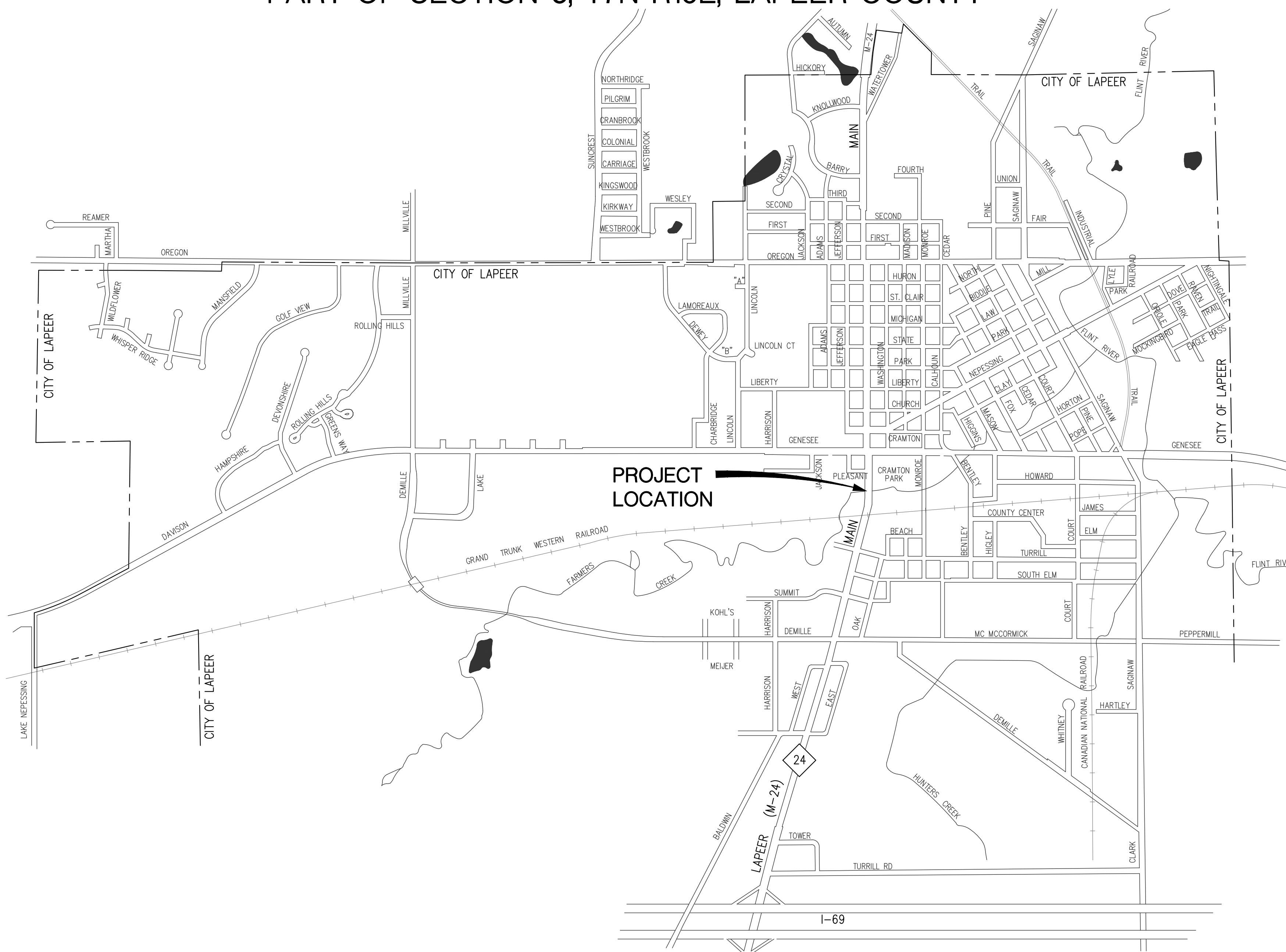
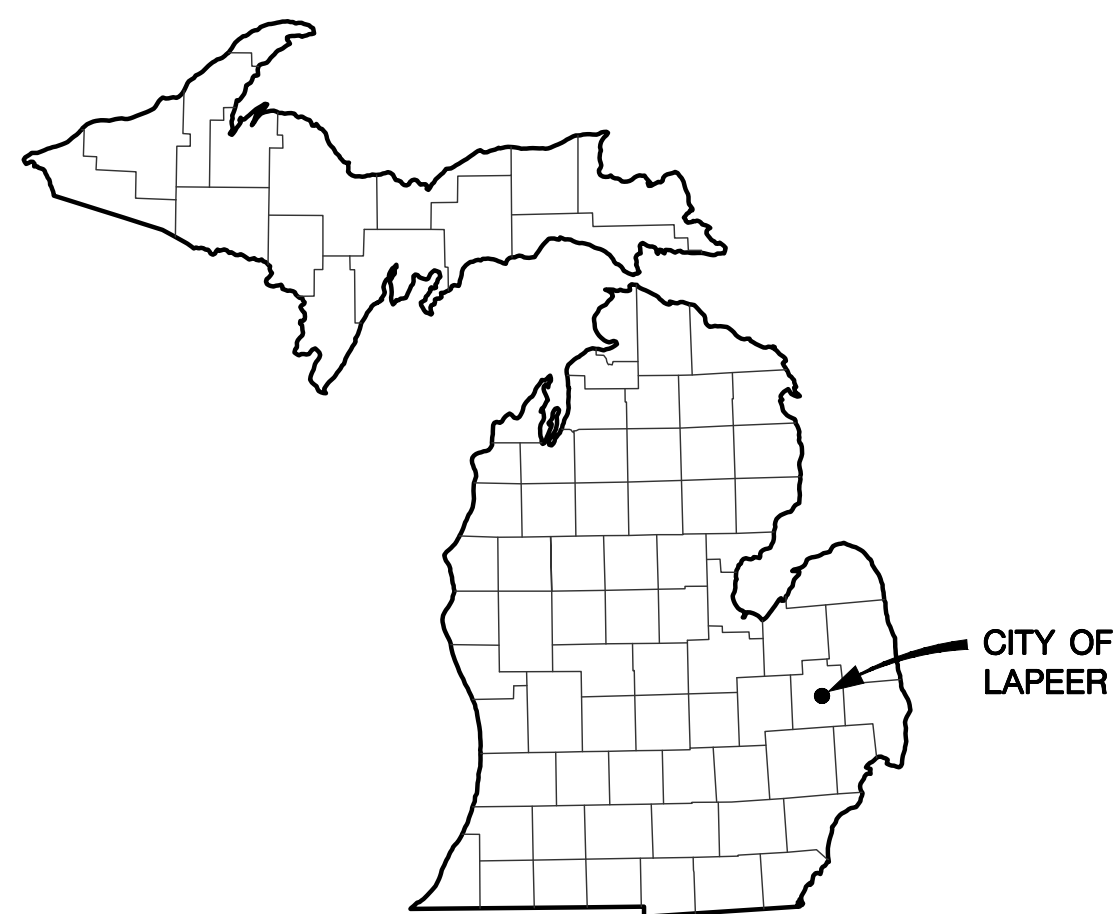




# PRELIMINARY PLANS FOR CITY OF LAPEER PARKS AND RECREATION DEPARTMENT PROPOSED M-24 UNDERPASS CONNECTION PROJECT

M-24 AND FARMERS CREEK, LAPEER MI, 48446  
PART OF SECTION 5, T7N-R10E, LAPEER COUNTY



### SHEET INDEX

- 1 COVER SHEET
- 2 LEGEND SHEET
- 3 REMOVAL SHEET - P.O.B. TO STA 6+40
- 4 REMOVAL SHEET - STA 6+40 TO STA 8+50
- 5 REMOVAL SHEET - STA 8+50 TO P.O.E.
- 6 TRAIL SITE PLAN SHEET - P.O.B. TO STA 6+40
- 7 TRAIL SITE PLAN SHEET - STA 6+40 TO STA 8+50
- 8 TRAIL SITE PLAN SHEET - STA 8+50 TO P.O.E.
- 9 TRAIL GRADING SHEET - P.O.B. TO STA 6+40
- 10 TRAIL GRADING SHEET - STA 6+40 TO STA 8+50
- 11 TRAIL GRADING SHEET - STA 8+50 TO P.O.E.
- 12 TRAIL PROFILE SHEET - P.O.B. TO STA 9+50
- 13 TRAIL PROFILE SHEET - STA 9+50 TO P.O.E.
- 14 TRAIL CROSS SECTION SHEET - P.O.B. TO STA 6+40
- 15 TRAIL CROSS SECTION SHEET - STA 6+40 TO P.O.E.

### PROJECT SCOPE

PROPOSED CONNECTIONS TO EXISTING BOX CULVERT TUNNEL UNDER M-24 FOR PEDESTRIAN UNDERPASS.

WEST SIDE: CONCRETE TRAILWAY SWITCHBACK RAMP FROM WEST END OF TUNNEL TO EXISTING SIDEWALK ALONG THE WEST SIDE OF M-24.

EAST SIDE: CONCRETE APPROACH RAMP FROM EAST OF TUNNEL TO EXISTING GRADE WITHIN CRAMTON PARK. A PROPOSED HMA TRAILWAY WILL BEGIN AT THE EAST END OF THE APPROACH AND WILL RUN ALONG THE WEST SIDE OF THE PARK AREA AND CONNECT TO AN EXISTING TRAIL.

GRADING OF TRAILWAY WILL CONFORM TO UNIVERSAL ACCESS REQUIREMENTS.

### PROJECT CONTACT

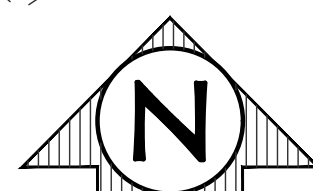
RODNEY R. CHURCH  
DIRECTOR OF PARKS,  
RECREATION & CEMETERY  
CITY OF LAPEER  
810-664-4431

### UTILITIES

THE EXISTING UTILITIES LISTED BELOW AND SHOWN ON THESE PLANS REPRESENT THE BEST INFORMATION AVAILABLE AS OBTAINED FROM THE UTILITY OWNER. THIS INFORMATION DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO BE SATISFIED AS TO ITS ACCURACY AND THE LOCATION OF EXISTING UTILITIES.

NAME OF OWNER	CONTACT	TYPE OF UTILITY
DTE ENERGY 1100 CLARK ROAD LAPEER, MI 48446	ROBERT HEISER (586) 457-0192 ROBERT.HEISER@DTEENERGY.COM	ELECTRIC
CONSUMERS ENERGY 3201 E. COURT STREET FLINT, MI 48506	EVAN HUIZENGA (810) 247-8227 EVAN.HUIZENGA@CMSENERGY.COM	GAS
AT&T 54 N. MILL STREET, P.O. BOX 32 PONTIAC, MI 48342	MICHAEL BAIZ (810) 519-8035 MB1269@ATT.COM	TELEPHONE
CHARTER COMMUNICATIONS 1392 TRADE CENTRE DR TRAVERSE CITY, MI 49696	PATRICK DELISI (810) 247-3899 PATRICK.DELISI@CHARTER.COM	CABLE
CITY OF LAPEER DEPARTMENT OF PUBLIC WORKS 217 BENTLEY STREET LAPEER, MI 48446	JEFFREY GRAHAM (810) 664-4711 JGRAHAM@CITY.LAPEER.MI.US	WATER, SANITARY, STORM AND STREETS

CITY OF LAPEER  
NO SCALE



Know what's below.  
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### PLAN SUBMITTALS AND CHANGES

DATE	DESCRIPTION
6-6-23	ISSUED TO EGLE FOR PERMITTING
7-31-23	REVISED PER EGLE REVIEW

PROPOSED WORK WITHIN FLOODPLAIN OF FARMERS CREEK RIVER AND WITHIN DELINEATED WETLANDS.  
CITY OF LAPEER, PART OF SECTION 5, T7N-R10E, LAPEER COUNTY.

PLAN DATE: JUNE 2023  
PROJECT MGR: PTO  
REVIEWER: DPS  
SCALE: NOT TO SCALE

ROWE PROFESSIONAL SERVICES COMPANY  
C: (810) 664-9411  
F: (810) 664-3451  
WWW.ROWEPSC.COM



128 N. Saginaw Street  
Lapeer, MI 48446

PREPARED FOR  
CITY OF LAPEER  
M-24 UNDERPASS CONNECTION PROJECT  
M-24 AND FARMERS CREEK, LAPEER MI, 48446  
COVER SHEET

REV:  
SHT# 1 OF 15  
JOB No: 15L0105

PLNOTE: 7/5/2023 2:54 PM R:\Projects\15L0105\Draw\Construction Drawings\01-15L0105-0001.dwg

**STRUCTURE SYMBOLS**

- ◻ EXISTING CATCH BASIN IN CURB LINE
- ◻ PROPOSED CATCH BASIN IN CURB LINE
- EXISTING CATCH BASIN IN GREEN SPACE
- PROPOSED CATCH BASIN IN GREEN SPACE
- EXISTING STORM MANHOLE
- PROPOSED STORM MANHOLE
- ▷ PROPOSED CULVERT END SECTION
- }) EXISTING HEADWALL
- ) PROPOSED HEADWALL
- EXISTING GATE VALVE AND BOX
- EXISTING WATER SHUT OFF (CURB BOX)
- PROPOSED GATE VALVE AND BOX
- EXISTING GATE VALVE AND WELL
- PROPOSED GATE VALVE AND WELL
- ✖ EXISTING SPRINKLER HEAD
- EXISTING WATER WELL
- ⊕ PROPOSED FIRE HYDRANT
- ⊕ PROPOSED FIRE HYDRANT
- ⊕ PROPOSED WATER MAIN FITTINGS
- EXISTING CLEAN OUT
- EXISTING SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER MANHOLE
- ⊠ EXISTING MONITORING WELL

**EXISTING TOPOGRAPHICAL SYMBOLS**

- ⊕ SIGN
- ⊕ STREET SIGN
- ⊕ END OF PIPE
- ⊕ SWAMP OR WETLAND
- ⊕ DECIDUOUS TREE
- ⊕ CONIFEROUS TREE
- ⊕ TREE STUMP
- ⊕ MAIL BOX
- ⊕ SOIL BORING
- ROCK
- METAL POST
- ⊕ BUMPER BLOCK

**UTILITY SYMBOLS**

- UTILITY POLE
- ▷ GUY ANCHOR CABLE
- \* LIGHT POLE / ORNAMENTAL LIGHT
- ⊕ POWER LIGHT POLE
- TELEPHONE MANHOLE
- + UNDERGROUND GAS LINE MARKER
- GAS RISER
- GAS VENT
- GAS VALVE
- ⊕ RAILROAD SIGNAL
- \* METAL LIGHT POLE
- OUTLET
- CIRCUIT BREAKER PANEL
- ⊠ ELECTRICAL TRANSFORMER PAD
- ⊠ ELECTRICAL TRANSFORMER RISER
- ⊕ ELECTRIC METER
- TELEPHONE PEDESTAL / RISER
- ⊠ TRAFFIC SIGNAL ON POLE
- PHONE BOOTH / PAY PHONE

**SURVEY SYMBOLS**

- MONUMENT
- △ BENCHMARK
- △ TRAVERSE POINT
- ⊕ SECTION CORNER
- FOUND SURVEY MONUMENTATION

**MISCELLANEOUS SYMBOLS**

- EX 1812 EXISTING STORM SEWER STRUCTURE NUMBER
- EX 5236 EXISTING SANITARY SEWER STRUCTURE NUMBER
- 1 PROPOSED STORM SEWER STRUCTURE NUMBER
- A PROPOSED SANITARY SEWER STRUCTURE NUMBER
- ~ FLOW DIRECTION
- ⊕ EXISTING RIP-RAP
- ⊕ PROPOSED RIP-RAP

**CAUTION SYMBOLS**

- CAUTION ● HAZARDOUS FLAMMABLE MATERIAL UNDERGROUND USED WITH UNDERGROUND GAS & ELECTRICAL LINES
- CAUTION ● FIBER OPTIC USED WITH FIBER OPTIC LINES
- CAUTION ● CRITICAL UNDERGROUND UTILITY USED WITH CRITICAL UNDERGROUND LINES

**PLAN VIEW LINE TYPES**

- 12" STM --- EXISTING STORM SEWER
- 12" CONC --- EXISTING CULVERT
- PROPOSED STORM SEWER LESS THAN 24"
- PROPOSED STORM SEWER 24" AND GREATER
- 12" SAN --- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- 12" WM --- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- SECTION LINE
- 60' ROW --- EXISTING RIGHT OF WAY
- 60' ROW --- PROPOSED RIGHT OF WAY
- PROPOSED EASEMENT
- EXISTING CENTER LINE DITCH
- PROPOSED DITCH CENTERLINE
- EXISTING CENTER LINE ROADWAY
- PARCEL LINE / LOT LINE
- 0/H --- EXISTING OVERHEAD UTILITIES
- U/G ELEC --- UNDERGROUND ELECTRICAL LINE
- 6" S-MP GAS --- GAS LINE OR PETROLEUM PIPELINE
- U/G TEL --- UNDERGROUND TELEPHONE LINE
- U/G CATV --- UNDERGROUND CABLE TV LINE
- U/G FIBER OPTIC --- UNDERGROUND FIBER OPTIC
- 11+00 --- PROJECT CONTROL LINE
- TREE LINE
- BRUSH LINE
- X --- EXISTING FENCE
- X --- PROPOSED FENCE
- • --- EXISTING GUARD RAIL
- ..... PROPOSED SLOPE STAKE LINE
- □ --- PROPOSED SILT FENCE

**TOPOGRAPHY**

- 960 --- EXISTING CONTOURS MAJOR
- 958 --- EXISTING CONTOURS MINOR
- 960 --- PROPOSED CONTOURS MAJOR
- 958 --- PROPOSED CONTOURS MINOR

**PARCEL INFORMATION**

- 401-069 PARCEL/TAX IDENTIFICATION NUMBER
- #5324 ADDRESS/BUSINESS NAME

**HATCHING LEGEND**

- REMOVE PAVEMENT OR CONCRETE SIDEWALK
- REMOVE TREES OR BRUSH
- PROPOSED CONCRETE SIDEWALK
- PROPOSED HMA PAVEMENT
- PROPOSED WETLAND DISTURBANCE

**PROPOSED CALLOUTS**

- (ADJ) ADJUST STRUCTURE
- (ADJ-X) ADJUST STRUCTURE W/ NEW COVER
- (ADJ-B/O) ADJUST STRUCTURE BY OTHERS
- (REC) RECONSTRUCT STRUCTURE
- (REL) RELOCATE
- (REL-B/O) RELOCATE BY OTHERS
- (R) REMOVE
- (R&R) REMOVE AND REPLACE
- (SALV) SALVAGE
- (S) SAVE
- (A) ABANDON
- (C) CLEARING
- (B) BULKHEAD
- (SR-F) SIDEWALK RAMP TYPE
- 6 SOIL EROSION CONTROL MEASURE SEE MDOT STANDARD PLAN R-96-E FOR SESC MEASURES KEY



Know what's below. Call before you dig.

