

CITY OF NORTHFIELD MILL TOWNS STATE TRAIL

ISG PROJECT # 23-30059

NORTHFIELD, MN

SEGMENT D AND E CONSTRUCTION PLANS - 60% PLAN REVIEW



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.

DATE: _____ LIC. NO. _____

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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-TITLE
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---/---/---
CLIENT PROJECT NO.	-

TITLE
TITLE

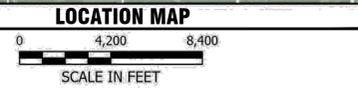
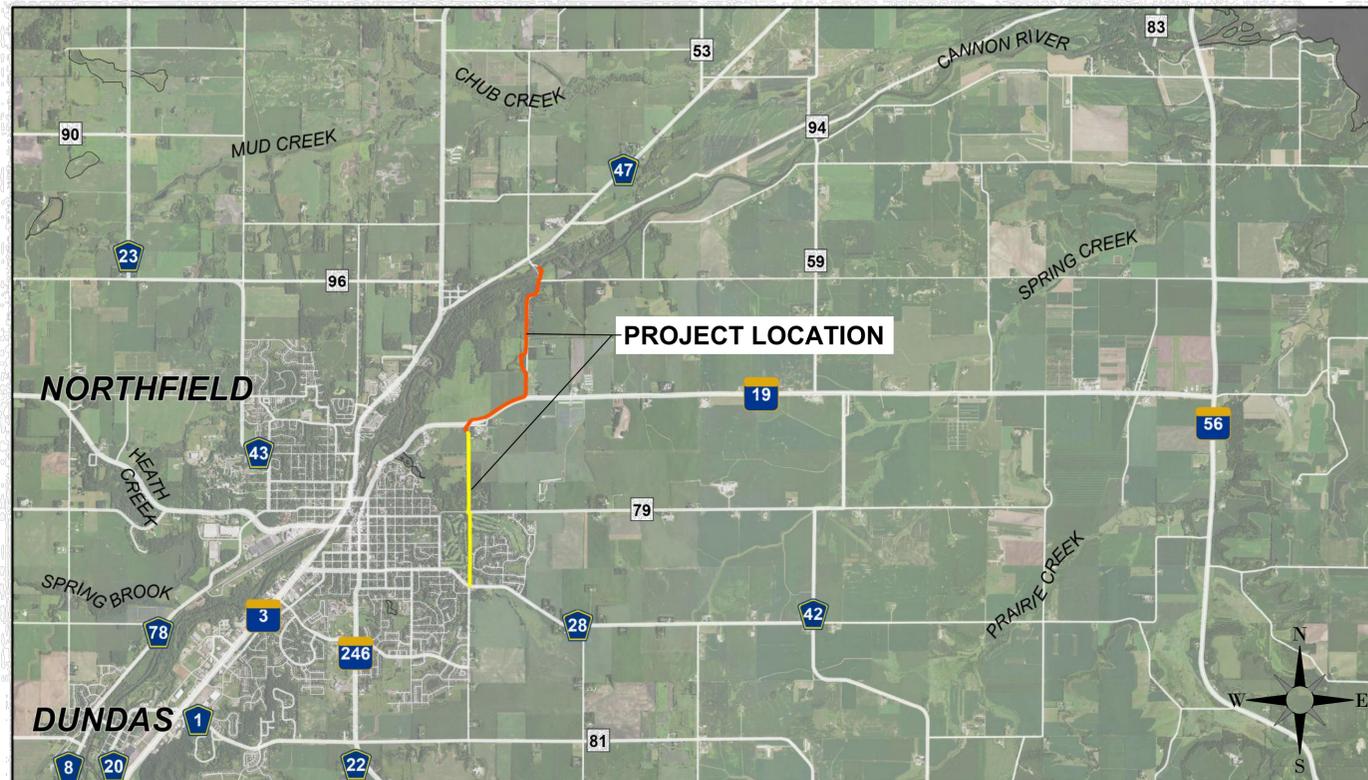
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1 OF ---

LEGEND

EXISTING	
	CITY LIMITS
	SECTION LINE
	QUARTER SECTION LINE
	RIGHT OF WAY LINE
	PROPERTY / LOTLINE
	EASEMENT LINE
	ACCESS CONTROL
	WATER EDGE
	WETLAND BOUNDARY
	WETLAND / MARSH
	FENCE LINE
	CULVERT
	STORM SEWER
	SANITARY SEWER
	SANITARY SEWER FORCEMAIN
	WATER
	GAS
	OVERHEAD ELECTRIC
	UNDERGROUND ELECTRIC
	UNDERGROUND TELEPHONE
	UNDERGROUND TV
	OVERHEAD UTILITY
	UNDERGROUND UTILITY
	UNDERGROUND FIBER OPTIC
	CONTOUR (MAJOR)
	CONTOUR (MINOR)
	DECIDUOUS TREE
	CONIFEROUS TREE
	TREE LINE
	MANHOLE/STRUCTURE
	CATCH BASIN
	HYDRANT
	VALVE
	CURB STOP
	POWER POLE
	UTILITY PEDESTAL / CABINET

PROPOSED

	LOT LINE
	RIGHT OF WAY
	EASEMENT
	CULVERT
	STORM SEWER
	STORM SEWER (PIPE WIDTH)
	SANITARY SEWER
	SANITARY SEWER (PIPE WIDTH)
	WATER
	GAS
	OVERHEAD ELECTRIC
	UNDERGROUND ELECTRIC
	UNDERGROUND TV
	CONTOUR
	MANHOLE (STORM, SANITARY)
	CATCH BASIN
	HYDRANT
	VALVE



ABBREVIATIONS:

AC ACRE	CL CENTERLINE	FDC FIRE DEPARTMENT CONNECTION	HH HANDHOLE	LSO LOWEST STRUCTURAL OPENING	PP POLYPROPYLENE	STA STATION
ADA AMERICANS WITH DISABILITIES ACT	CMP CORRUGATED METAL PIPE	FDN FOUNDATION	HORIZ HORIZONTAL	MAX MAXIMUM	PSI POUNDS PER SQUARE INCH	SY SQUARE YARD
ADD ADDENDUM	CO CLEANOUT	FES FLARED END SECTION	HR HOUR	MB MAIL BOX	PVC POLYVINYL CHLORIDE	T/C TOP OF CURB
AFF ABOVE FINISHED FLOOR	CONC CONCRETE	FFE FINISHED FLOOR ELEVATION	HWL HIGH WATER LEVEL	MECH MECHANICAL	PVMT PAVEMENT	TEL TELEPHONE
AGG AGGREGATE	CONST CONSTRUCTION	FFM FEET PER MINUTE	HWY HIGHWAY	MH MANHOLE	QTY QUANTITY	TEMP TEMPORARY
APPROX APPROXIMATE	CONT CONTINUOUS	FPS FEET PER SECOND	HYD HYDRANT	MIN MINIMUM	R RIM	THRU THROUGH
ARCH ARCHITECT, ARCHITECTURAL	CY CURB YARD	FT FOOT, FEET	I INVERT	MISC MISCELLANEOUS	RAD RADIUS	TNTH TOP NUT OF FIRE HYDRANT
BFE BASEMENT FLOOR ELEVATION	C&G CURB AND GUTTER	FTG FOOTING	ID INSIDE DIAMETER	NO NUMBER	RCP REINFORCED CONCRETE PIPE	TRANS TRANSFORMER
BIT BITUMINOUS	DEMO DEMOLITION	GA GAUGE	IN INCH	NTS NOT TO SCALE	RD ROOF DRAIN	TV TELEVISION
BM BENCHMARK	DIA DIAMETER	GAL GALLON	INV INVERT	NWL NORMAL WATER LEVEL	REBAR REINFORCING BAR	T/W TOP OF WALL
CAD COMPUTER-AIDED DESIGN	DIM DIMENSION	GALV GALVANIZED	IP IRON PIPE	OC ON CENTER	REM REMOVE	TYP TYPICAL
CB CATCH BASIN	DS DOWNSPOUT	GC GENERAL CONTRACTOR	IPS IRON PIPE SIZE	OCEW ON CENTER EACH WAY	ROW RIGHT OF WAY	UT UTILITY, UNDERGROUND
CFS CUBIC FEET PER SECOND	EA EACH	GFE GARAGE FLOOR ELEVATION	J-BOX JUNCTION BOX	OH OVERHEAD	R/W RIGHT OF WAY	UT TELEPHONE
CF CUBIC FOOT	ELEC ELECTRICAL	GL GUTTER LINE	JT JOINT	OHD OVERHEAD DOOR	SAN SANITARY	VCP VITRIFIED CLAY PIPE
CI CAST IRON	ELEV ELEVATION	GPM GALLONS PER MINUTE	LF LINEAR FEET	OZ OUNCE	SCH SCHEDULE	W/O WITHOUT
CIP CAST IRON PIPE	EOF EMERGENCY OVERFLOW	GV GATE VALVE	LN LINEAR	PED PEDESTAL, PEDESTRIAN	SF SQUARE FOOT	W/ WITH
CJPC CAST IN PLACE CONCRETE	EQ EQUAL	HDPE HIGH DENSITY POLYETHYLENE	LPS LOW PRESSURE STEAM	PERF PERFORATED	SPEC SPECIFICATION	YD YARD
CJ CONTROL JOINT	EX EXISTING	HD HEAVY DUTY	LS LUMP SUM	PL PROPERTY LINE	SQ SQUARE	YR YEAR

PROJECT INDEX:

OWNER:
CITY OF NORTHFIELD
801 WASHINGTON STREET
NORTHFIELD, MN 55057
PH: (507) 645-3006

PROJECT ADDRESS / LOCATION:
EAST OF CITY OF NORTHFIELD,
SEE LOCATION MAP FOR DETAILS
SEC. 5 & 6, T111N, R19W
SEC. 20, 29, 31, & 32, T112N, R32W
NORTHFIELD, MN

MANAGING OFFICE:

MANKATO OFFICE
115 EAST HICKORY STREET
SUITE 300
MANKATO, MN 56001
PHONE: 507.387.6651
PROJECT MANAGER:
EMAIL:

SPECIFICATIONS REFERENCE
ALL CONSTRUCTION SHALL COMPLY WITH THE CITY OF NORTHFIELD REQUIREMENTS AND MnDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2020 EDITION, THE MnDOT SUPPLEMENTAL SPECIFICATIONS, SEPTEMBER 2022, THE STANDARD SPECIFICATIONS FOR SANITARY SEWER, STORM DRAIN AND WATERMAIN AS PROPOSED BY THE CITY ENGINEERS ASSOCIATION OF MINNESOTA 2018, AND THE CURRENT VERSION OF THE MINNESOTA STATE PLUMBING CODE UNLESS DIRECTED OTHERWISE.
PROJECT DATUM
HORIZONTAL COORDINATES HAVE BEEN REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83), 2011 ADJUSTMENT (NAD83(2011)) ON THE RICE COUNTY COORDINATE SYSTEM, IN U.S. SURVEY FEET.
ELEVATIONS HAVE BEEN REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
RTK GPS METHODS WERE USED TO ESTABLISH HORIZONTAL AND VERTICAL COORDINATES FOR THIS PROJECT.

B.M. ELEVATION=990.07
CONTROL POINT
NORTHING: 199648.617
EASTING: 497952.067
TOPOGRAPHIC SURVEY
THIS PROJECT'S TOPOGRAPHIC SURVEY CONSISTS OF DATA COLLECTED IN JUNE/ 2020 BY ISG.

PRELIMINARY NOT FOR CONSTRUCTION

PLOT DATE: 5/9/2024 1:38 PM



DEPARTMENT OF NATURAL RESOURCES



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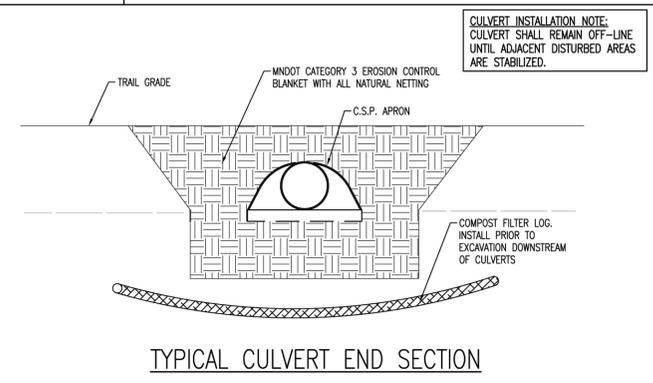
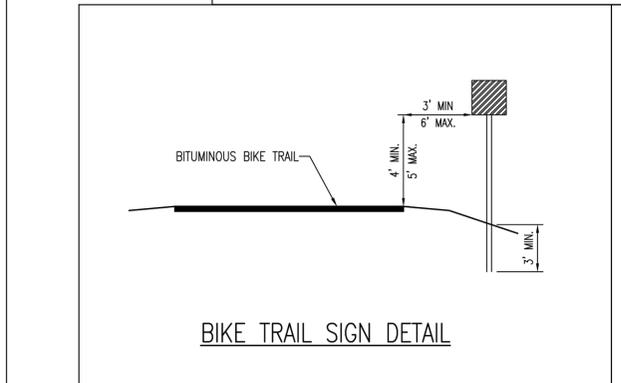
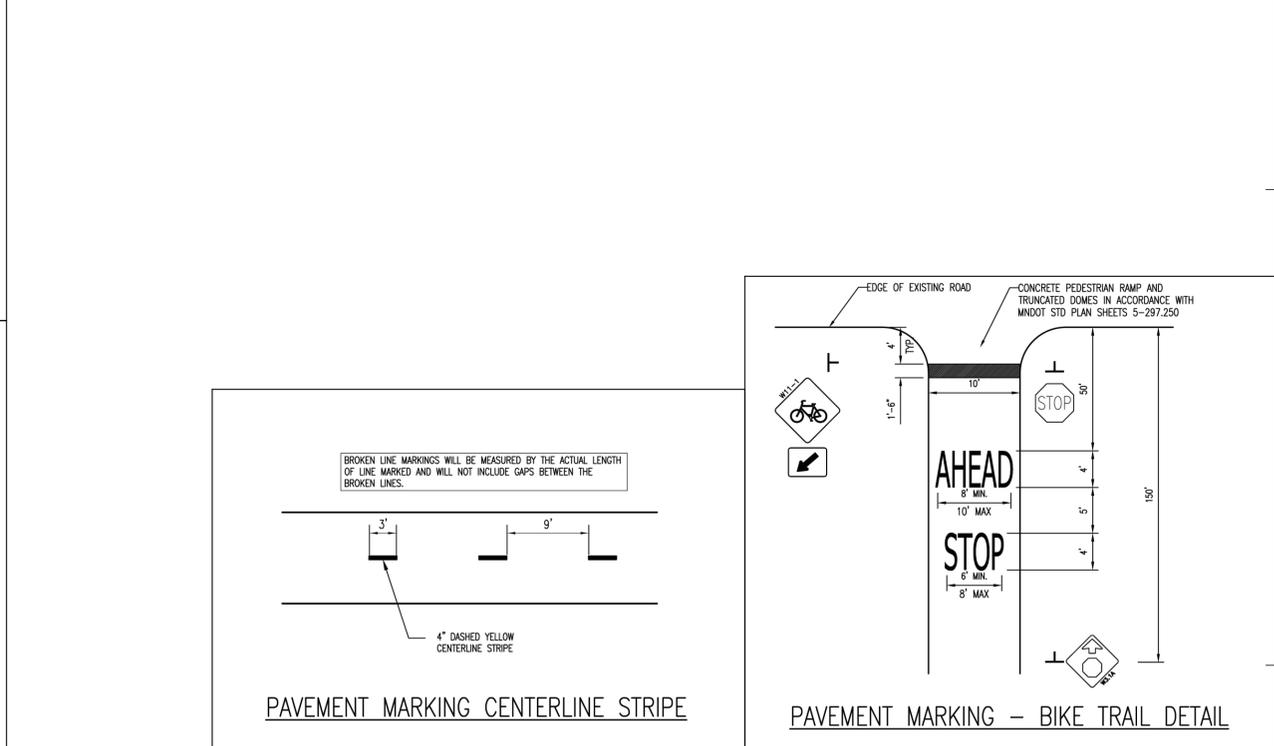
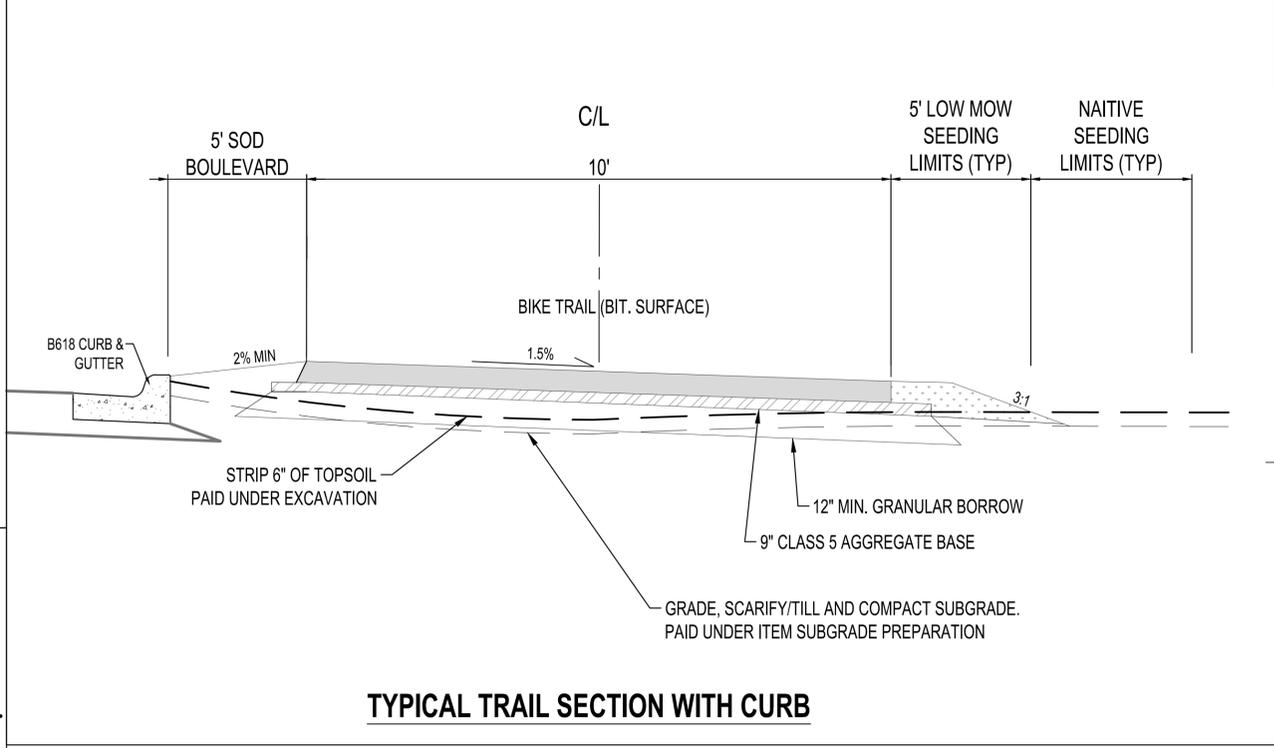
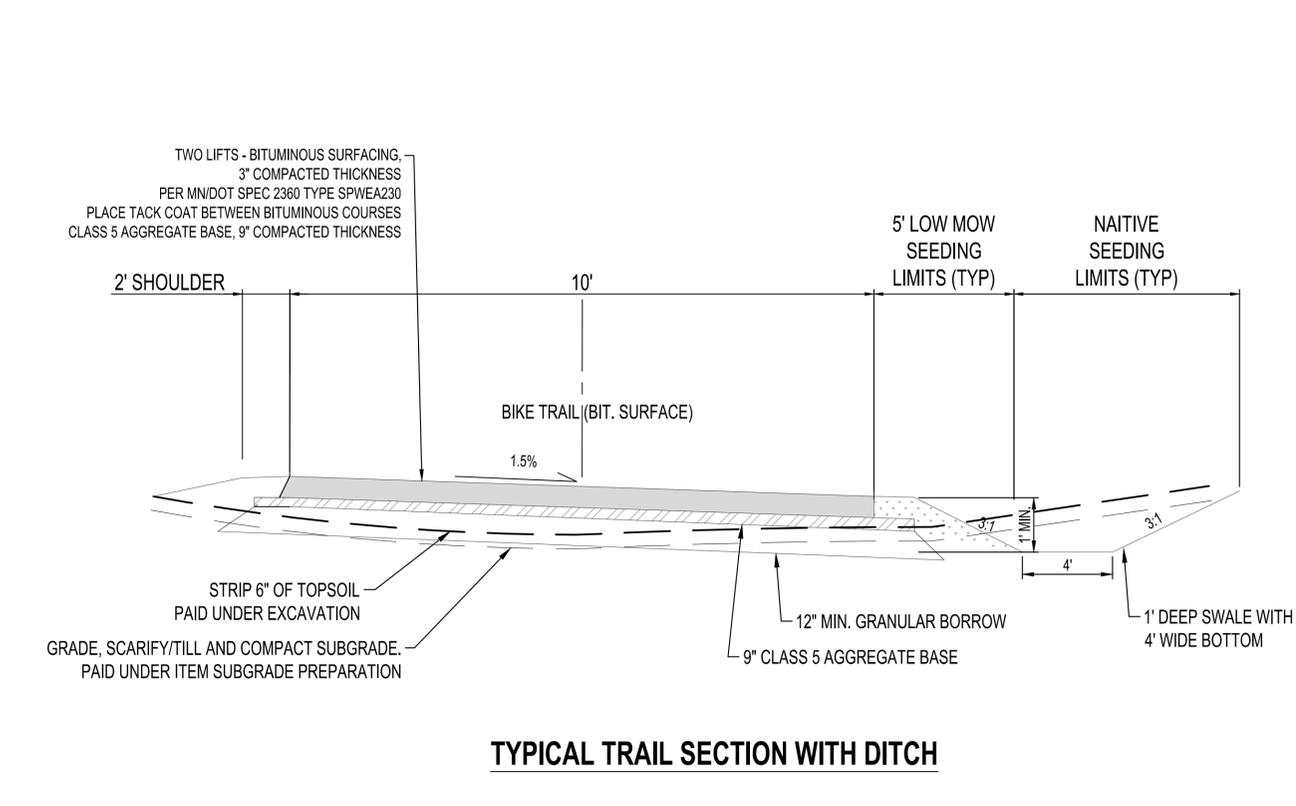
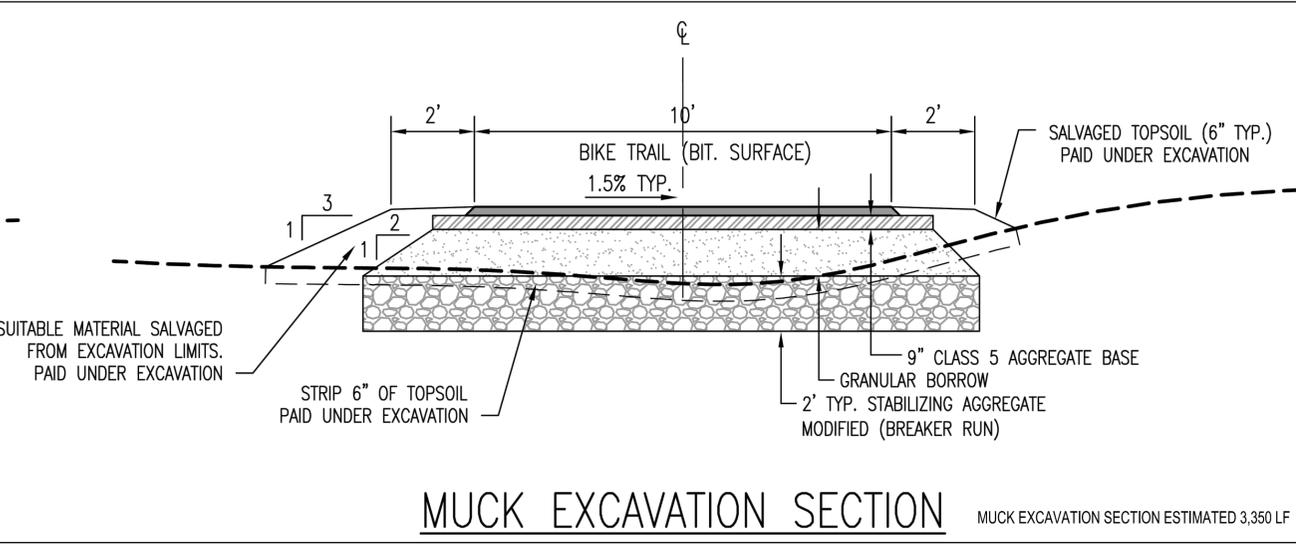
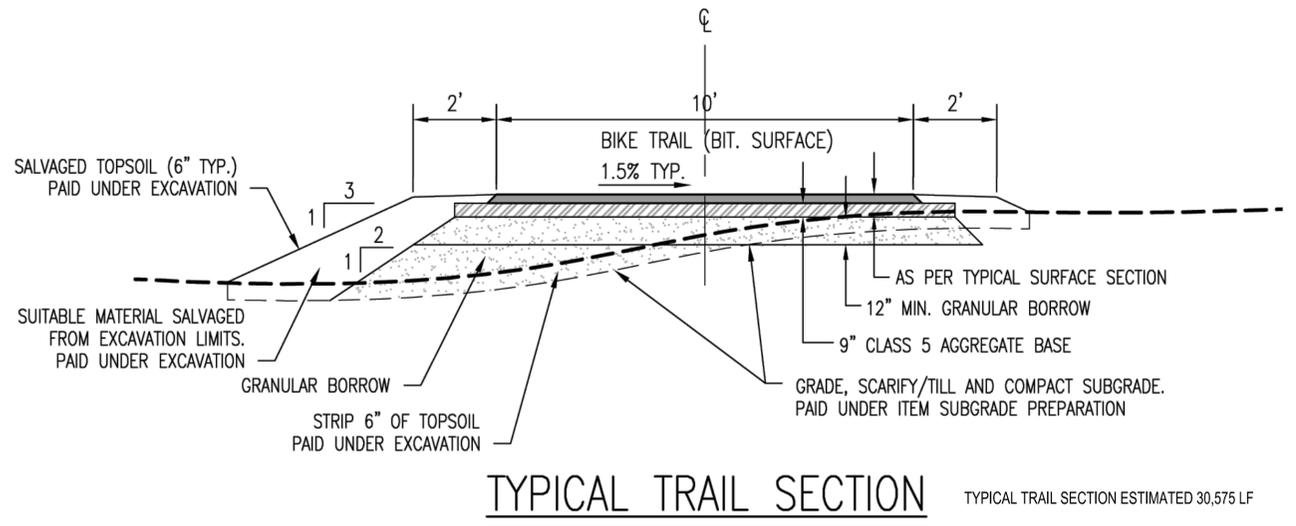
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CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL

NORTHFIELD MN

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DESIGNED BY	KJR
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CLIENT PROJECT NO.	-

TITLE
LOCATION MAP



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MILL TOWNS STATE TRAIL
NORTHFIELD MN

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FILE NAME 30059-DETAILS
DRAWN BY OBO/BJK
DESIGNED BY KJR
REVIEWED BY KJR
ORIGINAL ISSUE DATE --/--
CLIENT PROJECT NO. --

TITLE
TYPICAL SECTIONS AND DETAILS

SHEET
3 OF ---

PLOT DATE: 5/31/2024 1:34 PM

PRELIMINARY NOT FOR CONSTRUCTION



DEPARTMENT OF
NATURAL RESOURCES



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PROJECT

**CITY OF
NORTHFIELD
MILL TOWNS
STATE TRAIL**

NORTHFIELD MN

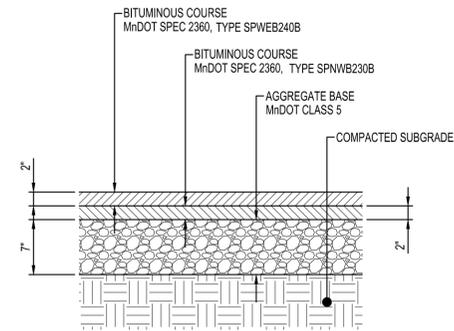
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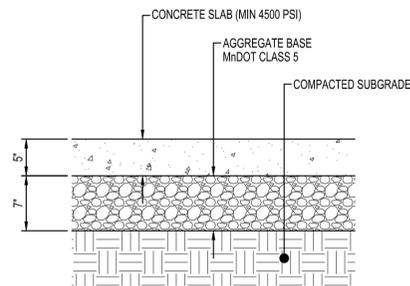
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DETAILS

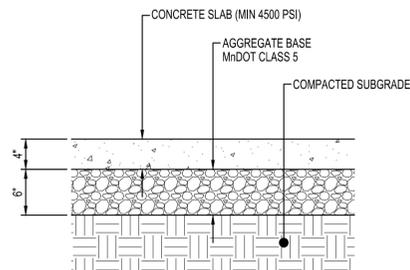
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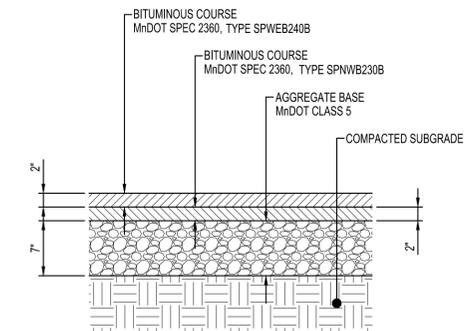
**STANDARD
BITUMINOUS PAVEMENT**
NTS



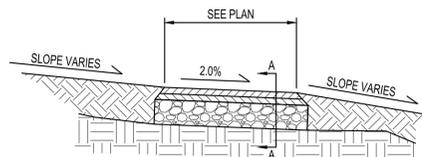
**STANDARD
CONCRETE PAVEMENT**
NTS



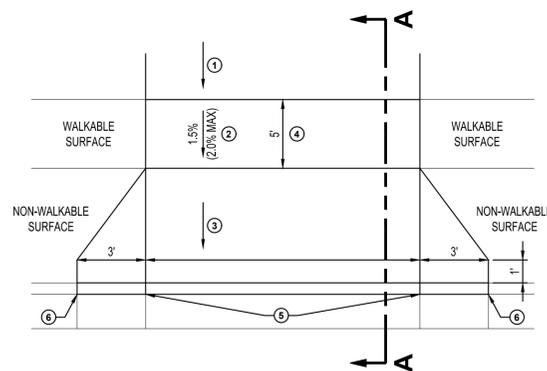
CONCRETE WALK
NTS



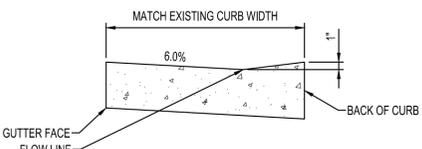
SECTION A-A



TYPICAL TRAIL SECTION
NTS ST950-MN



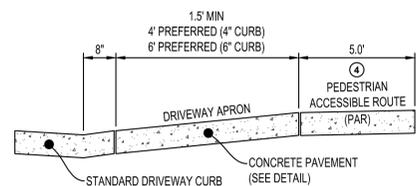
PLAN



STANDARD CURB AT DRIVEWAY

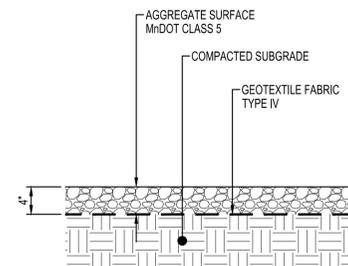
KEY NOTES:

- TO BE USED WHEN THE DRIVEWAY PAR IS LEVEL WITH OR ABOVE THE TOP OF CURB, RESULTING IN A CONTINUOUS PEDESTRIAN ACCESS ROUTE PROFILE.
- 8.0% MAX PREFERRED.
 - THE PEDESTRIAN ACCESS ROUTE(PAR) CROSS-SLOPE MAY NOT EXCEED 2% (0.02 FT/FT) AS CONSTRUCTED.
 - 8.0% MAX PREFERRED, 10.0% MAX FOR COMMERCIAL AND 12.0% MAX FOR RESIDENTIAL.
 - 5.0' STANDARD MIN PAR WIDTH (4' ABSOLUTE MINIMUM). IF FEASIBLE, WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS.
 - 1' CURB HEIGHT.
 - 6" CURB HEIGHT.

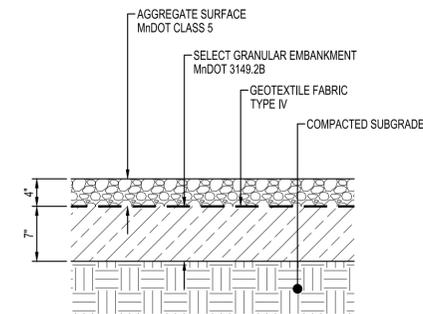


SECTION A-A

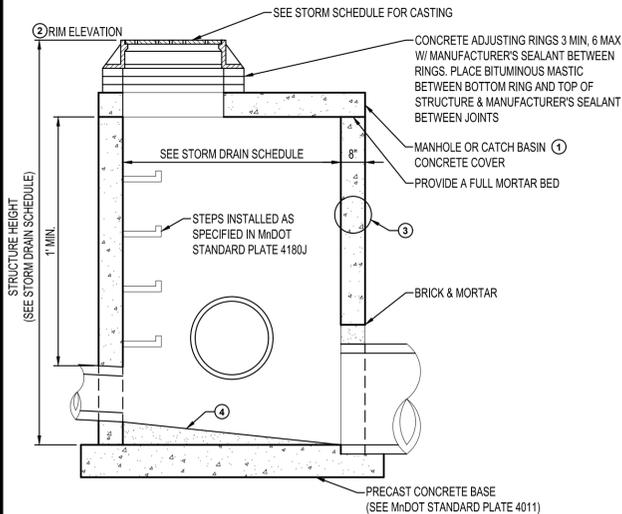
TYPICAL DRIVEWAY
NTS ST400-MN



**HEAVY DUTY
AGGREGATE SURFACE**
NTS

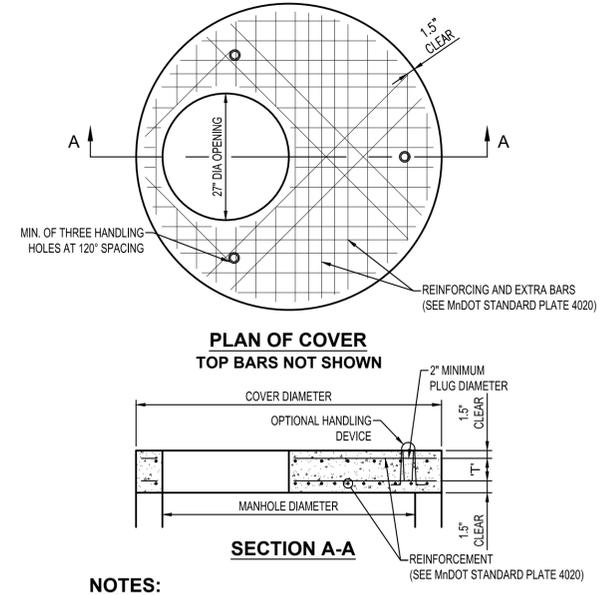


**HEAVY DUTY 2
AGGREGATE SURFACE**
NTS



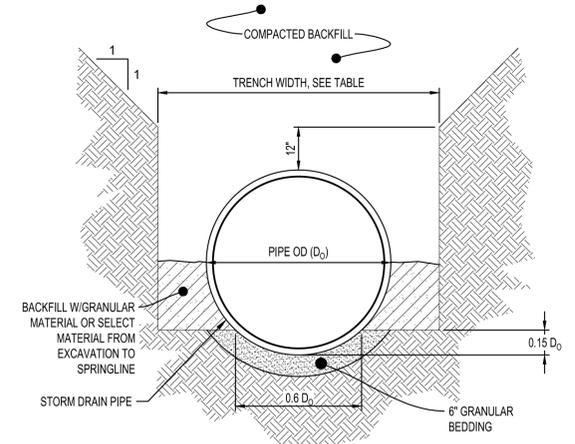
- KEY NOTES:**
- ① WHEN USED AS A CATCH BASIN AND REQUIRING A RECTANGULAR OPENING, USE 4022 CONCRETE COVER.
 - ② WHEN REFERRING TO A CURB CATCH BASIN, USE TOP BACK OF CURB ELEVATION.
 - ③ WALL CONSTRUCTION MAY BE: CLASS II PRECAST PIPE (MnDOT STANDARD PLATE 3000); CAST IN PLACE CONCRETE MEETING THE REQUIREMENTS OF CLASS II PIPE, OR MASONRY CONSTRUCTION, BRICK OR BLOCK (MnDOT STANDARD PLATE 4000).
 - ④ PROVIDE MORTAR FILLETS TO FIT BOTTOM PORTIONS OF PIPE TO DIRECT FLOW TO OUTLET.

4020 MANHOLE OR CATCH BASIN
NTS SD101-MN



- NOTES:**
1. AASHTO HS 25 LOADING
 2. THE NO. 4020 SHALL BE PERMANENTLY MARKED ON THE TOP OF THE COVER.
 3. EQUIVALENT STEEL AREAS IN WIRE MESH MAY BE USED.
 4. SEE MnDOT STANDARD PLATE 4020 FOR DIMENSIONS & REINFORCEMENT.

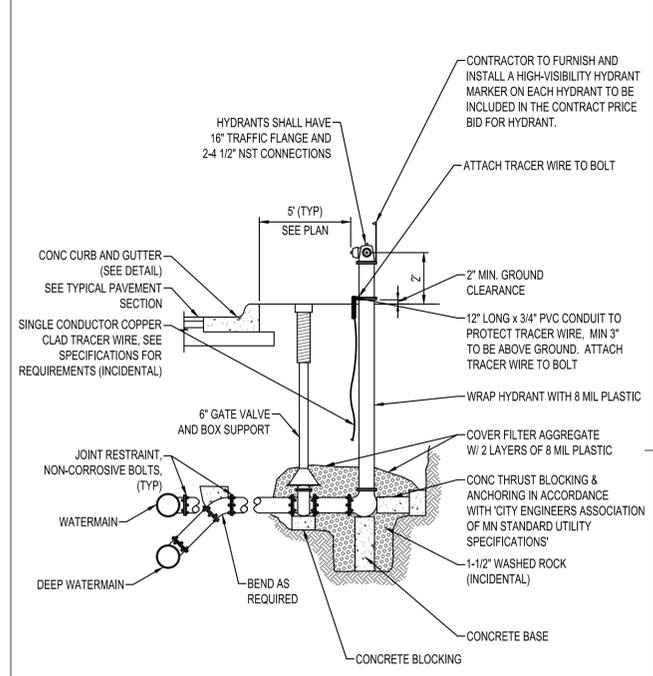
4020 MANHOLE OR CATCH BASIN CONCRETE COVER
NTS SD102-MN



TRENCH WIDTH	
PIPE Ø	TRENCH WIDTH
36" OR LESS	D ₀ + 24"
42" TO 54"	1.5 x D ₀
60" OR OVER	D ₀ + 36"

- NOTES:**
1. GRANULAR BEDDING AND BACKFILL FOR STORM DRAIN PIPES SHALL BE INCIDENTAL TO STORM DRAIN CONSTRUCTION

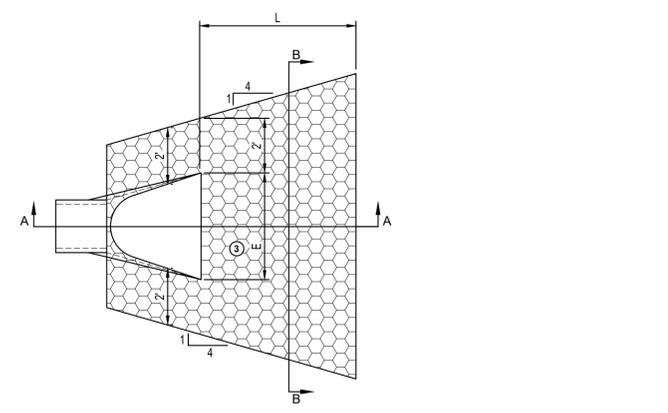
REINFORCED CONCRETE STORM DRAIN PIPE BEDDING
NTS SD601-MN



TYPICAL HYDRANT INSTALLATION
NTS WM100-MN

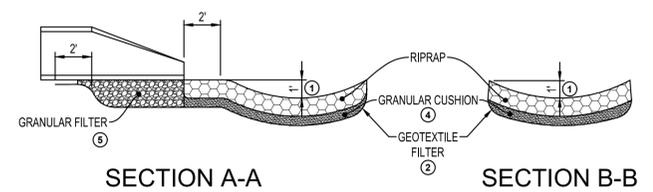


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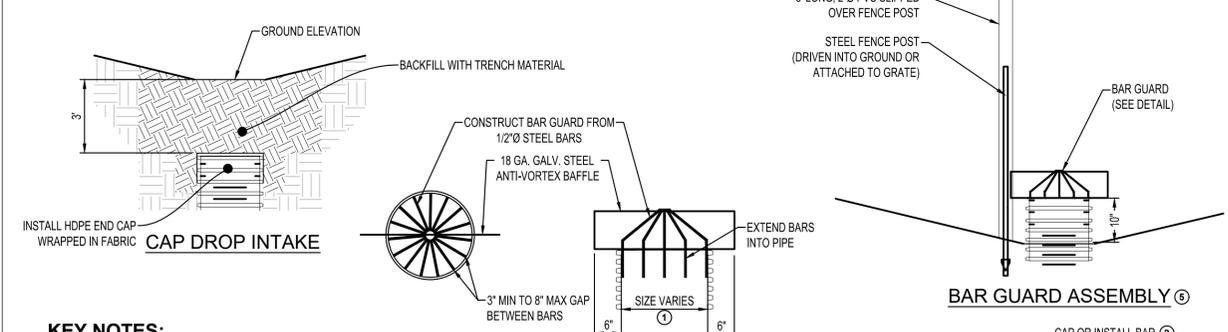


DIMENSIONS			
PIPE Ø (INCHES)	L (FEET)	PIPE Ø (INCHES)	L (FEET)
12	8	27	12
15	8	30	14
18	10	36	16
21	10	42	18
24	12	48	20

- KEY NOTES:**
- ① FOR PIPES GREATER THAN OR EQUAL TO 30", USE 1.5'
 - ② GEOTEXTILE FILTER, MnDOT SPEC. 3733, SHALL COVER THE BOTTOM AND SIDES OF THE AREA EXCAVATED FOR THE RIPRAP. GRANULAR FILTER MATERIALS
 - ③ DIMENSION 'E' IS GIVEN ON MnDOT STANDARD PLATES 3100 AND 3110.
 - ④ GRANULAR FILTER, MnDOT SPEC. 3601, MAY BE USED AS A CUSHION LAYER. PLACE FILTER PER SPEC. 2511. THE CUSHION LAYER IS INCIDENTAL.
 - ⑤ GRANULAR FILTER OR RIPRAP, SPEC. 3601, TO EXTEND UNDER THE ENTIRE OPEN PORTION OF PIPE APRON. DEPTH OF MATERIAL UNDER APRON SHALL MATCH RIPRAP DEPTH. WHEN USING RIPRAP, INCREASE RIPRAP QUANTITY ACCORDINGLY AND PLACE A 3" LAYER OF 1.5" CRUSHED ROCK UNDER THE APRON TO AID IN GRADING FOR APRON PLACEMENT. CRUSHED ROCK IS INCIDENTAL.
- NOTES:**
1. REQUIREMENTS FOR GEOTEXTILE TYPE, RIPRAP SIZE AND THICKNESS, WILL BE DESIGNATED IN THE PLANS.
 2. PIPE SIZES LARGER THAN THOSE SHOWN REQUIRE A SPECIAL DESIGN



RIPRAP AT RCP OUTLET
NTS EC400-MN



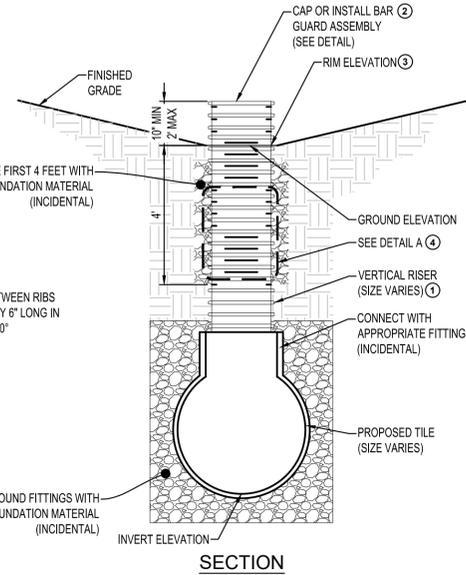
- KEY NOTES:**
- ① INTAKES SHALL BE 18" FOR PROPOSED TILE LESS THAN 30" IN DIAMETER AND 24" FOR 30" DIAMETER AND LARGER.
 - ② INTAKE CAPS SHALL BE SUBSTITUTED FOR BAR GUARD ASSEMBLIES IN AREAS THAT WILL NOT TAKE SURFACE FLOW, AS APPROVED BY THE ENGINEER.
 - ③ RIM ELEVATIONS CALLED OUT ON PLANS REPRESENTS EXISTING GROUND ELEVATION.
 - ④ DETAIL A MAY BE INTERCHANGED WITH NARROW SLOTTED OR PERFORATED TILE.
 - ⑤ BAR GUARD ASSEMBLY SHALL INCLUDE THE BAR GUARD, ANTI-VORTEX BAFFLE, AND THE FENCE POST WITH PVC.

- NOTES:**
1. ALL VERTICAL RISERS SHALL BE WRAPPED WITH MnDOT TYPE 1 GEOTEXTILE FABRIC. (INCIDENTAL TO EACH INTAKE)
 2. IF THE PROPOSED TILE SIZE IS LESS THAN 18" IN DIAMETER, REDUCERS SHALL BE USED ON BOTH SIDES OF AN 18" TEE FOR THE RISER. (TELEVISION ACCESS)
 3. TILE FLAGS (7" MIN) MAY BE SUBSTITUTED FOR FENCE POST WITH PVC.
 4. ALL APPROPRIATE FITTINGS, FABRIC, AND GRANULAR FOUNDATION MATERIAL SHALL BE INCIDENTAL.
 5. INTAKES THAT WILL NOT TAKE SURFACE FLOW SHALL BE CAPPED. INTAKES IN ROAD DITCHES AND AT PROPERTY LINES SHALL HAVE A BAR GUARD INSTALLED. VERIFY WITH ENGINEER. PAID FOR BY EACH.
 6. VERTICAL RISERS MAY BE CUT DOWN AND BURIED AT 3' BELOW GRADE AFTER FINAL TELEVISION, PER LANDOWNER REQUEST. PAID FOR BY "CAP DROP INTAKE."
 7. INTAKES SHALL NOT BE BURIED AND CAPPED UNTIL FINAL TELEVISION HAS BEEN APPROVED BY THE ENGINEER.

HEAVY DUTY BAR GUARD
(INCIDENTAL TO BAR GUARD ASSEMBLY)

DETAIL A

DROP INTAKE
NTS AG240-MN



PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

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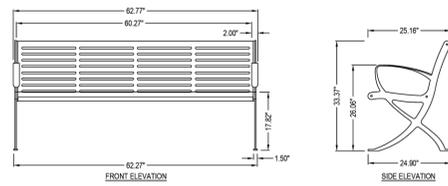
TITLE

DETAILS

MODEL: #LEXC6
 FINISH COLOR: POWDER COAT; SUBMIT COLOR SAMPLES FOR APPROVAL BY OWNER
 MOUNTING: SURFACE MOUNT; INSTALL PER MANUFACTURER'S INSTRUCTIONS
 OPTIONS: NONE

ANOVA

ANOVA FURNISHINGS
 1424 TALMAGE AVENUE
 ST. LOUIS, MO 63110-2323
 TOLL FREE: 1-888-535-5005
 PHONE: (800) 231-1327
 FAX: (314) 754-0835
 www.anovafurnishings.com



Colors and/or Options: Please see manufacturer website at www.anovafurnishings.com.
 Finish: Seat: Protected by patented Fusion Advantage™, a heat fused plastic coating that creates an impervious waterproof barrier and resists UV deterioration, mildew, staining and fading. Leg/Armrests: Powder-resistant, powder coated steel features a state-of-the-art primer proven to prevent rusting.
 Material: Composed of 10-gauge steel slat seat with a 5" wide slat pattern and steel legs, armrests and under supports.
 Capacity: 200 lbs. per linear foot.
 Unit Weight: 142 lbs.
 Assembly: The bench requires some assembly. Stainless steel assembly hardware is included.
 Structural Warranty: Limited 20-year warranty.
 Finish Warranty: Fusion Advantage: 7-year warranty against fading, peeling, chipping, cracking, mold, mildew and defects in materials and/or workmanship. Powder Coat: 3-year warranty against rusting, peeling, chipping, cracking, mold, mildew and defects in materials and/or workmanship. 7-year warranty against fading.

- NOTES:
 1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
 2. DO NOT SCALE DRAWING.
 3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
 4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
 5. CONTRACTOR NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADetails.com/Info AND ENTER REFERENCE NUMBER 628-368.

EXPOSITION COLLECTION
 LEXCS - EXPOSITION 5' CONTOUR BENCH

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BENCH
 SCALE: NTS

MANUFACTURER: SARIS INFRASTRUCTURE
 MODEL: DELUXE PUBLIC WORKS STAND W/ WHEEL CHOCK
 FRAME: POWDER COAT; SUBMIT COLOR SAMPLES FOR APPROVAL BY OWNER
 MOUNT: SURFACE; INSTALL PER MANUFACTURER'S INSTRUCTIONS
 OPTIONS: NONE

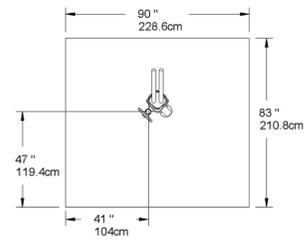
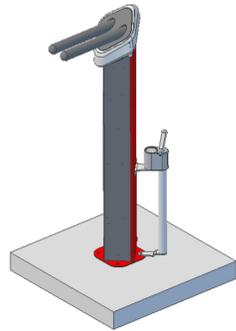
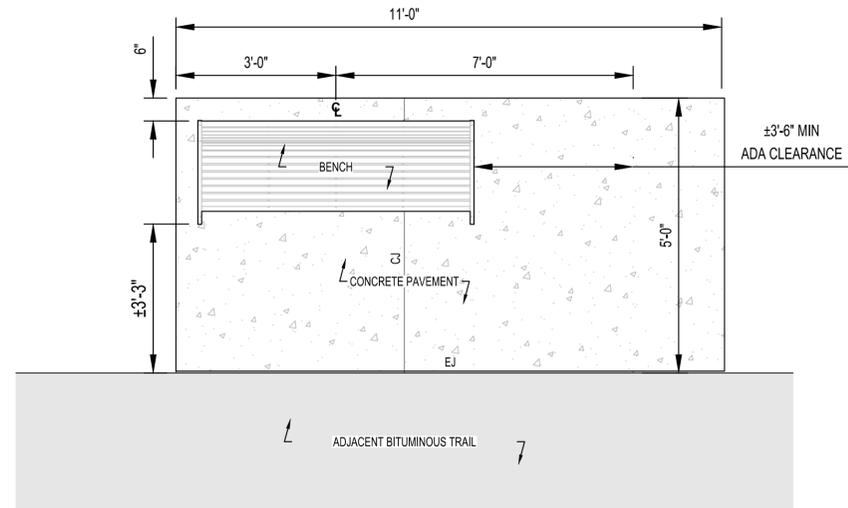


Figure 2: Minimum space requirements (with Wheel Chock)



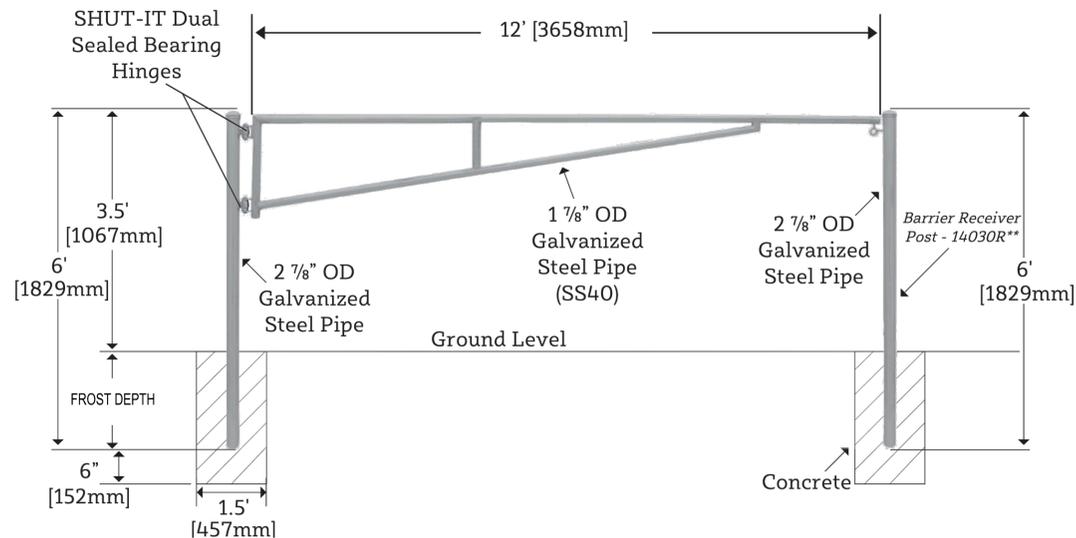
BIKE REPAIR STATION
 SCALE: NTS



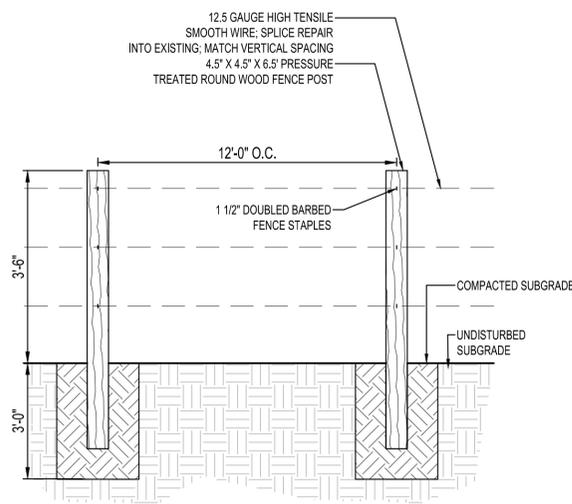
CONCRETE PAD - TYPE 1 (PLAN)
 SCALE: NTS

MANUFACTURER: BARRIER GATE BRANDS
 MODEL: 14010-12
 FRAME: 12-FT & 20-FT MANUAL SWING BARRIER GATE
 MOUNT: EMBED IN CONCRETE FROST FOOTING; INSTALL PER MANUFACTURER'S INSTRUCTIONS.
 FINISH: GALVANIZED STEEL

14010-12 | 12 ft.
 14010-20 | 20 ft.



TUBULAR BARRIER GATE
 SCALE: NTS



THREE-STRAND WIRE FENCE
 SCALE: NTS



DEPARTMENT OF NATURAL RESOURCES



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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-C0-LANDSCAPE DETAILS
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
DETAILS



DEPARTMENT OF NATURAL RESOURCES



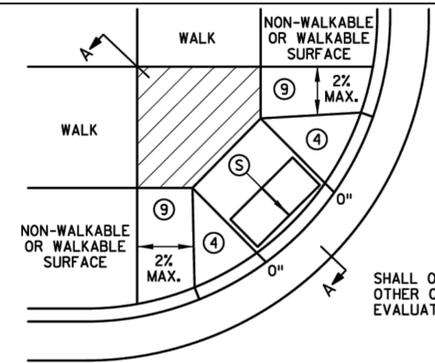
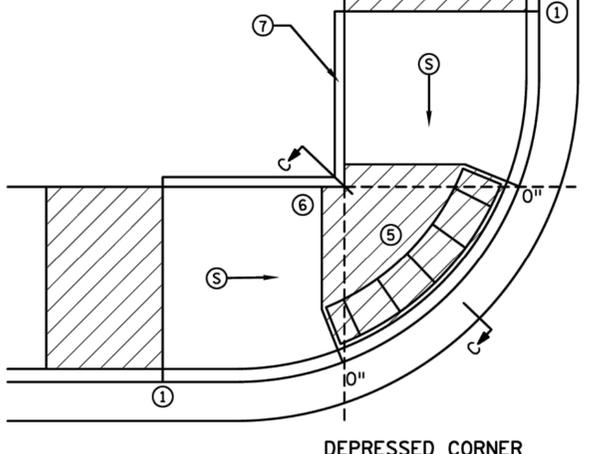
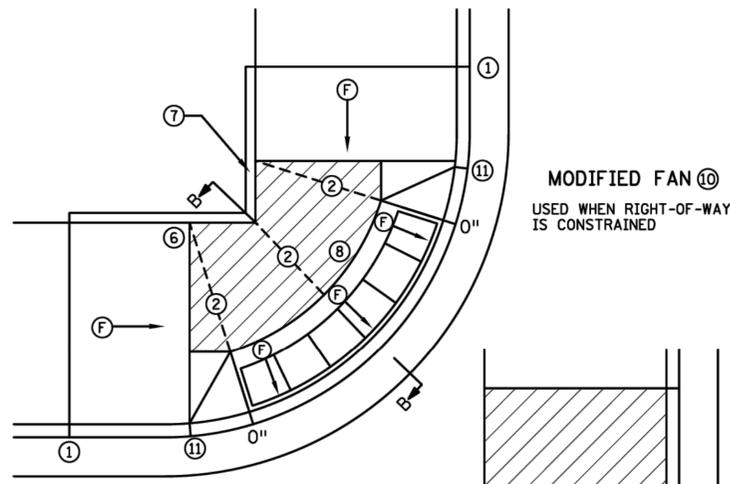
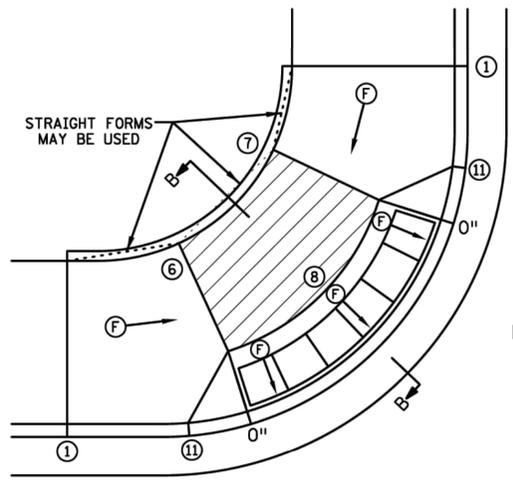
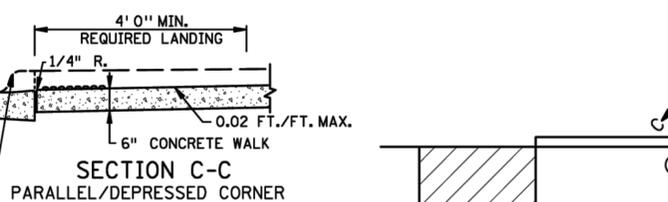
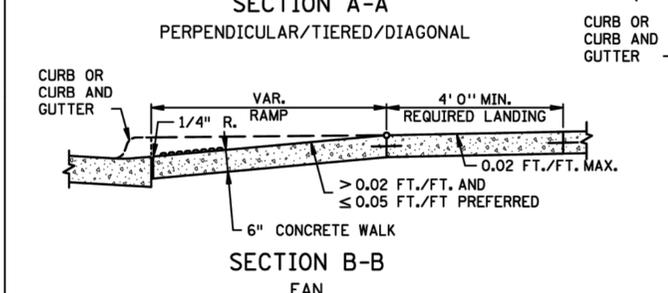
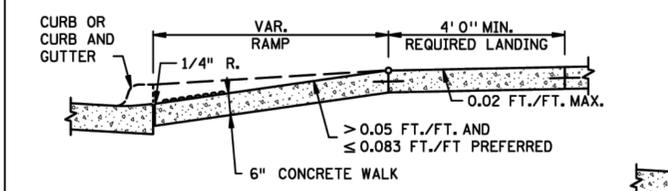
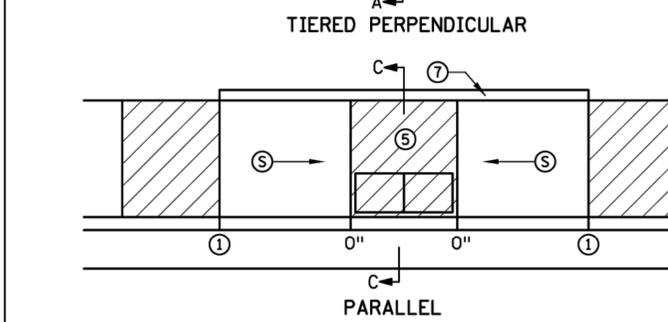
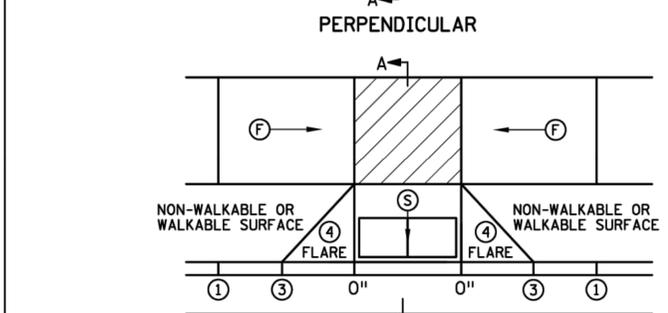
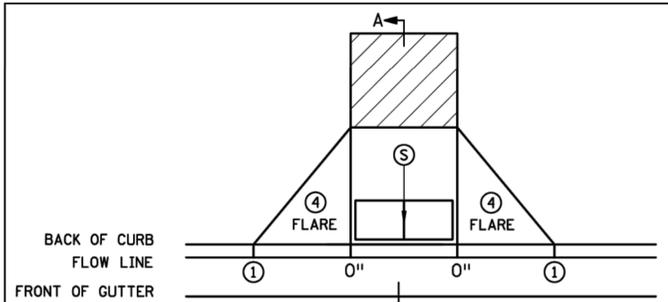
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CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-DETAILS
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---/---/---
CLIENT PROJECT NO.	

PEDESTRIAN CURB RAMP DETAILS



NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.

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, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

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

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR, 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH, EXCEPT AS STATED IN ⑥ BELOW.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.

WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE. MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

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.

