

**CONSTRUCTION NOTE:  
POTHOLE WHERE  
NECESSARY AND ADJUST  
DEPTH ACCORDINGLY**

THE UTILITIES SHOWN ON THIS PLAN ARE INDICATED IN ACCORDANCE WITH AVAILABLE RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING EXACT LOCATIONS AND ELEVATIONS OF ALL UTILITIES FROM THE OWNERS OF THE RESPECTIVE UTILITIES AND FROM FIELD VERIFICATION.

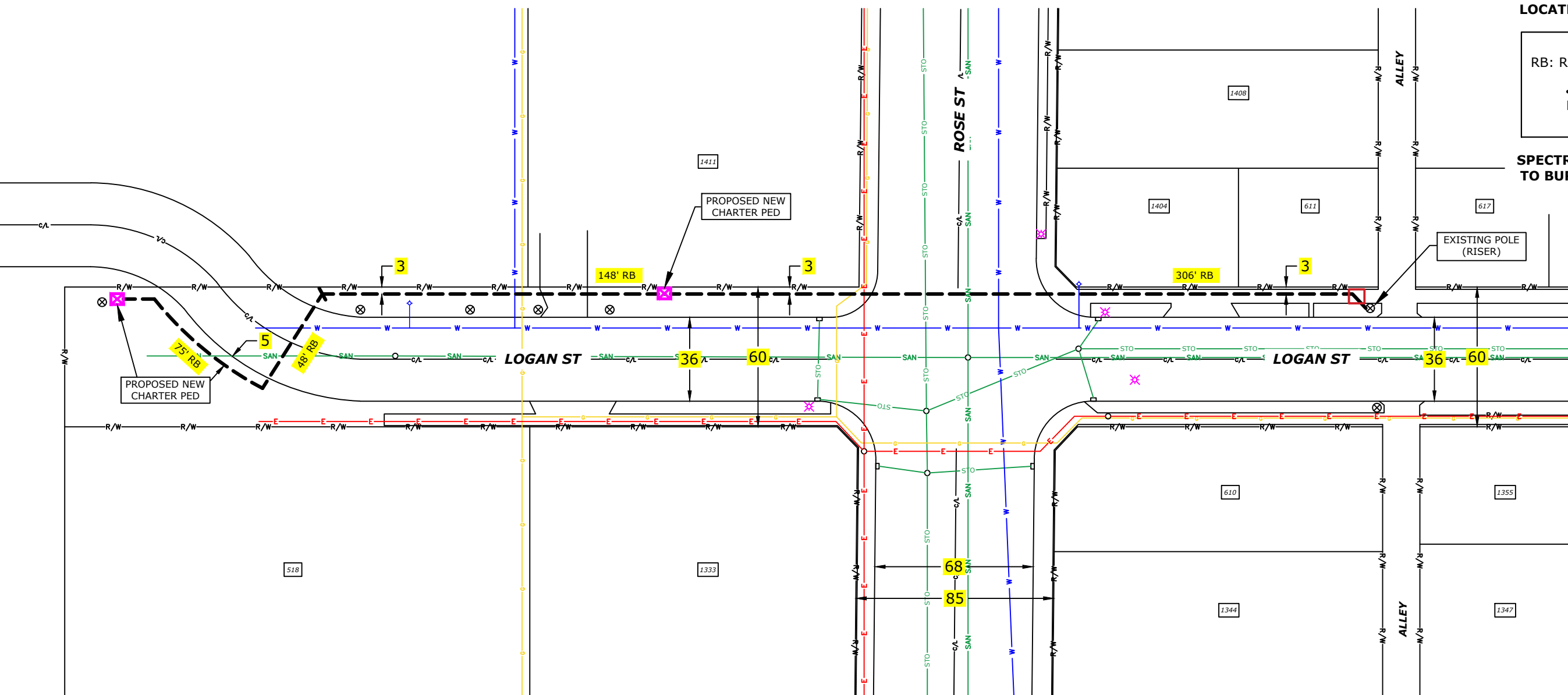
**CONSTRUCTION NOTE:  
BURY CABLE AT A MINIMUM OF 30" DEPTH  
UNLESS OTHERWISE NOTED ON PRINTS.**

