

DESIGN EXCEPTIONS

NONE

ADA DESIGN WAIVERS

NONE

UNDERGROUND UTILITIES

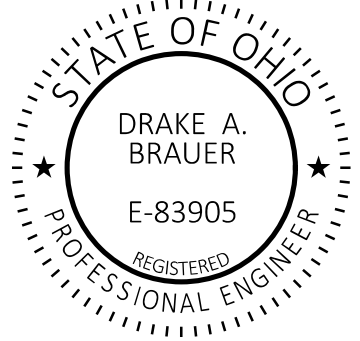
Contact Two Working Days
Before You Dig


OHIO811.org
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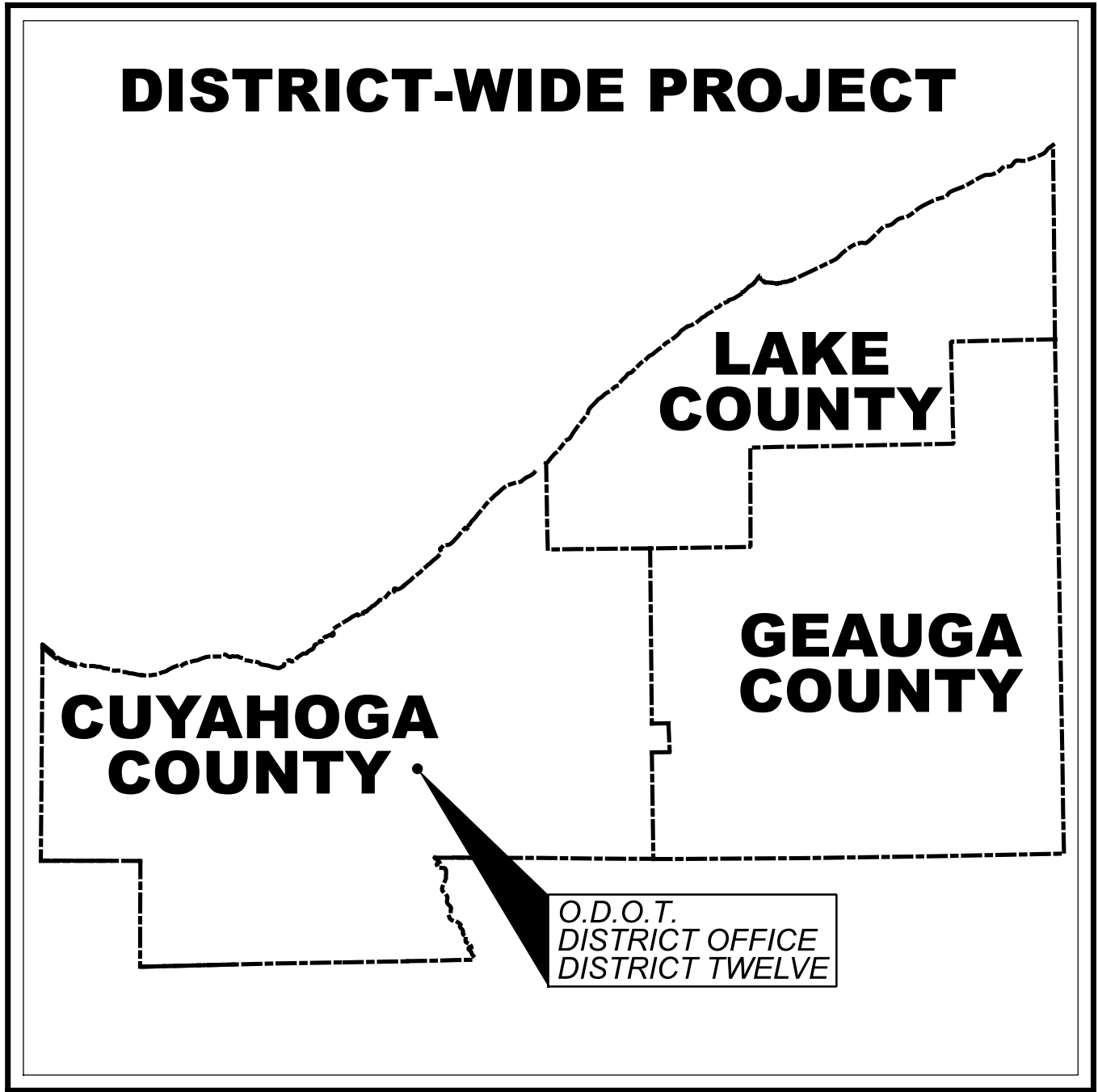
OHIO 811, 8-1-1, or 1-800-362-2764
(Non members must be called directly)

PLAN PREPARED BY:
O.D.O.T. DISTRICT 12
PLANNING AND ENGINEERING
5500 TRANSPORTATION BLVD.
GARFIELD HEIGHTS, OH 44125

ENGINEER'S SEAL



STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1	1/19/24	MGS-5.2	7/15/16		MT-95.30	7/19/19	TC-61.10	4/21/23	800	01/17/25	
BP-5.1	1/17/25	MGS-5.3	7/15/16		MT-95.31	7/19/19	TC-61.30	7/19/24	821	04/20/12	
		MGS-6.1	1/19/18		MT-95.32	4/19/19			832	07/19/24	
MGS-1.1	1/17/25	MGS-6.2	7/19/24		MT-95.40	7/21/23			921	07/19/24	
MGS-2.1	1/17/25				MT-95.45	7/21/23					
MGS-2.3	1/20/23				MT-95.50	7/21/17					
MGS-3.1	1/19/18				MT-97.10	4/19/19					
MGS-3.2	1/18/13				MT-98.28	1/17/20					
MGS-4.2	1/17/25						RM-4.2	7/19/24			
MGS-4.3	1/18/13				MT-101.70	7/19/24	RM-4.3	1/17/25			
					MT-101.75	7/21/23	RM-4.5	1/17/25			
					MT-105.10	1/17/20	RM-4.6	7/19/24			



LOCATION MAP

DISTRICT OFFICE - DISTRICT TWELVE
5500 TRANSPORTATION BLVD., GARFIELD HEIGHTS, OHIO 44125
LATITUDE: 41 °28'27"± LONGITUDE: 81 °41'42"±



STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

D12-GR-FY2025

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FEDERAL PROJECT NUMBER

NON-FEDERAL

RAILROAD INVOLVEMENT

NONE

PROJECT DESCRIPTION

District-Wide Guardrail Job Order
Repair Contract For SFY 2025

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	N/A
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	N/A
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A (NOI not required)*
	* Routine Maintenance Project

2023 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS, CHANGES LISTED IN THE PROPOSAL, AND THE SUPPLEMENTAL SPECIFICATION 800 VERSION INDICATED ON THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.


John Picuri, P.E., P.S.
District 12 Deputy Director


Pamela Boratyn
Director, Department of Transportation



General

Project Description

This project is a District 12 Guardrail and Attenuator Repair and/or Replacement Project and may have **Work Orders** in each of the District 12 Counties (Cuyahoga, Lake and Geauga) on various routes and sections.

The intent of this project is to repair/replace/install any designated damaged guardrail runs throughout the District through the use of “Work Orders” and one **“Specific Location” (Location 1 – I.R-271)** designated in these plans.

The location and estimated amount of rail repair items to be replaced shall be furnished to the Engineer, through the use of Work Orders, by the District 12 Highway Management Department.

The Project Engineer shall verify, that any existing end terminal (Type E or Type B) or Type 1 Impact Attenuator, that is to be completely replaced due to extensive damage, the replacement end terminal or Type 1 Impact Attenuator shall be MASH 2016 compliant per O.D.O.T. Office of Roadway Engineering’s current standards of “Approved Guardrail End Treatments” web page.