- ① MATCH FULL HEIGHT CURB.
- ② 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
- ③ 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
- ④ SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- ⑤ DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
- ⑥ THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)
- ⑦ WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- ⑧ A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.
- ⑨ PAVE FULL WALK WIDTH.
- ⑩ "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.
- ⑪ INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

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%.
(Hatched Box)	LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
X"	CURB HEIGHT

LEAD EXPERT OFFICE

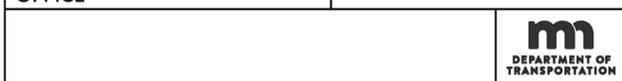
JEFFREY PERKINS OPERATIONS DIVISION

PEDESTRIAN CURB RAMP DETAILS

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN
5-297.250
1 OF 6



STANDARD PLAN

STATE PROJ. NO.	SHEET NO.
TRUNK HWY.	TOTAL SHEETS



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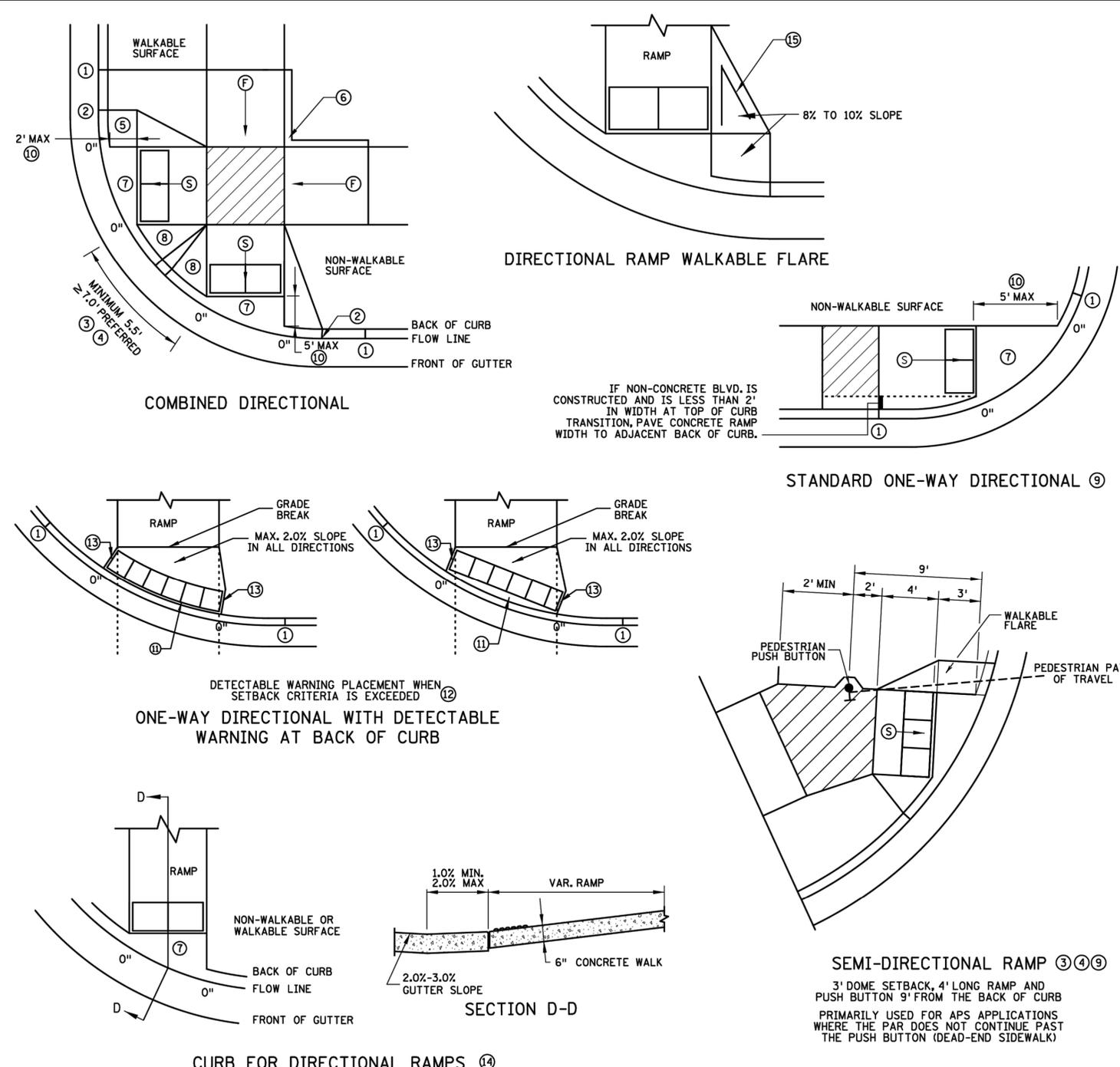
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-DETAILS
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---/---/---
CLIENT PROJECT NO.	-

TITLE
PEDESTRIAN CURB RAMP DETAILS

SHEET
8 OF ---



- NOTES:**
- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) 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, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.
 - 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 WITHIN THE PAR, 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.
 - ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.
 - TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISION (PROSECUTION OF WORK).
 - TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
 - WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.
 - ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.
 - 4" MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS, DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL, DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE, WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF, WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.
 - WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR, ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.
 - RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES 10 & 11 FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.
- MATCH FULL CURB HEIGHT.
 - 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
 - 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES), 4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).
 - THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.
 - WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.
 - GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS, WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
 - 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.
 - 8% TO 10% WALKABLE FLARE.
 - PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
 - FRONT EDGE OF DETECTABLE WARNING SHALL BE SETBACK 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, A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
 - RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB, IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.
 - FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH, THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.
 - THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB, MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
 - TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.
 - PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

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%.
- LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.
- X" CURB HEIGHT

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS		APPROVED: 11-04-2021 REVISED:	<i>Tom Styrbicki</i> THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	2 OF 6
		STANDARD PLAN		STATE PROJ. NO.	SHEET NO.		
				TRUNK HWY.	TOTAL SHEETS		



DEPARTMENT OF NATURAL RESOURCES



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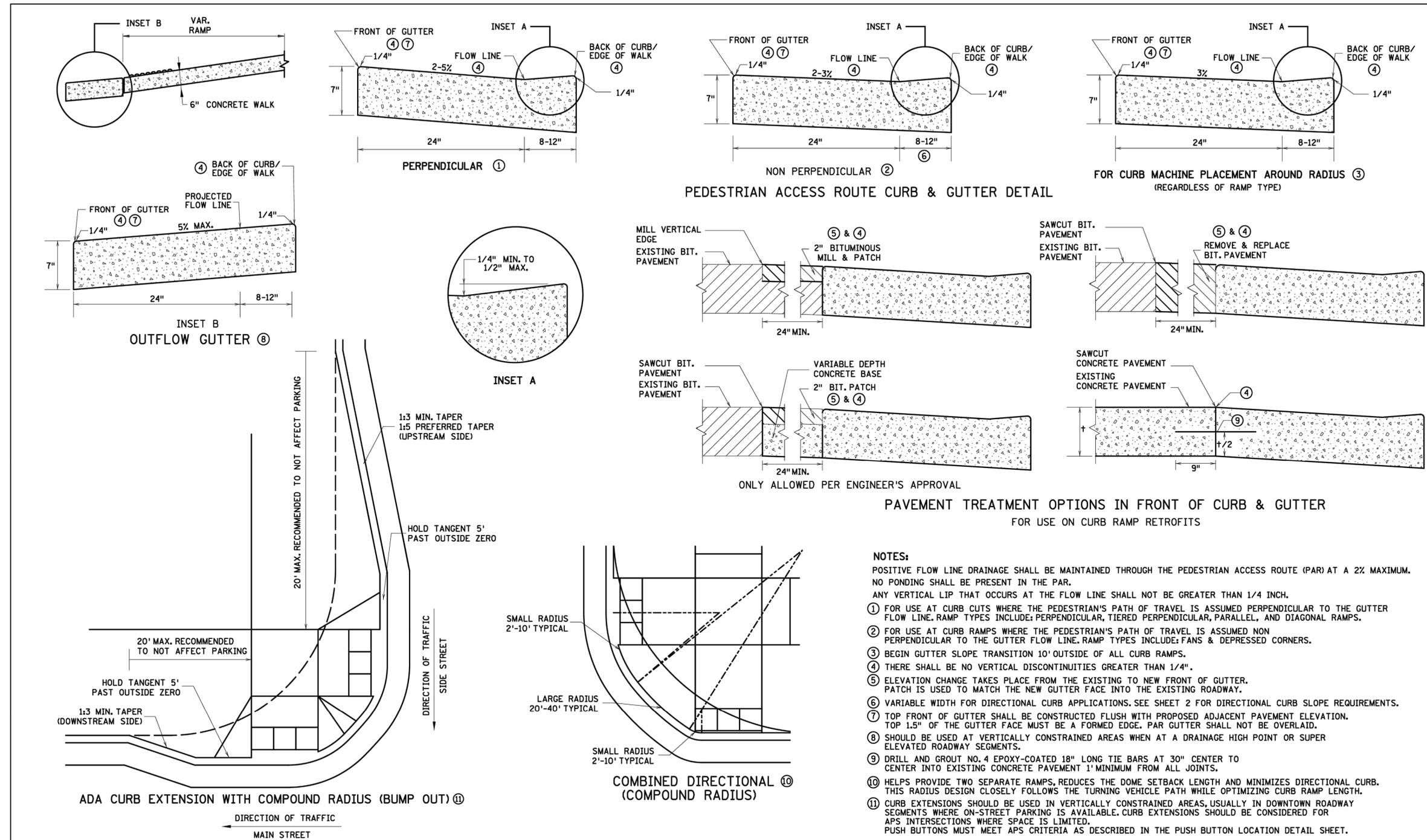
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

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TITLE
PEDESTRIAN CURB RAMP DETAILS



LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	3 OF 6
DEPARTMENT OF TRANSPORTATION			STANDARD PLAN		STATE PROJ. NO.	SHEET NO.
					TRUNK HWY.	TOTAL SHEETS



DEPARTMENT OF NATURAL RESOURCES



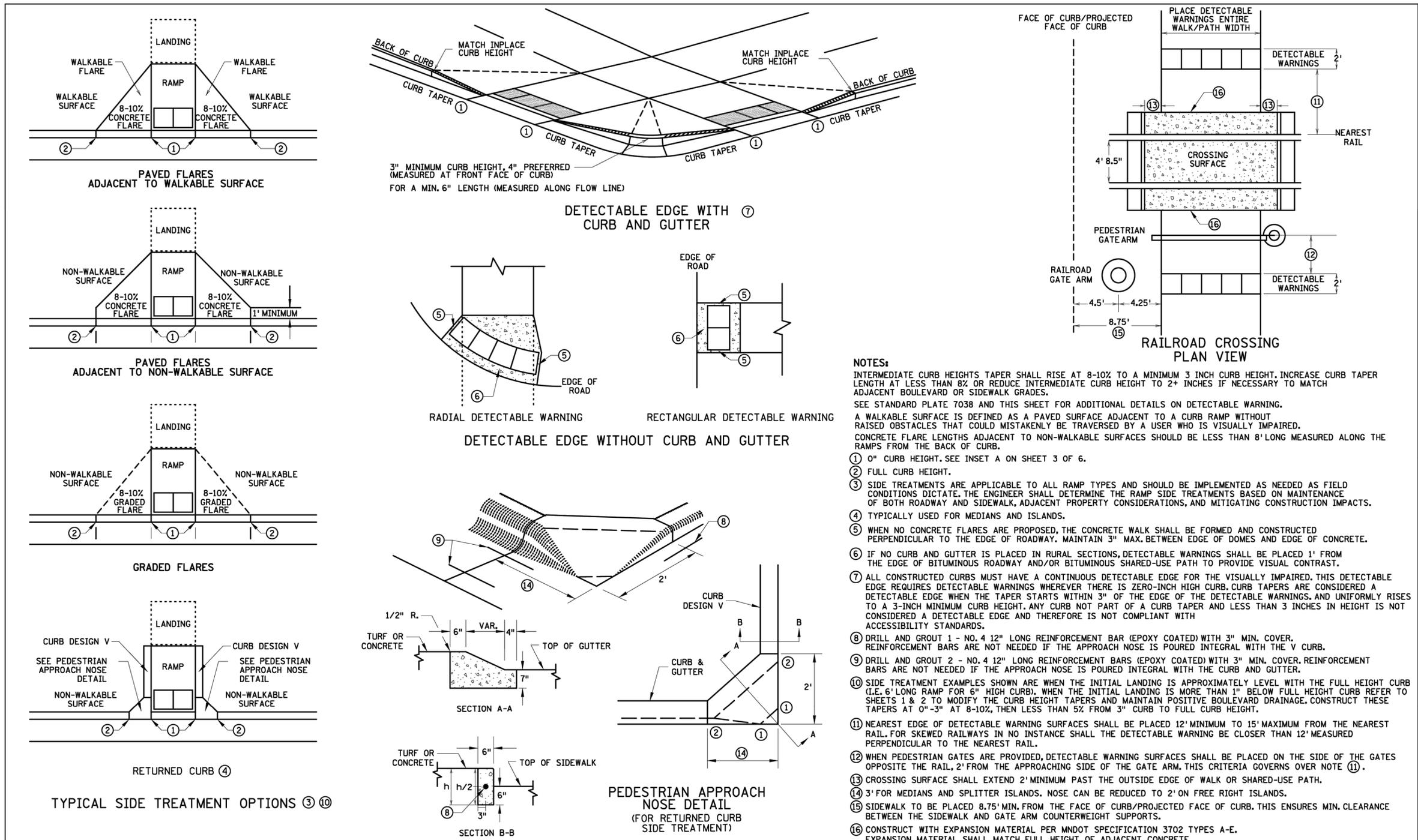
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LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS		APPROVED: 11-04-2021 REVISED:	 THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	4 OF 6
		STANDARD PLAN		STATE PROJ. NO.		SHEET NO.	
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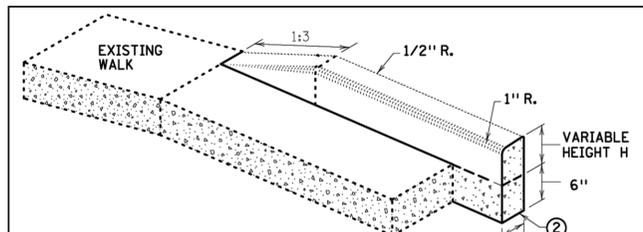
PROJECT
CITY OF NORTHFIELD
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NORTHFIELD MN

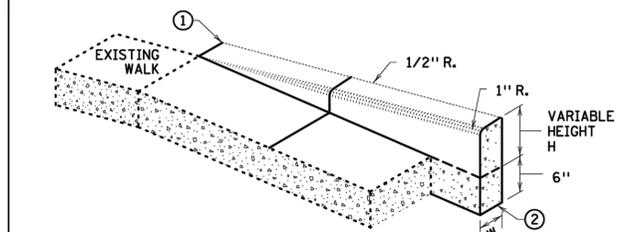
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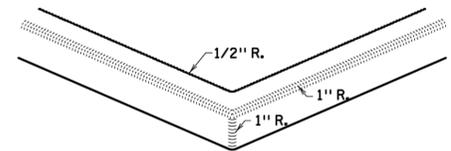
TITLE
PEDESTRIAN CURB RAMP DETAILS



V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS

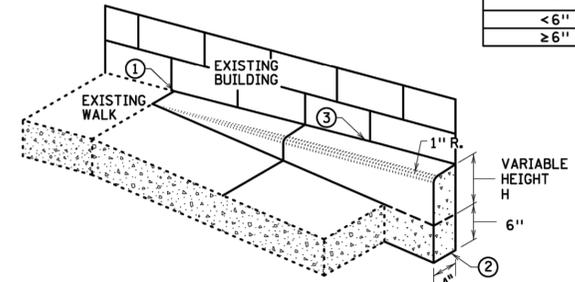


V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

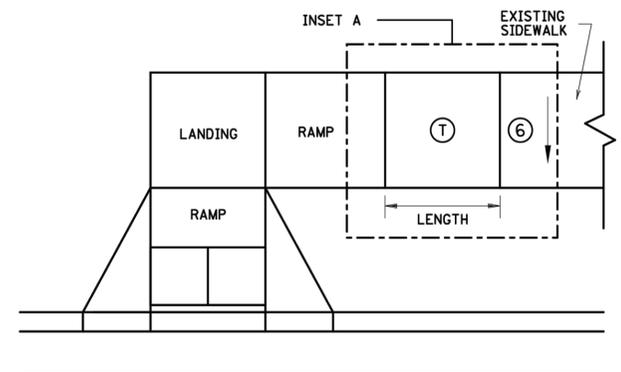


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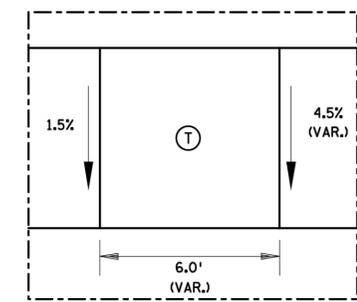
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



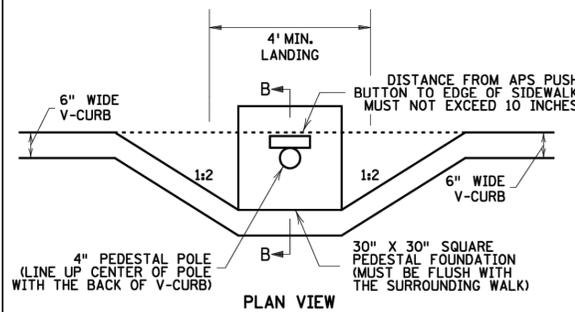
V CURB ADJACENT TO BUILDING OR BARRIER



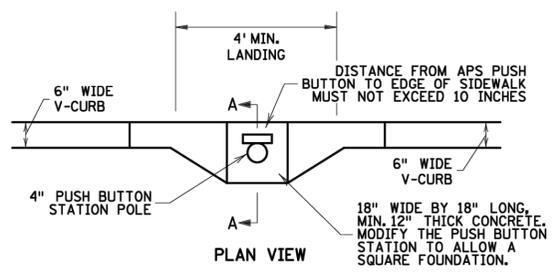
TRANSITION PANEL ④ ⑤



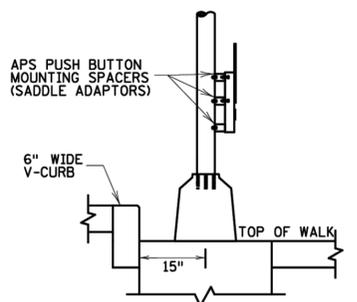
INSET A



PLAN VIEW

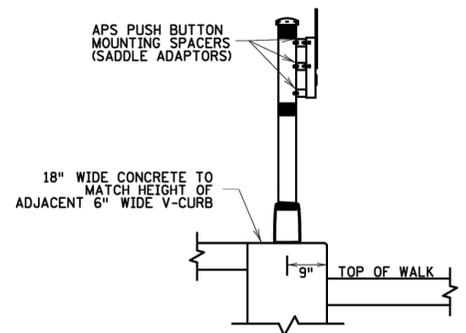


PLAN VIEW



SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



SECTION A-A

PUSH BUTTON STATION (V-CURB)

NOTES:

- A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.
- 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 CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.
- ④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.
- ⑤ TRANSITION PANEL(S) ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).
- ⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

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

- ⑤ 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%.
- ④ LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
- ① TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

LEAD EXPERT OFFICE
JEFFREY PERKINS
OPERATIONS DIVISION



PEDESTRIAN CURB RAMP DETAILS

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN
5-297.250

5 OF 6

STANDARD PLAN

STATE PROJ. NO.
TRUNK HWY.

SHEET NO.
TOTAL SHEETS



DEPARTMENT OF NATURAL RESOURCES



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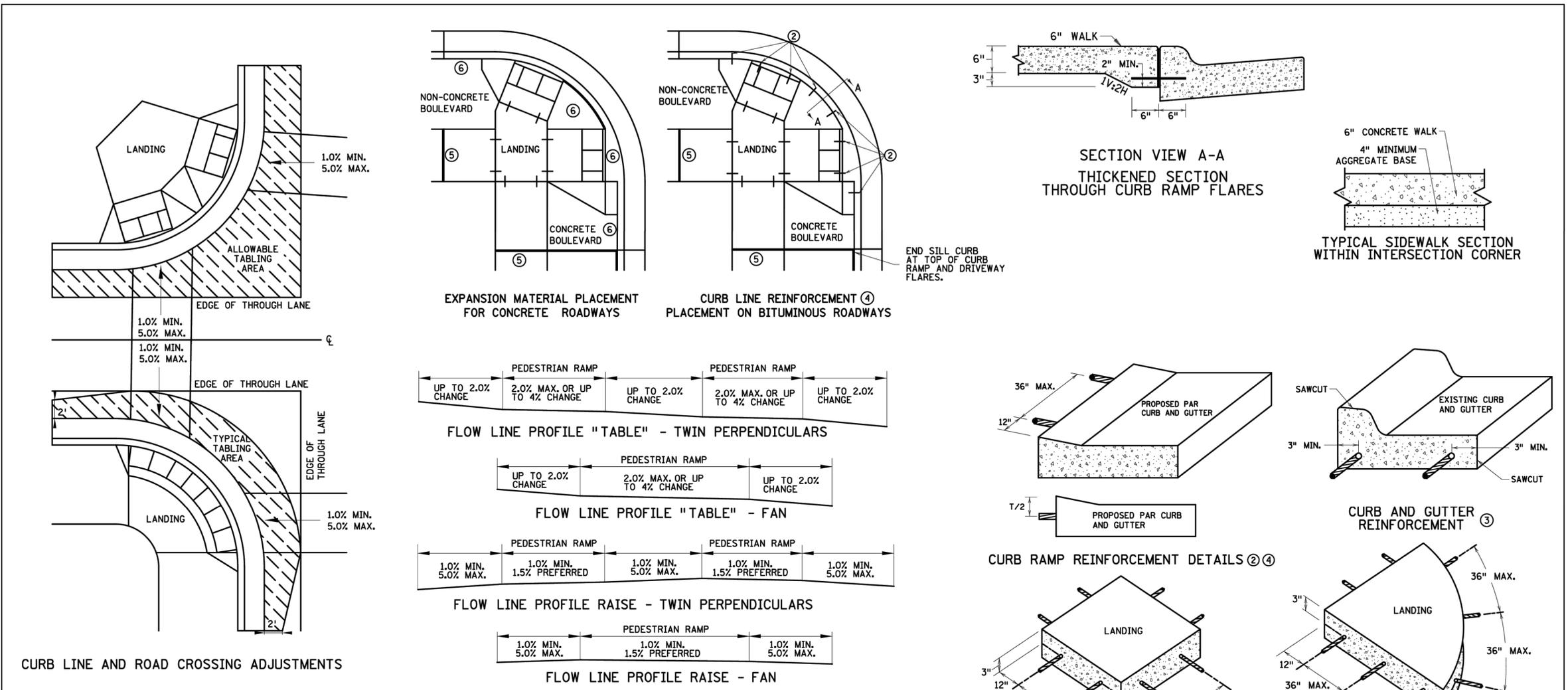
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-DETAILS
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---
CLIENT PROJECT NO.	-

TITLE
PEDESTRIAN CURB RAMP DETAILS

SHEET
12 OF ---



GENERAL NOTES:

"TABLING" OF CROSSWALKS MEANS MAINTAINING LESS THAN 2% CROSS SLOPE WITHIN A CROSSWALK, IS REQUIRED WHEN A ROADWAY IS IN A STOP OR YIELD CONDITION AND THE PROJECT SCOPE ALLOWS.

RECONSTRUCTION PROJECTS: ON FULL PAVEMENT REPLACEMENT PROJECTS "TABLING" OF ENTIRE CROSSWALK SHALL OCCUR WHEN FEASIBLE.

MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

- 1.0% MIN. CROSS-SLOPE OF THE ROAD
- 5.0% MAX. CROSS-SLOPE OF THE ROAD
- "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
- UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEYOND THE PEDESTRIAN CURB RAMP

STAND-ALONE ADA RETROFITS: FOLLOW MILL & OVERLAY CRITERIA ABOVE HOWEVER ALL PAVEMENT WARPING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

RAISING OF CURB LINES SHOULD OCCUR IN VERTICALLY CONSTRAINED AREAS. RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

- 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
- 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
- 5.0% RECOMMENDED MAX. FLOW LINE
- LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL

NOTES:

- TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.
- DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) AT 36" MAXIMUM CENTER TO CENTER MINIMUM 12" SPACING FROM CONSTRUCTION JOINTS. BARS TO BE ADJUSTED TO MATCH RAMP GRADE. BARS TO BE PAID BY EACH.
- DRILL AND GROUT 2 - NO. 4 X 12" LONG (6" EMBEDDED) REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS. BARS TO BE PAID BY EACH.
- THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS. FOR CONCRETE ROADWAYS, SEE NOTE 6.
- CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.
- USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	6 OF 6
DEPARTMENT OF TRANSPORTATION		STANDARD PLAN	STATE PROJ. NO.	SHEET NO.		
			TRUNK HWY.	TOTAL SHEETS		



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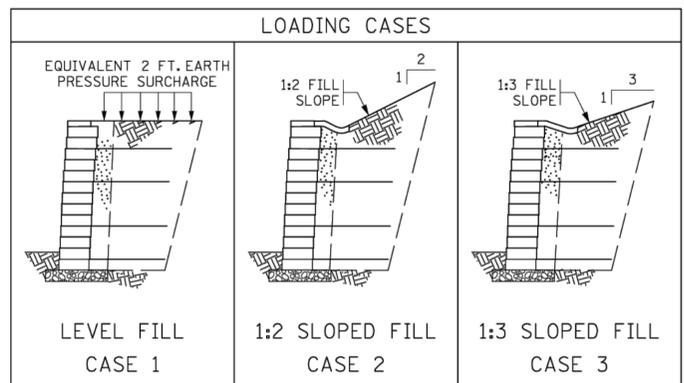
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TITLE
RETAINING WALLS
DETAILS

SHEET
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SAMPLE OF ESTIMATED QUANTITIES TABULATION FOR MODULAR BLOCK WALLS ③

	UNIT	QUANTITY
STRUCTURE EXCAVATION CLASS ---	CU. YD.	
STRUCTURAL BACKFILL (CV)	CU. YD.	
STRUCTURAL CONCRETE (1P42)	CU. YD.	
COARSE FILTER AGGREGATE	CU. YD.	
MODULAR BLOCK RETAINING WALL	SQ. FT.	
TYPE 1 GEOTEXTILE	SQ. YD.	

- ① VERTICAL FACE AREA OF MODULAR BLOCK AS MEASURED FROM PLAN TOP OF WALL TO 2 FT. BELOW FINISHED GRADE AT BOTTOM OF WALL.
- ② PAY ITEM FOR MBW SHALL BE 2411.
- ③ REFER TO TABULATIONS / ESTIMATE SHEETS FOR QUANTITIES.
- ④ FOR USE AS LEVELING PAD.

DEFINITION OF TERMS

MBW	= MODULAR BLOCK WALL
C.I.P.	= CAST-IN-PLACE
H	= WALL HEIGHT FROM TOP OF CAP TO BOTTOM OF LOWERMOST BLOCK UNIT
S	= VERTICAL REINFORCEMENT SPACING
REINFORCEMENT COVERAGE RATIO	= WIDTH OF SOIL REINFORCEMENTS TO HORIZONTAL SPACING (100% COVERAGE RATIO REQUIRED)

- NOTES TO CONTRACTOR:**
- APPROVED COMBINATIONS OF MODULAR BLOCK UNIT AND SOIL REINFORCEMENT AND APPROVED MODULAR BLOCK UNIT PRODUCTS ARE MAINTAINED BY THE FOUNDATION UNIT (GEOTECHNICAL ENGINEERING SECTION), AND ARE POSTED AT <https://www.dot.state.mn.us> ONLY APPROVED PRODUCT COMBINATIONS AND APPROVED BLOCK UNITS PRODUCED FROM APPROVED SOURCES SHALL BE USED.
- PROVIDE DETAILED SHOP DRAWINGS FOR CONSTRUCTION CONTAINING:
- A COPY OF MNDOT STANDARD SHEETS FOR LOADING CASE(S) USED WITH BLOCK TYPE AND SPACING NOTED ON THE "MODULAR BLOCK WALL REINFORCEMENT LAYOUT" TABLE.
 - ELEVATION VIEW WITH REINFORCEMENT PLACEMENT REQUIREMENTS, WALL FACING LAYOUT, AND GEOMETRIC INFORMATION. TOP OF WALL MAY EXTEND UP TO 4" ABOVE PLAN TOP OF WALL ELEVATION.
 - PLAN VIEW WITH BOTTOM AND TOP OF WALL ALIGNMENT, AND PLAN LIMITS OF WALL ALIGNMENT.
 - CROSS SECTIONS DETAILING BATTER, REINFORCEMENT, VERTICAL SPACING, REINFORCEMENT LENGTHS, SUBSURFACE DRAINAGE, SURFACE DRAINAGE, AND WATER RUNOFF COLLECTION ABOVE WALL.
 - REINFORCEMENT LAYOUT; REINFORCEMENT SHALL BE PLACED AT 100% COVERAGE RATIO. REINFORCEMENT ELEVATIONS SHALL BE CONSISTENT ACROSS LENGTH OF WALL STRUCTURE.
 - BLOCK, REINFORCEMENT AND FILL PLACEMENT METHODS AND REQUIREMENTS.
 - DETAIL ALL WALL FILL PENETRATIONS AND WALL FACE PENETRATIONS. DETAIL REINFORCEMENT AND/OR WALL FACING UNIT PLACEMENT AROUND PENETRATIONS. VERTICAL PENETRATIONS GREATER THAN 1 FT. DIAMETER REQUIRE A STRUCTURAL GEORID DIVERSION SYSTEM AND/OR PREINSTALLED SLEEVES.
 - DETAILS THAT ARE SPECIFIC TO VENDOR PRODUCTS AND THEIR INTERACTION WITH OTHER PROJECT COMPONENTS.
 - LIST INFORMATION ON APPROVED COMBINATION OF MBW UNIT AND GEOSYNTHETIC REINFORCEMENT, INCLUDING MNDOT CLASSIFICATION CODE, NOMINAL BLOCK WIDTH, PROPERTIES FOR FIELD IDENTIFICATION, AND INSTALLATION INSTRUCTIONS.
 - DETAILS OF CAP UNITS AND INSTALLATION/FASTENING INSTRUCTIONS FOR THE CAPS. CAP UNITS SHALL BE SET IN A BED OF ADHESIVE DESIGNED TO WITHSTAND MOISTURE AND TEMPERATURE EXTREMES, REMAIN FLEXIBLE, AND SHALL BE SPECIFICALLY FORMULATED FOR BONDING MASONRY TO MASONRY.
 - CERTIFICATION BY PROFESSIONAL ENGINEER EXPERIENCED IN MBW DESIGN THAT THE CONSTRUCTION LAYOUT MEETS THE REQUIREMENTS OF PLANS AND MNDOT MBW STANDARDS. DEVIATION FROM STANDARD DESIGN TABLES ARE PERMITTED BY VALUE ENGINEERING SUBMITTAL ONLY ON PROJECTS WITH OVER 5000 SQ. FT. OF WALL.
 - CONTRACTOR MUST PROVIDE AN MBW SUBMITTAL THAT DETAILS EROSION PREVENTION AND PERMANENT PLANT STABILIZATION. THE SUBMITTAL MUST ALSO MEET THE REQUIREMENTS OF SPEC. 1712.2.

DESIGN CRITERIA

DESIGN CRITERIA FOLLOWS THE "AASHTO LRFD BRIDGE DESIGN SPECIFICATION" (7TH EDITION, 2014) EXCEPT FOR THE DEVIATIONS NOTED BELOW. DESIGN CRITERIA ARE IN ACCORDANCE WITH MNDOT POLICY, AS RECORDED IN THE MNDOT ROAD DESIGN MANUAL, OR FACILITY DESIGN GUIDE.

A. THE MINIMUM REINFORCEMENT LENGTH IS 7 FT. FROM THE FRONT OF THE BLOCK OR 0.8H FOR CASE 1 AND CASE 3 AND 1.2H FOR CASE 2, WHICHEVER IS GREATER.

B. THE REINFORCEMENT FILL FRICTION ANGLE IS 34°.

C. THE LATERAL EARTH PRESSURE COMPUTATION FOR EXTERNAL STABILITY CALCULATIONS USES AN INTERFACE FRICTION ANGLE SET EQUAL TO THE RETAINED BACKFILL ANGLE.

D. THE LATERAL EARTH PRESSURE COMPUTATION FOR INTERNAL STABILITY CALCULATIONS USES THE EFFECTS OF WALL FACE BATTER.

LOAD FACTORS - STRENGTH LIMIT STATE

HORIZONTAL EARTH PRESSURE (γ_{EH}) = 1.5 FOR EXTERNAL STABILITY
HORIZONTAL EARTH PRESSURE (γ_{EH}) = 1.35 FOR INTERNAL STABILITY
VERTICAL PRESSURE FROM DEAD LOAD OF EARTH FILL (γ_{EV}) = 1.35 FOR BEARING CAPACITY
VERTICAL PRESSURE FROM DEAD LOAD OF EARTH FILL (γ_{EV}) = 1.0 FOR SLIDING AND PULL OUT
EQUIVALENT EARTH PRESSURE SURCHARGE (γ) = 1.35

RESISTANCE FACTORS - STRENGTH LIMIT STATE

BEARING ϕ_{BR} = 0.65
DIRECT SLIDING ϕ_{DS} = 1.0
GEORID STRENGTH ϕ = 0.9
GEORID BLOCK CONNECTION STRENGTH ϕ = 0.9
GEORID PULLOUT ϕ = 0.9

SEE FOUNDATION REPORT FOR NOMINAL SOIL BEARING RESISTANCE OF FOUNDATION SOIL.

CASE 1 AND 3 - NOMINAL SOIL BEARING RESISTANCE OF 2000 PSF IS REQUIRED FOR WALLS UP TO 12 FT IN HEIGHT. FOR WALLS GREATER THAN 12 FT IN HEIGHT, THE REQUIRED NOMINAL BEARING RESISTANCE IS EQUAL TO 2000 PSF + (H-10)(1500 PSF) WHERE H IS IN FEET.

CASE 2 - NOMINAL SOIL BEARING RESISTANCE OF 2500 PSF IS REQUIRED FOR WALLS UP TO 12 FT IN HEIGHT. FOR WALLS GREATER THAN 12 FT IN HEIGHT, THE REQUIRED NOMINAL BEARING RESISTANCE IS EQUAL TO 2500 PSF + (H-10)(2200 PSF) WHERE H IS IN FEET.

REINFORCED WALL FILL CHARACTERISTICS:

A. USE STRUCTURAL BACKFILL (SPEC. 3149.2D2)
B. INTERNAL ANGLE OF FRICTION (ϕ_p) = 34° MINIMUM
C. COHESION (C) = 0
D. MOIST UNIT WEIGHT (γ_p) = 125 PCF

COARSE FILTER AGGREGATE CHARACTERISTICS:

A. COARSE FILTER AGGREGATE TO MEET SPEC. 3149.2H.

RETAINED BACKFILL CHARACTERISTICS:

A. INTERNAL ANGLE OF FRICTION (ϕ_b) = 30°
B. COHESION (C) = 0
C. MOIST UNIT WEIGHT (γ_b) = 120 PCF

FOUNDATION SOILS CHARACTERISTICS:

A. INTERNAL ANGLE OF FRICTION (ϕ_f) = 30°
B. COHESION (C) = 0
C. UNIT WEIGHT (γ_f) = 120 PCF

BASIS OF DESIGN:

IN ADDITION TO THE STANDARD SHEETS, INCLUDE PLAN AND FRONT ELEVATION VIEWS OF THE MODULAR BLOCK RETAINING WALLS IN THE PLANS. THE PLAN VIEW MUST SHOW ALIGNMENT BASELINE, LIMITS OF BOTTOM OF WALL ALIGNMENT, AND LIMITS OF TOP OF WALL ALIGNMENT AS ALIGNMENTS VARY WITH BATTER OF WALL SYSTEM ACTUALLY SUPPLIED. THE FRONT ELEVATION MUST IDENTIFY BOTTOM AND TOP OF WALL ELEVATIONS, EXISTING GRADES, AND FINISHED GRADES.

IF THE WALL IS CURVED, THE RADIUS AT THE BOTTOM AND THE TOP OF EACH WALL SEGMENT AND THE P.C. AND P.T. STATION POINTS OFF OF BASELINE AND LIMITS OF BOTTOM AND TOP OF WALL ALIGNMENT MUST BE SHOWN.

REFERENCE STANDARD PLATES AND PROVIDE DETAILS FOR TRAFFIC BARRIERS, CURB AND GUTTER, HANDRAILS AND FENCING AS REQUIRED BY PROJECT CONDITIONS. SEE AASHTO MANUALS, MNDOT ROAD DESIGN MANUAL OR FACILITY DESIGN GUIDE, STANDARD PLATES AND DETAILS FOR REQUIREMENTS.

SHOW SURFACE DRAINAGE PATTERNS IN THE PLAN VIEW. PROVIDE DIMENSIONS FOR WIDTH AND DEPTH OF THE DRAINAGE SWALE AS WELL AS THE TYPE OF IMPERVIOUS LINER MATERIAL. COLLECT SURFACE WATER RUNOFF ABOVE AND DIVERT AROUND WALL FACE.

DETAIL LINES AND GRADES OF THE INTERNAL DRAINAGE COLLECTION PIPE. DETAIL OR NOTE THE DESTINATION OF INTERNAL WALL DRAINS AS WELL AS THE METHOD OF TERMINATION (DAYLIGHT END OF PIPE OR CONNECTION INTO HYDRAULIC STRUCTURE). SPACE DRAIN PIPE OUTLET NOT MORE THAN 150 FT.

SOFT SOILS AND/OR HIGH WATER CONDITIONS (DEFINED AS GROUNDWATER WITHIN A DEPTH EQUAL TO THE WALL HEIGHT (H) MAY NOT BE SUITABLE FOR APPLICATION OF STANDARD DESIGNS AND REQUIRE SPECIAL CONSIDERATION BY THE FOUNDATIONS UNIT.

STANDARD DESIGN CHARTS ARE NOT APPLICABLE TO:
-PROJECT/SITES WHERE FOUNDATION SOILS SHEAR STRENGTH AND/OR BEARING RESISTANCE DO NOT MEET OR EXCEED VALUES USED IN THE DEVELOPMENT OF STANDARD DESIGN CHARTS.
-PROJECTS WITH A LARGE QUANTITY OF FACE AREA WHERE PROJECT SPECIFIC DESIGNS ARE RECOMMENDED, AS DEFINED IN MNDOT ROAD DESIGN MANUAL OR FACILITY DESIGN GUIDE.
-WHERE SLOPES IN FRONT OF WALL ARE STEEPER THAN 1:3.
-WHERE MAXIMUM WALL HEIGHT EXCEEDS 12 FT.
-WHERE WALLS ARE TIERED.
-WALLS WITH NOISE WALLS.

IF USING CONCRETE RAILING, INCLUDE STANDARD BRIDGE DETAIL "CONCRETE RAILING (TYPE F)" IN PLAN SET.

PROVIDE PROJECT SPECIFIC AESTHETIC REQUIREMENTS INCLUDING COLOR AND FASCIA SURFACING IN THE SPECIAL PROVISIONS.

MNDOT ROAD DESIGN MANUAL OR FACILITY DESIGN GUIDE CONTAINS GUIDELINES, TRAFFIC SAFETY AND OTHER ASPECTS.

LEAD EXPERT OFFICE

AMBER BLANCHARD
ACTING DIRECTOR
OFFICE OF MATERIALS
AND ROAD RESEARCH

m MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.640 **1 OF 2**

APPROVED: 03-29-2023
REVISED:

Thomas Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

STATE PROJ. NO. (T.H.) SHEET NO. OF SHEETS

MODULAR BLOCK RETAINING WALL
GENERAL NOTES



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CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

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TITLE
RETAINING WALLS DETAILS

SHEET
14 OF ---

MODULAR WALL STORMWATER MANAGEMENT AND VEGETATION ESTABLISHMENT NOTES

THE FOLLOWING MUST BE ADDRESSED IN DESIGN AND INCORPORATED INTO THE PLAN SUBMITTALS:

1. STORMWATER MANAGEMENT OF OVERLAND AND SLOPE TOE FLOWS-
INCLUDE IN WALL PACKAGE SUBMITTAL THAT DETAILS HOW OVERLAND AND TOE OF SLOPE FLOWS WILL BE MANAGED AROUND AND THROUGH DURING ALL PHASES OF WALL CONSTRUCTION.
INCLUDE THE FOLLOWING:
A. DESCRIBE EROSION PREVENTION BMPS, AND METHODS FOR APPROPRIATE INSTALLATION.
B. DETAIL HOW TEMPORARY OR PERMANENT STABILIZATION WILL BE INCORPORATED INTO THE WORK.
C. DETAIL HOW SLOPE TOE WILL BE DEFENDED FROM SEDIMENT LOSS DURING ALL PHASES OF WALL CONSTRUCTION, INCLUDING CONTINGENCY PROGRAM FOR SEDIMENT RECOVERY OUTSIDE OF CONSTRUCTION LIMITS.
2. TOP AND END WALL STABILIZATION-
INCLUDE IN WALL PACKAGE SUBMITTAL ESTIMATED QUANTITIES, PRECISE BEST PRACTICES FOR EXPOSED SOIL STABILIZATION FOR ALL PHASES OF CONSTRUCTION. DETAIL TIME FRAMES FOR INTERIM AND CONCURRENT STABILIZATION MEASURES, ALONG WITH STANDARD INSTALLATION DETAILS THAT FOLLOW MnDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION (LATEST EDITION) OR NATIONWIDE GENERAL INDUSTRY PRACTICE.
USE 1:4 SLOPE STEEPNESS TO DIFFERENTIATE BETWEEN RELATIVELY FLAT AND CRITICAL SLOPE STEEPNESS FOR DETERMINING APPROPRIATE SLOPE COVERS THAT PREVENT EROSION DURING THE VEGETATIVE ESTABLISHMENT PHASE. INCLUDE THE FOLLOWING:
A. DEFINE THE COHESIVE SOIL TYPES FOR MAXIMIZING EROSION STABILITY FOR SWALE AND UPGRADIENT AREAS.
B. OBTAIN SOIL FERTILITY TEST RESULTS OF PROPOSED TOPSOILS. BASE FERTILIZER APPLICATION RECOMMENDATION FROM TEST RESULTS.
C. DEFINE ADDITIONAL SOIL AMENDMENTS TO MAXIMIZE VEGETATIVE GROWTH.
D. DEFINE THE SEED MIXTURES APPROPRIATE TO SOLAR ASPECT, REGION, ADJACENT PERENNIAL COVER TYPES, AND EXPECTED MAINTENANCE PROTOCOLS.
E. USE CRITICAL PATH PLANNING FOR OPTIMUM SEEDING DATE INCORPORATION INTO THE WORK..
3. TOE OF WALL STABILIZATION-
INCLUDE ITEMS ABOVE IN PACKAGE SUBMITTAL FOR EXPOSED SOIL STABILIZATION WITH ADDITIONAL STABILIZATION PROGRAM DELIVERY IF CONVEYANCE FLOW OR SATURATED SOIL CONDITION IS ALSO PRESENT.
4. DRAIN TILE OUTLETS-
INCLUDE IN WALL PACKAGE SUBMITTAL IMMEDIATE STABILIZATION PROGRAM INCLUDING BMPS FOR DRAIN TILE OUTLET OR WALL OPENINGS OR PENETRATIONS.
5. CONCRETE WASTE/EXCESS MATERIAL MANAGEMENT-
INCLUDE IN WALL PACKAGE SUBMITTAL A MATERIAL MANAGEMENT PROGRAM THAT ADDRESSES CONCRETE WASTE GROUND CONTACT PREVENTION, SPILL MANAGEMENT, AND EXCESS MATERIAL DISPOSAL.
6. VEGETATION MANAGEMENT PROGRAM-
A. PREVENT EROSION. SUBMIT A CONTINGENCY PLAN FOR EXTREME WEATHER GREATER THAN A 2 YEAR TYPE STORM AND EROSION CONDITIONS. IMMEDIATELY IMPLEMENT THE CONTINGENCY PLAN WHEN DAMAGE IS DETECTED.
B. ESTABLISH VEGETATION. SUBMIT A VEGETATION ESTABLISHMENT MONITORING PROGRAM THAT WEEKLY OR MORE OFTEN DETERMINES PLANT HEALTH AND DEVELOPMENT. DEVELOP A CORRECTIVE ACTION PLAN WHEN VEGETATION IS NOT DEVELOPING ADEQUATE COVER DENSITY OR SPECIES DIVERSITY BASED ON SEED MIX DEFINED IN THE WALL SUBMITTAL.
C. PROVIDE AUTOMATED TEMPORARY IRRIGATION SYSTEM UNTIL PERENNIAL SEEDED OR SOD COMPONENTS ARE A MINIMUM OF 6 INCHES OF COVER HEIGHT. APPLY WATER AT A RATE OF 1 INCH PER WEEK, EVENLY AND UNIFORMLY APPLIED EACH DAY. IRRIGATION IS NOT NECESSARY ON RAIN DAYS. ENSURE APPROPRIATE SPECIES DENSITY HAS OCCURRED THAT MEETS CONTRACT REQUIREMENTS AND ENVIRONMENTAL COMMITMENTS.
D. CONTROL ANNUAL WEEDS THAT LIMIT PERENNIAL VEGETATIVE COVER BY MECHANICAL METHODS.
E. CONTROL ALL NOXIOUS STATE LISTED WEEDS BY MECHANICAL OR PRECISION HERBICIDE METHODS.
7. LIST AND PROVIDE TEMPORARY AND PERMANENT STABILIZATION ESTIMATED QUANTITY ITEMS AND TABULATIONS IN WALL SUBMITTAL PACKAGE. THE TABULATION OF ESTIMATED QUANTITIES SHOULD INCLUDE ITEMS LIKE TOPSOIL BORROW, FERTILIZER TYPES, TEMPORARY EROSION PREVENTION ITEMS, PERMANENT EROSION PREVENTION ITEMS, SEED MIXTURE TYPES, SEDIMENT CONTROL BMP TYPES, AND IRRIGATION.

LEAD EXPERT OFFICE
AMBER BLANCHARD
ACTING DIRECTOR
OFFICE OF MATERIALS
AND ROAD RESEARCH



STANDARD PLAN 5-297.640 2 OF 2

Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 03-29-2023
REVISED:

STATE PROJ. NO.

**MODULAR BLOCK RETAINING WALL
STORMWATER MANAGEMENT AND VEGETATION NOTES**

(T.H.) SHEET NO. OF SHEETS



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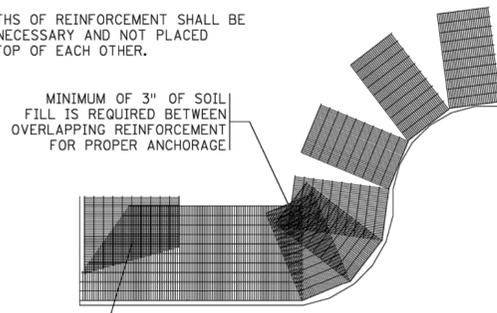
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REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-DETAILS
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

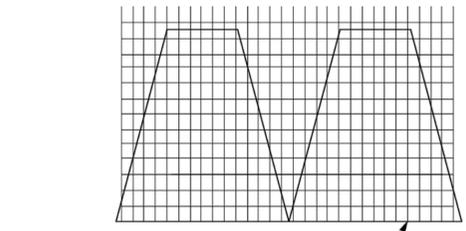
TITLE
RETAINING WALLS DETAILS

NOTES:
CORRECT ORIENTATION OF GEOSYNTHETIC TO OBTAIN PROPER STRENGTH SHALL BE DETAILED ON CONTRACTOR SHOP DRAWINGS.
ADJACENT WIDTHS OF REINFORCEMENT SHALL BE EXTENDED AS NECESSARY AND NOT PLACED DIRECTLY ON TOP OF EACH OTHER.



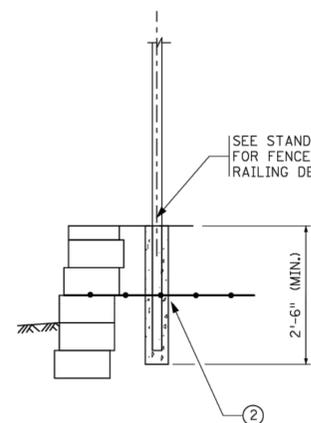
STAGGER REINFORCEMENT BY ONE BLOCK HEIGHT. REINFORCEMENTS SHALL NOT BE PLACED DIRECTLY ON TOP OF EACH OTHER.

REINFORCEMENT PLACEMENT AROUND CURVES AND CORNERS

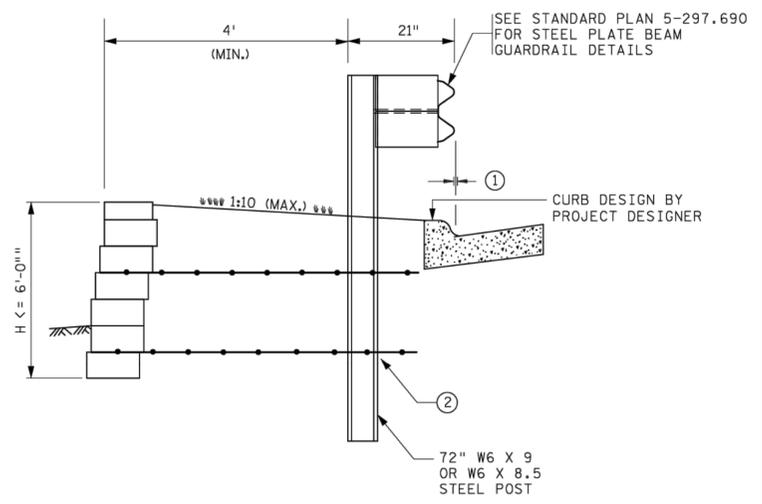


REINFORCEMENT IS TO BE PLACED ON LEVEL BACKFILL AND EXTENDED TO FRONT FACE OF OVERLYING BLOCKS. PLACE NEXT UNIT. PULL REINFORCEMENT TAUT AND BACKFILL AS REQUIRED.

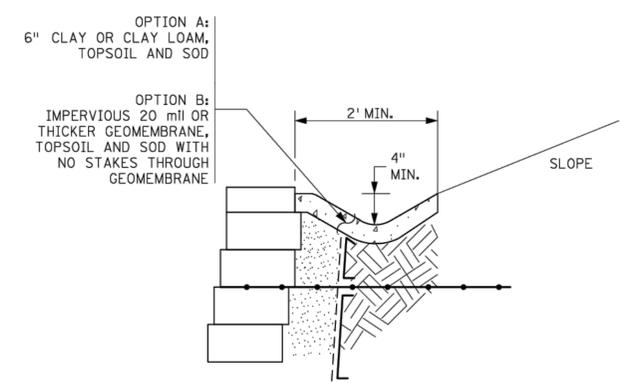
REINFORCEMENT PLACEMENT BETWEEN BLOCK UNITS



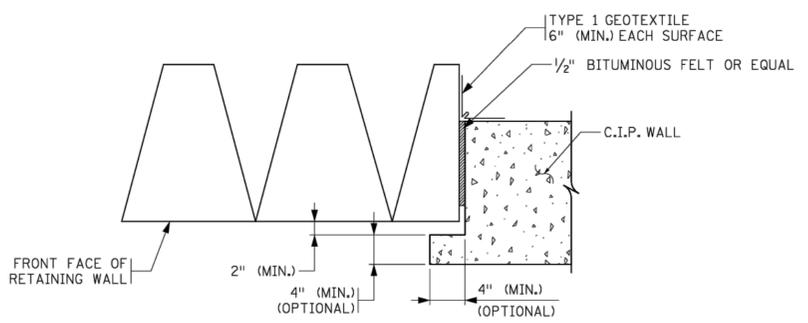
POST DETAIL
TYPICAL HANDRAIL AND/OR FENCE POST



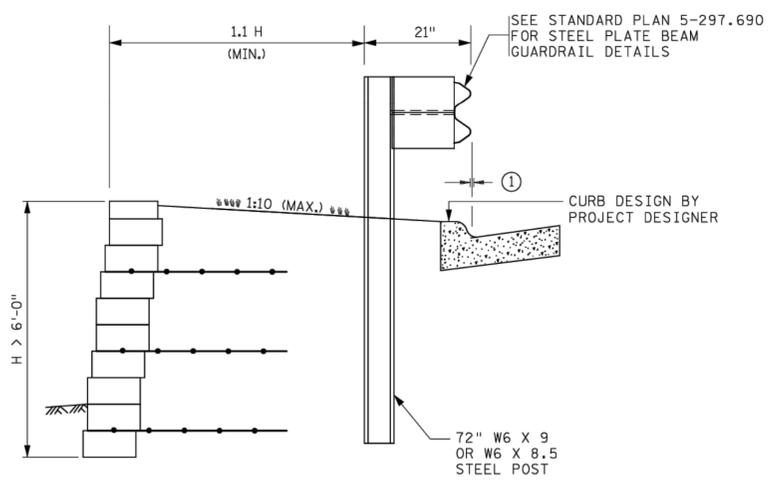
STEEL PLATE BEAM GUARDRAIL DETAIL 1



NOTE:
MINIMUM SWALE DIMENSIONS ARE 2 FEET WIDE BY 4 INCHES DEEP.
TYPICAL SWALE DETAIL



CONNECTION DETAIL AT JUNCTURE OF MBW AND C.I.P. STRUCTURE



STEEL PLATE BEAM GUARDRAIL DETAIL 2

NOTES:
① USE CAUTION WHEN PLACING CURB WITH GUARDRAIL. CURBS ADVERSELY AFFECT THE PERFORMANCE OF THE GUARDRAIL.
② ALL POSTS MUST BE SLEEVED THROUGH THE GEOGRID.

LEAD EXPERT OFFICE
AMBER BLANCHARD
ACTING DIRECTOR
OFFICE OF MATERIALS
AND ROAD RESEARCH



STANDARD PLAN 5-297.645 1 OF 2
APPROVED: 03-29-2023
REVISOR:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

MODULAR BLOCK RETAINING WALL DETAILS

STATE PROJ. NO. (T.H.) SHEET NO. OF SHEETS



DEPARTMENT OF NATURAL RESOURCES



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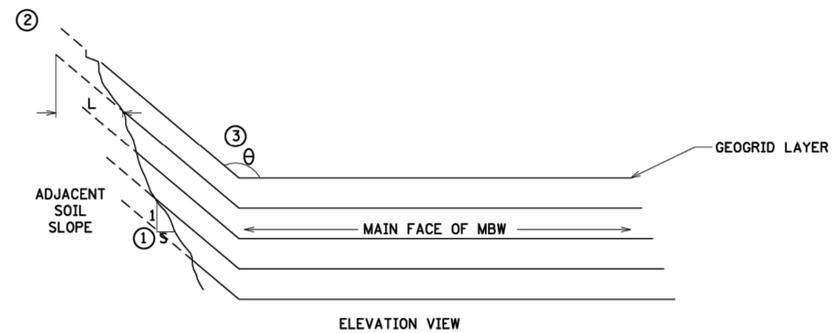
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

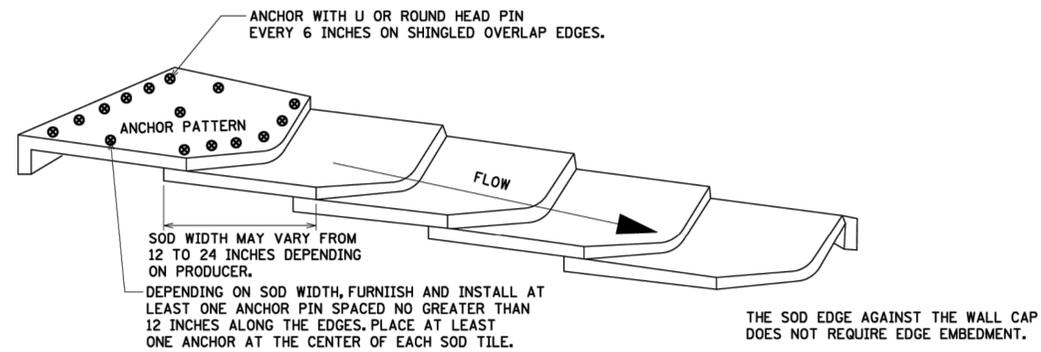
PROJECT NO.	23-30059
FILE NAME	30059-DETAILS
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
RETAINING WALLS DETAILS

SHEET
17 OF ---

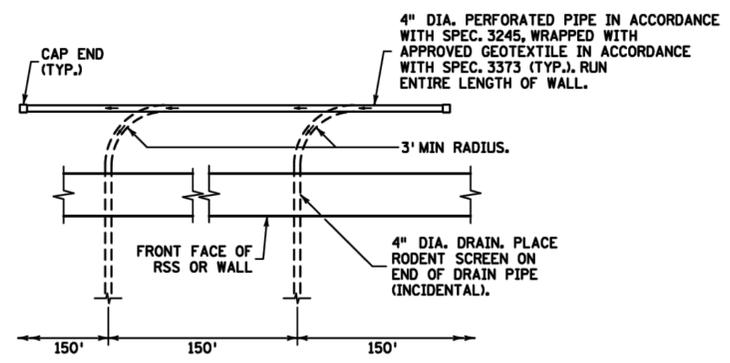


MBW TERMINATION DETAIL AT ADJACENT SOIL SLOPE



- FOLLOW SPEC. 2575.3A.2b SODDING INSTALLATION DATES.
- FOLLOW SPEC. 2575.3F.2 FOR ORIENTATION, LEAD AND EDGE EMBEDMENT, OVERLAPPING AND SHINGLING.
- PROVIDE TEMPORARY IRRIGATION UNTIL SOD ROOTED A MINIMUM OF 3 INCHES.

SOD FLUME INSTALLATION DETAIL



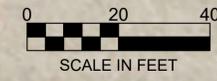
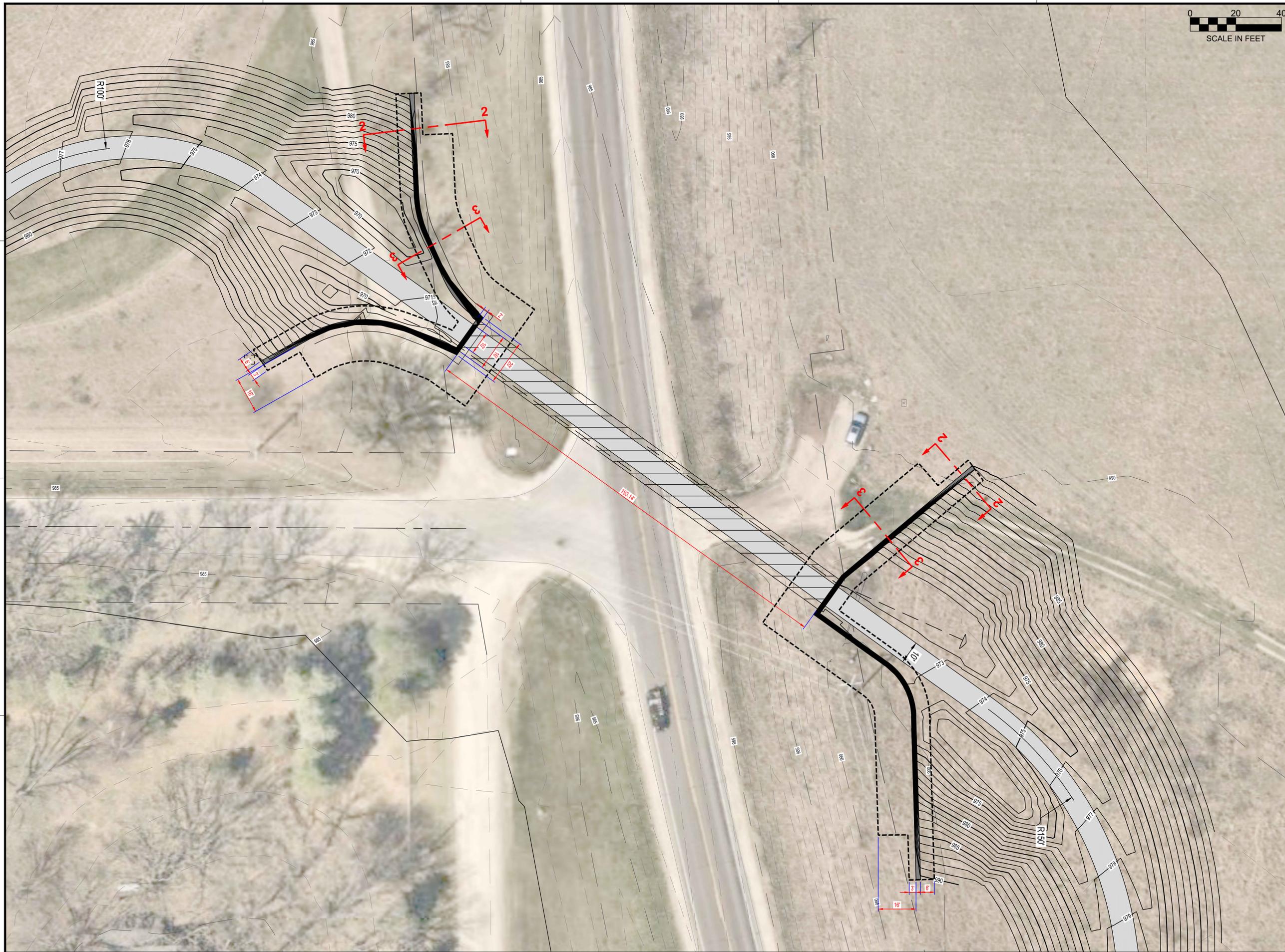
TOP VIEW DRAINAGE DETAIL

- NOTES:
- THE SLOPE OF ADJACENT SOIL, 1:s, MUST BE NO STEEPER THAN 1 1/2:2H.
 - GEOGRID SHALL BE BURIED A DISTANCE, L, NO LESS THAN 2' INTO THE ADJACENT SOIL SLOPE.
 - THE ANGLE, θ , OF THE MBW WILL BE DETERMINED BY THE DESIGNER TO MEET RIGHT-OF-WAY CONSTRAINTS AND THE REQUIREMENT OF NOTES 1 AND 2.

