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SHEET NUM.												PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
4	6	19	20	21	22							01/IMS/OT	EXT	TOTAL				
<b>ROADWAY</b>																		
LS												LS	201	11000	LS	CLEARING AND GRUBBING		
			3									3	202	20010	3	EACH	HEADWALL REMOVED	
			1,595	43								1,638	202	23000	1,638	SY	PAVEMENT REMOVED, CONCRETE	
			75									75	202	30700	75	FT	CONCRETE BARRIER REMOVED	
			810	538								1,348	202	32000	1,348	FT	CURB REMOVED	
												134	202	32700	134	SY	GUTTER REMOVED	
												477	202	35101	477	FT	PIPE REMOVED, 24" AND UNDER, AS PER PLAN	
												152	202	35200	152	FT	PIPE REMOVED, OVER 24"	
												675	202	38000	675	FT	GUARDRAIL REMOVED	
												6	202	58100	6	EACH	CATCH BASIN REMOVED	
												50	SPECIAL	20270000	50	FT	FILL AND PLUG EXISTING CONDUIT. 12"	
												LS	202	98000	LS		REMOVAL MISC.: LIGHT TOWER RETAINING WALL	
			20,257									20,257	203	10000	20,257	CY	EXCAVATION	
			6,143									6,143	203	20000	6,143	CY	EMBANKMENT	
			438									438	203	35110	438	CY	GRANULAR MATERIAL, TYPE B	
			2,155									2,155	203	98000	2,155	CY	ROADWAY, MISC.: FLOOR CONTROL EMBANKMENT	
			562									562	203	98000	562	CY	ROADWAY, MISC.: UNDERCUT	
3			207									3	204	35000	3	HOUR	PROOF ROLLING	
			5,226									5,226	206	11001	5,226	SY	CURING COAT, AS PER PLAN	
												5,425	206	15030	5,425	SY	CEMENT STABILIZED SUBGRADE, 16 INCHES DEEP	
												831.25	606	15050	831.25	FT	GUARDRAIL, TYPE MGS	
												3	606	26150	3	EACH	ANCHOR ASSEMBLY, MGS TYPE E(INCHRP 350 OR MASH 2016)	
												1	606	26500	1	EACH	ANCHOR ASSEMBLY, TYPE T	
												3	606	35002	3	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
												1	606	35103	1	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2, AS PER PLAN	
												4,655	608	12000	4,655	SF	5" CONCRETE WALK	
												306	608	52000	306	SF	CURB RAMP	
												943	622	10160	943	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D	
												3	622	25000	3	EACH	CONCRETE BARRIER END SECTION, TYPE D	
												4	622	25050	4	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D	
												1	623	40500	1	EACH	REFERENCE MONUMENT	
												13	626	00102	13	EACH	BARRIER REFLECTOR, TYPE 1, 1 WAY	
												20	626	00110	20	EACH	BARRIER REFLECTOR, TYPE 2, 1 WAY	
												LS	878	25000	LS		INSPECTION AND COMPACTION TESTING OF UNBOUND MATERIALS	

**GENERAL SUMMARY**

**HAM-71-8.65**

CALCULATED  
LBA  
CHECKED  
SNS



EARTHWORK QUANTITIES																
STATION	SHEET NO.	203					659	DEDUCT							659	
		EXCAVATION CU YD	EMBANKMENT CU YD	GRANULAR MATERIAL, TYPE B CU YD	ROADWAY MISC.: FLOOD CONTROL EMBANKMENT CU YD	ROADWAY MISC.: UNDERCUT CU YD	SEEDING & MULCHING AREA SQ YD	TIED CONCRETE BLOCK MAT, TYPE 1 SQ YD	DEDUCT FOR ROCK CHANNEL PROTECTION SQ YD	DEDUCT FOR ROCK CHANNEL PROTECTION (CULVERT) SQ YD	DEDUCT FOR RIP RAP SQ YD	DEDUCT FOR DITCH EROSION PROTECTION SQ YD	DEDUCT FOR PAVED GUTTER SQ YD	SEEDING & MULCHING SQ YD		
I.R. 71																
408+50.00	413+00.00	37	456	65			1431								-29.00	1402.00
RAMP N																
408+50.00	414+00.00	42	5501	4252			11161							-441.00		10720
RAMP P																
408+50.00	418+00.00	49	2057	1826	438		650							-207.00		443
LEVEE																
0+00.00	5+50.00	55	1577		2053	411	2622							-207.00		2415
YONONTE CREEK																
9+50.00	5+50.00	58	10666		102	151	5600							-207.00		5393
	SUBTOTAL		20257	6143	438	2155	562	21464	0.00	0.00	0.00	0.00		-1062.00	-29.00	20373
<b>TOTALS TO GENERAL SUMMARY</b>			20257*	6143*	438*	2155*	562*									20373**

