



APPLICATION/PERMIT TO CONSTRUCT, OPERATE AND MAINTAIN UTILITY FACILITIES ON HIGHWAY RIGHT-OF-WAY

Wisconsin Department of Transportation
DT1553 7/2017 s. 66.0831, 84.08, 85.15, 86.07(2)(a), 86.16, 182.017 and other applicable Wis. Stats.

1. Applicant (Utility facility owner) Name and Address Dan Klansky District Superintendent Town of Greenville W6860 Parkview P.O. Box 139 Greenville, WI 54942		2. Work Start Date 6/8/2018	3. Work Finish Date★ 6/8/2018	6. Location Description (¼ section, section, town, range; provide plat and/or location maps) T21N, R16E, NW1/4 of sec 14 N 5138 Ridgeway Dr Greenville	
9. Facility Type (Check all that apply) and Description (Size, material, voltage, pressure, # fibers, etc.) ☐ Comm: _____ ☐ Electric: _____ ☐ Gas/Oil: _____ ☒ Water: 14" ☐ Sewer: _____ ☐ Casing: _____ ☐ Conduit: _____ ☐ After the fact/emergency repair ☒ Transmission ☐ Service ☐ Distribution ☐ Service (ESCP)		4. Is the work due to a WisDOT highway project? ☐ Yes ☒ No		7. Work Location (List all that apply) Town: Greenville Village: _____ City: _____ County: Outagamie	
10. Facility Orientation (Check all that apply) ☒ Underground ☐ Overhead ☒ Crossing ☐ Parallel ☐ OSOW high clearance route ☐ Structure attachment ☐ Scenic easement (Off right-of-way)		12. Proposed Work Methods (Check all that apply) ☒ Trench ☐ Plow ☐ Place fill ☐ Rock blasting ☐ Place cable ☒ Open cut in conduit pavement ☐ Hand/mechanical excavation Bore: ☐ Hydraulic (Auger/Jack/Tunnel) ☐ Pneumatic (Mole) ☒ Directional 1 (Manually tracked) ☐ Directional 2 (Computer tracked) ☐ Unknown (At this time) Install or attach to poles/towers: ☐ New ☐ Existing ☐ Guys (-Diameter) (Name of existing owner) (Provide details for all guy-wires on plan sheets) Pothole (Subsurface excavation): ☒ Air ☐ Water Tree/vegetation control: ☐ Trim (Prune) ☐ Plant ☐ Remove (Cut) ☐ Mow ☐ Chemically treat		13. Work Zone Description (Check all that apply). (Provide relevant diagram(s) with application.) ☐ Not applicable ☐ Full road closure: detour ☐ Full road closure: temporary ☐ Lane closure: without flagging ☒ Lane closure: with flagging ☐ Lane encroachment (2 feet or less) ☐ Intersection/roundabout ☐ Shoulder/parking lane closure ☐ Railroad crossing Freeway/expressway location ☐ Off shoulder: < 30' off white line ☐ Off shoulder: ≥ 30' off white line ☐ Near right-of-way line or fence Non-freeway/expressway location ☐ Off shoulder: < 15' off white line ☐ Off shoulder: ≥ 15' off white line ☐ Back of curb: < 2' behind ☐ Back of curb: ≥ 2' behind	
11. Work Types (Check all that apply) ☐ New facility ☐ Remove ☐ Joint install ☐ Maintenance ☒ Improve or repair existing ☐ Discontinue, left in place		14. Is the facility near a survey monument? HMM 09-15-35 If yes, call (866) 568-2852 or email geodetic@dot.wi.gov . ☐ Yes ☒ No		15. Will appurtenances be installed with the facility? If yes, provide a description and/or specification for each item. ☐ Yes ☒ No	
		16. Trans 401 project designation? If Major, provide a formal erosion control plan. HMM 09-15-55 ☐ Major ☒ Minor		17. Are any environmental approvals, certifications or permits required from other regulatory agencies, including tribal governments? If yes, provide a copy of each item. If no, provide proof of other agency coordination as needed. ☐ Yes ☐ No	

★ Includes permanent restoration. If the permitted work has not started by the "Work Finish Date", this permit is null and void. If the permitted work has started, but has not been completed by the "Work Finish Date", the work shall not be completed unless authorized through an approved written time extension or a subsequent permit. **ANY PERMIT ISSUED IS REVOCABLE.**

18. Utility Person Responsible for Construction Dan Klansky	Telephone Number 920-841-8550	It is understood and agreed that WisDOT approval is subject to the applicant's full compliance with all pertinent statutes, as well as any regulations and rules of other jurisdictional agencies (which may be more restrictive), any supplemental permit provisions, and WisDOT's Utility Accommodation Policy , current edition.
19. Utility or Project 24/7 Emergency Contact	Telephone Number	
20. Provide company name and address of utility authorized representative if not employed by the applicant. Robert J Immel Excavating PO Box 135 Greenville, WI 54942	<i>Daniel Klansky</i> (Utility Authorized Representative Signature – If filled via computer, brush script font) Sanitary District Superintendent 920 841-8550 dklansky@townofgreenville.com (Title) (Telephone Number) (Email Address) 6/5/2018 (Date)	
21. Provide additional work details, if needed (use back page or include separate pages) There is a leaking water main and we needed to bore a new water service under the highway. We have to trench on both sides of the highway to route the line through. This is Emergency work to prevent damage.	This permit does not transfer any land, or give, grant or convey any land right, right in land, or easement in WisDOT right-of-way. It is not assignable or transferrable. If a utility facility changes ownership, this permit terminates. The new owner must obtain a permit in order to operate and maintain the facility in WisDOT right-of-way.	

