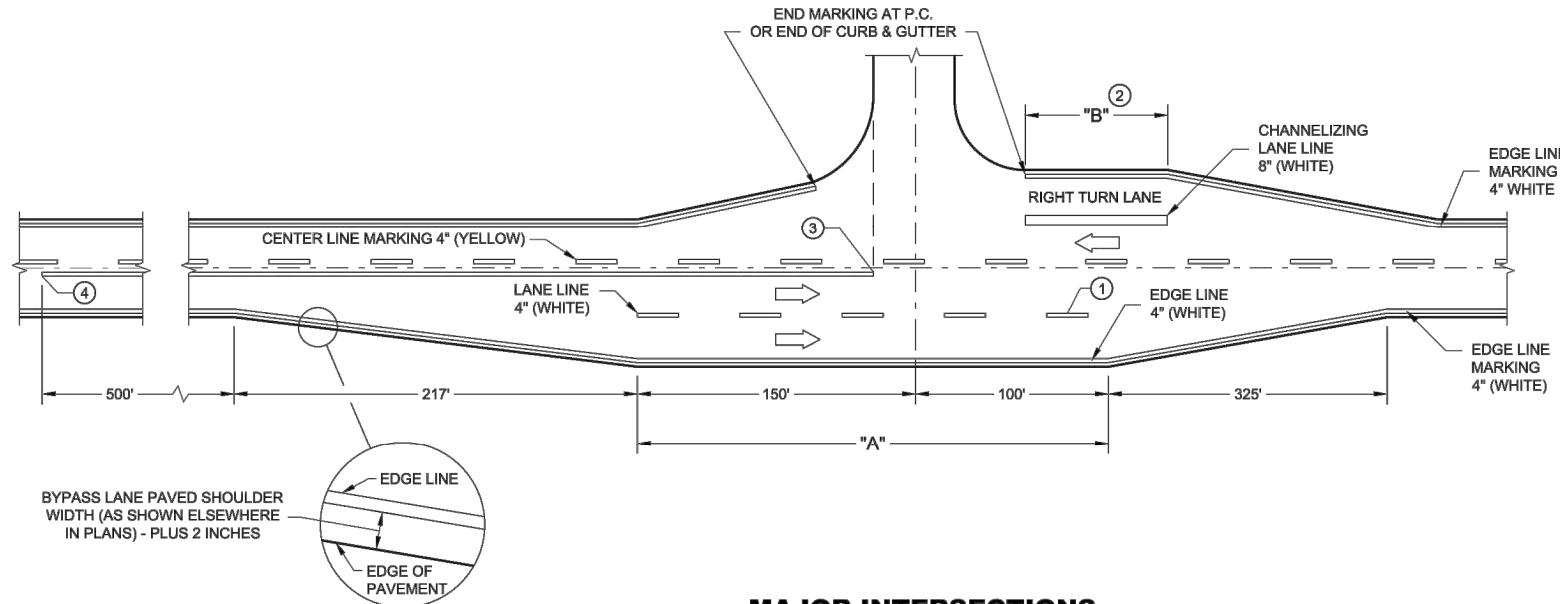
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

## LEGEND

→ DIRECTION OF TRAVEL



## **INTERSECTION ON OUTSIDE OF CURVE**



## MAJOR INTERSECTIONS

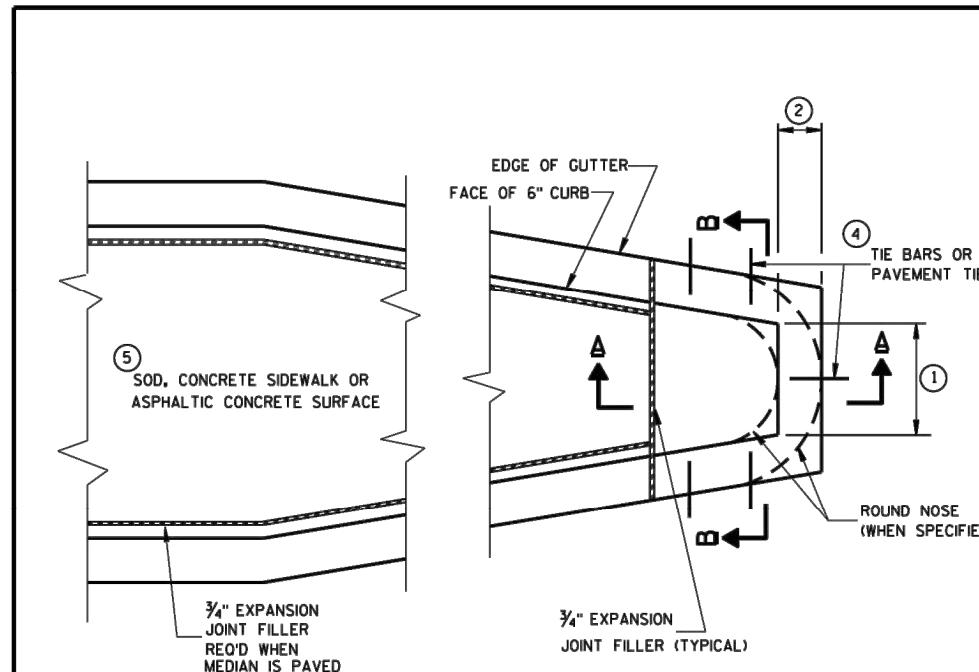
## **PAVEMENT MARKING (INTERSECTIONS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

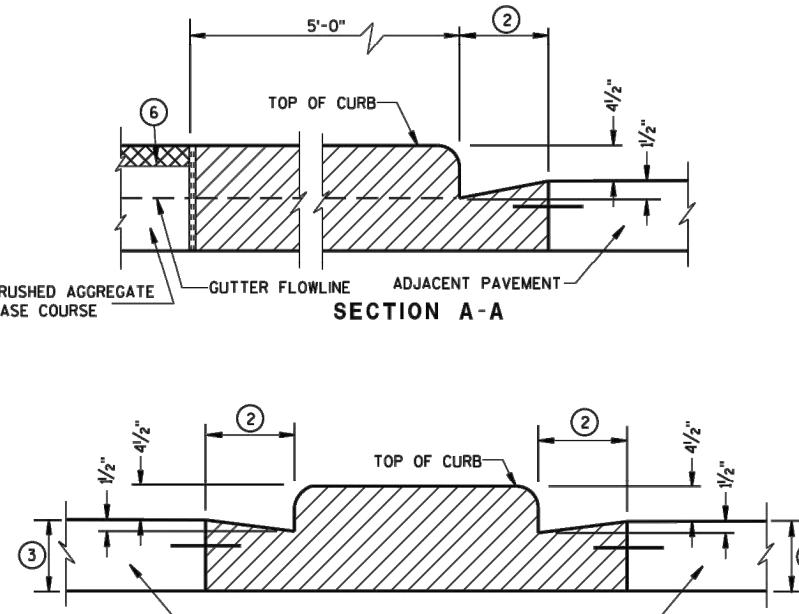
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**TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI  
MISCELLANEOUS DETAILS**

|                               |              |
|-------------------------------|--------------|
| CE                            |              |
| DESIGNED<br>RJK               | DRAWN<br>RJK |
| PROJECT NO.<br>K0006 81700105 |              |
| DATE                          |              |



## CONCRETE MEDIAN BLUNT NOSE DETAIL



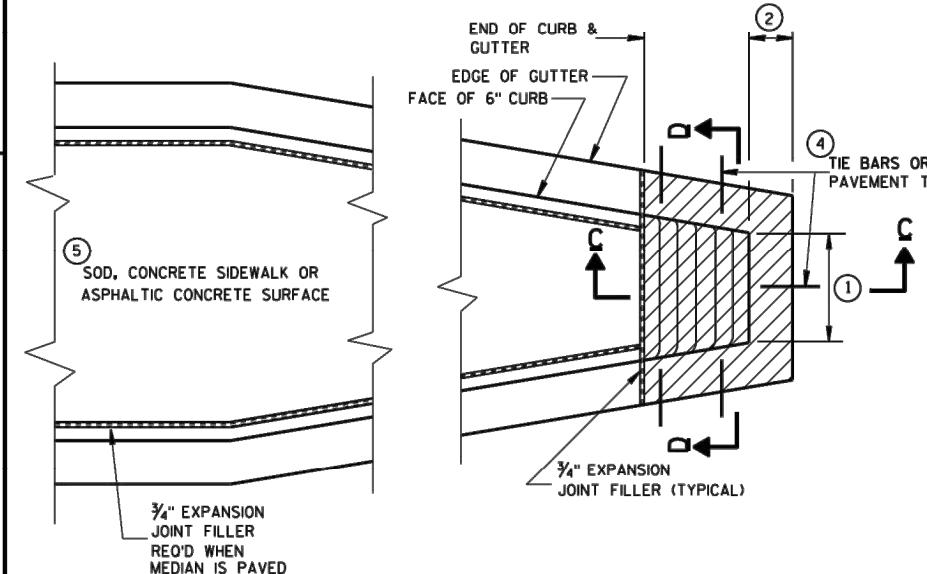
## GENERAL NOTES

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.

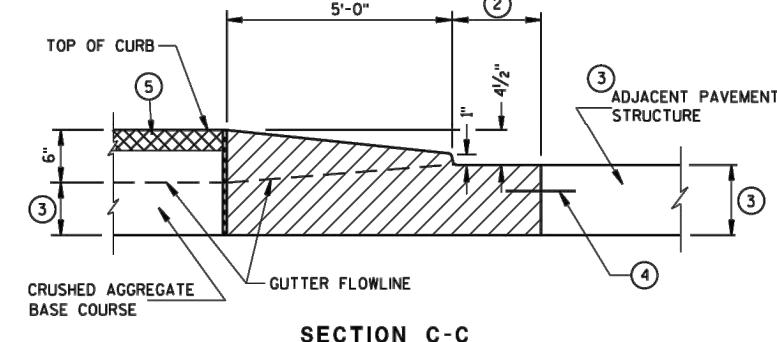
- ① SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).
- ② WIDTH OF CUTTER TO MATCH EXISTING ADJACENT CUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.
- ③ DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:
  - (1) NEW OR EXISTING CONCRETE PAVEMENT.
  - (2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.
  - (3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.
- ④ TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.

