MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF RAMSEY/CITY OF ANOKA
ANOKA COUNTY, MINNESOTA
MISSISSIPPI RIVER TRAIL

CONSTRUCTION PLAN FOR: GRADING, BITUMINOUS TRAIL, BRIDGES, PEDESTRIAN RAMPS, RETAINING WALLS, SIGNAGE, PAVEMENT STRIPING AND MARKINGS

LOCATED ON	MISSISSIPPI WEST REGIONAL PARK	FROM	1000' WEST OF TRAPROCK ST	TO	RIVERDALE DR
LOCATED ON	RIVERDALE DR, TUNGSTEN ST, RIVLYN AVE	FROM	FELDSPAR ST	TO	KINGS ISLAND
LOCATED ON	KINGS ISLAND	FROM	RIVLYN AVE	TO	MISSISSIPPI RIVER COMMUNITY PARK

WEST TRAIL (OFF-ROAD) (SP 103-090-003)

GROSS LENGTH	3049.09	FEET	0.577	MILES
BRIDGE LENGTH	0	FEET	0	MILES
EXCEPTION LENGTH	0	FEET	0	MILES
NET LENGTH	3049.09	FEET	0.577	MILES

LENGTH AND DESCRIPTION BASED UPON PROPOSED TRAIL ALIGNMENT

CENTRAL TRAIL (ON-ROAD) (SP 103-090-003)

GROSS LENGTH	3001.12	FEET	.568	MILES
BRIDGE LENGTH	0	FEET	0	MILES
EXCEPTION LENGTH	0	FEET	0	MILES
NET LENGTH	3001.12	FEET	.568	MILES

LENGTH AND DESCRIPTION BASED UPON EXISTING STREET ALIGNMENT

CENTRAL TRAIL (OFF-ROAD) (SP 103-090-003)

GROSS LENGTH	2107.09	FEET	.399	MILES
BRIDGE LENGTH	0	FEET	0	MILES
EXCEPTION LENGTH	0	FEET	0	MILES
NET LENGTH	2107.09	FEET	.399	MILES

LENGTH AND DESCRIPTION BASED UPON PROPOSED TRAIL ALIGNMENT

EAST TRAIL (OFF-ROAD) (SP 103-090-003)

GROSS LENGTH	2928.08	FEET	.555	MILES
BRIDGE LENGTH	100	FEET	.019	MILES
EXCEPTION LENGTH	0	FEET	0	MILES
NET LENGTH	3028.08	FEET	.574	MILES

LENGTH AND DESCRIPTION BASED UPON PROPOSED TRAIL ALIGNMENT

BIKE TRAIL DESIGN DESIGNATION — OFF-ROAD TRAIL

STA. 0+00.00 TO STA. 30+30+49.09
STA. 112+73.65 TO STA. 133+80.74
STA. 205+38.00 TO STA. 234+66.33

FUNCTIONAL CLASSIFICATION	BIKE TRAIL
DESIGN SPEED	20 MPH

DESIGN SPEED FOR BIKEWAY BASED ON STOPPING SIGHT DISTANCE:
HEIGHT OF EYE = 4.5 FT
HEIGHT OF OBJECT = 0 FT

BIKE TRAIL DESIGN DESIGNATION — ON-ROAD TRAIL

RIVERDALE DRIVE: STA. 100+00.00 TO STA. 112+73.65
RIVERDALE DRIVE: STA. 133+80.74 TO STA. 141+79.12

FUNCTIONAL CLASSIFICATION	LOCAL
DESIGN SPEED	35 MPH
ADT	810
BIKEWAY DESIGN	6 FT BICYCLE LANE

BIKE TRAIL DESIGN DESIGNATION — ON-ROAD TRAIL

TUNGSTEN STREET: STA. 141+79.12 TO STA. 145+58.63
RIVLYN AVENUE: STA. 145+58.63 TO STA. 151+08.21

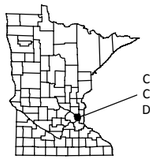
FUNCTIONAL CLASSIFICATION	LOCAL
DESIGN SPEED	30 MPH
ADT	315
BIKEWAY DESIGN	14.50 FT SHARED LANE

TYPICAL PLAN SCALE
UNLESS OTHERWISE NOTED:

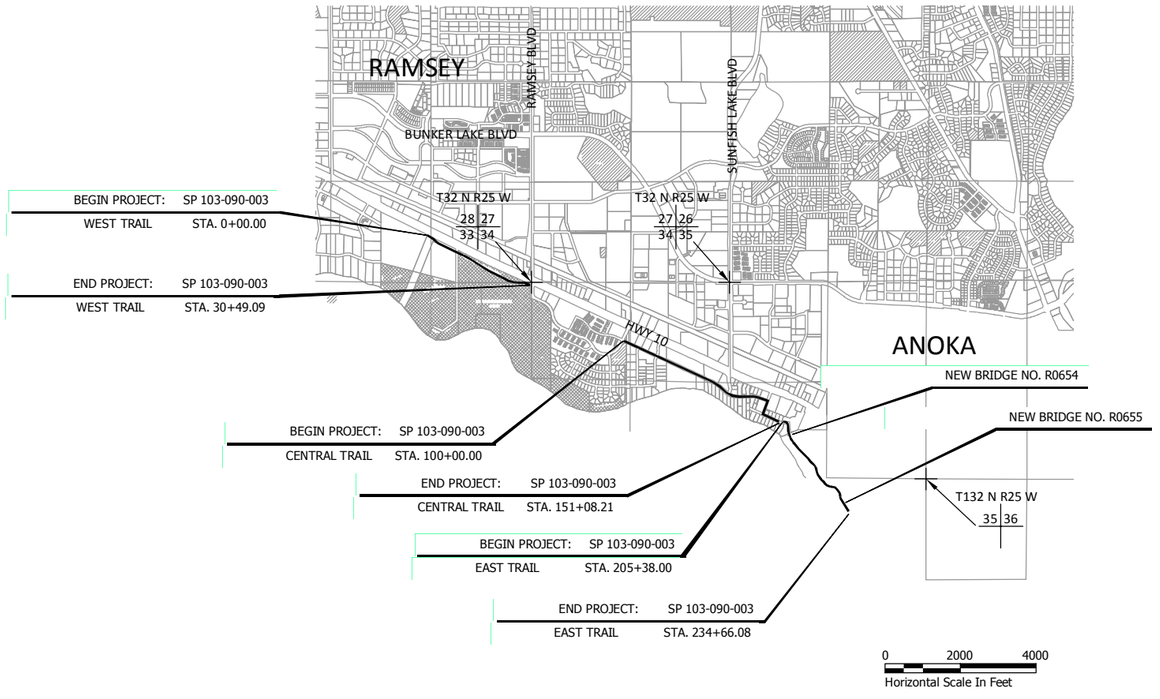
0 50 100
Horizontal Scale In Feet

0 10 20
Vertical Scale In Feet

PROJECT LOCATION



CITY: RAMSEY/ANOKA
COUNTY: ANOKA
DISTRICT: METRO



VICINITY MAP

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THE UTILITY QUALITY LEVELS IN THIS PLAN WERE DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

MINNESOTA PROJECT NUMBER: TA 0213(156)

--- GOVERNING SPECIFICATIONS ---
THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATION FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) AND PART VI, "FIELD MANUAL" FOR TEMPORARY TRAFFIC CONTROL DEVICES.

THIS PLAN SET CONTAINS 85 SHEETS.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

_____ LIC. NO. _____ DATE _____
KEVIN P. KIELB

APPROVED: _____ DATE _____
CITY ENGINEER, CITY OF RAMSEY

APPROVED: _____ DATE _____
CITY ENGINEER, CITY OF ANOKA

APPROVED: _____ DATE _____
COUNTY ENGINEER, ANOKA COUNTY

RECOMMENDED FOR APPROVAL: _____ DATE _____
STATE BRIDGE ENGINEER

_____ DATE _____
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AND FEDERAL AID RULES/POLICY

_____ DATE _____
STATE AID ENGINEER: APPROVED FOR STATE AND FEDERAL AID FUNDING: STATE AID ENGINEER

I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, OF THIS PLAN WERE MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

.....

..... LIC. NO. ..... DATE .....
PRINTED NAME HERE

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DESIGNED	KPK/AK
DRAWN	AK
CHECKED	KPK

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN WILLMAR, MN BURNSVILLE, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
TITLE SHEET
SP 103-090-003

SHEET 1 OF 53

EXISTING TOPOGRAPHIC SYMBOLS

- STORM SEWER APRON
- **BASKETBALL POST**
- BARRICADE PERMANENT
- BENCH
- BOOSTER STATION
- BUILDING LOWEST OPENING
- BURIAL CONTROL MONUMENT
- BUSH DECIDUOUS
- CATCH BASIN BEEHIVE
- CURB BOX
- CATCH BASIN
- COLUMN
- CONTROL BOX SIGNAL
- CLEAN OUT (SEWER)
- CULVERT END
- DRINKING FOUNTAIN
- ENERGY DISSIPATER
- FLAG POLE
- FUEL PUMP
- GUY WIRE
- GRILL
- HANDICAP SPACE
- HANDHOLE
- FIRE HYDRANT
- HYDRANT PVMNT MARKER (REFLECTOR)
- HYDRANT VALVE
- INLET (SMALL DIA.)
- LIFT STATION CONTROL PANEL
- LIFT STATION DRY WELL
- LIFT STATION WET WELL
- LIGHT YARD
- LOOP DETECTOR
- MAIL BOX
- MAIL RELAY BOX
- MANHOLE-AIR RELEASE
- MANHOLE-HEAT
- MANHOLE-GAS
- MANHOLE-POWER
- MANHOLE-SANITARY SEWER
- MANHOLE-STORM SEWER
- MANHOLE-COMMUNICATIONS
- MANHOLE-UNKNOWN
- MANHOLE-WATER
- METER POWER
- METER GAS
- ORDINARY HIGH WATER MARK
- OUTLET CONTROL STRUCTURE
- PARKING METER
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POWER
- PEDESTAL CATV
- PEDESTAL COMMUNICATIONS
- POST INDICATOR VALVE
- POLE-COMMUNICATIONS
- POLE-GUY
- POLE-LIGHT
- POLE-POWER
- POLE-UTILITY
- POLE-UTILITY SERVICE
- POST
- PROPANE TANK
- PICNIC TABLE
- SAMPLING WELL
- ROCK
- RR SIGNAL CONTROL BOX
- RR CROSSING GATE
- RR SIGNAL
- REGULATION STATION GAS
- SATELLITE DISH
- SEPTIC TANK
- SEPTIC VENT
- SEPTIC DRAIN FIELD
- SIGN
- SOIL BORING
- STAND PIPE GAS
- SPIGOT WATER
- SPRINKLER HEAD
- SPRINKLER VALVE BOX
- STUMP
- SERVICE-GAS POINT ON LINE
- SERVICE-SANITARY SEWER POINT ON LINE
- SERVICE-STORM SEWER POINT ON LINE
- SERVICE-WATER POINT ON LINE
- TELEPHONE BOOTH
- TRANSMISSION TOWER ELECTRIC
- TEST PIT LOC
- TRANSFORMER POWER
- TREE DEAD
- TREE-CONIFEROUS
- TREE-DECIDUOUS
- TREE-FRUIT
- TRASH CAN
- TRAFFIC SIGNAL
- VALVE GAS
- VALVE
- VENT GAS
- WATER REDUCER
- WETLAND
- WELL-MONITORING
- WELL-WATER

SURVEY SYMBOLS

- AERIAL CONTROL POINT
- BACKSIGHT CONTROL POINT
- GPS CONTROL POINT
- JUDICIAL LAND MONUMENT
- MONUMENT COMPUTED
- MONUMENT IRON FOUND
- MONUMENT IRON SET
- RESECTED POINT
- ROW MONUMENT
- ROW MARKER POST
- SECTION CORNER
- TRAVERSE CONTROL POINT
- BENCH MARK LOCATION

PROPOSED TOPOGRAPHIC SYMBOLS

- BOLLARD
- SANITARY CLEANOUT
- MANHOLE
- SANITARY OR STORM LIFT STATION
- STORM SEWER BEEHIVE CATCH BASIN
- STORM SEWER CATCH BASIN
- STORM SEWER FLARED END SECTION
- STORM SEWER OUTLET STRUCTURE
- STORM SEWER OVERFLOW STRUCTURE
- CURB BOX
- FIRE HYDRANT
- WATER REDUCER
- VALVE
- RIP RAP
- DRAINAGE FLOW
- PEDESTRIAN RAMP

EXISTING PRIVATE UTILITY LINES

- CABLE TV QUALITY LEVEL D
- CABLE TV QUALITY LEVEL C
- CABLE TV QUALITY LEVEL B
- CABLE TV QUALITY LEVEL A
- FIBER OPTIC QUALITY LEVEL D FIBER
- OPTIC QUALITY LEVEL C FIBER OPTIC
- QUALITY LEVEL B FIBER OPTIC
- QUALITY LEVEL A
- POWER QUALITY LEVEL D
- POWER QUALITY LEVEL C
- POWER QUALITY LEVEL B
- POWER QUALITY LEVEL A
- GAS QUALITY LEVEL D
- GAS QUALITY LEVEL C
- GAS QUALITY LEVEL B
- GAS QUALITY LEVEL A
- COMMUNICATION QUALITY LEVEL D
- COMMUNICATION QUALITY LEVEL C
- COMMUNICATION QUALITY LEVEL B
- COMMUNICATION QUALITY LEVEL A
- OVERHEAD POWER
- OVERHEAD COMMUNICATION
- OVERHEAD UTILITIES

EXISTING TOPOGRAPHIC LINES

- RETAINING WALL
- FENCE - BARBED WIRE
- FENCE - CHAIN LINK
- FENCE - DECORATIVE
- FENCE - STOCKADE
- FENCE - WOOD
- FENCE - ELECTRIC
- GUARD RAIL
- TREE LINE
- WETLAND

SURVEY LINES

- BOUNDARY
- CENTERLINE
- EXISTING EASEMENT LINE
- PROPOSED EASEMENT LINE
- FLOOD PLAIN BOUNDARY
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- SETBACK LINE
- SECTION LINE
- QUARTER SECTION LINE
- SIXTEENTH SECTION LINE

EXISTING UTILITY LINES

- FORCE MAIN
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER
- WATER MAIN
- WATER SERVICE

PROPOSED UTILITY LINES

- FORCE MAIN
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER DRAINTILE
- STORM SEWER
- WATER MAIN
- WATER SERVICE
- PIPE CASING

FUTURE UTILITY LINES

- FORCE MAIN
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER DRAINTILE
- STORM SEWER
- WATER MAIN
- WATER SERVICE
- PIPE CASING

CONCRETE CURB AND GUTTER

- EXISTING
- PROPOSED
- FUTURE
- DEMOLITION

GRADING INFORMATION

- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- PROPOSED CONTOUR MAJOR
- PROPOSED GRADING LIMITS / SLOPE LIMITS
- PROPOSED SPOT ELEVATION

× 953.53 × STA:5+67.19 980.87

1:4 RISE:RUN (SLOPE)

ABBREVIATIONS

AD	ALGEBRAIC DIFFERENCE
BV	BUTTERFLY VALVE
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
℄	CENTER LINE
CL.	CLASS
CMP	CORRUGATED METAL PIPE
C.O.	CHANGE ORDER
DIP	DUCTILE IRON PIPE
EL/ELEV	ELEVATION
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EX	EXISTING
FES	FLARED END SECTION
F/F	FACE TO FACE
FM	FORCE MAIN
F.O.	FIELD ORDER
GV	GATE VALVE
HP	HIGH POINT
HWL	HIGH WATER LEVEL
INV	INVERT
K	CURVE COEFFICIENT
LP	LOW POINT
MH	MANHOLE (SANITARY)
NTS	NOT TO SCALE
NWL	NORMAL WATER LEVEL
PC	POINT OF CURVE
PCC	COMPOUND CURVE
PI	POINT OF INTERSECTION
ℙ	PROPERTY LINE
PPVC	PERFORATED POLYVINYL CHLORIDE PIPE
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
PVC	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
R/W	RIGHT-OF-WAY
SS	STORM SEWER STRUCTURE
STA	STATION
TCE	TEMPORARY CONSTRUCTION EASEMENT
TNH	TOP NUT HYDRANT
TYP	TYPICAL
VC	VERTICAL CURVE
WM	WATER MAIN

HATCH PATTERNS

- HEAVY DUTY BITUMINOUS
- SAND
- BITUMINOUS
- BEDROCK
- CONCRETE
- GROUND
- GRAVEL

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KEVIN P. KIELB, P.E.
LIC. NO. 23211 DATE 3/25/2013

DESIGNED KPK/AK
DRAWN AK
CHECKED KPK

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN WILLMAR, MN BURNSVILLE, MN
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
LEGEND
SP 103-090-003

SHEET 2 OF 53

A	STATEMENT OF ESTIMATED QUANTITIES				
ITEM NO.	ID NO.	ITEM	UNIT	PARTICIPATING	TOTAL BID QUANTITY
1	2021.501	MOBILIZATION	LUMP SUM	1	1
2	2101.502	CLEARING	EACH	289	289
3	2101.507	GRUBBING	EACH	289	289
4	2101.610	TREE TRIMMING	HOUR	3	3
5	2102.501	PAVEMENT MARKING REMOVAL	LIN FT	7150	7150
6	2104.501	REMOVE CURB AND GUTTER	LIN FT	325	325
7	2104.501	REMOVE FENCE	LIN FT	120	120
8	2104.501	REMOVE PIPE SEWERS	LIN FT	31	31
9	2104.509	REMOVE PIPE APRON	EACH	2	2
10	2104.602	RELOCATE STREET LIGHT	EACH	1	1
11	2105.501	COMMON EXCAVATION (EV) (P)	CU YD	5160	5160
12	2105.521	GRANULAR BORROW (LV)	CU YD	3326	3326
13	2105.525	TOPSOIL BORROW (LV)	CU YD	2434	2434
14	2211.501	AGGREGATE BASE CLASS 5	TON	3230	3230
15	2360.501	TYPE SP 9.5 WEARING COURSE MIXTURE (2,B) [SPWEA240B]	TON	1430	1430
16	2360.505	TYPE SP 9.5 BITUMINOUS MIXTURE FOR PATCHING [SPWEA240B]	TON	16	16
17	2504.602	RELOCATE HYRDANT	EACH	1	1
18	2531.501	CONCRETE CURB & GUTTER	LIN FT	325	325
19	2531.618	PEDESTRAIN CURB RAMP	SQ FT	1300	1300
20	2531.618	TRUNCATED DOMES	SQ FT	260	260
21	2540.602	INTERPRETIVE SIGN	EACH	2	2
22	2557.602	FENCE POST	EACH	2	2
23	2563.601	TRAFFIC CONTROL	LUMP SUM	1	1
24	2564.531	SIGN PANELS TYPE C	SQ FT	191.5	191.5
25	2564.537	INSTALL SIGN TYPE C	EACH	59	59
26	2564.602	RELOCATE SIGN	EACH	5	5
27	2573.502	SILT FENCE, TYPE PREASSEMBLED	LIN FT	7150	7150
28	2573.530	STORM DRAIN INLET PROTECTION	EACH	12	12
29	2575.501	SEEDING	ACRE	3.2	3.2
30	2575.502	SEED MIXTURE 240	POUND	241	241
31	2575.505	SODDING TYPE LAWN	SQ YD	2850	2850
32	2575.523	EROSION CONTROL BLANKET CATEGORY 3	SQ YD	15250	15250
33	2575.531	FERTILIZER TYPE 3	TON	0.64	0.64
34	2582.501	PAVEMENT MESSAGE (BIKE SYMBOL) EPOXY	EACH	10	10
35	2582.501	PAVEMENT MESSAGE (BIKE LANE ARROW) EPOXY	EACH	10	10
36	2582.501	PAVEMENT MESSAGE (LANE) EPOXY	EACH	10	10
37	2582.502	4" SOLID LINE WHITE - EPOXY	LIN FT	9740	9740
38	2582.502	4" DOUBLE SOLID LINE YELLOW - EPOXY	LIN FT	3900	3900
39	2582.503	CROSSWALK MARKING - EPOXY	SQ FT	1010	1010

BASIS FOR QUANTITIES	
MATERIAL	CONVERSION FACTORS
BITUMINOUS MIXTURE	110 LBS/SY-IN
AGGREGATE BASE CLASS 5	1.8225 TONS/CY
SEED MIXTURE 240	75 LBS/ACRE
FERTILIZER TYPE 3	400 LBS/ACRE

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

Mn/DOT STANDARD PLATES	
PLATE NO.	DESCRIPTION
7038A	DETECTABLE WARNING SURFACE
8000I	STANDARD BARRICADES

SEE SHEETS 5-11 FOR ADDITIONAL STANDARD PLATES

B	CONCRETE REMOVALS		
ALIGNMENT	STATION	LOCATION	2104 REMOVE CURB & GUTTER (LIN FT)
WEST TRAIL (OFF-ROAD)	8+10		50
CENTRAL TRAIL (OFF-ROAD)	100+00	LT	25
CENTRAL TRAIL (OFF-ROAD)	100+00	RT	25
CENTRAL TRAIL (OFF-ROAD)	112+75	LT	25
CENTRAL TRAIL (OFF-ROAD)	112+75	RT	25
CENTRAL TRAIL (OFF-ROAD)	127+12	LT	50
CENTRAL TRAIL (OFF-ROAD)	131+05	LT	50
CENTRAL TRAIL (OFF-ROAD)	131+05	RT	25
CENTRAL TRAIL (OFF-ROAD)	133+90	LT	25
EAST TRAIL (OFF-ROAD) - RAMSEY	205+38		25
EAST TRAIL (OFF-ROAD) - ANOKA			

C	CLEARING AND GRUBBING				
ALIGNMENT	STATION - STATION	LOCATION	2101 CLEARING (EACH)	2101 GRUBBING (EACH)	2101 TREE TRIMMING (HOUR)
WEST TRAIL (OFF-ROAD)	0+00 - 30+49		4	4	
CENTRAL TRAIL (OFF-ROAD)	100+00 - 151+08		2	2	3
EAST TRAIL (OFF-ROAD) - RAMSEY	205+38 - 209+44		20	20	
EAST TRAIL (OFF-ROAD) - ANOKA	209+44 - 234+66		185	185	

E	AGGREGATE INSTALLATION		
ALIGNMENT	STATION - STATION	LOCATION	2211 AGGREGATE BASE CLASS 5 (TON)
WEST TRAIL (OFF-ROAD)	0+00 - 30+49		1030
CENTRAL TRAIL (OFF-ROAD)	112+74 - 133+81	LT	715
EAST TRAIL (OFF-ROAD) - RAMSEY	205+38 - 209+44		200
EAST TRAIL (OFF-ROAD) - ANOKA	209+44 - 234+66		1285

F	CONCRETE INSTALLATION				
ALIGNMENT	STATION	LOCATION	2531 CONCRETE CURB & GUTTER (LIN FT)	2521 PEDESTRIAN CURB RAMP (SQ FT)	2531 TRUNCATED DOMES (SQ FT)
WEST TRAIL (OFF-ROAD)	8+10		50	200	40
CENTRAL TRAIL (OFF-ROAD)	100+00	LT	25	100	20
CENTRAL TRAIL (OFF-ROAD)	100+00	RT	25	100	20
CENTRAL TRAIL (OFF-ROAD)	112+75	LT	25	100	20
CENTRAL TRAIL (OFF-ROAD)	112+75	RT	25	100	20
CENTRAL TRAIL (OFF-ROAD)	127+12	LT	50	200	40
CENTRAL TRAIL (OFF-ROAD)	131+05	LT	50	200	40
CENTRAL TRAIL (OFF-ROAD)	131+05	RT	25	100	20
CENTRAL TRAIL (OFF-ROAD)	133+90	LT	25	100	20
EAST TRAIL (OFF-ROAD) - RAMSEY	205+38		25	100	20
EAST TRAIL (OFF-ROAD) - ANOKA					

G	BITUMINOUS INSTALLATION			
ALIGNMENT	STATION - STATION	LOCATION	2360 TYPE SP 9.5 WEARING COURSE MIXTURE [SPWEA240B] (TON)	2360 TYPE SP 9.5 BITUMINOUS MIXTURE FOR PATCHING [SPWEA240B] (TON)
WEST TRAIL (OFF-ROAD)	0+00 - 30+49		445	3
CENTRAL TRAIL (OFF-ROAD)	112+74 - 133+81	LT	320	11
EAST TRAIL (OFF-ROAD) - RAMSEY	205+38 - 209+44		90	2
EAST TRAIL (OFF-ROAD) - ANOKA	209+44 - 234+66		575	

CONSTRUCTION NOTES:

1. TRAILS SHALL BE CONSTRUCTED SO NO WATER IS HELD EITHER ADJACENT TO OR ON THE TRAILS.
2. CONTRACTOR TO REMOVE ALL MATERIALS OFF SITE AS EXCAVATED (TEMPORARY STOCKPILE OF MATERIALS ON SITE WILL NOT BE PERMITTED).
3. CONTRACTOR TO LIMIT CONSTRUCTION ACTIVITIES TO AREAS OUTSIDE THE CONSTRUCTION ZONE.
4. DAMAGE TO TURF OR PROPERTY NOT SLATED FOR REMOVAL IN OR ADJACENT TO THE CONSTRUCTION ZONE SHALL BE THE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE AND REPAIR.
5. MATERIALS USED FOR FILL AREAS SHALL BE APPROVED PRIOR TO PLACEMENT (TOPSOIL MATERIALS WITH TURF OR SOD MIXED IN WILL NOT BE ACCEPTED).
6. SEEDED AREAS SHALL BE FREE OF ALL ROCKS, DIRT CLUMPS, SOD OR OTHER DEBRIS.
7. EXACT LIMITS AND LOCATION OF SAW CUTTING EXISTING BITUMINOUS OR CONCRETE EDGES WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
8. CONTRACTOR RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL TRAFFIC CONTROL DEVICES.

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DRAWN AK
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REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
QUANTITY TABULATIONS
SP 103-090-003

D	EARTHWORK SUMMARY								
NOTES	ITEMS	UNIT	PROJECT TOTAL	WEST TRAIL (OFF-ROAD) STA 0+00 - STA 30+49	CENTRAL TRAIL (OFF-ROAD) STA 112+74 - STA 133+81	EAST TRAIL (OFF-ROAD) STA 205+38 - STA 208+75	BRIDGE R0654 STA 208+75 - STA 210+50	EAST TRAIL (OFF-ROAD) STA 210+50 - STA 233+25	BRIDGE R0655 STA 233+25 - STA 234+66
	UNADJUSTED VOLUMES BASED ON CROSS SECTIONS								
	EXCAVATION								
1	COMMOM EXCAVATION (EV)	CY	5160	1150	660	290	1460	1080	520
	EMBANKMENT								
2	TOPSOIL (CV)	CY	1690	490	190	60	290	420	240
3	GRANULAR EMBANKMENT (CV)	CY	2520	60	50	90	190	1680	450
4	COMMON EMBANKMENT MATERIAL REQUIRED (CV)	CY	630	0	0	0	0	630	0
	EARTHWORK BALANCE								
	TOPSOIL								
5	TOPSOIL REQUIRED (EV)	CY	2028	588	228	72	348	504	288
6	TOPSOIL BORROW REQUIRED (EV)	CY	2028	588	228	72	348	504	288
	SUITABLE GRADING MATERIAL								
7	COMMON EXCAVATION (EV)	CY	5160	1150	660	290	1460	1080	520
8	EMBANKMENT MATERIAL (EV)	CY	756	0	0	0	0	756	0
9	EXCESS GRADING MATERIAL (EV)	CY	4404	1150	660	290	1460	324	520
10	GRANULAR MATERIAL REQUIRED (EV)	CY	3024	72	60	108	228	2016	540
	EARTHWORK QUANTITIES TO SEQ								
11	COMMON EXCAVATION (EV)	CY	5160	1150	660	290	1460	1080	520
12	TOPSOIL BORROW (LV)	CY	2434	706	274	86	418	605	346
13	GRANULAR BORROW (LV)	CY	3326	79	66	119	251	2218	594

NOTES:

1. CUT VOLUME FROM CROSS SECTIONS. ALSO ASSUMES AN AVERAGE OF 4 INCHES OF STRIPPING ACROSS THE SITE FOR FUTURE EXCAVATION AND TOPSOIL PLACEMENT.
2. 4 INCHES OF TOPSOIL PLACED IN ALL VEGETATED AREAS DISTURBED DURING CONSTRUCTION.
3. FILL VOLUMES FROM CROSS SECTIONS (LESS TOPSOIL AND GRANULAR BORROW).
4. GRANULAR BORROW FOR USE AT APPROACHES TO BRIDGES BEYOND LIMITS OF BRIDGE RELATED MATERIALS WITHIN CORE TRAIL EMBANKMENT.
5. 4 INCHES OF TOPSOIL PLACED WITH SHRINKAGE FACTOR OF 1.2 APPLIED FROM (CV) TO (EV).
6. ASSUMES NO TOPSOIL GENERATED DURING EXCAVATION.
7. INCLUDES STRIPPING AND TRAIL EXCAVATION.
8. APPLIES A SHRINKAGE FACTOR OF 1.2 FROM (CV) TO (EV). UTILIZE MATERIAL BELOW TOP 4 INCHES OF STRIPPING.EXCLUDES TOPSOIL AND GRANULAR BORROW.
9. MATERIAL TO BE HAULED OFF-SITE BY CONTRACTOR.
10. GRANULAR BORROW TO BE IMPORTED FOR BRIDGE APPROACH EMBANKMENT. 14 FEET WIDE AT TOP WITH 1:1.5 SLOPES TO GRADE.
11. COMMON EXCAVATION.
12. INCLUDES SHRINKAGE FACTOR OF 1.2 FROM (EV) TO (LV).
13. INCLUDES SHRINKAGE FACTOR OF 1.1 FROM (EV) TO (LV).

H	TURF AND EROSION CONTROL INSTALLATION							
ALIGNMENT	STATION - STATION	2573 SILT FENCE (LIN FT)	2573 STORM DRAIN INLET PROTECTION (EACH)	2575 EROSION CONTROL BLANKET CATEGORY 3 (SQ YD)	2575 SEEDING (ACRE)	2575 SEED MIXTURE TYPE 240 (POUND)	2575 FERTILZER TYPE 3 (TON)	2575 SODDING TYPE LAWN (SQ YD)
WEST TRAIL (OFF-ROAD)	0+00 - 30+49	3200	4	5800	1.2	90	0.24	850
CENTRAL TRAIL (OFF-ROAD)	112+74 - 133+81		8					2000
EAST TRAIL (OFF-ROAD) - RAMSEY	205+38 - 209+44	750		1300	0.3	23	0.06	
EAST TRAIL (OFF-ROAD) - ANOKA	209+44 - 234+66	3200		8150	1.7	128	0.34	

I	TRAFFIC CONTROL INSTALLATION							
ALIGNMENT	2564 SIGN PANEL TYPE C (SQ FT)	2564 INSTALL SIGN TYPE C (EACH)	2582 PAVEMENT MESSAGE (BIKE SYMBOL) - EPOXY (EACH)	2582 PAVEMENT MESSAGE (BIKE LANE ARROW) - EPOXY (EACH)	2582 PAVEMENT MESSAGE (LANE) - EPOXY (EACH)	2582 4" SOLID LINE WHITE - EPOXY (LIN FT)	2582 4" DOUBLE SOLID LINE YELLOW - EPOXY (LIN FT)	2582 CROSSWALK MARKING - EPOXY (SQ FT)
WEST TRAIL (OFF-ROAD)								
CENTRAL TRAIL (OFF-ROAD)	191.5	59	10	10	10	9740	3900	1010
EAST TRAIL (OFF-ROAD) - RAMSEY								
EAST TRAIL (OFF-ROAD) - ANOKA								

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

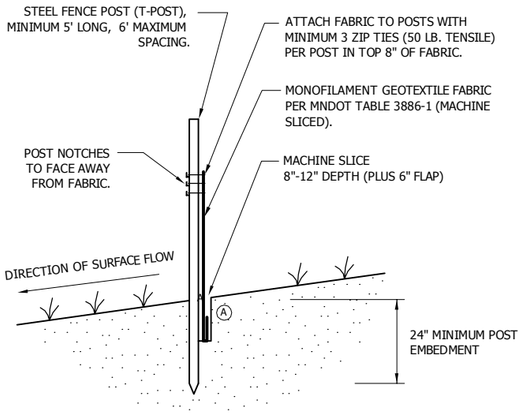
KEVIN P. KIELB, P.E.
LIC. NO. 23211 DATE 3/25/2013

DESIGNED KPK/AK
DRAWN AK
CHECKED KPK

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN WILLMAR, MN BURNSVILLE, MN
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

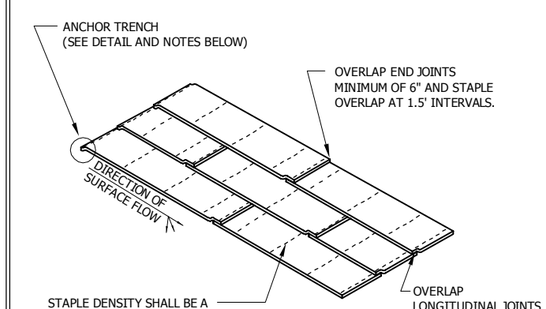
CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
QUANTITY TABULATIONS
SP 103-090-003



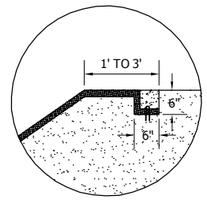
NOTE:
THE MACHINE SLICED METHOD (THIS DETAIL) IS THE STANDARD SILT FENCE INSTALLATION METHOD. HEAVY-DUTY (ERO-1B) OR STANDARD (ERO-1C) SILT FENCE INSTALLATION METHODS SHOULD ONLY BE USED WHEN APPROVED OR DIRECTED BY THE CITY.

Ⓐ COMPACTION:
AFTER "SLICING" IN THE FABRIC AND *BEFORE* INSTALLATION OF STEEL POSTS, DRIVE INSTALLATION EQUIPMENT OVER THE "SLICE" WHILE FABRIC IS LAYING ON THE GROUND. *THEN* INSTALL STEEL POSTS AND PULL UP FABRIC TO ATTACH AT A UNIFORM HEIGHT.

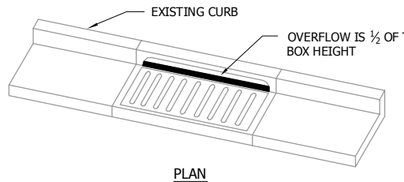
	SILT FENCE MACHINE SLICED	LAST REVISION: Jan. 2005 PLATE NO. ERO-1A



ANCHOR TRENCH
1. DIG 6" X 6" TRENCH
2. LAY BLANKET IN TRENCH
3. STAPLE AT 1.5' INTERVALS
4. BACKFILL WITH NATURAL SOIL AND COMPACT
5. BLANKET LENGTH SHALL NOT EXCEED 100' WITHOUT AN ANCHOR TRENCH

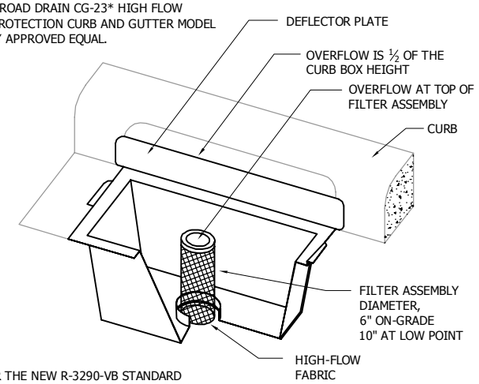


	EROSION CONTROL BLANKET INSTALLATION	LAST REVISION: Mar. 2004 PLATE NO. ERO-2



PLAN

WIMCO ROAD DRAIN CG-23* HIGH FLOW INLET PROTECTION CURB AND GUTTER MODEL OR CITY APPROVED EQUAL.



* FOR THE NEW R-3290-VB STANDARD CASTING, INSTALL WIMCO ROAD DRAIN CG-3290 OR CITY APPROVED EQUAL.