LEAD EXPERT OFFICE
AMBER BLANCHARD
ACTING DIRECTOR
OFFICE OF MATERIALS
AND ROAD RESEARCH

m MINNESOTA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.645 2 OF 2
APPROVED: 03-29-2023
REVISED:
THOMAS TYBRICKI
STATE DESIGN ENGINEER

MODULAR BLOCK RETAINING WALL DETAILS
(T.H.) SHEET NO. OF SHEETS



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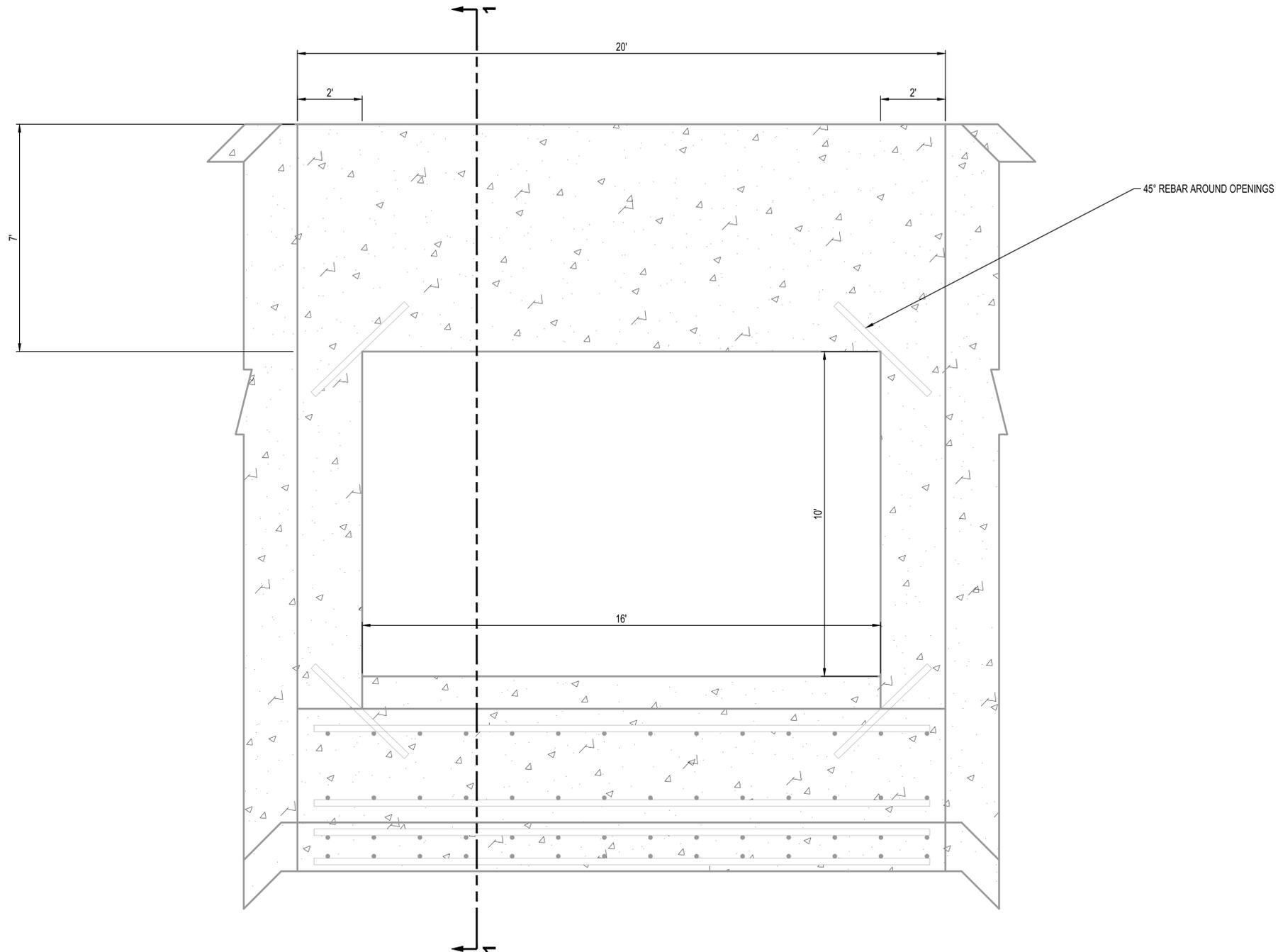
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
 NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
 FILE NAME 30059-PROF-SEGMENT E
 DRAWN BY OBO/BJK
 DESIGNED BY KJR
 REVIEWED BY KJR
 ORIGINAL ISSUE DATE --/--
 CLIENT PROJECT NO. -

TITLE
CULVERT DETAILS

SHEET
18 OF ---



CULVERT HEADWALL
NTS



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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
FILE NAME 30059-DETAILS
DRAWN BY OBO/BJK
DESIGNED BY KJR
REVIEWED BY KJR
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CLIENT PROJECT NO. -

TITLE
CULVERT DETAILS



DEPARTMENT OF
NATURAL RESOURCES



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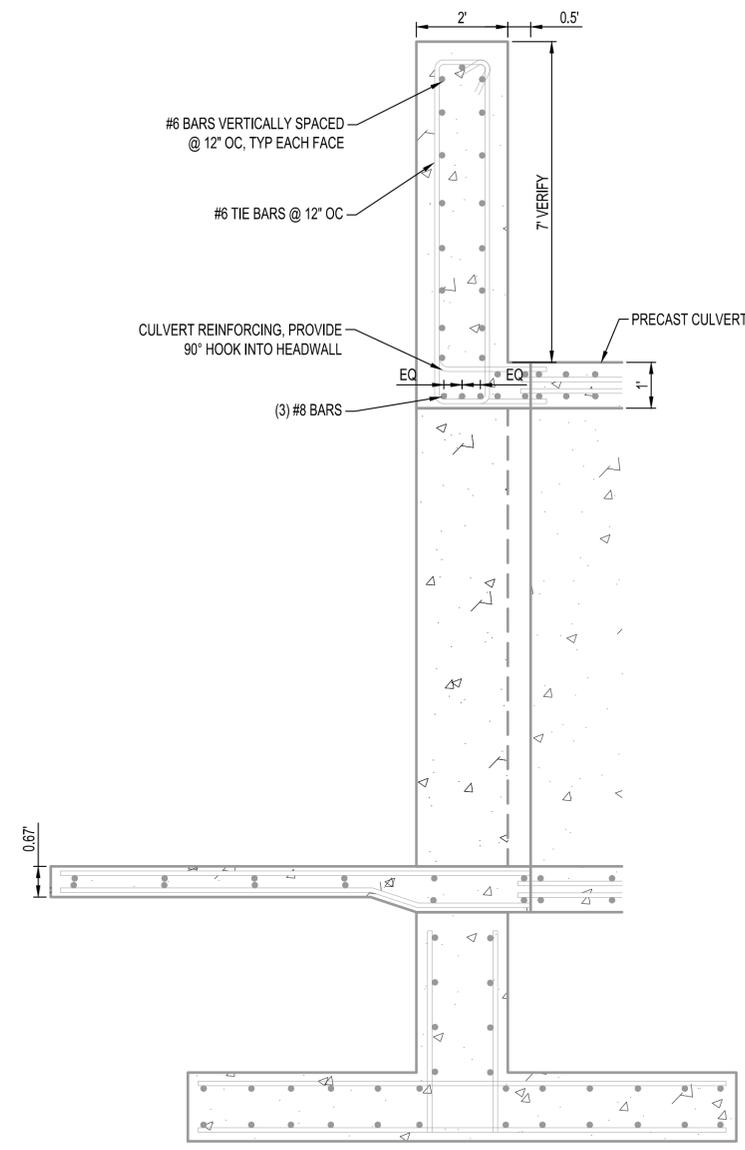
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL

NORTHFIELD MN

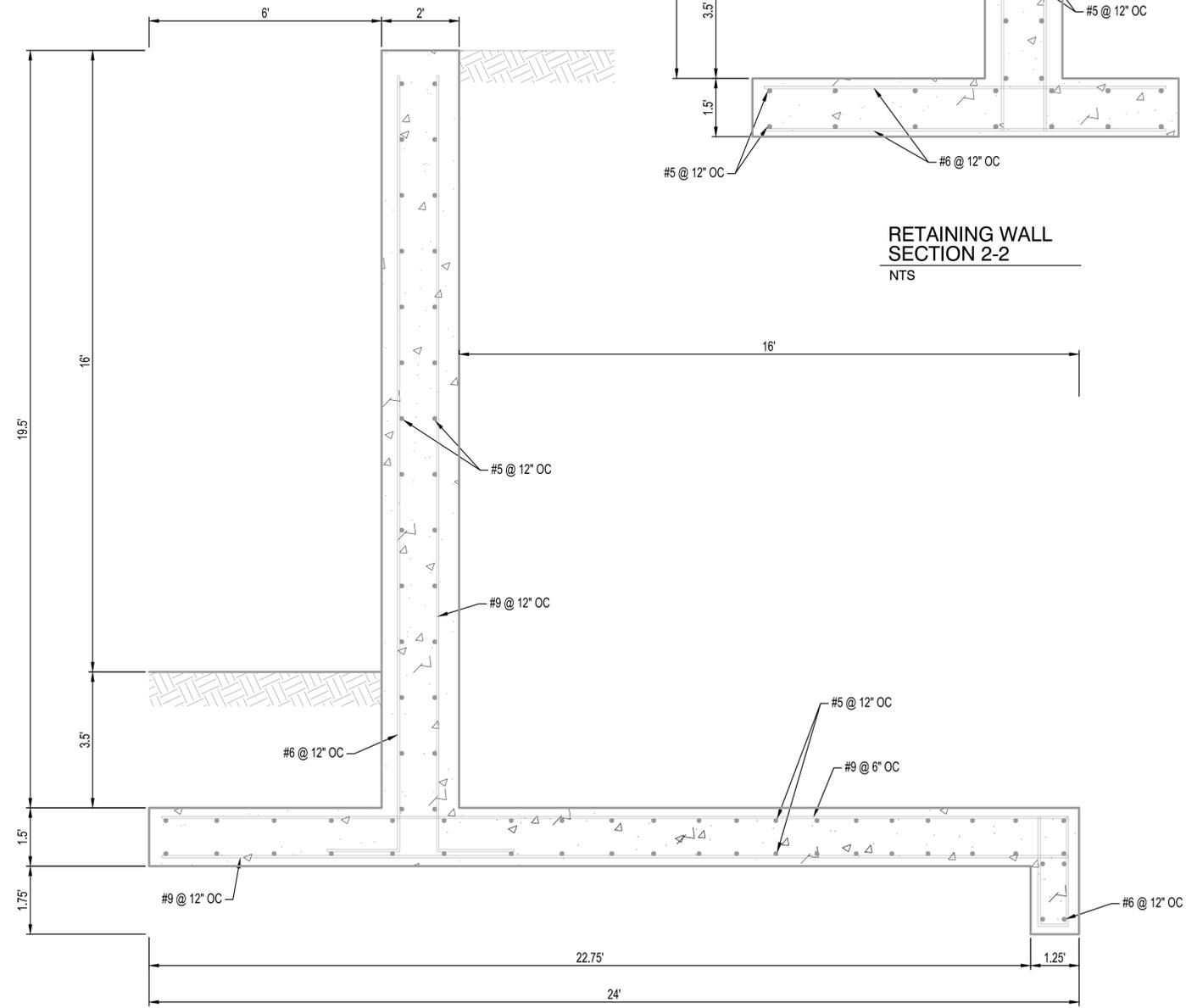
REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-DETAILS
DRAWN BY	OBO/BJK
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ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
CULVERT DETAILS



CULVERT HEADWALL SECTION 1-1
NTS

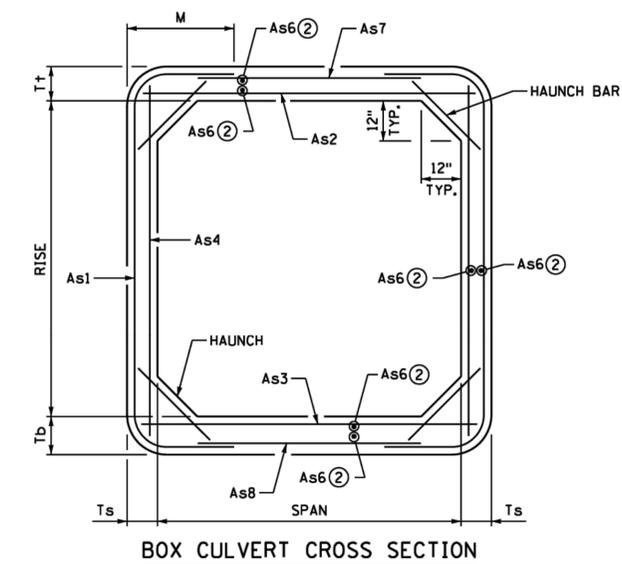


RETAINING WALL SECTION 2-2
NTS

RETAINING WALL SECTION 3-3
NTS



SPAN x RISE (ft.)	CLASS	f'c (psi)	FILL HEIGHT RANGE (ft.)	Tt (in.)	Tb (in.)	Ts (in.)	WEIGHT (lbs./ft.)	REINFORCEMENT REQUIREMENTS ①										
								As1		As2		As3		As4		As7/As8		
								As	LENGTH	M	As	LENGTH	As	LENGTH	As	LENGTH	As	LENGTH
16x4	1	5000	<3	10	11	9	5800	1.33	16'-11"	5'-10"	0.87	16'-6"	0.81	16'-6"	0.22	4'-6"	0.27	10'-5"
	2	5000	3 - 6	10	11	9	5800	1.24	15'-7"	5'-2"	0.83	16'-6"	0.81	16'-6"	0.22	4'-6"	0.27	11'-5"
	3	5000	6 - 10	10	11	10	5950	1.48	17'-4"	6'-1"	1.01	16'-6"	1.00	16'-6"	0.24	4'-6"	0.27	10'-5"
	4	6000	10 - 16	12	12	11	6750	1.85	16'-8"	5'-7"	1.30	16'-6"	1.32	16'-6"	0.27	4'-6"	0.29	11'-1"
16x5	1	5000	<3	10	11	9	6025	1.23	17'-7"	5'-8"	0.95	16'-6"	0.90	16'-6"	0.22	5'-6"	0.27	10'-5"
	2	5000	3 - 6	10	11	9	6025	1.14	16'-3"	5'-0"	0.91	16'-6"	0.90	16'-6"	0.22	5'-6"	0.27	11'-5"
	3	5000	6 - 10	10	11	10	6200	1.36	17'-4"	5'-7"	1.09	16'-6"	1.11	16'-6"	0.24	5'-6"	0.27	11'-3"
	4	6000	10 - 16	12	12	10	6850	1.84	15'-10"	4'-8"	1.55	16'-6"	1.57	16'-6"	0.24	5'-6"	0.29	12'-9"
16x6	1	5000	<3	10	11	9	6250	1.15	17'-3"	5'-0"	1.01	16'-6"	0.98	16'-6"	0.22	6'-6"	0.27	11'-5"
	2	5000	3 - 6	10	11	9	6250	1.06	17'-0"	4'-11"	0.98	16'-6"	0.98	16'-6"	0.22	6'-6"	0.27	11'-5"
	3	5000	6 - 10	10	11	9	6250	1.38	18'-1"	5'-5"	1.27	16'-6"	1.32	16'-6"	0.22	6'-6"	0.27	11'-5"
	4	6000	10 - 16	12	12	10	7100	1.69	16'-10"	4'-8"	1.66	16'-6"	1.69	16'-6"	0.24	6'-6"	0.29	12'-9"
16x7	1	5000	<3	10	11	8	6250	1.13	16'-10"	4'-4"	1.17	16'-6"	1.16	16'-6"	0.20	7'-6"	0.27	12'-9"
	2	5000	3 - 6	10	11	8	6250	1.05	16'-6"	4'-2"	1.14	16'-6"	1.16	16'-6"	0.20	7'-6"	0.27	12'-10"
	3	5000	6 - 10	10	11	9	6475	1.29	17'-5"	4'-7"	1.34	16'-6"	1.41	16'-6"	0.22	7'-6"	0.27	12'-10"
	4	6000	10 - 16	12	12	10	7350	1.57	17'-10"	4'-8"	1.76	16'-6"	1.80	16'-6"	0.24	7'-6"	0.29	12'-9"
16x8	1	5000	<3	10	11	8	6450	1.05	17'-6"	4'-2"	1.23	16'-6"	1.23	16'-6"	0.20	8'-6"	0.27	12'-9"
	2	5000	3 - 6	10	11	8	6450	0.97	17'-2"	4'-0"	1.20	16'-6"	1.23	16'-6"	0.20	8'-6"	0.27	12'-9"
	3	5000	6 - 10	10	11	9	6700	1.20	18'-2"	4'-6"	1.41	16'-6"	1.50	16'-6"	0.22	8'-6"	0.27	12'-10"
	4	6000	10 - 16	12	12	10	7600	1.47	18'-10"	4'-8"	1.84	16'-6"	1.89	16'-6"	0.24	8'-6"	0.29	12'-9"
16x9	1	5000	<3	10	11	8	6650	0.98	18'-4"	4'-1"	1.29	16'-6"	1.28	16'-6"	0.20	9'-6"	0.27	12'-9"
	2	5000	3 - 6	10	11	8	6650	0.90	17'-11"	3'-10"	1.24	16'-6"	1.28	16'-6"	0.20	9'-6"	0.27	12'-9"
	3	5000	6 - 10	10	11	9	6925	1.13	18'-11"	4'-4"	1.53	16'-6"	1.57	16'-6"	0.22	9'-6"	0.27	12'-9"
	4	6000	10 - 16	12	12	10	7850	1.36	19'-8"	4'-7"	1.90	16'-6"	1.97	16'-6"	0.24	9'-6"	0.29	12'-9"
16x10	1	5000	<3	10	11	8	6850	0.93	19'-1"	3'-11"	1.34	16'-6"	1.34	16'-6"	0.20	10'-6"	0.27	12'-9"
	2	5000	3 - 6	10	11	8	6850	0.84	18'-9"	3'-9"	1.29	16'-6"	1.34	16'-6"	0.20	10'-6"	0.27	12'-9"
	3	5000	6 - 10	10	11	9	7150	1.07	19'-8"	4'-3"	1.58	16'-6"	1.64	16'-6"	0.22	10'-6"	0.27	12'-10"
	4	6000	10 - 16	12	12	10	8100	1.29	20'-6"	4'-6"	1.96	16'-6"	2.06	16'-6"	0.24	10'-6"	0.29	12'-9"
16x11	1	5000	<3	10	11	8	7050	0.91	20'-0"	3'-11"	1.39	16'-6"	1.39	16'-6"	0.20	11'-6"	0.27	12'-9"
	2	5000	3 - 6	10	11	8	7050	0.83	19'-8"	3'-9"	1.33	16'-6"	1.39	16'-6"	0.20	11'-6"	0.27	12'-9"
	3	5000	6 - 10	10	11	9	7375	1.02	20'-6"	4'-2"	1.63	16'-6"	1.70	16'-6"	0.22	11'-6"	0.27	12'-9"
	4	6000	10 - 16	12	12	10	8350	1.23	21'-3"	4'-5"	2.03	16'-6"	2.12	16'-6"	0.24	11'-6"	0.29	12'-9"
16x12	1	5000	<3	10	11	8	7250	0.90	21'-1"	3'-11"	1.43	16'-6"	1.44	16'-6"	0.24	12'-6"	0.27	12'-7"
	2	5000	3 - 6	10	11	8	7250	0.83	20'-9"	3'-9"	1.37	16'-6"	1.44	16'-6"	0.24	12'-6"	0.27	12'-9"
	3	5000	6 - 10	10	11	9	7600	0.99	22'-7"	4'-8"	1.67	16'-6"	1.75	16'-6"	0.24	12'-6"	0.27	11'-7"
	4	6000	10 - 16	12	12	11	8950	1.20	22'-2"	4'-4"	1.92	16'-6"	2.02	16'-6"	0.24	12'-6"	0.29	12'-11"



GENERAL NOTES

SEE STANDARD FIG. 5-395.100(A) FOR BASIS OF DESIGN. FILL HEIGHT IS DEFINED AS THE DISTANCE FROM THE TOP OF THE CULVERT TO THE TOP OF THE PAVEMENT OR TO TOP OF FILL IF THERE IS NO PAVEMENT.

DESIGNS FOR FILL HEIGHTS GREATER THAN SHOWN IN THE TABLES ARE AVAILABLE FROM THE MnDOT BRIDGE OFFICE.

SEE STANDARD FIG. 5-395.101(A) AND FIG. 5-397.101(B) FOR ADDITIONAL INFORMATION. TRANSVERSE REINFORCEMENT IS PARALLEL TO THE CULVERT SPAN. LONGITUDINAL REINFORCEMENT IS PERPENDICULAR TO THE CULVERT SPAN.

IF THE FILL HEIGHT RANGE EXTENDS INTO MORE THAN ONE CLASS, USE THE CLASS WITH THE LARGEST STEEL AREAS. CHECK MAXIMUM AND MINIMUM FILL HEIGHTS OVER THE FULL AREA OF ROADWAY AND SHOULDERS.

ROADWAY OR SHOULDER FILL HEIGHTS OF LESS THAN 2'-0" REQUIRE A DISTRIBUTION SLAB. EXTEND THE WIDTH OF THE DISTRIBUTION SLAB TO THE OUTSIDE EDGES OF THE ROADWAY SHOULDERS UNLESS DIRECTED BY THE ENGINEER.

USE CONCRETE MIX 3552 FOR THE DISTRIBUTION SLAB.

PLACE 6" THICK CAST-IN-PLACE DISTRIBUTION SLABS WITH NO. 5 BARS AT 1'-0" TRANSVERSELY AND NO. 5 BARS AT 1'-0" LONGITUDINALLY. EPOXY COAT ALL DISTRIBUTION SLAB REINFORCEMENT. CENTER DISTRIBUTION SLAB JOINTS OVER BARREL SEGMENTS. PROVIDE 3" MINIMUM GRANULAR MATERIAL IN ACCORDANCE WITH SPEC. 3149.2B BETWEEN BARREL AND DISTRIBUTION SLAB.

PRECAST DISTRIBUTION SLABS WITH THE SAME REINFORCEMENT MAY BE USED FOR FILL HEIGHTS OVER 1'-0". CENTER DISTRIBUTION SLAB JOINTS OVER BARREL SEGMENTS. PROVIDE 6" MIN GRANULAR MATERIAL IN ACCORDANCE WITH SPEC. 3149.2B BETWEEN BARREL AND DISTRIBUTION SLAB.

REDESIGN DISTRIBUTION SLAB PER THE MnDOT PAVEMENT DESIGN MANUAL IF IT IS USED AS PAVEMENT SURFACE.

CULVERT WEIGHT IS BASED ON 150 P.C.F. WITH A HAUNCH SIZE OF 12 INCHES.

- ① REINFORCEMENT AREAS ARE IN SQUARE INCHES PER LINEAL FOOT OF BARREL. ALL REINFORCEMENT LENGTHS AND AREAS ARE MINIMUM REQUIREMENTS. REINFORCEMENT REQUIREMENTS ARE FOR WELDED WIRE REINFORCEMENT WITH MINIMUM SPECIFIED YIELD STRESS OF 65 ksi. IF BAR REINFORCEMENT IS SUBSTITUTED FOR WELDED WIRE REINFORCEMENT, INCREASE THE AREA OF REINFORCEMENT BY 8% AND SUBMIT DESIGN CALCULATIONS VERIFYING COMPLIANCE WITH AASHTO 5.7.3.4 "CONTROL CRACKING BY DISTRIBUTION OF REINFORCEMENT".
- ② PLACE LONGITUDINAL REINFORCEMENT DENOTED AS As6 IN ALL SLABS AND WALLS WITH A MINIMUM OF .06 IN²/FT.

REVISION: DECEMBER 21, 2022

APPROVED: MARCH 24, 2011

Nancy Dubenberg
STATE BRIDGE ENGINEER

FIG. 5-395.100(E)

DO NOT INCLUDE TABLES WITH PLAN

TITLE: PRECAST CONCRETE BOX CULVERT TABLES

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PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059

FILE NAME 30059-DETAILS

DRAWN BY OBO/BJK

DESIGNED BY KJR

REVIEWED BY KJR

ORIGINAL ISSUE DATE --/--

CLIENT PROJECT NO. -

TITLE

CULVERT DETAILS

Mill Town State Trail Permanent and Temporary Easement Schedule
 City of Northfield /MNDNR
 Location: Northfield, MN

OPINION of PROBABLE VALUATION

2205325003	1101	SPRING CREEK ROAD	NORTHFIELD EQUITIES LLC	RESIDENTIAL	0	1,185
2205325001	1015	SPRING CREEK ROAD	LELAND A & KARI L PONGRATZ	RESIDENTIAL	1,001	937
2205253001	0	SPRING CREEK ROAD	SAINT DOMINIC CURCH	AG/NATURAL LAND	159	1,455
2205253002	0	SPRING CREEK ROAD	SAINT DOMINIC CURCH	AG/NATURAL LAND	423	3,701
2205225001	0	SPRING CREEK ROAD	NORTHFIELD GOLF CLUB	AG/NATURAL LAND	455	10,471
0432200001	0	DIVISION ST/TH19	CARLETON COLLEGE	AG/NATURAL LAND	258	2,475
0432225001	0	DIVISION ST/TH19	CARLETON COLLEGE	AG/NATURAL LAND	66,244	9,894
0431100001	0	DIVISION ST/TH19	CARLETON COLLEGE	AG/NATURAL LAND	6,211	1,715
2231400001	0	SPRING CREEK ROAD	CARLETON COLLEGE	AG/NATURAL LAND	66,280	84,642
410200052010	0	CANADA AVE	CARLETON COLLEGE	AG/NATURAL LAND	17,891	4,284
410290050010	0	CANADA AVE	CARLETON COLLEGE	AG/NATURAL LAND	56,387	8,341
410290051010	0	CANADA AVE	CARLETON COLLEGE	AG/NATURAL LAND	42,443	0
410290025010	0	CANADA AVE	CARLETON COLLEGE	AG/NATURAL LAND	109,910	20,957
410200081010	0	CANADA AVE	JB DUDLEY	AG/NATURAL LAND	2,424	6,479



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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
 NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
 FILE NAME 30059-DETAILS
 DRAWN BY OBO/BJK
 DESIGNED BY KJR
 REVIEWED BY KJR
 ORIGINAL ISSUE DATE --/--
 CLIENT PROJECT NO. -

TITLE
EASEMENT SCHEDULE

SHEET
22 OF ---

PLOT DATE: 5/1/2024 1:37 PM

PRELIMINARY NOT FOR CONSTRUCTION



PLOT DATE: 5/31/2024 2:25 PM



DEPARTMENT OF NATURAL RESOURCES



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CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL

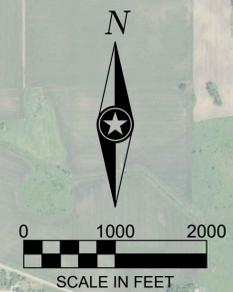
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-TRAFFIC-CONTROL-PLAN
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---/---/---
CLIENT PROJECT NO.	-

TITLE
DETOUR PLAN

SHEET
23 OF ----



PRELIMINARY NOT FOR CONSTRUCTION

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT LOCATION
 PROJECT/SITE NAME: MILL TOWNS STATE TRAIL
 PROJECT LOCATION:
 CITY/TOWNSHIP: NORTHFIELD
 COUNTY/STATE: MINNESOTA
 ZIP CODE: 55057
 LATITUDE/LONGITUDE:
 QUARTER SECTION, SECTION, TOWNSHIP, RANGE:

PROJECT DESCRIPTION
 THE PROJECT INCLUDES CONSTRUCTION OF A NEW OF A NEW BITUMINOUS BIKE TRAIL ALONG SPRING CREEK ROAD, HIGHWAY 19, AND CANADA AVENUE. GRADING OF THE TRAIL AND CULVERTS TO CONVEY STORMWATER. CULVERT EXTENSIONS OF EXISTING CULVERTS.

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF A NEW BITUMINOUS TRAIL, CURB AND GUTTER, AND STORM CULVERTS.

TENTATIVE CONSTRUCTION SCHEDULE (OPERATOR SHOULD PROVIDE ESTIMATED CONSTRUCTION SCHEDULE TO THE OWNER'S REPRESENTATIVE)	
CONSTRUCTION ACTIVITIES:	ESTIMATED DATES OF SOIL DISTURBANCE ACTIVITIES:
CLEARING AND GRUBBING OPERATIONS, GRADING	APRIL - AUGUST 2025
HIGHWAY CULVERT	APRIL - OCTOBER 2025
STORM SEWER INSTALLATION	JUNE - AUGUST 2025
CURB & GUTTER/SIDEWALK	AUGUST - OCTOBER 2025
PAVING	SEPTEMBER - OCTOBER 2025
INITIAL TURF	NOVEMBER 2025
LANDSCAPING, FINAL TURF, MISC.	APRIL - AUGUST 2025

PRE-CONSTRUCTION IMPERVIOUS SURFACE AND DISTURBED AREA CALCULATIONS
 TOTAL AREA TO BE DISTURBED = 14.93 ACRES MINIMUM AREA REQUIRING MPCA PERMIT = 1.00 ACRES
****AN MPCA NPDES PERMIT IS/IS NOT REQUIRED FOR THIS PROJECT****
 IMPERVIOUS AREA: PRE-CONSTRUCTION = 0.83 ACRES/POST-CONSTRUCTION = 1.37 ACRES
 NET INCREASE OF IMPERVIOUS AREA = 0.54 ACRES
 MINIMUM NEW IMPERVIOUS SURFACE AREA CREATED REQUIRING PERMANENT STORMWATER MANAGEMENT = 1.00 ACRES (BASED ON MPCA PERMIT/CITY CODE/WATERSHED REQUIREMENTS)

CONTACT INFORMATION/RESPONSIBLE PARTIES
 THE OWNER OWNS THE LAND, ADJACENT ROADS, AND EASEMENT AREAS ASSOCIATED WITH THE PROJECT. THE OWNER IS THE OWNER CO-PERMITTEE APPLYING FOR PERMIT COVERAGE AND WILL BE RESPONSIBLE FOR COMPLIANCE WITH ALL TERMS AND CONDITIONS OF THE PERMIT INCLUDING DEVELOPING THIS SWPPP AND THE LONG-TERM MAINTENANCE PLAN OF THE PERMANENT STORMWATER MANAGEMENT SYSTEM FOR THIS PROJECT (IF APPLICABLE). THE OWNER WILL ENSURE THAT THE DESCRIBED WORK IN THE SWPPP IS BEING COMPLETED BY THE OPERATOR PERMITTEE.

OWNER/PERMITTEE: **COMPANY (CONTACT NAME, TITLE)**
ADDRESS
CITY, STATE ZIP
000.000.0000/EMAIL

THE PRIMARY CONTRACTOR WILL ENTER INTO A CONTRACT WITH THE OWNER TO COMPLETE THE REQUIRED WORK FOR THIS PROJECT. THE PRIMARY CONTRACTOR WILL BECOME (UNDER CONTRACT) THE OPERATOR CO-PERMITTEE APPLYING FOR PERMIT COVERAGE ON THE NPDES PERMIT (THROUGH EXECUTION OF AN NPDES PERMIT MODIFICATION FORM) AND THEREBY AGREE TO IMPLEMENT THIS SWPPP IN COOPERATION WITH THE OWNER. THE OPERATOR IS RESPONSIBLE FOR IDENTIFYING AN EROSION CONTROL SUPERVISOR PRIOR TO STARTING CONSTRUCTION (REFER TO SWPPP AMENDMENT SECTION). THE NPDES PERMIT MODIFICATION FORM SHALL BE SUBMITTED TO THE MPCA AFTER THE PROJECT IS AWARDED TO THE OPERATION.

THE OPERATOR WILL ENSURE THAT INDIVIDUALS OVERSEEING OR IMPLEMENTING THE SWPPP HAVE BEEN PROPERLY TRAINED AND THAT CERTIFICATIONS WILL BE MADE AVAILABLE UPON REQUEST. THIS INCLUDES ANY SUB-CONTRACTORS THAT THE OPERATOR EMPLOYS UNDER SEPARATE CONTRACT. THE OPERATOR WILL PROVIDE THE CONTACT INFORMATION FOR THE EROSION CONTROL SUPERVISOR, SITE SUPERINTENDENT/FOREMAN, AND BMP INSTALLERS. THE EROSION CONTROL SUPERVISOR SHALL BE A RESPONSIBLE EMPLOYEE OF THE PRIME CONTRACTOR AND/OR DULY AUTHORIZED BY THE PRIME CONTRACTOR TO REPRESENT THE PRIME CONTRACTOR ON ALL MATTERS PERTAINING TO THE NPDES CONSTRUCTION STORMWATER PERMIT COMPLIANCE. THE EROSION CONTROL SUPERVISOR SHALL HAVE AUTHORITY OVER ALL OPERATOR ACTIVITIES WHICH INFLUENCE NPDES PERMIT COMPLIANCE, INCLUDING GRADING, EXCAVATION, BRIDGE CONSTRUCTION, CULVERT INSTALLATION, UTILITY WORK, CLEARING/GRUBBING, DEWATERING, AND ANY OTHER OPERATION THAT INCREASES THE EROSION POTENTIAL ON THE PROJECT.

THE OPERATOR WILL PERFORM A PRECONSTRUCTION SITE VISIT TO ADDRESS ANY AREAS OF CONCERN PERTAINING TO ENVIRONMENTAL COMPLIANCE. THE OPERATOR WILL IMPLEMENT AND MAINTAIN BMPs FOR THE DURATION OF CONSTRUCTION PROJECT. THE OPERATOR WILL COMPLETE THE REQUIRED SITE INSPECTIONS AND IS RESPONSIBLE FOR SECTIONS 3-4, 6-22, 24, AND APPLICABLE PARTS OF 23, TO REMAIN IN COMPLIANCE WITH NPDES PERMIT.

OPERATOR/PERMITTEE: (TO BE DETERMINED)

ISG INC. HAS BEEN CONTRACTED BY THE OWNER TO DEVELOP THE SWPPP PLAN FOR THIS PROJECT. THIS SWPPP WAS PREPARED BY AN INDIVIDUAL THAT HAS BEEN PROPERLY TRAINED IN ACCORDANCE TO SECTION 21 OF THE NPDES PERMIT (CERTIFICATION CARDS ARE AVAILABLE UPON REQUEST). ISG INC. WILL OFFER GUIDANCE FOR COMPLIANCE WITH THE NPDES PERMIT BEFORE, DURING, AND AFTER CONSTRUCTION OF THE PROJECT.

SWPPP DESIGNER:
 ISG INC. (BILL KARELS)
 115 EAST HICKORY ST., SUITE 300
 MANKATO, MN 56001
 507-387-8651/BILL.KARELS@ISGINC.COM

AGENCY CONTACTS			
AGENCY	PERMIT	NAME	PHONE NUMBER/E-MAIL
MPCA (EMERGENCY)	N/A	STATE DUTY OFFICER	1-800-422-0798
MPCA	NPDES-CSW #MNR10001	BRIAN GREEN	507-206-2610/BRIAN.GREEN@STATE.MN.US
ACOE	SECTION 404	LEO GRABOWSKI	218-828-8402/LEONARD.A.GRABOWSKI@USACE.ARMY.MIL
DNR	N/A	N/A	N/A
TODD SWCD	WCA	ED UHLENKAMP	320-732-2644/ED.UHLENKAMP@CO.TODD.MN.US
WATERSHED DISTRICT	N/A	N/A	N/A

LOCATION OF SWPPP COMPONENTS		
DESCRIPTION	TITLE	LOCATION (SHEET NAME)
SWPPP NARRATIVE	SWPPP NARRATIVE	SWPPP GENERAL INFORMATION, DETAILS AND NOTES
SITE CONDITIONS	SWPPP NARRATIVE	SWPPP GENERAL INFORMATION, DETAILS AND NOTES
SITE MAPS (SOILS, WATER RESOURCES, POTENTIAL POLLUTANT GENERATING ACTIVITIES)	SWPPP MAP, SWPPP NARRATIVE	STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
CONSTRUCTION PHASING/STAGING, BUFFERS, & AREAS NOT TO BE DISTURBED	SWPPP NARRATIVE	SWPPP GENERAL INFORMATION, DETAILS AND NOTES
DIRECTION OF SURFACE WATER FLOW (PRE- & POST- CONSTRUCTION)	DRAINAGE PLAN	STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
IMPERVIOUS SURFACES	CONSTRUCTION PLAN & PROFILE	STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
TEMPORARY EROSION & SEDIMENT CONTROL BMPs FOR STEEP SLOPES (3:1), DNR FISH EXCLUSION "WORK IN WATER RESTRICTIONS" REFER TO SWPPP	TEMPORARY EROSION AND SEDIMENT CONTROL PLAN, SWPPP NARRATIVE	SWPPP GENERAL INFORMATION, DETAILS AND NOTES
PERMANENT EROSION PREVENTION BMPs	TURF ESTABLISHMENT PLAN, SWPPP NARRATIVE	STORMWATER POLLUTION PREVENTION PLAN (SWPPP); SWPPP GENERAL INFORMATION, DETAILS AND NOTES
STORM SEWER	DRAINAGE PLAN	STORMWATER POLLUTION PREVENTION PLAN (SWPPP); OVERALL UTILITY PLAN
GRADING	GRADING PLAN	OVERALL GRADING PLAN, NOTES AND EARTHWORK CALCULATIONS
ESTIMATED BMP QUANTITIES	ESTIMATED QUANTITIES	STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
BMP DETAILS/SPECIFICATIONS	MISC. DETAILS, SWPPP NARRATIVE	SWPPP GENERAL INFORMATION, DETAILS AND NOTES
HYDROLOGIC/WATER QUALITY MODELING		AVAILABLE UPON REQUEST

EXISTING SITE CONDITIONS, SOILS, & WATER RESOURCES
 SOILS AND NATIVE TOPSOIL: NATIVE TOPSOIL WILL BE STRIPPED AND STOCKPILED FOR FINAL GRADING OPERATIONS, WHERE INDICATED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS. METHODS AND EQUIPMENT TO MINIMIZE SOIL COMPACTION IN PROPOSED INFILTRATION AREAS, DRIP LINE OF TREES TO BE PRESERVED, ETC.) SHALL BE DETERMINED BY THE OPERATOR'S SWPPP AMENDMENT. TRACKED VEHICLES ARE PREFERRED AND WHEELED VEHICLES ARE DISCOURAGED IN THESE AREAS. THE FOLLOWING USDA-NRCS MAPPED SOILS ARE SHOWN AS "NOT HIGHLY ERODIBLE", "POTENTIALLY HIGHLY ERODIBLE, AND HIGHLY ERODIBLE" ON THE COUNTY SOIL SURVEY MAP.

USDA-NRCS MAPPED SOIL SURVEY UNIT NO., NAME, TEXTURE, SLOPE PERCENTAGE	PERCENTAGE OF PROJECT AREA	APPROXIMATE PARTICLE SIZE RANGE (MM)		
		SAND (0.05-2.00+)	SILT (0.002-0.05)	CLAY (<0.002)
2B-OSTRANDER LOAM, 1-8% SLOPES	9.2%	41.2%	37.8%	21%

2C-OSTRANDER LOAM, 8-12% SLOPES	10.8%	41.3%	37.8%	20%
100C-COPASTON LOAM, 8-12% SLOPES	3.2%	43.2%	39.2%	17.6%
415B-KANARANZI LOAM, 2-6% SLOPES	0.1%	70.8%	19.8%	8.3%
415C-KANARANZI LOAM, 8-12% SLOPES	2.4%	70.8%	19.8%	9.3%
485-KALMARVILLE SANDY LOAM, FREQUENTLY FLOODED	7.3%	74.1%	16.8%	9.1%
81B-BOONE LOAMY FINE SAND, 1-6% SLOPES	1.2%	96.2%	2.2%	1.8%
81D-BOONE LOAMY FINE SAND, 6-18% SLOPES	3.2%	96.7%	1.8%	1.5%
104B-HAYDEN LOAM, 2-6% SLOPES	8.4%	36.4%	37.0%	26.6%
104C2-HAYDEN LOAM, 6-10% SLOPES, MODERATELY ERODED	1.1%	36.4%	37.0%	26.6%
301B-LINDSTROM SILT LOAM, TILL PLAIN, 2-6% SLOPES	3.2%	12.3%	69.1%	18.6%
382B-BLOOMING SILT LOAM, 2-6% SLOPES	27.2%	34.5%	40.6%	24.9%
382C2-BLOOMING SILT LOAM, 6-12% SLOPES, ERODED	2.2%	32.6%	41.9%	25.5%
611D-HAWICK GRAVELL SANDY LOAM, 12-20% SLOPES	1.3%	88.4%	6.2%	5.5%
757-NERWOODS LOAM, 2-6% SLOPES	3.3%	19.5%	55.5%	24.9%
849B-URBAN LAND-ESTHERVILLE COMPLEX, 1-6% SLOPES	1.5%	N/A	N/A	N/A
875B-HAWICK-ESTHERVILLE COMPLEX, 2-6% SLOPES	1.6%	87.3%	8.7%	4%
875C-HAWICK-ESTHERVILLE COMPLEX, 6-12% SLOPES	5.6%	87.4%	8.7%	4%
1409A-MARQUIS SILT LOAM, 1-3% SLOPES	0.6%	37.3%	38.7%	24%
1409B-MARQUIS SILT LOAM, 2-6% SLOPES	4.6%	37.3%	38.7%	24%
1831-COLO SILT LOAM, CHanneled, 0-2% SLOPES, FREQUENTLY FLOODED	1.9%	7.0%	63.4%	29.7%

DESCRIPTION OF RECEIVING WATERS (LOCATED WITHIN 1-MILE): STORMWATER FROM THIS PROJECT WILL BE CONVEYED INTO SEVERAL CATCHBASINS AND CULVERTS. PROJECT DISCHARGE POINTS DISCHARGE INTO EXITING DITCHES AND AN EXISTING POND.

DESCRIPTION OF IMPAIRED WATERS OR WATER SUBJECT TO TMDLS: A SPECIAL AND IMPAIRED WATERS SEARCH WAS COMPLETED USING THE MPCA SEARCH ENGINE (HTTPS://MPCA.MAPS.ARCGIS.COM/APP/SWEBAPPVIEWER/INDEX.HTML?ID=03EF170FA3E41F68E92F8FAFEC100C) ON 11/11/2022. BASED ON THIS REVIEW, THE FOLLOWING SPECIAL OR IMPAIRED WATERS (WITH CONSTRUCTION RELATED IMPAIRMENTS) ARE LOCATED WITHIN ONE MILE OF AND ARE DOWNSTREAM OF ANY PROJECT DISCHARGE POINTS THAT WILL RECEIVE STORMWATER. NINE MILE CREEK (AUID 07020012-516) IS IMPAIRED (CHLORIDE, FISH BIOASSESSMENT), THEREFORE SECTION 23 REQUIREMENTS APPLY TO THIS PROJECT. THE SEARCH SHOWED NO IMPAIRED WATERS OR WATERS SUBJECT TO TMDLS WITHIN THE PROJECT LIMITS.

DISCHARGES TO SPECIAL (PROHIBITED) WATERS (SECTION 23)
 ALL REQUIREMENTS IN SECTION 23 ARE IN ADDITION TO BMPs ALREADY SPECIFIED IN THE PERMIT. WHERE PROVISIONS OF SECTION 23 CONFLICT WITH REQUIREMENTS ELSEWHERE IN THE PERMIT, THE PROVISIONS IN SECTION 23 TAKE PRECEDENCE. ALL BMPs USED TO COMPLY WITH THESE ITEMS MUST BE DOCUMENTED IN THE SWPPP FOR THE PROJECT.

23.9 EXPOSED SOILS: OPERATOR SHALL STABILIZE ALL EXPOSED SOIL AREAS WITHIN (7) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

23.10 TEMPORARY BASIN: OPERATOR SHALL ADHERE TO THE REQUIREMENTS DESCRIBED IN ITEM 14.1-14.10 OF THE NPDES CONSTRUCTION PERMIT FOR COMMON DRAINAGE LOCATIONS THAT SERVE AN AREA WITH FIVE (5) OR MORE ACRES DISTURBED.

23.11 BUFFER ZONE: AN UNDISTURBED BUFFER ZONE OF NOT LESS THAN 100 LINEAR FEET FROM THE SPECIAL WATER (NOT INCLUDING TRIBUTARIES) SHALL BE MAINTAINED AT ALL TIMES. EXCEPTIONS FROM THIS REQUIREMENT FOR AREAS, SUCH AS WATER CROSSINGS, LIMITED WATER ACCESS, AND RESTORATION OF THE BUFFER, ARE ALLOWED IF THE PERMITTEE FULLY DOCUMENTS IN THE SWPPP THE CIRCUMSTANCES AND REASONS THAT THE BUFFER ENCROACHMENT IS NECESSARY. REPLACEMENT OF EXISTING IMPERVIOUS SURFACE WITHIN THE BUFFER IS ALLOWED UNDER THIS PERMIT. ALL POTENTIAL WATER QUALITY, SCENIC, AND OTHER ENVIRONMENTAL IMPACTS OF THESE EXCEPTIONS MUST BE MINIMIZED BY THE USE OF ADDITIONAL OR REDUNDANT BMPs AND DOCUMENTED IN THE SWPPP FOR THE PROJECT.

23.12 TEMPERATURE CONTROLS: THE PERMANENT STORMWATER MANAGEMENT SYSTEM MUST BE DESIGNED SUCH THAT THE DISCHARGE FROM THE PROJECT WILL MINIMIZE ANY INCREASE IN THE TEMPERATURE OF TROUT STREAM RECEIVING WATERS RESULTING FROM THE 1-AND 2-YEAR 24-HOUR PRECIPITATION EVENTS. THIS INCLUDES ALL TRIBUTARIES OF DESIGNATED TROUT STREAMS WITHIN THE PLSS SECTION WHERE THE TROUT STREAM IS LOCATED. ALL STORMWATER ROUTED TO THE STORMWATER SYSTEM MUST DISCHARGE WITHIN 24 HOURS. PROJECTS THAT DISCHARGE TO TROUT STREAMS MUST MINIMIZE THE IMPACT USING ONE OR MORE OF THE FOLLOWING MEASURES, IN ORDER OF PREFERENCE:
 A. PROVIDE STORMWATER INFILTRATION OR OTHER VOLUME REDUCTION PRACTICES AS DESCRIBED IN ITEMS 15.4-15.5.
 B. PROVIDE STORMWATER FILTRATION AS DESCRIBED IN ITEMS 17.1-17.11.
 C. MINIMIZE THE DISCHARGE FROM CONNECTED IMPERVIOUS SURFACES BY DISCHARGING TO VEGETATED AREAS OR GRASS SWALES AND THROUGH THE USE OF OTHER NON-STRUCTURAL CONTROLS.
 D. IF A DRY POND IS USED, THE DESIGN MUST INCLUDE AN APPROPRIATE COMBINATION OF MEASURES SUCH AS SHADING, VEGETATED SWALE DISCHARGES, OR CONSTRUCTED WETLAND TREATMENT CELLS THAT LIMIT TEMPERATURE INCREASES.
 E. OTHER METHODS THAT MINIMIZE ANY INCREASE IN THE TEMPERATURE OF THE TROUT STREAM.

23.13 INSPECTIONS: PERMITTEES MUST CONDUCT ROUTINE SITE INSPECTIONS ONCE EVERY THREE (3) DAYS AS DESCRIBED IN ITEM 11.2.

23.14 TREATMENT: IF DISCHARGES TO PROHIBITED WATERS CANNOT PROVIDE VOLUME REDUCTION EQUAL TO ONE (1) INCH TIMES THE NET INCREASE OF IMPERVIOUS SURFACES AS REQUIRED IN ITEMS 15.4 AND 15.5, PERMITTEES MUST DEVELOP A PERMANENT STORMWATER TREATMENT PLAN THAT WILL RESULT IN NO NET INCREASE OF TSS OR PHOSPHORUS TO THE PROHIBITED WATER. PERMITTEES MUST KEEP THE PLAN IN THE SWPPP FOR THE PROJECT.

POTENTIAL FOR SEDIMENT AND/OR OTHER POLLUTANT(S) DISCHARGING FROM THE PROJECT SITE

THE TEMPORARY EROSION AND SEDIMENT CONTROL BMPs IN THIS SWPPP HAVE BEEN DESIGNED TO MINIMIZE THE POTENTIAL OF SEDIMENTS DISCHARGING OFF-SITE FROM A 0.5 INCH RAINFALL WITHIN A 24-HOUR PERIOD. THE NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATE FOR THE PROJECT LOCATION WAS REVIEWED AND USED FOR ANTICIPATED INSPECTION FREQUENCY, BMP DESIGN, AND ESTIMATING CONSTRUCTION ACTIVITIES IN THIS SWPPP. ATLAS 14 RESULTS DO NOT NECESSARILY REFLECT ANY DESIGN CRITERIA IN THE PERMANENT STORMWATER MANAGEMENT SYSTEM.

ROUTINE INSPECTION AND BMP MAINTENANCE BY THE OPERATOR IS CRUCIAL IN ENSURING THE FUNCTIONALITY OF EACH BMP. STEEP SLOPES AND OTHER ENVIRONMENTALLY SENSITIVE AREAS THAT ARE AT A HIGHER RISK OF SEDIMENTATION ARE DEFINED IN THIS SWPPP (IF APPLICABLE).

CONSTRUCTION PHASING/STAGING, BUFFERS, & AREAS NOT TO BE DISTURBED

AREAS NOT TO BE DISTURBED ARE TO BE DELINEATED BEFORE WORK BEGINS. PERMITTEES ARE RESPONSIBLE FOR PRESERVING A 50 FOOT NATURAL BUFFER OR (IF INFEASIBLE AND DOCUMENTED) PROVIDE REDUNDANT SEDIMENT CONTROL BMPs, WHEN A SURFACE WATER IS LOCATED WITHIN 50 FEET AND RECEIVES DRAINAGE FROM THE PROJECT'S GRADING LIMITS. THIS REQUIREMENT DOES NOT APPLY TO ADJACENT ROAD SIDE DITCHES, JUDICIAL/COUNTY DITCHES, STORMWATER CONVEYANCES, STORM DRAIN INLETS, AND SEDIMENT BASINS.

THERE IS NO CONSTRUCTION PHASING OR STAGING DEFINED BY THE OWNER FOR THIS PROJECT. THE SCHEDULE FOR INSTALLING TEMPORARY BMPs SHALL BE INCORPORATED INTO THE OPERATOR'S WEEKLY SCHEDULE FOR EACH CONSTRUCTION STAGE AND PRESENTED TO THE OWNER'S REPRESENTATIVE (PER MNDOT SPEC 1717.D). THE PROJECT'S CONSTRUCTION PHASING AND STAGING IS DEFINED BY THE 'CONSTRUCTION STAGING & TRAFFIC CONTROL PLAN' AND PROJECT SPECIFICATIONS.

ENVIRONMENTALLY SENSITIVE AREAS

STEEP SLOPES: EXISTING AND PROPOSED SLOPES 1 IN 3 (33.33%) AND STEEPER THAT ARE PROPOSED TO BE DISTURBED ARE ILLUSTRATED ON THE PLAN SHEETS. STEEP SLOPES MAY BE TEMPORARILY CREATED DURING GRADING OPERATIONS IF NECESSARY, AT WHICH TIME TEMPORARY BMPs MUST BE IMPLEMENTED BY THE OPERATOR (THROUGH AN APPROVED SWPPP AMENDMENT) WITHIN 7 DAYS OF NO LONGER WORKING THE STEEP SLOPE.

CONTAMINATED PROPERTIES: THE MPCA'S "WHAT'S IN MY NEIGHBORHOOD" DATABASE WAS REVIEWED ON 05/15/2024 (WWW.PCA.STATE.MN.US/DATA/WHAT'S-MY-NEIGHBORHOOD) AND A CONTAMINATION ASSESSMENT WAS PERFORMED (AVAILABLE UPON REQUEST). NO PRE-EXISTING HAZARDOUS MATERIALS OR WASTES ARE ANTICIPATED TO BE IMPACTED BY THE PROJECT.

STORMWATER POLLUTION MITIGATION MEASURES (AS IDENTIFIED FROM ENVIRONMENTAL REVIEW): NO FORMAL ENVIRONMENTAL REVIEW WAS REQUIRED FOR THIS PROJECT. THEREFORE, NO ADDITIONAL STORMWATER RELATED MITIGATION MEASURES APPLY.

KARST AREAS: THERE ARE NO KNOWN ACTIVE KARST AREAS WITHIN OR ADJACENT TO THE PROJECT LIMITS.

SITE PLAN REQUIRED AREAS: NO AREAS OF "HIGH ENVIRONMENTAL RISKS" ARE KNOWN TO BE LOCATED WITHIN OR IMMEDIATELY ADJACENT TO THE PROJECT LIMITS.

FLOOD CONTINGENCY PLAN: PROJECT ACTIVITIES MAY OCCUR WITHIN THE 100-YEAR FLOODPLAIN OR FLOODWAY. THEREFORE, THE PROJECT ENGINEER (AT THEIR DISCRETION) MAY REQUIRE A PREVENTATIVE FLOOD CONTINGENCY PLAN FOR SPECIFIC PROJECT ACTIVITIES AND AREAS IF SEASONAL PRECIPITATION POSSES A POTENTIAL RISK OF FLOODING WORK AREAS WITHIN THE PROJECT LIMITS. THIS PLAN SHALL BE SUBMITTED BY THE OPERATOR TO THE OWNER'S REPRESENTATIVE FOR APPROVAL A MINIMUM OF 72 HOURS PRIOR TO THE SCHEDULED WORK AND/OR DURING ACTIVE WORK WITHIN THE FLOODPLAIN. NO WORK WITHIN THE FLOODPLAIN CAN COMMENCE UNTIL WRITTEN APPROVAL/NOTICE TO PROCEED FROM THE OWNERS REPRESENTATIVE IS RECEIVED.

FISH EXCLUSION DATES: FISH EXCLUSION DATES ARE NOT APPLICABLE TO THIS PROJECT LOCATION.

AQUATIC INVASIVE SPECIES: ALL IN-STREAM AND DEWATERING EQUIPMENT SHALL BE DECONTAMINATED OF ALL AQUATIC PLANTS AND PROHIBITED INVASIVE SPECIES PRIOR TO USING WITHIN SURFACE WATERS ON-SITE AND TRANSPORTING OFF-SITE. ALL DECONTAMINATION ACTIVITIES SHALL MEET THE CHAPTER 1 STANDARDS OF THE MINNESOTA DNR'S BEST PRACTICES MANUAL FOR MEETING DNR GENERAL PUBLIC WATERS WORK PERMIT GP 2004-0001.

WETLANDS: THERE IS ONE WETLAND WITHIN THE PROJECT AREA AND MUST BE PROTECTED TO THE MAXIMUM EXTENT POSSIBLE. 0.40 ACRES OF WETLAND FILLED/EXCAVATION HAS BEEN PERMITTED AS ILLUSTRATED ON THE PLAN SHEETS. PERMITTED AREAS OF WETLAND IMPACT WILL BE PROTECTED WITH SILT FENCE ALONG THE PERIMETER OF THE FILL OR EXCAVATIONS.

APPLICABLE FEDERAL, TRIBAL, STATE OR LOCAL PROGRAMS: THE PROJECT FALLS UNDER THE JURISDICTION OF SEVERAL ENTITIES, AS IDENTIFIED IN THE "AGENCY CONTACTS" TABLE ON PAGE 1 OF THE SWPPP. THE MORE STRINGENT OF LOCAL VS. STATE VS. FEDERAL RULES SHALL APPLY WHERE THEY CONFLICT. INFORMATION PERTAINING TO THE STATE NPDES PERMIT CAN BE FOUND AT: (HTTP://WWW.PCA.STATE.MN.US/INDEX.PHP/WATER/WATER-TYPES-AND-PROGRAMS/STORMWATER/CONSTRUCTION-STORMWATER). THE OPERATOR IS RESPONSIBLE TO COMPLY WITH ALL APPLICABLE PERMITS, MNDOT SPECIAL PROVISION, MNDOT SPEC BOOK (2018 EDITION), MNDOT SPECIFICATIONS 17.17.

SEQUENCE OF CONSTRUCTION/TIMING OF BMP INSTALLATION



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.

DATE _____ LIC. NO. _____

SHEET NOT VALID UNLESS THIS TEXT IS COLOR.

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PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-SWPPP DETAILS
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE

SWPPP NARRATIVE

SHEET

24

OF ----



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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PROJECT

**CITY OF
NORTHFIELD
MILL TOWNS
STATE TRAIL**

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-SWPPP DETAILS
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE

**SWPPP
NARRATIVE**

SHEET

PRELIMINARY NOT FOR CONSTRUCTION

NO CONSTRUCTION OPERATIONS, INCLUDING REMOVALS, THAT REQUIRE EROSION & SEDIMENT CONTROL PER THE SWPPP CAN COMMENCE UNTIL THE OPERATOR'S EROSION CONTROL SUPERVISOR CERTIFIES THE PROPER INSTALLATION OF BMPs AND A CHAIN OF RESPONSIBILITY FOR SWPPP IMPLEMENTATION IS CREATED FOR ALL OPERATORS ON THE SITE. PERIMETER SEDIMENT CONTROLS (SILT FENCE, INLET PROTECTION, CONSTRUCTION ENTRANCES, ETC.) SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION. THESE PRACTICES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION IS ACHIEVED. OPERATOR SHALL IMPLEMENT THE NECESSARY ON-SITE BMPs IN ACCORDANCE WITH THE NPDES PERMIT REQUIREMENTS TO PREVENT NUISANCE CONDITIONS (MN RULES 7050.2010) FROM ANY DISCHARGES UNDER COVERAGE OF THE NPDES PERMIT. IN SOME CASES, MULTIPLE OR REDUNDANT APPLICATIONS OF SOME BMPs MAY BE NEEDED TO MEET THESE REQUIREMENTS.

INSPECTION PROCEDURES, SWPPP AMENDMENTS, RECORD KEEPING, & TRAINING

- THE SWPPP MUST BE AMENDED BY THE OPERATOR WHEN THE IDENTITY OF THE RESPONSIBLE SITE OPERATORS (EROSION CONTROL SUPERVISOR, SUB-CONTRACTORS, ETC.) ARE KNOWN.
- THE OPERATOR MUST INSPECT THE ENTIRE CONSTRUCTION SITE AT LEAST ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. THE OPERATOR SHALL PROVIDE A RAINFALL GAUGE ON-SITE, WITHIN ONE MILE OF THE SITE, OR SOURCE OF THE WEATHER REPORTING SYSTEM THAT USES SITE SPECIFIC RAINFALL DATA FROM RADAR SUMMARIES. THE LOCATION AND SOURCE OF THE RAINFALL GAUGE OR REPORTING SYSTEM MUST BE DOCUMENTED IN THE FIRST SWPPP INSPECTION REPORT. THE INSPECTION FREQUENCY MAY BE REDUCED TO ONCE PER MONTH OR SUSPENDED IF SITE CONDITIONS MEET ITEM 11.10 OF THE NPDES PERMIT. ALL INSPECTIONS AND MAINTENANCE CONDUCTED MUST BE RECORDED IN WRITING BY THE OPERATOR AND RETAINED WITH THE SWPPP. THE MPCA SITE INSPECTION FORM IS AVAILABLE FOR OPERATORS TO USE TO COMPLETE THE REQUIRED INSPECTIONS. THE FORM CAN BE FOUND ON THE MPCA WEBSITE OR AVAILABLE UPON REQUEST FOR THE PROJECT OWNER. RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY SHALL INCLUDE:
 - DATE, TIME, AND NAME OF PERSON(S) CONDUCTING INSPECTIONS;
 - FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS;
 - CORRECTIVE ACTIONS TAKEN (INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES); INCLUDING DOCUMENTATION/PHOTOS OF IMPLEMENTED BMPs INTENDED TO CORRECT A PROBLEM BUT FAILED.
 - DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCHES IN 24 HOURS;
 - DOCUMENTATION OF CHANGES MADE TO THE SWPPP.
- SWPPP AMENDMENTS AND SITE PLANS WILL BE PREPARED BY THE OPERATOR AND SUBMITTED TO THE OWNER FOR REVIEW AND WRITTEN APPROVAL BY THE PROJECT OWNER (OR DESIGNATED REPRESENTATIVE). ALL OWNER ACCEPTED AND DENIED SWPPP AMENDMENTS AND SITE PLANS MUST BE RECORDED IN WRITING AND RETAINED WITH THE SWPPP.
- THE SWPPP SHALL BE AMENDED TO INCLUDE ADDITIONAL OR MODIFIED BMPs, DESIGNED TO CORRECT IDENTIFIED PROBLEMS OR ADDRESS SITUATIONS (UNDER SECTION 6 OF THE NPDES PERMIT), PRIOR TO CONDUCTING SPECIFIC STAGES/PHASES OF THE PROJECT, AS REQUIRED BY THE OWNER AND DEFINED IN THIS PROJECT SWPPP.

THE TABLE BELOW IS A SUMMARY OF THE REQUIRED SWPPP AMENDMENTS:

SUMMARY OF OPERATOR PREPARED SWPPP AMENDMENTS (REQUIRED BY OWNER)		
SWPPP AMENDMENT NAME	SWPPP AMENDMENT DETAILS	SUBMITTAL TIMEFRAME
OPERATOR CHAIN OF RESPONSIBILITY	REFER TO "CONTACT INFORMATION/RESPONSIBLE PARTIES" SECTION	7 DAY PRIOR TO INITIATING WORK
BMP AMENDMENTS	SUBSTITUTED, ADDITIONAL, OR REDUNDANT BMPs TO COMPENSATE FOR FAILING/FAILED BMPs	DURING/AFTER CONSTRUCTION ACTIVITIES
METHODS TO MINIMIZE SOIL COMPACTION	REFER TO "EXISTING SITE CONDITIONS, SOILS, AND WATER RESOURCES" SECTION	7 DAYS PRIOR TO WORK WITHIN INFILTRATION BASINS AND PRESERVED TREE AREAS
STEEP SLOPES PHASING PLAN	REFER TO "ENVIRONMENTALLY SENSITIVE AREAS" SECTION	7 DAYS PRIOR TO INITIATING WORK
SPILL PREVENTION & RESPONSE PLAN	REFER TO "POLLUTION PREVENTION MANAGEMENT MEASURES"	7 DAY PRIOR TO INITIATING WORK
DEWATERING PLAN	REFER TO "DEWATERING" SECTION	7 DAYS PRIOR TO ACTIVITY
FLOOD CONTINGENCY PLAN	REFER TO "ENVIRONMENTALLY SENSITIVE AREAS" SECTION	72 HOURS PRIOR TO ACTIVITY

- THE SWPPP (ORIGINAL OR COPIES), ALL CHANGES TO THE SWPPP, PROJECT MANUAL, AND INSPECTIONS/MAINTENANCE RECORDS MUST BE KEPT AT THE SITE DURING CONSTRUCTION BY THE OPERATOR WHO HAS OPERATIONAL CONTROL OF THAT PORTION OF THE SITE. THE SWPPP CAN BE KEPT IN THE FIELD OFFICE OR ON-SITE VEHICLE DURING NORMAL WORKING HOURS. THE PERMITTEES MUST KEEP AND MAKE AVAILABLE TO FEDERAL, STATE, AND LOCAL OFFICIALS WITHIN THREE DAYS THE SWPPP, OTHER STORMWATER RELATED PERMITS, RECORDS OF ALL INSPECTION/MAINTENANCE, ALL PERMANENT OPERATIONS AND MAINTENANCE AGREEMENTS, ALL REQUIRED CALCULATIONS FOR DESIGN OF THE TEMPORARY AND PERMANENT STORMWATER MANAGEMENT SYSTEMS AND OTHER INFORMATION REQUIRED BY THE GENERAL PERMIT FOR THREE YEARS FOLLOWING THE NOTICE OF TERMINATION.
- THE OPERATOR MUST ASSIGN A TRAINED INDIVIDUAL(S) (PURSUANT TO SECTION 21) TO OVERSEE THE IMPLEMENTATION, MAINTENANCE, AND REPAIR OF BMPs. THIS INDIVIDUAL(S) SHALL ALSO PERFORM INSPECTIONS, REVISE/AMEND THE SWPPP (DOCUMENT IN SWPPP AS NECESSARY), AND BE AVAILABLE FOR AN ONSITE INSPECTION WITHIN 72 HOURS UPON REQUEST BY THE PERMITTED OWNER (OR ITS DESIGNEE), LOCAL GOVERNMENT UNITS, OR MPCA. MNDOT LEAD PROJECTS REQUIRE AVAILABLE ONSITE INSPECTION WITHIN 24 HOURS.

POLLUTION PREVENTION MANAGEMENT MEASURES

- POTENTIAL SOURCES OF POLLUTANTS FROM CONSTRUCTION ACTIVITIES INCLUDE:
- SEDIMENT AND FUGITIVE DUST GENERATED FROM CLEARING AND GRUBBING, IMPORT/EXPORT OPERATIONS, REMOVALS/COMPACTION, MASS/FINE GRADING, EXCAVATIONS, TRENCHING, TOPSOIL STRIPPING STOCKPILING, WET/DRY PAVEMENT CUTTING, STREET CONSTRUCTION.
 - BASIC/ACIDIC PH LEVELS FROM CURB AND GUTTER, MANHOLE STRUCTURES, SIDEWALKS, DRIVEWAY APRONS, FOUNDATIONS, BRIDGE ABUTMENTS, WET/DRY PAVEMENT CUTTING, AND MASONRY WASHOUT/CLEANOUT.
 - EXCESS NUTRIENTS FROM LANDSCAPING INSTALLATIONS, SOIL ADDITIVES, FERTILIZATION, MULCHING
 - HYDROCARBONS FROM STREET CONSTRUCTION, DEMOLITION/REMOVALS, WET/DRY PAVEMENT CUTTING

OPERATOR WILL COMPLY WITH ALL OF THE POLLUTION PREVENTION AND MANAGEMENT MEASURES IDENTIFIED IN THE NPDES-CSW PERMIT. OPERATOR WILL SUBMIT A SPILL PREVENTION AND RESPONSE PLAN (SPRP) TO THE ENGINEER PRIOR TO ANY CONSTRUCTION ACTIVITY. THE SPRP MUST SATISFACTORILY ADDRESS (AT A MINIMUM) THE FOLLOWING NPDES REQUIREMENTS BY THE PROPOSED IMPLEMENTATION AND MAINTENANCE OF APPROPRIATE BMPs.

NO-EXPOSURE: CONSTRUCTION AND BUILDING PRODUCTS (THAT HAVE THE POTENTIAL TO LEACH POLLUTANTS), PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPING MATERIALS MUST BE UNDER COVER (PLASTIC SHEETING OR TEMPORARY ROOFS) TO MINIMIZE CONTACT WITH STORMWATER AND PRECIPITATION.

SOLID WASTE: SEDIMENT, ASPHALT, CONCRETE MILLINGS, CONSTRUCTION AND DEMOLITION DEBRIS, AND OTHER WASTES MUST BE DISPOSED OF PROPERLY AND SHALL COMPLY WITH MPCA DISPOSAL REQUIREMENTS (CH. 7035).

HAZARDOUS MATERIALS: GAS, DIESEL, OIL, ANTIFREEZE, PAINT SOLVENTS, SOAPS, DETERGENTS, WOOD PRESERVATIVES, CLEANING SOLVENTS, CURING COMPOUNDS, ACIDS, ETC., MUST BE STORED IN SEALED CONTAINERS. SECONDARY SPILL CONTAINERS IS REQUIRED FOR ALL MATERIALS IF STORED ON-SITE FOR MORE THAN 24 CONSECUTIVE HOURS (DOUBLE WALLED TANKS ARE ACCEPTABLE FOR SECONDARY CONTAINMENT). STORAGE AND DISPOSAL OF HAZARDOUS WASTES AND MATERIALS MUST BE IN COMPLIANCE WITH MPCA REGULATIONS (CH. 7045).

PORTABLE TOILETS: MUST BE POSITIONED AND SECURED SO THEY ARE NOT TIPPED OR KNOCKED OVER. SANITARY WASTE MUST BE PROPERLY DISPOSED OF IN ACCORDANCE WITH MPCA REGULATIONS (CH. 7041).

SPILLED OR LEAKED CHEMICALS: REASONABLE STEPS TO PREVENT THE DISCHARGE OF SPILLED OR LEAKED CHEMICALS, INCLUDING FUEL, FROM ANY AREA WHERE CHEMICAL OR FUEL WILL BE LOADED OR UNLOADED. PROCEDURES FOR SPILL RESPONSE AND MATERIALS FOR CONTAINMENT, CLEANUP (DRIP PANS, ABSORBENTS, AND SPILL KITS), AND APPROPRIATE DISPOSAL SHALL BE AVAILABLE AT ALL TIMES ON-SITE. PERMITTEES MUST REPORT AND CLEAN UP SPILLS IMMEDIATELY AS REQUIRED BY MINNESOTA STATUTE 115.061.

EQUIPMENT/VEHICLE WASHING: WHEN VEHICLE/EQUIPMENT WASHING MUST OCCUR ON-SITE, THE ACTIVITY IS LIMITED TO A CONTAINED PORTION OF THE STAGING AREA UNLESS INFEASIBLE THROUGH A SWPPP AMENDMENT. SOAPS, DETERGENTS, AND SOLVENTS ARE TO BE USED AND STORED PROPERLY. RUNOFF MUST BE CONTAINED FROM THE WASHING AREAS AND DISPOSED OF PROPERLY.

CONCRETE, STUCCO, PAINT, CURING COMPOUNDS, SOLVENTS, AND OTHER WASHOUT WASTES: TEMPORARY OR LONG-TERM STORAGE OF WASHOUT WASTE IS PROHIBITED ON-SITE (SLURRY MUST BE HAULED IMMEDIATELY OFF-SITE). OPERATOR MUST SUBMIT A CONCRETE WASHOUT PLAN TO THE PROJECT ENGINEER FOR APPROVAL OF ALL ON-SITE WASHOUT LOCATIONS. ON-SITE WASHOUT LOCATIONS MUST BE LOCATED 200 FEET FROM AN ENVIRONMENTALLY SENSITIVE AREA AND SURFACE WATERS, HAVE "CONCRETE WASHOUT AREA" SIGNAGE, AND BE CONTAINED IN A LEAK PROOF CONTAINER OR IMPERMEABLE LINER. LIQUID AND SOLID WASTES SHOULD NOT CONTACT THE GROUND (UNLESS PERMITTED IN THE CONCRETE WASHOUT PLAN), BE CONTAINED TO PREVENT RUNOFF FROM THE WASHOUT LOCATION, AND MUST BE DISPOSED OF PROPERLY AND IN COMPLIANCE WITH MPCA REGULATIONS.

BURNING: BURNING OF GARBAGE, CONSTRUCTION DEBRIS, TREES, BRUSH, OR OTHER VEGETATIVE MATERIAL IS NOT ALLOWED ON SITE UNLESS PRIOR APPROVAL IS GRANTED BY THE OWNER.

CONSTRUCTION ACTIVITY REQUIREMENTS: EROSION PREVENTION PRACTICES, PROCEDURES, & MAINTENANCE STANDARDS

THE OPERATOR IS RESPONSIBLE FOR THE INSTALLATION, OPERATION, AND CONTINUED MAINTENANCE OF ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT BMPs, AS WELL AS ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPs, FOR THE DURATION OF THE CONSTRUCTION WORK AT THE SITE UNTIL FINAL STABILIZATION IS ACHIEVED. ALL BMPs MUST BE ADEQUATELY LOCATED, DESIGNED, INSTALLED, AND MAINTAINED TO PREVENT EROSION FROM A MINIMUM 0.5 INCH TOTAL RAINFALL EVENT WITHIN 24 HOURS.

ALL NONFUNCTIONAL BMPs MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPs BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS UNLESS ANOTHER TIME FRAME IS SPECIFIED IN THE SWPPP. ALL ERODED MATERIAL THAT LEAVES THE SITE SHALL BE COLLECTED BY THE OPERATOR AND RETURNED TO THE SITE AT THE OPERATOR'S EXPENSE AND INCIDENTAL TO THE PROJECT COST.

TEMPORARY OR PERMANENT STABILIZATION SHALL BE INITIATED AS SOON AS POSSIBLE, BUT NO LATER THAN THE END OF THE NEXT WORK DAY FOLLOWING THE DAY EARTH-DISTURBING ACTIVITIES IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. ALL EXPOSED SOIL AREAS SHALL BE STABILIZED WITHIN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. INITIATED STABILIZATION IS DEFINED AS COMPLETING ONE (OR MORE) OF THE FOLLOWING: SOIL PREPARATION FOR VEGETATION, MULCHING (OR OTHER TEMPORARY NON-VEGETATIVE BMP), SEEDING/PLANTING, OR SCHEDULING STABILIZATION MEASURES TO BE FULLY INSTALLED AND COMPLETED WITHIN THE 7 DAY TIMEFRAME.

FOR PUBLIC WATERS THAT THE MINNESOTA DNR HAS PROMULGATED "WORK IN WATER RESTRICTIONS" DURING SPECIFIED FISH SPAWNING TIME FRAMES, PERMITTEES MUST COMPLETE STABILIZATION OF ALL EXPOSED SOIL AREAS WITHIN 200 FEET OF THE WATER'S EDGE AND THAT DRAIN TO THESE WATERS WITHIN 24 HOURS DURING THE RESTRICTION PERIOD.

TEMPORARY STABILIZATION BMPs SHALL ONLY BE IMPLEMENTED WHEN PERMANENT STABILIZATION BMPs CANNOT BE IMPLEMENTED WITHIN THE 7 DAY TIMEFRAME FOR EXPOSED SOILS.

TEMPORARY/PERMANENT DRAINAGE DITCHES & SWALES: THE NORMAL WETTED PERIMETER (2-YEAR, 24-HOUR PRECIPITATION EVENT) OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH, CHANNEL, OR SWALE THAT DRAINS WATER FROM ANY PORTION OF THE CONSTRUCTION SITE, OR DIVERTS WATER AROUND THE SITE, MUST BE STABILIZED WITHIN THE LAST 200 LINEAL FEET FROM THE PROPERTY EDGE, OR FROM THE POINT OF DISCHARGE INTO ANY SURFACE WATER WITHIN 24 HOURS OF CONNECTION. STABILIZATION REMAINING OF THE REMAINING PORTIONS OF THE CHANNEL MUST BE STABILIZED WITHIN 14 DAYS. ALL STORMWATER CONVEYANCE CHANNELS MUST USE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES WITHIN AND ALONG THE LENGTH OF THE CHANNEL AND AT ANY OUTLETS. TEMPORARY OR PERMANENT DITCHES OR SWALES THAT ARE BEING USED AS A TEMPORARY SEDIMENT CONTAINMENT SYSTEM (WITH PROPERLY DESIGNED ROCK DITCH CHECKS, BIO ROLLS, SILT DIKES, ETC.) DO NOT NEED TO BE STABILIZED. THESE AREAS, HOWEVER, MUST BE STABILIZED WITHIN 24 HOURS AFTER NO LONGER BEING USED AS A SEDIMENT CONTAINMENT SYSTEM. MULCH, HYDROMULCH, TACKIFIER, OR POLYACRYLAMIDE BELOW THE WETTED PERIMETER OF A DITCH, SWALE, OR OTHER SURFACE WATER CONVEYANCE IS NOT ACCEPTABLE STABILIZATION.