**CONSTRUCTION NOTE:  
SPECTRUM CABLE WILL PLACE PROPOSED  
CABLES IN CORRIDOR AS CLOSE TO THE BACK  
OF RIGHT-OF-WAY AS POSSIBLE, PENDING  
LOCATES.**

**LEGEND**  
RB: ROAD BORE (DIRECTIONAL BORE)  
-----  
NEW UNDERGROUND CABLE

**SPECTRUM MID-AMERICA, LLC PROPOSES  
TO BURY FIBER COMMUNICATION CABLE  
IN A 2" CONDUIT**

CONTACT THE STREET DEPARTMENT FOR  
ANY CONCRETE OR ASPHALT REMOVAL  
1-608-789-7340 (TROY SCHMUTZER)



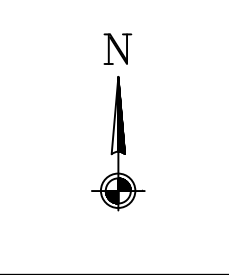
**mi-TECH**  
(920)465-8018  
GREEN BAY, BROWNSVILLE,  
NEW BERLIN & MINNEAPOLIS

LEGEND			
⊗ JOINT POLE	Ⓡ RISER POLE	⊕ MANHOLE	— GROUND
⊙ NEW JOINT POLE	Ⓡ ANCHOR & DOWNGUY	Ⓞ EXISTING FIBER COIL	— NEW GROUND
⊗ POWER POLE	Ⓡ NEW ANCHOR & DOWNGUY	Ⓞ EXISTING FIBER COIL	— P L PROPERTY LINE
⊗ NEW POWER POLE	Ⓡ JOINT ANCHOR	Ⓞ EXISTING VAULT	— C ROADWAY CENTERLINE
Ⓡ BORE PIT	Ⓡ NEW JOINT ANCHOR	Ⓞ EXISTING VAULT	Ⓡ HYDRANT
Ⓡ EXISTING PEDESTAL	Ⓡ TEL CABINET	Ⓞ NEW CHARTER VAULT	Ⓡ SIGNS
Ⓡ NEW PEDESTAL	Ⓡ CALL BOX	Ⓞ SHRUBS	Ⓡ STREET LIGHT
Ⓡ FIBER SLACK LOOP	Ⓡ STORM DRAIN	Ⓞ DECIDUOUS TREE	Ⓡ FIBER SPLICE CASE
Ⓡ ELECTRIC PEDESTAL	Ⓡ UTILITY VALVE		