**PLAN SUBMITTALS AND CHANGES**

PRELIMINARY PLANS - **NOT FOR CONSTRUCTION**	
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7-31-23	REVISED PER EGLE REVIEW

PROPOSED WORK WITHIN FLOODPLAIN OF FARMERS CREEK RIVER AND WITHIN DELINEATED WETLANDS. CITY OF LAPEER, PART OF SECTION 5, 17N-R10E, LAPEER COUNTY.

REV:

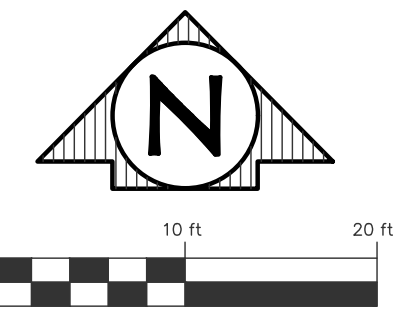
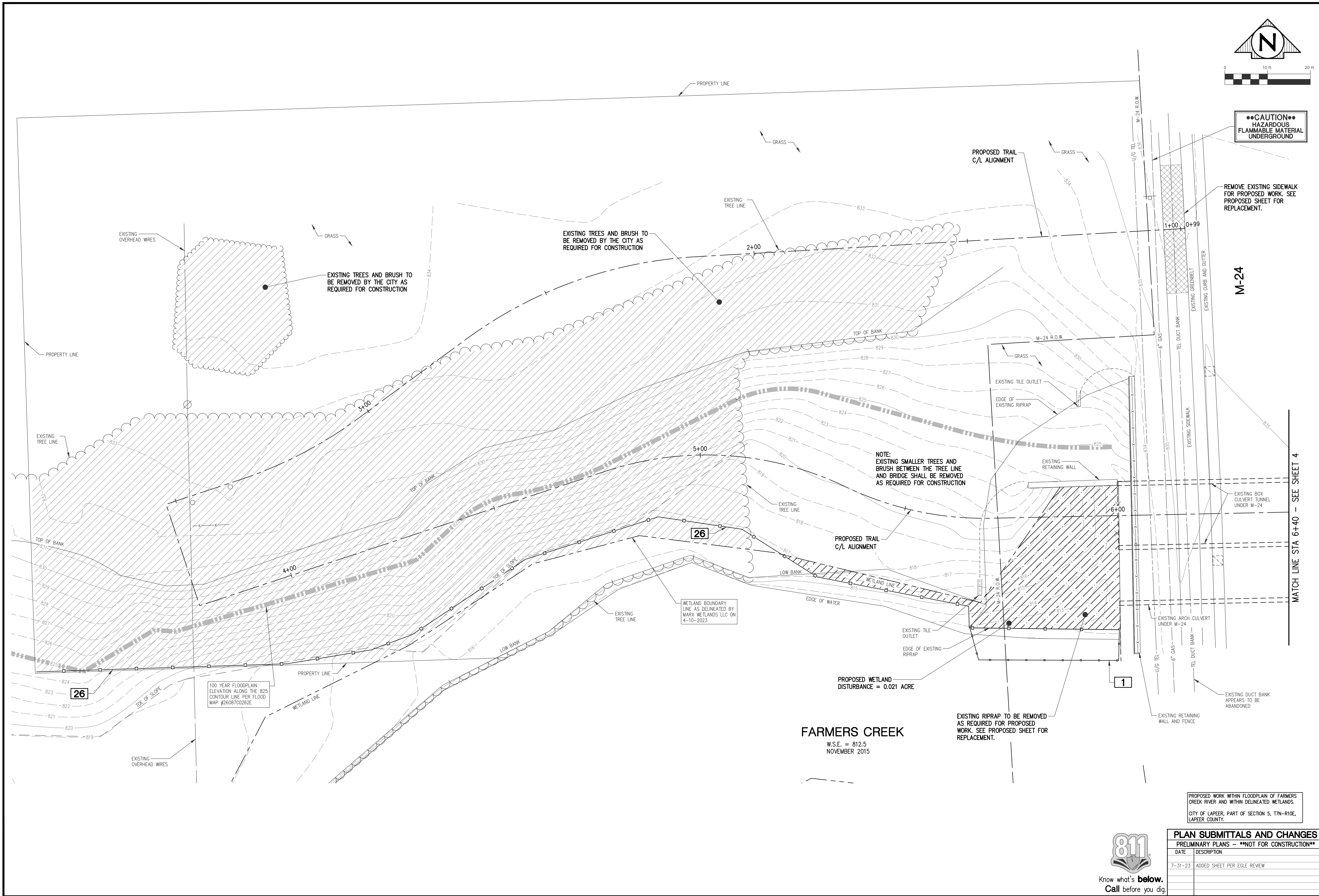
SHT# 2 OF 15  
JOB No: 15L0105

PLAN DATE: JUNE 2023  
PROJECT MGR: PTO  
REVIEWER: DPS  
SCALE: NOT TO SCALE

**ROWE PROFESSIONAL SERVICES COMPANY**  
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www.rowepsc.com

128 N. Saginaw Street  
Lapeer, MI 48446

PREPARED FOR  
**CITY OF LAPEER**  
**M-24 UNDERPASS CONNECTION PROJECT**  
M-24 AND FARMERS CREEK, LAPEER MI, 48446  
LEGEND SHEET



**CAUTION**  
HAZARDOUS  
FLAMMABLE MATERIAL  
UNDERGROUND

REMOVE EXISTING SIDEWALK  
FOR PROPOSED WORK. SEE  
PROPOSED SHEET FOR  
REPLACEMENT.

M-24

MATCH LINE STA 6+40 - SEE SHEET 4

EXISTING RIPRAP TO BE REMOVED  
AS REQUIRED FOR PROPOSED  
WORK. SEE PROPOSED SHEET FOR  
REPLACEMENT.

PROPOSED WETLAND  
DISTURBANCE = 0.021 ACRE

WETLAND BOUNDARY  
LINE AS DELINEATED BY  
MARK WETLANDS LLC ON  
4-10-2023

100 YEAR FLOODPLAIN  
ELEVATION ALONG THE 825  
CONTOUR LINE PER FLOOD  
MAP #26087C0262E

PROPOSED WORK WITHIN FLOODPLAIN OF FARMERS  
CREEK RIVER AND WITHIN DELINEATED WETLANDS.  
CITY OF LAPEER, PART OF SECTION 5, 17N-18E,  
LAPEER COUNTY.

PREPARED FOR  
**CITY OF LAPEER**  
**M-24 UNDERPASS CONNECTION PROJECT**  
 M-24 AND FARMERS CREEK, LAPEER MI, 48446  
 REMOVAL SHEET - P.O.B. TO STA 6+40

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PLAN DATE: JUNE 2023  
 PROJECT MGR: PTO  
 REVIEWER: DPS  
 SCALE: 1" = 10'

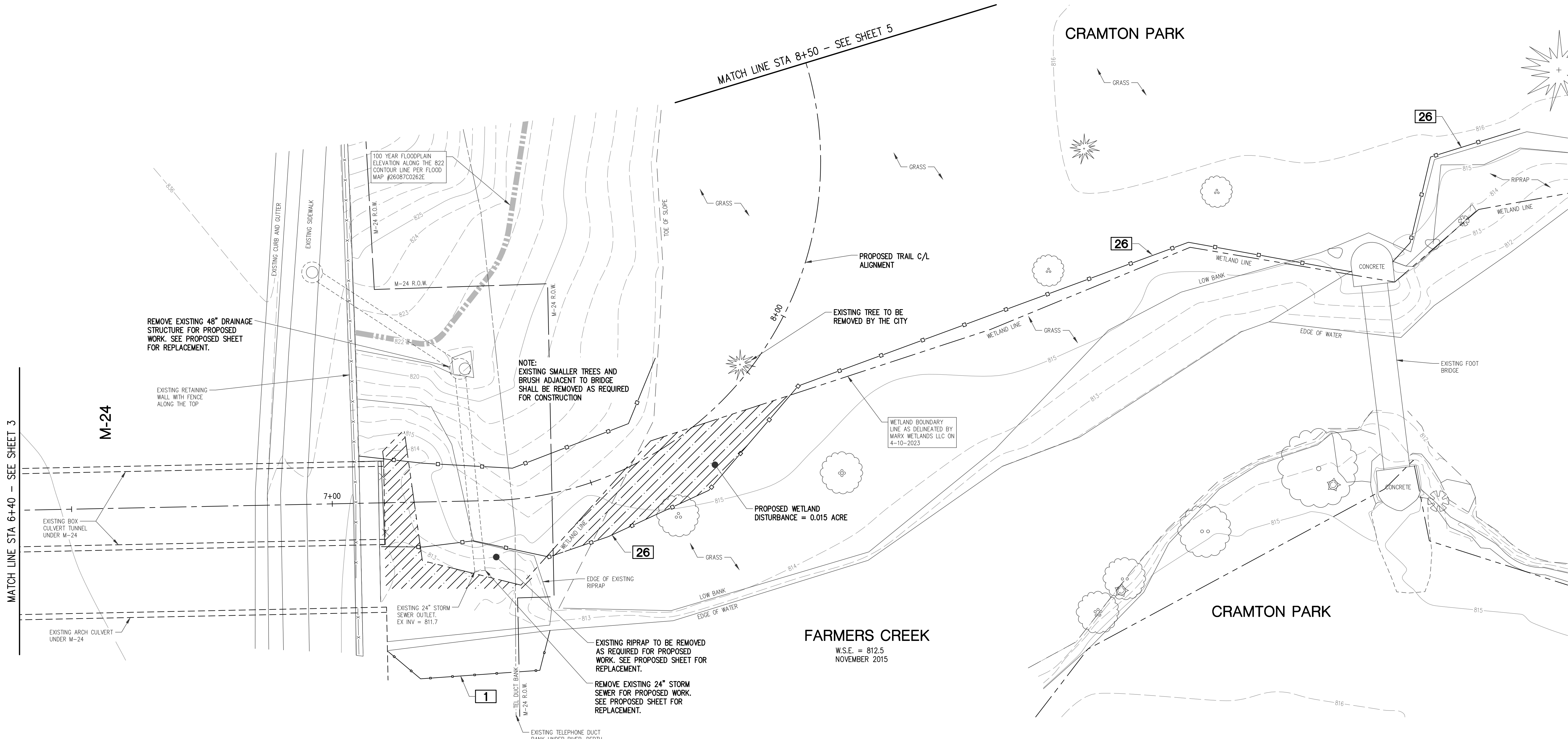
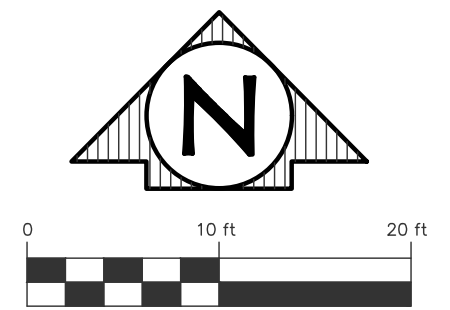
**PLAN SUBMITTALS AND CHANGES**  
**PRELIMINARY PLANS - \*\*NOT FOR CONSTRUCTION\*\***

DATE	DESCRIPTION
7-31-23	ADDED SHEET PER EGLE REVIEW

REV: \_\_\_\_\_  
 SHT# 3 OF 15  
 JOB No: 15L0105



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 PLOT DATE: 7/5/2023 2:54 PM



MATCH LINE STA 6+40 - SEE SHEET 3

MATCH LINE STA 8+50 - SEE SHEET 5

M-24

FARMERS CREEK  
W.S.E. = 812.5  
NOVEMBER 2015

CRAMTON PARK

CRAMTON PARK

REMOVE EXISTING 48" DRAINAGE STRUCTURE FOR PROPOSED WORK. SEE PROPOSED SHEET FOR REPLACEMENT.

EXISTING RETAINING WALL WITH FENCE ALONG THE TOP

100 YEAR FLOODPLAIN ELEVATION ALONG THE 822 CONTOUR LINE PER FLOOD MAP #26087C0262E

NOTE: EXISTING SMALLER TREES AND BRUSH ADJACENT TO BRIDGE SHALL BE REMOVED AS REQUIRED FOR CONSTRUCTION

PROPOSED TRAIL C/L ALIGNMENT

EXISTING TREE TO BE REMOVED BY THE CITY

WETLAND BOUNDARY LINE AS DELINEATED BY MARK WETLANDS LLC ON 4-10-2023

PROPOSED WETLAND DISTURBANCE = 0.015 ACRE

EXISTING RIPRAP TO BE REMOVED AS REQUIRED FOR PROPOSED WORK. SEE PROPOSED SHEET FOR REPLACEMENT.

REMOVE EXISTING 24" STORM SEWER FOR PROPOSED WORK. SEE PROPOSED SHEET FOR REPLACEMENT.

EXISTING TELEPHONE DUCT BANK UNDER RIVER. DEPTH AT RIVER = 10'±

PROPOSED WORK WITHIN FLOODPLAIN OF FARMERS CREEK RIVER AND WITHIN DELINEATED WETLANDS. CITY OF LAPEER, PART OF SECTION 5, 17N-R1DE, LAPEER COUNTY.



Know what's below.  
Call before you dig.

PLAN SUBMITTALS AND CHANGES

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REVIEWER: DPS  
SCALE: 1" = 10'

**ROWE PROFESSIONAL SERVICES COMPANY**

128 N. Saginaw Street  
Lapeer, MI 48446

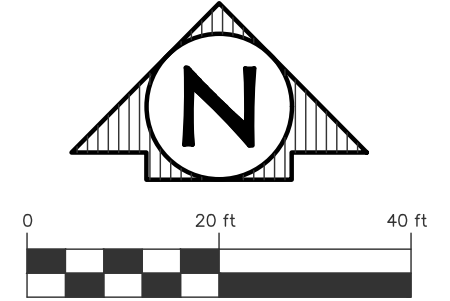
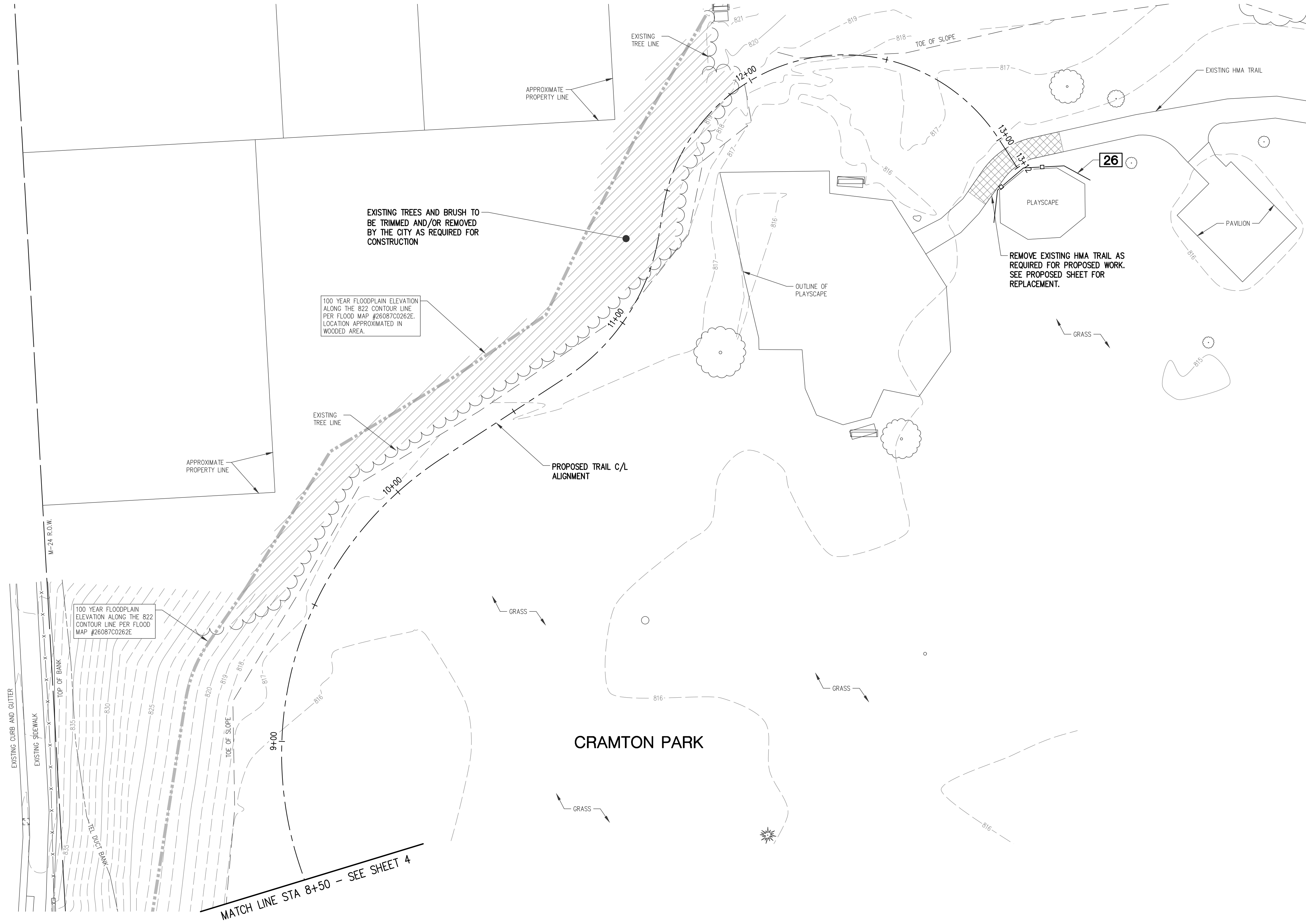
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PREPARED FOR  
**CITY OF LAPEER**  
**M-24 UNDERPASS CONNECTION PROJECT**  
M-24 AND FARMERS CREEK, LAPEER MI, 48446  
REMOVAL SHEET - STA 6+40 TO STA 8+50

REV: \_\_\_\_\_  
SHT# 4 OF 15  
JOB No: 15L0105

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M-24



EXISTING TREES AND BRUSH TO BE TRIMMED AND/OR REMOVED BY THE CITY AS REQUIRED FOR CONSTRUCTION

100 YEAR FLOODPLAIN ELEVATION ALONG THE 822 CONTOUR LINE PER FLOOD MAP #2608700262E. LOCATION APPROXIMATED IN WOODED AREA.

REMOVE EXISTING HMA TRAIL AS REQUIRED FOR PROPOSED WORK. SEE PROPOSED SHEET FOR REPLACEMENT.

CRAMTON PARK

MATCH LINE STA 8+50 - SEE SHEET 4

PROPOSED WORK WITHIN FLOODPLAIN OF FARMERS CREEK RIVER AND WITHIN DELINEATED WETLANDS. CITY OF LAPEER, PART OF SECTION 5, 17N-R10E, LAPEER COUNTY.



