



**OHIO TURNPIKE AND
INFRASTRUCTURE COMMISSION**

ADDENDUM NO. 2
ISSUED FEBRUARY 4, 2020

PROJECT NO. 70-20-01
SLOPE REPAIRS
MILEPOST 132.6 WB
LORAIN COUNTY, OHIO
ISSUED JANUARY 17, 2020

OPENING DATE **EXTENDED TO: 2:00 P.M. (EASTERN TIME), FEBRUARY 11, 2020**

ATTENTION OF BIDDERS IS DIRECTED TO:
ANSWERS TO QUESTIONS RECEIVED THROUGH 12:00 P.M. ON FEBRUARY 4, 2020

MODIFICATIONS TO THE CONTRACT DOCUMENTS

Plan Sheets:

4, 6, 8, 12, 13 and 14 of 19

-AND-

Bid Schedule of Items and Estimated Quantities Worksheet:

Ref. Nos. 20 and 32a

-AND-

Special Provisions:

SP627


-AND-

MP 132 Structural Quantities

-AND-

EXTENSION OF THE BID OPENING TO 2:00 PM ON FEBRUARY 11, 2020

Issued by the Ohio Turnpike and Infrastructure Commission through Jennifer L. Stueber, Esq., General Counsel.



Jennifer L. Stueber, Esq.,
General Counsel

2/4/2020

Date

ANSWERS TO QUESTIONS RECEIVED THROUGH 12:00 P.M. ON FEBRUARY 4, 2020:

Q#3 I have a question pertaining to the 30" Type C pipe shown on Plan Sheet 15. It is extremely deep and I was wondering if you could provide more clarification on what type of pipe you would allow.

A#3 The Contractor may propose the most economical material to construct the 30" storm sewer that is available. However, the proposed material is required to meet the requirements of 611 of the ODOT CMS, specifically section 611.04.B.4 that requires the Contractor "provide written confirmation from the conduit manufacturer that the pipe material and strength supplied are appropriate... for the backfill and bedding as well as the height of cover..." Additionally, all proposed conduit material submittals will be reviewed considering the depth of fill over the conduit installed. Additionally, Shop Drawing review of the proposed material's suitability for use on the project will include, but not be limited to, a comparison to established design parameters noted in Section 1008 of the of the ODOT Location & Design Volume 2 (L&D Vol. 2) for Conduit Design Criteria (Link: [ODOT L&D Volume II](#)), comparison to the ODOT CMS and a review of the manufacturer's product cut sheets/recommendations.

Q#4 The quantity of ITEM SPECIAL-SURFACE TREATMENT, REINFORCED EMBANKMENT appears to be understated. Will the owner please confirm the bid quantity?

A#4 The quantity for Reference No. 20, Bid Item SPECIAL – SURFACE TREATMENT, REINFORCED EMBANKMENT was reviewed and increased from 660 to 990 square yards to account for the total quantity required for the project. The following revised Contract Documents are provided with this Addendum No. 2: General Notes Plan Sheet 4 of 19, General Summary Plan Sheet 6 of 19, the Bid Schedule of Items and the Estimated Quantities Worksheet.

Q#5 Do we have to be prequalified through the state to bid this project?

A#5 No Prequalifications with the Ohio Department of Transportation are required for work on the Ohio Turnpike project. Additionally, the Ohio Turnpike & Infrastructure Commission does not utilize a bidder Prequalification Program. However, the Bidder must be able to ensure compliance with all requirements noted in the Contract Documents.

Q#6 Please provide the specifications for: "ITEM SP 627 – STONE SHOULDER PROTECTION"

A#6 Special Provision SP627 was inadvertently left out. SP627 is provided as part of this Addendum No. 2 and shall be considered part of the Contract Documents for the Project.

Q#7 Where is the LOW STRENGTH MORTAR BACKFILL, TYPE 2 detailed on plan page 13/19 to be paid?

A#7 Reference No. 32a, Bid Item 613 - Low Strength Mortar Backfill, Type 2 has been added to the Contract Documents. Additionally, Revised General Summary Plan Sheet 6 of 19, Revised Plan Sheet 12 of 19, the Bid Schedule of Items and the Estimated Quantities Worksheet are provided with this Adeendum No. 2.

Q#8 Please add the proposed headwall to the cross sections at STA 7+50 on plan page 17/19 and add a cross section for STA 8+00 and 8+40. Include the proposed headwall and show existing grades, proposed grades, and type and extent of embankment to be utilized.

A#8 Cross sections are intended to be graphic representations of the grading at a regular spaced interval. While some cross sections are provided at a specific station for clarity, it is not intended to depict all locations. Grading Plan Sheet 10 of 19 was provided to depict the final proposed grading for the project. Additionally, the profile of the culvert extension provided on Sheet 10 of 19 provides a cross-sectional view of the headwall, existing grades, proposed grades and extent of the embankment. No revisions were made to the plans as a result of this question.

Q#9 Is the Geogrid Type P3 being attached to the proposed headwall for the full length and full height of the headwall?

A#9 Yes.

Q#10 Please add a bid item for 503 Cofferdams and Excavation Bracing to cover the 30' deep excavation at the west end and the 15' deep excavation at the east end of the proposed headwall.

A#10 Excavations associated with the ends of the headwall are anticipated to be mostly or entirely in shale bedrock. It will not be practical to drive sheeting for cofferdams into shale and a bid item for cofferdam/excavation bracing is not applicable. The design anticipated that these excavations would be laid back, not positively supported.

Q#11 Has the Geotechnical engineer confirmed continual slope stability during the proposed headwall and granular reinforced embankment construction?

A#11 The Geotechnical Engineer has checked slope stability under the final design condition. Stability of temporary excavations during construction are the responsibility of the contractor dependent on his means and methods.

Q#12 Plan sheet 5 MOT notes allow the contractor a right shoulder closure during active work periods. Will OTIC allow one-lane closures in accordance with the most recently updated OTIC Permitted Lane Closures schedule?

A#12 OTIC will consider lane closures up to a Short Term Stationary Zones (from 1 to 12 hours) permissible provided they are requested, implemented, maintained and removed in accordance with the Contract Documents including, but not limited to the Permitted Lane Closure schedule.

Q#13 Plan sheet 11 has notes regarding “Temporary easement to be acquired by OTIC” and “Limits for potential temporary access road for construction pending OTIC securing temporary easement”. The existing Right-of-Way line abuts the proposed 601A Rock Channel Protection shown on plan sheet 10. If this temporary easement has not been acquired, then there will be no ability to access the work area from the north side. Has the temporary easement been secured and/or is the contractor to assume for estimating and bidding purposes that this temporary easement will be secured prior to construction starting?

A#13 A reasonable effort shall be made to install the Rock Channel Protection to the limits delineated in the Project Plans without encroaching upon property outside of the Commission right of way without a Temporary Easement in place.

Please note that as of the issuance of this Addendum, an agreement between the Ohio Turnpike and the Lorain County Metroparks is entering into the final stages of negotiation and it appears that an easement will be attainable prior to beginning construction of the Project. However, until a final agreement is reached, it is to be assumed that all work must be completed from within the Turnpike right of way. Additionally, the Base Bid submitted shall reflect the additional cost to fully complete construction from within the right of way. The Temporary Access Deduct Alternate Credit shall reflect the difference in cost to utilize either the Temporary Easement obtained by the Commission from the Lorain County Metroparks or another alternate access plan obtained and coordinated by the Contractor.

Q#14 The footing plan on sheet 14/19 shows two large L shaped individual footers, plan sheet 12/19 shows the north east footer to be stepped with bottom of footers at 675.6 and 685.0 which is correct?

A#14 The footing is stepped. The “Footing Plan” on Structural Details Plan Sheet 14 of 19 has been revised to show the step in plan view. Revised Structural Details Plan Sheets 13 and 14 of 19 are provided with this Adeendum No. 2.

Q#15 Sheet 12/19 shows the bottom of footing elevation as 675.6, sheet 13/19 section B-B shows the bottom footer elevation as 675.9, which is correct?

A#15 The correct elevation is 675.6. The label on “Section B-B” of Structural Details Plan Sheet 13 of 19 has been revised to 675.6. Revised Structural Details Plan Sheet 13 of 19 is provided with this Addendum No. 2.

Q#16 We are having trouble checking the rebar quantity (bid item 28), can OTIC please furnish the rebar bar list and calculations?

A#16 Engineering estimates of reinforcement quantities are provided with this Addendum No. 2 in the attached MP 132 Structural Quantities spreadsheet. These quantities are being provided for informational purposes only. Following award of the Contract, the Contractor shall be responsible to submit full reinforcement details, including quantities, as part of shop drawing submittal.

Q#17 Bid item 11- Reinforced Embankment (Granular)- what is the minimum to maximum depth between geogrid in this bid item? Plan sheet shows the range for bid item 10 but not this bid item.

A#17 Vertical spacing and size of geogrids for Reinforced Embankment (Granular) is the same as for Reinforced Embankment – Type P3 grids at 2.5 ft vertical spacing. Typical Sections Plan Sheet 8 of 19 has been revised to include grid depth dimensions. Revised Typical Sections Plan Sheet 8 of 19 is provided with this Addendum No. 2.

Q#18 The majority of the footing for the box culvert extension is at elevation 675.6 the existing ground elevation varies from elevation 683.0 to 700.0. The edge of the new footer is approx. 10’ from the existing right of way line. There is no way to safely excavate the headwall without a cofferdam. Please add a bid item for cofferdams, cribs and sheeting.

A#18 See the response to Q#10.

**Receipt of Addendum No. 2
Project No. 70-20-01 is hereby acknowledged:**

(Firm Name) _____

(Signature) _____

(Printed Name) _____

(Date) _____

**BIDDERS MUST RETURN THE ABOVE ACKNOWLEDGEMENT
OF RECEIPT OF ADDENDUM NO. 2 WITH THEIR BID.**

GENERAL NOTES

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PROPOSED CONDUIT SLOPE, THE CHIEF ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE CHIEF ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH THE EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE THE PERTINENT SP 611 CONDUIT ITEM

PIPE CONNECTIONS TO CORRUGATED METAL STRUCTURES

CONNECTIONS OF PROPOSED LONGITUDINAL DRAINAGE TO CORRUGATED METAL STRUCTURES SHALL BE MADE BY MEANS OF A SHOP FABRICATED OR FIELD WELDED STUB ON THE STRUCTURE. THE STUB SHALL MEET THE REQUIREMENTS OF CMS 707 AND HAVE A MINIMUM LENGTH OF TWO FEET AND A MINIMUM WALL THICKNESS OF 0.064 INCHES. THE LOCATION AND ELEVATION OF THE STUB ARE TO BE CONSIDERED APPROXIMATE AND MAY BE ADJUSTED BY THE CHIEF ENGINEER TO AVOID CUTTING THROUGH JOINTS IN THE STRUCTURE.