LINETYPES	
-----	NEW UNDERGROUND CABLE
—	GAS
—	WATER
—	ELECTRICAL
—	STORM
—	SANITARY
—	CABLE TV
—	TELEPHONE

PROJECT # 5780386  
PERMIT I.D. # 5780386-City

**Spectrum**



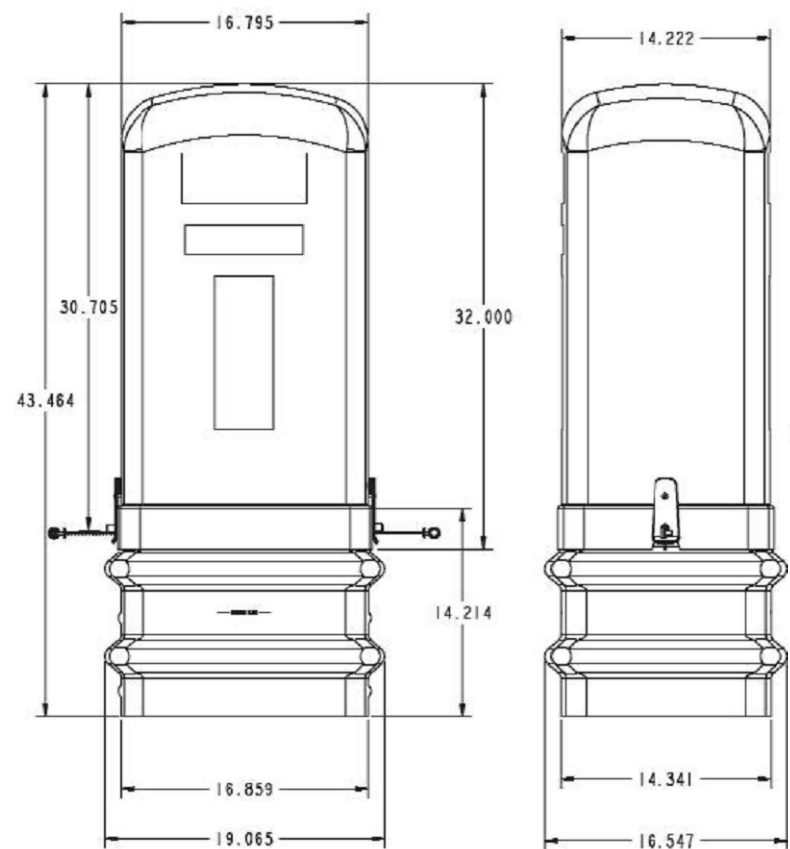
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DRAFTED BY:	DATE:
DESIGNED BY:	DATE:
ASBULTS BY:	DATE:

LOCATION  
LA CROSSE, WI

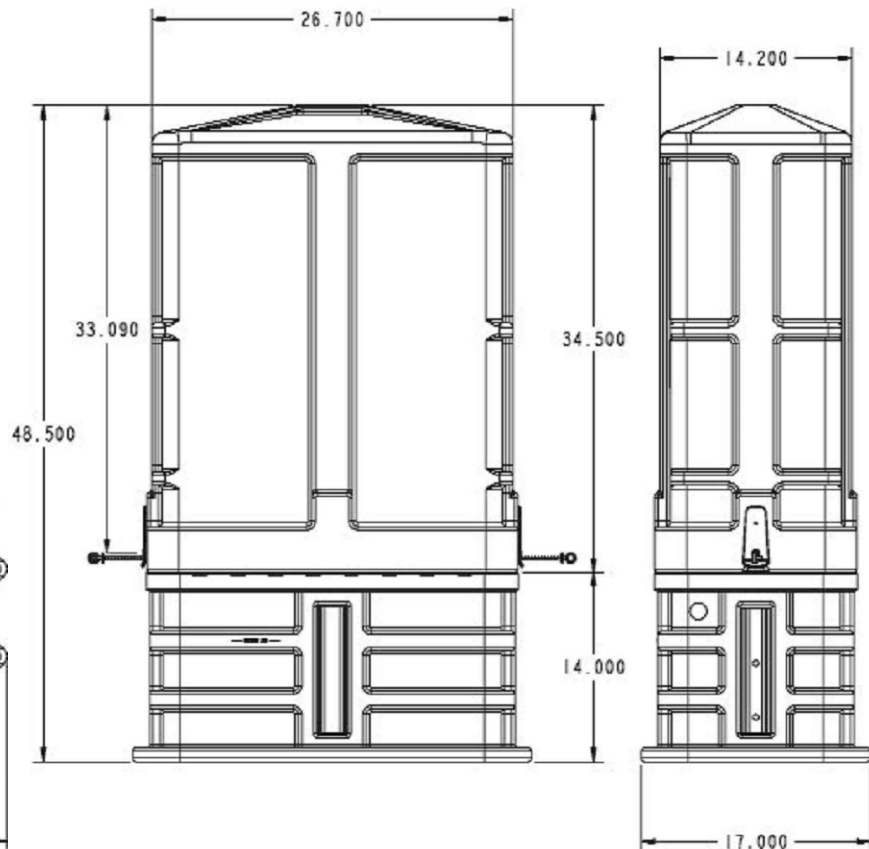
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# TYPES OF PEDESTALS USED DURING CONSTRUCTION