PLAN SUBMITTALS AND CHANGES	
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DATE	DESCRIPTION
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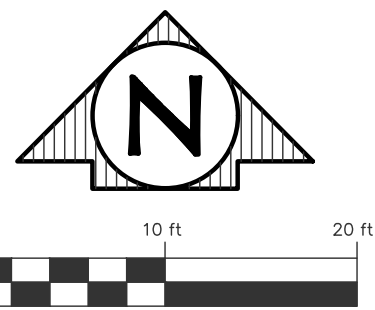
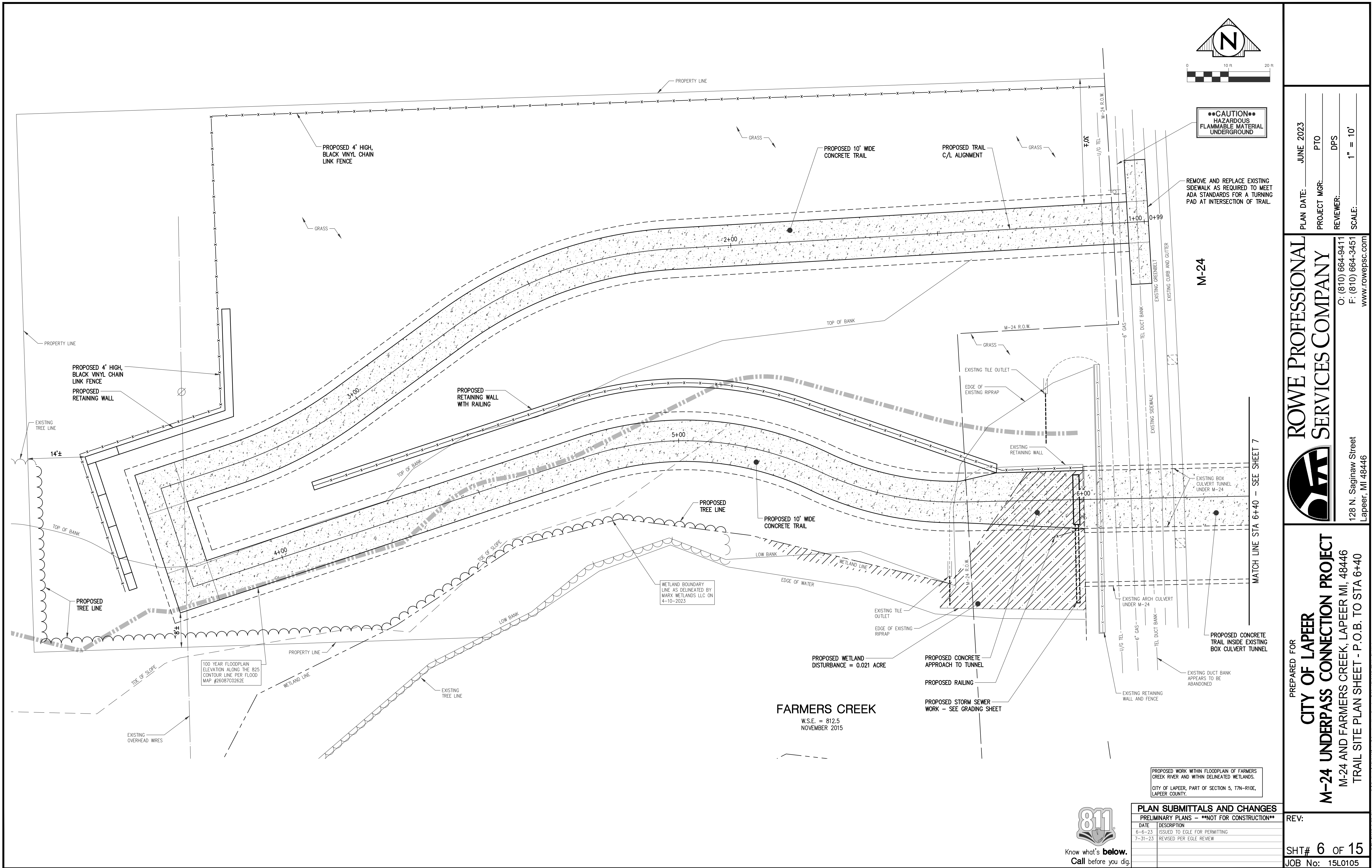
SHT# 5 OF 15  
JOB No: 15L0105

PLAN DATE: JUNE 2023  
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SCALE: 1" = 20'

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PREPARED FOR  
**CITY OF LAPEER**  
**M-24 UNDERPASS CONNECTION PROJECT**  
M-24 AND FARMERS CREEK, LAPEER MI, 48446  
REMOVAL SHEET - STA 8+50 TO P.O.E.

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**CAUTION**  
HAZARDOUS  
FLAMMABLE MATERIAL  
UNDERGROUND

REMOVE AND REPLACE EXISTING  
SIDEWALK AS REQUIRED TO MEET  
ADA STANDARDS FOR A TURNING  
PAD AT INTERSECTION OF TRAIL.

M-24

MATCH LINE STA 6+40 - SEE SHEET 7

**FARMERS CREEK**  
W.S.E. = 812.5  
NOVEMBER 2015

100 YEAR FLOODPLAIN  
ELEVATION ALONG THE 825  
CONTOUR LINE PER FLOOD  
MAP #26087C0262E

WETLAND BOUNDARY  
LINE AS DELINEATED BY  
MARK WETLANDS LLC ON  
4-10-2023

PROPOSED WETLAND  
DISTURBANCE = 0.021 ACRE

PROPOSED WORK WITHIN FLOODPLAIN OF FARMERS  
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CITY OF LAPEER, PART OF SECTION 5, 17N-R10E,  
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PLAN DATE: JUNE 2023  
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M-24 AND FARMERS CREEK, LAPEER MI, 48446  
TRAIL SITE PLAN SHEET - P.O.B. TO STA 6+40

**PLAN SUBMITTALS AND CHANGES**

PRELIMINARY PLANS - \*\*NOT FOR CONSTRUCTION\*\*

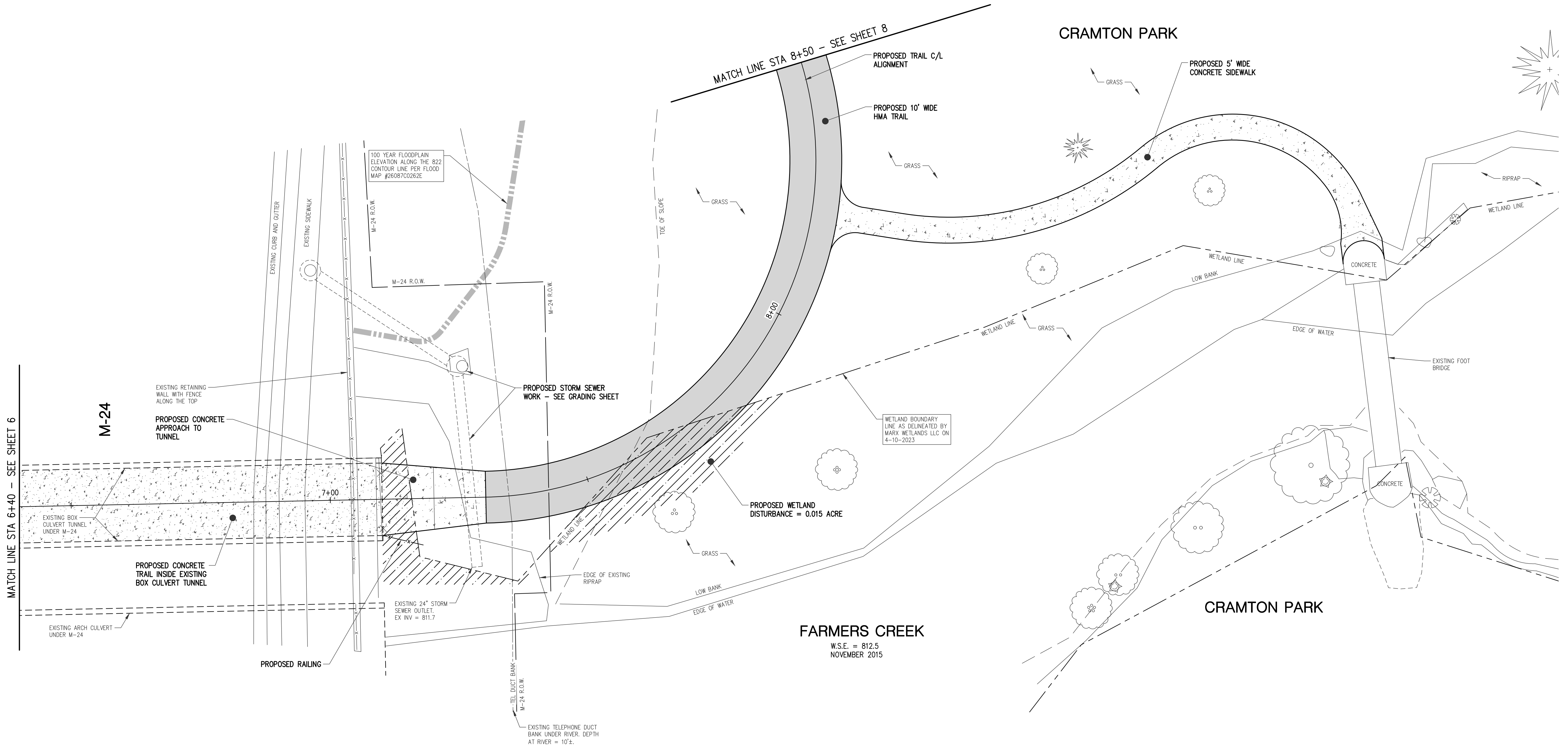
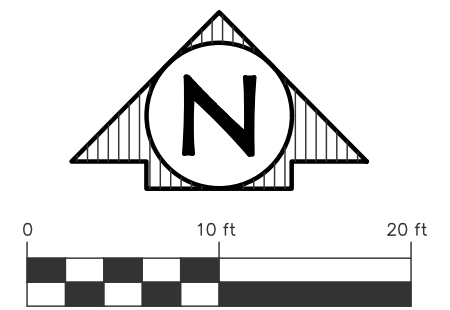
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SHT# 6 OF 15  
JOB No: 15L0105



PLOTDATE: 7/5/2023 2:35 PM



MATCH LINE STA 6+40 - SEE SHEET 6

MATCH LINE STA 8+50 - SEE SHEET 8

M-24

FARMERS CREEK  
W.S.E. = 812.5  
NOVEMBER 2015

CRAMTON PARK

CRAMTON PARK

PROPOSED WORK WITHIN FLOODPLAIN OF FARMERS CREEK RIVER AND WITHIN DELINEATED WETLANDS. CITY OF LAPEER, PART OF SECTION 5, 17N-R10E, LAPEER COUNTY.



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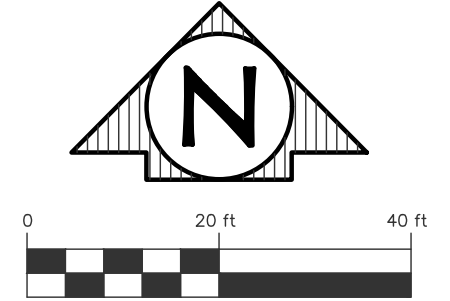
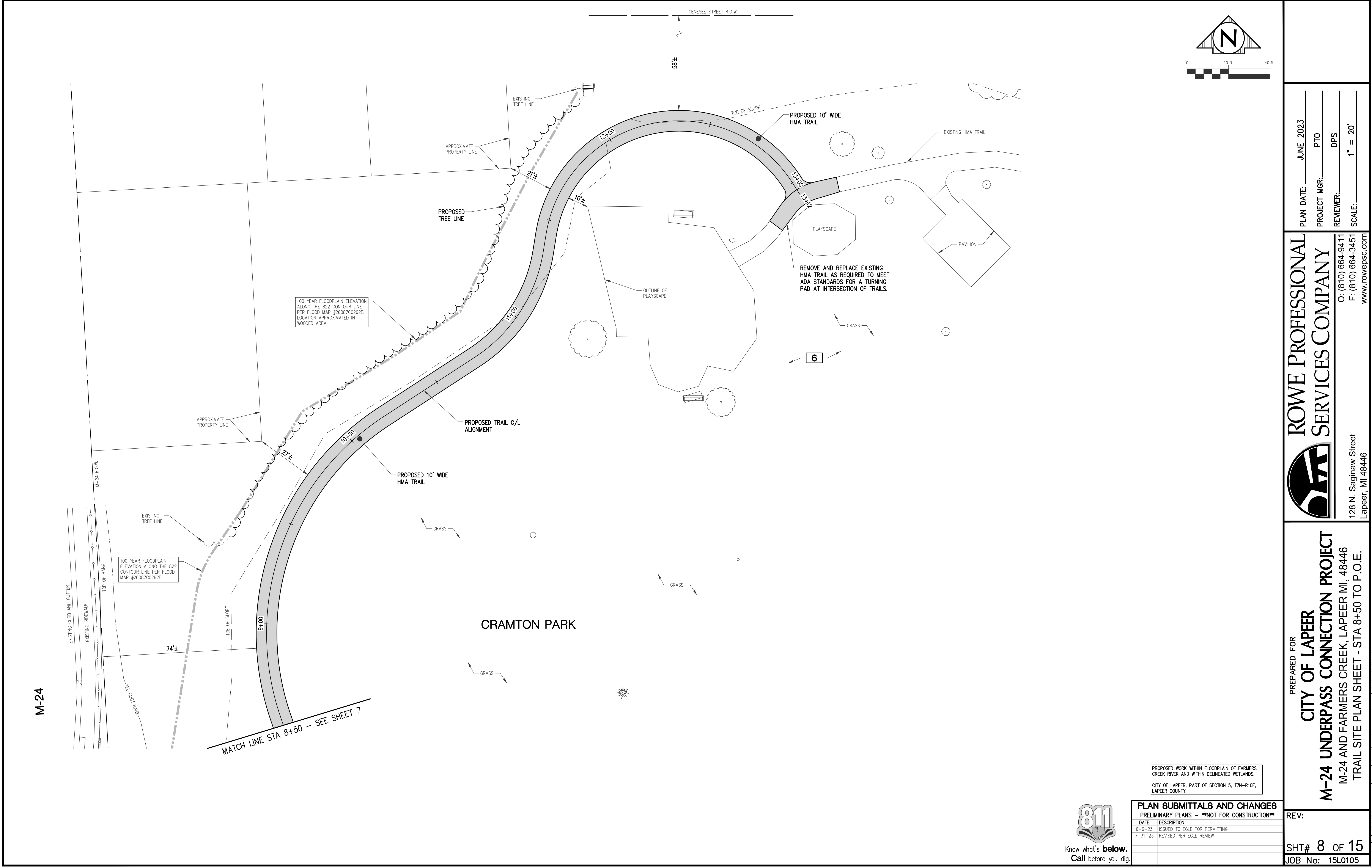
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M-24 AND FARMERS CREEK, LAPEER MI, 48446  
TRAIL SITE PLAN SHEET - STA 6+40 TO STA 8+50

REV: \_\_\_\_\_  
SHT# 7 OF 15  
JOB No: 15L0105

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PLAN DATE: JUNE 2023  
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 TRAIL SITE PLAN SHEET - STA 8+50 TO P.O.E.

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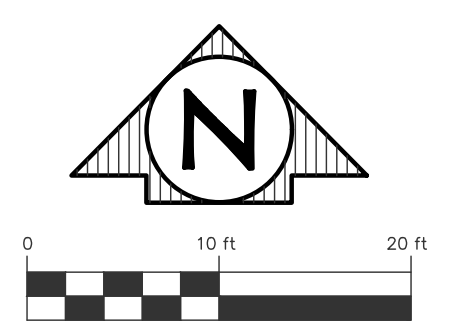
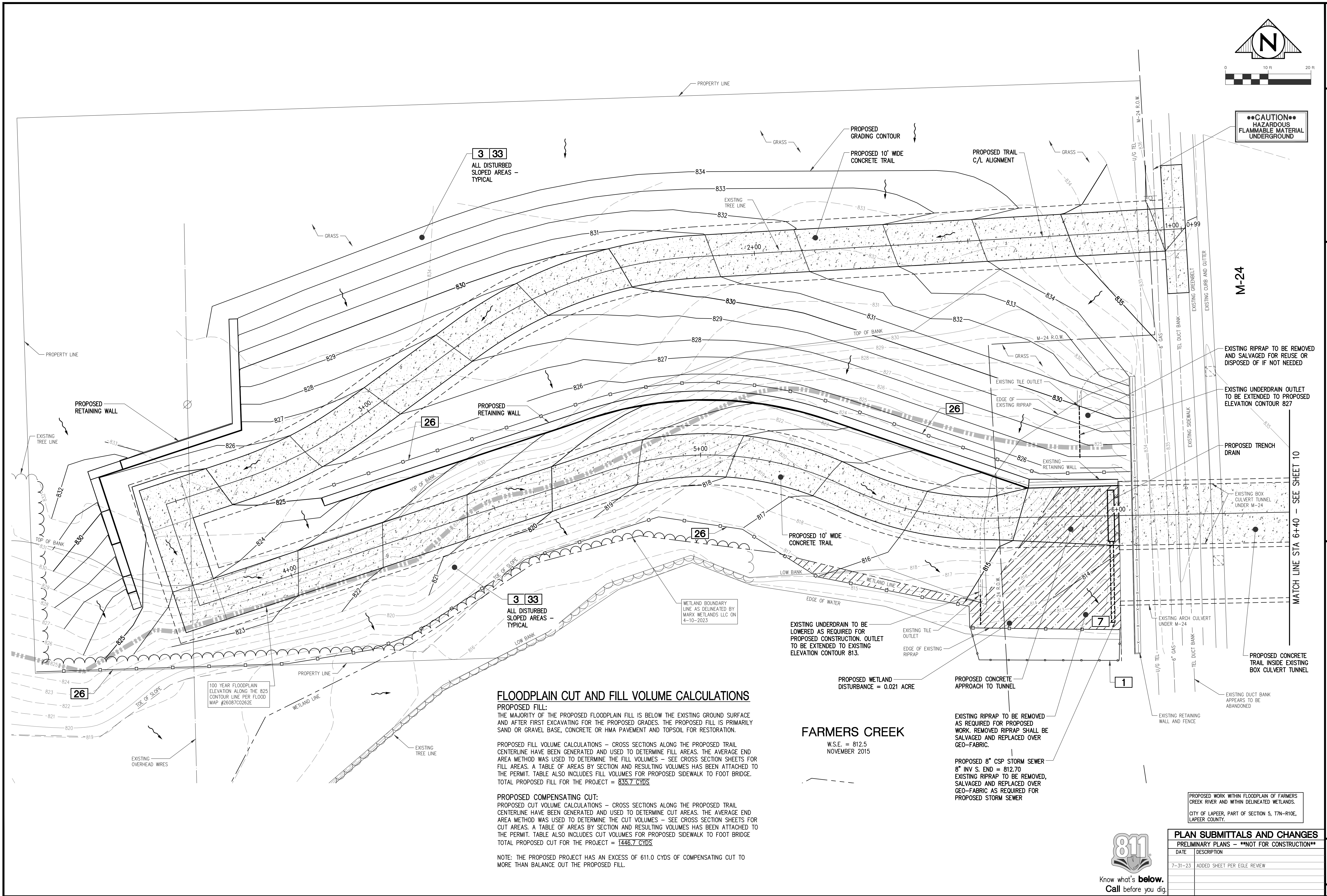


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REV:  
 SHT# 8 OF 15  
 JOB No: 15L0105

PLOT# 7/5/2023 2:53 PM R:\Projects\15L0105\Map\Construction Drawings\15L0105 TRAIL PLAN.dwg





••CAUTION••  
HAZARDOUS  
FLAMMABLE MATERIAL  
UNDERGROUND

3 33  
ALL DISTURBED  
SLOPED AREAS -  
TYPICAL

26

3 33  
ALL DISTURBED  
SLOPED AREAS -  
TYPICAL

WETLAND BOUNDARY  
LINE AS DELINEATED BY  
MARK WETLANDS LLC ON  
4-10-2023

EXISTING UNDERDRAIN TO BE  
LOWERED AS REQUIRED FOR  
PROPOSED CONSTRUCTION. OUTLET  
TO BE EXTENDED TO EXISTING  
ELEVATION CONTOUR 813.

