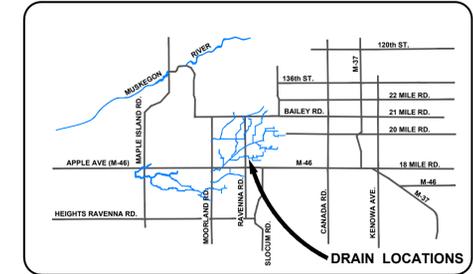




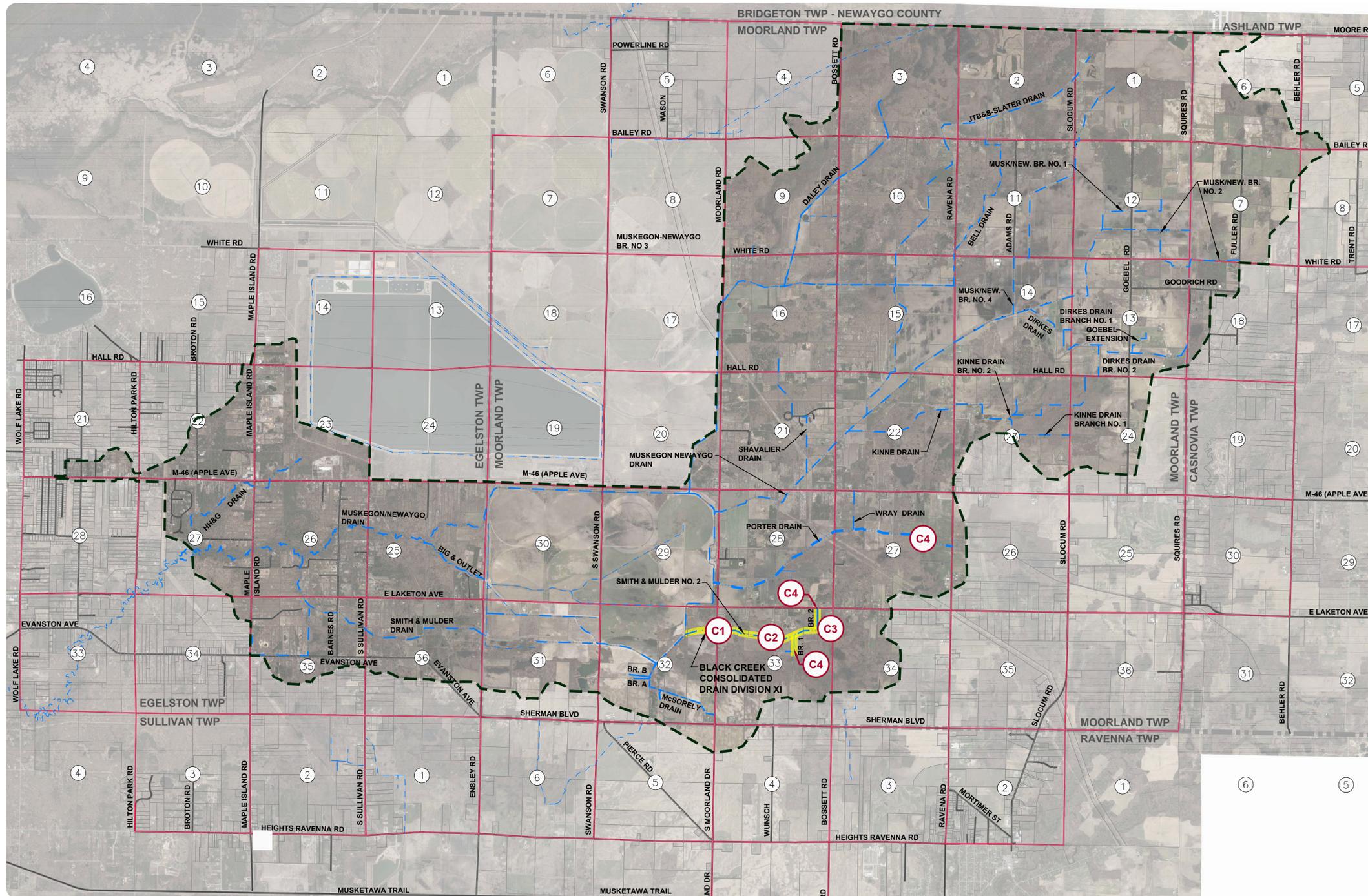
# BLACK CREEK CONSOLIDATED DRAIN-DIVISION XI

FORMER SMITH & MULDER DRAIN NO. 2 DRAIN  
 EGELSTON, MOORLAND, RAVENNA & CASNOVIA TOWNSHIPS  
 MUSKEGON COUNTY, MICHIGAN



2121 3 Mile Rd. NW  
 Walker, MI 49544  
 Ph: 616-301-7888  
 www.LREMI.com

**LRE**  
 ENGINEERS & SURVEYORS



**VICINITY MAP**  
 NOT TO SCALE

**INDEX OF SHEETS**

**CS - COVER SHEET**

**C1 - PLAN & PROFILE**  
 FORMER SMITH & MULDER NO. 2 DRAIN  
 (STA. 0+00 - 29+50)

**C2 - PLAN & PROFILE**  
 FORMER SMITH & MULDER NO. 2 DRAIN  
 (STA. 29+50 - 59+50)

**C3 - PLAN & PROFILE**  
 FORMER SMITH & MULDER NO. 2 DRAIN  
 (STA. 59+50 - 72+50)

**C4 - PLAN & PROFILE**  
 FORMER SMITH & MULDER  
 NO. 2 BR. 1 DRAIN  
 (STA. 0+00 - 10+50)  
 FORMER SMITH & MULDER  
 NO. 2 BR. 2 DRAIN  
 (STA. 0+00 - 10+50)