The Contractor shall not perform any guardrail work until he receives the authorization from the Engineer. This authorization shall be in the form of a **“Work Order”**.
The Engineer shall furnish to the Contractor a completed and signed **“Work Order”** for each location before the Contractor may commence with the work.

Within 21 days of receiving a Work Order, the Contractor shall complete the Work Order. As long as there is uncompleted work or the Contractor is in possession of unfulfilled Work Orders, the Contractor shall continually pursue the completion of the work or be subject to termination of the contract as provided for in the C.M.S. . When multiple orders have been issued and remain incomplete, the Contractor shall work on the locations in the order of priority, As Directed by the Engineer. No new work locations shall be initiated by the Contractor prior to the completion of work at any given location, unless otherwise approved by the Engineer.

The locations of guardrail runs, as described in submitted “Work Orders”, are subject to adjustment prior to final acceptance. The Engineer shall be satisfied that all installations will afford maximum protection for traffic.

104.02 Adjustment Exclusions

Contingency and Work Order repair items will not be subjected to the unit price adjustments in 104.02.D.2 of the CMS, Per Proposal Note 116.

Right Of Way

All work will be performed within the existing right of way.

Cooperation Between Contractors

The Contractor shall cooperate and coordinate his operations with the Contractors on other projects that may be in force during the life of the contract. No waiver of any provisions of 105.08 of the construction and materials specifications is intended.

Environmental Commitments

For this project the following environmental commitments shall be adhered to:

- 1. All work to be within existing right-of-way.
- 2. No work in streams, wetlands, or pollinator initiative sites.
- 3. No tree removal.

Location of Guardrail

The locations of guardrail runs, as described in the repair Work Orders, are subject to adjustment by the Engineer prior to construction and final acceptance. The Engineer shall be satisfied that all installations will afford maximum protection for traffic.

Staging Areas

There are no specific areas given in the plans for the Contractor to use as a staging area(s). If the Contractor wants to use an area(s) for staging, regardless if it falls within the project limits or not, the Contractor is to use the Right of Way E-Permitting System at <https://odhcp.bemcorp.net/Accounts/Account/Account> in order to apply for a permit per Section 107.02 of the CMS. For specific permitting questions, the Contractor can contact the District Permitting Office, (Melvin Safford) at 216-584-2137, (Andrew Tomko) at 216-584-2195 or at District12Permits@dot.ohio.gov.

If a permit is granted, all conditions of the permit shall be met in addition to the requirements of 104.04 of the CMS, at no additional cost to the State. If the Project Engineer deems that all the conditions of the permit were not met, then 10% of the Contract bid amount for mobilization shall be withheld until all the conditions of the permit are satisfied.

Underground Utilities

The Contractor shall use the following procedure at each location where work is performed, in accordance with Sections 105.07 and 107.16 in the Construction and Materials Specifications:

OUPS: 1-800-362-2764
(contact limited basis participants directly)

OGPUPS: 1-800-925-0988

Highway Lighting Cabling and Conduit:
The lighting plans for the existing lighting circuits are on file at ODOT District 12, Garfield Heights.

The following are the contacts for ODOT maintained lighting/traffic circuits:

Attn: William Gerber, Roadway Services Manager
O.D.O.T. District 12 – Roadway Services
(216) 584-0084

Attn: David Nimrichter, District Traffic Manager
O.D.O.T. District 12
(216) 584-2296

ODOT Maintained Drainage:
Attn: Michael W. Miller, PE (Drainage)
O.D.O.T. District 12
(216) 584-2119

The location and markings shall be coordinated to stay approximately two days ahead of the planned construction:

The Contractor shall be responsible for contacting any utilities that may be affected by the work performed for this contract. The Contractor shall notify the utilities sufficiently before work begins so that the companies can locate and mark the location of their facilities before any excavation or post driving begins.

The Contractor shall also locate and avoid underground drainage pipes not associated with a particular utility company.
If any conflicts occur the Engineer shall determine whether the position of the guardrail can be adjusted to avoid the utility.

DESIGN AGENCY



DESIGNER

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P.02

TOTAL

26

Roadway

Estimated Quantities

The Contractor shall not order materials or perform work for items designated by plan note to be used "As Directed by the Engineer" unless authorized by the Engineer. The actual work locations and quantities used for such items shall be incorporated into the final change order governing completion of this project.

The Engineer maintains the right to non-perform any of the pay items at any time.

The following estimated quantities shall be used As Directed by the Engineer for replacement of damaged guardrail sections.
The following quantities have been carried to the General Summary to be used as described above:

Item 202 - Guardrail Removed	6,000 FT.
Item 202 - Anchor Assembly Removed, Type A	2 Each
Item 202 - Anchor Assembly Removed, Type T	4 Each
Item 202 - Anchor Assembly Removed	50 Each
Item 202 - Bridge Terminal Assembly Removed	25 Each
Item 606 - Guardrail, Type 5MR	300 FT.
Item 606 - Guardrail, Type 5	1000 FT.
Item 606 - Guardrail, Type 5A	100 FT.
Item 606 - Guardrail, Type MGS (WORK ORDER)	6,000 FT.
Item 606 - Guardrail, Type MGS With Long Posts	200 FT.
Item 606 - Guardrail, Type MGS	
Half Post Spacing	300 FT.
Item 606 - Guardrail, Type MGS	
Quarter Post Spacing	300 FT.
Item 606 - Guardrail, Barrier Design, Type 5	300 FT.
Item 606 – Thrie Beam Guardrail	50 FT.
Item 606 - Anchor Assembly, Type T	5 Each
Item 606 - Anchor Assembly, MGS Type T	15 Each
Item 606 - Bridge Terminal Assembly, Type 1	4 Each
Item 606 – MGS Bridge Terminal Assembly, Type 1	10 Each
Item 606 - Bridge Terminal Assembly, Type 2	5 Each
Item 606 - Bridge Terminal Assembly, Type BR-1	2 Each
Item 620 - Delineator, Post Mounted	8 Each

Item 626 - Barrier Reflector, Type 1 or 2

As Directed by the Engineer, barrier reflectors shall be placed on all new or replacement guardrail and barrier runs and shall be placed on repaired guardrail and barrier runs where the section repaired requires reflectors.

The following quantities have been carried to the General Summary to be used as described above.

Barrier Reflector, Type 1, One Way	10 Each
Barrier Reflector, Type 2, One Way	200 Each

Public Safety And Protection Of Incomplete Guardrail Related Work

Before work begins, the Contractor shall submit to the Engineer the names and telephone numbers of persons whom can be contacted 24 hours a day by the Ohio Department Of Transportation and all interested law enforcement agencies. The Contractor shall be responsible for placing or replacing necessary traffic control devices to maintain traveled pavement safely.

No hazard shall be left unprotected except for the actual time necessary to remove, grade, and reinstall guardrail in a continuous operation. The removal of all guardrail shall at all times be As Directed by the Engineer. No guardrail shall be removed until the replacement material is on site and ready for installation. Failure to comply with this requirement shall be deemed sufficient cause to order work suspended on this project until such time that the Engineer is assured of compliance.

The following provisions "A", "B", and "C" shall apply when the lane adjacent to the guardrail is open to traffic: the period of time that a hazard is left unprotected by the removal of guardrail shall be held to an absolute minimum and in no case shall such a period be longer than one working day. If, after one day, the entire run of guardrail construction is not complete the following shall apply:

A:
In areas where existing guardrail has been removed or the guardrail is in a partial stage of completion. The Contractor shall provide and maintain Type II barricades with Type C (steady burning) warning lights within the limits of the unprotected area. The barricades shall be placed at 50' intervals and offset at least 2' from the edge of the traveled roadway and in close proximity to the construction. The approach end of a partially completed run of guardrail shall be fastened at ground level to a steel drum.

