



STATE OF MICHIGAN PROCUREMENT

Michigan Department of Transportation

425 W. Ottawa, Lansing, MI 48933

CONTRACT CHANGE NOTICE

Change Notice Number **04**

to

Contract Number **180000001213**

CONTRACTOR	RMD Holdings Ltd dba Nationwide Construction Group
	6995 1 Lowe Plank Rd
	Richmond, MI 48062
	Andre DeMil
	ademil@nationwiedecos.com
	(586) 270-2016
	CV0034454

STATE	Program Manager	Mike Budai, Taylor TSC Ahmad Azmoudeh, Macomb TSC BudaiM@michigan.gov AzmoudehA@michigan.gov 248-343-3697 , Mike Budai 248-43104749, Ahmad Azmoudeh	MDOT
	Contract Administrator	Laura Dotson (517) 230-1612 Dotsonl2@michigan.gov	MDOT

May 1 CONTRACT SUMMARY				
DESCRIPTION: As-Needed Guardrail & High-Tension Cable Barrier Maintenance and Emergency Services-Taylor and Macomb TSC				
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW	
10/1/2018	9/30/2020	3, 1 yr	9/30/2022	
PAYMENT TERMS		DELIVERY TIMEFRAME		
Net 45		As directed		
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING	
<input type="checkbox"/> P-card <input type="checkbox"/> Payment Request (PRC) <input type="checkbox"/> Other			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
MINIMUM DELIVERY REQUIRMENTS				
Per contract specifications				
DESCRIPTION OF CHANGE NOTICE				
OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
<input checked="" type="checkbox"/>	1 year	<input type="checkbox"/>		9/30/23
CURRENT VALUE		VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE	
\$4,762,222.00		\$420,925.50	\$5,183,147.50	
DESCRIPTION: This contract is exercising the final option year and is increased by \$420,925.50. All other terms and conditions remain the same. State Administrative Board approval date: June 28, 2022.				

FOR THE CONTRACTOR:

RMD Holdings Ltd dba Nationwide Construction Group
Company Name

Authorized Agent Signature

Robert DeMil
Authorized Agent (Print or Type)

6/28/2022
Date

FOR THE STATE:

Signature

Carol Rademacher for the Department Director
Name & Title

Michigan Department of Transportation
Agency

7/5/2022
Date



STATE OF MICHIGAN PROCUREMENT

Department of Transportation

Van Wagoner Building, 425 West Ottawa Street
P.O. Box 30050, Lansing, MI 48909

CONTRACT CHANGE NOTICE

Change Notice Number **03**

to

Contract Number **18000001213**

CONTRACTOR	RMD Holdings Ltd d/b/a Nationwide Construction Group
	69951 Lowe Plank Rd Richmond, MI 48062
	Andre DeMil (586) 270-2016 ademil@nationwidecos.com
	V Cust#

STATE	Program Manager	Mike Budai, Taylor TSC 248-343-3697 BudaiM@michigan.gov	MDOT
	Contract Administrator	Ahmad Azmoudeh, Macomb TSC 248-431-4749 AzmoudehA@michigan.gov	
		Klatra Pickett 517-355-0071 Pickettk1@michigan.gov	MDOT

CONTRACT SUMMARY

DESCRIPTION: TAYLOR and Macomb TSC
As-Needed Guardrail & High-Tension Cable Barrier Maintenance & Emergency Services

INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
10/1/2018	9/30/2020	3, 1yr	9/30/2021
PAYMENT TERMS		DELIVERY TIMEFRAME	
Net 45		As directed	
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING
<input type="checkbox"/> P-card <input type="checkbox"/> Payment Request (PRC) <input type="checkbox"/> Other			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS			
N/A			

DESCRIPTION OF CHANGE NOTICE

OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
<input checked="" type="checkbox"/>	1yr	<input type="checkbox"/>		9/30/2022
CURRENT VALUE	VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE		
\$3,462,222.00	\$1,300,000.00	\$4,762,222.00		

DESCRIPTION: Effective September 7, 2021

Option Year w/ Increase MDOT is exercising the 2ND option year and this contract is increased by \$1,300,000.00. The revised contract expiration date is 9/30/2022

Macomb TSC 300,000.00. Taylor TSC 1,000,000.00

All other terms, conditions, specifications, and pricing remain the same, per contractor, MDOT Contract Service Division, and State Administrative Board approval on September 7, 2021.

FOR THE CONTRACTOR:

RMD Holdings Ltd
d/b/a Nationwide Construction Group

Authorized Agent Signature

Robert DeMil - President

Authorized Agent (Print or Type)

September 14, 2021

Date

FOR THE STATE:

Signature

Carol Rademacher for Department Director

Name & Title

Michigan Department of Transportation

Agency

9/20/2021

Date



STATE OF MICHIGAN PROCUREMENT

Department of Transportation

Van Wagoner Building, 425 West Ottawa Street
P.O. Box 30050, Lansing, MI 48909

CONTRACT CHANGE NOTICE

Change Notice Number **02**

to

Contract Number **18000001213**

CONTRACTOR	RMD Holdings Ltd d/b/a Nationwide Construction Group
	69951 Lowe Plank Rd Richmond, MI 48062
	Andre DeMil (586) 270-2016 ademil@nationwidecos.com
	V Cust#

STATE	Program Manager	Mike Budai, Taylor TSC 248-343-3697 BudaiM@michigan.gov	MDOT
	Contract Administrator	Ahmad Azmoudeh, Macomb TSC 248-431-4749 AzmoudehA@michigan.gov	
		Klatra Pickett 517-355-0071 Pickettk1@michigan.gov	MDOT

CONTRACT SUMMARY

DESCRIPTION: TAYLOR and Macomb TSC As-Needed Guardrail & High-Tension Cable Barrier Maintenance & Emergency Services			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
10/1/2018	9/30/2020	3, 1yr	9/30/2020
PAYMENT TERMS		DELIVERY TIMEFRAME	
Net 45		As directed	
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING
<input type="checkbox"/> P-card <input type="checkbox"/> Payment Request (PRC) <input type="checkbox"/> Other			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS			
N/A			

DESCRIPTION OF CHANGE NOTICE

OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
<input checked="" type="checkbox"/>	1yr	<input type="checkbox"/>		9/30/2021
CURRENT VALUE	VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE		
\$1,962,222.00	\$1,500,000.00	\$3,462,222.00		

DESCRIPTION: Effective September 30, 2020

Option Year w/ Increase **MDOT is exercising the 1st option year and this contract is increased by \$1,500,000.00. The revised contract expiration date is 9/30/2021**

Macomb TSC 300,000.00. Taylor TSC 1,200,000.00

All other terms, conditions, specifications, and pricing remain the same, per contractor, MDOT Contract Service Division, and State Administrative Board approval on September 1, 2020.

FOR THE CONTRACTOR:

RMD Holdings, LTD., d/b/a Nationwide Construction Group
Company Name

Authorized Agent Signature

Robert DeMil, President

Authorized Agent (Print or Type)

9/25/2020

Date

FOR THE STATE:

Signature

Carol Rademacher for the Department Director

Name & Title

Michigan Department of Transportation

Agency

10/22/2020

Date



STATE OF MICHIGAN PROCUREMENT

Department of Transportation

Van Wagoner Building, 425 West Ottawa Street
P.O. Box 30050, Lansing, MI 48909

CONTRACT CHANGE NOTICE

Change Notice Number 01

to

Contract Number **18000001213**

CONTRACTOR	RMD Holdings Ltd d/b/a Nationwide Construction Group Andre DeMil 69951 Lowe Plank Rd. Richmond, MI 48062 (586) 270-2016 ademil@nationwidecos.com
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STATE	Program Manager	Mike Budai, Taylor TSC 248-343-3697 BudaiM@michigan.gov	MDOT
	Contract Administrator	Ahmad Azmoudeh, Macomb TSC 248-431-4749 AzmoudehA@michigan.gov	MDOT

CONTRACT SUMMARY				
DESCRIPTION: Metro Region – TAYLOR TSC				
As-Needed Guardrail & High-Tension Cable Barrier Maintenance & Emergency Services				
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW	
10/1/2018	9/30/2020	3, 1yr	9/30/2020	
PAYMENT TERMS		DELIVERY TIMEFRAME		
Net 45		As directed		
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING	
<input type="checkbox"/> P-card <input type="checkbox"/> Payment Request (PRC) <input type="checkbox"/> Other			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
MINIMUM DELIVERY REQUIREMENTS				
N/A				
DESCRIPTION OF CHANGE NOTICE				
OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
<input type="checkbox"/>		<input type="checkbox"/>		
CURRENT VALUE		VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE	
\$831,111.00		\$1,131,111.00	\$1,962,222.00	
DESCRIPTION Effective March 26, 2019, the following amendments are incorporated into this contract (master agreement):				
INCREASE	\$1,131,111.00 ADDED to contract value.			
LOCATION	Macomb Transportation Service Center (TSC) is ADDED as an as-needed jurisdiction, within Schedule A, Scope item 1.1., Table 1			
AVAILABLE OPTION YEARS	Per contract language, available renewal option years are three (3), one year options, coversheet CHANGED from 2, 1yr to 3, 1yr.			
PROGRAM MANAGER	Program manager for Taylor TSC is changed FROM Jasna Cehaja TO Mike Budai. Program manager Ahmad Azmoudeh is ADDED for Macomb TSC.			
All other terms, conditions, specifications, and pricing remain the same, per contractor, MDOT Contract Service Division, and State Administrative Board approval on March 26, 2019.				

FOR THE CONTRACTOR:

Company Name

Authorized Agent Signature

Authorized Agent (Print or Type)

Date

FOR THE STATE:

Signature

Name & Title

Agency

Date



STATE OF MICHIGAN ENTERPRISE PROCUREMENT

Department of Transportation
Van Wagoner Building, 425 West Ottawa Street
P.O. Box 30050, Lansing, MI 48909

NOTICE OF CONTRACT

NOTICE OF CONTRACT NO. **18000001213**
between
THE STATE OF MICHIGAN
and

CONTRACTOR	RMD Holdings Ltd d/b/a Nationwide Construction Group
	Andre DeMil
	69951 Lowe Plank Rd.
	Richmond, MI 48062
	(586) 270-2016
	ademil@nationwidecos.com

STATE	Program Manager	Jasna Cehaja	MDOT
		313-375-2444	
		CehajaJ@michigan.gov	
STATE	Contract Administrator	Klatra Pickett	MDOT
		517-335-0071	
		Pickettk1@michigan.gov	

CONTRACT SUMMARY			
DESCRIPTION: Metro Region – TAYLOR TSC As-Needed Guardrail & High-Tension Cable Barrier Maintenance & Emergency Services			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
10/1/2018	9/30/2020	2, 1yr	9/30/2020
PAYMENT TERMS		DELIVERY TIMEFRAME	
Net 45		As directed	
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS			
N/A			
MISCELLANEOUS INFORMATION			
N/A			
ESTIMATED CONTRACT VALUE AT TIME OF EXECUTION			\$831,111.00

THIS IS NOT AN ORDER: This Master Agreement is awarded based on our inquiry bearing the solicitation RFP #18000002998. Orders for delivery will be issued directly by the Department of Transportation through the issuance of a Delivery Order.

FOR THE CONTRACTOR:

Nationwide Construction Group

Authorized Agent Signature

Authorized Agent (Print or Type)

Date

FOR THE STATE:

Signature

Name & Title

Agency

Date



STATE OF MICHIGAN

As-Needed Guardrail Maintenance &
High-Tension Cable Barrier

SCHEDULE A STATEMENT OF WORK CONTRACT ACTIVITIES

BACKGROUND

The Michigan Department of Transportation (MDOT), for Metro TAYLOR Transportation Center (TTSC) provides transportation related construction, maintenance and program needs on all M, I, and US routes, within their jurisdiction.

The Contractor, RMD Holding Ltd, dba Nation Wide Construction Group, will provide contract activities as presented within Schedule A and as defined within the attachments.

This is a two (2) year contract with three (3) – one (1) year optional renewals.

1. Scope of Work and General Requirements

The MDOT, TAYLOR TSC will use a pre-qualified contractor in category N9-6L to provide as-needed maintenance and as needed emergency services of guardrail and high-tension cable barrier for all state routes in Wayne County, within the Taylor TSC jurisdiction.

The required objective is to MAINTAIN AND REPAIR roadway guardrail and high-tension cable barrier for the safety of the motoring public at all times.

1.1 Scope

The Contractor will provide as-needed maintenance of guardrail and high-tension cable barrier as indicated in the table below. (ref. Table 1) As defined here, these will be collectively referred to as “appurtenances” unless otherwise referenced individually.

Service will either be Standard, or Emergency as referenced herein.

Table 1 – Required Services

TSC Jurisdiction	Galvanized steel beam guardrail	High tension cable barrier
Wayne County (except non-freeway routes in Detroit)	X	X

The Contractor shall submit a standardized list of pay items common to guardrail and cable barrier, as listed on Schedule B. Specific project locations will be identified at stated Kick-Off Meetings.

Quantities listed in the Schedule B for each are estimates. Actual work performed will be determined by the Program Manager or his/her designee on an as-needed basis. The State is not obligated to purchase any listed quantity.

1.2 General Requirements Overview

The Contractor through: innovation, technology, or other means shall perform and provide the required maintenance and have adequate qualified staff to complete the requested work determined by MDOT and otherwise do all things necessary for, or incidental, to the performance of work, including by not limited to:

- All personnel;
- Equipment;
- Tools;
- Supplies;
- Materials;
- Training; and supervision of staff



The Contractor shall provide services at the locations described on Work Orders throughout Wayne County and or as directed by the MDOT Program Manager (PM). The MDOT Program Manager may designate (via email) an alternate person(s) to act on his/her behalf.

Use of ArcGIS software will be required for the use of tracking all work and Work Orders. All necessary information concerning the specific site will be on each Work Order. Each Work Order will have a unique number automatically created by the ArcGIS system or MDOT PM. All work must be completed by the expiration date of each Work Order as designate in Section 2.1. The Contractor will be required to periodically check the ArcGIS guardrail database for new assignments or to update the status of previous Work Orders.

Other methods can be used for issuing Work Orders in lieu of ArcGIS if mutually agreed upon by MDOT and the Contractor. Unless otherwise agreed upon by both parties, Work Orders in ArcGIS are considered written approval hence forth in this contract.

All repair work made under this contract shall be done in accordance with the currently published MDOT Standard Specifications for Construction, Special Provisions, Standard Plans and Special Details included herein.

1.3. Performance Guarantee (in reference to attached Standard Contract Terms, section 5)

The Contractor must at all times have financial resources sufficient, in the opinion of the State, to ensure performance of the Contract and must provide proof upon request. The Contractor will have a valid performance bond for the duration of the contract term.

Contractor will provide a copy of the performance bond prior to execution of a Master Agreement (contract).

1.4. Standard Plans, Special Details and Special Provisions Requirements

The Contractor shall complete all work according to the applicable standards listed below:

Standard Plans and Special Details

Guardrail Median Object Protection	R-56-F*
Guardrail at Bridges and Embankments	R-59-E
Guardrail Types A, B, BD, T, TD, MGS-8, & MGS-8D	R-60-J*
Guardrail Approach Terminal Types 2M	R-62-H*
Guardrail Approach Terminal Type 3B & 3T	R-63-C*
Guardrail Departing Terminal Types B, T & MGS	R-66-E*
Guardrail Anchorage, Bridge, Details	R-67-G*
Low Tension 3-Cable Barrier	R-70-C
Guardrail Anchorage, Median	R-71-C*
W-Beam Backed Guardrail & Guardrail Long Span Installations	R-72-D*
Guardrail Over Box or Slab Culverts	R-73-F*
Soil Erosion and Sedimentation Control Measures	R-96-E
Ground Driven Sign Supports for Temp Signs	WZD-100-A*
Temporary Traffic Control Devices	WZD-125-E*
Bridge Railing, Thrie Beam Retrofit (R4 Type Bridge Railing)	B-22-E*
Bridge Railing, Thrie Beam Retrofit (Open Parapet Type Bridge Railing)	B-23-F*
Guardrail At Intersections	21*
Guardrail Anchored in Backslope Types 4B, 4T & 4MGS-8	24*
Protect Intelligent Transportation System Infrastructure	12IT800(B595)
Staking Michigan Department of Transportation Underground	
Electrical Infrastructure and ITS Facilities	12DS819(M815)
Protect Intelligent Transportation System Infrastructure	12IT800(B595)
Staking Michigan Department of Transportation Underground	
Electrical Infrastructure and ITS Facilities	12DS819(M815)

*Denotes Special Detail

Special Provisions

- Galvanized Beam Guardrail
- Maintenance and Repair of High Tension Cable Barrier After Construction
- Steel Guardrail Post, Furnish and Install
- Guardrail Anchored in Backslope (Type 4B and Type 4T)
- Maintaining Traffic



Additional Drawings (other detail)

Driven Socket Detail
Gibraltar End Terminal Foundation Detail
Cass End Terminal Foundation Detail
Line Post Foundation Detail

1.5 Traffic Control

Contract shall provide traffic control in accordance with the attached Special Provision for Maintaining Traffic.

1.6 Other Miscellaneous Requirements

Post Holes

Posts placed within 3 feet of existing culverts shall be in drilled holes and shall not be driven. All post holes shall be back filled and compacted as directed by the Engineer.

Guardrail Posts

With the exception of Guardrail Types MGS-8 and MGS-8D, all guardrail posts shall be 8 feet long except for those within the anchorage areas or guardrail approach terminals. Additional post length shall be included in the payment for proposed guardrail items.

With Guardrail types MGS-8 and MGS-8D, all guardrail posts shall be 9 feet long except for those within the anchorage areas or guardrail approach terminals. Additional post length shall be included in the payment for proposed guardrail items.

Guardrail Transitions

Transition sections from guardrail types MGS-8 and MGS-8D to other guardrail types (e.g. Types B, BD, T and TD) will be included as part of the pay item associated with guardrail types MGS-8 and MGS-8D.

Curved Guardrail

Shop bent curved guardrail shall not be ordered until the radius has been field verified by the Contractor.

Guardrail at Bridges

Guardrail shall be extended parallel to the existing bridge railing until past downspouts before flaring to shoulder.

Grading and Drainage

Before constructing beam guardrail, grade the shoulder and berm to provide drainage. For approach guardrail terminals, grade to Class A slope tolerances. Remove all excess material and dispose of according to subsections (ref. 2012 publication section 205.03.P), of the currently published MDOT Standard Specifications for Construction.

Utilities

For protection of underground utilities and in conformance with Public Act 174 of 2013, (ref.attached) the Contractor shall dial 1-800-482-7171 a minimum of three full working days, excluding Saturdays, Sundays, and holidays prior to beginning each excavation in areas where public utilities have not been previously located. Members will thus be routinely notified. This does not relieve the Contractor of the responsibility of notifying utility owners who may not be a part of the "Miss Dig" alert system.

MDOT's freeway lighting system, Intelligent Transportation Systems (ITS) and other miscellaneous electrical systems are not a part of Miss Dig. The Contractor shall follow the included referenced special provisions:

- Special Provision for Protect Intelligent Transportation System Infrastructure
- Special Provision for Staking Michigan Department of Transportation Underground Electrical Infrastructure and ITS Facilities



1.7. ArcGIS Software

The Contractor is required to use ArcGIS software to track and monitor the MDOT guardrail database in conjunction with MDOT. The database is portrayed in the form of a map that can be accessed on desktop computers via ArcGIS Online (AGO) or the Collector Application (aka Collector App) via smart phones and tablets, which is available to download for free. MDOT will provide log on credentials to the Contractor for access to the guardrail database.

The Contractor will utilize ArcGIS Software to:

- View and access Work Orders issued by MDOT
- Record performed service data, including but not limited to: taking a before and after photo, route, cross street, bound, notes, status updates, service category, quantities, equipment used, vehicles present, traffic control used, number of workers present, cable tensions.

The Contractor is required to have mobile devices with cellular connections. Any costs associated with mobile devices are the responsibility of the Contractor. ArcGIS applications are available on iOS, Android and Windows devices. If the Contractor already has an AGO organizational account, credentials can be associated with the databases for this contract.

MDOT staff and contractor representatives will share the same database. The database will be backed up by MDOT periodically to monitor any changes. Data points from the map can be extracted and used for reporting purposes. There will be limitations on what information MDOT and/or the Contractor can modify in the ArcGIS database. Only MDOT will have right to create a Work Order for the Contractor.

The Contractor is encouraged to check the Collector App or AGO multiple times a week to monitor the workload. Failure to check the ArcGIS software for Work Order issuance will not constitute reprieve from the repair due dates listed in Section 2.1.

Device Requirements:

Collector is supported on Android, iOS, and Windows devices.

- Android
 - a. Android 4.1 (Jelly Bean) or later
 - b. ARMv7 or x86 processor
 - c. OpenGL ES 2.0 support
 - d. Precise location (GPS and network-based) support
- iOS
 - a. iOS 8 or later
 - b. iPhone, iPad, iPod touch
- Windows
 - a. Windows 10.0.586 or later (tablet and PC; excluding LTSB)

2. Work Deliverables

2.1. Work Orders for Standard Service

The as-needed maintenance services in TAYLOR will be managed by the TAYLOR Transportation Service Center (TTSC).

The MDOT PM will provide, as-needed, the listing of appurtenance replacements and upgrades and shall include the location of the damaged appurtenance, the extent of the damage, estimated number and type of units damaged, and general description of the site in the Work Order. Work Orders will be location based and MDOT will not combine locations in a single Work Order. No payment will be made for work performed by the Contractor without written approval from MDOT.

Starting from the issuance of the Work Order, the Contractor will have the following number of calendar days to complete the work without penalty:

Table 2. – Completion Time Requirements

	Galvanized steel beam guardrail	High tension cable barrier (excluding end terminals)	High tension cable barrier end terminals
Number of calendar days to complete work	14	3	5



The proposed work methods for Standard Service will be as follows:

- A. MDOT will survey damage to the appurtenance, remove debris from the road surface if necessary.
- B. MDOT will provide the Contractor written approval through the Work Order. The Contractor is responsible to check for Work Orders in ArcGIS.
- C. Starting from the issuance of the Work Order, the Contractor will have the specified number of calendar days in Table 1 to complete the work without penalty.
- D. The Contractor shall be responsible to remove damaged portions of the existing appurtenance, debris, snow, and ice, as-needed, to complete the installation of the new appurtenance. The Contractor shall set up the required traffic control in accordance with the Special Provision for Maintaining Traffic.
- E. For steel beam guardrail and high tension cable barrier, the Contractor, after removing damaged parts, shall install new parts and perform the following related tasks if necessary:
 - i. Realign loose posts and compact earth around them.
 - ii. Install new-posts and parts "in kind" (i.e. if a steel post is removed, it must be replaced with a steel post). The same length posts shall be installed at the proper depth.
 - iii. Install hardware.
 - iv. Salvage and replace guardrail run tag from damaged post to a new post.
- F. The Contractor shall complete all work items in accordance with the currently published Standard Specifications for Construction, Special Provisions, Standard Plans and Special Details (see section 1.2.) included herein.
- G. The Contractor shall clean up debris and litter in a 20' radius of the damaged appurtenance (from guardrail and high tension cable barrier systems, car parts and other roadside litter and junk. This work shall be included in other items of work.
- H. When the work is complete, the Work Order shall be updated in ArcGIS by the Contractor and status appropriately updated for MDOT inspection and acceptance. (See section 3.1.)

2.2. Work Orders for Emergency Service

The MDOT PM will contact the Contractor via phone if immediate contract services are required and deemed Emergency Service. The MDOT PM will contact the 24/7 contact as designated by the Contractor. Emergency Service will not require written approval from MDOT and will be entered in ArcGIS by MDOT within 24 hours of the repair being made.

Starting from initial call from MDOT to the 24/7 Contractor contact, the Contractor will have 3 hours to be on site without penalty.

Emergency Service shall not differ from Standard Service in that all work items shall be constructed in accordance with the currently published Standard Specifications for Construction, Special Provisions, Standard Plans and Special Details (see section 1.2.) included herein. Appurtenance pay items for Emergency Service will be paid for at the contract unit price, but an *Emergency Service Mobilization*, paid as Each instance used, will also apply.

The proposed work methods for Emergency Service will be as follows:

- A. MDOT will survey damage to the appurtenance, remove debris from the road surface if necessary.
- B. MDOT will provide the Contractor verbal approval as well as location information, the extent of the damage, estimated number and type of units damaged.
- C. Starting from initial call from MDOT to the 24/7 Contractor contact, the Contractor will have 3 hours to be on site without penalty.
- D. Once on site, the Contractor shall make all necessary repairs as outlined in the Standard Service Work Methods.
- E. When the work is complete, the Contractor shall provide verbal communication to the MDOT PM for inspection and acceptance (see Section 3.2).
- F. Within 24 hours the Contractor shall enter in the Work Order data (after MDOT creates the Work Order) in ArcGIS.



3. Acceptance

3.1. Acceptance, Inspection and Penalty of Standard Service

MDOT will use the following process to determine acceptance of the contract activities on a Work Order by Work Order basis. Starting from the issuance of the Work Order, the Contractor will have the specified number of calendar days per Section 2.1. to complete the work without penalty.

- A. The Contractor will notify the MDOT PM of completed contract activities (in a Work Order) by changing the status of the Work Order in the ArcGIS Software.
- B. The MDOT PM will then perform a visual inspection (if not already in conjunction with the repair) of the completed contract activities. Upon inspection, the MDOT PM will either accept the completed contract activities as compliant with the specifications in the Contract, or will cite the completed contract activities as being non-compliant with the specifications of the Contract. If deemed non-compliant with the specifications, the Contractor will be notified immediately via phone.
- C. If the completed contract activities are deemed non-compliant, the Contractor will have the opportunity to remedy without penalty if still within the specified number of calendar days in Section 2.1.
- D. Once a remedy has taken place, the MDOT PM will again inspect the contracted activities and repeat notification until accepted.
- E. The MDOT PM will update status to 'complete' the Work Order once the contracted activities are accepted as compliant.

Regardless of initial compliance or subsequent remedy leading to compliance of contract activities, the Contractor will not receive penalty if still within the specified number of calendar days. The Contractor will receive penalty, indefinitely, for each contracted activity until compliance is achieved starting from the issue date of the Work Order.

Table 3.- Penalty of Standard Service

	Galvanized steel beam guardrail	High tension cable barrier (excluding end terminals)	High tension cable barrier end terminals
\$100 per calendar day per Work Order until accepted.	Starts on day 15 after the issuance of the Work Order.	Starts of day 4 after the issuance of the Work Order.	Starts on day 6 after the issuance of the Work Order.

The following exceptions and criteria will be accepted for variance from the penalty as approved by the MDOT PM:

- Product manufacturer delays with written letter

3.2. Acceptance, Inspection and Penalty of Emergency Service

MDOT will use the following process to determine acceptance of the contract activities resulting from an Emergency Service request.

- A. The Contractor will notify the MDOT PM of completed actives (via a phone call).
- B. The MDOT PM will then perform a visual inspection (if not already in conjunction with the repair) of the completed contract activities. Upon inspection, the MDOT PM will either accept the completed contract activities as compliant with the specifications in the Contract, or will cite the completed contract activities as being non-compliant with the specifications of the Contract. If deemed non-compliant with the specifications, the Contractor will be notified immediately via phone.
- C. If the completed contract activities are deemed non-compliant, the Contractor will have the opportunity to remedy the work. The MDOT PM will again inspect the contracted activities and until deemed compliant.
- D. The MDOT PM will verbally confirm the completeness of the contract activities and enter the data supplied by the Contractor into ArcGIS for the Emergency Service.