For Wisconsin Department of Transportation Use Only

☒ UTILITY SHALL NOTIFY WISDOT REPRESENTATIVE LISTED BELOW 3 DAYS BEFORE STARTING ANY WORK: Region contact, office address, telephone number and email address Linda Skaleski WisDOT, Northeast Region 944 Vanderperren Way Green Bay, WI 54304 920-492-4166 dotdtsdneutilitycoordination@dot.wi.gov	☒ Review All Supplemental Permit Provisions ☒ Revisions Made to Drawings or Other Pages ☒ Lane Closure System notification required HMM 09-15-60 ☐ Insurance or performance bond required ☐ Joint installation: See permit(s) # _____ ☐ Private utility (Non-public ownership and/or use) ☐ Expedited Service Connection Permit ☐ This permit voids & supersedes # _____ issued: _____ ☐	Application Received 6/5/2018
		Application Completed
		Permit Issued
		Permit Extended
		Permit Amended
		Permit Number 2018191

(WisDOT Improvement Project ID Numbers, if applicable)

(WisDOT Authorized Representative Signature – If filled via computer, Brush Script font)

**APPLICATION/PERMIT TO CONSTRUCT, OPERATE AND MAINTAIN UTILITY FACILITIES ON HIGHWAY
RIGHT-OF-WAY (continued)**

Wisconsin Department of Transportation DT1553

Use this section to provide information that does not fit on front page

INDEMNIFICATION

This Applicant shall save and hold the State, its officers, employees, agents, and all private and governmental contractors and subcontractors with the State under Chapter 84 Wisconsin Statutes harmless, as allowed by Wisconsin law, from actions of any nature whatsoever (including any by Applicant itself) which arise out of, or are connected with, or are claimed to arise out of or be connected with any of the work done by the Applicant, or the construction or maintenance of facilities by the Applicant, pursuant to this permit or any other permit issued by the State for location of property, lines or facilities on highway right-of-way, (1) while the Applicant is performing its work, or (2) while any of the Applicant's property, equipment, or personnel, are in or about such place or the vicinity thereof, or (3) while any property constructed, placed or operated by or on behalf of Applicant remains on the State's property or right-of-way pursuant to this permit or any other permit issued by the State for location of property, lines or facilities on highway right-of-way; including without limiting the generality of the foregoing, all liability, damages, loss expense, claims, demands and actions on account of personal injury, death or property loss to the State, its officers, employees, agents, contractors, subcontractors or frequenters; to the Applicant, its employees, agents, contractors, subcontractors, or frequenters; or to any other persons, whether based upon, or claimed to be based upon, statutory (including, without limiting the generality of the foregoing, worker's compensation), contractual, tort, or whether or not caused or claimed to have been caused by active or inactive negligence or other breach of duty by the State, its officers, employees, agents, contractors, subcontractors or frequenters; Applicant, its employees, agents, contractors, subcontractors or frequenters; or any other person.

Without limiting the generality of the foregoing, the liability, damage, loss, expense, claims, demands and actions indemnified against shall include all liability, damage, loss, expense, claims, demands and actions for damage to any property, lines or facilities placed by or on behalf of the Applicant pursuant to this permit or any other permit issued by the State for location of property, lines or facilities on highway right-of-way in the past or present, or that are located on any highway or State property or right-of-way with or without a permit issued by the State, for any loss of data, information, or material; for trademark, copyright or patent infringement; for unfair competition or infringement of personal or property rights of any kind whatever. The Applicant shall at its own expense investigate all such claims and demands, attend to their settlement or other disposition, defend all actions based thereon and pay all charges of attorneys and all other costs and expenses of any kind arising from any such liability, damage, loss, claims, demands and actions.

Any transfer, whether voluntary or involuntary, of ownership or control of any property constructed, placed or operated by or on behalf of the Applicant that remains on the State's property or right-of-way pursuant to this permit shall not release Applicant from any of the indemnification requirements of this permit, unless the State is notified of such transfer in writing. Any acceptance by any other person or entity, whether voluntary or involuntary, of ownership or control of any property constructed, placed or operated by or on behalf of the Applicant that remains on the State's property or right-of-way pursuant to this permit, shall include acceptance of all of the indemnification requirements of this permit by the other person or entity receiving ownership or control.



STANDARD SUPPLEMENTAL PERMIT PROVISIONS

For Wisconsin Department of Transportation Utility Facility Permits

Acronyms used in this document:

- BMPs: Best Management Practices
- R/W: Right-of-Way
- UAP: Utility Accommodation Policy
- HMM: Highway Maintenance Manual
- WisDOT: Wisconsin Department of Transportation

1. GENERAL WORK REQUIREMENTS

- As required by Wisconsin Statute 182.0175, when filing your Diggers Hotline request ensure that this WisDOT Permit Number is in the Remarks Section of the Diggers Hotline Ticket.
- The Permittee shall bore under all driveways, private entrances, wetlands, culverts, and all roadways.
- The Permittee is responsible for obtaining any permits from the Department of Natural Resources, or any other agency that may have an interest in the area impacted by the construction of the utility facility.

2. **WORK DUE TO A WISDOT HIGHWAY PROJECT.** This approved permit constitutes acceptance that the work in this permit is compatible with permit requirements. This approved permit is NOT a Work Plan Approval/Start Work Notice as required by Trans 200.05(07). This approved permit is NOT a Work Plan Approval/Start Work Notice for a non-Trans 220 project. This approved permit does NOT approve or authorize an agreement between WisDOT and the Permittee for compensable work due to a WisDOT highway project.

3. **PERMIT TERM.** For as long as the Permittee continues to own, operate and maintain this utility facility within WisDOT R/W in accordance with the terms of its permit and WisDOT's UAP, this permit shall be valid.

4. **REVOCATION BY WISDOT.** WisDOT may revoke this permit if its own use of the R/W would be facilitated by the full or partial relocation of the Permittee utility facility, and shall provide the Permittee with written notice prior to revocation. At which time WisDOT shall work with the Permittee to find a suitable replacement area on R/W near the terminated location if possible. WisDOT shall not compensate the Permittee to move its utility facility in keeping with WisDOT's policy on compensable / non-compensable utility facility moves.

5. **TERMINATION BY PERMITTEE.** The Permittee may terminate this permit upon 60 days written notice to WisDOT. Upon such termination, the Permittee shall either remove its communication cable facility from the R/W, or abandon it in-place provided it does not constitute an environmental hazard.

6. **HOLIDAY WORK RESTRICTIONS for 2018.** The Permittee shall not work on January 1, May 28, July 4, September 3, and November 22, and December 25.

7. **WORK-TIME RESTRICTIONS.** Weekday work is from sunrise to sunset. Weekend work may be allowed upon prior approval from WisDOT. No work shall take place during nighttime hours unless authorized by WisDOT.

8. **TRAFFIC CONTROL.** All work zone traffic control will be in accordance with the Wisconsin Manual on Uniform Traffic Control Devices. Additional guidance is available from WisDOT through a booklet entitled, *Work Zone Safety, Guidelines for Construction, Maintenance, and Utility Operations* or from HMM 09-15-60.