B:
If the existing guardrail is for the protection of an obstacle (i.e. sign support, bridge parapet, etc.) The Contractor shall erect portable concrete barrier in the direction of traffic. The requirements of paragraph "A" shall apply to the remaining guardrail within the run. Temporary barrier shall be flared at a 20:1 (minimum) taper rate and shall include a temporary end terminal, as per RM-4.2.

C:
The requirements stated in "A" shall apply for a period not to exceed one week. Where the rebuilding or construction of any run of guardrail cannot be accomplished within one week, the Contractor shall provide and maintain temporary concrete barrier in the interim time it takes to complete the work. The approach end of the portable concrete barrier shall be flared to the outer edge of the paved shoulder and shall include a temporary end terminal as per RM-4.2. In addition, a Type II barricade with Type B (high intensity flasher) warning light shall be placed in front of this initial section of temporary barriers to provide forewarning to the approaching traffic.

Temporary concrete barrier is not required to separate opposing traffic when the median barrier is removed provided that both median lanes remain closed until the new median barrier is in place. For hazards within this zone, paragraphs A, B and C above still apply.

The term "guardrail" as used herein shall be understood to cover all types of guardrail, existing or proposed for the project including barrier design guardrail, bridge wingwall parapets, and concrete barrier.

The cost of complying with these safety procedures shall be included in the bid price for Item 614 - Maintaining Traffic.

Protection Of Right-Of-Way Landscaping

The Contractor shall constrict all of his/her activities, equipment storage, and staging to within the construction limits. Unless otherwise identified in the plans or proposal. The construction limits are identified as 30 feet [10 meters] from the edge of pavement.

Should the Contractor wish to use any area outside these limits, a request in writing must be submitted to the Project Engineer. The document submitted must clearly identify the area that the Contractor plans to use and explain the proposed use and restoration of the area. Use of these areas for disposal of waste Material and construction debris, excavation of borrow material and placement of portable plants is prohibited. The request must be approved, in writing, before the Contractor has permission to use the area.

Prior to beginning work, the Contractor, superintendent or his representative, the Project Engineer, and a representative of the maintaining agency shall review and record all landscaping items within the right of way (both within and outside the construction limits). A record of this review will be kept in the Project Engineer’s files. Prior to final acceptance, a final review of landscaping items will be made. Any items damaged beyond the construction limits as defined above will be replaced in kind or as approved by the Project Engineer.

Connection Between Existing And Proposed Guardrail

When it is necessary to splice proposed guardrail to existing guardrail, only the existing guardrail shall be cut, drilled, or punched. The connection shall be made using a “w-beam rail splice” as shown in AASHTO M 180. Payment shall be included in the contract price for the respective guardrail items.

Where Type 5 guardrail, terminal assemblies, etc. are to be connected to existing guardrail, some modifications may be required including extra posts,

Drilling holes and possibly partial sections of additional rail elements. If additional portions of rail elements are used, the lineal foot measurements of this additional portion shall be added for payment.

Curved Rail Elements

When a curved rail element is required it will appear on the “Work Order” given to the Contractor prior to working on that location. The cost of these curved rail elements shall be paid per lin. Ft. of the related guardrail item or rebuilt item. The Contractor shall verify the radius of the curved rail in the field.

DESIGN AGENCY



DESIGNER

JAG

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DAB 02/03/25

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TOTAL

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Item 606 - Guardrail Misc: Anchor Assembly, Type B, (Type 5 And MGS (NCHRP 350) ...

The items listed below shall be used to rebuild a damaged anchor assembly Type B, (**Type 5 And MGS (NCHRP 350)**). The bid price for each item listed below shall include all equipment labor and materials (listed item plus any associated items required and not listed separately ie. Hardware, post blocks, etc.).

Item 606 - Guardrail,Misc.:Anchor Assembly, Type B,
12.5 Ft. Rail Element. (Including Deflector Angle) **5 Each**

Item 606 - Guardrail,Misc.:Anchor Assembly, Type B,
Breakaway Wood Post, 3.75’ **5 Each**

Item 606 - Guardrail,Misc.:Anchor Assembly, Type B,
Breakaway Wood Post, 6’ **5 Each**

Item 606 - Guardrail,Misc.:Anchor Assembly, Type B,
Buffered End Section / Impact Head **5 Each**

Item 606 - Guardrail,Misc.:Anchor Assembly, Type B,
Cable Assembly (Inc. Bracket, Sleeve, Etc.) **5 Each**

Item 606 – Guardrail,Misc.:Anchor Assembly, Type B,
MGS, 9.375’ Rail Element **5 Each**

Item 606 - Guardrail,Misc.:Anchor Assembly, Type B,
Offset / Angle / Ground Strut **4 Each**

Item 606 - Guardrail,Misc.:Anchor Assembly, Type B,
Steel Post (Bottom) **5 Each**

Item 606 - Guardrail,Misc.:Anchor Assembly, Type B,
Steel Post (Top) **5 Each**

Item 606 - Guardrail,Misc.:Anchor Assembly, Type B,
Steel Yielding Post **5 Each**

Be reminded as described above the items listed shall include all associated items not listed separately
(ie. Bolts, nuts, washers, post blocks, screws, etc.)
The face of the Type 5 or MGS, Type B, Buffered End Section shall be covered with a sheet of yellow Type G reflective sheeting, per CMS 730.19.

The intent is to pay for any of the damaged items listed above and the anchor assembly shall be rebuilt so as to create a fully functional anchor assembly.

Item 606 - Guardrail Misc: Immediate Repair, 24 Hour

This item of work is provided to preserve the **safety** of the motoring public by quickly repairing damage that may present itself to be of an **immediate danger and threat** to the public.
In the event that a guardrail repair Work Order be designated **“Immediate Repair, 24 Hour”** by the Project Engineer, the Contractor shall complete the Work Order within **24 hours** after receipt of the Work Order.
24 hours after notification shall be deemed an interim completion date. The intent of this item of work is to compensate the Contractor for his cost to quickly respond to the immediate repair request. Payment for this item of work shall be for each immediate repair request successfully started within the 24 hours allotted. All material, labor, equipment, etc required for the repair will be paid at the unit bid price of each.

If the Contractor **does not** complete the “immediate repair” within the stated 24 hours, the Contractor shall provide to the Project Engineer a signed and dated letter specifying the reasons the designated work was unable to be accomplished. This documentation will be maintained by the Project Engineer.
The following quantity has been carried to the General Summary to be used as described above.

Item 606 - Guardrail Misc., Immediate Repair, 24 Hour **10 Each**

Item 606 - Guardrail Misc: Urgent Repair, 72 Hour

This item of work is provided to preserve the **safety** of the motoring public by quickly repairing damage that may present itself to be of an **immediate danger and threat** to the public.
In the event that a guardrail repair Work Order be designated **“Urgent Repair, 72 Hour”** by the Project Engineer, the Contractor shall complete the Work Order within **72 hours** after receipt of the Work Order.
72 hours after notification shall be deemed an interim completion date. The intent of this item of work is to compensate the Contractor for his cost to quickly respond to the urgent repair request. Payment for this item of work shall be for each urgent repair request successfully started within the 72 hours allotted. All material, labor, equipment, etc required for the repair will be paid at the unit bid price of each.

If the Contractor **does not** complete the “urgent repair” within the stated 72 hours, the Contractor shall provide to the Project Engineer a signed and dated letter specifying the reasons the designated work was unable to be accomplished. This documentation will be maintained by the Project Engineer.
The following quantity has been carried to the General Summary to be used as described above.