Table 4 - Penalty of Emergency Service

\$500 penalty	\$500 penalty
Failure to be on scene within 3 hours of MDOTs initial call to the 24/7 contact	Leaving the emergency location prior to MDOT PM authorization.



4. Pricing

4.1 Price Term

Pricing on all listed service items in Schedule B, shall be firm for a 365 day period ("Pricing Period"). The first pricing period begins on the Effective Date listed on the Contract.

Listed service items are based on prior usage, MDOT reserves the right to request additional items. Contractor will provide a quote at a fixed price.

Additional items added to the contract are to be executed through a contract change notice.

4.2 Adjusted Pricing

Adjustments may be requested, in writing, by either party and will take effect no earlier than the next Pricing Term. Adjustments will be based on changes in actual Contractor costs. Any request must be supported by written evidence documenting the change in costs. The State may consider sources, such as the Consumer Price Index; Producer Price Index; other pricing indices as needed; economic and industry data; manufacturer or supplier letters noting the increase in pricing; and any other data the State deems relevant.

Following the presentation of supporting documentation, both parties will have 30 days to review the information and prepare a written response. If the review reveals no need for modifications, pricing will remain unchanged unless mutually agreed to by the parties. If the review reveals that changes are needed, both parties will negotiate such changes, for no longer than 30 days, unless extended by mutual agreement.

The Contractor remains responsible for Contract Activities at the current price for all orders received before the mutual execution of a Change Notice indicating the start date of the new Pricing Period.

5. Staffing

5.1. Contractor Project Manager, Field Supervisor and Emergency Contact

The Contractor must appoint one Project Manager and one Field Supervisor, specifically assigned to State of Michigan accounts that will respond to State inquiries regarding the contract activities. Both employees will be specifically assigned to this Contract, be knowledgeable on the contractual requirements, have a technical background to perform requested work

The Contractor must appoint one Emergency Contact to be accessible 24 hours a day 7 days a week

The Contractor must notify the MDOT PM at least 5 calendar days before removing or assigning these positions. The information to supply for each staff member is as follows:

1st a primary employee as the first point of contact

Project Manager

Employee Name:	Andre DeMil
Employee Title:	Project manager
Employee Office phone:	(586) 270-2016
Employee Cell phone:	(586) 203-7042
Employee email:	ademil@nationwidecos.com

2nd a secondary employee to support the primary, when needed for routine maintenance

Field Supervisor

Employee Name:	Bryan Decker
Employee Title:	Assistant project manager
Employee Office phone:	n/a
Employee Cell phone:	(586) 215-1519
Employee email:	bdecker@nationwidecos.com

Emergency Contact - 24 hours a day, 7 days a week

Employee Name:	Andre DeMil
Employee Title:	Project manager
Employee Office phone:	(586) 270-2016
Employee Cell phone:	(586) 203-7042
Employee email:	ademil@nationwidecos.com



5.2. Disclosure of Subcontractors

If the Contractor intends to utilize subcontractors, the subcontractors must also be currently listed as a pre-qualified vendor in MDOT's N9-6L category.

None were listed.

6. Project Management

6.1. Pre-Service Submittal

The Contractor shall submit a Pre-Service Packet to the Program Manager prior to the start of work. The Pre-Service Packet shall include:

- 24 hour emergency contact
- Contractors damage claim program regarding employee injuries
- Written plan to address property damage and other claim damages from citizens or the motoring public
- Safety Plan
- Material certifications
- FHWA eligibility letter

The packet is considered a living document and shall be updated on as needed basis during the life of the contract.

6.2. Meetings

The Contractor must attend the following meetings:

- A. Mandatory Pre-Proposal Meeting
 - i. Prior to submission of proposal and bid the potential bidders are required to meet with MDOT.
- B. Kick Off Meeting
 - i. Prior to commencement of work the Contractor is required to meet with MDOT program staff to discuss the scope of the contract and identify specific project locations.
- C. Annual Service Review
 - I. The MDOT PM may request an audit of the services provided each year under the specifications, terms, and conditions of the Contract.
 - II. An unsatisfactory audit may result in cancellation of the Contract under the terms of the Cancellation Clause in the Contract. Further, should the Contract be cancelled for cause, the Contractor will not be allowed to participate in request(s) for continuation of this service.
 - III. The audit will consist of an evaluation of the total service quality, including responsiveness, timeliness of required reporting, and any other specifics as required under the terms of the Contract. The results of the audit along with recommendations from the Program Manager will be placed within the Contractor's file and distributed to MDOT TSCs within the State Regions.
 - IV. Should the Contractor desire, a meeting will be arranged between all concerned parties within 10 (ten) calendar days of the date the Contractor received, or could have reasonably been expected to receive, his/her copy of the audit. This meeting will provide an opportunity for the Contractor to present his/her reactions to audit recommendations.
- D. MDOT may request other meetings, as it deems appropriate.

6.3. Reporting

The Contractor shall complete and submit a report that will record information for each Work Order in a calendar month. This will be due on the same day of the month as agreed upon by the Contractor and MDOT PM. This information will be accessible from the ArcGIS software and will be required for invoice payment of the month. The report shall include, but is not limited to the following information:

- Work Order number (Object ID)
- Date and time each report work completed
- Time crew arrived at site
- Time crew left the site
- The type of repair completed
- Quantity of work completed
- Routes, mile marker or road crossing where the work completed
- Total hours worked
- Number of workers and supervisors
- Comments



7. Ordering

7.1. Authorizing Document

The appropriate authorizing document for the Contract will be the Master Agreement(s) (MA). A Delivery Order (DO) will be created from the MA and provided to the Contractor each fiscal year by the respective TSC.

8. Invoice and Payment

8.1. Invoice Requirements

The Contractor shall furnish an invoice for services rendered monthly. The billing shall reference/include the appropriate Delivery Order number, date(s) of service, Work Order (Object IDs) numbers, quantities, unit prices, total price, required reports, and Traffic Control*.

Overtime, holiday pay, and travel expenses will not be paid.

*The Contractor shall reference attached Special Provisions for Maintaining Traffic Control Payments.

Invoices must be submitted to the following email address:

Work at the Taylor TSC = MDOT-Taylor-Invoices@michigan.gov

8.2. Payment Methods

Public Act 533 of 2004 requires that payment on all State contracts for the purchase of goods or services be made by Electronic Funds Transfer (EFT). If you are not registered to receive EFT payments you must do so prior to the execution of the contract (www.michigan.gov/SIGMAVSS).

MDOT shall pay the billed amount in accordance with the bid rate, and the payment terms specified in this Contract, which are net 30 days after the later of the invoice date, and/or the date the MDOT PM certifies the invoice for the satisfactory completion of completed work meeting the outcome target as outlined in this contract.



STATE OF MICHIGAN

STANDARD CONTRACT TERMS

This STANDARD CONTRACT (“**Contract**”) is agreed to between the State of Michigan (the “**State**”) and RMD Holdings Ltd d/b/a Nationwide Construction Group (“**Contractor**”), a Michigan corporation. This Contract is effective on October 1, 2018 (“**Effective Date**”), and unless terminated, expires on September 30, 2020.

This Contract may be renewed for up to three (3) additional one (1) year period(s). Renewal is at the sole discretion of the State and will automatically extend the Term of this Contract. The State will document its exercise of renewal options via Contract Change Notice.

The parties agree as follows:

- Duties of Contractor.** Contractor must perform the services and provide the deliverables described in **Schedule A – Statement of Work** (the “**Contract Activities**”). An obligation to provide delivery of any commodity is considered a service and is a Contract Activity.

Contractor must furnish all labor, equipment, materials, and supplies necessary for the performance of the Contract Activities, and meet operational standards, unless otherwise specified in Schedule A.

Contractor must: (a) perform the Contract Activities in a timely, professional, safe, and workmanlike manner consistent with standards in the trade, profession, or industry; (b) meet or exceed the performance and operational standards, and specifications of the Contract; (c) provide all Contract Activities in good quality, with no material defects; (d) not interfere with the State’s operations; (e) obtain and maintain all necessary licenses, permits or other authorizations necessary for the performance of the Contract; (f) cooperate with the State, including the State’s quality assurance personnel, and any third party to achieve the objectives of the Contract; (g) return to the State any State-furnished equipment or other resources in the same condition as when provided when no longer required for the Contract; (h) not make any media releases without prior written authorization from the State; (i) assign to the State any claims resulting from state or federal antitrust violations to the extent that those violations concern materials or services supplied by third parties toward fulfillment of the Contract; (j) comply with all State physical and IT security policies and standards which will be made available upon request; and (k) provide the State priority in performance of the Contract except as mandated by federal disaster response requirements. Any breach under this paragraph is considered a material breach.

Contractor must also be clearly identifiable while on State property by wearing identification issued by the State, and clearly identify themselves whenever making contact with the State.

- Notices.** All notices and other communications required or permitted under this Contract must be in writing and will be considered given and received: (a) when verified by written receipt if sent by courier; (b) when actually received if sent by mail without verification of receipt; or (c) when verified by automated receipt or electronic logs if sent by facsimile or email.

<p>If to State:</p> <p>Klatra Pickett 425 West Ottawa Street Lansing, MI 48909 Pickettk1@michigan.gov 517-335-0071</p>	<p>If to Contractor:</p> <p>Robert DeMil – CEO 69951 Lowe Plank Rd Richmond, MI 48062 ademil@nationwidecos.com (586) 270-2007</p>
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3. **Contract Administrator.** The Contract Administrator for each party is the only person authorized to modify any terms of this Contract, and approve and execute any change under this Contract (each a “**Contract Administrator**”):

State: Klatra Pickett 425 West Ottawa Street Lansing, MI 48909 Pickettk1@michigan.gov 517-335-0071	Contractor: Robert DeMil – CEO 69951 Lowe Plank Rd Richmond, MI 48062 ademil@nationwidecos.com (586) 270-2007
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4. **Program Manager.** The Program Manager for each party will monitor and coordinate the day-to-day activities of the Contract (each a “**Program Manager**”):

State: Jasna Cehaja MDOT - Taylor TSC 6510 Telegraph Road Taylor, MI 48180 CehajaJ@michigan.gov 313.375.2444	Contractor: Andre DeMil 69951 Lowe Plank Rd Richmond, MI 48062 ademil@nationwidecos.com (586) 270-2016
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5. **Performance Guarantee.** Contractor must at all times have financial resources sufficient, in the opinion of the State, to ensure performance of the Contract and must provide proof upon request. The State may require a performance bond (as specified in Schedule A) if, in the opinion of the State, it will ensure performance of the Contract.

6. **Insurance Requirements.** Contractor must maintain the insurances identified below and is responsible for all deductibles. All required insurance must: (a) protect the State from claims that may arise out of, are alleged to arise out of, or result from Contractor's or a subcontractor's performance; (b) be primary and non-contributing to any comparable liability insurance (including self-insurance) carried by the State; and (c) be provided by a company with an A.M. Best rating of "A" or better, and a financial size of VII or better.

Required Limits	Additional Requirements
Commercial General Liability Insurance	
<u>Minimal Limits:</u> \$1,000,000 Each Occurrence Limit \$1,000,000 Personal & Advertising Injury Limit \$2,000,000 General Aggregate Limit \$2,000,000 Products/Completed Operations	Contractor must have their policy endorsed to add “the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents” as additional insureds using endorsement CG 20 10 11 85, or both CG 2010 07 04 and CG 2037 07 0.
Umbrella or Excess Liability Insurance	
<u>Minimal Limits:</u> \$5,000,000 General Aggregate	Contractor must have their policy endorsed to add “the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents” as additional insureds.
Automobile Liability Insurance	
<u>Minimal Limits:</u> \$1,000,000 Per Occurrence	Contractor must have their policy: (1) endorsed to add “the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents” as additional insureds; and (2) include Hired and Non-Owned Automobile coverage.



Workers' Compensation Insurance	
<u>Minimal Limits:</u> Coverage according to applicable laws governing work activities.	Waiver of subrogation, except where waiver is prohibited by law.
Employers Liability Insurance	
<u>Minimal Limits:</u> \$500,000 Each Accident \$500,000 Each Employee by Disease \$500,000 Aggregate Disease.	

If any of the required policies provide **claims-made** coverage, the Contractor must: (a) provide coverage with a retroactive date before the effective date of the contract or the beginning of Contract Activities; (b) maintain coverage and provide evidence of coverage for at least three (3) years after completion of the Contract Activities; and (c) if coverage is canceled or not renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective date, Contractor must purchase extended reporting coverage for a minimum of three (3) years after completion of work.

Contractor must: (a) provide insurance certificates to the Contract Administrator, containing the agreement or purchase order number, at Contract formation and within 20 calendar days of the expiration date of the applicable policies; (b) require that subcontractors maintain the required insurances contained in this Section; (c) notify the Contract Administrator within 5 business days if any insurance is cancelled; and (d) waive all rights against the State for damages covered by insurance. Failure to maintain the required insurance does not limit this waiver.

This Section is not intended to and is not be construed in any manner as waiving, restricting or limiting the liability of either party for any obligations under this Contract (including any provisions hereof requiring Contractor to indemnify, defend and hold harmless the State).

7. Reserved

8. Independent Contractor. Contractor is an independent contractor and assumes all rights, obligations and liabilities set forth in this Contract. Contractor, its employees, and agents will not be considered employees of the State. No partnership or joint venture relationship is created by virtue of this Contract. Contractor, and not the State, is responsible for the payment of wages, benefits and taxes of Contractor's employees and any subcontractors. Prior performance does not modify Contractor's status as an independent contractor

9. Subcontracting. Contractor may not delegate any of its obligations under the Contract without the prior written approval of the State. Contractor must notify the State at least 90 calendar days before the proposed delegation, and provide the State any information it requests to determine whether the delegation is in its best interest. If approved, Contractor must: (a) be the sole point of contact regarding all contractual matters, including payment and charges for all Contract Activities; (b) make all payments to the subcontractor; and (c) incorporate the terms and conditions contained in this Contract in any subcontract with a subcontractor. Contractor remains responsible for the completion of the Contract Activities, compliance with the terms of this Contract, and the acts and omissions of the subcontractor. The State, in its sole discretion, may require the replacement of any subcontractor.

10. Staffing. The State's Contract Administrator may require Contractor to remove or reassign personnel by providing a notice to Contractor.

11. Background Checks. Upon request, Contractor must perform background checks on all employees and subcontractors and its employees prior to their assignment. The scope is at the discretion of the State and documentation must be provided as requested. Contractor is responsible for all costs associated with the requested background checks. The State, in its sole discretion, may also perform background checks.

12. Assignment. Contractor may not assign this Contract to any other party without the prior approval of the State. Upon notice to Contractor, the State, in its sole discretion, may assign in whole or in part, its rights or responsibilities under this Contract to any other party. If the State determines that a novation of the Contract to a third party is necessary, Contractor will agree to the novation and provide all necessary documentation and signatures.



13. **Change of Control.** Contractor will notify, at least 90 calendar days before the effective date, the State of a change in Contractor's organizational structure or ownership. For purposes of this Contract, a change in control means any of the following: (a) a sale of more than 50% of Contractor's stock; (b) a sale of substantially all of Contractor's assets; (c) a change in a majority of Contractor's board members; (d) consummation of a merger or consolidation of Contractor with any other entity; (e) a change in ownership through a transaction or series of transactions; (f) or the board (or the stockholders) approves a plan of complete liquidation. A change of control does not include any consolidation or merger effected exclusively to change the domicile of Contractor, or any transaction or series of transactions principally for bona fide equity financing purposes.

In the event of a change of control, Contractor must require the successor to assume this Contract and all of its obligations under this Contract.

14. **Ordering.** Contractor is not authorized to begin performance until receipt of authorization as identified in Schedule A.
15. **Acceptance.** Contract Activities are subject to inspection and testing by the State within 30 calendar days of the State's receipt of them ("**State Review Period**"), unless otherwise provided in Schedule A. If the Contract Activities are not fully accepted by the State, the State will notify Contractor by the end of the State Review Period that either: (a) the Contract Activities are accepted, but noted deficiencies must be corrected; or (b) the Contract Activities are rejected. If the State finds material deficiencies, it may: (i) reject the Contract Activities without performing any further inspections; (ii) demand performance at no additional cost; or (iii) terminate this Contract in accordance with Section 23, Termination for Cause.

Within 10 business days from the date of Contractor's receipt of notification of acceptance with deficiencies or rejection of any Contract Activities, Contractor must cure, at no additional cost, the deficiency and deliver unequivocally acceptable Contract Activities to the State. If acceptance with deficiencies or rejection of the Contract Activities impacts the content or delivery of other non-completed Contract Activities, the parties' respective Program Managers must determine an agreed to number of days for re-submission that minimizes the overall impact to the Contract. However, nothing herein affects, alters, or relieves Contractor of its obligations to correct deficiencies in accordance with the time response standards set forth in this Contract.

If Contractor is unable or refuses to correct the deficiency within the time response standards set forth in this Contract, the State may cancel the order in whole or in part. The State, or a third party identified by the State, may perform the Contract Activities and recover the difference between the cost to cure and the Contract price plus an additional 10% administrative fee.

16. **Reserved.**
17. **Reserved**
18. **Reserved**

19. **Terms of Payment.** Invoices must conform to the requirements communicated from time-to-time by the State. All undisputed amounts are payable within 45 days of the State's receipt. Contractor may only charge for Contract Activities performed as specified in Schedule A. Invoices must include an itemized statement of all charges. The State is exempt from State sales tax for direct purchases and may be exempt from federal excise tax, if Services purchased under this Agreement are for the State's exclusive use. Notwithstanding the foregoing, all prices are inclusive of taxes, and Contractor is responsible for all sales, use and excise taxes, and any other similar taxes, duties and charges of any kind imposed by any federal, state, or local governmental entity on any amounts payable by the State under this Contract.

The State has the right to withhold payment of any disputed amounts until the parties agree as to the validity of the disputed amount. The State will notify Contractor of any dispute within a reasonable time. Payment by the State will not constitute a waiver of any rights as to Contractor's continuing obligations, including claims for deficiencies or substandard Contract Activities. Contractor's acceptance of final payment by the State constitutes a waiver of all claims by Contractor against the State for payment under this Contract, other than those claims previously filed in writing on a timely basis and still disputed.

The State will only disburse payments under this Contract through Electronic Funds Transfer (EFT). Contractor must register with the State at <http://www.michigan.gov/SIGMAVSS> to receive electronic fund transfer payments. If Contractor does not register, the State is not liable for failure to provide payment. Without prejudice to any other right or remedy it may have, the State reserves the right to set off at any time any amount then due and owing to it by Contractor against any amount payable by the State to Contractor under this Contract.

20. **Liquidated Damages.** Liquidated damages, if applicable, will be assessed as described in Schedule A.



- 21. Stop Work Order.** The State may suspend any or all activities under the Contract at any time. The State will provide Contractor a written stop work order detailing the suspension. Contractor must comply with the stop work order upon receipt. Within 90 calendar days, or any longer period agreed to by Contractor, the State will either: (a) issue a notice authorizing Contractor to resume work, or (b) terminate the Contract or purchase order. The State will not pay for Contract Activities, Contractor's lost profits, or any additional compensation during a stop work period.
- 22. Termination for Cause.** The State may terminate this Contract for cause, in whole or in part, if Contractor, as determined by the State: (a) endangers the value, integrity, or security of any location, data, or personnel; (b) becomes insolvent, petitions for bankruptcy court proceedings, or has an involuntary bankruptcy proceeding filed against it by any creditor; (c) engages in any conduct that may expose the State to liability; (d) breaches any of its material duties or obligations; or (e) fails to cure a breach within the time stated in a notice of breach. Any reference to specific breaches being material breaches within this Contract will not be construed to mean that other breaches are not material.

If the State terminates this Contract under this Section, the State will issue a termination notice specifying whether Contractor must: (a) cease performance immediately, or (b) continue to perform for a specified period. If it is later determined that Contractor was not in breach of the Contract, the termination will be deemed to have been a Termination for Convenience, effective as of the same date, and the rights and obligations of the parties will be limited to those provided in Section 24, Termination for Convenience.

The State will only pay for amounts due to Contractor for Contract Activities accepted by the State on or before the date of termination, subject to the State's right to set off any amounts owed by the Contractor for the State's reasonable costs in terminating this Contract. The Contractor must pay all reasonable costs incurred by the State in terminating this Contract for cause, including administrative costs, attorneys' fees, court costs, transition costs, and any costs the State incurs to procure the Contract Activities from other sources.

- 23. Termination for Convenience.** The State may immediately terminate this Contract in whole or in part without penalty and for any reason, including but not limited to, appropriation or budget shortfalls. The termination notice will specify whether Contractor must: (a) cease performance of the Contract Activities immediately, or (b) continue to perform the Contract Activities in accordance with Section 25, Transition Responsibilities. If the State terminates this Contract for convenience, the State will pay all reasonable costs, as determined by the State, for State approved Transition Responsibilities.
- 24. Transition Responsibilities.** Upon termination or expiration of this Contract for any reason, Contractor must, for a period of time specified by the State (not to exceed 90 calendar days), provide all reasonable transition assistance requested by the State, to allow for the expired or terminated portion of the Contract Activities to continue without interruption or adverse effect, and to facilitate the orderly transfer of such Contract Activities to the State or its designees. Such transition assistance may include, but is not limited to: (a) continuing to perform the Contract Activities at the established Contract rates; (b) taking all reasonable and necessary measures to transition performance of the work, including all applicable Contract Activities, training, equipment, software, leases, reports and other documentation, to the State or the State's designee; (c) taking all necessary and appropriate steps, or such other action as the State may direct, to preserve, maintain, protect, or return to the State all materials, data, property, and confidential information provided directly or indirectly to Contractor by any entity, agent, vendor, or employee of the State; (d) transferring title in and delivering to the State, at the State's discretion, all completed or partially completed deliverables prepared under this Contract as of the Contract termination date; and (e) preparing an accurate accounting from which the State and Contractor may reconcile all outstanding accounts (collectively, "**Transition Responsibilities**"). This Contract will automatically be extended through the end of the transition period.
- 25. General Indemnification.** Contractor must defend, indemnify and hold the State, its departments, divisions, agencies, offices, commissions, officers, and employees harmless, without limitation, from and against any and all actions, claims, losses, liabilities, damages, costs, attorney fees, and expenses (including those required to establish the right to indemnification), arising out of or relating to: (a) any breach by Contractor (or any of Contractor's employees, agents, subcontractors, or by anyone else for whose acts any of them may be liable) of any of the promises, agreements, representations, warranties, or insurance requirements contained in this Contract; (b) any infringement, misappropriation, or other violation of any intellectual property right or other right of any third party; (c) any bodily injury, death, or damage to real or tangible personal property occurring wholly or in part due to action or inaction by Contractor (or any of Contractor's employees, agents, subcontractors, or by anyone else for whose acts any of them may be liable); and (d) any acts or omissions of Contractor (or any of Contractor's employees, agents, subcontractors, or by anyone else for whose acts any of them may be liable).



The State will notify Contractor in writing if indemnification is sought; however, failure to do so will not relieve Contractor, except to the extent that Contractor is materially prejudiced. Contractor must, to the satisfaction of the State, demonstrate its financial ability to carry out these obligations.

The State is entitled to: (i) regular updates on proceeding status; (ii) participate in the defense of the proceeding; (iii) employ its own counsel; and to (iv) retain control of the defense if the State deems necessary. Contractor will not, without the State's written consent (not to be unreasonably withheld), settle, compromise, or consent to the entry of any judgment in or otherwise seek to terminate any claim, action, or proceeding. To the extent that any State employee, official, or law may be involved or challenged, the State may, at its own expense, control the defense of that portion of the claim.

Any litigation activity on behalf of the State, or any of its subdivisions under this Section, must be coordinated with the Department of Attorney General. An attorney designated to represent the State may not do so until approved by the Michigan Attorney General and appointed as a Special Assistant Attorney General.

26. **Infringement Remedies.** If, in either party's opinion, any piece of equipment, software, commodity, or service supplied by Contractor or its subcontractors, or its operation, use or reproduction, is likely to become the subject of a copyright, patent, trademark, or trade secret infringement claim, Contractor must, at its expense: (a) procure for the State the right to continue using the equipment, software, commodity, or service, or if this option is not reasonably available to Contractor, (b) replace or modify the same so that it becomes non-infringing; or (c) accept its return by the State with appropriate credits to the State against Contractor's charges and reimburse the State for any losses or costs incurred as a consequence of the State ceasing its use and returning it.
27. **Limitation of Liability and Disclaimer of Damages.** **IN NO EVENT WILL THE STATE'S AGGREGATE LIABILITY TO CONTRACTOR UNDER THIS CONTRACT, REGARDLESS OF THE FORM OF ACTION, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR BY STATUTE OR OTHERWISE, FOR ANY CLAIM RELATED TO OR ARISING UNDER THIS CONTRACT, EXCEED THE MAXIMUM AMOUNT OF FEES PAYABLE UNDER THIS CONTRACT.** The State is not liable for consequential, incidental, indirect, or special damages, regardless of the nature of the action.
28. **Disclosure of Litigation, or Other Proceeding.** Contractor must notify the State within 14 calendar days of receiving notice of any litigation, investigation, arbitration, or other proceeding (collectively, "**Proceeding**") involving Contractor, a subcontractor, or an officer or director of Contractor or subcontractor, that arises during the term of the Contract, including: (a) a criminal Proceeding; (b) a parole or probation Proceeding; (c) a Proceeding under the Sarbanes-Oxley Act; (d) a civil Proceeding involving: (1) a claim that might reasonably be expected to adversely affect Contractor's viability or financial stability; or (2) a governmental or public entity's claim or written allegation of fraud; or (e) a Proceeding involving any license that Contractor is required to possess in order to perform under this Contract.
29. **Reserved**
30. **Reserved**
31. **Non-Disclosure of Confidential Information.** The parties acknowledge that each party may be exposed to or acquire communication or data of the other party that is confidential, privileged communication not intended to be disclosed to third parties. The provisions of this Section survive the termination of this Contract.
- a. **Meaning of Confidential Information.** For the purposes of this Contract, the term "**Confidential Information**" means all information and documentation of a party that: (a) has been marked "confidential" or with words of similar meaning, at the time of disclosure by such party; (b) if disclosed orally or not marked "confidential" or with words of similar meaning, was subsequently summarized in writing by the disclosing party and marked "confidential" or with words of similar meaning; and, (c) should reasonably be recognized as confidential information of the disclosing party. The term "Confidential Information" does not include any information or documentation that was: (a) subject to disclosure under the Michigan Freedom of Information Act (FOIA); (b) already in the possession of the receiving party without an obligation of confidentiality; (c) developed independently by the receiving party, as demonstrated by the receiving party, without violating the disclosing party's proprietary rights; (d) obtained from a source other than the disclosing party without an obligation of confidentiality; or, (e) publicly available when received, or thereafter became publicly available (other than through any unauthorized disclosure by, through, or on behalf of, the receiving party). For purposes of this Contract, in all cases and for all matters, State Data is deemed to be Confidential Information.