**C5 - DETAILS**

**LEGEND**

▲ - TRAVERSE POINT	○ - FIRE HYDRANT
△ - WELL	○ - WATER VALVE
⊖ - HIGHWAY	⊖ - GAS METER
● - MONUMENT	⊖ - WATER METER
○ - FOUND IRON STAKE	⊖ - TELEPHONE RISER
⊖ - SET IRON STAKE	⊖ - ELECTRIC METER
⊖ - SIGN	⊖ - CATCH BASIN
RR - RR SIGN	⊖ - UTILITY MANHOLE
○ - GUY POLE	⊖ - ROUND CATCH BASIN
○ - GUY ANCHOR	⊖ - UTILITY MANHOLE
○ - UTILITY POLE	⊖ - STORM MANHOLE
○ - LIGHT POLE	⊖ - SANITARY MANHOLE
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○ - U.G. UTILITY MARKER	○ - SHRUB
⊖ - MAILBOX	○ - DECIDUOUS TREE
	○ - CONIFEROUS TREE

**UTILITY CONTACTS**

CONSUMERS ENERGY  
 KURT GOLDING  
 MISSDIGDESIGNTICKERS  
 @CMSENERGY.COM

MUSKEGON AREA INTERMEDIATE SCHOOL DISTRICT  
 KEN LOPEZ  
 (616) 393-0138 (O)  
 MITICKETS@DIGTRACK.COM

GAS-DTE GAS TRANSMISSION  
 BARBARA SAUNDERS  
 (313) 235-5111 (O) &  
 GREG BLOSSER  
 (313) 235-1080 (O)  
 BLOSSERG@DTEENERGY.COM

GAS-AMERIGAS  
 CHAD KROUSE  
 (231) 638-3183 (O)  
 CHAD.KROUSE@AMERIGAS.COM

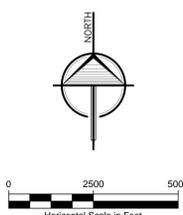
MUSKEGON COUNTY WASTEWATER  
 STEVE BARNARD  
 (231) 724-3441 (O)  
 MISSDIG@CO.MUSKEGON.MI.US

FRONTIER/VERIZON  
 KATHRYN ANDERSON  
 (810) 724-3127 (O)  
 MI.MISSDIG.FACILITIES.  
 DESIGN.REQUEST@FTR.COM

WINDSTREAM COMMUNICATIONS  
 (800) 289-1901 (O)  
 LOCATE.DESK@WINDSTREAM.COM

**LEGEND**

--- ENCLOSED CHANNEL DRAIN	--- TOWNSHIP LINE
--- OPEN CHANNEL DRAIN	--- ROADS
--- DRAINAGE DISTRICT BOUNDARY	--- PROPERTY LINES
--- SECTION LINE	--- SECTION NUMBERS
	--- SHEET NUMBERS