Item 606 - Guardrail Misc., Urgent Repair, 72 Hour **25 Each**

Item 606 – Anchor Assembly, Type B Type MGS (MASH 2016)

This item shall consist of furnishing and installing any of the MASH 2016 compliant guardrail end terminals for Type MGS guardrail as listed on Roadway Engineering’s web page under roadside safety devices for approved guardrail end treatments. Installation shall be at the locations specified in the plans (or repair Work Orders), in accordance with the manufacturer’s specifications.

Refer to the manufacturer’s instructions regarding the installation of, and the grading around, the foundation tubes and ground strut. The top of any foundation tube should be less than 4 inches above the ground. The placement of the foundation tubes should be an appropriate depth below the level line in order to maintain the finished MGS guardrail height of 31 inches from the edge of the shoulder.

On-site grading is required if the top of the foundation tubes or top of the ground strut does project more than 4 inches above the ground line.

The face of the Type B impact head shall be covered with reboundable retrorreflective sheeting, per CMS 730.191.

Payment for the above work shall be made at the unit price bid for Item 606, Anchor Assembly, MGS Type B, Each, and shall include all labor, tools, equipment and materials necessary to construct a complete and functional anchor assembly system, including reflective sheeting and all related hardware, grading, embankment and excavation not separately specified, as required by the manufacturer.

The following quantities have been carried to the General Summary to be used as described above.

Item 606 - Anchor Assembly, MGS Type B (MASH 2016)..... **11 Each**



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SHEET	TOTAL
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**Item 606 - Impact Attenuator, Type 1
(Unidirectional or Bidirectional) (MASH 2016)**

This item shall consist of furnishing and installing any one of the MASH 2016 compliant Type 1 Impact Attenuators as listed on the Office of Roadway Engineering’s web page. Installation shall be at the locations specified in the plans (or repair Work Orders), in accordance with the manufacturer’s specifications.

The Type 1 Impact Attenuator impact head shall be covered with retroreflective sheeting, per CMS 730.191.

Payment for the above work shall be made at the unit price bid for Item 606, Impact Attenuator, Type 1 (Unidirectional or Bidirectional), Each, and shall include all labor, tools, equipment and materials necessary to construct a complete and functional impact attenuator system, including all related transitions, hardware, reflective sheeting and grading, not separately specified, as required by the manufacturer.

The following quantity has been carried to the General Summary to be used as described above.

Item 606 - Impact Attenuator, Type 1,
(Unidirectional) (MASH 2016) **12 Each**

Item 606 – Guardrail Rebuilt, As Per Plan

These items shall include all work necessary to replace sections of damaged or deteriorated guardrail with type specified on the plans or work order As Directed by the Engineer.

These items shall include replacing guardrail, post(s) and/or associated hardware within the length designated for repair and all work necessary to reset and align post and guardrail deemed “fit” for re-use by the Engineer.

Adjustment of adjacent rail outside the limits designated for replacement, if necessary, in order to reestablish spacing, will be considered incidental to this item.

Sections to be replaced will be designated by the Engineer by guardrail panel.

It is the intent to match posts in the guardrail runs with like posts (that is wood post for wood and steel post for steel).

Materials shall be new or useable salvage under the removal items of this contract. Payment shall be at the unit bid price.

Item 606 – Guardrail Rebuilt, Type MGS,
As Per Plan **600 Ft.**

Item 606 – Guardrail Rebuilt, Type 5MR,
As Per Plan **100 Ft.**

Item 606 – Guardrail Rebuilt, Type 5,
As Per Plan **200 Ft.**

Item 606 – Guardrail Rebuilt, Type 5A,
As Per Plan **25 Ft.**

**Item 606 - Anchor Assembly, Type E
Type MGS (MASH 2016)**

This item shall consist of furnishing and installing any one of the MASH 2016 compliant guardrail end terminals for Type MGS guardrail as listed on Roadway Engineering’s web page under roadside safety devices for approved guardrail end treatments. Installation shall be at the locations specified in the plans (or repair Work Orders), in accordance with the manufacturer’s specifications.

The face of the Type E impact head shall be covered with reboundable retroreflective sheeting, per CMS 730.191.

Refer to the manufacturer’s instructions regarding the installation of, and the grading around the foundation tubes and ground strut. The top of any foundation tube should be less than 4 inches above the ground. The placement of the foundation tubes should be an appropriate depth below the level line in order to maintain the finished guardrail height of 31 inches from the edge of the shoulder.

On-site grading is required if the top of the foundation tubes or top of the ground strut does project more than 4 inches above the ground line.

Payment for the above work shall be made at the unit price bid for

Item 606, Anchor Assembly, MGS Type E, (MASH 2016) Each

and shall include all labor, tools, equipment and materials necessary to construct a complete and functional anchor assembly system, including all related transitions, reflective sheeting, hardware, grading, embankment and excavation not separately specified, as required by the manufacturer.

The following quantity has been carried to the General Summary to be used as described above.

Item 606 - Anchor Assembly, Type E (MASH 2016)..... **60 Each**

Item 202 – Concrete Barrier Removed, As Per Plan

Removal of the existing concrete barrier foundation shall be included in this item of work. The Contractor shall sawcut the pavement at the barrier foundation edge prior to the concrete barrier and concrete barrier foundation removal as to prevent adjacent pavement from being disturbed. In areas where the proposed footer limits differ from the existing footer limits, removal of pavement between the sawcut and the existing footer shall be included in this item of work. The Contractor shall perform all work according to Section 202 of the CMS and As Directed by the Engineer.

With the removal of the existing concrete barrier in areas not to be occupied by new concrete barrier, The Contractor shall fill the hole with granular material or excess material resulting from guardrail construction and grade the area acceptable to the Engineer. For quantities, see Sub-Summaries for guardrail upgrading Locations.

All costs for this item of work, including sawcutting, labor, materials, equipment and incidentals shall be included in the unit bid price for Item 202 – Concrete Barrier Removed, As Per Plan.

Item 202 – Removal Misc.: Impact Attenuator Removed, As Per Plan

This item, As Directed by the Engineer and deemed “fit” for re-use is for:

1. The removal, salvaged and delivery of specified Quadguard impact attenuators to the below listed O.D.O.T. District Twelve Maintenance Facility.
2. The removal, backfilling and grading of the concrete mounting pad associated with the removal of the specified impact attenuators.

Based on a Quadguard atttenuator tension strut design without a concrete backstop, the Contractor may encounter a concrete anchor pad have a depth of 6” reinforced concrete or 8” non-reinforced concrete with a approximate width of 4’ and a approximate length of 21’. The concrete anchor pad will have a leading anchor block with the approximate pad width and the approximate length of 4’. The concrete leading anchor block may extend approximately 3’ into the ground.

This item shall include the cost to trim, remove, and salvage of a existing attenuator including individual components, mounting rails, cable items, metal backups and anchor brackets.

The salvaged impact attenuators shall be transported by the Contractor to:

ODOT District 12 - Riveredge Garage
Address: 4940 Old Grayton Rd., Cleveland OH 44135
Location: 1/4 mile north of SR 17 next to NASA Lewis Research Center
Phone Number: 1-216-584-2207, Dave Pasenow or Ronzell Clayton
The Garage shall be contacted approximately 2 weeks prior to delivery.

With the removal of the concrete mounting pad, The Contractor shall fill the hole with granular material or excess material resulting from guardrail construction and grade the area acceptable to the Engineer. The compactable granular material shall conform to 703.16 and placed to grade as approved by the Engineer. For quantities, see Sub-Summaries for guardrail upgrading Locations.

All materials, equipment and labor necessary to perform the described above, shall be included in the bid price for:
Item 202 – Removal Misc.: Impact Attenuator Removed, As Per Plan

Item 202 – Anchor Assembly Removed, Type A

This item shall include the removal of the existing type a, anchor assembly including all posts, hardware, rail elements, and concrete anchors. All items removed shall become the property of the Contractor and shall be properly disposed of.