FARMERS CREEK  
W.S.E. = 812.5  
NOVEMBER 2015

EXISTING RIPRAP TO BE REMOVED  
AS REQUIRED FOR PROPOSED  
WORK. REMOVED RIPRAP SHALL BE  
SALVAGED AND REPLACED OVER  
GEO-FABRIC.

PROPOSED 8" CSP STORM SEWER  
8" INV S. END = 812.70  
EXISTING RIPRAP TO BE REMOVED,  
SALVAGED AND REPLACED OVER  
GEO-FABRIC AS REQUIRED FOR  
PROPOSED STORM SEWER

PROPOSED WORK WITHIN FLOODPLAIN OF FARMERS  
CREEK RIVER AND WITHIN DELINEATED WETLANDS.  
CITY OF LAPEER, PART OF SECTION 5, T7N-R10E,  
LAPEER COUNTY.

**FLOODPLAIN CUT AND FILL VOLUME CALCULATIONS**

**PROPOSED FILL:**  
THE MAJORITY OF THE PROPOSED FLOODPLAIN FILL IS BELOW THE EXISTING GROUND SURFACE  
AND AFTER FIRST EXCAVATING FOR THE PROPOSED GRADES. THE PROPOSED FILL IS PRIMARILY  
SAND OR GRAVEL BASE, CONCRETE OR HMA PAVEMENT AND TOPSOIL FOR RESTORATION.

PROPOSED FILL VOLUME CALCULATIONS - CROSS SECTIONS ALONG THE PROPOSED TRAIL  
CENTERLINE HAVE BEEN GENERATED AND USED TO DETERMINE FILL AREAS. THE AVERAGE END  
AREA METHOD WAS USED TO DETERMINE THE FILL VOLUMES - SEE CROSS SECTION SHEETS FOR  
FILL AREAS. A TABLE OF AREAS BY SECTION AND RESULTING VOLUMES HAS BEEN ATTACHED TO  
THE PERMIT. TABLE ALSO INCLUDES CUT VOLUMES FOR PROPOSED SIDEWALK TO FOOT BRIDGE.  
TOTAL PROPOSED FILL FOR THE PROJECT = 835.7 CYDS

**PROPOSED COMPENSATING CUT:**  
PROPOSED CUT VOLUME CALCULATIONS - CROSS SECTIONS ALONG THE PROPOSED TRAIL  
CENTERLINE HAVE BEEN GENERATED AND USED TO DETERMINE CUT AREAS. THE AVERAGE END  
AREA METHOD WAS USED TO DETERMINE THE CUT VOLUMES - SEE CROSS SECTION SHEETS FOR  
CUT AREAS. A TABLE OF AREAS BY SECTION AND RESULTING VOLUMES HAS BEEN ATTACHED TO  
THE PERMIT. TABLE ALSO INCLUDES CUT VOLUMES FOR PROPOSED SIDEWALK TO FOOT BRIDGE  
TOTAL PROPOSED CUT FOR THE PROJECT = 1446.7 CYDS

NOTE: THE PROPOSED PROJECT HAS AN EXCESS OF 611.0 CYDS OF COMPENSATING CUT TO  
MORE THAN BALANCE OUT THE PROPOSED FILL.

**PLAN SUBMITTALS AND CHANGES**

PRELIMINARY PLANS - **NOT FOR CONSTRUCTION**	
DATE	DESCRIPTION
7-31-23	ADDED SHEET PER EGLE REVIEW



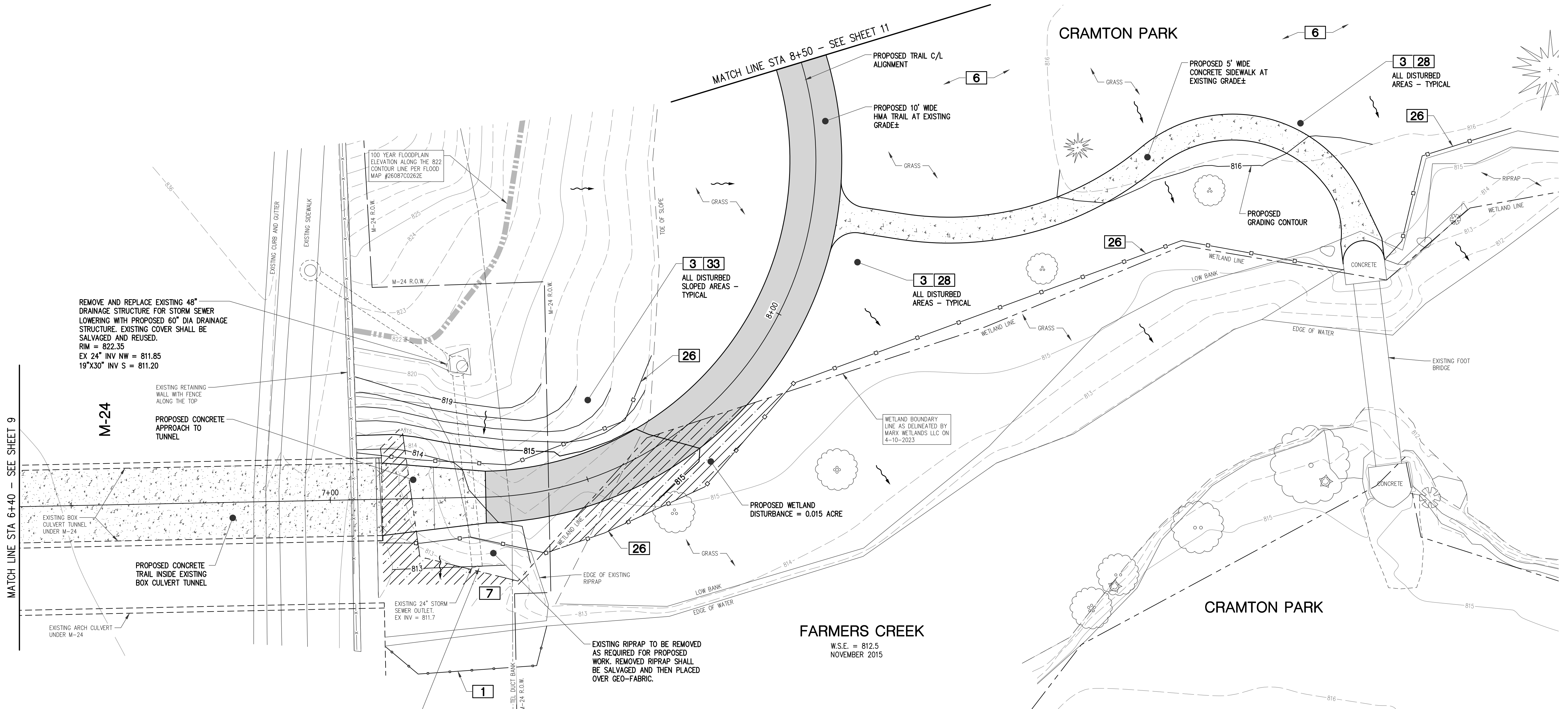
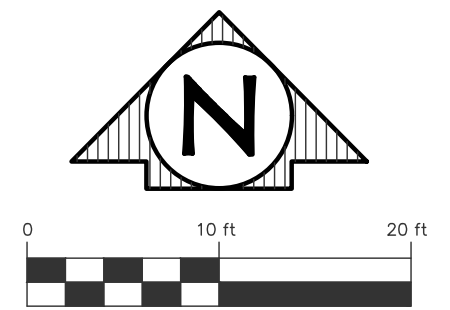
PLAN DATE: JUNE 2023  
PROJECT MGR: PTO  
REVIEWER: DPS  
SCALE: 1" = 10'

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PREPARED FOR  
**CITY OF LAPEER**  
**M-24 UNDERPASS CONNECTION PROJECT**  
M-24 AND FARMERS CREEK, LAPEER MI, 48446  
TRAIL GRADING SHEET - P.O.B. TO STA 6+40

REV:  
SHT# 9 OF 15  
JOB No: 15L0105

PLOTDATE: 7/31/2023 2:35 PM



REMOVE AND REPLACE EXISTING 48" DRAINAGE STRUCTURE FOR STORM SEWER LOWERING WITH PROPOSED 60" DIA DRAINAGE STRUCTURE. EXISTING COVER SHALL BE SALVAGED AND REUSED.  
 RM = 822.35  
 EX 24" INV NW = 811.85  
 19"X30" INV S = 811.20

PROPOSED CONCRETE APPROACH TO TUNNEL

PROPOSED CONCRETE TRAIL INSIDE EXISTING BOX CULVERT TUNNEL

EXISTING 24" STORM SEWER SHALL BE REMOVED, REPLACED AND LOWERED FOR CONSTRUCTION OF CONCRETE APPROACH WITH 36 FT REINF CONC ELLIP SEWER, HE CL IV, 19"X30", TDB @ 0.56% GRADE WITH END SECTION AND GRATE.  
 19"X30" INV S. END = 811.00  
 EXISTING RIPRAP TO BE REMOVED, SALVAGED AND THEN PLACED OVER GEO-FABRIC AS REQUIRED FOR PROPOSED WORK.

EXISTING RIPRAP TO BE REMOVED AS REQUIRED FOR PROPOSED WORK. REMOVED RIPRAP SHALL BE SALVAGED AND THEN PLACED OVER GEO-FABRIC.

3 33  
 ALL DISTURBED SLOPED AREAS - TYPICAL

3 28  
 ALL DISTURBED AREAS - TYPICAL

3 28  
 ALL DISTURBED AREAS - TYPICAL

26

26

26

1

6

6

MATCH LINE STA 6+40 - SEE SHEET 9

MATCH LINE STA 8+50 - SEE SHEET 11

PROPOSED WORK WITHIN FLOODPLAIN OF FARMERS CREEK RIVER AND WITHIN DELINEATED WETLANDS. CITY OF LAPEER, PART OF SECTION 5, 17N-R10E, LAPEER COUNTY.



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REV:

SHT# 10 OF 15  
 JOB No: 15L0105

PLAN DATE: JUNE 2023  
 PROJECT MGR: PTO  
 REVIEWER: DPS  
 SCALE: 1" = 10'

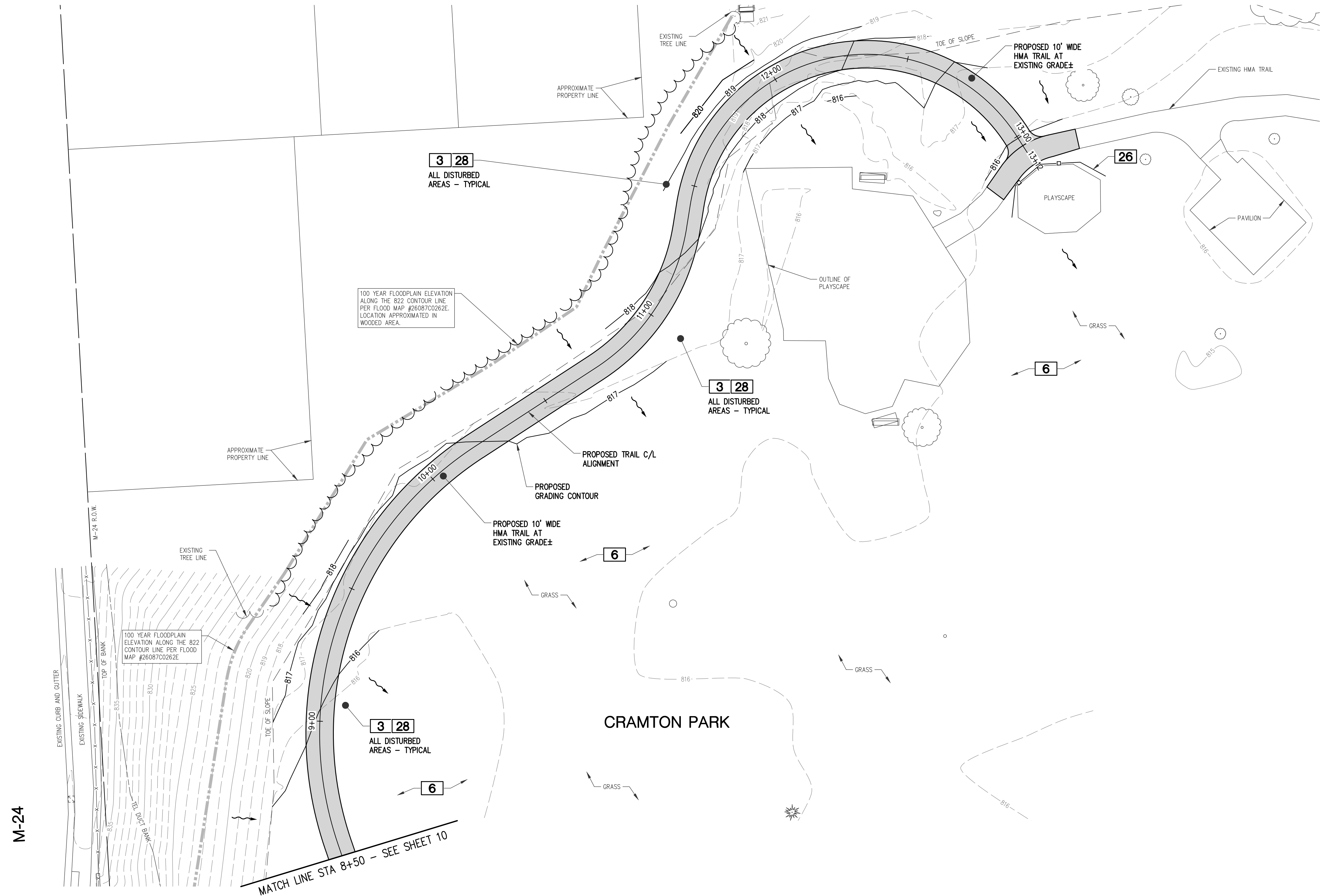
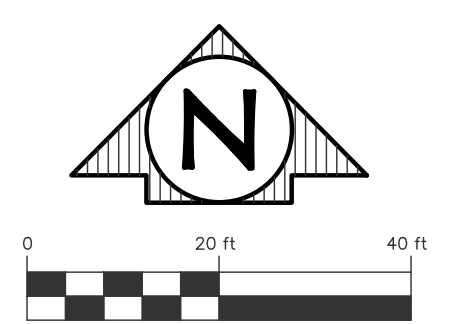
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 TRAIL GRADING SHEET - STA 6+40 TO STA 8+50

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**3 28**  
ALL DISTURBED  
AREAS - TYPICAL

**3 28**  
ALL DISTURBED  
AREAS - TYPICAL

100 YEAR FLOODPLAIN  
ELEVATION ALONG THE 822  
CONTOUR LINE PER FLOOD  
MAP #26087C0262E.  
LOCATION APPROXIMATED IN  
WOODED AREA.

100 YEAR FLOODPLAIN  
ELEVATION ALONG THE 822  
CONTOUR LINE PER FLOOD  
MAP #26087C0262E.

**3 28**  
ALL DISTURBED  
AREAS - TYPICAL

PROPOSED WORK WITHIN FLOODPLAIN OF FARMERS  
CREEK RIVER AND WITHIN DELINEATED WETLANDS.  
CITY OF LAPEER, PART OF SECTION 5, 17N-R10E,  
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PLAN SUBMITTALS AND CHANGES	
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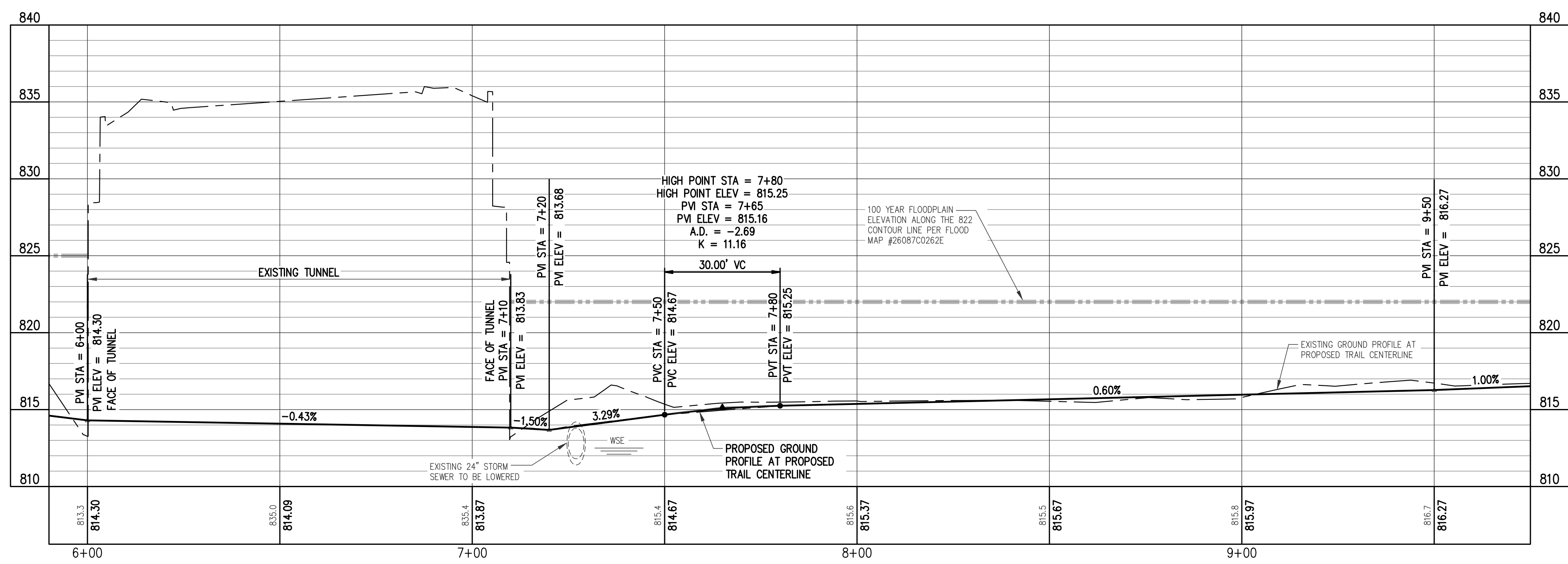
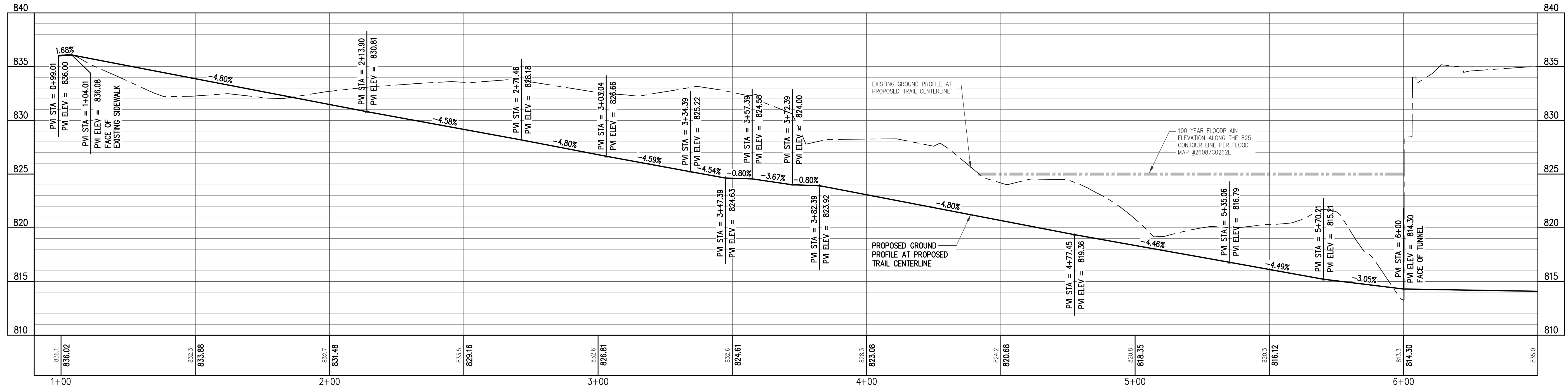
SHT# **11** OF 15  
JOB No: 15L0105

PLAN DATE: JUNE 2023  
PROJECT MGR: PTO  
REVIEWER: DPS  
SCALE: 1" = 20'

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M-24 AND FARMERS CREEK, LAPEER MI, 48446  
TRAIL GRADING SHEET - STA 8+50 TO P.O.E.