	INLET PROTECTION CATCH BASIN INSERT AFTER PAVING	LAST REVISION: Jan. 2005 PLATE NO. ERO-4C

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

KEVIN P. KIELB, P.E.
LIC. NO. 23211 DATE 3/25/2013

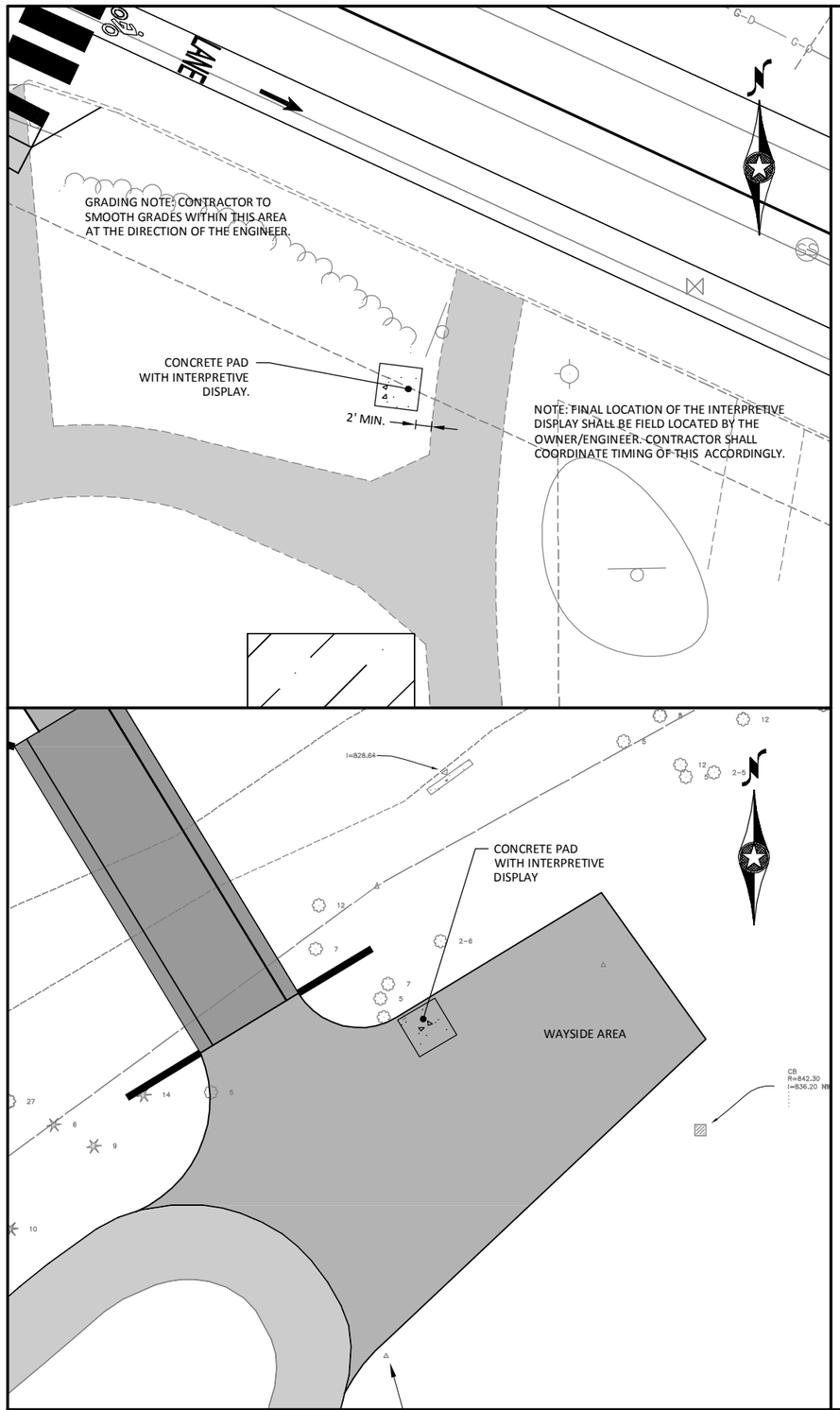
DESIGNED KPK/AK
DRAWN AK
CHECKED KPK

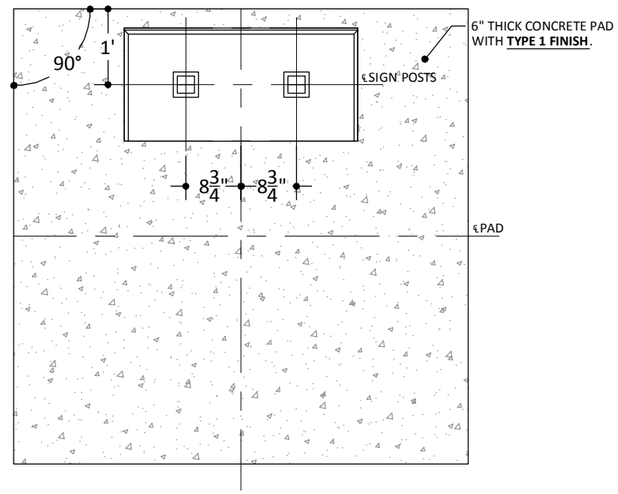
BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN WILLMAR, MN BURNSVILLE, MN
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

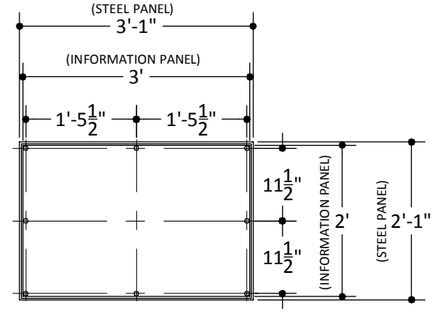
CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
CONSTRUCTION DETAILS
SP 103-090-003

SHEET 5 OF 53





PLAN



3/8" DIA. HOLES - TYP.
HOLES THROUGH BOTH PANELS - FASTEN WITH TAMPER RESISTANT HARDWARE WITH SMOOTH ROUNDED FACE SIMILAR TO CARRIAGE BOLT ON DISPLAY SIDE OF PANEL.

STEEL PLATE PLAN

NOTES:

REFER TO SPECIFICATION SECTION 05510 FOR ADDITIONAL INFORMATION.

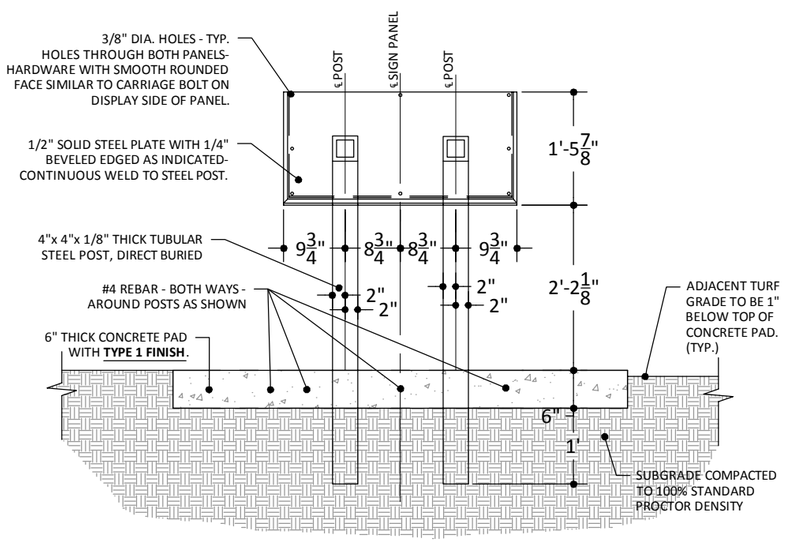
CONTINUOUS WELD ALL METAL CONNECTIONS AND CLOSED ENDS. GRIND EDGES SMOOTH.

ALL METAL SHALL BE GALVANIZED AFTER FABRICATION AND PRIOR TO PRIMING/PAINTING.

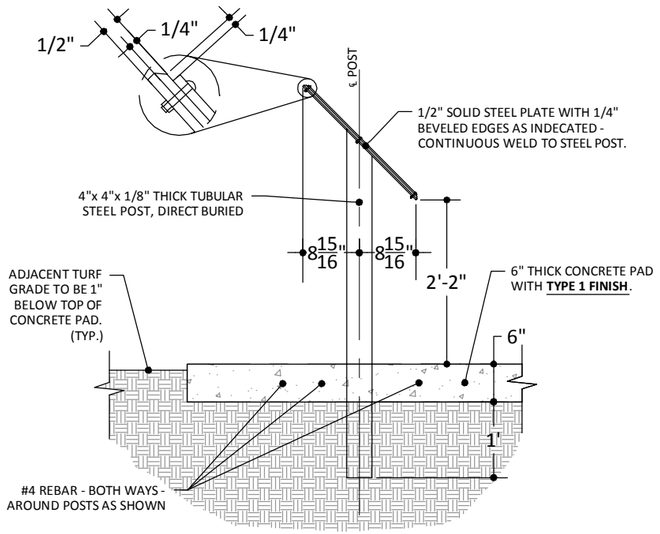
SHOP DRAWING NOTICE:

SHOP DRAWINGS MUST BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION.

* SIGN PANELS AND REQUIRED HARDWARE TO BE SUPPLIED AND INSTALLED BY THE OWNER.



FRONT ELEVATION



SIDE ELEVATION

HORZ. SCALE 0 10 20 FEET

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

KEVIN P. KIELB, P.E.
LIC. NO. 23211 DATE 3/25/2013

DESIGNED KPK/AK
DRAWN AK
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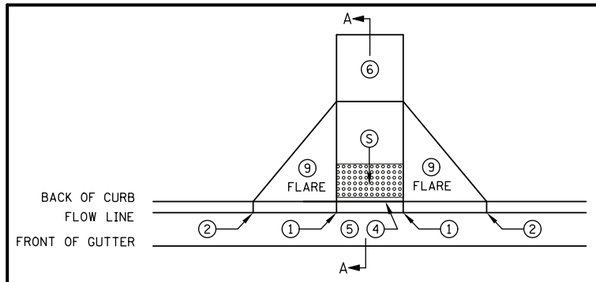
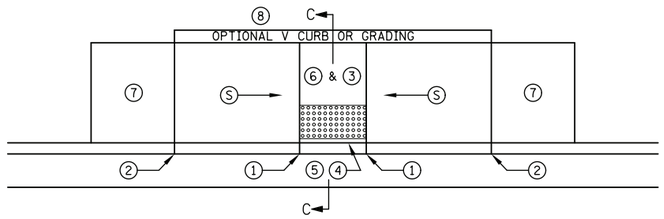
REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
INTERPRETIVE SIGN DETAIL
SP 103-090-003

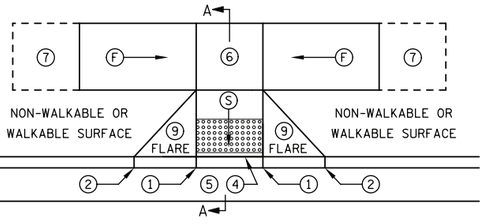
SHEET 6 OF 53



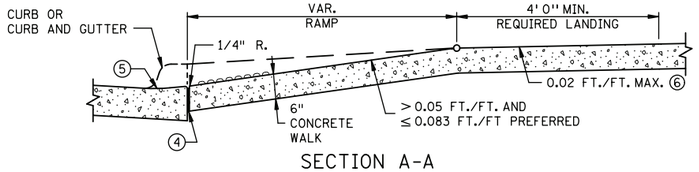
PERPENDICULAR



PARALLEL

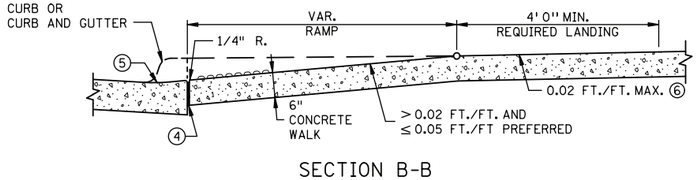


TIERED PERPENDICULAR



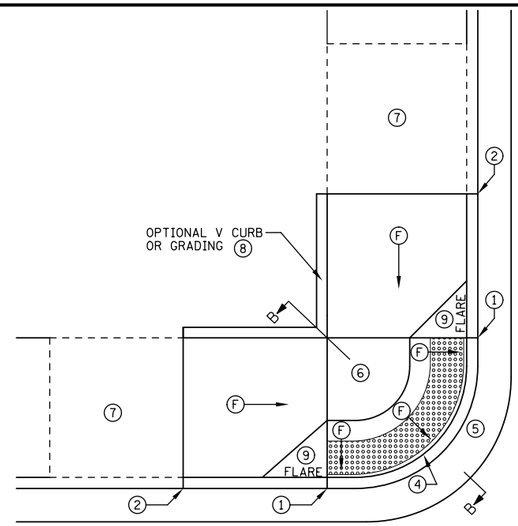
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



SECTION B-B

FAN



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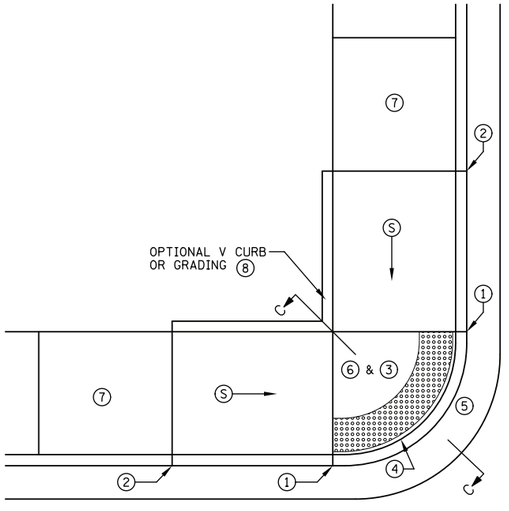
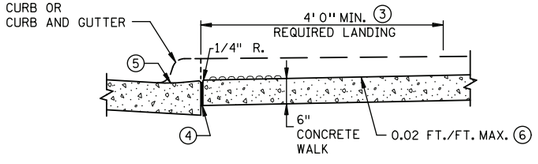
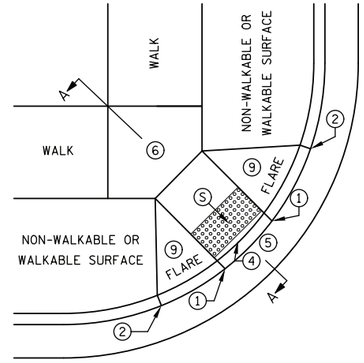


DEPRESSED CORNER



SECTION C-C

PARALLEL/DEPRESSED CORNER



DIAGONAL (10)

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONCTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 5 WHEN LANDINGS ARE CAST SEPARATELY.

ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MINIMUM OF 24" IN THE PATH OF TRAVEL. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.

SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

(1) 0" CURB HEIGHT.

(2) FULL CURB HEIGHT.

(3) DETECTABLE WARNINGS MAY BE PART OF 4' X 4' LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.

(4) 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

(5) SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.

(6) 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS.

(7) IF LONGITUDINAL SLOPE IS GREATER THAN 5.0%, 4' X 4' MIN. LANDING WITH MAX 2.0% SLOPE IN ALL DIRECTIONS REQUIRED.

(8) V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. SEE SHEET 5 OF 5.

(9) SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.

(10) DIAGONAL RAMPS SHOULD ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

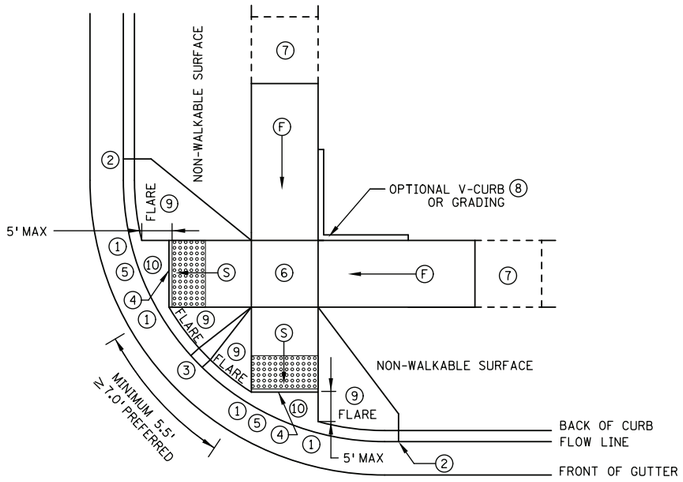
LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

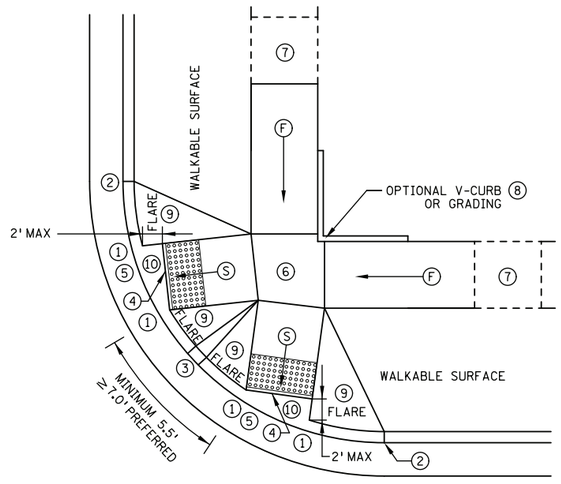
(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%

(F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%

STANDARD PLAN SHEET NO. 5-297.250 (1 OF 5)	PEDESTRIAN CURB RAMP DETAILS
STANDARD APPROVED: APRIL 10, 2013	
STATE PROJ. NO. 103-090-003	SHEET NO. 7 OF 53 SHEETS

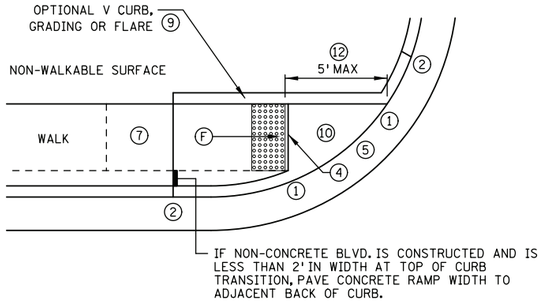


ADJACENT TO NON-WALKABLE SURFACE

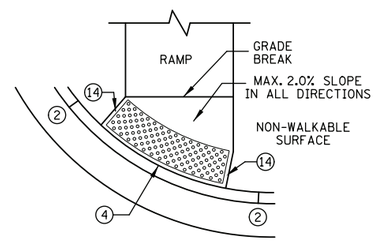


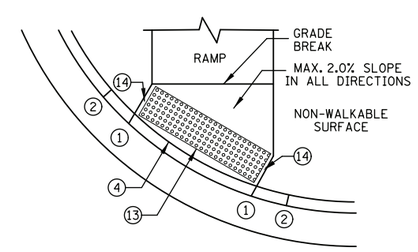
ADJACENT TO WALKABLE SURFACE

COMBINED DIRECTIONAL (15)

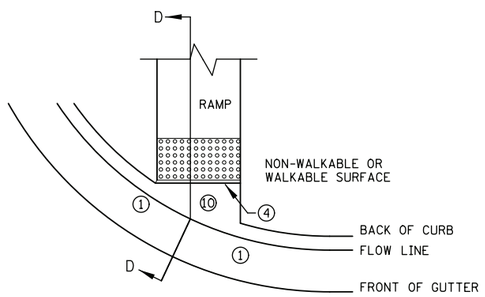


ONE-WAY DIRECTIONAL

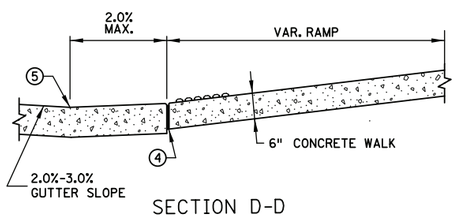




DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED



CURB FOR DIRECTIONAL RAMPS (11)



SECTION D-D

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONCTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 5 WHEN LANDINGS ARE CAST SEPARATELY.

ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MINIMUM OF 24" IN THE PATH OF TRAVEL. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.

SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

(1) 0" CURB HEIGHT.

(2) FULL CURB HEIGHT.

(3) 3" MINIMUM CURB HEIGHT, 4" PREFERRED.

(4) 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MIN. TO 6" MAX. FROM THE BACK OF CURB.

(5) SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.

(6) 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS.

(7) IF LONGITUDINAL SLOPE IS GREATER THAN 5.0%, 4' X 4' MIN. LANDING WITH MAX 2.0% SLOPE IN ALL DIRECTIONS REQUIRED.

(8) V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

(9) SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.

(10) MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.

(11) TO BE USED FOR ALL DIRECTIONAL RAMPS.

(12) PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.

(13) RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.

(14) WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

(15) FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%

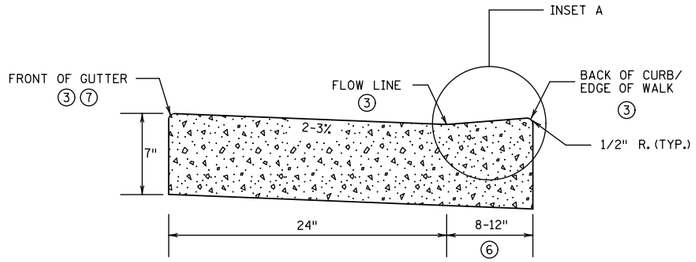
(F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%

STANDARD PLAN SHEET NO. 5-297.250 (2 OF 5)

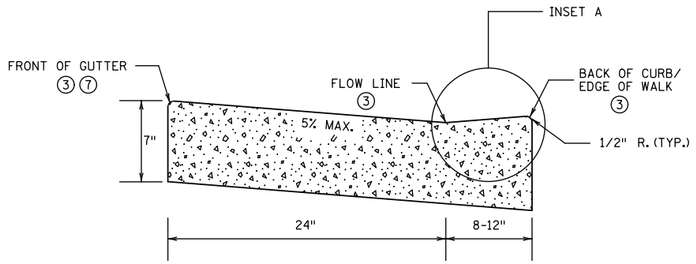
STANDARD APPROVED: APRIL 10, 2013

PEDESTRIAN CURB RAMP DETAILS

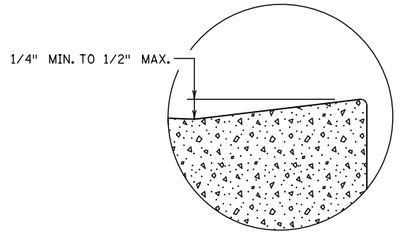
STATE PROJ. NO. 103-090-003



NON PERPENDICULAR ①

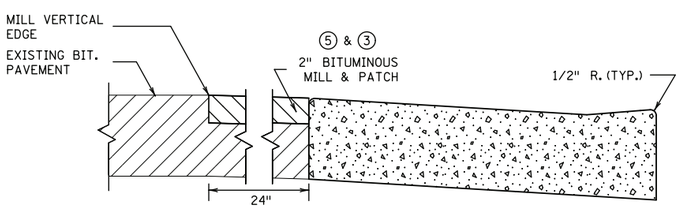


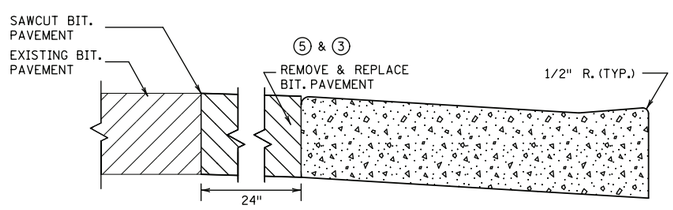
PERPENDICULAR ②

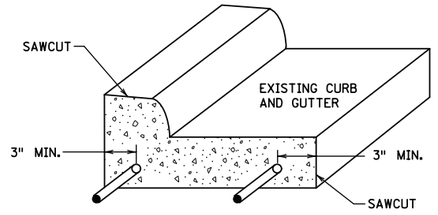


INSET A

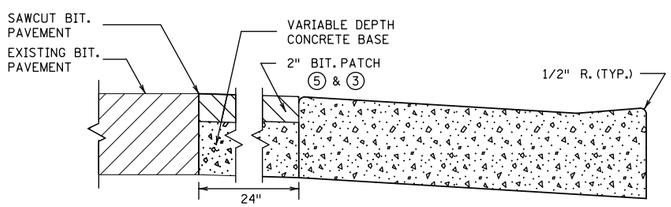
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

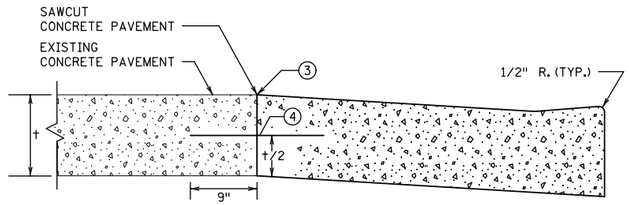






CURB AND GUTTER ⑧
REINFORCEMENT
FOR USE ON CURB RAMP RETROFITS





PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS

NOTES:

POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.

NO PONDING SHALL BE PRESENT IN THE PAR.

ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.

① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS, DEPRESSED CORNERS, & ONE WAY AND COMBINED DIRECTIONALS.

② FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.

③ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".

④ DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT.

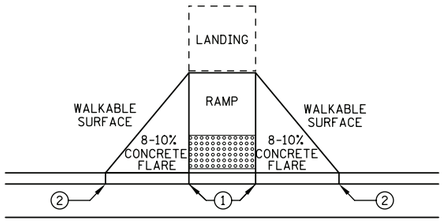
⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.

⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS.

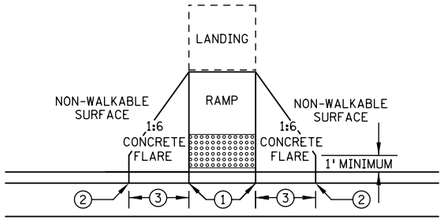
⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. PAR GUTTER SHALL NOT BE OVERLAID.

⑧ WHERE PLAN SPECIFIES, DRILL AND GROUT 2 - NO. 4 X 12" LONG REINFORCEMENT BARS (EPOXY COATED).

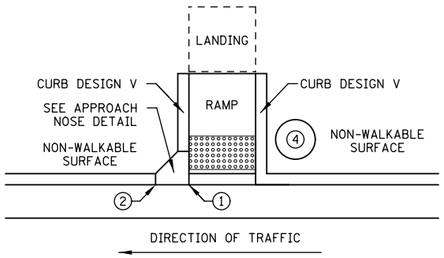
STANDARD PLAN SHEET NO. 5-297.250 (3 OF 5)	PEDESTRIAN CURB RAMP DETAILS
STANDARD APPROVED: APRIL 10, 2013	
STATE PROJ. NO. 103-090-003	SHEET NO. 9 OF 53 SHEETS



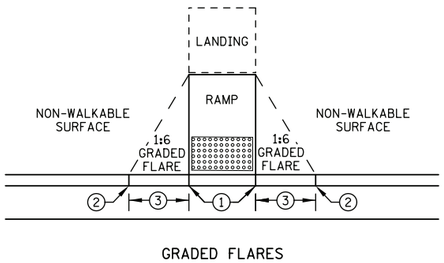
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

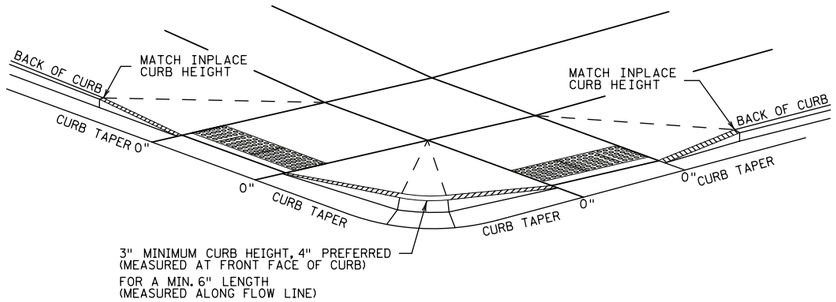


RETURNED CURB

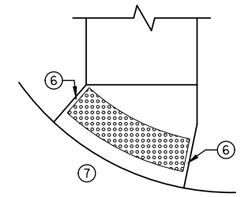


GRADED FLARES

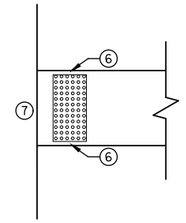
TYPICAL SIDE TREATMENT OPTIONS ⑤



DETECTABLE EDGE WITH
CURB AND GUTTER ⑧

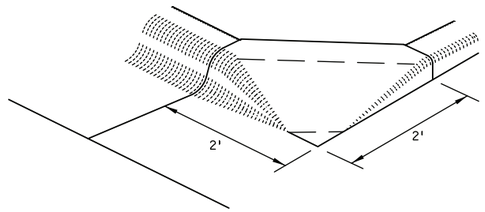


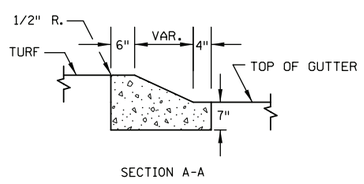
RADIAL DETECTABLE WARNING



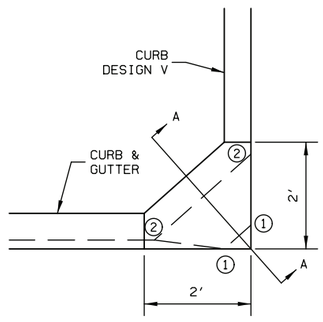
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER





SECTION A-A



APPROACH NOSE DETAIL
FOR DOWNSTREAM SIDE OF TRAFFIC

NOTES:

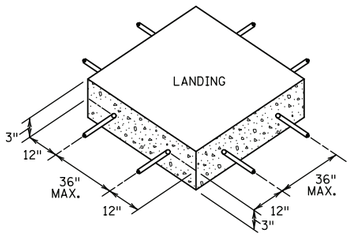
SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

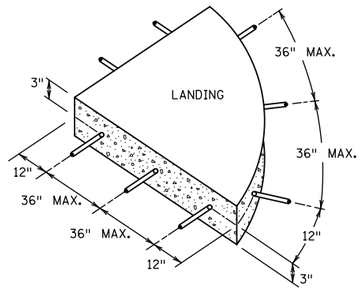
WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER.

CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

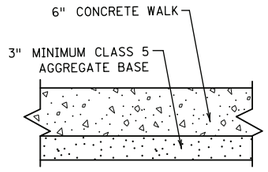
① 0" CURB HEIGHT.
② FULL CURB HEIGHT.
③ 2' - 3' FLARE.
④ IMMOVABLE OBJECT OR OBSTRUCTION.
⑤ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED ON ALL RAMPS AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.
⑥ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
⑦ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF ROADWAY TO PROVIDE VISUAL CONTRAST.
⑧ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

STANDARD PLAN SHEET NO. 5-297.250 (4 OF 5)	PEDESTRIAN CURB RAMP DETAILS
STANDARD APPROVED: APRIL 10, 2013	
STATE PROJ. NO. 103-090-003	SHEET NO. 10 OF 53 SHEETS

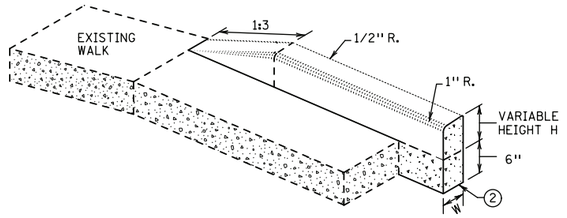




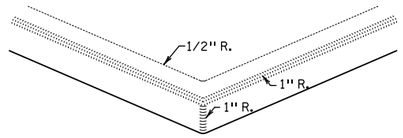
SIDEWALK REINFORCEMENT ⑤ ⑥



TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

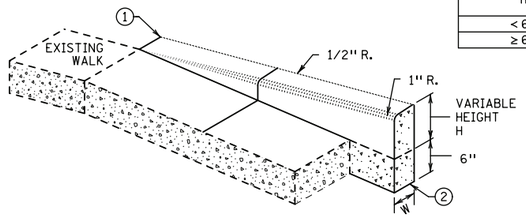


V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS

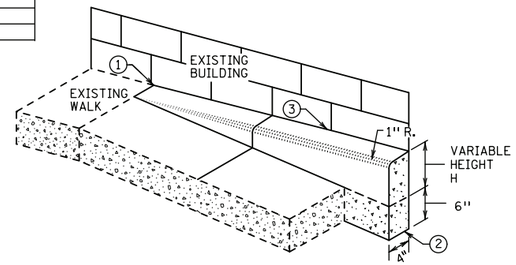


V CURB INTERSECTION

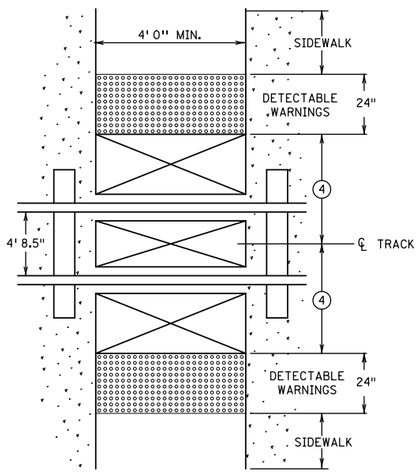
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



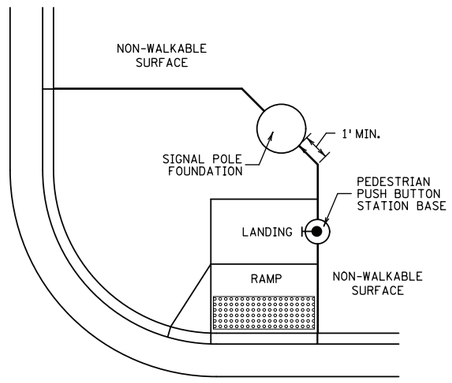
V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS



V CURB ADJACENT TO BUILDING OR BARRIER



RAILROAD CROSSING
PLAN VIEW



CONCRETE WALK EDGES ADJACENT
TO CONCRETE STRUCTURES

NOTES:

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.

② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

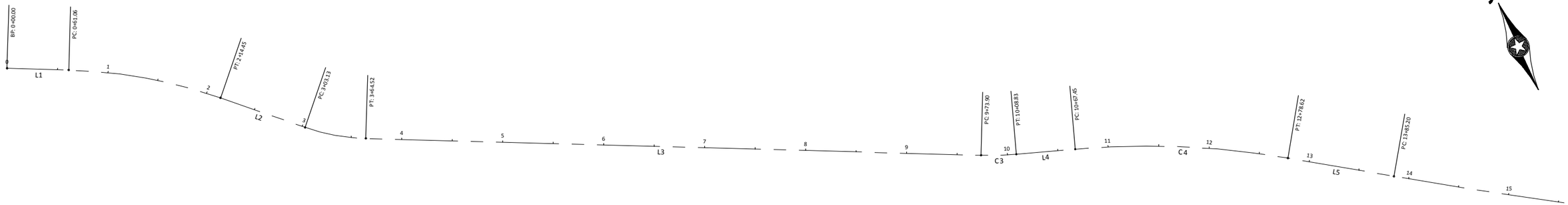
③ EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.

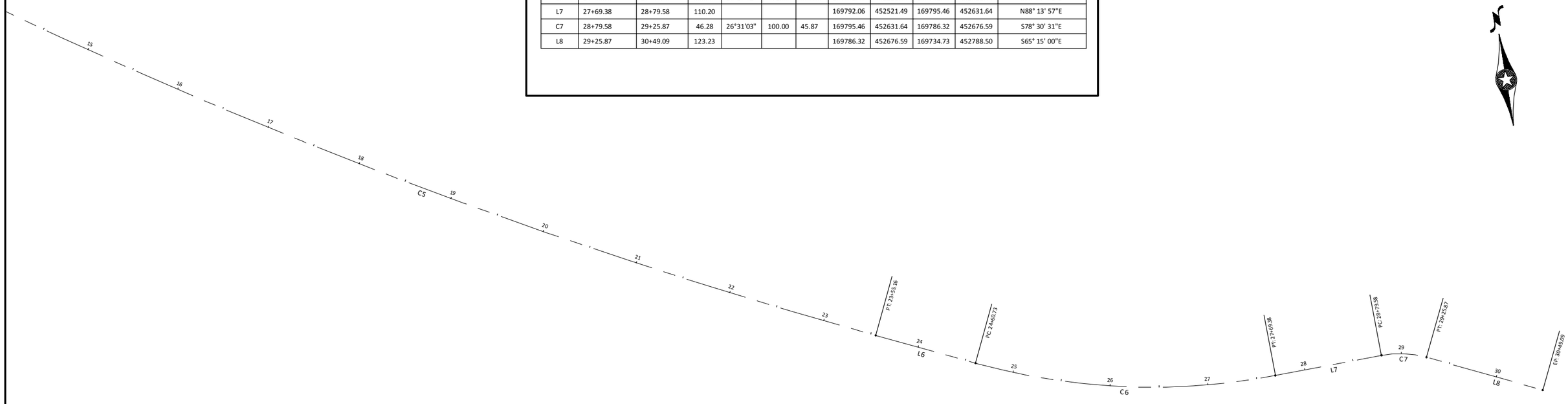
④ EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 15' MAXIMUM FROM THE CENTERLINE OF THE TRACK. WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 17" - 19" FROM THE APPROACHING SIDE OF THE GATE ARM.

⑤ WHEN PLAN SPECIFIES, DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS AT 36" MAX. CENTER TO CENTER (EPOXY COATED).

⑥ TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONCTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET WHEN LANDINGS ARE CAST SEPARATELY.