THE FIELD WELDED JOINT, IF USED, SHALL BE THOROUGHLY CLEANED AND REGALVANIZED OR OTHERWISE SUITABLY REPAIRED. WELDING SHALL MEET THE REQUIREMENTS OF CMS 513.21.

A MASONRY COLLAR, AS PER ODOT STANDARD DRAWING, DM-1.1, WILL BE REQUIRED TO CONNECT THE LONGITUDINAL DRAINAGE TO THE STUB, WHEN PIPE OTHER THAN CORRUGATED METAL IS PROVIDED FOR THE LONGITUDINAL DRAINAGE.

PAYMENT FOR CUTTING INTO THE STRUCTURE AND PROVIDING THE CONNECTION DESCRIBED, SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM SP 611.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT 70-20-01 AND AGAIN BEFORE FINAL ACCEPTANCE BY THE OTIC, REPRESENTATIVES OF THE OTIC AND THE CONTRACTOR, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE OTIC REPRESENTATIVE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS PART OF THE PROJECT 70-20-01 SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT 70-20-01 WILL BE ACCEPTED BY THE OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION OR REVISED AS SHOWN IN THESE PLANS.

ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE CHIEF ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT SP 611 CONDUIT ITEMS.

ITEM 659 - SEEDING AND MULCHING

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AFFECTED AREAS, EXCLUDING GRANULAR EMBANKMENT. SEEDING AND MULCHING SHALL BE APPLIED TO ACCESS AREAS, STAGING AREAS, ANY BORROW AREAS AND ANY OTHER AREAS DISTURBED DURING CONSTRUCTION.

THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS DIRECTED BY THE CHIEF ENGINEER, TO PROMOTE GROWTH AND TO CARE FOR PERMANENTLY SEEDED AREAS PER SECTION 659.09 OF THE SPECIFICATIONS:

Table with 2 columns: Item Name and Quantity. Includes ITEM 659 - SEEDING AND MULCHING, CLASS 4B (4,372 SQ.YD.), ITEM 659 - LIME (0.90 AC), ITEM 659 - COMMERCIAL FERTILIZER (0.59 TON), and ITEM 659 - WATER (11.8 MGAL).

TEMPORARY SOIL EROSION AND SEDIMENT CONTROLS

THE EARTH DISTURBED AREA FOR EACH WORK SITE IS LISTED BELOW:

Table with 2 columns: Description and Area. Includes PROJECT EARTH DISTURBED AREA (0.90 AC), ESTIMATED CONTRACTOR EARTH DISTURBED AREA (2.00 AC), and NOTICE OF INTENT (NOI) EARTH DISTURBED AREA (2.90 AC).

AN EPA CO-PERMITTEE PERMIT IS REQUIRED FOR THE WORK AT MP 132.6. THE CONTRACTOR WILL DEVELOP A STORM WATER POLLUTION PREVENTION PLAN AND FILE FOR AN EPA NOI PERMIT. THE FOLLOWING LUMP SUM PAY ITEM IS PROVIDED FOR THIS WORK:

ITEM 832 - STORM WATER POLLUTION PREVENTION PLAN LUMP SUM

THE CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY SOIL EROSION AND SEDIMENT CONTROLS AT ALL WORK AREAS ACCORDING TO ODOT SS832. AN ENCUMBERED DOLLAR VALUE IS PROVIDED FOR THE INSTALLATION OF TEMPORARY EROSION CONTROLS. THE FOLLOWING PAY ITEM IS PROVIDED FOR TEMPORARY EROSION CONTROLS:

ITEM 832 - EROSION CONTROL 25,000 EACH

ITEM 863 - REINFORCED EMBANKMENT

REINFORCED EMBANKMENT REFERS TO GEOGRID-REINFORCED EMBANKMENT CONSTRUCTED USING SUITABLE FILL MATERIALS AS DEFINED IN ITEM 203 AND ITEM 703.16A AND PER THE DETAILS AND CONFIGURATIONS SHOWN IN THESE PLANS. SELECTION, PREQUALIFICATION TESTING, CONSTRUCTION, AND MEASUREMENT AND PAYMENT OF REINFORCED EMBANKMENT SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 863 (SS 863).

ALL GEOGRIDS SHALL BE TYPE P3 AS SPECIFIED IN SS 863.

THE GEOGRID REINFORCED EMBANKMENT SHALL BE CONSTRUCTED IN CONJUNCTION WITH ITEM SPECIAL - SURFACE TREATMENT, REINFORCED EMBANKMENT.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR WORK ASSOCIATED WITH ITEM 863 - REINFORCED EMBANKMENT.

Table with 2 columns: Item Name and Quantity. Includes ITEM 863, GEOGRID TYPE P3 (11,200 SQ.YD.) and ITEM 863 REINFORCED EMBANKMENT (8,800 CU.YD.).

COMMON EMBANKMENT THAT LIES BEYOND OR UNDERNEATH THE ZONE OF GEOGRID REINFORCEMENT SHALL NOT BE CONSIDERED REINFORCED EMBANKMENT. SUCH EMBANKMENT SHALL BE CONSTRUCTED, MEASURED, AND PAID FOR IN ACCORDANCE WITH ITEM 203, EMBANKMENT.

ITEM 863 - REINFORCED EMBANKMENT (GRANULAR)

GRANULAR REINFORCED EMBANKMENT REFERS TO GEOGRID-REINFORCED EMBANKMENT CONSTRUCTED USING GRANULAR FILL MATERIAL AS DEFINED IN CMS 703.16C AND PER THE DETAILS AND CONFIGURATIONS SHOWN IN THESE PLANS. SELECTION, PREQUALIFICATION TESTING, CONSTRUCTION, AND MEASUREMENT AND PAYMENT OF GRANULAR REINFORCED EMBANKMENT SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 863 (SS 863).

GRANULAR REINFORCED EMBANKMENT SHALL BE CONSTRUCTED IN ALL AREAS THAT ARE DIRECTLY BEHIND PROPOSED RETAINING WALLS, WINGWALLS, AND HEADWALL STRUCTURES. WHERE GRANULAR REINFORCED EMBANKMENT IS CONSTRUCTED BETWEEN PROPOSED WALL STRUCTURES AND EXISTING WALL STRUCTURES THAT ARE TO REMAIN, GEOGRIDS SHALL EXTEND FROM THE BACK FACE OF THE PROPOSED WALL TO THE FRONT FACE OF THE EXISTING WALL.

FILL MATERIAL FOR GRANULAR REINFORCED EMBANKMENT SHALL BE GRANULAR MATERIAL TYPE B, AS SPECIFIED IN CMS 703.16C. ALL GEOGRIDS FOR GRANULAR REINFORCED EMBANKMENT SHALL BE TYPE P3 AS SPECIFIED IN SS 863.

GEOGRIDS FOR REINFORCED EMBANKMENT (GRANULAR) SHALL BE ATTACHED TO PROPOSED CAST-IN-PLACE WALL STRUCTURES USING AN APPROPRIATE, MANUFACTURER-APPROVED SPLICE THAT IS FORMED INTO THE PROPOSED WALL.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR WORK ASSOCIATED WITH ITEM 863 - REINFORCED EMBANKMENT(GRANULAR)

Table with 2 columns: Item Name and Quantity. Includes ITEM 863, GEOGRID TYPE P3 (2,973 SQ.YD.) and ITEM 863 - REINFORCED EMBANKMENT (GRANULAR) (2,230 CU.YD.).

ITEM SPECIAL - SURFACE TREATMENT, REINFORCED EMBANKMENT

THIS ITEM CONSISTS OF CONSTRUCTING THE SURFACE OF REINFORCED EMBANKMENT FOR THE PROJECT. WORK WILL CONSIST OF PLACING A WRAP-AROUND FACING OF TYPE S2 GEOGRID PER ODOT SS 863, APPLYING TOPSOIL AND TURF REINFORCEMENT MATTING, TYPE 3 PER ODOT SS 836 AND THEN SEEDING AND MULCHING OF THE SURFACE AT ALL REINFORCED EMBANKMENT PROPOSED FOR THE PROJECT. THE SURFACE TREATMENT SHALL BE CONFIGURED ACCORDING TO THE DETAILS SHOWN IN THESE PLANS.

ALL TOPSOIL, SEEDING AND MULCHING UNDER THIS ITEM SHALL BE IN ACCORDANCE WITH ITEM 659. SEED MIX TYPE SHALL BE CLASS 3C. TYPE S2 GEOGRID SHALL BE UV-STABILIZED AND SHALL MEET THE REQUIREMENTS OF CMS 712.15, AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH ITEM 204 PROVISIONS AND REQUIREMENTS. TURF REINFORCEMENT MATTING SHALL BE TYPE 3 AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 836.

ITEM SPECIAL - SURFACE TREATMENT, REINFORCED EMBANKMENT SHALL BE MEASURED AND PAID FOR BY THE SQUARE YARD OF FINISHED SURFACE ALONG THE REINFORCED SLOPES. ALL ASSOCIATED ELEMENTS (TOPSOIL, SEED MIX, MULCH, FERTILIZER, GEOGRIDS, TURF REINFORCEMENT MATTING, ETC.) SHALL BE CONSIDERED INCIDENTAL TO THE UNIT PRICE FOR THIS ITEM. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR WORK ASSOCIATED WITH ITEM SPECIAL - SURFACE TREATMENT, REINFORCED EMBANKMENT

ITEM SPECIAL - SURFACE TREATMENT, REINFORCED EMBANKMENT 990 SQ.YD.

ITEM SPECIAL - 30-INCH SEWER EXPLORATION

THIS ITEM CONSISTS OF ESTABLISHING THE DEPTH AND LOCATION OF AN EXISTING 30-INCH CORRUGATED METAL PIPE (CMP) SEWER, PRIOR TO ORDERING AND FURNISHING MANHOLES FOR THE PROPOSED REPLACEMENT OF THE CMP. THE OUTLET AND HEADWALL OF THE EXISTING 30-INCH SEWER HAS BEEN LOCATED AND IS SHOWN HEREIN, BUT THE ALIGNMENT AND LOCATION OF THE EXISTING PIPE UPSTREAM OF THE OUTLET IS NOT KNOWN. PRIOR TO ORDERING OF MANHOLE STRUCTURES AND CONSTRUCTION OF THE NEW SEWER REPLACEMENT, CONTRACTOR SHALL LOCATE AND EXPOSE THE EXISTING CMP FROM THE EXISTING OUTLET TO THE LOCATION OF MANHOLE #1 AS SHOWN ON THESE PLANS. THIS EXPOSED SECTION OF PIPE SHALL BE REMOVED. THE DEPTH OF MANHOLE #1 AND THE PROFILE OF THE NEW PIPE BETWEEN MANHOLES #1 AND #2 SHALL BE DETERMINED ON THE BASIS OF THE INVERT ELEVATION OF THE EXISTING SEWER AS DETERMINED IN THE FIELD. CONTRACTOR SHALL FULLY PHOTO-DOCUMENT THE EXPOSED PIPE, AND SHALL SUBMIT THE PHOTOGRAPHY, A FORMAL SKETCH SHOWING THE INVERT ELEVATIONS OF THE EXPOSED PIPE, AND SHOP DRAWINGS SHOWING THE CONFIGURATION OF MANHOLE #1 AS CONTRACTOR PROPOSES TO ORDER IT, FOR THE REVIEW OF THE CHIEF ENGINEER, PRIOR TO FURNISHING THE MANHOLE AND CONSTRUCTING THE PIPE REPLACEMENT. THE WORK UNDER THIS SPECIAL ITEM SHALL BE PAID FOR AS A LUMP SUM.