\* TOTALS CARRIED TO GENERAL SUMMARY  
 \*\* QUANTITIES CARRIED TO GENERAL NOTES

ITEM 659 SOIL ANALYSIS TEST  
 20373 SQ YD X 9 X 1/43560 AREA X 1 EACH/10 AREA = 0.42 EACH  
 USE 1 EACH \*\*

ITEM 659 REPAIR SEEDING AND MULCHING  
 20373 SQ YD X 0.05 = 1018.65 SQ YD  
 USE 1020 SQ YD \*\*

ITEM 659 COMMERCIAL FERTILIZER  
 20373 SQ YD X 1 TON/7410 SQ YD = 2.75 TONS  
 USE 3 TONS \*\*

ITEM 659 LIME  
 20373 SQ YD X 9 X 1/43560 = 4.21 ACRES  
 USE 5 ACRES\*\*

ITEM 659 WATER  
 20373 SQ YD X 0.0027 M GAL/SQ YD X 2 = 110.01 M GAL  
 USE 111 M GAL \*\*

ITEM 659 MOWING  
 20373 SQ YD X 9 X 0.25/1000 = 45.84 M SQ FT  
 USE 46 M SQ FT \*\*

ITEM 204 PROOF ROLLING  
 USING ITEM 206 CHEMICALLY STABILIZED SUBGRADE 5226 SY (FROM PAVT CALCULATIONS)  
 5226 SQ YD x 1 HR/2000 SQ YD = 2.61 HOURS, USE 3 HOURS \*\*

ITEM 206 CEMENT  
 AREA OF ITEM 206 CEMENT STABILIZED SUBGRADE 16" DEEP = 5226 SQ YD (FROM PAVT CALCULATIONS)  
 5226 SQ YD x (0.75 x 16" x 110 x 0.06) LBS/SQ YD x 1 TON/2000 LBS = 206.95 TONS  
 USE 207 TONS\*

ITEM 206 CURING COAT, AS PER PLAN  
 AREA OF ITEM 206 STABILIZED SUBGRADE, 5226 SY (FROM PAVT CALCULATIONS) = 5226 SY \*

**ITEM 203 ROADWAY MISC.; FLOOD CONTROL EMBANKMENT**

THE PLACING OF EMBANKMENT WITHIN THE LEVEE LIMITS SHALL REQUIRE THE FOLLOWING:

THE EXISTING GROUND SURFACE SHALL BE STRIPPED OF ORGANICS AND TOPSOIL TO A DEPTH OF APPROXIMATELY 6 INCHES PRIOR TO BENCHING THE FLOOD CONTROL EMBANKMENT.

THE SOIL ON WHICH THE BACKFILL IS TO BE PLACED SHOULD NOT BE EXCAVATED UNTIL IMMEDIATELY BEFORE BACKFILLING, AND SHALL NOT BE ALLOWED TO BECOME OVERLY WET OR DRY WHILE EXPOSED. THE SURFACE AREA OF THE SOIL SHALL BE SCARIFIED AS NECESSARY TO ENSURE A GOOD BOND BETWEEN THE EXISTING SOIL AND THE BACKFILL MATERIAL.

BACKFILL MATERIAL MUST BE LOW PERMEABILITY SOILS - IMPERMEABLE SOILS (E.G. SC, CL OR CL-ML WITH AN ESTIMATED HYDRAULIC CONDUCTIVITY LESS THAN  $1 \times 10^{-5}$  CM/SEC) IN ACCORDANCE WITH ASTM 2488 - USCS CLASSIFICATION SYSTEM.

BACKFILL MATERIAL SHALL BE PLACED IN LOOSE LIFTS WITH THICKNESSES NOT TO EXCEED 6-INCHES AND COMPACTED TO A MINIMUM OF 95 PERCENT STANDARD PROCTOR DENSITY DETERMINED AT OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D-698. MOISTURE CONTROL LIMITS ARE TO BE WITHIN -1% TO +3% OF OPTIMUM.