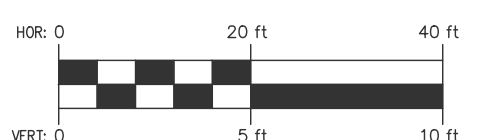
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**PLAN SUBMITTALS AND CHANGES**

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PROPOSED WORK WITHIN FLOODPLAIN OF FARMERS CREEK RIVER AND WITHIN DELINEATED WETLANDS. CITY OF LAPEER, PART OF SECTION 5, T7N-R10E, LAPEER COUNTY.



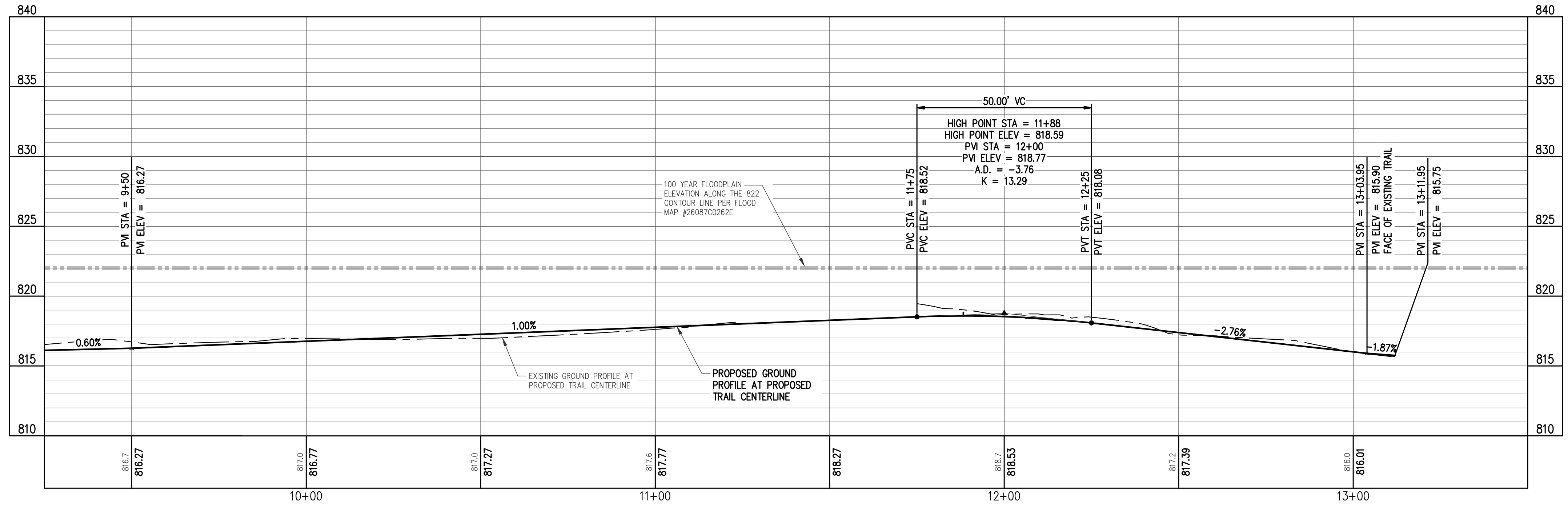
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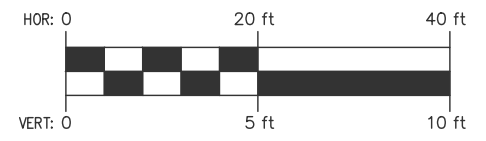
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 M-24 AND FARMERS CREEK, LAPEER MI, 48446  
 TRAIL PROFILE SHEET - P.O.B. TO STA 9+50

REV:  
 SHT# 12 OF 15  
 JOB No: 15L0105

PL0105: 7/5/2023 2:36 PM R:\Projects\15L0105\Weg\Construction\Drawings\15L0105\_PROFILE.dwg



PROPOSED WORK WITHIN FLOODPLAIN OF FARMERS CREEK RIVER AND WITHIN DELINEATED WETLANDS. CITY OF LAPEER, PART OF SECTION 5, T7N-R10E, LAPEER COUNTY.



Know what's below.  
Call before you dig.