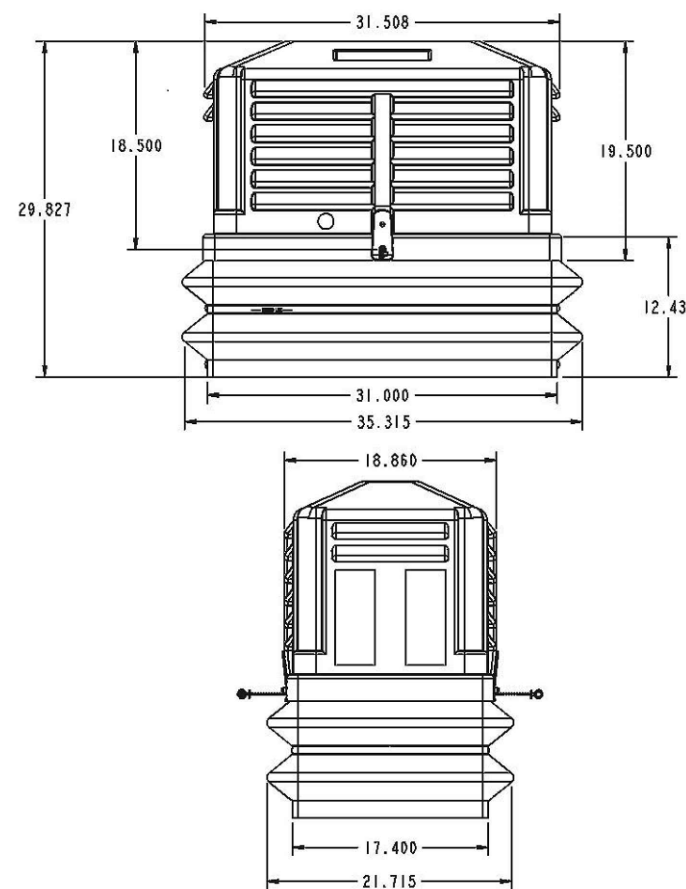
CHARLES PED 4500 (SM)



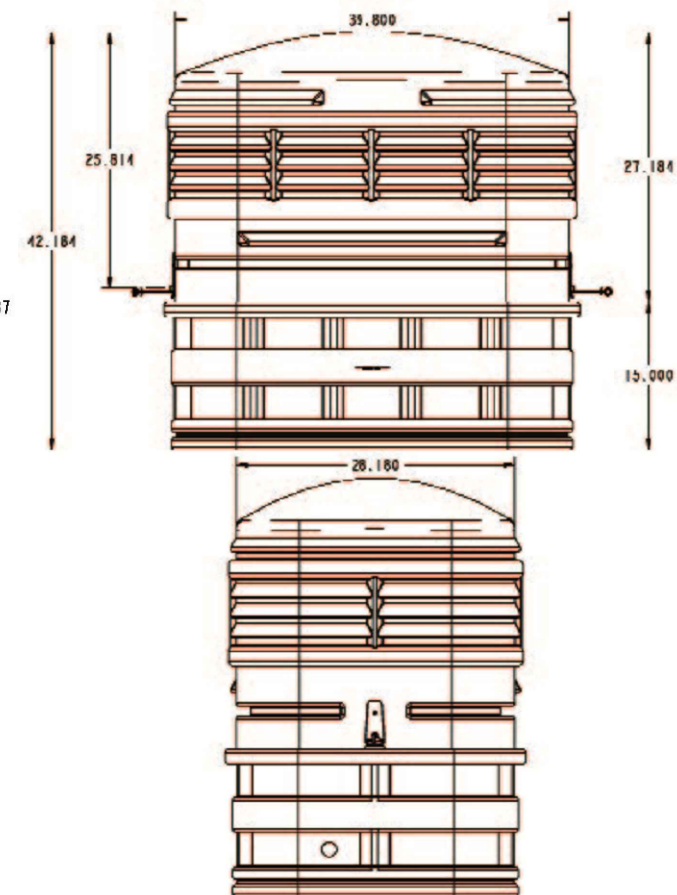
CHARLES PED 5500 (MD)