ITEM SP 611 - CONDUIT MISC.: CURED-IN-PLACE PIPE LINER 30" CONDUIT, TYPE C

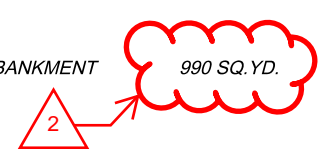
INSTALL A CONTINUOUS (JOINT-LESS) CURED-IN-PLACE PIPELINER SYSTEM TO LINE THE INTERIOR OF THE HOST PIPE TO BE REHABILITATED. THE LINER PIPE MUST BE ABLE TO MOLD ITSELF OR FIT TIGHTLY TO THE SHAPE OF THE EXISTING PIPE. THE LINER MUST PROVIDE FOR COMPLETE STRUCTURAL INTEGRITY, INDEPENDENT OF THE LOAD BEARING CAPACITY OF THE EXISTING HOST PIPE. THE PIPELINER MUST BE CAPABLE OF CONFORMING TO THE PIPELINE BENDS IN THE HOST PIPE WITHOUT SPLITTING, RUPTURING, OR WRINKLING OF THE PIPE LINER MATERIAL. THE LINING MUST PROVIDE A FLOW CAPACITY EQUAL TO, OR GREATER THAN, THAT OF THE HOST PIPE PRIOR TO REHABILITATION. CURED-IN-PLACE PIPELINERS SHALL CONFORM TO ASTM D5813 AND BE DESIGNED ACCORDING TO ASTM F1216 AS A FULLY DETERIORATED GRAVITY PIPE. REFER TO SUPPLEMENTAL SPECIFICATION 833, SPECIFICALLY SECTION 833.04 ITEM 1. AND TABLE 833.01 AND 833.03 FOR THE DESIGN PARAMETERS.

INSTALLATION SHALL BE PER ASTM F1216, ASTM F1743, ASTM 2019 AND PER THE MANUFACTURER'S RECOMMENDATIONS.

INSPECT THE EXISTING HOST PIPE USING EXPERIENCED PERSONNEL TRAINED IN LOCATING BREAKS, OBSTACLES, AND SERVICE CONNECTIONS BY CLOSED-CIRCUIT TELEVISION OR MAN ENTRY BEFORE AND AFTER INSTALLATION OF THE PIPELINER. CLEAN, REMOVE DEBRIS, AND REPAIR CONDUIT WALLS AND JOINTS PRIOR TO INSTALLING THE PIPELINER. RESTORE ACTIVE SERVICE CONNECTIONS AFTER INSTALLATION OF THE PIPELINER. PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM SP 611, CONDUIT MISC.; CURED-IN-PLACE PIPELINER.

THE FOLLOWING CONTINGENCY ITEM HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE CHIEF ENGINEER:

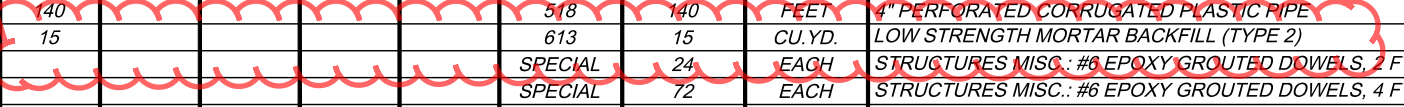
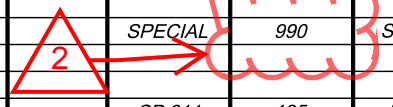
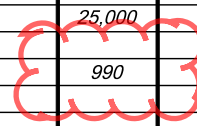
ITEM SP 611 - CONDUIT, MISC.: CURED-IN-PLACE PIPE LINER, 30" CONDUIT, TYPE C 140 FEET



Vertical sidebar containing project information: PROJECT 70-20-01, DATE: 8/28/2019, M.P. 132.6, OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION, AECOM logo, and various revision and design agency details.

G:\Akron\DCS\Projects\TRN160590767_OTIC9918031900_CAD_GIS\Task Orders\Task 4 Slope Repair\121-123-132\Design\Roadway\Sheets\GG001.dwg; GG001; 2/04/20 - 9:13am

SHEET NUM.										ITEM	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	
3	4	5	12	15	19										
													ROADWAY		
LS										201	1	LUMP	CLEARING AND GRUBBING		
										202	1	EACH	HEADWALL REMOVED		
										202	25	FEET	PIPE REMOVED, OVER 24"		
400										202	400	FEET	FENCE REMOVED		
										203	3,033	CU.YD.	EXCAVATION		
										203	10,152	CU.YD.	EMBANKMENT		
			LS							203	1	LUMP	ROADWAY, MISC.:CHANNEL SHAPING	5	
400										607	400	FEET	FENCE, TYPE 47, AS PER PLAN	3	
										863	14,173	SQ.YD.	GEOGRID, TYPE P3		
										863	8,800	CU.YD.	REINFORCED EMBANKMENT		
										863	2,230	CU.YD.	REINFORCED EMBANKMENT (GRANULAR)		
										SP 627	25	CU.YD.	STONE SHOULDER PROTECTION	3	
25															
													EROSION CONTROL		
										601	150	CU.YD.	ROCK CHANNEL PROTECTION, TYPE A WITH FILTER		
										659	4,372	SQ.YD.	SEEDING AND MULCHING CLASS 4B		
										659	0.59	TON	COMMERCIAL FERTILIZER		
										659	0.9	ACRE	LIME		
										659	11.8	MGAL	WATER		
										832	1	LUMP	STORM WATER POLLUTION PREVENTION PLAN		
										832	25,000	EACH	EROSION CONTROL		
										SPECIAL	990	SQ.YD.	SURFACE TREATMENT, REINFORCED EMBANKMENT	4	
													DRAINAGE		
										SP 611	135	FEET	30" CONDUIT, TYPE C		
										SP 611	140	FEET	CONDUIT, MISC.:CURED-IN-PLACE LINER 30" CONDUIT, TYPE C	4	
										SP 611	280	FEET	CONDUIT, MISC.:VIDEO LOG	5	
										SP 611	2	EACH	MANHOLE, NO. 3		
										SPECIAL	140	FEET	PIPE CLEANOUT 27" TO 48"	3	
140										SPECIAL	1	LUMP	30-INCH SEWER EXPLORATION	4	
													RETAINING WALLS		
										LS	503	1	LUMP	UNCLASSIFIED EXCAVATION, INCLUDING SHALE	
										62,200	509	62,200	LB	EPOXY COATED REINFORCING STEEL	
										302	511	302	CU.YD.	CLASS QC1 CONCRETE, SUBSTRUCTURE	
										14	512	14	SQ.YD.	TYPE 2 WATERPROOFING	
										67	516	67	SQ.FT.	1" PREFORMED EXPANSION JOINT FILLER	
										140	140	FEET	4" PERFORATED CORRUGATED PLASTIC PIPE		
										15	15	CU.YD.	LOW STRENGTH MORTAR BACKFILL (TYPE 2)		
										SPECIAL	24	EACH	STRUCTURES MISC.: #6 EPOXY GROUTED DOWELS, 2 FT	5	
										SPECIAL	72	EACH	STRUCTURES MISC.: #6 EPOXY GROUTED DOWELS, 4 FT	5	
										SPECIAL	27	EACH	STRUCTURES MISC.: #9 EPOXY GROUTED DOWELS, 6 FT	5	
													MISCELLANEOUS		
										SP 614	1	LUMP	MAINTAINING TRAFFIC		
										623	1	LUMP	CONSTRUCTION LAYOUT STAKES AND SURVEYING		
										624	1	LUMP	MOBILIZATION		
										SPECIAL	1	LUMP	SITE ACCESS FROM THE TURNPIKE MAINLINE	3	
LS										IB ART 6	1	LUMP	PREMIUM FOR CONTRACT PERFORMANCE BOND AND PAYMENT BOND		