**PLAN SUBMITTALS AND CHANGES**

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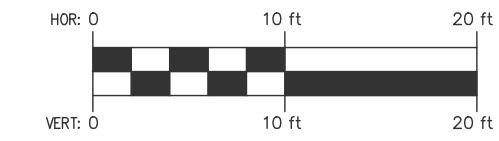
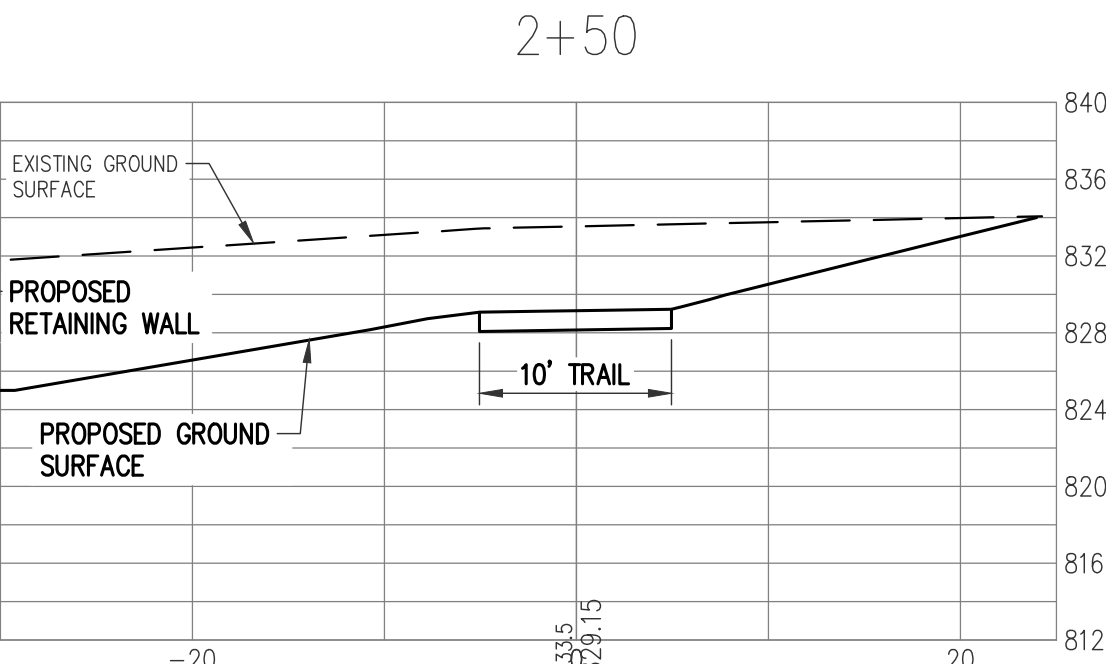
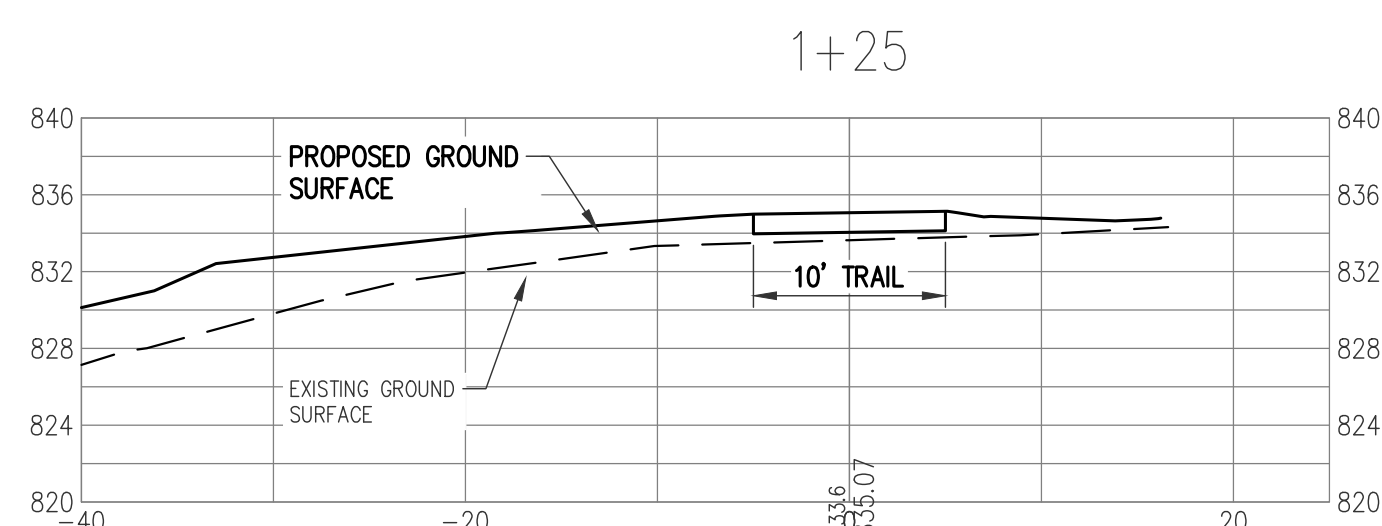
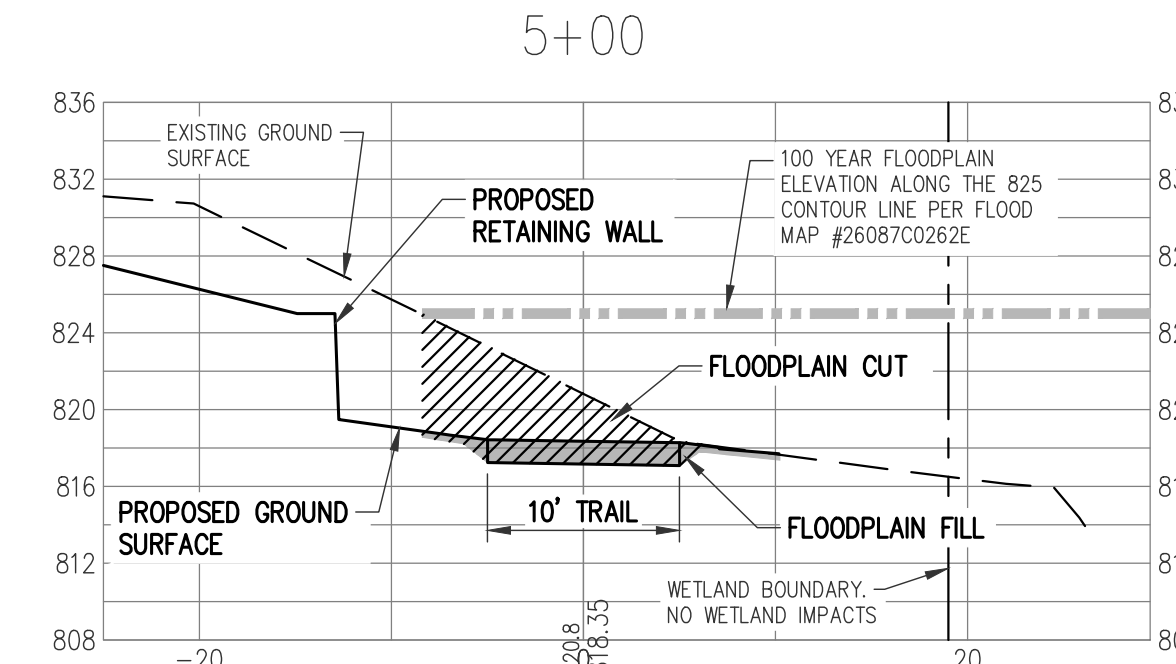
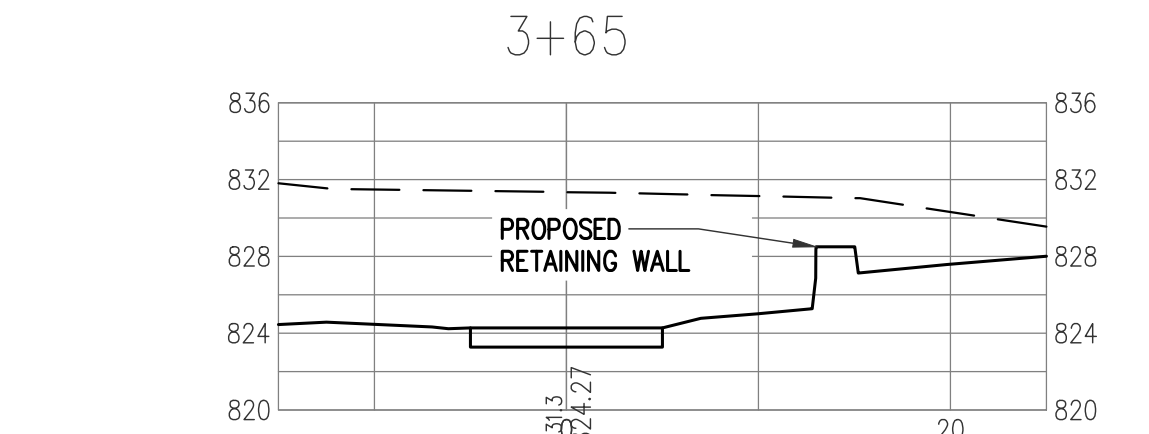
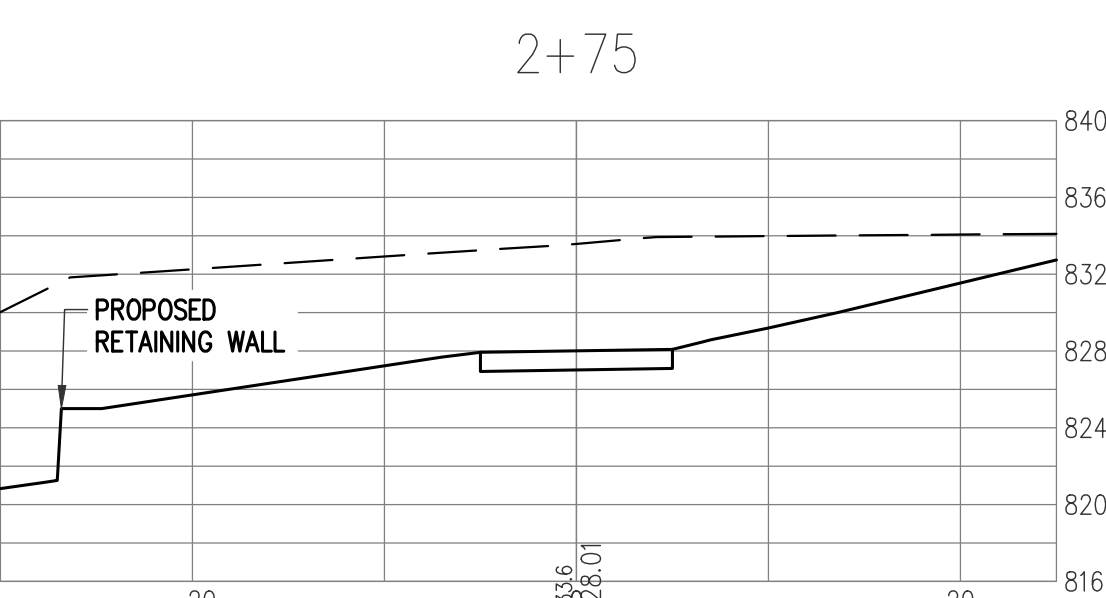
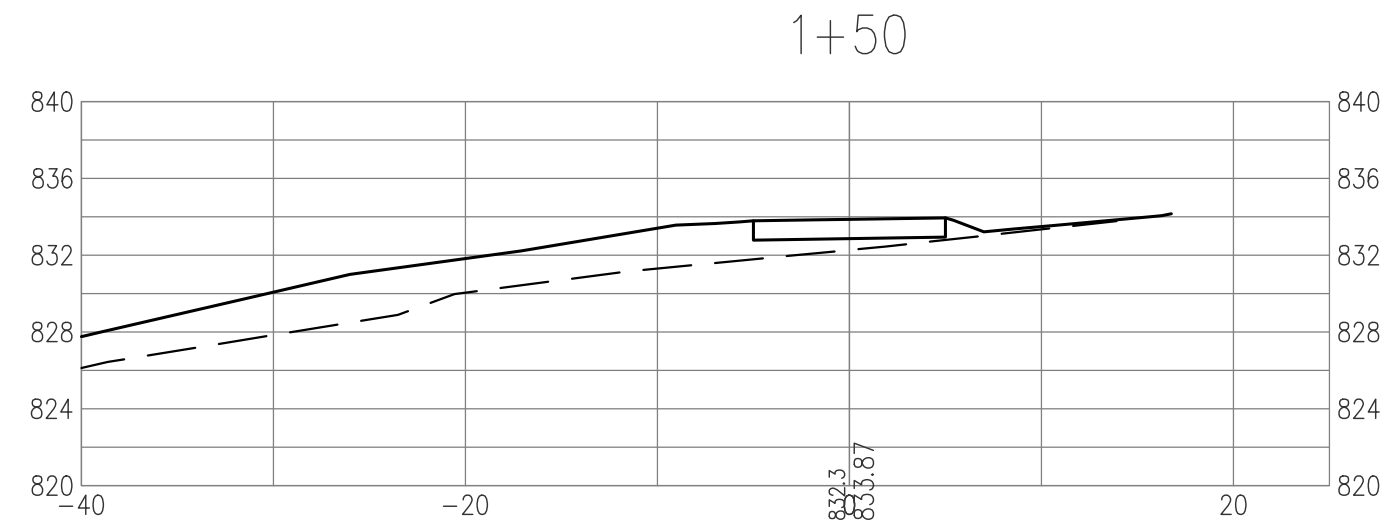
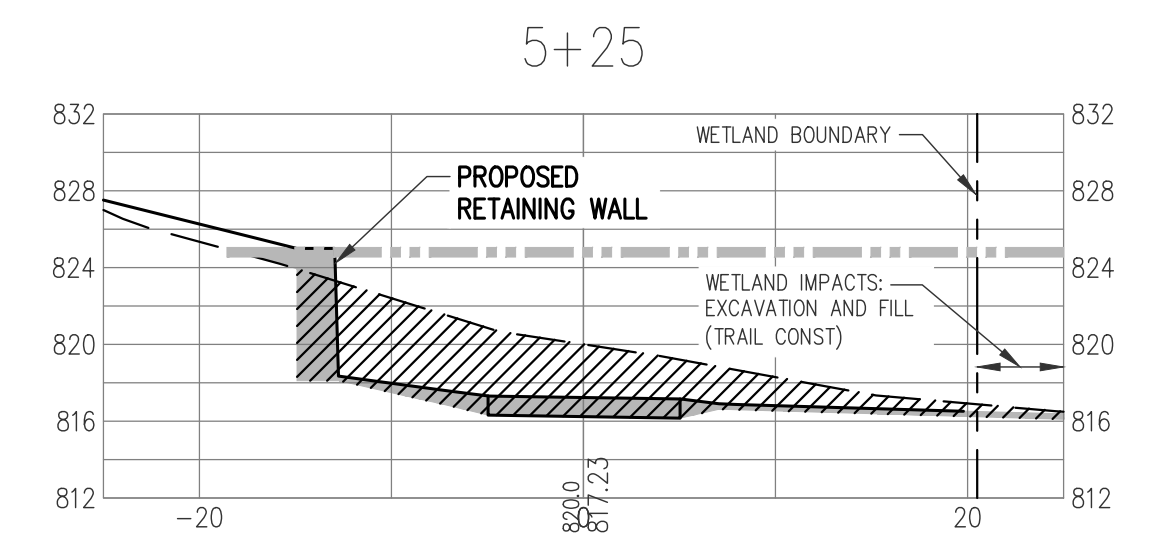
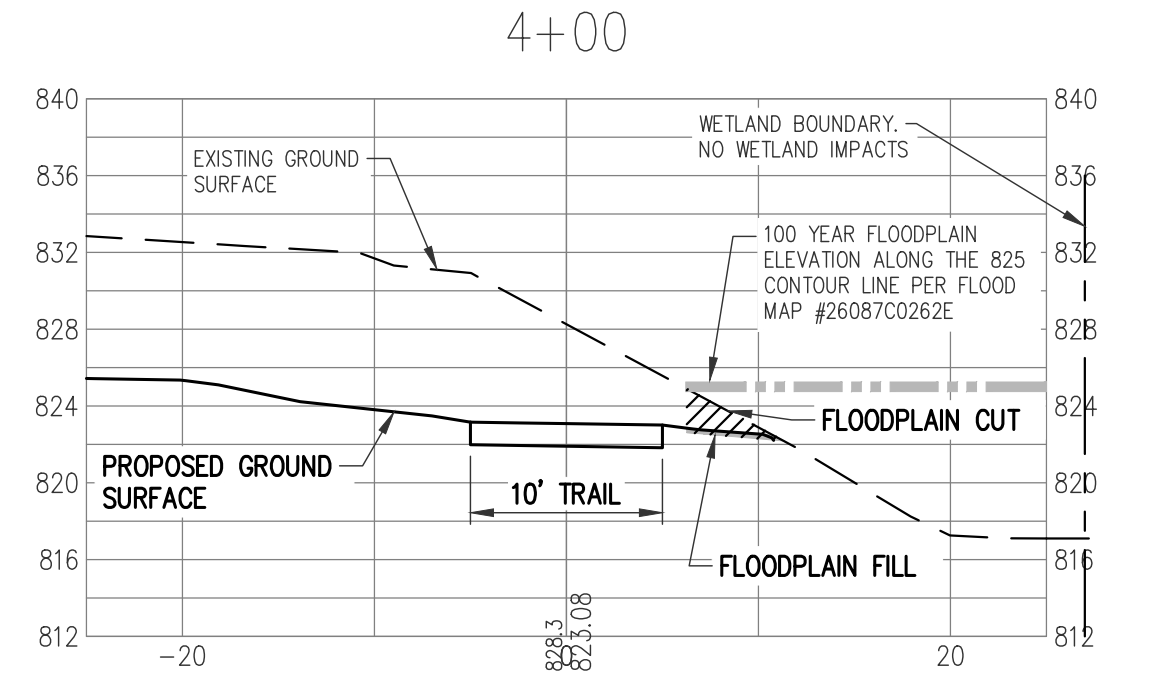
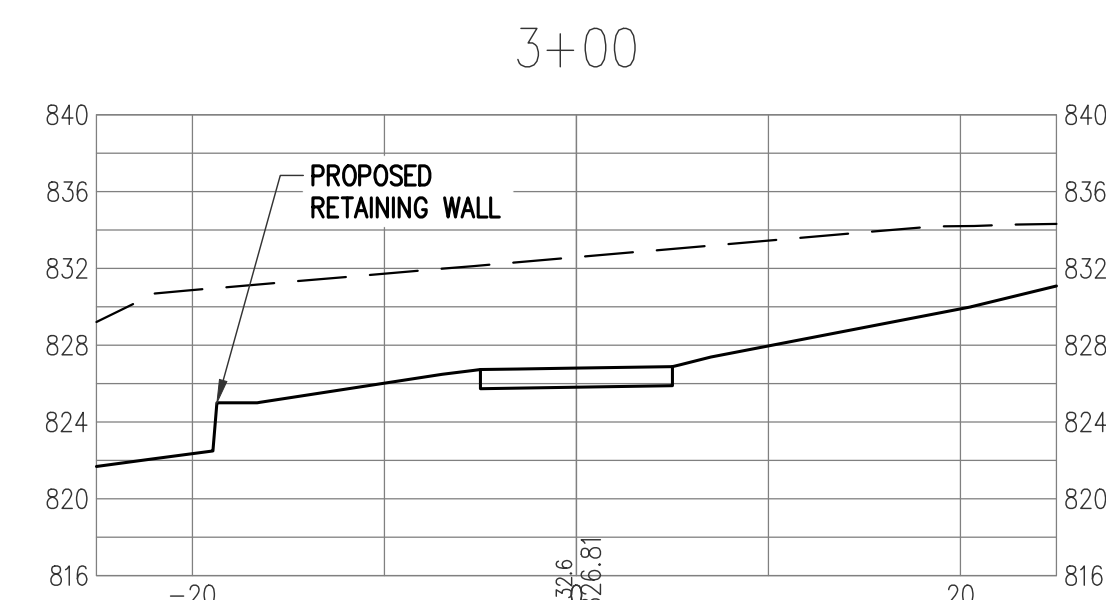
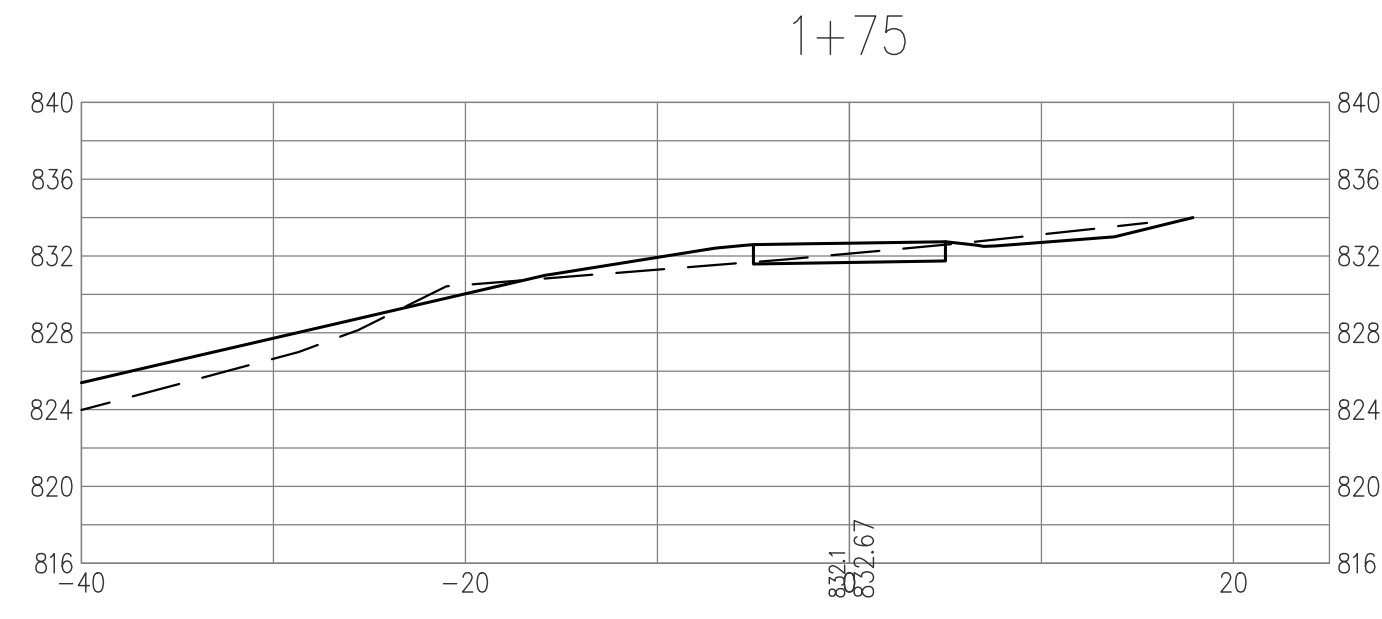