STANDARD PLAN SHEET NO. 5-297.250 (5 OF 5)	PEDESTRIAN CURB RAMP DETAILS
STANDARD APPROVED: APRIL 10, 2013	
STATE PROJ. NO. 103-090-003	SHEET NO. 11 OF 53 SHEETS





WEST TRAIL (OFF-ROAD)

NUMBER	START STATION	END STATION	LENGTH	DELTA	RADIUS	CHORD	START N	START E	END N	END E	LINE / CHORD DIRECTION
L1	0+00	0+61.06	61.06				171046.00	450080.58	171018.89	450135.29	S63° 38' 38"E
L2	2+14.45	3+03.13	88.67				170930.94	450260.23	170869.42	450324.09	S46° 04' 01"E
L3	3+64.52	9+73.90	609.38				170834.22	450374.10	170563.79	450920.18	S63° 39' 17"E
C3	9+73.90	10+08.83	34.93	6°32'19"	306.08	34.91	170563.79	450920.18	170550.11	450952.30	S66° 55' 26"E
L4	10+08.83	10+67.45	58.62				170550.11	450952.30	170530.24	451007.45	S70° 11' 36"E
C4	10+67.45	12+78.62	211.17	14°43'57"	821.26	210.59	170530.24	451007.45	170434.07	451194.80	S62° 49' 37"E
L5	12+78.62	13+85.20	106.58				170434.07	451194.80	170373.64	451282.59	S55° 27' 39"E
C5	13+85.20	23+55.16	969.96	10°01'22"	5544.89	968.73	170373.64	451282.59	169896.21	452125.50	S60° 28' 20"E
L6	23+55.16	24+60.73	105.57				169896.21	452125.50	169852.40	452221.55	S65° 29' 01"E
C6	24+60.73	27+69.38	308.66	26°17'02"	672.83	305.96	169852.40	452221.55	169792.06	452521.49	S78° 37' 32"E
L7	27+69.38	28+79.58	110.20				169792.06	452521.49	169795.46	452631.64	N88° 13' 57"E
C7	28+79.58	29+25.87	46.28	26°31'03"	100.00	45.87	169795.46	452631.64	169786.32	452676.59	S78° 30' 31"E
L8	29+25.87	30+49.09	123.23				169786.32	452676.59	169734.73	452788.50	S65° 15' 00"E

HORZ. SCALE 0 50 100 FEET

H:\ANOK\N15104941\C3D\15104941ALIGN.dwg 6/11/2013 1:58:48 PM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

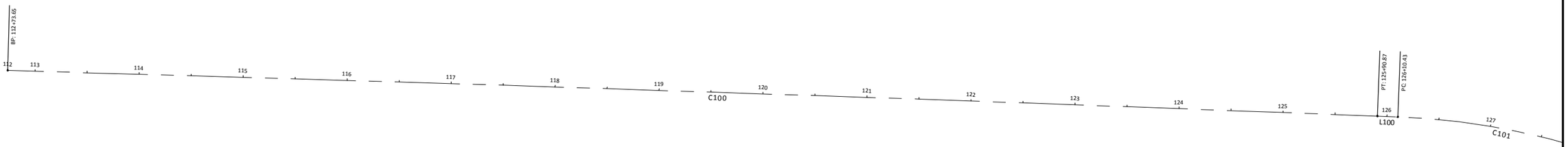
KEVIN P. KIELB, P.E.
LIC. NO. 23211 DATE 3/25/2013

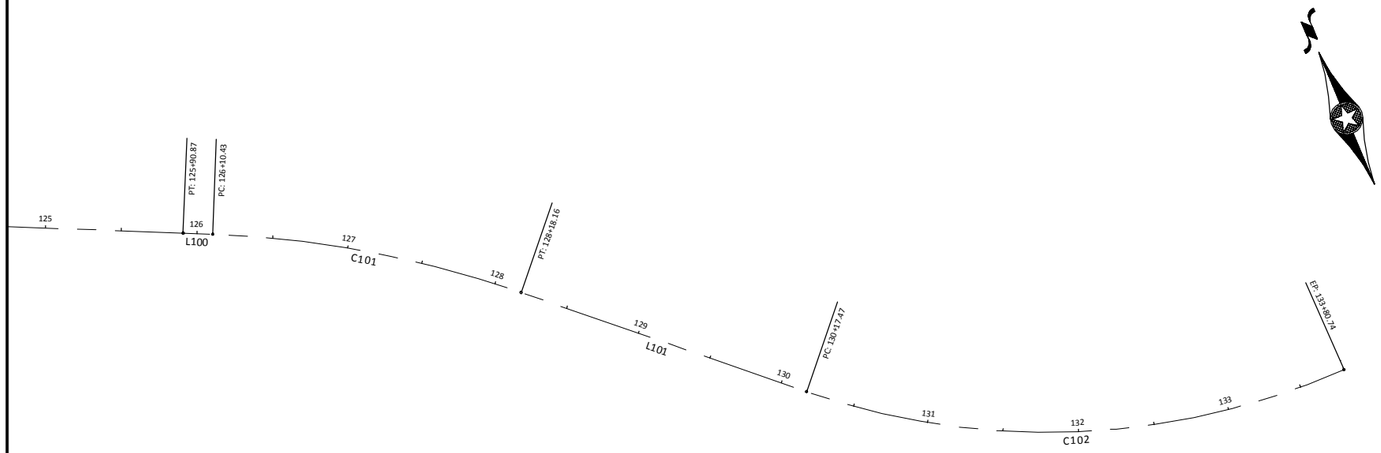
DESIGNED KPK/AK
DRAWN AK
CHECKED KPK

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN WILLMAR, MN BURNSVILLE, MN
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
WEST TRAIL (OFF-ROAD) ALIGNMENT TABULATION
SP 103-090-003





CENTRAL TRAIL (OFF-ROAD)											
NUMBER	START STATION	END STATION	LENGTH	DELTA	RADIUS	CHORD	START N	START E	END N	END E	LINE / CHORD DIRECTION
C100	112+73.65	125+90.87	1317.22	0°37'00"	122369.66	1317.22	167758.38	456435.63	167203.35	457630.20	S65° 04' 43"E
L100	125+90.87	126+10.43	19.56				167203.35	457630.20	167195.01	457647.89	S64° 46' 13"E
C101	126+10.43	128+18.16	207.73	16°57'08"	702.10	206.98	167195.01	457647.89	167080.15	457820.07	S56° 17' 39"E
L101	128+18.16	130+17.47	199.31				167080.15	457820.07	166946.32	457967.77	S47° 49' 05"E
C102	130+17.47	133+80.74	363.27	43°01'11"	483.82	354.80	166946.32	457967.77	166821.07	458299.72	S69° 19' 40"E

HORZ. SCALE 0 100 200 FEET

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

KEVIN P. KIELB, P.E.
LIC. NO. 23211 DATE 3/25/2013

DESIGNED KPK/AK
DRAWN AK
CHECKED KPK

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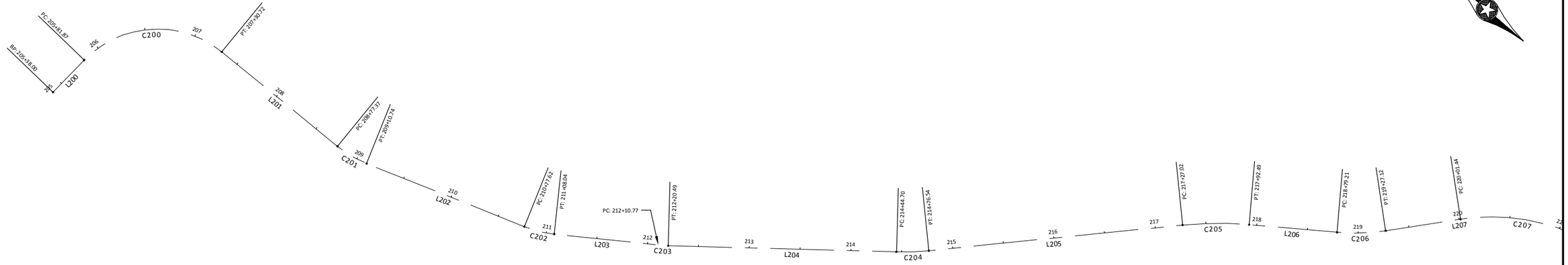
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN WILLMAR, MN BURNSVILLE, MN
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
CENTRAL TRAIL (OFF-ROAD) ALIGNMENT TABULATION
SP 103-090-003

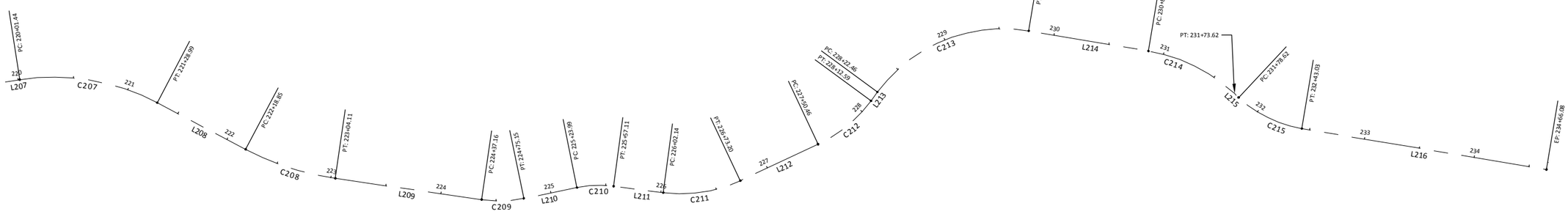


EAST TRAIL (OFF-ROAD)

NUMBER	START STATION	END STATION	LENGTH	DELTA	RADIUS	CHORD	START N	START E	END N	END E	LINE / CHORD DIRECTION
L200	205+38	205+81.87	43.87				166131.28	459467.63	166128.87	459511.43	S86° 50' 48"E
C200	205+81.87	207+30.72	148.85	85°17'08"	100.00	135.49	166128.87	459511.43	166031.74	459605.89	S44° 12' 14"E
L201	207+30.72	208+77.37	146.65				166031.74	459605.89	165885.15	459609.89	S1° 33' 40"E
C201	208+77.37	209+10.74	33.37	17°22'55"	110.00	33.24	165885.15	459609.89	165852.44	459615.81	S10° 15' 07"E
L202	209+10.74	210+77.62	166.88				165852.44	459615.81	165694.60	459669.98	S18° 56' 35"E
C202	210+77.62	211+08.04	30.42	15°50'39"	110.00	30.32	165694.60	459669.98	165667.55	459683.68	S26° 51' 55"E
L203	211+08.04	212+10.77	102.74				165667.55	459683.68	165583.18	459742.30	S34° 47' 14"E
C203	212+10.77	212+20.49	9.71	4°27'08"	125.00	9.71	165583.18	459742.30	165575.42	459748.14	S37° 00' 48"E
L204	212+20.49	214+44.70	224.21				165575.42	459748.14	165401.77	459889.97	S39° 14' 22"E
C204	214+44.70	214+76.54	31.84	7°17'52"	250.00	31.82	165401.77	459889.97	165378.45	459911.63	S42° 53' 19"E
L205	214+76.54	217+27.02	250.48				165378.45	459911.63	165206.15	460093.43	S46° 32' 15"E
C205	217+27.02	217+92.49	65.47	10°43'02"	350.00	65.37	165206.15	460093.43	165156.95	460136.47	S41° 10' 44"E
L206	217+92.49	218+79.21	86.72				165156.95	460136.47	165086.63	460187.22	S35° 49' 12"E
C206	218+79.21	219+27.12	47.92	13°43'38"	200.00	47.80	165086.63	460187.22	165051.49	460219.63	S42° 41' 01"E
L207	219+27.12	220+01.44	74.32				165051.49	460219.63	165003.27	460276.18	S49° 32' 50"E
C207	220+01.44	221+28.99	127.55	36°32'22"	200.00	125.40	165003.27	460276.18	164896.10	460341.29	S31° 16' 39"E
L208	221+28.99	222+18.85	89.86				164896.10	460341.29	164808.54	460361.51	S13° 00' 27"E

EAST TRAIL (OFF-ROAD)

NUMBER	START STATION	END STATION	LENGTH	DELTA	RADIUS	CHORD	START N	START E	END N	END E	LINE / CHORD DIRECTION
C208	222+18.85	223+04.11	85.26	19°32'25"	250.00	84.85	164808.54	460361.51	164730.31	460394.36	S22° 46' 40"E
L209	223+04.11	224+37.16	133.05				164730.31	460394.36	164618.16	460465.94	S32° 32' 53"E
C209	224+37.16	224+75.15	37.99	19°47'11"	110.00	37.80	164618.16	460465.94	164590.27	460491.45	S42° 26' 28"E
L210	224+75.15	225+23.99	48.84				164590.27	460491.45	164560.43	460530.11	S52° 20' 04"E
C210	225+23.99	225+57.11	33.13	18°58'46"	100.00	32.97	164560.43	460530.11	164536.25	460552.54	S42° 50' 41"E
L211	225+57.11	226+02.14	45.02				164536.25	460552.54	164498.64	460577.29	S33° 21' 18"E
C211	226+02.14	226+73.20	71.06	32°34'15"	125.00	70.11	164498.64	460577.29	164453.24	460630.71	S49° 38' 25"E
L212	226+73.20	227+50.46	77.26				164453.24	460630.71	164421.72	460701.25	S65° 55' 32"E
C212	227+50.46	228+12.59	62.13	28°28'44"	125.00	61.49	164421.72	460701.25	164411.22	460761.84	S80° 09' 55"E
L213	228+12.59	228+22.46	9.87				164411.22	460761.84	164411.98	460771.69	N85° 35' 43"E
C213	228+22.46	229+76.84	154.38	63°10'55"	140.00	146.68	164411.98	460771.69	164344.96	460902.16	S62° 48' 49"E
L214	229+76.84	230+85.98	109.14				164344.96	460902.16	164251.63	460958.73	S31° 13' 22"E
C214	230+85.98	231+73.62	87.64	33°28'35"	150.00	86.40	164251.63	460958.73	164167.98	460980.34	S14° 29' 05"E
L215	231+73.62	231+78.62	5.00				164167.98	460980.34	164162.99	460980.15	S2° 15' 13"W
C215	231+78.62	232+43.03	64.41	33°32'51"	110.00	63.49	164162.99	460980.15	164101.52	460996.07	S14° 31' 13"E
L216	232+43.03	234+66.08	223.05				164101.52	460996.07	163910.92	461111.93	S31° 17' 38"E



HORZ. 0 100 200
SCALE FEET

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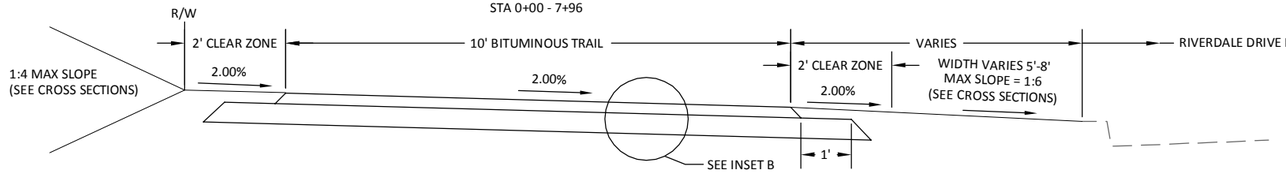
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

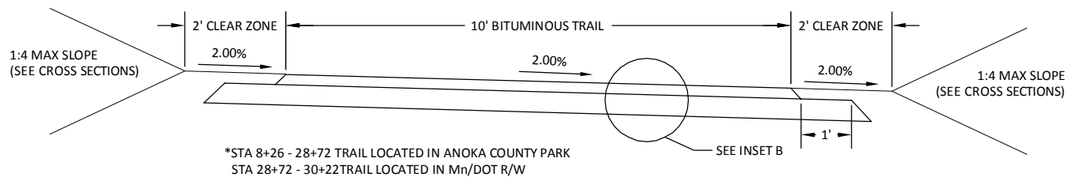
CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
EAST TRAIL (OFF-ROAD) ALIGNMENT TABULATION
SP 103-090-003

SHEET 14 OF 53

WEST TRAIL
STA 0+00 - 7+96

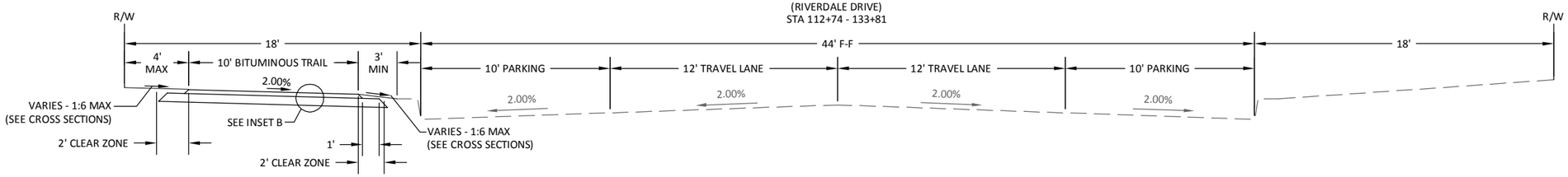


WEST TRAIL*
STA 8+09 - 30+49

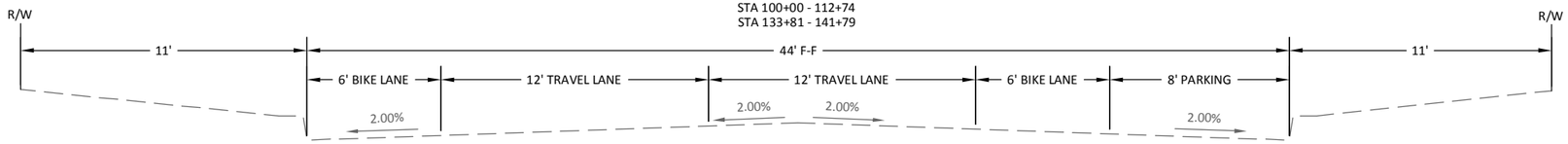


*STA 8+26 - 28+72 TRAIL LOCATED IN ANOKA COUNTY PARK
STA 28+72 - 30+22TRAIL LOCATED IN Mn/DOT R/W

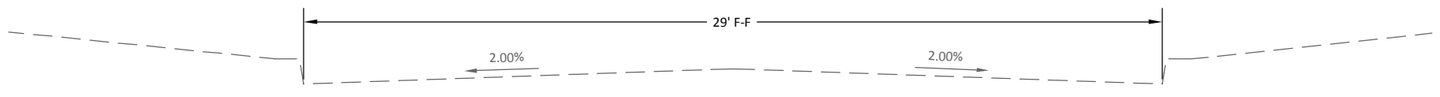
CENTRAL TRAIL
(RIVERDALE DRIVE)
STA 112+74 - 133+81



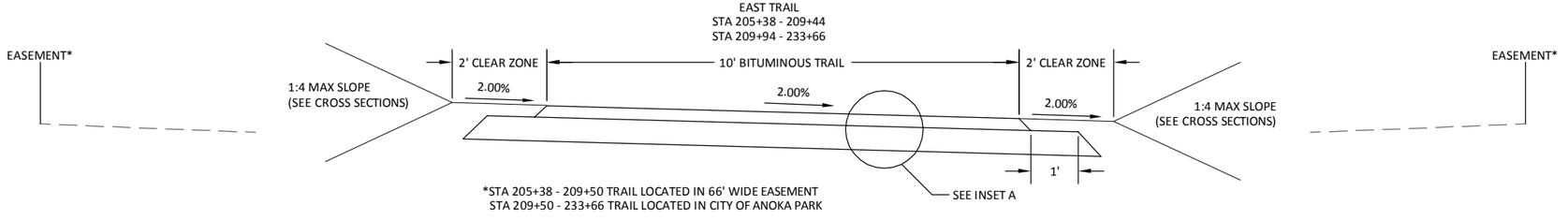
CENTRAL TRAIL
(RIVERDALE DRIVE)
STA 100+00 - 112+74
STA 133+81 - 141+79



CENTRAL TRAIL
(TUNGSTEN STREET & RIVLYN AVENUE)
STA 141+79 - 151+08

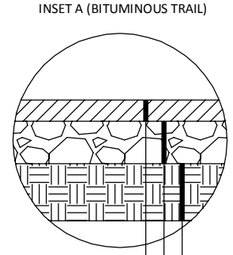


EAST TRAIL
STA 205+38 - 209+44
STA 209+94 - 233+66



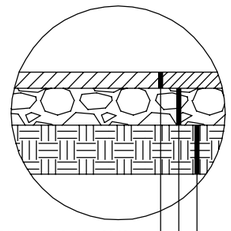
*STA 205+38 - 209+50 TRAIL LOCATED IN 66' WIDE EASEMENT
STA 209+50 - 233+66 TRAIL LOCATED IN CITY OF ANOKA PARK

INSET A (BITUMINOUS TRAIL)



3" TYPE SP 9.5 WEARING COURSE MIXTURE (2,B) [SPWEA240B] (2360)
6" AGGREGATE BASE CLASS 5 (2357)
SUBGRADE PREPARATION - INCIDENTAL (2112)

INSET B (BITUMINOUS TRAIL)



2" TYPE SP 9.5 WEARING COURSE MIXTURE (2,B) [SPWEA240B] (2360)
4" AGGREGATE BASE CLASS 5 (2357)
SUBGRADE PREPARATION - INCIDENTAL (2112)

NOTE:

THE 2' TRAIL CLEAR ZONE ON EITHER SIDE OF THE TRAIL SHOULD BE AT THE SAME CROSS SLOPE AS THE TRAIL IN MOST CASES.

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ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
TYPICAL SECTIONS
SP 103-090-003

SHEET 15 OF 53

GENERAL PROJECT INFORMATION:

RESPONSIBLE PARTIES:
The Contractor and Owner must apply for coverage under the MPCA's General Storm Water Permit for Construction Activity as required by the National Pollutant Discharge Elimination System (NPDES) Phase II program. Coverage under the permit will begin automatically 7 calendar days after the postmarked date on the permit application. [Longer time frames apply to sites that: (1) disturb areas greater than 50 acres AND discharge within 1 mile of a Special or Impaired Water; or (2) Use alternative storm water treatment techniques].

Owner:	CITY OF ANOKA	<NAME>	XXX.XXX.XXXX
		Contact Person	Phone
SWPPP Preparer:	BOLTON & MENK, INC.	KEVIN KIELB	651.704.9970
		Contact Person	Phone
Contractor:	(SUPPLIED BY CONTRACTOR)	<NAME>	XXX.XXX.XXXX
		Contact Person	Phone
Person Responsible For Inspections:	(SUPPLIED BY CONTRACTOR)	<NAME>	XXX.XXX.XXXX
		Contact Person	Phone
Party Responsible for Long Term O&M of Permanent Storm Water Management Facility:	CITY OF ANOKA	GREG LEE	763.576.2700
		Contact Person	Phone

PROJECT LOCATION:

County, State	Township	Range	Section(s)	Latitude	Longitude
Anoka, MN	31,32	25	2,33,34,35	45.21997	93.43295

PROJECT DESCRIPTION:
This project includes disturbance of approximately 5.5 acres. Construction activities include performing removals, aggregate base construction, and concrete and bituminous construction.

Soils on the site are primarily of Hydrologic Soil Group Type A, with high infiltration capacity.

Planned Construction Start Date: 8/1/2013
Estimated Construction Completion Date: 7/1/2014

PROJECT AREAS:
Total Project Size (disturbed area) = 5.5 AC

Existing area of impervious surface = 0 AC
Post construction area of impervious surface = 2.3 AC
Total new impervious surface area created = 2.3 AC

STORM WATER MANAGEMENT:
Type of storm water management used if more than 1 acre of new impervious surface is created:

Wet sedimentation basin [ ] Regional pond [ ] Alternative methods [ ]
Infiltration [ ] Permanent storm water
Filtration [ ] management not required [X]

Required Water Quality Volume: N/A
Design Water Quality Volume: N/A
Elevation of Water Quality Volume Storage: N/A
Surface Area at Water Quality Volume Storage: N/A
Allowable Discharge of Water Quality Volume: N/A
Designed Discharge for Water Quality Volume: N/A
Required Infiltration Volume: N/A
Designed Infiltration Volume: N/A

The stormwater from the Mississippi West Regional Park and King's Island drains south to the Mississippi River. Stormwater from Riverdale Dr. is collected in catch basins and carried south. No change in the overall stormwater conveyance system is expected as a result of the project.

RECEIVING WATERS:
Surface waters which will receive storm water from the site within 1 mile of project boundary. Include waters shown on USGS 7.5 minute quad and all waters identified in Appendix A of the permit.

Name of Water Body	Type (ditch, pond, wetland, lake, etc.)	Appendix A Special Water?	Flows to Impaired Water within 1 mile?	USEPA Approved TMDL?
Mississippi River	River	YES	NO	NO

Impairment:

CONSTRUCTION ACTIVITY NOTES:

EROSION PREVENTION PRACTICES:
Phased construction will be used to extent practical or as indicated in the plans to minimize exposed soils.

Areas not to be disturbed shall be delineated with flags, stakes, signs, silt fence, etc. prior to work beginning. The normal wetted perimeter of all ditches or swales, including storm water management pond slopes, that drain waters from the site must be stabilized within 200' of any property edge or discharge point, including storm sewer inlets, within 24 hours of connection.

Energy dissipation or other outlet treatment must be installed within 24 hours of connection.

All exposed soils must be stabilized as soon as possible but in no case later than 14 days after the construction activity has temporarily or permanently ceased.

Seed and/or sod, fertilizer, and mulch shall be placed as indicated in the plans and project specifications.

Rapid stabilization shall be of type and quantity indicated in the project specifications. Additional rapid stabilization may be necessary to minimize erosion throughout the duration of the project. Type and quantity shall be determined by the engineer or inspector prior to installation.

If the Contractor stockpiles material on site, he shall install the appropriate erosion control devices around the stockpile and perform the best management practices possible to avoid erosion from the stockpile.

Temporary (or permanent) sedimentation ponds are required for areas > 10 acres of disturbed soils draining soils draining to one point.

SEDIMENT CONTROL PRACTICES:
Installation of silt fence and all other down gradient sediment protection measures shall be completed prior to commencement of upstream land disturbing activities.

Silt fence shall be installed along constant contours with continuous lengths not to exceed 600 feet. As indicated on plans, silt fence will be periodically broken and hooked upslope in "J-hook" or "smile" patterns to provide ponding and slow runoff.

No unbroken slope lengths greater than 75 feet are permitted when slope is 3:1 or greater. Slope shall be broken with silt fence or biorolls as indicated on plans.

Install ditch checks (Biorolls) as shown in plan. Ditch checks to be installed after street is removed and left in place until final restoration is established.

BMP	QUANTITY
SILT FENCE	7150 LIN FT
STORM DRAIN INLET PROTECTION	12 EACH
SODDING TYPE LAWN	2850 SY
EROSION CONTROL BLANKET	15250 SY

Vehicle tracking to be minimized to all practical extents. All eroded material that leaves the construction zone shall be collected by the contractor and returned to the site at the contractor's expense.

All stock piles shall be surrounded by silt fence and seeded with temporary seed and mulch. See erosion and sediment control plans.

All site storm sewer inlets, as well as off site downstream inlets with potential to receive sediment, shall be protected with approved inlet protection measures at all times. Inlets shall remain protected until site is 100% stabilized and vegetation is at least 70% established. Inlet protection may be removed in winter, if the project has an approval letter from jurisdictional authority or can produce it within 72 hours.

POLLUTION PREVENTION:
All solid waste collected from the construction site must be disposed of in accordance with MPCA disposal requirements.

Concrete washout must be contained in device such as provided by Neaton Brothers Concrete Washout LLC, or equivalent unit. Unit must be maintained to manufacturer recommendation.

All hazardous materials (e.g., oil, gasoline, fuel, antifreeze, paint, cleaning solvents, curing compounds, fertilizers, etc.) must be properly stored (including secondary containment when necessary) to prevent spills, leaks, or other discharge. Storage and disposal of hazardous waste must be in compliance with MPCA regulations.

External washing areas must be limited to a defined area of the site. All runoff containing any hazardous material must be properly collected and disposed of. Defined area must be contained with heavy- or super-duty silt fence. NO ENGINE DEGREASING ALLOWED ON SITE.

The contractor is responsible for monitoring air pollution and ensuring it does not exceed levels set by local, state, or federal regulations. This includes dust created by work being performed on the site. Air pollution and dust control correction is considered incidental to the unit bid prices for which work is being performed. Additional dust control measures may be required by the Engineer.

INSPECTION & MAINTENANCE:
The permittees must routinely inspect the construction site once every seven (7) days during active construction and within 24 hours of a rainfall event greater than 0.5 inches in a 24 hour period.

All inspections performed during construction must be recorded and records retained on site with the SWPPP in accordance with the storm water permit. Records must include a site map showing areas of land disturbing activities and areas where activities have temporarily or permanently ceased.

Silt fence, biorolls and inlet protection devices must be maintained when non-functional or when accumulated sediment reaches 1/3 of device height.

Off site vehicle tracking to be removed within 24 hours of occurrence.

All non-functional BMPs must be repaired, replaced, or supplemented with functional BMPs within 24 hours of discovery, or as soon as field conditions allow access.

FINAL STABILIZATION:
The permittees must submit a Notice of Termination (N.O.T.) within 30 days of final stabilization or transferring permit responsibility to another owner or operator.

The Contractor must ensure final stabilization of the site. Final stabilization shall include a minimum of 70% vegetation establishment (100% stabilized) on all pervious areas.

All temporary erosion control measures and BMPs must be removed as part of the final site stabilization, unless directed otherwise by owner or engineer.

IMPLEMENTATION SCHEDULE & PHASING:
1) Install silt fence and inlet protection.
2) Clear, grub, and grade site.
3) Add additional temporary BMP?s as necessary during construction based on inspection reports.
4) Ensure final stabilization measures are complete.
5) Submit Notice of Termination (NOT) to MPCA within 30 days of final stabilization.

RECORD RETENTION:
The SWPPP, all changes to it, and inspections and maintenance records must be kept at the site during construction. All owner(s) must retain the following for 3 years after submittal of NOT:
1) SWPPP;
2) Any other permits required for the project;
3) Inspection and maintenance logs;
4) All permanent operation and maintenance agreements for surface water facilities;
5) All design calculations for temporary and permanent storm water management.

PLAN SHEETS:
Sheet numbers 17-20 of this plan set are also considered a part of the SWPPP for this project.

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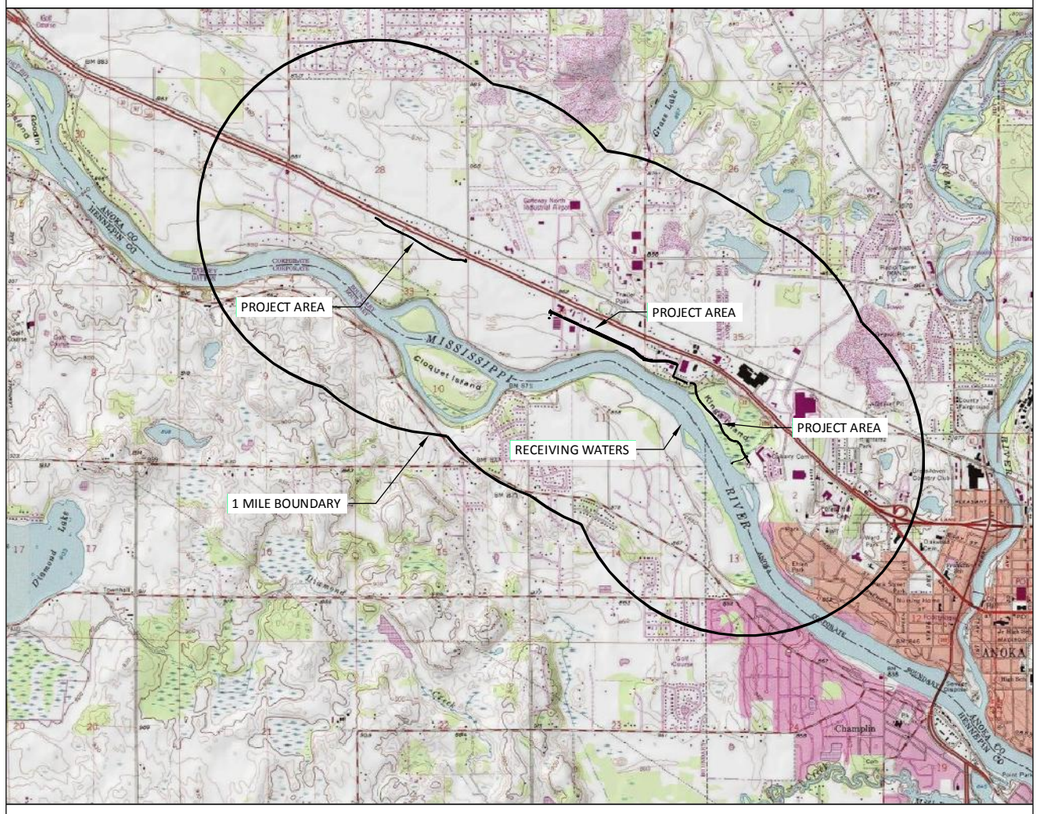
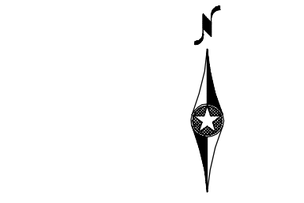
REV.	BY	DATE

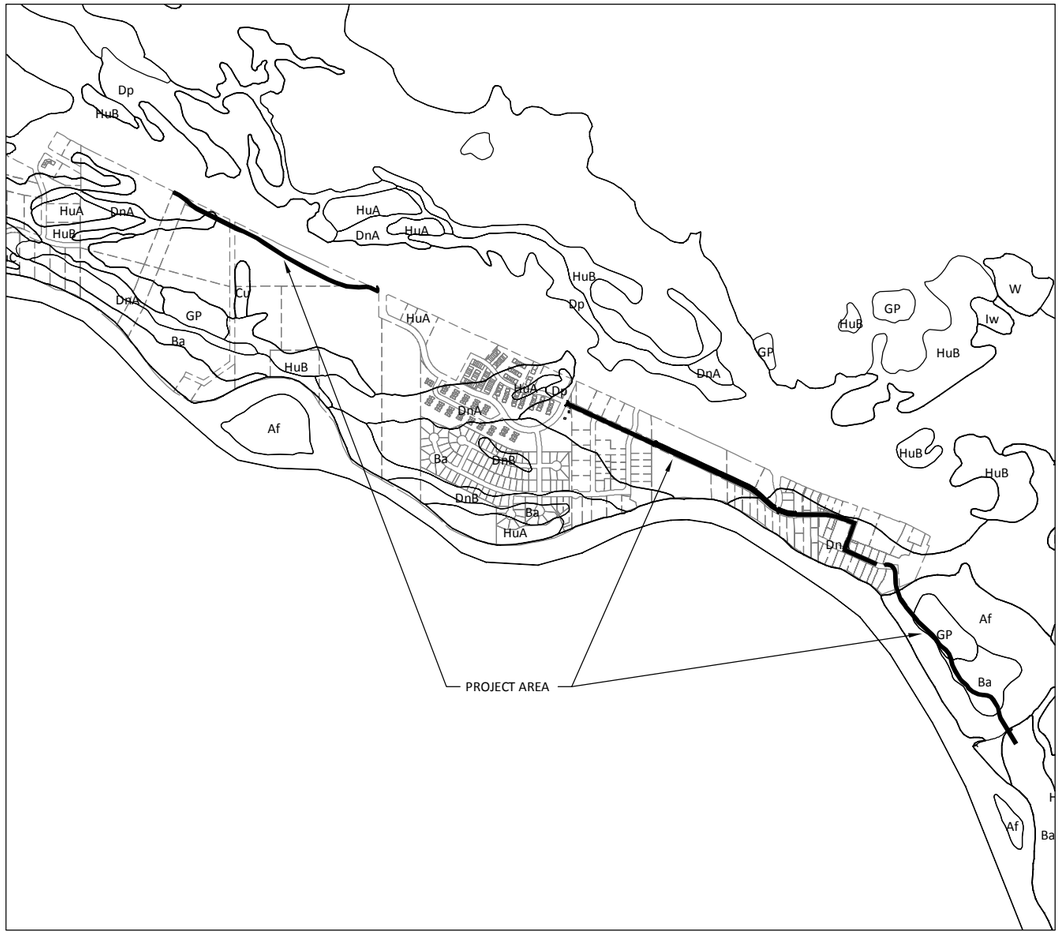
CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
SWPPP NARATIVE
SP 103-090-003

USGS QUAD MAP





USDA SCS SOIL SURVEY MAP



SOIL TYPES SUMMARY

Af - Alluvial land, mixed, frequently flooded
Ba - Becker very fine sandy loam
Cu - Cut and fill land
DnA - Dickman sandy loam, 0 to 2 percent slopes
DnB - Dickman sandy loam, 2 to 6 percent slopes
Dp - Duelm loamy coarse sand
GP - Pits, gravel-Udisamments complex
HuA - Hubbard coarse sand, 0 to 2 percent slopes
HuB - Hubbard coarse sand, 2 to 6 percent slopes
Iw - Isanti fine sandy loam
W - Water

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KEVIN P. KIELB, P.E.
LIC. NO. 23211 DATE 3/25/2013

DESIGNED KPK/AK
DRAWN AK
CHECKED KPK

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN WILLMAR, MN BURNSVILLE, MN
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
SWPPP FIGURES
SP 103-090-003

SHEET 17 OF 53

WB TH 10

EB TH 10

BP: 0+00.00

PC: 0+61.06

PT: 2+14.45

PC: 3+03.13

PT: 3+64.52

EROSION CONTROL BLANKET CATEGORY 3. NATURAL BIODEGRADABLE (NOT PHOTODEGRADABLE) NETTING AND STICHING MATERIAL

RIVERDALE DRIVE

PC: 9+73.90

PT: 10+08.83

PC: 10+67.45

PT: 12+78.62

PC: 13+85.20

SUBDIVISION NO. 34

EROSION CONTROL LEGEND

- MS — MACHINE SLICED SILT FENCE
- HD — HEAVY DUTY SILT FENCE
- WB — WIRE BACKED SILT FENCE
- SD — SUPER DUTY SILT FENCE
- FLOTATION SILT CURTAIN
- RIP RAP
- INLET PROTECTION
- DITCH CHECK - BIOLOG
- DITCH CHECK - ROCK
- CULVERT / PIPE PROTECTION
- TEMPORARY SEDIMENT BASIN W/ PIPE DRAIN
- SEDIMENT — TEMPORARY SEDIMENT TRAP
- DIVERSION AND PIPE DRAIN
- SANDBAGS
- CONCENTRATED SURFACE FLOW
- C/W — CONCRETE WASHOUT
- BLANKET
- TEMPORARY MULCH
- MULCH
- HYDROMULCH
- SOD
- TURF REINFORCEMENT MAT (TRM)
- OTHER APPROVED BEST MANAGEMENT PRACTICE (BMP)
- CONSTRUCTION ENTRANCE / EXIT

EB TH 10

PT: 23+55.16

PC: 24+60.73

PT: 27+69.38

PC: 28+75.58

PT: 29+25.87

EP: 30+49.09

EROSION CONTROL BLANKET CATEGORY 3. NATURAL BIODEGRADABLE (NOT PHOTODEGRADABLE) NETTING AND STICHING MATERIAL

HORZ. SCALE 0 50 100 FEET

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REV.	BY	DATE

CITY OF ANOKA, MINNESOTA

MISSISSIPPI RIVER TRAIL

TEMPORARY EROSION CONTROL & TURF ESTABLISHMENT - WEST TRAIL

SP 103-090-003

SHEET 18 OF 53

EROSION CONTROL LEGEND

- MS — MACHINE SLICED SILT FENCE
- HD — HEAVY DUTY SILT FENCE
- WB — WIRE BACKED SILT FENCE
- SD — SUPER DUTY SILT FENCE
- FLOTATION SILT CURTAIN
- RIP RAP
- INLET PROTECTION
- DITCH CHECK - BIOLOG
- DITCH CHECK - ROCK
- CULVERT / PIPE PROTECTION
- TEMPORARY SEDIMENT BASIN W/ PIPE DRAIN
- SEDIMENT — TEMPORARY SEDIMENT TRAP
- DIVERSION AND PIPE DRAIN
- SANDBAGS
- CONCENTRATED SURFACE FLOW
- C/W — CONCRETE WASHOUT
- BLANKET
- TEMPORARY MULCH
- MULCH
- HYDROMULCH
- SOD
- TURF REINFORCEMENT MAT (TRM)
- OTHER APPROVED BEST MANAGEMENT PRACTICE (BMP)
- CONSTRUCTION ENTRANCE / EXIT