OHIO TURNPIKE

AECOM

DESIGN AGENCY

BY DATE: JEL 10/10/20

REVISIONS: Addendum #2

NO. 1

CHECKED: JEL

DESIGNED: JES

DRAWN: JES

IN CHARGE: DSB

GENERAL SUMMARY

HENRIETTA TOWNSHIP

LORAIN COUNTY

M.P. 132.6

PROJECT 70-20-01

DATE: 8/28/2019

6

19

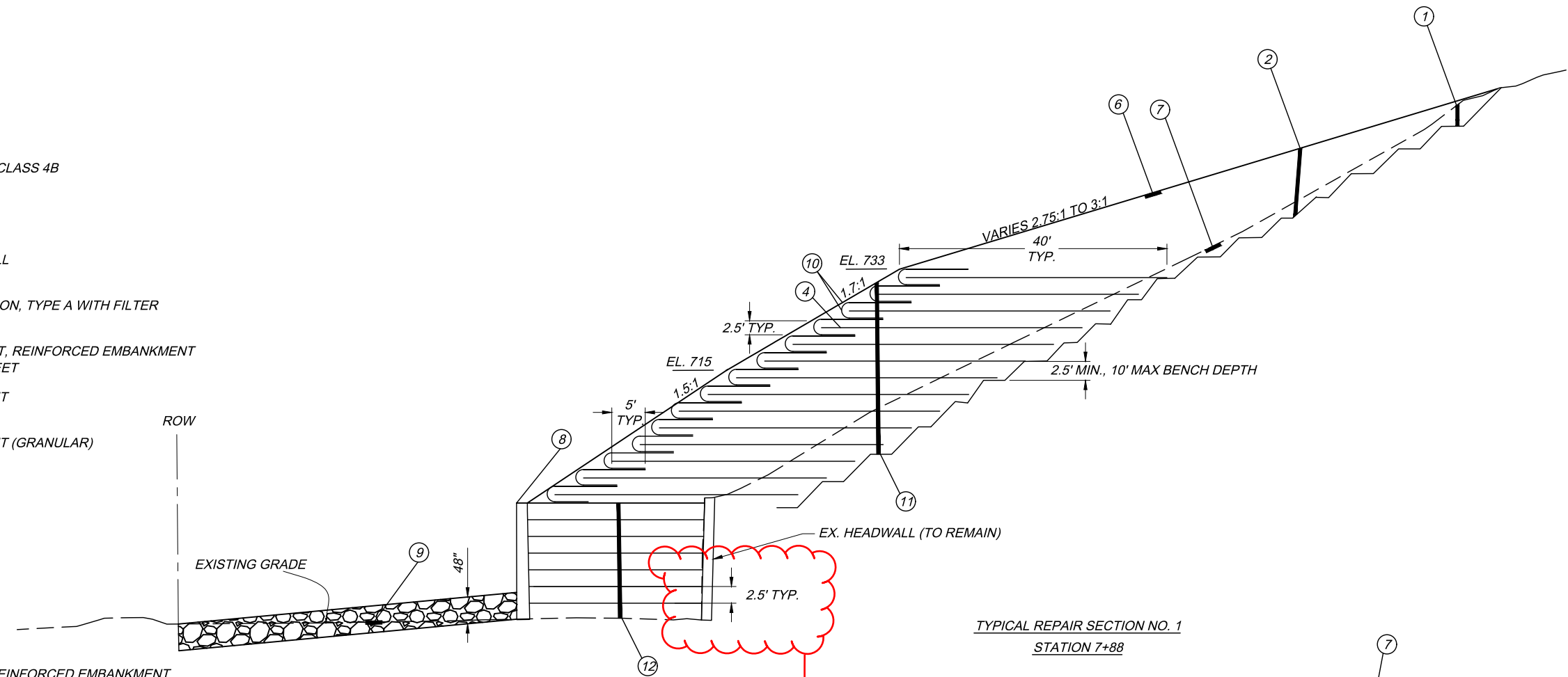
OHIO TURNPIKE

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

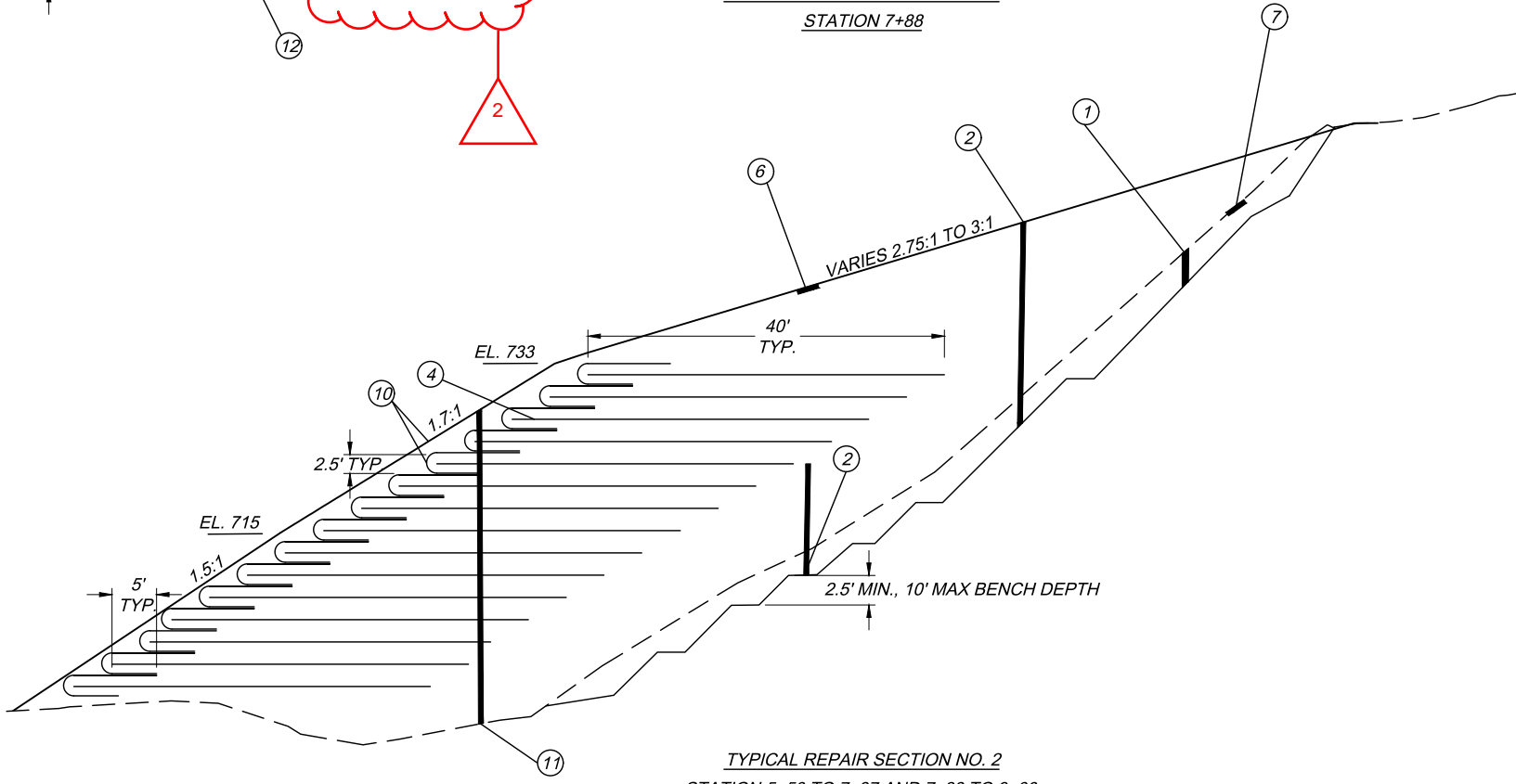
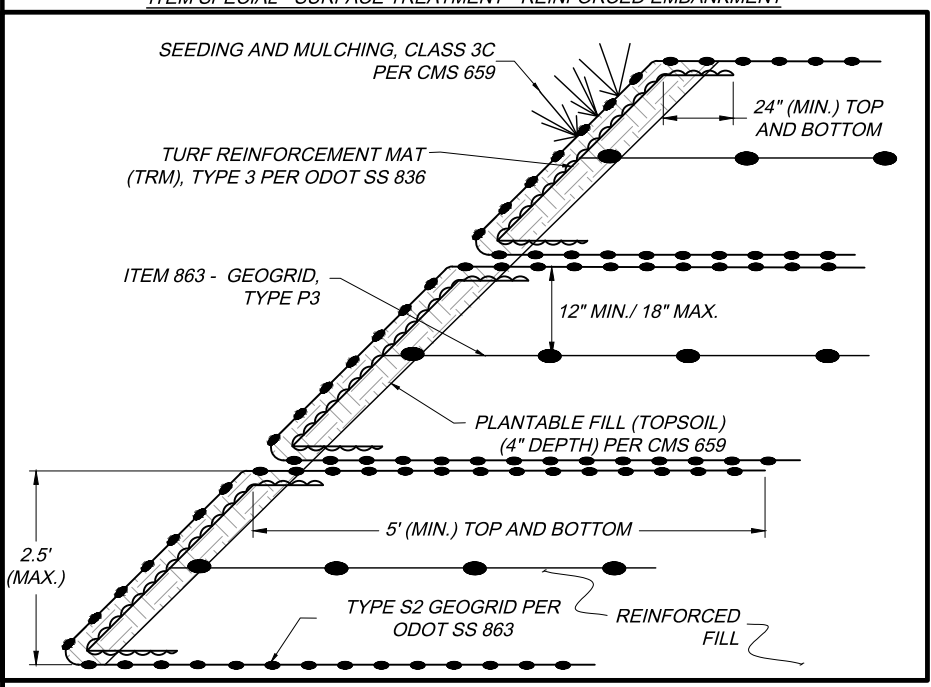
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LEGEND

- ① ITEM 203 - EXCAVATION
- ② ITEM 203 - EMBANKMENT
- ③ NOT USED
- ④ ITEM 863 - GEOGRID, TYPE P3
- ⑤ NOT USED
- ⑥ ITEM 659 - SEEDING AND MULCHING, CLASS 4B
- ⑦ ITEM 201 - CLEARING AND GRUBBING
- ⑧ CAST-IN-PLACE CONCRETE HEADWALL
- ⑨ ITEM 601 - ROCK CHANNEL PROTECTION, TYPE A WITH FILTER
- ⑩ ITEM SPECIAL - SURFACE TREATMENT, REINFORCED EMBANKMENT SEE DETAIL, THIS SHEET
- ⑪ ITEM 863 - REINFORCED EMBANKMENT
- ⑫ ITEM 863 - REINFORCED EMBANKMENT (GRANULAR)



TYPICAL REPAIR SECTION NO. 1
STATION 7+88



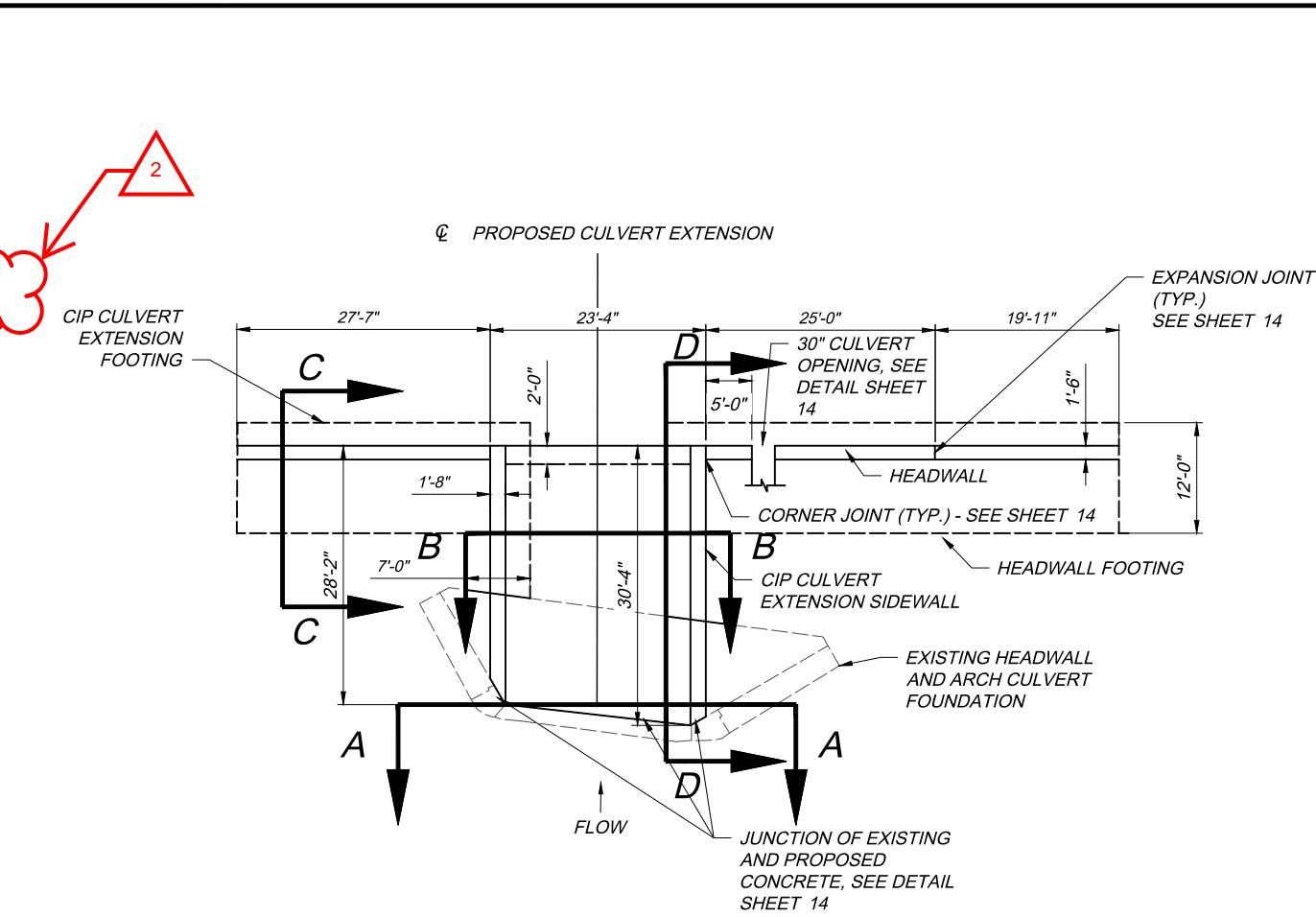
TYPICAL REPAIR SECTION NO. 2
STATION 5+50 TO 7+87 AND 7+88 TO 9+00