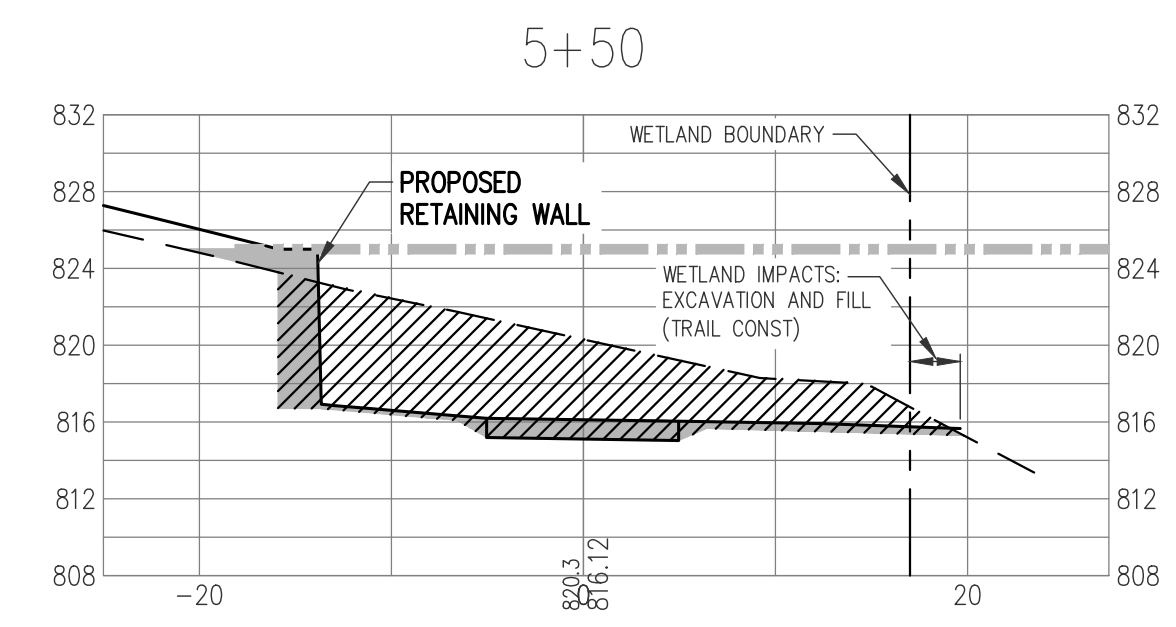
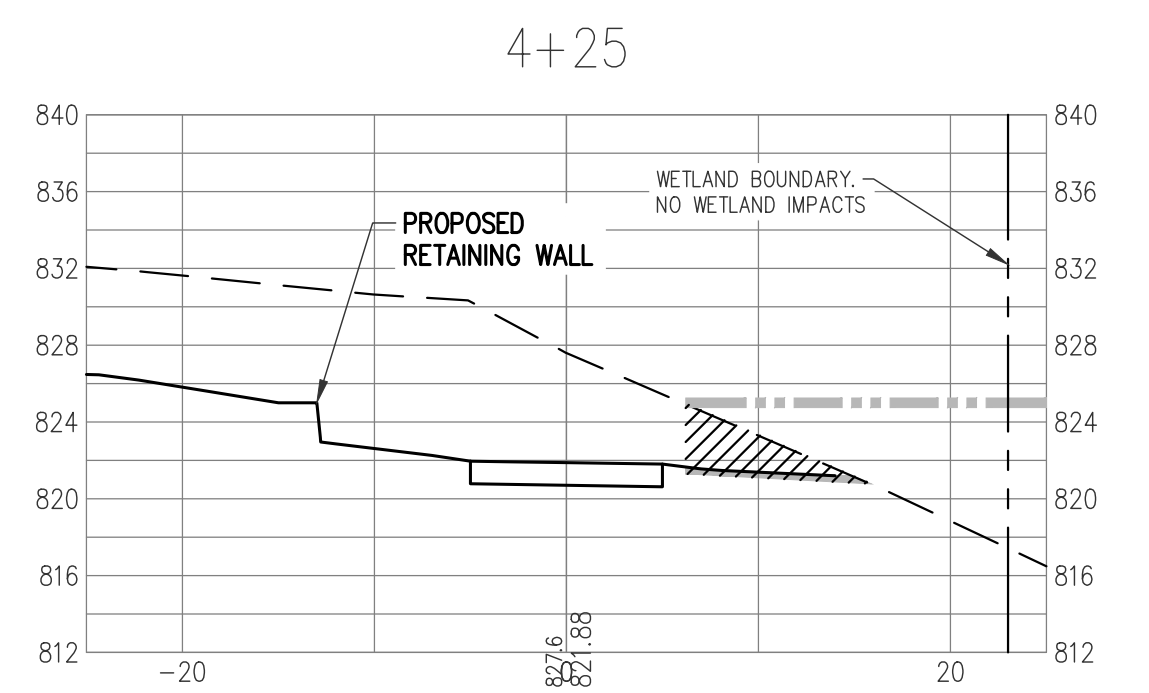
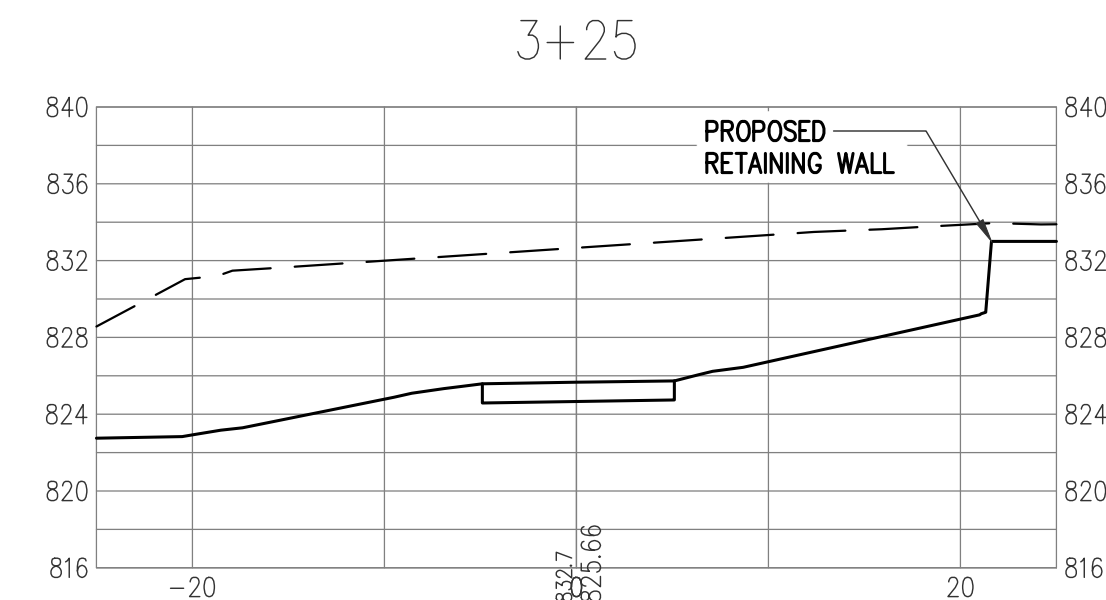
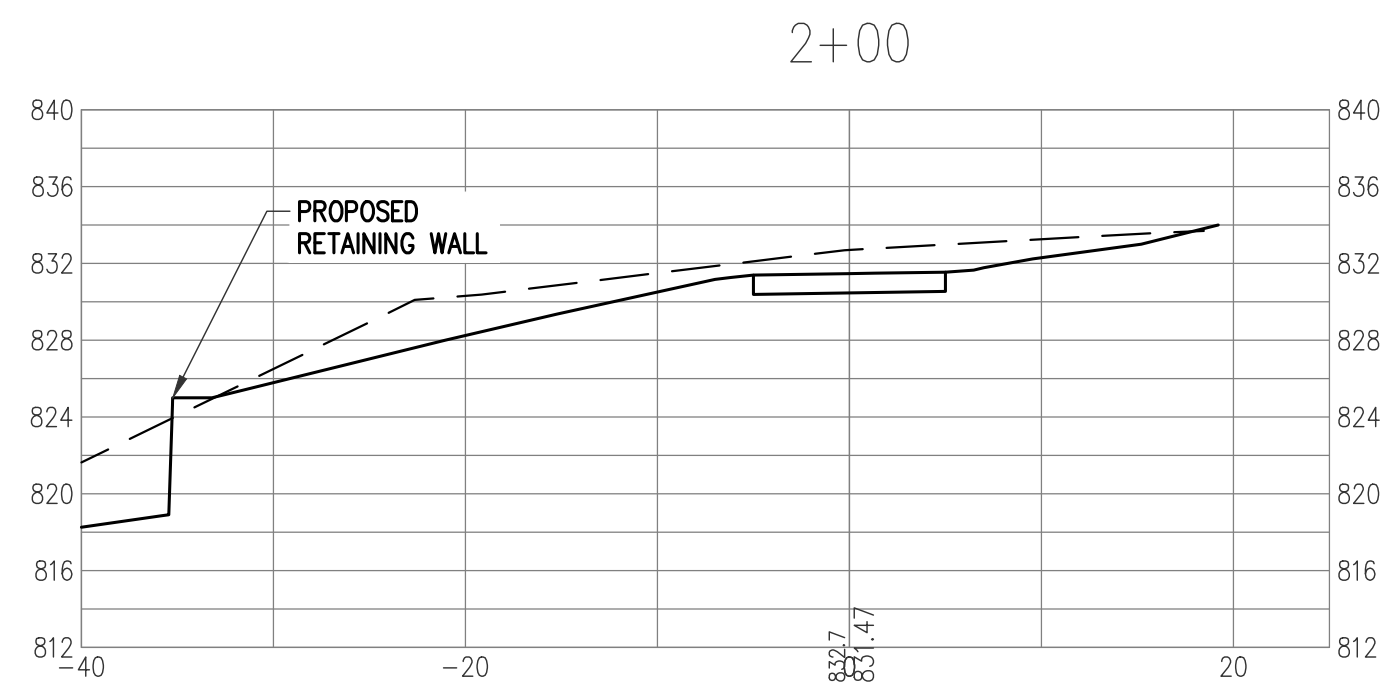
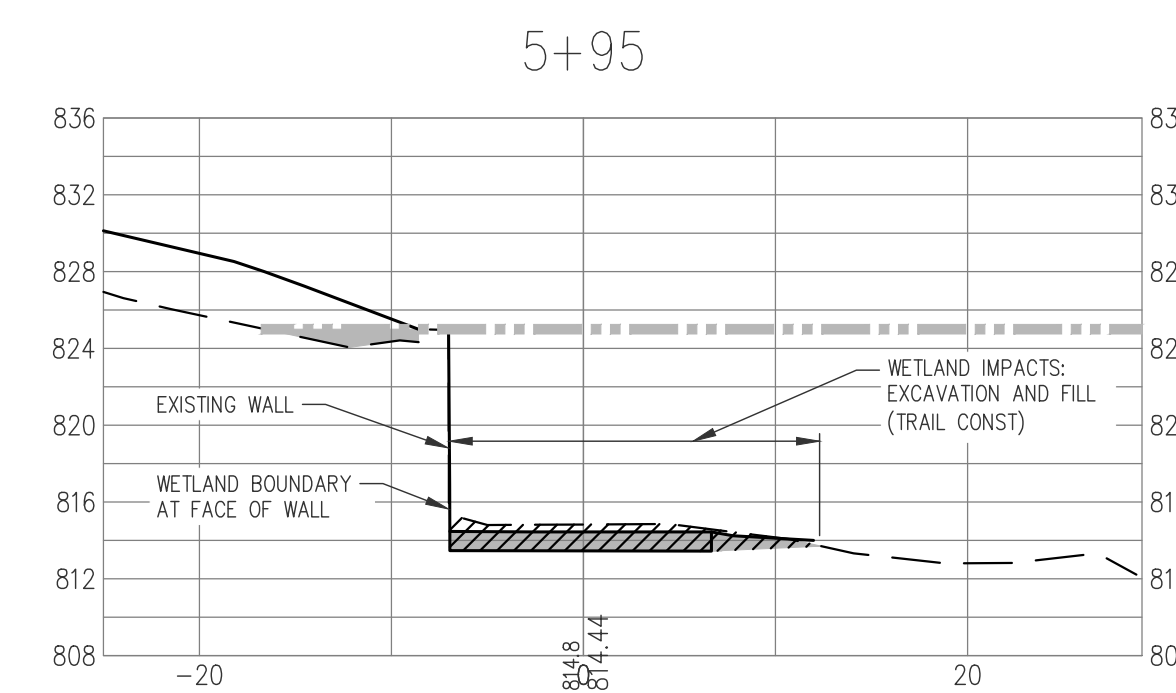
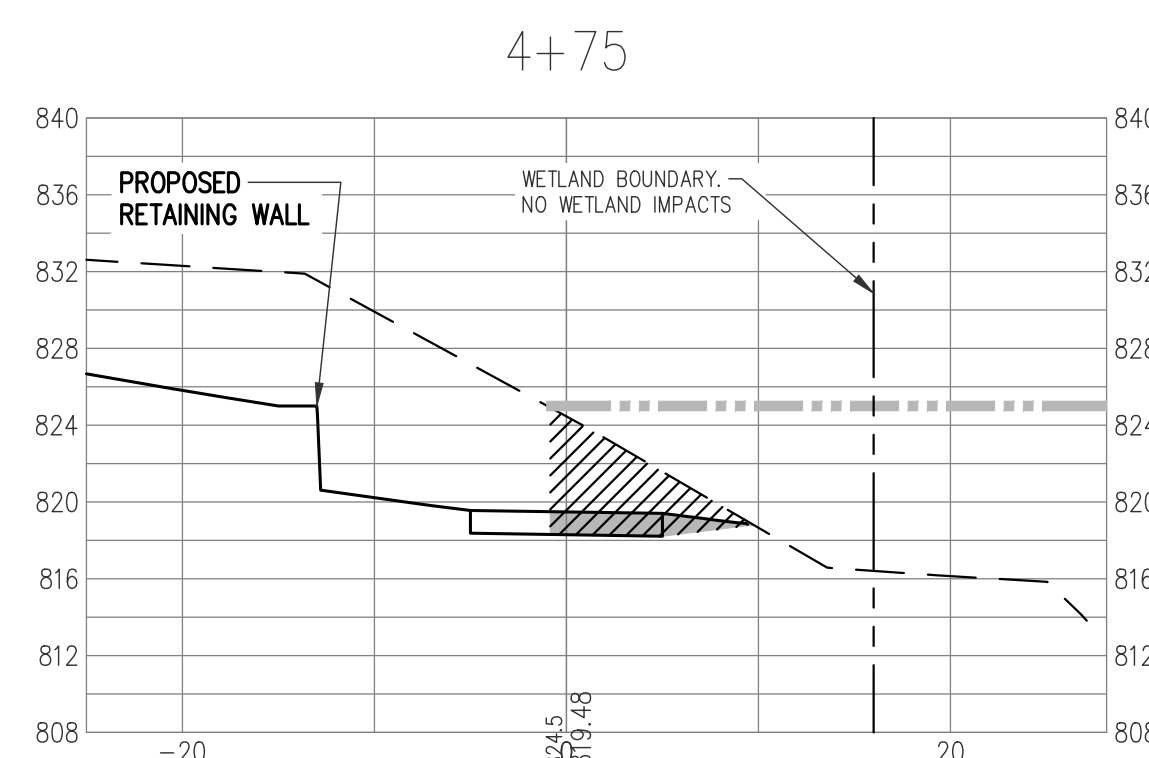
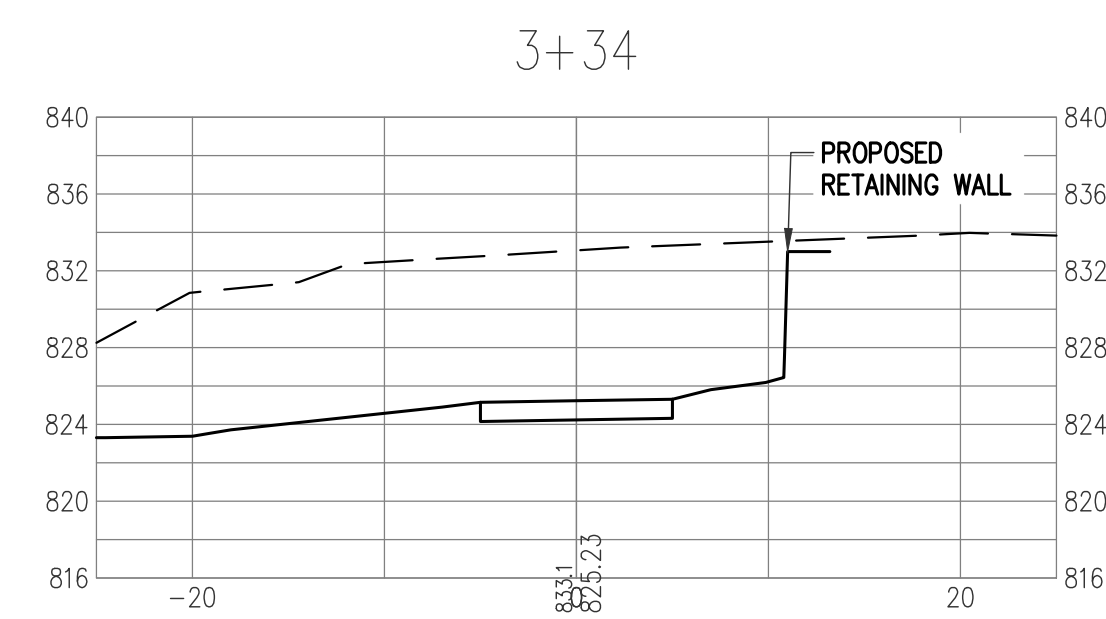
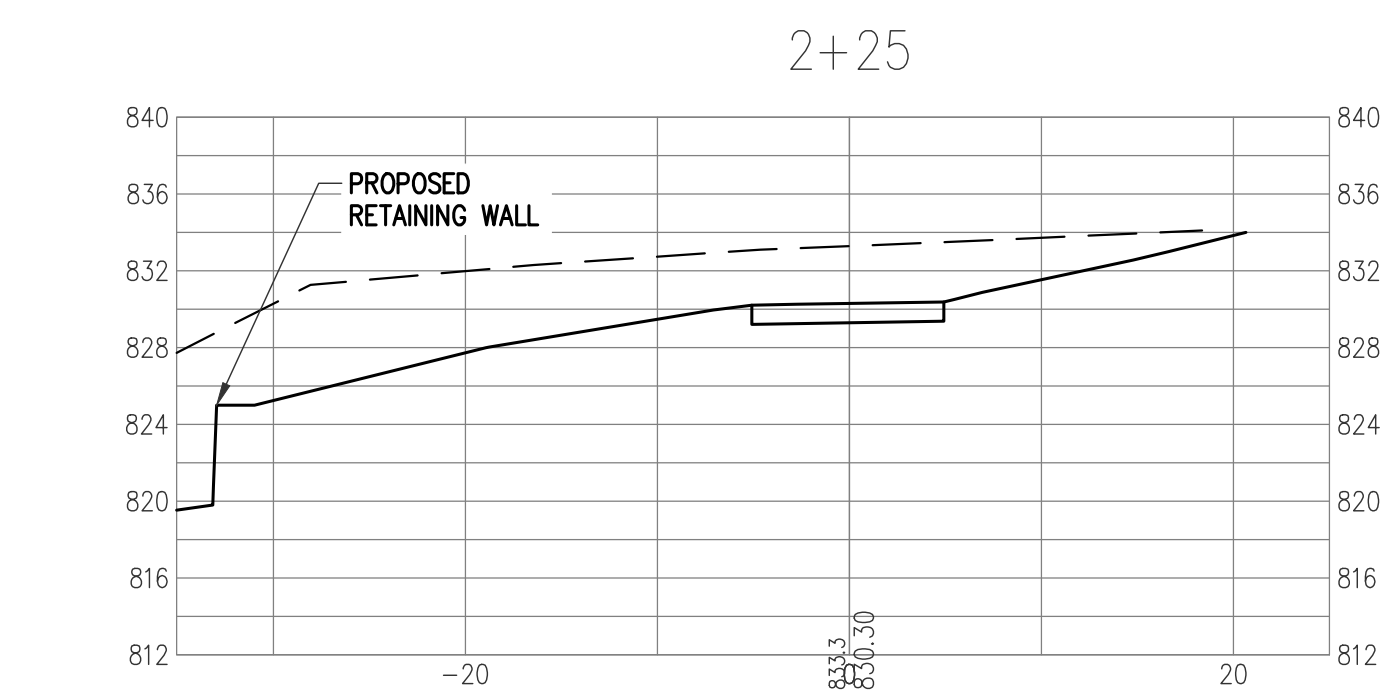
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PLAN DATE: JUNE 2023  
PROJECT MGR: PTO  
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SCALE: H: 1"=20' V: 1"=5'