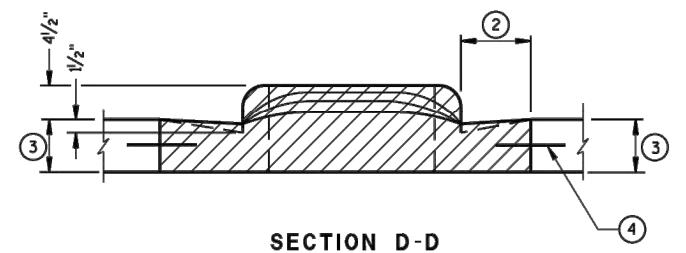
⑤ SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.



**CONCRETE MEDIAN SLOPED NOSE TYPE 1**



**CONCRETE MEDIAN SLOPED NOSE TYPE 2**



**SECTION D-D**

**CONCRETE MEDIAN NOSE**

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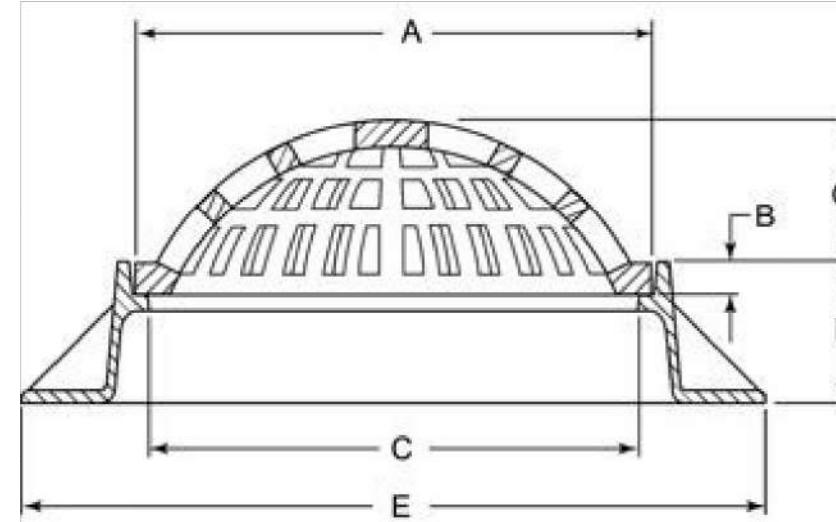
**STATE OF WISCONSIN**  
**DEPARTMENT OF TRANSPORTATION**

---

S.D.D. 11 B 2-2

TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI  
MISCELLANEOUS DETAILS

**MCMAHON** ENGINEER ARCHITECT  
McMAHON ASSOCIATES, INC.  
1445 McMAMHON DRIVE, NEENAH, WI 54956



**Illustrating R-2560-E**

| DIMENSIONS ARE IN INCHES |        |     |    |    |   |   |           |
|--------------------------|--------|-----|----|----|---|---|-----------|
| CATALOG NUMBER           | A      | B   | C  | E  | F | G | FRAME/LID |
| R-2560-E1                | 25 3/4 | 7/8 | 24 | 35 | 7 | 6 | R-1733    |

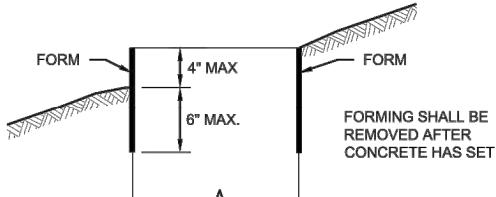
**CE TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI  
MISCELLANEOUS DETAILS**

|                               |                  |
|-------------------------------|------------------|
| DESIGNED<br>RJK               | DRAWN<br>RJK     |
| PROJECT NO.<br>K0006 81700105 | DATE<br>MAY 2020 |
| SHEET NO.                     | 81               |

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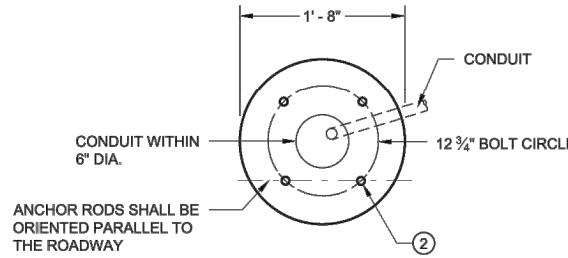
McMAHON ASSOCIATES, INC.  
1445 McMAHON DRIVE, NEENAH, WI 54956  
Mailing: P.O. BOX 1025, NEENAH, WI 54957-1025  
Phone: 920/751-4284 Fax: 920/751-4284 MCGRFCOM

FORM DEPTH SHALL BE  
NO MORE THAN 6" BELOW  
GRADE ON THE LOWER  
SIDE OF BASE



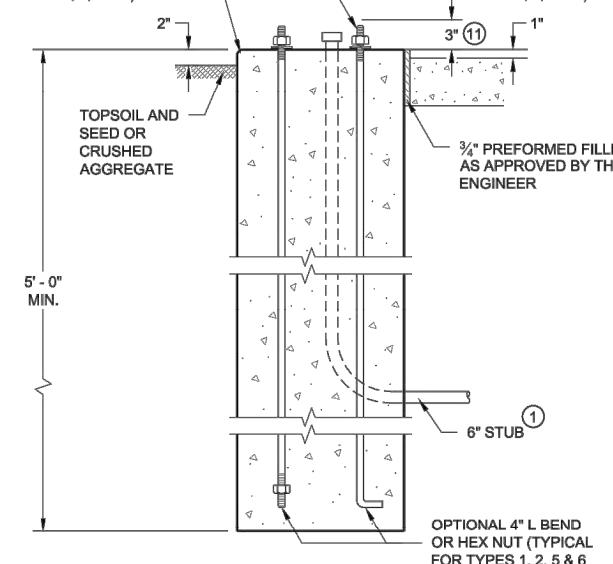
### FORMING DETAIL

| QUANTITY REQUIREMENTS           | CONCRETE BASE TYPE |      |       |
|---------------------------------|--------------------|------|-------|
|                                 | 1                  | 2    | 5 & 6 |
| APPROX. CUBIC YARDS OF CONCRETE | 0.40               | 0.57 | 0.40  |
| LBS. OF HOOP BAR STEEL          | NONE               | 23   | 16    |
| LBS. OF VERTICAL BAR STEEL      | NONE               | 60   | 18    |



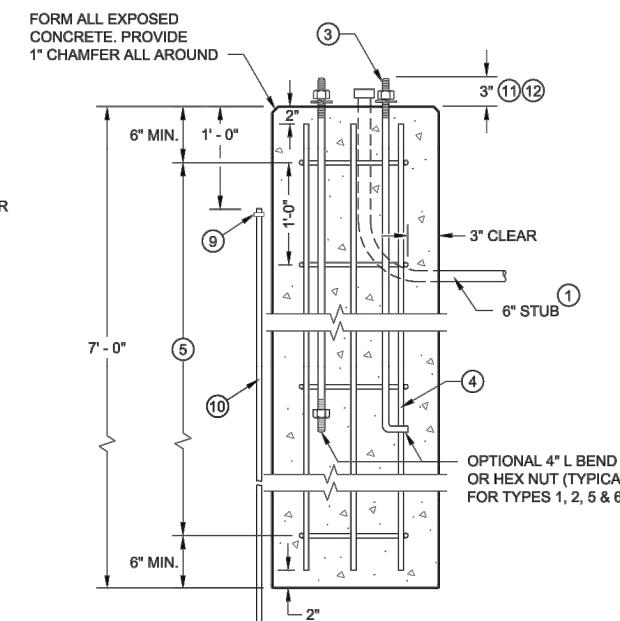
### HALF SECTION IN UNPAVED AREA

(TYPICAL FOR TYPES 1, 2, 5 & 6)



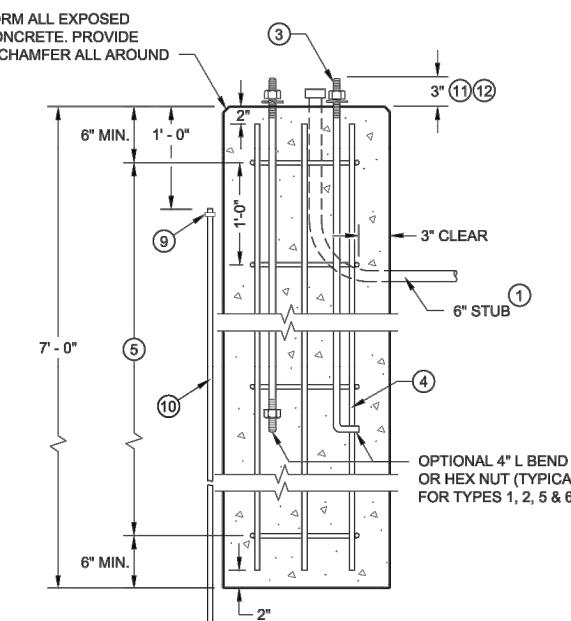
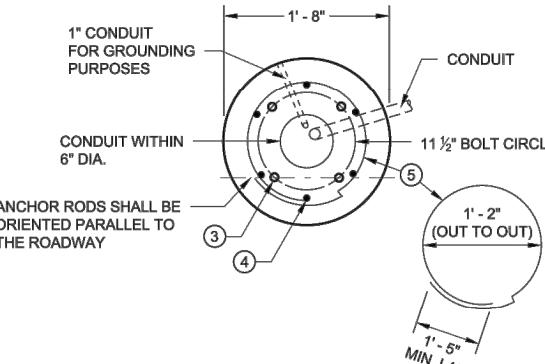
### HALF SECTION IN PAVEMENT

(TYPICAL FOR TYPES 1, 2, 5 & 6)

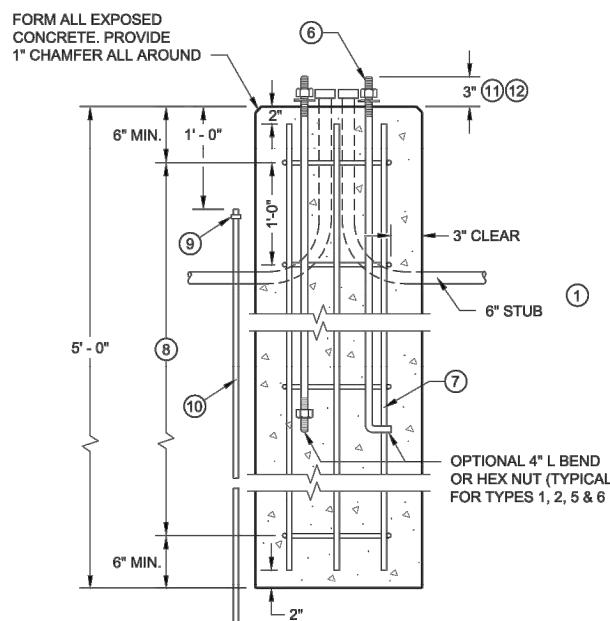
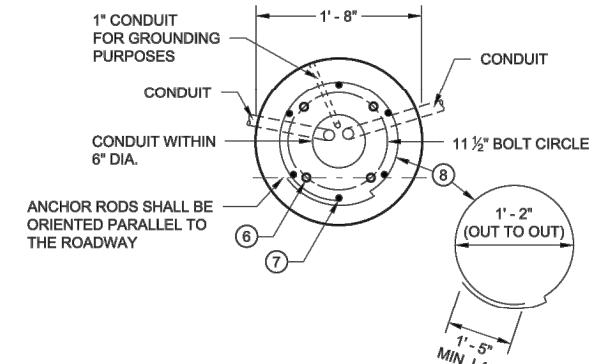


**TYPE 1**

### CONCRETE BASES



**TYPE 2**



**TYPE 5 & 6**

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLEING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL BENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION.