- b. Obligation of Confidentiality. The parties agree to hold all Confidential Information in strict confidence and not to copy, reproduce, sell, transfer, or otherwise dispose of, give or disclose such Confidential Information to third parties other than employees, agents, or subcontractors of a party who have a need to know in connection with this Contract or to use such Confidential Information for any purposes whatsoever other than the performance of this Contract. The parties agree to advise and require their respective employees, agents, and subcontractors of their obligations to keep all Confidential Information confidential. Disclosure to a subcontractor is permissible where: (a) use of a subcontractor is authorized under this Contract; (b) the disclosure is necessary or otherwise naturally occurs in connection with work that is within the subcontractor's responsibilities; and (c) Contractor obligates the subcontractor in a written contract to maintain the State's Confidential Information in confidence. At the State's request, any employee of Contractor or any subcontractor may be required to execute a separate agreement to be bound by the provisions of this Section.
- c. Cooperation to Prevent Disclosure of Confidential Information. Each party must use its best efforts to assist the other party in identifying and preventing any unauthorized use or disclosure of any Confidential Information. Without limiting the foregoing, each party must advise the other party immediately in the event either party learns or has reason to believe that any person who has had access to Confidential Information has violated or intends to violate the terms of this Contract and each party will cooperate with the other party in seeking injunctive or other equitable relief against any such person.
- d. Remedies for Breach of Obligation of Confidentiality. Each party acknowledges that breach of its obligation of confidentiality may give rise to irreparable injury to the other party, which damage may be inadequately compensable in the form of monetary damages. Accordingly, a party may seek and obtain injunctive relief against the breach or threatened breach of the foregoing undertakings, in addition to any other legal remedies which may be available, to include, in the case of the State, at the sole election of the State, the immediate termination, without liability to the State, of this Contract or any Statement of Work corresponding to the breach or threatened breach.
- e. Surrender of Confidential Information upon Termination. Upon termination of this Contract or a Statement of Work, in whole or in part, each party must, within 5 calendar days from the date of termination, return to the other party any and all Confidential Information received from the other party, or created or received by a party on behalf of the other party, which are in such party's possession, custody, or control; provided, however, that Contractor must return State Data to the State following the timeframe and procedure described further in this Contract. Should Contractor or the State determine that the return of any Confidential Information is not feasible, such party must destroy the Confidential Information and must certify the same in writing within 5 calendar days from the date of termination to the other party. However, the State's legal ability to destroy Contractor data may be restricted by its retention and disposal schedule, in which case Contractor's Confidential Information will be destroyed after the retention period expires.

32. **Reserved**

33. **Reserved**

34. **Reserved**

35. **Records Maintenance, Inspection, Examination, and Audit**. The State or its designee may audit Contractor to verify compliance with this Contract. Contractor must retain, and provide to the State or its designee and the auditor general upon request, all financial and accounting records related to the Contract through the term of the Contract and for 4 years after the latter of termination, expiration, or final payment under this Contract or any extension ("**Audit Period**"). If an audit, litigation, or other action involving the records is initiated before the end of the Audit Period, Contractor must retain the records until all issues are resolved.

Within 10 calendar days of providing notice, the State and its authorized representatives or designees have the right to enter and inspect Contractor's premises or any other places where Contract Activities are being performed, and examine, copy, and audit all records related to this Contract. Contractor must cooperate and provide reasonable assistance. If any financial errors are revealed, the amount in error must be reflected as a credit or debit on subsequent invoices until the amount is paid or refunded. Any remaining balance at the end of the Contract must be paid or refunded within 45 calendar days.

This Section applies to Contractor, any parent, affiliate, or subsidiary organization of Contractor, and any subcontractor that performs Contract Activities in connection with this Contract.



- 36. Warranties and Representations.** Contractor represents and warrants: (a) Contractor is the owner or licensee of any Contract Activities that it licenses, sells, or develops and Contractor has the rights necessary to convey title, ownership rights, or licensed use; (b) all Contract Activities are delivered free from any security interest, lien, or encumbrance and will continue in that respect; (c) the Contract Activities will not infringe the patent, trademark, copyright, trade secret, or other proprietary rights of any third party; (d) Contractor must assign or otherwise transfer to the State or its designee any manufacturer's warranty for the Contract Activities; (e) the Contract Activities are merchantable and fit for the specific purposes identified in the Contract; (f) the Contract signatory has the authority to enter into this Contract; (g) all information furnished by Contractor in connection with the Contract fairly and accurately represents Contractor's business, properties, finances, and operations as of the dates covered by the information, and Contractor will inform the State of any material adverse changes; (h) all information furnished and representations made in connection with the award of this Contract is true, accurate, and complete, and contains no false statements or omits any fact that would make the information misleading; and that (i) Contractor is neither currently engaged in nor will engage in the boycott of a person based in or doing business with a strategic partner as described in 22 USC 8601 to 8606. A breach of this Section is considered a material breach of this Contract, which entitles the State to terminate this Contract under Section 23, Termination for Cause.
- 37. Conflicts and Ethics.** Contractor will uphold high ethical standards and is prohibited from: (a) holding or acquiring an interest that would conflict with this Contract; (b) doing anything that creates an appearance of impropriety with respect to the award or performance of the Contract; (c) attempting to influence or appearing to influence any State employee by the direct or indirect offer of anything of value; or (d) paying or agreeing to pay any person, other than employees and consultants working for Contractor, any consideration contingent upon the award of the Contract. Contractor must immediately notify the State of any violation or potential violation of these standards. This Section applies to Contractor, any parent, affiliate, or subsidiary organization of Contractor, and any subcontractor that performs Contract Activities in connection with this Contract.
- 38. Compliance with Laws.** Contractor must comply with all federal, state and local laws, rules and regulations.
- 39. Prevailing Wage.** This Contract and any subcontract is subject to the Prevailing Wage Act, 1965 PA 166. Contractor must comply with the state prevailing wage law and its requirements.
- 40. Reserved**
- 41. Nondiscrimination.** Under the Elliott-Larsen Civil Rights Act, 1976 PA 453, MCL 37.2101, *et seq.*, and the Persons with Disabilities Civil Rights Act, 1976 PA 220, MCL 37.1101, *et seq.*, Contractor and its subcontractors agree not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, marital status, or mental or physical disability. Breach of this covenant is a material breach of this Contract.
- 42. Unfair Labor Practice.** Under MCL 423.324, the State may void any Contract with a Contractor or subcontractor who appears on the Unfair Labor Practice register compiled under MCL 423.322.
- 43. Governing Law.** This Contract is governed, construed, and enforced in accordance with Michigan law, excluding choice-of-law principles, and all claims relating to or arising out of this Contract are governed by Michigan law, excluding choice-of-law principles. Any dispute arising from this Contract must be resolved in Michigan Court of Claims. Contractor consents to venue in Ingham County, and waives any objections, such as lack of personal jurisdiction or *forum non conveniens*. Contractor must appoint agents in Michigan to receive service of process.
- 44. Non-Exclusivity.** Nothing contained in this Contract is intended nor will be construed as creating any requirements contract with Contractor. This Contract does not restrict the State or its agencies from acquiring similar, equal, or like Contract Activities from other sources.
- 45. Force Majeure.** Neither party will be in breach of this Contract because of any failure arising from any disaster or acts of god that are beyond their control and without their fault or negligence. Each party will use commercially reasonable efforts to resume performance. Contractor will not be relieved of a breach or delay caused by its subcontractors. If immediate performance is necessary to ensure public health and safety, the State may immediately contract with a third party.
- 46. Dispute Resolution.** The parties will endeavor to resolve any Contract dispute in accordance with this provision. The dispute will be referred to the parties' respective Contract Administrators or Program Managers. Such referral must include a description of the issues and all supporting documentation. The parties must submit the dispute to a senior executive if unable to resolve the dispute within 15 business days. The parties will continue performing while a dispute is being resolved, unless the dispute precludes performance. A dispute involving payment does not preclude performance.



Litigation to resolve the dispute will not be instituted until after the dispute has been elevated to the parties' senior executive and either concludes that resolution is unlikely, or fails to respond within 15 business days. The parties are not prohibited from instituting formal proceedings: (a) to avoid the expiration of statute of limitations period; (b) to preserve a superior position with respect to creditors; or (c) where a party makes a determination that a temporary restraining order or other injunctive relief is the only adequate remedy. This Section does not limit the State's right to terminate the Contract.

47. **Media Releases.** News releases (including promotional literature and commercial advertisements) pertaining to the Contract or project to which it relates must not be made without prior written State approval, and then only in accordance with the explicit written instructions of the State.
48. **Website Incorporation.** The State is not bound by any content on Contractor's website unless expressly incorporated directly into this Contract.
49. **Entire Agreement and Order of Precedence.** This Contract, which includes Schedule A – Statement of Work, and expressly incorporated schedules and exhibits, is the entire agreement of the parties related to the Contract Activities. This Contract supersedes and replaces all previous understandings and agreements between the parties for the Contract Activities. If there is a conflict between documents, the order of precedence is: (a) first, this Contract, excluding its schedules, exhibits, and Schedule A – Statement of Work; (b) second, Schedule A – Statement of Work as of the Effective Date; and (c) third, schedules expressly incorporated into this Contract as of the Effective Date. NO TERMS ON CONTRACTOR'S INVOICES, ORDERING DOCUMENTS, WEBSITE, BROWSE-WRAP, SHRINK-WRAP, CLICK-WRAP, CLICK-THROUGH OR OTHER NON-NEGOTIATED TERMS AND CONDITIONS PROVIDED WITH ANY OF THE CONTRACT ACTIVITIES WILL CONSTITUTE A PART OR AMENDMENT OF THIS CONTRACT OR IS BINDING ON THE STATE FOR ANY PURPOSE. ALL SUCH OTHER TERMS AND CONDITIONS HAVE NO FORCE AND EFFECT AND ARE DEEMED REJECTED BY THE STATE, EVEN IF ACCESS TO OR USE OF THE CONTRACT ACTIVITIES REQUIRES AFFIRMATIVE ACCEPTANCE OF SUCH TERMS AND CONDITIONS.
50. **Severability.** If any part of this Contract is held invalid or unenforceable, by any court of competent jurisdiction, that part will be deemed deleted from this Contract and the severed part will be replaced by agreed upon language that achieves the same or similar objectives. The remaining Contract will continue in full force and effect.
51. **Waiver.** Failure to enforce any provision of this Contract will not constitute a waiver.
52. **Survival.** The provisions of this Contract that impose continuing obligations, including warranties and representations, termination, transition, insurance coverage, indemnification, and confidentiality, will survive the expiration or termination of this Contract.
53. **Contract Modification.** This Contract may not be amended except by signed agreement between the parties (a "Contract Change Notice"). Notwithstanding the foregoing, no subsequent Statement of Work or Contract Change Notice executed after the Effective Date will be construed to amend this Contract unless it specifically states its intent to do so and cites the section or sections amended.

Company Name: RMD Holdings Ltd d/b/a Nationwide Construction Group

STATE OF MICHIGAN

MA: 180000001213 - Taylor TSC
Teeded Guardrail & High-Tension Cable Barrier Maintenance

SCHEDULE B PRICING MATRIX

1. The Contractor must provide a pricing schedule for the proposed Contract Activities using the table shown below. The pricing schedule should be submitted in a modifiable format (e.g. Microsoft Word or Excel); however, you may also submit an additional pricing schedule in a non-modifiable format (e.g., PDF). Failure to complete the pricing schedule as requested may result in disqualification of your proposal.

2. Price proposals must include all costs, including but not limited to, any one-time or set-up charges, fees, and potential costs that Contractor may charge the State (e.g., shipping and handling, per piece pricing, and palletizing).

3. The Contractor is encouraged to offer quick payment terms. The number of days must not include processing time for payment to be received by the Contractor's financial institution.

Quick payment terms: None offered.

4. By submitting its proposal, the Contractor certifies that the prices were arrived at independently, and without consultation, communication, or agreement with any other Contractor.

#	DESCRIPTION OF SERVICES TAYLOR TSC	UNIT OF MEASURE	ESTIMATED QUANTITIES for 1 year	Installation, Labor, Set Up, handling, mobilization Cost (Vendor to Complete)	Material /Base Cost for listed service Items (Vendor Complete)	Total Unit Cost	Annual Cost (formula to populate)
1	Guardrail, Type MGS-8, Furn and Install	Ft	25.00	\$ 15.75	\$ 14.25	\$ 30.00	\$750.00
2	Guardrail, Type MGS-8D, Furn and Install	Ft	25.00	\$ 20.75	\$ 14.25	\$ 35.00	\$875.00
3	Guardrail Anchored in Backslope, Type 4T	Ea	2.00	\$ 0.50	\$ 0.50	\$ 1.00	\$2.00
4	Guardrail Departing Terminal, Type T	Ea	10.00	\$ 450.00	\$ 350.00	\$ 800.00	\$8,000.00
5	Bridge Railing, Thrie Beam Retrofit, Furn and Install	Ft	10.00	\$ 25.00	\$ 25.00	\$ 50.00	\$500.00
6	Cable Barrier, Annual Maintenance	Ea	1.00			\$ 3,000.00	\$3,000.00
7	Cable Barrier, Driven Socket, Furn and Install	Ea	5.00	\$ 0.50	\$ 0.50	\$ 1.00	\$5.00
8	Cable Barrier, Driven Socket, Rem	Ea	5.00	\$ 0.50	\$ 0.50	\$ 1.00	\$5.00
9	Cable Barrier, End Terminal Fdn	Ea	1.00	\$ 0.50	\$ 0.50	\$ 1.00	\$1.00
10	Cable Barrier, End Terminal Fdn, Rem	Ea	1.00	\$ 0.50	\$ 0.50	\$ 1.00	\$1.00
11	Cable Barrier, End Terminal Fdn, Repr	Ea	1.00	\$ 0.50	\$ 0.50	\$ 1.00	\$1.00
12	Cable Barrier, Line Post Fdn	Ea	100.00	\$ 25.00	\$ 75.00	\$ 100.00	\$10,000.00
13	Cable Barrier, Line Post Fdn, Rem	Ea	100.00	\$ 49.00	\$ 1.00	\$ 50.00	\$5,000.00
14	Cable Barrier, Line Post Fdn, Repr	Ea	40.00	\$ 25.00	\$ 25.00	\$ 50.00	\$2,000.00
15	Cable Release Post and Hardware, Furn and Install (Gibraltar)	Ea	2.00	\$ 0.50	\$ 0.50	\$ 1.00	\$2.00
16	Cable Release Post and Hardware, Upper, Furn and Install (CAS)	Ea	10.00	\$ 1.00	\$ 49.00	\$ 50.00	\$500.00
17	Cable Splice Kit, Furn and Install	Ea	2.00	\$ 0.50	\$ 0.50	\$ 1.00	\$2.00
18	Cable, Furn and Install	Ft	500.00	\$ 0.50	\$ 0.50	\$ 1.00	\$500.00
19	Emergency Service Mobilization	Ea	10.00			\$ 250.00	\$2,500.00
20	Guardrail Anch, Bridge 1st Panel	Ea	10.00	\$ 250.00	\$ 150.00	\$ 400.00	\$4,000.00
21	Guardrail Anch, Bridge 2nd Panel	Ea	5.00	\$ 100.00	\$ 100.00	\$ 200.00	\$1,000.00
22	Guardrail Anch, Bridge, Furn and Install	Ea	3.00	\$ 50.00	\$ 50.00	\$ 100.00	\$300.00
23	Guardrail Anch, Median 1st Panel	Ea	1.00	\$ 0.50	\$ 0.50	\$ 1.00	\$1.00
24	Guardrail Anch, Median 2nd Panel	Ea	1.00	\$ 0.50	\$ 0.50	\$ 1.00	\$1.00
25	Guardrail Anch, Median, Furn and Install	Ea	1.00	\$ 0.50	\$ 0.50	\$ 1.00	\$1.00
26	Guardrail Approach Terminal Cable Assembly	Ea	10.00	\$ 0.50	\$ 0.50	\$ 1.00	\$10.00
27	Guardrail Approach Terminal Struts	Ea	10.00	\$ 0.50	\$ 0.50	\$ 1.00	\$10.00
28	Guardrail Approach Terminal, Type 1B/1T (FLEAT)	Ea	10.00	\$ 150.00	\$ 1,350.00	\$ 1,500.00	\$15,000.00
29	Guardrail Approach Terminal, Type 1B/1T (FLEAT) 1st Panel	Ea	25.00	\$ 350.00	\$ 150.00	\$ 500.00	\$12,500.00
30	Guardrail Approach Terminal, Type 1B/1T (FLEAT) 2nd Panel	Ea	10.00	\$ 430.00	\$ 70.00	\$ 500.00	\$5,000.00
31	Guardrail Approach Terminal, Type 1B/1T (FLEAT) 3rd Panel	Ea	10.00	\$ 430.00	\$ 70.00	\$ 500.00	\$5,000.00
32	Guardrail Approach Terminal, Type 1B/1T (FLEAT-SP)	Ea	5.00	\$ 1.00	\$ 99.00	\$ 100.00	\$500.00
33	Guardrail Approach Terminal, Type 1B/1T (FLEAT-SP) 1st Panel	Ea	10.00	\$ 1.00	\$ 99.00	\$ 100.00	\$1,000.00
34	Guardrail Approach Terminal, Type 1B/1T (FLEAT-SP) 2nd Panel	Ea	5.00	\$ 30.00	\$ 70.00	\$ 100.00	\$500.00
35	Guardrail Approach Terminal, Type 1B/1T (FLEAT-SP) 3rd Panel	Ea	5.00	\$ 30.00	\$ 70.00	\$ 100.00	\$500.00
36	Guardrail Approach Terminal, Type 1B/1T (SRT)	Ea	10.00	\$ 661.00	\$ 839.00	\$ 1,500.00	\$15,000.00
37	Guardrail Approach Terminal, Type 1B/1T (SRT) 1st Panel	Ea	15.00	\$ 275.00	\$ 225.00	\$ 500.00	\$7,500.00
38	Guardrail Approach Terminal, Type 1B/1T (SRT) 2nd Panel	Ea	10.00	\$ 275.00	\$ 225.00	\$ 500.00	\$5,000.00
39	Guardrail Approach Terminal, Type 1B/1T (SRT) 3rd Panel	Ea	5.00	\$ 430.00	\$ 70.00	\$ 500.00	\$2,500.00

#	DESCRIPTION OF SERVICES TAYLOR TSC	UNIT OF MEASURE	ESTIMATED QUANTITIES for 1 year	Installation, Labor, Set Up, handling, mobilization Cost (Vendor to Complete)	Material /Base Cost for listed service Items (Vendor Complete)	Total Unit Cost	Annual Cost (formula to populate)
40	Guardrail Approach Terminal, Type 2B/2T (ET)	Ea	5.00	\$ 1.00	\$ 1,499.00	\$ 1,500.00	\$7,500.00
41	Guardrail Approach Terminal, Type 2B/2T (ET) 1st Panel	Ea	15.00	\$ 350.00	\$ 150.00	\$ 500.00	\$7,500.00
42	Guardrail Approach Terminal, Type 2B/2T (ET) 2nd Panel	Ea	7.00	\$ 730.00	\$ 70.00	\$ 800.00	\$5,600.00
43	Guardrail Approach Terminal, Type 2B/2T (ET) 3rd Panel	Ea	4.00	\$ 430.00	\$ 70.00	\$ 500.00	\$2,000.00
44	Guardrail Approach Terminal, Type 2B/2T (ET) 4th Panel	Ea	4.00	\$ 430.00	\$ 70.00	\$ 500.00	\$2,000.00
45	Guardrail Approach Terminal, Type 2B/2T (SKT)	Ea	8.00	\$ 1,450.00	\$ 1,550.00	\$ 3,000.00	\$24,000.00
46	Guardrail Approach Terminal, Type 2B/2T (SKT) 1st Panel	Ea	15.00	\$ 550.00	\$ 150.00	\$ 700.00	\$10,500.00
47	Guardrail Approach Terminal, Type 2B/2T (SKT) 2nd Panel	Ea	8.00	\$ 630.00	\$ 70.00	\$ 700.00	\$5,600.00
48	Guardrail Approach Terminal, Type 2B/2T (SKT) 3rd Panel	Ea	3.00	\$ 630.00	\$ 70.00	\$ 700.00	\$2,100.00
49	Guardrail Approach Terminal, Type 2B/2T (SKT) 4th Panel	Ea	4.00	\$ 430.00	\$ 70.00	\$ 500.00	\$2,000.00
50	Guardrail Approach Terminal, Type 2B/2T (SKT-SP)	Ea	5.00	\$ 1.00	\$ 99.00	\$ 100.00	\$500.00
51	Guardrail Approach Terminal, Type 2B/2T (SKT-SP) 1st Panel	Ea	7.00	\$ 1.00	\$ 99.00	\$ 100.00	\$700.00
52	Guardrail Approach Terminal, Type 2B/2T (SKT-SP) 2nd Panel	Ea	5.00	\$ 30.00	\$ 70.00	\$ 100.00	\$500.00
53	Guardrail Approach Terminal, Type 2B/2T (SKT-SP) 3rd Panel	Ea	3.00	\$ 30.00	\$ 70.00	\$ 100.00	\$300.00
54	Guardrail Approach Terminal, Type 2B/2T (SKT-SP) 4th Panel	Ea	3.00	\$ 30.00	\$ 70.00	\$ 100.00	\$300.00
55	Guardrail Approach Terminal, Type 2M (MAX-Tension)	Ea	2.00	\$ 0.50	\$ 0.50	\$ 1.00	\$2.00
56	Guardrail Approach Terminal, Type 2M (MAX-Tension) 1st Panel	Ea	2.00	\$ 0.50	\$ 0.50	\$ 1.00	\$2.00
57	Guardrail Approach Terminal, Type 2M (MAX-Tension) 2nd Panel	Ea	2.00	\$ 0.50	\$ 0.50	\$ 1.00	\$2.00
58	Guardrail Approach Terminal, Type 2M (MAX-Tension) 3rd Panel	Ea	2.00	\$ 0.50	\$ 0.50	\$ 1.00	\$2.00
59	Guardrail Approach Terminal, Type 2M (MAX-Tension) 4th Panel	Ea	2.00	\$ 0.50	\$ 0.50	\$ 1.00	\$2.00
60	Guardrail Approach Terminal, Type 2M (MSKT)	Ea	2.00	\$ 1.00	\$ 1,749.00	\$ 1,750.00	\$3,500.00
61	Guardrail Approach Terminal, Type 2M (MSKT) 1st Panel	Ea	2.00	\$ 350.00	\$ 150.00	\$ 500.00	\$1,000.00
62	Guardrail Approach Terminal, Type 2M (MSKT) 2nd Panel	Ea	2.00	\$ 430.00	\$ 70.00	\$ 500.00	\$1,000.00
63	Guardrail Approach Terminal, Type 2M (MSKT) 3rd Panel	Ea	2.00	\$ 430.00	\$ 70.00	\$ 500.00	\$1,000.00
64	Guardrail Approach Terminal, Type 2M (MSKT) 4th Panel	Ea	2.00	\$ 430.00	\$ 70.00	\$ 500.00	\$1,000.00
65	Guardrail Approach Terminal, Type 2M (MSKT) 5th Panel	Ea	2.00	\$ 430.00	\$ 70.00	\$ 500.00	\$1,000.00
66	Guardrail Approach Terminal, Type 2M (Soft-Stop)	Ea	2.00	\$ 1.00	\$ 1,499.00	\$ 1,500.00	\$3,000.00
67	Guardrail Approach Terminal, Type 2M (Soft-Stop) 1st Panel	Ea	2.00	\$ 100.00	\$ 150.00	\$ 250.00	\$500.00
68	Guardrail Approach Terminal, Type 2M (Soft-Stop) 2nd Panel	Ea	2.00	\$ 180.00	\$ 70.00	\$ 250.00	\$500.00
69	Guardrail Approach Terminal, Type 2M (Soft-Stop) 3rd Panel	Ea	2.00	\$ 180.00	\$ 70.00	\$ 250.00	\$500.00
70	Guardrail Approach Terminal, Type 2M (Soft-Stop) 4th Panel	Ea	2.00	\$ 0.50	\$ 0.50	\$ 1.00	\$2.00
71	Guardrail Approach Terminal, Type 3B/3T (CAT)	Ea	1.00	\$ 1.00	\$ 2,499.00	\$ 2,500.00	\$2,500.00
72	Guardrail Approach Terminal, Type 3B/3T (CAT) 1st Panel	Ea	1.00	\$ 295.00	\$ 205.00	\$ 500.00	\$500.00
73	Guardrail Approach Terminal, Type 3B/3T (CAT) 2nd Panel	Ea	1.00	\$ 245.00	\$ 255.00	\$ 500.00	\$500.00
74	Guardrail Approach Terminal, Type 3B/3T (CAT) Nose Assembly	Ea	2.00	\$ 690.00	\$ 310.00	\$ 1,000.00	\$2,000.00
75	Guardrail Approach Terminal, Type 3B/3T (FLEAT-MT)	Ea	1.00	\$ 1.00	\$ 1,349.00	\$ 1,350.00	\$1,350.00
76	Guardrail Approach Terminal, Type 3B/3T (FLEAT-MT) 1st Panel	Ea	1.00	\$ 850.00	\$ 150.00	\$ 1,000.00	\$1,000.00
77	Guardrail Approach Terminal, Type 3B/3T (FLEAT-MT) 2nd Panel	Ea	1.00	\$ 430.00	\$ 70.00	\$ 500.00	\$500.00
78	Guardrail Approach Terminal, Type 3B/3T (FLEAT-MT) 3rd Panel	Ea	1.00	\$ 430.00	\$ 70.00	\$ 500.00	\$500.00
79	Guardrail Approach Terminal, Type 4B/4T Buried Panel	Ea	1.00	\$ 0.50	\$ 0.50	\$ 1.00	\$1.00
80	Guardrail Approach Terminal, Type 4B/4T Non-Buried Panel	Ea	1.00	\$ 0.50	\$ 0.50	\$ 1.00	\$1.00
81	Guardrail Departing Terminal, Type B/T	Ea	5.00	\$ 1.00	\$ 299.00	\$ 300.00	\$1,500.00
82	Guardrail Post, Culv, Furn and Install	Ea	1.00	\$ 0.50	\$ 0.50	\$ 1.00	\$1.00
83	Guardrail Reflector	Ea	5.00	\$ 3.75	\$ 2.25	\$ 6.00	\$30.00
84	Guardrail, Backed, Furn and Install	Ea	1.00	\$ 0.50	\$ 0.50	\$ 1.00	\$1.00
85	Guardrail, Type A, Furn and Install	Ft	10.00	\$ 0.50	\$ 0.50	\$ 1.00	\$10.00
86	Guardrail, Type B, Furn and Install	Ft	800.00	\$ 0.75	\$ 14.25	\$ 15.00	\$12,000.00
87	Guardrail, Type BD, Furn and Install	Ft	100.00	\$ 0.50	\$ 14.50	\$ 15.00	\$1,500.00
88	Guardrail, Type T, Furn and Install	Ft	5000.00	\$ 3.50	\$ 14.50	\$ 18.00	\$90,000.00
89	Guardrail, Type TD, Furn and Install	Ft	800.00	\$ 0.50	\$ 14.50	\$ 15.00	\$12,000.00
90	Impact Head Assembly (ET-2000/Plus)	Ea	5.00	\$ 1.00	\$ 699.00	\$ 700.00	\$3,500.00
91	Impact Head Assembly (FLEAT/FLEAT-SP/FLEAT-MT)	Ea	5.00	\$ 1.00	\$ 799.00	\$ 800.00	\$4,000.00
92	Impact Head Assembly (MAX-Tension)	Ea	3.00	\$ 1.00	\$ 399.00	\$ 400.00	\$1,200.00
93	Impact Head Assembly (MSKT)	Ea	3.00	\$ 1.00	\$ 799.00	\$ 800.00	\$2,400.00
94	Impact Head Assembly (SKT/SKT-SP)	Ea	10.00	\$ 1.00	\$ 799.00	\$ 800.00	\$8,000.00
95	Impact Head Assembly (Soft-Stop)	Ea	4.00	\$ 1.00	\$ 399.00	\$ 400.00	\$1,600.00
96	Intermediate Line Post, Furn and Install (CASS, 4:1 Slope)	Ea	600.00	\$ 96.00	\$ 54.00	\$ 150.00	\$90,000.00
97	Intermediate Line Post, Furn and Install (CASS, 4:1 Slope), Modified	Ea	4.00	\$ 86.00	\$ 64.00	\$ 150.00	\$600.00
98	Intermediate Line Post, Furn and Install (Gibraltar, TL-4)	Ea	200.00	\$ 249.50	\$ 0.50	\$ 250.00	\$50,000.00
99	Intermediate Line Post, Furn and Install (Gibraltar, TL-4), Modified	Ea	2.00	\$ 149.50	\$ 0.50	\$ 150.00	\$300.00