9. **WORK AREA PROTECTION DURING NON-WORK TIMES.** The Permittee may store vehicles, equipment, or materials on the non-freeway R/W provided they are placed as close to the non-freeway R/W line as possible, but no less than 30 feet from the edge of the nearest travel lane. If vehicles, equipment, or materials must be parked or stored within an area that is less than 30 feet from the edge of the nearest travel lanes, appropriate temporary concrete or water-filled barriers, signing, and devices shall be utilized. The Permittee shall ensure that any excavations left open during non-work times are well marked and secured from public intrusion.

The primary objective will be maintenance of a safe traffic and working environment. No operation shall to any extent pose any hazard neither to, nor in any manner influence traffic at any time.

All vehicles used to conduct the work operations will be equipped with conspicuously visible roof-mounted revolving or strobe lights. These lights shall be in operation just prior to and during the time the work operations are being conducted. Hazard warning lights on the vehicles must also be operating.

10. **WORK RESTRICTIONS.** For the purposes of placement of these facilities, as stated with this permit request, the State security fence shall not be opened or damaged.

11. **CLEAR ZONE / DRAINAGE INTERFERENCE.** No topsoil or other excavated piles of soil shall be deposited in any manner that interferes with the clear zone or regular drainage patterns within the highway.

As much as possible, all equipment, operations, and spoil material should be situated or accomplished off of the highway.

12. **EROSION CONTROL.** The Permittee shall use the appropriate erosion control BMPs to contain soil directly at the site to prevent disturbed soil from getting into nearby waterways and wetlands. All appropriate erosion control devices shall be in place **prior to starting construction activities**. Temporary seeding shall be used as necessary after rough grading and before completion of the project. The Permittee shall ensure that erosion control BMPs used to protect restored areas remain in place until replacement vegetation achieves sustained growth.

The Permittee shall take all precautions necessary to prevent mud, dirt, or other debris from being deposited onto the shoulder or pavement of all access roads or highways. Any materials deposited on the shoulder or pavement shall be removed immediately. Ruts may remain as is if the Permittee is accessing the R/W from private property, but appropriate erosion control BMPs shall be used to contain disturbed soil at the site.

13. **R/W RESTORATION.** Upon completion of the project a variation of erosion control measures will be required to restore the area that has been disturbed allowing it to return to the manner it was in previous to the construction. All disturbed sites will require a seed mixture that includes a quick sprouting variety with fertilizer and mulch. Other possibilities that may have to be considered are Geotextile fabric, e-mat, and stone ditch checks.

The Permittee is responsible to assure that erosion control measures used to protect restored areas remain in place until replacement vegetation achieves sustained growth.

The basic drainage pattern of the highway shall remain undisturbed by the permitted work. Upon project completion, all spoils, debris, refuse, and waste resulting from the permitted work shall be removed from the work site. Should future maintenance work on the Permittee's utility facility result in the disturbance of the existing R/W, the Permittee shall restore the R/W to its original condition as soon as possible.

Any works or operations not in full compliance herewith shall justify an order by any inspecting officer of WisDOT to cease all further progress on the work, and to accomplish all restorations of disturbed areas, including full restorations of the pavement

Upon completion of the work, all disturbed areas shall be restored according to requirements stated in the Utility Accommodation Policy, HMM 09-15-65, and in a manner satisfactory to WisDOT

14. **NOTIFICATIONS / CONTACTS.** Notify Northeast Region permit coordinator/field inspector, by phone or email, three days prior to the start of construction. Notify Diggers' Hotline 800/242-8511 at least three working days prior to the start of any excavation. It is the obligation of the permittee to determine the location of, and avoid any damage to, the pre-existing lines and facilities of others.

15. **TREES.** Prevent the spread of oak wilt by treating all cut surfaces and abrasions sustained **between April 1 and September 30** by healthy oak trees and saplings with a thorough application of tree paint immediately upon discovering a wound. Between these dates, also paint the cut surfaces of the stumps of all healthy oak trees and saplings immediately after cutting, whether remaining in place or grubbed.

This permit approves the installation of facilities as shown on the diagram provided. If the above assigned position is not feasible, an alternate location of facilities shall be approved prior to installing the facilities by contacting the permit coordinator approving the permit. If the facility is later discovered to be at a location other than that designated by the permit you may be required to relocate the facility at your expense.

This permit is subject to the attached drawings, these supplemental provisions, and WisDOT's Utility Accommodation Policy. New supplemental provisions may be added, or the existing ones deleted or amended in the future as different issues arise during the installation, operation and maintenance of the permittee's facilities.

3.3 Subsurface Utility Excavation (SUE)

WisDOT allows SUE as a necessary tool for accurate vertical location of utilities. Two methods are available: air (vacuum) and water (jetting). Within the pavement structure (lanes, shoulders, curb & gutter), use **air** SUE rather than water. Water may be allowed if the air method cannot penetrate frozen and/or densely compacted soil. Air or water SUE may be used in other R/W areas beyond the pavement structure. Table 1 below outlines the basic steps for SUE work.

Consult WisDOT prior to using water SUE. If WisDOT agrees to its use, check the SUE water jetting box on the permit application and show hole locations on a drawing. Submit **before** pavement condition pictures at each SUE hole with the permit application, and provide pictures of the fully restored holes **after** the job is completed. This provides WisDOT and the utility with documentation that the restoration was finished. Monitor the holes over the next few years, or until WisDOT is satisfied that no additional settling is occurring or until a new resurfacing or pavement replacement project is done. A utility must repair any SUE hole settlement (Figure 2).

Numerous pictures are not needed. But pictures should be taken from the same angle and distance for the before and after conditions, and be far enough away to provide some sort of perspective for the location (i.e., not right next to the hole). Take pictures with a digital camera so they can be sent electronically, or if taken with a conventional camera, scan and send to WisDOT in a .jpg or .pdf format. No pictures are required for air SUE.

Use round cores for SUE holes within the pavement structure. Round cores are preferred since they prevent stress cracks due to elimination of corners. The maximum size of a SUE hole is 12" in diameter in the wheel paths and a maximum of 16" in diameter outside the wheel paths. Beyond the pavement structure, the hole size may be larger (18"-24") and square upon WisDOT approval.

Table 1: Basic SUE Steps

- 1) Pavement is saw cut full depth, with a bit ranging from 12" to 16" in diameter; resulting in a "core".
- 2) The core is removed and saved for reuse (if structurally sound).
- 3) A protective steel ring is placed to protect the edge of the opening from damage.
- 4) Vacuum equipment is used to excavate compacted material from bottom of base course down to beneath utility facility.
- 5) Utility work is performed (e.g., leak repair, service connection).
- 6) Utility facility is protected with fine material.
- 7) Self-mixing flowable fill material is placed from top of fine material to bottom of base course (fill is designed to be traffic-bearing in 90 minutes).
- 8) Non-shrink grout is placed (grout is designed to be traffic-bearing in about 90 minutes).
- 9) The removed core (or a generic equivalent replacement core) is placed in the remaining opening (original alignment and orientation is maintained if removed core is used) forcing the grout to the surface to fill the annular space and core extraction hole.
- 10) The restored opening is sealed.