RIVERDALE DRIVE

SUNFISH LAKE BOULEVARD

RIVERDALE DRIVE

HORZ. SCALE 0 50 100 FEET

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ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
TEMPORARY EROSION CONTROL & TURF ESTABLISHMENT - CENTRAL TRAIL
SP 103-090-003

SHEET 19 OF 53

EROSION CONTROL LEGEND

MS — MACHINE SLICED SILT FENCE	DITCH CHECK - ROCK	BLANKET	SOD
HD — HEAVY DUTY SILT FENCE	CULVERT / PIPE PROTECTION	TEMPORARY MULCH	TURF REINFORCEMENT MAT (TRM)
WB — WIRE BACKED SILT FENCE	TEMPORARY SEDIMENT BASIN W/ PIPE DRAIN	MULCH	OTHER APPROVED BEST MANAGEMENT PRACTICE (BMP)
SD — SUPER DUTY SILT FENCE	TEMPORARY SEDIMENT TRAP	HYDROMULCH	CONSTRUCTION ENTRANCE / EXIT
FLOTATION SILT CURTAIN	DIVERSION AND PIPE DRAIN		
RIP RAP	SANDBAGS		
INLET PROTECTION	CONCENTRATED SURFACE FLOW		
DITCH CHECK - BIOLOG	CONCRETE WASHOUT		

EROSION CONTROL BLANKET CATEGORY 3.
NATURAL BIODEGRADABLE (NOT PHOTODEGRADABLE) NETTING AND STICHING MATERIAL

RIVLYN AVENUE

EROSION CONTROL BLANKET CATEGORY 3.
NATURAL BIODEGRADABLE (NOT PHOTODEGRADABLE) NETTING AND STICHING MATERIAL

HORZ. SCALE 0 50 100 FEET

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DRAWN	AK
CHECKED	KPK

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ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
TEMPORARY EROSION CONTROL & TURF ESTABLISHMENT - EAST TRAIL
SP 103-090-003

SHEET 20 OF 53

WB TH 10

EB TH 10

REMOVE 20 LF
CHAIN LINK FENCE

REMOVE 25 LF
CURB AND GUTTER

REMOVE 25 LF
CURB AND GUTTER

APPROXIMATE GRADING LIMITS

OUTLOT A

RIVERDALE DRIVE

SUBDIVISION NO. 34

EXISTMH

CBMH 5

CBMH 4

CBMH 2

ES 1

CBMH 3

CB 1

CBMH 6

CBMH 7

STMH 8

CBMH 10

CB 11

REMOVALS LEGEND

REMOVE CONCRETE CURB AND GUTTER

CLEAR AND GRUB

EB TH 10

PROTECT EXISTING
BILLBOARD

REMOVE 40 FT
WOVEN WIRE FENCE

RIVE

HORZ. SCALE 0 50 100 FEET

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ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

CITY OF ANOKA, MINNESOTA

MISSISSIPPI RIVER TRAIL

REMOVALS - WEST TRAIL

SP 103-090-003

SHEET 21 OF 53

FELDSPAR STREET

RELOCATE STREET SIGN

REMOVE 25 LF CURB AND GUTTER

REMOVE EXISTING ℄ STRIPING

REMOVE EXISTING SHOULDER STRIPING

RIVERDALE DRIVE

RELOCATE STREET SIGN

RELOCATE STREET SIGN

REMOVE 25 LF CURB AND GUTTER

EBONY STREET

REMOVE EXISTING ℄ STRIPING

REMOVE EXISTING SHOULDER STRIPING

DOLOMITE STREET

REMOVE EXISTING SHOULDER STRIPING

REMOVE 25 LF CURB AND GUTTER

REMOVE 25 LF CURB AND GUTTER

REMOVE EXISTING ℄ STRIPING

REMOVALS LEGEND

REMOVE CONCRETE CURB AND GUTTER

CLEAR AND GRUB

TRIM TREE AS NEEDED TO MAINTAIN TRAIL CLEAR ZONE

RELOCATE PRIVATE UTILITY PEDESTAL (BY OTHERS)

RELOCATE FIRE HYDRANT OUTSIDE OF TRAIL CLEAR ZONE

RIVERDALE DRIVE

REMOVE 25 LF CURB AND GUTTER

REMOVE 25 LF CURB AND GUTTER

HORZ. SCALE 0 50 100 FEET

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ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

CITY OF ANOKA, MINNESOTA

MISSISSIPPI RIVER TRAIL

REMOVALS - CENTRAL TRAIL

SP 103-090-003

SHEET 22 OF 53

REMOVE EXISTING SHOULDER STRIPING

REMOVE EXISTING ℄ STRIPING

RELOCATE STREET LIGHT

RELOCATE PRIVATE UTILITY PEDESTAL (BY OTHERS)

RELOCATE STREET SIGN

RELOCATED PRIVATE UTILITY PEDESTAL (BY OTHERS)

REMOVE 25 LF CURB AND GUTTER

REMOVE 25 LF CURB AND GUTTER

RELOCATE STREET SIGN

REMOVE 25 LF CURB AND GUTTER

REMOVE 25 LF CURB AND GUTTER

CLEAR AND GRUB AS NEEDED FOR PEDESTRIAN RAMP INSTALLATION

REMOVE EXISTING ℄ STRIPING

REMOVE EXISTING SHOULDER STRIPING

RIVERDALE DRIVE

TUNGSTEN STREET

RIVLYN AVENUE

SAN MH R=857.03

REMOVALS LEGEND

REMOVE CONCRETE CURB AND GUTTER

CLEAR AND GRUB

HORZ. SCALE 0 50 100 FEET

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REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
REMOVALS - CENTRAL TRAIL
SP 103-090-003

REMOVE 20 LF CHAIN LINK FENCE

REMOVE 25 LF CURB AND GUTTER

REMOVE 2 EA CONCRETE APRON

REMOVE 31 LF 48" RCP

APPROXIMATE GRADING LIMITS

REMOVALS LEGEND

REMOVE CONCRETE CURB AND GUTTER

CLEAR AND GRUB

APPROXIMATE GRADING LIMITS

REMOVE 20 LF FENCE

REMOVE 20 LF FENCE

HORZ. SCALE 0 50 100 FEET

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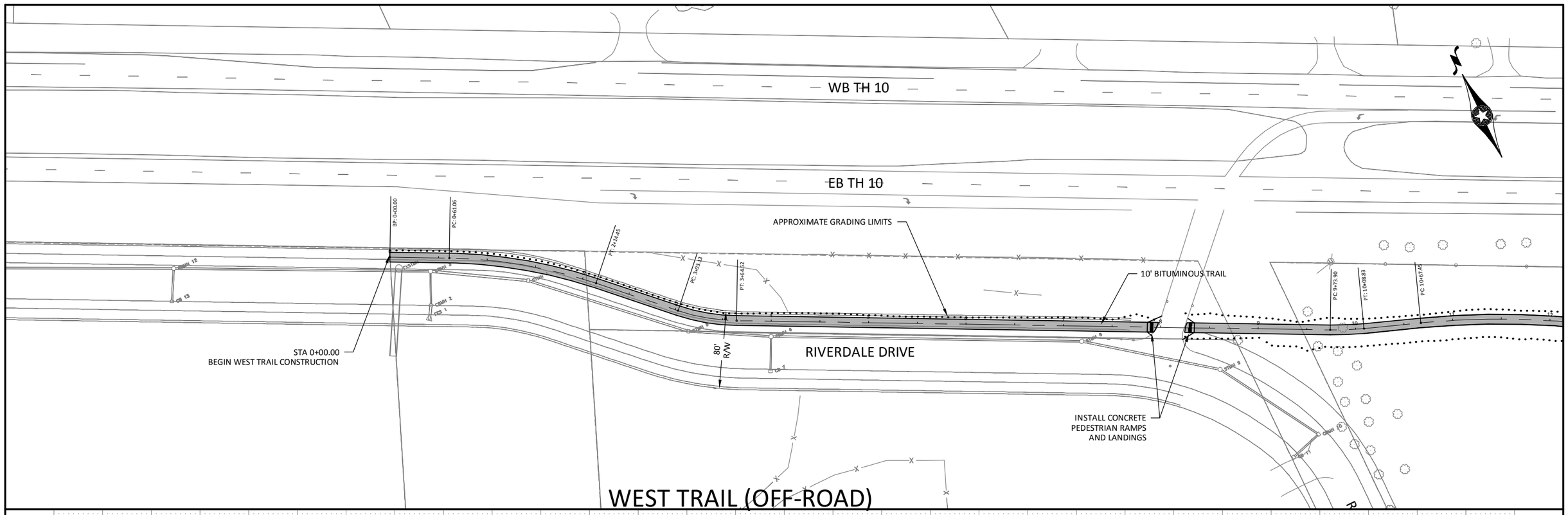
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

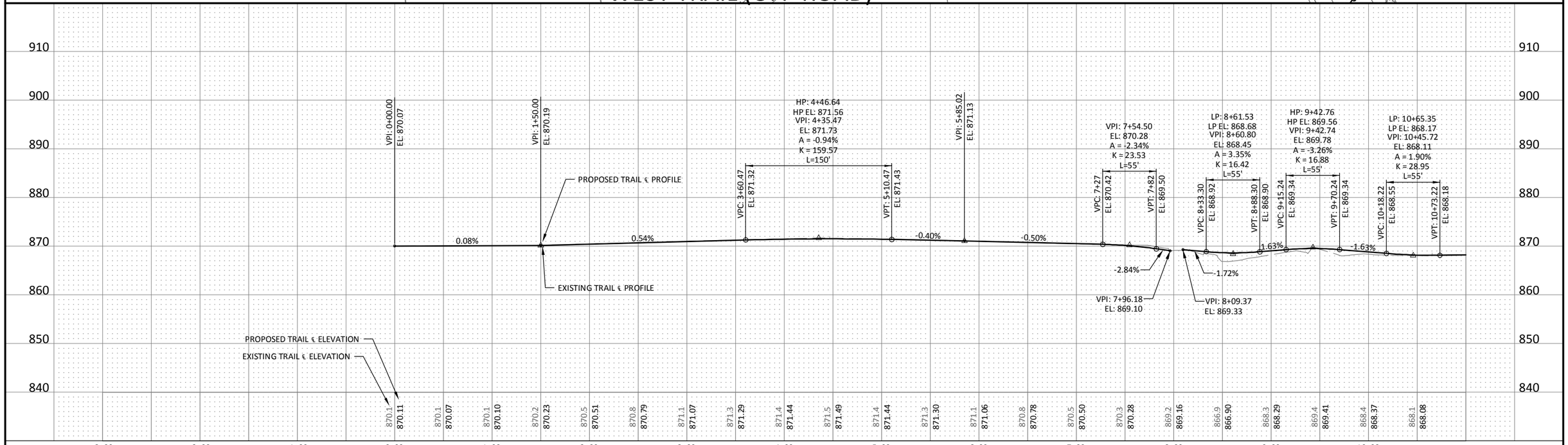
REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
REMOVALS - EAST TRAIL
SP 103-090-003

SHEET 24 OF 53



WEST TRAIL (OFF-ROAD)



HORZ. SCALE 0 50 100 FEET
VERT. SCALE 0 10 20 FEET

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ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
WEST TRAIL (OFF-ROAD) PLAN & PROFILE
SP 103-090-003

SHEET 25 OF 53

EB TH-10

10' BITUMINOUS TRAIL

INSTALL CONCRETE PEDESTRIAN RAMPS AND LANDINGS

APPROXIMATE GRADING LIMITS

RIVERDALE DRIVE

PC: 9+73.90

PT: 10+08.83

PC: 10+67.74

PT: 12+78.62

PC: 13+85.20

WEST TRAIL (OFF-ROAD)

PROPOSED TRAIL ℄ PROFILE

EXISTING TRAIL ℄ PROFILE

PROPOSED TRAIL ℄ ELEVATION

EXISTING TRAIL ℄ ELEVATION

VPI: 8+09.37 EL: 869.33

LP: 8+61.53
LP EL: 868.68
VPI: 8+60.80
EL: 868.45
A = 3.35%
K = 16.42
L=55'

VPC: 8+33.30 EL: 868.92

VPT: 8+88.30 EL: 868.90

1.72%

1.63%

HP: 9+42.76
HP EL: 869.56
VPI: 9+42.74
EL: 869.78
A = -3.26%
K = 16.88
L=55'

VPC: 9+15.24 EL: 869.34

VPT: 9+70.24 EL: 869.34

-1.63%

LP: 10+65.35
LP EL: 868.17
VPI: 10+45.72
EL: 868.11
A = 1.90%
K = 28.95
L=55'

VPC: 10+18.22 EL: 868.55

VPT: 10+73.22 EL: 868.18

0.27%

HP: 12+55.68
HP EL: 868.63
VPI: 12+49.66
EL: 868.66
A = -0.45%
K = 123.39
L=55'

VPC: 12+22.16 EL: 868.59

VPT: 12+77.16 EL: 868.61

-0.17%

LP: 15+50.78
LP EL: 868.16
VPI: 15+48.98
EL: 868.14
A = 0.33%
K = 168.32
L=55'

VPC: 15+21.48 EL: 868.19

VPT: 15+76.48 EL: 868.18

0.15%

VPI: 17+27.25
EL: 868.41
A = 0.74%
K = 74.27
L=55'

VPC: 16+99.75 EL: 868.37

VPT: 17+54.75 EL: 868.66

0.89%

HP: 18+51.17
HP EL: 869.44
VPI: 18+60.20
EL: 869.60
A = -2.66%
K = 20.68
L=55'

VPC: 18+32.70 EL: 869.35

VPT: 18+87.70 EL: 869.11

1.77%

VPI: 19+40.67
EL: 868.18
A = -3.02%
K = 18.19
L=55'

VPC: 19+13.17 EL: 868.66

VPT: 19+68.17 EL: 866.86

-4.79%

LP: 20+82.29
LP EL: 863.49
VPI: 20+44.78
EL: 863.19
A = 5.47%
K = 18.27
L=100'

VPC: 19+94.78 EL: 865.59

VPT: 20+94.78 EL: 863.53

0.68%

HP: 21+48.99
HP EL: 863.85
VPI: 21+60.22
EL: 863.98
A = -2.31%
K = 23.80
L=55'

VPC: 21+32.72 EL: 863.79

VPT: 21+87.72 EL: 863.53

910 900 890 880 870 860 850 840

869.2 869.16 866.9 866.90 868.3 868.29 869.4 869.41 868.4 868.37 868.1 868.08 868.2 868.24 868.2 868.21 868.6 868.62 868.2 868.22 868.2 868.21 868.0 867.98 867.9 867.90 867.9 867.95 868.1 868.10 867.8 867.82 867.8 867.80 867.9 867.89 868.0 868.00 868.2 868.16 869.1 869.08 869.6 869.59 869.3 869.28 867.8 867.79 865.1 865.10 863.4 863.44 863.4 863.41 864.0 863.97

8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00

HORZ. SCALE 0 50 100 FEET

VERT. SCALE 0 10 20 FEET

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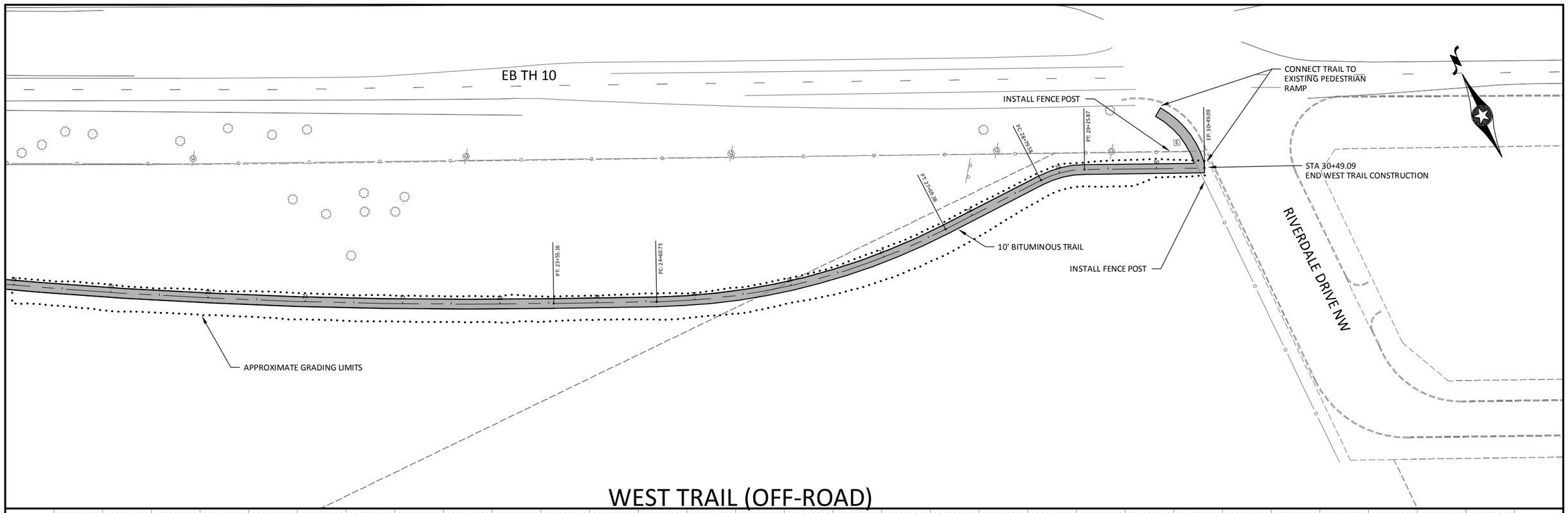
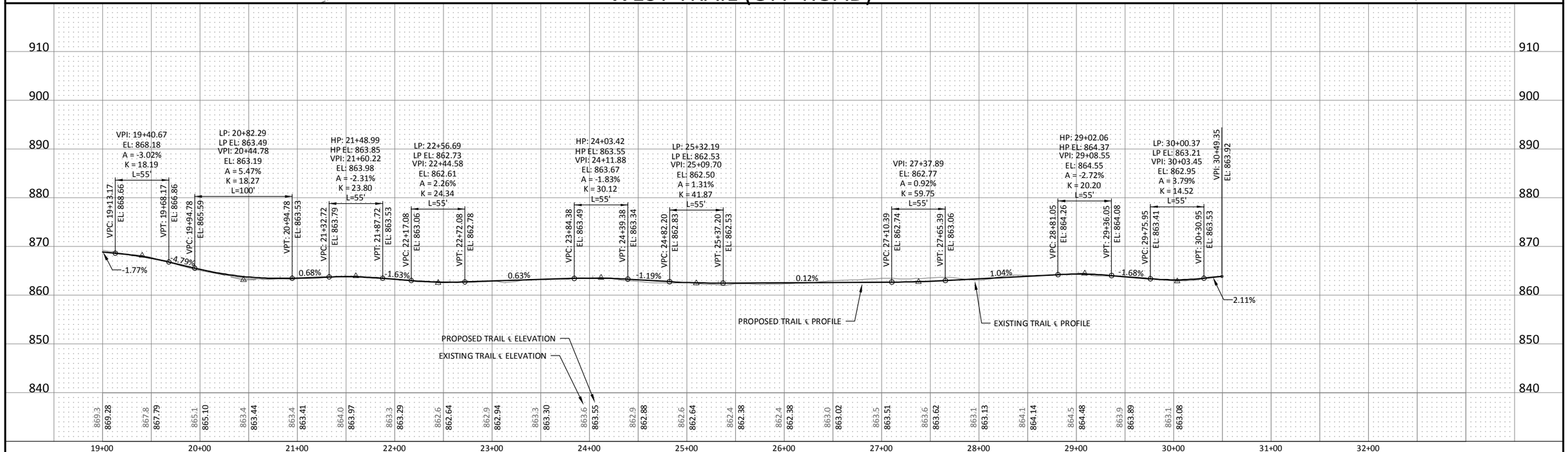
REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
WEST TRAIL (OFF-ROAD) PLAN & PROFILE
SP 103-090-003



WEST TRAIL (OFF-ROAD)



HORZ. SCALE 0 50 100 FEET

VERT. SCALE 0 10 20 FEET

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REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
WEST TRAIL (OFF-ROAD) PLAN & PROFILE
SP 103-090-003

FELDSPAR STREET

139TH LANE

RIVERDALE DRIVE

EBONY STREET

DOLOMITE STREET

66' R/W

INSTALL CONCRETE PEDESTRIAN RAMP AND LANDING

36"x120" WHITE CROSSWALK MARKING - EPOXY

STA 100+00.00
BEGIN ON-ROAD BIKE LANES

INSTALL CONCRETE PEDESTRIAN RAMP AND LANDING

INSTALL INTERPRETIVE SIGN (SEE DETAIL)

RESTROOM BY OTHERS (2013 CONSTRUCTION)

SHELTER BY OTHERS (2013 CONSTRUCTION)

4" SOLID WHITE - EPOXY

4" DOUBLE SOLID YELLOW - EPOXY

R3-17 (24X18) BIKE LANE

R8-3A (24X24)

R3-17 (24X30) BIKE LANE

STA 112+73.65
END ON-ROAD BIKE LANES
BEGIN OFF-ROAD SHARED USE PATH

D11-1 (24X18) BIKE ROUTE

D1-1

STOP R1-1 (30X30)

W11-15 (30X30)

D1-1 (VARIESX6') MISS. R. TRAIL

CENTRAL TRAIL (ON-ROAD)

VPI: 100+00.00
EL: 858.54

HP: 100+92.18
HP EL: 858.96
VPI: 100+78.41
EL: 859.08
A = -1.09%
K = 91.54
L=100'

VPC: 100+28.41
EL: 858.73

VPT: 101+28.41
EL: 858.88

0.70%

-0.40%

VPC: 102+28.76
EL: 858.49

VPI: 102+78.76
EL: 858.29
A = -0.09%
K = 1056.85
L=100'

VPT: 103+28.76
EL: 858.04

-0.49%

LP: 103+91.88
LP EL: 857.85
VPI: 103+94.41
EL: 857.72
A = 1.03%
K = 96.80
L=100'

VPC: 103+44.41
EL: 857.97

VPT: 104+44.41
EL: 857.99

0.54%

VPC: 104+85.96
EL: 858.22

VPI: 105+35.96
EL: 858.49
A = 0.15%
K = 646.74
L=100'

VPT: 105+85.96
EL: 858.84

0.70%

HP: 109+56.19
HP EL: 861.23
VPI: 109+50.20
EL: 861.38
A = -1.25%
K = 80.30
L=100'

VPC: 109+00.20
EL: 861.03

VPT: 110+00.20
EL: 861.10

-0.55%

VPC: 111+93.43
EL: 860.05

EXISTING RIVERDALE DR. ℄ PROFILE = PROPOSED RIVERDALE DR. ℄ PROFILE

EXISTING RIVERDALE DR. ℄ ELEVATION

900 890 880 870 860 850 840 830

858.5 858.8 858.9 858.8 858.7 858.4 858.2 858.0 857.8 858.0 858.2 858.6 858.9 859.2 859.6 859.9 860.2 860.6 860.9 861.2 861.1 860.8 860.5 860.3 860.0

98+00 99+00 100+00 101+00 102+00 103+00 104+00 105+00 106+00 107+00 108+00 109+00 110+00 111+00 112+00

HORZ. SCALE 0 50 100 FEET

VERT. SCALE 0 10 20 FEET

H:\ANOK\N15104941\C3D\104941PP-CENTRAL.dwg 6/11/2013 2:03:43 PM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

KEVIN P. KIELB, P.E.
LIC. NO. 23211 DATE 3/25/2013

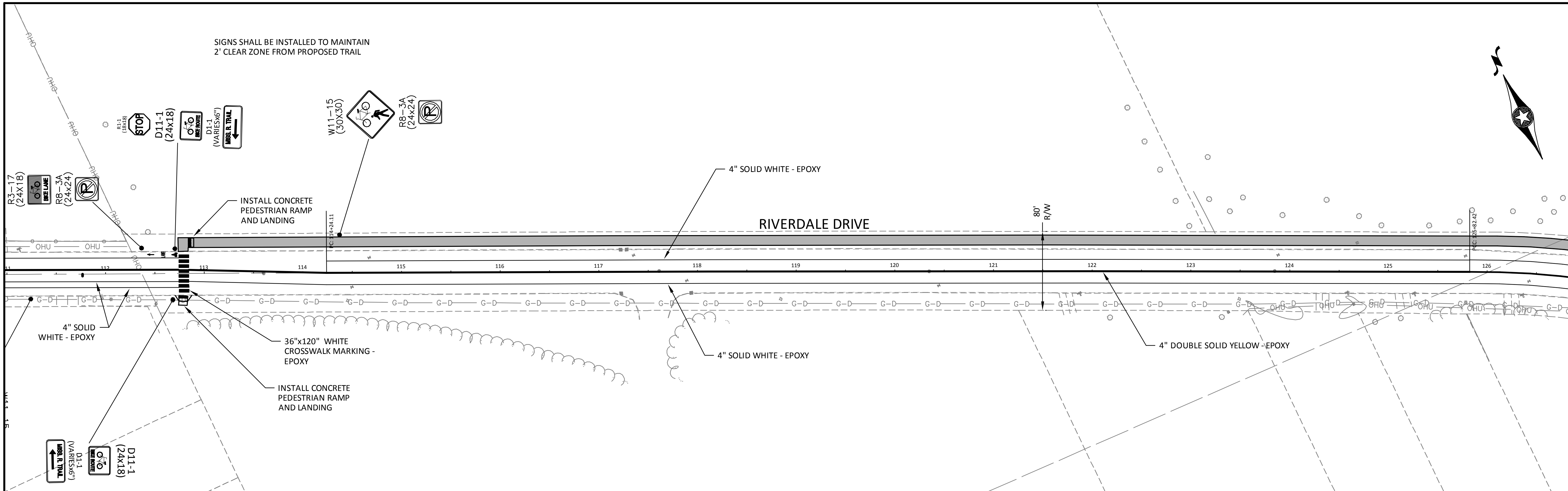
DESIGNED KPK/AK
DRAWN AK
CHECKED KPK

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN WILLMAR, MN BURNSVILLE, MN
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

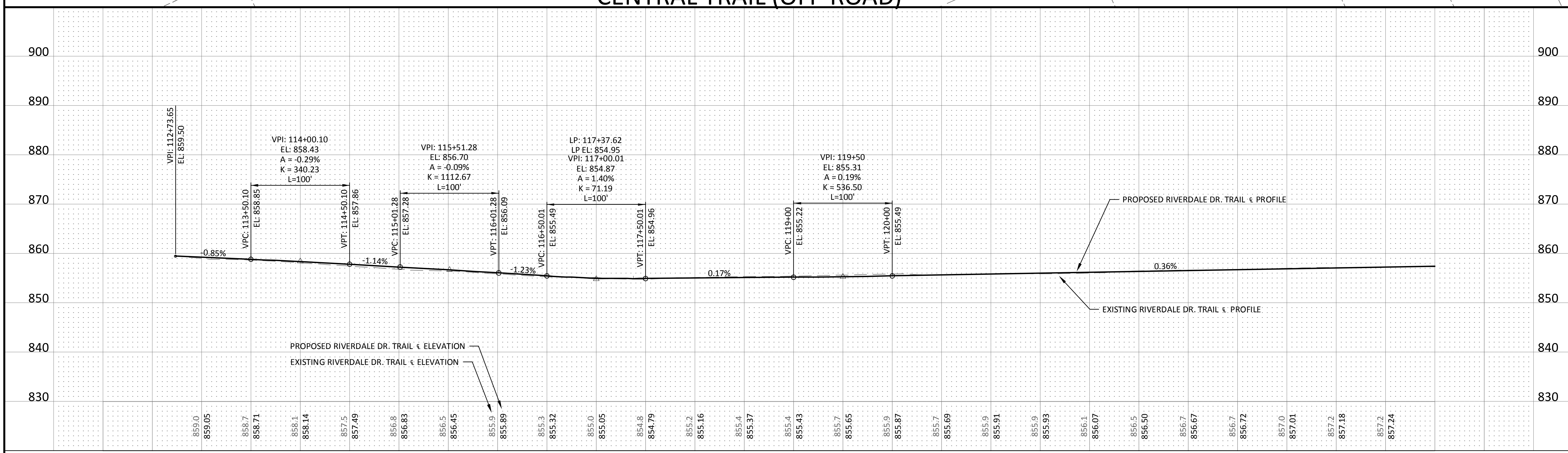
REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
CENTRAL TRAIL (ON-ROAD) PLAN & PROFILE
SP 103-090-003

SHEET 28 OF 53



CENTRAL TRAIL (OFF-ROAD)



HORZ. SCALE 0 50 100 FEET
VERT. SCALE 0 10 20 FEET

H:\ANOK\N15104941\C3D\104941PP-CENTRAL.dwg 6/11/2013 2:03:58 PM

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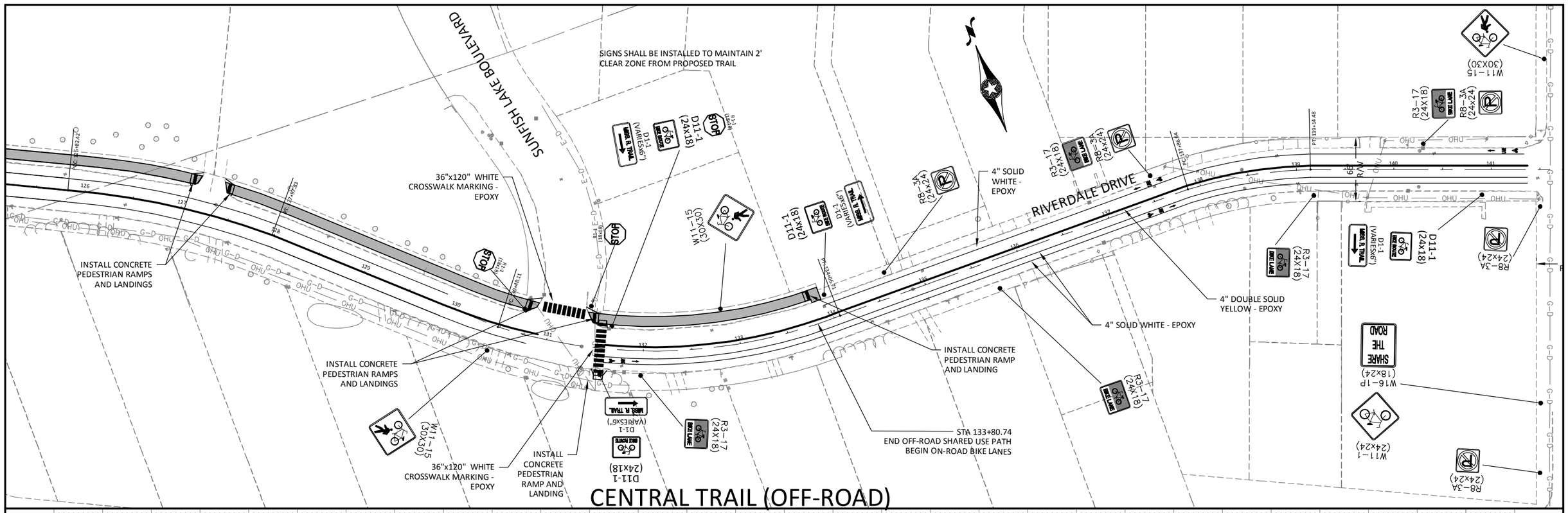
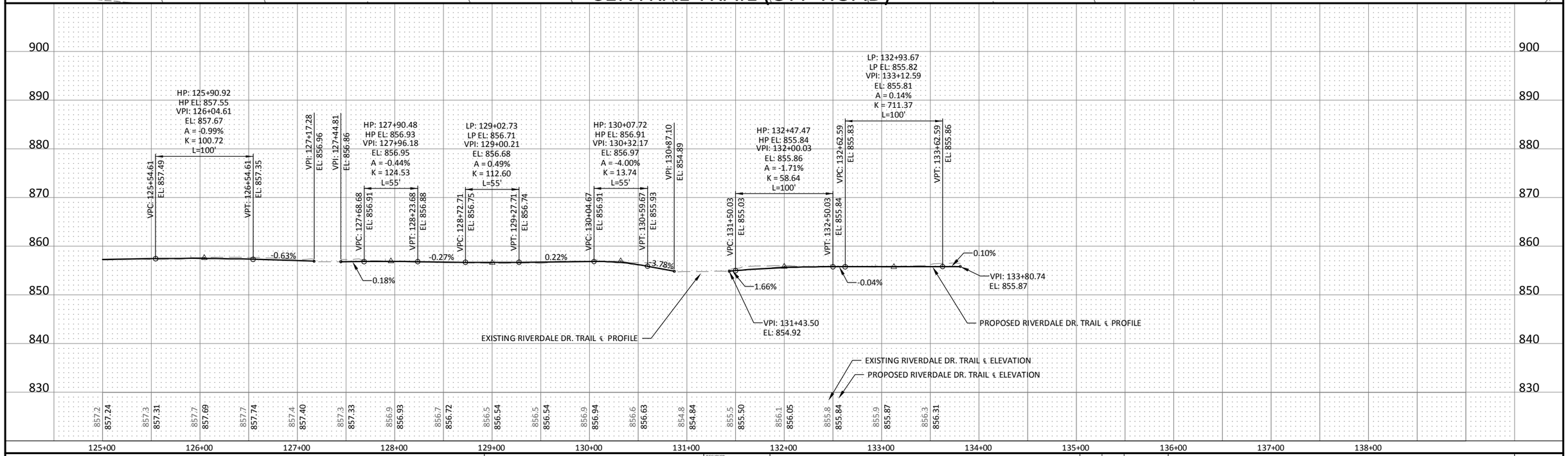
ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
CENTRAL TRAIL (OFF-ROAD) PLAN & PROFILE
SP 103-090-003

CENTRAL TRAIL (OFF-ROAD)





HORZ. SCALE 0 50 100 FEET
VERT. SCALE 0 10 20 FEET

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

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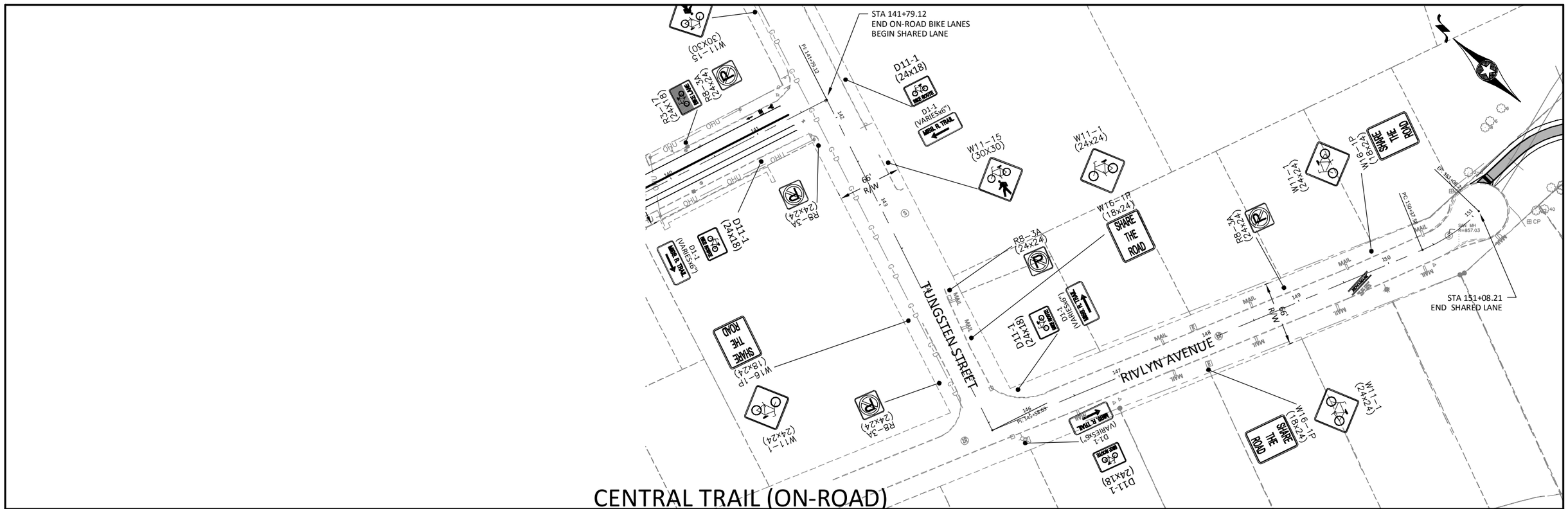
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
CENTRAL TRAIL (OFF-ROAD) PLAN & PROFILE
SP 103-090-003

SHEET 30 OF 53



HORZ. SCALE 0 50 100 FEET

VERT. SCALE 0 10 20 FEET

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

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Consulting Engineers & Surveyors
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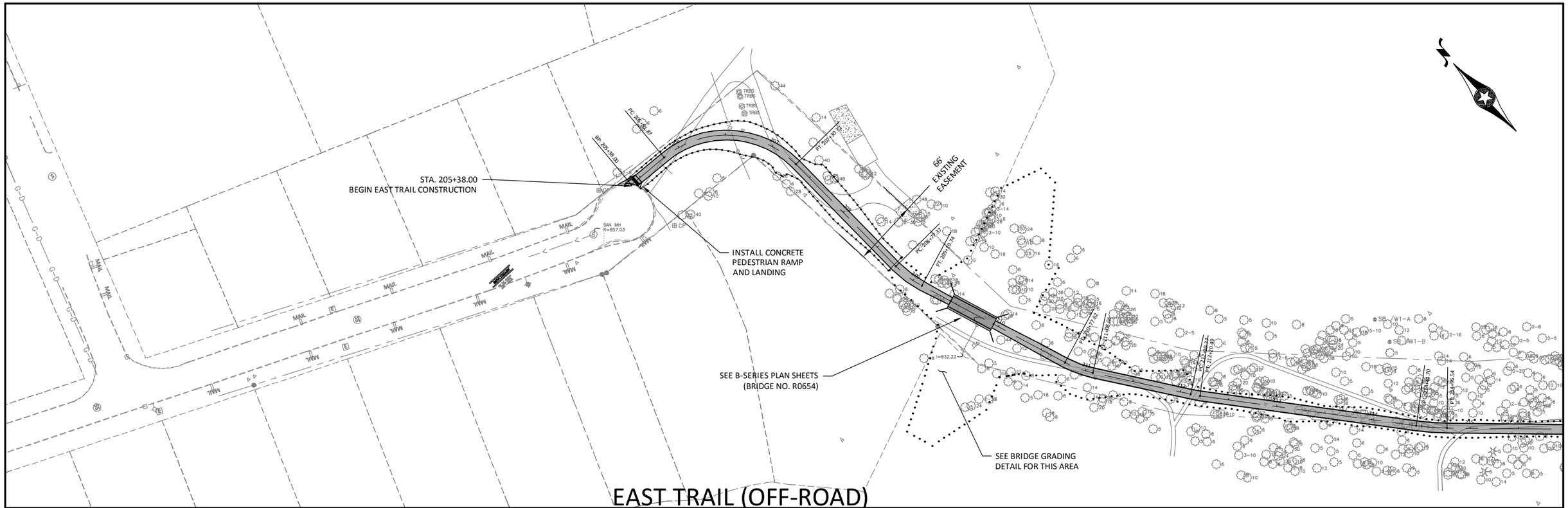
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