OHIO TURNPIKE		AECOM		OHIO TURNPIKE	
DESIGN AGENCY		BY DATE		REVISIONS	
PROJECT 70-20-01		JEL 11/1/20		NO. 1 Addendum #2	
DATE: 8/28/2019		JEL		ACI	
M.P. 132.6		/IN CHARGE		DSB	
TYPICAL SECTIONS		LORAIN COUNTY		HENRIETTA TOWNSHIP	
8		19		OHIO TURNPIKE	

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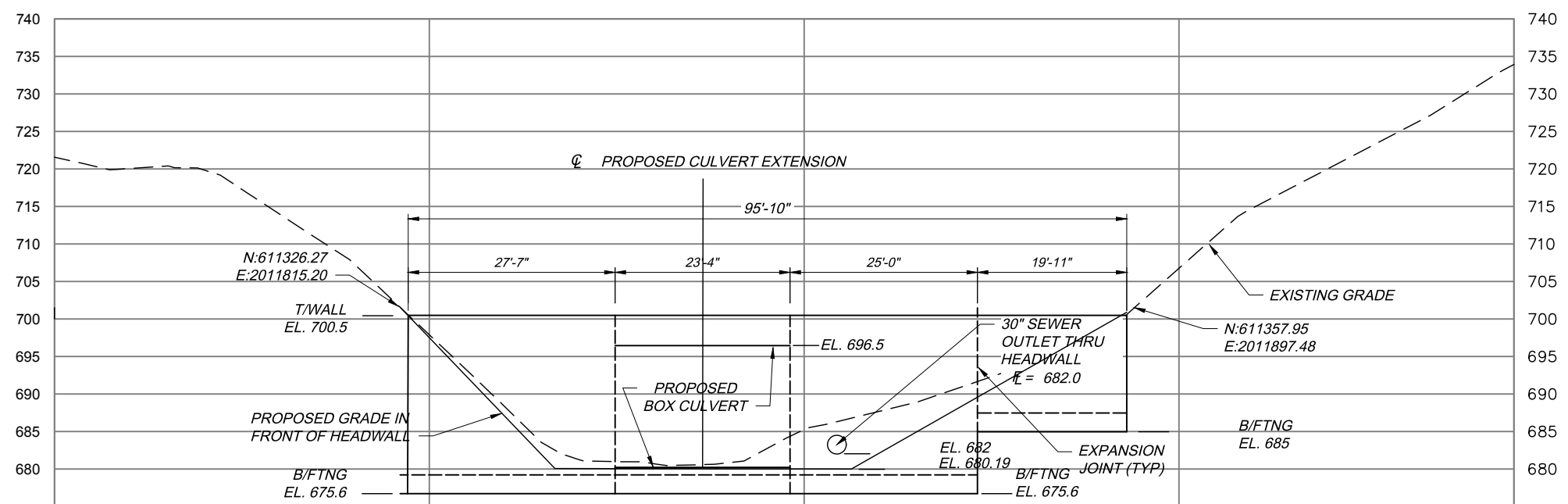
ESTIMATED QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
503	1	LUMP	UNCLASSIFIED EXCAVATION, INCLUDING SHALE
509	62,200	LB	EPOXY COATED REINFORCING STEEL
511	302	CU. YD.	CLASS QC1 CONCRETE, SUBSTRUCTURE
512	14	SQ. YD.	TYPE 2 WATERPROOFING
516	67	SQ. FT.	1" PREFORMED EXPANSION JOINT FILLER
518	140	FEET	4" PERFORATED CORRUGATED PLASTIC PIPE
613	15	CU. YD.	LOW STRENGTH MORTAR BACKFILL (TYPE 2)

QUANTITIES CARRIED TO GENERAL SUMMARY

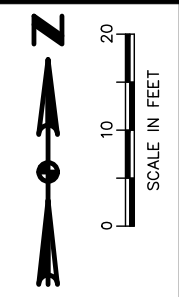


FOR SECTION VIEWS
SEE SHEET 13

FOUNDATION PLAN - PROPOSED HEADWALL AND CULVERT EXTENSION

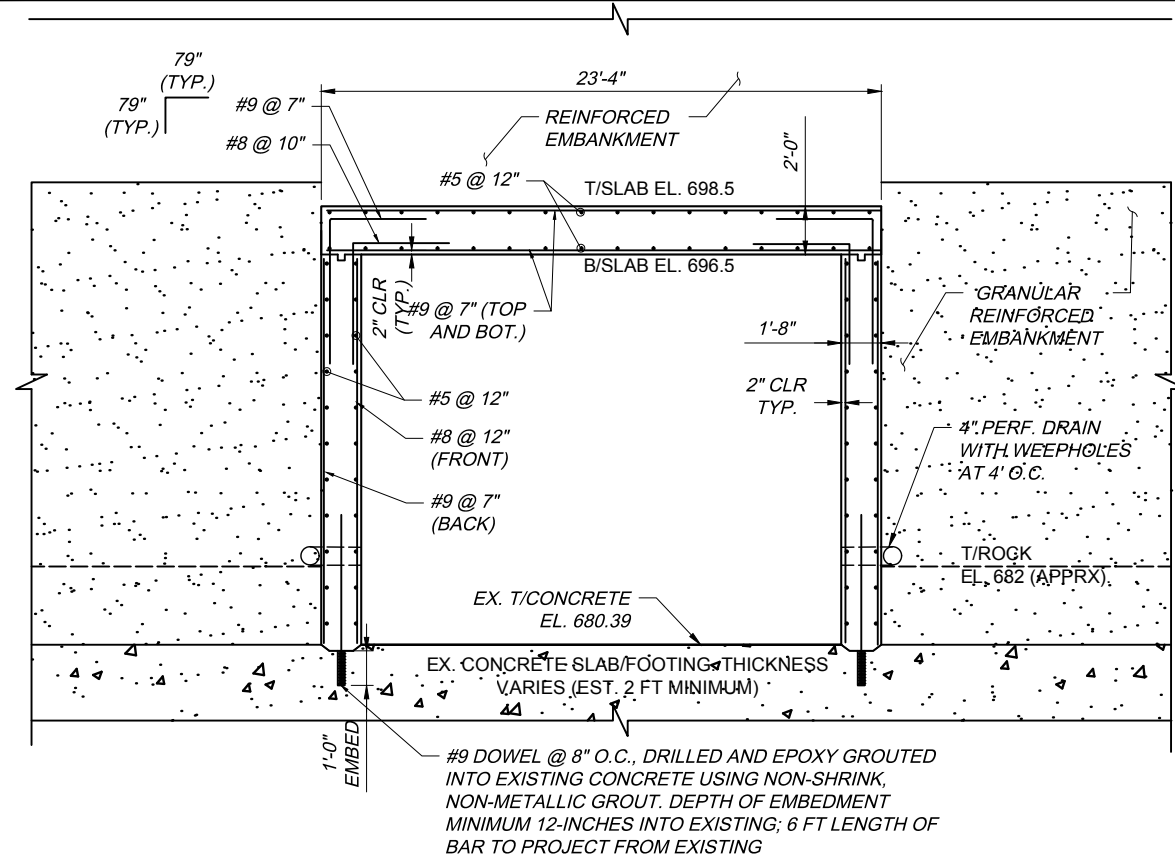


PROFILE - PROPOSED HEADWALL

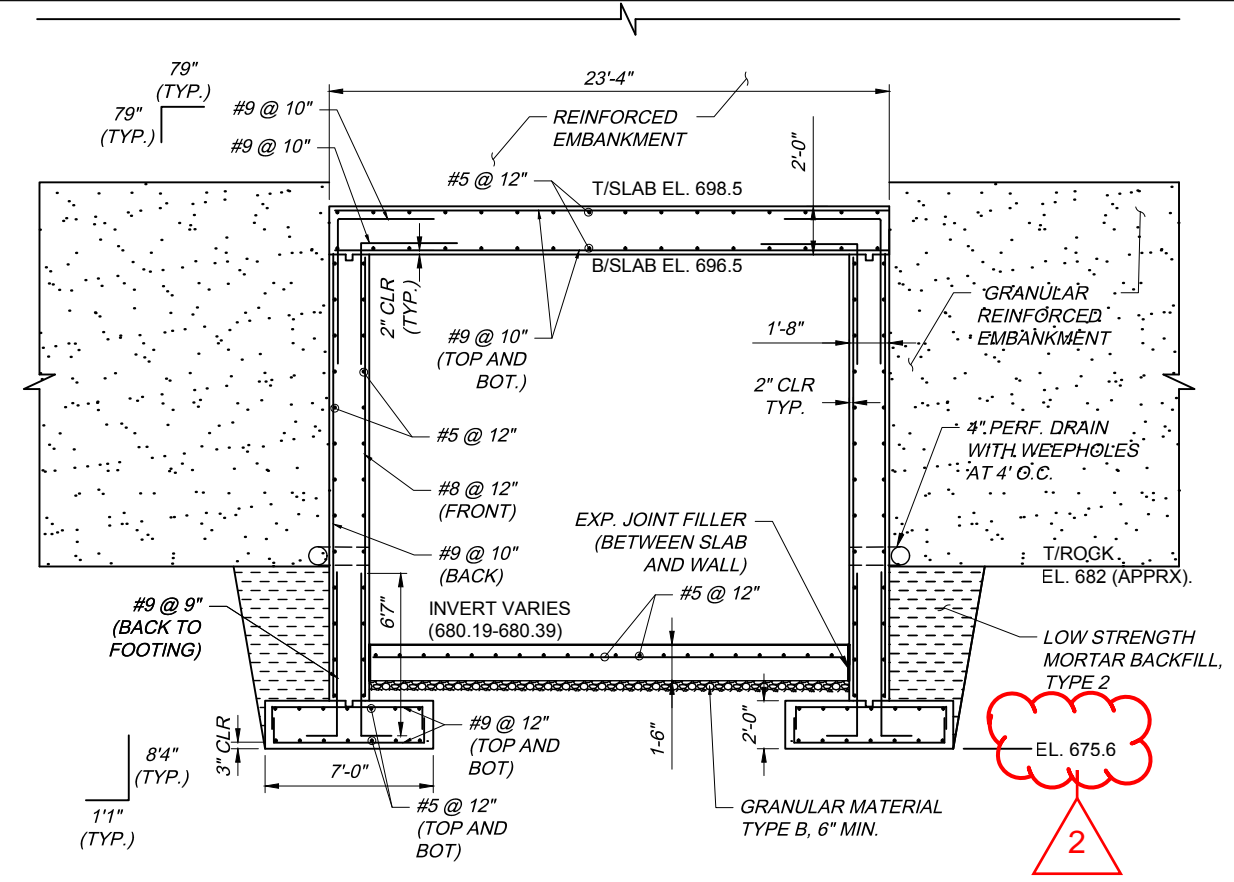


	DESIGN AGENCY																				
	OHIO TURNPIKE																				
PROJECT 70-20-01	HEADWALL AND CULVERT FOUNDATION PLAN																				
DATE: 8/28/2019	HENRIETTA TOWNSHIP																				
M.P. 132.6	LORAIN COUNTY																				
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DESIGNED	CHECKED	NO.	REVISIONS																		
VKG	MRW	A	Addendum #2																		
DRAWN	IN CHARGE																				
VKG	DSB																				
BY	DATE																				
JEL	11/3/20																				