#	DESCRIPTION OF SERVICES TAYLOR TSC	UNIT OF MEASURE	ESTIMATED QUANTITIES for 1 year	<u>Installation, Labor, Set Up, handling, mobilization Cost</u> (Vendor to Complete)	<u>Material /Base Cost</u> for listed service Items (Vendor Complete)	<u>Total Unit Cost</u>	<u>Annual Cost</u> (formula to populate)
100	Intermediate Line Post, Misc Hardware (CASS, 4:1 Slope)	Ea	600.00	\$ 25.00	\$ 10.00	\$ 35.00	\$21,000.00
101	Intermediate Line Post, Misc Hardware (Gibraltar, TL-4)	Ea	200.00	\$ 149.50	\$ 0.50	\$ 150.00	\$30,000.00
102	Post, Wood Guard	Ea	10.00	\$ 0.50	\$ 0.50	\$ 1.00	\$10.00
103	Reflector, Furn and Install (CASS)	Ea	110.00	\$ 40.00	\$ 10.00	\$ 50.00	\$5,500.00
104	Reflector, Furn and Install (Gibraltar)	Ea	80.00	\$ 49.50	\$ 0.50	\$ 50.00	\$4,000.00
105	Special End Shoe, Furn and Install	Ea	15.00	\$ 1.00	\$ 34.00	\$ 35.00	\$525.00
106	Steel Guardrail Post, 84 inches, Furn and Install	Ea	15.00	\$ 1.00	\$ 24.00	\$ 25.00	\$375.00
107	Steel Guardrail Post, 96 inches, Furn and Install	Ea	1.00	\$ 275.00	\$ 50.00	\$ 325.00	\$325.00
108	Steel Guardrail Post, 108 inches, Furn and Install	Ea	5.00	\$ 40.00	\$ 60.00	\$ 100.00	\$500.00
109	Swaged Fitting, Furn and Install	Ea	1.00	\$ 0.50	\$ 0.50	\$ 1.00	\$1.00
110	Terminal End Shoe, Type B, Furn and Install	Ea	3.00	\$ 15.00	\$ 35.00	\$ 50.00	\$150.00
111	Terminal End Shoe, Type T, Furn and Install	Ea	1.00	\$ 1.00	\$ 49.00	\$ 50.00	\$50.00
112	Terminal Line Post, Misc Hardware (CASS)	Ea	7.00	\$ 25.00	\$ 25.00	\$ 50.00	\$350.00
113	Terminal Line Post, Short, Furn and Inst all (CASS)	Ea	10.00	\$ 1.00	\$ 199.00	\$ 200.00	\$2,000.00
114	Terminal Line Post, Tall, Furn and Insta ll (CASS)	Ea	10.00	\$ -	\$ 200.00	\$ 200.00	\$2,000.00
115	Terminal Post 1, Furn and Install (Gibra ltar)	Ea	2.00	\$ 49.50	\$ 0.50	\$ 50.00	\$100.00
116	Terminal Post 2, Furn and Install (Gibra ltar)	Ea	2.00	\$ 49.50	\$ 0.50	\$ 50.00	\$100.00
117	Terminal Post 3, Furn and Install (Gibra ltar)	Ea	2.00	\$ 49.50	\$ 0.50	\$ 50.00	\$100.00
118	Terminal Post 4, Furn and Install (Gibra ltar)	Ea	2.00	\$ 49.50	\$ 0.50	\$ 50.00	\$100.00
119	Terminal Post, Misc Hardware (Gibraltar)	Ea	2.00	\$ 24.50	\$ 0.50	\$ 25.00	\$50.00
120	Thrie Beam Terminal Connector, Furn and Install	Ea	1.00	\$ 0.50	\$ 0.50	\$ 1.00	\$1.00
121	Thrie Beam Transition, Furn and Install	Ea	30.00	\$ 1.00	\$ 84.00	\$ 85.00	\$2,550.00
122	Traffic Control Wayne County	LS	1.00			\$ 280,000.00	\$280,000.00
123	Turnbuckle, Furn and Install	Ea	5.00	\$ 1.00	\$ 149.00	\$ 150.00	\$750.00
124	Wedge Lock Fitting, Furn and Install	Ea	1.00	\$ 0.50	\$ 0.50	\$ 1.00	\$1.00
TOTAL							\$831,111.00

Listed Quantities are estimates only from prior usage.

Actual work performed will be determined by the Program Manager or his/her designee on an as-needed basis.

The State is not obligated to purchase any listed quantity.

Exhibit A

**RMD HOLDINGS, LTD. D/B/A NATIONWIDE CONSTRUCTION GROUP
SCHEDULE OF KEY EMPLOYEES**

<u>NAME</u>	<u>PRESENT POSITION</u>	<u>LENTH OF TIME WITH COMPANY</u>	<u>TOTAL YEARS</u>	<u>CONSTRUCTION EXPERIENCE</u>
<u>OFFICERS</u>				
Robert DeMil	Owner & President	39	39	Fencing and Guardrail, Highway and General Construction
<u>PROJECT MANAGEMENT</u>				
Scott Keller	Sales Manager/Project Manager/Estimator	25	25	Fencing and Guardrail, Highway and General Construction
Melvin Kucway	Project Manager/Estimator	28	28	Fencing and Guardrail, Highway and General Construction
Franco Amicucci	Project Manager/Estimator	23	25	Fencing and Guardrail, Highway and General Construction
Joseph Carrier	Project Manager/Estimator	21	26	Fencing and Guardrail, Highway and General Construction
Andre DeMil	Project Manager/Estimator	18	20	Fencing and Guardrail, Highway and General Construction
Brian Schultz	Project Manager/Estimator	13	37	Fencing and Guardrail, Highway and General Construction
Mike Carr	Project Manager/Estimator	10	23	Fencing and Guardrail, Highway and General Construction
Scott Gray	Project Manager/Estimator	2	27	Fencing and Guardrail, Highway and General Construction
Bryan Decker	Assistant Project Manager	1	1	Fencing and Guardrail, Highway and General Construction
<u>FIELD SUPERVISORS & FOREMEN</u>				
James Raines	Field Supervisor	23	48	Fencing and Guardrail, Highway and General Construction
Miguel Sanchez	Field Foreman	19	26	Fencing and Guardrail, Highway and General Construction
Steve Gonzales	Field Foreman	16	35	Fencing and Guardrail, Highway and General Construction
Jerry Trout	Field Foreman	15	20	Fencing and Guardrail, Highway and General Construction
Darrin Johnson	Field Foreman	12	21	Fencing and Guardrail, Highway and General Construction
Chad Fox	Field Foreman	10	17	Fencing and Guardrail, Highway and General Construction
Rusty Dawson	Field Foreman	8	30	Fencing and Guardrail, Highway and General Construction
Alexander Parodi	Field Foreman	6	6	Fencing and Guardrail, Highway and General Construction
Chris Behnke	Field Foreman	4	17	Fencing and Guardrail, Highway and General Construction
Brandon Kaul	Field Foreman	3	6	Fencing and Guardrail, Highway and General Construction
William McNabb Jr.	Field Foreman	2	15	Fencing and Guardrail, Highway and General Construction
Jeff Weilnau	Field Foreman	1	4	Fencing and Guardrail, Highway and General Construction
<u>YARD EMPLOYEES</u>				
Larry Furton	Fleet Manager	26	26	Fleet Manager, Auto Mechanic & Highway and General Construction
De'Andrew Lewis	Welder	24	24	Welder and Highway and General Construction
Michael Smith	Mechanic	9	31	Auto Mechanic for Highway and General Construction
Dusten Crider	Mechanic	0	10	Auto Mechanic for Highway and General Construction
Jacob Cooke	Yard Manager	2	2	Yard Manager
<u>OFFICE MANAGEMENT</u>				
Rogue Tyson	Corporate Attorney	16	27	General Construction
Robert Pietryka	Chief Financial Officer	23	31	General Construction
John Zuehlke	Assistant Controller	26	26	General Construction
Dora Osborne	Accountant	5	36	General Construction
Allan Reyes	Safety Manager	10	28	Government Construction
Paul Macker	Contract Administrator	14	26	General Construction & Manufacturing
Bryan Muir	Subcontract Administrator	25	25	Highway and General Construction

MISS DIG UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT
Act 174 of 2013

AN ACT to enhance public safety, protect the environment, and prevent the disruption of vital public services by reducing the incidences of damage to underground facilities caused by excavation or blasting activity by providing notices to facility owners and facility operators before excavation or blasting; to provide for certain notices to affected parties when underground facilities are damaged; to provide for the powers and duties of certain state governmental officers and entities; to allow the promulgation of rules; to prescribe penalties; to allow the imposition of a fee; to provide for immunity for certain individuals; to allow claims for damages against certain governmental entities in certain circumstances; and to repeal acts and parts of acts.

History: 2013, Act 174, Eff. Apr. 1, 2014.

The People of the State of Michigan enact:

460.721 Short title.

Sec. 1. This act shall be known and may be cited as the "MISS DIG underground facility damage prevention and safety act".

History: 2013, Act 174, Eff. Apr. 1, 2014.

460.723 Definitions.

Sec. 3. As used in this act:

(a) "Additional assistance" means a response by a facility owner or facility operator to a request made by an excavator during business hours, for help in locating a facility.

(b) "Approximate location" means a strip of land at least 36 inches wide, but not wider than the width of the marked facility plus 18 inches on either side of the facility marks.

(c) "Blasting" means changing the level or grade of land or rendering, tearing, demolishing, moving, or removing earth, rock, buildings, structures, or other masses or materials by seismic blasting or the detonation of dynamite or any other explosive agent.

(d) "Business day" means Monday through Friday, excluding holidays observed by the notification system and posted on the notification system website.

(e) "Business hours" means from 7 a.m. to 5 p.m., eastern standard time, on business days.

(f) "Caution zone" means the area within 48 inches of either side of the facility marks provided by a facility owner or facility operator.

(g) "Commission" means the Michigan public service commission created in section 1 of 1939 PA 3, MCL 460.1.

(h) "Damage" means any impact upon or exposure of an underground facility requiring its repair or replacement due to weakening, partial destruction, or complete destruction of the facility, including, but not limited to, the protective coating, lateral support, cathodic protection, or housing of the facility.

(i) "Design ticket" means a communication to the notification system in which a request for information regarding underground facilities for predesign, design, or advance planning purposes, but not marking for excavation or blasting, is made under the procedures described in section 6a.

(j) "Dig notice" means a communication to the notification system by an excavator providing notice of intended excavation or blasting activity as required by this act.

(k) "Emergency" means a sudden or unforeseen occurrence, including a government-declared emergency, involving a clear and imminent danger to life, health, or property, or imminent danger to the environment, that requires immediate correction in order to restore or to prevent the interruption of essential governmental services, utility services, or the blockage of public transportation and that requires immediate excavation or blasting.

(l) "Emergency notice" means a communication to the notification system to alert the facility owners or facility operators of the urgent need for marking the location of a facility due to an emergency.

(m) "Excavation" means moving, removing, or otherwise displacing earth, rock, or other material below existing surface grade with power tools or power equipment, including, but not limited to, grading, trenching, tiling, digging, drilling, boring, augering, tunneling, scraping, cable or pipe plowing, and pile driving; and wrecking, razing, rending, moving, or removing a structure or mass of materials. Excavation does not include any of the following:

(i) Any of the following activities performed in the course of farming operations:

(A) Any farming operation performed in the public right-of-way to a depth of not more than 12 inches below the existing surface grade if the farming operation is not performed within 6 feet of any aboveground

structure that is part of a facility.

(B) Any farming operation performed outside a public right-of-way and within 25 yards of an existing petroleum or natural gas pipeline to a depth of not more than 18 inches below the existing surface grade if the farming operation is not performed within 6 feet of any aboveground structure that is part of a facility.

(C) Any farming operation performed outside a public right-of-way and not within 25 yards of an existing petroleum or natural gas pipeline if the farming operation is not performed within 6 feet of any aboveground structure that is part of a facility.

(ii) Replacing a fence post, sign post, or guardrail in its existing location.

(iii) Any excavation performed at a grave site in a cemetery.

(iv) Any excavation performed within a landfill unit as defined in R 299.4103 of the Michigan administrative code during its active life as defined in R 299.4101 of the Michigan administrative code or during its postclosure period as set forth in R 299.4101 to R 299.4922 of the Michigan administrative code.

(v) Any of the following activities if those activities are conducted by railroad employees or railroad contractors and are carried out with reasonable care to protect any installed facilities placed in the railroad right-of-way by agreement with the railroad:

(A) Any routine railroad maintenance activities performed in the public right-of-way as follows:

(I) Within the track area, either to the bottom of the ballast or to a depth of not more than 12 inches below the bottom of the railroad tie, whichever is deeper, if the routine railroad maintenance activity is not performed within 6 feet of any aboveground structure that is part of a facility that is not owned or operated by that railroad.

(II) Outside the track area, not more than 12 inches below the ground surface, if the routine railroad maintenance activity is not performed within 6 feet of any aboveground structure that is part of a facility that is not owned or operated by that railroad.

(B) Any routine railroad maintenance activities performed to a depth of not more than 18 inches below the flow line of a ditch or the ground surface in the railroad right-of-way, excluding the public right-of-way, if the routine railroad maintenance activity is not performed within 6 feet of any aboveground structure that is part of a facility that is not owned or operated by that railroad.

(vi) Routine maintenance or preventative maintenance as those terms are defined in section 10c of 1951 PA 51, MCL 247.660c, to a depth of not more than 12 inches below the roadway and any shoulder of a street, county road, or highway.

(n) "Excavator" means any person performing excavation or blasting.

(o) "Facility" or "underground facility" means an underground or submerged conductor, pipe, or structure, including, but not limited to, a conduit, duct, line, pipe, wire, or other device and its appurtenances used to produce, store, transmit, or distribute a utility service, including communications, data, cable television, electricity, heat, natural or manufactured gas, oil, petroleum products, steam, sewage, video, water, and other similar substances, including environmental contaminants or hazardous waste.

(p) "Facility operator" means a person that controls the operation of a facility.

(q) "Facility owner" means a person that owns a facility.

(r) "Farm" means that term as defined in section 2 of the Michigan right to farm act, 1981 PA 93, MCL 286.472.

(s) "Farming operations" means plowing, cultivating, planting, harvesting, and similar operations routine to most farms and that are performed on a farm. Farming operations do not include installation of drainage tile, underground irrigation lines, or the drilling of a well.

(t) "Governmental agency" means the state and its political subdivisions, including counties, townships, cities, villages, or any other governmental entity.

(u) "Mark", "marks", or "marking" means the temporary identification on the surface grade of the location of a facility in response to a ticket as described in section 7.

(v) "Notification system" means MISS DIG System, Inc., a Michigan nonprofit corporation formed and operated by each facility owner and facility operator to administer a 1-call system for the location of facilities, or any successor to this corporation.

(w) "Person" means an individual, firm, joint venture, partnership, corporation, association, governmental agency, department or agency, utility cooperative, or joint stock association, including any trustee, receiver, assignee, or personal representative thereof.

(x) "Positive response" means the procedure administered by the notification system to allow excavators to determine whether all facility owners or facility operators contacted under a ticket have responded in accordance with this act.

(y) "Public right-of-way" means the area on, below, or above a public roadway, highway, street, alley, easement, or waterway.

(z) "Railroad" means that term as defined in section 109 of the railroad code of 1993, 1993 PA 354, MCL 462.109.

(aa) "Safe zone" means an area 48 inches or more from either side of the facility marks provided by a facility owner or facility operator.

(bb) "Soft excavation" means a method and technique designed to prevent contact damage to underground facilities, including, but not limited to, hand-digging, cautious digging with nonmechanical tools, vacuum excavation methods, or use of pneumatic hand tools.

(cc) "Start date" means the date that a proposed excavation or blasting is expected to begin as indicated on a ticket.

(dd) "Ticket" means a communication from the notification system to a facility owner or facility operator requesting the marking of underground facilities, based on information provided by an excavator in a dig notice.

(ee) "White lining" means marking by an excavator of the area of a proposed excavation or blasting, with white paint or flags, or both, before giving notice to the notification system.

History: 2013, Act 174, Eff. Apr. 1, 2014.

460.724 MISS DIG Systems, Inc.; operation and membership; notification system; duties and responsibilities; funding; fees; farm operation; tax exemption.

Sec. 4. (1) Facility owners and facility operators shall continue to operate and be members of MISS DIG Systems, Inc., a Michigan nonprofit corporation, that shall have the duties and undertake the responsibilities of the notification system under this act on and after the effective date of this act. The notification system responsibilities and duties do not include the physical marking of facilities, which is the responsibility of a facility owner or facility operator upon notification under this act.

(2) The notification system and its procedures shall be governed by its board of directors and in accordance with its current articles of incorporation and bylaws as of the effective date of this act, with any future changes made in accordance with the nonprofit corporation act, 1982 PA 162, MCL 450.2101 to 450.3192, and the notification system's articles, bylaws, and board procedures. The notification system shall request input regarding its policies from all interested persons, including facility owners and facility operators, excavators, marking service providers, and governmental agencies.

(3) Funding for the notification system operations shall be established by the notification system, including through fees based on a reasonable assessment of operating costs among facility owners or facility operators. A facility owner or facility operator shall not charge a fee to excavators for marking facilities under this act.

(4) Facility owners and facility operators shall be members of and participate in the notification system and pay the fees levied by the notification system under this section. This obligation and the requirements of this act for facility owners and facility operators do not apply to persons owning or operating a facility located on real property the person owns or occupies if the facility is operated solely for the benefit of that person.

(5) Owners of real property on which there is a farm operation, as that term is defined in section 2 of the Michigan right to farm act, 1981 PA 93, MCL 286.472, may become a nonvoting member of the notification system, known as a farm member, upon providing the notification system with the information necessary to send the farm member a ticket for purposes of notification under section 6(1). A farm member is not subject to any fees levied under subsection (3).

(6) The notification system is exempt from taxes collected under the general property tax act, 1893 PA 206, MCL 211.1 to 211.155.

History: 2013, Act 174, Eff. Apr. 1, 2014.

460.725 Duty of excavator to provide dig notice to notification system; contents of notice; validity of ticket; compliance with procedures and requirements; exposure of facility; notice requirements; excavation using power equipment.

Sec. 5. (1) An excavator shall provide a dig notice to the notification system at least 72 hours, but not more than 14 calendar days, before the start of any blasting or excavation. If the dig notice is given during business hours, the 72-hour period shall be measured from the time the dig notice is made to the notification system. If a dig notice is given before 7 a.m. on a business day, the 72-hour period begins at 7 a.m. on that day. If a dig notice is given on a nonbusiness day or after 5 p.m. on a business day, the 72-hour period begins at 7 a.m. on the next business day. All hours of nonbusiness days are excluded in counting the 72-hour period. If there are multiple excavators on the same site, each excavator shall provide its own dig notice.

(2) A dig notice shall contain at least all of the following:

(a) The name, address, and telephone number of the excavator.

(b) A description of the proposed area of blasting or excavation, including the street address and a property

description.

(c) The specific type of work to be performed.

(d) The start date and time of blasting or excavation.

(e) Whether the proposed blasting or excavation will be completed within 21 days after the start date.

(3) A ticket is valid for 21 days from the start date of the excavation or blasting on the ticket as identified by the excavator, except that a ticket is valid for 180 days from the start date if the dig notice indicates that the proposed excavation or blasting will not be completed within 21 days from the start date.

(4) An excavator shall comply with the notification system procedures and all requirements of this act.

(5) Except as otherwise provided in this subsection, before blasting or excavating in a caution zone, an excavator shall expose all marked facilities in the caution zone by soft excavation. If conditions make complete exposure of the facility impractical, an excavator shall consult with the facility owner or facility operator to reach agreement on how to protect the facility. For excavations in a caution zone parallel to a facility, an excavator shall use soft excavation at intervals as often as reasonably necessary to establish the precise location of the facility. An excavator may use power tools and power equipment in a caution zone only after the facilities are exposed or the precise location of the facilities is established.

(6) An excavator shall provide support or bracing of facilities or excavation walls in an excavation or blasting area that are reasonably necessary for protection of the facilities.

(7) An excavator shall provide notification to the notification system if facility markings are destroyed or covered by excavation or blasting activities or if a ticket expires before the commencement of excavation. If a ticket expires before the commencement of excavation, an excavator shall provide a new dig notice to the notification system, and comply with subsection (1).

(8) An excavator shall provide notification to the notification system requesting additional assistance if the location of a marked facility within the approximate location cannot be determined.

(9) An excavator shall provide immediate additional notice to the notification system and stop excavation in the immediate vicinity if the excavator has reason to suspect the presence of an unmarked facility due to any 1 of the following:

(a) Visible evidence of a facility with no marks visible.

(b) Lack of a positive response to a ticket.

(c) A positive response from a facility owner or facility operator indicating the presence of a facility with no marks visible.

(10) If an excavator contacts or damages a facility, the excavator shall provide immediate notice to the facility owner or facility operator.

(11) If an excavator damages a facility resulting in the escape of any flammable, toxic, or corrosive gas or liquid, or endangering life, health, or property, the excavator shall call 9-1-1 and provide immediate notice to the facility owner or facility operator. The excavator shall also take reasonable measures to protect the excavator, those in immediate danger, the general public, and the environment until the facility owner or facility operator, or emergency first responders, have arrived and taken control of the site.

(12) An excavator shall provide prompt emergency notice to the notification system for any proposed excavation or blasting in an emergency. In an emergency, blasting or excavation required to address the conditions of the emergency may be performed as the emergency conditions reasonably require, subject to the provisions in this act for emergency notice and marking facilities in response to an emergency notice.

(13) If the location of a proposed excavation or blasting cannot be described in a manner sufficient to enable the facility owner or facility operator to ascertain the precise tract or parcel involved, an excavator shall provide white lining in advance of submitting a ticket or additional assistance to the facility owner or facility operator on reasonable request to identify the area of the proposed excavation or blasting.

(14) For purposes of this section, notice to the notification system constitutes notice to all facility owners or facility operators regarding facilities located in the area of the proposed excavation or blasting.

(15) Except as otherwise provided in this act, an excavator may conduct excavation in a safe zone using power equipment without establishing the precise location of any facilities.

History: 2013, Act 174, Eff. Apr. 1, 2014.

460.726 Notification system; transmission of ticket to facility owners or operators; availability; positive response system; maintenance of records; emergency notice; design tickets.

Sec. 6. (1) The notification system shall receive dig notice notification of proposed excavation and blasting activities and promptly transmit a ticket to facility owners or facility operators of facilities in the area of the proposed excavation or blasting. The notification system shall provide alternative means of access and notification to the system. Except for shutdowns caused by acts of nature, war, or terrorism, the notification

system shall be available 24 hours per day, 7 days per week.

(2) The notification system shall publicize the availability and use of the notification system and educate the public, governmental agencies, excavators, farm operators, facility owners, and facility operators regarding the practices and procedures of the notification system, the requirements of this act, and practices to protect underground facilities from damage.

(3) The notification system shall administer a positive response system to allow excavators to determine whether all of the facility owners or facility operators in the area have responded to a ticket and whether a particular facility owner or facility operator does not have facilities in the area of a proposed excavation or blasting.

(4) The notification system shall maintain adequate records of its notification activity for a period of 6 years after the date of the notice, including voice recordings of calls. The notification system shall provide copies of those records to any interested person upon written request and payment of a reasonable charge for reproduction and handling as determined by the notification system.

(5) The notification system shall expedite the processing of any emergency notice it receives under this act.

(6) The notification system shall receive design tickets under the procedures described in section 6a and transmit them to facility owners or facility operators.

History: 2013, Act 174, Eff. Apr. 1, 2014.

460.726a Project design or planning services; fees; procedures; design ticket response; marking facility location.

Sec. 6a. (1) The notification system shall establish reasonable procedures, including marking response times, for design ticket notification to facility owners or facility operators of requests for project design or planning services to determine the type, size, and general location of facilities during the planning and design stage of a construction or demolition project. Facility owners or operators may charge the person requesting project design or planning services separate fees for design or planning services.

(2) Procedures under this section do not affect or alter the obligation of excavators to provide notice of blasting or excavation under section 5.

(3) The response to a design ticket is to provide general information regarding the location of underground facilities, not to mark any facilities. However, if a facility owner or operator does not have drawings or records that show the location of a facility, the facility owner or operator shall mark that facility under the procedures described in section 7. A design ticket or information provided in response to a design ticket does not satisfy the requirement under this act for excavation or blasting notice to the notification system or marking the approximate location of facilities for blasting or excavation.

History: 2013, Act 174, Eff. Apr. 1, 2014.

460.727 Marking facility location; positive response; additional assistance of facility owner or operator upon request by excavator; damage to facility; emergency response; construction of new facility.

Sec. 7. (1) A facility owner or facility operator shall respond to a ticket by the start date and time for the excavation or blasting under section 5(1) by marking its facilities in the area of the proposed excavation or blasting in a manner that permits the excavator to employ soft excavation to establish the precise location of the facilities.

(2) A facility owner or facility operator shall mark the location of each facility with paint, stakes, flags, or other customary methods using the uniform color code of the American national standards institute as follows:

- (a) White – used by excavators to mark a proposed excavation or blasting area.
- (b) Pink – temporary survey markings.
- (c) Red – electric power lines, cables, conduit, and lighting cables.
- (d) Yellow – gas, oil, steam, petroleum, or gaseous materials.
- (e) Orange – communication, cable television, alarm or signal lines, cables, or conduit.
- (f) Blue – potable water.
- (g) Purple – reclaimed water, irrigation, and slurry lines.
- (h) Green – sewers and drain lines.

(3) A facility owner or facility operator shall provide notification to the notification system using positive response.

(4) Upon receiving a notification during business hours from an excavator through the notification system of previous marks being covered or destroyed, a facility owner or facility operator shall mark the location of a facility within 24 hours, excluding all hours on nonbusiness days.

(5) If a facility owner or facility operator receives a request under section 5(8) or (9), that facility owner or facility operator shall provide additional assistance to an excavator within 3 hours of a request made by the excavator during business hours. An excavator and a facility owner or facility operator may agree to an extension of the time for additional assistance. If a request for additional assistance is made at a time when the additional assistance cannot be provided during normal business hours or assistance is required at a remote rural location, the response time shall be no later than 3 hours after the start of the next business day or a time based on mutual agreement.

(6) If a facility owner or facility operator receives notice that a facility has been damaged, that facility owner or facility operator shall promptly dispatch personnel to the area.

(7) A facility owner or facility operator shall respond within 3 hours to an emergency notice, or before the start day and time provided in an emergency notice if that start day and time is more than 3 hours from the time of notice.

(8) New facilities built after the effective date of this act shall be constructed in a manner that allows their detection when in use.

(9) This section does not apply to the state transportation department or to the marking of a county or intercounty drain by a county drain commissioner's office or drainage board.

History: 2013, Act 174, Eff. Apr. 1, 2014.