The existing concrete anchor and concrete at posts shall be removed entirely. All holes remaining after removal shall be filled with granular material or excess material resulting from guardrail construction. All fill material shall be thoroughly compacted and leveled, as directly by the Engineer.

Payment for all of the above shall be included in the unit bid price for:
Item 202 – Anchor Assembly Removed, Type A

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PROJECT ID

110600

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TOTAL

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**Item 606 – MGS Bridge Terminal Assembly, Type 1,
As Per Plan**

This item provides for the measuring, ordering, and the installation of a MGS Bridge Terminal Assembly, Type 1 containing “curved” rail components to meet field conditions, As Directed by the Engineer.

This item includes the cost of all labor, equipment and material to install and align the bridge terminal assembly. Payment shall be at the unit bid price.

The following quantity have been carried to the General Summary, to be used As Directed By The Engineer.

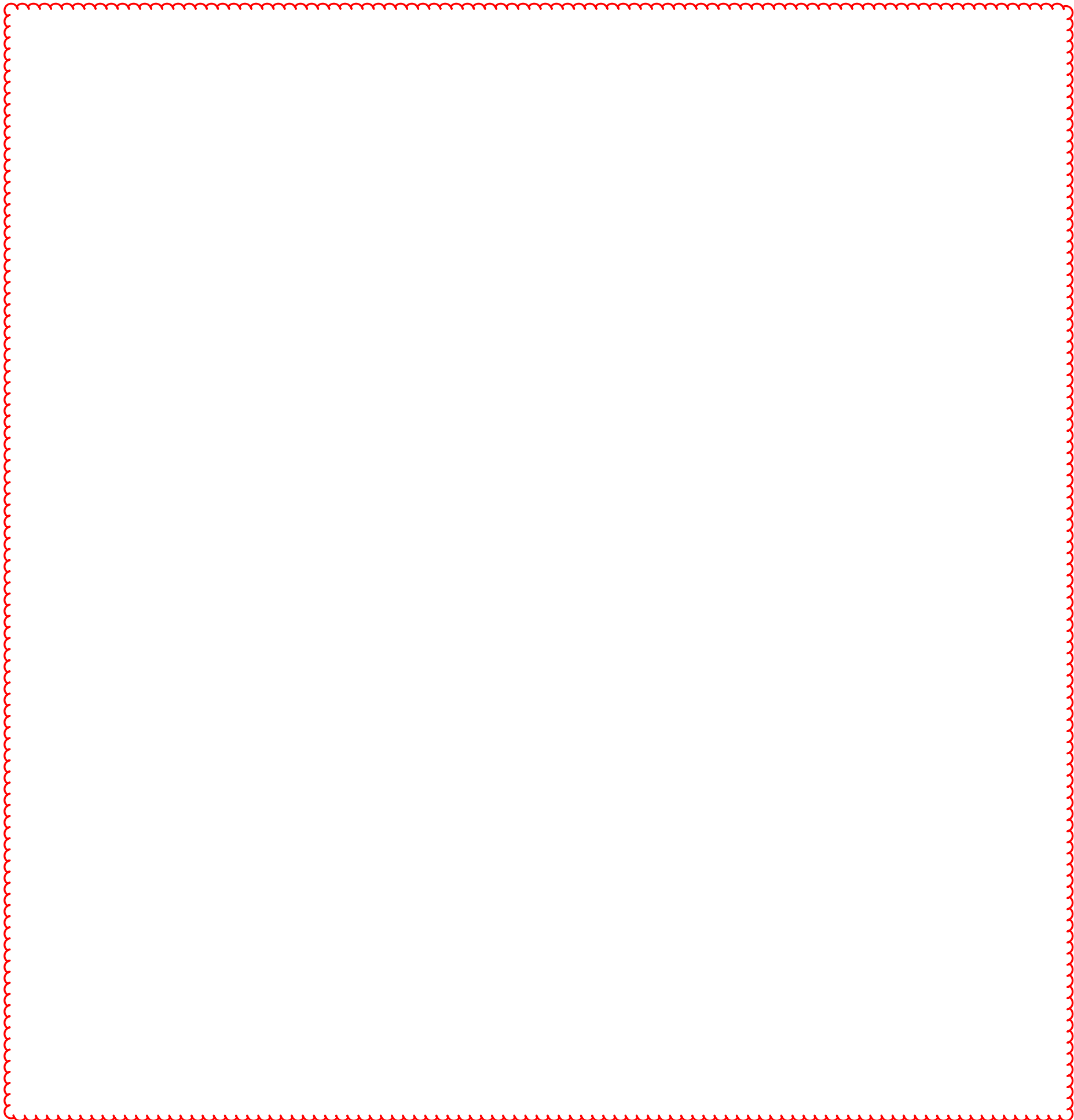
Item 606 – MGS Bridge Terminal Assembly, Type 1,
As Per Plan **1 Each**

Item 624 – Mobilization, As Per Plan (WORK ORDER)

This item of work corresponds to the number of Maintenance of Traffic Set-Ups provided in support of work driven by Work Orders.

Payment for the above shall be included in the unit bid price for:

Item 624 – Mobilization, As Per Plan (WORK ORDER)..... 100 Each



Item 606 – Impact Attenuator, Misc.: Type 2, ...

The items listed below will be used to rebuild a damaged impact attenuator. The bid price for each item listed below will include all equipment labor and materials (listed item plus any associated items required and not listed separately, such as hardware,etc).

The following items have been provided to repair damaged Impact Attenuator, Type 2 :

Item 606 – Impact Attenuator Misc.: (Type 2),
(Quadguard), Attenuator Reset **2 Each**

Item 606 – Impact Attenuator Misc.: (Type 2),
(Quadguard), Cartridge Insert, Type 1 **4 Each**

Item 606 – Impact Attenuator Misc.: (Type 2),
(Quadguard), Cartridge Insert, Type 2 **4 Each**

Item 606 – Impact Attenuator Misc.: (Type 2),
(Quadguard), Diaphragm, (24”-36”) **2 Each**

Item 606 – Impact Attenuator Misc.: (Type 2),
(Quadguard), Diaphragm, (69”-90”) **1 Each**

Item 606 – Impact Attenuator Misc.: (Type 2),
(Quadguard), Fender Panel, **2 Each**

Item 606 – Impact Attenuator Misc.: (Type 2),
(Quadguard), Nose Assembly **4 Each**

Item 606 – Impact Attenuator Misc.: (Type 2),
(Quadguard), Side Panel **1 Each**

Item 606 – Impact Attenuator Misc.: (Type 2), (Quadguard), Attenuator Reset, will include all work, equipment, and material necessary to reset a Type 2, Quadguard impact attenuator as listed on the O.D.O.T. - The Office of Roadway Engineering Website.

Item 606 – Impact Attenuator Misc.: (Type 2), (Quadguard), Cartridge Insert, (Type 1 or 2) will include all work, equipment, and material necessary to install a new cartridge insert for any of Type 2, Quadguard impact attenuators as listed on the O.D.O.T. - The Office of Roadway Engineering Website.

Item 606 – Impact Attenuator Misc.: (Type 2), (Quadguard), Diaphragm, (24”-36”, 69”-90”) will include all work, equipment, and material necessary to install a new diaphragm for any of Type 2, Quadguard impact attenuators as listed on the O.D.O.T. - The Office of Roadway Engineering Website.