Figure 2: Improper SUE Restoration

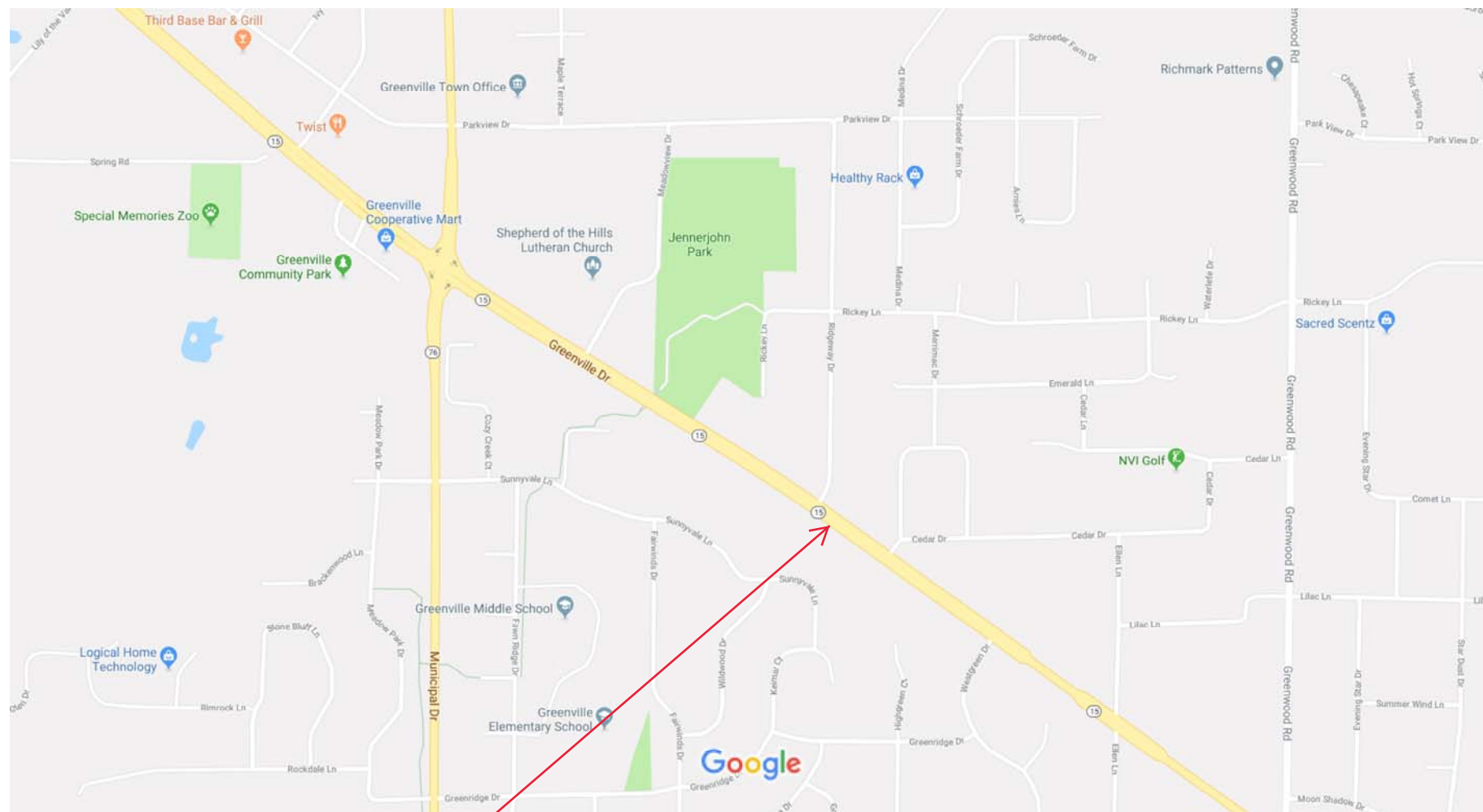
3.4 Non-Metallic Lines

Any non metallic pipe, cable or other kind of utility line which lacks a continuous and integral metallic component capable of detection by locating instruments shall be accompanied in its location by a continuous detectable metallic tracer wire or metallic tape.

3.5 Casing

Where crossings by underground lines are encased in protective conduit or duct, the encasement shall extend at least two feet beyond the toe of slope or three feet beyond the ditch line. On curbed sections, it shall extend at least outside the outer curbs.