WHEN REQUIRED TO CONNECT NON-METALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 2, TYPE 5 AND TYPE 6 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER ALL BASE TYPES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 OF THE STANDARD SPECIFICATIONS.

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL OF THE ENGINEER.

② (4) 1" DIA. X 3' - 6" ANCHOR RODS.

③ (4) 1" DIA. X 5' - 0" ANCHOR RODS.

④ (6) NO. 6 X 6' - 8" BAR STEEL REINFORCEMENT.

⑤ (7) NO. 4 X 5' - 1" BAR STEEL REINFORCEMENT @ 1' - 0" C - C.

⑥ (4) 1" DIA. X 3' - 6" ANCHOR RODS.

⑦ (6) NO. 4 X 4' - 8" BAR STEEL REINFORCEMENT.

⑧ (5) NO. 4 X 5' - 1" BAR STEEL REINFORCEMENT @ 1' - 0" C - C.

⑨ EXOTHERMIC CONNECTION TO EQUIPMENT GROUNDING CONDUCTOR

⑩ 5/8" DIA. X 8' - 0" COPPERCLAD EQUIPMENT GROUNDING ELECTRODE REQUIRED

⑪ ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

⑫ FOR NON - BREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

### CONCRETE BASES TYPES 1, 2, 5, & 6

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2019 /S/ Ahmet Demirbilek

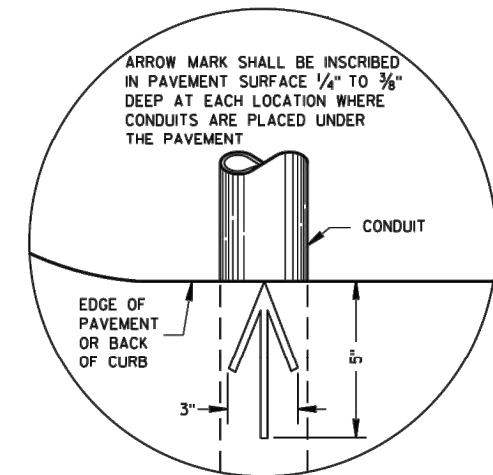
DATE  
FHWA

STATE ELECTRICAL ENGINEER

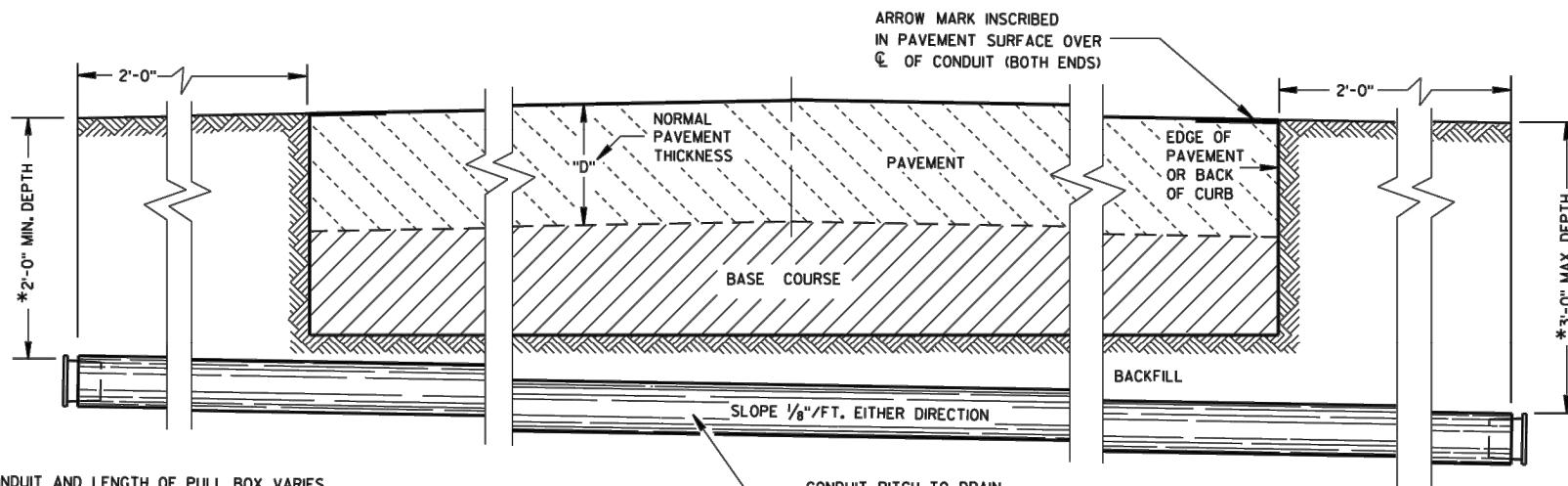
### CE TRAIL AND HIGHWAY IMPROVEMENTS KAUKAUNA, OUTAGAMIE COUNTY, WI

### MISCELLANEOUS DETAILS

DESIGNED  
RJK  
DRAWN  
RJK  
PROJECT NO.  
K0006 81700105  
DATE  
MAY 2020  
SHEET NO.



PLAN VIEW  
ARROW MARK



\*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES  
WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

SIDE ELEVATION  
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.

S.D.D. 9 B 2-10

6

## CE TRAIL AND HIGHWAY IMPROVEMENTS KAUKAUNA, OUTAGAMIE COUNTY, WI MISCELLANEOUS DETAILS

McMAHON  
ASSOCIATES, INC.  
ENGINEERS  
AND H. H. LITE

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Mailing: P.O. BOX 1025, NEENAH, WI 54956  
Phone: 920/751-4284, Fax: 920/751-4284, MCMAHON@COMCAST.NET

|                                                                 |                                                           |
|-----------------------------------------------------------------|-----------------------------------------------------------|
| CONDUIT                                                         |                                                           |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION              |                                                           |
| APPROVED<br>March, 2017<br>RJK<br>PROJECT NO.<br>K0006 81700105 | DRAWN<br>RJK<br>DATE<br>STATE ELECTRICAL ENGINEER<br>FHWA |

**TABLE OF NOMINAL DIMENSIONS AND WEIGHTS**

| DIMENSION<br>IN INCHES    |   | CORRUGATED STEEL PIPE |        |        |        |        |        |        |        |        |       |
|---------------------------|---|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PIPE DIAMETER<br>(INSIDE) | A | 12                    | 12     | 12     | 18     | 18     | 18     | 24     | 24     | 24     | 24    |
| PIPE LENGTH **            | B | 24                    | 30     | 36     | 24     | 30     | 36     | 36     | 42     | 48     |       |
| WALL THICKNESS            | C | 0.064                 | 0.064  | 0.064  | 0.064  | 0.064  | 0.064  | 0.064  | 0.064  | 0.064  | 0.064 |
| COVER                     | D | 10 1/4                | 10 1/4 | 10 1/4 | 16 1/4 | 16 1/4 | 16 1/4 | 22 1/4 | 22 1/4 | 22 1/4 |       |
| FRAME                     | E | 14 1/2                | 14 1/2 | 14 1/2 | 20 1/2 | 20 1/2 | 20 1/2 | 26 1/2 | 26 1/2 | 26 1/2 |       |
| FRAME                     | F | 8 1/2                 | 8 1/2  | 8 1/2  | 14 1/2 | 14 1/2 | 14 1/2 | 20 1/2 | 20 1/2 | 20 1/2 |       |
| FRAME                     | G | 11 1/2                | 11 1/2 | 11 1/2 | 17 1/2 | 17 1/2 | 17 1/2 | 23 1/2 | 23 1/2 | 23 1/2 |       |
| WEIGHT IN POUNDS *        |   |                       |        |        |        |        |        |        |        |        |       |
| FRAME AND COVER           |   | 60                    | 60     | 60     | 110    | 110    | 110    | 155    | 155    | 155    |       |

\* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

\*\* NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPliced). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS  
DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING, PLUS NO MORE THAN 1/8

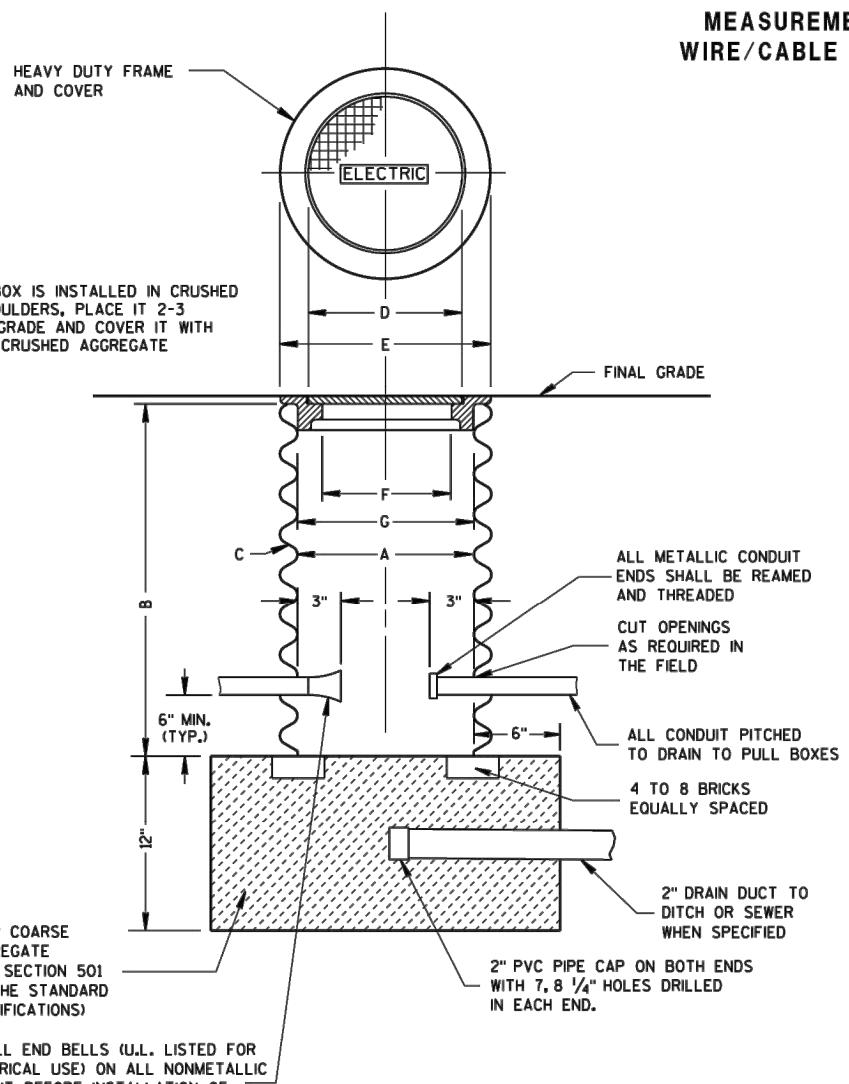
**THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL IT IS  
INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.**