EROSION CONTROL BLANKETS/MATS: OPERATOR SHALL VERIFY DURING REGULAR INSPECTIONS THAT NO GULLIES, RILLS, OR SCOUR HOLES HAVE FORMED UNDER EROSION CONTROL BLANKETS AND MATS. ALL REPAIRS MUST BE COMPLETED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.

MULCH: OPERATOR MUST APPLY MULCH IN A UNIFORM PATTERN OVER THE DISTURBED SOILS TO ACHIEVE A MINIMUM OF 90% GROUND COVER.

DUST CONTROL: DUST FROM THE SITE WILL BE CONTROLLED BY INCREASED STREET SWEEPING AND/OR USING A MOBILE PRESSURE-TYPE DISTRIBUTOR TRUCK TO APPLY POTABLE WATER TO DISTURBED AREAS. THE MOBILE UNIT WILL APPLY WATER AT A RATE NECESSARY TO PREVENT RUNOFF AND PONDING.

STORM SEWER OUTLETS: PIPE OUTLETS MUST HAVE TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS AFTER HYDRAULIC CONNECTION TO A RECEIVING SURFACE WATER.

TEMPORARY & PERMANENT EROSION PREVENTION BMPs

TYPE 1 MULCH: APPLY TO DISTURBED SLOPES LESS THAN 1:3 (V:H) WITH BLOWER EQUIPMENT OR CONCURRENTLY WITH HYDROMULCH AT 2 TONSI/ACRE. IMMEDIATELY OVERSPRAY (IF NOT HYDROMULCHED) WITH TACKIFIER (PER MANUFACTURER'S RECOMMENDED RATES) OR DISC-ANCHORED.

RAPID STABILIZATION METHOD #3: THIS WORK SHALL CONSIST OF OPERATIONS NECESSARY TO RAPIDLY STABILIZE SMALL CRITICAL AREAS WITHIN 200 FEET OF SURFACE WATERS TO PREVENT OFF-SITE SEDIMENTATION AND OR TO COMPLY WITH PERMIT REQUIREMENTS. INSTALL PER MNDOT SPECIFICATIONS 2575.3N.

RAPID STABILIZATION METHOD #4 (WOOD FIBER, NATURAL NET ONLY) IS AN ACCEPTABLE BMP FOR DISTURBED AREAS ADJACENT TO ENVIRONMENTALLY SENSITIVE AREAS, SURFACE WATERS, AND WITHIN THE LAST 200 FEET OF DITCH BOTTOMS.

TEMPORARY WINTER COVER: AREAS OF EXPOSED SOILS THAT ARE NOT COMPLETED BEFORE THE WINTER WILL BE STABILIZED WITH TYPE #3 (CERTIFIED AS WEED FREE) ADJACENT TO WETLAND OR STORMWATER PONDS. ALL OTHER DISTURBED AREAS SHALL BE STABILIZED WITH TYPE #1 MULCH UNLESS AN ALTERNATIVE, MORE PROTECTIVE BMPs ARE SPECIFIC WITHIN THE SWPPP. ALL EXPOSED SOILS SHALL BE STABILIZED BEFORE CONSTRUCTION IS COMPLETED FOR THE SEASON.

HYDRO-MULCH TYPE #5: HYDRAULIC SOIL STABILIZER IN COMBINATION WITH A TACKIFIER WILL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS TO EXPOSED SOILS AREAS TO PROVIDE TEMPORARY LONG-TERM OR PERMANENT COVER FOR VEGETATION ESTABLISHMENT.

CONSTRUCTION ACTIVITY REQUIREMENTS: SEDIMENT CONTROL PRACTICES, PROCEDURES, & MAINTENANCE STANDARDS

DOWNGRADIENT SYSTEMS: IF THE DOWNGRADIENT TREATMENT SYSTEM IS OVERLOADED, ADDITIONAL UPGRADIENT SEDIMENT CONTROL PRACTICES OR REDUNDANT BMPs MUST BE INSTALLED TO ELIMINATE THE OVERLOADING, AND THE SWPPP MUST BE AMENDED TO IDENTIFY THESE ADDITIONAL PRACTICES.

PERIMETER CONTROL BMPs (SILT FENCES, CHIP/SLASH MULCH SACKS, BIOROLLS, FLOATING SILT CURTAIN, ETC.): PERIMETER CONTROL BMPs SHALL BE INSTALLED ON ALL DOWNGRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER AREAS PRIOR TO INITIATING UPGRADIENT LAND DISTURBANCE ACTIVITIES. UPLAND PERIMETER CONTROL BMPs SHALL BE PLACED AS CLOSE AS POSSIBLE TO FOLLOW A SINGLE CONTOUR OR ELEVATION. ALL PERIMETER CONTROL DEVICES MUST BE REPAIRED, REPLACED, OR MAINTAINED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE HEIGHT OF THE DEVICE. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE FOR SHORELAND-IN-WATER SHORT-TERM CONSTRUCTION ACTIVITIES. IMMEDIATELY AFTER THE SHORT-TERM ACTIVITY IN THAT AREA IS COMPLETE, AN UPLAND PERIMETER CONTROL MUST BE INSTALLED IF EXPOSED SOILS CONTINUE TO DRAIN TO THE SURFACE WATER.

50 FOOT NATURAL BUFFER(S): REFER TO "CONSTRUCTION PHASING/STAGING, BUFFERS, & AREAS NOT TO BE DISTURBED" SECTION OF THIS SWPPP.

TEMPORARY SEDIMENTATION BASINS: WHERE TEN (10) OR MORE ACRES OF DISTURBED SOIL DRAIN TO A COMMON LOCATION, A TEMPORARY SEDIMENT BASIN MUST BE PROVIDED PRIOR TO RUNOFF LEAVING THE CONSTRUCTION SITE OR ENTERING SURFACE WATERS. ALL TEMPORARY BASINS SHALL BE CONSTRUCTED AND OPERATIONAL PRIOR TO GRADING TEN (10) OR MORE ACRES. BASINS MUST PROVIDE A LIVE STORAGE VOLUME FROM A 2-YEAR 24-HOUR STORM EVENT FROM EACH ACRE (DISTURBED AND UNDISTURBED) DRAINING TO THE BASIN OR 1,800 CUBIC FEET OF LIVE STORAGE PER ACRE DRAINED, WHICHEVER IS GREATER. AT A MINIMUM, IF CALCULATIONS ARE NOT PERFORMED, THE BASIN SHALL PROVIDE 3,600 CUBIC FEET OF LIVE STORAGE FROM EACH ACRE. THE BASIN INTAKE MUST BE DESIGNED TO WITHDRAW WATER FROM THE SURFACE. PREVENT SHORT CIRCUITING AND THE DISCHARGE OF FLOATING DEBRIS. INCLUDE AN EMERGENCY OVERFLOW ABOVE THE LIVE STORAGE ELEVATION, AND PROVIDE ENERGY DISSIPATION AT THE BASIN OUTLET. BASINS MUST BE DRAINED AND SEDIMENT REMOVED WHEN THE DEPTH OF COLLECTED SEDIMENT IN THE BASIN REACHES 1/2 THE LIVE STORAGE VOLUME. IF A BASIN IS INFEASIBLE WITHIN THE PROJECT LIMITS, EQUIVALENT SEDIMENT CONTROL BMPs MUST BE IMPLEMENTED AND DOCUMENTED IN THE SWPPP OR SWPPP AMENDMENT.

TEMPORARY STOCKPILES: ALL STOCKPILES MUST HAVE SILT FENCE OR EQUIVALENT PERIMETER SEDIMENT CONTROLS IMPLEMENTED AND MAINTAINED AT ALL TIMES. PILES CANNOT BE PLACED IN BUFFER AREAS OR SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS OR CONDUITS AND DITCHES, UNLESS THERE IS A BYPASS IN PLACE TO PREVENT STORMWATER RUN-ON INTO THE STOCKPILE. STABILIZATION ON TEMPORARY STOCKPILES WITHOUT SIGNIFICANT SILT, CLAY, OR ORGANIC COMPONENTS IS NOT REQUIRED.

CONSTRUCTION SITE ENTRANCE/VEHICLE TRACKING: OPERATOR MUST MINIMIZE SEDIMENT FROM LEAVING THE CONSTRUCTION SITE (OR ONTO STREETS WITHIN THE SITE) BY IMPLEMENTING BMPs SUCH AS ROCK PADS, SLASH MULCH, CONCRETE OR STEEL WASH RACKS, OR EQUIVALENT SYSTEMS. STREET SWEEPING MUST BE USED DAILY DURING CONSTRUCTION OPERATIONS IF SUCH BMPs ARE NOT ADEQUATE TO PREVENT SEDIMENT FROM BEING TRACKED ONTO THE STREET. TRACKED SEDIMENT MUST BE REMOVED FROM ALL PAVED SURFACES (ON AND OFF-SITE) WITHIN 24 HOURS OF DISCOVERY OR SOONER AS DIRECTED BY THE PROJECT OWNER. MULTIPLE STREET SWEEPINGS AT THE OPERATOR'S EXPENSE MAY BE REQUIRED ON ALL ENTRY/EXIT POINTS TO THE SITE AT THE DISCRETION OF THE PROJECT OWNER.

SURFACE WATERS: INCLUDING OFF-SITE AND DOWNSTREAM DRAINAGE DITCHES, CATCH BASINS, AND CONVEYANCE SYSTEMS, MUST BE INSPECTED FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION. THE REMOVAL AND STABILIZATION OF EXPOSED SOILS MUST TAKE PLACE WITHIN SEVEN (7) DAYS OF DISCOVERY UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL ACCESS CONSTRAINTS. IF PRECLUDED, REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN SEVEN (7) CALENDAR DAYS OF OBTAINING ACCESS. THE PERMITTEES ARE RESPONSIBLE FOR CONTACTING ALL LOCAL, REGIONAL, STATE, AND FEDERAL AGENCIES AND RECEIVING ANY APPLICABLE PERMITS PRIOR TO CONDUCTING ANY WORK.

INLET PROTECTION: ALL STORM DRAIN INLETS (INCLUDING DOWNGRADIENT, OFF-SITE) MUST BE PROTECTED BY APPROPRIATE BMPs DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED. SILT FENCE IS NOT AN ACCEPTABLE CATCH BASIN INLET PROTECTION BMP. CONTRACTOR SHALL CLEAN, REMOVE AND DISPOSE OF SEDIMENT AND/OR REPLACE STORM DRAIN INLET PROTECTION ON A ROUTINE BASIS TO ENSURE THE DEVICE IS FULLY FUNCTIONAL PRIOR TO THE NEXT FORECASTED PRECIPITATION EVENT (30% OR GREATER). INLET PROTECTION MAY BE REMOVED FOR A PARTICULAR INLET IF A SPECIFIC SAFETY CONCERN (STREET FLOODING/FREEZING) HAS BEEN IDENTIFIED BY THE PERMITTEE(S) OR THE JURISDICTIONAL AUTHORITY (E.G. CITY/COUNTY/TOWNSHIP/MNDOT ENGINEER). WRITTEN CORRESPONDENCE REGARDING THE NEED FOR REMOVAL MUST BE DOCUMENTED IN THE SWPPP.

CHEMICAL TREATMENTS: OPERATOR MUST AMEND THE SWPPP TO INCLUDE THE INTENDED USES AND LOCATIONS OF FLOCCULANTS, POLYMERS, AND OTHER SEDIMENTATION TREATMENT CHEMICALS. CHEMICAL TREATMENTS MAY ONLY BE APPLIED IN AREAS WHERE TREATED STORMWATER IS DIRECTED TO A RECEIVING SEDIMENT CONTROL SYSTEM (NOT DIRECTLY DISCHARGED TO NATURAL WATER BODIES). THIS INCLUDES DOCUMENTING THE EXPECTED SOIL TYPES, MANUFACTURER'S RECOMMENDED DOSING, APPLICATION RATES/QUANTITIES, AND MONITORING RESULTS (TURBIDITY, PH).

TEMPORARY & PERMANENT SEDIMENT CONTROL BMPs

TEMPORARY SEDIMENT BASIN: A TEMPORARY SEDIMENT BASIN WAS FOUND TO BE INFEASIBLE AS DESCRIBED IN THE CSW PERMIT 14.10 DUE TO INSUFFICIENT SPACE ALONG THE PROJECT. ONE SOLUTION BEING NOT DISTURBING MORE THAN 10.00 ACRES AT ONE TIME.

DEWATERING, STREAM DIVERSION, AND BASIN DRAINING

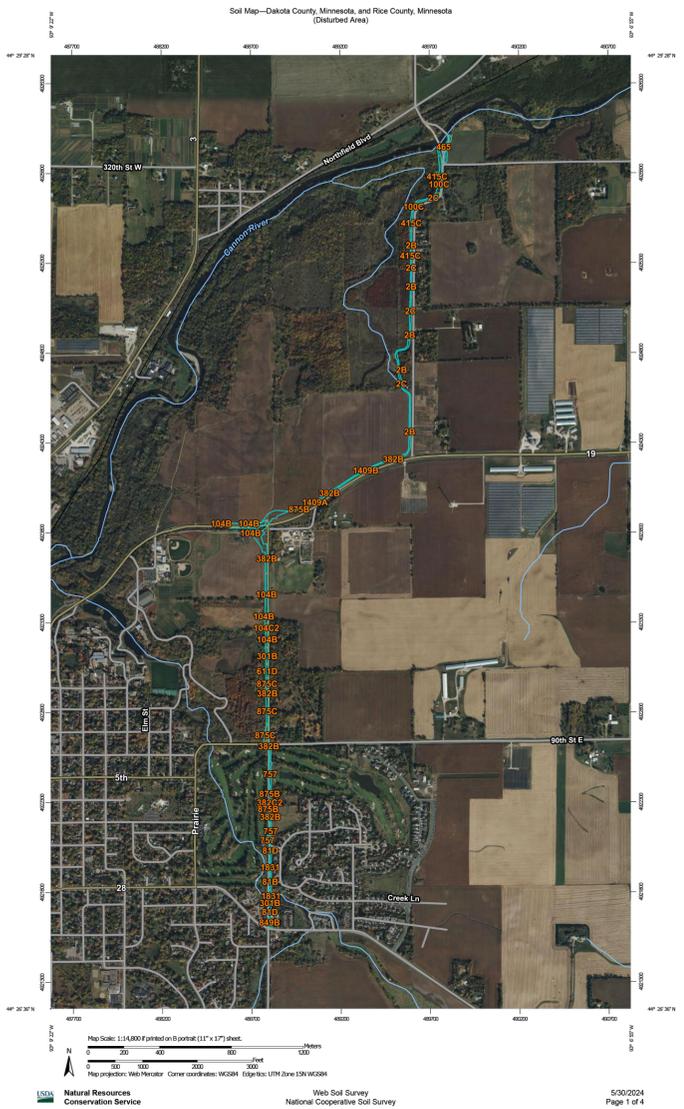
DEWATERING, STREAM DIVERSION, OR BASIN DRAINING IS ANTICIPATED DURING CONSTRUCTION OF THIS PROJECT. DITCH REALIGNMENT, CULVERT CONSTRUCTION WILL REQUIRE SITE DEWATERING. WHEN DEWATERING OR BASIN DRAINING IS REQUIRED, THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN AND NARRATIVE TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO UNDERTAKING THESE ACTIVITIES. DEWATERING PLAN MUST INCLUDE BMPs TO PREVENT SEDIMENT TRANSPORT, EROSION, AND ADVERSE IMPACTS TO DOWNSTREAM RECEIVING WATERS. THE DEWATERING PLAN MUST ALSO INCLUDE ANY SPECIFIC CHEMICAL TREATMENTS (FLOC, POLYMERS, ETC.) THAT WILL BE USED. IF AN APPROVED TMDL WASTE LOAD ALLOCATION IS ESTABLISHED FOR CONSTRUCTION ACTIVITIES ON A RECEIVING WATERBODY, THE OPERATOR MUST IMPLEMENT ALL NECESSARY BMPs TO MEET THE ASSIGNED WLA. THE DEWATERING PLAN AND DNR APPROPRIATIONS PERMIT WILL BECOME PART OF THE SWPPP. WATER THAT IS TURBID OR HAS SEDIMENT MUST BE DISCHARGED TO A TEMPORARY OR PERMANENT SEDIMENTATION BASIN (AND/OR OTHER APPROPRIATE BMPs) ON THE PROJECT SITE WHENEVER POSSIBLE. DISCHARGE FROM THE TEMPORARY OR PERMANENT SEDIMENTATION BASIN MUST BE VISUALLY CHECKED TO ENSURE ADEQUATE TREATMENT IS OBTAINED IN THE BASIN AND THAT NUISANCE CONDITIONS (SEE MINN. R. 7050.0210, SUBP. 2), IMPACTS TO WETLANDS, AND EROSION IN RECEIVING CHANNELS OR ON DOWNSLOPE PROPERTIES WILL NOT RESULT FROM THE DISCHARGE. THE DISCHARGE MUST BE DISPERSED OVER NATURAL ROCK RIPRAP, SAND BAGS, PLASTIC SHEETING, OR OTHER ACCEPTED ENERGY DISSIPATION MEASURES. ADEQUATE SEDIMENTATION CONTROL MEASURES AND ADDITIONAL FILTRATION BMPs ARE REQUIRED FOR DISCHARGE WATER THAT CONTAINS SUSPENDED SOLIDS, OIL, OR GREASE.

PERMIT TERMINATION CONDITIONS

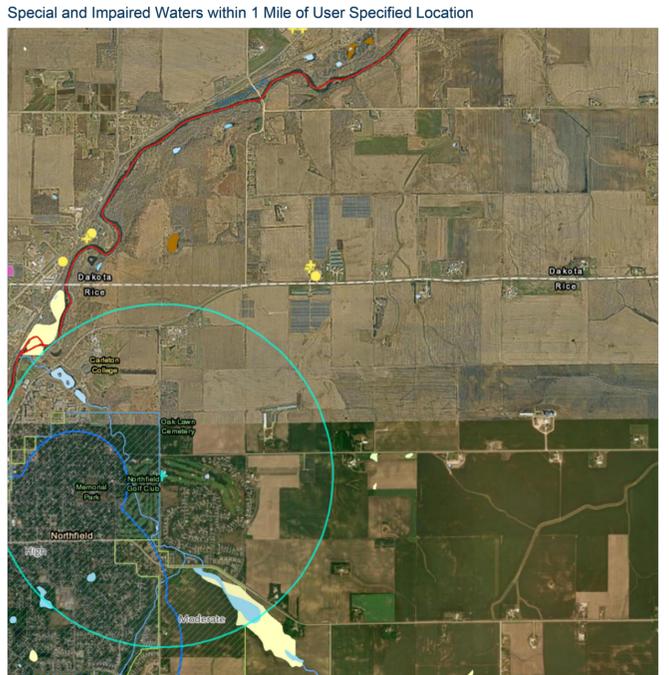
PERMIT TERMINATION CONDITIONS ARE ACHIEVED WHEN THE FOLLOWING FOUR PARAMETERS ARE COMPLETED PRIOR TO SUBMISSION OF THE NOTICE OF TERMINATION TO MPCA.

- 70% VEGETATIVE COVER:** ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED, AND ALL EXPOSED SOILS ARE STABILIZED BY A UNIFORM, LIVE PERENNIAL VEGETATIVE COVER WITH A DENSITY 70% OVER THE ENTIRE PREVIOUOUS SURFACE AREA OR OTHER EQUIVALENT MEANS NECESSARY TO PREVENT SOIL FAILURE UNDER EROSION CONDITIONS. REFER TO PART 13.7 IF THE PROJECT IS ON AGRICULTURAL LAND. FOR RESIDENTIAL CONSTRUCTION ONLY, PLEASE REFER TO PART 13.6 OF THE NPDES PERMIT.
- FINAL CLEAN OUT OF PERMANENT STORMWATER MANAGEMENT SYSTEMS & CONVEYANCE SYSTEMS:** ALL ACCUMULATED SEDIMENT MUST BE REMOVED FROM PERMANENT STORMWATER MANAGEMENT SYSTEMS, CONVEYANCE SYSTEMS, AND DITCHES MUST BE STABILIZED WITH PERMANENT COVER. ALL SYSTEMS MUST OPERATE AS DESIGNED.
- REMOVAL OF ALL TEMPORARY SYNTHETIC BMPs:** ALL TEMPORARY SYNTHETIC AND STRUCTURAL EROSION PREVENTION AND SEDIMENT CONTROL BMPs (SUCH AS SILT FENCE) MUST BE REMOVED ON THE PORTIONS OF THE SITE FOR WHICH THE PERMITTEE IS RESPONSIBLE. BMPs DESIGNED TO DECOMPOSE ON SITE (SUCH AS SOME COMPOST LOGS) MAY BE LEFT IN PLACE.
- OPERATOR PROVIDES THE OWNER ALL INSPECTION AND SWPPP AMENDMENT RECORDS FOR THE PROJECT. OWNER IS RESPONSIBLE FOR KEEPING ALL RECORDS (AS DEFINED IN PART 24.5) ON FILE FOR THREE YEARS AFTER SUBMITTAL OF THE NOTICE OF TERMINATION.

THE CO-PERMITTEES (OWNER AND OPERATOR) MUST SIGN AND SUBMIT THE COMPLETED NOTICE OF TERMINATION TO THE MPCA WITHIN 30 DAYS AFTER SELLING/LEGALLY TRANSFERRING THE PROPERTY OR FINAL STABILIZATION IS ACHIEVED. PERMITTEE(S) MAY TERMINATE PERMIT COVERAGE PRIOR TO THE PROJECT COMPLETION IF THE CONDITIONS IN PART 4 OF THE NPDES-CSW PERMIT ARE MET.



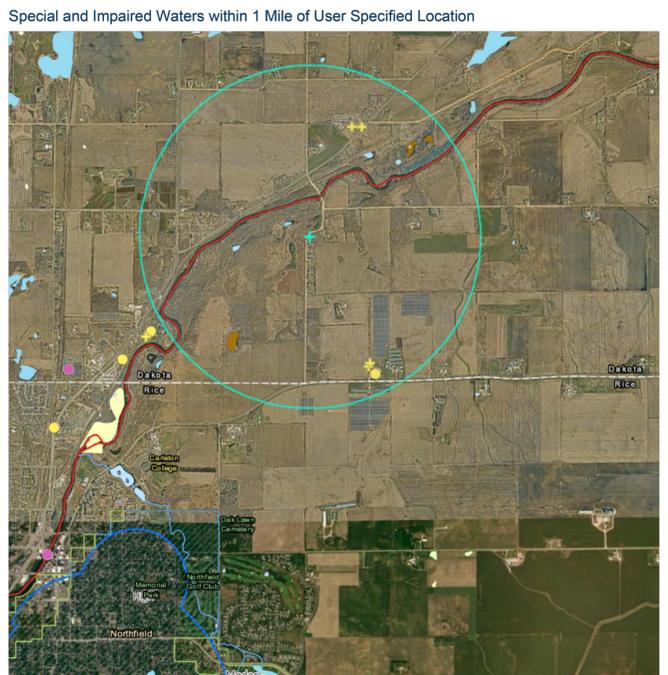
MINNESOTA POLLUTION CONTROL AGENCY Industrial Stormwater



- Industrial Stormwater**
 - Monitoring Location
 - General Permit Holder
 - No Exposure Certified Facility
 - Impaired Streams w/ add'l Industrial stormwater reqs
 - Impaired Wetlands/Lakes w/ add'l Industrial stormwater reqs
 - Mississippi River
 - Lake Trout Lake
 - Trout Lake & Lake Trout Lake
 - Trout Lake
 - Trout Stream Tributary
 - Trout Stream
- Lake Superior ORVW**
 - Restricted Discharge
 - Prohibited Discharge
- National Wetlands Inventory**
 - Seasonally Flooded Basin or Flat
 - Wet Meadow
 - Shallow Marsh
 - Deep Marsh
 - Shallow Open Water
 - Shrub Swamp
 - Wooded Swamp
 - Bogs
- Calcareous Fens**
 - MPCA Listed
 - DNR Listed
- Karsts**
 - Stream Sink
 - Sinkhole
 - Tile Outlet
 - Tile Inlet
 - Misc.
- Wilderness Area**
 - Streams
 - Lakes
- Scenic and Recreational River Segment**
 - Impaired Lakes w/o additional reqs
 - Impaired Streams w/o additional reqs
 - Wellhead Protection Area
 - MDH - Emergency Response Area
 - MDH - Drinking Water Supply Management Areas
 - Very High Vulnerability
 - High Vulnerability
 - Medium Vulnerability

This report was generated on 5/30/2024 using the Industrial Stormwater Special and Impaired Waters Search Tool: <https://pca-gis02.pca.state.mn.us/ISW/>

MINNESOTA POLLUTION CONTROL AGENCY Industrial Stormwater



- Industrial Stormwater**
 - Monitoring Location
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 - Impaired Streams w/ add'l Industrial stormwater reqs
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PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-SWPPP DETAILS
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE

SWPPP NARRATIVE

SHEET

26 OF ---

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2B	Ostrander loam, 1 to 6 percent slopes	1.4	9.2%
2C	Ostrander loam, 6 to 12 percent slopes	1.7	10.8%
100C	Copan loam, 6 to 12 percent slopes	0.5	3.2%
415B	Kamrarani loam, 2 to 6 percent slopes	0.0	0.1%
415C	Kamrarani loam, 6 to 12 percent slopes	0.4	2.4%
465	Kalmaville sandy loam, frequently flooded	1.1	7.3%
Subtotals for Soil Survey Area		6.1	33.0%
Totals for Area of Interest		15.3	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
81B	Boone loamy fine sand, 1 to 6 percent slopes	0.2	1.2%
81D	Boone loamy fine sand, 6 to 18 percent slopes	0.5	3.2%
104B	Hayden loam, 2 to 6 percent slopes	1.3	8.4%
104C2	Hayden loam, 6 to 10 percent slopes, moderately eroded	0.2	1.1%
301B	Lindstrom silt loam, 8 to 12 percent slopes	0.5	3.2%
382B	Blooming silt loam, 2 to 6 percent slopes	4.2	27.2%
382C2	Blooming silt loam, 6 to 12 percent slopes, eroded	0.3	2.2%
611D	Hawick gravelly sandy loam, 12 to 20 percent slopes	0.2	1.3%
757	Nerwoods loam, 2 to 6 percent slopes	0.5	3.3%
849B	Urban land-Esthorville complex, 1 to 6 percent slopes	0.2	1.5%
875B	Hawick-Esthorville complex, 2 to 6 percent slopes	0.2	1.6%
875C	Hawick-Esthorville complex, 6 to 12 percent slopes	0.9	5.6%
1409A	Marquis silt loam, 1 to 3 percent slopes	0.1	0.6%
1409B	Marquis silt loam, 2 to 6 percent slopes	0.7	4.6%
1831	Colo silt loam, channelled, 0 to 2 percent slopes, frequently flooded	0.3	1.9%
W	Water	0.0	0.0%
Subtotals for Soil Survey Area		16.3	67.0%
Totals for Area of Interest		15.3	100.0%

PRELIMINARY NOT FOR CONSTRUCTION



DEPARTMENT OF
NATURAL RESOURCES



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PROJECT

**CITY OF
NORTHFIELD
MILL TOWNS
STATE TRAIL**

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

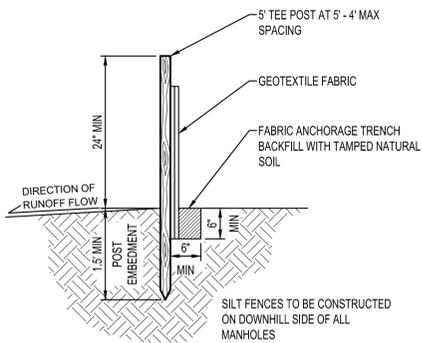
PROJECT NO.	23-30059
FILE NAME	30059-SWPPP DETAILS
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---/---/---
CLIENT PROJECT NO.	-

TITLE

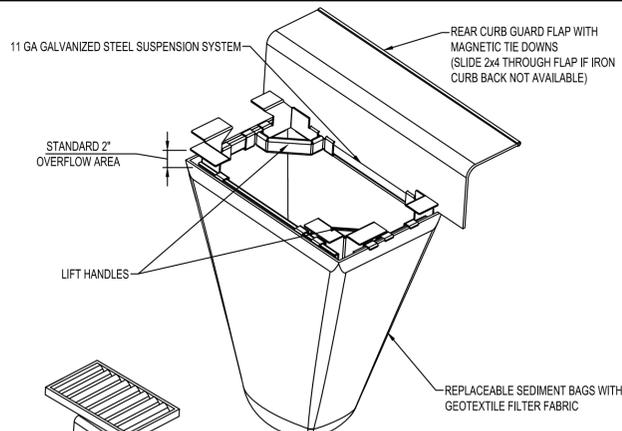
**SWPPP
DETAILS**

SHEET

27 OF ---



SILT FENCE
NTS EC100

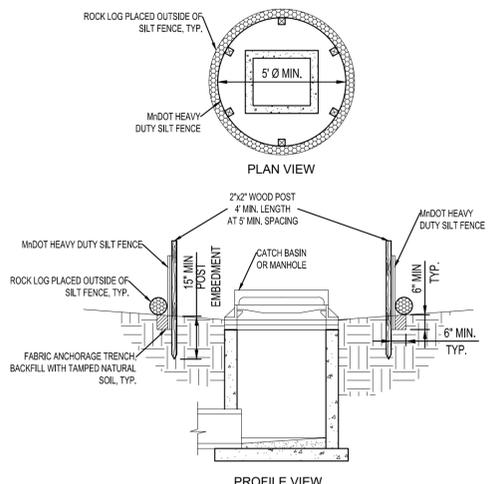


NOTES:
FOR SPECIFICATIONS AND MAINTENANCE GUIDELINES VISIT WWW.INLETFILTERS.COM

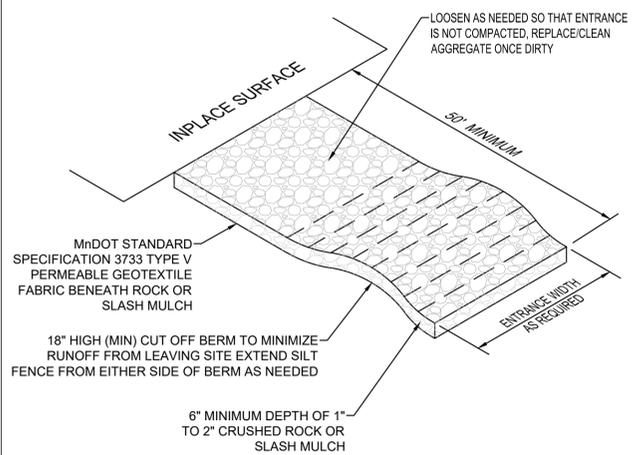
INSTALLATION:
REMOVE GRATE
DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
REPLACE GRATE

MATERIALS:
FRAMING - 11 GAUGE STEEL; CORROSION RESISTANT
SEDIMENT BAG - WOVEN GEOTEXTILE FABRIC; 2 CUBIC FOOT TYP VOLUME;
STAINLESS STEEL LOCKING BAND SECURING BAG TO FRAME

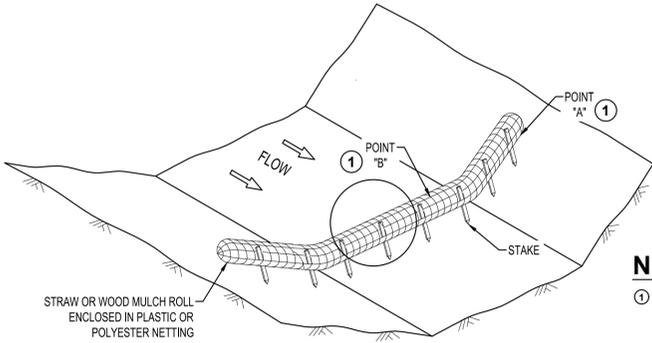
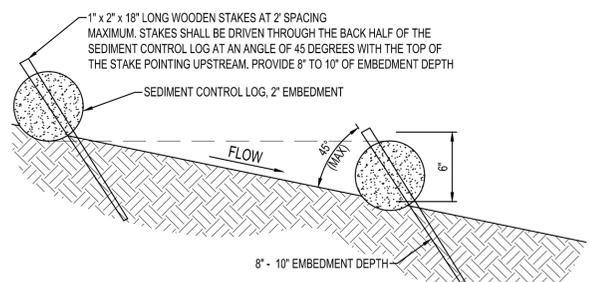
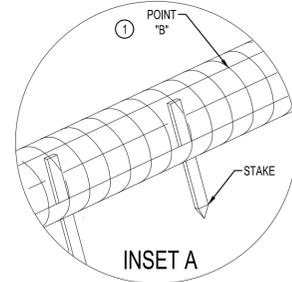
**CURB BOX FILTER
INLET PROTECTION**
NTS EC212



**SILT FENCE
INLET PROTECTION**
NTS EC220



STABILIZED CONSTRUCTION EXIT
NTS EC600



NOTES:
① POINT "A" MUST BE A MINIMUM OF 6" HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS

**SWALE/DITCH
SEDIMENT CONTROL LOG STAKING**
NTS EC301

EROSION CONTROL QUANTITIES

ITEM NO.	DESCRIPTION	UNITS	QUANTITY
2511.507	RANDOM RIPRAP, CLASS __	CY	---
2511.504	GEOTEXTILE FILTER, TYPE __	SY	---
2573.502	PROPOSED STORM DRAIN INLET PROTECTION	EACH	---
2573.502	CULVERT END CONTROL	EACH	---
2573.503	SILT FENCE, PREASSEMBLED	LF	---
2573.503	SEDIMENT CONTROL LOG	LF	---
2573.501	STABILIZED CONSTRUCTION EXIT	EACH	---
2575.504	EROSION CONTROL BLANKET, CATEGORY __	SY	---
2575.504	TURF REINFORCEMENT MAT, CATEGORY __	SY	---
	PERIMETER CONTROL	LF	---
	CONCRETE WASHOUT AREA	EACH	---

QUANTITIES ARE FOR INFORMATIONAL PURPOSES TO MEET THE REQUIREMENTS OF THE CONSTRUCTION STORMWATER PERMIT. NO GUARANTEE IS MADE TO THE ACTUAL QUANTITIES REQUIRED.

RESTORATION SCHEDULE

SYMBOL	QTY	BOTANICAL / COMMON NAME
GROUND COVERS		
	1 AC	SEED MIX MNDOT 25-131 / LOW MAINTENANCE TURF
	3.8 AC	SEED MIX MNDOT 35-642 / MESIC PRAIRIE SOUTHEAST
	2 AC	SEED MIX MNDOT 36-211 / WOODLAND EDGE SOUTH & WEST

NOTE: SEED TO LIMIT OF DISTURBANCE

SITE RESTORATION NOTES

PART 1: SITE PREPARATION

1. THE CONTRACTOR SHALL ASSESS THE SITE FOR THREATS TO NATIVE PRAIRIE RESTORATION. THREATS, INCLUDING WEEDS, UNDESIRABLE AND NON-NATIVE SPECIES OF TREES, SHRUBS, VINES, AND HERBACEOUS PLANTS, SHALL BE MINIMIZED THROUGHOUT THE GROWING SEASON IN PREPARATION FOR FALL SEEDING.
2. SITE PREPARATION METHODOLOGY MAY VARY DEPENDING ON THE PLANTS SPECIES PRESENT ON SITE, LAND USE HISTORY, AND SITE CONDITIONS. THE CONTRACTOR SHALL PERFORM ADAPTIVE WEED MANAGEMENT DEPENDENT ON EXISTING THREATS IDENTIFIED IN THE SITE ASSESSMENT. THE CONTRACTOR SHALL MANAGE BROADLEAF WEEDS BY MECHANICAL REMOVAL OR WITH UP TO 3 APPLICATIONS OF BROADLEAF HERBICIDE SUCH AS 2,4-D. IF NECESSARY, SPRAY EVERY 6-8 WEEKS STARTING IN LATE MAY/EARLY JUNE. GLYPHOSATE IS NOT RECOMMENDED AS IT WILL KILL THE TEMPORARY SEED MIX. THE CONTRACTOR SHALL NOT USE PRE-EMERGENT HERBICIDES. THE CONTRACTOR SHALL MANAGE GRASS WEEDS VIA MOWING, WHERE MOWING OCCURS WHEN PLANTS ARE NO MORE THAN 8 INCHES TALL THROUGHOUT THE GROWING SEASON. THE CONTRACTOR SHALL COLLECT AND COMPOST GRASS CLIPPINGS OFF SITE.
3. THE CONTRACTOR SHALL APPLY ALL HERBICIDES IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS AND MANUFACTURER'S INSTRUCTIONS.
4. THE CONTRACTOR SHALL NOT APPLY HERBICIDES DURING OR WITHIN 72 HOURS OF A RAIN EVENT OR WHEN WIND VELOCITIES EXCEED 5 MILES PER HOUR.

PART 2: SEEDBED PREPARATION

1. CONSTRUCTION AND GRADING ACTIVITIES CAN COMPACT THE SOIL. PRIOR TO SEEDING, THE CONTRACTOR SHALL INSPECT SOIL FOR COMPACTION.
2. ANY COMPACTED AREAS MUST BE REMEDIATED TO PROVIDE A LOOSE, SMOOTH, EVENLY TEXTURED SEEDBED. USE CULTIVATING EQUIPMENT LIKE A DISC AND HARROW. ON SLOPES, OPERATE EQUIPMENT AT RIGHT ANGLES TO THE DIRECTION OF SURFACE DRAINAGE.
3. THE DISC SHALL NOT INVERT THE SOIL. AVOID SOIL INVERSION AND TILLING TO PRESERVE SOIL BIOLOGY AND PREVENT EMERGENCE OF WEED SEEDS. SOIL DISTURBANCE SHALL NOT EXCEED 2 INCH DEPTH.
4. IN AREAS WHERE NO COMPACTION OCCURRED, THE CONTRACTOR SHALL TREAT REMAINING VEGETATION WITH GLYPHOSATE AND 2,4-D HERBICIDES TO KILL REMAINING VEGETATION IN SEPTEMBER, AT LEAST 1 MONTH PRIOR TO FALL SEEDING.

PART 3: SEEDING METHODOLOGY

1. THE CONTRACTOR SHALL SOW SEED BETWEEN OCTOBER 1 - NOVEMBER 30, AFTER A HARD FROST HAS OCCURRED. SUMMER SEEDING (JULY - SEPTEMBER) IS NOT PERMITTED.
2. THE CONTRACTOR SHALL SEED AFTER ALL GRADING, CONSTRUCTION, AND SITE PREPARATION ACTIVITIES ARE COMPLETED. THE CONTRACTOR MUST WAIT THREE (3) DAYS AFTER GLYPHOSATE APPLICATION TO SEED NATIVE SPECIES. IF OTHER HERBICIDES HAVE BEEN USED ON SITE, CONSULT THE MANUFACTURER'S RECOMMENDATION FOR SAFE RE-ENTRY PERIOD PRIOR TO SEEDING. SOME HERBICIDES CAN STAY IN THE SOIL FOR MONTHS AND HINDER THE GERMINATION OF NATIVE PLANTS.
3. THE CONTRACTOR SHALL BROADCAST OR DRILL SEED.
4. HAND OR MECHANICAL BROADCASTING - BEST FOR SMALL SITES (LESS THAN 1 ACRE) OR AREAS WHERE LARGE EQUIPMENT (TRACTORS, DRILLS, ETC) CANNOT BE USED. THIS METHOD REQUIRES A CARRIER OR FILLER MATERIAL (DAMP SAWDUST, PEAT MOSS, PERLITE, VERMICULITE, CRACKED CORN, PARBOILED RICE HULLS, ETC) TO EVENLY DISTRIBUTE DIFFERENT SIZED SEED. CONSULT ARCHITECT / OWNER'S REPRESENTATIVE FOR FURTHER INFORMATION ON SEED CARRIERS IF NEEDED. THE CONTRACTOR SHALL ENSURE AN EVEN DISTRIBUTION OF SEED ACROSS THE SITE.
5. DRILLING WITH A NATIVE SEED DRILL - BEST FOR LARGE (>1 ACRE), RELATIVELY FLAT SITES. PLANTING DEPTH SHALL BE 1/4" - 1/2". THE DRILL SHALL ACCURATELY METER THE TYPES OF SEED TO BE PLANTED AND KEEP ALL SEEDS UNIFORMLY MIXED DURING THE DRILLING. THE DRILL SHALL CONTAIN A MINIMUM OF TWO SEED BOXES; A SMALL SEED BOX FOR FINE SEED AND ANOTHER SEED BOX FOR LARGE/FLUFFY SEEDS. THE DRILL SHALL BE EQUIPPED WITH DISC FURROW OPENERS AND PACKER ASSEMBLY TO COMPACT THE SOIL DIRECTLY OVER THE DRILL ROWS. MAXIMUM ROW SPACING SHALL BE 8 INCHES. SMALL SEED SHALL BE DROP-SEEDED ONTO THE GROUND SURFACE FROM THE FINE SEED BOX. DRILL SEEDING SHALL BE DONE AT A RIGHT ANGLE TO SURFACE DRAINAGE IF POSSIBLE. A FILLER OR CARRIER MATERIAL (DAMP SAWDUST, PEAT MOSS, PERLITE, VERMICULITE, CRACKED CORN, PARBOILED RICE HULLS, ETC) MAY BE USED TO FACILITATE PROPER SEED METERING.
 - 5.1. SEED BOX 1: SMALL FLOWABLE SEED = MOST WILDFLOWER SPECIES + SOME SEDGES + RUSHES.
 - 5.2. SEED BOX 2: LARGE FLOWABLE SEED = COVER CROP + SOME WILDFLOWER SPECIES + SOME GRASS (DEPENDING ON TO WHAT DEGREE THE SEED WAS CLEANED).
 - 5.3. SEED BOX 3: FLUFFY NON-FLOWABLE SEED = GRASSES + SOME WILDFLOWER SEEDS (DEPENDING ON TO WHAT DEGREE THE SEED WAS CLEANED).
6. THE CONTRACTOR IS RESPONSIBLE FOR CALIBRATING EQUIPMENT TO DELIVER SEED AT THE SPECIFIED RATE AND TO OPERATE EQUIPMENT IN A MANNER NECESSARY TO EVENLY DISTRIBUTE THE SEEDS OVER THE SPECIFIED AREA AT THE SPECIFIED RATE.
7. SEEDED AREAS MAY HAVE ONE PASS WITH A ROLLER OR CULTIPACKER TO FIRM THE SOIL AND ENSURE SEED-TO-SOIL CONTACT.



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PROJECT

**CITY OF
NORTHFIELD

MILL TOWNS
STATE TRAIL**

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-C0-LANDSCAPE DETAILS
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
**RESTORATION
NOTES**



DEPARTMENT OF NATURAL RESOURCES



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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL

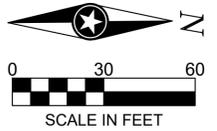
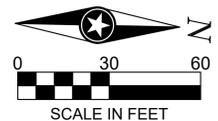
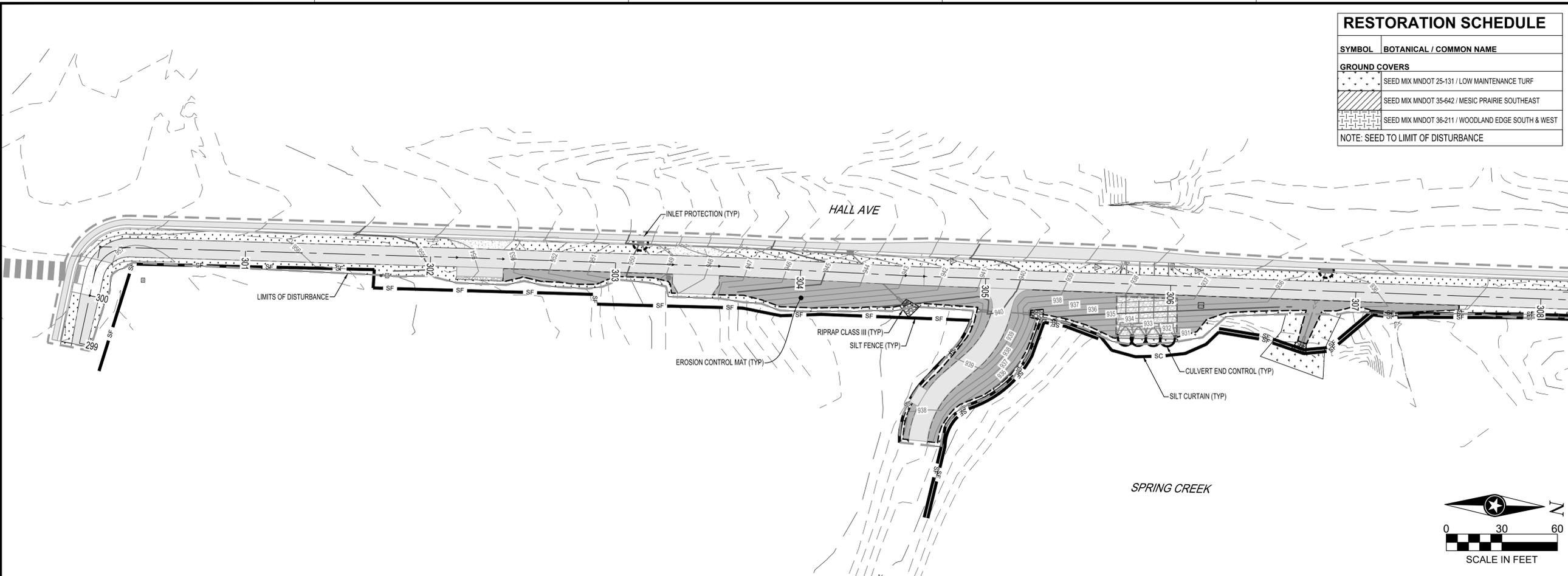
REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-SWPPP-SEGMENT D
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---/---/---
CLIENT PROJECT NO.	-

TITLE
SWPPP (SEGMENT D)

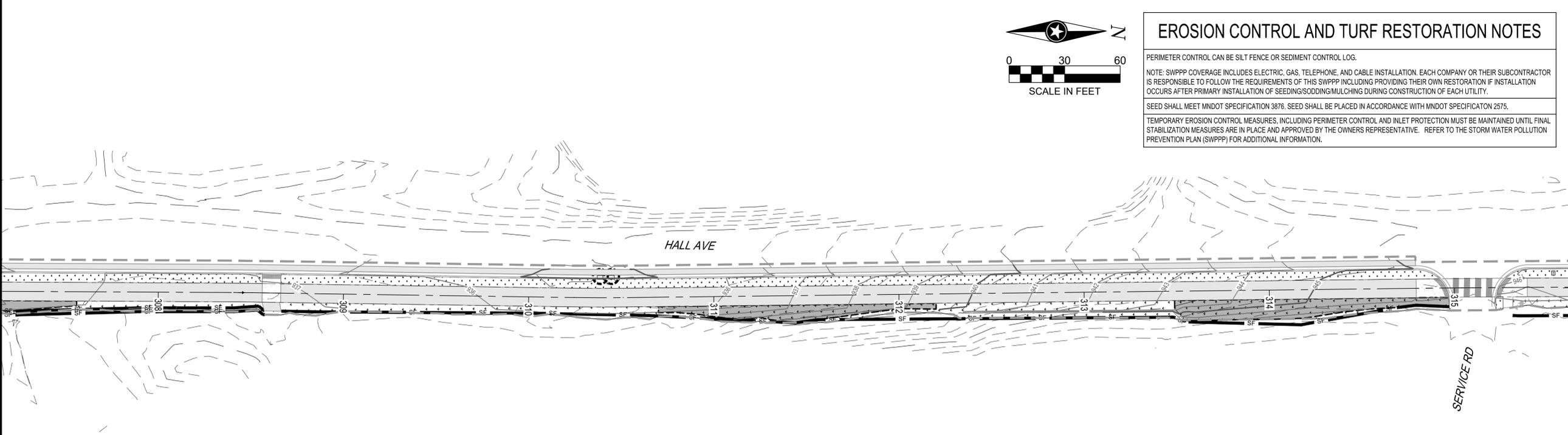
SHEET
29 OF ---

RESTORATION SCHEDULE	
SYMBOL	BOTANICAL / COMMON NAME
GROUND COVERS	
	SEED MIX MNDOT 25-131 / LOW MAINTENANCE TURF
	SEED MIX MNDOT 35-642 / MESIC PRAIRIE SOUTHEAST
	SEED MIX MNDOT 36-211 / WOODLAND EDGE SOUTH & WEST
NOTE: SEED TO LIMIT OF DISTURBANCE	



EROSION CONTROL AND TURF RESTORATION NOTES

PERIMETER CONTROL CAN BE SILT FENCE OR SEDIMENT CONTROL LOG.
NOTE: SWPPP COVERAGE INCLUDES ELECTRIC, GAS, TELEPHONE, AND CABLE INSTALLATION. EACH COMPANY OR THEIR SUBCONTRACTOR IS RESPONSIBLE TO FOLLOW THE REQUIREMENTS OF THIS SWPPP INCLUDING PROVIDING THEIR OWN RESTORATION IF INSTALLATION OCCURS AFTER PRIMARY INSTALLATION OF SEEDING/SODDING/MULCHING DURING CONSTRUCTION OF EACH UTILITY.
SEED SHALL MEET MNDOT SPECIFICATION 3876. SEED SHALL BE PLACED IN ACCORDANCE WITH MNDOT SPECIFICATION 2575.
TEMPORARY EROSION CONTROL MEASURES, INCLUDING PERIMETER CONTROL AND INLET PROTECTION MUST BE MAINTAINED UNTIL FINAL STABILIZATION MEASURES ARE IN PLACE AND APPROVED BY THE OWNERS REPRESENTATIVE. REFER TO THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR ADDITIONAL INFORMATION.



EROSION CONTROL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SILT FENCE		SILT CURTAIN		SEDIMENT CONTROL LOG		EXISTING DRAINAGE ARROW
	STORM DRAIN INLET PROTECTION		CULVERT END CONTROL		STABILIZED CONSTRUCTION EXIT		PROPOSED DRAINAGE ARROW
							EROSION CONTROL BLANKET, CATEGORY 3

PLOT DATE: 5/31/2024 1:40 PM

PRELIMINARY NOT FOR CONSTRUCTION



DEPARTMENT OF
NATURAL RESOURCES



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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

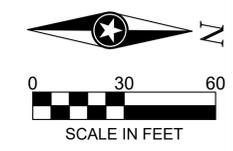
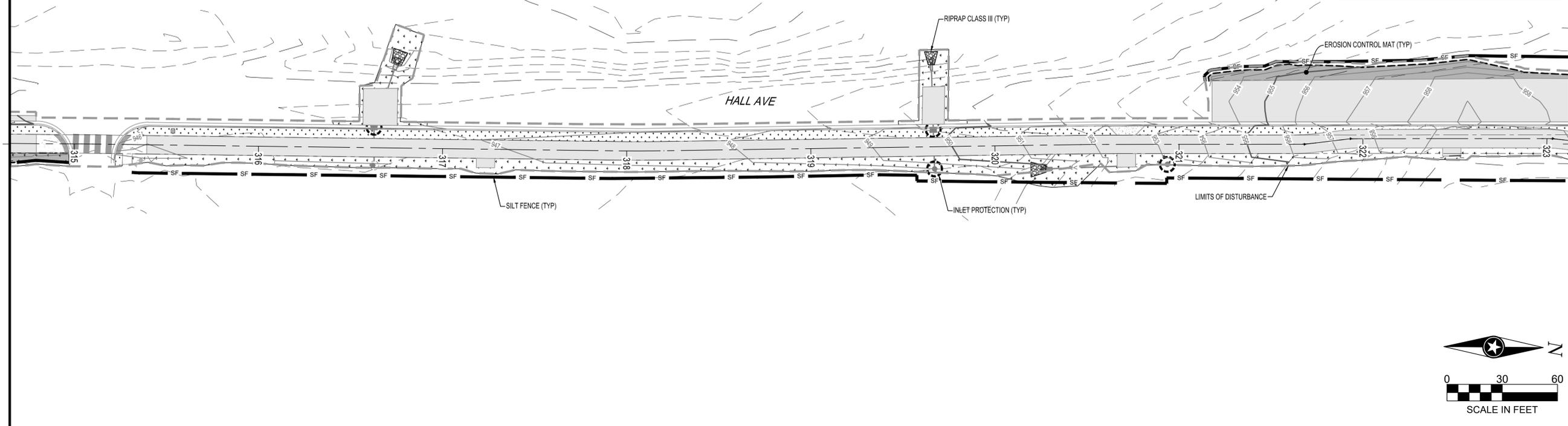
REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
FILE NAME 30059-SWPPP-SEGMENT D
DRAWN BY OBO/BJK
DESIGNED BY KJR
REVIEWED BY KJR
ORIGINAL ISSUE DATE --/--
CLIENT PROJECT NO. -

TITLE
SWPPP (SEGMENT D)

SHEET
30 OF ---

RESTORATION SCHEDULE	
SYMBOL	BOTANICAL / COMMON NAME
GROUND COVERS	
	SEED MIX MNDOT 25-131 / LOW MAINTENANCE TURF
	SEED MIX MNDOT 35-642 / MESIC PRAIRIE SOUTHEAST
	SEED MIX MNDOT 36-211 / WOODLAND EDGE SOUTH & WEST
NOTE: SEED TO LIMIT OF DISTURBANCE	



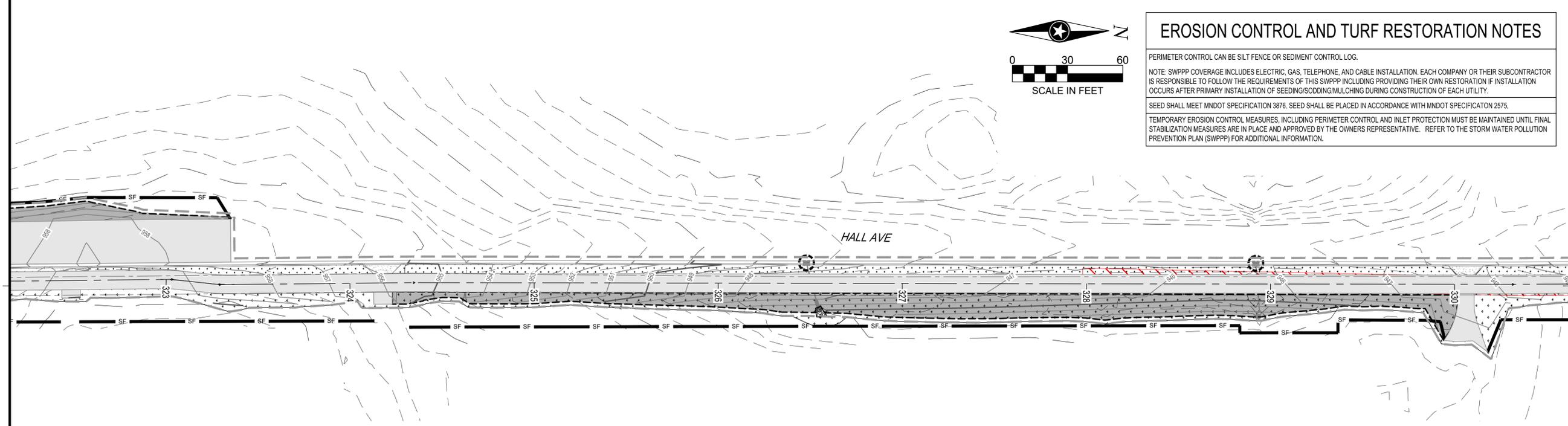
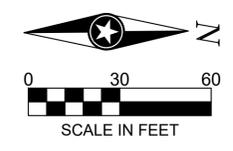
EROSION CONTROL AND TURF RESTORATION NOTES

PERIMETER CONTROL CAN BE SILT FENCE OR SEDIMENT CONTROL LOG.

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SEED SHALL MEET MNDOT SPECIFICATION 3876. SEED SHALL BE PLACED IN ACCORDANCE WITH MNDOT SPECIFICATION 2575.

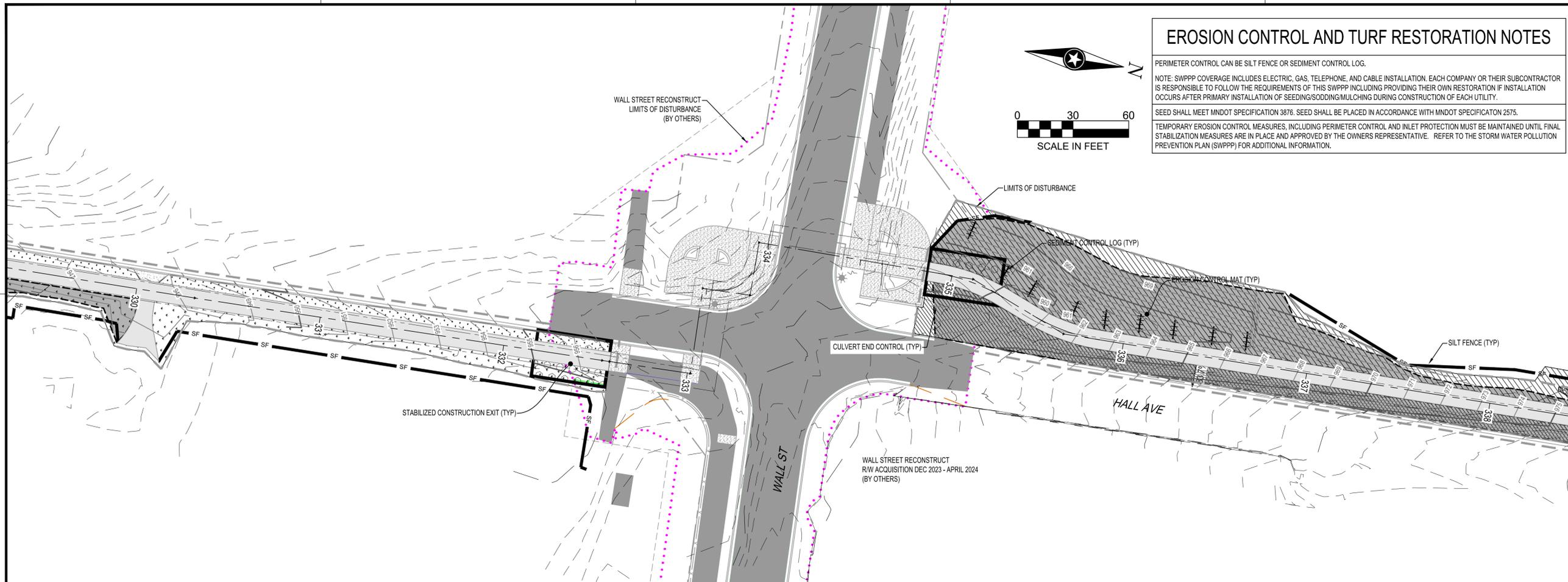
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EROSION CONTROL LEGEND					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SILT FENCE		SILT CURTAIN		SEDIMENT CONTROL LOG
	STORM DRAIN INLET PROTECTION		CULVERT END CONTROL		STABILIZED CONSTRUCTION EXIT
					EXISTING DRAINAGE ARROW
					PROPOSED DRAINAGE ARROW
					EROSION CONTROL BLANKET, CATEGORY 3

PLOT DATE: 5/31/2024 1:40 PM

PRELIMINARY NOT FOR CONSTRUCTION



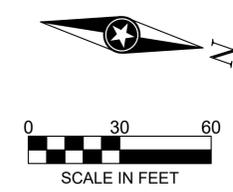
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DEPARTMENT OF NATURAL RESOURCES



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EROSION CONTROL LEGEND							
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
— SF —	SILT FENCE	— SC —	SILT CURTAIN	+++++	SEDIMENT CONTROL LOG	↗	EXISTING DRAINAGE ARROW
⊙	STORM DRAIN INLET PROTECTION	⌒	CULVERT END CONTROL	⊠	STABILIZED CONSTRUCTION EXIT	↖	PROPOSED DRAINAGE ARROW
						▭	EROSION CONTROL BLANKET, CATEGORY

PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059

FILE NAME 30059-SWPPP-SEGMENT D

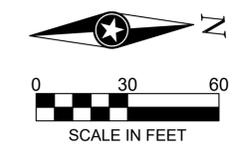
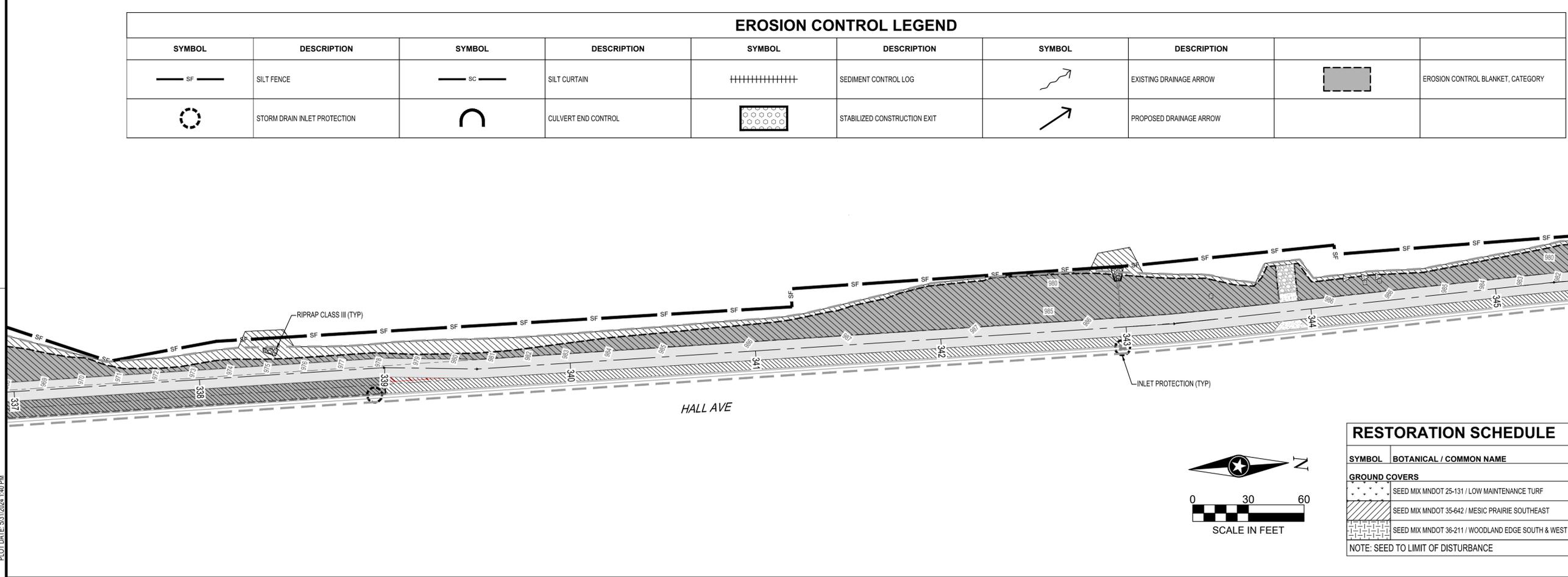
DRAWN BY OBO/BJK

DESIGNED BY KJR

REVIEWED BY KJR

ORIGINAL ISSUE DATE --/--

CLIENT PROJECT NO. -



RESTORATION SCHEDULE	
SYMBOL	BOTANICAL / COMMON NAME
⊙	SEED MIX MNDOT 25-131 / LOW MAINTENANCE TURF
▨	SEED MIX MNDOT 35-642 / MESIC PRAIRIE SOUTHEAST
⊠	SEED MIX MNDOT 36-211 / WOODLAND EDGE SOUTH & WEST

NOTE: SEED TO LIMIT OF DISTURBANCE

TITLE

SWPPP (SEGMENT D)

SHEET

31 OF ---

PLOT DATE: 5/8/2024 1:40 PM

PRELIMINARY NOT FOR CONSTRUCTION

RESTORATION SCHEDULE	
SYMBOL	BOTANICAL / COMMON NAME
GROUND COVERS	
	SEED MIX MNDOT 25-131 / LOW MAINTENANCE TURF
	SEED MIX MNDOT 35-642 / MESIC PRAIRIE SOUTHEAST
	SEED MIX MNDOT 36-211 / WOODLAND EDGE SOUTH & WEST
NOTE: SEED TO LIMIT OF DISTURBANCE	



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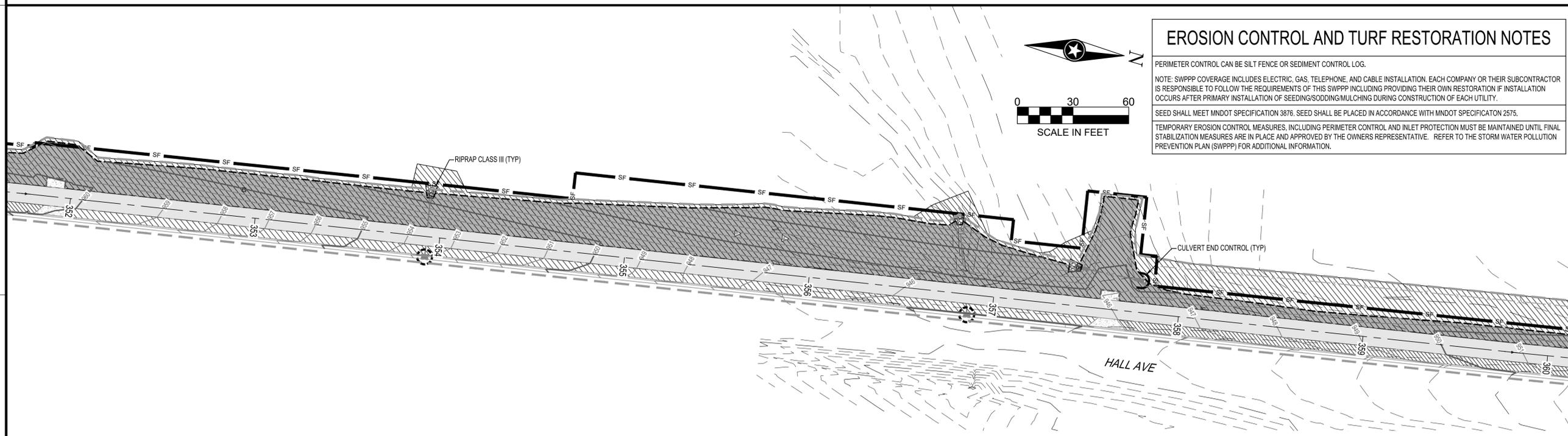
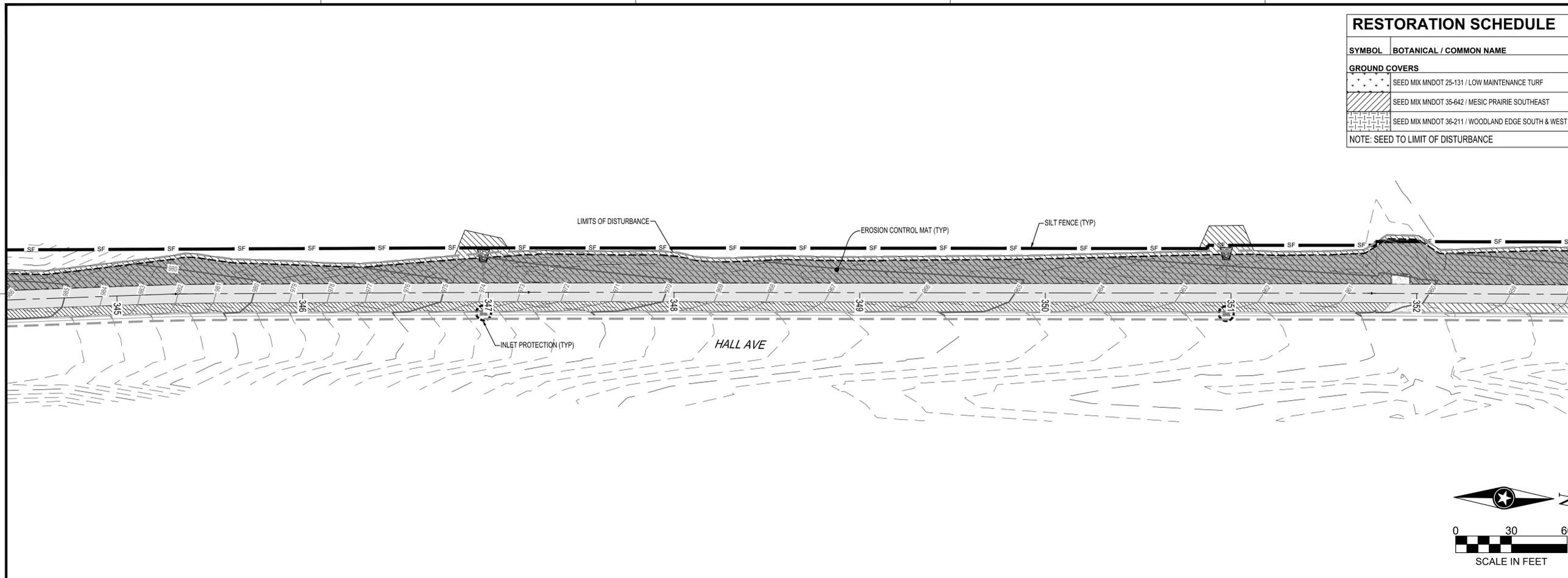
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-SWPPP-SEGMENT D
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---/---/---
CLIENT PROJECT NO.	

