

ITEM 618 RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)

Rumble strip locations shall follow SCD BP-9.1 except the lateral offset on the inside shoulders shall be the 24" maximum.

The following quantity has been carried to the General Summary:

ITEM 618 RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE) 17.46 mile

Calculation:

Resurfacing limits:
LIC-37-15.14 - Sta. 623+00.00 = 100 FT
Sta. 623+00.00 - Sta. 855+00.00 = 23,200 FT

Bridge deduction:
(Sta. 747+96.78 - Sta. 750+51.79 = 255.01 FT)

Total:
100 + 23,200 + (-255.01) = 23,044.99 FT

Inside shoulders E.B. & W.B. (Plan Split 01/NHS)
(23,044.99 X 2) ÷ 5280 = 8.73 Mile

Outside shoulders E.B. & W.B. (Plan Split 02/NHS)
(23,044.99 X 2) ÷ 5280 = 8.73 Mile

Total: 8.73 + 8.73 = 17.46 Mile

ITEM 209 LINEAR GRADING

The following quantity has been included in the General Summary for final resurfacing operations:

ITEM 209 LINEAR GRADING 10.18 MILE

Inside Shoulders: S.L.M. 15.14 to Sta. 639+65 = 1765 FT
Sta. 833+78 to Sta. 855+00 = 2122 FT
E.B. & W.B. = 2 * (2122 + 1765) = 7774 FT

Outside Shoulders: S.L.M. 15.14 to Sta. 855+00 = 23,300 FT
(Deductions):
Structure LIC-16-1416 = (-85 FT)
Structure LIC-16-1559L/R = (-250 FT)
E.B. & W.B. = 2 * (23,300 - 85 - 250) = 45,930

Total (Plan Split 02/NHS) = (7774 + 45,930) ÷ 5280 = 10.18 MILE

ITEM 630 GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN
ITEM 630 GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN

Sign post supports shall conform to SCD TC-41.20, except only the Type S post with anchor base shall be furnished for this project. The Type P and Type F posts will not be accepted.

ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN

In addition to the requirements of ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, the Contractor shall provide the following information to the Department:

The Contractor shall provide as-built data for the specified completed construction items in Ohio State Plane Coordinates (GRID). The construction items shall be located as per the survey feature code list found on the Ohio Department of Transportation Office of CADD & Mapping Services website. An email containing a comma delimited ASCII file and a surveyor's certification shall be delivered to the Project Engineer and to Cody.Gierhart@dot.ohio.gov after all information has been collected. The ASCII file shall include a header containing name of surveyor, date(s) of collection, horizontal datum (i.e. NAD83 (2011)), Ohio State Plane Coordinate System (North or South), vertical datum (i.e. NAVD 88, Geoid12A) and method of collection (i.e. Ohio VRS, GPS RTK, Total Station, etc.), and be in a table format as follows: point number, Northing, Easting, elevation, feature code, description.

Below is a list of the items the Contractor is required to provide:

- barrier (guardrail, concrete, cable)
- anchor assemblies
- permanent impact attenuators
- BMP's
- culverts (inlet invert, outlet invert, size and type)
- storm sewer outlets (outlet invert, size and type)
- catch basin, manholes, and inlets
- underdrain outlets
- signs (with description)
- ITS pull boxes and junction boxes

The above items shall be collected using survey grade equipment meeting the requirements of Section 400 in the Ohio Department of Transportation Survey & Mapping Specifications Manual.

All cost associated with obtaining the information listed above shall be included in the lump sum bid price for ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN.

The following quantity has been included in the general summary to perform the work as described above:

ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN LS

ITEM 606 IMPACT ATTENUATOR, TYPE 1 (BIDIRECTIONAL)

This item shall consist of furnishing and installing any one of the Type 1 Impact Attenuators as listed on the Office of Roadway Engineering's webpage. Installation shall be at the locations specified in the plans, in accordance with the manufacturer's specifications.

Payment for the above work shall be made at the unit price bid for ITEM 606, IMPACT ATTENUATOR, TYPE 1 (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.

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, beam splice as shown in AASHTO M 180-12, except the beam washers are not to be used. Payment shall be included in the contract unit price for the respective guardrail items.

ITEM 606 ANCHOR ASSEMBLY, MGS TYPE E

This item shall consist of furnishing and installing any of the 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, 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, 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.

ITEM 690 SPECIAL - NO MOW STRIP

A 4 inch thick no mow strip shall be constructed with materials conforming to ITEM 608 CONCRETE WALK. The no mow strip shall be placed on compacted earth and constructed using Class QC1 concrete with a curing compound meeting the specifications of CMS 705.07.

The no mow strip shall be integral to the socketed concrete foundation or have an expansion joint with materials meeting the requirements of CMS 705.03, between the socketed concrete foundation and the concrete no mow strip.

The no mow strip shall have a transverse joint every 8 feet and an expansion joint every 100 feet. The joints and materials to construct the joints shall conform to CMS 608.06C.