Google Maps

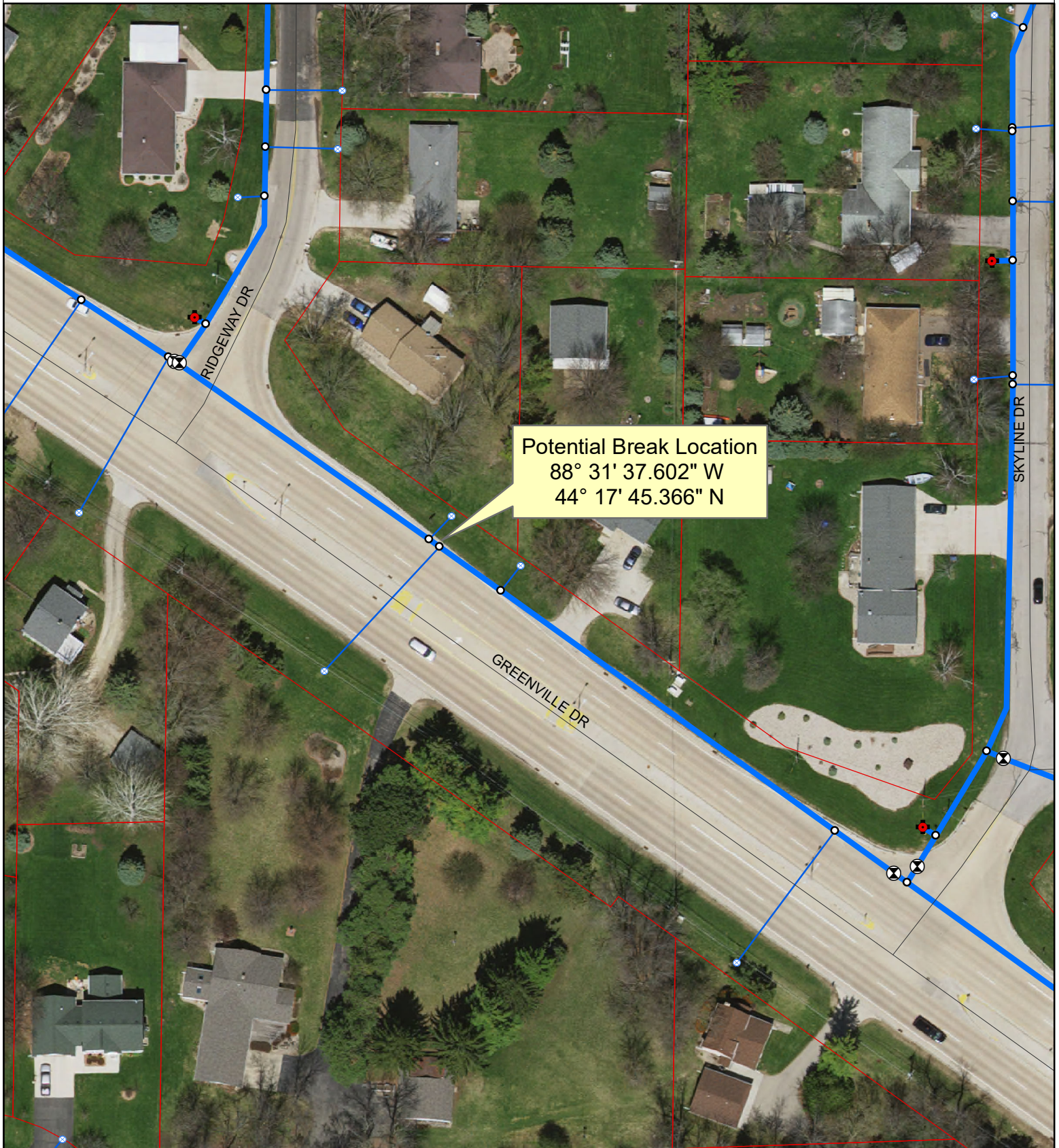


Map data ©2018 Google 500 ft

**CLICK LINK TO VIEW THIS
AREA IN GOOGLE MAPS**<https://www.google.com/maps/@44.2977366,-88.5292832,16z>

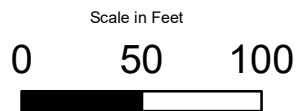
6/5/2018

Town of Greenville



Potential Break Location
 88° 31' 37.602" W
 44° 17' 45.366" N

- ⊙ Curb Stop Valves
- ⊕ Hydrants
- ⊗ Water Valve
- Water Fitting
- Lateral Line
- Water Main
- ▭ Greenville Parcels
- Streets



Scale is approximate and is not based on legally recorded or surveyed data.

Source: Infrastructure - Town of Greenville, 2018
 Parcels & Orthophoto - Outagamie County, 2014

This map provides data containing geographic information about the Town of Greenville. The data was obtained from multiple sources and agencies. The Town of Greenville provides this information with the understanding that it is not guaranteed to be current, correct or complete and assumes no responsibility for the accuracy of this map or its use or misuse. The map is intended for use as a general reference only.



Prepared June 5th, 2018
 By: Town of Greenville - GIS Department
 W6860 Parkway Dr.
 P.O. Box 60
 Greenville, WI 54942
 (920) 757-7276 Phone
 (920) 757-6342 Fax
 Website: www.townofgreenville.com
 Email: gis@townofgreenville.com





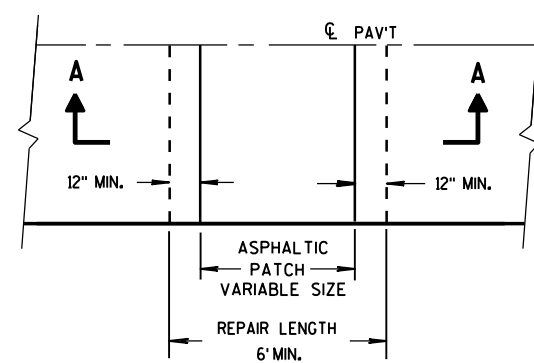
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.

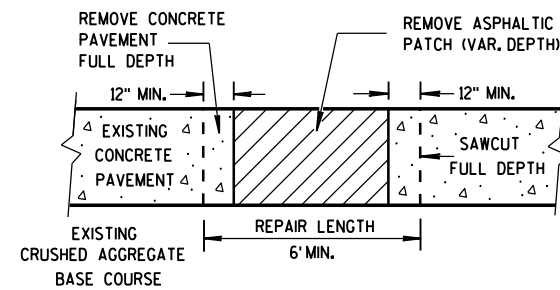
PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

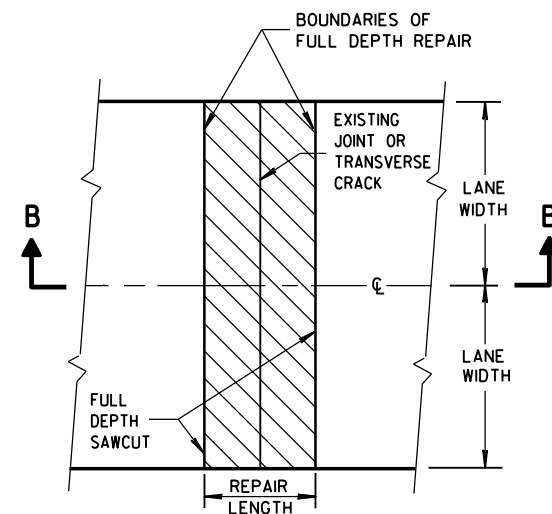
① DOWEL BARS MIGHT NOT EXIST.