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

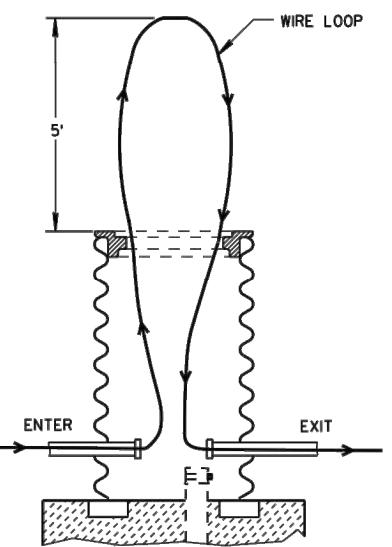
ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED AS A FUTURE WIRING CONTRACT.

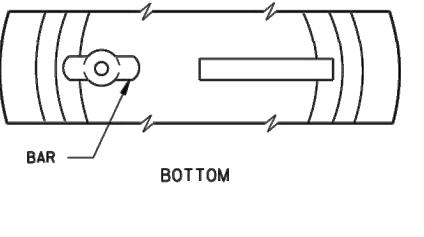
IN A PULL BOX IS INSTALLED IN CRUSHED  
AGGREGATE SHOULDERS, PLACE IT 2-3  
INCHES BELOW GRADE AND COVER IT WITH  
INCHES OF CRUSHED AGGREGATE



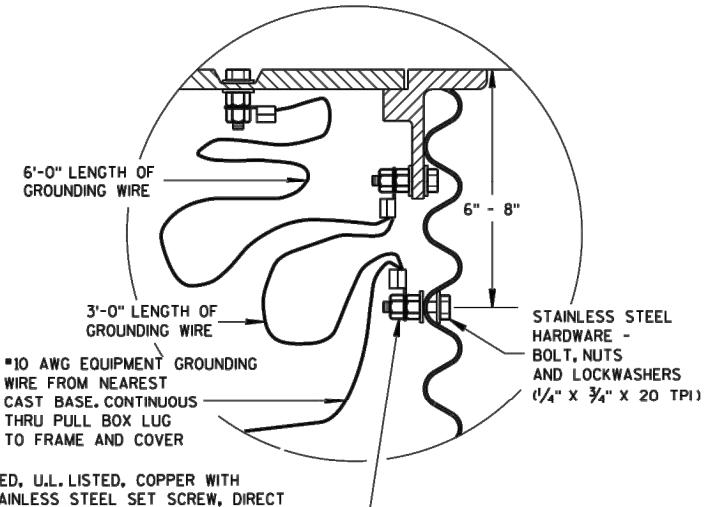
## PULL BOX



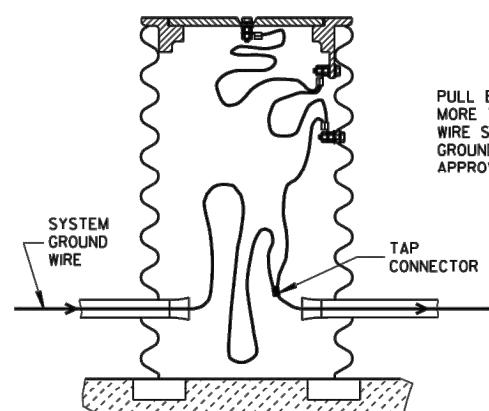
**MEASUREMENT DETAIL FOR  
WIRE/CABLE IN THE PULL BOX**



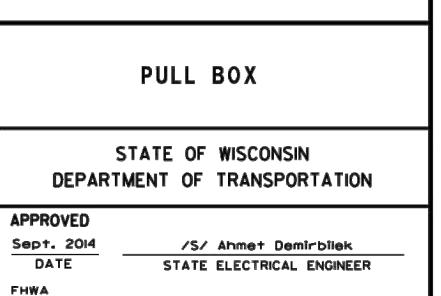
SECTION  
**ALTERNATE COVER (LOCKING)**  
TIGHTENING BAR TYPE



## **EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES**

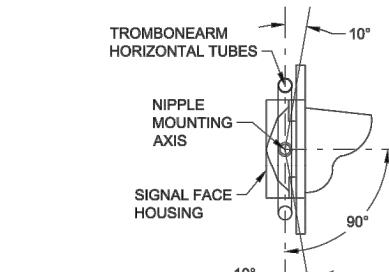


## **EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES**

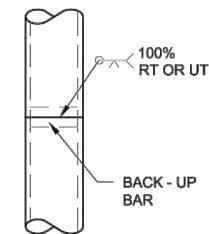


TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI  
MISCELLANEOUS DETAILS

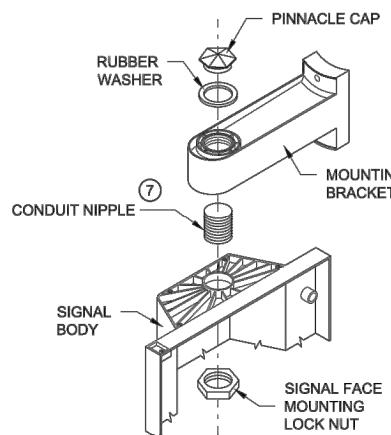
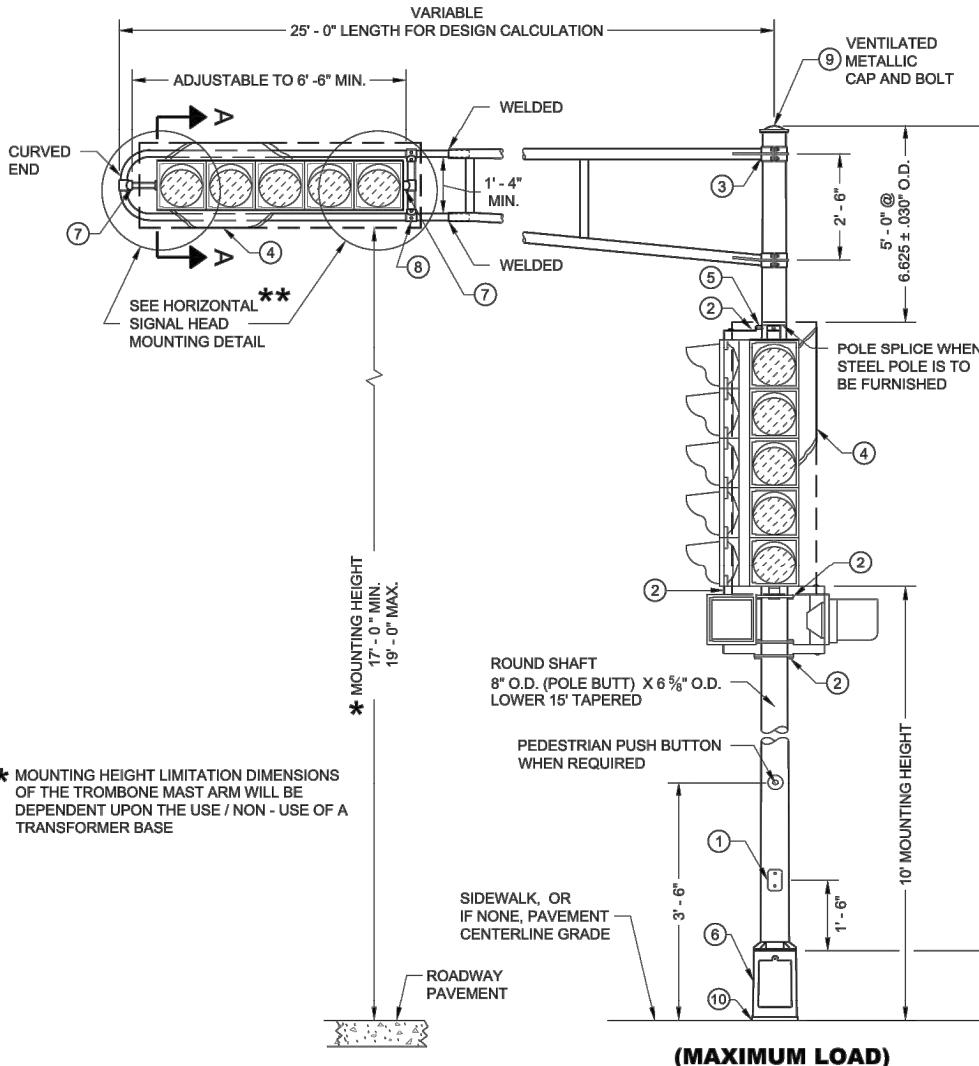
|               |     |
|---------------|-----|
| DESIGNED      | DRA |
| RJK           | RE  |
| PROJECT NO.   |     |
| K0006 8170010 |     |
| DATE          |     |
| MAY 2020      |     |


**FOR MANUFACTURERS USE ONLY**

WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN / BRIDGE FOR VERIFICATION AND APPROVAL.