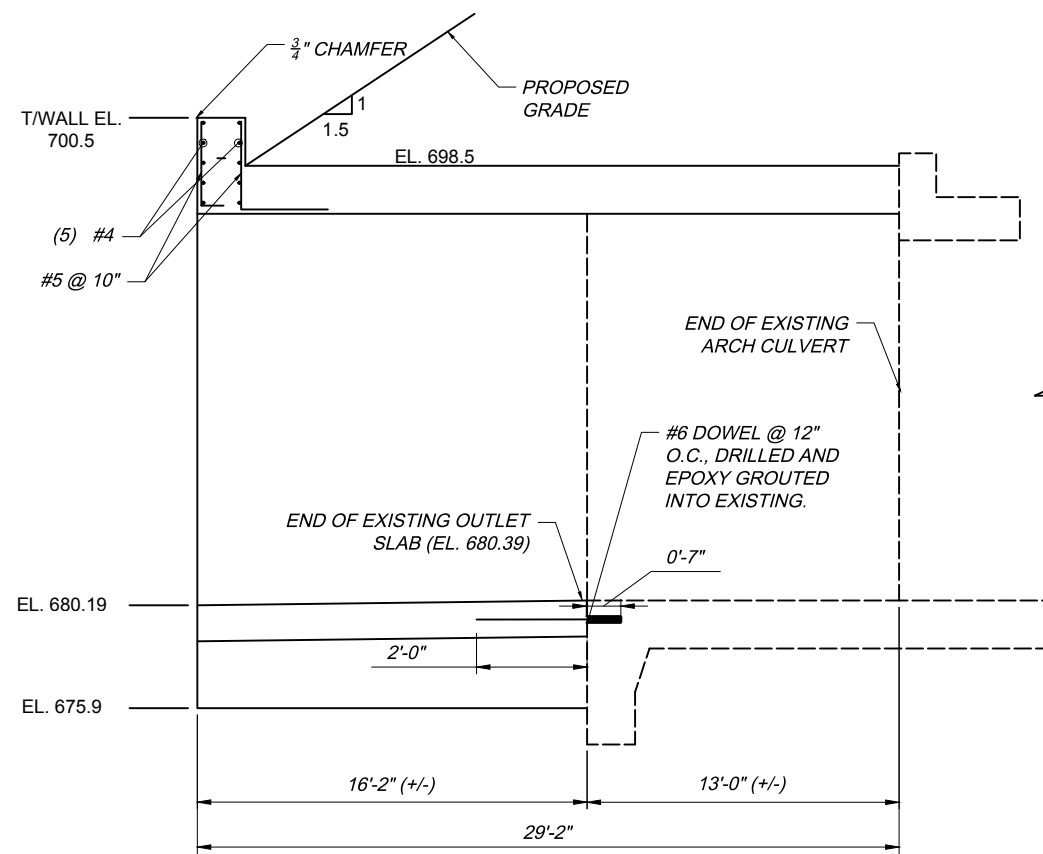
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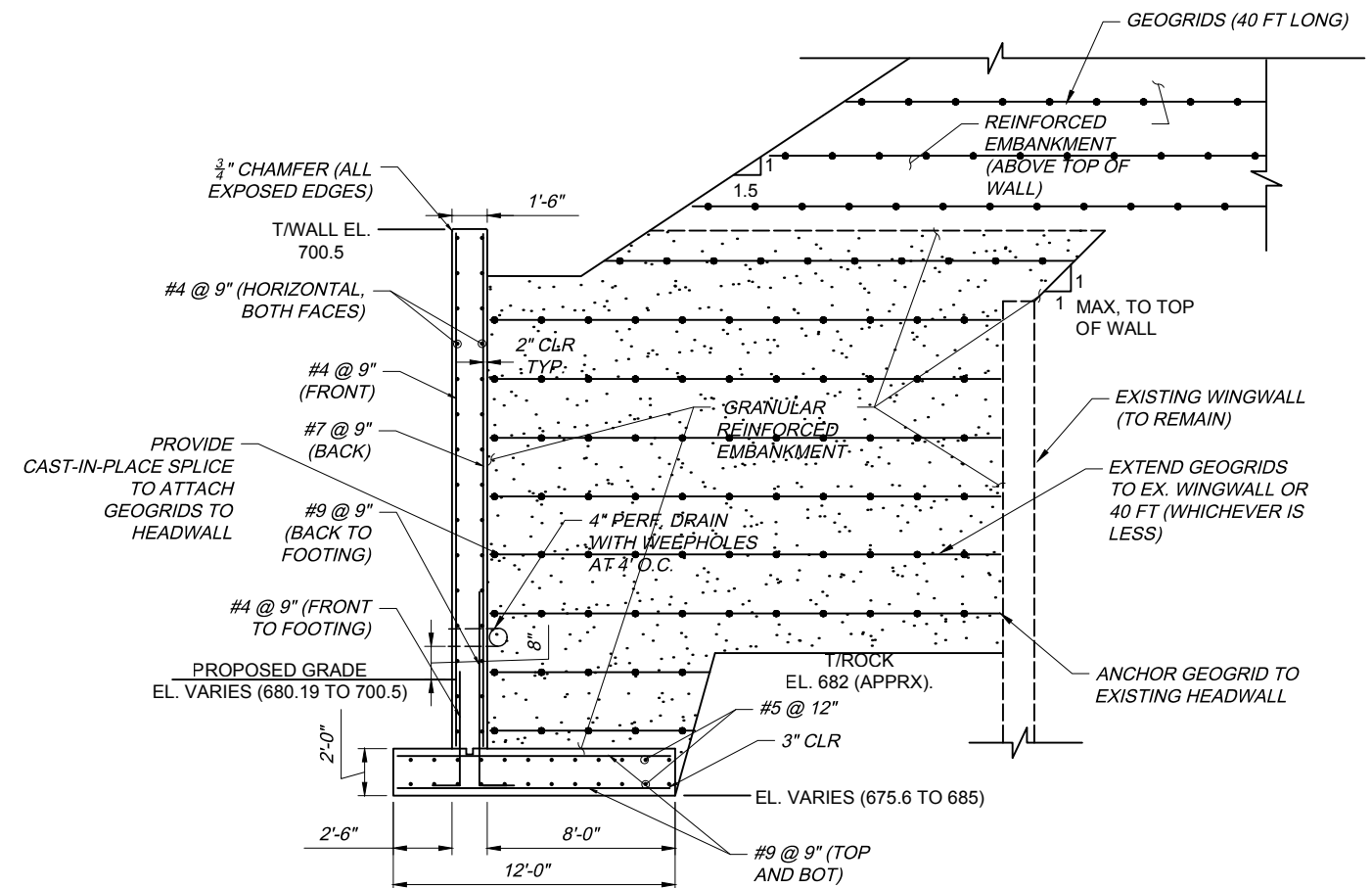
SECTION A-A: CULVERT EXTENSION OVER EXISTING FOUNDATION



SECTION B-B: CULVERT EXTENSION DOWNSTREAM OF EXISTING FOUNDATION



SECTION D-D: LONGITUDINAL SECTION



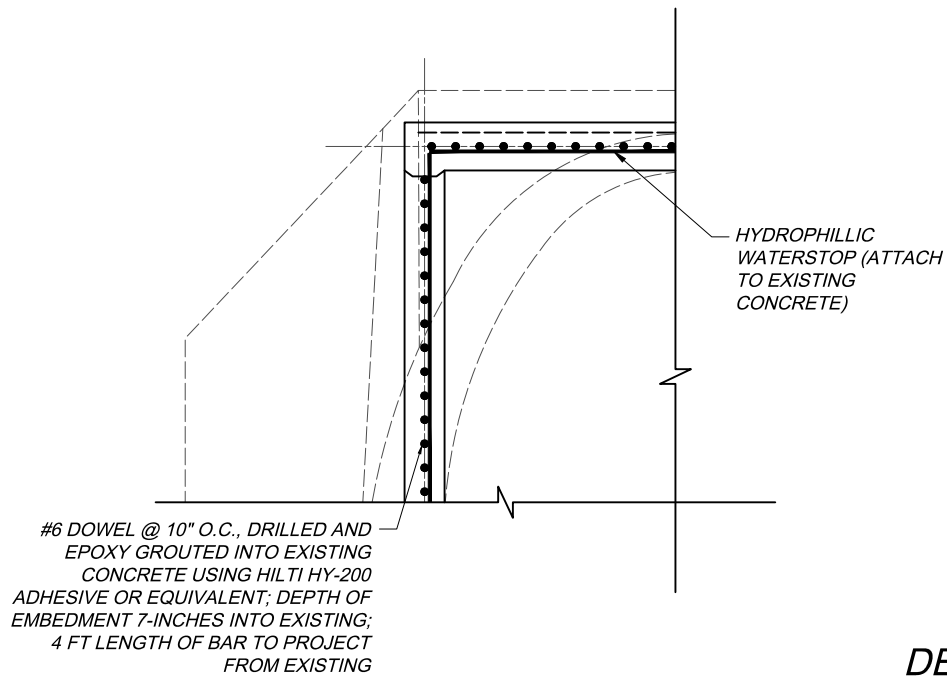
SECTION C-C: PROPOSED HEADWALL

DESIGN AGENCY		BY DATE	REVISIONS		NO.	CHECKED	DESIGNED	LORAIN COUNTY	
		JEL 11/3/20	Addendum #2		1	MRW	VKG	HENRIETTA TOWNSHIP	
						IN CHARGE	VKG		
						DSB			
PROJECT 70-20-01		DATE: 8/28/2019		M.P. 132.6					
13		19							