CHARLES PED 7500 (LG)



CHARLES PED 9500 (XLG)



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NEW BERLIN & MINNEAPOLIS

## LEGEND

⊗ JOINT POLE	Ⓜ RISER POLE	Ⓢ MANHOLE	— — GROUND
⊕ NEW JOINT POLE	Ⓜ ANCHOR & DOWNGUY	Ⓢ EXISTING FIBER COIL	— — NEW GROUND
⊗ POWER POLE	Ⓜ NEW ANCHOR & DOWNGUY	Ⓢ NEW FIBER COIL	— — PROPERTY LINE
⊗ NEW POWER POLE	Ⓜ JOINT ANCHOR	Ⓢ EXISTING VAULT	— — ROADWAY CENTERLINE
Ⓢ BORE PIT	Ⓜ NEW JOINT ANCHOR	Ⓢ NEW CHARTER VAULT	● FIBER WARNING SIGN
Ⓢ EXISTING PEDESTAL	Ⓜ TEL CABINET	Ⓢ SHRUBS	Ⓢ TRAFFIC LIGHT
Ⓢ NEW PEDESTAL	Ⓜ CALL BOX	Ⓢ DECIDUOUS TREE	Ⓢ HYDRANT
∞ FIBER SLACK LOOP	Ⓜ STORM DRAIN	Ⓢ STREET LIGHT	Ⓢ SIGNS
Ⓢ ELECTRIC PEDESTAL	Ⓜ UTILITY VALVE	Ⓢ FIBER SPLICE CASE	Ⓢ

## LINETYPES

NEW UNDERGROUND CABLE	---
GAS	— —
WATER	— —
ELECTRICAL	— —
STORM	— —
SANITARY	— —
CABLE TV	— —
TELEPHONE	— —

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ASBULTS BY:	DATE:		

**Contractor Contingency Plan For Inadvertent Release of Non-Hazardous Drilling Fluid HD Crossings**

Contractor will be utilizing an environmentally safe drilling fluid in combination with established and proven drilling techniques to minimize the potential for any adverse impact to occur to the pipe installation and surrounding area as a result of the directional drilling. The only potentially negative impact that directional drilling could have on the environment would be the inadvertent loss of drilling fluid from the bore-hole and its subsequent migration into sensitive areas. However, the use of drilling fluid is required for successful completion of the drilled crossing and there is no alternative that can be used in its place. Contractor will implement the best available measures (BACT) within the limitations of available construction technology to reduce the potential for inadvertent fluid loss to the surrounding area and ensure that if drilling fluid is inadvertently lost to the surface that any adverse environmental impact is minimized. In addition, Contractor will follow an established procedure to be used by the driller in the event drilling fluid is being noticeably lost from the bore-hole in an attempt to re-establish circulation. Contractor' field personnel undergo continuous FERC environmental training creating an environmental awareness for potential problems.

The drilling fluid is primarily used to clean drill cuttings from the bore-hole as the down-hole cutters are advanced through the ground. The fluid also serves to cool the down-hole tools, stabilize the bore-hole, and reduce friction between the ground formation and the down-hole tools and also the product line during installation. The drilling fluid typically consists of a fresh water base with an inert additive (typically bentonite clay) mixed in to provide fluid properties desirable for use in directional drilling operations. The fluid is pumped from the rig down through the drill stem and into the bore-hole as the drilling progresses at a rate of approximately 60 to 150 gallons per minute for the pilot hole, reaming, and product line installation operations. **(Attachment MSDS/Information Sheet for: 1.) Max Gel, 2.) Super Gel -"X" and 3.) Quik Gel)** Typical brands used by Contractor.