Item 606 – Impact Attenuator Misc.: (Type 2), (Quadguard), Nose Assembly will include all work, equipment, and material necessary to install a new nose assembly for any of Type 2, Quadguard impact attenuators as listed on the O.D.O.T. - The Office of Roadway Engineering Website
After preparation cleaning of the front of the nose assembly,
The face of the impact head shall be covered with Type G reflective sheeting, per CMS 730.19

Item 606 – Impact Attenuator Misc.: (Type 2), (Quadguard), Side Panel will include all work, equipment, and material necessary to install a new side panel for any of Type 2, Quadguard impact attenuators as listed on the O.D.O.T. - The Office of Roadway Engineering Website.

The Contractor shall refer to the O.D.O.T. - The Office of Roadway Engineering Website for the O.D.O.T. approved shop drawings for Impact Attenuator, ODOT Type 2, Quadguard.

Be reminded as described above the items listed will include all associated items not listed separately (ie bolts, nuts, washers, etc.) The intent is to pay for any of the damaged items listed above and the impact attenuator will be rebuilt so as to create a fully functional impact attenuator.

The reinstallation or reattachment of existing components deemed reusable by the Engineer, and which are necessary to create a fully functional impact attenuator, and the removal and disposal of damaged materials, will be considered incidental to the work and not paid for separately.

DESIGN AGENCY



DESIGNER

JAG

REVIEWER

DAB 02/03/25

PROJECT ID

110600

SHEET

P.09

TOTAL

26

MODEL: Sheet PAPER:SIZE: 34x22 (in.) DATE: 4/11/2025 TIME: 11:27:26 AM USER: jgmoveuse
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SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
3	4	5	6	7	8	9	10	13	14	18	19	01/NFP/21	02/IMS/21						
											202		202	202	30701	202	FT	ROADWAY	
6,000										7,781		6,000	7,781	202	38000	13,781	FT	CONCRETE BARRIER REMOVED, AS PER PLAN	6
2												2		202	42000	2	EACH	GUARDRAIL REMOVED	
4												4		202	42040	4	EACH	ANCHOR ASSEMBLY REMOVED, TYPE A	
50												50		202	42206	50	EACH	ANCHOR ASSEMBLY REMOVED, TYPE T	
25												25		202	47000	25	EACH	ANCHOR ASSEMBLY REMOVED	
																		BRIDGE TERMINAL ASSEMBLY REMOVED	
										3			3	202	98100	3	EACH	REMOVAL MISC.:IMPACT ATTENUATOR REMOVED, AS PER PLAN	6
											36		36	203	10001	36	CY	EXCAVATION, AS PER PLAN	11
										86			86	209	15001	86	STA	RESHAPING UNDER GUARDRAIL, AS PER PLAN	10
300												300		606	12000	300	FT		
1,000												1,000		606	13000	1,000	FT	GUARDRAIL, TYPE 5MR	
100												100		606	13050	100	FT	GUARDRAIL, TYPE 5	
																		GUARDRAIL, TYPE 5A	
6,000										7,307		6,000	7,307	606	15050	13,307	FT	GUARDRAIL, TYPE MGS	
200												200		606	15100	200	FT	GUARDRAIL, TYPE MGS WITH LONG POSTS	
300										62.5		300	62.5	606	15150	362.5	FT	GUARDRAIL, TYPE MGS HALF POST SPACING	
300												300		606	15250	300	FT	GUARDRAIL, TYPE MGS QUARTER POST SPACING	
300												300		606	15500	300	FT	GUARDRAIL, BARRIER DESIGN, TYPE 5	
										37.5			37.5	606	15550	37.5	FT	GUARDRAIL, BARRIER DESIGN, TYPE MGS	
			600									600		606	16051	600	FT	GUARDRAIL REBUILT, TYPE MGS, AS PER PLAN	6
			100									100		606	16301	100	FT	GUARDRAIL REBUILT, TYPE 5MR, AS PER PLAN	6
			200									200		606	16501	200	FT	GUARDRAIL REBUILT, TYPE 5A, AS PER PLAN	6
			25									25		606	16701	25	FT	GUARDRAIL REBUILT, TYPE 5, AS PER PLAN	6
		11								4		11	4	606	26050	15	EACH	ANCHOR ASSEMBLY, TYPE 5A, AS PER PLAN	
			60							8		60	8	606	26150	68	EACH	ANCHOR ASSEMBLY, MGS TYPE B (MASH 2016)	
																		ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)	
5												5		606	26500	5	EACH	ANCHOR ASSEMBLY, TYPE T	
15										14		15	14	606	26550	29	EACH	ANCHOR ASSEMBLY, TYPE T	
					2							2		606	27901	2	EACH	ANCHOR ASSEMBLY REBUILT, TYPE T, AS PER PLAN	8
					2							2		606	27911	2	EACH	ANCHOR ASSEMBLY REBUILT, MGS TYPE T, AS PER PLAN	8
4												4		606	35000	4	EACH		
10										11		10	11	606	35002	21	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
						1						1		606	35003	1	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
					2							2		606	35011	2	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN	9
					2							2		606	35013	2	EACH	BRIDGE TERMINAL ASSEMBLY REBUILT, TYPE 1, AS PER PLAN	8
																		MGS BRIDGE TERMINAL ASSEMBLY REBUILT, TYPE 1, AS PER PLAN	8
5												5		606	35100	5	EACH		
										3			3	606	35102	3	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
2												2		606	35170	2	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	
					2							2		606	35181	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE BR-1	
																		BRIDGE TERMINAL ASSEMBLY REBUILT, TYPE BR-1, AS PER PLAN	8
				100								100		SPECIAL	60655020	100	FT		
				4								4		SPECIAL	60655110	4	EACH	CABLE BARRIER, REPLACEMENT CABLE	7
				8								8		SPECIAL	60655120	8	EACH	CABLE BARRIER, CONCRETE ANCHOR FOUNDATION WITH SLEEVE	7
				4								4		SPECIAL	60655130	4	EACH	CABLE BARRIER, CONCRETE SOCKETED FOUNDATION	7
				10								10		SPECIAL	60655140	10	EACH	CABLE BARRIER, TERMINAL POST, CAST IN PLACE	7
																		CABLE BARRIER, ANCHOR POST	7
				1								1		SPECIAL	60655150	1	EACH		
				1								1		SPECIAL	60655160	1	EACH	CABLE BARRIER, ANCHOR ASSEMBLY	7
				4								4		SPECIAL	60655170	4	EACH	CABLE BARRIER, TERMINAL STRUT	7
				4								4		SPECIAL	60655180	4	EACH	CABLE BARRIER, TURNBUCKLE	7
				4								4		SPECIAL	60655190	4	EACH	CABLE BARRIER, SPLICE	7
														SPECIAL	60655200	4	EACH	CABLE BARRIER, POST REFLECTOR	7
				8								8		SPECIAL	60655200	8	EACH	CABLE BARRIER, TENSIONING (3 CABLES)	7
				8								8		SPECIAL	60655200	8	EACH	CABLE BARRIER, TENSIONING (4 CABLES)	7
				2								2		SPECIAL	60655210	2	EACH	CABLE BARRIER, ANCHOR RECONSTRUCTED	7
				4								4		SPECIAL	60655220	4	EACH	CABLE BARRIER, ANCHOR POST RESET	7