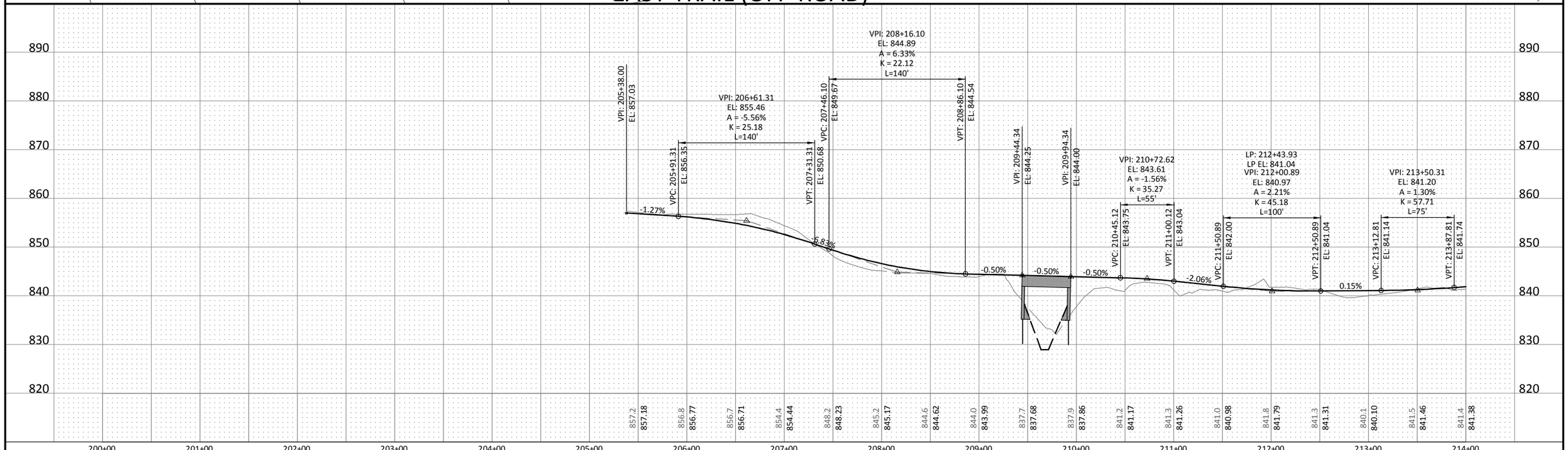
REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
CENTRAL TRAIL (ON-ROAD) PLAN & PROFILE
SP 103-090-003

SHEET 31 OF 53



EAST TRAIL (OFF-ROAD)



HORZ. SCALE 0 50 100 FEET
VERT. SCALE 0 10 20 FEET

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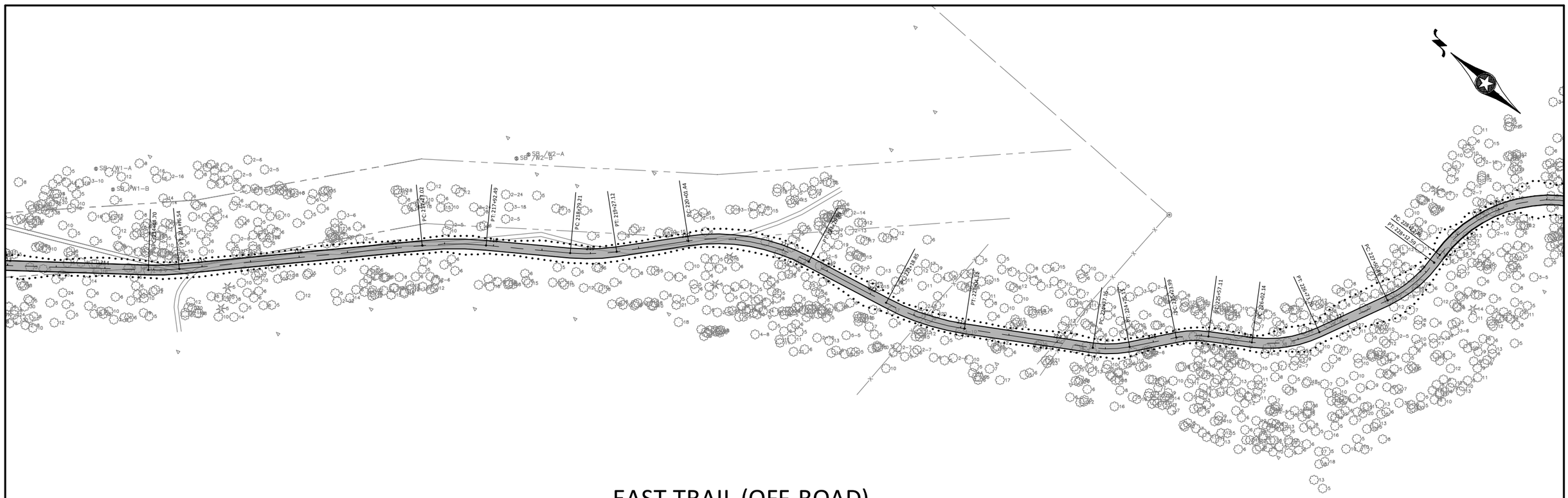
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

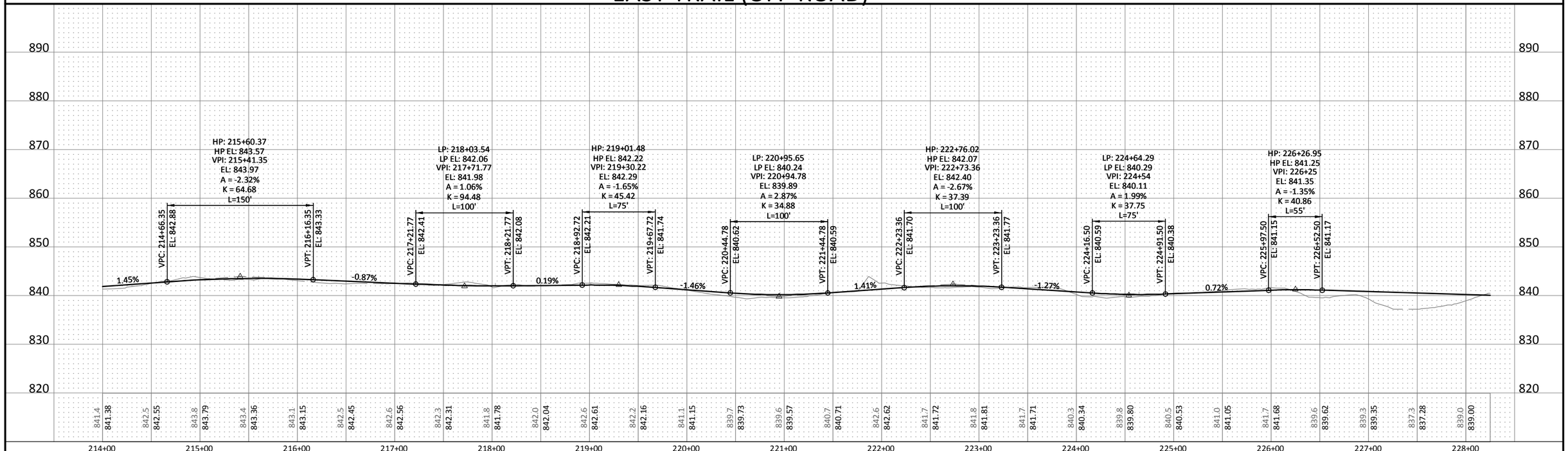
REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
EAST TRAIL (OFF-ROAD) PLAN & PROFILE
SP 103-090-003

SHEET 32 OF 53



EAST TRAIL (OFF-ROAD)



HORZ. SCALE 0 50 100 FEET

VERT. SCALE 0 10 20 FEET

H:\ANOK\N15104941\C3D\104941PP-EAST.dwg 6/11/2013 2:06:21 PM

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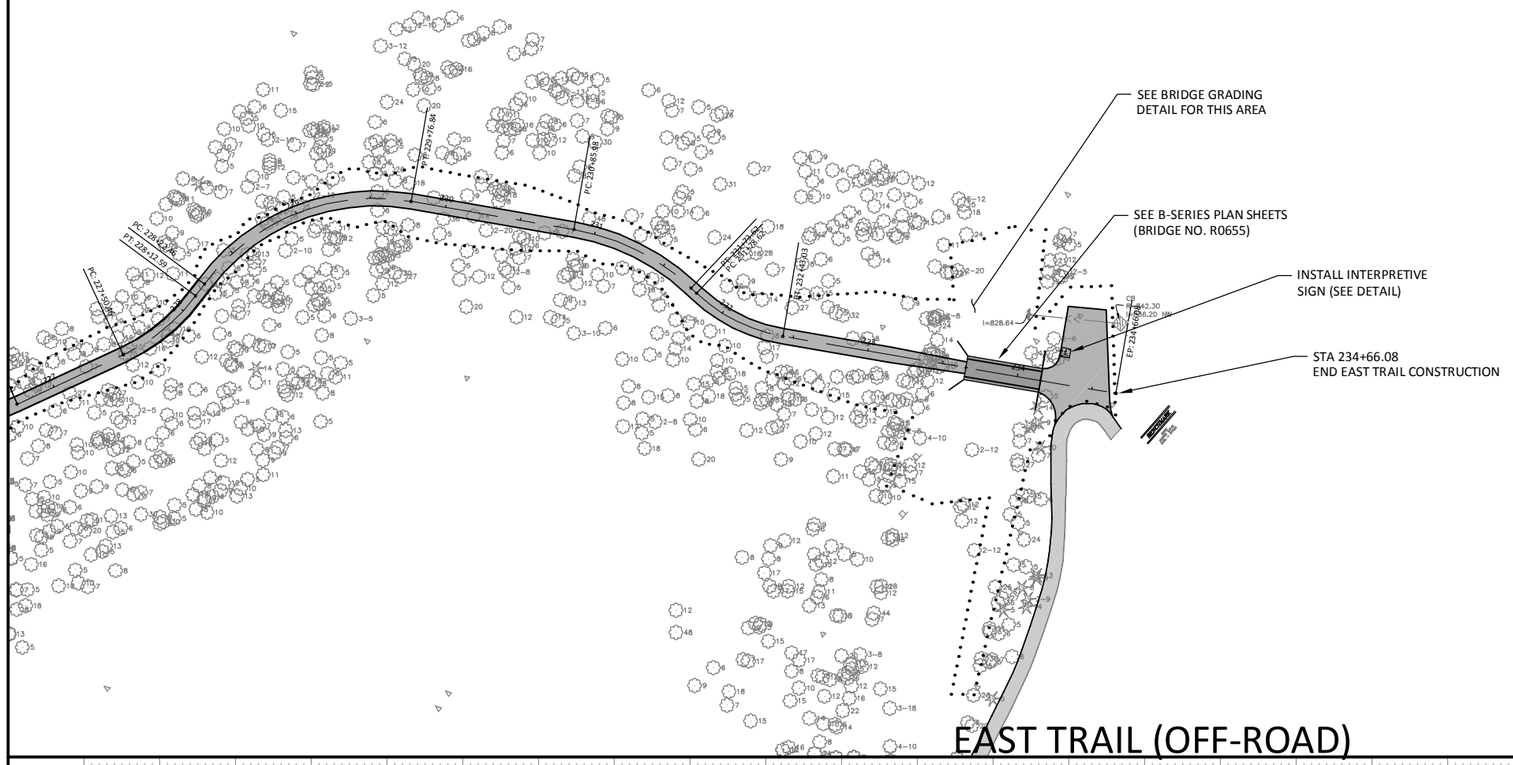
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

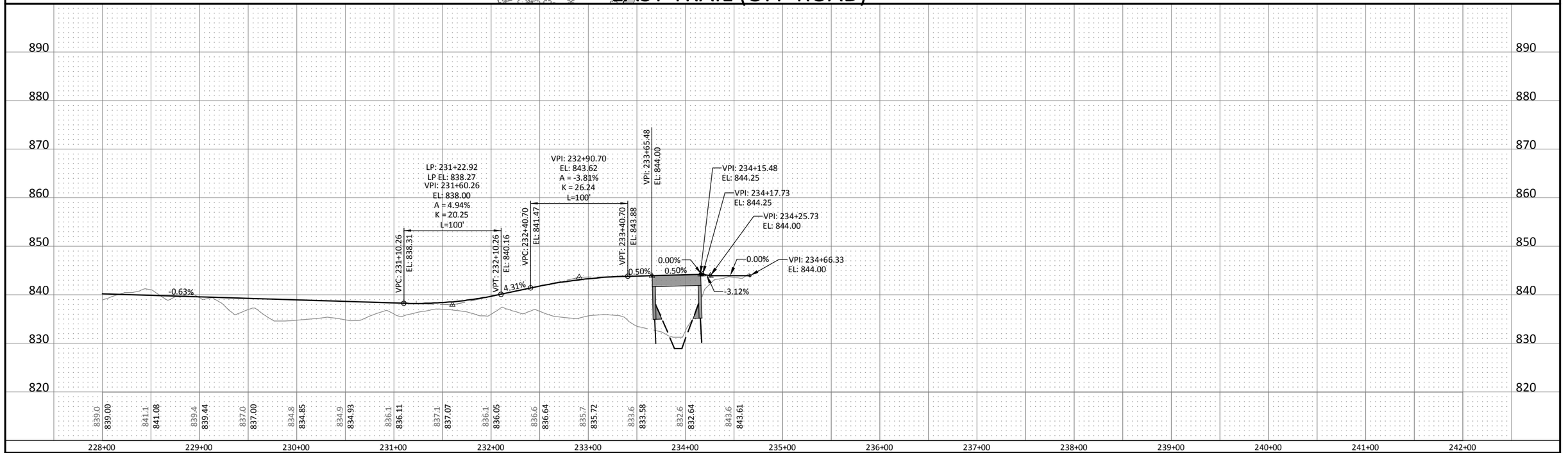
REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
EAST TRAIL (OFF-ROAD) PLAN & PROFILE
SP 103-090-003

SHEET 33 OF 53



EAST TRAIL (OFF-ROAD)



HORZ. SCALE 0 50 100 FEET
VERT. SCALE 0 10 20 FEET

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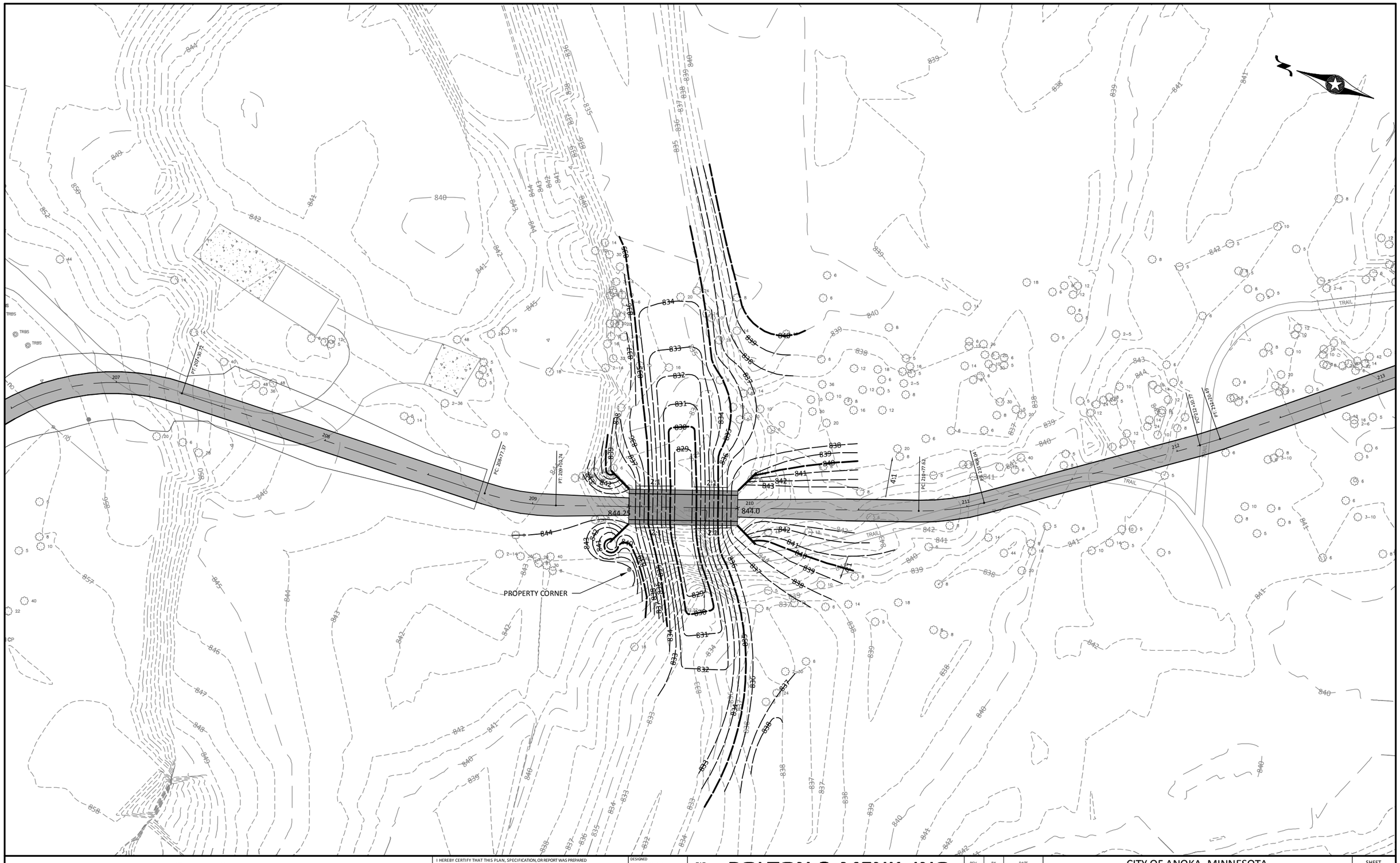
REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
EAST TRAIL (OFF-ROAD) PLAN & PROFILE
SP 103-090-003

SHEET 34 OF 53



HORZ. SCALE 0 20 40 FEET

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CHECKED KPK

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
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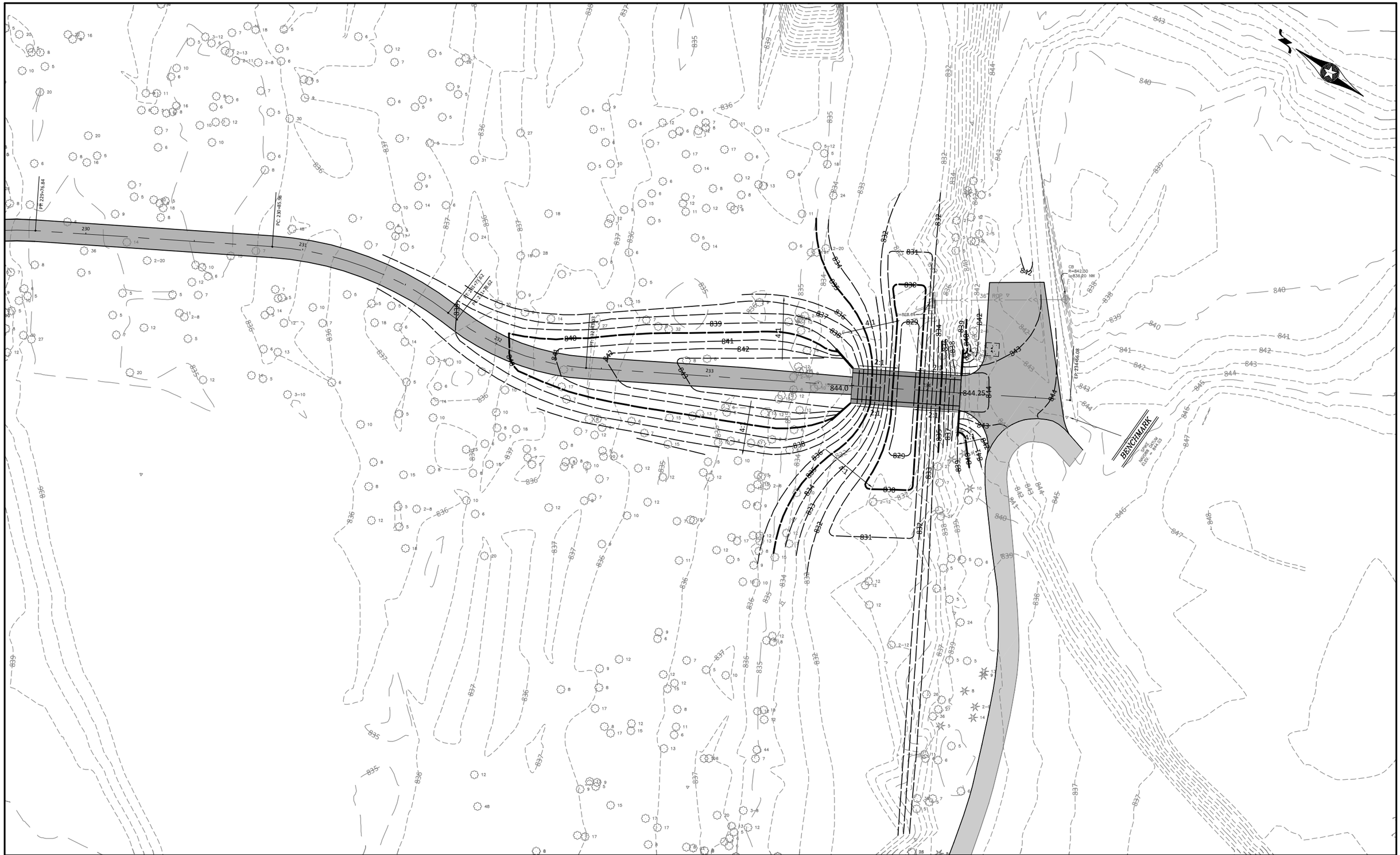
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
EAST TRAIL (OFF-ROAD) - WEST BRIDGE GRADING DETAIL
SP 103-090-003

SHEET 35 OF 53



HORZ. SCALE 0 20 40 FEET

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

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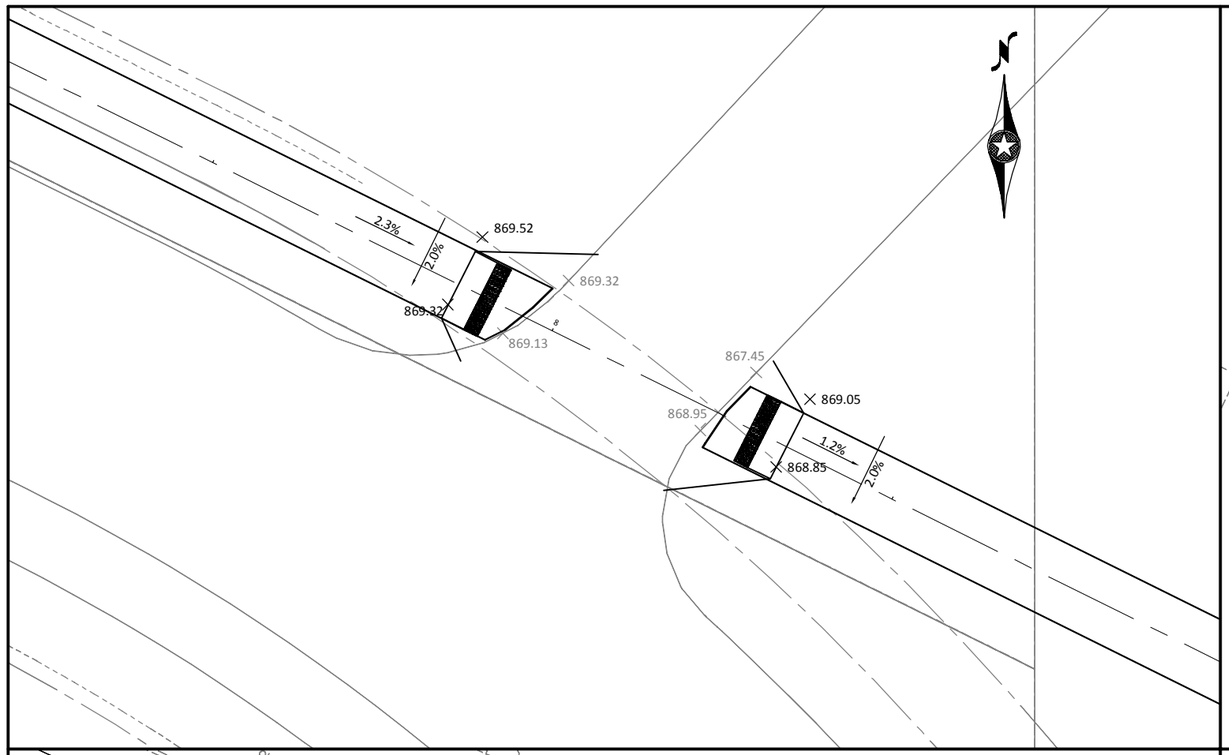
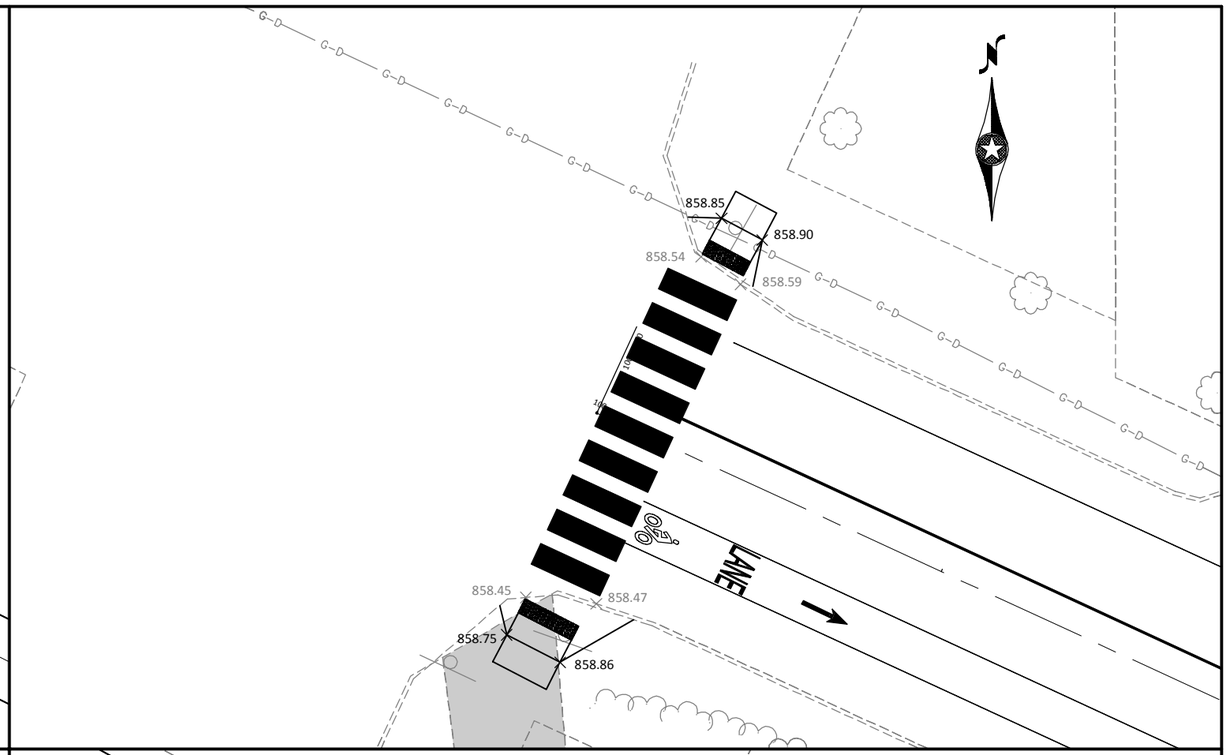
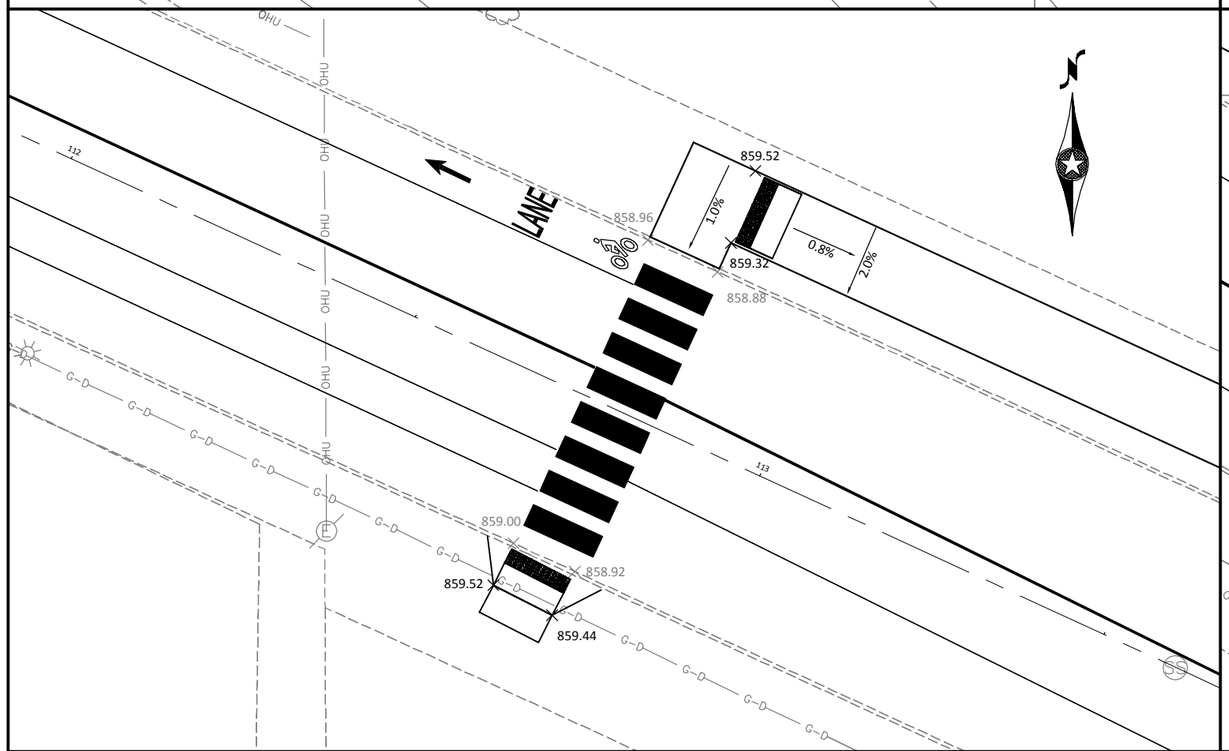
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

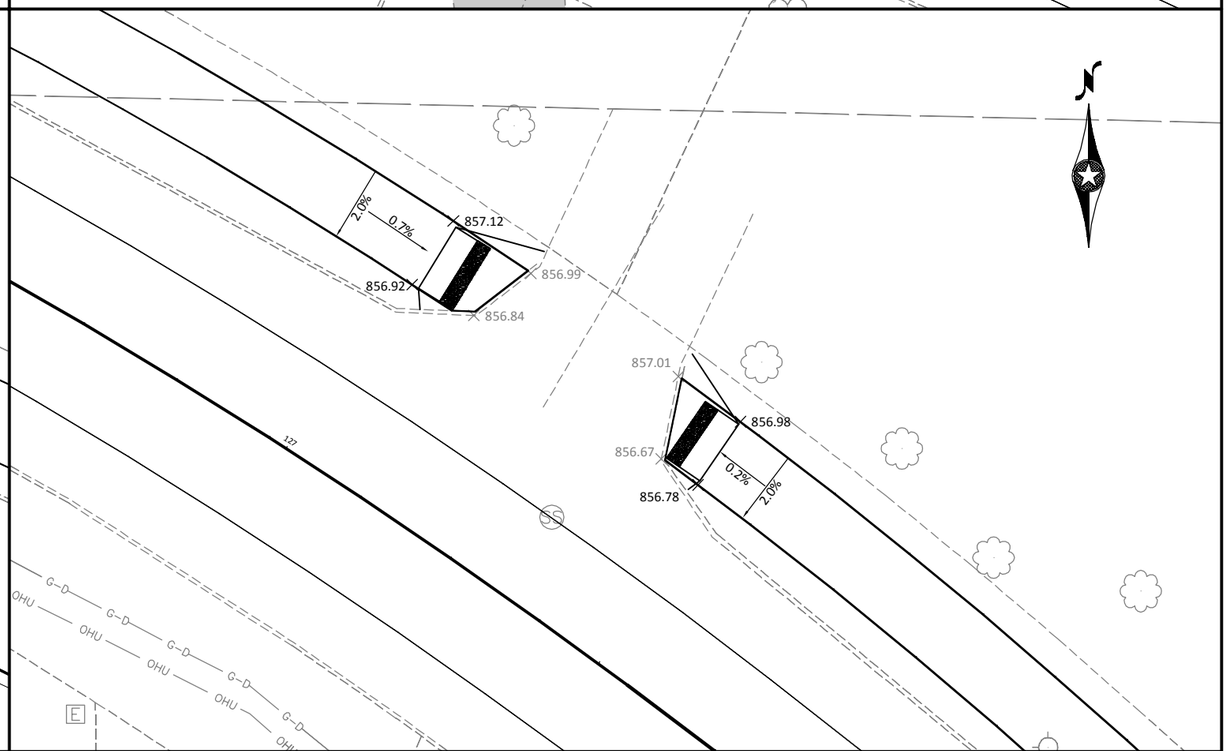
REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
EAST TRAIL (OFF-ROAD) - EAST BRIDGE GRADING DETAIL
SP 103-090-003