**SECTION A-A**

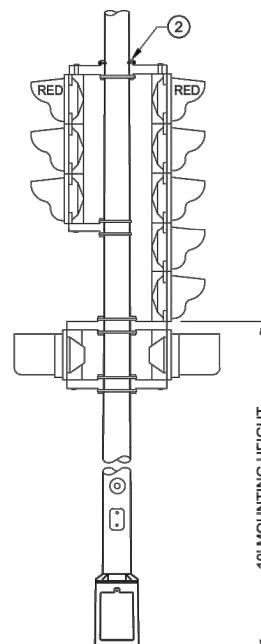
(10 DEGREES TILT REQUIREMENT OF FACE(S) IN THE TROMBONE MOUNTING)


**SIGNAL FACE MOUNTING DETAIL  
(BANDED)**


\* MOUNTING HEIGHT LIMITATION DIMENSIONS OF THE TROMBONE MAST ARM WILL BE DEPENDENT UPON THE USE / NON - USE OF A TRANSFORMER BASE

**TYPICAL MOUNTING OF BACK TO BACK  
3 AND 5 SECTION SIGNAL FACES**

**TYPE 2 POLE MOUNTING CONFIGURATION**



**TYPICAL MOUNTING OF 3 SECTION  
SIGNAL FACE**

**GENERAL NOTES**

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

POLES SHALL BE EITHER ALUMINUM OR GALVANIZED STEEL AS CALLED FOR IN THE CONTRACT.

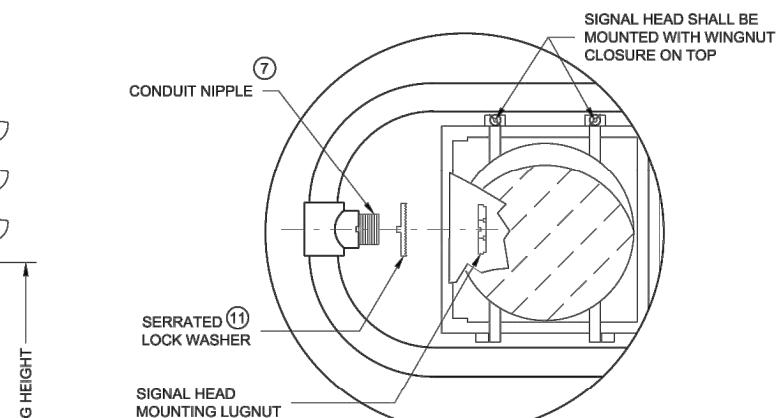
SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

A PULL WIRE / ROPE SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

TYPE 2 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063 - T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2)  $\frac{1}{4}$ " X  $\frac{3}{4}$ " - 20 TPI , STAINLESS STEEL, HEX HEAD BOLTS.
- ② SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING.
- ③ GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1  $\frac{3}{8}$ " HOLE IN POLE SHAFT FOR WIRING.
- ④ SECURELY MOUNT DULL BLACK POLYCARBONATE BACK PLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.
- ⑤ POLE MOUNTED SIGNAL FACES SHALL REQUIRE ONE OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACES.
- ⑥ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ⑦ USE 1  $\frac{1}{2}$  ID NIPPLES ZINC-COATED RIGID METAL CONDUIT, LONG ENOUGH TO ACCOMMODATE FULL DEPTH THREADING INTO THE HEAD MOUNTING LOCK NUT IN ORDER TO TIGHTEN THE FACE, BUT THAT DO NOT INTERFERE WITH REFLECTOR CLOSURE. THREAD THE NIPPLE INTO THE MOUNTING BRACKET/ELBOW UNTIL TIGHT. USE APPROVED PINNACLE TYPE HARDWARE FROM A DEPARTMENT APPROVED MANUFACTURER TO CLOSE THE UNUSED 1  $\frac{1}{2}$  OPENING IN SIGNAL FACES AND BRACKET ENDS.
- ⑧ VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW ( $\frac{1}{4}$ " X  $\frac{3}{4}$ " - 20 TPI STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUTS THE SLIDING TYPE.
- ⑨ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1)  $\frac{1}{4}$ " X  $\frac{3}{4}$ " - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑩ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.
- ⑪ USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.



**HORIZONTAL SIGNAL HEAD  
MOUNTING DETAIL**

\*\* SIGNAL HEAD ATTACHMENT ALSO APPLIES TO MOUNTING AT CROSS BAR

| <b>POLE MOUNTINGS FOR<br/>TRAFFIC SIGNALS<br/>TYPE 2</b> |  |
|----------------------------------------------------------|--|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION       |  |

**SDD 09E01 - 15a**

**CE TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI  
MISCELLANEOUS DETAILS**

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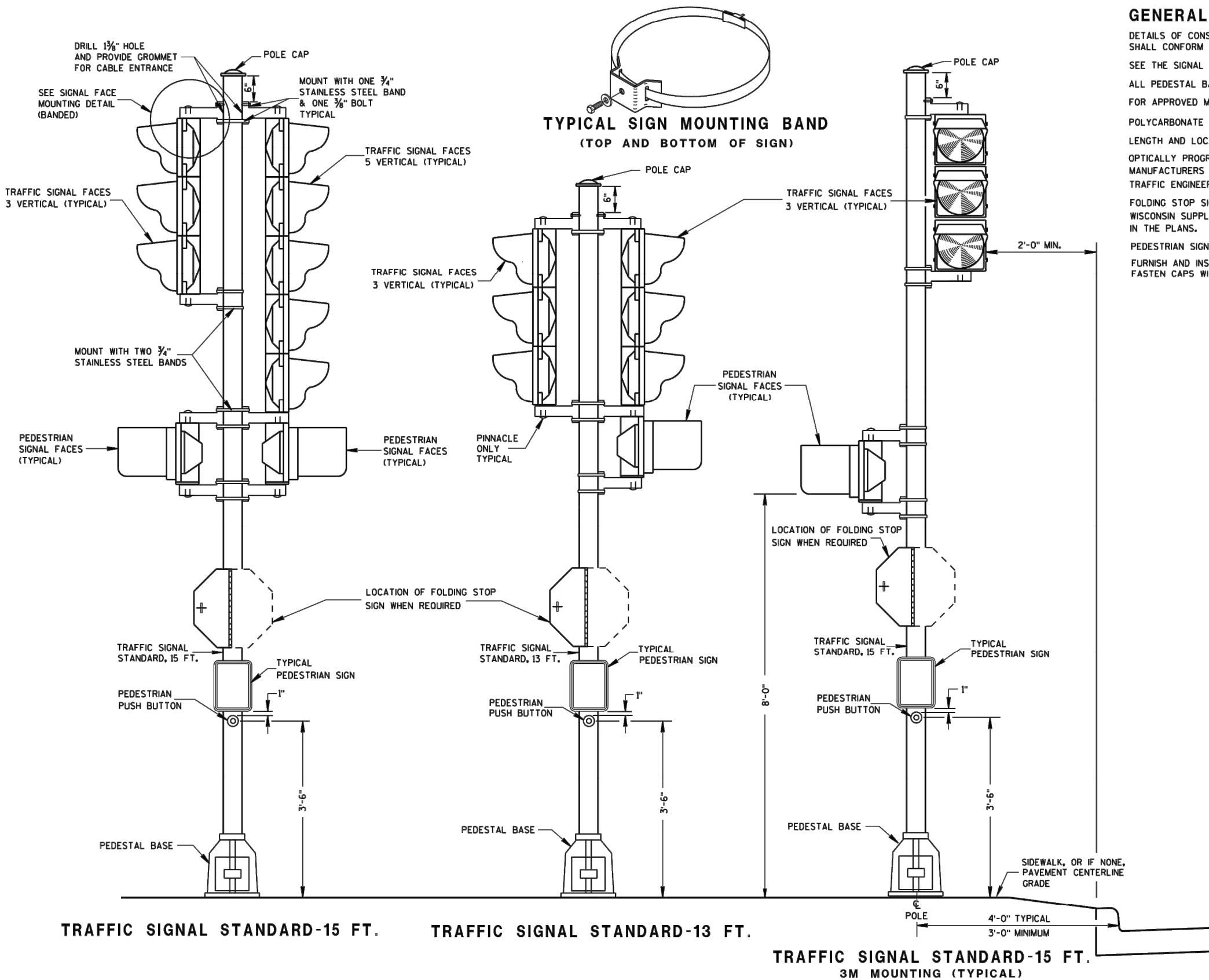
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## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING  
SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

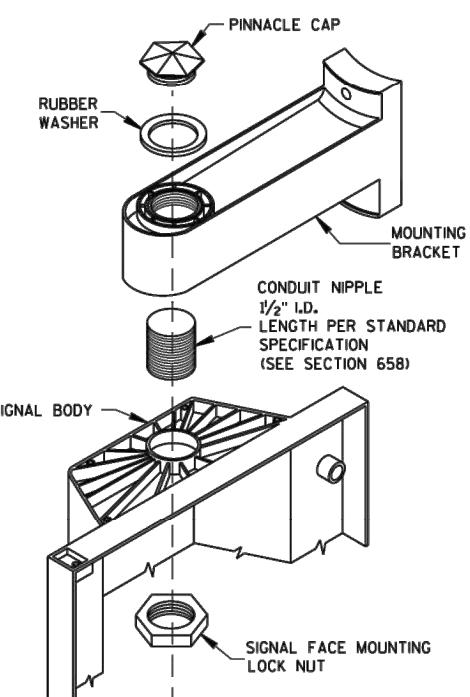
FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLYCARBONATE MOUNTING BRACKETS SHALL BE USED.

LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON  
OPTICALLY PROGRAMMED SIGNAL FACES SHALL BE MASKED IN ACCORDANCE WITH  
MANUFACTURERS INSTRUCTIONS, AND UNDER THE DIRECTIONS OF THE REGION  
TRAFFIC ENGINEER.

FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.  
FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS.  
FASTEN CAPS WITH ONE  $11/16$ " x  $3/8$ " - 20 TPI STAINLESS STEEL HEX HEAD BOLT



## SIGNAL FACE MOUNTING DETAIL

TRAFFIC SIGNAL STANDARD  
POLY BRACKET MOUNTINGS  
(TYPICAL) 13 FT. OR 15 FT.