GENERAL SUMMARY

DESIGN AGENCY



DESIGNER

JAG

REVIEWER

DAB 02/03/25

PROJECT ID

110600

SHEET

P.15

TOTAL

26

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SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
3	4	5	6	7	8	9	10	13	14	18	19	01/NFP/21	02/IMS/21						
			12							3		12	3	606	60002	15	EACH	ROADWAY IMPACT ATTENUATOR, TYPE 1 (UNIDIRECTIONAL) (MASH 2016)	
					2							2		606	61000	2	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 1), (MATT), #1 BOTTOM POST	8
					7							7		606	61000	7	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 1), (MATT), #1 TOP POST	8
					14							14		606	61000	14	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 1), (MATT), 6 - 3 FT, 10 GAUGE, SLOTTED RAIL	8
					14							14		606	61000	14	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 1), (MATT), 6 - 3 FT, 12 GAUGE, SLOTTED RAIL	8
					3							3		606	61000	3	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 1), (MATT), 6 FT, STEEL POST (NON-YIELDING)	8
					30							30		606	61000	30	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 1), (MATT), 6 FT, STEEL POST (YIELDING)	8
					6							6		606	61000	6	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 1), (MATT), 9 - 4 FT, 12 GAUGE, SLOTTED RAIL	8
					7							7		606	61000	7	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 1), (MATT), CABLE ASSEMBLY	8
					7							7		606	61000	7	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 1), (MATT), IMPACT HEAD, RAILS AND TUBE ASSEMBLY	8
					2							2		606	61000	2	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 1), (MATT), STRUT	8
					10							10		606	61000	10	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 1), 12.5 FT SLOTTED PANEL	8
					10							10		606	61000	10	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 1), 3.5 FT POST	8
					10							10		606	61000	10	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 1), CABLE ASSEMBLY	8
					10							10		606	61000	10	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 1), NOSE AND SIDE PLATES	8
						2						2		606	61000	2	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 2), (QUADGUARD), ATTENUATOR RESET	9
						4						4		606	61000	4	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 2), (QUADGUARD), CARTRIDGE INSERT, TYPE 1	9
						4						4		606	61000	4	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 2), (QUADGUARD), CARTRIDGE INSERT, TYPE 2	9
						2						2		606	61000	2	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 2), (QUADGUARD), DIAPHRAGM, (24"-36")	9
						1						1		606	61000	1	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 2), (QUADGUARD), DIAPHRAGM, (69"-90")	9
						2						2		606	61000	2	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 2), (QUADGUARD), FENDER PANEL	9
						4						4		606	61000	4	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 2), (QUADGUARD), NOSE ASSEMBLY	9
						1						1		606	61000	1	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 2), (QUADGUARD), SIDE PANEL	9
							2					2		606	61000	2	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 3), ATTENUATOR RESET	10
							2					2		606	61000	2	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 3), CARTRIDGE INSERT	10
							1					1		606	61000	1	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 3), CYLINDER INSERT	10
							2					2		606	61000	2	EACH	IMPACT ATTENUATOR, MISC.:(TYPE 3), NOSE PLATE ASSEMBLY	10
50												50		606	71000	50	FT	THRIE BEAM GUARDRAIL	
	2											2		606	98100	2	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY, TYPE E, (MASH 2016), SOFTSTOP, ANCHOR PADDLE	4
	2											2		606	98100	2	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY, TYPE E, (MASH 2016), SOFTSTOP, ANCHOR POST (POST 0)	4
	2											2		606	98100	2	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY, TYPE E, (MASH 2016), SOFTSTOP, ANCHOR RAIL 12'-6"	4
	2											2		606	98100	2	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY, TYPE E, (MASH 2016), SOFTSTOP, ANGLE STRUT	4
	2											2		606	98100	2	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY, TYPE E, (MASH 2016), SOFTSTOP, IMPACT HEAD	4
	2											2		606	98100	2	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY, TYPE E, (MASH 2016), SOFTSTOP, OFFSET BLOCK	4
	2											2		606	98100	2	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY, TYPE E, (MASH 2016), SOFTSTOP, SYSTEM LINE POST 6'-0"	4
	2											2		606	98100	2	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY, TYPE E, (MASH 2016), SOFTSTOP, SYSTEM RAIL 12'-6"	4
	2											2		606	98100	2	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY, TYPE E, (MASH 2016), SOFTSTOP, SYTP (STEEL YIELDING TERMINAL POST) 4'-9 ½"	4
	2											2		606	98100	2	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY, TYPE E, (MASH 2016), SOFTSTOP, SYTP (STEEL YIELDING TERMINAL POST) 6'-0"	4
		5										5		606	98100	5	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY,TYPE B, 12.5 FT. RAIL ELEMENT	5
		5										5		606	98100	5	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY,TYPE B, BREAKAWAY WOOD POST, 3.75 FT.	5
		5										5		606	98100	5	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY,TYPE B, BREAKAWAY WOOD POST, 6 FT.	5
		5										5		606	98100	5	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY,TYPE B, BUFFERED END SECTION	5
		5										5		606	98100	5	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY,TYPE B, CABLE ASSEMBLY	5
		5										5		606	98100	5	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY,TYPE B, MGS, 9.375 FT. RAIL ELEMENT	5
		4										4		606	98100	4	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY,TYPE B, OFFSET STRUT	5
		5										5		606	98100	5	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY,TYPE B, STEEL POST (BOTTOM)	5
		5										5		606	98100	5	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY,TYPE B, STEEL POST (TOP)	5
		5										5		606	98100	5	EACH	GUARDRAIL, MISC.:ANCHOR ASSEMBLY,TYPE B, YIELDING STEEL POST	5