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**REVISIONS:**

NO.	DATE	ISSUED FOR
1.	DEC. 2017	EX. CONDITION SURVEY
2.	AUG. 2019	MAINTENANCE PLANS
3.	JUNE 2020	BIDS

MUSKEGON COUNTY DRAIN COMMISSIONER  
 141 E. APPLE AVE., MUSKEGON, MI 49842

BLACK CREEK CONSOLIDATED DRAIN-DIVISION XI  
 EGELSTON, MOORLAND, RAVENNA & CASNOVIA TOWNSHIPS, MUSKEGON COUNTY, MI

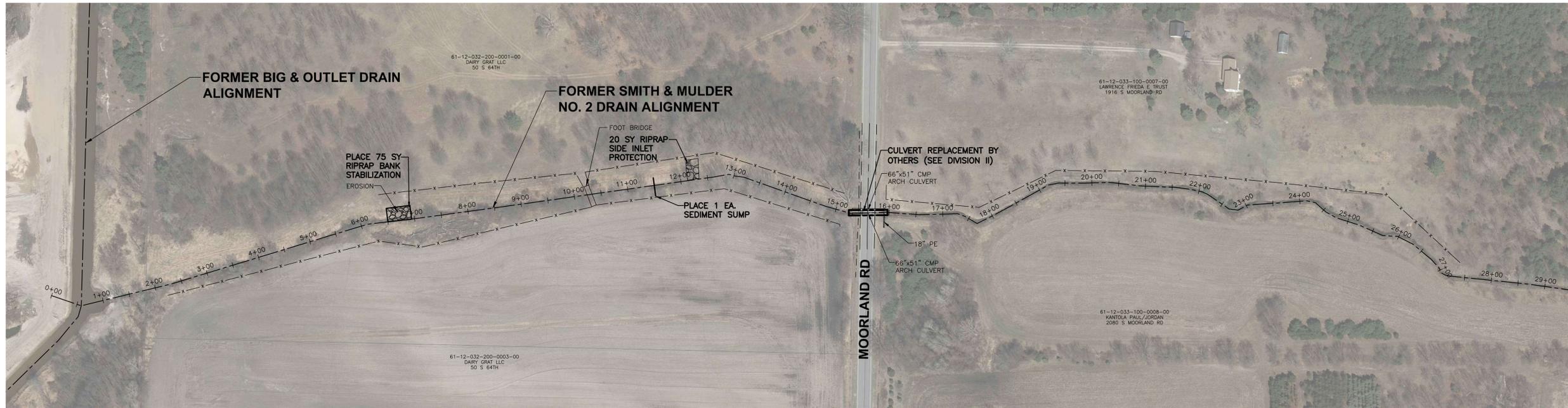
**PROJECT NUMBER:** 17-008

DATE	BY
SEPT. 2017	CT JS
AUG. 2019	AW
AUG. 2019	AW
JUNE 2020	AW

**DRAWN BY:** RAG  
**CHECKED BY:** DJF

**COVER SHEET**

SHEET NUMBER  
**CS**

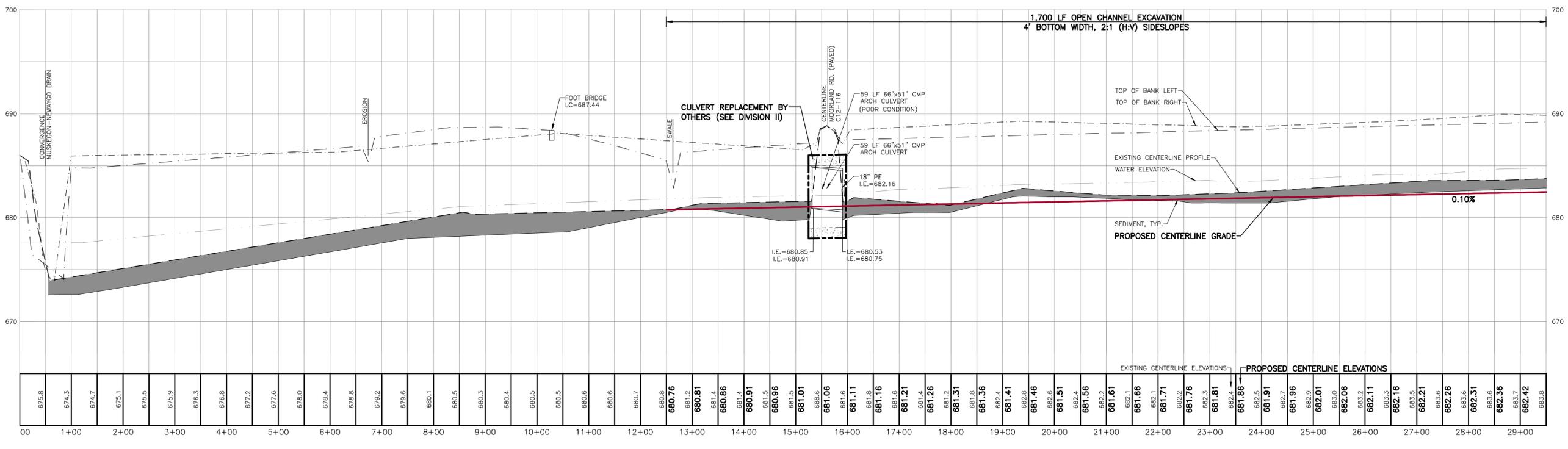
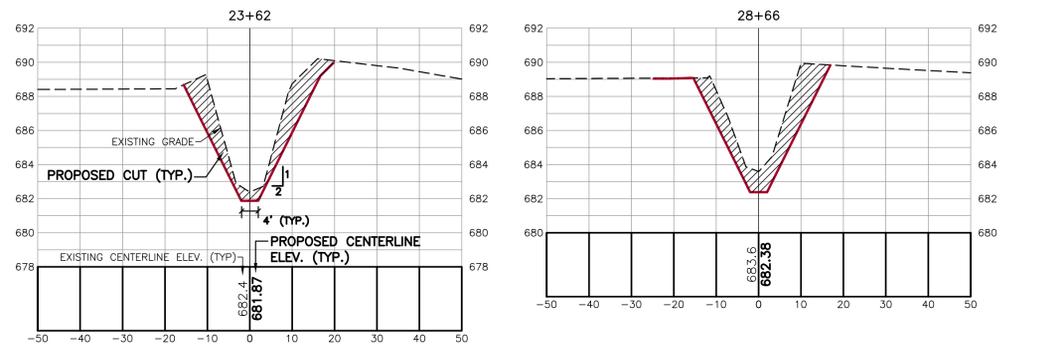
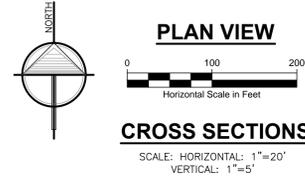


MATCHLINE: SEE SHT. C2 FOR CONTINUATION

- NOTES:**
1. DRAIN R.O.W. SUFFICIENT WIDTH FOR DEPOSITION OF SPOIL MATERIAL.
  2. MULCH BLANKET BANKS AS DIRECTED BY ENGINEER. PAID FOR AS SY MULCH BLANKET.
  3. SALVAGE AND RE-SPREAD TOPSOIL, SEED & MULCH ALL DISTURBED AREAS. PAID FOR AS LF OPEN CHANNEL SEEDING.
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  6. QUANTITIES WILL NOT BE PAID ABOVE CONTRACT AMOUNT UNLESS AUTHORIZED BY ENGINEER.

**MISCELLANEOUS QUANTITIES:**

MOBILIZATION	1 LS
OPEN CHANNEL SEEDING	1,700 LF
MULCH BLANKET	3,050 SY
RIPRAP	100 SY



**CENTERLINE PROFILE**  
SCALE: HORIZONTAL: 1" = 100'  
VERTICAL: 1" = 5'



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ENGINEERS & SURVEYORS

REVISIONS:	NO.	ISSUED FOR:	DATE
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	3.	BIDS	JUNE 2020

PROJECT	
MUSKOGEE COUNTY DRAIN COMMISSIONER	
141 E. APPLE AVE., MUSKOGEE, MI 49842	
PROJECT	
BLACK CREEK CONSOLIDATED DRAIN-DIVISION XI	
EGELSTON, MOORLAND, RAVENNA & CASNOVA TOWNSHIPS, MUSKOGEE COUNTY, MI	