460.728 Damages or equitable relief.

Sec. 8. This act does not limit the right of an excavator, facility owner, or facility operator to seek legal relief and recovery of actual damages incurred and equitable relief in a civil action arising out of a violation of the requirements of this act, or to enforce the provisions of this act, nor shall this act determine the level of damages or injunctive relief in any such civil action. This section does not affect or limit the availability of any contractual or legal remedy that may be available to an excavator, facility owner, or facility operator arising under any contract to which they may be a party.

History: 2013, Act 174, Eff. Apr. 1, 2014.

460.729 Liability of officers, agents, or employees of notification system; liability of excavator or farmer engaged in farming operations or owner of farm.

Sec. 9. (1) The notification system and its officers, agents, or employees are not liable for any damages, including damages for injuries or death to persons or damage to property, caused by its acts or omissions in carrying out the provisions of this act. The notification system is not responsible for assuring performance by a facility owner or facility operator of its obligation to participate in the notification system under section 4(4).

(2) An excavator or a farmer engaged in farming operations that complies with this act is not responsible for damages that occur to a facility that is improperly marked, not marked, or determined to be within the safe zone.

(3) An owner of a farm who complies with this act is not liable for any damages to a facility if the damage occurred in the course of farming operations, except in those lands within the public right-of-way, unless the owner intentionally damaged the underground facility or acted with wanton disregard or recklessness in damaging the facility. As used in this subsection, "owner" includes a family member, employee, or tenant of the owner.

History: 2013, Act 174, Eff. Apr. 1, 2014.

460.730 Ordinances, charters, or other laws requiring permits.

Sec. 10. This act does not authorize, affect, or impair local ordinances, charters, or other provisions of law requiring permits to be obtained before excavating or tunneling in a public street or highway or to construct or demolish buildings or other structures on private property. A permit issued by a governmental agency does not relieve a person from the responsibility of complying with this act. The failure of any person who has been granted a permit to comply with this act does not impose any liability upon the governmental agency issuing the permit.

History: 2013, Act 174, Eff. Apr. 1, 2014.

460.731 Prohibited conduct; violations as misdemeanor; penalty; civil fine; use of commission determination in court action or proceeding; instruction forms; rules; incident reports; maintenance and availability of information.

Sec. 11. (1) A person who engages in any of the following conduct is guilty of a misdemeanor punishable by imprisonment for not more than 1 year or a fine of not more than \$5,000.00, or both:

(a) Knowingly damages an underground facility and fails to promptly notify the facility owner or facility operator.

(b) Knowingly damages an underground facility and backfills the excavation or otherwise acts to conceal the damage.

(c) Willfully removes or otherwise destroys stakes or other physical markings used to mark the approximate location of underground facilities unless that removal or destruction occurs after the excavation or blasting is completed or as an expected consequence of the excavation or blasting activity.

(2) Upon complaint filed with the commission or upon the commission's own motion, following notice and hearing, a person, other than a governmental agency, who violates any of the provisions of this act may be ordered to pay a civil fine of not more than \$5,000.00 for each violation. In addition to or as an alternative to any fine, the commission may require the person to obtain reasonable training to assure future compliance with this act. Before filing a complaint under this subsection, a person shall attempt to settle the dispute with the adverse party or parties using any reasonable means of attempted resolution acceptable to the involved parties. In determining the amount of any fine, the commission shall consider all of the following:

(a) The ability of the person charged to pay or continue in business.

(b) The nature, circumstances, and gravity of the violation.

(c) Good-faith efforts by the person charged to comply with this act.

(d) The degree of culpability of the person charged and of the complainant.

(e) The history of prior violations of the person charged.

(3) A commission determination under subsection (2) shall not be used against a party in any action or proceeding before any court. A complaint filed under subsection (2) does not limit a person's right to bring a civil action to recover damages that person incurred arising out of a violation of the requirements of this act.

(4) The commission shall develop forms with instructions and may promulgate administrative rules for processing complaints under this act, pursuant to the administrative procedures act of 1969, 1969 PA 306, MCL 24.201 to 24.328.

(5) Not later than October 1, 2014, the commission shall establish requirements for reporting incidents involving damage to underground facilities.

(6) Beginning April 1, 2015, the commission shall maintain information on damaged facilities reported under subsection (5), including, but not limited to, any damage that occurs during excavation, digging, or blasting that is excluded from the definition of excavation under section 3(m). The commission shall make any information maintained under this subsection publicly available on its website.

History: 2013, Act 174, Eff. Apr. 1, 2014.

460.732 Governmental liability.

Sec. 12. (1) Except as provided in this section, this act does not affect the liability of a governmental agency for damages for tort or the application of 1964 PA 170, MCL 691.1401 to 691.1419.

(2) A facility owner or a facility operator may file a complaint with the commission seeking a civil fine and, if applicable, damages from a governmental agency under this section for any violation of this act.

(3) After notice and a hearing on a complaint under subsection (2), the commission may order the following, as applicable:

(a) If the commission has not issued an order against the governmental agency under this section within the preceding 12 months, a civil fine of not more than \$5,000.00. In determining the amount of the fine, the commission shall consider the factors in section 11(2).

(b) If the commission has issued an order under subdivision (a) against the governmental agency within the preceding 12 months, both of the following:

(i) A civil fine of not more than \$10,000.00. In determining the amount of the fine, the commission shall consider the factors in section 11(2).

(ii) That the governmental agency provide at its expense underground facility safety training to all its personnel involved in underground utility work or excavating.

(c) If the commission has issued an order under subdivision (b) against the governmental agency within the preceding 12 months, both of the following:

(i) A civil fine of not more than \$15,000.00. In determining the amount of the fine, the commission shall consider the factors in section 11(2).

(ii) If the violation of this act by the governmental agency caused damage to the facilities of the facility owner or facility operator, that the governmental agency pay to the owner or operator the cost of repair of the facilities.

(4) A party to a complaint filed under this section or section 11 may file an appeal of a commission order issued under this section or section 11 in the Ingham county circuit court.

(5) This section does not apply if the violation of this act was a result of action taken in response to an emergency.

(6) A finding by the commission under this section is not admissible in any other proceeding or action.

(7) A civil fine ordered under this act shall be paid to the commission and used for underground facilities safety education and training.

(8) Each day upon which a violation described in this act occurs is a separate offense.

History: 2013, Act 174, Eff. Apr. 1, 2014.

460.733 Compliance by individual engaged in farming operation.

Sec. 13. An individual engaged in a farming operation on a farm shall comply with this act beginning May 1, 2014.

History: 2013, Act 174, Eff. Apr. 1, 2014.

Taylor TSC Cable Barrier Runs

I-275 Cable Barrier Runs	
NO.	Length (feet)
Run 1	2,014
Run 2	2,228
Run 3	710
Run 4	1,410
Run 5	2,180
Run 6	375
Run 7	6,106
Run 8	1,276
Run 9	959
Run 10	2,134
Run 11 a	3,662
Run 11 b	2,920
Run 12	2,108
Run 13	2,574
Run 14	2,421
Run 15	837
Run 16	3,142
Run 17	2,159
Run 18	718

I-94 Cable Barrier Runs	
NO.	Length (feet)
Run 1	4,039
Run 2	454
Run 3	8,436
Run 4	455
Run 5	7,554
Run 6	459
Run 7	2,284
Run 8	455
Run 9	2,567
Run 10	455
Run 11	2,173
Run 12	4,619
Run 13	444
Run 14	719

M-14 Cable Barrier Runs	
NO.	Length (feet)
Run 1	1,060
Run 2	397
Run 3	8,175
Run 4	2,937
Run 5	6,468
Run 6	293
Run 7	2,723
Run 8	665
Run 9	714

Total # of Runs for TTSC	42
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MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
GALVANIZED BEAM GUARDRAIL

GCB:CT

1 of 3

APPR:xxx:YYY:00-01-18

a. Description. This work consists of furnishing all necessary materials, labor, and equipment for the maintenance (including removal and installation) of galvanized beam guardrail as required for replacing damaged sections of steel beam guardrail and related components as directed by the Engineer. This work also includes any site clean-up or turf establishment to return site to the original condition.

b. Material. Provide materials in accordance to the following sections of the Standard Specification for Construction:

Sound Earth	205
Guardrail Beam Elements and Hardware	908
Reflectors.....	908
Steel Posts.....	908
Wood Posts.....	912
Guardrail Blocks.....	912
Turf Establishment	917 and 911

c. Construction. Guardrail construction must conform to the applicable requirements of section 807 of the Standard Specifications for Construction. Turf establishment must conform to the requirements of section 816 of the Standard Specifications for Construction. Construction must conform to current standard plans and special details applicable to the items of work specified.

d. Measurement and Payment. The complete work, as described, will be measured and paid for at the contract unit price using the following pay items:

Pay Item	Pay Unit
Guardrail, Type __, Furn and Install	Foot
Guardrail, Backed, Furn and Install	Each
Guardrail Approach Terminal, Type 1B/1T (SRT)	Each
Guardrail Approach Terminal, Type 1B/1T (SRT) __ Panel	Each
Guardrail Approach Terminal, Type 1B/1T (FLEAT)	Each
Guardrail Approach Terminal, Type 1B/1T (FLEAT) __ Panel	Each
Guardrail Approach Terminal, Type 1B/1T (FLEAT-SP)	Each
Guardrail Approach Terminal, Type 1B/1T (FLEAT-SP) __ Panel	Each
Impact Head Assembly (FLEAT/FLEAT-SP/FLEAT-MT)	Each
Guardrail Approach Terminal, Type 2B/2T (ET).....	Each
Guardrail Approach Terminal, Type 2B/2T (ET) __ Panel.....	Each
Impact Head Assembly (ET-2000/Plus).....	Each
Guardrail Approach Terminal, Type 2B/2T (SKT)	Each

Guardrail Approach Terminal, Type 2B/2T (SKT) __ Panel	Each
Guardrail Approach Terminal, Type 2B/2T (SKT-SP)	Each
Guardrail Approach Terminal, Type 2B/2T (SKT-SP) __ Panel	Each
Impact Head Assembly (SKT/SKT-SP)	Each
Guardrail Approach Terminal, Type 2M (MSKT)	Each
Guardrail Approach Terminal, Type 2M (MSKT) __ Panel	Each
Impact Head Assembly (MSKT)	Each
Guardrail Approach Terminal, Type 2M (Soft-Stop)	Each
Guardrail Approach Terminal, Type 2M (Soft-Stop) __ Panel	Each
Impact Head Assembly (Soft-Stop)	Each
Guardrail Approach Terminal, Type 2M (MAX-Tension)	Each
Guardrail Approach Terminal, Type 2M (MAX-Tension) __ Panel	Each
Impact Head Assembly (MAX-Tension)	Each
Guardrail Approach Terminal, Type 3B/3T (CAT)	Each
Guardrail Approach Terminal, Type 3B/3T (CAT) Nose Assembly	Each
Guardrail Approach Terminal, Type 3B/3T (CAT) __ Panel	Each
Guardrail Approach Terminal, Type 3B/3T (FLEAT-MT)	Each
Guardrail Approach Terminal, Type 3B/3T (FLEAT-MT) __ Panel	Each
Guardrail Approach Terminal, Type 4B/4T Non-Buried Panel	Each
Guardrail Approach Terminal, Type 4B/4T Buried Panel	Each
Guardrail Departing Terminal, Type B/T	Each
Guardrail Anch, Bridge, Furn and Install	Each
Guardrail Anch, Bridge __ Panel	Each
Guardrail Anch, Median, Furn and Install	Each
Guardrail Anch, Median __ Panel	Each
Thrie Beam Transition, Furn and Install	Each
Special End Shoe, Furn and Install	Each
Thrie Beam Terminal Connector, Furn and Install	Each
Bridge Railing, Thrie Beam Retrofit, Furn and Install	Foot
Guardrail Post, Culv, Furn and Install	Each
Terminal End Shoe, Type __, Furn and Install	Each
Guardrail Approach Terminal Cable Assembly	Each
Guardrail Approach Terminal Struts	Each

The contract unit price for all pay items described in this special provision will be payment in full for all materials, labor, and equipment required to furnish and install the specific units and all associated components and hardware, site clean-up, and turf establishment.

Payment for all pay items described in this special provision will include the removal and disposal of any existing items being replaced.

Guardrail, Type __, Furn and Install includes both straight and curved guardrail. Additional payment will not be provided for shop bent guardrail panels.

Guardrail, Backed, Furn and Install will be used for all w-beam backed details. Additional payment will not be provided for specific detail types.

Guardrail Approach Terminal, Type __ will be measured as units each for a complete unit, or each by the panel (**1st, 2nd, 3rd, 4th, Buried, or Non-Buried Panel**), acceptably replaced or upgraded. The panel will consist of all posts, miscellaneous hardware, ground struts, soil

anchors, cable assemblies, and guardrail material required to replace the 1st, 2nd, 3rd, 4th, Buried, or Non-Buried Panel 12.5 foot section of guardrail in accordance with the standard specifications, standard plans, special details, and manufacturer's specifications.

Guardrail Approach Terminal, Type ___ and **Guardrail Departing Terminal, Type B/T**, respectively, will be used regardless of the guardrail type connected to the terminal. Additional payment will not be provided based on the guardrail type connected to the terminal. **Impact Head Assembly (FLEAT/FLEAT-SP/FLEAT-MT), Impact Head Assembly (ET-2000/Plus), Impact Head Assembly (SKT/SKT-SP), Impact Head Assembly (MSKT), Impact Head Assembly (Soft-Stop),** and **Impact Head Assembly (MAX-Tension)** will be measured as individual units each when replaced separately from a complete Guardrail Approach Terminal, and will include payment for miscellaneous hardware required to install the impact head assembly. The FLEAT-MT guardrail approach terminal contains two distinct impact head assemblies. Each impact head assembly on the FLEAT-MT terminal will be measured as an individual unit.

Guardrail Approach Terminal, Type 2M includes all materials, labor, and equipment within the length of each terminal, as defined in subsections d.1, d.2, and d.3 of this special provision. The lengths specified in subsections d.1, d.2, and d.3 of this special provision do not include a transition section, per Standard Plan R-60-Series, for connecting Guardrail Approach Terminal, Type 2M to guardrail Type B or Type T.

1. MSKT. Overall length is 59 feet, 4½ inches, measured from Post 1.
2. Soft-Stop. Overall length is 50 feet, 9½ inches, measured from Post 0.
3. MAX-Tension. Overall length is 55 feet, ½ inch, measured from the soil anchor.

If the pay item lengths defined in this special provision conflict with the pay item lengths specified in the manufacturer's details and/or specifications, the pay item lengths defined in this special provision will take precedence.

Guardrail Anch, Bridge ___ Panel will be measured as individual panels for any panel, 1st or 2nd, with maximum post spacing of 3 feet 1.5 inches or less as specified in the appropriate standard plans/special details, when replaced separately from a complete Guardrail Anch Bridge assembly. **Guardrail Anch, Bridge, Furn and Install** and **Guardrail Anch, Bridge ___ Panel**, respectively, will be applicable to all detail types. Additional payment will not be provided based on detail type.

Guardrail Anch, Median ___ Panel will be measured as individual panels for any panel, 1st or 2nd, when replaced separately from a complete Guardrail Anch Median assembly.

Thrie Beam Transition, Furn and Install, Special End Shoe, Furn and Install, and Thrie Beam Terminal Connector, Furn and Install, respectively, will be measured as each and is provided as a unit. The unit includes all posts and guardrail materials required to repair or replace the specific unit.

Bridge Railing, Thrie Beam Retrofit, Furn and Install will be applicable to all bridge railing types being retrofitted. Additional payment will not be provided based on the type of bridge railing being retrofitted.

Guardrail Post, Culv, Furn and Install includes all materials, labor, and equipment to furnish and install posts on box or slab culverts, or other concrete surfaces, as shown on Standard Plan

R-73 Series. This pay item will be applicable to all guardrail types and post lengths. Additional payment will not be provided based on guardrail type or post length.

Terminal End Shoe, Type __, Furn and Install will be measured as each and is provided as a unit. The unit includes furnishing and installing a terminal end shoe of the type specified.

Guardrail Approach Terminal Cable Assembly and **Guardrail Approach Terminal Struts** includes all materials, labor, and equipment required to furnish and install the respective units, including miscellaneous hardware, meeting the requirements of this special provision and approved by the manufacturer of the respective guardrail approach terminal being serviced. Payment for **Guardrail Approach Terminal Cable Assembly** or **Guardrail Approach Terminal Struts** will only be provided at locations where the existing approach terminal is undamaged and missing the respective units, as determined by the Engineer. The pay items are applicable to all guardrail approach terminals, regardless of approach terminal brand or manufacturer.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
**MAINTENANCE AND REPAIR OF HIGH TENSION CABLE BARRIER AFTER
CONSTRUCTION**

TAY:AP

1 of 22

APPR:RWS:MJF:02-05-16

a. Description. The work consists of performing routine high-tension cable barrier (HTCB) repairs and maintenance, as described in this special provision. This work includes furnishing all necessary materials, labor, and equipment for the maintenance (including removal and installation) of HTCB as required for repairing/replacing damaged sections of HTCB and related components as directed by the Engineer. If the requirements of this special provision conflict with the requirements of the manufacturer's details, the requirements of this special provision will take precedence.

b. Materials. Provide materials in accordance with the manufacturer's specifications and this special provision. Provide written certification to the Engineer stating that the materials used to maintain/repair the HTCB system and end terminals meet manufacturer's specifications and this special provision. Provide manufacturer's written certification to the Engineer certifying that all components supplied by the manufacturer meet manufacturer's specifications and this special provision.

Provide new cable barrier components in accordance with subsection 105.10 of the Standard Specifications for Construction. Provide new cable barrier components procured from the manufacturer of the HTCB system being serviced. All new cable barrier components must meet manufacturer's specifications of the cable barrier system being serviced and this special provision. New cable barrier components must be similar to and compatible with the existing components in the cable barrier system being serviced. For each respective cable barrier system, intermixing different types of line posts, turnbuckles, line post sockets, cable splices, and other components is prohibited.

1. Cable Barriers and End Terminals. Ensure that the end terminals are compatible with the cable barrier system being maintained/repared.

New cable barrier and end terminals must meet or exceed *National Cooperative Highway Research Program Report 350 (NCHRP 350)*, Test Level 3 (TL-3) or *Manual for Assessing Safety Hardware (MASH)*, Test Level 3 (TL-3) and have Federal Highway Administration (FHWA) acceptance. Furnish FHWA acceptance letters, to the Engineer, stating that the end terminals meet or exceed *NCHRP 350*, TL-3 or *MASH*, TL-3.

2. Cables. Cable must be 3/4-inch (minimum) diameter, 3 by 7 construction, zinc-coated (galvanized) wire rope manufactured in accordance with AASHTO M 30, Type I, Class A coating. Each cable must have a minimum tensile strength of 39,000 pounds. Each cable must be factory pre-stretched after manufacture with a tensile load of 50 percent (minimum) of the cable's tensile strength to prevent future strain relaxation of the cable. The cable must not be damaged during the pre-stretching process. Each cable must have a minimum modulus of elasticity of 11,805,090 pounds per square inch after pre-stretching.

Provide documentation from the cable manufacturer with each spool of new cable, to the Engineer, certifying the breaking strength of the cable, the amount of force used to pre-stretch the cable, the modulus of elasticity of the cable after pre-stretching, and the pre-stretching/testing date(s).

3. Posts and Fittings. Ensure all posts are made of steel meeting ASTM A 36, ASTM A 50, or Nucor Grade SP-80 and zinc coated (galvanized) after fabrication in accordance with ASTM A 123. Ensure modified cable posts and hardware for accommodating turnbuckles and fittings meets manufacturer's specifications for the cable barrier system being maintained/repared and does not undermine the crash worthiness of the cable barrier system.

All fittings, including but not limited to turnbuckles and connections, must have a minimum diameter of 3/4 inch. All fittings must develop a minimum tensile load (without yielding) of 36,800 pounds. The manufacturer must conduct one tensile load test on each fitting type furnished. Provide documentation from the manufacturer, to the Engineer, certifying that all types of new fittings have been tested and meet the specified minimum load requirements. The documentation must also list the tensile yield strength and test date(s) for each fitting type.

Provide right hand or left hand threaded terminals, M24 by 3 pitch, in accordance with ANSI B1.13M. Swaged type terminals may be shop or field swaged.

Provide a threaded terminal where the body allows a minimum of 5.9 inches wire rope engagement depth. Fully fitted ropes must develop a minimum breaking load of 36,800 pounds. Galvanize threaded terminals, after threading, in accordance with ASTM A 153.

One end of each turnbuckle must be threaded right hand and the other end left hand according to ANSI B1.13M, M24 by 3 to accept threaded rope terminals. Provide solid or closed body type turnbuckles with two inspection holes to determine threaded rope terminal penetration. Provide turnbuckles that allow for a minimum of 6 inches of penetration from each end.

All fittings, including but not limited to turnbuckles and connections, must either be zinc coated (galvanized) in accordance with ASTM A 153 after threading, or be made of stainless steel. All other components made of ferrous metal, excluding stainless steel components, must be zinc coated (galvanized) in accordance with ASTM A 123 after fabrication.

4. Reflective Sheeting. Provide Type IX reflective sheeting to be attached to all reflectors as specified in subsection 919.03.B of the Standard Specifications for Construction. Provide reflectors meeting manufacturer's specifications. Provide reflectors that match the color of the edge line adjacent to approaching traffic. Supply reflectors that have a minimum of 13 square inches of reflective sheeting facing approaching traffic.

5. Concrete/Foundation Materials. Provide Grade S1 concrete in accordance with section 701 of the Standard Specifications for Construction for all new foundations, except that concrete slump must be modified in accordance with subsection 718.02 of the Standard Specifications for Construction.

Provide concrete curing materials in accordance with subsection 903.07 of the Standard Specifications for Construction.

Provide temporary casing material in accordance with subsection 919.10 of the Standard Specifications for Construction unless otherwise shown on the plans.

Provide slurry in accordance with subsection 718.03.E of the Standard Specifications for Construction. Use only polymer type slurries.

Provide crack repair epoxy meeting ASTM C 881 as a structural repair epoxy. Crack repair epoxy must bond to both concrete and steel, and must be resistant to water and salt. Crack repair epoxy must be capable of sealing cracks ranging in width from 1/64 to 1/4 inch. Crack repair epoxy must have a minimum compressive strength of 11,000 pounds per square inch after curing.

Provide foundation repair mortar, epoxy, or polymer based, with a minimum compressive strength of 7,500 pounds per square inch in accordance with ASTM D 695. Foundation repair mortar must bond to both concrete and steel, and must be suitable for outdoor use. Foundation repair mortar must be suitable for sealing cracks greater than 1/4 inch in width and repairing chipped or spalled concrete foundations.

6. Steel Reinforcement. Provide epoxy-coated steel reinforcement for concrete foundations in accordance with section 905 of the Standard Specifications for Construction.

7. Miscellaneous Materials.

A. Provide low-density polyethylene or polypropylene excluder caps meeting manufacturer's specifications.

B. Provide marine-grade anti-seize lubricant acceptable for use on galvanized steel for threaded fittings.

C. Use sound earth meeting the requirements specified in section 205 of the Standard Specifications for Construction for grading and earthwork.

D. Provide sockets, for concrete post foundations, fabricated from 11 gauge (minimum), hot-rolled mild steel galvanized in accordance with ASTM A 123, after fabrication. Sockets for concrete post foundations must meet manufacturer's specifications.

E. Provide driven sockets (i.e., sockets not encased in concrete) for line posts in accordance with the plans, the manufacturer's specifications, and the following:

(1) The rectangular tube portion of the driven socket must have a minimum thickness of 3/16 inch and a minimum length of 60 inches (5 feet).

(2) The inner cross-sectional dimensions of the rectangular tube (i.e., the area for inserting the line post into the driven socket) must meet manufacturer's specifications.

(3) The soil plate attached to the rectangular tube must have a minimum thickness of 8 gauge and must meet the dimensional requirements shown on the plans, or as directed by the Engineer.

(4) The soil plate must be attached to the rectangular tube as shown on the plans, or as directed by the Engineer.

(5) Each driven socket must have a post stop, meeting manufacturer's specifications, to keep the post at its intended height. The post stop must allow water to pass through.

(6) The bottom of the driven socket must have an opening for water to drain out of the rectangular tube.

(7) Driven sockets, including soil plates and other hardware attached to the driven socket, must be made of steel meeting ASTM A 36, ASTM A 50, or Nucor Grade SP-80.

(8) The driven socket assembly (rectangular tube, soil plate, post stop, and any other hardware attached to the driven socket) must be zinc coated (galvanized) in accordance with ASTM A 123, after fabrication.

F. Select zinc-rich paint for repair of damaged galvanized surfaces in accordance with ASTM A 780. Use a zinc-rich paint closely matching the color of the surface to be repaired and apply in accordance with subsection 716.03.E of the Standard Specifications for Construction.

c. Contractor Qualification Requirements. The Contractor performing the work items described in this special provision must meet the following requirements:

1. Qualifications of Contractor Maintaining and Repairing HTCB. The Contractor maintaining and repairing HTCB must have prior experience installing and/or maintaining HTCB. The Contractor must have prior experience installing cables, posts, turnbuckles, end terminals, foundations, reflectors, miscellaneous hardware, cutting cables, splicing cables, and tensioning cables. In addition, for each respective cable system being maintained as part of the contract, the Contractor must have a certification letter from each respective cable barrier manufacturer. Each certification letter must indicate that the Contractor has received the training and necessary aids to install and maintain the HTCB system produced by the respective manufacturer.

2. Qualifications of Drilled Shaft Contractor Removing and Constructing Cable Terminal Foundations. The Contractor removing and constructing end terminal foundations must have removed and installed drilled shafts with diameters and depths similar to those identified in the proposal package within a period of 3 years or less prior to the bid date for this project. The Contractor must demonstrate to the Engineer that the Contractor's supervisor and drillers performing the work have completed at least three projects of similar scope, drilled shaft diameters and depths, and subsurface conditions to this project. The Contractor's supervisor must have at least 3 years of acceptable experience in installing similar types of drilled shafts.

3. Qualifications of Drilled Shaft Contractor Removing and Constructing Line Post Foundations. The Contractor removing and constructing line post foundations must have removed and installed drilled shafts with a minimum diameter of 15 inches and depths in excess of 48 inches within a period of 3 years or less prior to the bid date for this project. The Contractor must demonstrate to the Engineer that the Contractor's supervisor and drillers performing the work have completed at least three projects of similar scope, drilled shaft

diameters and depths, and subsurface conditions to this project. The Contractor's supervisor must have at least 3 years of acceptable experience in installing similar types of drilled shafts.

d. Pre-Construction Meeting Requirements. Furnish the following items to the Engineer at the pre-construction meeting:

1. A resume detailing the Contractor's experience installing and/or maintaining HTCB systems over the last 3 years. The resume must indicate the dates of all cable barrier installation and/or maintenance projects overseen by the Contractor. The resume must also specify the brand name and type of all cable barrier systems installed and/or maintained on each project. The resume must detail work experiences demonstrating that the Contractor meets all the qualification requirements identified in this special provision.

2. If certain work items are going to be subcontracted, the Contractor must furnish a detailed resume of the subcontractor's experiences, identifying the subcontractor and demonstrating that the subcontractor meets the qualification requirements of this special provision for items of work being subcontracted.

3. A certification letter from each respective cable barrier manufacturer indicating the Contractor has received the training and necessary aids to install and maintain the respective HTCB systems being maintained as part of this contract.

4. A drilled shaft foundation installation plan, as required in subsection 718.03.A of the Standard Specifications for Construction, and meeting the requirements of this special provision.