---

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

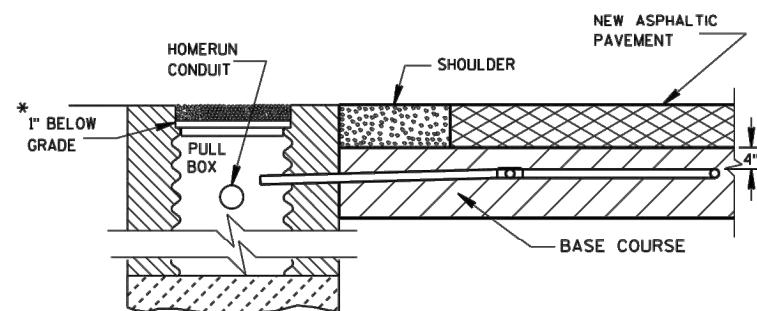
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|           |                           |
|-----------|---------------------------|
| APPROVED  | /S/ Ahmet Demirbilek      |
| 2/28/2013 | STATE ELECTRICAL ENGINEER |
| DATE      |                           |
| FWHA      |                           |

S.D.D. 9 E 6-5

THE TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI  
VISUAL ANNOTATED DETAILS

**McMAHON**  
ENGINEERS & ARCHITECTS  
McMAHON ASSOCIATES, INC.  
1445 McMAHON DRIVE, NEENAH, WI 54956



### DETECTOR LOOP INSTALLATION DETAIL

\*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

### GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD-OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPlices shall be installed by using cast in place splice kits listed on the departments approved products list or an engineer approved equal. Non-insulated butt splices to fit #12 AWG stranded wire shall be used. Splices shall be soldered and insulated from each other as per instructions included in the splice kit.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

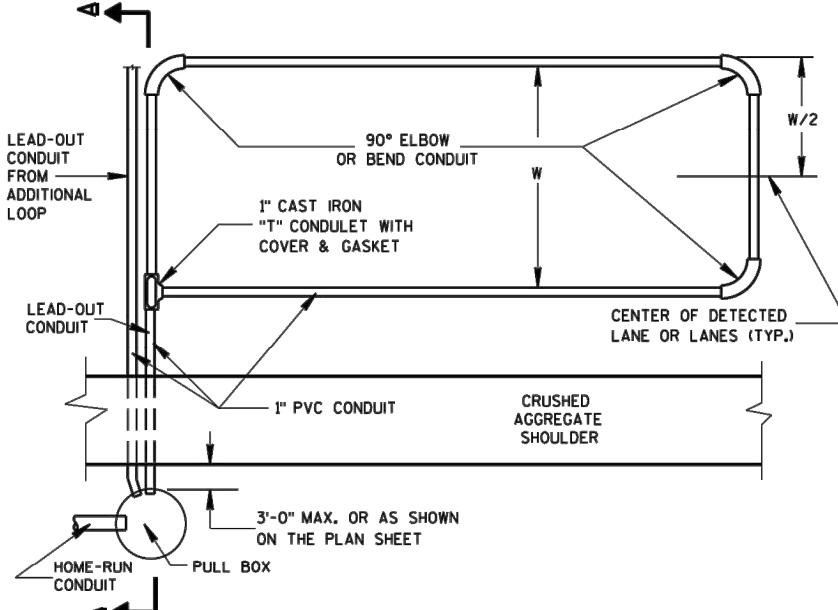
SPlices of loop wire to lead-in cable shall be made only in pull boxes at the side of the road.

The #12 AWG loop wire shall be installed from the roadside pull box, through the loop duct, back to the roadside pull box, and be installed in one, non-spliced, continuous length.

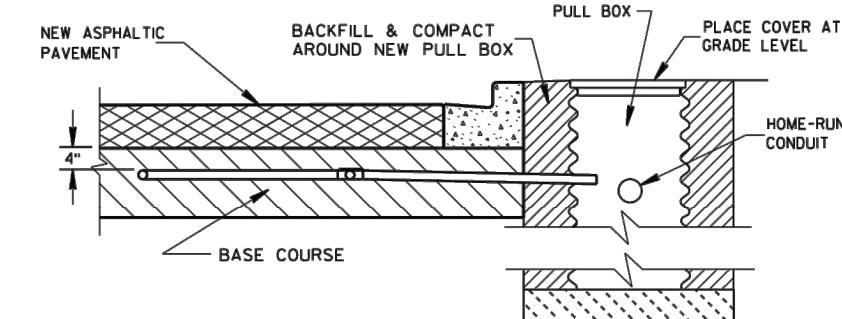
PROTECTION OF THE CONDUIT AND CONDULET SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE THE ASPHALTIC PAVEMENT IS PLACED.

WHEN MULTIPLE LAYERS OF ASPHALTIC PAVEMENT ARE TO BE PLACED, LOOPS MAY BE INSTALLED BY SAWING A TWO INCH WIDE SLOT IN THE FIRST LAYER, DIG OUT THE ASPHALTIC MATERIAL AND BASE COURSE, PLACE THE LOOP, FILL THE SLOT WITH BASE COURSE MATERIAL AND NEW ASPHALTIC MATERIAL AND TAMP THE ASPHALTIC MATERIAL IN PLACE.

SHOULD TRAFFIC BE ALLOWED TO USE THE AREA OF ROADWAY WITH THE NEWLY INSTALLED LOOP BEFORE THE PLACEMENT OF THE NEXT LAYER OF ASPHALTIC PAVEMENT, THE SLOT/PAVEMENT OPENING SHALL BE SEALED WITH HOT Poured ELASTIC TYPE MATERIAL CONFORMING TO THE REQUIREMENTS OF THE "SPECIFICATION FOR JOINT SEALANTS, HOT Poured, FOR CONCRETE AND ASPHALT PAVEMENTS, ASTM DESIGNATION: D3405".

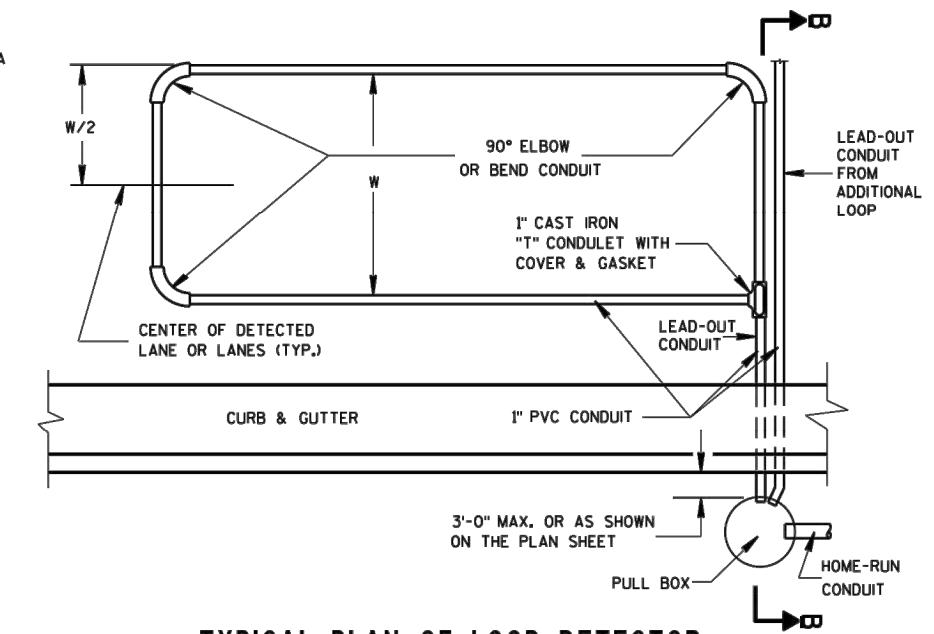


TYPICAL PLAN OF LOOP DETECTOR



### LOOP DETECTOR INSTALLATION DETAIL

#### SECTION B-B CURB & GUTTER



TYPICAL PLAN OF LOOP DETECTOR

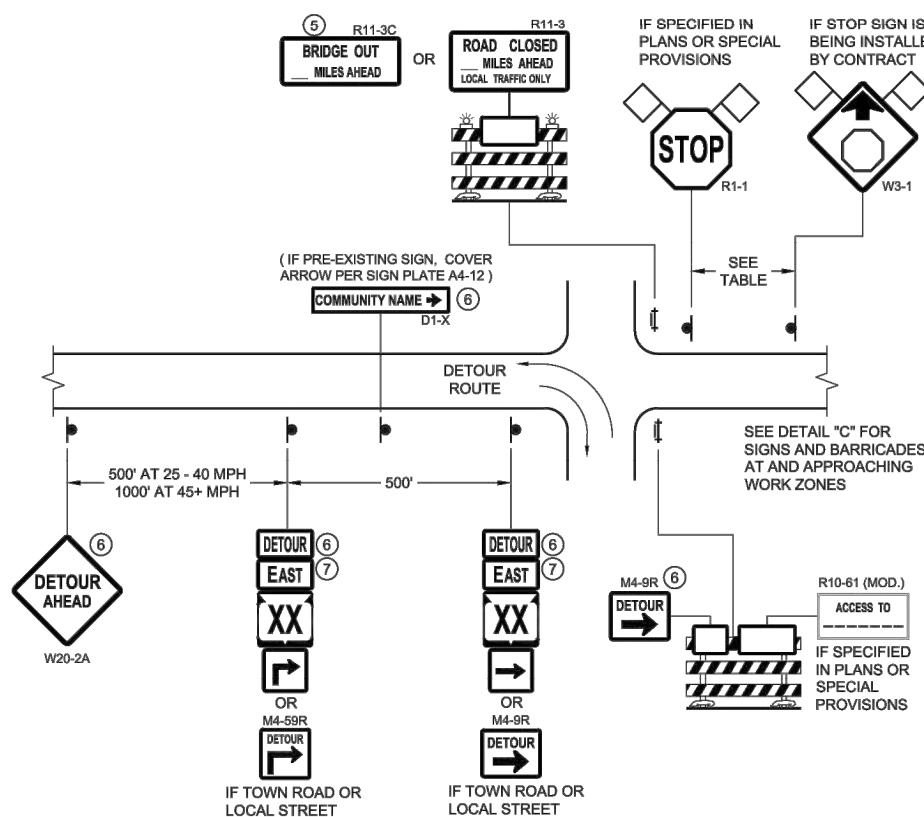
|                                                                               |                                                                   |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------|
| LOOP DETECTOR PLACED<br>IN CRUSHED AGGREGATE BASE<br>(NEW ASPHALTIC PAVEMENT) |                                                                   |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION                            |                                                                   |
| APPROVED<br>Sept. 2014<br>K0006 81700105<br>FHWA                              | DRAWN<br>RJK<br>/S/ Ahmet Demirbilek<br>STATE ELECTRICAL ENGINEER |
| PROJECT NO.<br>K0006 81700105                                                 | DATE<br>MAY 2020                                                  |