COMPACTION TEST RESULTS OF WORK ACCOMPLISHED AS DESCRIBED ABOVE SHALL BE SUBMITTED TO THE US ARMY CORPS OF ENGINEERS FOR REVIEW AND APPROVAL THROUGHOUT THE CONSTRUCTION PROCESS.

THE DISTURBED AREAS SHALL BE SEEDED AND COVERED WITH A BIO-DEGRADABLE GEOTEXTILE CONFORMING TO ODOT SPECIFICATION 712.11 FOR TYPE B TEMPORARY EROSION CONTROL MAT, WHEN FINAL GRADING IS COMPLETE.

PAYMENT FOR THE LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 203 ROADWAY MISC.; FLOOD CONTROL EMBANKMENT.

**ITEM 203 ROADWAY MISC.; UNDERCUT**

THE UNDERCUT AREAS ON THE PROPOSED LEVEE AND YONONTE CREEK CROSS SECTIONS ARE LOCATIONS WHERE THE EXISTING SOIL MUST BE REMOVED AND REPLACED WITH ITEM 203 ROADWAY MISC.; FLOOD CONTROL EMBANKMENT FOR THE PURPOSE OF PREVENTING SEEPAGE UNDER THE PROPOSED LEVEE.

PAYMENT FOR THE UNDERCUTTING / EXCAVATION OF THE EXISTING SOILS, AS SHOWN IN THE PLANS, AND PAYMENT FOR THE REPLACEMENT OF THIS UNDERCUT SOIL WITH FLOOD CONTROL EMBANKMENT, ACCORDING TO THE NOTE ABOVE, SHALL BE INCLUDED IN THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 203 ROADWAY MISC.; UNDERCUT. THIS PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

**ITEM 630 SIGNING, MISC; LEVEE SIGNAGE**

FIVE SIGNS, AS SHOWN BELOW, SHALL BE PLACED ALONG THE LENGTH OF THE I-WALL. SIGNS SHALL BE SPACED NO MORE THAN 150 FEET APART AND SHOULD BE LOCATED TO MINIMIZE ANY IMPACTS TO INSPECTION, OPERATION AND MAINTENANCE, OR ABILITY TO PERFORM EFFORTS DURING HIGH WATER OR FLOOD EVENTS. SIGNS SHALL MEET ALL THE REQUIREMENTS OF ITEM 630.



PAYMENT FOR THE LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK SHALL BE INCLUDED IN THE FOLLOWING QUANTITIES CARRIED TO THE GENERAL SUMMARY.

ITEM 630 SIGNING, MISC; LEVEE SIGNAGE 5 EACH

**RIPRAP REPAIR**

THE CONTRACTOR SHALL TAKE CARE TO NOT DAMAGE THE CONCRETE LINING OF THE YONONTE CREEK CHANNEL. ANY DAMAGE TO THE CHANNEL LINING SHALL BE REPAIRED USING ITEM 601 RIPRAP, TYPE D AS DEFINED IN THE ODOT CMS. REPAIRING DAMAGE SHALL BE AT THE CONTRACTOR'S EXPENSE.