5. Provide a telephone number where the Contractor may be contacted to report any cable barrier damages.

e. High-Tension Cable Barrier (HTCB) Repair/Maintenance. Repair and maintain the HTCB systems identified in the contract documents throughout the duration of the contract. Repair and maintain all HTCB systems, regardless of cable barrier manufacturer, as directed by the Engineer.

1. General Requirements. Complete cable barrier work within the timeframe specified in the proposal package, or as specified by the Engineer.

Maintain an inventory of spare parts for each respective cable system being maintained throughout the duration of the contract. Time extensions are not to be granted due to shortages of spare parts. Store and handle all spare parts. Replace missing or damaged parts at no additional cost to the Department.

Conduct cable barrier repairs according to the respective cable barrier manufacturer's specifications, as specified in this special provision, and as specified by the Engineer.

Remove and dispose of any damaged or non-functional cable barrier components and driven sockets in accordance with subsection 204.03.B of the Standard Specifications for Construction, unless otherwise directed by the Engineer.

Remove snow and ice, including the removal of ice located inside post sockets, as required for repairing the cable system.

The Department is not responsible for damages or repairs due to Contractor negligence. Damages due to Contractor negligence must be repaired by the Contractor at the Contractor's expense.

2. Posts. Base post spacing on manufacturer's specifications depending on the roadway curvature shown on the plans while satisfying the following condition: the post spacing must not exceed 10 feet, 6 inches, unless otherwise specified on the plans developed by the Department or directed by the Engineer.

Install a modified cable post and/or hardware, according to manufacturer's specifications, at all locations where a standard cable post cannot be properly installed and attached to the cables due to the presence of a turnbuckle.

Install excluder caps on all posts placed in sockets.

3. Driven Sockets. After removing driven sockets, backfill the resulting holes with compacted sound earth.

Install the driven sockets such that the soil plates are on the side furthest from the closest traveled lane. Use driven sockets that meet manufacturer's specifications for the respective cable system being serviced.

Driven sockets may only be used at line post locations. Unless otherwise specified by the Engineer, use of driven sockets at cable terminal post locations is prohibited.

Driven sockets must not be driven into the ground, unless the Contractor conducts an on-site field demonstration in the Engineer's presence demonstrating that the socket can be driven into the ground without soil and debris entering the inner portion of the rectangular tube and without damaging the socket assembly. Obtain the Engineer's approval to drive sockets into the ground. Ensure that the soil around driven sockets is thoroughly compacted around the socket after installation. Loose soil or voids around driven sockets after installation is unacceptable and must be corrected by the Contractor at no additional cost to the Department.

Unless otherwise specified by the Engineer, driven sockets must be set in augered holes. Auger a hole for each driven socket that is large enough to fully accommodate the driven socket, including the soil plate. Thoroughly compact the bottom of augered holes to provide a stable foundation. Install driven sockets in augered holes to within the tolerances specified in this special provision and backfill with sound earth thoroughly compacted in 6-inch maximum layers. The backfill must be compacted thoroughly over the entire augered hole cross-section for each 6-inch layer. The entire length of the inner portion of the rectangular tube must be free of soil and debris after installation.

The out-of-plumb tolerance for driven sockets must not exceed one percent. The top of driven sockets must not protrude more than 1 inch above the surrounding ground. The top of driven sockets must not be below ground level. All portions of the soil plate attached to driven sockets must be at least 1 inch below ground level.

Replace any driven sockets damaged during installation, or as a result of the Contractor's operations, at no additional cost to the Department.

4. Reflectors. Attach reflectors to line posts according to manufacturer's specifications and this special provision. Install reflectors on both sides of the line post, unless otherwise specified on the plans developed by the Department. Space reflectors at the following intervals:

A. 48 feet (maximum) on tangent sections and curves with a radius of 1,150 feet or greater.

B. 24 feet (maximum) on curves with a radius less than 1,150 feet.

5. Slope Grading/Slope Restoration. Grade around newly installed concrete foundations and driven sockets, as necessary, to remove any ridges, dips, holes, or voids around the foundations/driven sockets and match the surrounding slopes. Thresholds on slope grading must be as specified on the plans or directed by the Engineer.

Unless otherwise specified by the Engineer or in the proposal package, the Contractor is responsible for slope grading and slope restoration, as required to restore the slope to its original condition or as directed by the Engineer, on all cable barrier repairs.

6. Cutting Cables. Whenever possible, disassemble the existing cable barrier at existing turnbuckle locations in lieu of cutting cables. Obtain the Engineer's approval prior to cutting cables. If approved by the Engineer, cut the cables as necessary to perform the necessary work. Prior to cutting cable, wrap the cable with duct tape or other similar tape on both sides of the proposed cut to keep the cable from unraveling.

7. Fittings. Swaged fittings are preferred over wedge lock type fittings. Use swaged fittings whenever possible. Swaged fittings must be used if repairs can be completed within the timeframe specified in this special provision. Otherwise, wedge lock type fittings may be used to replace swaged fittings, as needed, to complete repairs within the timeframe specified in this special provision.

When installing wedge lock fittings on the Brifen cable system, manufactured by Brifen USA, Inc., use only closed-type wedge lock fittings. Closed-type wedge lock fittings utilize a threaded-end socket to secure the wedge by compression. Open-type wedge lock fittings do not have a threaded-end socket to secure the wedge by compression. Either type (open-type or closed-type) of wedge lock fitting may be utilized with cable barrier systems made by manufacturers other than Brifen USA, Inc.

Apply anti-seize lubricant to all threaded fittings prior to installation.

Torpedo cable splices and other similar cable splice kits may be used to form a cable splice on cable barrier systems made by manufacturers other than Brifen USA, Inc.

Do not install Torpedo cable splices on Brifen cable systems, manufactured by Brifen USA, Inc. The Contractor may use a similar cable splice kit, approved by Brifen USA, Inc., for splicing cables on the Brifen cable system.

Torpedo cable splices and other similar cable splice kits must be limited to two per cable per run (between end anchor foundations).

The use of a turnbuckle and two wedge lock type fittings (one fitting with a left-hand threaded rod and the other fitting with a right-hand threaded rod) may also be used to create a cable splice. The use of this type of cable splice is not limited, but must only be used when absolutely necessary.

Cable splicing, regardless of type, must only be done for repairing severed cables or replacing damaged cable sections. Any type of cable splicing must be kept to a minimum and must only be performed when absolutely necessary.

All wedge-lock type fittings, including Torpedo cable splices and other similar cable splice kits, must have a minimum of one wire crimped over the base of each wedge to hold it firmly in place. The crimped section of wire over the base of the wedge must have a minimum length of 3/16 inch.

Regarding swaged fittings and wedge lock fittings, the Contractor is responsible for determining and furnishing the correct thread type(s) and connection type(s) required for completing the installation.

Upon complete assembly of the cable barrier run, all threaded terminals in the cable run must penetrate a minimum of 3 inches and a maximum of 4 inches into the turnbuckle measured from the ends of the turnbuckle.

8. Cable Tensioning. After each cable barrier repair, check the tension of each cable in the damaged area to ensure that cable tension is within the manufacturer's recommended tolerance. Use the tension chart for pre-stretched cable published by the manufacturer of the cable barrier system being maintained. Cable tension must be based on cable temperature, not ambient temperature. Use an infrared thermometer to measure cable temperature prior to measuring cable tension. If necessary, the Contractor must adjust cable tension to within the manufacturer's recommended tolerance. Keep a tension log to identify the date the tension in each cable was checked, the cable temperature at the time tension was checked, and the tension in each cable. Maintain a tension log throughout the duration of the contract. Furnish copies of the tension log within 24 hours of request by the Engineer.

Do not tension cables attached to newly constructed end terminal foundations until the concrete has reached a minimum compressive strength of 3,000 pounds per square inch.

9. Annual Maintenance. Conduct routine maintenance on all cable barrier runs approximately once every 12 months, unless otherwise directed by the Engineer. As part of annual maintenance, the Contractor is required to complete the following items of work:

A. Tension Check and Adjustment. Check the tension in each cable of every cable run. Use the tension chart for pre-stretched cable published by the manufacturer of cable barrier system being checked. Cable tension must be based on cable temperature, not ambient temperature. Use an infrared thermometer to measure cable temperature prior to measuring cable tension. If necessary, adjust cable tension to within the manufacturer's recommended tolerance. Keep a tension log identifying the date tension was checked and adjusted, the tension in each cable, and the temperature of each cable when tension was checked.

B. Exercising and Lubricating Turnbuckles. Tighten and loosen all turnbuckles in all cable runs to ensure that turnbuckles have not seized. Any deposits on the threaded

fittings must be removed. Apply anti-seize lubricant to all threaded fittings during this process and ensure that threaded fittings are coated with anti-seize lubricant.

C. **Repair of Damaged Galvanized Surfaces.** Repair all areas where the underlying steel has been exposed and/or where rust is visible. Clean the damaged surface to near-white metal before applying zinc-rich paint. Paint must not be applied to cable wedges. Cable barrier components must not be damaged as part of the cleaning process. Apply zinc-rich paint according to manufacturer's recommendations for temperature and dryness.

D. **Monitoring for Cable Barrier Damages.** Carefully examine each cable barrier run and check for any damages. All observed damages must be clearly marked in the field. Report all observed damages to the Engineer. The Contractor must receive Engineer's authorization prior to repairing any observed damages.

e. Concrete Foundation Repair. Repair damaged line post and end terminal foundations according to this special provision or as directed by the Engineer.

Line post foundations are repairable if the steel socket embedded in the foundation is not damaged, if the foundation and steel socket are structurally intact, and if foundation heaving is 1 inch or less.

Line post foundation cracks that are 1/4 inch or less in width must be repaired with concrete repair epoxy. Blow out cracks with dry and oil-free compressed air. Prepare and clean existing concrete surfaces and cracks according to the epoxy manufacturer's recommendations and specifications. Remove the post from the socket prior to filling cracks with epoxy. Thoroughly fill all cracks with concrete repair epoxy following the epoxy manufacturer's recommendations and specifications. Concrete repair epoxy must only be applied when the foundation and air temperature are within the epoxy's recommended temperature range. The injection method is preferred for applying concrete repair epoxy to ensure all cracks are thoroughly filled with epoxy. The gravity-feed method is acceptable for applying concrete repair epoxy, so long as the Contractor takes steps to ensure all cracks are thoroughly filled with epoxy. Prevent epoxy from going inside the steel socket. Any epoxy that enters the steel socket must be thoroughly removed before reinserting the post in the socket and before the epoxy hardens.

Line post foundations with cracks greater than 1/4 inch in width, chipped foundations, and spalled foundations must be repaired with foundation repair mortar. Remove any loose chunks of concrete from the foundation without damaging embedded steel components. Bevel the edges of surface cracks as needed. Blow out cracks with dry and oil-free compressed air. Prepare and clean surfaces along cracks and areas where mortar is going to be applied according to the mortar manufacturer's recommendations and specifications. Remove the post from the socket prior to applying mortar. Thoroughly fill all cracks and voids with foundation repair mortar following the mortar manufacturer's recommendations and specifications. Foundation repair mortar must only be applied when the foundation and air temperature are within the mortar's recommended temperature range. Prevent mortar from going inside the steel socket. Any mortar that enters the steel socket must be thoroughly removed before reinserting the post in the socket and before the mortar hardens.

Line post foundations that cannot be repaired due to weather and/or temperature must be clearly marked with a stake or other durable fixture. Return to the site and repair the foundation as soon as weather and temperature conditions allow the repair to be completed.

Obtain Engineer's approval before repairing end terminal foundations. The Engineer must specify the repair procedures and materials required to repair damaged end terminal foundations.

f. Concrete Foundation Removal and Replacement. The Contractor is responsible for removing and replacing line post and end terminal foundations that are damaged beyond repair, or as directed by the Engineer.

Completely remove and dispose of all cable barrier line post and end terminal foundations identified for removal, unless otherwise stated on the plans or directed by the Engineer.

Remove and dispose concrete foundations in accordance with subsection 204.03.B of the Standard Specifications for Construction, unless otherwise directed by the Engineer.

Line post foundations that are damaged beyond repair must be removed and replaced with a new foundation. After removing the damaged line post foundation, the resulting excavation must either be used to construct the new foundation or backfilled with sound earth thoroughly rammed in 12-inch maximum layers.

End terminal foundations that are damaged beyond repair must be removed and replaced with a new foundation. After removing the damaged end terminal foundation, the resulting excavation must either be used to construct the new foundation or backfilled with sound earth thoroughly rammed in 12 inch maximum layers.

g. Concrete Foundation Construction. Unless directed otherwise by the Engineer, construct concrete foundations according to the details on the plans, section 718 of the Standard Specification for Construction, and this special provision.

Construct line post foundations with minimum diameter of 15 inches and minimum depth of 48 inches. Place steel reinforcement in line post foundations as specified in the contract. Embed a steel socket in the concrete of each line post foundation to hold a line post. Install the socket in accordance with the contract and according to manufacturer's specifications. Ensure that the socket is approved for use with the cable barrier system being serviced. Line post foundations must be installed such that the post spacing meets manufacturer's specifications, but must not exceed 10 feet, 6 inches, unless otherwise directed by the Engineer.

Construct new end terminal foundations in accordance with the minimum dimensions and steel reinforcement requirements specified in the contract, the cable barrier manufacturer's specifications, and this special provision. Embed required sockets and components in the new end terminal foundation. Ensure that the socket and components embedded in the foundation are approved for use with the cable barrier system being serviced.

1. Casing. Determine the need for casing the shaft excavation and if casing is required, use shaft excavation casing temporarily, and remove casing according to this special provision. The use of permanent shaft excavation casing is prohibited.

2. Protection of Existing Structures, Utilities, Culverts, and Drain Pipes. Control operations to prevent damage to existing structures, utilities, culverts, and drain pipes. Preventative measures include, but are not limited to, selecting construction methods and procedures that prevent caving of the shaft excavation, monitoring and controlling the vibrations from construction activities (such as installation of casing and drilling of the shaft),

and monitoring and controlling the depth of excavation. Repair any damage to existing structures, utilities, culverts, or drain pipes, to the satisfaction of the Engineer at no additional cost to the Department, including engineering analysis and redesign, and without any extension of the completion dates for the project.

3. Construction Tolerances. Comply with the following minimum construction tolerances:

A. At the drilled shaft actual bottom elevation, the out-of plumb must be no greater than one percent of the drilled shaft length as measured from the actual center of the shaft at the shaft design top elevation.

B. After cable barrier installation, the out-of-plumb of all cable barrier line posts must be no greater than one percent in all directions. The use of plastic shims for leveling line posts is prohibited.

C. After all the shaft concrete is placed, the top of the reinforcing steel cage for line post and end terminal foundations must be no more than 1 inch above or below plan position.

D. The top elevation of all concrete foundations must have a tolerance of 0 to 1 inch above top of shaft elevation. The top of all concrete foundations must not be below ground level.

The Department considers drilled shaft excavations and completed foundations that are not constructed and installed within the required tolerances to be unacceptable. Correct all unacceptable shaft excavations and completed foundations to the satisfaction of the Engineer. Furnish labor, equipment, and materials necessary to complete corrections for out of tolerance drilled shafts and posts, including engineering analysis and redesign, at no additional cost to the Department, and without an extension of the completion dates for the project.

4. Excavation. Maintain the stability of the excavation sidewalls and extend the shaft excavation to a stratum accepted by the Engineer. Extend drilled shaft tip elevations when the Engineer determines the bearing stratum encountered during excavation is unsuitable or differs from that anticipated in the design of the drilled shaft. Provide the Engineer access to auger cuttings of the bearing material for additional analysis. Fill over-excavation of shafts, and unauthorized shaft excavations extended below required depths or elevations, with concrete when constructing concrete foundations, at no additional cost to the Department.

Do not leave an uncased drilled shaft excavation open over night. If, when constructing concrete foundations, an uncased drilled shaft cannot be completed in one day, backfill the excavation with flowable fill.

Dispose of excavated materials removed from shaft excavations, and not used for slope grading, in accordance with subsection 205.03.P of the Standard Specifications for Construction. Keep excavated materials away from each open shaft excavation. Remove excavated materials immediately after completing the shaft excavation, or as directed by the Engineer. Direct surface water away from shaft excavations. Ensure that excavated material does not enter the waters of the state or stormwater drainage systems.

5. Obstructions. Remove surface and subsurface obstructions encountered in the length of excavation at concrete foundation locations. Such obstructions may include materials such

as old concrete foundations or abandoned utilities, or natural materials, such as boulders. In the event that the excavation cannot be advanced using conventional augers fitted with soil or rock teeth, drilling buckets and/or under reaming tools, use special procedures or tools including, but not limited to, chisels, boulder breakers, core barrels, air tools, hand excavation, and enlarging the hole diameter. Unless otherwise specified in the contract, removal of such obstructions will be paid for as extra work provided that special procedures or tools are utilized. To be considered for payment for obstruction removal, submit written notification to the Engineer no later than 24 hours after encountering obstructions and allow the Engineer to inspect the excavation and verify that special procedures or tools are required prior to undertaking the removal.

6. Excavation Inspections. Excavation inspection must be in accordance with subsection 718.03.F.1 of the Standard Specifications for Construction, with the following addition: after shaft excavation, and provided that a tremie pour is not required, provide access and allow time for the Engineer to inspect the shaft. Provide suitable lighting if needed.

7. Steel Reinforcement. Place steel reinforcement in concrete post foundations as recommended by the manufacturer, however, the reinforcement must be equal to or greater than that shown on the plans. Construct and place reinforcing steel cage in accordance with subsection 706.03.E of the Standard Specifications for Construction and the following:

A. Completely assemble a reinforcing cage, consisting of longitudinal bars, stiffener bars, centralizers and tie reinforcement or spiral reinforcement prior to placement in the shaft excavation. Tie together steel reinforcement cages for all cable barrier foundations. Do not use welded steel reinforcement cages.

B. Place the steel reinforcement as a unit immediately after the shaft excavation is inspected and accepted and prior to concrete placement.

C. Use non-corrosive spacers on the exterior of the reinforcing cage, near the bottom of the cage and at sufficient intervals to ensure concentric spacing of the cage for its entire length within the shaft excavation. Ensure the spacers are of adequate dimensions to provide a minimum 3 inches annular space between the outside of the reinforcing cage and the perimeter of the excavated shaft.

D. Maintain the bottom of the cage the proper distance above the shaft base using approved concrete bottom supports, or by other methods approved by the Engineer.

E. Tie and support the reinforcing steel in the shaft during concrete placement and temporary casing removal such that the reinforcing steel remains within allowable tolerances.

F. Check the elevation of the top of the steel cage before and after the concrete is placed. If the reinforcing steel cage is not maintained within the specified tolerances, make corrections to the satisfaction of the Engineer. Modify the steel cage support in a manner satisfactory to the Engineer prior to constructing additional shafts.

G. Use epoxy-coated steel reinforcement for all cable barrier foundations, including line post foundations.

8. Concrete Placement. Complete concrete placement for concrete foundations in accordance with the applicable portions of section 706 and subsection 718.03.H of the Standard Specifications for Construction, and as modified herein.

Ensure that concrete is delivered to the site from the batch plant in a continuous manner to help avoid interruption of placement. Place concrete, either by freefall or through a tremie or concrete pump, the same day the shaft is excavated.

Place concrete by freefall methods only in dry excavations where free water accumulation of 3 inches or less can be maintained immediately prior to concrete placement. Direct concrete placed by freefall methods in the center of the shaft to avoid contact with the reinforcing steel cage, shaft sidewalls, and temporary casing. Drop chutes may be used to direct concrete in a vertical stream down the shaft.

Consolidate the concrete in all cable barrier foundations, including line post foundations, with vibrators according to the requirements of subsection 706.03.H.1 of the Standard Specifications for Construction.

9. Temporary Casing. Coordinate temporary casing withdrawal carefully with concrete placement. When temporary casing is being withdrawn, maintain a sufficient head of concrete above the bottom of the casing to prevent reduction in the shaft diameter due to earth and/or hydrostatic pressure on the fresh concrete, and to prevent extraneous material from mixing with fresh concrete. Check the concrete level in the temporary casing prior to, and after casing withdrawal to confirm that separation of the shaft concrete has not occurred.

10. Protection of Concrete. Protect fresh concrete from flowing water and damage from mechanical equipment and nearby construction vibrations. Do not generate vibrations from pounding of sheet piling, pile driving, or casing installation within a radius of 25 feet until the concrete has attained 75 percent of its specified minimum strength. Protect concrete from strength reduction caused by frost or freezing actions.

Comply with the curing requirements of subsection 810.03.J.8 of the Standard Specifications for Construction for all cable barrier foundations, including line post foundations.

11. Conduct concrete quality control in accordance with the contract, or as directed by the Engineer.

h. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay items:

Pay Item	Pay Unit
Cable Barrier, Annual Maintenance	Each
Cable, Furn and Install	Foot
Turnbuckle, Furn and Install	Each
Swaged Fitting, Furn and Install	Each
Wedge Lock Fitting, Furn and Install	Each
Cable Splice Kit, Furn and Install.....	Each
Intermediate Line Post, Furn and Install (CASS, 4:1 Slope).....	Each
Intermediate Line Post, Furn and Install (CASS, 4:1 Slope), Modified	Each
Intermediate Line Post, Misc Hardware (CASS, 4:1 Slope)	Each

Reflector, Furn and Install (CASS).....	Each
Terminal Line Post, Short, Furn and Install (CASS)	Each
Terminal Line Post, Tall, Furn and Install (CASS).....	Each
Terminal Line Post, Misc Hardware (CASS)	Each
Cable Release Post and Hardware, Upper, Furn and Install (CASS).....	Each
Intermediate Line Post, Furn and Install (Gibraltar, TL-4)	Each
Intermediate Line Post, Furn and Install (Gibraltar, TL-4), Modified	Each
Intermediate Line Post, Misc Hardware (Gibraltar, TL-4)	Each
Reflector, Furn and Install (Gibraltar).....	Each
Terminal Post __, Furn and Install (Gibraltar)	Each
Terminal Post, Misc Hardware (Gibraltar).....	Each
Cable Release Post and Hardware, Furn and Install (Gibraltar).....	Each
Cable Barrier, Line Post Fdn, Repr.....	Each
Cable Barrier, Line Post Fdn, Rem	Each
Cable Barrier, Line Post Fdn	Each
Cable Barrier, End Terminal Fdn, Repr.....	Each
Cable Barrier, End Terminal Fdn, Rem.....	Each
Cable Barrier, End Terminal Fdn	Each
Cable Barrier, Driven Socket, Rem.....	Each
Cable Barrier, Driven Socket, Furn and Install	Each

The Engineer will not provide payment for the pay items **Wedge Lock Fitting, Furn and Install** and **Cable Splice Kit, Furn and Install**, respectively, for installations where the Contractor fails to crimp one wire over the base of each wedge, as specified in this special provision.

Snow and ice removal is included in associated pay items, and will not be paid for separately.

The Department will not pay for damages or repairs due to Contractor negligence or for repairs that are unauthorized by the Engineer.

Removal and disposal of cable barrier components will be included in the pay items described in this special provision, and will not be paid for separately.

All costs associated with preparing and submitting reports and documents to MDOT will be included in the pay items described in this special provision, and will not be paid for separately.

Checking and adjusting cable tension after each repair, and maintaining a tension log, as specified in this special provision, will be included in the pay items described in this special provision, and will not be paid for separately.

With the exception of grading around newly constructed foundations and driven sockets, slope grading and slope restoration during routine repairs will either be included in other items of work or will be done by others.

The Engineer reserves the right to withhold payment for any work items until the Engineer verifies that the work items in question have been completed according to the requirements of this special provision.

Conducting driven socket installation demonstrations, as specified in this special provision, will be included in the pay items described in this special provision and will not be paid for separately.

1. **Cable Barrier, Annual Maintenance** includes all materials, labor, and equipment required to conduct annual maintenance, as specified in this special provision, on all cable barrier installations maintained under this contract, regardless of manufacturer. **Cable Barrier, Annual Maintenance** will be measured per annual maintenance event. An annual maintenance event must occur approximately once every 12 months, unless otherwise specified by the Engineer, and must consist of completing the items of work specified in subsection e.9 of this special provision on all cable barrier installations being maintained as part of this contract. In order to receive payment, the Contractor must complete all items of work; provide the completion date of the annual maintenance event to the Engineer; furnish a copy of the tension log showing tension data collected during the annual maintenance event; and furnish a report identifying all observed damages and locations. **Cable Barrier, Annual Maintenance** will be paid after successful completion of all work items required of each annual maintenance event. Removing, furnishing, and installing cable barrier parts for completing authorized repairs will be measured separately using the pay items described in this special provision.

2. **Cable, Furn and Install** includes all materials, labor, and equipment required to furnish and install 3/4 inch (minimum) diameter, 3 by 7 construction cable as described in this special provision. Removal and disposal of existing cable is included in this pay item. Removal and disposal of any swaged fittings, wedge lock fittings, turnbuckles, and cable splices in the cable section designated for removal is included in this pay item and will not be paid for separately. Cutting cables as necessary is included in this pay item. Furnishing and installing fittings to cable ends is not included in this pay item. **Cable, Furn and Install** will be measured per foot of new cable installed. The pay item **Cable, Furn and Install** will be applicable to all cable barrier systems, regardless of manufacturer.

3. **Turnbuckle, Furn and Install** includes all materials, labor, and equipment required to furnish and install a turnbuckle meeting the requirements of this special provision and approved for use by the manufacturer of the respective cable barrier system being maintained and repaired. Removal and disposal of existing turnbuckles, as required for installation of new turnbuckles, is included in this pay item. Cutting turnbuckles as necessary for removal is included in this pay item. Applying anti-seize lubricant to threaded fittings prior to installation is included in this pay item. **Turnbuckle, Furn and Install** will be measured per individual turnbuckle installed. The pay item **Turnbuckle, Furn and Install** will be applicable to all cable barrier systems, regardless of manufacturer.

4. **Swaged Fitting, Furn and Install** includes all materials, labor, and equipment required to furnish and install a swaged fitting meeting the requirements of this special provision and approved for use by the manufacturer of the respective cable barrier system being maintained and repaired. This pay item includes swaged fittings of both thread types (left-hand or right-hand), and additional payment will not be provided for specific thread types. This pay item includes swaged fittings of both connection types (fitting connected to a turnbuckle or fitting connected to a cable release post, anchor post or anchor assembly), and additional payment will not be provided for specific connection types. Applying anti-seize lubricant to threaded fittings prior to installation is included in this pay item. **Swaged Fitting, Furn and Install** will be measured per individual swaged fitting furnished and installed. An individual swaged fitting will consist of one swaged fitting of the thread type and connection type required for completing the repair, and any miscellaneous hardware required for connecting the fitting to a turnbuckle or a cable release post, anchor post or anchor assembly. The pay item **Swaged Fitting, Furn and Install** will be applicable to all cable barrier systems, regardless of manufacturer.

