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**ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN**

PORTIONS OF THE EXISTING CONCRETE BARRIER ALONG IR 77 SHALL BE REMOVED TO PROVIDE ACCESS TO PIER 1 AND PIER 3 AT LOCATION 5: CUY-77-0223 (OAKES ROAD OVER IR 77); PORTIONS OF THE EXISTING CONCRETE BARRIER ALONG IR 480 RAMP SHALL BE REMOVED TO PROVIDE ACCESS TO PIER 1 AT LOCATION 6: CUY-77-0881 (IR 77 RAMP OVER IR 480 RAMP) AND PORTIONS OF THE EXISTING CONCRETE BARRIER ALONG IR 271 SHALL BE REMOVED TO PROVIDE ACCESS TO PIER 2 AND PIER 4 AT LOCATION 10: CUY-422-1122 (US 422 [CHAGRIN BOULEVARD] OVER IR 271).

IN ADDITION TO CMS ITEM 202, THIS ITEM SHALL INCLUDE SAWCUTTING THE EXISTING ASPHALT PAVEMENT AT A DISTANCE OF 4" FROM THE TOE OF THE EXISTING CONCRETE BARRIER; CAREFULLY REMOVING 4" OF THE ASPHALT PAVEMENT ADJACENT AND PARALLEL TO THE EXISTING CONCRETE BARRIER; AND SAWCUTTING THE EXISTING CONCRETE BARRIER TO BE REMOVED. THE EXISTING CONCRETE BARRIER SAWCUTS SHALL BE LOCATED AT THE EXISTING CONTRACTION JOINTS AROUND THE EXISTING REBAR AND CHIPPING THE CONCRETE AWAY LEAVING THE EXISTING REBAR IN PLACE. THE LENGTH OF EXISTING CONCRETE BARRIER TO BE REMOVED SHALL BE DETERMINED BASED ON THE DISTANCE REQUIRED TO PERFORM THE PIER REPAIRS. THE CONCRETE BARRIER END SECTIONS SHALL REMAIN AND SHALL NOT BE DISTURBED.

ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS REQUIRED TO PERFORM THIS WORK, TO THE SATISFACTION OF THE ENGINEER, SHALL BE INCLUDED WITH ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN FOR PAYMENT.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE PLANS AND CARRIED TO THE GENERAL SUMMARY:

LOCATION 5: CUY-77-0223 (OAKES ROAD OVER IR 77)	
ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN	<u>80</u> FT
LOCATION 6: CUY-77-0881 (IR-77 RAMP OVER IR 480 RAMP)	
ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN	<u>54</u> FT
LOCATION 10: CUY-422-1122 (US 422 [CHAGRIN BOULEVARD] OVER IR 271)	
ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN	<u>240</u> FT

**ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN (A)**

THE EXISTING CONCRETE BARRIER ALONG IR 71 SHALL BE REMOVED TO PROVIDE ACCESS TO PIER 1 AND PIER 3 AT LOCATION 3: CUY-71-0467 (WHITNEY ROAD OVER IR 71). IN ADDITION TO CMS ITEM 202, THIS ITEM SHALL INCLUDE SAWCUTTING THE EXISTING ASPHALT PAVEMENT AT A DISTANCE OF 4" FROM THE TOE OF THE EXISTING BARRIER AND CAREFULLY REMOVING THE EXISTING CONCRETE BARRIER AND THE 4" OF ASPHALT PAVEMENT.

ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS REQUIRED TO PERFORM THIS WORK, TO THE SATISFACTION OF THE ENGINEER, SHALL BE INCLUDED WITH ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN (A) FOR PAYMENT.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PLANS AND CARRIED TO THE GENERAL SUMMARY:

LOCATION 3: CUY-71-0467 (WHITNEY ROAD OVER IR 71)	
ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN (A)	<u>110</u> FT
ITEM 202 - GUARDRAIL REMOVED	<u>275</u> FT

**ITEM 204 - PROOF ROLLING**

THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE CALCULATIONS AND CARRIED TO THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING. SEE PLAN SHEET 74 FOR ADDITIONAL INFORMATION.

ITEM 204 - PROOF ROLLING	<u>1</u> HOUR
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**ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E (NCHRP 350)**

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 A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

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 (NCHRP 350), 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 609 - CURB, TYPE 6, AS PER PLAN**

PORTIONS OF THE EXISTING CURB ALONG TURNEY ROAD SHALL BE REPLACED ALONG THE APPROACH SLABS AT LOCATION 14: CUY-480-2019 (TURNERY ROAD OVER IR 480), AND PORTIONS OF THE EXISTING CURB ALONG US 6A (DETROIT RD.) SHALL BE REPLACED AT THE REAR NW CORNER OFF THE APPROACH SLAB AT LOCATION 15: CUY-06A-0042 (US 6A [DETROIT ROAD] OVER ROCKY RIVER).