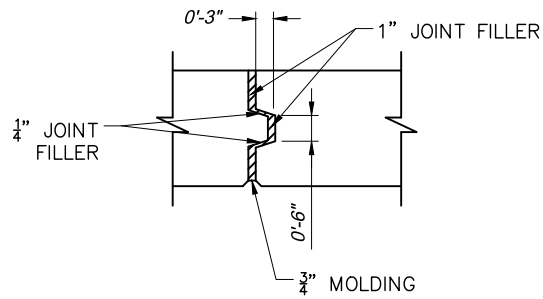
OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION



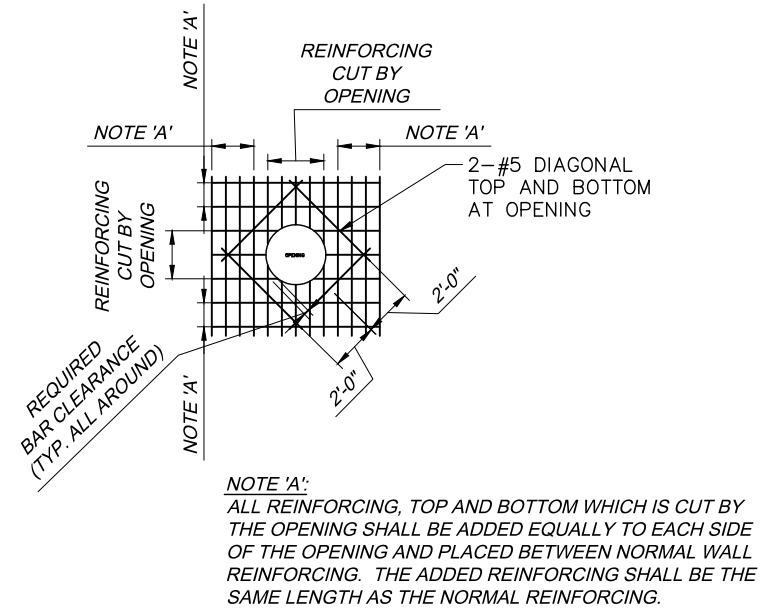
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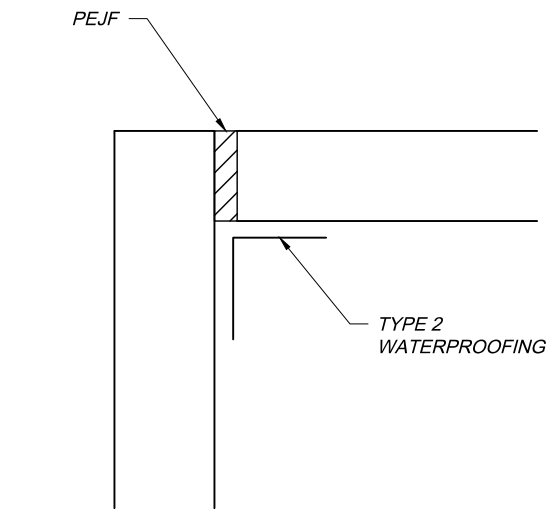
DETAIL: JUNCTION OF EXISTING CULVERT AND PROPOSED EXTENSION



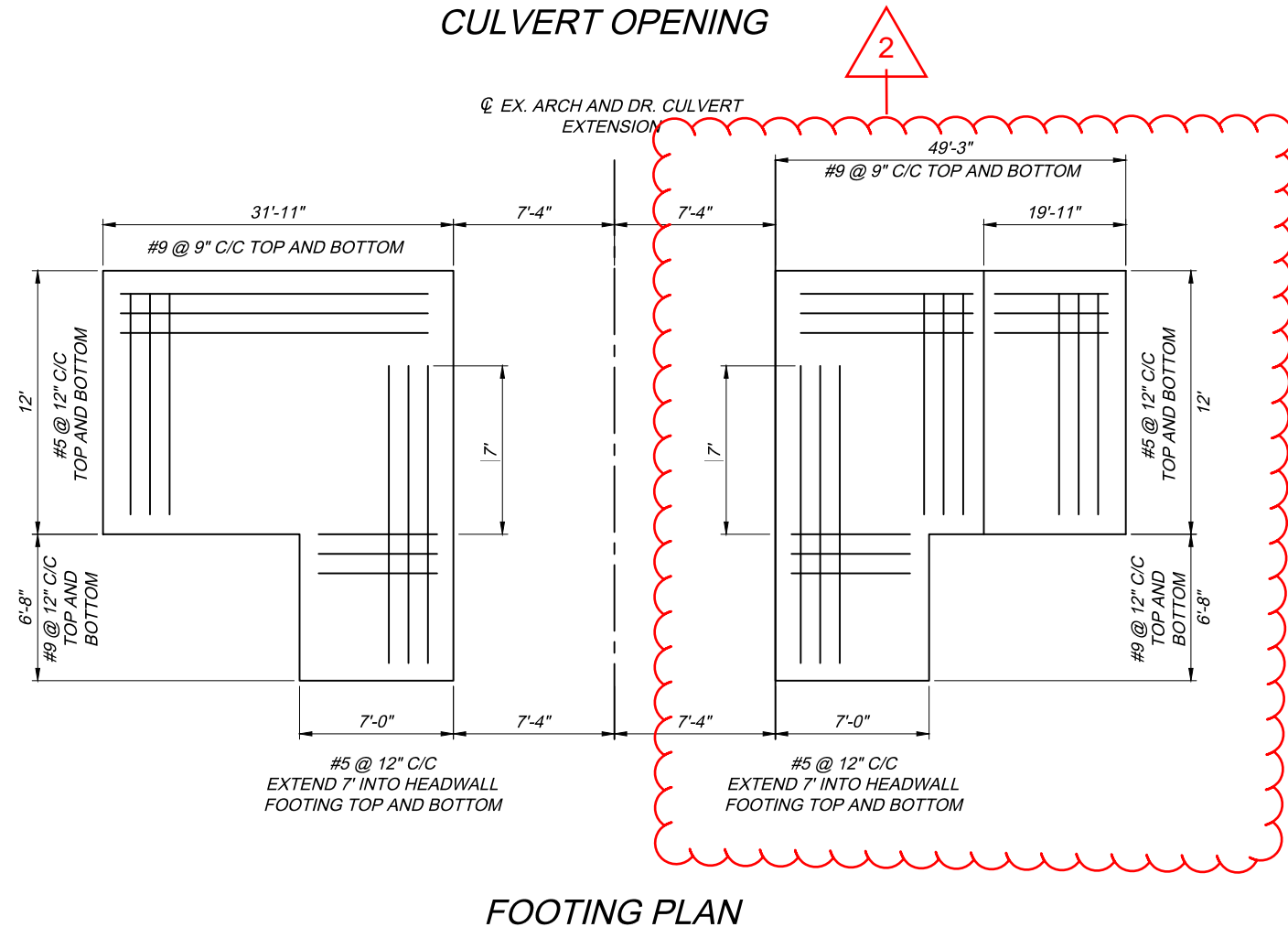
DETAIL: TYPICAL HEADWALL EXPANSION JOINT



DETAIL: HEADWALL REINFORCEMENT AT 30-INCH CULVERT OPENING



DETAIL: CORNER JOINT



FOOTING PLAN

PROJECT 70-20-01	DATE: 8/28/2019	M.P. 132.6	LORAIN COUNTY	STRUCTURAL DETAILS HENRIETTA TOWNSHIP	DESIGNED	CHECKED	NO.	REVISIONS	BY	DATE	DESIGN AGENCY
					VKG DRAWN	MRW IN CHARGE	MRW	Addendum #2	JEL	11/12/20	OHIO TURNPIKE

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

		MP 132.6 WESTBOUND SLOPE REPAIR (Ref. Nos. 1-40)				
REF. No.	ITEM No.	ITEM DESCRIPTION	APPROX. QUANTITY	UNIT	UNIT COST	EXTENDED AMOUNT BID
1	201	CLEARING AND GRUBBING	1	LUMP		
2	202	HEADWALL REMOVED	1	EACH		
3	202	PIPE REMOVED, OVER 24"	25	FEET		
4	202	FENCE REMOVED	400	FEET		
5	203	EXCAVATION	3,033	CU. YD.		
6	203	EMBANKMENT	10,152	CU. YD.		
7	203	ROADWAY, MISC.: CHANNEL SHAPING	1	LUMP		
8	607	FENCE, TYPE 47, AS PER PLAN	400	FEET		
9	863	GEOGRID, TYPE P3	14,173	SQ. YD.		
10	863	REINFORCED EMBANKMENT	8,800	CU. YD.		
11	863	REINFORCED EMBANKMENT (GRANULAR)	2,230	CU. YD.		
12	SP 627	STONE SHOULDER PROTECTION	25	CU. YD.		
13	601	ROCK CHANNEL PROTECTION, TYPE A WITH FILTER	150	CU. YD.		
14	659	SEEDING AND MULCHING, CLASS 4B	4,372	SQ. YD.		
15	659	COMMERCIAL FERTILIZER	0.59	TON		
16	659	LIME	0.90	ACRE		
17	659	WATER	11.80	MGAL		
18	832	STORM WATER POLLUTION PREVENTION PLAN	1	LUMP		
19	832	EROSION CONTROL	25,000	EACH		
20	SPECIAL	SURFACE TREATMENT, REINFORCED EMBANKMENT	990	SQ. YD.		
21	SP 611	30" CONDUIT, TYPE C	135	FEET		
22	SP 611	CONDUIT MISC.: CURED-IN-PLACE LINER 30" CONDUIT, TYPE C	140	FEET		
23	SP 611	CONDUIT MISC.: VIDEO LOG	280	FEET		
24	SP 611	MANHOLE, NO. 3	2	EACH		
25	SPECIAL	PIPE CLEANOUT 27" TO 48"	140	FEET		
26	SPECIAL	30" SEWER EXPLORATION	1	LUMP		
27	503	UNCLASSIFIED EXCAVATION, INCLUDING SHALE	1	LUMP		
28	509	EPOXY COATED REINFORCING STEEL	62,200	LB		
29	511	CLASS QC1 CONCRETE, SUBSTRUCTURE	302	CU. YD.		
30	512	TYPE 2 WATERPROOFING	14	SQ. YD.		
31	516	1" PREFORMED EXPANSION JOINT FILLER	67	SQ. FT.		
32	518	4" PERFORATED CORRUGATED PLASTIC PIPE	140	FEET		
32a	613	LOW STRENGTH MORTAR BACKFILL, TYPE 2	15	CU. YD.		
33	SPECIAL	SPECIAL - STRUCTURES MISC.: #6 EPOXY GROUTED DOWELS, 2 FT	24	EACH		
34	SPECIAL	SPECIAL - STRUCTURES MISC.: #6 EPOXY GROUTED DOWELS, 4 FT	72	EACH		
35	SPECIAL	SPECIAL - STRUCTURES MISC.: #9 EPOXY GROUTED DOWELS, 6 FT	27	EACH		
36	SPECIAL	SITE ACCESS - FROM THE TURNPIKE MAINLINE	1	LUMP		