PREPARED FOR  
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**M-24 UNDERPASS CONNECTION PROJECT**  
M-24 AND FARMERS CREEK, LAPEER MI, 48446  
TRAIL PROFILE SHEET - STA 9+50 TO P.O.E.



PROPOSED WORK WITHIN FLOODPLAIN OF FARMERS CREEK RIVER AND WITHIN DELINEATED WETLANDS. CITY OF LAPEER, PART OF SECTION 5, T7N-R10E, LAPEER COUNTY.



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REV:

SHT# 14 OF 15

JOB No: 15L0105

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PROJECT MGR: PTO

REVIEWER: DPS

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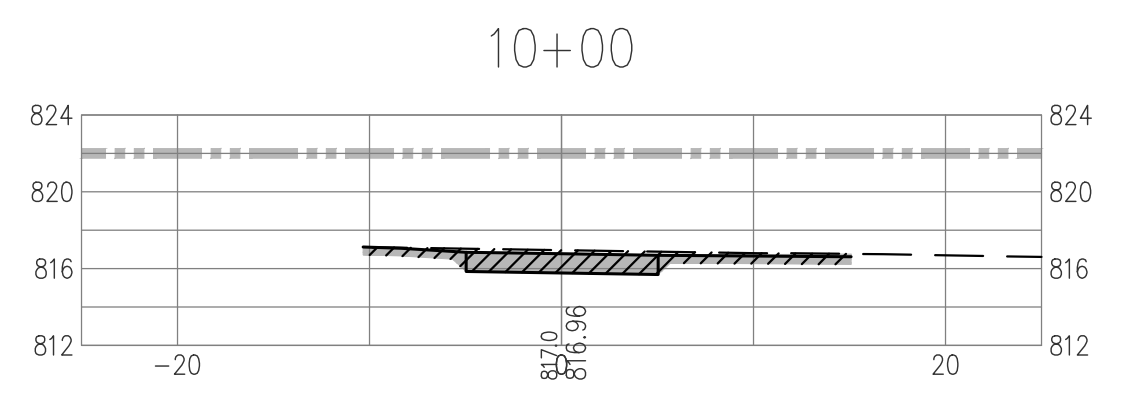
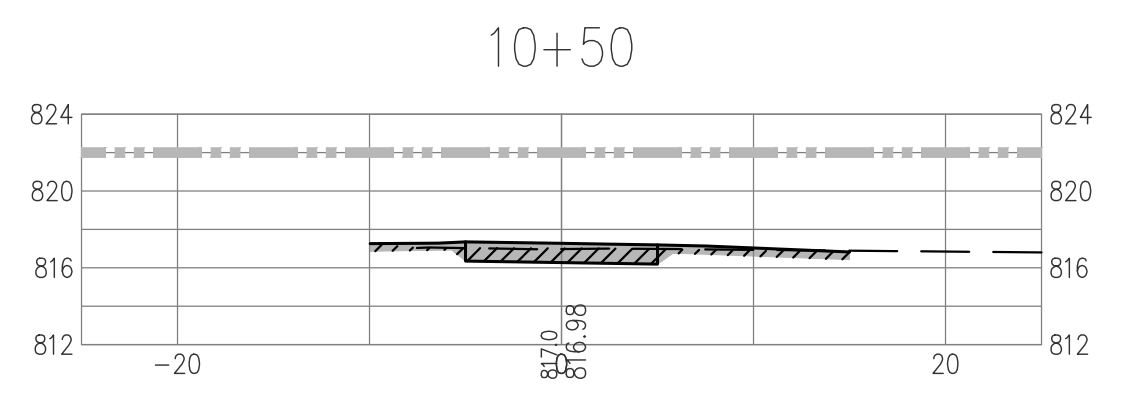
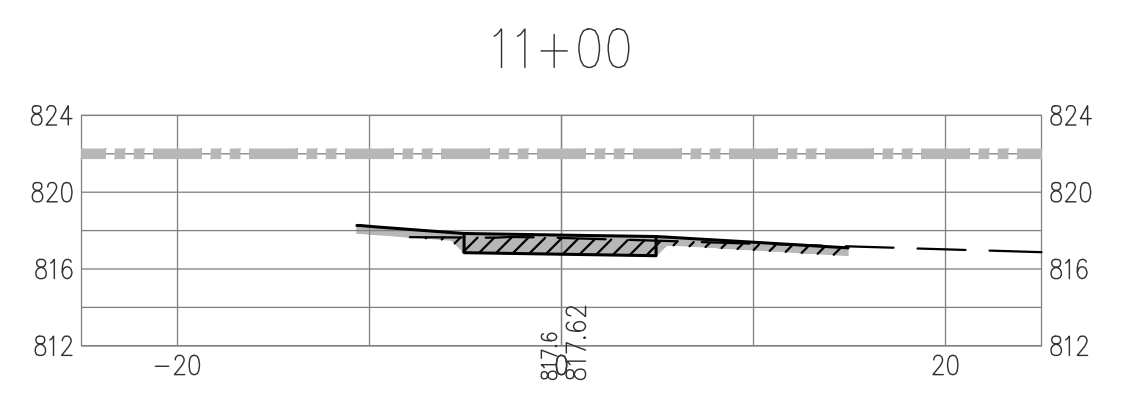
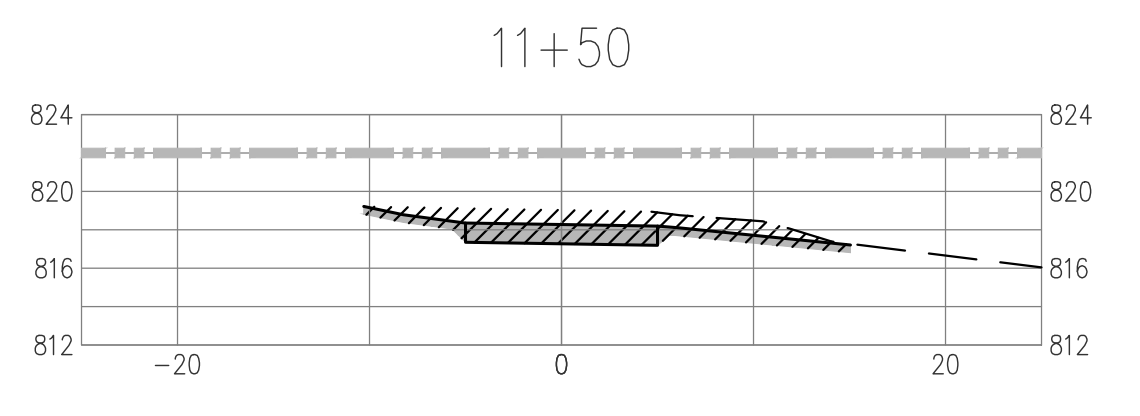
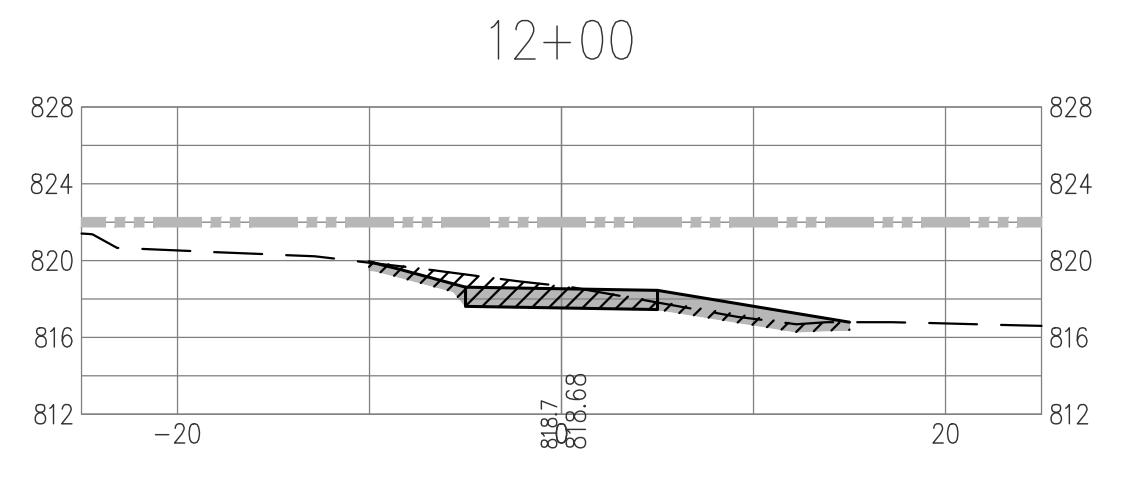
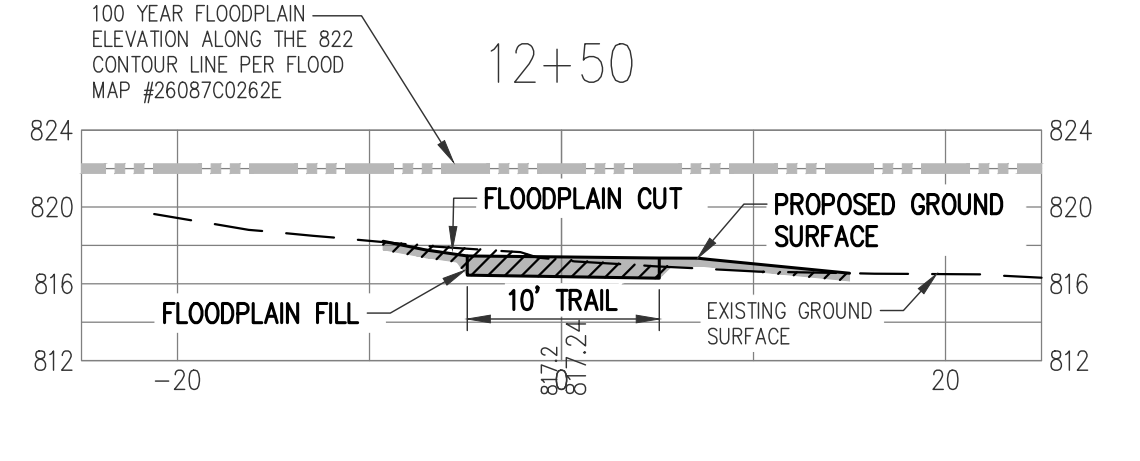
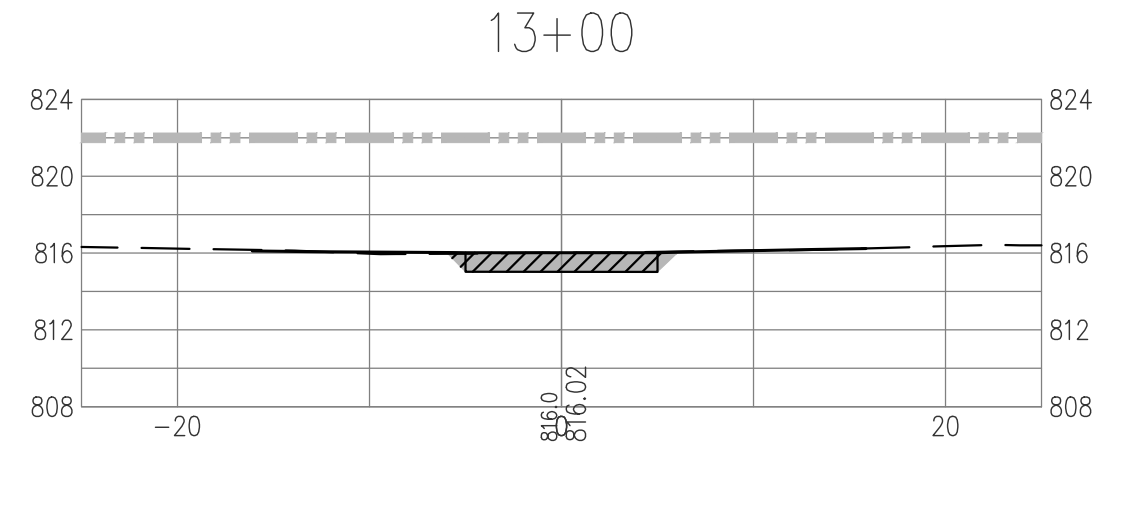
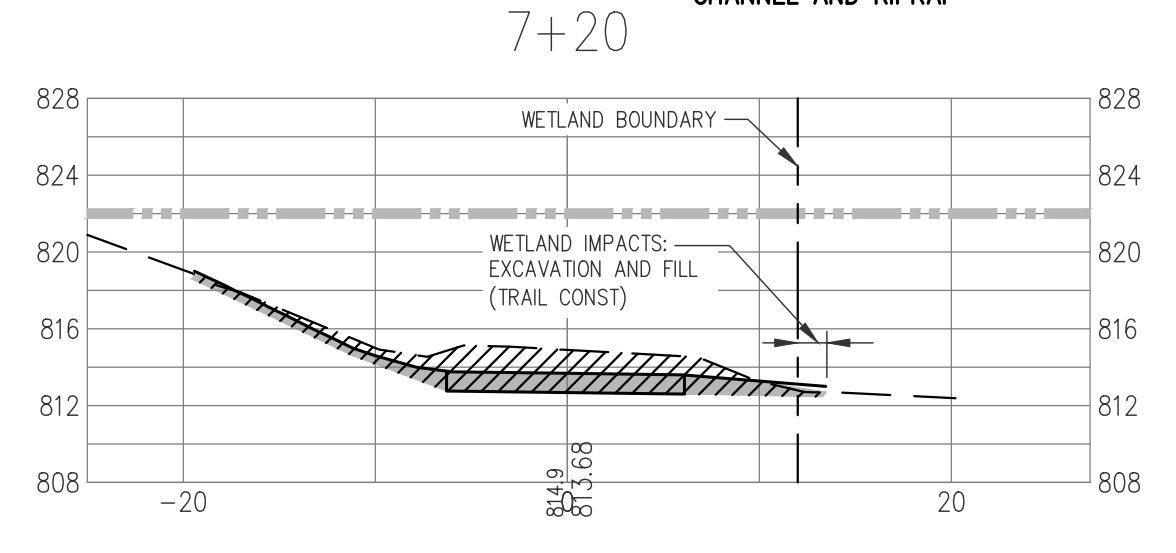
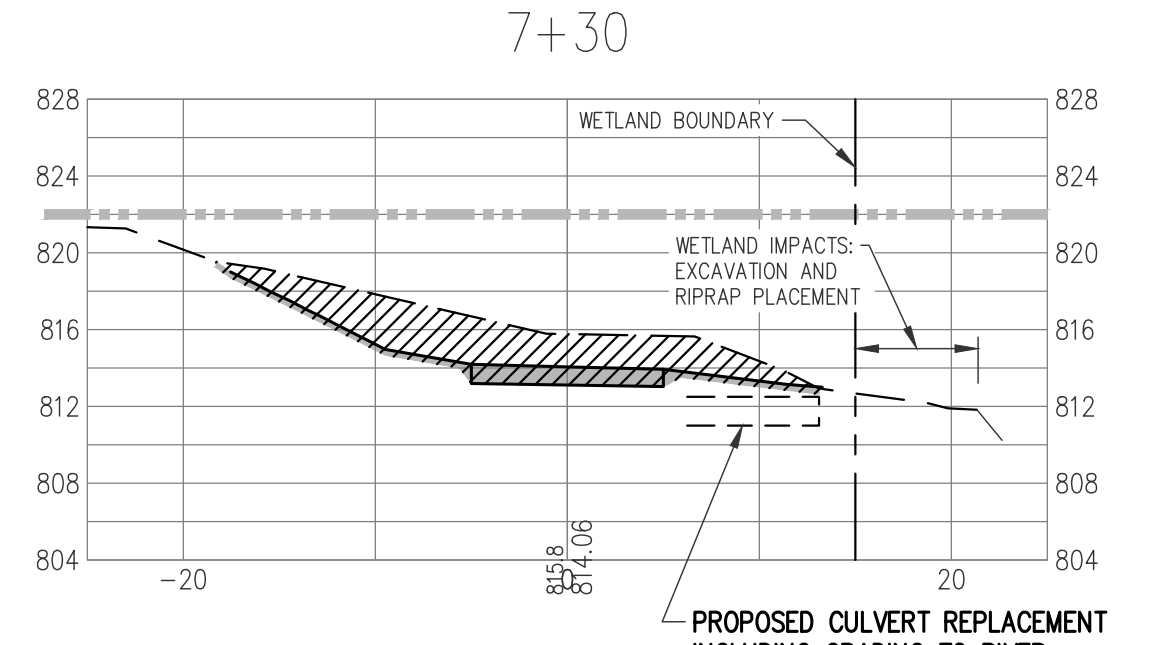
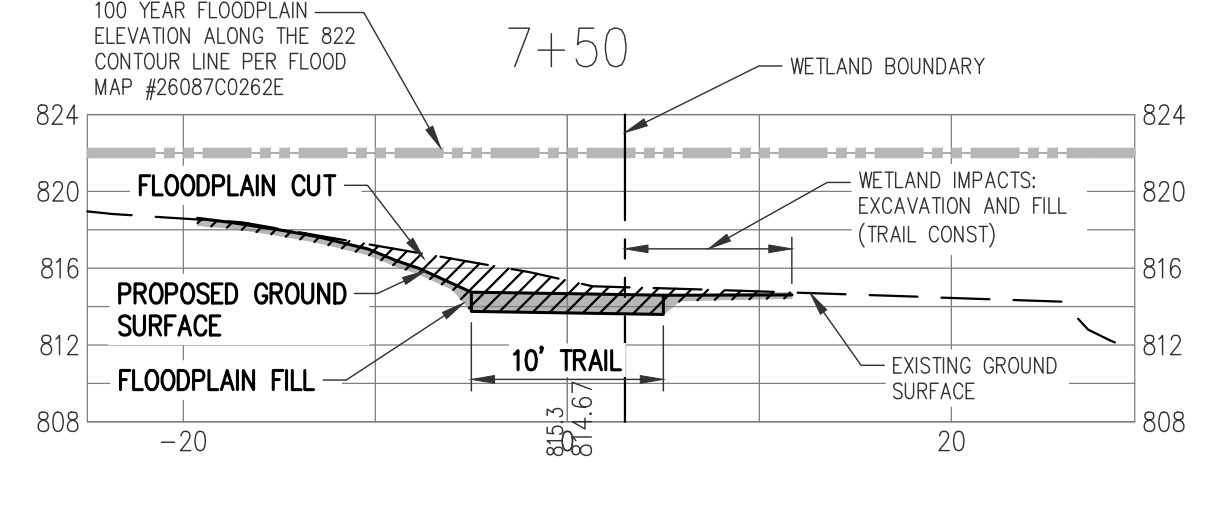
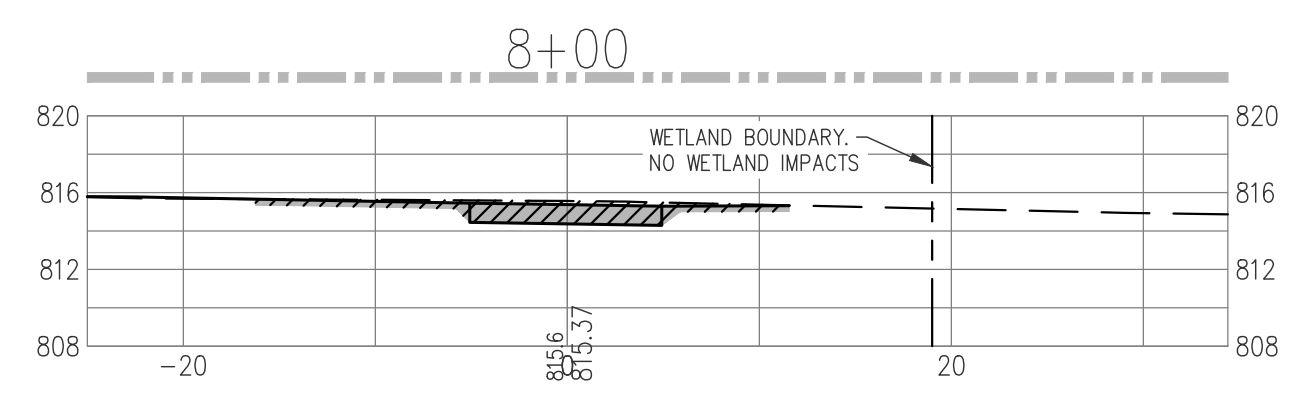
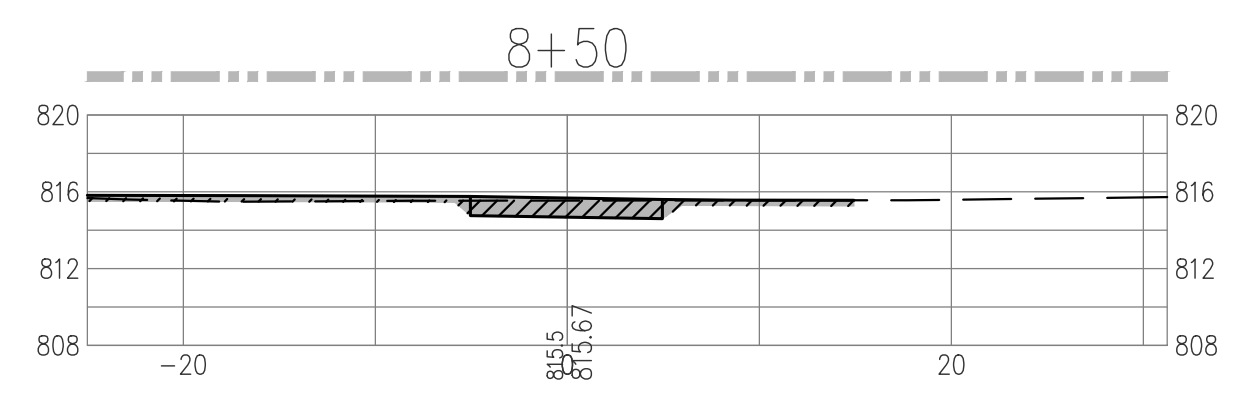
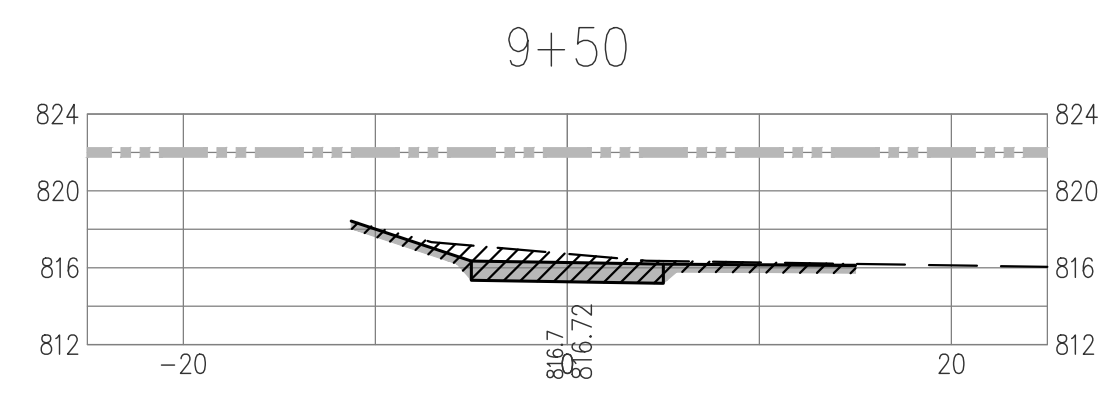


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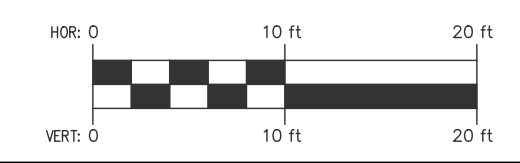
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TRAIL CROSS SECTION SHEET - P.O.B. TO STA 6+40

PLNOTE: 7/5/2023 2:36 PM



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SHT# 15 OF 15  
JOB No: 15L0105

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### Floodplain Cut Calculations - Trail

Sta	Length Ft	Cut Area Sft	Volume Cft
3+65			0.0
4+00	35	5.8	101.5
4+25	25	17.8	367.5
4+75	50	37.7	1832.5
5+00	25	59.5	1686.3
5+25	25	112.3	2891.3
5+50	25	154.6	4740.0
5+95	45	22.5	7463.3
6+00	5	0.0	112.5
TUNNEL			
7+10			0.0
7+20	10	45.1	225.5
7+30	10	69.9	800.5
7+50	20	31.5	1713.0
8+00	50	19.2	2055.0
8+50	50	14.5	1322.5
9+50	100	24.5	2675.0
10+00	50	20.4	1735.0
10+50	50	11.6	1310.0
11+00	50	11.7	872.5
11+50	50	31.9	1382.5
12+00	50	18.8	2065.0
12+50	50	13.8	1285.0
13+00	50	11.0	965.0
13+10	10	0.0	110.0
	835 Ft total		37711.3 Cft
			1396.7 Cyd total Cut

### Floodplain Cut Calculations - Sidewalk

ave width = 15'

length = 120'

ave depth of cut = 0.75'

1350.0 Cft

50.0 Cyd total Cut

1446.7 Cyd Grand Total Cut

City of Lapeer

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### Floodplain Fill Calculations - Trail

Sta	Length	Fill Area Sft	Volume Cft
3+65			0.0
4+00	35	1.2	21.0
4+25	25	3.0	67.5
4+75	50	10.7	417.5
5+00	25	16.0	467.5
5+25	25	37.5	868.8
5+50	25	39.7	1433.8
5+95	45	21.5	2270.3
6+00	5	0.0	107.5
TUNNEL			
7+10		0.0	
7+20	10	24.0	120.0
7+30	10	16.4	322.0
7+50	20	17.0	498.0
8+00	50	16.0	1250.0
8+50	50	19.6	1290.0
9+50	100	17.4	2830.0
10+00	50	17.2	1300.0
10+50	50	16.5	1272.5
11+00	50	16.3	1232.5
11+50	50	16.5	1227.5
12+00	50	21.2	1355.0
12+50	50	16.5	1472.5
13+00	50	11.0	1100.0
13+10	10	0.0	110.0
	835 Ft total		21033.8 Cft
			779.0 Cyd total Fill

### Floodplain Fill Calculations - Sidewalk

ave width = 15'

length = 120'

ave depth of fill = 0.85'

1530.0 Cft

56.7 Cyd total Fill

835.7 Cyd Grand Total Fill

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