IN ADDITION TO CMS 609, THIS ITEM SHALL MATCH THE EXISTING CURB HEIGHT OF THE BRIDGE AND SMOOTHLY TRANSITION DOWN TO MATCH TO THE HEIGHT OF THE EXISTING CURB.

ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS REQUIRED TO PERFORM THIS WORK TO THE SATISFACTION OF THE ENGINEER, SHALL BE INCLUDED WITH ITEM 609 - CURB, TYPE 6, AS PER PLAN.

**ITEM 619 - FIELD OFFICE, TYPE B, AS PER PLAN**

A TYPE B FIELD OFFICE IS REQUIRED FOR THIS PROJECT. THE FOLLOWING REVISIONS TO EQUIPMENT SUPPLIED WITH THE TYPE B FIELD OFFICE, AS SPECIFIED IN CMS TABLE 619.02-1, FIELD OFFICE, SHALL APPLY:

THE COPIER SUPPLIED MUST MEET THE REQUIREMENTS OF THE COPIER SUPPLIED WITH THE TYPE C FIELD OFFICE.	
THE BROAD BAND INTERNET CONNECTION MUST MEET A MINIMUM DOWNLOAD SPEED OF 10MB PER SECOND AND A MINIMUM UPLOAD SPEED OF 5MB PER SECOND.	
THE CONTRACTOR SHALL FURNISH, SET-UP AND MAINTAIN A WI-FI ROUTER MEETING THE REQUIREMENTS OF IEEE 802.11ac FOR THE EXCLUSIVE USE OF THE DEPARTMENT.	
ALL OTHER FIELD OFFICE ITEMS SUPPLIED SHALL MEET THE REQUIREMENTS OF A TYPE B FIELD OFFICE.	
ITEM 619 - FIELD OFFICE, TYPE B, AS PER PLAN	<u>12</u> MNTH

**ASPHALT PAVEMENT PATCHING**

THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR PATCHING ANY DETERIORATED ASPHALT FOLLOWING THE BACKWALL REPAIRS AT LOCATION 6: CUY-77-0881 (IR 77 RAMP OVER IR 480 RAMP), THE APPROACH SLAB REPLACEMENT AT LOCATION 8: CUY-90-0683 (RAMP B OVER IR 90), AND THE JOINT REPAIRS AND CURB REPLACEMENT AT LOCATION 14: CUY-480-2019 (TURNERY ROAD OVER IR 480) AND IS TO BE USED AS DIRECTED BY THE ENGINEER.

THE FOLLOWING QUANTITY HAS BEEN PROVIDED IN THE GENERAL SUMMARY FOR THE ASPHALT PATCHING AT THE LOCATIONS PROVIDED ABOVE.:

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (441)	<u>10</u> CY
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THE ABOVE QUANTITY IS BASED ON A PAVEMENT WIDTH OF TWO FEET ALONG THE LENGTH OF THE ROADWAY AND AN ESTIMATED THICKNESS OF THREE INCHES.

THE COST OF ALL THE WORK DESCRIBED ABOVE INCLUDING LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO PERFORM THIS WORK TO THE SATISFACTION OF THE ENGINEER SHALL BE PAID FOR AT THE UNIT CONTRACT BID PRICE FOR ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (441).

**ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN**

PORTIONS OF THE EXISTING CONCRETE BARRIER ALONG IR 77 SHALL BE REPLACED AT PIER 1 AND PIER 3 OF LOCATION 5: CUY-77-0223 (OAKES ROAD OVER IR 77); PORTIONS OF THE EXISTING CONCRETE BARRIER ALONG IR 480 RAMP SHALL BE REPLACED AT PIER 1 OF LOCATION 6: CUY-77-0881 (IR 77 RAMP OVER IR 480 RAMP); AND PORTIONS OF THE EXISTING CONCRETE BARRIER ALONG IR 271 SHALL BE REPLACED AT PIER 2 AND PIER 4 OF LOCATION 10: CUY-422-1122 (US 422 [CHAGRIN BOULEVARD] OVER IR 271).

IN ADDITION TO CMS 622, THIS ITEM SHALL INCLUDE CONSTRUCTING A SPREAD FOOTING THAT EXTENDS FROM THE BACK OF THE BARRIER TO 4" FROM THE TOE OF THE CONCRETE BARRIER. THE SPREAD FOOTING SHALL BE PER STANDARD DRAWING RM-4.6. THE CROSS-SLOPE OF THE CONCRETE FOOTING SURFACE SHALL MATCH THE CROSS-SLOPE OF THE EXISTING ASPHALT PAVEMENT ADJACENT TO THE BARRIER. THE ELEVATION OF THE CONCRETE FOOTING SURFACE SHALL MATCH INTO THE EXISTING ADJACENT ASPHALT SURFACE. FORM THE BARRIER AROUND THE EXISTING REBAR TO MATCH INTO THE EXISTING CONCRETE END SECTION.

ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS REQUIRED TO PERFORM THIS ITEM, TO THE SATISFACTION OF THE ENGINEER, SHALL BE INCLUDED WITH ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN FOR PAYMENT.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PLANS AND CARRIED TO THE GENERAL SUMMARY:

LOCATION 5: CUY-77-0223 (OAKES ROAD OVER IR 77)	
ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN	<u>52</u> FT
LOCATION 6: CUY-77-0881 (IR 77 RAMP OVER IR 480 RAMP)	
ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN	<u>40</u> FT
LOCATION 10: CUY-422-1122 (US 422 [CHAGRIN BOULEVARD] OVER IR 271)	
ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN	<u>198</u> FT

**ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN (A)**

THE EXISTING CONCRETE BARRIER ALONG IR 71 SHALL BE REPLACED AT PIER 1 AND PIER 3 OF LOCATION 3: CUY-71-0467 (WHITNEY ROAD OVER IR 71). IN ADDITION TO CMS ITEM 622, THIS ITEM SHALL INCLUDE CONSTRUCTING A SPREAD FOOTING THAT EXTENDS FROM THE BACK OF THE BARRIER TO 4" FROM THE TOE OF THE CONCRETE BARRIER. THE SPREAD FOOTING SHALL BE PER THE STANDARD DRAWING RM-4.6. THE CROSS-SLOPE OF THE CONCRETE FOOTING SURFACE SHALL MATCH THE CROSS-SLOPE OF THE EXISTING ASPHALT PAVEMENT ADJACENT TO THE BARRIER. THE ELEVATION OF THE CONCRETE FOOTING SURFACE SHALL MATCH INTO THE EXISTING ADJACENT ASPHALT SURFACE.

ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS REQUIRED TO PERFORM THIS WORK, TO THE SATISFACTION OF THE ENGINEER, SHALL BE INCLUDED WITH ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN (A) FOR PAYMENT.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PLANS AND CARRIED TO THE GENERAL SUMMARY:

LOCATION 3: CUY-71-0467 (WHITNEY ROAD OVER IR 71)	
ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN (A)	<u>82</u> FT
ITEM 622 - CONCRETE BARRIER END SECTION, TYPE D	<u>2</u> EACH
ITEM 606 - MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	<u>2</u> EACH
ITEM 606 - GUARDRAIL, TYPE MGS	<u>150</u> FT
ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E (NCHRP 350)	<u>2</u> EACH

**ITEM 622 - CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D, AS PER PLAN**

PORTIONS OF THE EXISTING CONCRETE BARRIER ALONG IR 77 SHALL BE REPLACED AT PIER 1 AND PIER 3 OF LOCATION 5: CUY-77-0223 (OAKES ROAD OVER IR 77); PORTIONS OF THE EXISTING CONCRETE BARRIER ALONG IR 480 RAMP SHALL BE REPLACED AT PIER 1 OF LOCATION 6: CUY-77-0881 (IR 77 RAMP OVER IR 480 RAMP); AND PORTIONS OF THE EXISTING CONCRETE BARRIER ALONG IR 271 SHALL BE REPLACED AT PIER 2 AND PIER 4 OF LOCATION 10: CUY-422-1122 (CHAGRIN BOULEVARD] OVER IR 271).

IN ADDITION TO CMS 622, THIS ITEM SHALL INCLUDE CONSTRUCTING A SPREAD FOOTING THAT EXTENDS FROM THE BACK OF THE BARRIER TO 4" FROM THE TOE OF THE CONCRETE BARRIER. THE SPREAD FOOTING SHALL BE PER STANDARD DRAWING RM-4.6. THE CROSS-SLOPE OF THE CONCRETE FOOTING SURFACE SHALL MATCH THE CROSS-SLOPE OF THE EXISTING ASPHALT PAVEMENT ADJACENT TO THE BARRIER. THE ELEVATION OF THE CONCRETE FOOTING SURFACE SHALL MATCH INTO THE EXISTING ADJACENT ASPHALT SURFACE.

ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS REQUIRED TO PERFORM THIS ITEM, TO THE SATISFACTION OF THE ENGINEER, SHALL BE INCLUDED WITH ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN FOR PAYMENT.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE PLANS AND CARRIED TO THE GENERAL SUMMARY:

LOCATION 5: CUY-77-0223 (OAKES ROAD OVER IR 77)	
ITEM 622 - CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D, AS PER PLAN	<u>1</u> EACH
LOCATION 6: CUY-77-0881 (IR-77 RAMP OVER IR 480 RAMP)	
ITEM 622 - CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D, AS PER PLAN	<u>1</u> EACH
LOCATION 10: CUY-422-1122 (US 422 [CHAGRIN BOULEVARD] OVER IR 271)	
ITEM 622 - CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D, AS PER PLAN	<u>3</u> EACH

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GENERAL NOTES - 3

CUY-BH-FY2021(B) MISC  
PID NO. 109131