GENERAL SUMMARY

DESIGN AGENCY



DESIGNER

JAG

REVIEWER

DAB 02/03/25

PROJECT ID

110600

SHEET

P.16


TOTAL

26

REF. NO.	PLAN SPLIT NO.	GUARDRAIL EXISTING IR-271		GUARDRAIL PROPOSED IR-271		DIRECTION	SIDE		202	606	606		606	606	606	606	606	209	441		626	620	620	609	202	606	606
		FROM	TO	FROM	TO				FT	FT	FT		ANCHOR ASSEMBLY, MGS TYPE B (MASH 2016)	ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)	ANCHOR ASSEMBLY, MGS TYPE T	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	RESHAPING UNDER GUARDRAIL, AS PER PLAN	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (449), (UNDER GUARDRAIL), AS PER PLAN		BARRIER REFLECTOR, TYPE 2, ONE WAY	DELINEATOR, POST GROUND MOUNTED, TYPE C	DELINEATOR, POST GROUND MOUNTED, TYPE D	CURB, TYPE 4-C	REMOVAL MISC.:IMPACT ATTENUATOR REMOVED, AS PER PLAN	GUARDRAIL, BARRIER DESIGN, TYPE MGS	IMPACT ATTENUATOR, TYPE 1 (UNIDIRECTIONAL) (MASH 2016)
													EACH	EACH	EACH	EACH	EACH	STA	CY		EACH	EACH	EACH	FT	EACH	FT	EACH
GR61	2	102+85	117+00	102+85.00	117+00.00	SB	RT	RMP S-WE	1412.5	1375	25		1		1			14.1	39.3		17						
GR61	2	417+00	422+04	417+00.00	422+04.00	SB	RT	MAINLINE	500	462.5								5.1	14.3		7	1					
GR62	2	103+93.00	109+53.00	103+93.00	109+53.00	SB	LT	RMP S-WE	562.5	500				1	1			5.6	15.7		8		1				
GR63	2	399+72.00	409+46.00	399+72.00	409+46.00	SB	RT	MAINLINE	962.5	887.5				1		1		9.6	26.8		12	1		20			
GR64	2	399+83.00	402+60.00	399+83.00	402+92.50	SB	LT	MAINLINE	262.5	237.5						1		3.1	8.6		6			20	1	12.5	1
GR65	2	399+88.00	402+60.00	399+88.00	402+46.00	SB	RT	EXPRESS	250	237.5						1		2.6	7.3		5			20			
GR66	2	400+05.00	400+30.00	400+05.00	400+30.00	NB	RT	EXPRESS	25	12.5					1		1	0.4	1.1		3						
GR67	2	400+10.00	400+35.00	400+10.00	400+35.00	NB	LT	MAINLINE	25	12.5					1		1	0.4	1.1		3						
GR68	2	400+23.00	409+73.00	400+10.00	400+23.00	NB	RT	MAINLINE	962.5	937.5					1		1	9.6	26.8		12						
GR69	2	418+17.00	419+90.00	418+17.00	419+90.00	NB	RT	MAINLINE	175	112.5	12.5		1		1			1.9	5.3		4	1					
GR70	2	426+41.00	427+79.00	426+41.00	427+79.00	SB	RT	MAINLINE	137.5	75				1	1			1.4	3.9		4	1					
GR71	2	426+44.00	429+06.00	426+44.00	429+06.00	SB	LT	MAINLINE	262.5	200				1	1			2.6	7.3		5		1				
GR72	2	426+44.00	429+06.00	426+44.00	429+06.00	SB	RT	EXPRESS	262.5	200				1	1			2.6	7.3		5	1					
GR73	2	426+63.00	430+38.00	426+63.00	430+38.00	NB	RT	MAINLINE	375	300	25		1		1			3.9	10.8		6	1					
GR73A	2	NW-QUADRANT BRDG PARAPET		NW-QUADRANT BRDG PARAPET		WB	RT	CHAGRIN BLVD	150	112.5					1	1		1.5	4.2		4	1					
GR73B	2	SW-QUADRANT BRDG PARAPET		SW-QUADRANT BRDG PARAPET		EB	RT	CHAGRIN BLVD	137.5	62.5				1		1		1.4	3.9		4	1					
GR73C	2	SE-QUADRANT BRDG PARAPET		SE-QUADRANT BRDG PARAPET		EB	RT	CHAGRIN BLVD	118.5	81.25					1	1		1.2	3.3		4	1					
GR73D	2	NE-QUADRANT BRDG PARAPET		NE-QUADRANT BRDG PARAPET		WB	RT	CHAGRIN BLVD	150	75				1		1		1.5	4.2		4	1					
GR74	2	446+19.00	448+89.00	444+67.00	448+89.00	NB	RT	EXPRESS	250	362.5					1			4.2	11.7		7				1	12.5	1
GR75	2	446+43.00	447+75.00	445+00.00	447+75.00	NB	RT	MAINLINE	137.5	237.5						1		2.6	7.3		5			20			
GR76	2	446+42.00	447+28.00	446+42.00	447+30.00	NB	RT	MAINLINE	87.5	25			1			1		1.0	2.8		3	1					
GR77	2	450+00.00	452+71.00	449+90.00	452+75.00	SB	RT	MAINLINE	275	212.5				1		1		2.9	8		5	1		20			
GR78	2	449+40.00	450+65.00	449+40.00	452+50.00	SB	LT	MAINLINE	100	237.5						1		3.1	8.6		6			20	1	12.5	1
GR79	2	448+43.00	450+42.00	448+43.00	452+05.00	SB	RT	EXPRESS	200	350					1			3.6	10.1		6						
TOTALS CARRIED TO GENERAL SUMMARY									7781	7307	62.5		4	8	14	11	3	86	240		145	12	2	120	3	37.5	3
PLAN SPLIT #1 TOTAL																											
PLAN SPLIT #2 TOTAL									7,781	7,307	62.5		4.00	8	14	11	3	86	240		145	12	2	120	3	37.5	3

LOCATION 1 - SUB-SUMMARY

DESIGN AGENCY



DESIGNER
JAG

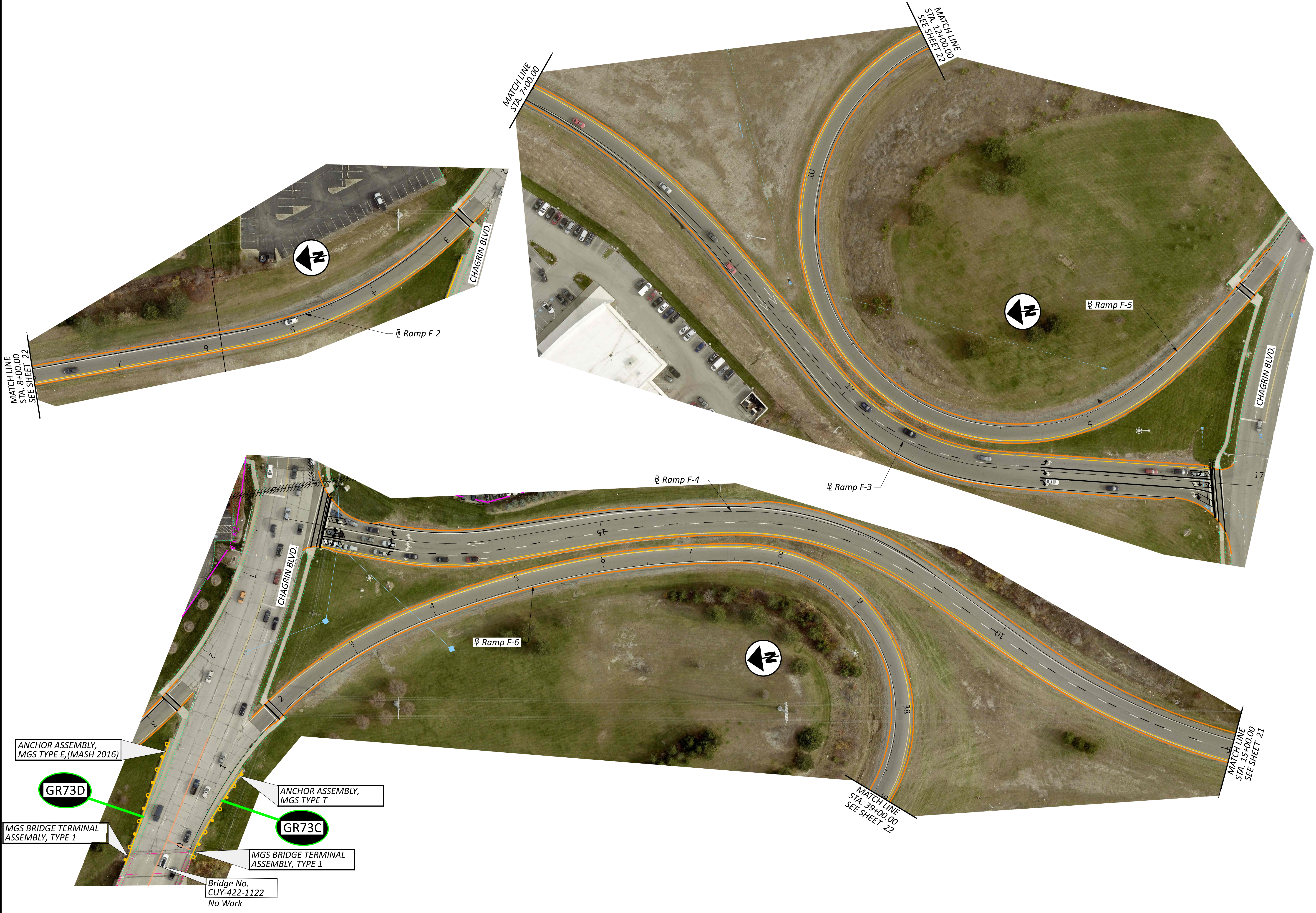
REVIEWER
DAB 02/03/25

PROJECT ID
110600

SHEET
P.18

TOTAL
26

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HORIZONTAL
SCALE IN FEET

LOCATION 1 - I.R.-271

Ramps F-2, F-3, F-4, and F-6

DESIGN AGENCY



DESIGNER

JAG

REVIEWER

DAB 02/03/25

PROJECT ID

110600

SHEET	TOTAL
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