TITLE
SWPPP (SEGMENT D)

SHEET
32 OF ---



EROSION CONTROL AND TURF RESTORATION NOTES

PERIMETER CONTROL CAN BE SILT FENCE OR SEDIMENT CONTROL LOG.

NOTE: SWPPP COVERAGE INCLUDES ELECTRIC, GAS, TELEPHONE, AND CABLE INSTALLATION. EACH COMPANY OR THEIR SUBCONTRACTOR IS RESPONSIBLE TO FOLLOW THE REQUIREMENTS OF THIS SWPPP INCLUDING PROVIDING THEIR OWN RESTORATION IF INSTALLATION OCCURS AFTER PRIMARY INSTALLATION OF SEEDING/SODDING/MULCHING DURING CONSTRUCTION OF EACH UTILITY.

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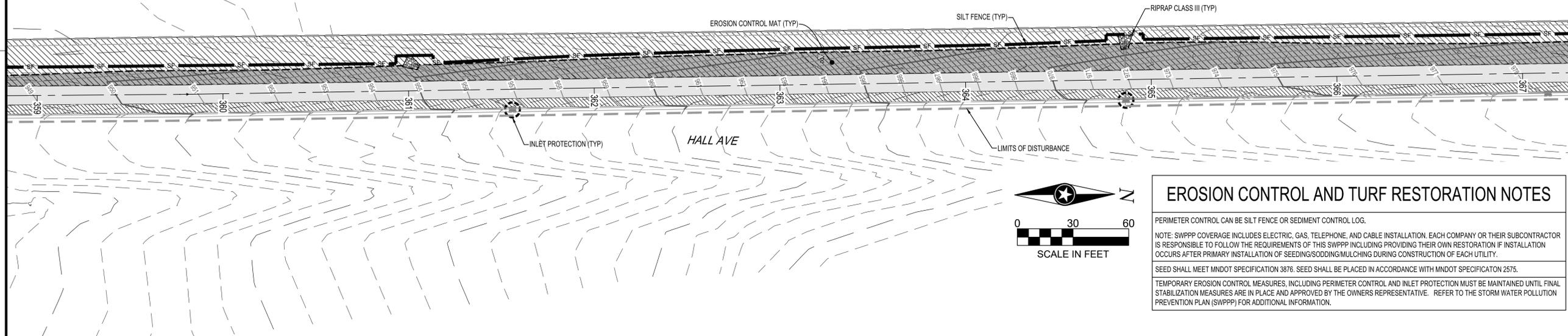
EROSION CONTROL LEGEND							
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SILT FENCE		SILT CURTAIN		SEDIMENT CONTROL LOG		EXISTING DRAINAGE ARROW
	STORM DRAIN INLET PROTECTION		CULVERT END CONTROL		STABILIZED CONSTRUCTION EXIT		PROPOSED DRAINAGE ARROW
							EROSION CONTROL BLANKET, CATEGORY

PLOT DATE: 5/31/2024 1:40 PM

PRELIMINARY NOT FOR CONSTRUCTION

EROSION CONTROL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
— SF —	SILT FENCE	— SC —	SILT CURTAIN		SEDIMENT CONTROL LOG	↗	EXISTING DRAINAGE ARROW
○	STORM DRAIN INLET PROTECTION	C	CULVERT END CONTROL	□ (dots)	STABILIZED CONSTRUCTION EXIT	↖	PROPOSED DRAINAGE ARROW
						■ (dashed)	EROSION CONTROL BLANKET, CATEGORY 3



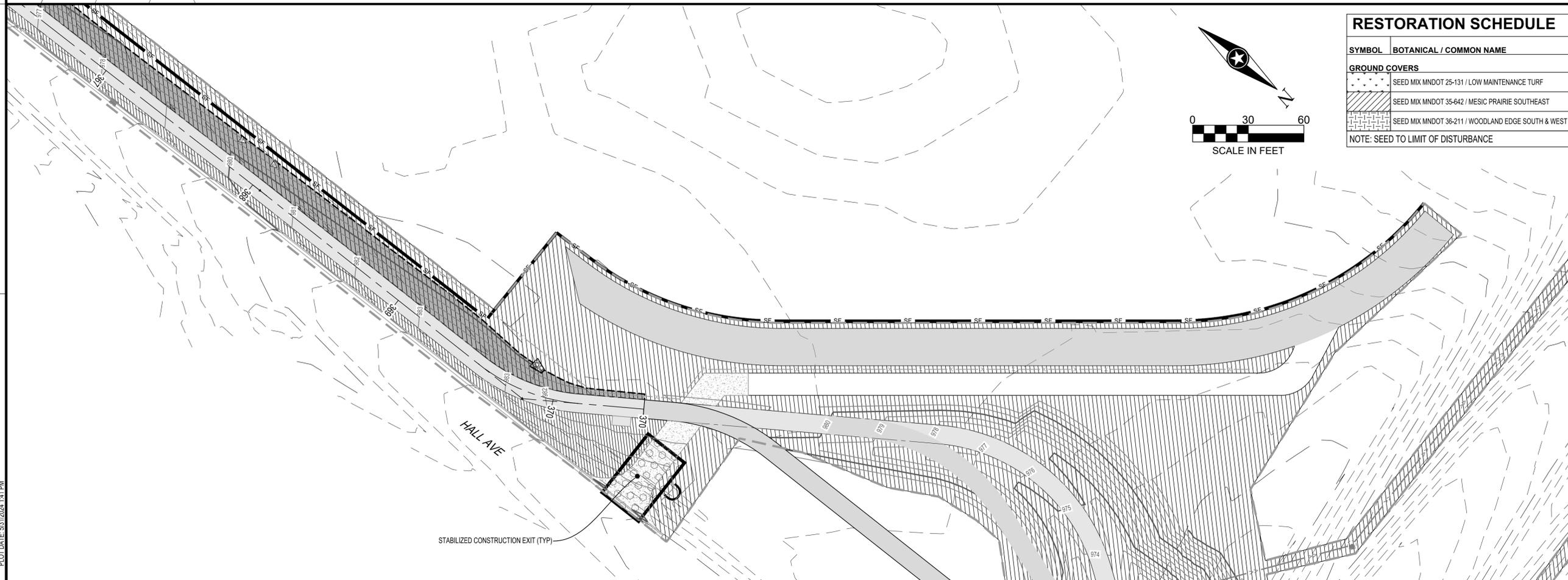
EROSION CONTROL AND TURF RESTORATION NOTES

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RESTORATION SCHEDULE

SYMBOL	BOTANICAL / COMMON NAME
GROUND COVERS	
□ (dots)	SEED MIX MNDOT 25-131 / LOW MAINTENANCE TURF
□ (diagonal lines)	SEED MIX MNDOT 35-642 / MESIC PRAIRIE SOUTHEAST
□ (cross-hatch)	SEED MIX MNDOT 36-211 / WOODLAND EDGE SOUTH & WEST
NOTE: SEED TO LIMIT OF DISTURBANCE	



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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
 NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
 FILE NAME 30059-SWPPP-SEGMENT D
 DRAWN BY OBO/BJK
 DESIGNED BY KJR
 REVIEWED BY KJR
 ORIGINAL ISSUE DATE --/--
 CLIENT PROJECT NO. -

TITLE
SWPPP (SEGMENT D)

SHEET
33 OF ---

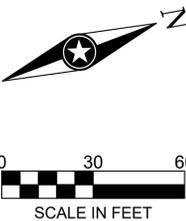
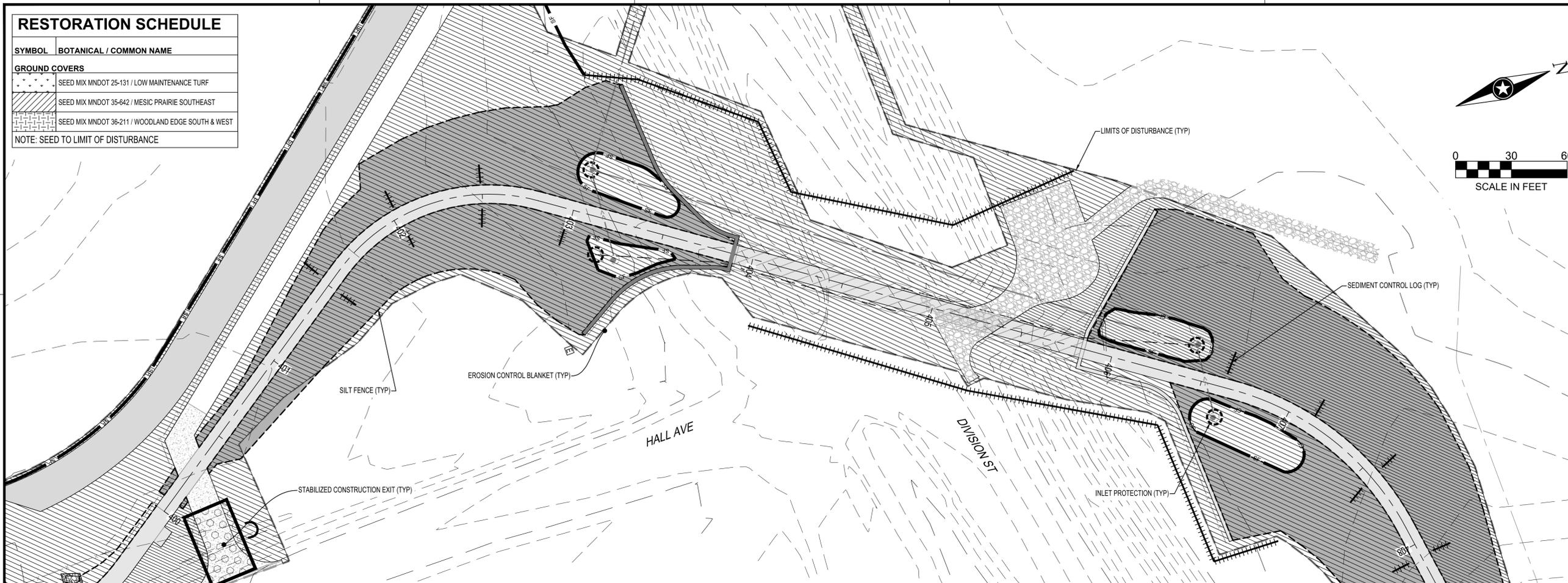
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PRELIMINARY NOT FOR CONSTRUCTION

RESTORATION SCHEDULE

SYMBOL	BOTANICAL / COMMON NAME
GROUND COVERS	
	SEED MIX MNDOT 25-131 / LOW MAINTENANCE TURF
	SEED MIX MNDOT 35-642 / MESIC PRAIRIE SOUTHEAST
	SEED MIX MNDOT 36-211 / WOODLAND EDGE SOUTH & WEST

NOTE: SEED TO LIMIT OF DISTURBANCE



DEPARTMENT OF NATURAL RESOURCES



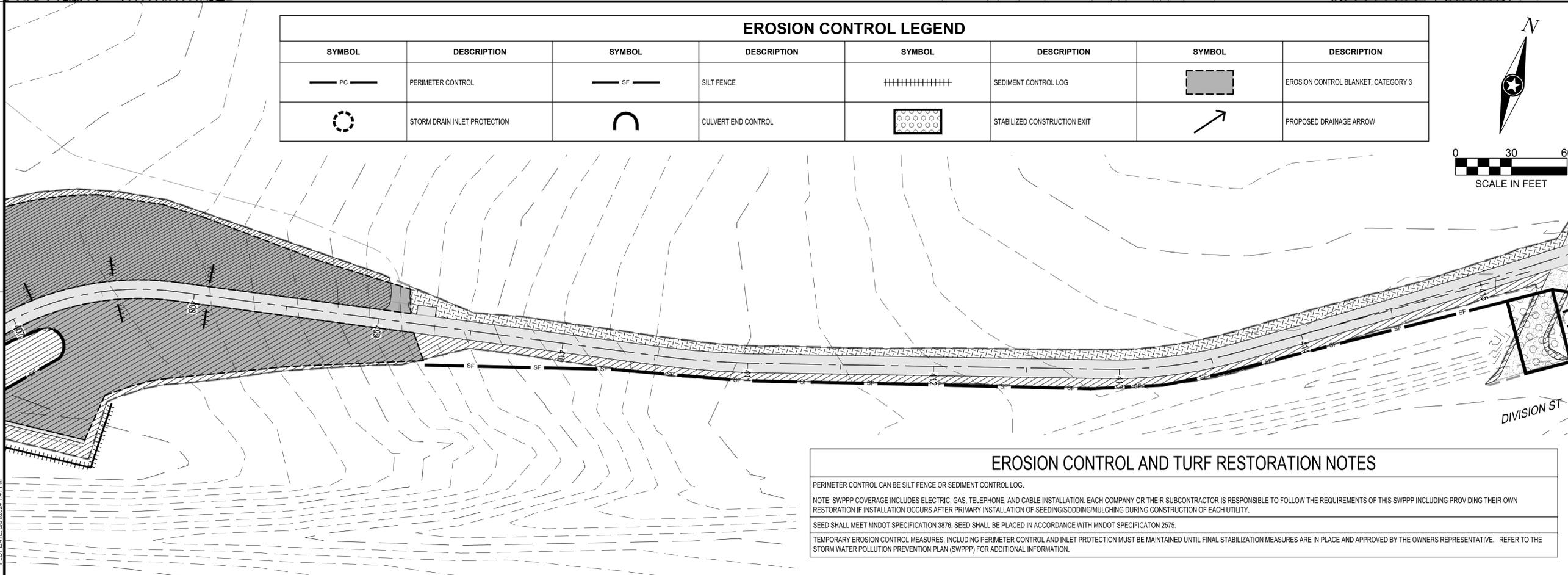
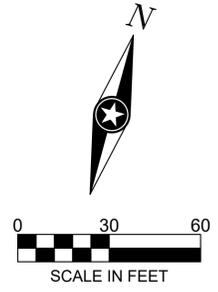
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EROSION CONTROL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	PERIMETER CONTROL		SILT FENCE		SEDIMENT CONTROL LOG		EROSION CONTROL BLANKET, CATEGORY 3
	STORM DRAIN INLET PROTECTION		CULVERT END CONTROL		STABILIZED CONSTRUCTION EXIT		PROPOSED DRAINAGE ARROW



EROSION CONTROL AND TURF RESTORATION NOTES

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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
 NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-SWPPP-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---/---/---
CLIENT PROJECT NO.	-

TITLE
SWPPP (SEGMENT E)

SHEET
34 OF ---

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PLOT DATE: 5/31/2024 1:41 PM

RESTORATION SCHEDULE	
SYMBOL	BOTANICAL / COMMON NAME
GROUND COVERS	
	SEED MIX MNDOT 25-131 / LOW MAINTENANCE TURF
	SEED MIX MNDOT 35-642 / MESIC PRAIRIE SOUTHEAST
	SEED MIX MNDOT 38-211 / WOODLAND EDGE SOUTH & WEST
NOTE: SEED TO LIMIT OF DISTURBANCE	

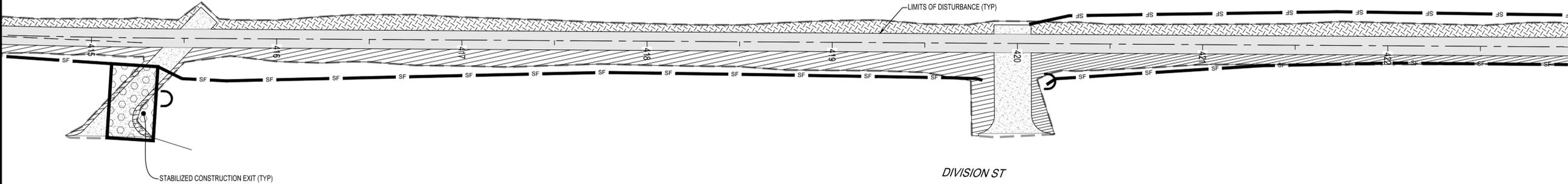
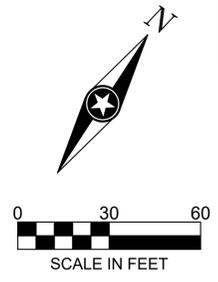
EROSION CONTROL AND TURF RESTORATION NOTES

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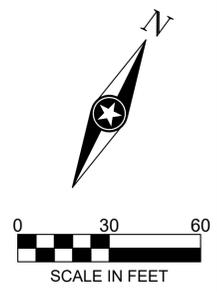
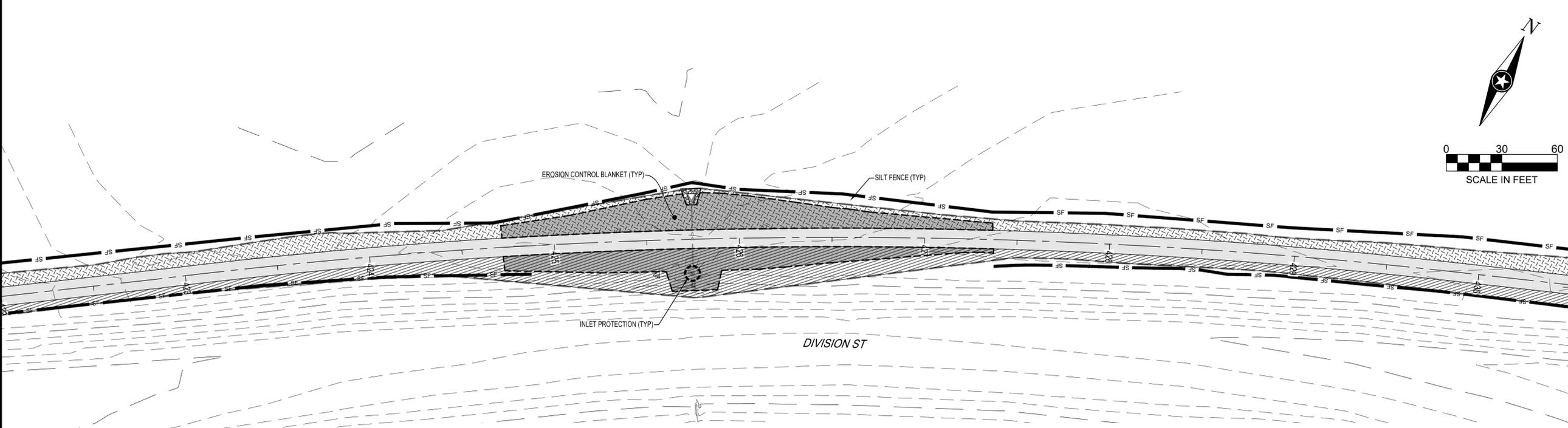


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PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059

FILE NAME 30059-SWPPP-SEGMENT E

DRAWN BY OBO/BJK

DESIGNED BY KJR

REVIEWED BY KJR

ORIGINAL ISSUE DATE --/--

CLIENT PROJECT NO. -

TITLE

SWPPP (SEGMENT E)

SHEET

35 OF ---

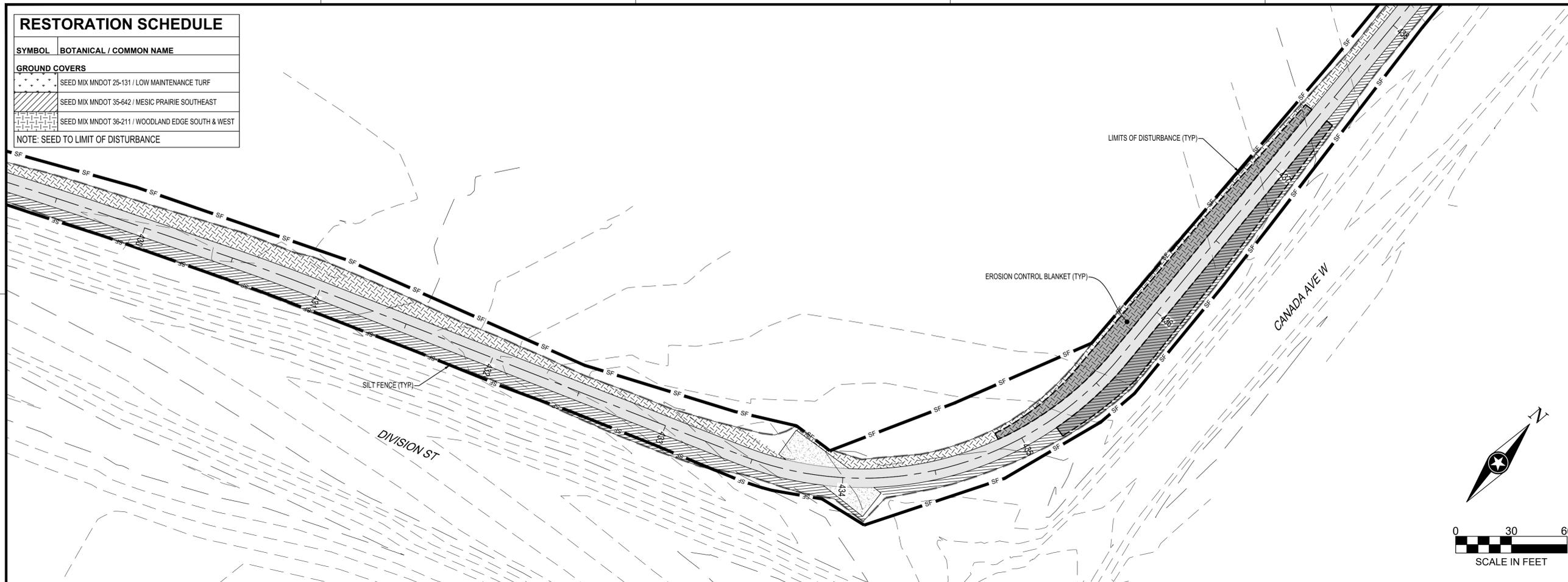
EROSION CONTROL LEGEND							
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SILT FENCE		SILT CURTAIN		SEDIMENT CONTROL LOG		EROSION CONTROL BLANKET, CATEGORY 3
	STORM DRAIN INLET PROTECTION		CULVERT END CONTROL		STABILIZED CONSTRUCTION EXIT		PROPOSED DRAINAGE ARROW

PLOT DATE: 5/31/2024 1:41 PM

PRELIMINARY NOT FOR CONSTRUCTION

RESTORATION SCHEDULE

SYMBOL	BOTANICAL / COMMON NAME
GROUND COVERS	
	SEED MIX MNDOT 25-131 / LOW MAINTENANCE TURF
	SEED MIX MNDOT 35-642 / MESIC PRAIRIE SOUTHEAST
	SEED MIX MNDOT 38-211 / WOODLAND EDGE SOUTH & WEST
NOTE: SEED TO LIMIT OF DISTURBANCE	



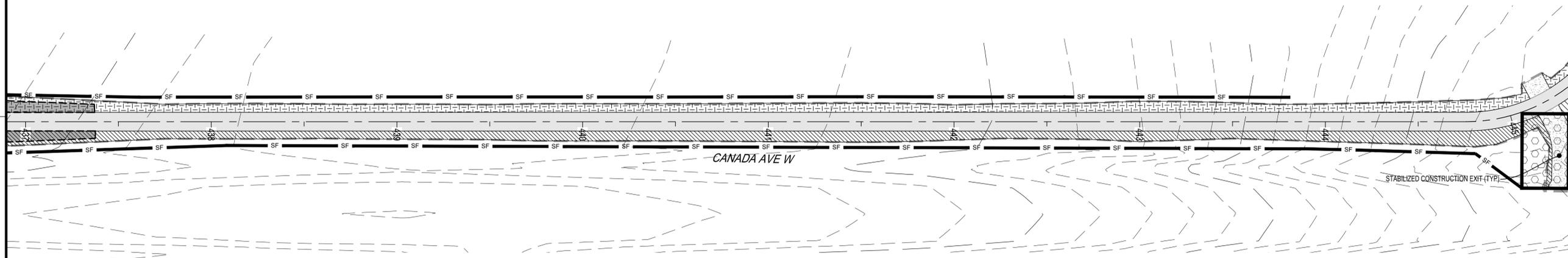
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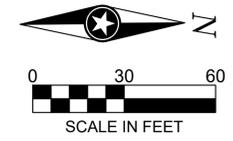
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EROSION CONTROL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SILT FENCE		SILT CURTAIN		SEDIMENT CONTROL LOG		EROSION CONTROL BLANKET, CATEGORY 3
	STORM DRAIN INLET PROTECTION		CULVERT END CONTROL		STABILIZED CONSTRUCTION EXIT		PROPOSED DRAINAGE ARROW



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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
 FILE NAME 30059-SWPPP-SEGMENT E
 DRAWN BY OBO/BJK
 DESIGNED BY KJR
 REVIEWED BY KJR
 ORIGINAL ISSUE DATE --/--
 CLIENT PROJECT NO. -

TITLE
SWPPP (SEGMENT E)

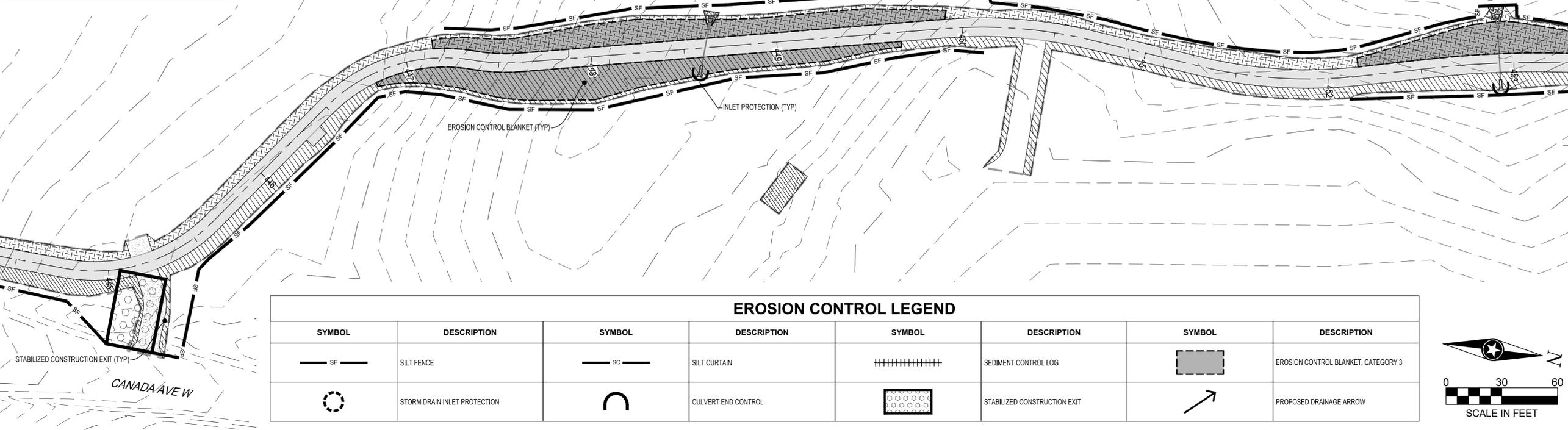
SHEET
36 OF ---

PLOT DATE: 5/1/2024 1:42 PM

PRELIMINARY NOT FOR CONSTRUCTION

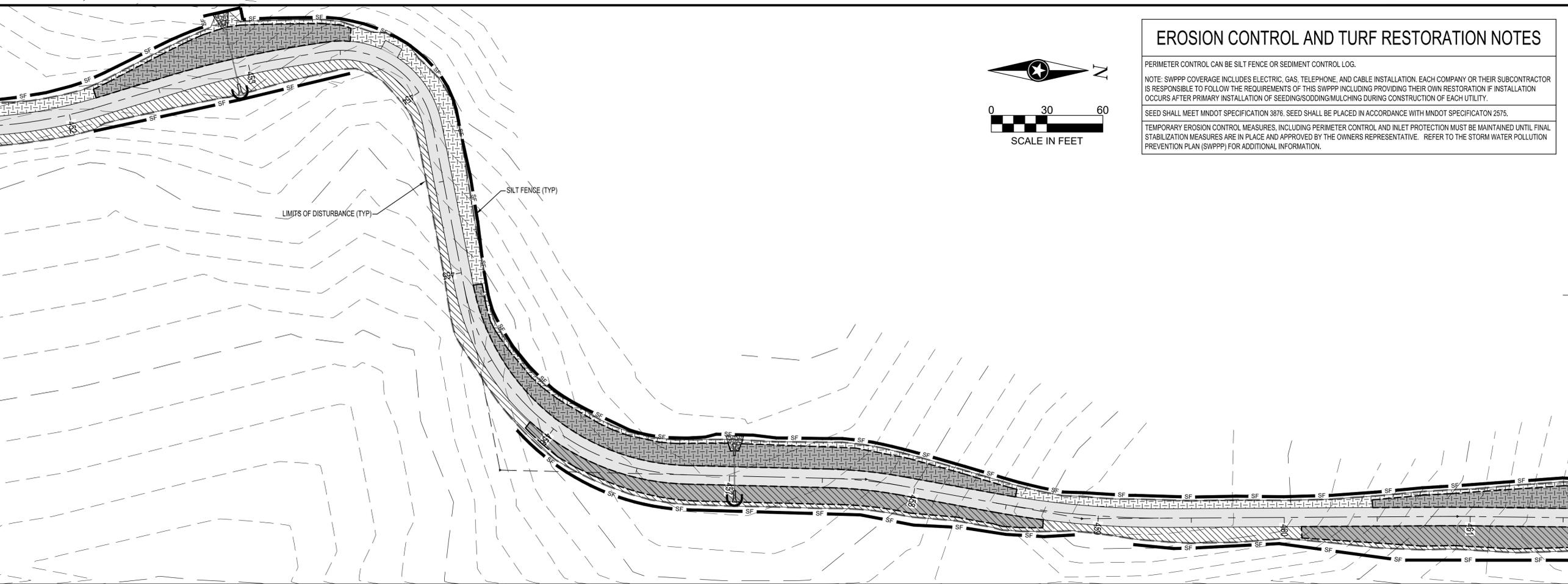
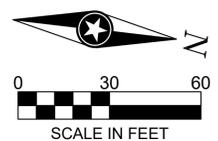
RESTORATION SCHEDULE

SYMBOL	BOTANICAL / COMMON NAME
GROUND COVERS	
	SEED MIX MNDOT 25-131 / LOW MAINTENANCE TURF
	SEED MIX MNDOT 35-642 / MESIC PRAIRIE SOUTHEAST
	SEED MIX MNDOT 38-211 / WOODLAND EDGE SOUTH & WEST
NOTE: SEED TO LIMIT OF DISTURBANCE	



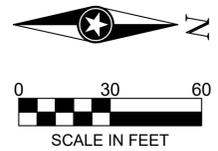
EROSION CONTROL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SILT FENCE		SILT CURTAIN		SEDIMENT CONTROL LOG		EROSION CONTROL BLANKET, CATEGORY 3
	STORM DRAIN INLET PROTECTION		CULVERT END CONTROL		STABILIZED CONSTRUCTION EXIT		PROPOSED DRAINAGE ARROW



EROSION CONTROL AND TURF RESTORATION NOTES

PERIMETER CONTROL CAN BE SILT FENCE OR SEDIMENT CONTROL LOG.
 NOTE: SWPPP COVERAGE INCLUDES ELECTRIC, GAS, TELEPHONE, AND CABLE INSTALLATION. EACH COMPANY OR THEIR SUBCONTRACTOR IS RESPONSIBLE TO FOLLOW THE REQUIREMENTS OF THIS SWPPP INCLUDING PROVIDING THEIR OWN RESTORATION IF INSTALLATION OCCURS AFTER PRIMARY INSTALLATION OF SEEDING/SODDING/MULCHING DURING CONSTRUCTION OF EACH UTILITY.
 SEED SHALL MEET MNDOT SPECIFICATION 3876. SEED SHALL BE PLACED IN ACCORDANCE WITH MNDOT SPECIFICATION 2575.
 TEMPORARY EROSION CONTROL MEASURES, INCLUDING PERIMETER CONTROL AND INLET PROTECTION MUST BE MAINTAINED UNTIL FINAL STABILIZATION MEASURES ARE IN PLACE AND APPROVED BY THE OWNERS REPRESENTATIVE. REFER TO THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR ADDITIONAL INFORMATION.



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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
 NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-SWPPP-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
SWPPP (SEGMENT E)

SHEET
37 OF ---

PLOT DATE: 5/31/2024 1:42 PM

PRELIMINARY NOT FOR CONSTRUCTION

RESTORATION SCHEDULE

SYMBOL	BOTANICAL / COMMON NAME
GROUND COVERS	
	SEED MIX MNDOT 25-131 / LOW MAINTENANCE TURF
	SEED MIX MNDOT 35-642 / MESIC PRAIRIE SOUTHEAST
	SEED MIX MNDOT 38-211 / WOODLAND EDGE SOUTH & WEST

NOTE: SEED TO LIMIT OF DISTURBANCE

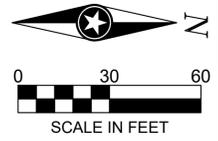
EROSION CONTROL AND TURF RESTORATION NOTES

PERIMETER CONTROL CAN BE SILT FENCE OR SEDIMENT CONTROL LOG.

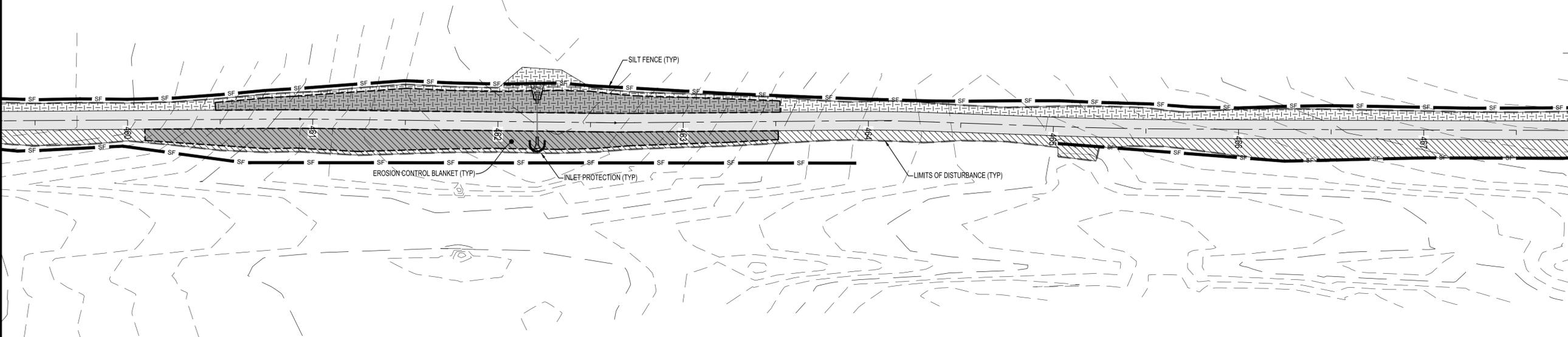
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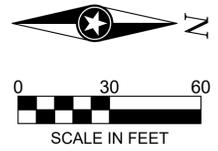
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EROSION CONTROL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SILT FENCE		SILT CURTAIN		SEDIMENT CONTROL LOG		EROSION CONTROL BLANKET, CATEGORY 3
	STORM DRAIN INLET PROTECTION		CULVERT END CONTROL		STABILIZED CONSTRUCTION EXIT		PROPOSED DRAINAGE ARROW



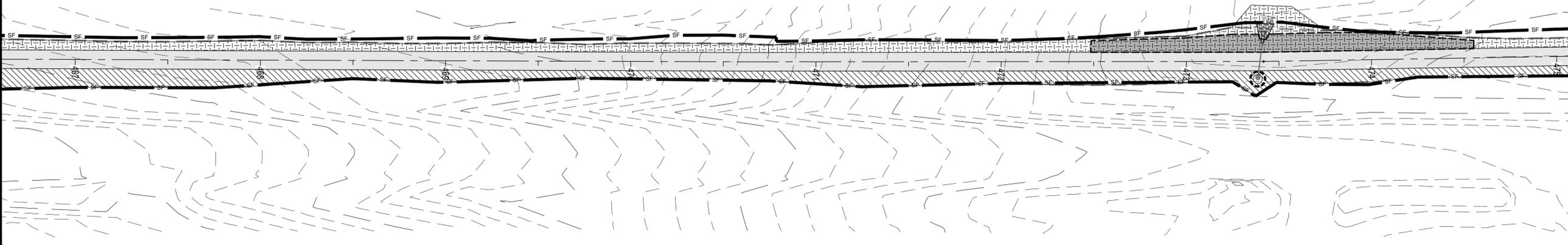
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
 NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
 FILE NAME 30059-SWPPP-SEGMENT E
 DRAWN BY OBO/BJK
 DESIGNED BY KJR
 REVIEWED BY KJR
 ORIGINAL ISSUE DATE --/--
 CLIENT PROJECT NO. -

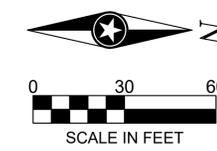
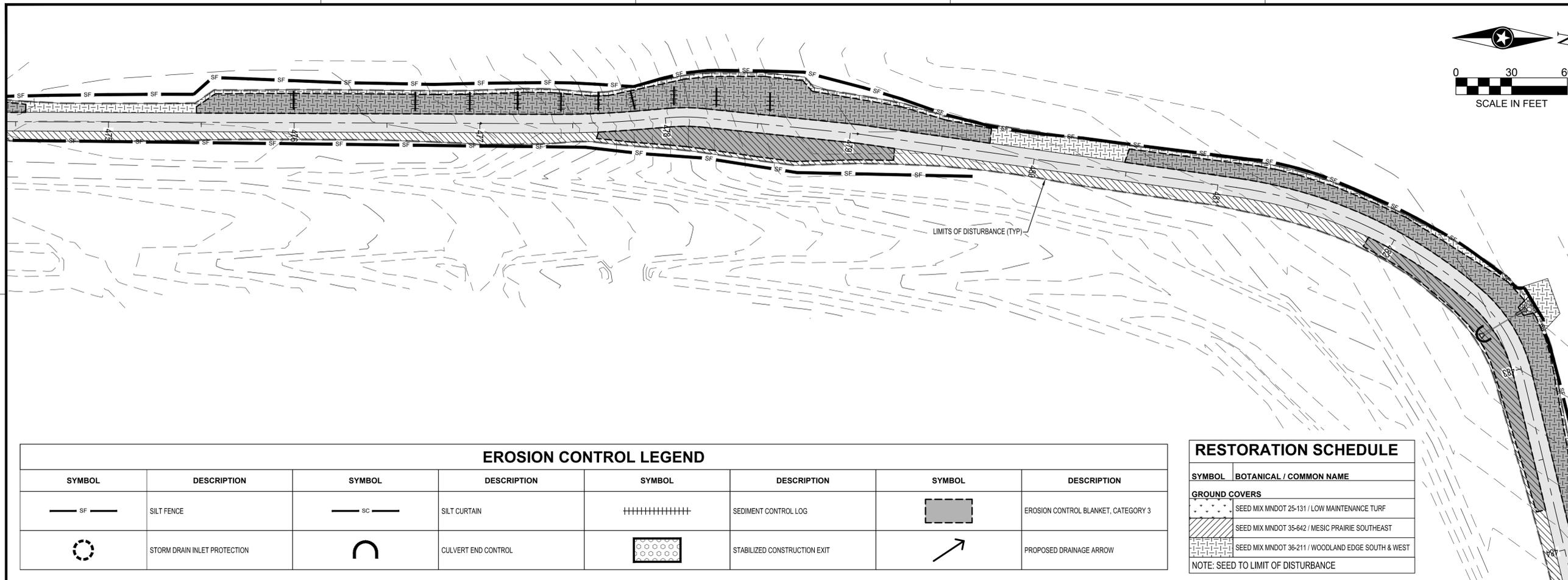
TITLE
SWPPP (SEGMENT E)

SHEET
38 OF ---



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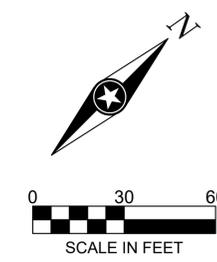
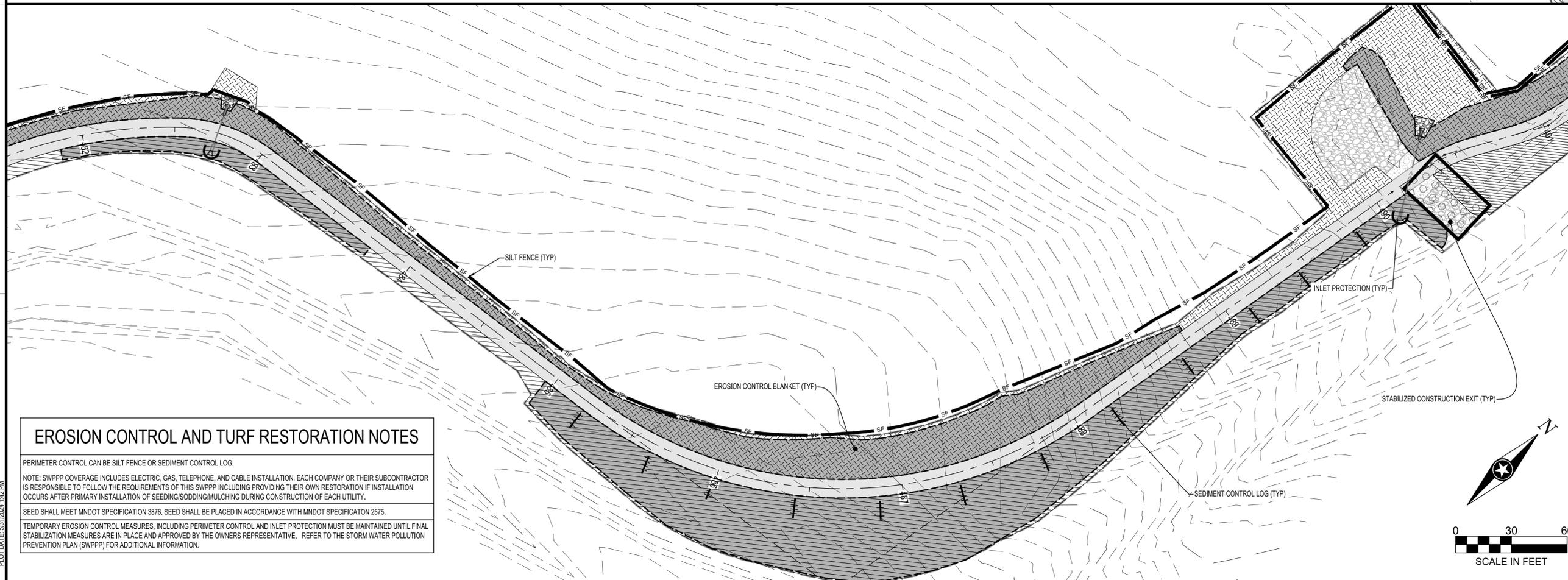
EROSION CONTROL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SILT FENCE		SILT CURTAIN		SEDIMENT CONTROL LOG		EROSION CONTROL BLANKET, CATEGORY 3
	STORM DRAIN INLET PROTECTION		CULVERT END CONTROL		STABILIZED CONSTRUCTION EXIT		PROPOSED DRAINAGE ARROW

RESTORATION SCHEDULE

SYMBOL	BOTANICAL / COMMON NAME
GROUND COVERS	
	SEED MIX MNDOT 25-131 / LOW MAINTENANCE TURF
	SEED MIX MNDOT 35-642 / MESIC PRAIRIE SOUTHEAST
	SEED MIX MNDOT 36-211 / WOODLAND EDGE SOUTH & WEST

NOTE: SEED TO LIMIT OF DISTURBANCE



EROSION CONTROL AND TURF RESTORATION NOTES

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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
 FILE NAME 30059-SWPPP-SEGMENT E
 DRAWN BY OBO/BJK
 DESIGNED BY KJR
 REVIEWED BY KJR
 ORIGINAL ISSUE DATE --/--
 CLIENT PROJECT NO. -

TITLE
SWPPP (SEGMENT E)

SHEET
39 OF ---

PLOT DATE: 5/31/2024 1:42 PM

PRELIMINARY NOT FOR CONSTRUCTION

RESTORATION SCHEDULE

SYMBOL	BOTANICAL / COMMON NAME
GROUND COVERS	
	SEED MIX MNDOT 25-131 / LOW MAINTENANCE TURF
	SEED MIX MNDOT 35-642 / MESIC PRAIRIE SOUTHEAST
	SEED MIX MNDOT 38-211 / WOODLAND EDGE SOUTH & WEST
NOTE: SEED TO LIMIT OF DISTURBANCE	

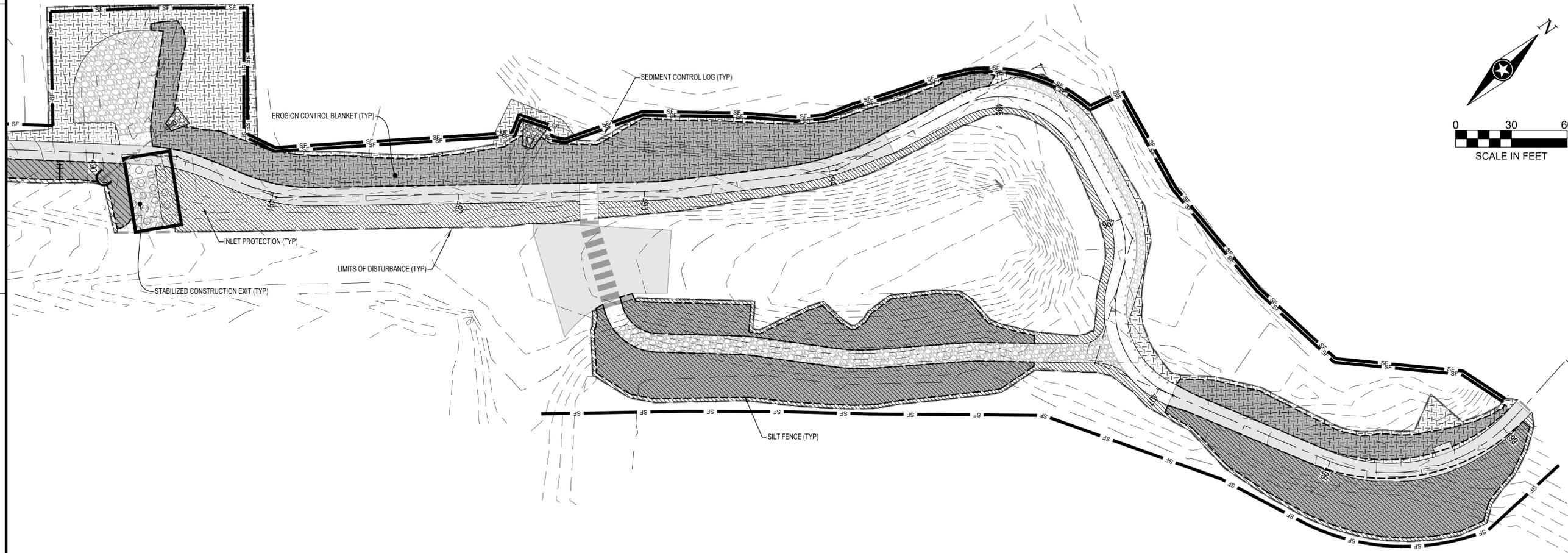
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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
 NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
 FILE NAME 30059-SWPPP-SEGMENT E
 DRAWN BY OBO/BJK
 DESIGNED BY KJR
 REVIEWED BY KJR
 ORIGINAL ISSUE DATE --/--
 CLIENT PROJECT NO. -

TITLE
SWPPP (SEGMENT E)

SHEET
40 OF ---

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SILT FENCE		SILT CURTAIN		SEDIMENT CONTROL LOG		EROSION CONTROL BLANKET, CATEGORY 3
	STORM DRAIN INLET PROTECTION		CULVERT END CONTROL		STABILIZED CONSTRUCTION EXIT		PROPOSED DRAINAGE ARROW

PLOT DATE: 5/31/2024 4:42 PM

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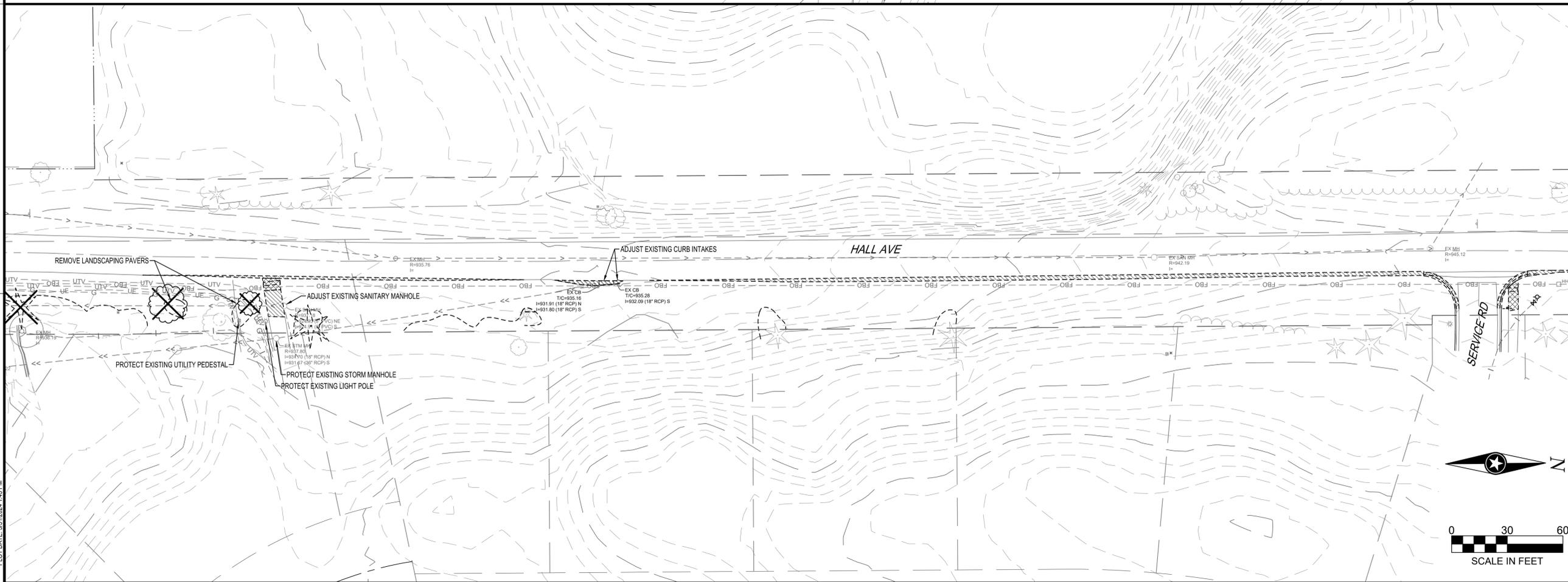
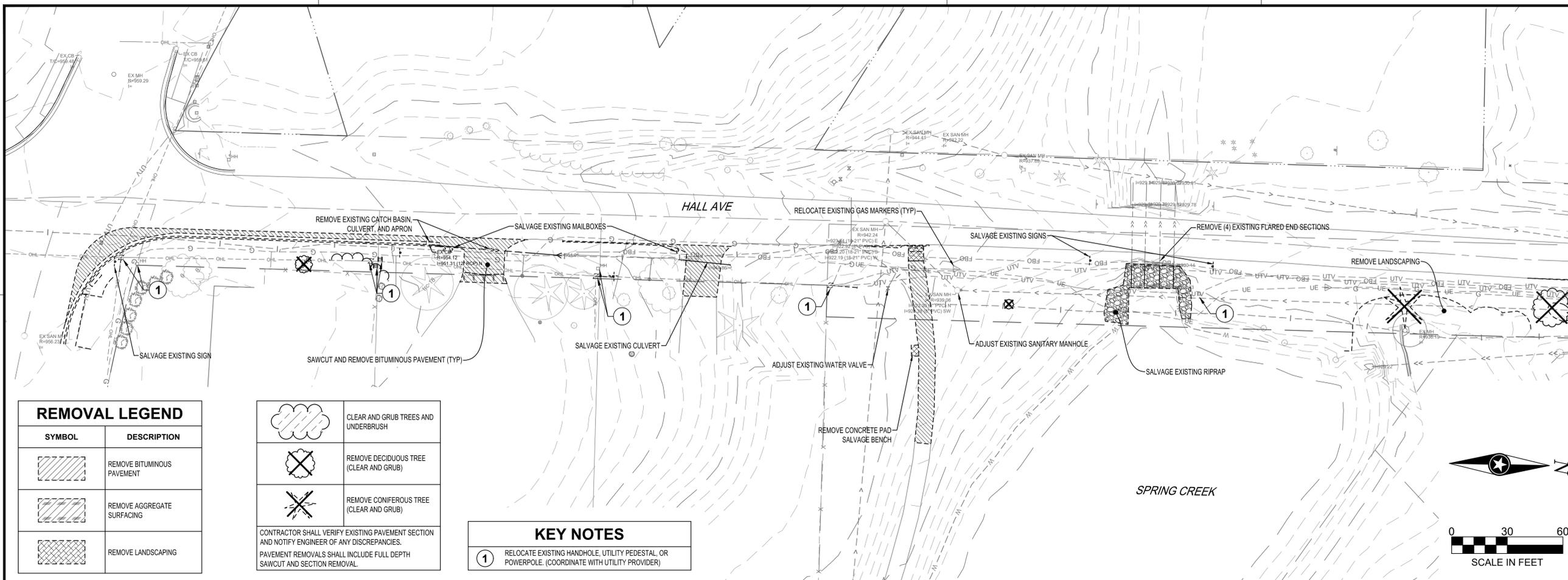
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
 FILE NAME 30059-EXIST-SEGMENT D
 DRAWN BY OBO/BJK
 DESIGNED BY KJR
 REVIEWED BY KJR
 ORIGINAL ISSUE DATE --/--
 CLIENT PROJECT NO. -

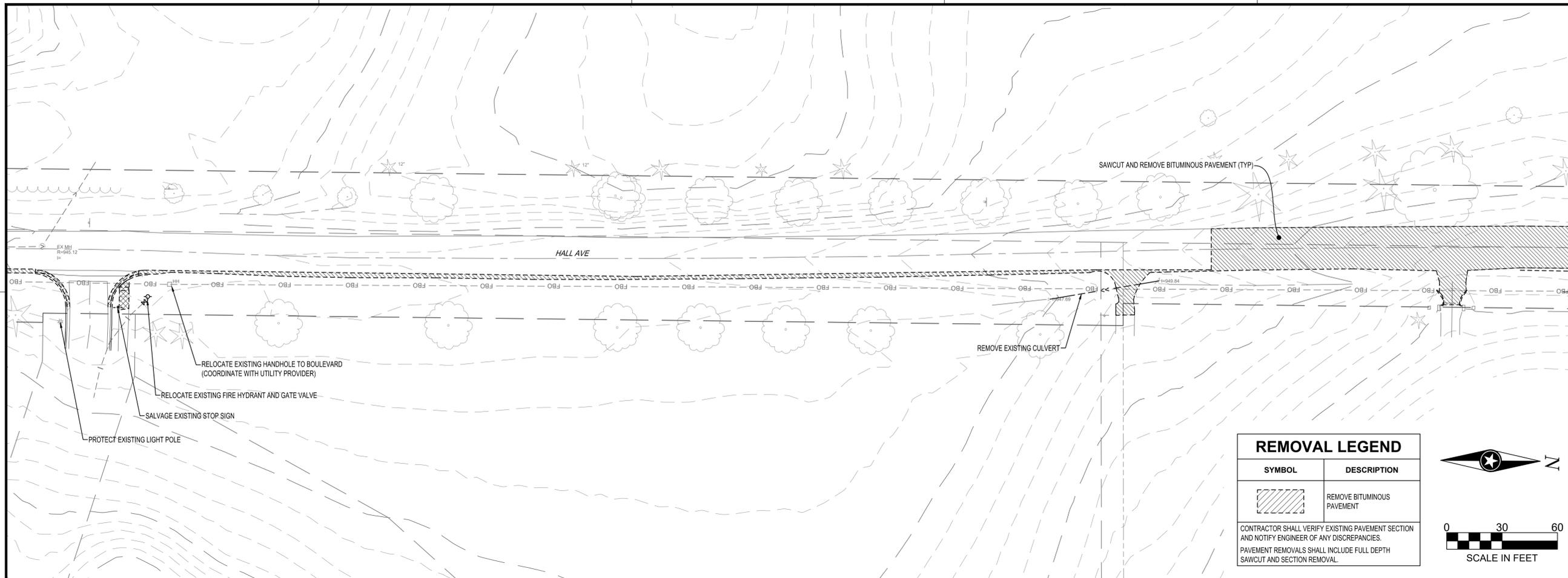
TITLE
EXISTING SITE AND REMOVAL PLAN (SEGMENT D)

SHEET
41 OF ---



PLOT DATE: 5/31/2024 1:43 PM

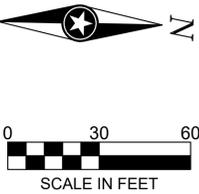
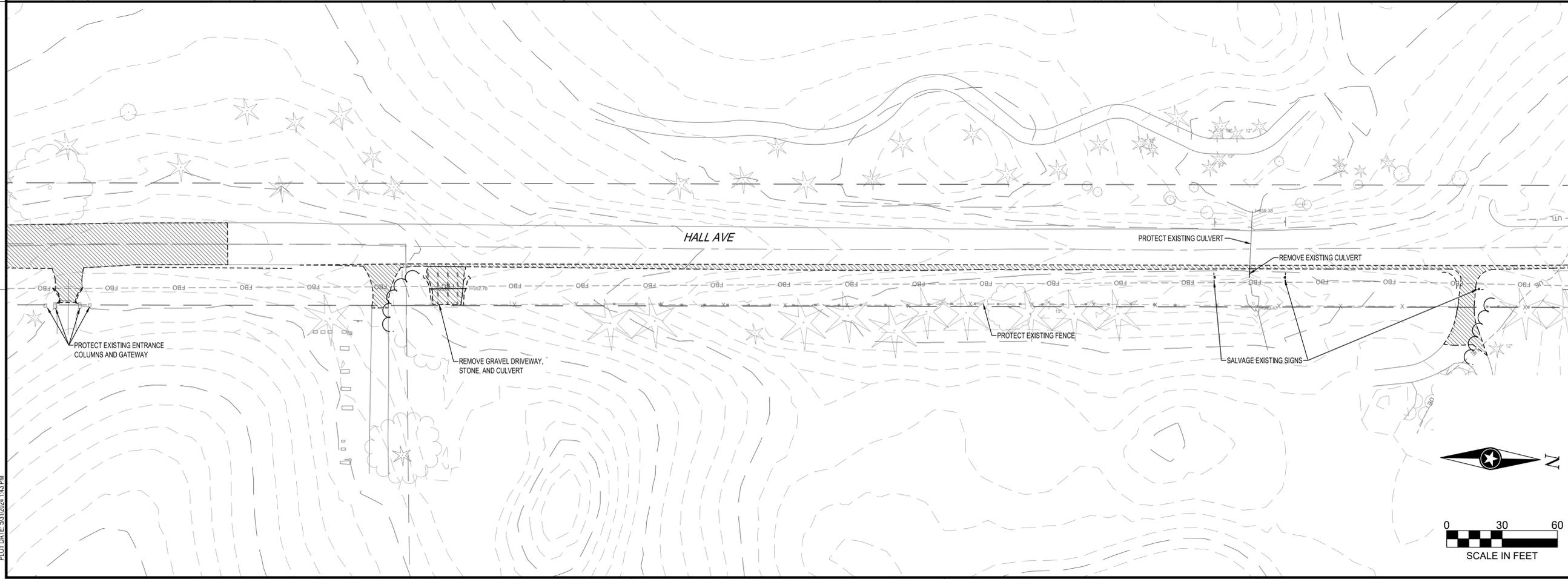
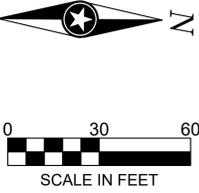
PRELIMINARY NOT FOR CONSTRUCTION



REMOVAL LEGEND

SYMBOL	DESCRIPTION
	REMOVE BITUMINOUS PAVEMENT

CONTRACTOR SHALL VERIFY EXISTING PAVEMENT SECTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
PAVEMENT REMOVALS SHALL INCLUDE FULL DEPTH SAWCUT AND SECTION REMOVAL.