PROJECT NUMBER: 17-008	
SURVEYED BY: CF JS	
DESIGNED BY: AWS	
DRAFTED BY: RAG	
CADC:DJF	

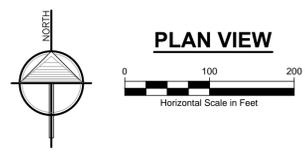
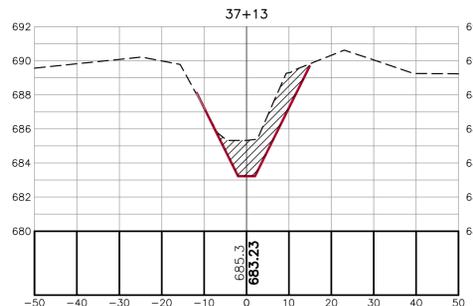
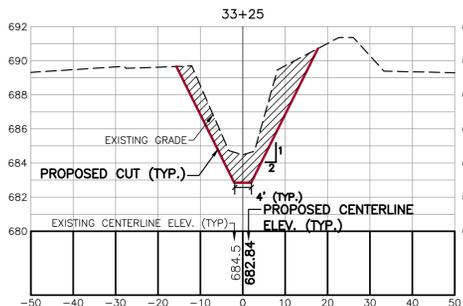
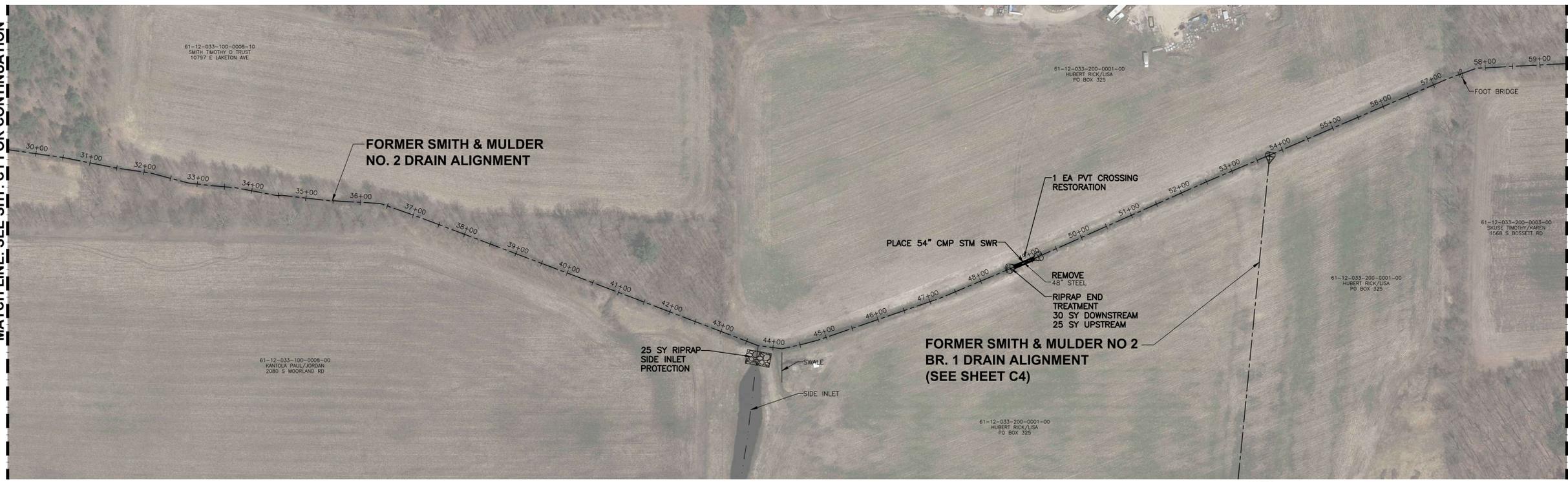
DATE
SEPT. 2017
AUG. 2019
AUG. 2019
JUNE 2020

PLAN & PROFILE  
STA: 0+00 - 29+50  
FORMER SMITH &  
MULDER NO. 2 DRAIN

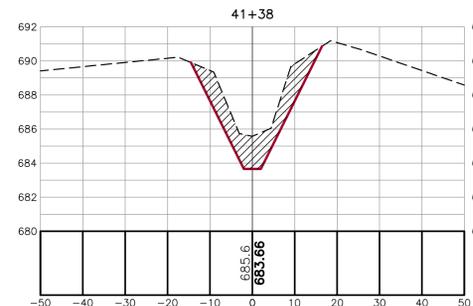
C1

MATCH LINE: SEE SHT. C1 FOR CONTINUATION

MATCH LINE: SEE SHT. C3 FOR CONTINUATION

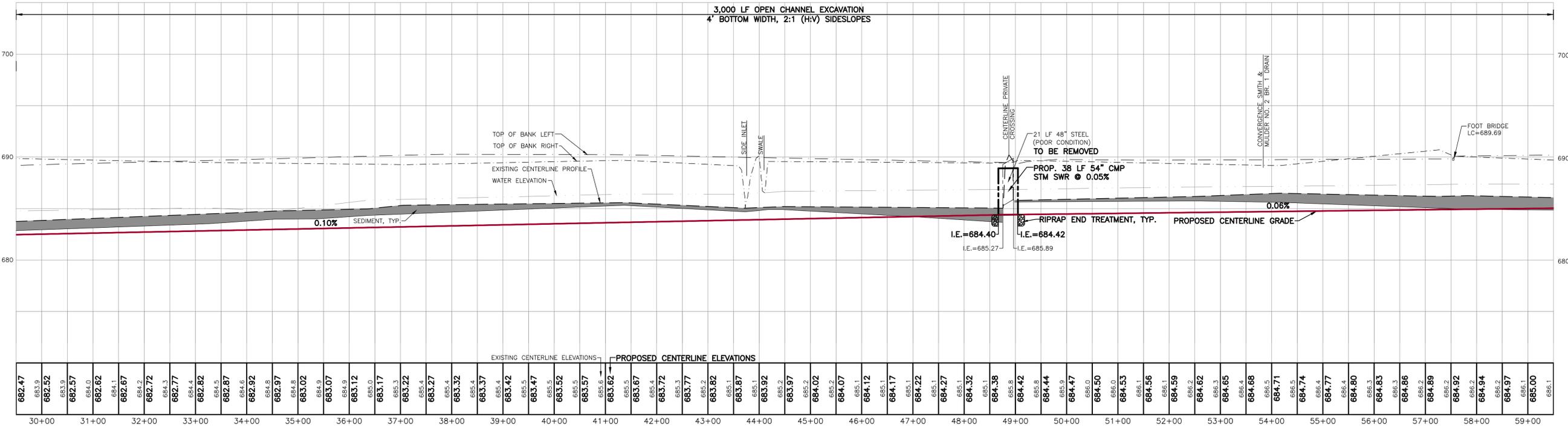


**CROSS SECTIONS**  
SCALE: HORIZONTAL: 1"=20'  
VERTICAL: 1"=5'



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**MISCELLANEOUS QUANTITIES:**  
OPEN CHANNEL SEEDING 3,000 LF  
MULCH BLANKET 3,350 SY