S.D.D. 9 F 8-4

CE TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI

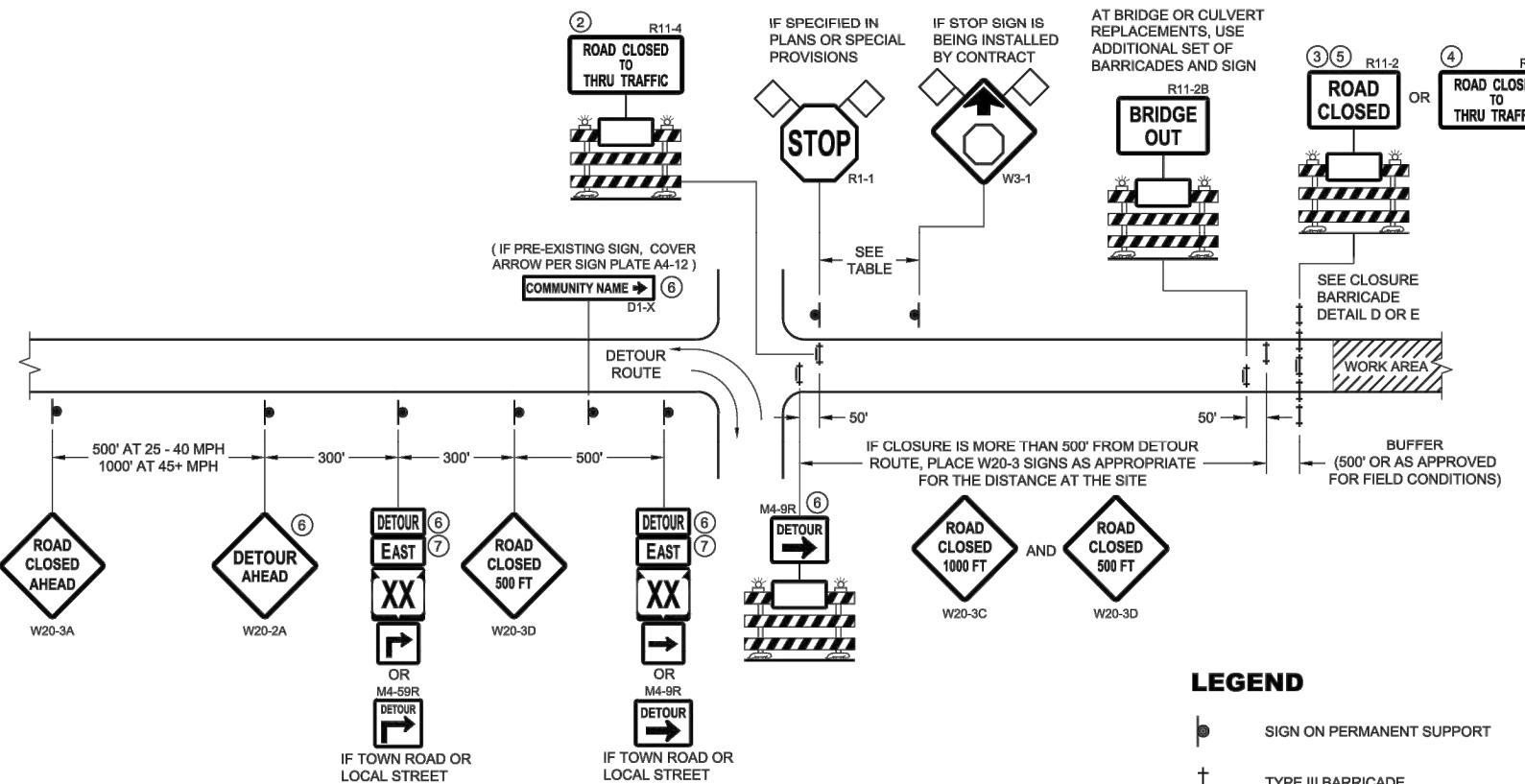
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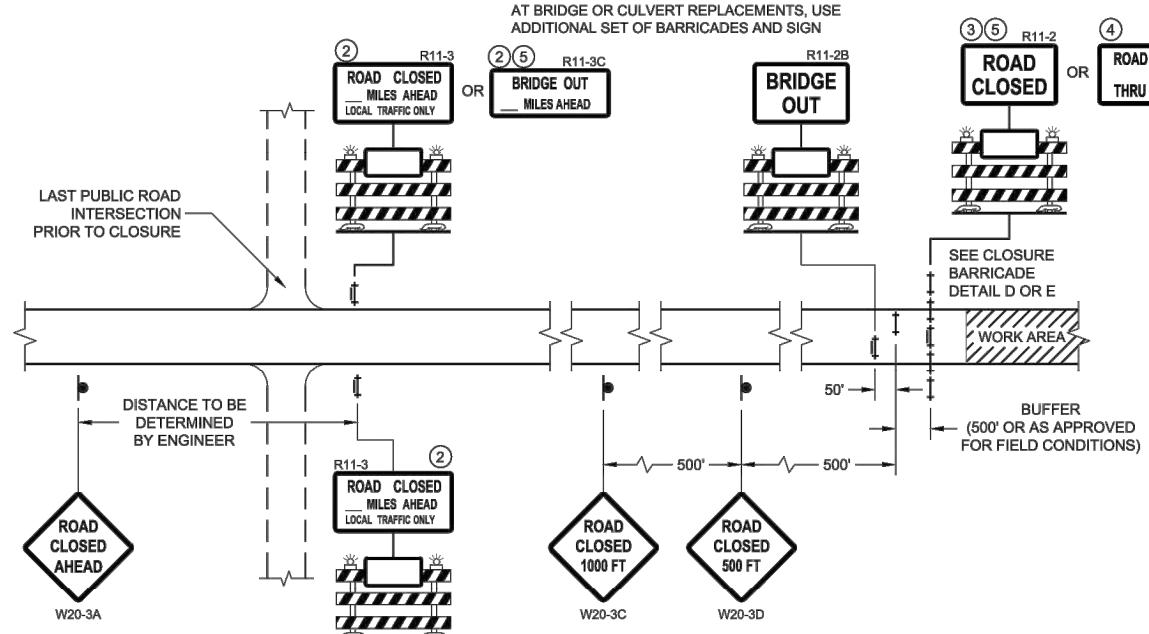
### DETAIL A MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO  $\frac{1}{2}$  MILE FROM  
DETOUR ROUTE (1000 FEET IF URBAN)



### DETAIL B MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN  $\frac{1}{2}$  MILE FROM  
DETOUR ROUTE (1000 FEET IF URBAN)



### DETAIL C MAINLINE CLOSURE, NO POSTED DETOUR

SEE SDD 15C2-SHEET "b"  
FOR GENERAL NOTES  
AND FOOTNOTES ① THROUGH ⑦

| SPEED LIMIT (MPH) | "STOP AHEAD" ADVANCE WARNING DISTANCE (FT) |
|-------------------|--------------------------------------------|
| 25                | 200                                        |
| 30                | 200                                        |
| 35                | 350                                        |
| 40                | 350                                        |
| 45                | 500                                        |
| 50                | 550                                        |
| 55                | 750                                        |

### BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /S/ Andrew Heidtke  
PROJECT NO. K0006 81700105  
DATE MAY 2020  
FVNA WORK ZONE ENGINEER

SDD 15C02 - 08a

CE TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI  
MISCELLANEOUS DETAILS

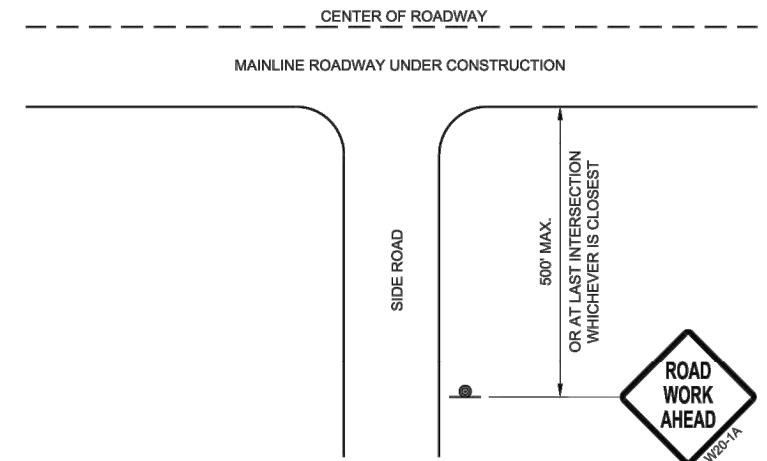
McMAHON ASSOCIATES, INC.  
Engineering, Architecture, and Construction  
1445 McMAHON DRIVE, NEENAH, WI 54956  
Mailing: P.O. BOX 1025, NEENAH, WI 54957-1025  
PH 920/751-4200 FX 920/751-4284 MCMAHON.COM





## GENERAL NOTES

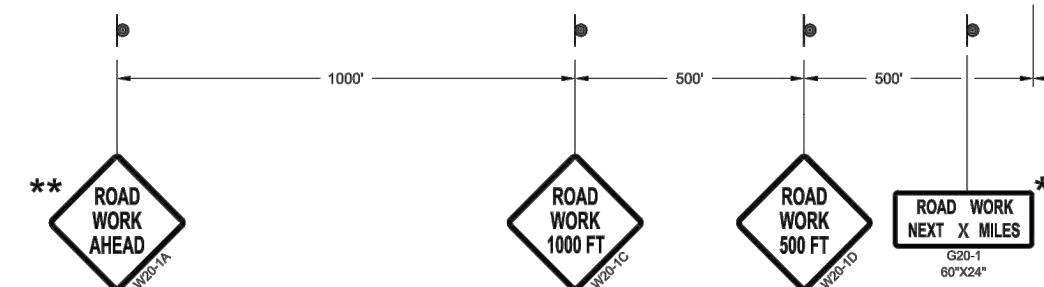
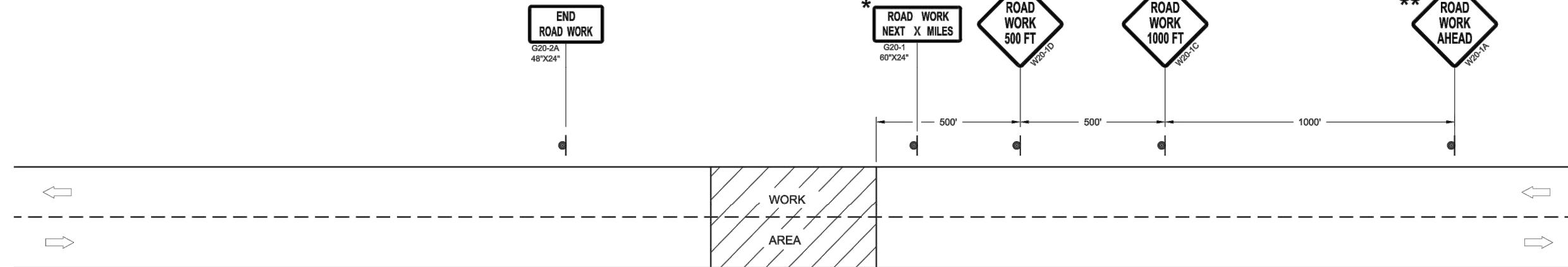
THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.  
 THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.  
 ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.  
 SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.  
 IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS REESTABLISHED.  
 \* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS  
 \*\* PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