DEPARTMENT OF NATURAL RESOURCES



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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

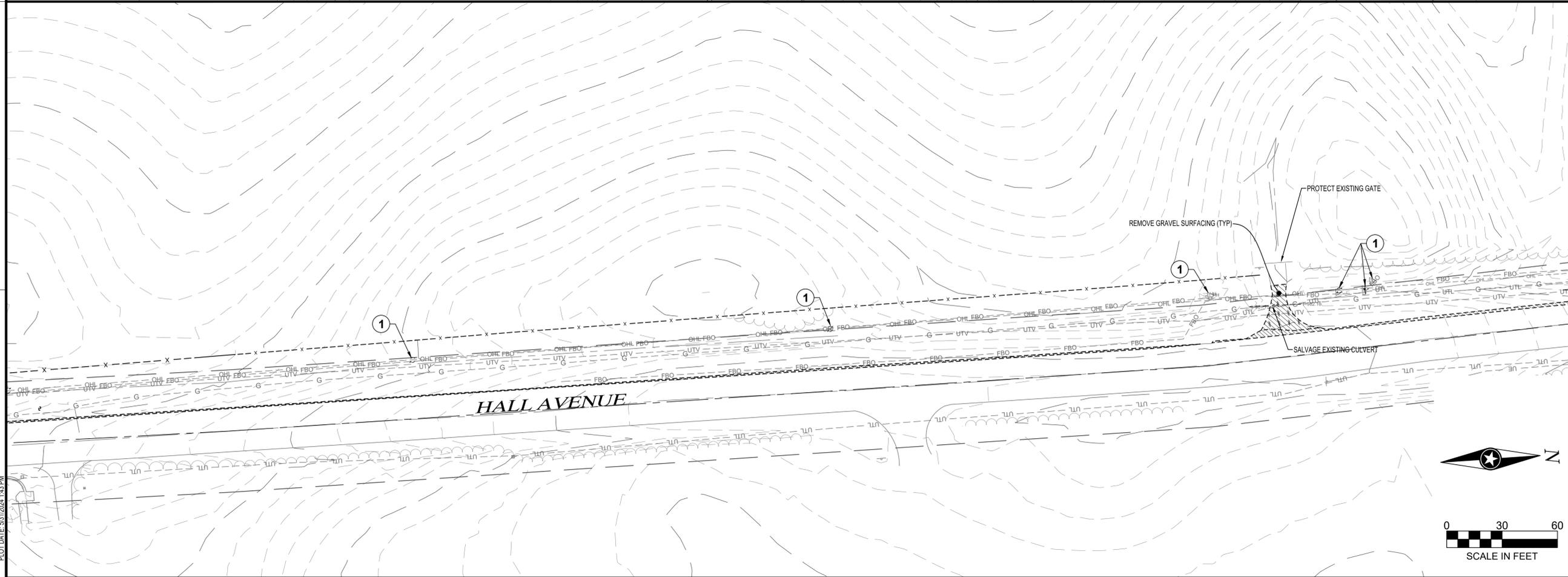
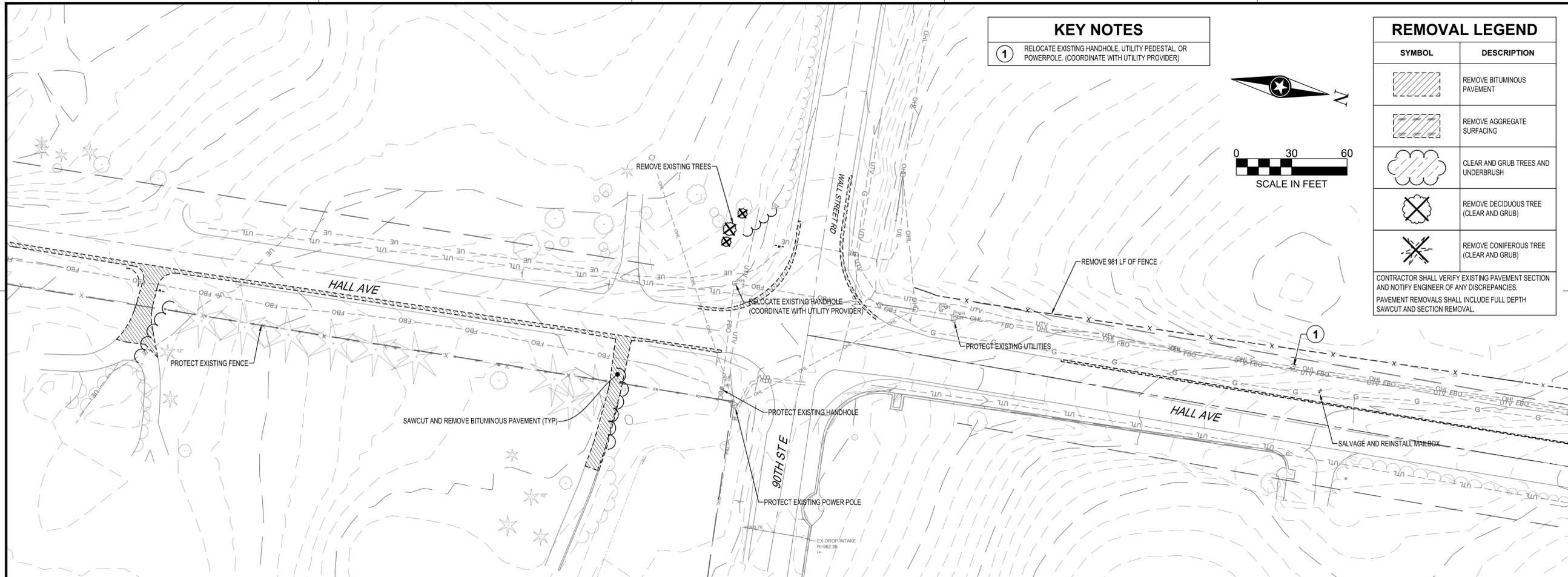
PROJECT NO.	23-30059
FILE NAME	30059-EXIST-SEGMENT D
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
EXISTING SITE AND REMOVAL PLAN (SEGMENT D)

SHEET
42 OF ---

PLOT DATE: 5/31/2024 1:43 PM

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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
 NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

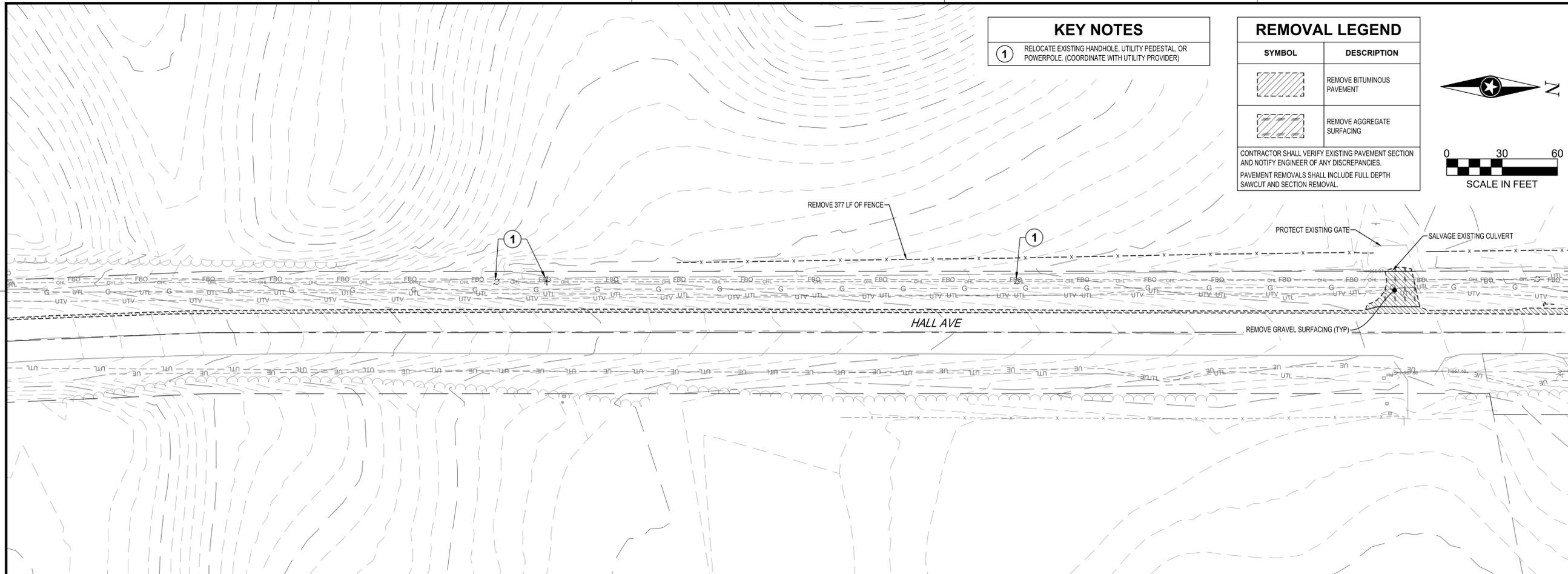
PROJECT NO. 23-30059
 FILE NAME 30059-EXIST-SEGMENT D
 DRAWN BY OBO/BJK
 DESIGNED BY KJR
 REVIEWED BY KJR
 ORIGINAL ISSUE DATE --/--
 CLIENT PROJECT NO. -

TITLE
EXISTING SITE AND REMOVAL PLAN (SEGMENT D)

SHEET
43 OF ---

PRELIMINARY NOT FOR CONSTRUCTION

PLOT DATE: 5/31/2024 4:43 PM

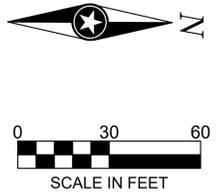


KEY NOTES
 ① RELOCATE EXISTING HANDHOLE, UTILITY PEDESTAL, OR POWERPOLE. (COORDINATE WITH UTILITY PROVIDER)

REMOVAL LEGEND

SYMBOL	DESCRIPTION
	REMOVE BITUMINOUS PAVEMENT
	REMOVE AGGREGATE SURFACING

CONTRACTOR SHALL VERIFY EXISTING PAVEMENT SECTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
 PAVEMENT REMOVALS SHALL INCLUDE FULL DEPTH SAWCUT AND SECTION REMOVAL.



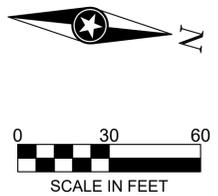
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**CITY OF NORTHFIELD
 MILL TOWNS STATE TRAIL**

NORTHFIELD MN

REVISION SCHEDULE

DATE	DESCRIPTION	BY

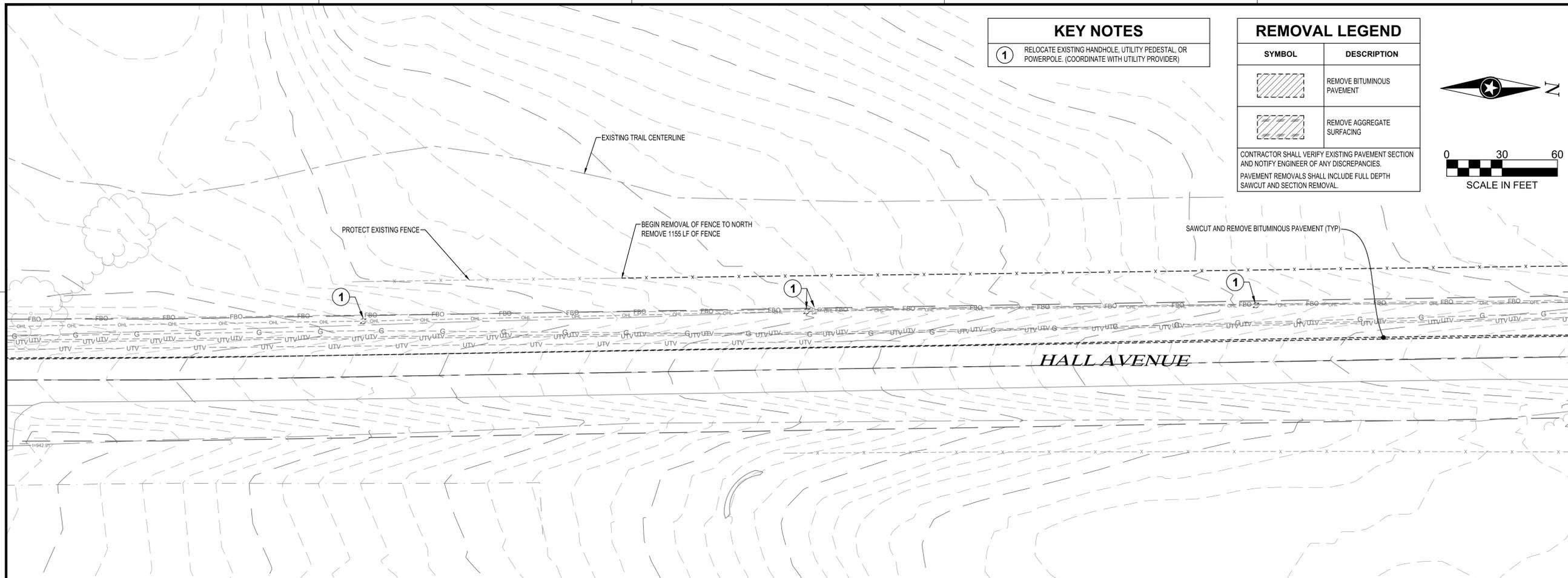
PROJECT NO.	23-30059
FILE NAME	30059-EXIST-SEGMENT D
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---/---/---
CLIENT PROJECT NO.	

EXISTING SITE AND REMOVAL PLAN (SEGMENT D)

SHEET **44** OF ---

PLOT DATE: 5/31/2024 1:44 PM

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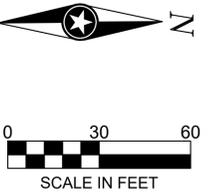
KEY NOTES

① RELOCATE EXISTING HANDHOLE, UTILITY PEDESTAL, OR POWERPOLE. (COORDINATE WITH UTILITY PROVIDER)

REMOVAL LEGEND

SYMBOL	DESCRIPTION
	REMOVE BITUMINOUS PAVEMENT
	REMOVE AGGREGATE SURFACING

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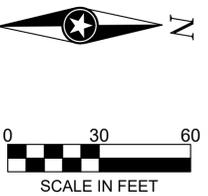
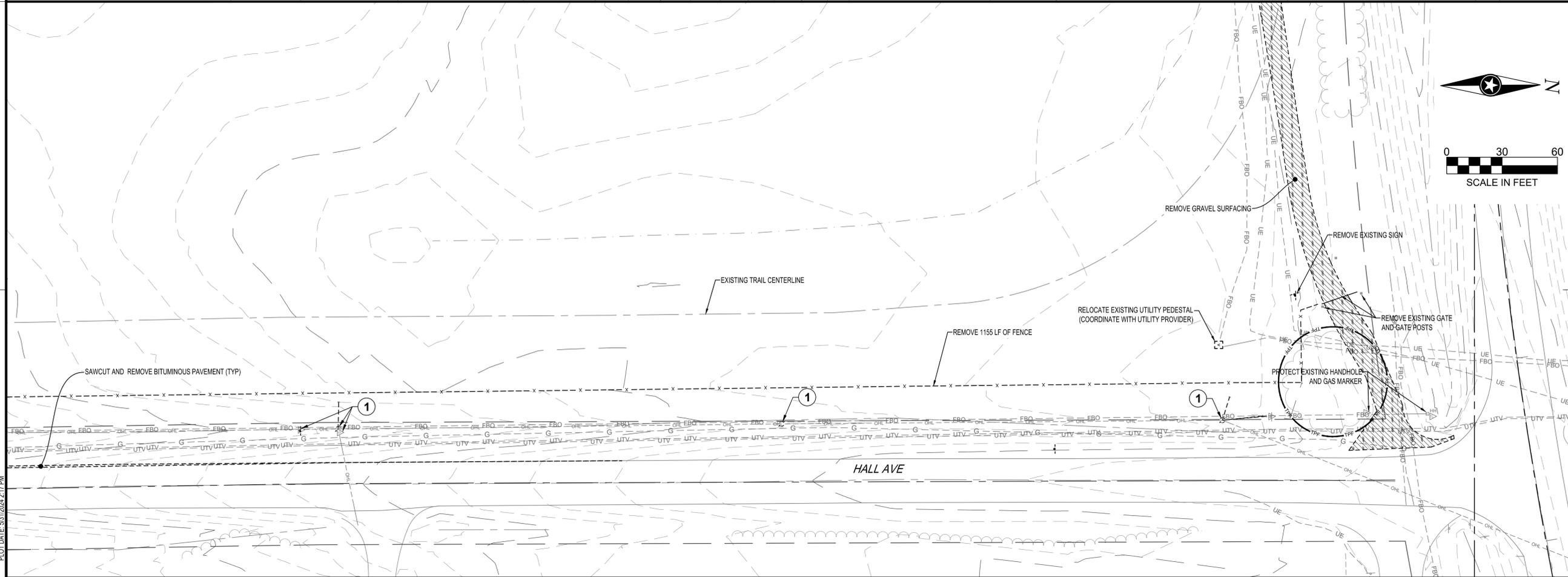
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PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
FILE NAME 30059-EXIST-SEGMENT D
DRAWN BY OBO/BJK
DESIGNED BY KJR
REVIEWED BY KJR
ORIGINAL ISSUE DATE --/--
CLIENT PROJECT NO. -

TITLE

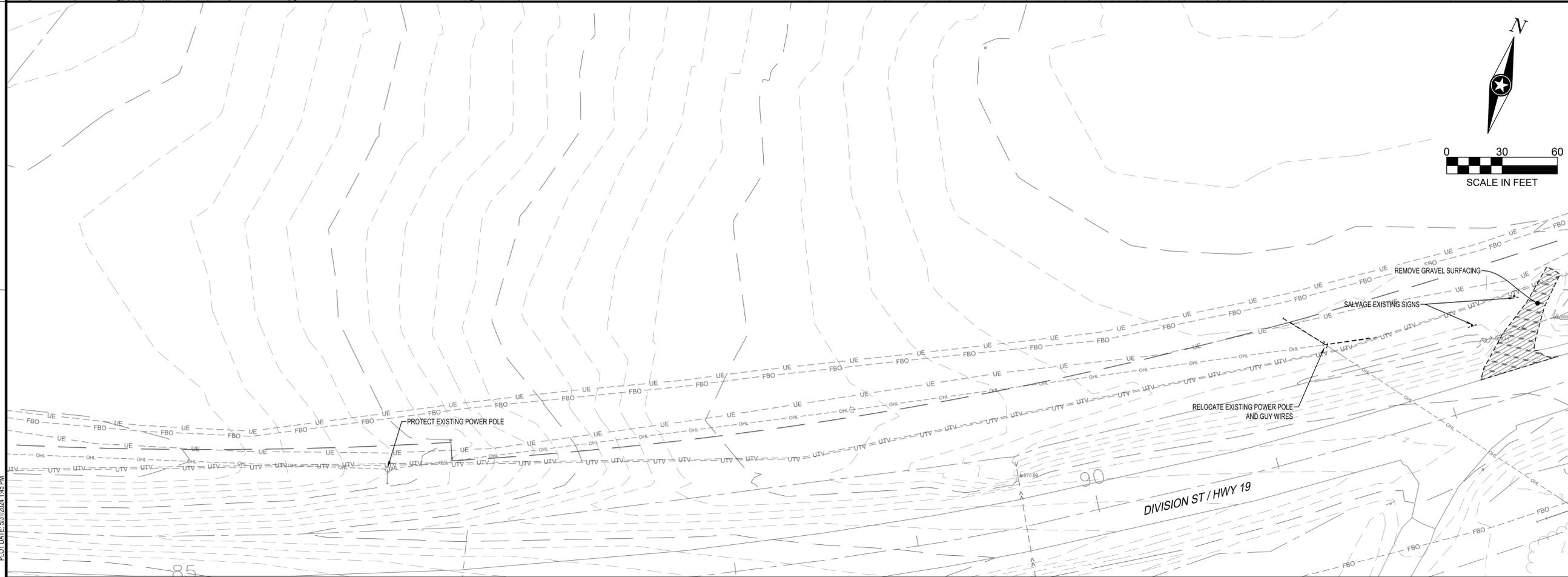
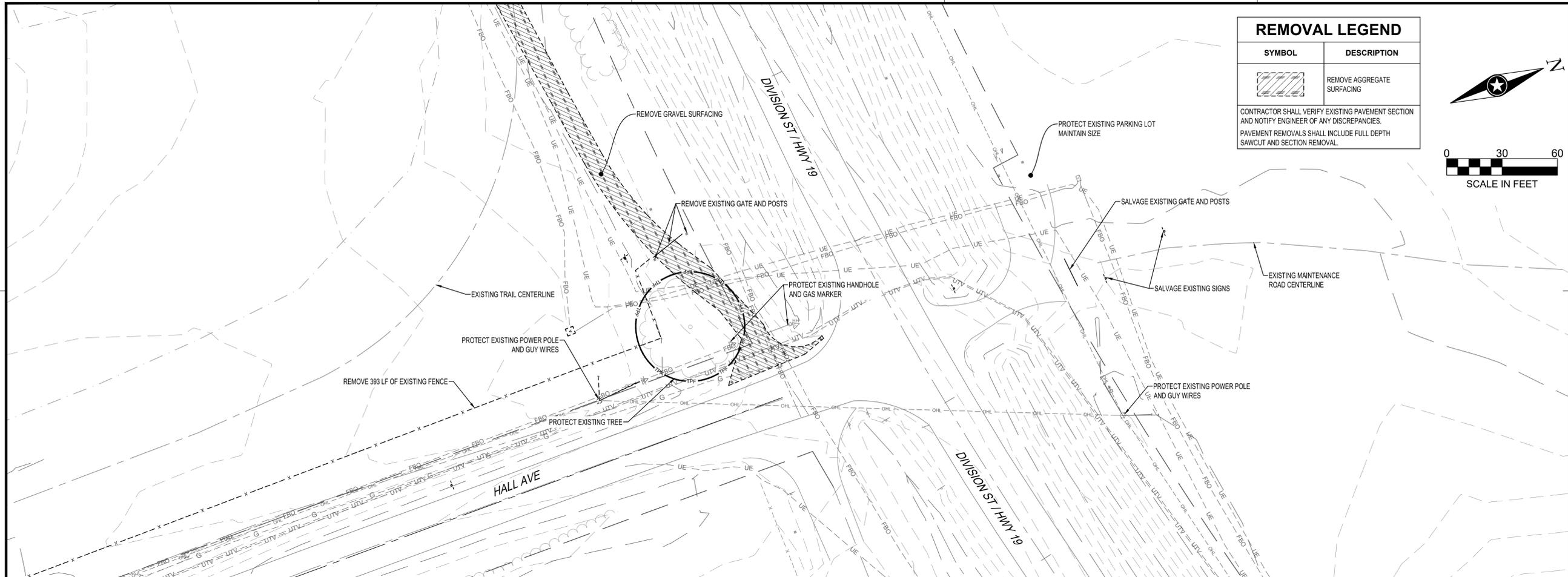
EXISTING SITE AND REMOVAL PLAN (SEGMENT D)

SHEET

45 OF ---

PLOT DATE: 5/31/2024 2:17 PM

PRELIMINARY NOT FOR CONSTRUCTION



REMOVAL LEGEND	
SYMBOL	DESCRIPTION
	REMOVE AGGREGATE SURFACING
CONTRACTOR SHALL VERIFY EXISTING PAVEMENT SECTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES. PAVEMENT REMOVALS SHALL INCLUDE FULL DEPTH SAWCUT AND SECTION REMOVAL.	



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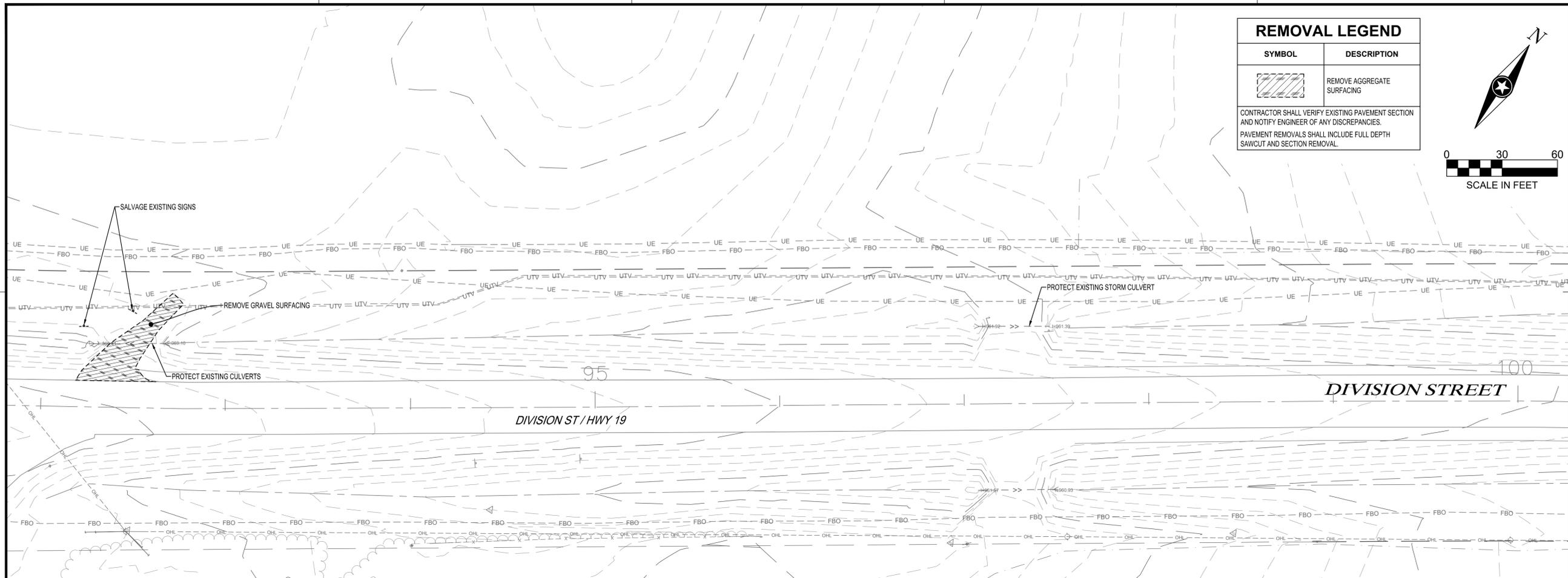
PROJECT NO.	23-30059
FILE NAME	30059-EXIST-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	11/1/23
CLIENT PROJECT NO.	-

TITLE
EXISTING SITE AND REMOVAL PLAN (SEGMENT E)

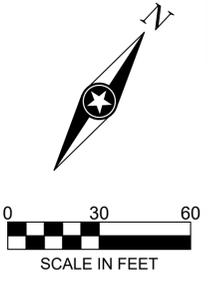
SHEET
46 OF ---

PLOT DATE: 5/31/2024 4:45 PM

PRELIMINARY NOT FOR CONSTRUCTION



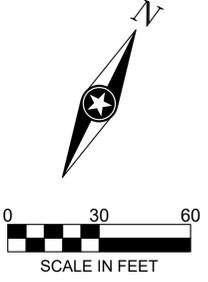
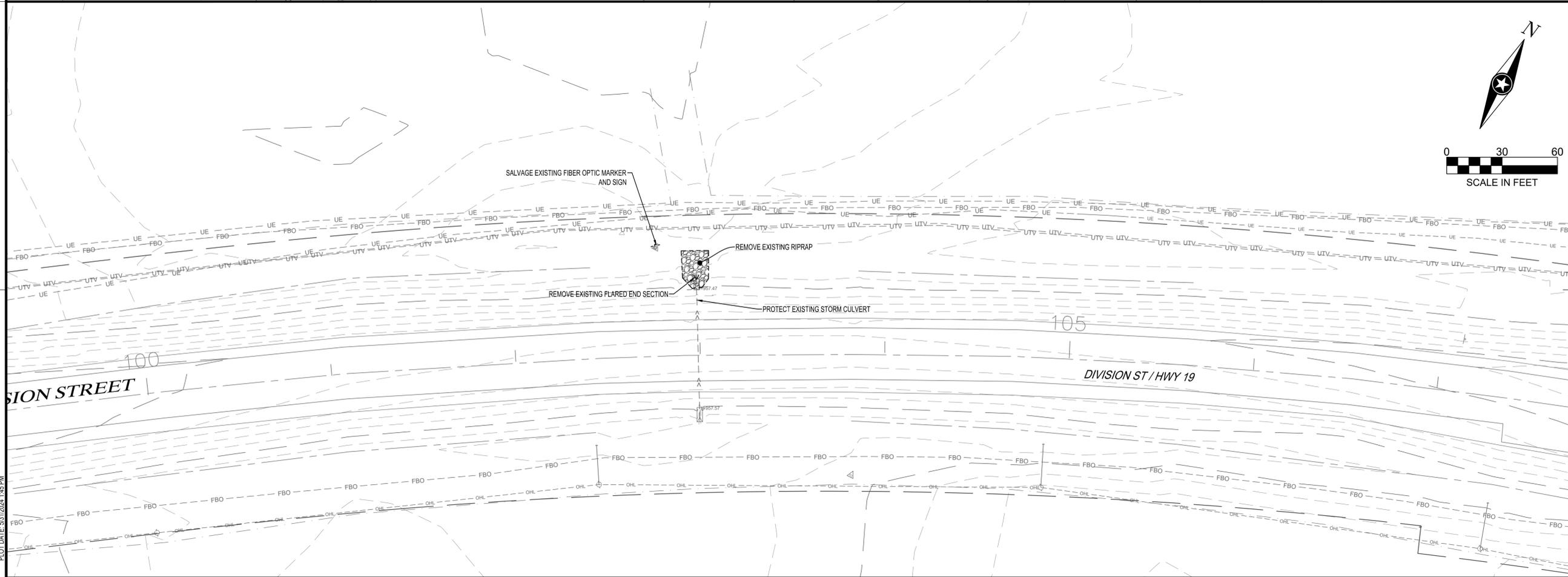
REMOVAL LEGEND	
SYMBOL	DESCRIPTION
	REMOVE AGGREGATE SURFACING
CONTRACTOR SHALL VERIFY EXISTING PAVEMENT SECTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES. PAVEMENT REMOVALS SHALL INCLUDE FULL DEPTH SAWCUT AND SECTION REMOVAL.	



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CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

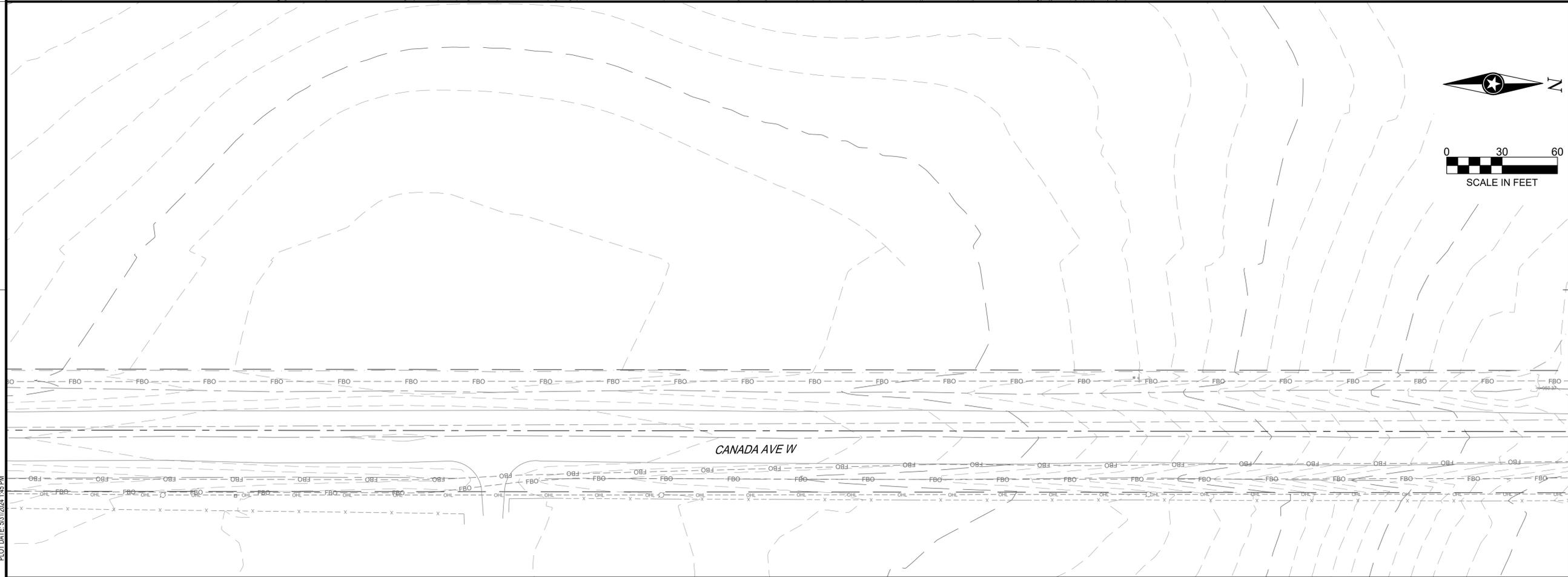
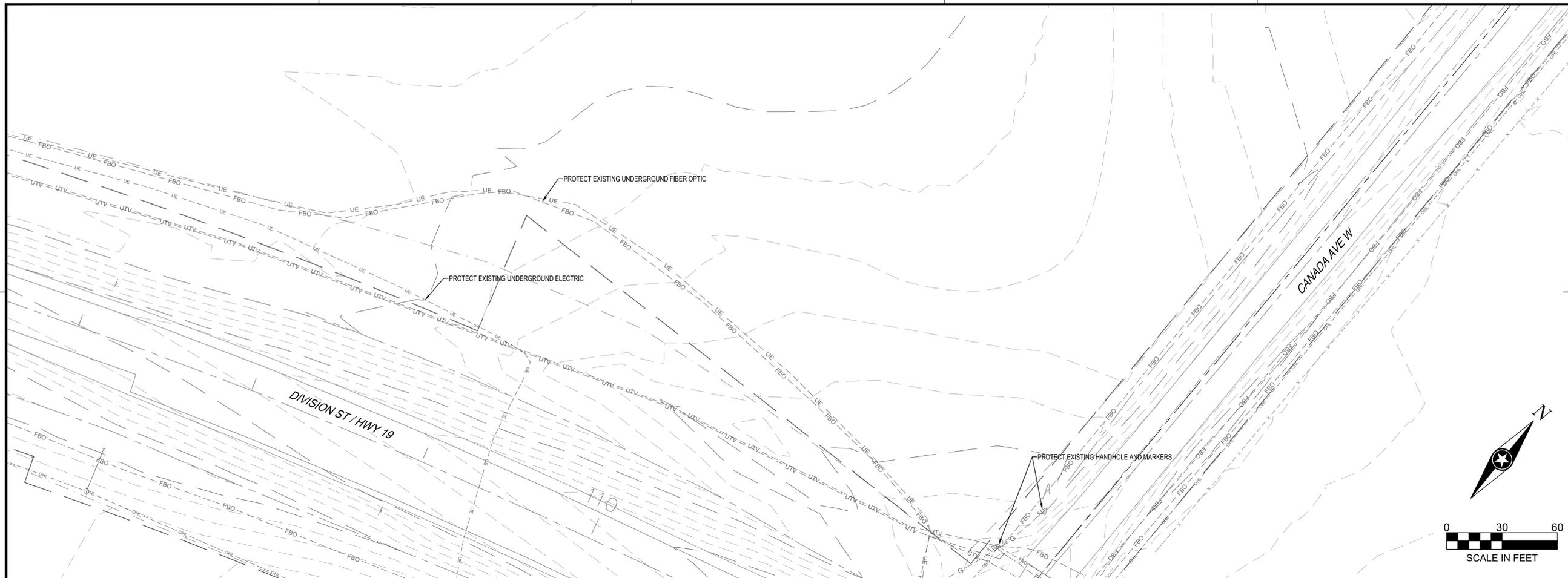
PROJECT NO.	23-30059
FILE NAME	30059-EXIST-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---/---/---
CLIENT PROJECT NO.	

EXISTING SITE AND REMOVAL PLAN (SEGMENT E)

SHEET **47** OF ---

PLOT DATE: 5/31/2024 1:45 PM

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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

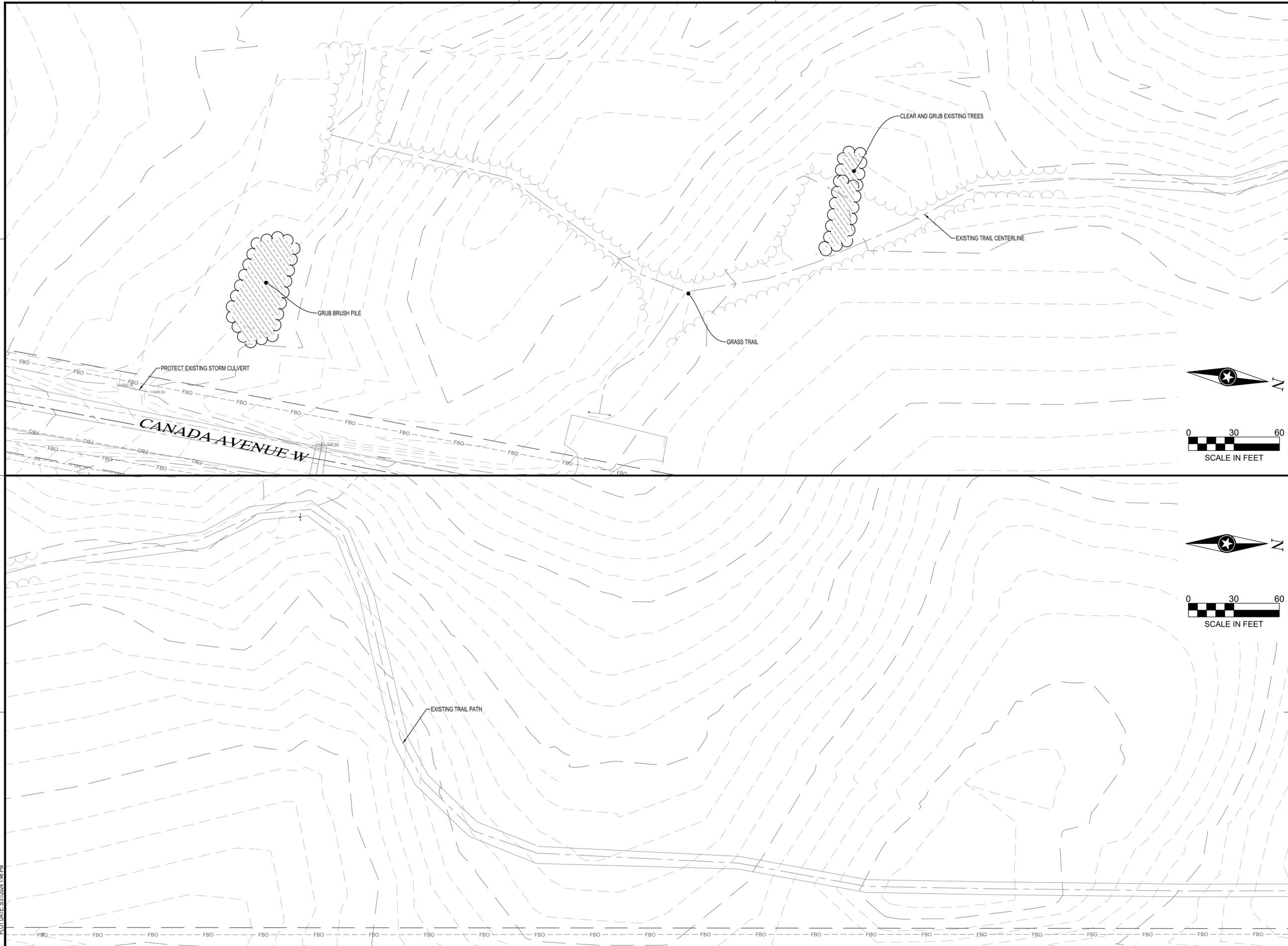
PROJECT NO.	23-30059
FILE NAME	30059-EXIST-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	11/1/23
CLIENT PROJECT NO.	-

TITLE
EXISTING SITE AND REMOVAL PLAN (SEGMENT E)

SHEET
48 OF ---

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PLOT DATE: 5/31/2024 1:45 PM



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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-EXIST-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

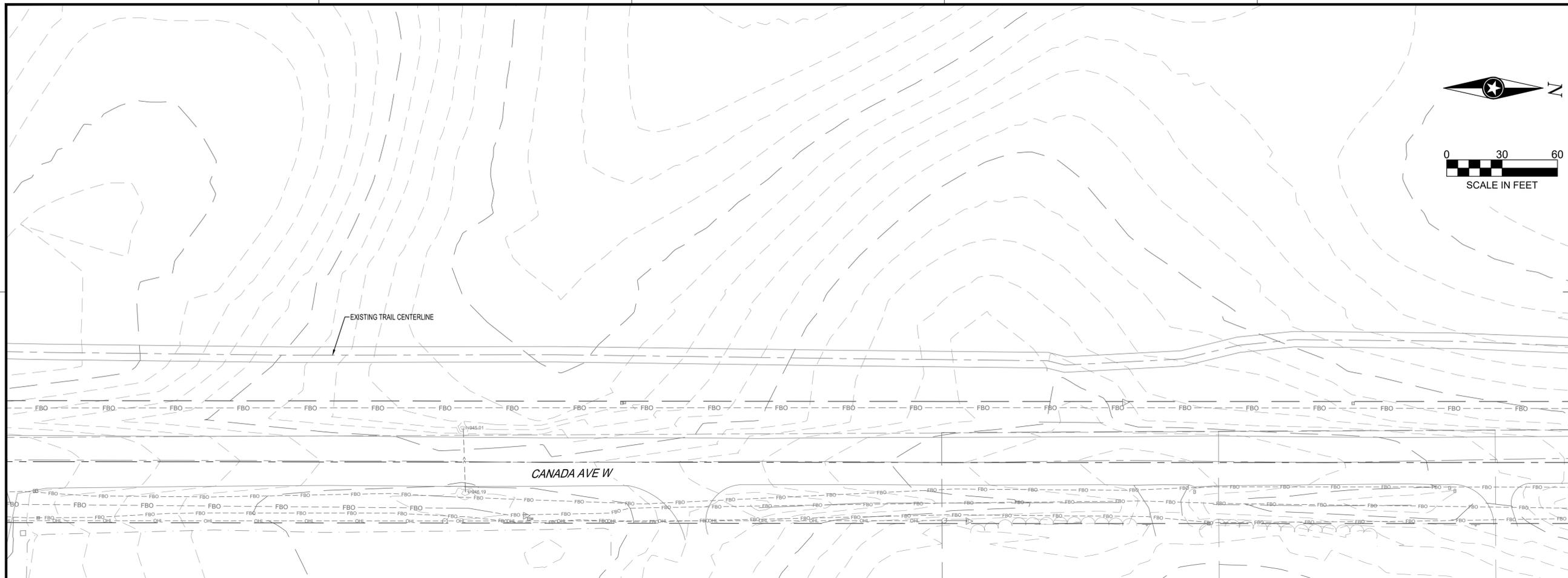
TITLE
EXISTING SITE AND REMOVAL PLAN (SEGMENT E)

SHEET
49 OF ---



PLOT DATE: 5/31/2024 1:46 PM

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DEPARTMENT OF
NATURAL RESOURCES

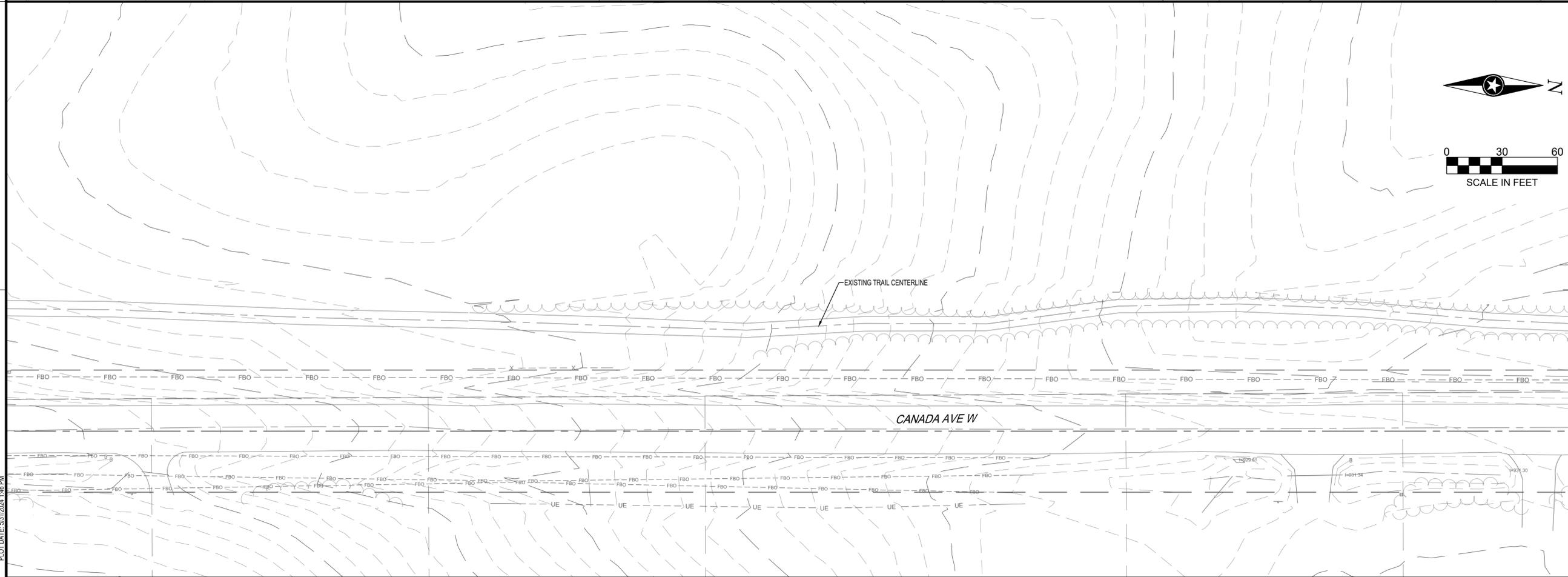


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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

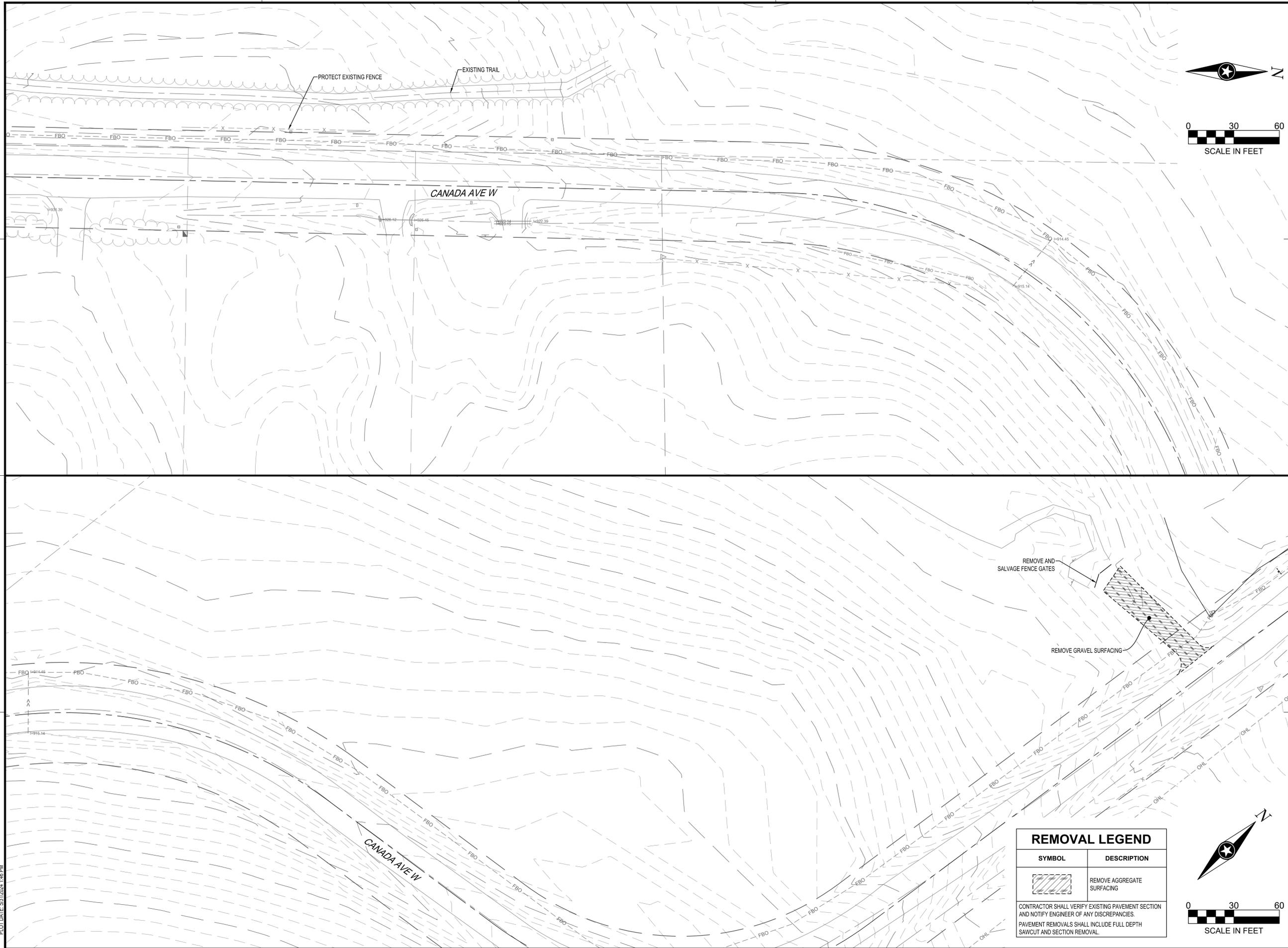
PROJECT NO. 23-30059
FILE NAME 30059-EXIST-SEGMENT E
DRAWN BY OBO/BJK
DESIGNED BY KJR
REVIEWED BY KJR
ORIGINAL ISSUE DATE --/--
CLIENT PROJECT NO. -

TITLE
EXISTING SITE AND REMOVAL PLAN (SEGMENT E)

SHEET
50 OF ---

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PROJECT

**CITY OF
NORTHFIELD
MILL TOWNS
STATE TRAIL**

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-EXIST-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---/---/---
CLIENT PROJECT NO.	-

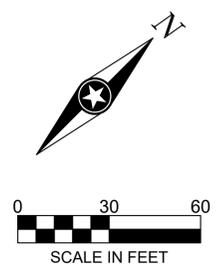
TITLE
**EXISTING SITE AND
REMOVAL PLAN
(SEGMENT E)**

SHEET
51 OF ---

REMOVAL LEGEND

SYMBOL	DESCRIPTION
	REMOVE AGGREGATE SURFACING

CONTRACTOR SHALL VERIFY EXISTING PAVEMENT SECTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
PAVEMENT REMOVALS SHALL INCLUDE FULL DEPTH SAWCUT AND SECTION REMOVAL.



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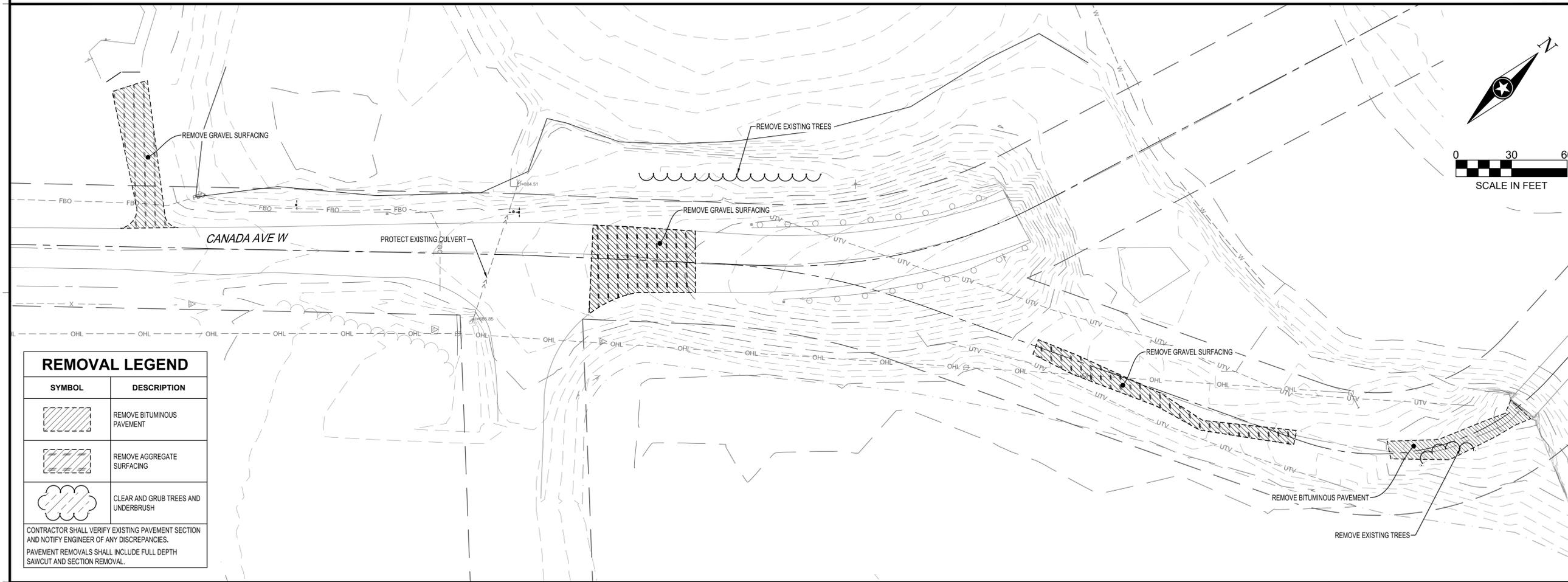
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-EXIST-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
EXISTING SITE AND REMOVAL PLAN (SEGMENT E)

SHEET
52 OF ---

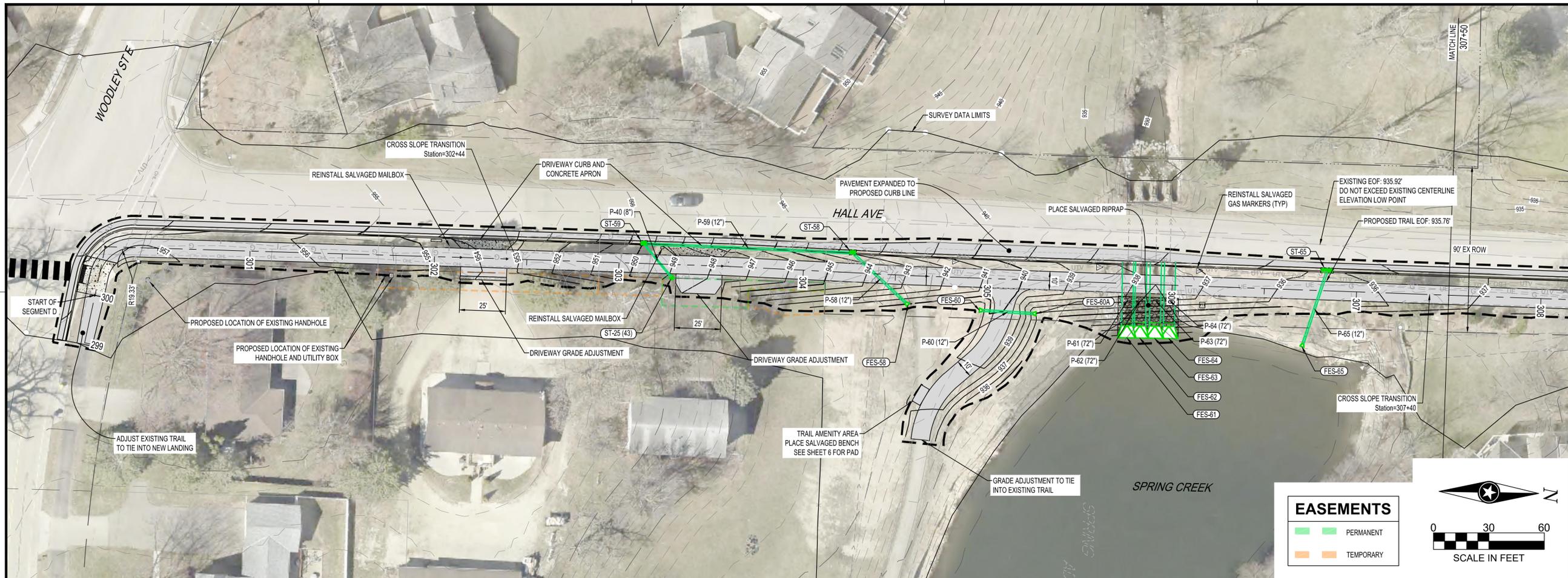


REMOVAL LEGEND	
SYMBOL	DESCRIPTION
	REMOVE BITUMINOUS PAVEMENT
	REMOVE AGGREGATE SURFACING
	CLEAR AND GRUB TREES AND UNDERBRUSH

CONTRACTOR SHALL VERIFY EXISTING PAVEMENT SECTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
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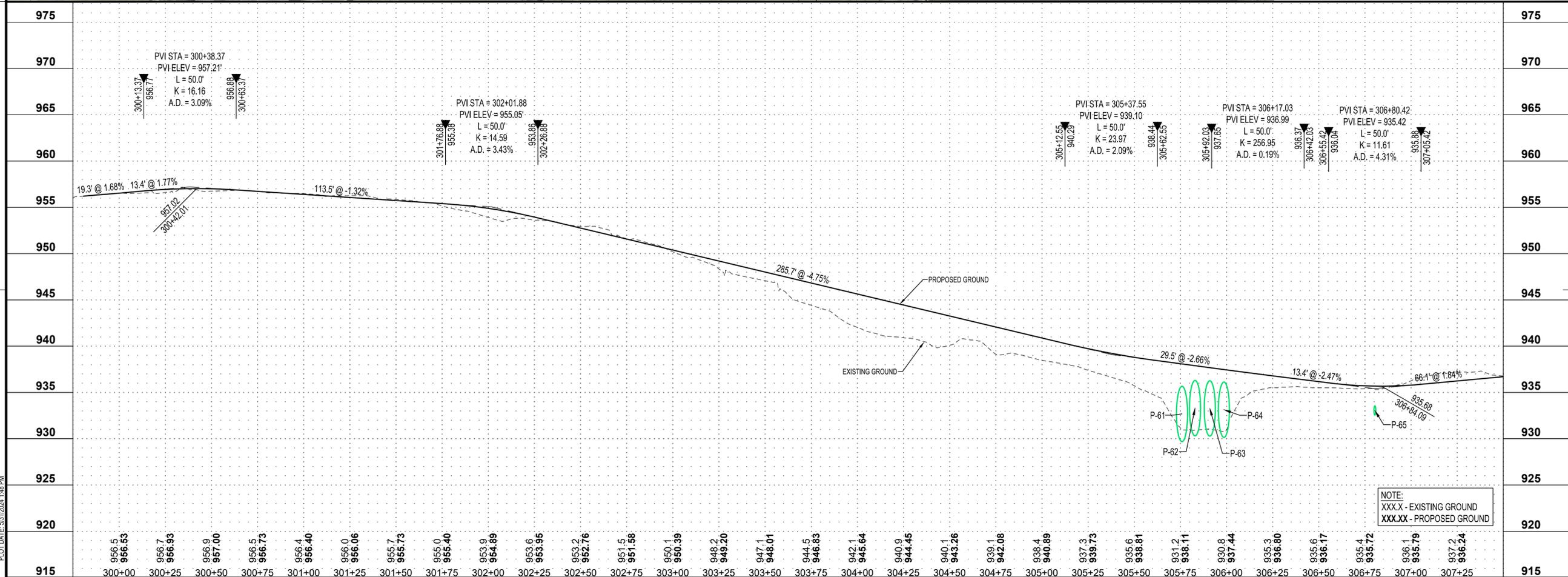
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- PERMANENT (Green line)
- TEMPORARY (Orange line)

SCALE IN FEET



PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-PROF-SEGMENT D
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---/---/---
CLIENT PROJECT NO.	