0 10 20
HORZ. SCALE FEET

H:\ANOK\N15104941\C3D\104941INT.dwg 6/11/2013 2:08:20 PM

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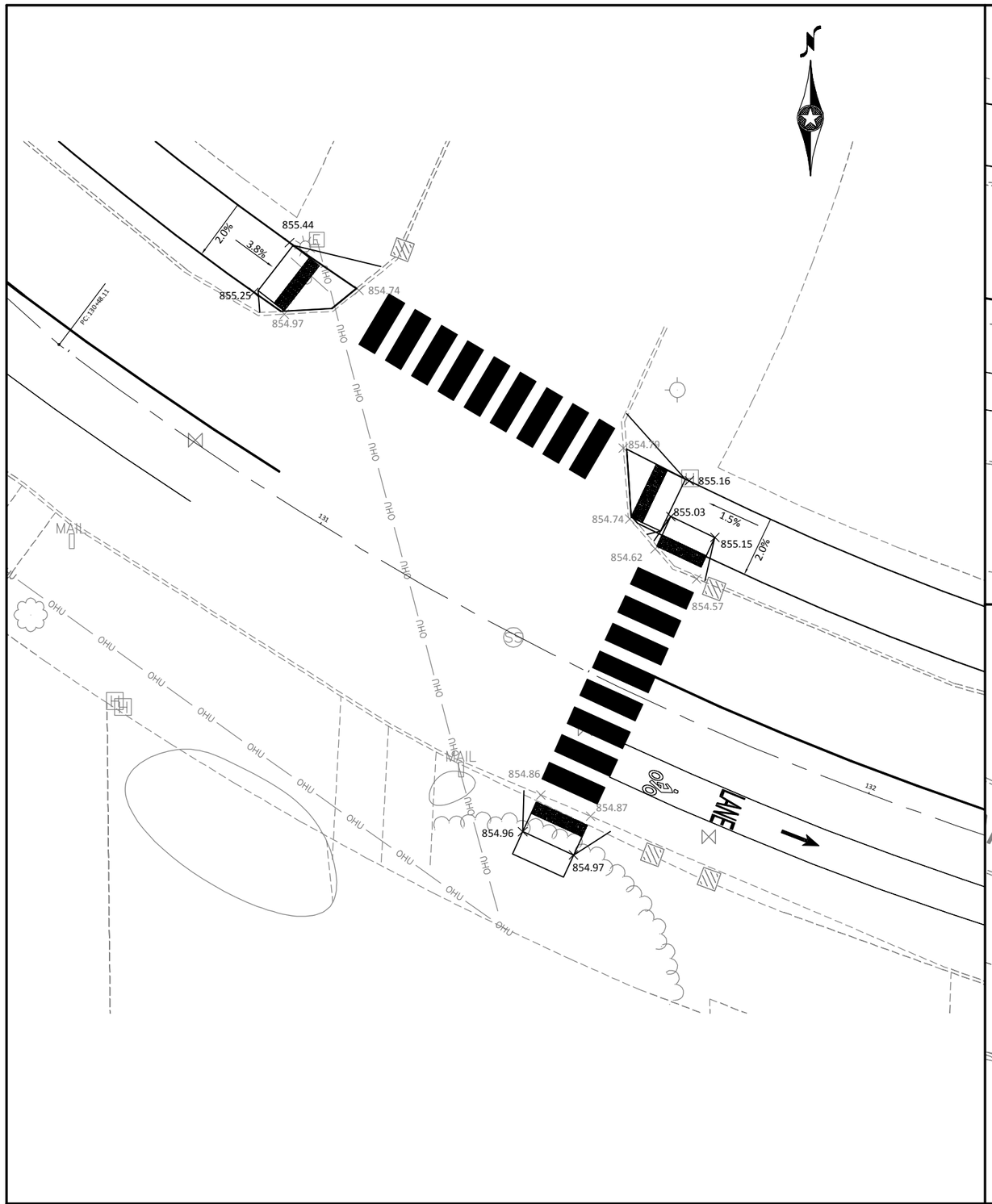
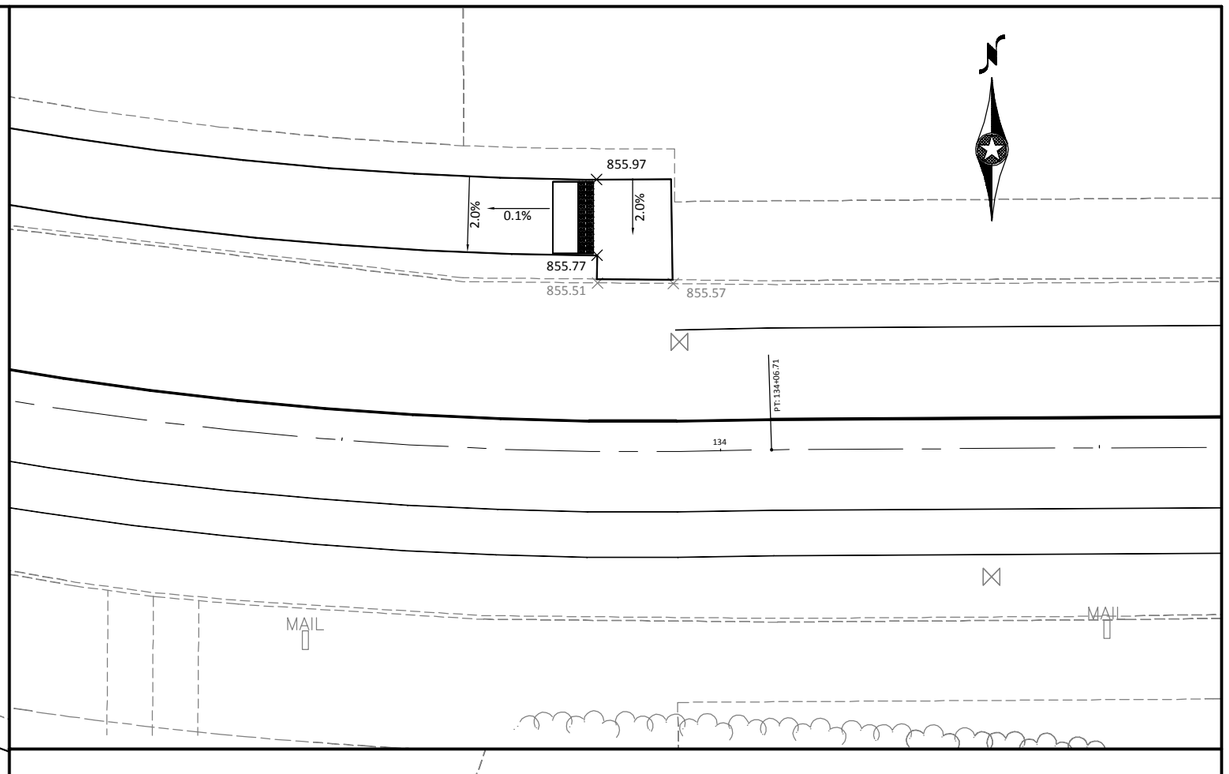
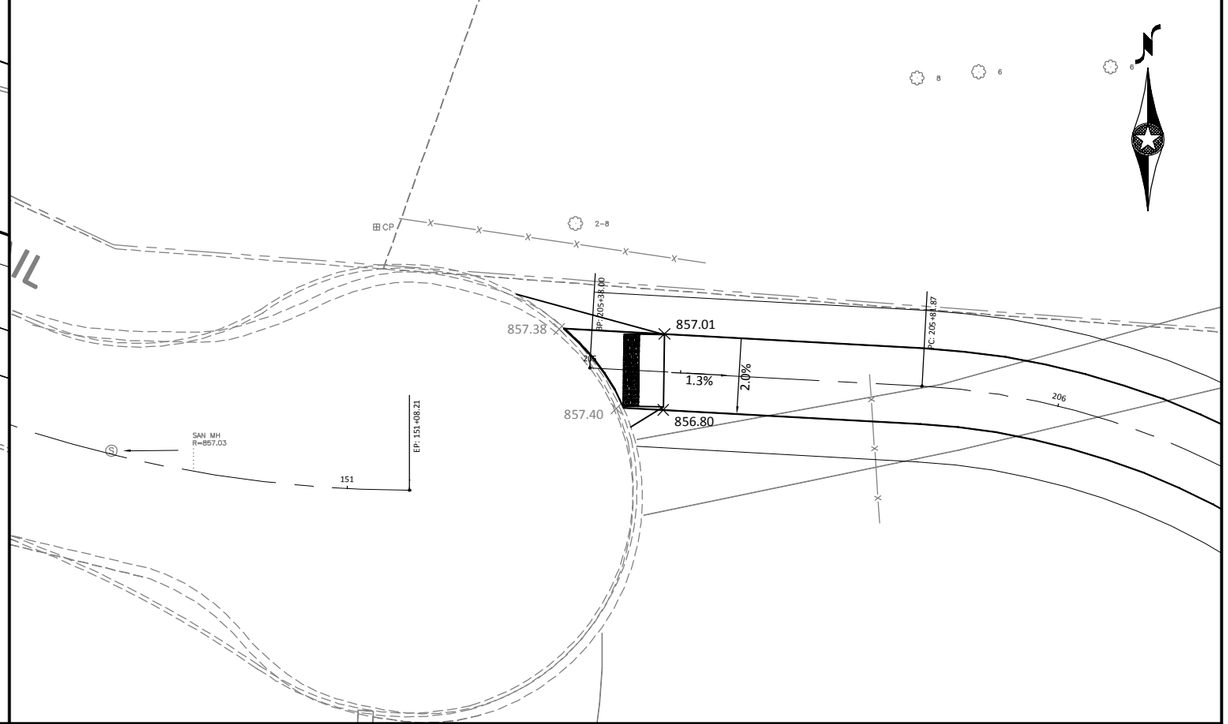
REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
PEDESTRIAN RAMP DETAIL
SP 103-090-003

SHEET 37 OF 53







HORZ. SCALE 0 10 20 FEET

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CHECKED KPK

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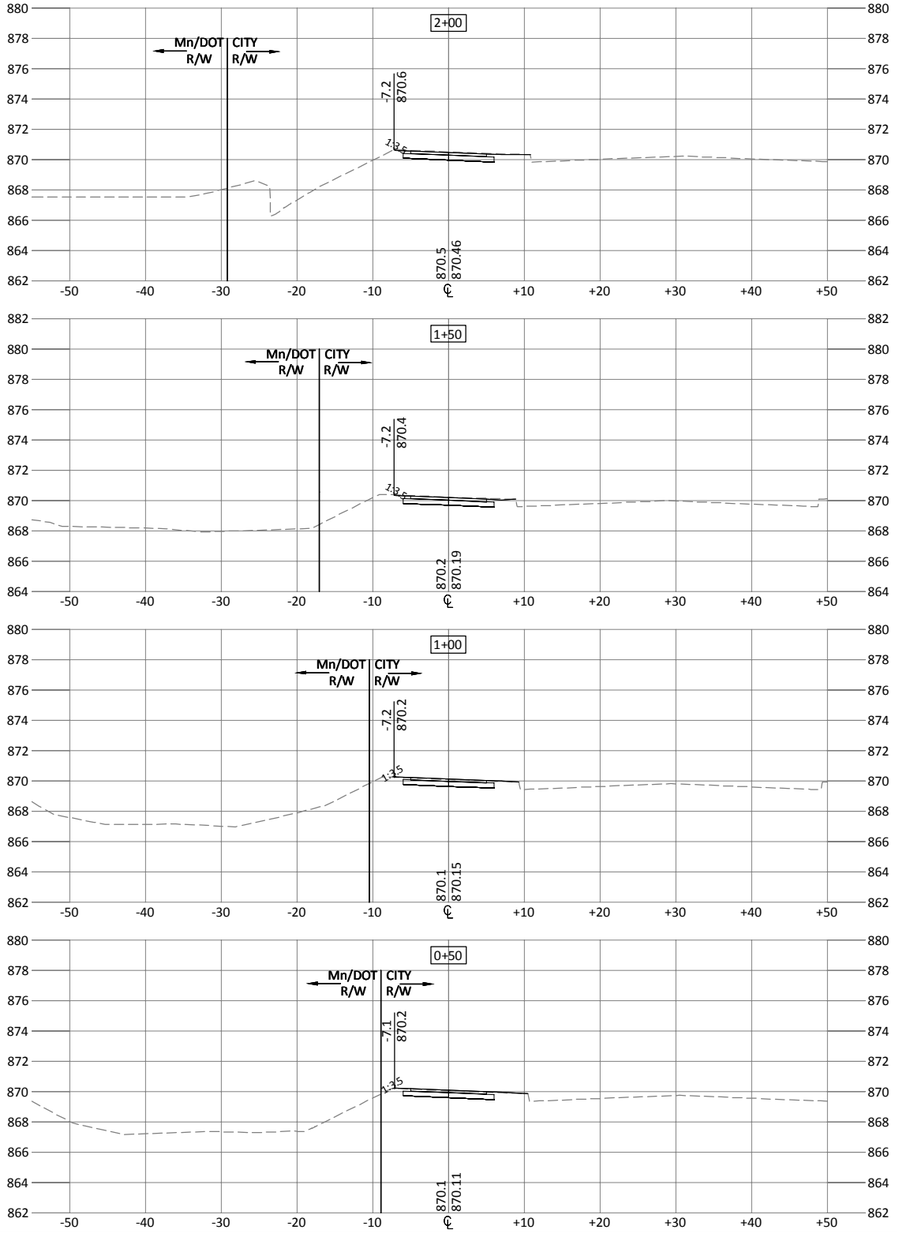
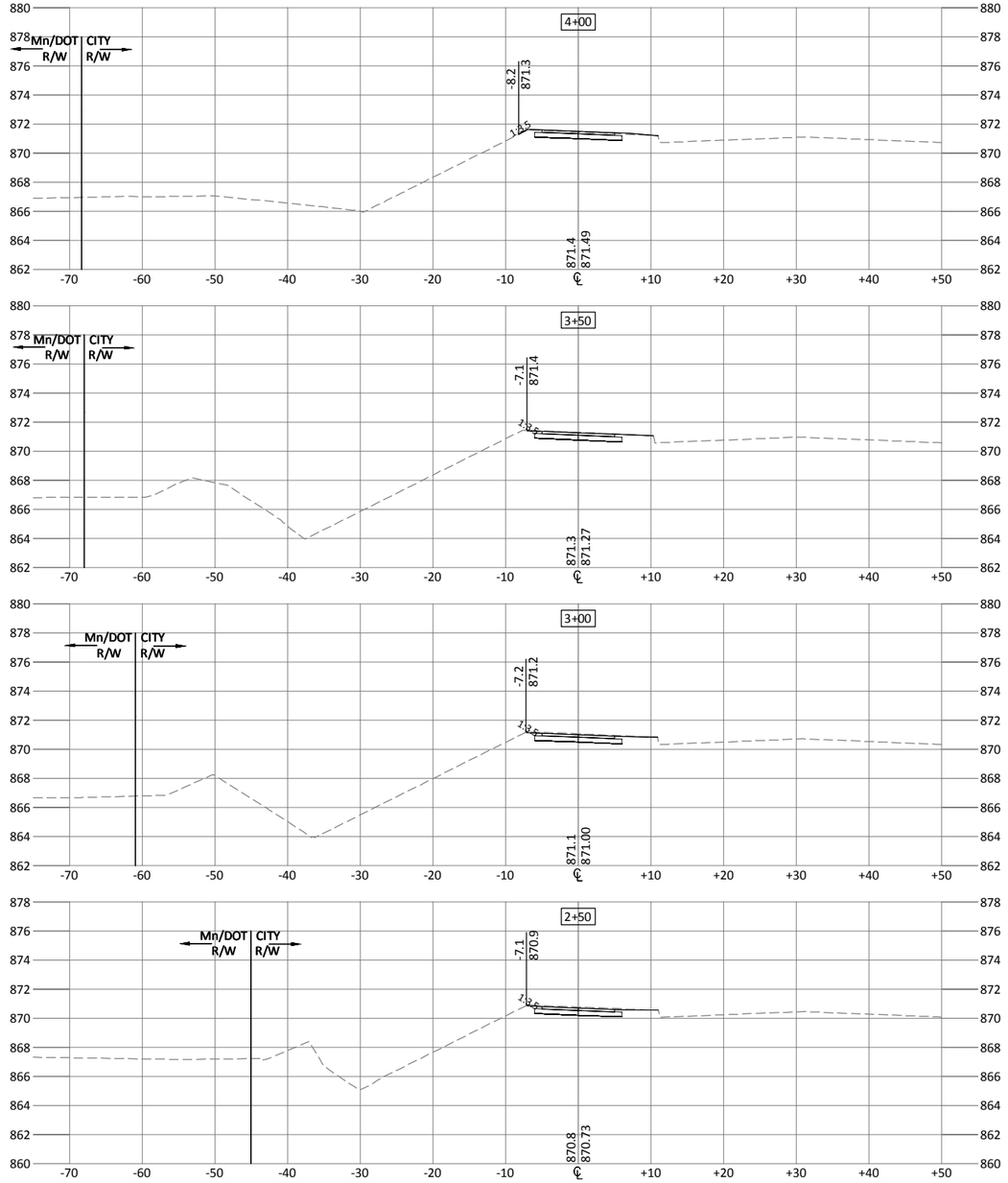
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
PEDESTRIAN RAMP DETAIL
SP 103-090-003

SHEET 38 OF 53





HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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DRAWN AK
CHECKED KPK

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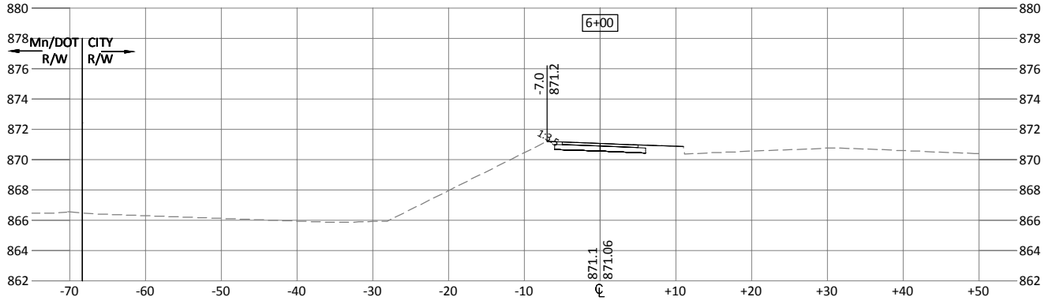
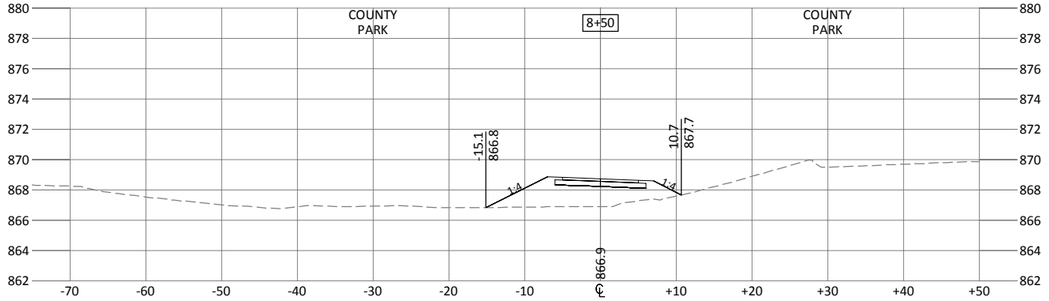
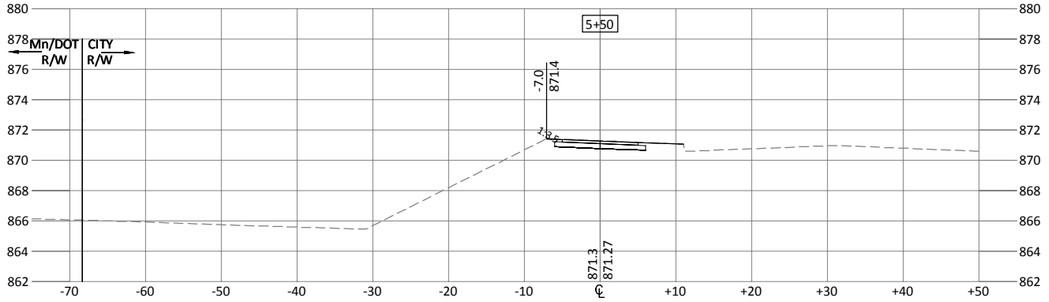
ROCHESTER, MN SPENCER, IA

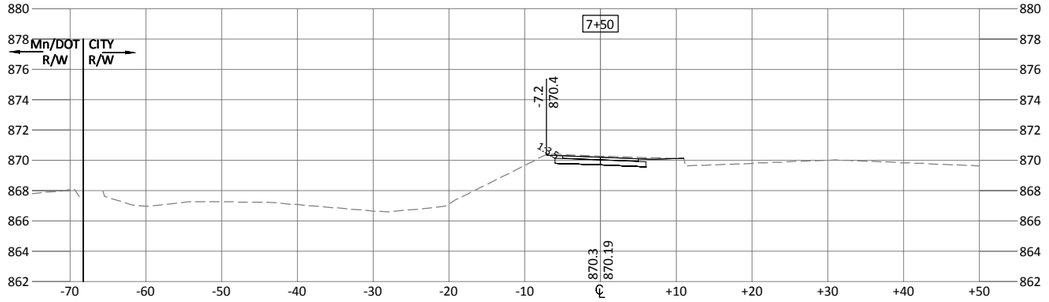
REV.	BY	DATE

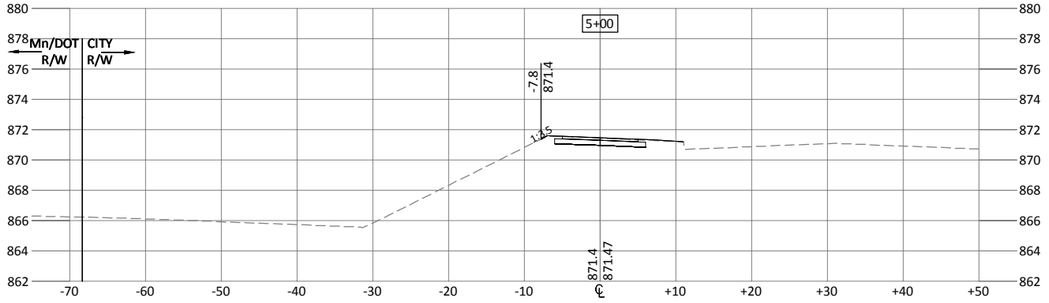
CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
WEST TRAIL (OFF-ROAD) CROSS SECTIONS
SP 103-090-003

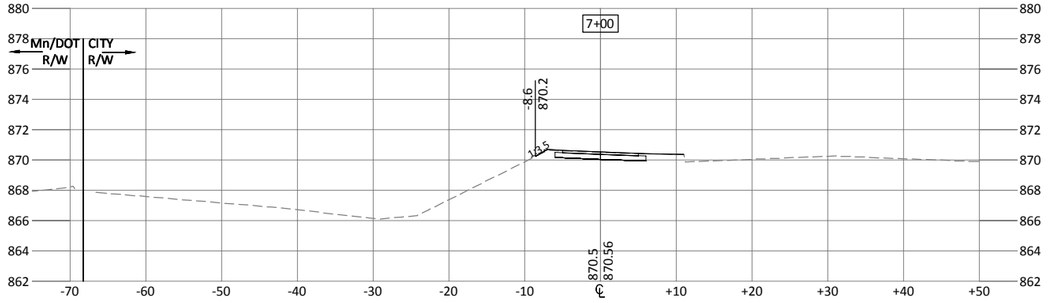


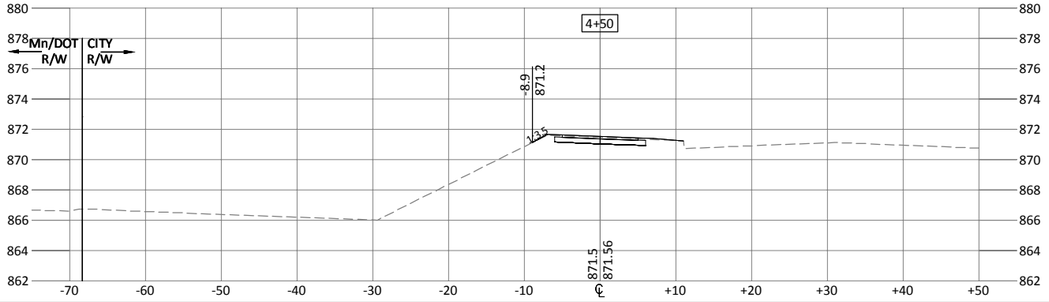


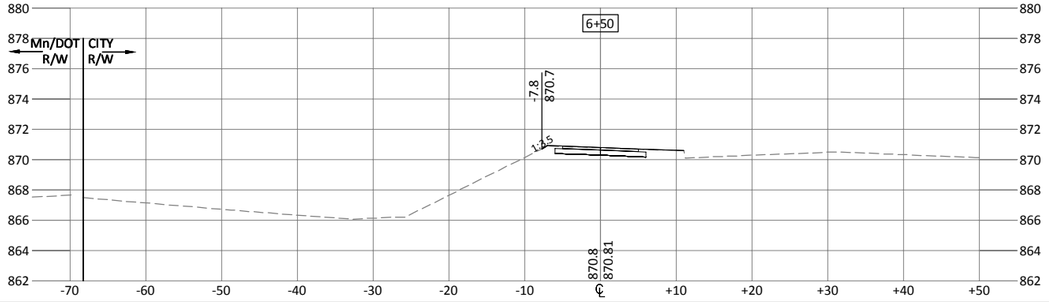












HORZ. 0 10 20 SCALE FEET

VERT. 0 5 10 SCALE FEET

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KEVIN P. KIELB, P.E.

LIC. NO. 23211 DATE 3/25/2013

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DRAWN AK

CHECKED KPK

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CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

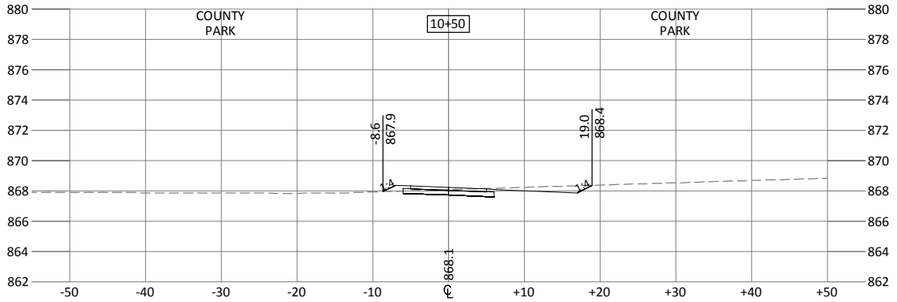
REV.	BY	DATE

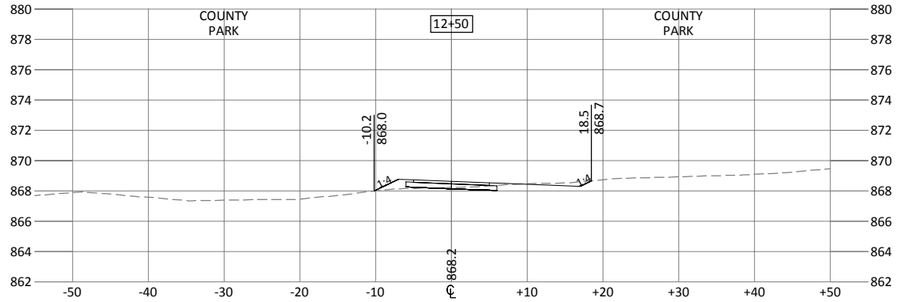
CITY OF ANOKA, MINNESOTA

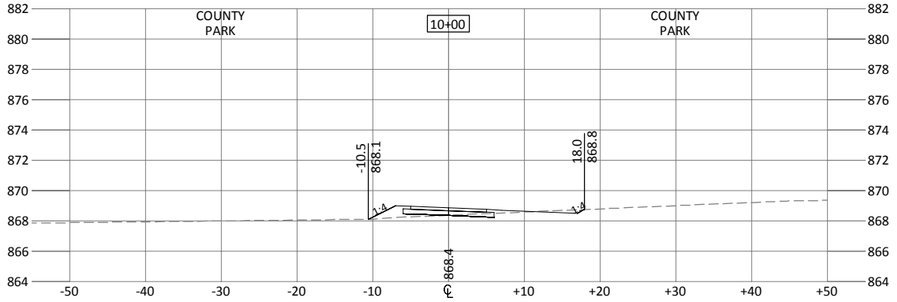
MISSISSIPPI RIVER TRAIL

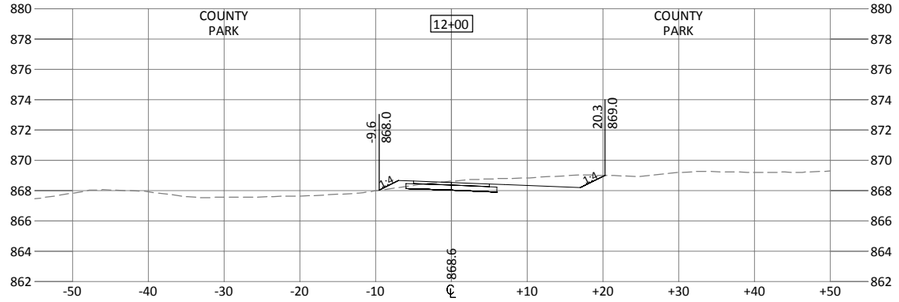
WEST TRAIL (OFF-ROAD) CROSS SECTIONS

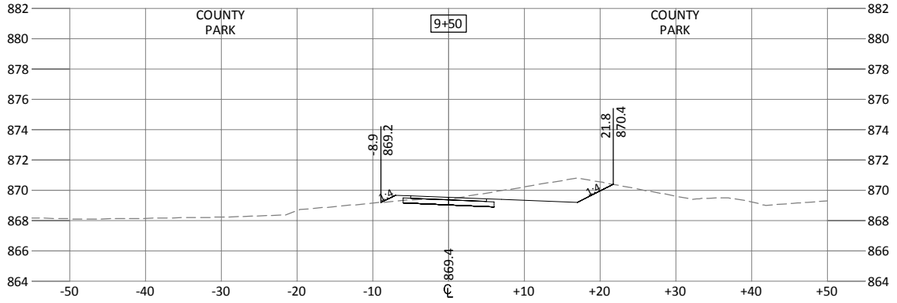
SP 103-090-003

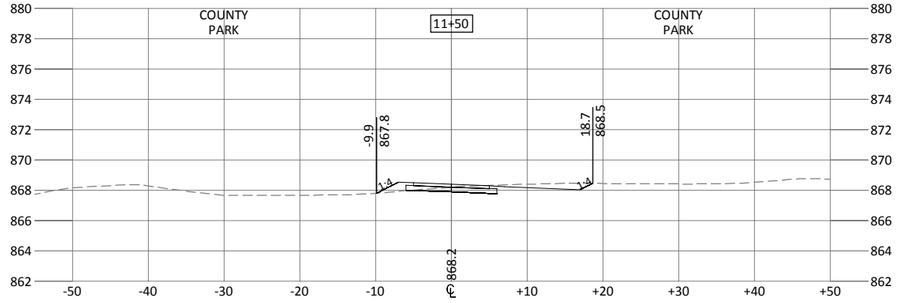


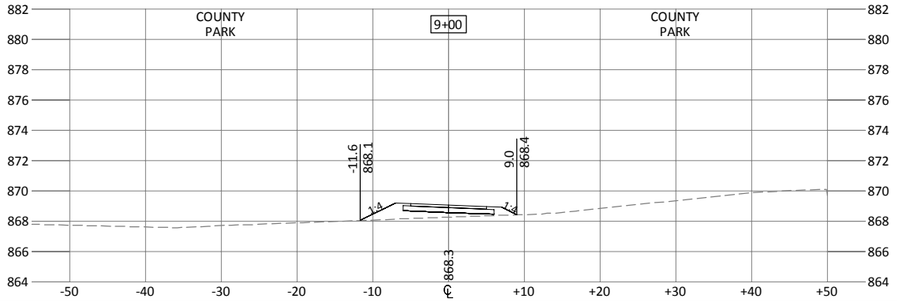


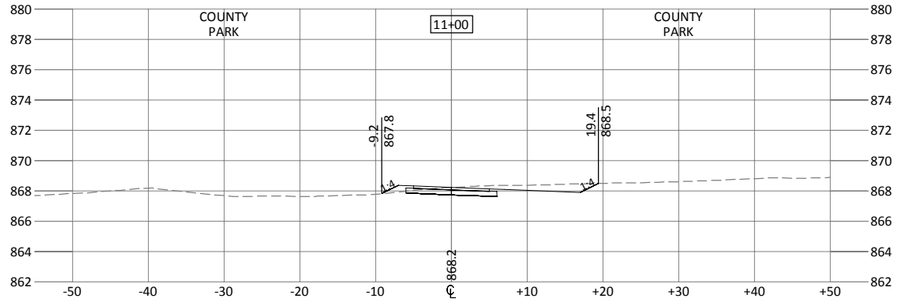












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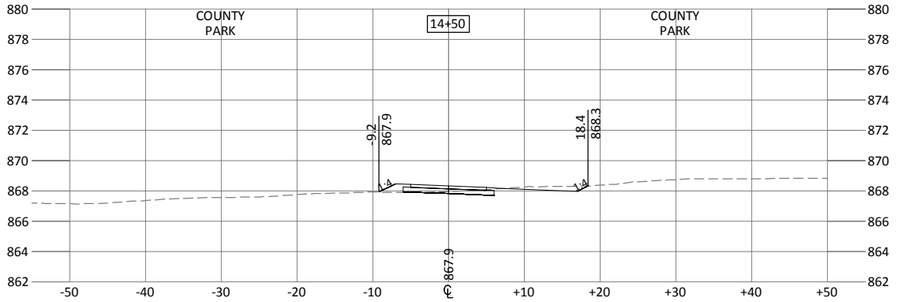
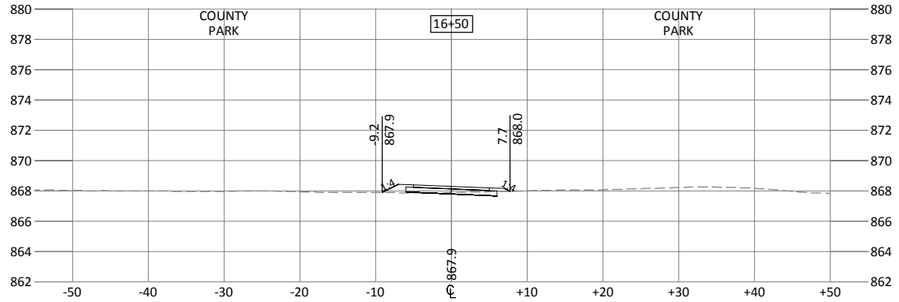
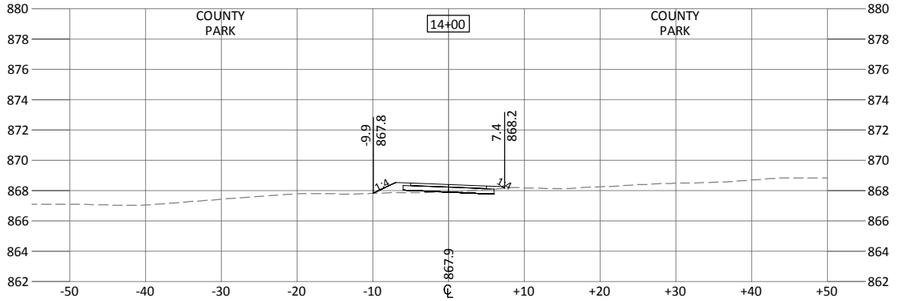
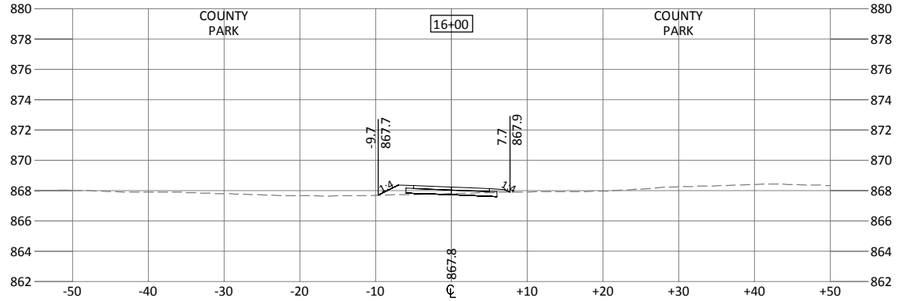
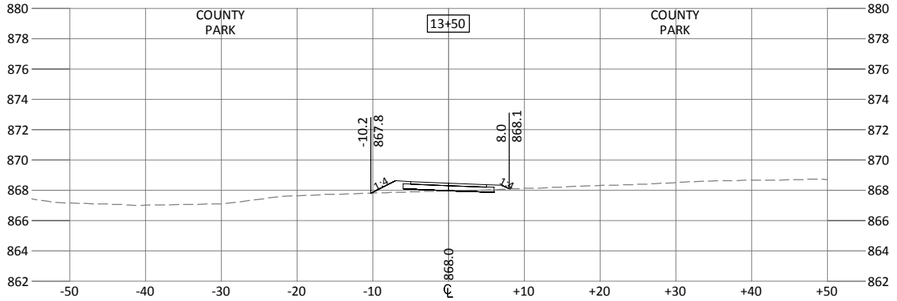
CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
WEST TRAIL (OFF-ROAD) CROSS SECTIONS
SP 103-090-003

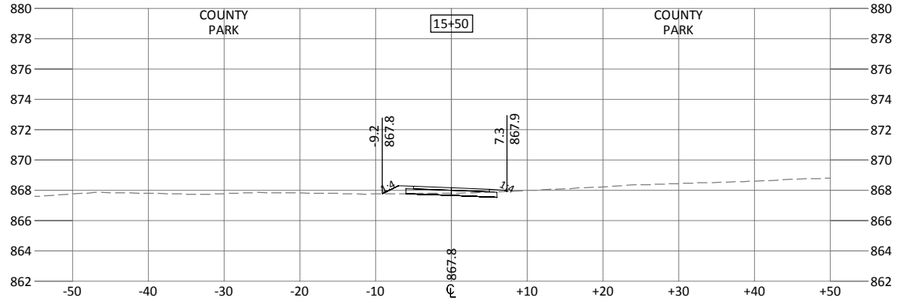


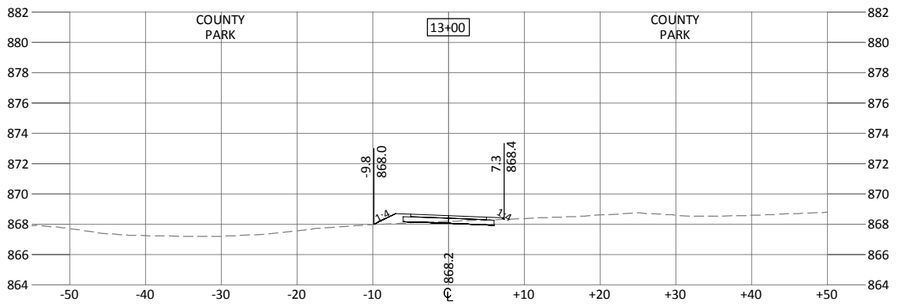


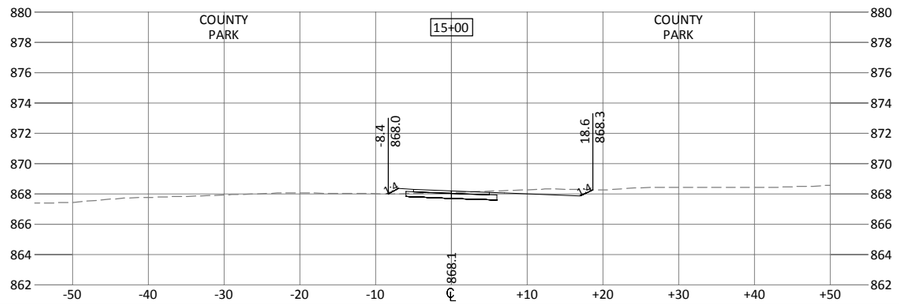












HORZ. 0 10 20 SCALE FEET

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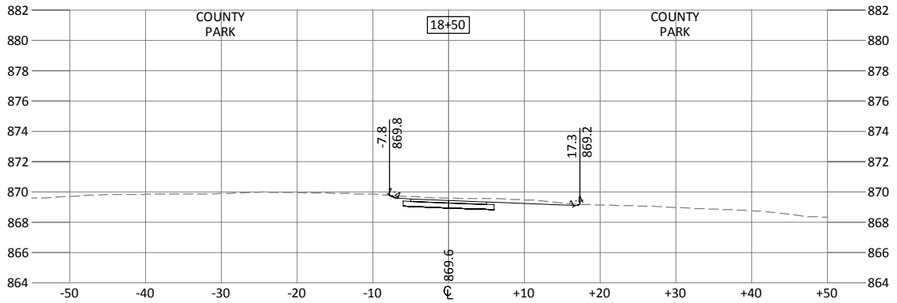
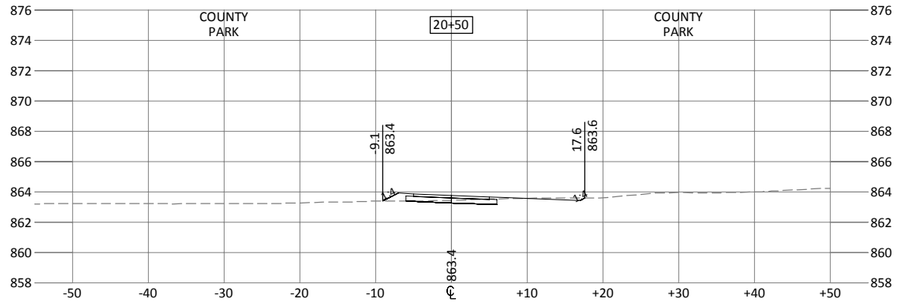
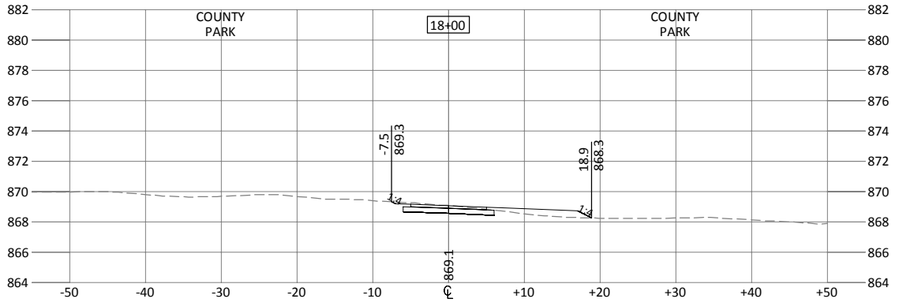
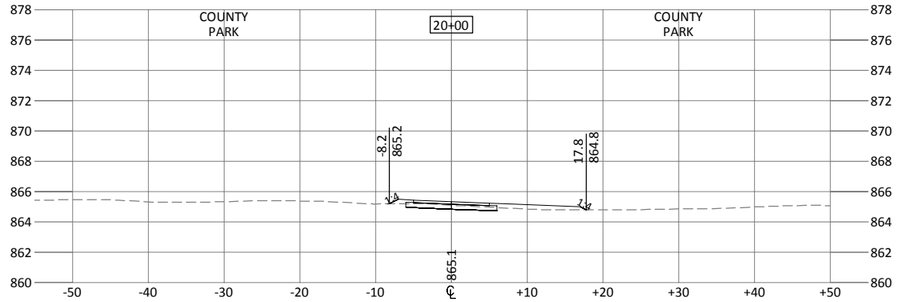
REV.	BY	DATE