5. **Wedge Lock Fitting, Furn and Install** includes all materials, labor, and equipment required to furnish and install a wedge lock fitting meeting the requirements of this special provision and approved for use by the manufacturer of the respective cable barrier system being maintained and repaired. This pay item includes wedge lock fittings of both thread types (left-hand or right-hand), and additional payment will not be provided for specific thread types. This pay item includes wedge lock fittings of both connection types (fitting connected to a turnbuckle or fitting connected to a cable release post, anchor post or anchor assembly), and additional payment will not be provided for specific connection types. This pay item includes both open-type and closed-type wedge lock fittings, and additional payment will not be provided for specific types. Applying anti-seize lubricant to threaded fittings prior to installation is included in this pay item. Crimping at least one wire over the base of each wedge, as specified in this special provision, is included in this pay item. Cutting cables, as required for the installation of wedge lock fittings, is included in this pay item. Removal and disposal of existing wedge lock fittings, swaged fittings, or cable splices, as required for installation of new wedge lock fittings, is included in this pay item. **Wedge Lock Fitting, Furn and Install** will be measured per individual wedge lock fitting installed. An individual wedge lock type fitting consists of one wedge lock fitting of the type required for completing the repair, and any miscellaneous items required for connecting the fitting to a turnbuckle or a cable release post, anchor post, or anchor assembly. The pay item **Wedge Lock Fitting, Furn and Install** will be applicable to all cable barrier systems, regardless of manufacturer.

6. **Cable Splice Kit, Furn and Install** includes all materials, labor, and equipment required to furnish and install a Torpedo Cable Splice or similar cable splice kit meeting the requirements of this special provision and approved for use by the manufacturer of the respective cable barrier system being maintained and repaired. Removal and disposal of existing Torpedo Cable Splices and similar cable splices, as required for installation of new cable splice kits, is included in this pay item. Crimping at least one wire over the base of each wedge, as specified in this special provision, is included in this pay item. Cutting cables, as required for the installation of cable splice kits, is included in this pay item. The removal and disposal of short lengths of cable will be considered incidental, and will not be paid for separately, if new cable is not required for cable splice kit installation. **Cable Splice Kit, Furn and Install** will be measured per individual Torpedo Cable Splice or similar cable splice kit installed, including all miscellaneous hardware required for installation. The pay item **Cable Splice Kit, Furn and Install** will be applicable to all cable barrier systems, regardless of manufacturer. Cable splices created using two wedge lock fittings and a turnbuckle will not be measured using this pay item.

7. **Intermediate Line Post, Furn and Install (CASS, 4:1 Slope)** includes all materials, labor, and equipment required to furnish and install an intermediate line post for the CASS 4:1 Slope cable barrier system, manufactured by Trinity Highway Products, LLC, being maintained and repaired. Removal and disposal of the existing post prior to installation is included in this pay item. The removal of ice located inside post sockets is included in this pay item. Furnishing and installing miscellaneous hardware attached to the post is not included in this pay item. Furnishing and installing reflectors is not included in this pay item. **Intermediate Line Post, Furn and Install (CASS, 4:1 Slope)** will be measured per individual post installed.

8. **Intermediate Line Post, Furn and Install (CASS, 4:1 Slope), Modified** includes all materials, labor, and equipment required to furnish and install a modified intermediate line post for the CASS 4:1 slope cable barrier system, manufactured by Trinity Highway Products,

LLC, being maintained and repaired. The modified line post must be designed to accommodate turnbuckles and/or fittings, as specified in this special provision. Removal and disposal of the existing post prior to installation is included in this pay item. The removal of ice located inside post sockets is included in this pay item. Furnishing and installing miscellaneous hardware attached to the post is not included in this pay item. Furnishing and installing reflectors is not included in this pay item. **Intermediate Line Post, Furn and Install (CASS, 4:1 Slope), Modified** will be measured per individual post installed.

9. **Intermediate Line Post, Misc Hardware (CASS, 4:1 Slope)** includes all materials, labor, and equipment required to furnish and install miscellaneous hardware to an intermediate line post or modified intermediate line post on the CASS 4:1 Slope cable barrier system, manufactured by Trinity Highway Products, LLC, being maintained and repaired. Miscellaneous hardware consists of any items attached to the post, including, but not limited to, post straps, cable spacers, j-hooks, excluder caps, nuts, and washers. Removal and disposal of existing miscellaneous hardware prior to installation is included in this pay item. Furnishing and installing reflectors is not included in this pay item. **Intermediate Line Post, Misc Hardware (CASS, 4:1 Slope)** will be measured per individual intermediate line post or modified intermediate line post. Each individual pay item includes all miscellaneous hardware attached to an individual line post, intermediate or modified, regardless of the quantity or type of hardware attached to the post.

10. **Reflector, Furn and Install (CASS)** includes all materials, labor, and equipment required to furnish and install a reflector meeting the requirements of this special provision and approved by the manufacturer for use with the CASS cable barrier system, manufactured by Trinity Highway Products, LLC, being maintained and repaired. Removal and disposal of existing reflectors is included in this pay item. **Reflector, Furn and Install (CASS)** will be measured per individual unit, regardless of whether the unit consists of a uni-directional reflector or bi-directional reflector.

11. **Terminal Line Post, Short, Furn and Install (CASS)** includes all materials, labor, and equipment required to furnish and install a short terminal line post for the CASS cable barrier system, manufactured by Trinity Highway Products, LLC, being maintained and repaired. A short terminal line post consists of the post type used in posts 4 through 7 of the CASS cable terminal. Post 4 is the first terminal post after the cable release posts. Post 7 is the fourth terminal post after the cable release posts. Removal and disposal of existing short terminal posts prior to installation is included in this pay item. The removal of ice located inside post sockets is included in this pay item. Furnishing and installing miscellaneous hardware attached to the post is not included in this pay item. **Terminal Line Post, Short, Furn and Install (CASS)** will be measured per individual post installed. The pay item **Terminal Line Post, Short, Furn and Install (CASS)** will be applicable to posts 4 through 7 of the CASS cable terminal.

12. **Terminal Line Post, Tall, Furn and Install (CASS)** includes all materials, labor, and equipment required to furnish and install a tall terminal line post for the CASS cable barrier system, manufactured by Trinity Highway Products, LLC, being maintained and repaired. A tall terminal line post consists of the post type used in posts 8 and 9 of the CASS cable terminal. Post 8 is the fifth terminal post after the cable release posts. Post 9 is the sixth terminal post after the cable release posts, and is the last terminal post of the CASS cable terminal. Post 9 is also the boundary where the cable terminal and the cable barrier meet. Removal and disposal of existing tall terminal posts prior to installation is included in this pay item. The removal of ice located inside post sockets is included in this pay item. Furnishing

and installing miscellaneous hardware attached to the post is not included in this pay item. **Terminal Line Post, Tall, Furn and Install (CASS)** will be measured per individual post installed. The pay item **Terminal Line Post, Tall, Furn and Install (CASS)** will be applicable to posts 8 and 9 of the CASS cable terminal.

13. **Terminal Line Post, Misc Hardware (CASS)** includes all materials, labor, and equipment required to furnish and install miscellaneous hardware to a terminal line post, short or tall, on the CASS cable barrier system, manufactured by Trinity Highway Products, LLC, being maintained and repaired. Miscellaneous hardware consists of any items attached to the post, including, but not limited to, cable lock bolts, nuts, and excluder caps. Removal and disposal of existing miscellaneous hardware prior to installation is included in this pay item. Furnishing and installing reflectors is not included in this pay item. **Terminal Line Post, Misc Hardware (CASS)** will be measured per individual terminal line post, short or tall. Each individual pay item includes all miscellaneous hardware attached to an individual terminal line post, short or tall, regardless of the quantity or type of hardware attached to the post.

14. **Cable Release Post and Hardware, Upper, Furn and Install (CASS)** includes all materials, labor, and equipment required to furnish and install a cable release post-upper post and hardware for the CASS cable barrier system, manufactured by Trinity Highway Products, LLC, being maintained and repaired. A cable release post-upper post consists of the upper portion of the cable release post used in posts 1 through 3 of the CASS cable terminal. Removal and disposal of existing upper cable release posts and hardware prior to installation is included in this pay item. Hardware consists of any items used in the cable release post assembly; including bolts, nuts, washers, and brackets. The lower portion of the cable release post, which is partially embedded in the concrete end terminal foundation, is not included as part of this pay item. Removal and disposal of the existing upper cable release posts and hardware is included in this pay item. **Cable Release Post and Hardware, Upper, Furn and Install (CASS)** will be measured per individual post installed.

15. **Intermediate Line Post, Furn and Install (Gibraltar, TL-4)** includes all materials, labor, and equipment required to furnish and install an intermediate line post for the Gibraltar TL-4 cable barrier system, manufactured by Gibraltar Cable Barrier Systems, being maintained and repaired. Removal and disposal of the existing post prior to installation is included in this pay item. The removal of ice located inside post sockets is included in this pay item. Furnishing and installing miscellaneous hardware attached to the post is not included in this pay item. Furnishing and installing reflectors is not included in this pay item. **Intermediate Line Post, Furn and Install (Gibraltar, TL-4)** will be measured per individual post installed.

16. **Intermediate Line Post, Furn and Install (Gibraltar, TL-4), Modified** includes all materials, labor, and equipment required to furnish and install a modified intermediate line post for the Gibraltar TL-4 cable barrier system, manufactured by Gibraltar Cable Barrier Systems, being maintained and repaired. The modified line post must be designed to accommodate turnbuckles and/or fittings, as specified in this special provision. Removal and disposal of the existing post prior to installation is included in this pay item. Furnishing and installing miscellaneous hardware attached to the post is not included in this pay item. The removal of ice located inside post sockets is included in this pay item. Furnishing and installing reflectors is not included in this pay item. **Intermediate Line Post, Furn and Install (Gibraltar, TL-4), Modified** will be measured per individual post installed.

17. **Intermediate Line Post, Misc Hardware (Gibraltar, TL-4)** includes all materials, labor, and equipment required to furnish and install miscellaneous hardware to an intermediate line post or modified intermediate line post on the Gibraltar TL-4 cable barrier system, manufactured by Gibraltar Cable Barrier Systems, being maintained and repaired. Miscellaneous hardware consists of any items attached to the post, including, but not limited to, hairpins, lock plates, U-bolts, nuts, and excluder caps. Removal and disposal of existing miscellaneous hardware prior to installation is included in this pay item. Furnishing and installing reflectors is not included in this pay item. **Intermediate Line Post, Misc Hardware (Gibraltar, TL-4)** will be measured per individual intermediate line post or modified intermediate line post. Each individual pay item includes all miscellaneous hardware attached to an individual line post, intermediate or modified, regardless of the quantity or type of hardware attached to the post.

18. **Reflector, Furn and Install (Gibraltar)** includes all materials, labor, and equipment required to furnish and install a reflector meeting the requirements of this special provision and approved by the manufacturer for use with the Gibraltar Cable barrier system, manufactured by Gibraltar Cable Barrier Systems, LLC, being maintained and repaired. Removal and disposal of existing reflectors is included in this pay item. **Reflector, Furn and Install (Gibraltar)** will be measured per individual unit, regardless of whether the unit consists of a uni-directional reflector or bi-directional reflector.

19. **Terminal Post __, Furn and Install (Gibraltar)** includes all materials, labor, and equipment required to furnish and install a terminal post, corresponding to the terminal post number specified. Terminal post 1 is the first terminal post after the cable release post. Terminal post 4 is the fourth terminal post after the cable release post, and is the last terminal post of the Gibraltar cable terminal. Terminal post 4 is also the boundary where the cable terminal and the cable barrier meet. Terminal posts obtained through this pay item must meet the requirements of this special provision and must be approved by the manufacturer for use with the Gibraltar cable barrier system, manufactured by Gibraltar Cable Barrier Systems, being maintained and repaired. Furnishing and installing miscellaneous hardware attached to the post is not included in this pay item. Removal and disposal of the existing terminal post prior to installation is included in this pay item. The removal of ice located inside post sockets is included in this pay item. **Terminal Post __, Furn and Install (Gibraltar)** will be measured per individual post installed.

20. **Terminal Post, Misc Hardware (Gibraltar)** includes all materials, labor, and equipment required to furnish and install miscellaneous hardware to a terminal post on the Gibraltar cable barrier system, manufactured by Gibraltar Cable Barrier Systems, being maintained and repaired. Miscellaneous hardware consists of any items attached to the post, including, but not limited to, j-bolts, nuts, washers, and excluder caps. Removal and disposal of existing miscellaneous hardware prior to installation is included in this pay item. Furnishing and installing reflectors is not included in this pay item. **Terminal Post, Misc Hardware (Gibraltar)** will be measured per individual terminal post, regardless of terminal post number. Each individual pay item includes all miscellaneous hardware attached to an individual terminal post, regardless of the quantity or type of hardware attached to the post.

21. **Cable Release Post and Hardware, Furn and Install (Gibraltar)** includes all materials, labor, and equipment required to furnish and install a cable release post and hardware for the Gibraltar Cable barrier system, manufactured by Gibraltar Cable Barrier Systems, being maintained and repaired. Hardware includes miscellaneous items, such as nuts, washers, and keeper wires, required to secure the fittings to the anchor post and properly

install the cable release post. Removal and disposal of existing cable release posts and hardware prior to installation is included in this pay item. The anchor post, which is partially embedded in the concrete end terminal foundation, is not included as part of this pay item. **Cable Release Post and Hardware, Furn and Install (Gibraltar)** will be measured per individual post installed.

22. **Cable Barrier, Line Post Fdn, Repr** includes all materials, labor, and equipment required to repair a line post foundation according to the requirements of this special provision. A line post foundation will be considered any concrete cable barrier foundation that does not have cables anchored to the foundation. In addition, line post foundations have embedded steel sockets for installing intermediate line posts, modified line posts, and terminal posts. **Cable Barrier, Line Post Fdn, Repr** will be measured per individual line post foundation repaired. The pay item **Cable Barrier, Line Post Fdn, Repr** will be applicable to all cable barrier systems, regardless of manufacturer.

23. **Cable Barrier, Line Post Fdn, Rem** includes all materials, labor, and equipment required to remove and dispose of a line post foundation according to the requirements of this special provision. A line post foundation will be considered any concrete cable barrier foundation that does not have cables anchored to the foundation. In addition, line post foundations have embedded steel sockets for installing intermediate line posts, modified line posts, and terminal posts. Removal and disposal of any steel components embedded in the foundation is included in this pay item. Backfilling the excavation with sound earth, as specified in this special provision, is included in this pay item. **Cable Barrier, Line Post Fdn, Rem** will be measured per individual line post foundation removed, regardless of the dimensions of the foundation. The pay item **Cable Barrier, Line Post Fdn, Rem** will be applicable to all cable barrier systems, regardless of manufacturer.

24. **Cable Barrier, Line Post Fdn** includes all materials, labor, and equipment required to construct a new line post foundation according to the requirements of this special provision and the details contained in the proposal package. A line post foundation will be considered any concrete cable barrier foundation that does not have cables anchored to the foundation. In addition, line post foundations have embedded steel sockets for installing intermediate line posts, modified line posts, and terminal posts. Filling any voids, dips, or holes around the foundation with sound earth, as specified in this special provision, is included in this pay item. Removal and disposal of excavated material from foundation excavations is included in this pay item. Materials, labor, and equipment required for furnishing, installing, and removing shaft excavation casings is included in this pay item. Materials, labor, and equipment required for concrete quality assurance, as specified in this special provision, is included in this pay item. The steel socket and steel reinforcement required to construct the foundation are included in this pay item. A line post foundation will consist of any concrete foundation with a steel socket embedded in the foundation for placing a post inside the socket. **Cable Barrier, Line Post Fdn** will be measured per individual line post foundation constructed. The pay item **Cable Barrier, Line Post Fdn** will be applicable to all cable barrier systems, regardless of manufacturer.

25. **Cable Barrier, End Terminal Fdn, Repr** includes all materials, labor, and equipment required to repair an end terminal foundation according to the requirements of this special provision. All items of work required prior to foundation repair, including marking damaged foundations, and submitting documents and photographs, are included in this pay item. An end terminal foundation will be considered any concrete cable barrier foundation that has cables anchored to the foundation. End terminal foundations have steel components

embedded in the foundation for attaching cables and posts to the foundation. **Cable Barrier, End Term Fdn, Repr** will be measured per individual end terminal foundation, regardless of the number of cables connected to the foundation or the dimensions of the foundation. An end terminal foundation consisting of one reinforced concrete pile cap connecting two or more drilled shafts will be measured and paid for as one individual end terminal foundation, regardless of foundation dimensions or number of drilled shafts. The pay item **Cable Barrier, End Term Fdn, Repr** will be applicable to all cable barrier systems, regardless of manufacturer.

26. **Cable Barrier, End Terminal Fdn, Rem** includes all materials, labor, and equipment required to remove and dispose of an end terminal foundation according to the requirements of this special provision. An end terminal foundation will be considered any concrete cable barrier foundation that has cables anchored to the foundation. End terminal foundations have steel components embedded in the foundation for attaching cables and posts to the foundation. Removal and disposal of any steel components embedded in the foundation is included in this pay item. Backfilling the excavation with sound earth, as specified in this special provision, is included in this pay item. **Cable Barrier, End Terminal Fdn, Rem** will be measured per individual end terminal foundation removed, regardless of the number of cables connected to the foundation or the dimensions of the foundation. An end terminal foundation consisting of one reinforced concrete pile cap connecting two or more drilled shafts will be measured and paid for as one individual end terminal foundation, regardless of foundation dimensions or number of drilled shafts. The pay item **Cable Barrier, End Term Fdn, Rem** will be applicable to all cable barrier systems, regardless of manufacturer.

27. **Cable Barrier, End Terminal Fdn** includes all materials, labor, and equipment required to construct a new end terminal foundation according to the requirements of this special provision and the details contained in the proposal package. Filling any voids, dips, or holes around the foundation with sound earth, as specified in this special provision, is included in this pay item. An end terminal foundation will be considered any concrete cable barrier foundation that has cables anchored to the foundation. End terminal foundations have steel components embedded in the foundation for attaching cables and posts to the foundation. Furnishing and installing all required steel components embedded in the foundation, including sockets, lower cable release posts, anchor posts, anchor frame assemblies, and reinforcing cage assemblies, are included as part of this pay item. Removal and disposal of excavated material from foundation excavations is included in this pay item. Materials, labor, and equipment required for furnishing, installing, and removing shaft excavation casings is included in this pay item. Materials, labor, and equipment required for concrete quality assurance, as specified in this special provision, is included in this pay item. **Cable Barrier, End Term Fdn** will be measured per individual end terminal foundation installed, regardless of the number of cables connected to the foundation or the dimensions of the foundation. An end terminal foundation consisting of one reinforced concrete pile cap connecting two or more drilled shafts will be measured as one individual end terminal foundation, regardless of foundation dimensions or number of drilled shafts. The pay item **Cable Barrier, End Term Fdn** will be applicable to all cable barrier systems, regardless of manufacturer.

28. **Cable Barrier, Driven Socket, Rem** includes all materials, labor, and equipment required to remove and dispose of a driven socket according to the requirements of this special provision. Backfilling the excavation with sound earth, as specified in this special provision, is included in this pay item. **Cable Barrier, Driven Socket, Rem** will be measured per individual driven socket removed, regardless of the dimensions or type of driven socket.

The pay item **Cable Barrier, Driven Socket, Rem** will be applicable to all cable barrier systems, regardless of manufacturer. Additional payment will not be provided for specific types of driven sockets.

29. **Cable Barrier, Driven Socket, Furn and Install** includes all materials, labor, and equipment required to furnish and install a driven socket according to the requirements of this special provision and the details contained in the proposal package. Filling any voids, dips, or holes around the driven socket with sound earth, as specified in this special provision, is included in this pay item. Removal and disposal of excavated material is included in this pay item. **Cable Barrier, Driven Socket, Furn and Install** will be measured per individual driven socket installed, regardless of the dimensions or type of driven socket. The pay item **Cable Barrier, Driven Socket, Furn and Install** will be applicable to all cable barrier systems, regardless of manufacturer. Additional payment will not be provided for specific types of driven sockets.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
STEEL GUARDRAIL POST, FURNISH AND INSTALL

OPR:CT

1 of 1

C&T:APPR:POJ:SCK:04-26-12

a. Description. This work consists of removing and disposal of an existing steel guardrail post, furnishing a new steel guardrail post of the length specified, and installing the new guardrail post in place of the existing steel guardrail post.

b. Materials. Provide materials in accordance with sections 908 and 912, respectively, of the Standard Specifications for Construction and the *Road and Bridge Standard Plans*.

c. Construction. Install the posts as specified in section 807 of the Standard Specifications for Construction. Place the new steel post at the same location as the existing steel guardrail post, unless otherwise directed by the Engineer. The top of the new steel guardrail post must be at the same elevation as the existing steel guardrail post, unless otherwise directed by the Engineer.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Steel Guardrail Post, __ inches, Furn and Install	Each

Steel Guardrail Post, __ inches, Furn and Install includes furnishing and installing new guardrail offset blocks, bolts, nuts, washers, miscellaneous hardware, existing guardrail reflectors, and/or any necessary fittings. Temporary removal and re-installation of existing guardrail and/or posts which is required to accomplish this work will also be included in the cost of **Steel Guardrail Post, __ inches, Furn and Install** and will not be paid for separately. Any existing guardrail, existing reflective systems, or adjacent posts which are damaged as a result of the Contractor's operation must be replaced by the Contractor at the Contractor's expense.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
GUARDRAIL ANCHORED IN BACKSLOPE
(Type 4B and Type 4T)

DES:CAL

1 of 1

C&T:APPR:JKG:JAR:07-18-02
FHWA:APPR:08-02-02

a. Description. This work shall consist of all labor, equipment, and materials required to install guardrail anchored in backslope, of the type specified, according to the details shown on the plans, section 807 of the standard specifications, and as directed by the Engineer. The face of the slope backfill shall match the face of the adjacent existing backslope.

b. Materials. The materials shall be according to section 908 of the standard specifications.

c. Measurement and Payment. The completed work as measured will be paid for at the contract unit price for the following contract items (pay items).

Contract Item (Pay Item)	Pay Unit
Guardrail Anchored in Backslope, Type ___	Each

Guardrail Anchored in Backslope shall be measured and paid for as units each, as shown on the plans. It includes all materials, equipment and labor, including slope excavation, and backfill. When a W-beam rubrail is called for on the plans, the unit price for **Guardrail Anchored in Backslope** will include materials, labor, and equipment for installation of the W-beam rubrail.

Slope restoration items will be paid for separately.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
**STAKING MICHIGAN DEPARTMENT OF TRANSPORTATION UNDERGROUND
ELECTRICAL INFRASTRUCTURE AND ITS FACILITIES**

DET:CAW

1 of 1

APPR:NAL:BMB:08-01-17

a. Description. This work consists of filling out the herein identified forms and contacting the appropriate people to ensure the proper staking of MDOT electric infrastructure and ITS facilities.

After award, complete MDOT Metro Region Underground Electrical Infrastructure Staking Request Form (Form 5300A) and email it to MDOT-FLP-Staking-Metro@Michigan.gov for freeway lighting and to MDOT-Electrical-Staking-Metro@Michigan.gov for traffic signals and others a minimum of 5 work days prior to performing excavation activities. Telephone inquiries can be made to (517) 712-2715.

Richard Antuna
Metro Region Electrical Crews Supervisor
Auburn Hills Garage
2925 Lapeer Road
Auburn Hills, MI 48326
Cell:(517) 712-2715

After award, complete MDOT Underground ITS Infrastructure Staking Request Form (Form 5300) and email it to: mdot-ITS-staking-metro@michigan.gov a minimum of 5 work days prior to performing excavation activities.

Note: Per Public Act 174 of 2013 (MISS DIG law) MDOT is exempt from marking underground facilities.

b. Materials. None specified.

c. Construction. None specified.

d. Measurement and Payment. This work to contact various people for Staking Electrical Infrastructure will not be paid for separately but will be considered included in other items of work.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
PROTECT INTELLIGENT TRANSPORTATION SYSTEM INFRASTRUCTURE

MET:RTK

1 of 1

APPR:JVJ:CLC:05-04-17

a. Description. This work consists of all labor, equipment, and materials necessary to protect the existing and newly installed MDOT ITS infrastructure during construction activities to ensure the safety of the construction workers and the general public.

b. Materials. None specified.

c. Construction. Any damage to MDOT ITS infrastructure will be repaired immediately by the Contractor causing the damage, or by another Contractor, at the sole discretion of the MDOT Engineer. Contacting MISS DIG is not sufficient to protect MDOT ITS infrastructure.

1. **Underground ITS Infrastructure Staking Request.** Download and complete MDOT Form 5300, *MDOT Underground ITS Infrastructure Staking Request Form* (<http://mdotcf.state.mi.us/public/webforms/public/5300.pdf>). Provide location information for the staking request including: route number, direction, and mile marker; or major cross streets, city, and county. Include construction drawings or a detailed sketch with MDOT Form 5300. Electronically submit the completed form and any attachments to the appropriate region email address listed on the form at least 5 days prior to the anticipated digging start date. Digging work is prohibited until the staking request has been approved.

2. **Hand Digging.** Hand dig to confirm the location of MDOT ITS infrastructure whenever the proposed work is within 10 feet of the marked location, or when directed by the Engineer.

3. **Protection.** Where indicated on the plans or by the Engineer, provide rectangular steel cover plates of at least 8 feet by 8 feet by 1 inch thick to serve as a buffer and shield between traffic loads or demolition and the critical infrastructure. Use these plates to cover handholes that will be driven over by traffic during construction, to protect conduit runs from bridge demolition activities and debris, and wherever indicated by the Engineer.

4. **Renewing Markings.** When construction activities obliterate facility staking markings, place a subsequent request to MDOT to refresh the facility staking markings. The Contractor is responsible for ensuring they know where all MDOT facilities are after the initial staking at each site.

d. Measurement and Payment. All costs associated for this work will not be paid for separately, but are included in the applicable pay items, such as, but not limited to: guardrail installation, fence installation, pavement placement, etc. All costs of any emergency repairs will be paid by the Contractor responsible for the damage regardless of who completes the repair.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
MAINTAINING TRAFFIC

OAK: GS
TAY: MH

1 of 7

OAK:APPR: TEP: 3/21/18
TAY:APPR: MB: 3/21/18

a. Description. This project will be for as-needed guardrail maintenance work on all state trunk lines within Oakland and Wayne County (except non-freeway routes in Detroit).

b. General. Traffic shall be maintained by the Contractor throughout the project in accordance with subsections 104.07, 104.11, and sections 812 and 922 of the Standard Specifications for Construction, the *2011 Michigan Manual of Uniform Traffic Control Devices (MMUTCD)*, and any supplemental specifications in this proposal.

1. The Contractor for this project shall coordinate this work with other contractors performing work within the Construction Influence Area (CIA) or adjoining areas to avoid conflicts in the maintenance of traffic, construction signing, and to provide for the orderly progress of contract work.

2. MDOT maintenance crews, Freeway Lighting Partners (FLP) and/or Contract Maintenance Agencies may perform maintenance work within or adjacent to the Construction Influence Area (CIA). The Maintenance Division of MDOT and/or Contract Maintenance Agency will coordinate their operations with the MDOT Program Manager (PM) to minimize the interference to the Contractor. No additional payment will be made to the Contractor for the joint use of traffic control items.

3. The Contractor is to note subsection 104.08 of the Standard Specifications for Construction for the requirements of cooperation with other contractors.

4. Additional MDOT or local projects may take precedence over proposed lane closures for this work. Scheduling of all work shall be at the discretion of the MDOT PM.

5. MDOT Freeway Lighting and MDOT SEMTOC/ITS **do not** participate in the MISS DIG program. The Contractor shall refer to the Utility section of this contract for the clearance process of these utilities.

c. Construction Influence Area (CIA). The CIA shall include the right-of-way of any trunk line from the point where advance construction warning signing begins to the point where construction signing ends. In addition, the CIA shall also include the rights-of-way of any intersecting roads adjacent to the work zone as far as the construction signing extends. The CIA shall also include the right-of-way of all posted detour routes.

d. Traffic Restrictions. Maintain traffic in accordance with the maintaining traffic typical plans and notes contained herein. Changes or adjustments to the typical plans may be necessary to fit field conditions, subject to approval of or as determined by the MDOT PM.