TITLE

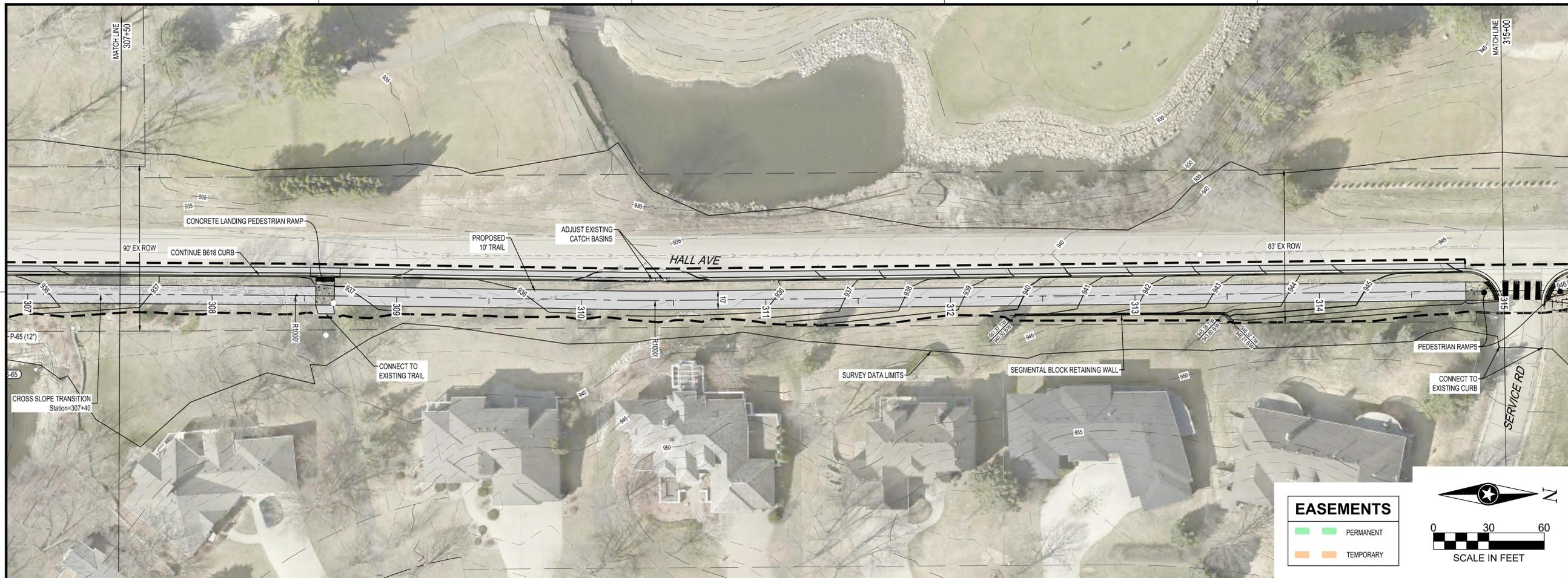
PLANNED TRAIL CONSTRUCTION (SEGMENT D)

SHEET

53 OF ---

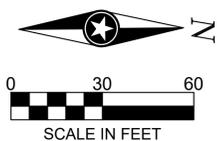
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EASEMENTS

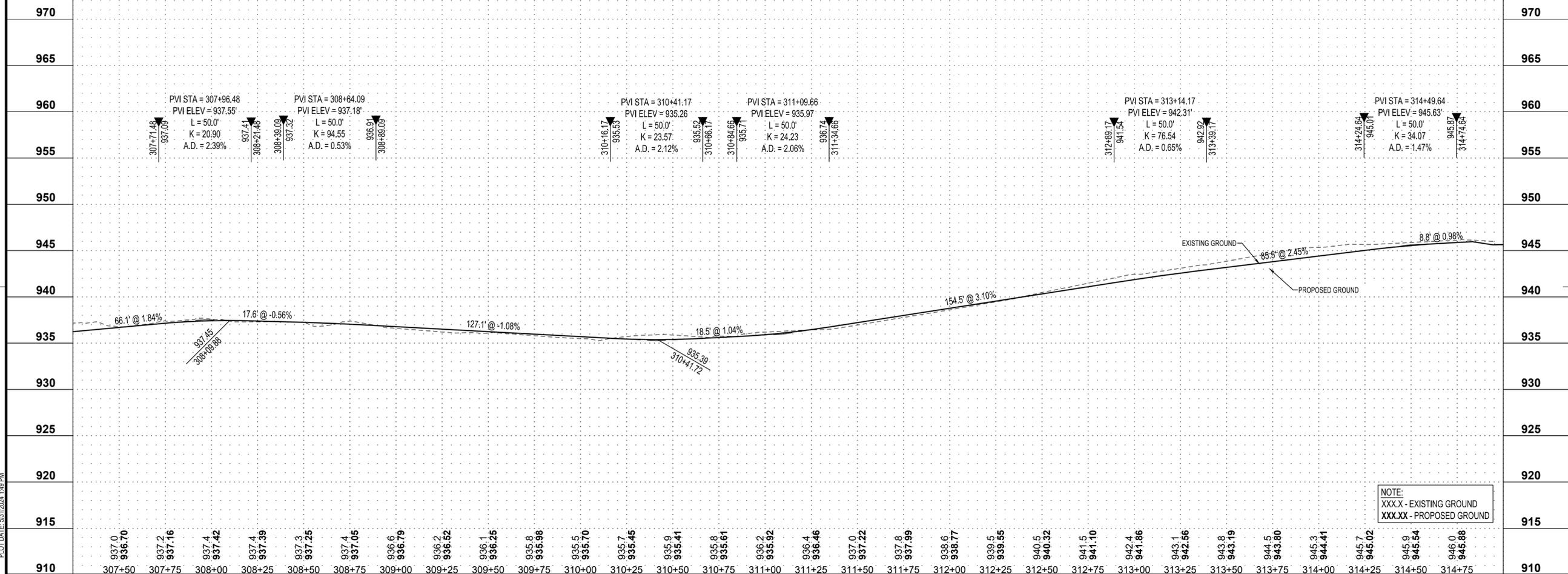
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PROJECT

CITY OF NORTHFIELD

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NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059

FILE NAME 30059-PROF-SEGMENT D

DRAWN BY OBO/BJK

DESIGNED BY KJR

REVIEWED BY KJR

ORIGINAL ISSUE DATE --/--

CLIENT PROJECT NO. -

TITLE

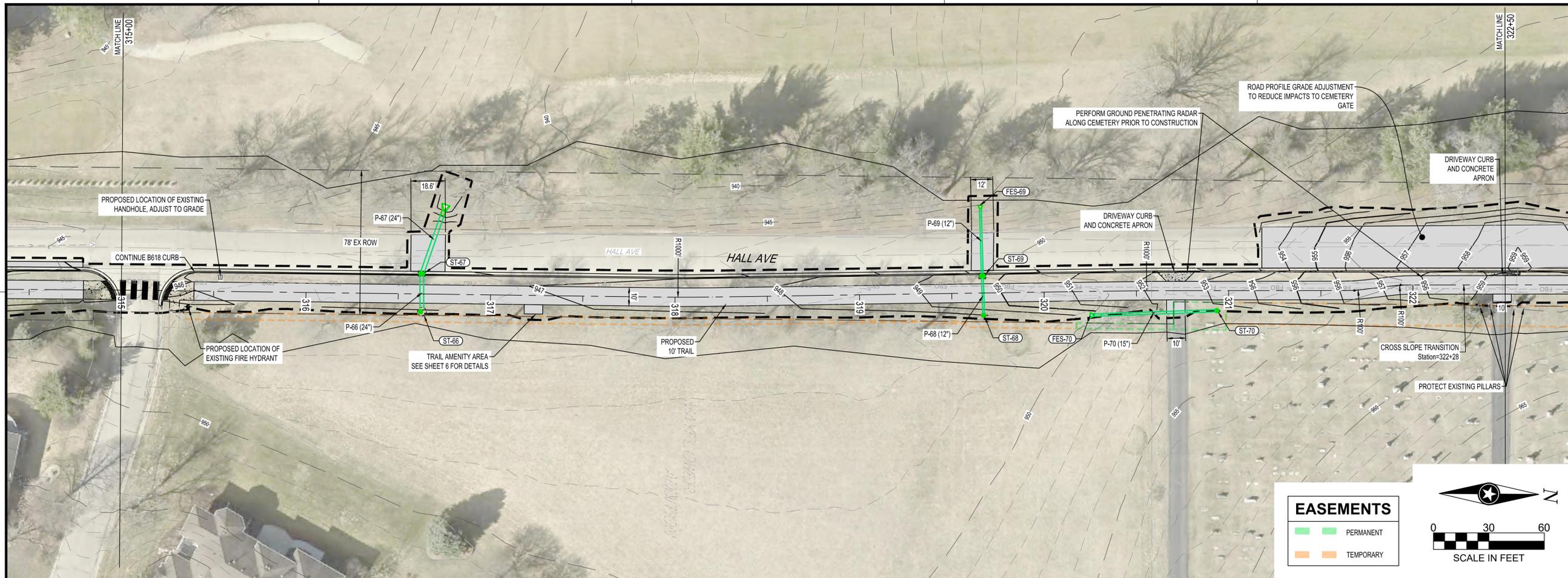
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SHEET

54 OF ----

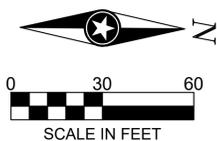
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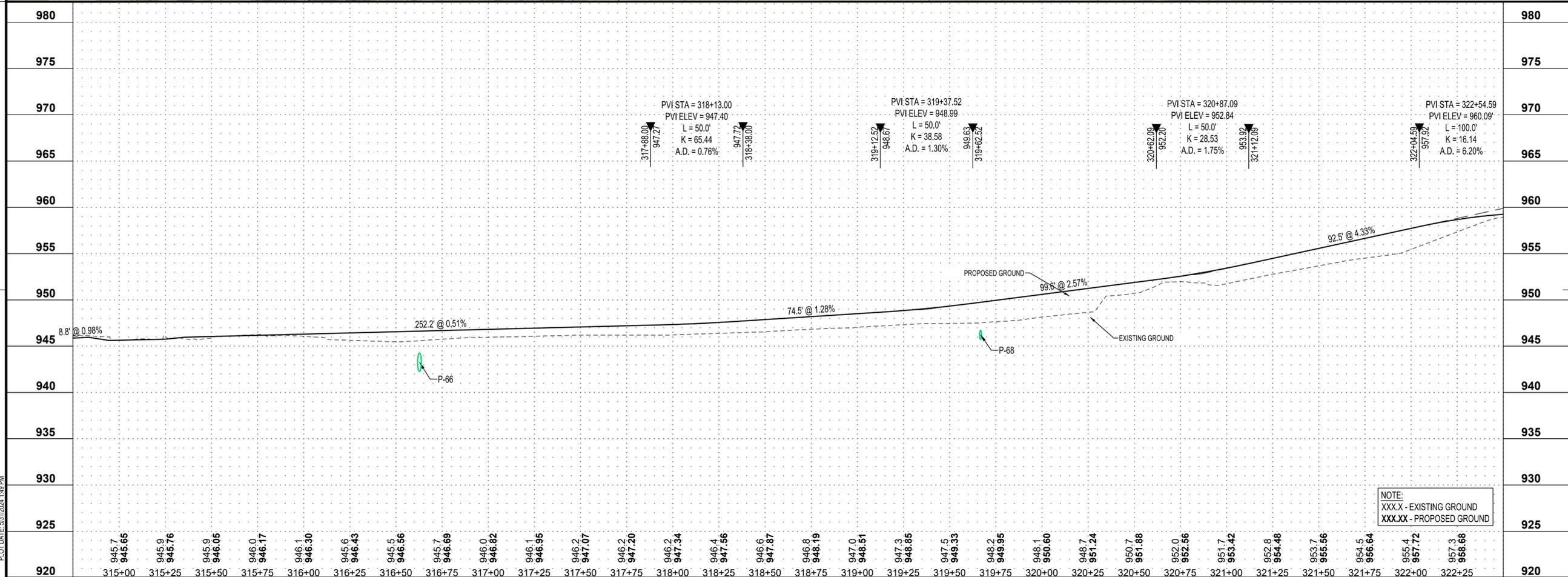
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PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
 FILE NAME 30059-PROF-SEGMENT D
 DRAWN BY OBO/BJK
 DESIGNED BY KJR
 REVIEWED BY KJR
 ORIGINAL ISSUE DATE --/--
 CLIENT PROJECT NO. --

TITLE

PLANNED TRAIL CONSTRUCTION (SEGMENT D)

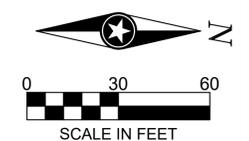
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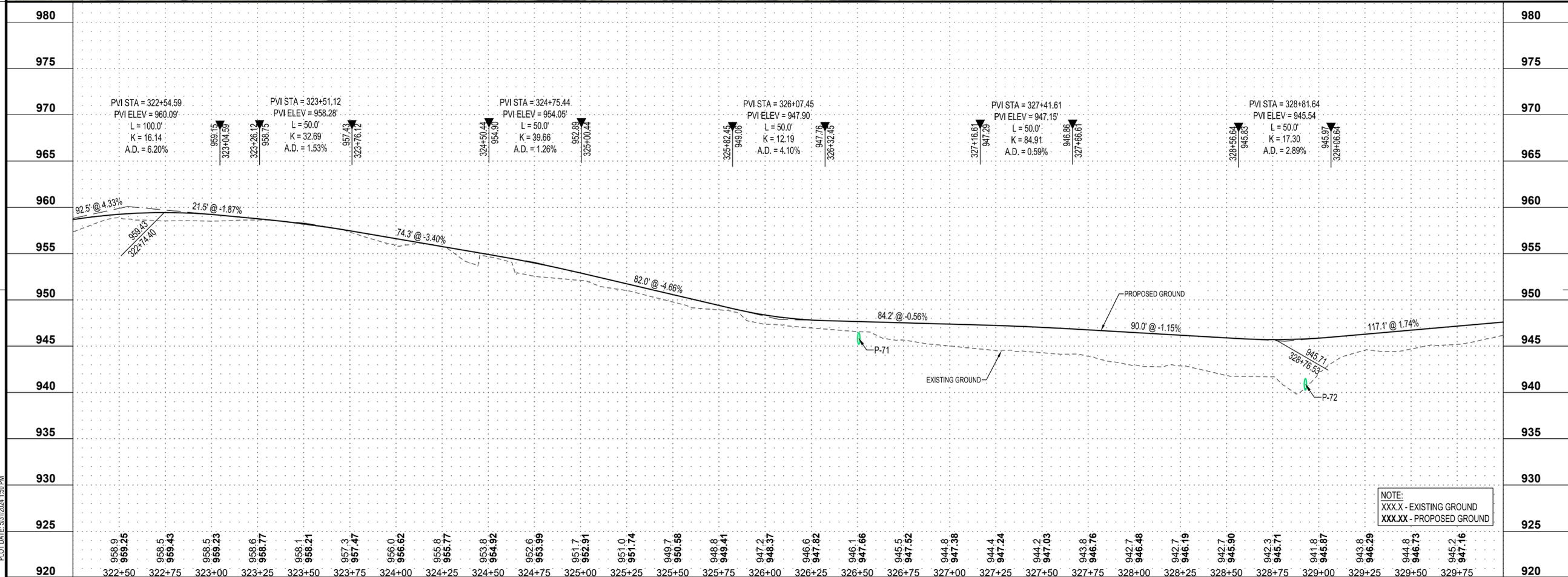
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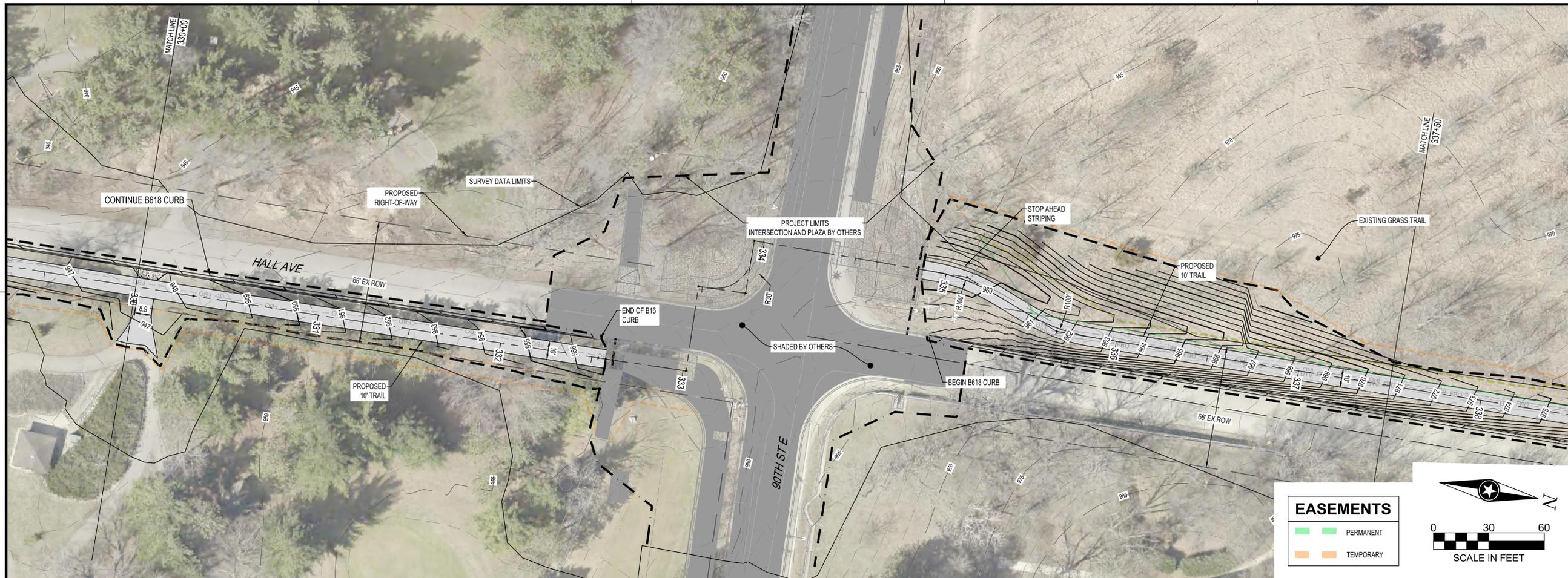
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PROJECT		
CITY OF NORTHFIELD		
MILL TOWNS STATE TRAIL		
NORTHFIELD		MN
REVISION SCHEDULE		
DATE	DESCRIPTION	BY
PROJECT NO.	23-30059	
FILE NAME	30059-PROF-SEGMENT D	
DRAWN BY	OBO/BJK	
DESIGNED BY	KJR	
REVIEWED BY	KJR	
ORIGINAL ISSUE DATE	--/--	
CLIENT PROJECT NO.	-	
TITLE		
PLANNED TRAIL CONSTRUCTION (SEGMENT D)		
SHEET		
56		OF ---

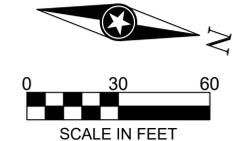
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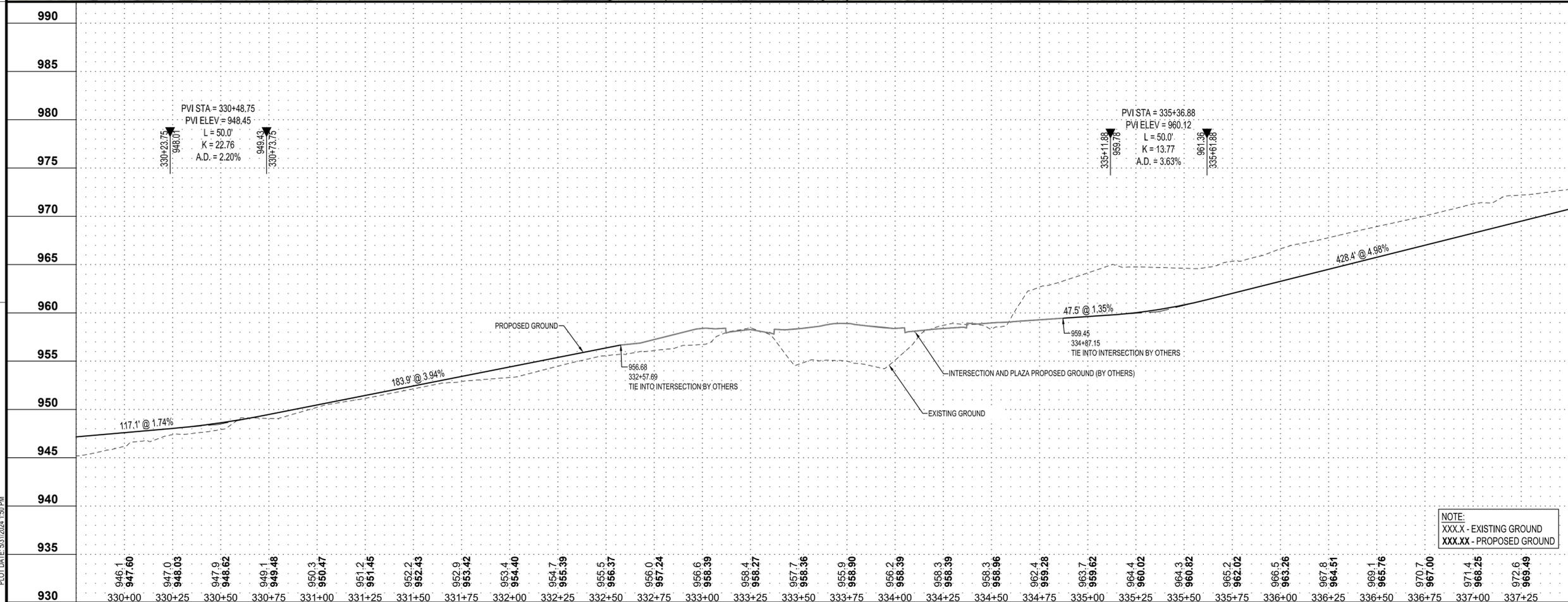
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PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-PROF-SEGMENT D
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---/---/---
CLIENT PROJECT NO.	-

TITLE

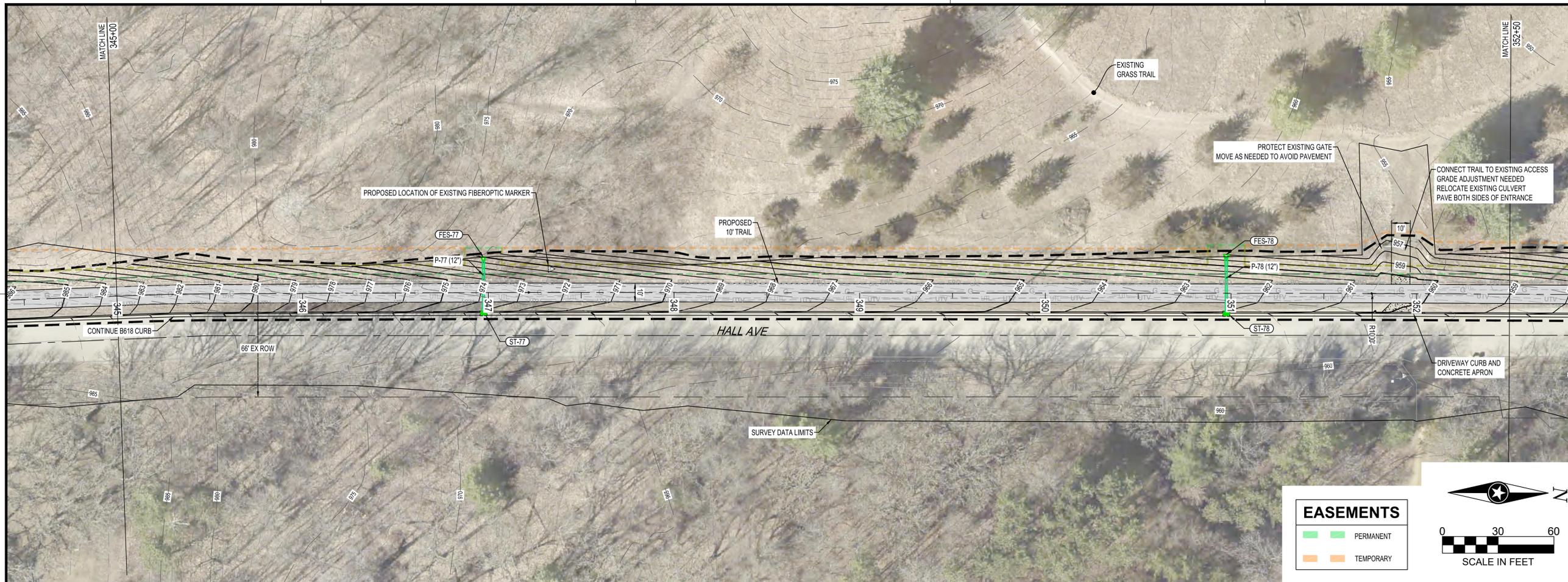
PLANNED TRAIL CONSTRUCTION (SEGMENT D)

SHEET

57 OF ----

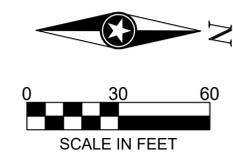
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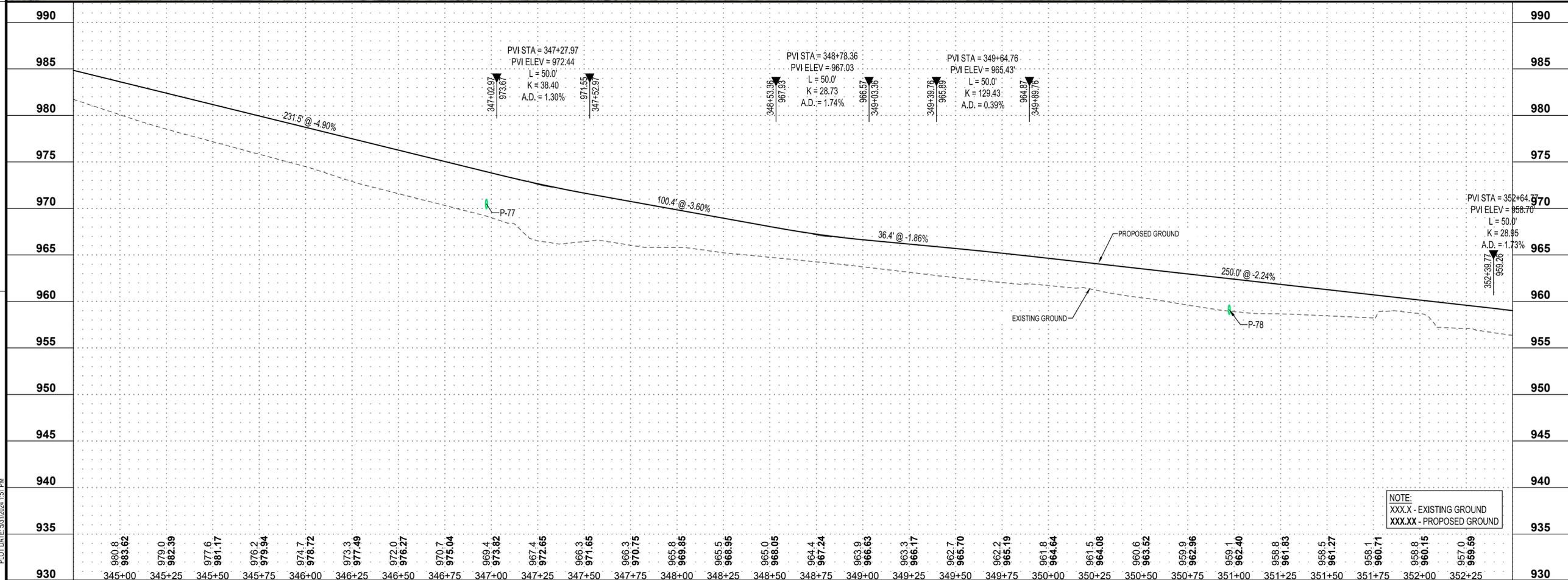
City Of
Northfield
Minnesota

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PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059

FILE NAME 30059-PROF-SEGMENT D

DRAWN BY OBO/BJK

DESIGNED BY KJR

REVIEWED BY KJR

ORIGINAL ISSUE DATE --/--

CLIENT PROJECT NO. -

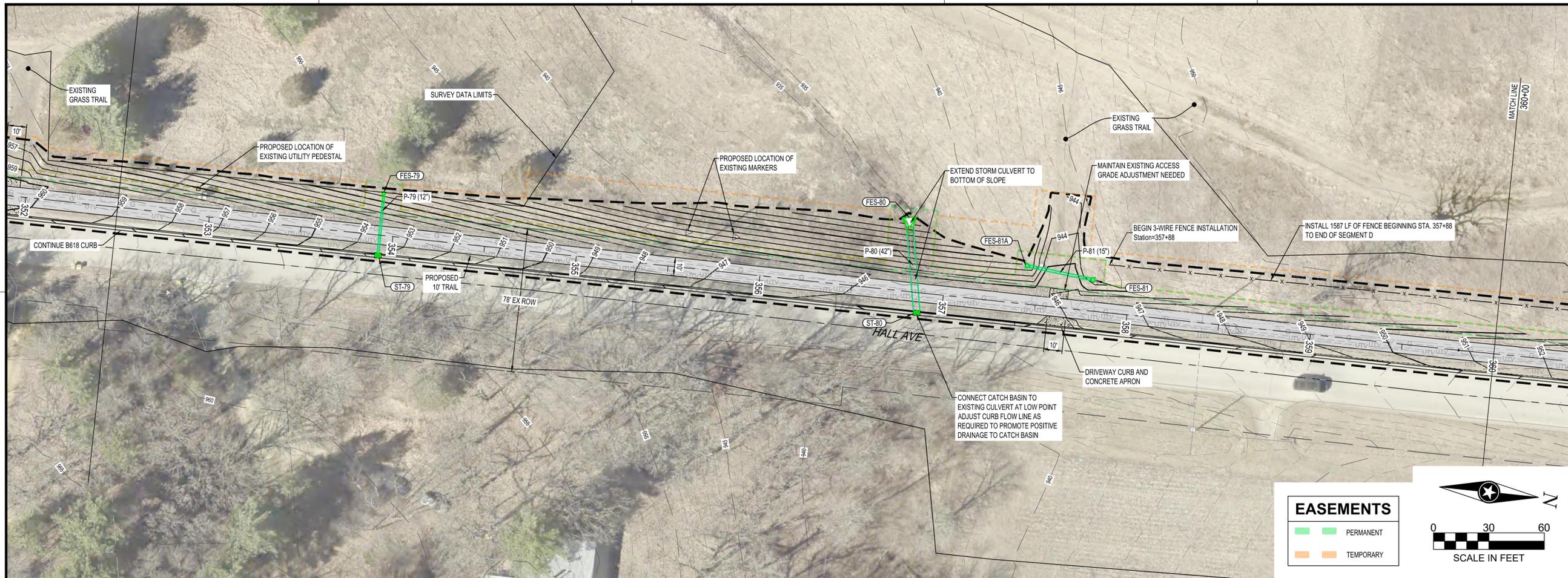
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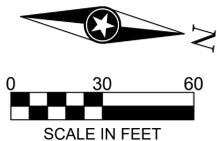
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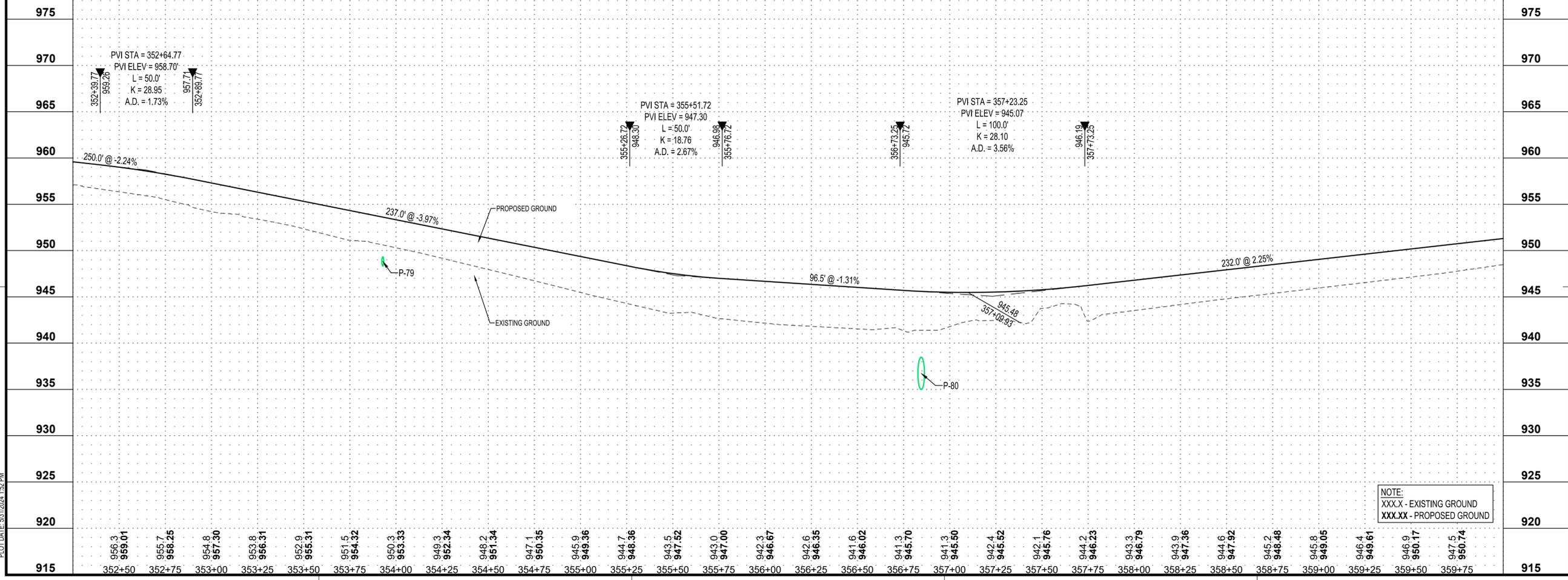
EASEMENTS	
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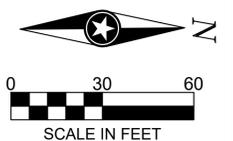
PROJECT		
CITY OF NORTHFIELD		
MILL TOWNS STATE TRAIL		
NORTHFIELD		MN
REVISION SCHEDULE		
DATE	DESCRIPTION	BY
PROJECT NO.	23-30059	
FILE NAME	30059-PROF-SEGMENT D	
DRAWN BY	OBO/BJK	
DESIGNED BY	KJR	
REVIEWED BY	KJR	
ORIGINAL ISSUE DATE	--/--	
CLIENT PROJECT NO.	-	
TITLE		
PLANNED TRAIL CONSTRUCTION (SEGMENT D)		
SHEET		
60		OF ----

PLOT DATE: 5/31/2024 4:52 PM

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—	TEMPORARY



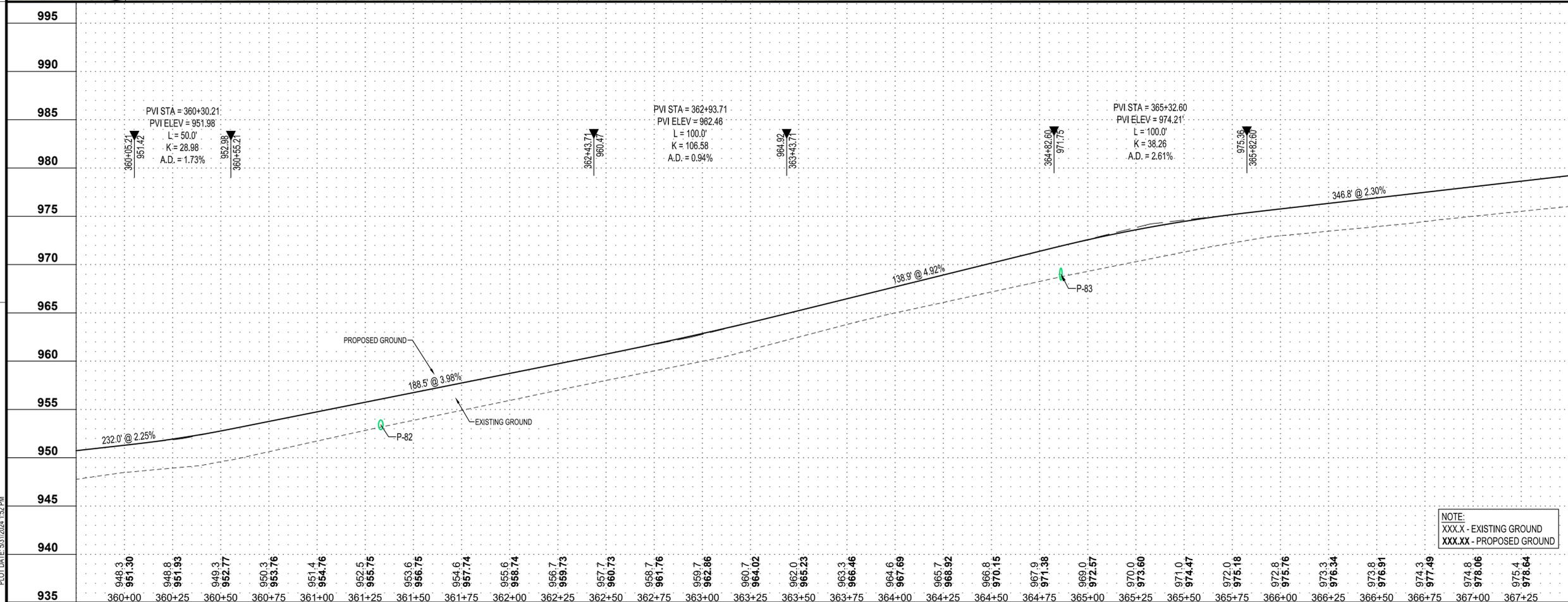
DEPARTMENT OF
NATURAL RESOURCES



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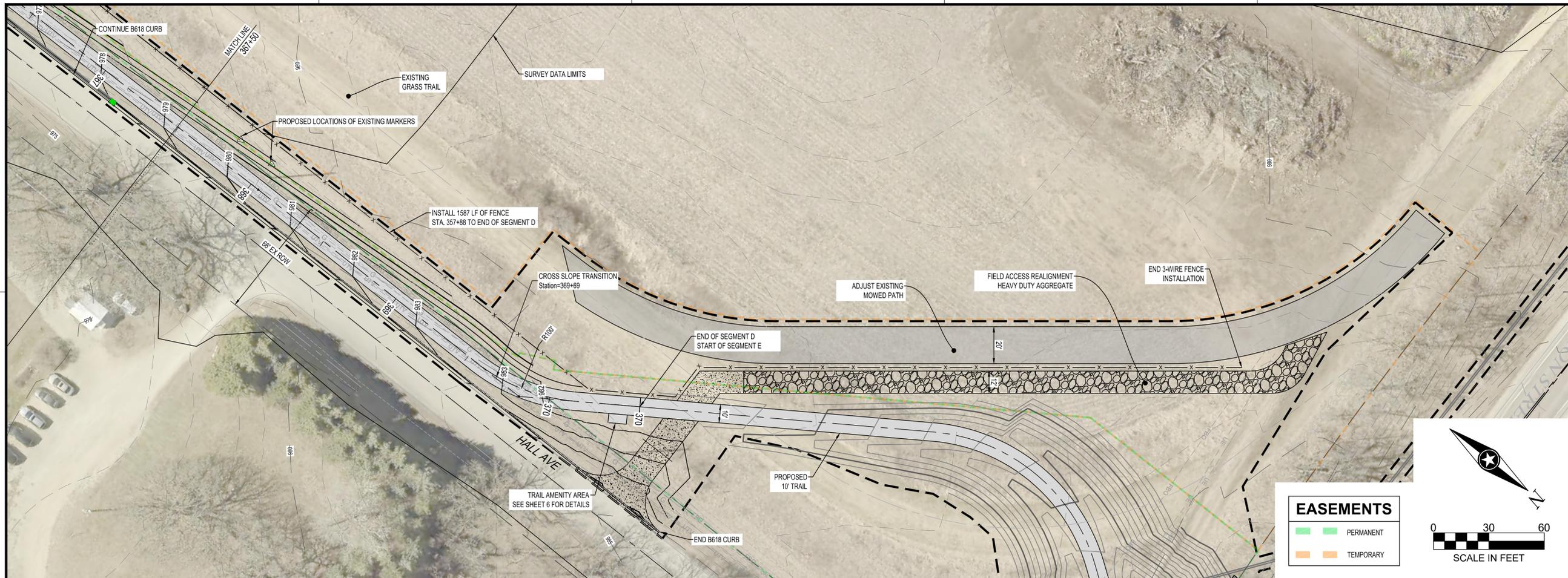
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PROJECT		
CITY OF NORTHFIELD		
MILL TOWNS STATE TRAIL		
NORTHFIELD MN		
REVISION SCHEDULE		
DATE	DESCRIPTION	BY
PROJECT NO.	23-30059	
FILE NAME	30059-PROF-SEGMENT D	
DRAWN BY	OBO/BJK	
DESIGNED BY	KJR	
REVIEWED BY	KJR	
ORIGINAL ISSUE DATE	--/--	
CLIENT PROJECT NO.	-	
TITLE		
PLANNED TRAIL CONSTRUCTION (SEGMENT D)		
SHEET		
61		
OF ----		

PLOT DATE: 5/31/2024 4:52 PM

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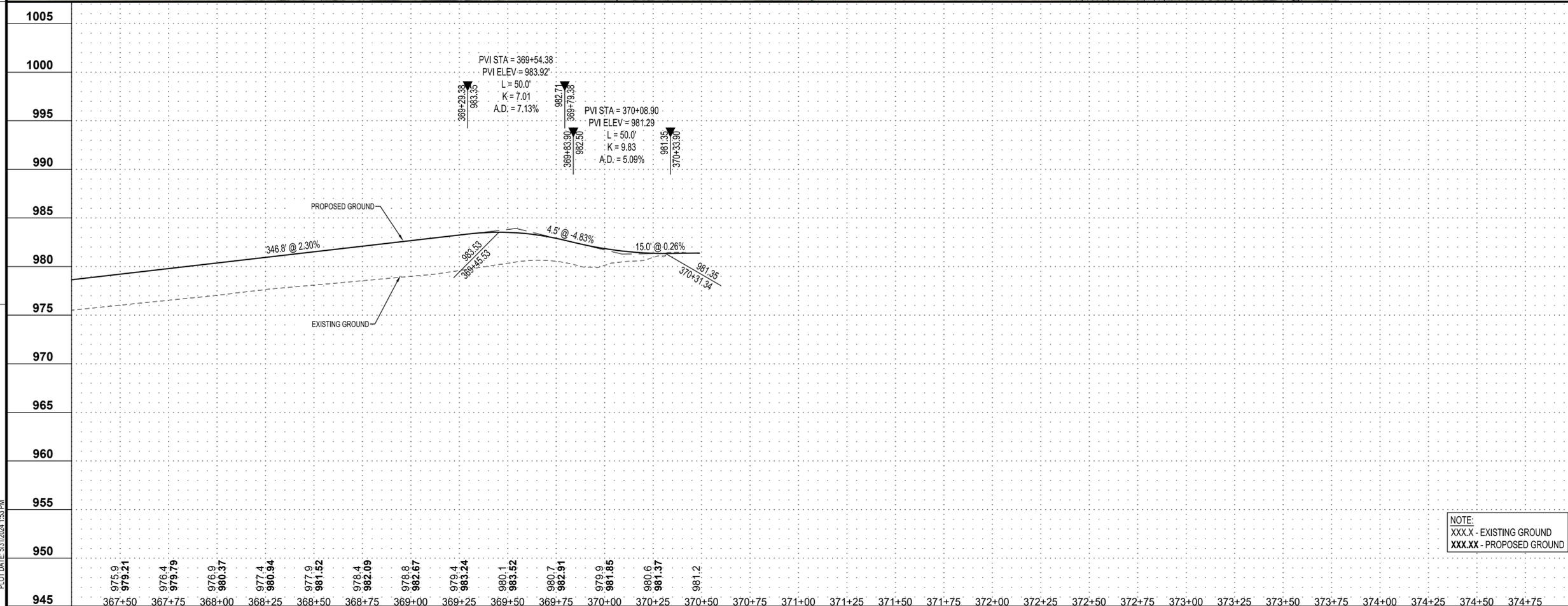
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NOTE:
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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
 NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

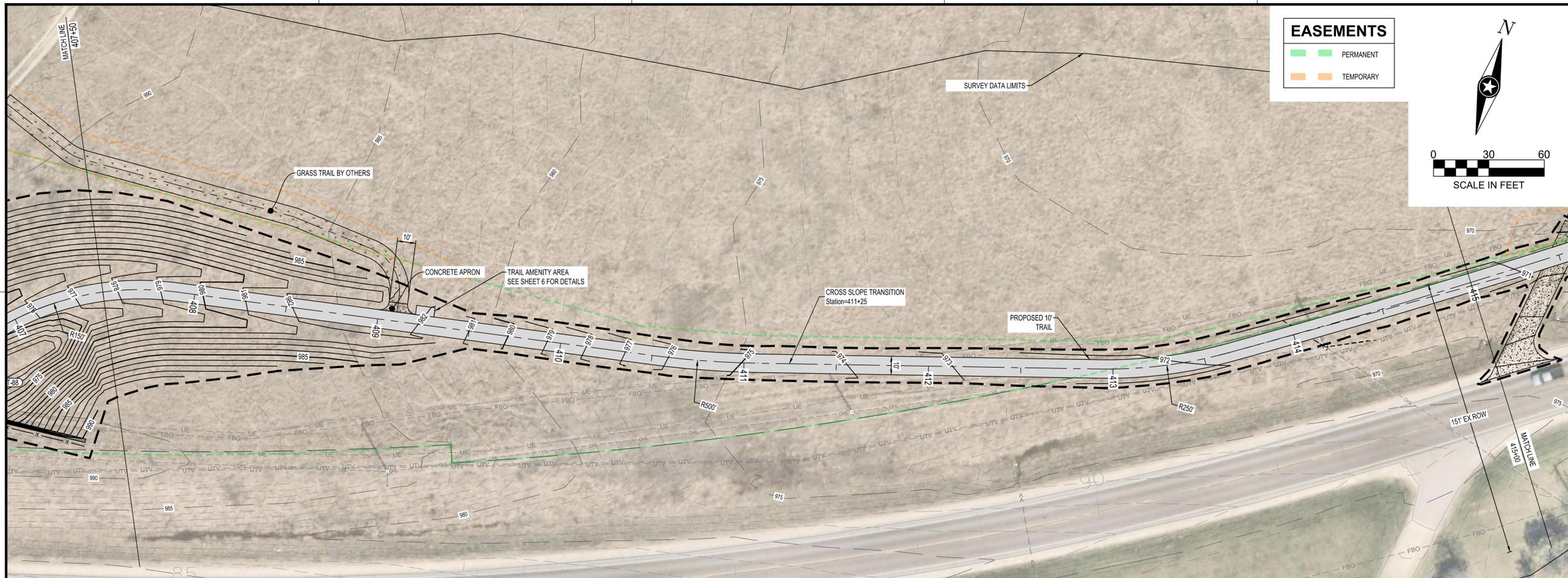
PROJECT NO. 23-30059
 FILE NAME 30059-PROF-SEGMENT D
 DRAWN BY OBO/BJK
 DESIGNED BY KJR
 REVIEWED BY KJR
 ORIGINAL ISSUE DATE --/--
 CLIENT PROJECT NO. -

TITLE
PLANNED TRAIL CONSTRUCTION (SEGMENT D)

SHEET
62 OF ---

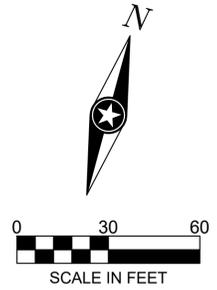
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PRELIMINARY NOT FOR CONSTRUCTION



EASEMENTS

- PERMANENT
- TEMPORARY



DEPARTMENT OF NATURAL RESOURCES

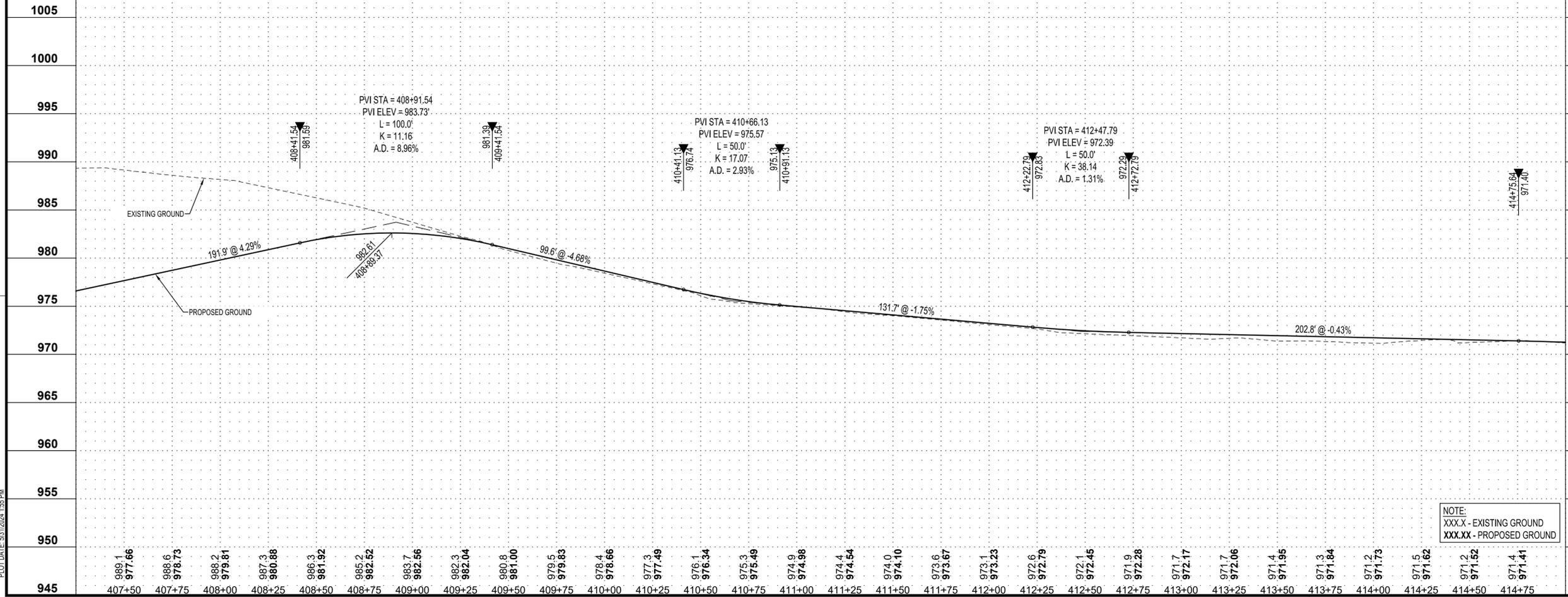


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PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059

FILE NAME 30059-PROF-SEGMENT E

DRAWN BY OBO/BJK

DESIGNED BY KJR

REVIEWED BY KJR

ORIGINAL ISSUE DATE --/--

CLIENT PROJECT NO. -

TITLE

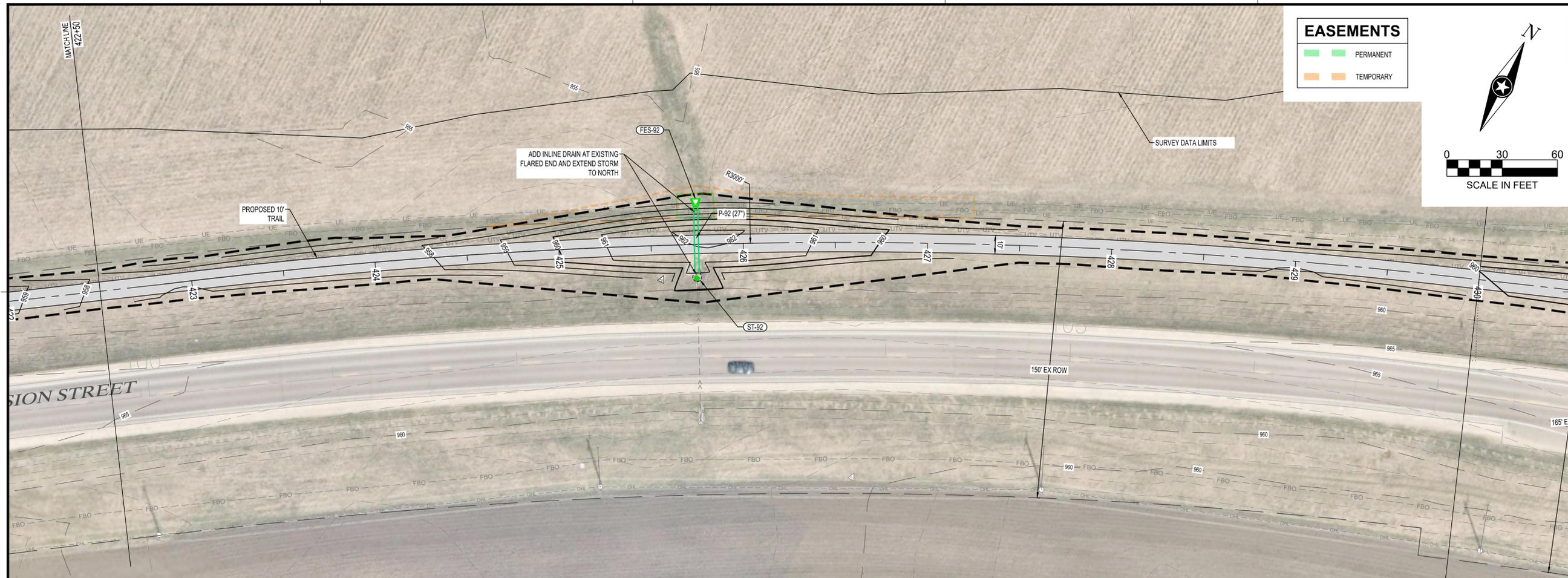
PLANNED TRAIL CONSTRUCTION (SEGMENT E)

SHEET

64 OF ---

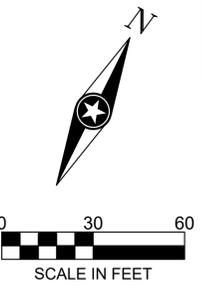
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PLOT DATE: 5/31/2024 4:56 PM



EASEMENTS

- PERMANENT
- TEMPORARY



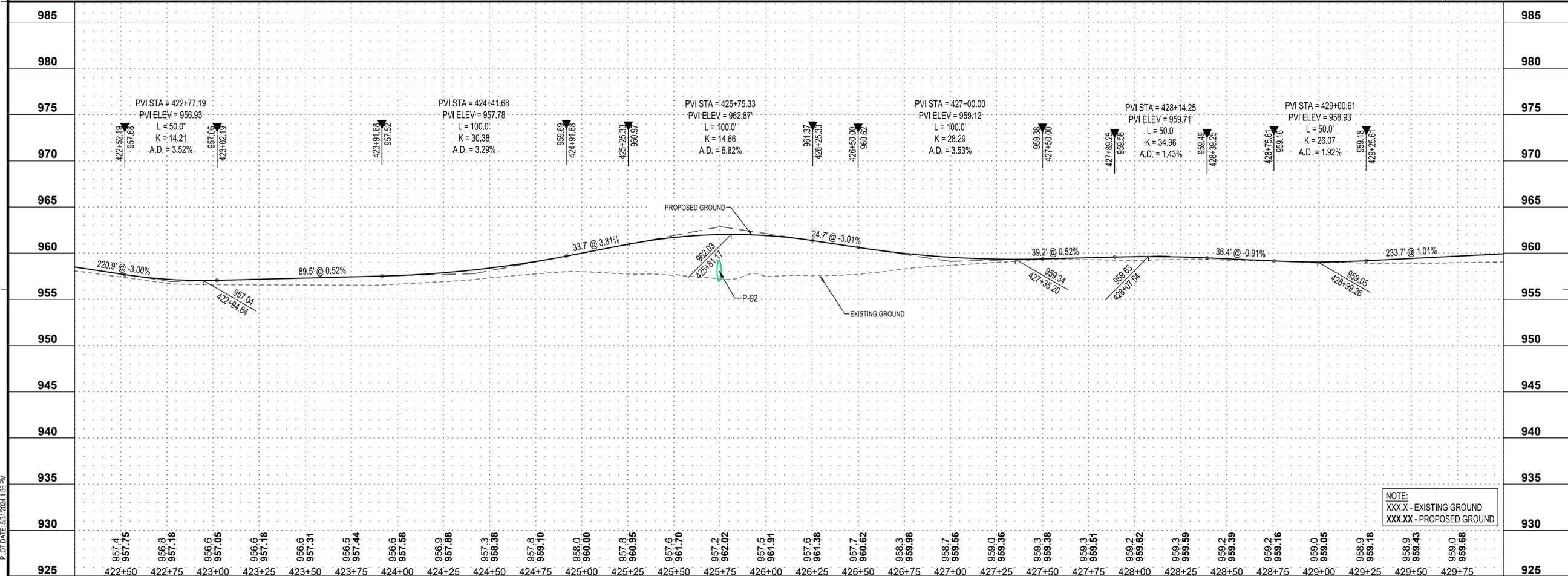
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PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059

FILE NAME 30059-PROF-SEGMENT E

DRAWN BY OBO/BJK

DESIGNED BY KJR

REVIEWED BY KJR

ORIGINAL ISSUE DATE --/--

CLIENT PROJECT NO. -

TITLE

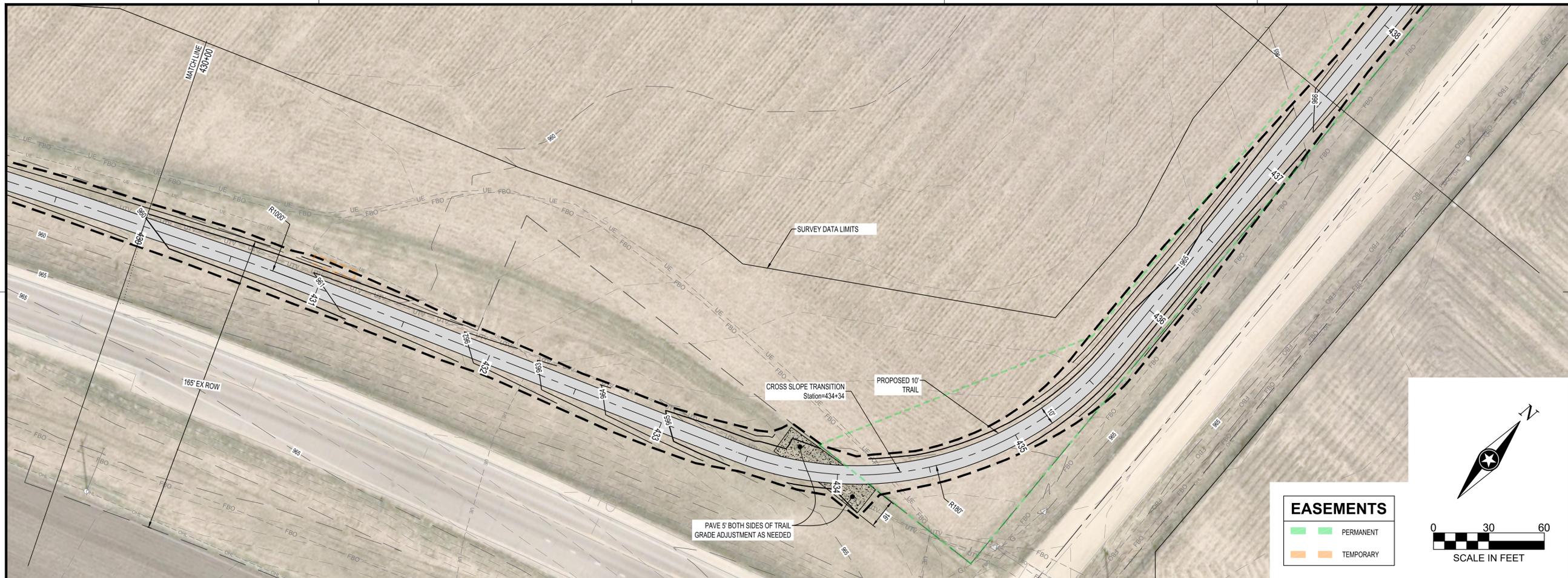
PLANNED TRAIL CONSTRUCTION (SEGMENT E)

SHEET **66** OF ----

NOTE:
 XXX.X - EXISTING GROUND
 XXX.XX - PROPOSED GROUND

PLOT DATE: 5/31/2024 1:56 PM

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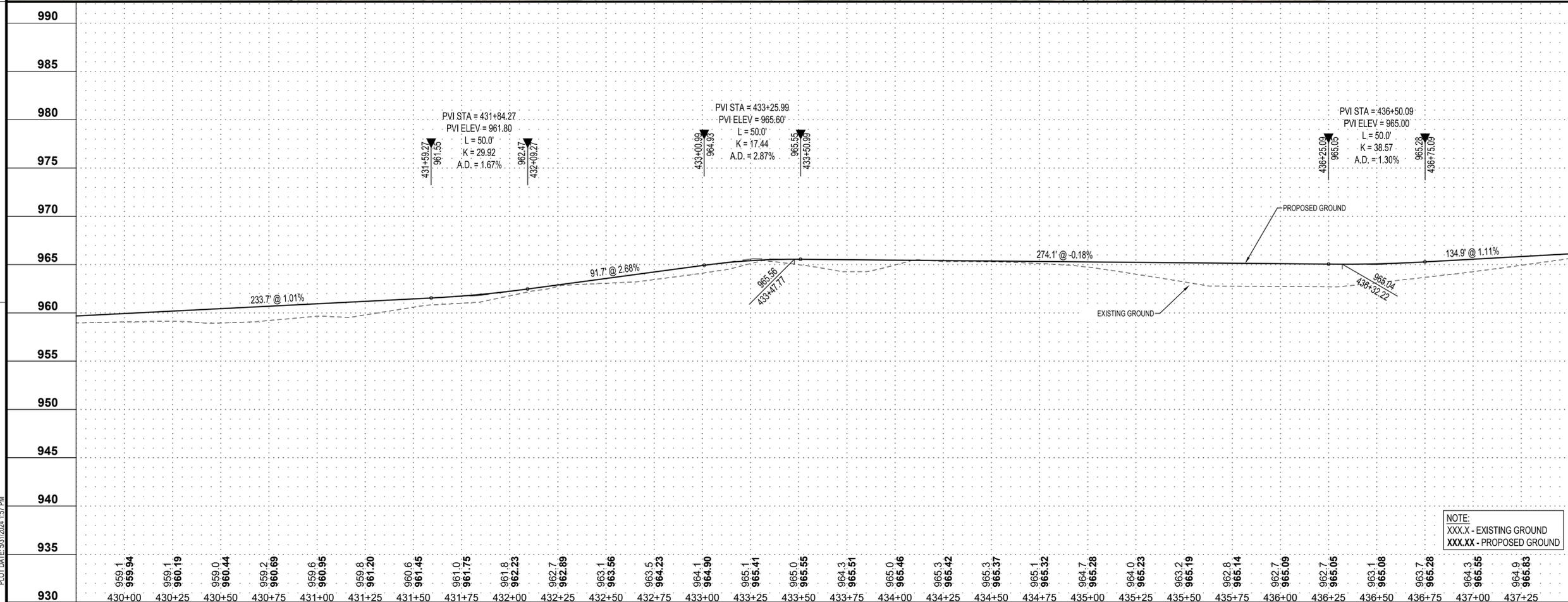
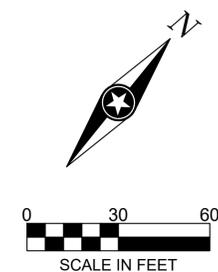


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EASEMENTS	
█	PERMANENT
█	TEMPORARY



PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-PROF-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---/---/---
CLIENT PROJECT NO.	-

TITLE

PLANNED TRAIL CONSTRUCTION (SEGMENT E)

SHEET **67** OF ----

PLOT DATE: 5/31/2024 1:57 PM

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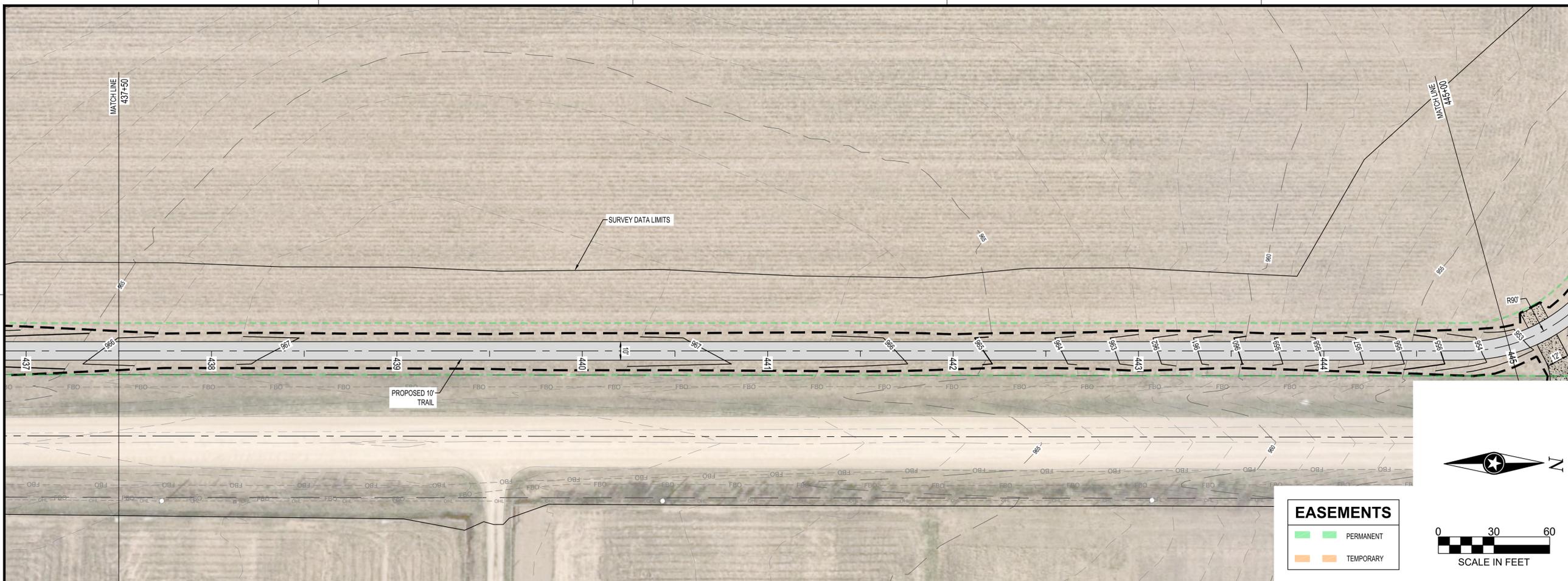
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

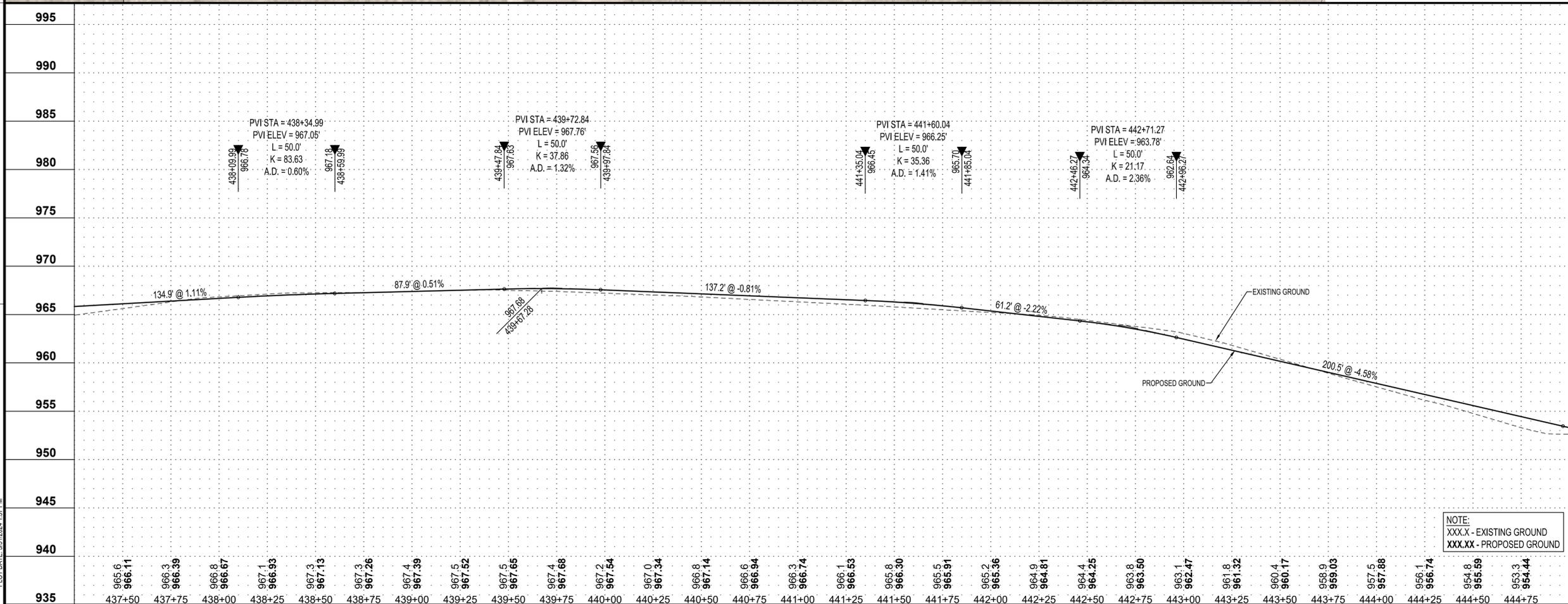
PROJECT NO.	23-30059
FILE NAME	30059-PROF-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	---/---/---
CLIENT PROJECT NO.	-

TITLE
PLANNED TRAIL CONSTRUCTION (SEGMENT E)

SHEET
68 OF ----



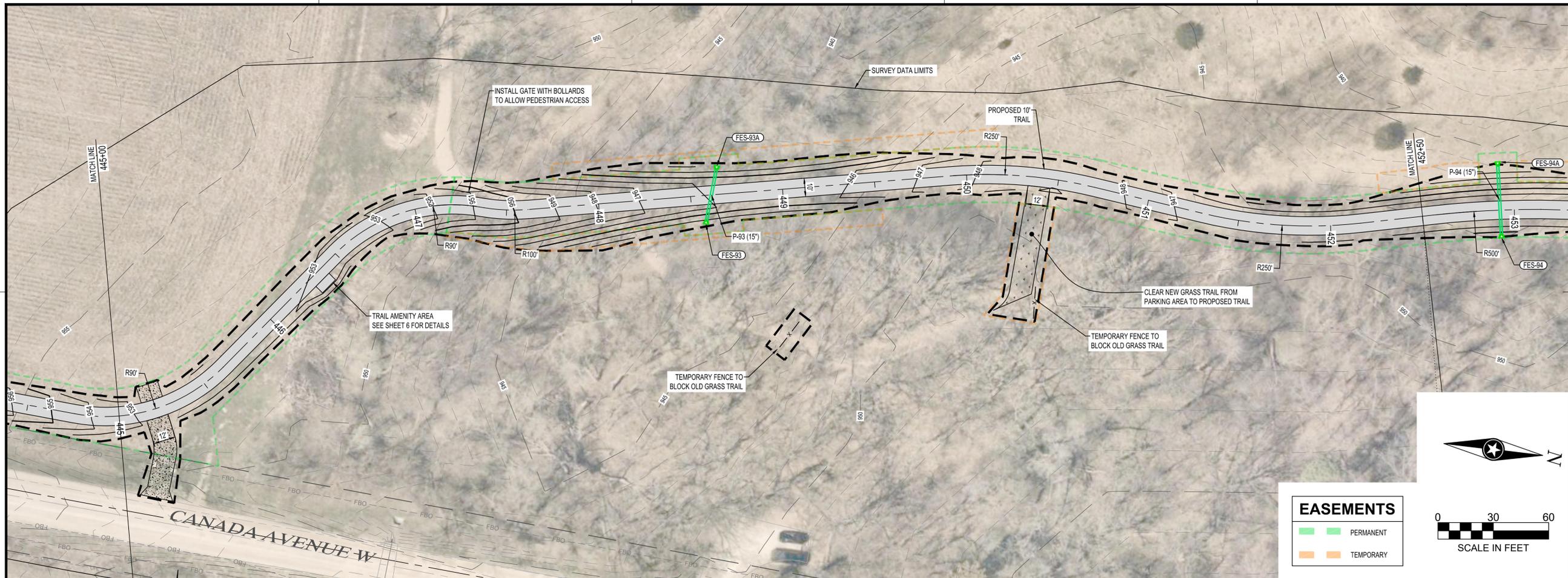
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█	PERMANENT
█	TEMPORARY



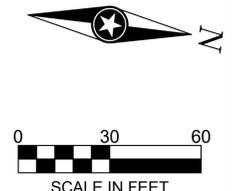
NOTE:
 XXX.X - EXISTING GROUND
 XXX.XX - PROPOSED GROUND