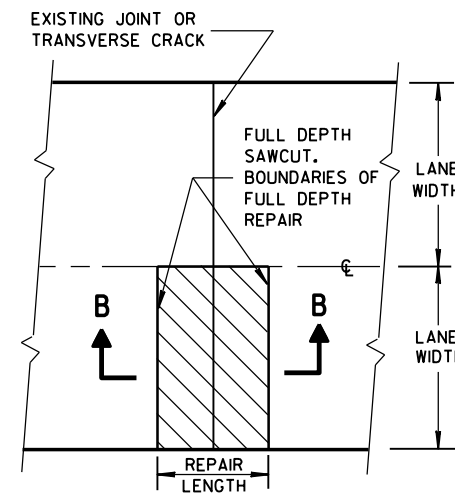
PLAN VIEW



SECTION A-A
HMA PATCH REMOVAL

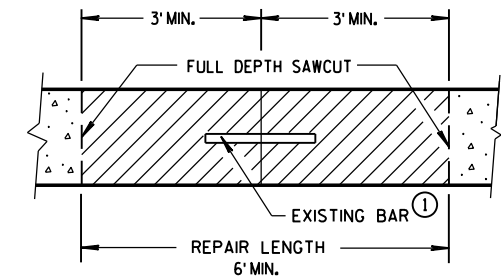


PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

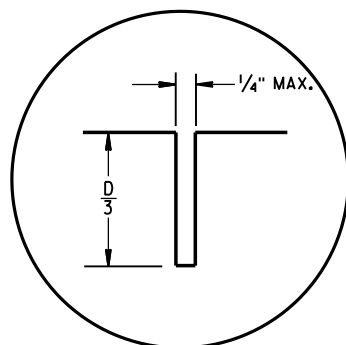
FULL DEPTH CONCRETE PAVEMENT REMOVAL



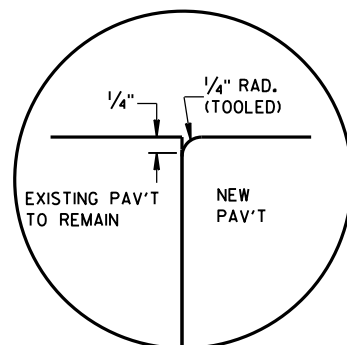
SECTION B-B
CONCRETE REMOVAL

CONCRETE PAVEMENT REPAIR
AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

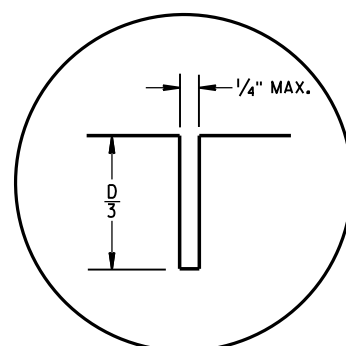


C1

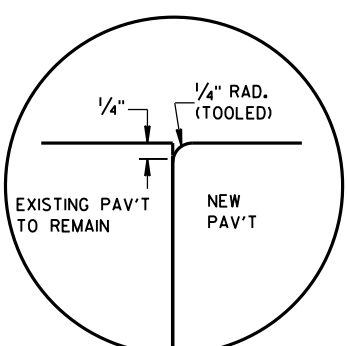


C2

TRANSVERSE JOINTS

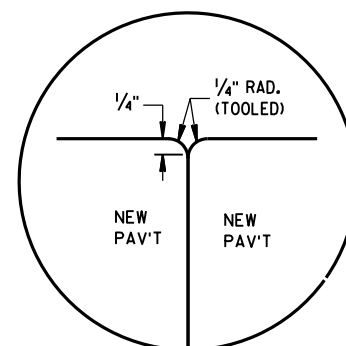


L1



L2

LONGITUDINAL JOINTS



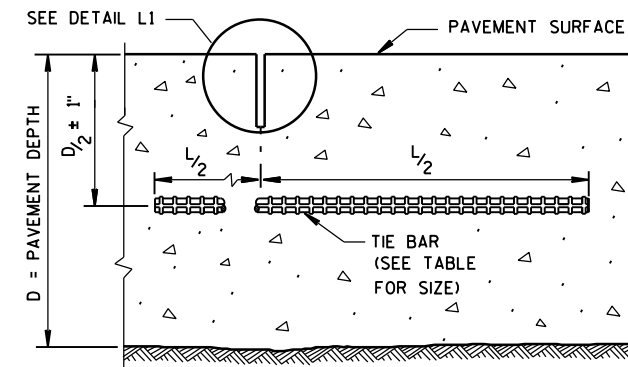
L3

TIE BAR TABLE

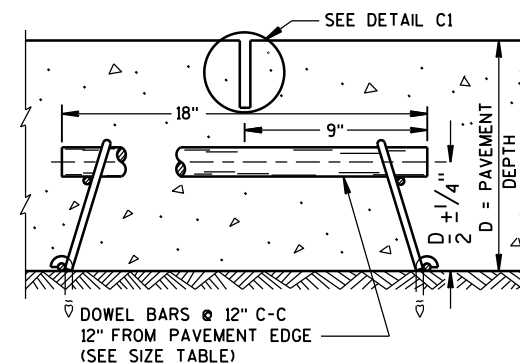
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



SECTION C-C
SAWED LONGITUDINAL JOINT



SECTION F-F
CONTRACTION JOINT

GENERAL NOTES

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

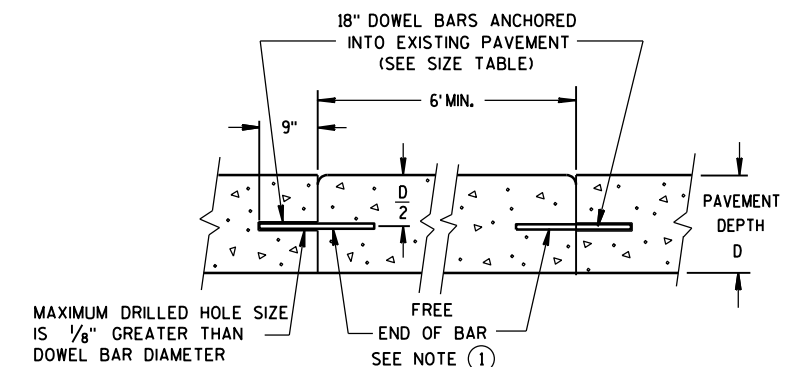
CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

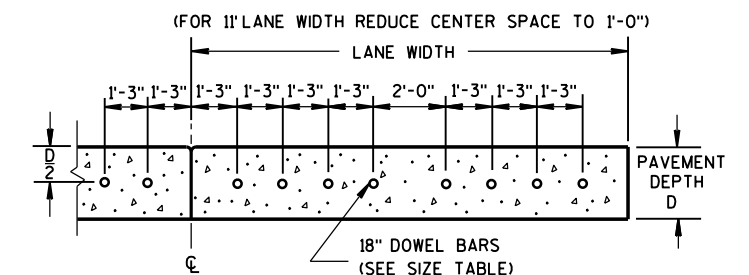
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