**CENTERLINE PROFILE**  
SCALE: HORIZONTAL: 1"=100'  
VERTICAL: 1"=5'

STATION	EXISTING CENTERLINE ELEVATIONS	PROPOSED CENTERLINE ELEVATIONS
30+00	682.47	683.9
31+00	682.52	683.9
32+00	682.57	684.0
33+00	682.62	684.1
34+00	682.67	684.2
35+00	682.72	684.3
36+00	682.77	684.4
37+00	682.82	684.5
38+00	682.87	684.6
39+00	682.92	684.8
40+00	682.97	684.8
41+00	683.02	684.9
42+00	683.07	684.9
43+00	683.12	685.0
44+00	683.17	685.0
45+00	683.22	685.3
46+00	683.27	685.4
47+00	683.32	685.4
48+00	683.37	685.4
49+00	683.42	685.5
50+00	683.47	685.5
51+00	683.52	685.5
52+00	683.57	685.6
53+00	683.62	685.6
54+00	683.67	685.5
55+00	683.67	685.4
56+00	683.72	685.3
57+00	683.77	685.2
58+00	683.82	685.1
59+00	683.87	685.1
	683.92	685.1
	683.97	685.2
	684.02	685.2
	684.07	685.2
	684.12	685.1
	684.17	685.1
	684.22	685.1
	684.27	685.1
	684.32	685.1
	684.38	685.1
	684.42	685.8
	684.44	685.8
	684.47	685.9
	684.50	686.0
	684.53	686.0
	684.56	686.1
	684.59	686.2
	684.62	686.3
	684.65	686.4
	684.68	686.4
	684.71	686.5
	684.74	686.5
	684.77	686.4
	684.80	686.4
	684.83	686.3
	684.86	686.3
	684.89	686.2
	684.92	686.2
	684.94	686.2
	684.97	686.1
	685.00	686.1

3 WORKING DAYS  
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REVISIONS:	NO.	ISSUED FOR:	DATE
	1.	EX. CONDITION SURVEY	DEC. 2017
	2.	MAINTENANCE PLANS	AUG. 2019
	3.	BIDS	JUNE 2020

PROJECT: MUSKOGEE COUNTY DRAIN COMMISSIONER  
141 E. APPLE AVE., MUSKOGEE, MI 49842

CLIENT: BLACK CREEK CONSOLIDATED DRAIN-DIVISION XI  
EGGESTON, MOORLAND, RAVENNA & CASNOVA TOWNSHIPS, MUSKOGEE COUNTY, MI

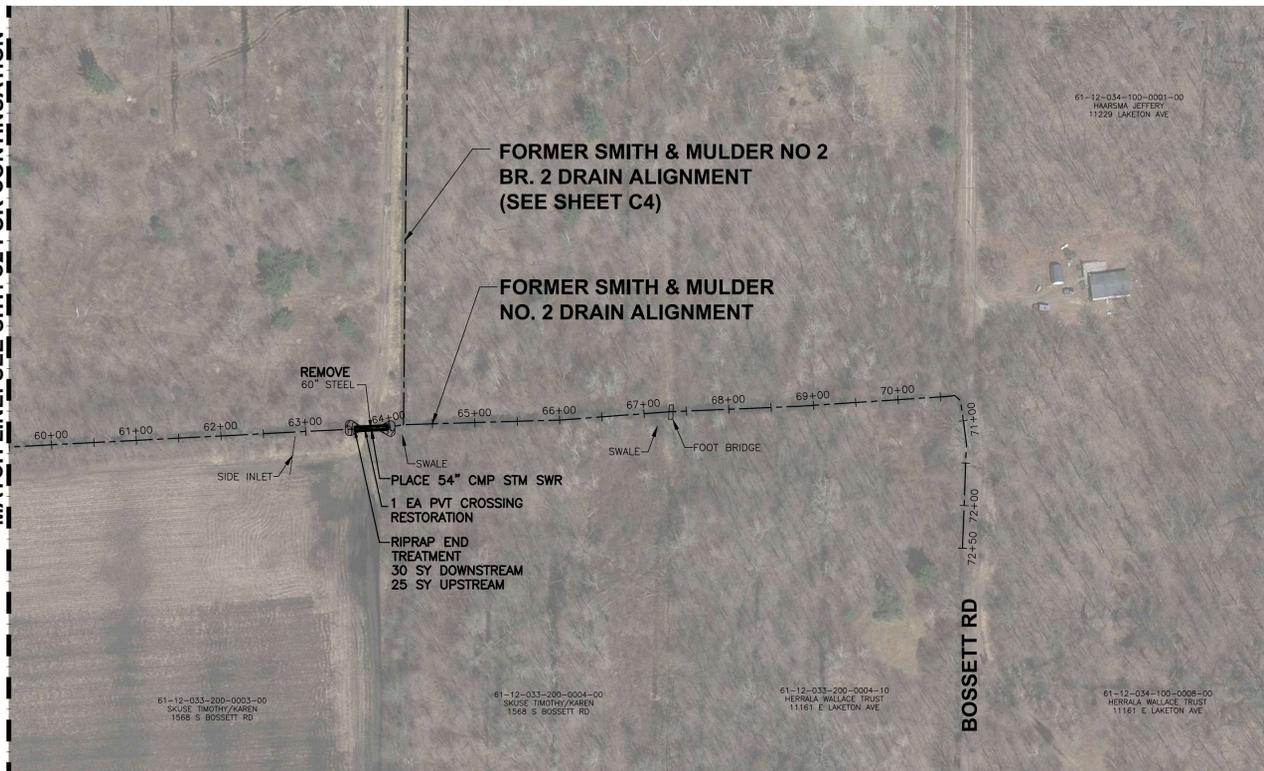
PROJECT NUMBER:	DATE
17-008	SEPT. 2017
	AUG. 2019
	AUG. 2019
	JUNE 2020