If material from the excavation of the no mow strip and the socketed concrete foundation is watered adjacent to the no mow strip, the area shall be seeded and mulched to the specifications of CMS 659. Payment for this work is included in the unit bid price for ITEM 690 SPECIAL - NO MOW STRIP.

All excavation, subgrade compaction, material, labor, and equipment to construct the concrete no mow strip shall be paid under ITEM 690 SPECIAL - NO MOW STRIP.

ITEM 606 CABLE GUARDRAIL

This item shall consist of furnishing and installing any one of the high tension four cable guardrail systems as listed on the Office of Roadway Engineering's web page. Payment for the above work shall be made at the unit price bid for ITEM 606 CABLE BARRIER WITH CONCRETE LINE POST FOUNDATION, and ITEM 606 CABLE BARRIER, ANCHOR ASSEMBLY and shall include all labor, tools, equipment and materials necessary to construct a complete and functional high tension cable guardrail system not separately specified, as required by the manufacturer. The length of the tensioned cable necessary to install a functional anchor system shall be included in ITEM 606 CABLE BARRIER WITH CONCRETE LINE POST FOUNDATION.

Installation shall be at the locations specified in the plans, in accordance with the manufacturer's specifications.

Systems shall have a maximum deflection of 8 feet and the maximum longitudinal distance between posts shall be 15 feet.

Installation will be a four cable high tension system installed in socketed posts foundation with a four foot wide "no mow strip".

Delineate the cable barrier using Type 6 barrier reflectors per Item 626 or using flexible posts per Item 620 as called for in the plans or directed by the Engineer.

Anchor terminal struts shall be covered completely on both sides with yellow reboundable retroreflective sheeting, per CMS 730.191.

Transitions to W-Beam guardrail are not allowed.

Refer to manufacturer for maximum offset from break point.

Torpedo or bullet splices are not allowed. All cable splices shall be swaged or open body design that allows for annual inspection between the wedge and strands of cable.

Posts are set in socketed concrete foundations and shall not be permanently installed until their respective runs of tensioned cable guardrail are ready for final connection to the end terminal assembly. The Contractor shall replace any posts damaged during installation as determined by the Engineer at no additional cost to the State.

Where a proposed anchor assembly is terminating an existing run of cable barrier, the type of anchor assembly shall be of the same type of system as the existing cable barrier run.



DESIGNER
BRH

REVIEWER

CMY 09/05/25

PROJECT ID

95445

SHEET

TOTAL

P.22

895

SHEET NO.	LOCATION	411		611		611		611		611		614		614		614		614		614		614		614		614		615		621		621		622															
		STABILIZED CRUSHED AGGREGATE		15" CONDUIT, TYPE B, AS PER PLAN		SLOTTED DRAIN, TYPE 2, AS PER PLAN		CATCH BASIN, NO. 4 WITHOUT APRON, AS PER PLAN		CATCH BASIN, NO. 6, AS PER PLAN		CATCH BASIN RECONSTRUCTED TO GRADE, AS PER PLAN		INCREASED BARRIER DENLINEATION		WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)		WORK ZONE RAISED PAVEMENT MARKER, (ONE WAY WHITE)		WORK ZONE RAISED PAVEMENT MARKER, (ONE WAY YELLOW)		BARRIER REFLECTOR, TYPE 1 (ONE WAY)		BARRIER REFLECTOR, TYPE 1 (BIDIRECTIONAL)		OBJECT MARKER, ONE WAY		WORK ZONE LANE LINE, CLASS I, 6", 642 PAINT		WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT (WHITE)		WORK ZONE CHANNELIZING LINE, CLASS I, 8", 642 PAINT		WORK ZONE DOTTED LINE, CLASS I, 6", 642 PAINT (WHITE)		WORK ZONE STOP LINE, CLASS I, 642 PAINT		WORK ZONE ARROW, CLASS I, 642 PAINT		PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A		RPM (ONE WAY WHITE)		RAISED PAVEMENT MARKER REMOVED		PORTABLE BARRIER, UNANCHORED		GLARE SCREEN	
		CY		FT		FT		EACH		EACH		FT		EACH		EACH		EACH		EACH		EACH		MILE		MILE		FT		FT		EACH		SY		EACH		RPM (ONE WAY WHITE)		EACH		FT		FT					
PLAN SPLIT 02/NHS																																																	
P.375	STA. 623+00 - 625+00																																																
P.376	STA. 625+00 - 630+00																																																
P.377	STA. 630+00 - 635+00																																																
P.378	STA. 635+00 - 640+00																																																
P.379	STA. 640+00 - 645+00																																																
P.380	STA. 645+00 - 650+00																																																
P.381	STA. 650+00 - 655+00																																																
P.382	STA. 655+00 - 660+00																																																
P.383	STA. 660+00 - 665+00																																																
P.384	STA. 665+00 - 670+00																																																

MOT ESTIMATED QUANTITIES TOTALS