Depending on the porosity and permeability of the ground formation, a small percentage (typically less than 5%), of the drill fluid will be naturally absorbed by the formation. Drilling fluid lost from the bore-hole in this manner rarely migrates to the surface inadvertently and is not likely to come in contact with the ground surface or estuaries. The fluid not absorbed by the ground will fill the annulus from the bottom of the bore-hole up and will circulate back to the surface via the annulus between the drill stem and the bore-hole wall. As long as the bore-hole remains open, and a path of lesser hydraulic relief pressure is not encountered (i.e. formation fracture), circulation back to the surface will continue for the duration of the drilling and installation operation. Contractor will utilize a drill head specially designed to bore a significantly larger diameter hole than the outer diameter of the drill stem to provide adequate space for the fluid to flow up the bore-hole annulus.

The absence of an open bore-hole conduit or the presence of a major formation fracture will typically lead to partial or possibly full loss of drilling fluid circulation. While it is impossible to determine the precise nature of this type of fluid loss, it is possible to accurately monitor for it by watching for a significant difference between the rate the fluid is being pumped down-hole and the rate it returns to the surface. The drilling fluid pumping rate and the rate of drilling fluid return to the surface is constantly monitored by the driller while the drilling is progressing.

The driller will know immediately if an unusually high volume of drilling fluid is being lost down-hole, depending on the ground conditions encountered in the crossing and taking into account the volume used to fill the bore-hole. Should the driller believe that circulation is being completely lost he will implement the following procedures:

- 1) Temporarily cease drilling operations, including pump shut down;
- 2) Dispatch observer as required to monitor the area in the vicinity of the crossing, including wetland areas, for inadvertent returns of drilling fluid at the surface;
- 3) Re-start the pump and stroke the bore-hole up and down in stroke lengths up to 30 feet.

During this procedure the bore-hole will be stroked as many as 4 times but no fewer than 2 in an effort to size the bore-hole annulus and re-open the circulation pathway. In addition, the thixotropic properties of the drilling fluid may be altered (i.e. thickened) at the same time (within the guidelines set forth by the manufacturer), to aid in re-establishing circulation as required, depending on bore-hole conditions. The observers will continuously monitor for inadvertent fluid returns as long as the pump remains on. Occasionally, based on the driller's discretion, it may be useful to increase the stroke length up to 90 feet or past the point at which he believes circulation was lost.

If circulation is re-established drilling will proceed as usual and monitoring for inadvertent fluid returns will no longer be required. If circulation is not re-established, monitoring for inadvertent fluid returns to the ground surface and river will continue and drilling will proceed.

Typically lost circulation has the highest probability of occurring while the pilot hole is being drilled due to the smaller bore-hole annulus and the relatively large volume of solids being displaced and carried in the drilling fluid. Often times in the course of drilling the pilot hole circulation will be temporarily lost as the pilot bit is advanced through more permeable or less competent sections of the ground formation and fluid pressures are at a maximum. As the pilot bit advances beyond these sections of the bore-hole, the fluid pressure will fall and circulation within the bore-hole is naturally re-established. In these instances, much of the fluid lost to the formation under the greater pressures will return back to the bore-hole as the pressures fall, in which case the drilling fluid is not likely to migrate to the surface or the river. It is also possible for the drilling fluid to leave the bore-hole and migrate in a direction other than the ground surface or a wetland, in which case it may never be observed even if circulation is lost for long periods of time.

If drilling fluid returns are observed to be continuously surfacing on the ground at a location that is accessible, the following procedures will be followed:

- 1) Cease drilling operations;
- 2) Contain the location such that the drilling fluid cannot migrate across the ground surface by constructing earthen berms and/or if required, utilizing containment materials and equipment (i.e. hay bales, silt fence, etc.).
- 3) Excavate a small sump pit at the location and provide a means for the fluid to be returned to either the drilling operations or a disposal site (i.e. pump through hose or into tanker);
- 4) Continue drilling operations and continue maintaining the integrity of the containment measures and monitoring the fluid returns as required ensuring that no surface migration occurs.