SURVEYED BY: CF JS  
DESIGNED BY: AWS  
DRAFTED BY: RAG  
CAGC/DJF

**PLAN & PROFILE**  
STA: 29+50 - 59+50  
FORMER SMITH & MULDER NO. 2 DRAIN

SHEET NUMBER  
**C2**

MATCH LINE: SEE SHT. C2 FOR CONTINUATION

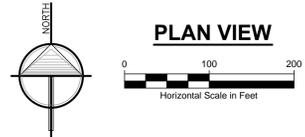
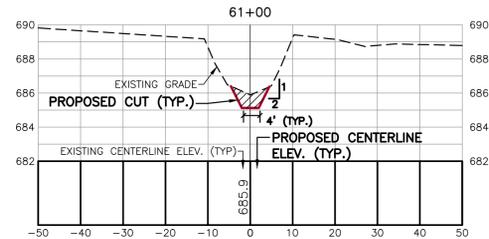


**NOTES:**

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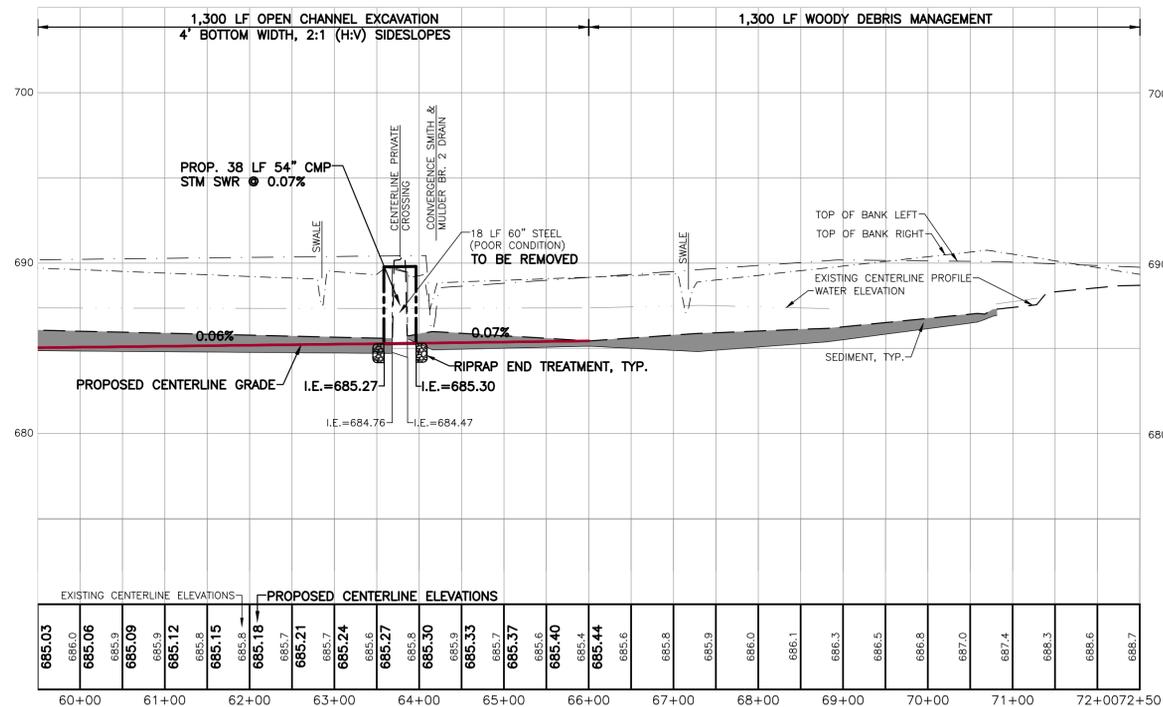
**MISCELLANEOUS QUANTITIES:**

OPEN CHANNEL SEEDING 1,300 LF



**CROSS SECTIONS**

SCALE: HORIZONTAL: 1"=20'  
VERTICAL: 1"=5'



**CENTERLINE PROFILE**

SCALE: HORIZONTAL: 1" = 100'  
VERTICAL: 1" = 5'

EXISTING CENTERLINE ELEVATIONS	PROPOSED CENTERLINE ELEVATIONS
685.03	685.18
686.0	685.21
685.06	685.24
686.9	685.27
685.09	685.30
685.12	685.33
685.8	685.37
685.15	685.40
685.8	685.44
685.18	685.47
685.21	685.5
685.24	685.53
685.6	685.57
685.27	685.6
685.30	685.63
685.33	685.66
685.37	685.69
685.40	685.72
685.44	685.75
685.6	685.78
685.8	685.81
685.9	685.84
686.0	685.87
686.1	685.9
686.3	685.93
686.5	685.96
686.8	685.99
687.0	686.02
687.4	686.05
685.3	686.08
685.6	686.11
686.7	686.14
686.7	686.17