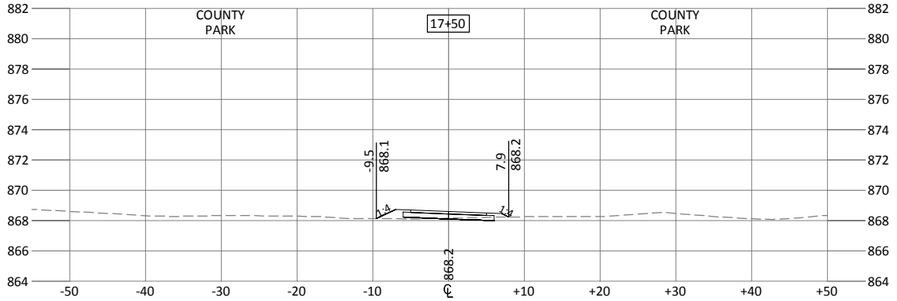
CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
WEST TRAIL (OFF-ROAD) CROSS SECTIONS
SP 103-090-003

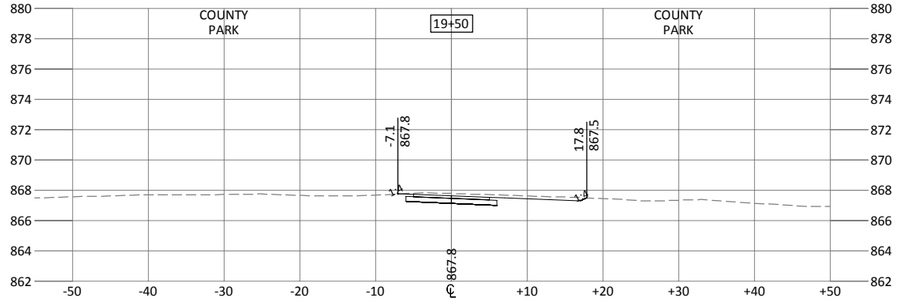


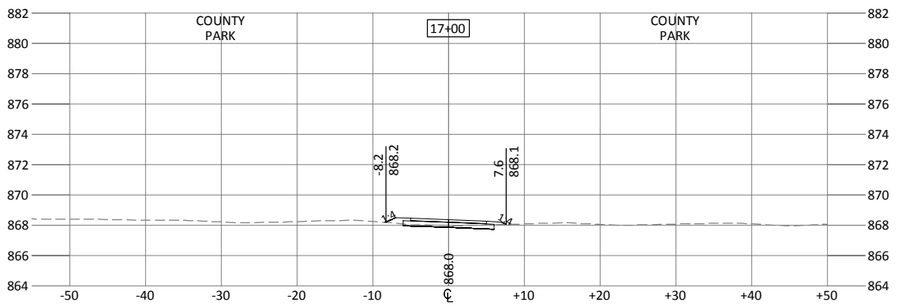


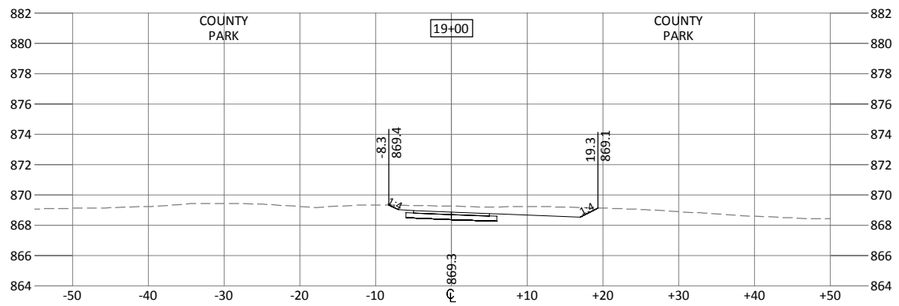












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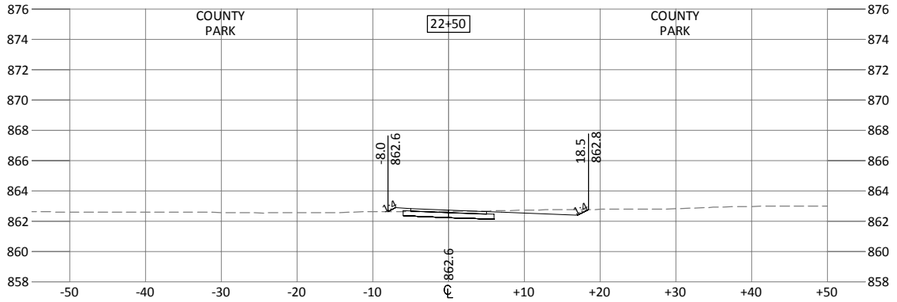
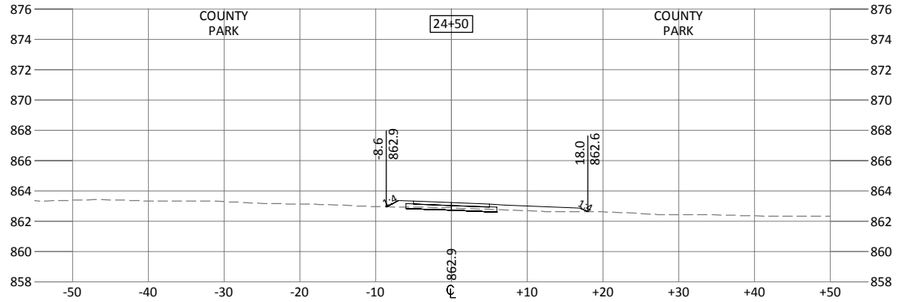
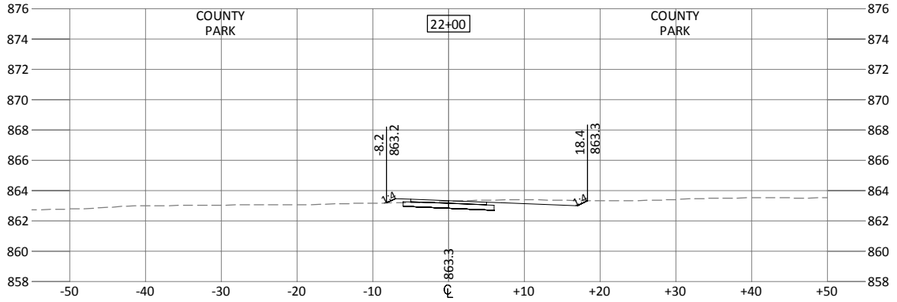
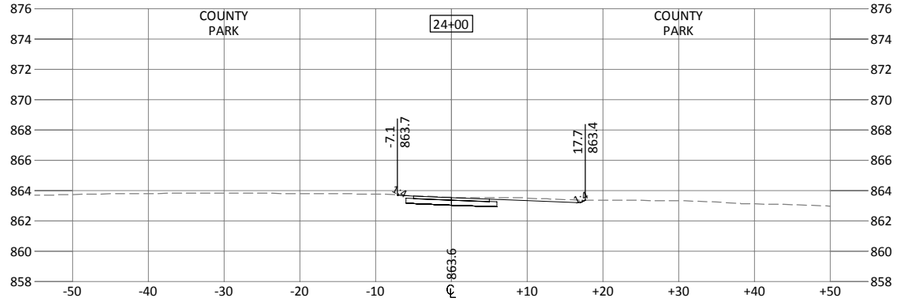
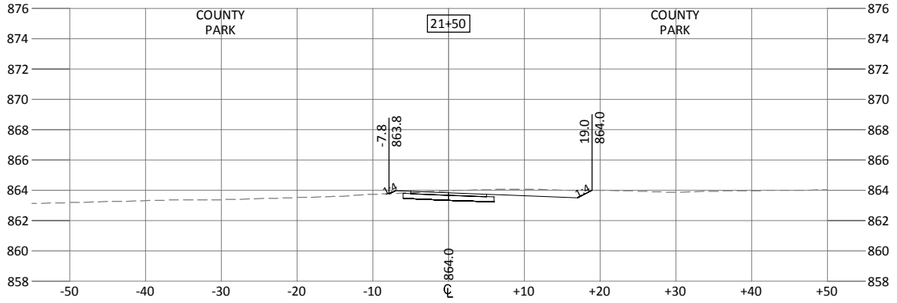
CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
WEST TRAIL (OFF-ROAD) CROSS SECTIONS
SP 103-090-003

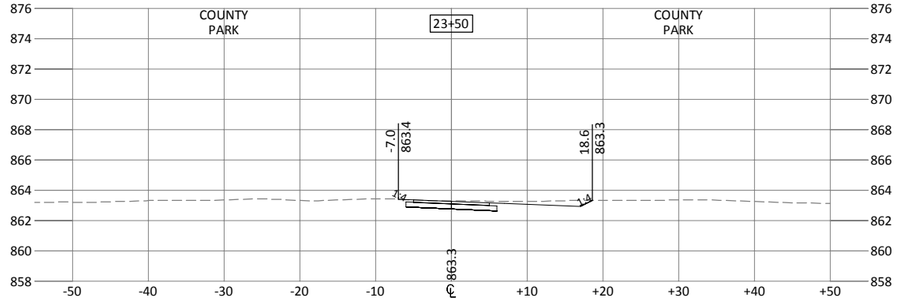


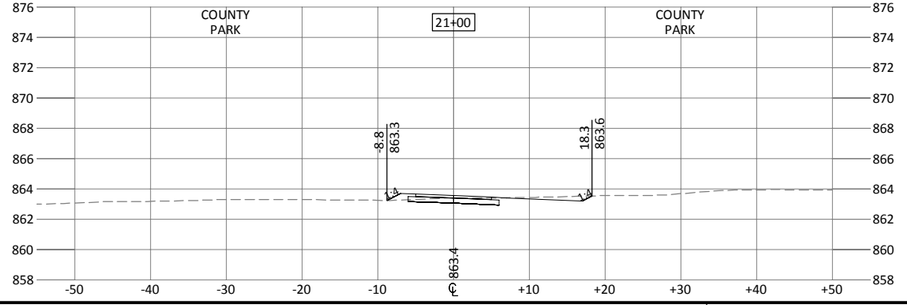


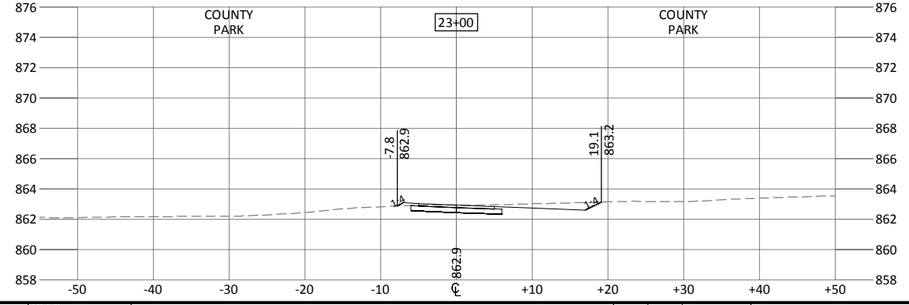












HORZ. SCALE 0 10 20 FEET

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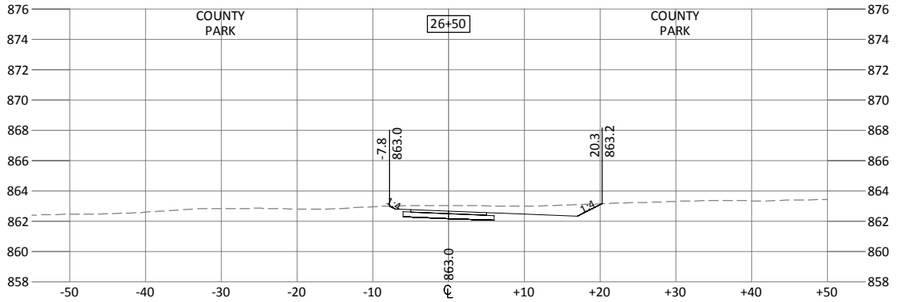
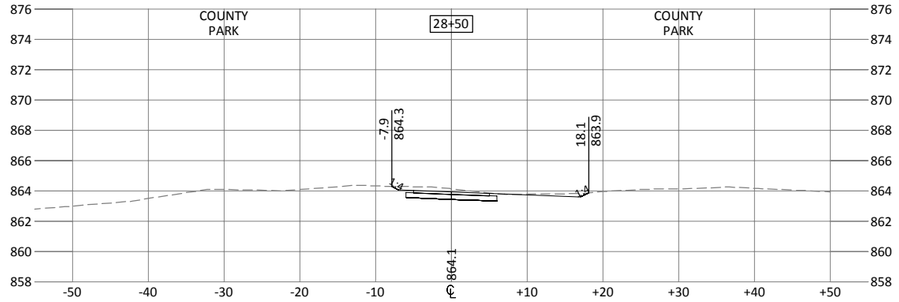
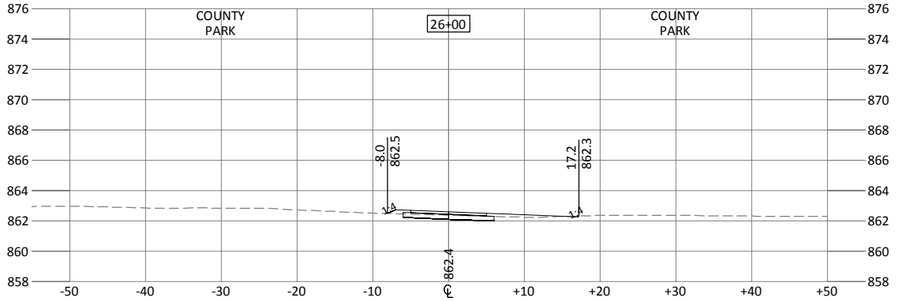
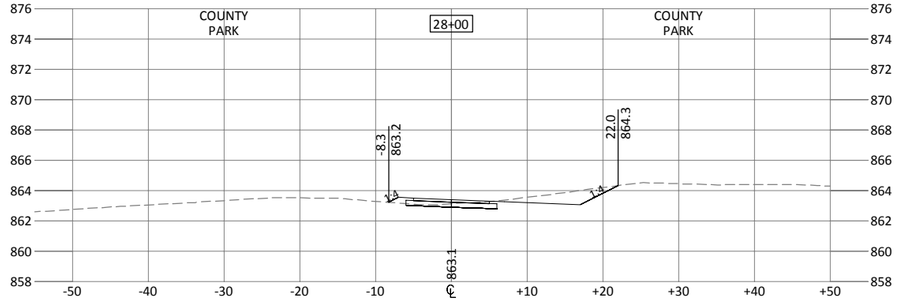
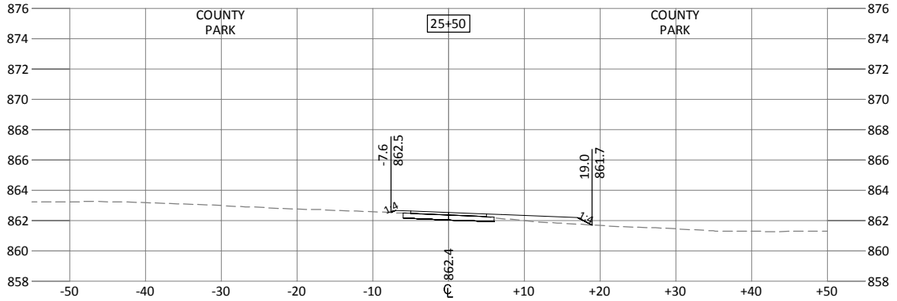
WEST TRAIL (OFF-ROAD) CROSS SECTIONS
SP 103-090-003

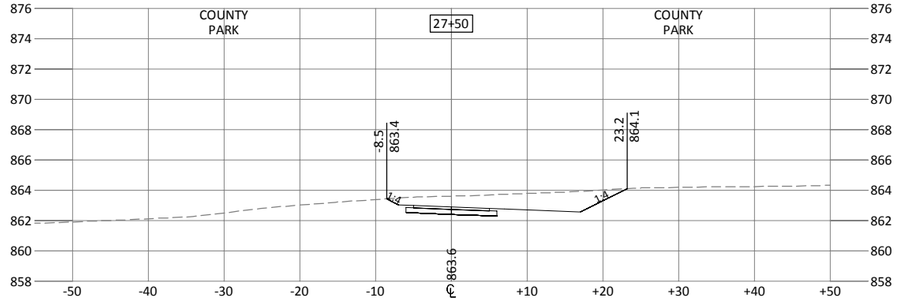


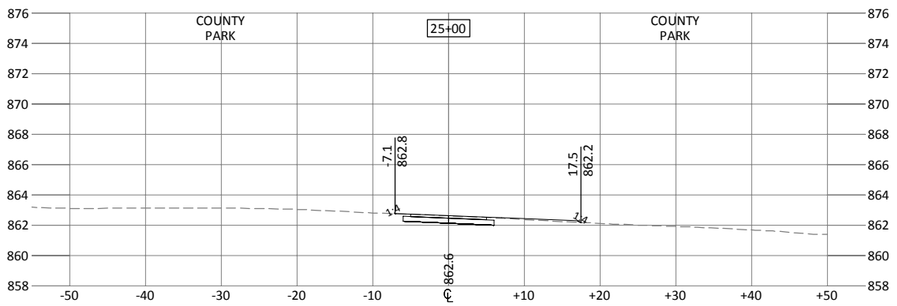


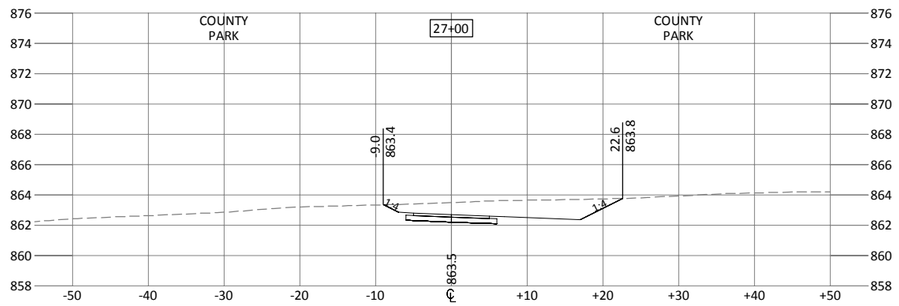












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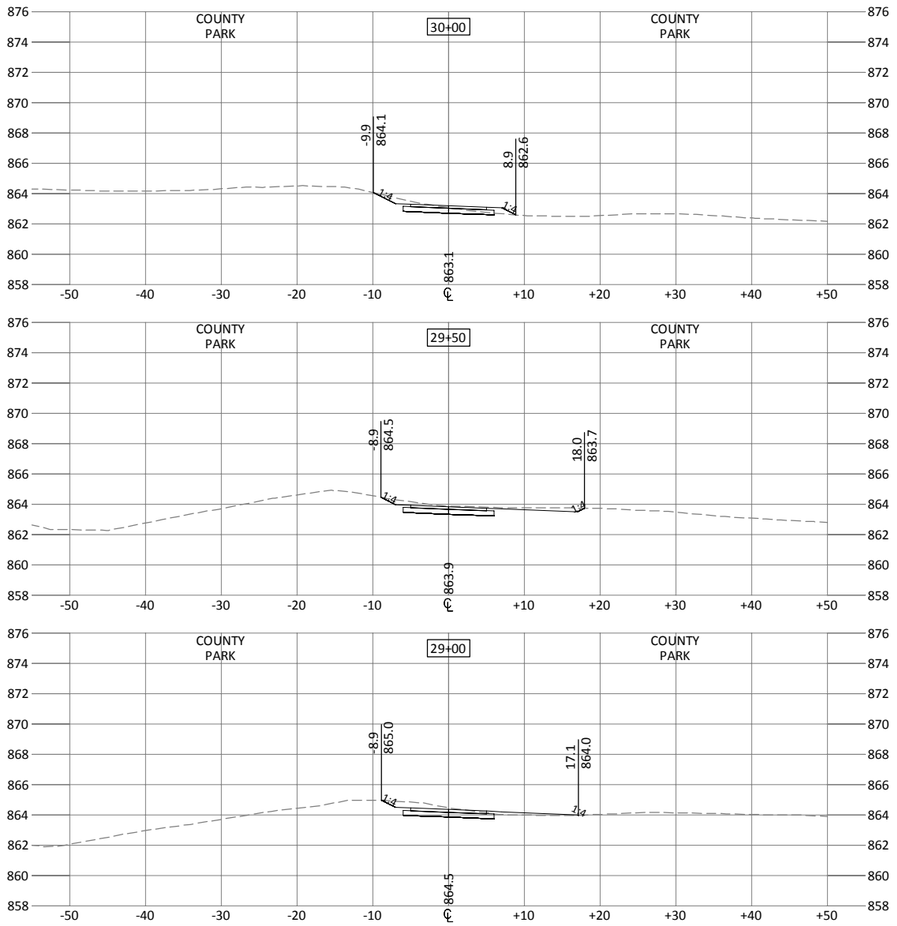
WEST TRAIL (OFF-ROAD) CROSS SECTIONS
SP 103-090-003



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VERT. SCALE 0 5 10 FEET

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KEVIN P. KIELB, P.E.
LIC. NO. 23211 DATE 3/25/2013

DESIGNED KPK/AK
DRAWN AK
CHECKED KPK

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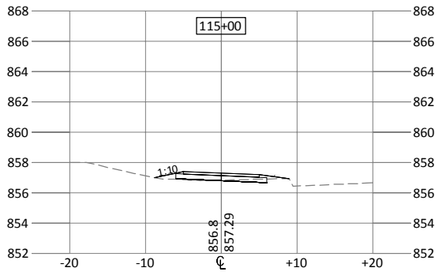
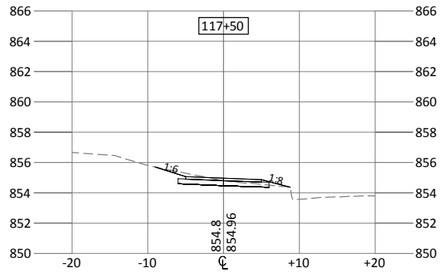
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN WILLMAR, MN BURNSVILLE, MN
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

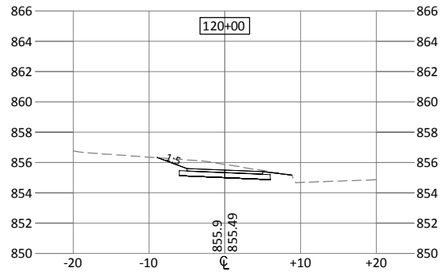
REV.	BY	DATE

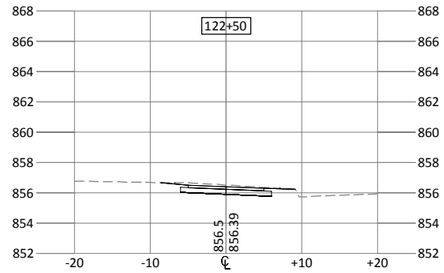
CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
WEST TRAIL (OFF-ROAD) CROSS SECTIONS
SP 103-090-003

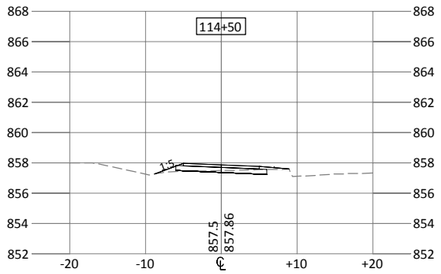
SHEET 46 OF 53

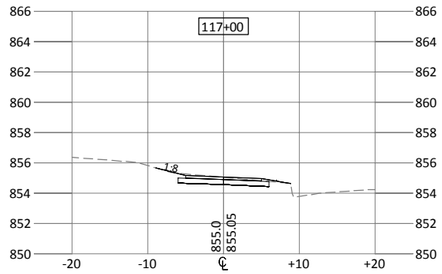


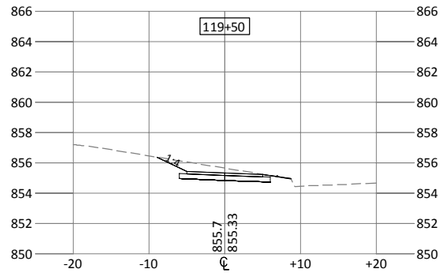


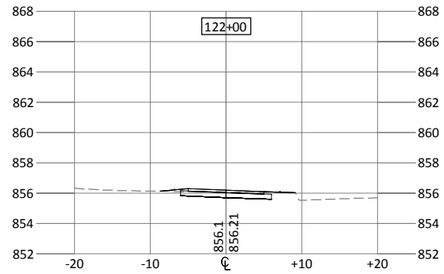


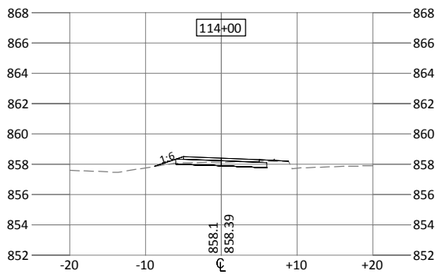


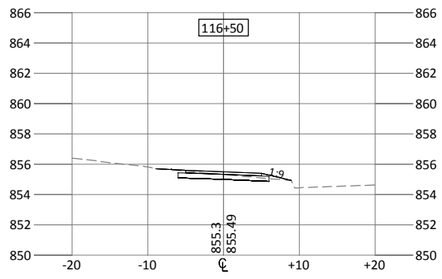


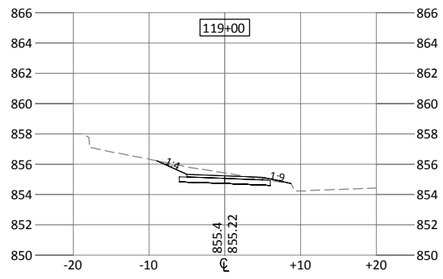


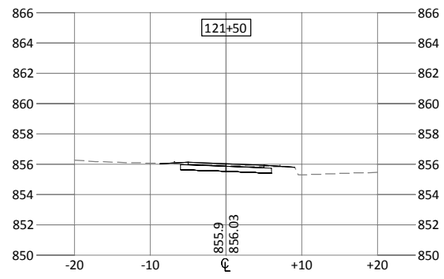


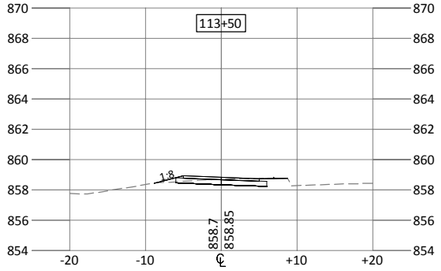


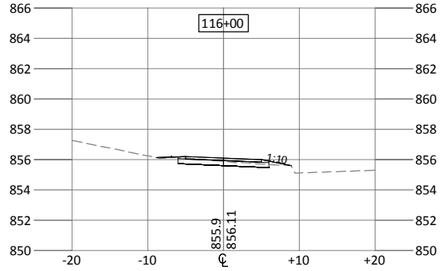


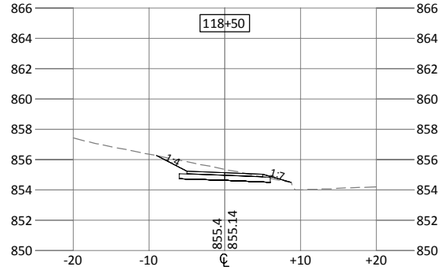


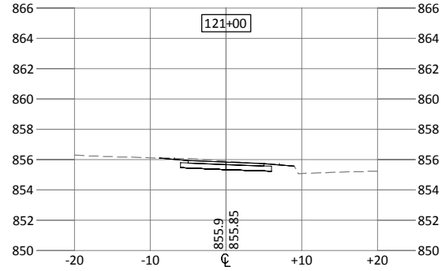


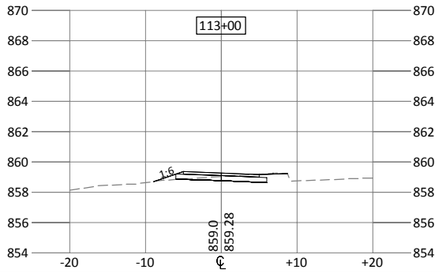


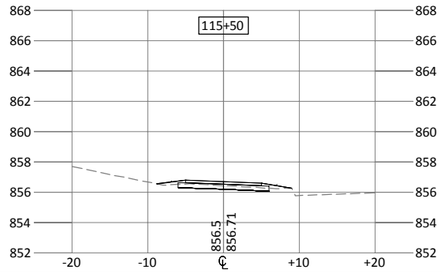


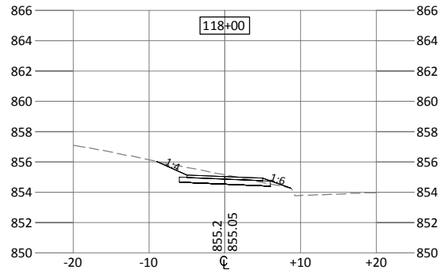


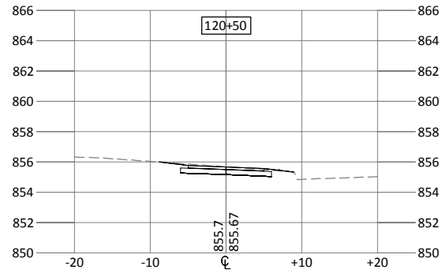












HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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REV.	BY	DATE

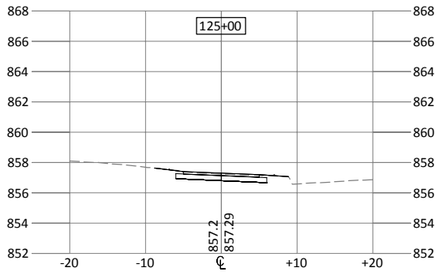
CITY OF ANOKA, MINNESOTA

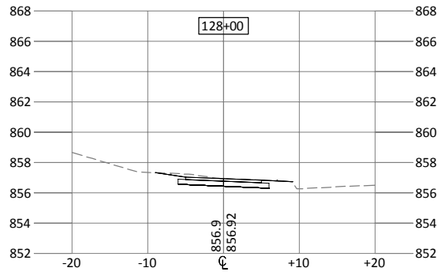
MISSISSIPPI RIVER TRAIL

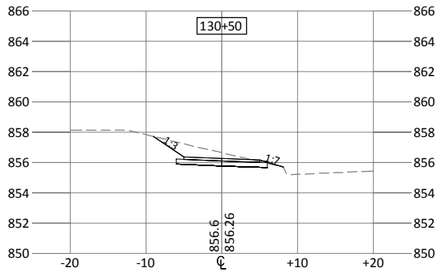
CENTRAL TRAIL (OFF-ROAD) CROSS SECTIONS

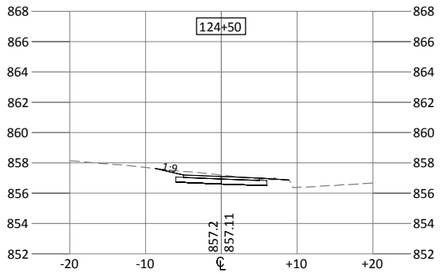
SP 103-090-003

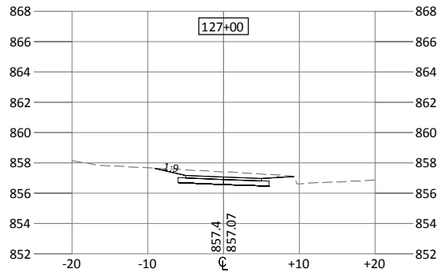
SHEET 47 OF 53

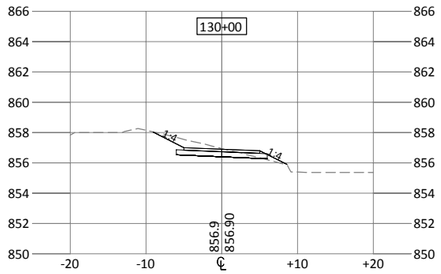


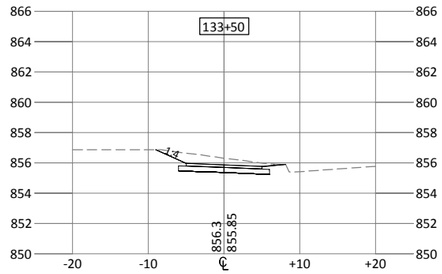


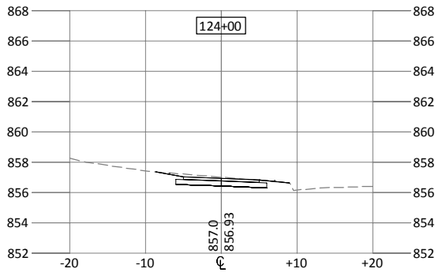


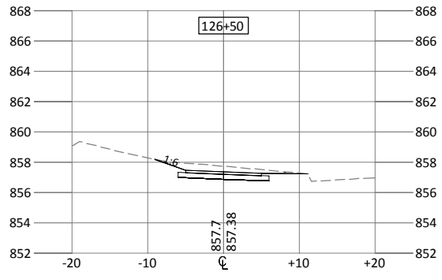


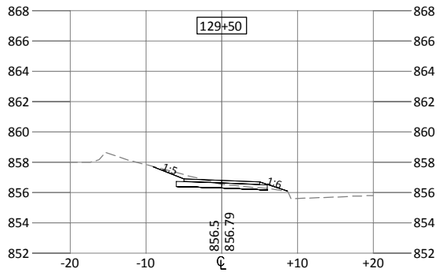


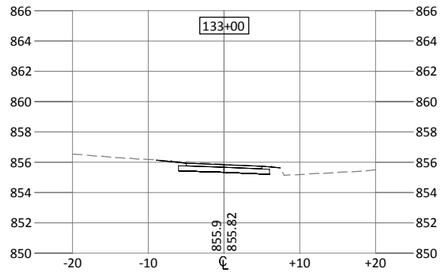


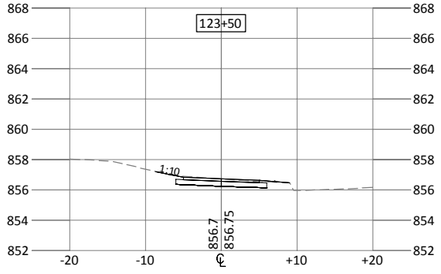


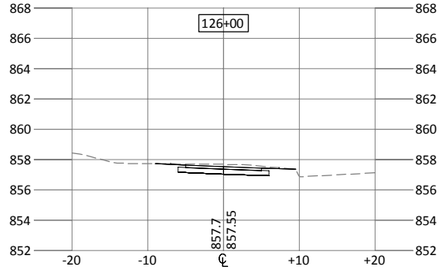


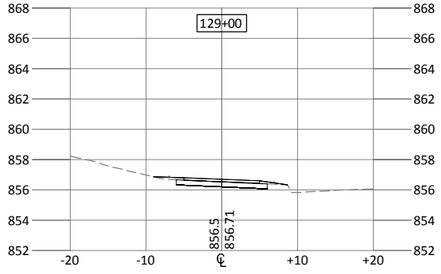


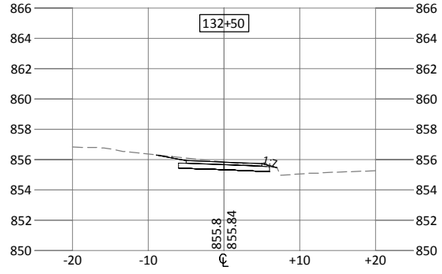


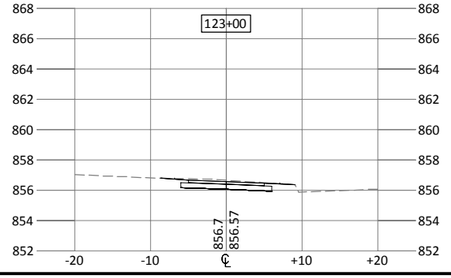


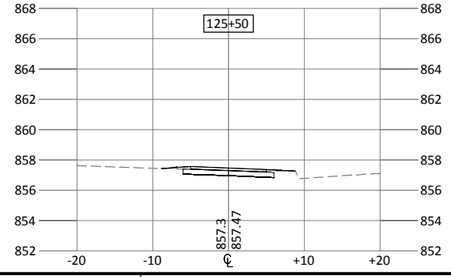


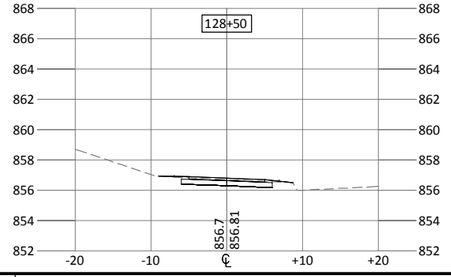


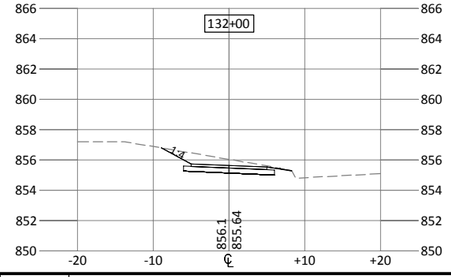












HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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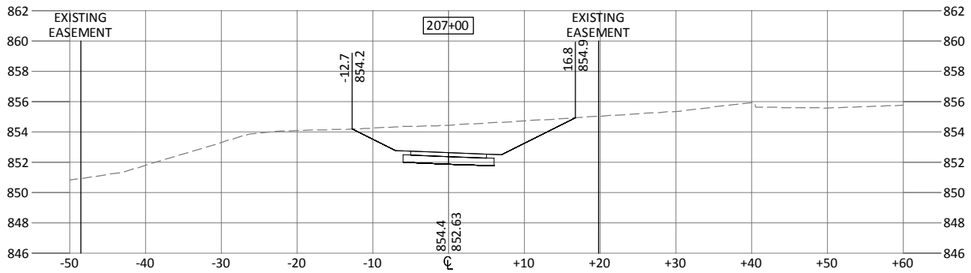
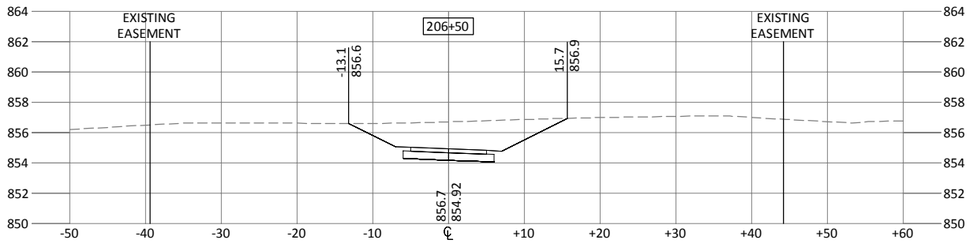
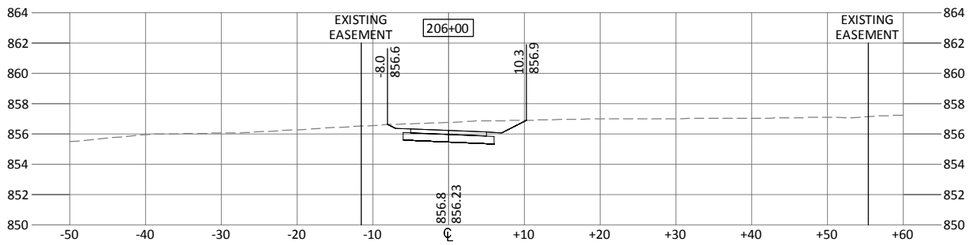
REV.	BY	DATE