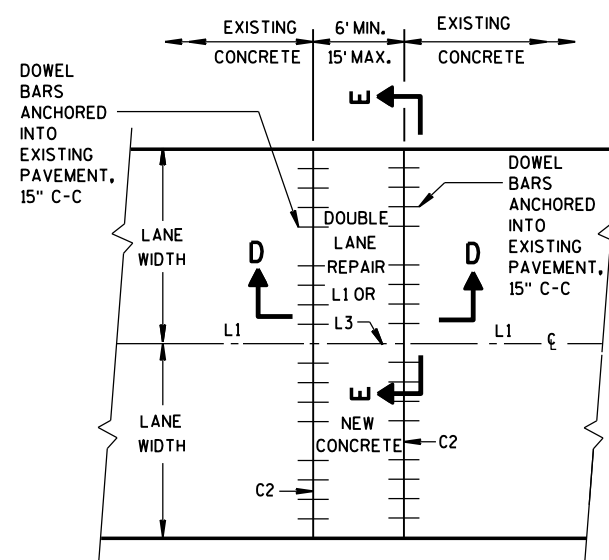
① APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



SECTION D-D

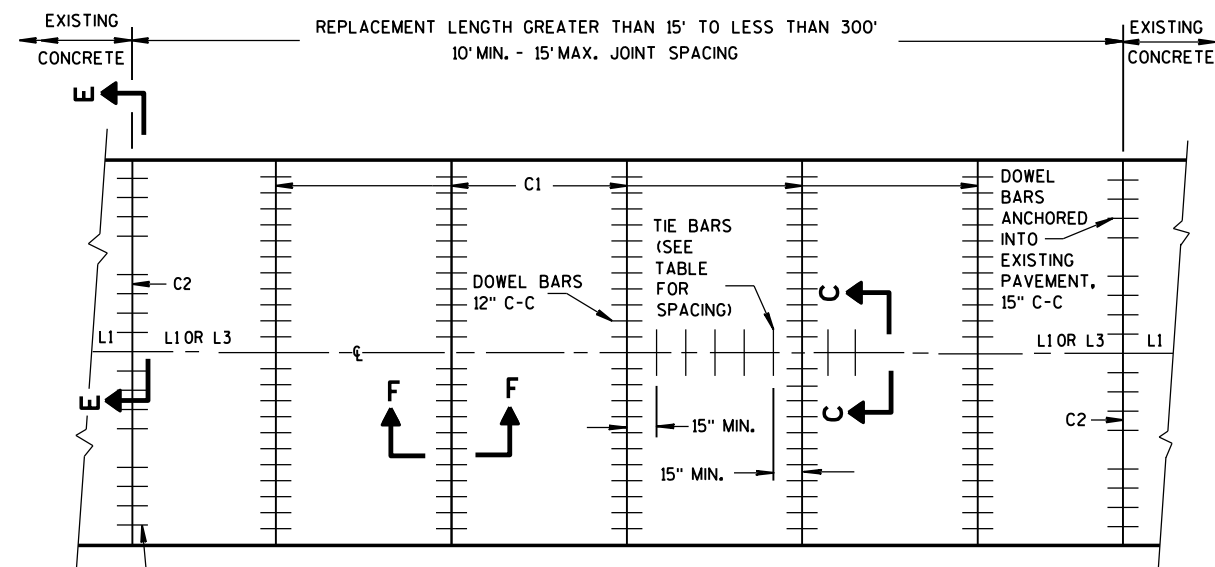


SECTION E-E
DRILLED DOWEL BAR CONSTRUCTION JOINT



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'

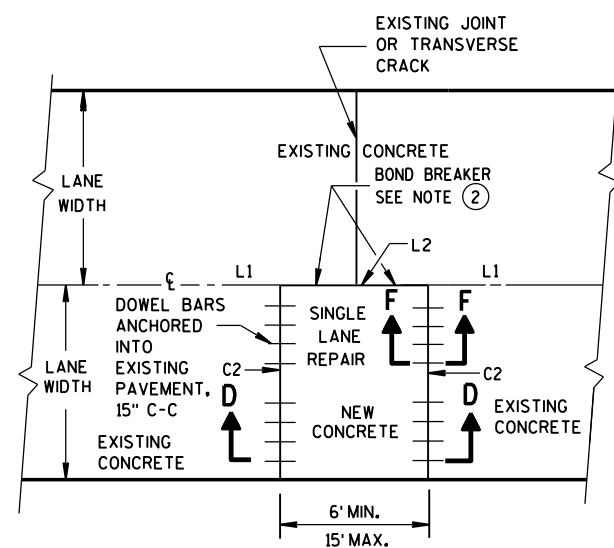
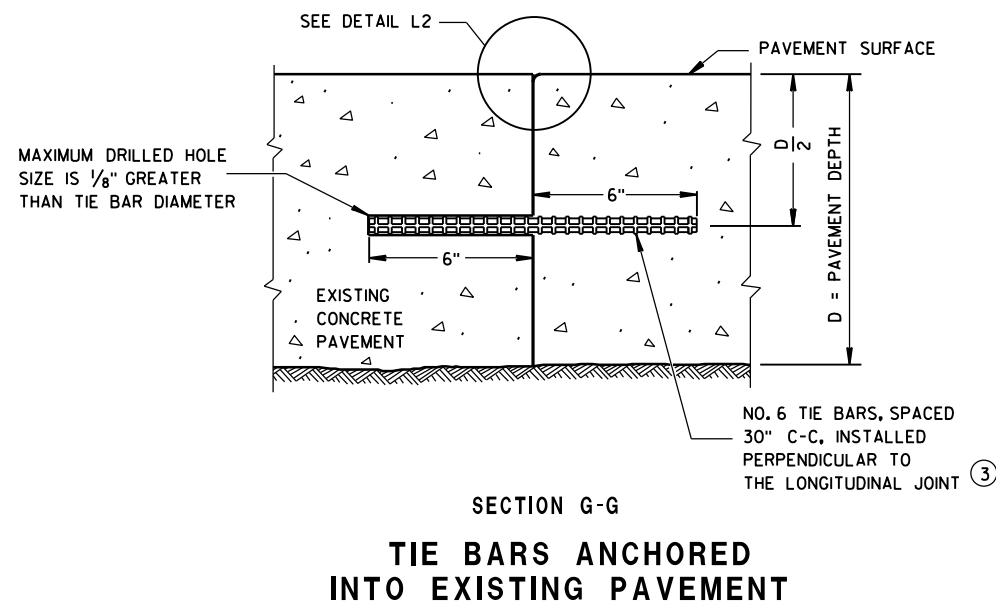
CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