1. No work shall be performed, or lane closures allowed during the Memorial Day, Fourth of July, Labor Day, Thanksgiving, Christmas, or New Year's Day holiday periods as defined below:

Holiday	2018 Dates
Memorial Day	3:00 pm Friday May 25th to 5:00 am Tuesday May 29th
Independence Day	3:00 pm Tuesday July 3rd to 5:00 am Thursday July 5th
Labor Day	3:00 pm Friday August 31st to 5:00 am Tuesday September 4th
Thanksgiving Day	3:00 pm Wednesday November 21st to 5:00 am Monday November 26th
Christmas Day	3:00 pm Friday December 21st to 5:00 am Wednesday December 26th
New Year's Day	3:00 pm Friday December 28th to 5:00 am Wednesday January 2nd

2. Additional lane closure restrictions may be requested by the MDOT PM if work impacts local events.

3. The Contractor shall implement lane closures according to applicable MDOT Typical Traffic Control Typical's (included within), and the suggested sequence of events and the *MMUTCD*.

4. The location for equipment and material stored on site must have prior approval of the Engineer. Provide a minimum 5-foot offset behind guardrail when storing equipment and/or material behind guardrail or store equipment and/or materials outside the clear zone. No equipment or material storage will be allowed within the clear zone of any roadway. Any additional signs or devices required to protect the motoring public from stored equipment or material will be at the Contractor's expense. Material and equipment can only be stored on site while the Contractor is actively working.

5. Lanes open to traffic during construction shall be a minimum of 12 feet wide unless otherwise approved in advance by the MDOT PM.

6. The MDOT PM has the authority to limit the duration of lane closures based on the Contractor's progress. The Contractor shall not be granted compensation or extension of time if the Engineer suspends lane closures due to the Contractor's inability to make significant progress during the time frame allotted for the lane closures.

e. Lane Restrictions.

1. All work shall be done using a shoulder closure and/or single lane closure. Lane closures are only to be used when the shoulder is less than 10 feet in width or as directed by the MDOT PM. All Contractor equipment, materials, and traffic control devices shall be within the shoulder closure and properly delineated. If any Contractor equipment and/or traffic control

devices encroach on the adjacent lane, a single lane closure must be taken. The single lane closure shall be done by utilizing traffic regulator control (flagging) where the single lane closure would result in only one available lane for traffic on bidirectional routes. Flagging will be prohibited on freeways.

2. For Standard Service in the Taylor TSC, shoulder closures will be allowed anytime active work is being done, and single lane closures will be permitted Monday through Friday 9A -3P and Saturday/Sunday 8A – 5P only. This is subject to change as directed by the MDOT PM.

For Standard Service in the Oakland TSC, if the location is not listed below, shoulder closures will be allowed anytime active work is being done, and single lane closures will be permitted Monday through Friday 9A -3P and Saturday/Sunday 8A – 5P only. This is subject to change as directed by the MDOT PM.

Oakland TSC

Control Section	Roadway	Times for Shoulder Closure	Times for Single Lane Closure
63021	Grand River	Any time	9A-3P Mon to Fri Any time Sa, Su
63022	I-96 (Kensington to I-275)	Any time	9A-3P Mon to Fri Any time Sa, Su
63022	M-5 (I-275 to M-102)	Any time	Any time except 5-9 A EB, 3-7 PM WB (M to F)
63031	US-24 (M-102 to Square Lk)	Any time	9A-3P Mon to Fri Any time Sa, Su
63041	M-59 (Tipsico Lake to US-24)	Any time	9A-3P Mon to Fri Any time Sa, Su
63042	Auburn Rd	Any time	9A-3P Mon to Fri Any time Sa, Su
63043	M-59 (Woodward to Dequindre)	Any time	9A-3P Mon to Fri Any time Sa, Su
63051	M-1 (M-102 to Square Lk)	Any time	9A-3P Mon to Fri Any time Sa, Su
63052	Square Lake (Woodward to US-24)	Any time	9A-3P Mon to Fri Any time Sa, Su
63052	US-24 (Square Lk to Dixie Hwy)	Any time	9A-3P Mon to Fri Any time Sa, Su
63053	US-24 (Telegraph to M-15)	Any time	9A-3P Mon to Fri Any time Sa, Su
63054	US-24 (M-15 to I-75)	Any time	9A-3P Mon to Fri Any time Sa, Su
63071	M-15	Any time	Any time except 5-9 A SB, 3-7 PM NB (M to F)
63081	M-10	Any time	9A-3P Mon to Fri Any time Sa, Su
63082	M-10	Any time	9A-3P Mon to Fri Any time Sa, Su
63091	BL-75 (Perry)	Any time	9A-3P Mon to Fri Any time Sa, Su

63101	I-696 (I-275 to US-24)	9A-3P Mon to Fri Any time Sa, Su	9A-3P Mon to Fri Any time Sa, Su
63102	I-696 (US-24 to I-75)	9A-3P Mon to Fri Any time Sa, Su	Any time Sa, Su 9A-3P Mon to Fri
63103	I-696 (I-75 to Dequindre)	9A-3P Mon to Fri Any time Sa, Su	Any time Sa, Su 9A-3P Mon to Fri
63111	Square Lake (I-75 to Woodward)	Any time	9A-3P Mon to Fri Any time Sa, Su
63112	M-24	Any time	Any time except 5-9 A SB, 2-7 PM NB (M to F)
63113	I-75/M-24 Connector	Any time	Any time except 5-9 A SB, 2-7 PM NB (M to F)
63131	M-150 (M-59 to Auburn)	Any time	9A-3P Mon to Fri Any time Sa, Su
63132	M-150 (Auburn to Tienken)	Any time	9A-3P Mon to Fri Any time Sa, Su
63151	Woodward (Loop to Square Lake)	Any time	Any time except 6-9 A SB, 4-6 PM NB (M to F)
63152	Chavez (Loop to Cass/Montcalm)	Any time	Any time except 4-7 PM NB (M to F)
63152	Chavez (Cass/Montcalm to Telegraph)	Any time	Any time except 6-9 A SB, 4-7 PM NB (M to F)
63152	Cass Ave	Any time	Any time except 6-9 AM (M to F)
63171	M-39	Any time	Any time Sa, Su 9A-3P Mon to Fri
63172	I-75 (M-15 to M-59)	9A-3P Mon to Fri Any time Sa, Su	9A-3P Mon to Fri Any time Sa, Su
63173	I-75 (Genesee Co to M-15)	Any time	9A-3P Mon to Fri Any time Sa, Su
63174	I-75 (M-59 to M-102)	9A-3P Mon to Fri Any time Sa, Su	Any time Sa, Su 9A-3P Mon to Fri
63191	I-275	Any time	Any time Sa, Su 9A-3P Mon to Fri

63192	M-5 (I-275 to Pontiac Trail)	Any time	9A-3P Mon to Fri Any time Sa, Su
63201	Woodward Loop in Pontiac	Any time	9A-3P Mon to Fri Any time Sa, Su

f. Typical and Speed Limits:

1. Taper/Barrel Spacing: Maintaining Traffic Typical M0020a
2. Shoulder Closure (divided roadway freeway or non-freeway): Maintaining Traffic Typical M0880a
3. Shoulder Closure (Two Lane Two Way Roadway): Maintaining Traffic Typical M0110a
4. Single Lane Closure (non-freeway- divided roadway): Maintaining Traffic Typical M0730a
5. Single Lane Closure (non-freeway- undivided roadway): Maintaining Traffic Typical M0240a
6. Single Lane Closure (freeway): Maintaining Traffic Typical M0980a
7. Ramp Closures: Maintaining Traffic Typical 45
8. Traffic Regulators: Maintaining Traffic Typical M0140a
9. There will be no speed reduction for shoulder closures or single lane closures. The existing speed limit shall be maintained on any cross roads at all times.

g. Traffic Control Devices.

1. General

A. All traffic control devices and their use shall conform to the *MMUTCD* and as specified herein.

B. Permanent or temporary traffic control items damaged by construction activities or by the Contractor shall be replaced at the Contractor's expense.

C. Traffic control devices moved to facilitate the Contractor's operation shall be reset by the end of the workday. The Contractor shall routinely maintain the traffic control devices – including but not limited to proper alignment, weighting with ballast, cleaning and replacing damaged devices.

D. All traffic control devices except lighted arrow boards shall be NCHRP 350 compliant.

E. All traffic control devices used on this project shall meet the "Acceptable" criteria outlined in current *American Traffic Safety Services Association (ATSSA)* publication titled: *Quality Guidelines for Temporary Traffic Control Devices and Features* when initially placed on site and after each major stage change.

2. Temporary Signs

A. All diamond warning signs shall be 48" x 48" in dimension unless otherwise noted in the proposal or plans.

B. All temporary signs shall be constructed with legends and symbols flush to the signs face and not extending beyond the sign borders or edges. Plaques and overlays will not be permitted in temporary signs.

C. All supplemental plaques shall be centered under the parent sign.

D. All temporary signs shall be placed with a 5 foot minimum bottom height to top of surrounding grade in uncurbed areas and 7 foot bottom height in curbed or pedestrian areas.

E. Do not install or temporarily store temporary signs with portable supports on shoulders, sidewalks, against guardrail, or against attenuators. On roadways with concrete barrier, temporary signs shall be laid against barrier with legs in a position that is downstream and with feet and ballast laying tight against concrete barrier.

G. All signs that will remain in place for 3 days or more shall be placed on driven supports, to the extent possible, as defined in Work Zone Detail 100A (WZD-100A). The stub length of a driven support, if used, shall also conform to WZD-100A. Driven sign supports and any associated support stubs shall be removed at the time the sign is removed. All other temporary signs may be installed on portable supports. No vacant sign stubs or sign supports will be allowed on this job.

3. Channelizing Devices

A. All channelizing devices shall be Plastic Drums with High Intensity Sheeting.

B. When a lane is closed, channelizing devices at entrance and exit ramps shall be used to clearly define the path for entering and exiting vehicles.

C. The spacing of the channelizing devices use to close lanes on non-freeway roads shall be as follows:

- 50 feet on Tangents
- 25 feet on Tapers and Shifts
- 10 feet when tighter control is required by the Engineer.

D. The spacing of the channelizing devices use to close lanes on freeway roads shall be as follows:

- 100 feet on Tangents
- 50 feet on Tapers and Shifts
- 25 feet when tighter control is required by the Engineer.

4. Lighted Arrows

A. Lighted Arrows, Type C, shall be used whenever closing a traffic lane or shoulder and shall be located as near as possible to the beginning of the taper unless physical limitations restrict its placement.

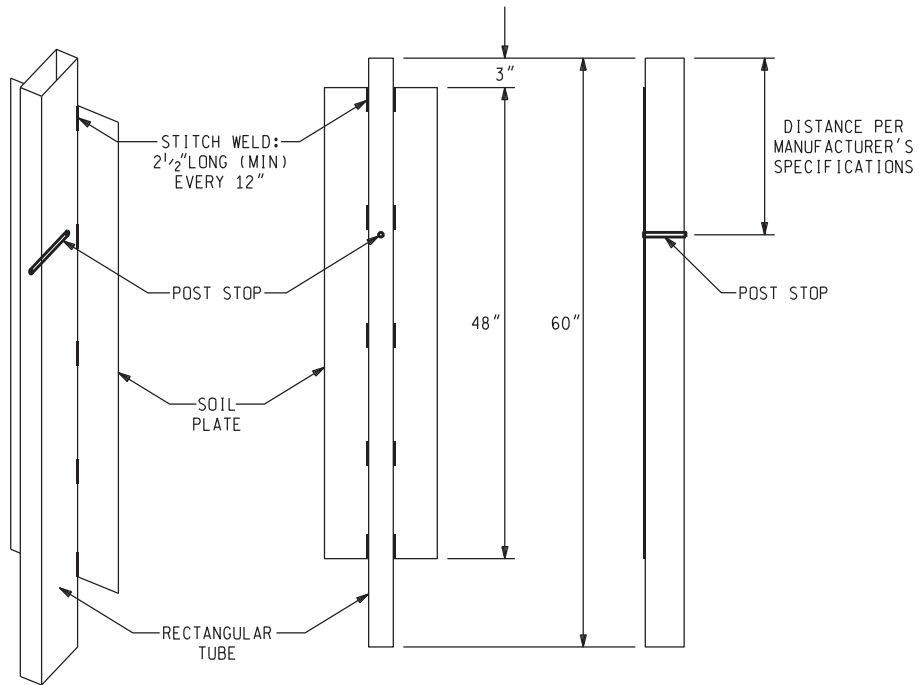
B. Place a 1/3L shoulder closure taper in advance of the lighted arrow board when implementing lane closures.

C. Lighted Arrows shall be left in upright position and in caution/bar mode when not in use for lane closures unless it is stored outside the clear zone. At no time shall the arrow board be left in travel mode with the head turned down when it is within the clear zone.

h. Measurement and Payment. The measurement and payment for all traffic control devices and labor shall be done as defined below.

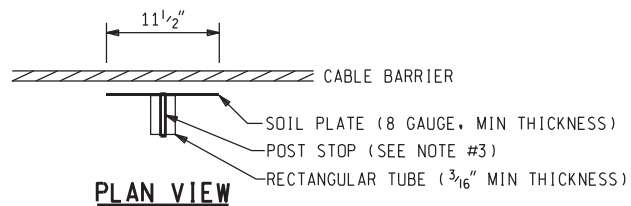
1. Traffic Control will be bid on in the unit of Lump Sum for an annual basis for each county separately.
 - a. **Traffic Control Oakland County (Lump Sum)**
 - b. **Traffic Control Wayne County (Lump Sum)**
2. The Contractor shall invoice and get paid for Traffic Control on a quarterly basis. This will be calculated by dividing the bid amount by 4.
3. Upon exercising an optional contract year, the bid item for Traffic Control will be repeated, unless negotiated between MDOT and the Contractor.
4. The bid items shall include all traffic control devices and labor regardless of a Standard or Emergency service.

DRIVEN SOCKET DETAIL



ELEVATION VIEW

SIDE VIEW



PLAN VIEW

NOTES:

- (1) ASSEMBLY MUST BE GALVANIZED TO ASTM A 123 AFTER FABRICATION.
- (2) INNER DIMENSIONS OF THE RECTANGULAR TUBE MUST MEET MANUFACTURER'S SPECIFICATIONS.
- (3) TYPE, SIZE, AND ORIENTATION OF POST STOP MUST MEET MANUFACTURER'S SPECIFICATIONS, AND MUST ALLOW WATER TO PASS THROUGH.
- (4) THE BOTTOM OF THE RECTANGULAR TUBE MUST HAVE AN OPENING TO ALLOW WATER TO DRAIN OUT OF THE RECTANGULAR TUBE.

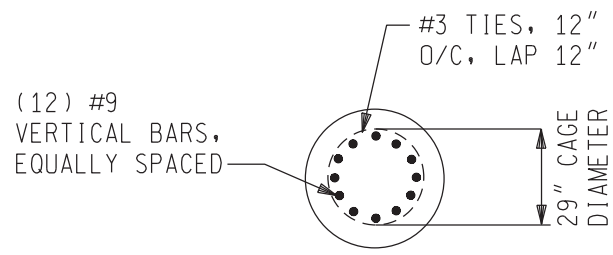
MISCELLANEOUS DETAILS

DATE 01/07/16	SCALE 1"=N/A	CONT. SEC. 82900	SHEET NO.
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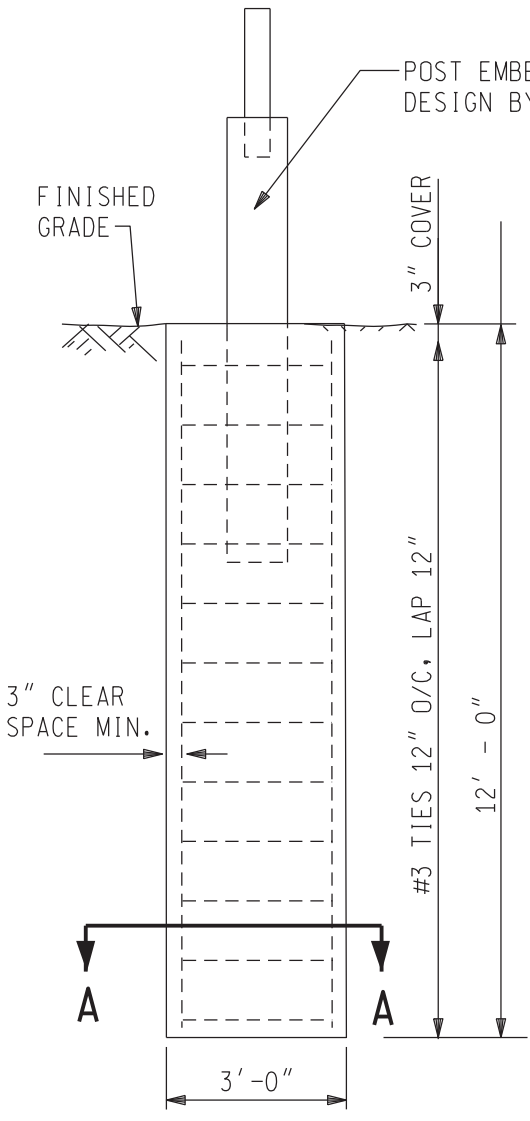
DATE:

LAST CORRECTION BY:

FILE NAME:



SECTION A-A

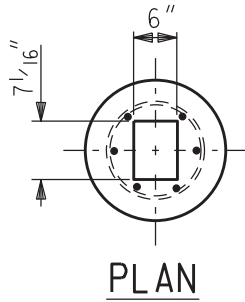


ELEVATION

NOTES:

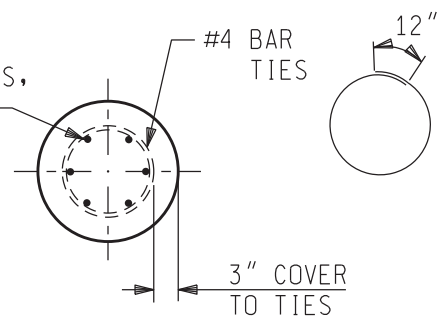
1. ALL MATERIALS & CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE MDT 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION (SCC) AND CONTRACT SPECIFICATIONS.
2. CONSTRUCT THE DRILLED SHAFT IN ACCORDANCE TO SUBSECTIONS 810.03J & K OF THE MDT 2012 SSC.
3. CONCRETE PLACEMENT FOR DRILLED SHAFTS SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF SECTION 706 OF THE MDT 2012 SSC.
4. REINFORCEMENT BARS FOR FOUNDATION SHALL BE GRADE 60 DEFORMED BARS AS SPECIFIED IN SECTION 905.03 OF THE MDT 2012 SSC.
5. CONTRACTOR SHALL PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT THE REINFORCEMENT AT THE POSITION SHOWN ON THE PLANS.
6. FOUNDATION CONCRETE SHALL BE GRADE S1.
7. CONCRETE SHALL BE PROTECTED FROM STRENGTH REDUCTION CAUSED BY HEAT, FROST, OR FREEZING ACTIONS PER SECTION 701.03 OF THE MDT 2012 SSC.
8. TOP OF FOUNDATION SHALL BE AT FINISHED GRADE.
9. ALL DISTURBED AREAS SHALL BE RESTORED. CONTRACTOR IS TO MINIMIZE THE AREAS OF DISTURBANCE AS MUCH AS IT IS PRACTICAL.
10. THIS END TERMINAL DETAIL SHALL BE USED FOR CONSTRUCTING NEW END TERMINAL FOUNDATIONS FOR THE GIBALTAR TL-4 CABLE SYSTEM ON M-14 (W. OF NAPIER RD TO SHELDON RD) IN WAYNE COUNTY.

	GIBALTAR END TERMINAL FOUNDATION DETAIL			
	M-14 CABLE BARRIER, WAYNE COUNTY			
DATE 01/07/16	SCALE 1"=NONE	CONT. SEC. 82900	SHEET NO. ---	---

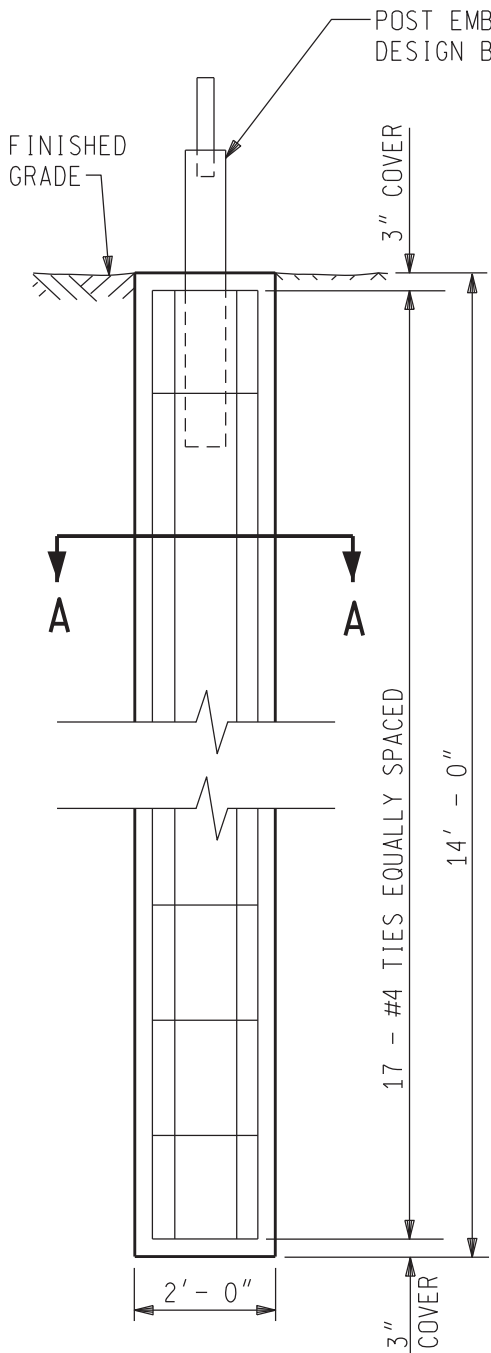


PLAN

(6) #8
LONGITUDINAL BARS,
EQUALLY SPACED



SECTION A-A

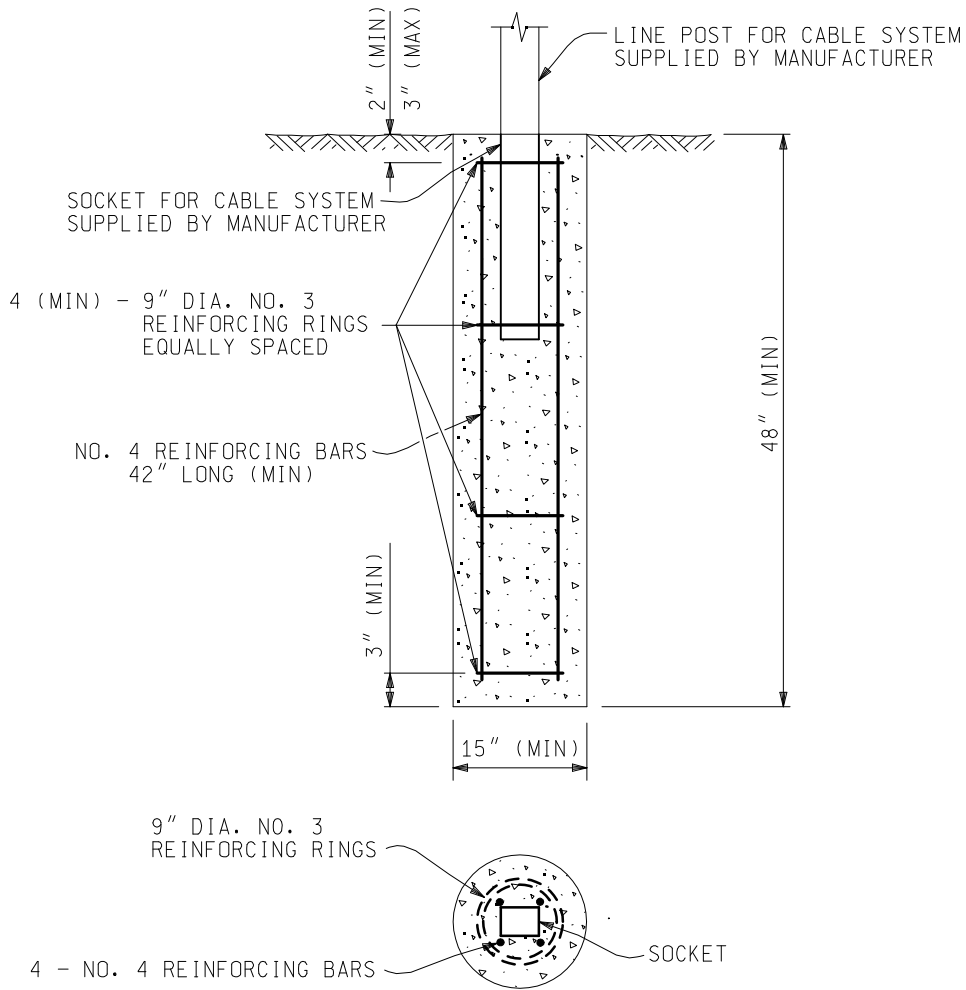


ELEVATION

NOTES:

1. ALL MATERIALS & CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE MDOT 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION (SCC) AND CONTRACT SPECIFICATIONS.
2. CONSTRUCT THE DRILLED SHAFT IN ACCORDANCE TO SUBSECTIONS 810.03J & K OF THE MDOT 2012 SSC.
3. CONCRETE PLACEMENT FOR DRILLED SHAFTS SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF SECTION 706 OF THE MDOT 2012 SSC.
4. REINFORCEMENT BARS FOR FOUNDATION SHALL BE GRADE 60 DEFORMED BARS AS SPECIFIED IN SECTION 905.03 OF THE MDOT 2012 SSC.
5. CONTRACTOR SHALL PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT THE REINFORCEMENT AT THE POSITION SHOWN ON THE PLANS.
6. FOUNDATION CONCRETE SHALL BE GRADE S1.
7. CONCRETE SHALL BE PROTECTED FROM STRENGTH REDUCTION CAUSED BY HEAT, FROST, OR FREEZING ACTIONS PER SECTION 701.03 OF THE MDOT 2012 SSC.
8. TOP OF FOUNDATION SHALL BE AT FINISHED GRADE.
9. ALL DISTURBED AREAS SHALL BE RESTORED. CONTRACTOR IS TO MINIMIZE THE AREAS OF DISTURBANCE AS MUCH AS IT IS PRACTICAL.
10. THIS END TERMINAL DETAIL SHALL BE USED FOR CONSTRUCTING NEW END TERMINAL FOUNDATIONS FOR THE CASS CABLE BARRIER INSTALLATIONS ON I-94 (RAWSONVILLE RD TO HANNAN RD) AND I-275 (M-153 TO M-102) IN WAYNE COUNTY.

		CASS END TERMINAL FOUNDATION DETAIL		
		I-94 AND I-275 CABLE BARRIER, WAYNE COUNTY		
DATE	SCALE	CONT. SEC.	SHEET NO.	
01/07/16	1"=NONE	82900	---	



MINIMUM SIZE AND REINFORCEMENT FOR
 LINE POST FOUNDATION FOR
 HIGH-TENSION CABLE BARRIER SYSTEMS

LINE_POST_FOUNDATION_DETAIL



DATE
 11/10/09

SCALE

CONT. SEC.

JOB NO.

DESIGN UNIT

SHEET NO.