Special additional requirements for a release to waterway or wetland

- 1) If HDD results in a release of drilling fluid to a waterway or wetland, immediately contact the DRN Spills Hotline (800.943.0003) and the DNR Office of Energy (608.266.3524).
- 2) Release of drilling fluid in a wetland shall be isolated with straw bales and silt fence (no earthen berms), followed by spill cleanup.
- 3) In order to minimize downstream impacts, release of drilling fluid in a flowing waterway requires isolation of spill from waterway (i.e. sandbags, plywood coffer, etc.) and immediate cleanup.

Special additional requirements for a release on pavement or roadway

- 1) If HDD results in a release of drilling fluid on pavement or roadway, immediately contact the DRN Spills Hotline (800.943.0003) and the DNR Office of Energy (608.266.3524) also contact local law enforcement (911).
- 2) Implement an Emergency Traffic Control Plan that is appropriate for the spill area.
- 3) Release of drilling fluid on pavement or roadway shall be isolated with straw bales, sand bags or earthen berms, followed by immediate spill cleanup.
- 4) In order to minimize the impact to traffic the appropriate equipment needed to clean up a spill will be on site or readily available.


If inadvertent drilling fluid returns are observed to be surfacing on the ground surface at a location that is inaccessible, the following procedures will be followed:

- 1) Ensure that all reasonable measures within the limitations of the technology have been taken to re-establish circulation;
- 2) Continue drilling with the minimum amount of drilling fluid as required to penetrate the formation and successfully install the product line.

It should be noted that often times the drill cuttings generated as a result of the drilling process will naturally bridge and subsequently seal fractures or voids in the formation as drilling progresses thus providing another means of re-establishing circulation. This is especially likely during the reaming process as higher volumes of larger cuttings are typically generated. Therefore it is usually beneficial to proceed with the pilot hole even if circulation has not been re-established since it will likely be re-established at some point during the reaming process.

The use of an environmentally safe drilling fluid ensures that even in the event of fluid loss to sensitive areas that there will be no adverse environmental impact other than a temporary minor increase in turbidity until the drilling fluid dissipates. It is important to note that any temporary increase in the turbidity as a result of inadvertent drilling fluid loss while directional drilling the crossing will be several orders of magnitude less than that of an open-cut crossing.

If inadvertent drilling fluid should migrate to the earth's surface, the Contractor' Field Representative will contact the Owner Representative for this project who will in turn contact the appropriate governing authorities.