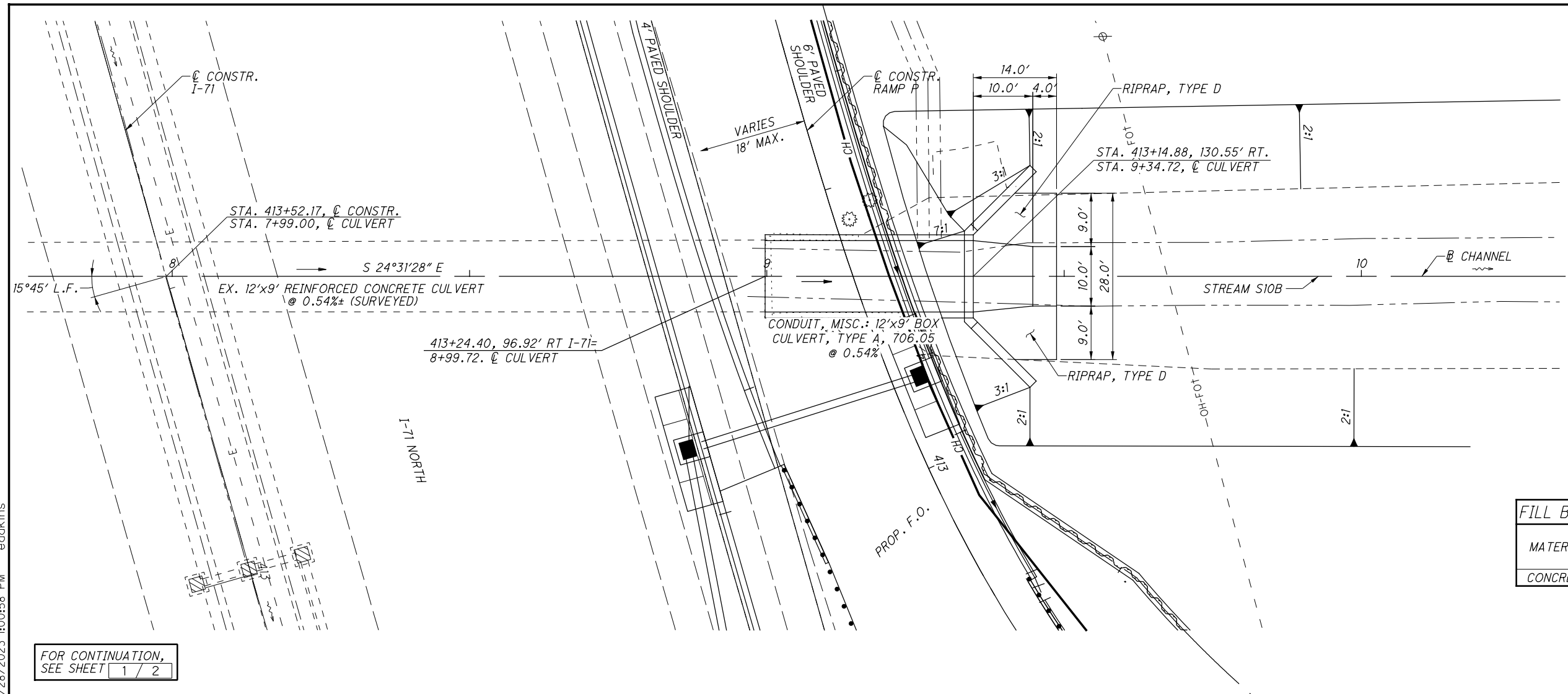
**ITEM 202 PIPE REMOVED, 24" AND UNDER, AS PER PLAN**

THIS ITEM SHALL BE IDENTICAL TO ITEM 202 PIPE REMOVED, 24" AND UNDER WITH THE EXCEPTION THAT ALL BACKFILL FOR THE REMOVAL SHALL USE ITEM 203 ROADWAY MISC.; FLOOD CONTROL EMBANKMENT WITHIN THE FLOODWALL INFLUENCE ZONE. THE FLOODWALL INFLUENCE ZONE IS 15' FROM THE OUTERMOST FLOODWALL FEATURE THAT EXTENDS AT A 1:1 SLOPE INTO THE GROUND.

I-WALL ESTIMATED QUANTITIES						
ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	GEN.	SHEET #
503	21300	LUMP	LS	UNCLASSIFIED EXCAVATION	1	
504	11101	5014	SF	STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN	5014	131-131B
509	10000	11,485	LB	EPOXY COATED REINFORCING STEEL	11,485	131G
511	46010	139	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING	139	131-131B
512	10100	288	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	288	131G
516	13601	533	SF	1" PREFORMED EXPANSION JOINT FILLER, APP	533	131G