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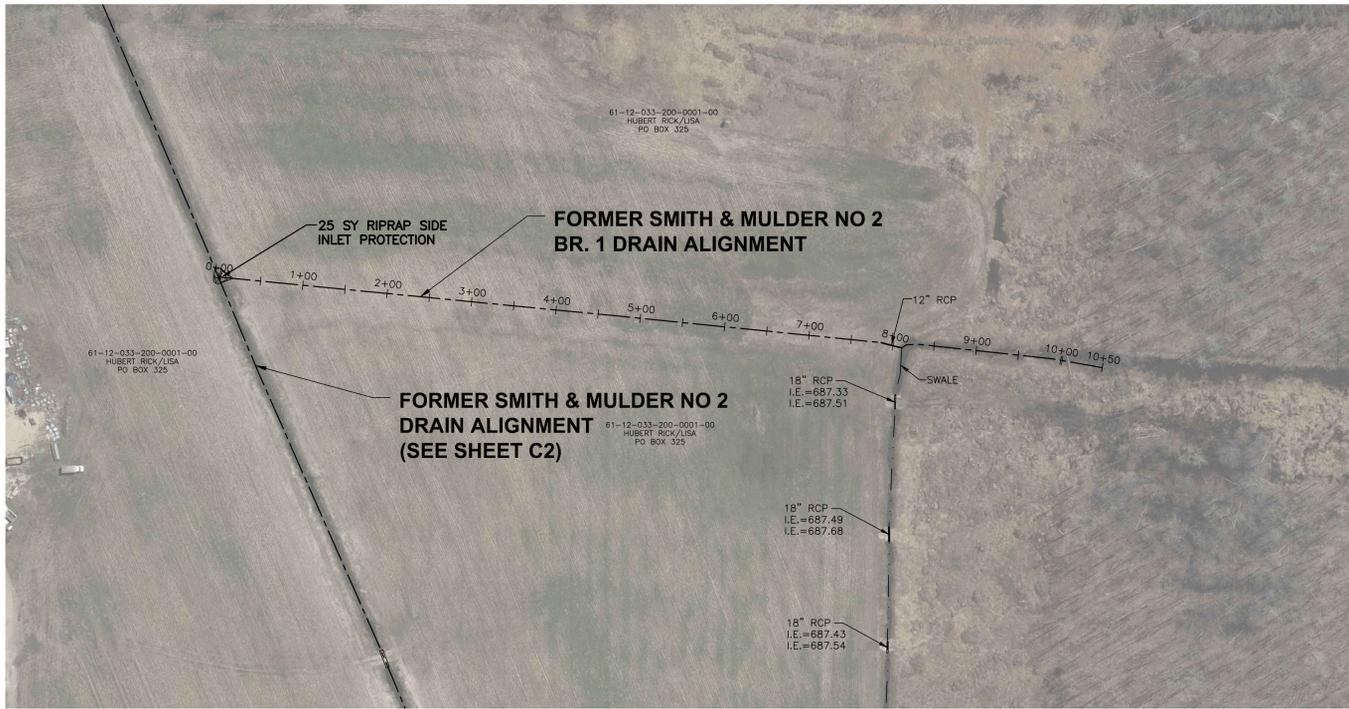
**MUSKOGEE COUNTY DRAIN COMMISSIONER**  
141 E. APPLE AVE., MUSKOGEE, MI 49842

**BLACK CREEK CONSOLIDATED DRAIN-DIVISION XI**  
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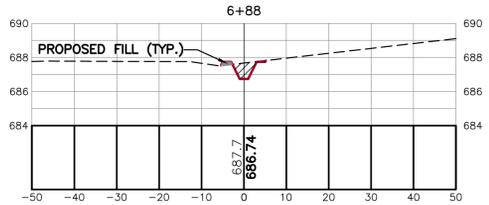
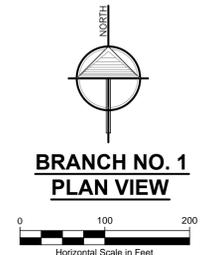
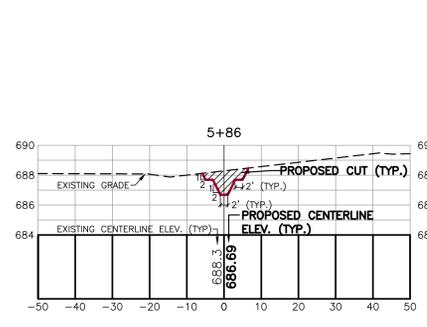
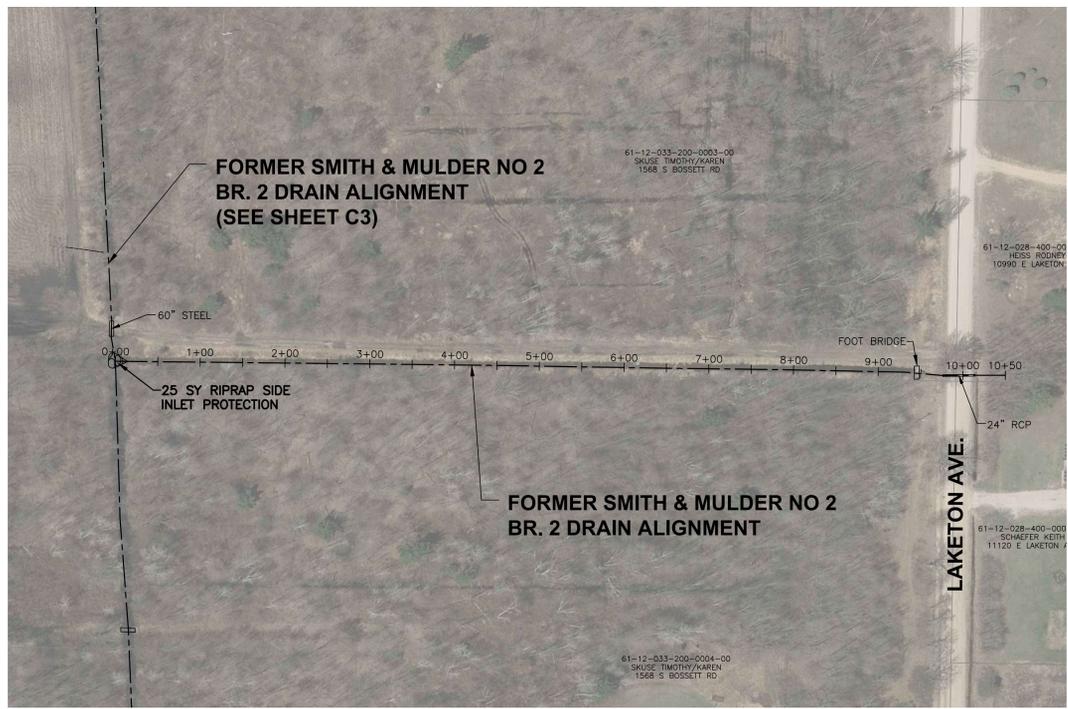
PROJECT NUMBER:	DATE
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**PLAN & PROFILE**  
STA: 59+50 - 72+50  
FORMER SMITH &  
MULDER NO. 2 DRAIN