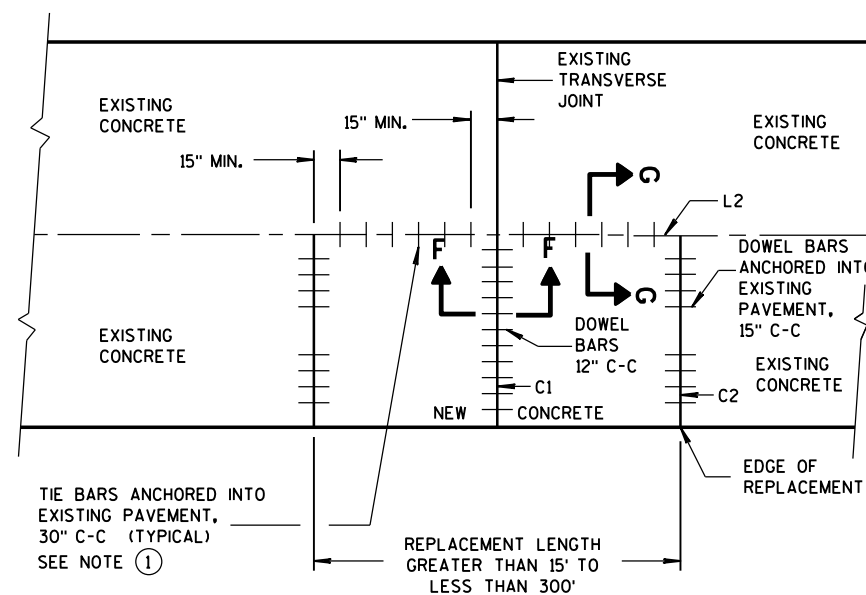


GENERAL NOTES

- WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.
- USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.
- ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



PLAN VIEW
SINGLE LANE
CONCRETE PAVEMENT REPAIR



PLAN VIEW
SINGLE LANE
CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT
REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA

*Concrete Pavement Repair and Replacement***References:**[FDM 14-25-10](#)**Bid items associated with this drawing:**

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
204.0100	Removing Pavement.....	SY
415.0060 - 0199	Concrete Pavement (inch)	SY
415.1080 - 1199	Concrete Pavement HES (inch)	SY
416.0610	Drilled Tie Bars.....	EACH
416.0620	Drilled Dowel Bars	EACH
416.1710	Concrete Pavement Repair.....	SY
416.1715	Concrete Pavement Repair SHES.....	SY
416.1720	Concrete Pavement Replacement.....	SY
416.1725	Concrete Pavement Replacement SHES	SY
690.0250	Sawing Concrete.....	LF

Standardized Special Provisions associated with this drawing:

<u>STSP NUMBER</u>	<u>TITLE</u>
NONE	

Other SDDs associated with this drawing:

SDD 13c11	Rural Doweled Concrete Pavement
SDD 13c13	Urban Doweled Concrete Pavement

Design Notes:

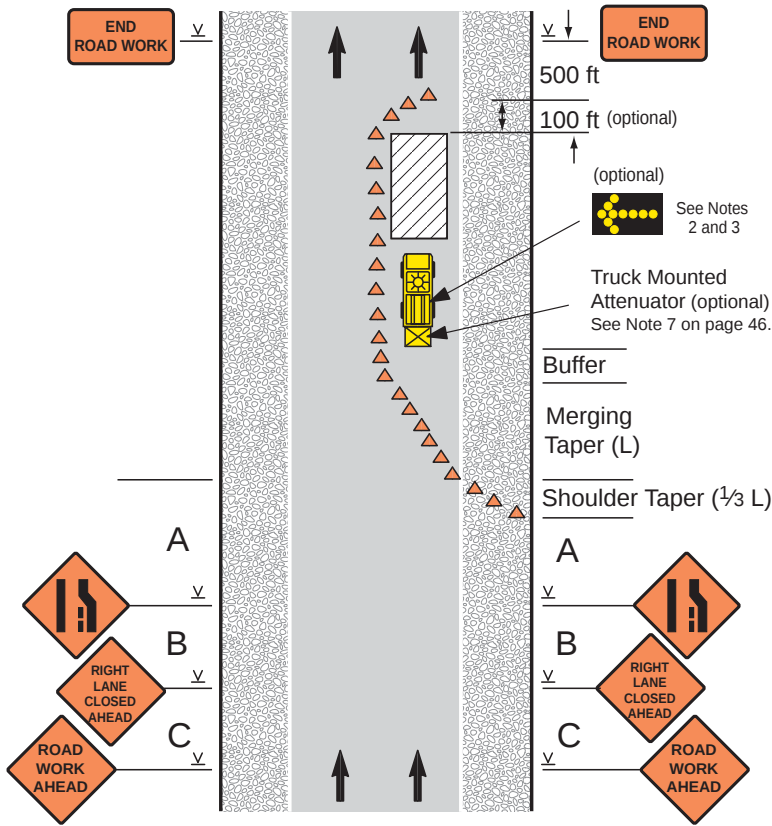
Always include SDDs 13c9 sheets "a", "b" and "c" together in plan sets.

If Concrete Pavement Repair or Concrete Pavement Repair SHES are part of a project, designers should also consider including Concrete Pavement Replacement or Concrete Pavement Replacement SHES and Concrete Pavement (inch) or Concrete Pavement HES (inch) bid items since unforeseen pavement repairs may extend beyond 15 feet in length.

Contact Person:

Myungook (MK) Kang (608) 246-7957

Lane Closure on Divided Roadway



Notes

1. When a side road intersects the roadway within the work zone, additional devices shall be erected to channelize traffic to/from the side road, and a ROAD WORK AHEAD sign shall be placed on each side road approach.
2. An arrow board shall be used when a freeway lane is closed. When more than one freeway lane is closed, a separate arrow board shall be used for each lane closed.

Speed Limit (mph)	Sign Spacing (ft)			Merging Taper (ft) for 12' lane	Buffer (ft)
	A	B	C		
30	200	200	200	180	200
35	350	350	350	245	250
40	350	350	350	320	305
45	500	500	500	540	360
50	1000	1500	2640	600	425
55	1000	1500	2640	660	495
60	1000	1500	2640	720	570
65	1000	1500	2640	780	645

3. Except for freeways, an arrow board is optional based on traffic volume, speed, and visibility. Generally, it is a good practice where speeds are 35 mph or greater. When used, it should be placed near the beginning of the taper or on a vehicle in the work area.
4. If an arrow board is not used, a Large Arrow sign or directional indicator barricades in the taper can be used to provide added guidance.