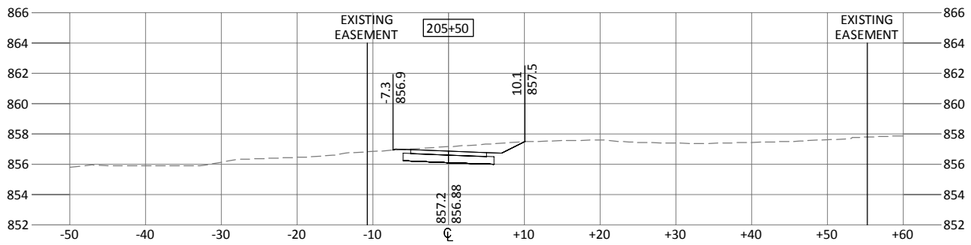
CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
CENTRAL TRAIL (OFF-ROAD) CROSS SECTIONS
SP 103-090-003

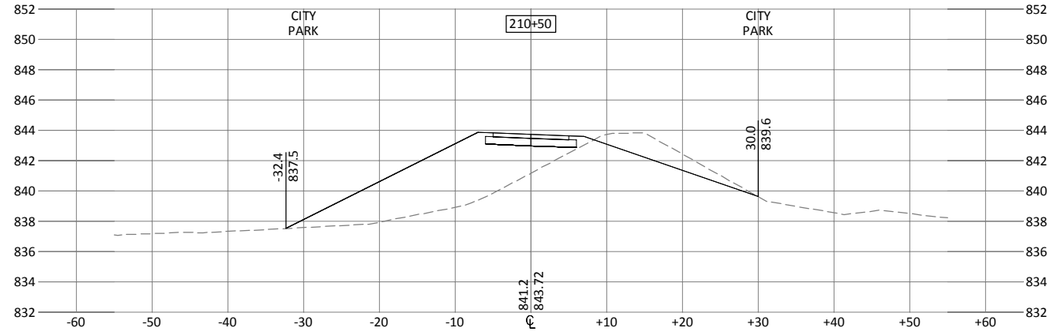
SHEET 48 OF 53

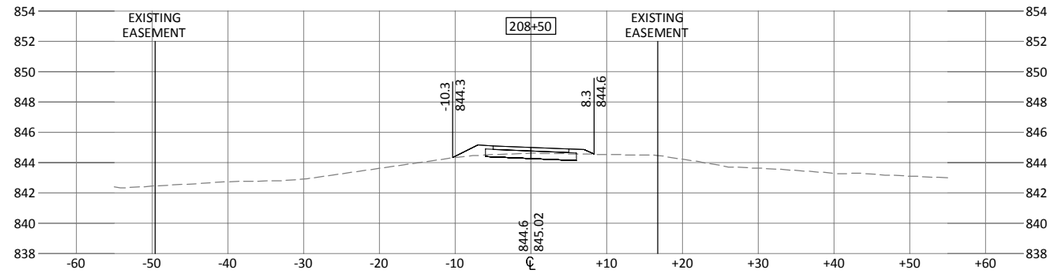


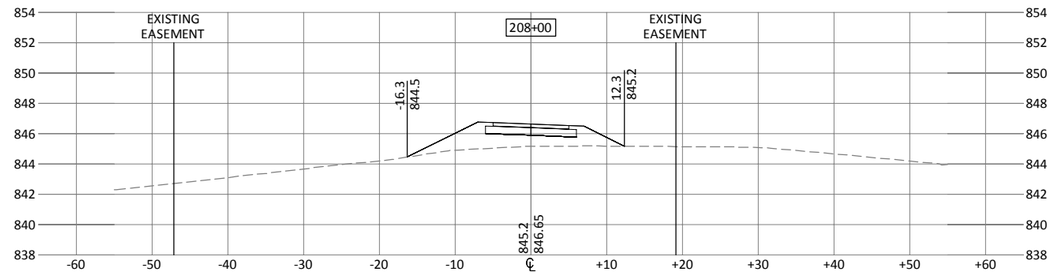


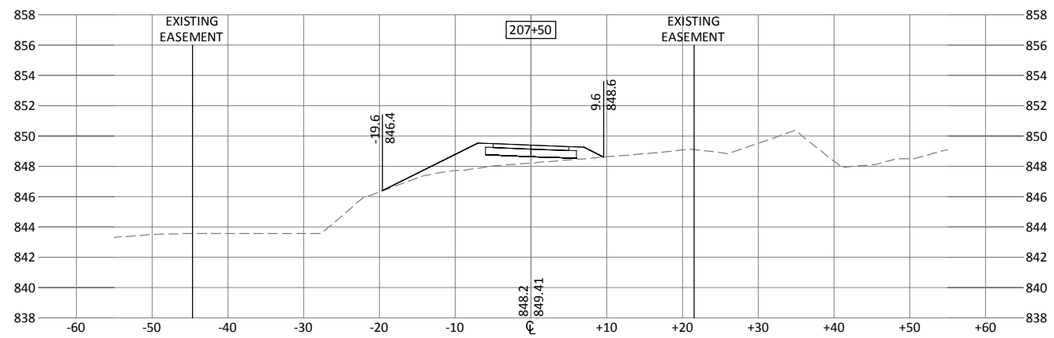












HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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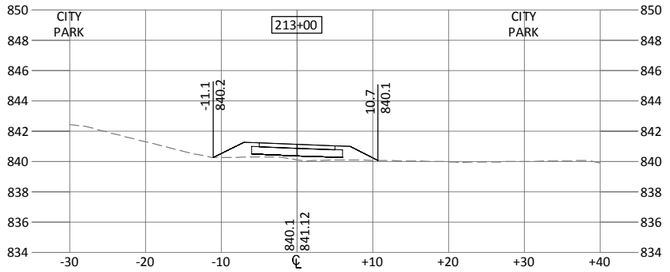
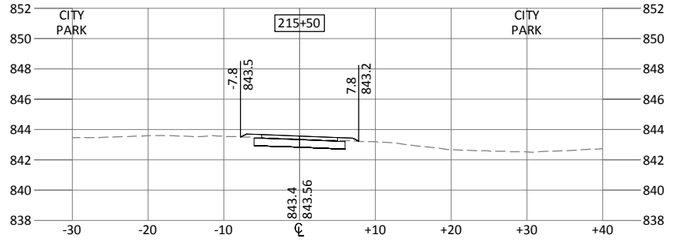
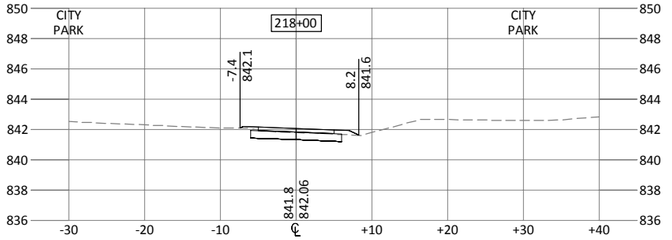
REV.	BY	DATE

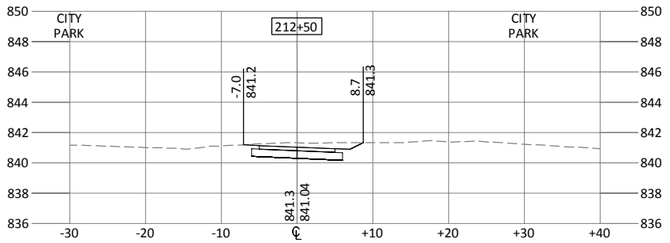
CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
EAST TRAIL (OFF-ROAD) CROSS SECTIONS
SP 103-090-003

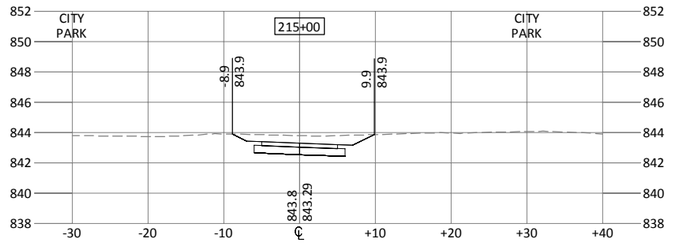
SHEET 49 OF 53

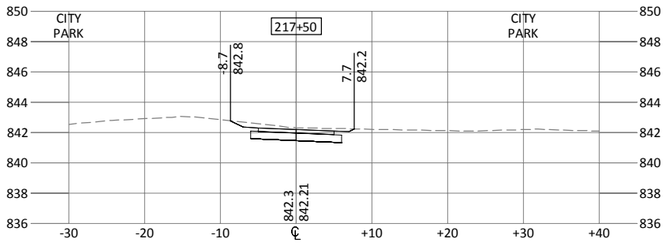


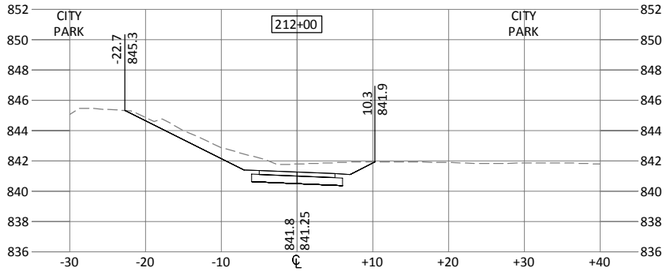


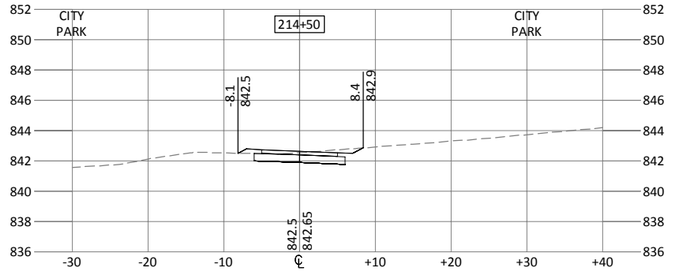


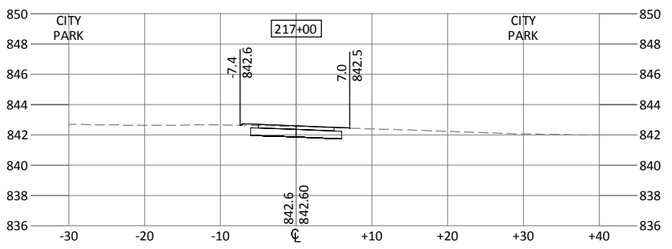


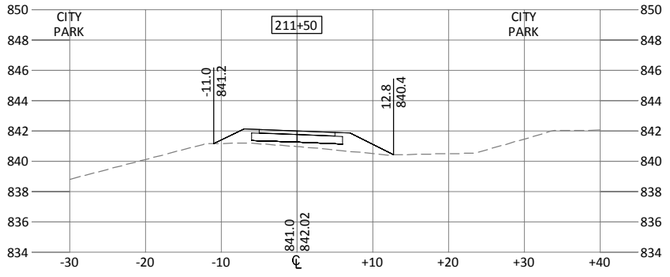


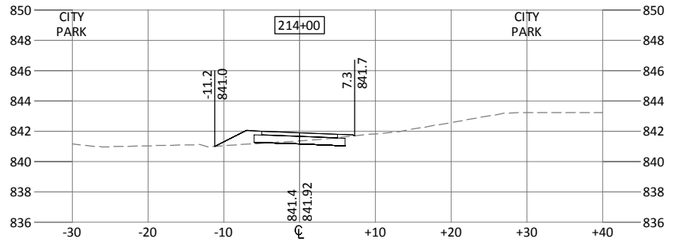


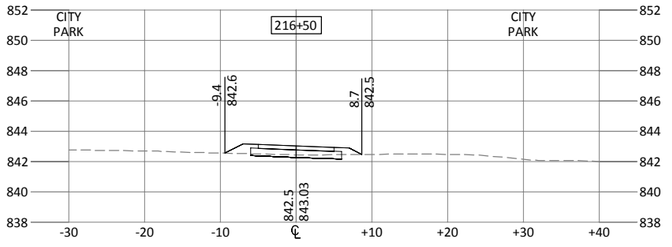


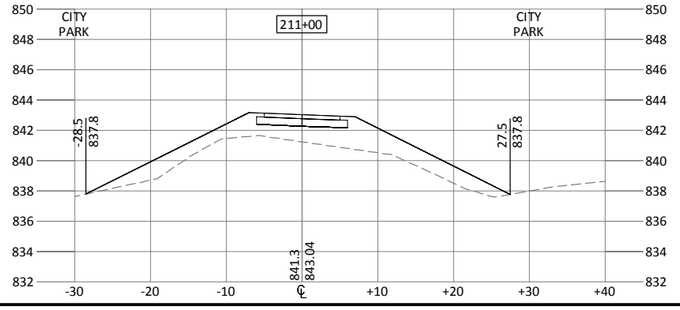


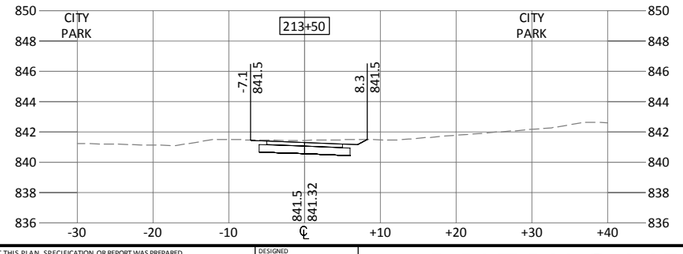


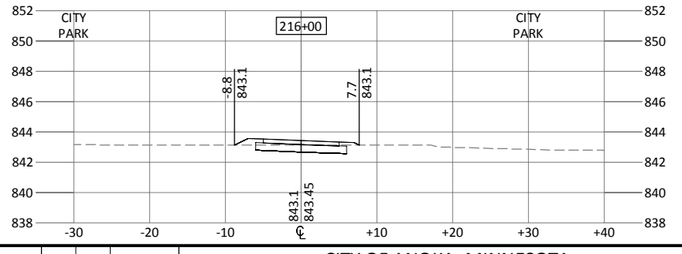












HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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LIC. NO. 23211 DATE 3/25/2013

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DRAWN AK
CHECKED KPK

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Consulting Engineers & Surveyors
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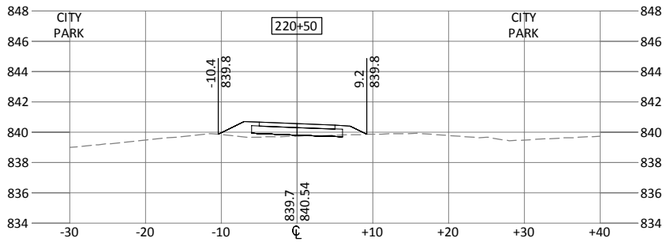
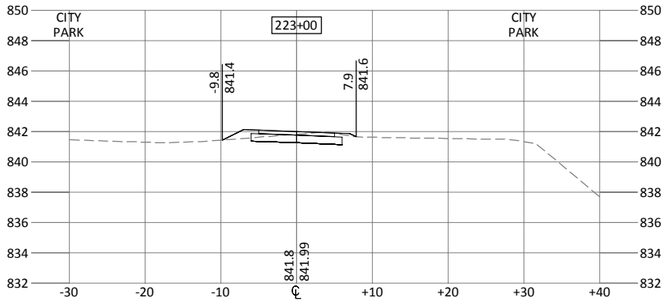
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

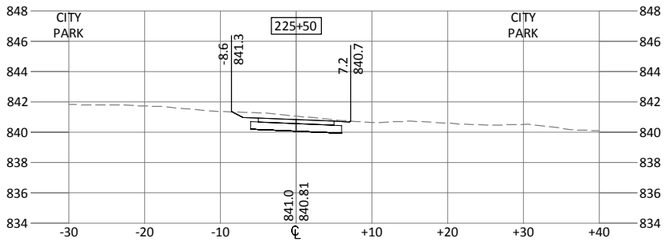
REV.	BY	DATE

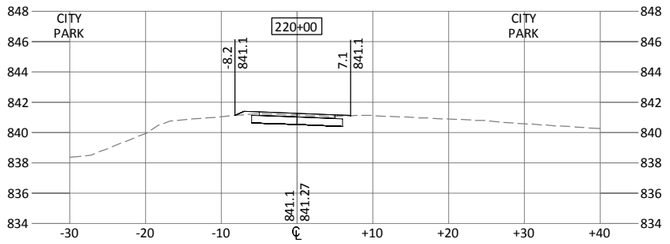
CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
EAST TRAIL (OFF-ROAD) CROSS SECTIONS
SP 103-090-003

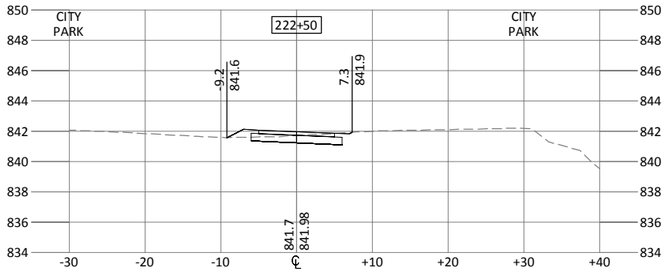
SHEET 50 OF 53

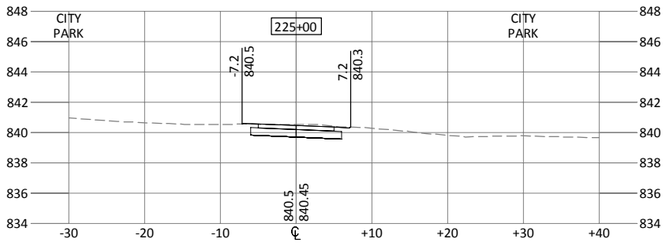


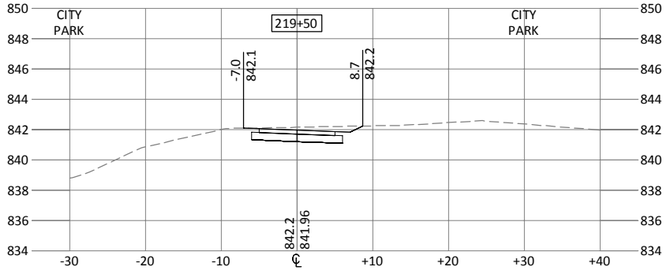


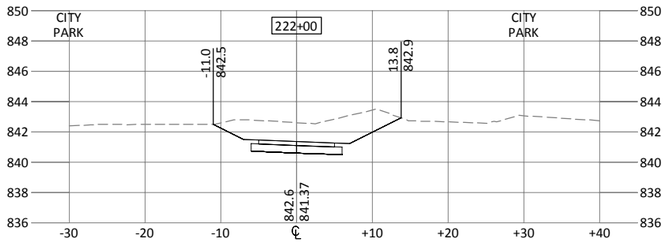


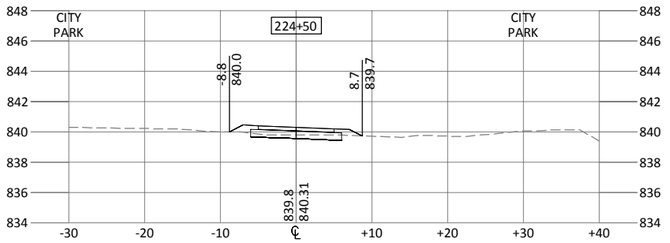


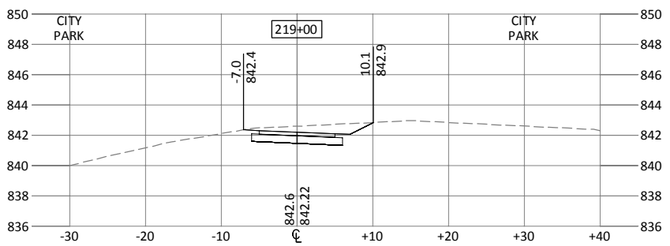


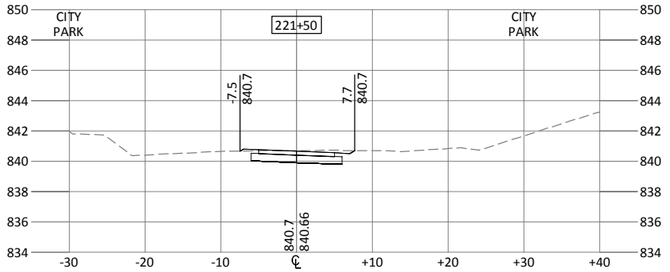


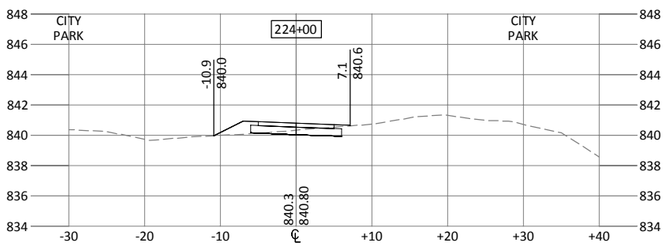


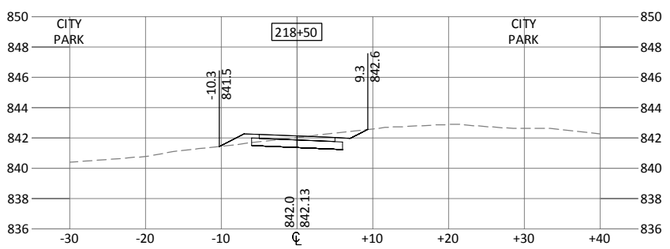


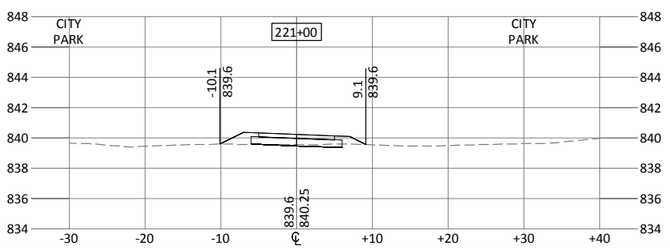


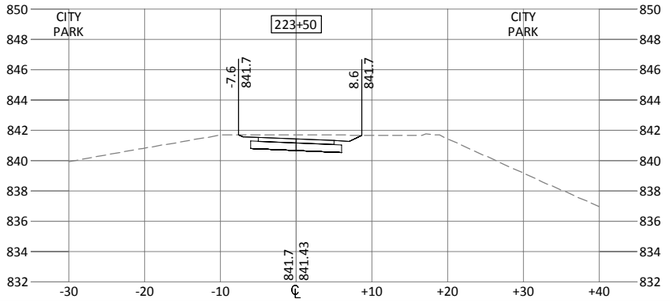












HORZ. 0 10 20 SCALE FEET

VERT. 0 5 10 SCALE FEET

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KEVIN P. KIELB, P.E.
LIC. NO. 23211 DATE 3/25/2013

DESIGNED KPK/AK
DRAWN AK
CHECKED KPK

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Consulting Engineers & Surveyors
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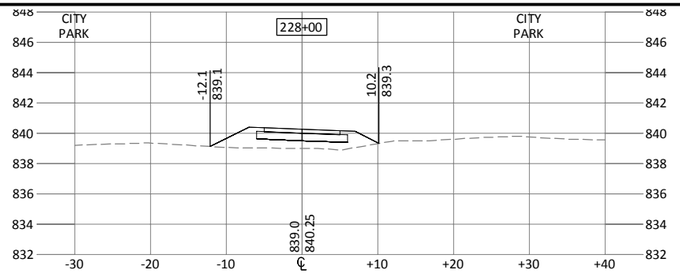
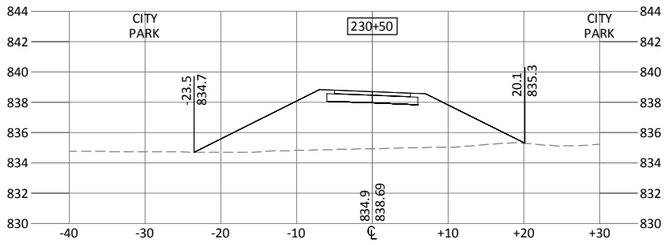
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN AMES, IA
ROCHESTER, MN SPENCER, IA

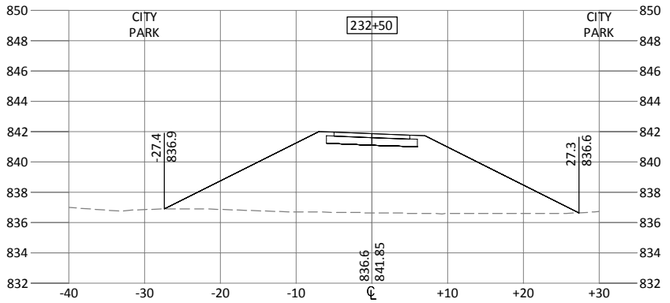
REV.	BY	DATE

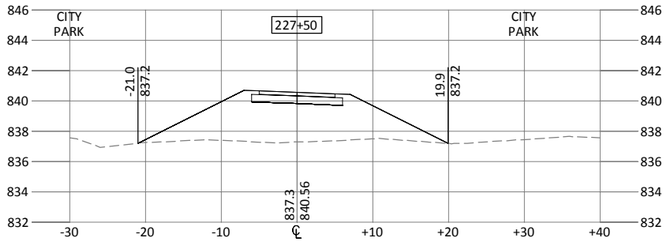
CITY OF ANOKA, MINNESOTA
MISSISSIPPI RIVER TRAIL
EAST TRAIL (OFF-ROAD) CROSS SECTIONS
SP 103-090-003

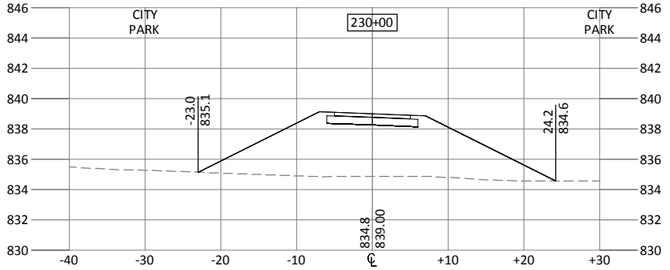
SHEET 51 OF 53

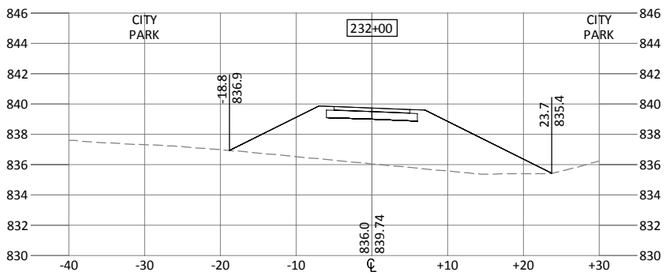


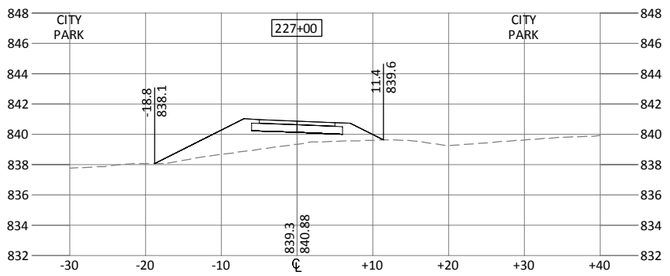


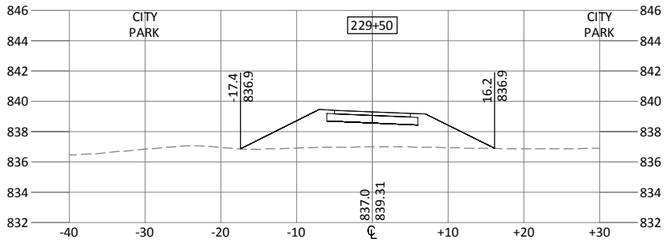


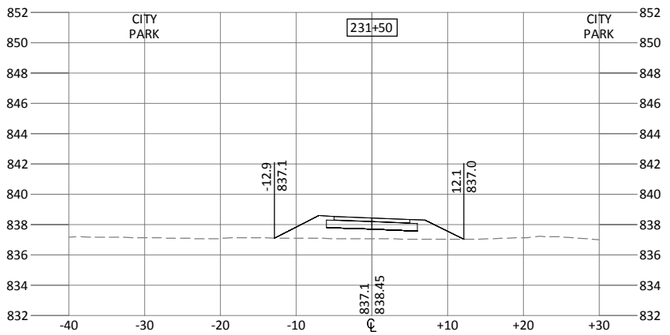


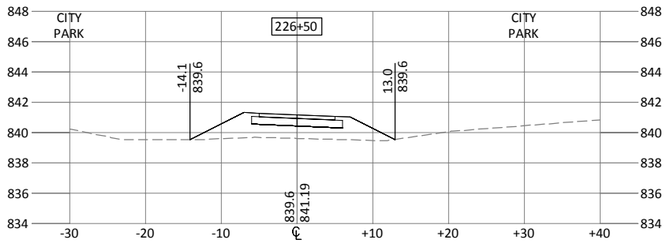


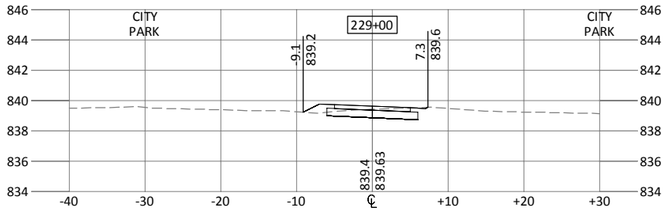


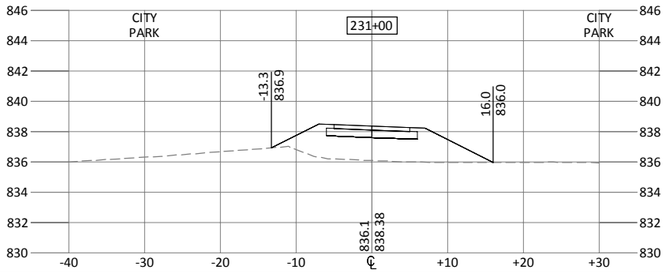


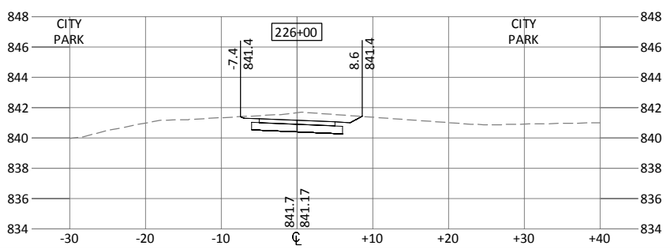


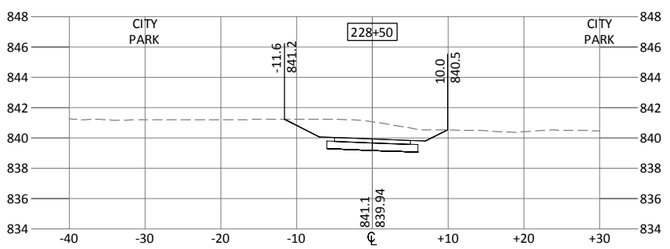












HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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ROCHESTER, MN SPENCER, IA

REV.	BY	DATE

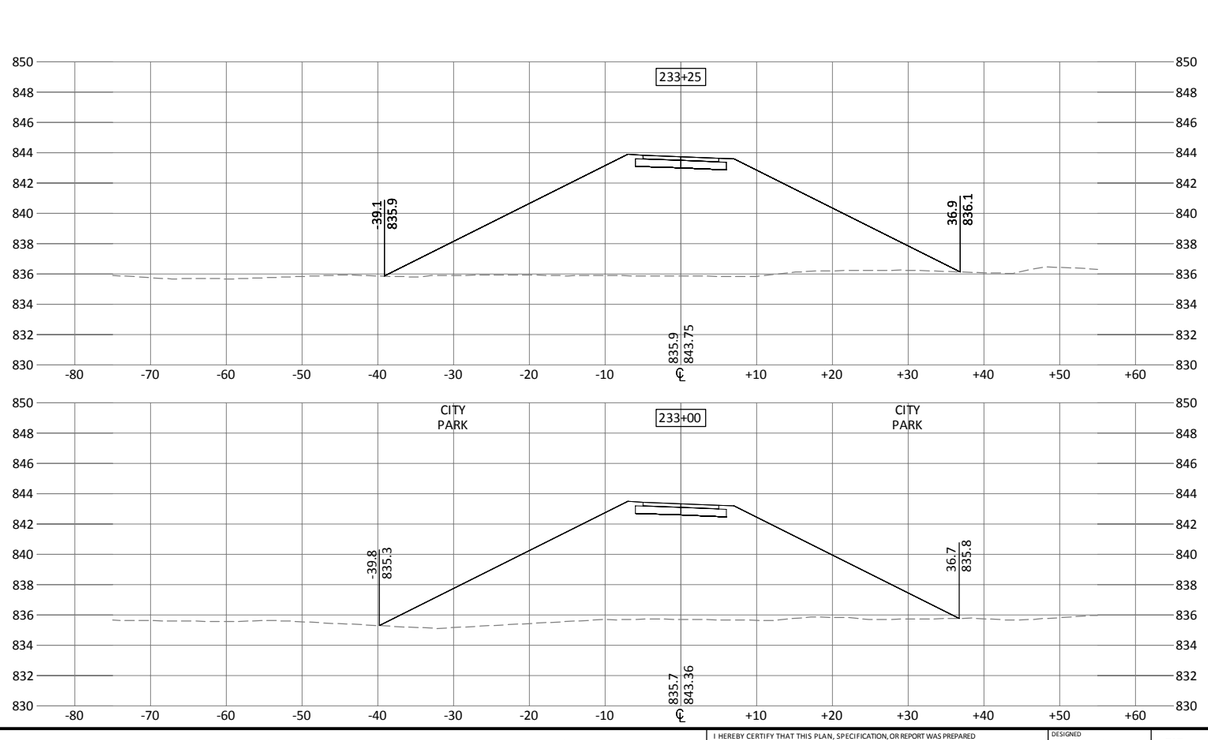
CITY OF ANOKA, MINNESOTA

MISSISSIPPI RIVER TRAIL

EAST TRAIL (OFF-ROAD) CROSS SECTIONS

SP 103-090-003

SHEET 52 OF 53



HORZ. SCALE 0 10 20 FEET

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CITY OF ANOKA, MINNESOTA

MISSISSIPPI RIVER TRAIL

EAST TRAIL (OFF-ROAD) CROSS SECTIONS

SP 103-090-003

SHEET 53 OF 53