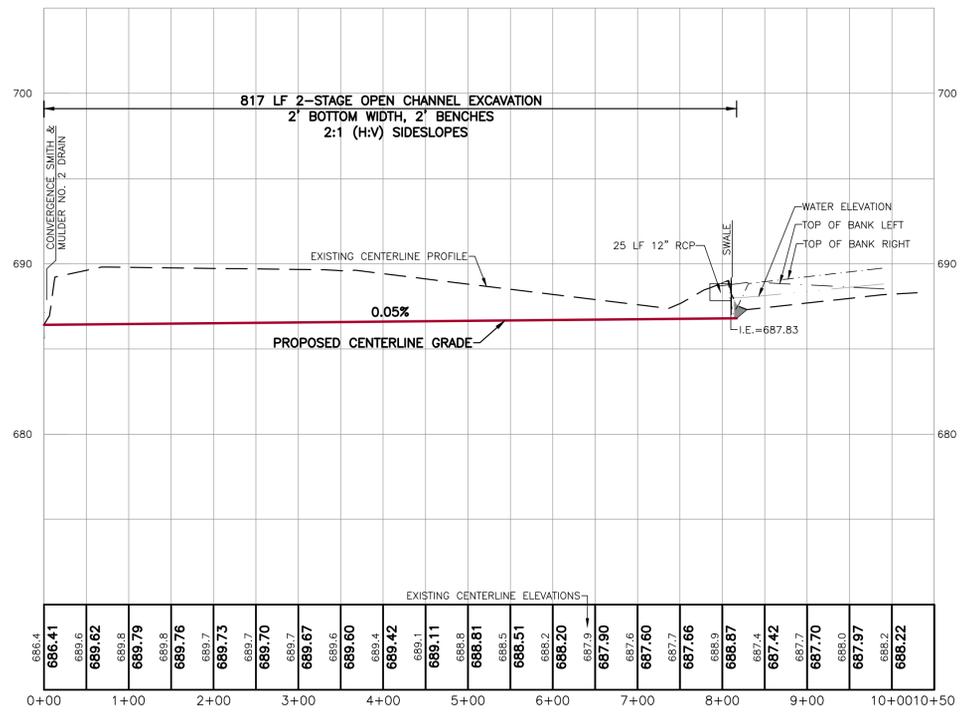
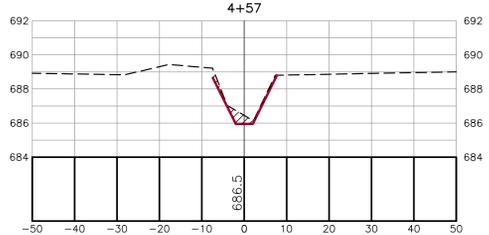
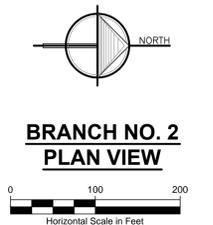
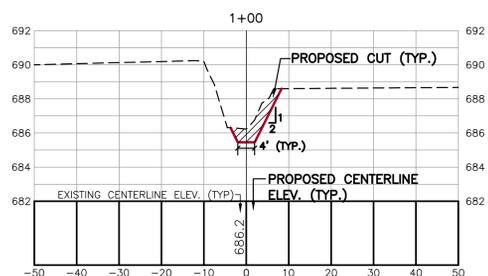
C3



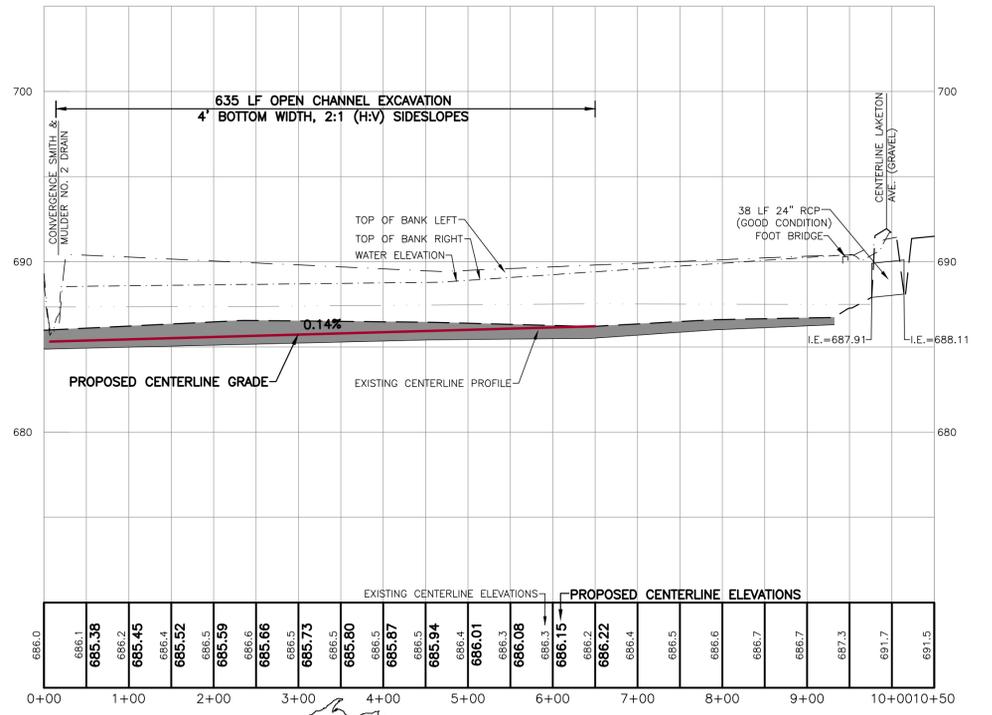
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**CROSS SECTIONS**  
SCALE: HORIZONTAL: 1"=20'  
VERTICAL: 1"=5'



**MISCELLANEOUS QUANTITIES:**  
OPEN CHANNEL SEEDING 1,452 LF  
MULCH BLANKET 3,500 SY



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	JUNE 2020

SURVEYED BY: CF JS  
DESIGNED BY: AWS  
DRAFTED BY: RAG  
CADC:DJF

**PLAN & PROFILE**  
STA: 0+00 - 15+00  
FORMER SMITH & MULDER NO. 2 BR. 1 DRAIN  
STA: 0+00 - 10+50  
FORMER SMITH & MULDER NO. 2 BR. 2 DRAIN

SHEET NUMBER  
**C4**