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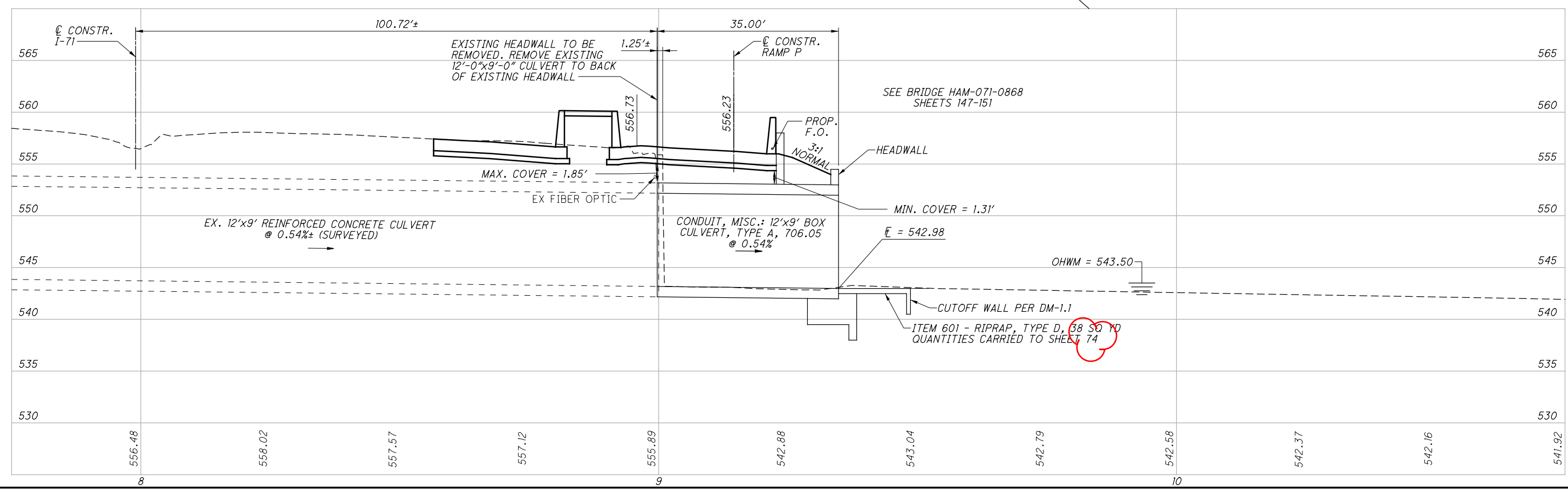
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HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 1024 Ac.
Q <sub>10</sub>	= 830 cfs
Q <sub>50</sub>	= 1360 cfs
Q <sub>100</sub>	= 1470 cfs
HW <sub>10</sub>	= 554.2
HW <sub>50</sub>	= 559.1
HW <sub>100</sub>	= 560.6
V <sub>10</sub>	= 3.5 fps
V <sub>50</sub>	= 2.1 fps
V <sub>100</sub>	= 1.71 fps
DESIGN SERVICE LIFE	= 75 YRS.
pH	= 7.01
ABRASION LEVEL:	1
EXISTING STRUCTURE	
SFN	3115275
TYPE:	12'x9' REINFORCED CONCRETE CULVERT
SKREW:	15°45' L.F.
ALIGNMENT:	TANGENT
LENGTH:	276 FT
DATE BUILT:	1966

FILL BELOW OHWM FOR STREAM SLOB			
MATERIAL	LENGTH (FT)	SURFACE AREA (ACRE)	VOLUME (CY)
CONCRETE	49	0.0146	12

FOR CONTINUATION, SEE SHEET 1 / 2



CALCULATED: [ ] GK: [ ] CHECKED: [ ]

**CULVERT DETAIL**

**I-71 STA. 413+52.17**

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**HAM-71-6.86**

2 / 2

72 / 129

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ESTIMATED QUANTITIES - CARRIED TO GENERAL SUMMARY

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET NUMBER
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	1 / 5
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING	
503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	1 / 5
509	10001	10121	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN	
511	46210	91	CU YD	CLASS QC1 CONCRETE, RETAINING/WINGWALL INCLUDING FOOTING	
511	46611	2	CU YD	CLASS QC1 CONCRETE, HEADWALL, AS PER PLAN	
512	10100	68	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	33000	150	SQ YD	TYPE 2 WATERPROOFING	
516	13600	38	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	
518	21200	12	CU YD	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
601	11000	38	SQ YD	RIPRAP, TYPE D	
611	97400	35	FT	CONDUIT, MISC.: 12' X 9' CONDUIT, TYPE A, 706.05, DESIGN COVER 3 FT, AS PER PLAN	1 / 5

QUANTITIES COMPUTED BY: JBR 8/16  
 QUANTITIES CHECKED BY: AMT 3/17

**ESTIMATED QUANTITIES**  
 BRIDGE No. HAM-071-0868  
 I-71 OVER TRIBUTARY OF DUCK CREEK

**HAM-71-8.65**  
 PID No. 114992

2 / 5

74  
129

DESIGNED	AMT	CHECKED	SUM	DRAWN	MNM	REVISED	JWG	REVIEWED	DWS	DATE	7-17
											3115275


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