37	SP 614	MAINTAINING TRAFFIC	1	LUMP		
38	623	CONSTRUCTION LAYOUT STAKES AND SURVEYING	1	LUMP		
39	624	MOBILIZATION	1	LUMP		
40	IB ART 6	PREMIUM FOR CONTRACT PERFORMANCE BOND AND PAYMENT BOND	1	LUMP		

PROJECT NO. 70-20-01 - TOTAL BASE BID (REF. No. 1 THRU REF. No. 40)

TEMPORARY ACCESS DEDUCT ALTERNATE CREDIT - ALTERNATE INGRESS/EGRESS

The Bidder may request permission to construct one (1) or more Temporary Access entrances or exits at a site or sites of its own choice. Such Deduct Alternate request must be submitted with the Bidder's Bid, and must include the information specified in SP 104 and will be considered subject to the conditions and provisions contained in said SP 104. The Bidder must fill in "yes" or "no" in the space provided below as to whether a Temporary Access Deduct Alternate Proposal is included with the Bid and must also enter an amount to be deducted from the Total Base Bid as a credit due to the Commission, should the Temporary Access Proposal be approved. (Refer to Articles 2.6.3 and 3.5.1 of the INSTRUCTIONS TO BIDDERS)

Amount of TEMPORARY ACCESS DEDUCT ALTERNATE CREDIT: \$

(must be a positive number)

A Temporary Access Deduct Alternate Proposal is included in the Bid Submittal: _____. (yes or no)

Item No.'s that do not have an IB or SP designation are Items drawn from the 2016 ODOT CMS. Bidders should refer to the 2016 ODOT CMS for information and guidance concerning these Items.

OTIC MP 132 Structural Quantities

Box Culvert Reinforcement

Section A

Location	Bar Size	Spacing (in)	Length of Bar (ft)	Orthogonal		Number of Bars	Bar Weight (lb/ft)	Subtotal Weight (lbs)
				Length (ft)				
Top Slab, Top 1	9	7	23.33	13		23	3.4	1824
Top Slab, Bot 1	9	7	23.33	13		23	3.4	1824
Top Slab, Top 2	5	12	13	23.33		24	1.043	325
Top Slab, Bot 2	5	12	13	23.33		24	1.043	325
Left Sidewall, Front	8	12	16.11	13		13	2.67	559
Left Sidewall, Back	9	7	16.11	13		23	3.4	1260
Left Sidewall, Horizontal (Both Faces Combined)	5	12	13	23.33		48	1.043	651
Right Sidewall, Front	8	12	16.11	13		13	2.67	559
Right Sidewall, Back	9	7	16.11	13		23	3.4	1260
Right Sidewall, Horizontal (Both Faces Combined)	5	12	13	23.33		48	1.043	651
Left Sidewall Hook, Front	8	10	9	13		16	2.67	384
Left Sidewall Hook, Back	9	7	8	13		23	3.4	626
Right Sidewall Hook, Front	8	10	9	13		16	2.67	384
Right Sidewall Hook, Back	9	7	8	13		23	3.4	626

TOTAL WEIGHT = 11259 lbs

Section B

Location	Bar Size	Spacing (in)	Length of Bar (ft)	Orthogonal		Number of Bars	Bar Weight (lb/ft)	Subtotal Weight (lbs)
				Length (ft)				
Top Slab, Top 1	9	10	23.33	16.3		20	3.4	1108
Top Slab, Bot 1	9	10	23.33	16.3		20	3.4	1108
Top Slab, Top 2	5	12	16.3	23.33		24	1.043	584
Top Slab, Bot 2	5	12	16.3	23.33		24	1.043	584
Left Sidewall, Front	8	12	16.11	16.3		17	2.67	740
Left Sidewall, Back	9	10	16.11	16.3		20	3.4	1108
Left Sidewall, Horizontal (Both Faces Combined)	5	12	16.3	16.11		34	1.043	571
Right Sidewall, Front	8	12	16.11	16.3		17	2.67	740
Right Sidewall, Back	9	10	16.11	16.3		20	3.4	1108
Right Sidewall, Horizontal (Both Faces Combined)	5	12	16.3	16.11		34	1.043	571
Left Sidewall Hook, Front	9	10	9	16.3		20	3.4	1108
Left Sidewall Hook, Back	9	10	8	16.3		20	3.4	1108
Right Sidewall Hook, Front	9	10	9	16.3		20	3.4	1108
Right Sidewall Hook, Back	9	10	8	16.3		20	3.4	1108

TOTAL WEIGHT = 12657 lbs

Section B Footing (Both Sides Combined)

Location	Bar Size	Spacing (in)	Length of Bar (ft)	Orthogonal		Number of Bars	Bar Weight (lb/ft)	Subtotal Weight (lbs)
				Length (ft)				
Top Reinf 1	9	12	7	20		40	3.4	2720

Bot Reinf 1	9	12	7	20	40	3.4	2720
Top Reinf 2	5	12	20	7	14	1.043	102.214
Bot Reinf 2	5	12	20	7	14	1.043	102.214
Hook Left	9	12	7	20	40	3.4	2720
Hook Right	9	12	7	20	40	3.4	2720

TOTAL WEIGHT = 11084 lbs

Culvert Floor Slab

Location	Bar Size	Spacing (in)	Length of Bar (ft)	Orthogonal Length (ft)	Number of Bars	Bar Weight (lb/ft)	Subtotal Weight (lbs)
Horiz. Reinf 1	5	12	19.9	16.3	34	1.043	578
Horiz Reinf. 2	5	12	16.3	19.9	40	1.043	830

TOTAL WEIGHT = 1408 lbs

OTIC MP 132 Structural Quantities

Headwall Reinforcement

Wall - Segments 1 (both combined)

Location	Bar Size	Spacing (in)	Length of Bar (ft)	Orthogonal Length (ft)	Number of Bars	Bar Weight (lb/ft)	Subtotal Weight (lbs)
Vert. Front Face	4	9	22	52.6	71	0.668	1043
Vert. Back Face	7	9	22	52.6	71	2.044	3193
Horizontal (both faces combined)	4	9	52.6	22	30	0.668	1054
Front Face Hook	4	9	5.7	52.6	71	0.668	269
Back Face Hook	9	9	10.3	52.6	71	3.4	2493

TOTAL WEIGHT = 8051 lbs

Wall - Segment 2

Location	Bar Size	Spacing (in)	Length of Bar (ft)	Orthogonal Length (ft)	Number of Bars	Bar Weight (lb/ft)	Subtotal Weight (lbs)
Vert. Front Face	4	9	13.5	19.9	27	0.668	243
Vert. Back Face	7	9	13.5	19.9	27	2.044	745
Horizontal (both faces combined)	4	9	19.9	13.5	18	0.668	239
Front Face Hook	4	9	5.7	19.9	27	0.668	102
Back Face Hook	9	9	10.3	19.9	27	3.4	948

TOTAL WEIGHT = 2278 lbs

Wall Footings (All Segments Combined)

Location	Bar Size	Spacing (in)	Length of Bar (ft)	Orthogonal Length (ft)	Number of Bars	Bar Weight (lb/ft)	Subtotal Weight (lbs)
Top Reinf 1	9	9	12	72.5	97	3.4	3957.6
Bot Reinf 1	9	9	12	72.5	97	3.4	3957.6
Top Reinf 2	5	12	72.5	12	12	1.043	907.41
Bot Reinf 2	5	12	72.5	12	12	1.043	907.41

TOTAL WEIGHT = 9730 lbs

OTIC MP 132 Structural Quantities

Concrete Take-Off

Location	Cross-Section Area (ft ²)	Orthogonal Length (ft)	Volume (CY)
Culvert Extension Section A	101.6	13	49
Culvert Extension Section B	108.8	16.3	66
Culvert Footing Section B (all)	28	16.3	17
Culvert Floor Slab	19.9	16.3	12
Headwall Segment 1	33	52.6	64
Headwall Segment 2	20.25	19.9	15
Headwall Footings (all)	24	72.5	64
TOTAL VOLUME =			287 CY

OTIC MP 132 Structural Quantities

Epoxy Dowels Take-Off

Location	Bar Size	Spacing (in)	Length of Bar (ft)	Orthogonal Length (ft)	Number of Bars	Bar Weight (lb/ft)	Subtotal Weight (lbs)
#9 Dowels, Culvert Segment A Foundation	9	8	7	16.1	25	3.4	595
#6 Dowels, Culvert Segment A to Ex. Arch	6	10	5	56.7	69	1.502	518
TOTAL WEIGHT =							1113 lbs

OTIC MP 132 Structural Quantities

Structural General Summary

Culvert Extension

Item	Quantity	Unit
Structural Concrete	158	CY
Steel Reinforcement	40051	lbs
#6 Epoxy-Grouted Dowels	71	EA
#9 Epoxy-Grouted Dowels	27	EA
Hydrophillic Waterstop	60	LF
4" Perforated Drain Pipe	65	LF

Headwall

Item	Quantity	Unit
Structural Concrete	158	CY
Steel Reinforcement	22065	lbs
4" Perforated Drain Pipe	75	LF

SPECIAL PROVISIONS

SP 627

STONE SHOULDER PROTECTION

(12/14/15)

A. Description

The Work shall consist of removing vegetation and other accumulation of debris under the guardrail and the furnishing and placing of stone backfill as shown on the Plans and in accordance with these Special Provisions. The removal, storage and reinstallation of existing mile markers and delineators shall be considered incidental to this Work.

B. Materials

Stone backfill shall be durable No. 67 size carbonate stone, graded in accordance with Section 703.01 of the Specifications.

C. Construction Methods

Existing vegetation and other accumulated debris shall be removed to the dimensions shown on the Plans and replaced with stone backfill material. All material removed shall be disposed of in strict accordance with SP 105 of these Special Provisions. An herbicide shall be applied to the area after final grading and before placement of the stone. The herbicide shall be Treflan EC, Spike or approved equal. Herbicide application shall strictly adhere to the instructions of the manufacturer and applied only by properly licensed personnel as required by the Ohio Revised Code.

D. Method of Measurement and Basis of Payment

Work under Stone Shoulder Protection shall be paid for at the Contract unit price per cubic yard, furnished, and placed, which price and payment shall be full compensation for excavation; disposal of unsuitable material; furnishing, placing stone backfill; removal, storage and reinstallation of mile markers and delineators; applying herbicide; and all labor, equipment, tools and incidentals necessary to perform the Work, complete and accepted.

Payment shall be made under:

<u>Item</u>	<u>Unit</u>	<u>Description</u>
SP 627	CU.YD.	Stone Shoulder Protection

SPECIAL PROVISIONS

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