**TYPICAL SIDE ROAD APPROACH  
WARNING SIGN DETAIL**

## LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- ▨ WORK AREA



**TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER**

**TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFICE**

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

APPROVED

July 2018 /S/ Andrew Heidtke

DATE

WORK ZONE ENGINEER

FHWA

**SDD 15C04 - 05**

6

**CE TRAIL AND HIGHWAY IMPROVEMENTS  
 KAUKAUNA, OUTAGAMIE COUNTY, WI**

**MISCELLANEOUS DETAILS**

DESIGNED  
 RJK

DRAWN  
 RJK

PROJECT NO.  
 K0006 81700105

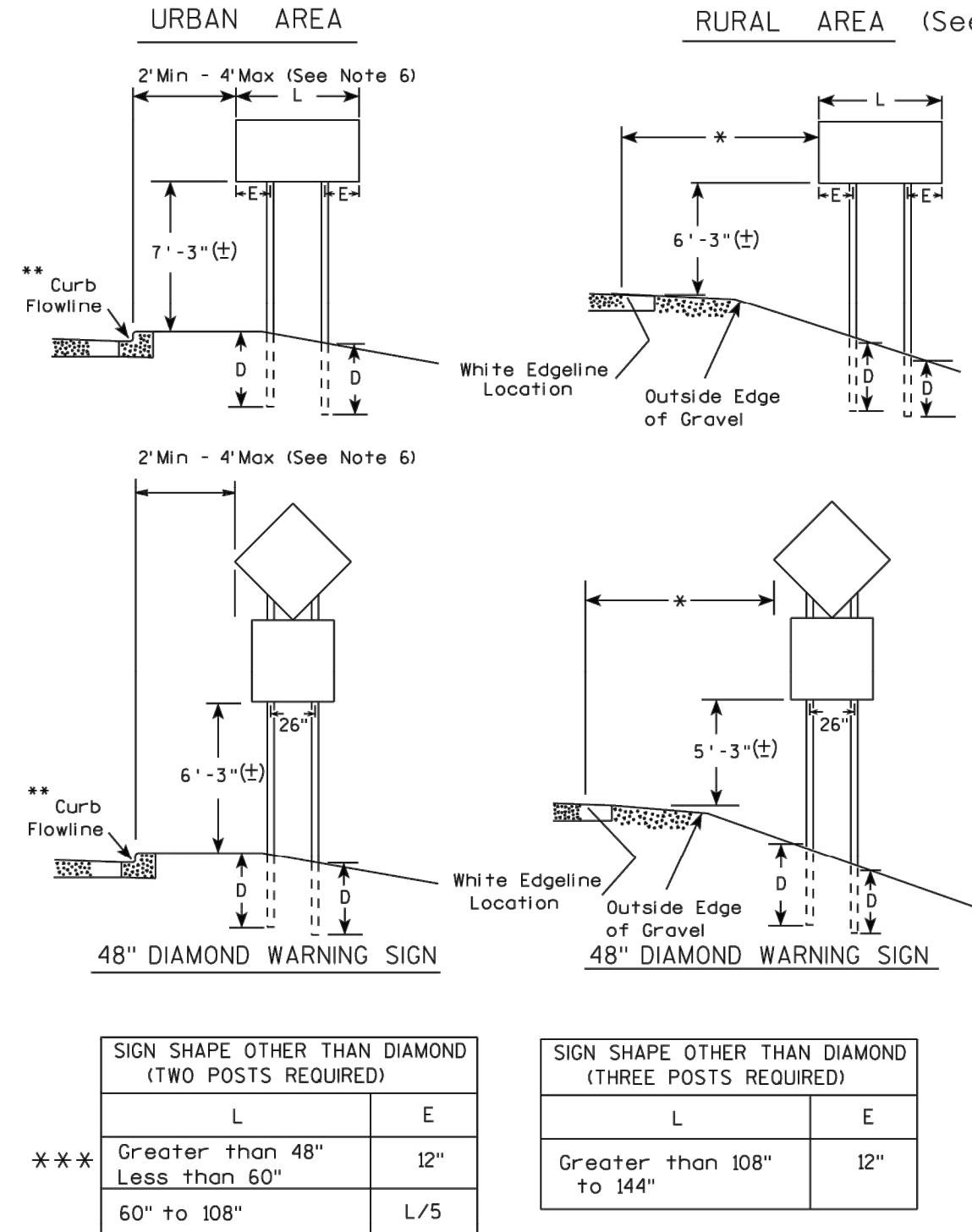
DATE  
 MAY 2020

SHEET NO.  
 92

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GENERAL NOTES

- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
- The (±) tolerance for mounting height is 3 inches.
- J-Assemblies are considered to be one sign for mounting height.
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
- The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).

\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

\*\* The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

\*\*\* See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

POST EMBEDMENT DEPTH

| Area of Sign Installation ( Sq. Ft. ) | D ( Min ) |
|---------------------------------------|-----------|
| 20 or Less                            | 4'        |
| Greater than 20                       | 5'        |

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

*Matthew R Rauch*

for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

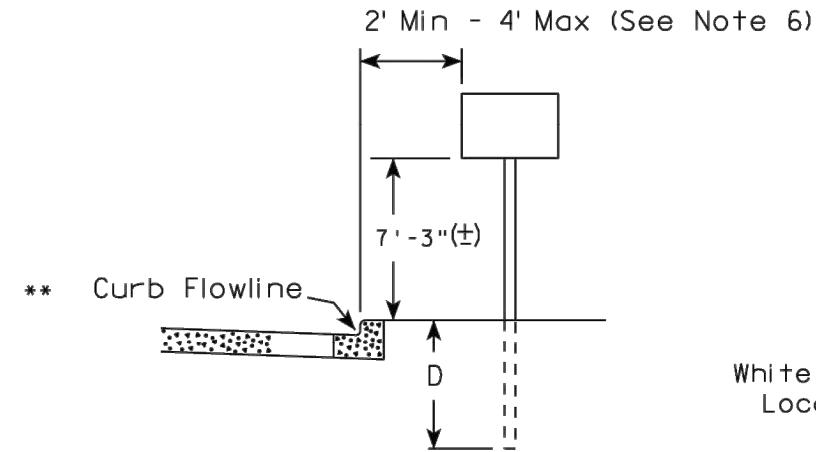
CE TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI  
MISCELLANEOUS DETAILS

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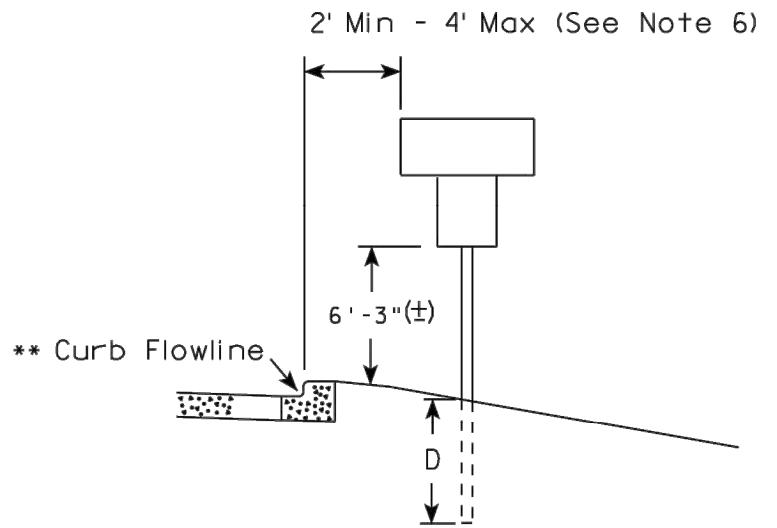
DESIGNED DRAWN  
RJK RJK  
PROJECT NO. K0006 81700105  
DATE MAY 2020  
SHEET NO. 93

## URBAN AREA



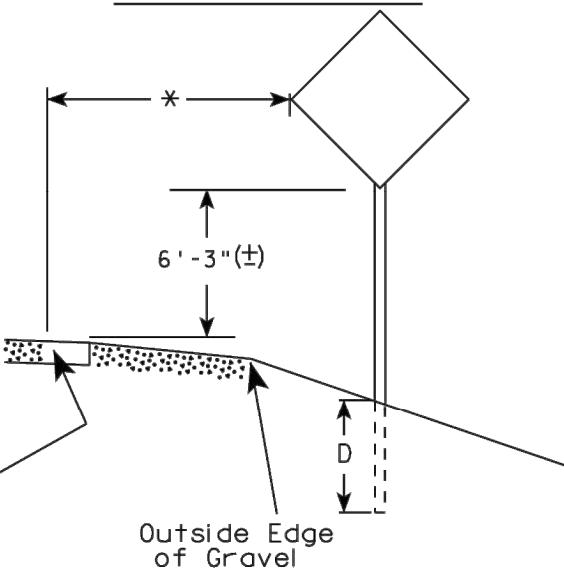
White Edgeline Location

2' Min - 4' Max (See Note 6)



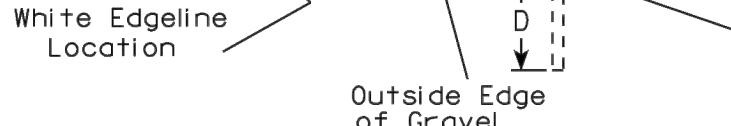
\*\* The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

## RURAL AREA (See Note 2)



White Edgeline Location

2' Min - 4' Max (See Note 6)



White Edgeline Location

2' Min - 4' Max (See Note 6)

## POST EMBEDMENT DEPTH

| Area of Sign Installation ( Sq. Ft. ) | D ( Min ) |
|---------------------------------------|-----------|
| 20 or Less                            | 4'        |
| Greater than 20                       | 5'        |

\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

## GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-3.21

CE TRAIL AND HIGHWAY IMPROVEMENTS  
KAUKAUNA, OUTAGAMIE COUNTY, WI

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|     |      |          |

DESIGNED DRAWN  
RJK RJK  
PROJECT NO. K0006 81700105  
DATE MAY 2020  
SHEET NO. 94