 <p>(920)465-8018 GREEN BAY, BROWNSVILLE, NEW BERLIN &amp; MINNEAPOLIS</p>	<p><b>LEGEND</b></p> <table border="0"> <tr> <td>⊗ JOINT POLE</td> <td>Ⓡ RISER POLE</td> <td>Ⓢ MANHOLE</td> <td>— — GROUND</td> </tr> <tr> <td>⊗ NEW JOINT POLE</td> <td>Ⓡ ANCHOR &amp; DOWNGUY</td> <td>Ⓢ EXISTING FIBER COIL</td> <td>— — NEW GROUND</td> </tr> <tr> <td>× POWER POLE</td> <td>Ⓡ NEW ANCHOR &amp; DOWNGUY</td> <td>Ⓢ 100' EXISTING FIBER COIL</td> <td>— — P L PROPERTY LINE</td> </tr> <tr> <td>× NEW POWER POLE</td> <td>Ⓡ JOINT ANCHOR</td> <td>Ⓢ 100' NEW FIBER COIL</td> <td>— — C ROADWAY CENTERLINE</td> </tr> <tr> <td>Ⓡ BORE PIT</td> <td>Ⓡ NEW JOINT ANCHOR</td> <td>Ⓢ EXISTING VAULT</td> <td>● FIBER WARNING SIGN</td> </tr> <tr> <td>Ⓡ EXISTING PEDESTAL</td> <td>Ⓡ TEL CABINET</td> <td>Ⓢ NEW CHARTER VAULT</td> <td>⊕ TRAFFIC LIGHT</td> </tr> <tr> <td>Ⓡ NEW PEDESTAL</td> <td>Ⓡ CALL BOX</td> <td>Ⓢ SHRUBS</td> <td>⊕ HYDRANT</td> </tr> <tr> <td>∞ FIBER SLACK LOOP</td> <td>Ⓡ STORM DRAIN</td> <td>Ⓢ DECIDUOUS TREE</td> <td>⊕ SIGNS</td> </tr> <tr> <td>Ⓡ ELECTRIC PEDESTAL</td> <td>Ⓡ UTILITY VALVE</td> <td></td> <td>⊕ STREET LIGHT</td> </tr> <tr> <td></td> <td></td> <td></td> <td>⊕ FIBER SPLICE CASE</td> </tr> </table>				⊗ JOINT POLE	Ⓡ RISER POLE	Ⓢ MANHOLE	— — GROUND	⊗ NEW JOINT POLE	Ⓡ ANCHOR & DOWNGUY	Ⓢ EXISTING FIBER COIL	— — NEW GROUND	× POWER POLE	Ⓡ NEW ANCHOR & DOWNGUY	Ⓢ 100' EXISTING FIBER COIL	— — P L PROPERTY LINE	× NEW POWER POLE	Ⓡ JOINT ANCHOR	Ⓢ 100' NEW FIBER COIL	— — C ROADWAY CENTERLINE	Ⓡ BORE PIT	Ⓡ NEW JOINT ANCHOR	Ⓢ EXISTING VAULT	● FIBER WARNING SIGN	Ⓡ EXISTING PEDESTAL	Ⓡ TEL CABINET	Ⓢ NEW CHARTER VAULT	⊕ TRAFFIC LIGHT	Ⓡ NEW PEDESTAL	Ⓡ CALL BOX	Ⓢ SHRUBS	⊕ HYDRANT	∞ FIBER SLACK LOOP	Ⓡ STORM DRAIN	Ⓢ DECIDUOUS TREE	⊕ SIGNS	Ⓡ ELECTRIC PEDESTAL	Ⓡ UTILITY VALVE		⊕ STREET LIGHT				⊕ FIBER SPLICE CASE	<p><b>LINETYPES</b></p> <table border="0"> <tr> <td>NEW UNDERGROUND CABLE</td> <td>— —</td> </tr> <tr> <td>GAS</td> <td>— —</td> </tr> <tr> <td>WATER</td> <td>— —</td> </tr> <tr> <td>ELECTRICAL</td> <td>— —</td> </tr> <tr> <td>STORM</td> <td>— —</td> </tr> <tr> <td>SANITARY</td> <td>— —</td> </tr> <tr> <td>CABLE TV</td> <td>— —</td> </tr> <tr> <td>TELEPHONE</td> <td>— —</td> </tr> </table>		NEW UNDERGROUND CABLE	— —	GAS	— —	WATER	— —	ELECTRICAL	— —	STORM	— —	SANITARY	— —	CABLE TV	— —	TELEPHONE	— —	<table border="1"> <tr> <td colspan="2">ADDRESS</td> <td colspan="2">LOCATION</td> </tr> <tr> <td>FIELD BY:</td> <td>DATE:</td> <td></td> <td></td> </tr> <tr> <td>DRAFTED BY:</td> <td>DATE:</td> <td></td> <td></td> </tr> <tr> <td>DESIGNED BY:</td> <td>DATE:</td> <td></td> <td></td> </tr> <tr> <td>ASBUILTS BY:</td> <td>DATE:</td> <td></td> <td></td> </tr> </table>	ADDRESS		LOCATION		FIELD BY:	DATE:			DRAFTED BY:	DATE:			DESIGNED BY:	DATE:			ASBUILTS BY:	DATE:		
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