PLOT DATE: 5/31/2024 1:57 PM

PRELIMINARY NOT FOR CONSTRUCTION



EASEMENTS	
—	PERMANENT
—	TEMPORARY



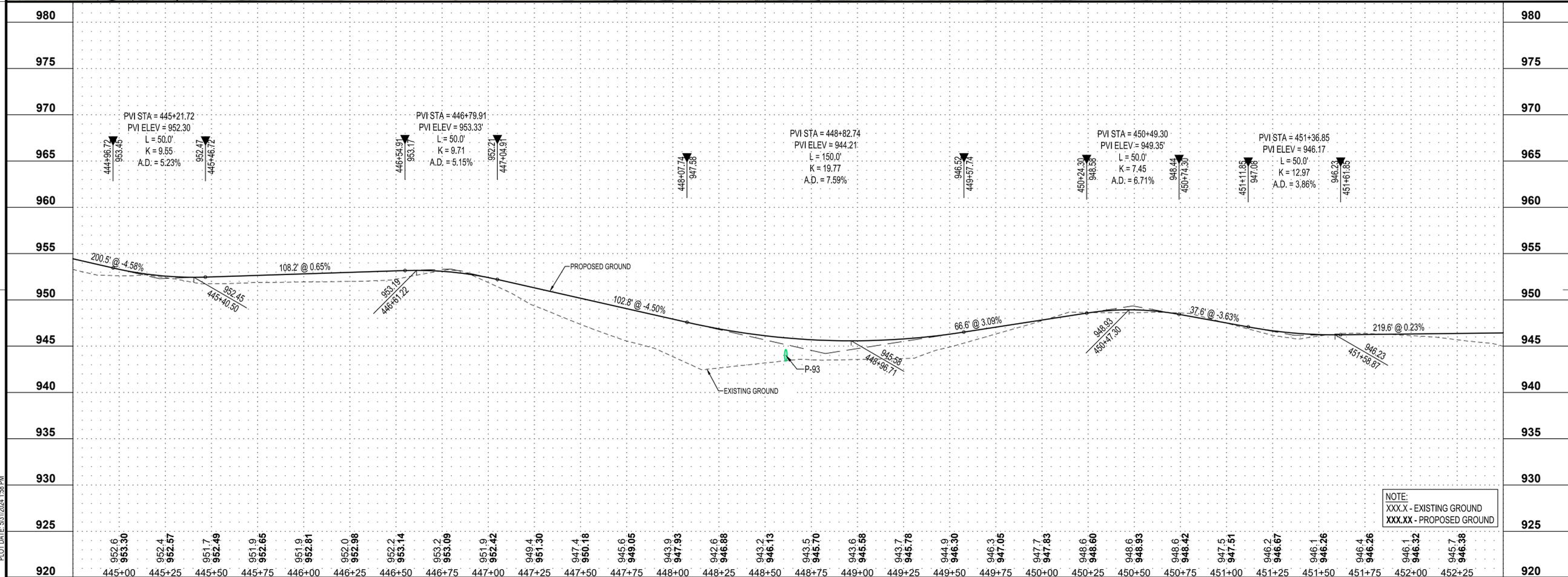
DEPARTMENT OF NATURAL RESOURCES



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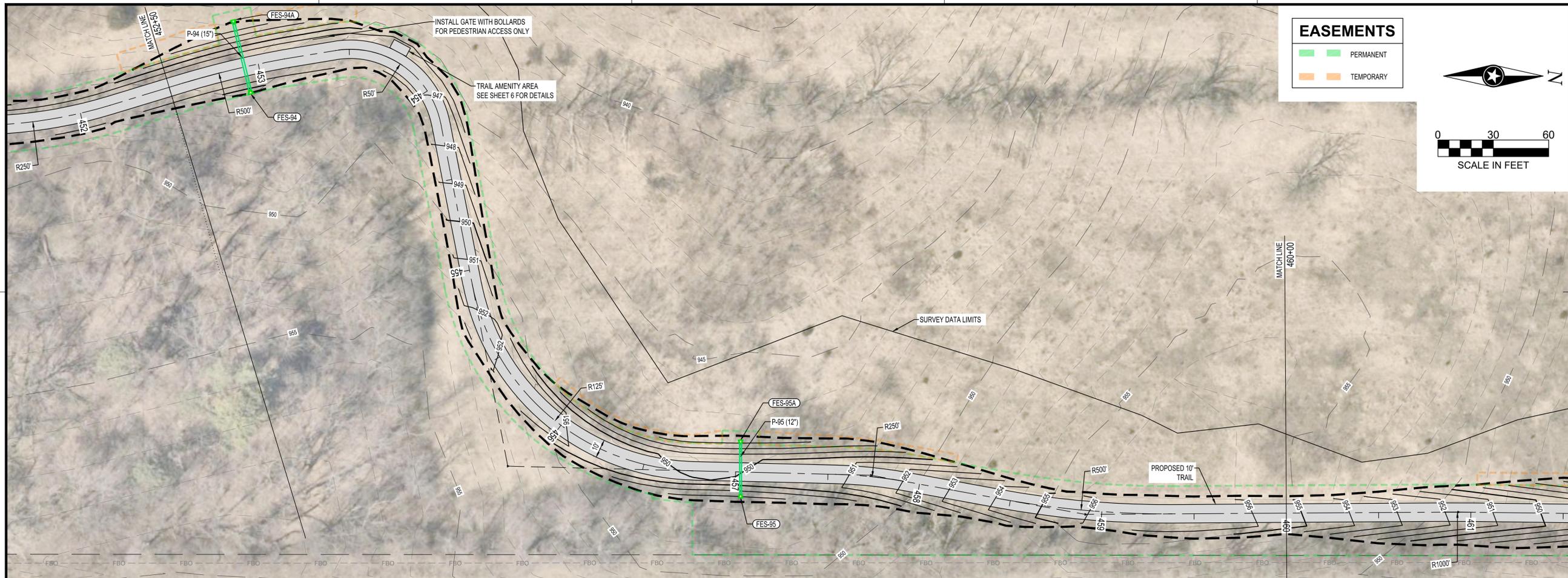


NOTE:
 XXX.X - EXISTING GROUND
 XXX.XX - PROPOSED GROUND

PROJECT		
CITY OF NORTHFIELD		
MILL TOWNS STATE TRAIL		
NORTHFIELD MN		
REVISION SCHEDULE		
DATE	DESCRIPTION	BY
PROJECT NO.	23-30059	
FILE NAME	30059-PROF-SEGMENT E	
DRAWN BY	OBO/BJK	
DESIGNED BY	KJR	
REVIEWED BY	KJR	
ORIGINAL ISSUE DATE	--/--	
CLIENT PROJECT NO.	-	
TITLE		
PLANNED TRAIL CONSTRUCTION (SEGMENT E)		
SHEET		
69		
OF ----		

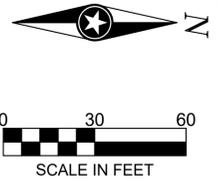
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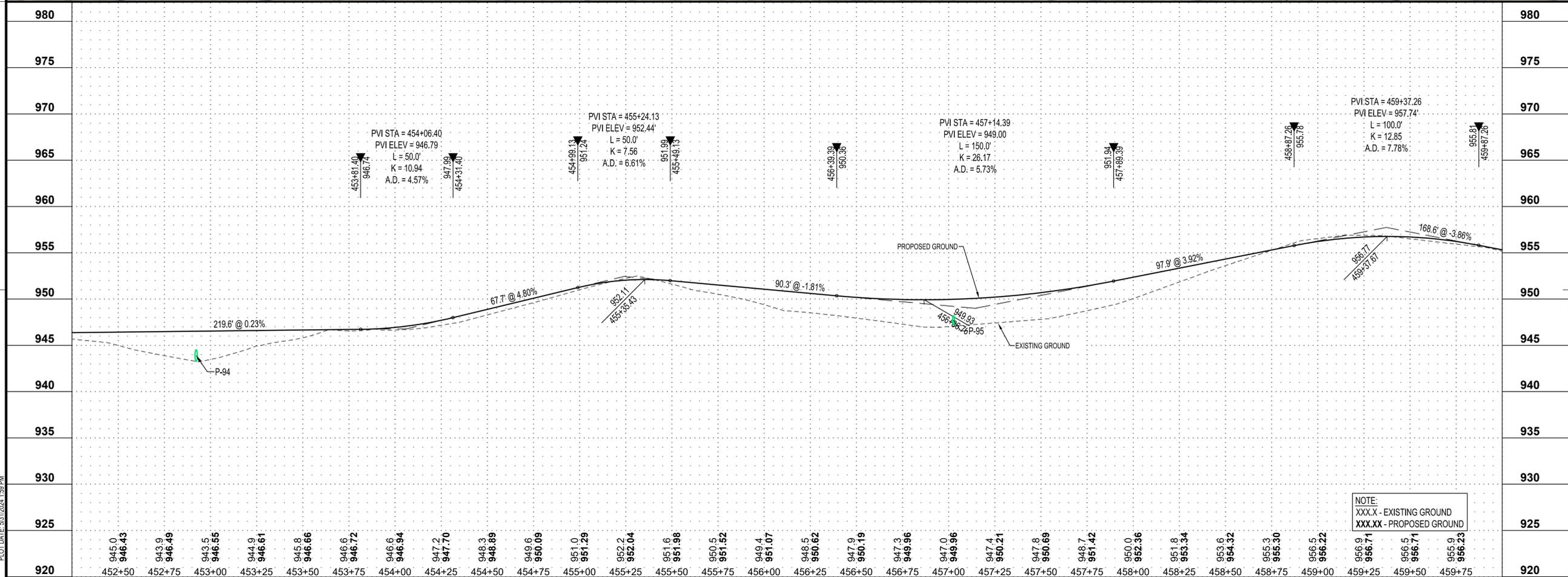
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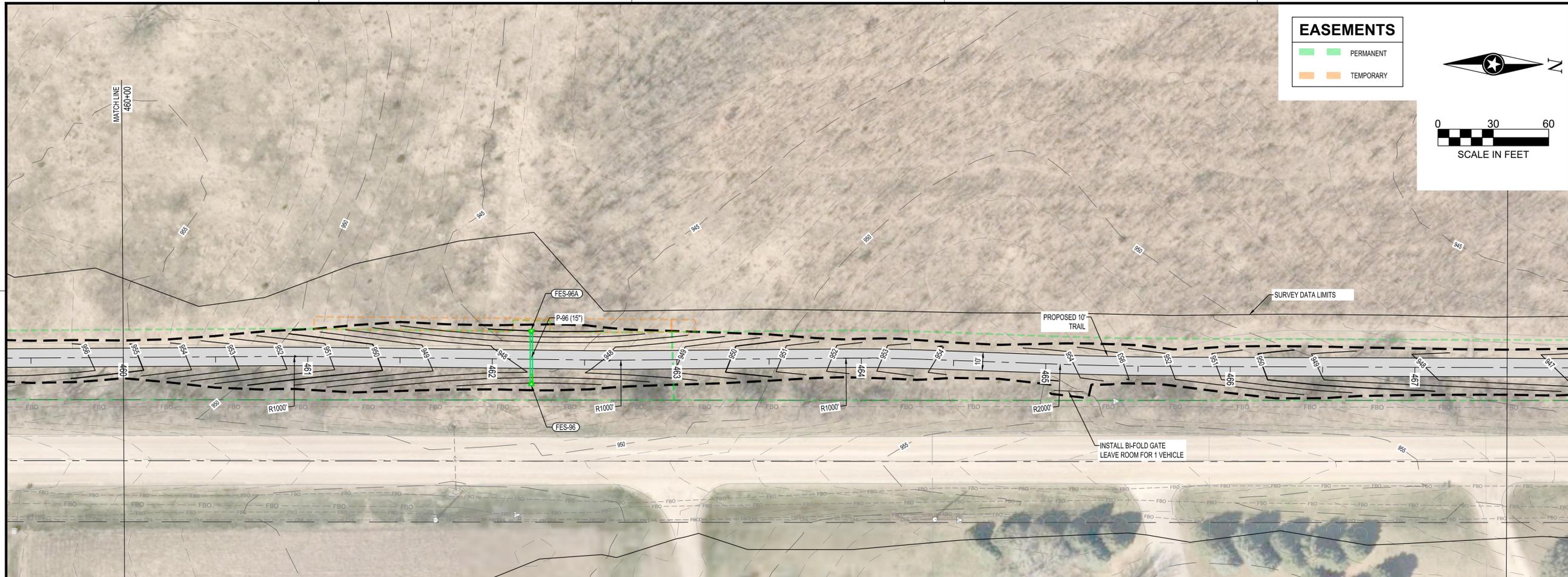
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PROJECT		
NORTHFIELD MN		
REVISION SCHEDULE		
DATE	DESCRIPTION	BY
PROJECT NO.	23-30059	
FILE NAME	30059-PROF-SEGMENT E	
DRAWN BY	OBO/BJK	
DESIGNED BY	KJR	
REVIEWED BY	KJR	
ORIGINAL ISSUE DATE	--/--	
CLIENT PROJECT NO.	-	
TITLE		
PLANNED TRAIL CONSTRUCTION (SEGMENT E)		
SHEET		
70		
OF ---		

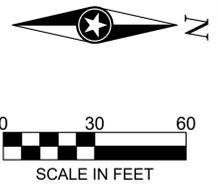
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EASEMENTS

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- TEMPORARY



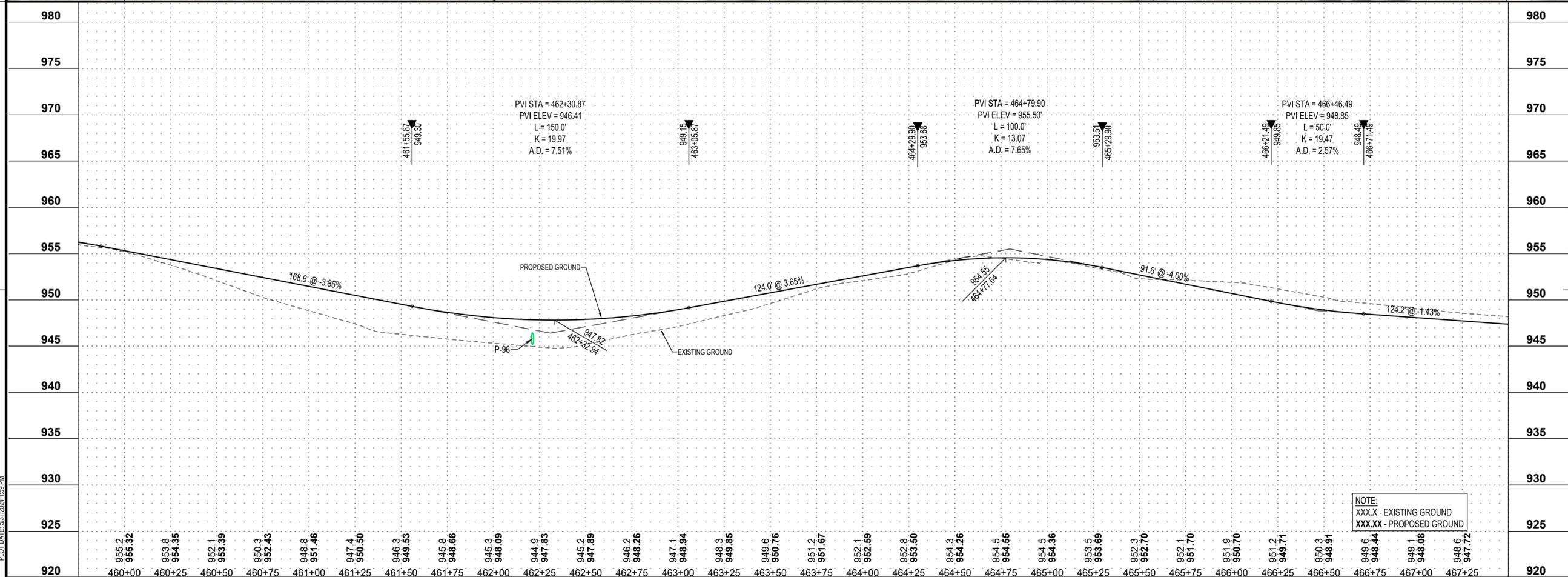
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PROJECT	CITY OF NORTHFIELD		
	MILL TOWNS STATE TRAIL		
	NORTHFIELD	MN	
REVISION SCHEDULE	DATE	DESCRIPTION	BY
PROJECT NO.	23-30059		
FILE NAME	30059-PROF-SEGMENT E		
DRAWN BY	OBO/BJK		
DESIGNED BY	KJR		
REVIEWED BY	KJR		
ORIGINAL ISSUE DATE	--/--		
CLIENT PROJECT NO.	-		
TITLE	PLANNED TRAIL CONSTRUCTION (SEGMENT E)		
SHEET	71		

NOTE:
 XXX.X - EXISTING GROUND
 XXX.XX - PROPOSED GROUND

PLOT DATE: 5/31/2024 4:58 PM

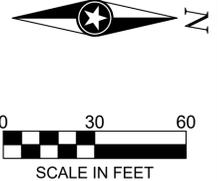
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PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059

FILE NAME 30059-PROF-SEGMENT E

DRAWN BY OBO/BJK

DESIGNED BY KJR

REVIEWED BY KJR

ORIGINAL ISSUE DATE --/--

CLIENT PROJECT NO. -

TITLE

PLANNED TRAIL CONSTRUCTION (SEGMENT E)

SHEET

73 OF ---

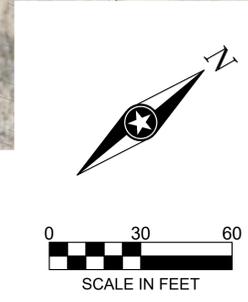
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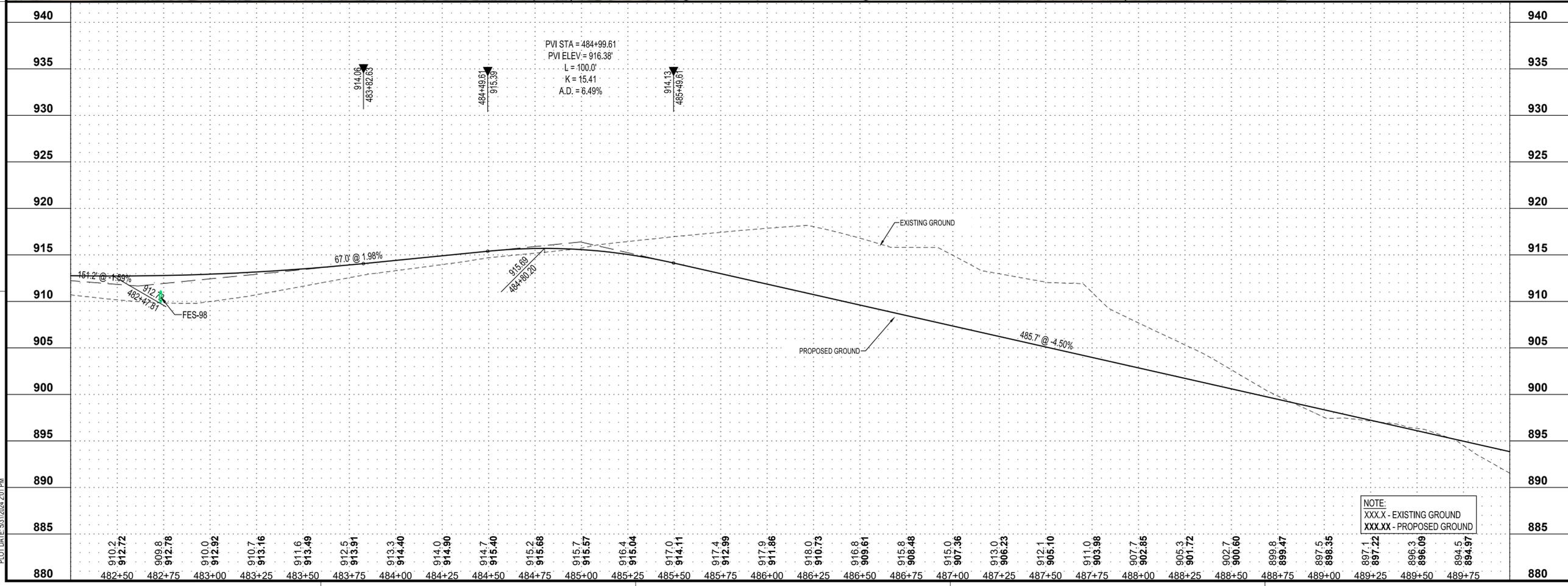
- PERMANENT (Green line)
- TEMPORARY (Orange line)



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NOTE:
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 XXX.XX - PROPOSED GROUND

PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
 FILE NAME 30059-PROF-SEGMENT E
 DRAWN BY OBO/BJK
 DESIGNED BY KJR
 REVIEWED BY KJR
 ORIGINAL ISSUE DATE --/--
 CLIENT PROJECT NO. -

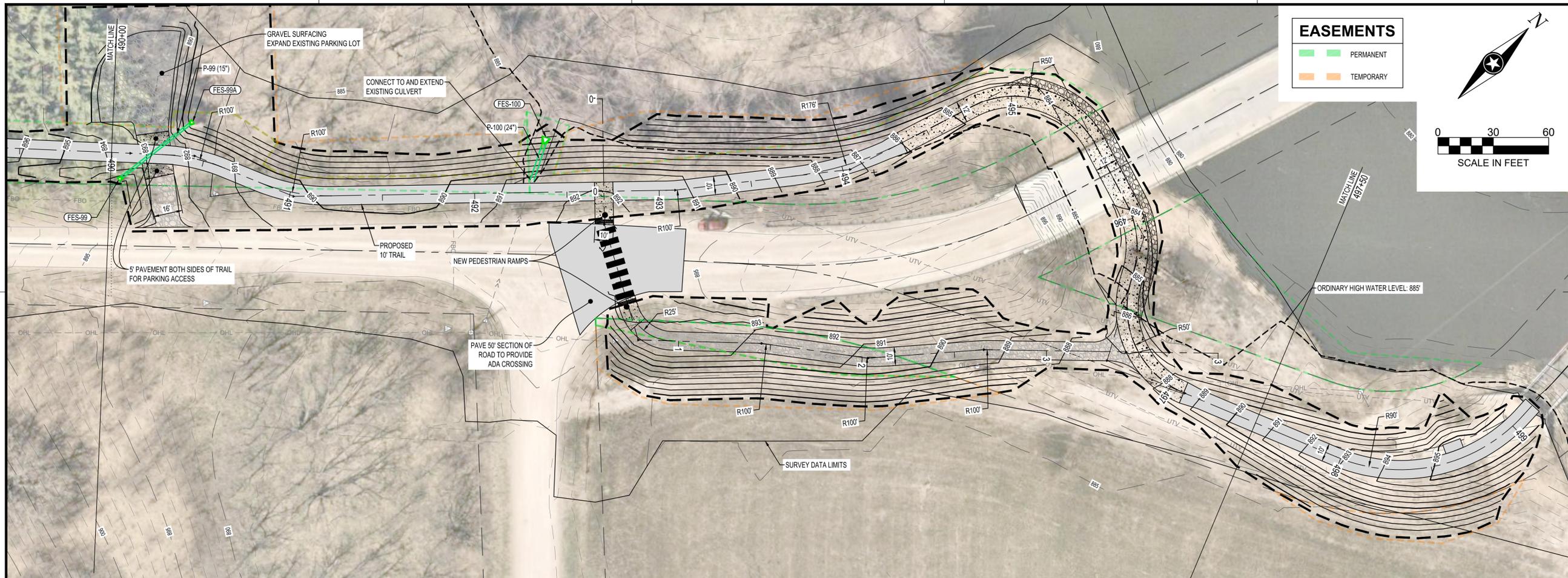
TITLE

PLANNED TRAIL CONSTRUCTION (SEGMENT E)

SHEET **74** OF ----

PLOT DATE: 5/31/2024 2:01 PM

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EASEMENTS

- PERMANENT
- TEMPORARY



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SCALE IN FEET



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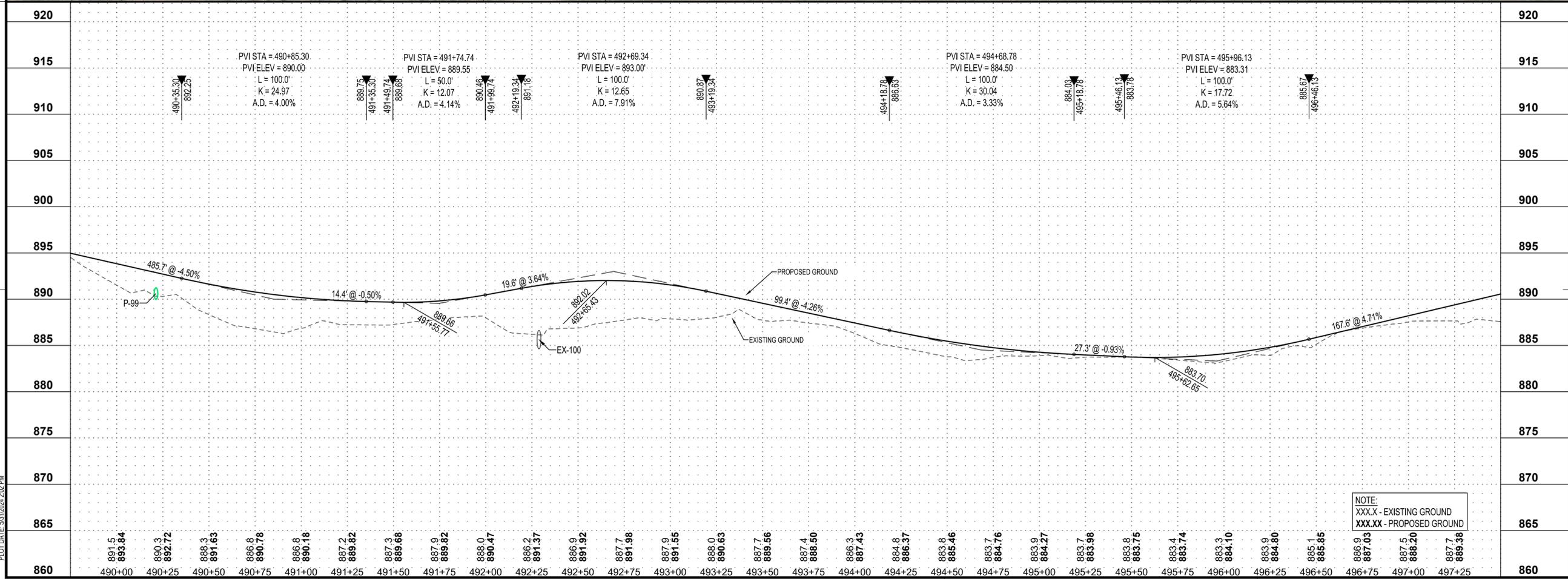


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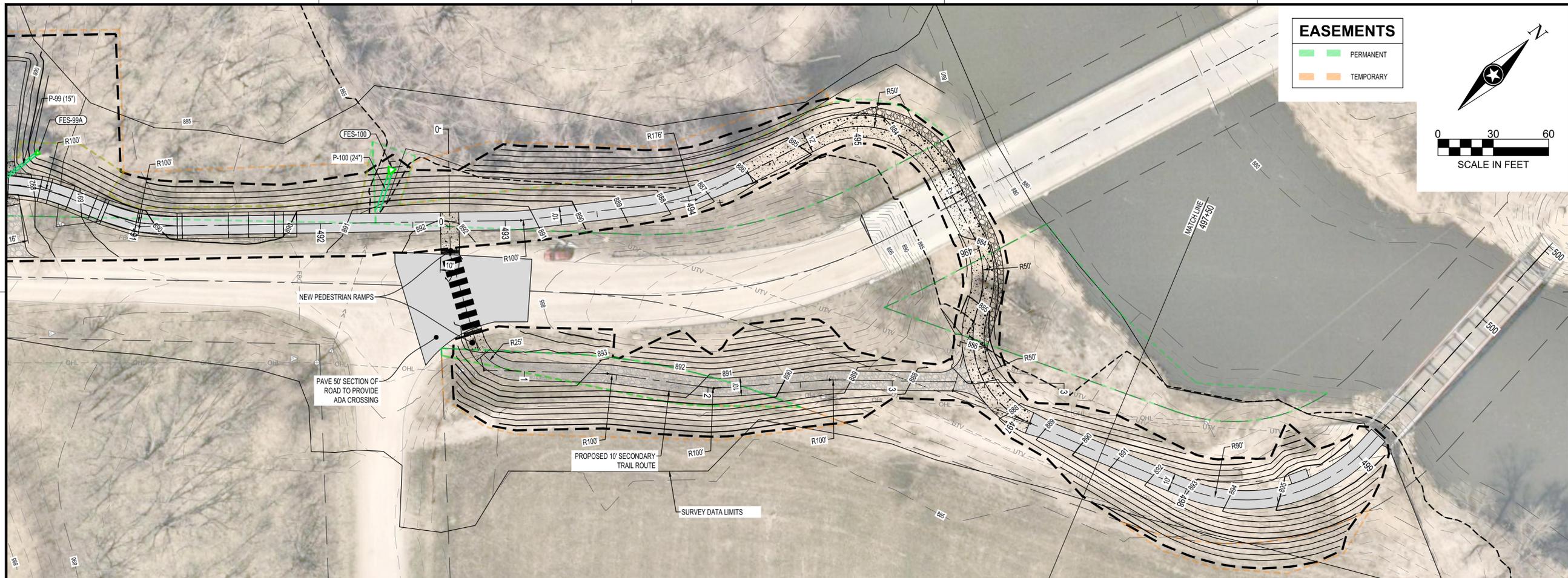


PROJECT	CITY OF NORTHFIELD		
	MILL TOWNS STATE TRAIL		
	NORTHFIELD MN		
REVISION SCHEDULE	DATE	DESCRIPTION	BY
PROJECT NO.	23-30059		
FILE NAME	30059-PROF-SEGMENT E		
DRAWN BY	OBO/BJK		
DESIGNED BY	KJR		
REVIEWED BY	KJR		
ORIGINAL ISSUE DATE	--/--		
CLIENT PROJECT NO.	-		
TITLE	PLANNED TRAIL CONSTRUCTION (SEGMENT E)		
SHEET	75		

NOTE:
XXX.X - EXISTING GROUND
XXX.XX - PROPOSED GROUND

PLOT DATE: 5/31/2024 2:10 PM

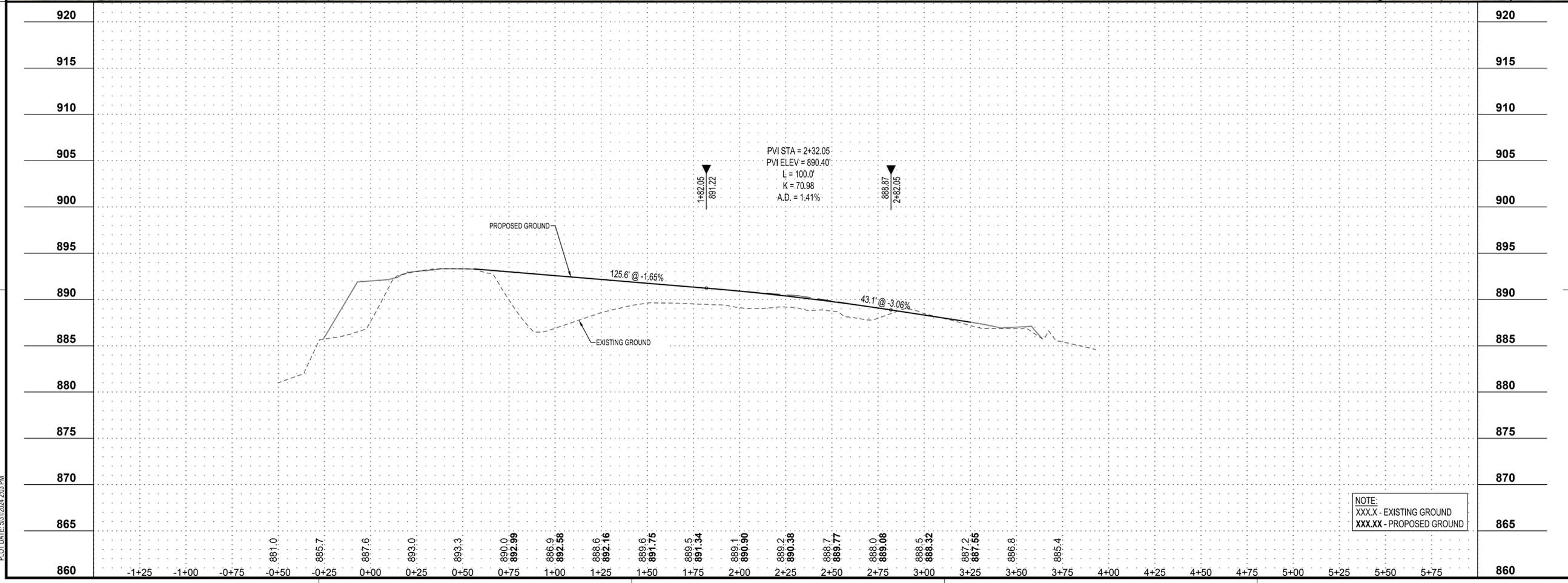
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PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
 FILE NAME 30059-PROF-SEGMENT E
 DRAWN BY OBO/BJK
 DESIGNED BY KJR
 REVIEWED BY KJR
 ORIGINAL ISSUE DATE --/--
 CLIENT PROJECT NO. -

TITLE

PLANNED TRAIL CONSTRUCTION (SECONDARY)

SHEET **77** OF ----

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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL

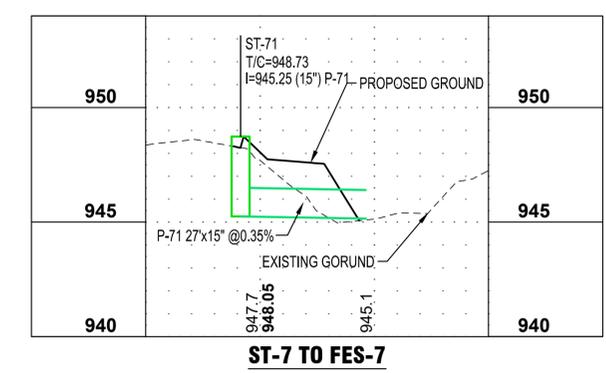
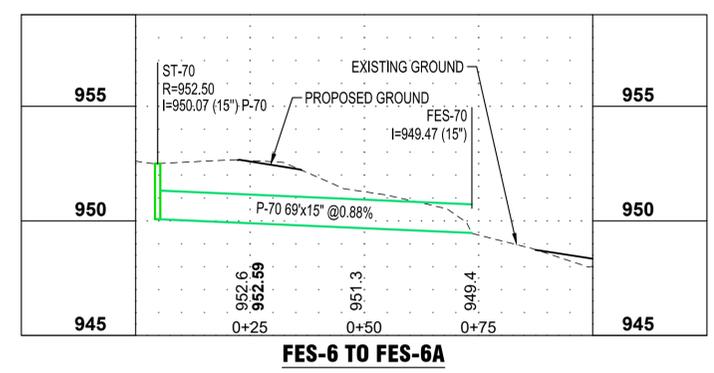
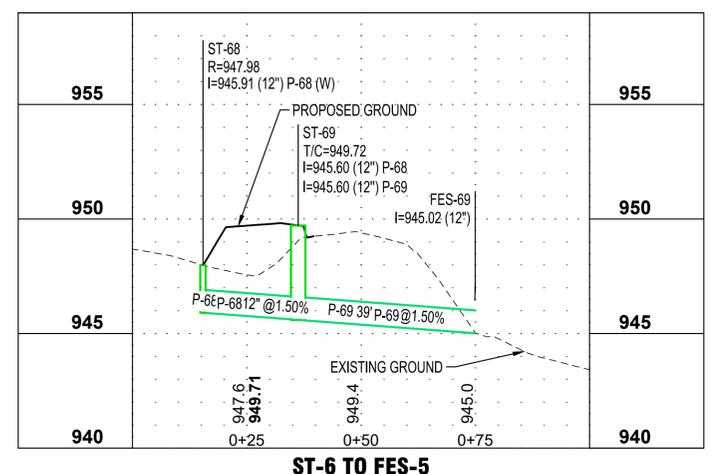
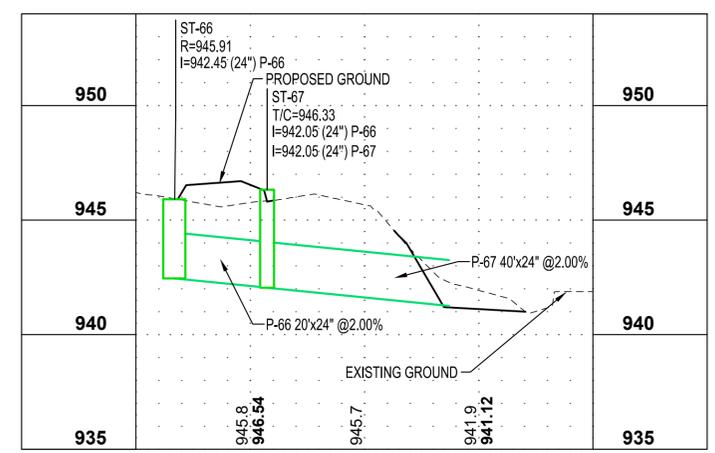
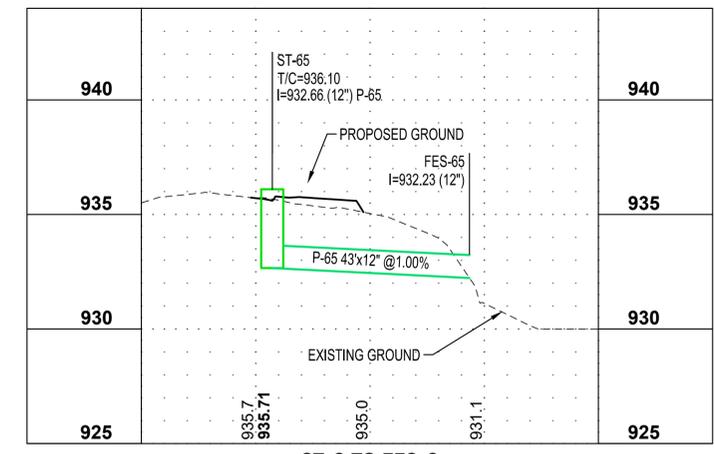
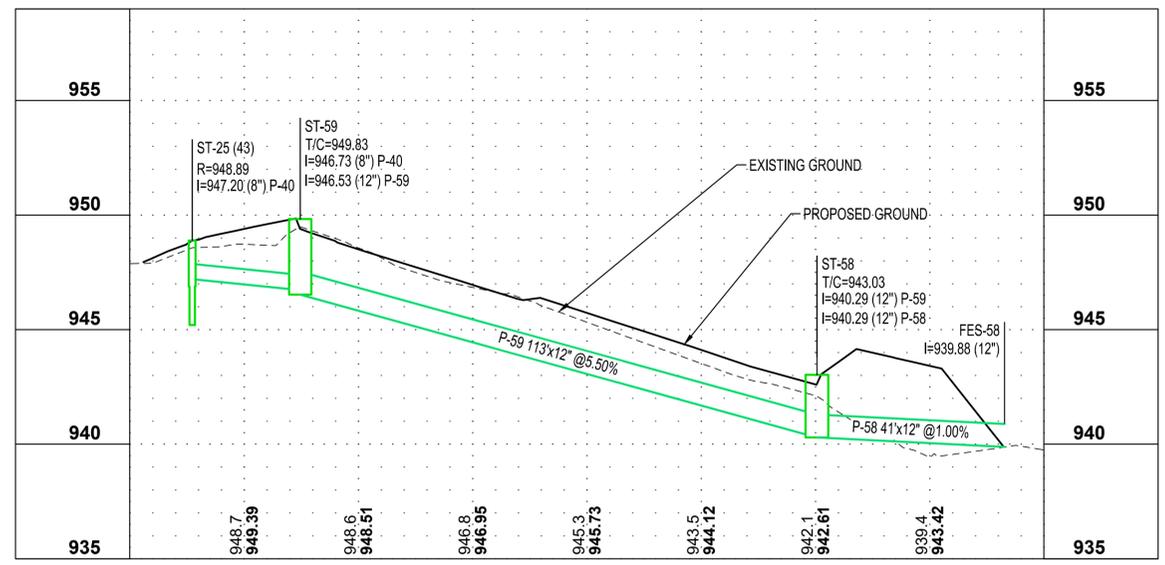
NORTHFIELD MN

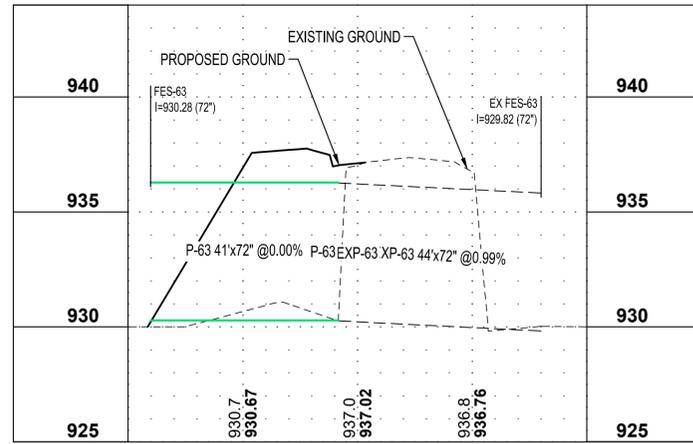
REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-UTILITY PROFILES
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

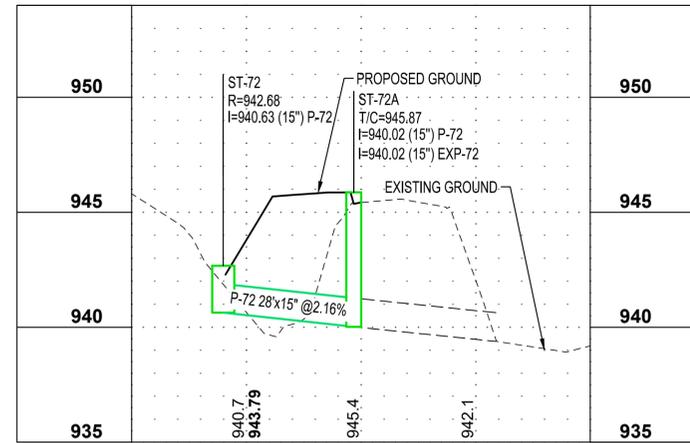
TITLE
UTILITY PROFILES

SHEET
78 OF ---

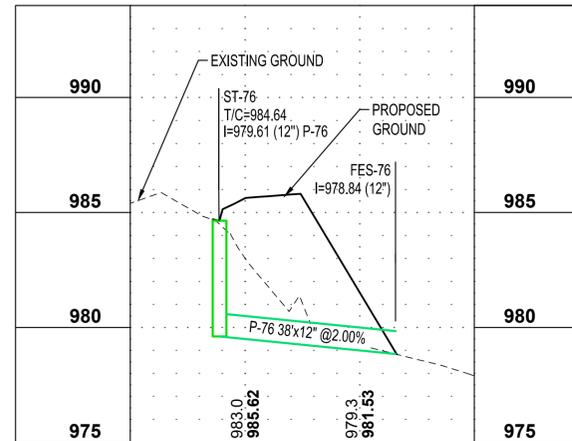




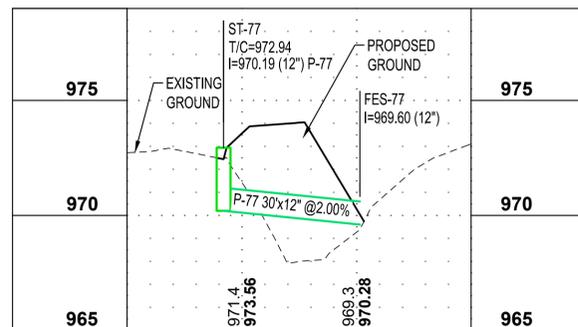
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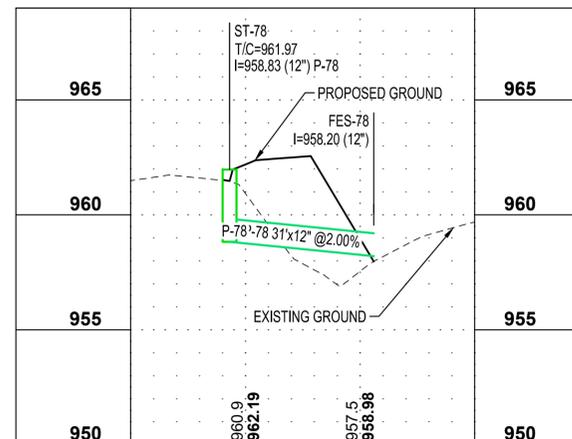
ST-8 TO ST-9



ST-11 TO FES-10



ST-12 TO FES-11



ST-13 TO FES-12



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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
 NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-UTILITY PROFILES
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
UTILITY PROFILES



DEPARTMENT OF NATURAL RESOURCES



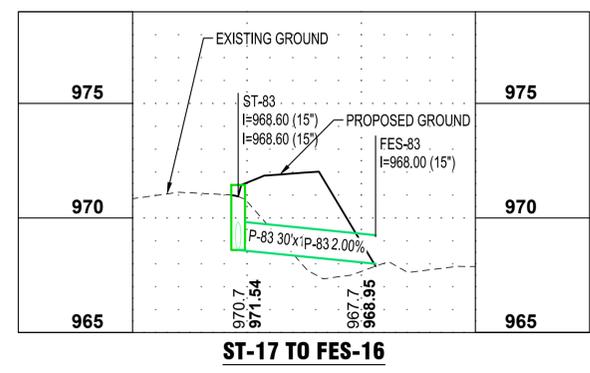
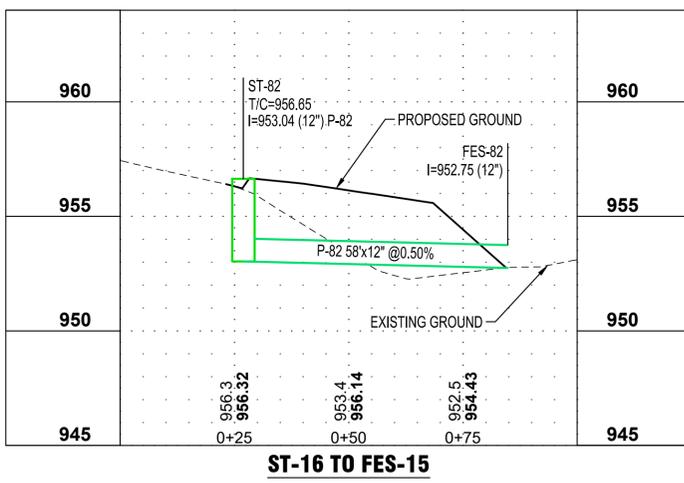
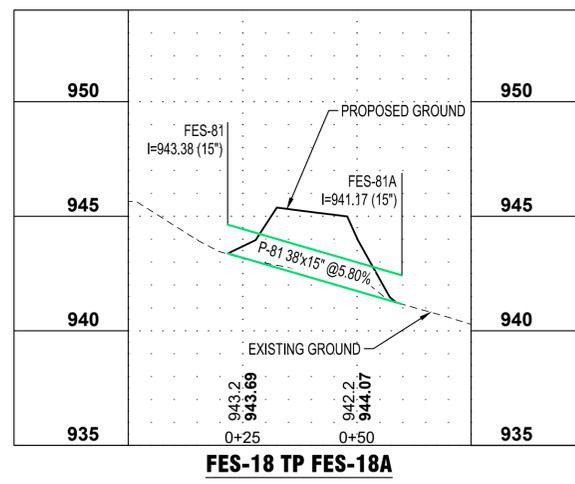
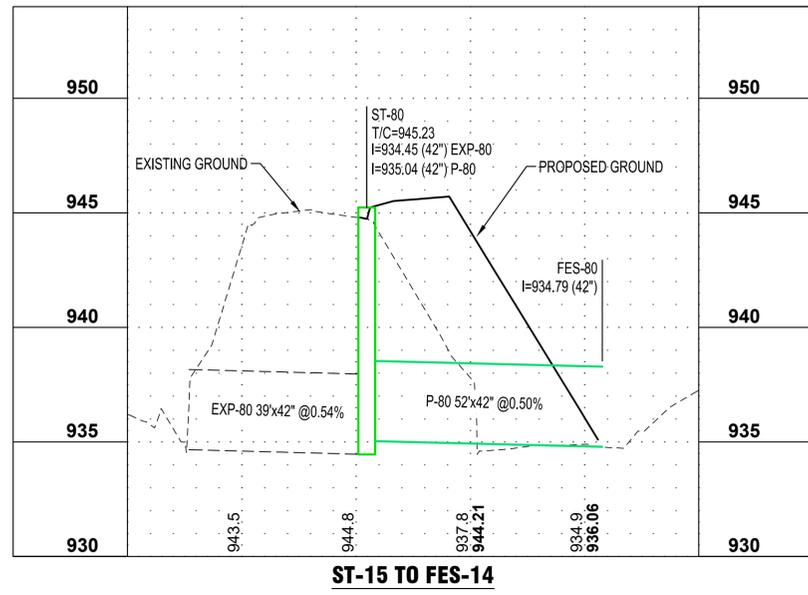
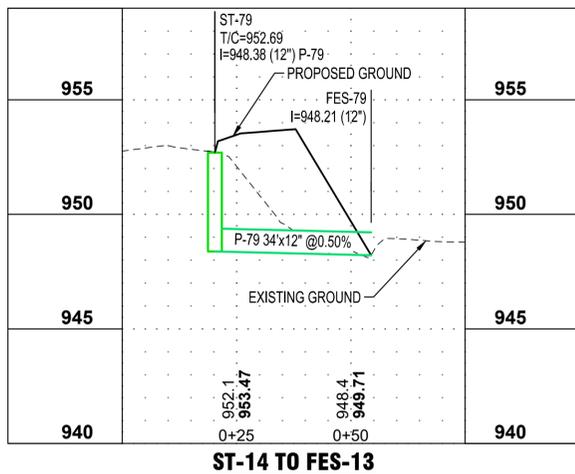
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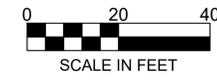
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

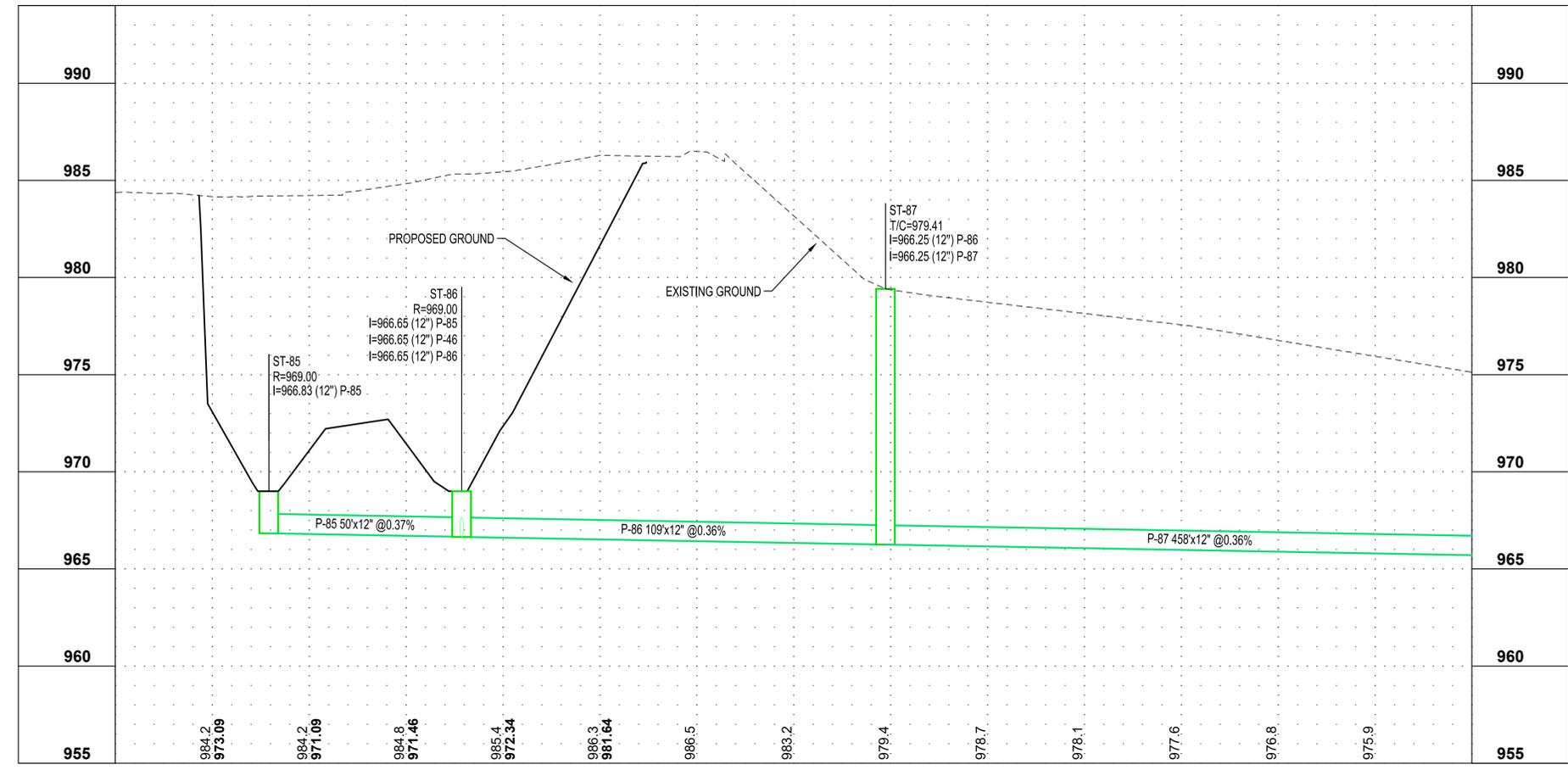
PROJECT NO. 23-30059
FILE NAME 30059-UTILITY PROFILES
DRAWN BY OBO/BJK
DESIGNED BY KJR
REVIEWED BY KJR
ORIGINAL ISSUE DATE --/--
CLIENT PROJECT NO. -

TITLE
UTILITY PROFILES

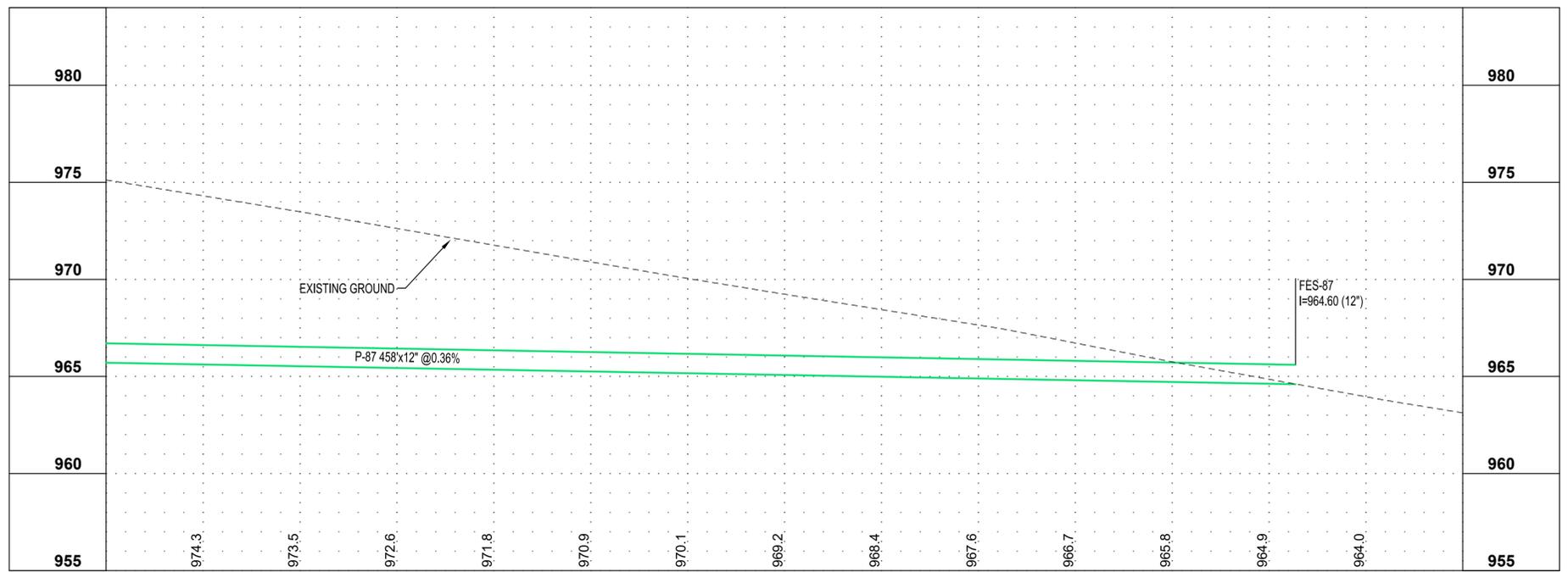




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ST-18 TO FES-19 (1)



ST-18 TO FES-19 (2)

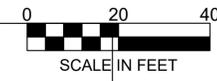
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-UTILITY PROFILES
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
UTILITY PROFILES



DEPARTMENT OF
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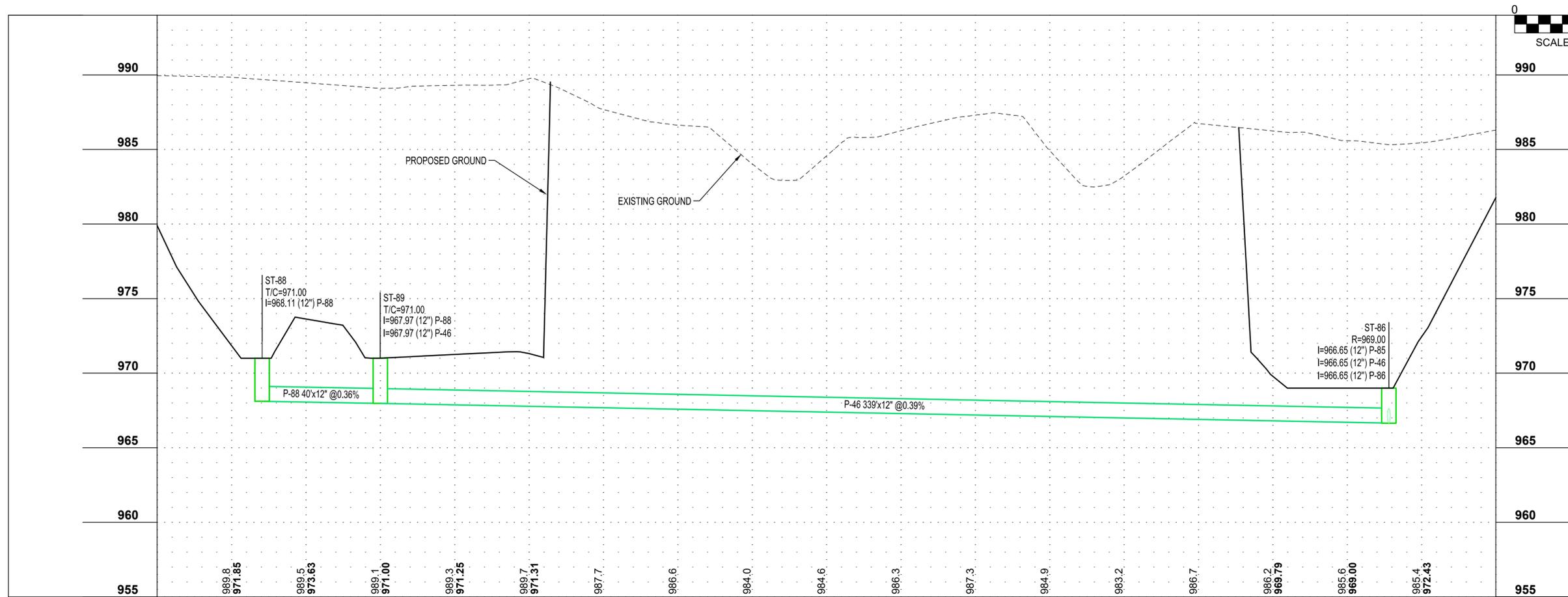
PROJECT
**CITY OF
NORTHFIELD**
**MILL TOWNS
STATE TRAIL**
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

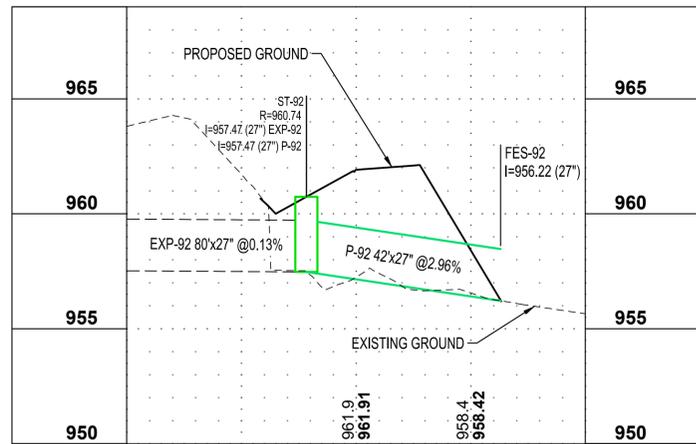
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FILE NAME	30059-UTILITY PROFILES
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
UTILITY PROFILES

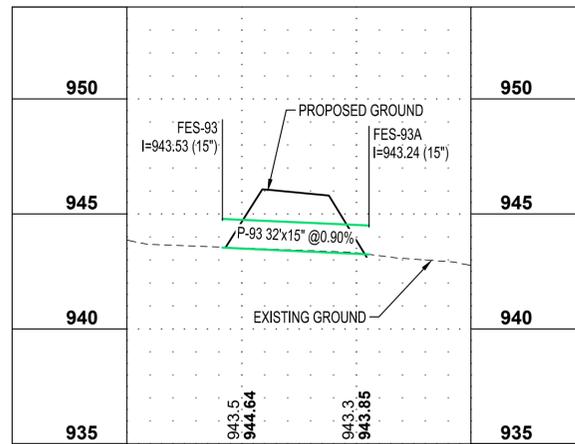
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82 OF ---



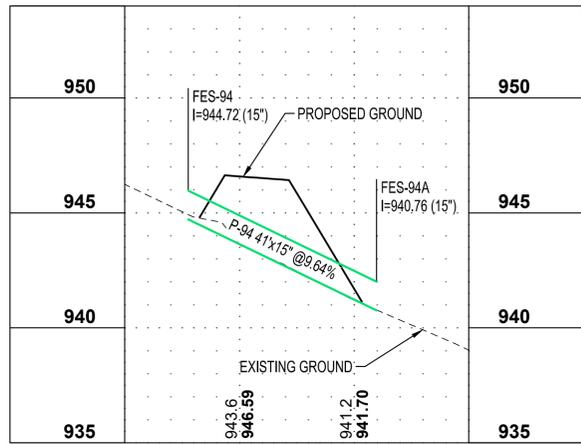
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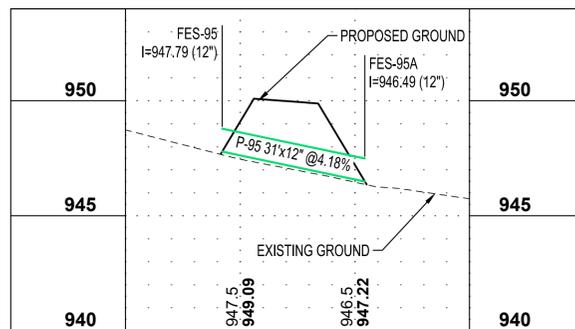
ST-25 TO FES-21



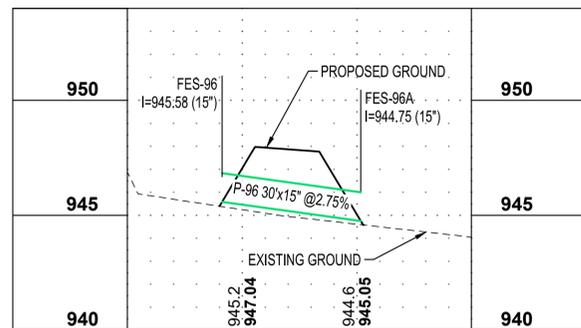
FES-23 TO FES-23A



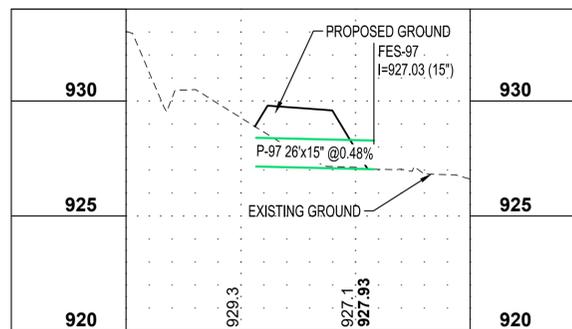
FES- TO FES-



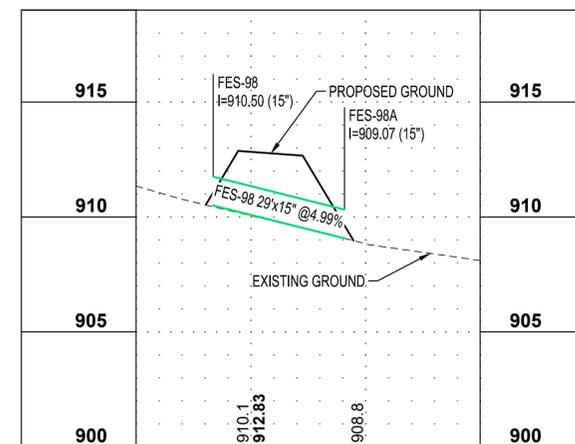
FES-24 TO FES-24A



FES-25 TO FES-25A



FES-26 TO FES-26A



FES- TO FES- (1)



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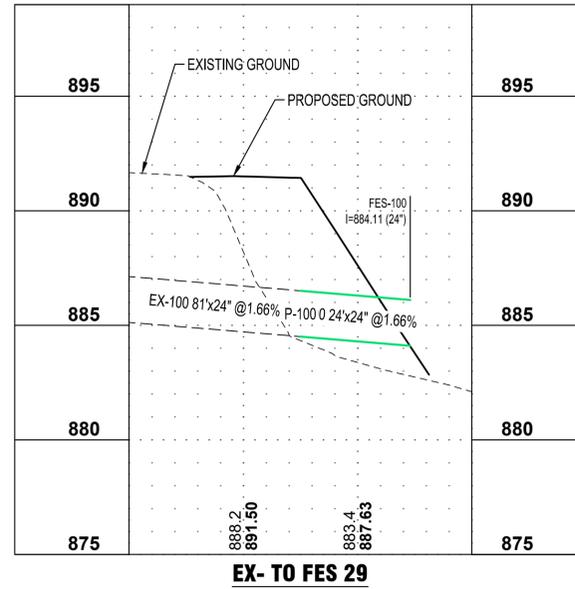
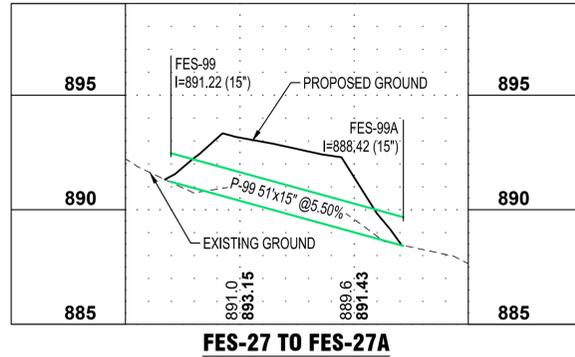
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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
 FILE NAME 30059-UTILITY PROFILES
 DRAWN BY OBO/BJK
 DESIGNED BY KJR
 REVIEWED BY KJR
 ORIGINAL ISSUE DATE --/--
 CLIENT PROJECT NO. -

TITLE
UTILITY PROFILES



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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
 NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-30059
 FILE NAME 30059-UTILITY PROFILES
 DRAWN BY OBO/BJK
 DESIGNED BY KJR
 REVIEWED BY KJR
 ORIGINAL ISSUE DATE --/--
 CLIENT PROJECT NO. -

TITLE
UTILITY PROFILES

SECTION VIEW LEGEND	
NOTE: AS VIEWED IN THE DIRECTION OF INCREASING STATION	
	EXISTING GROUND
	PROPOSED GROUND
	EXISTING STRUCTURE
	PROPOSED STRUCTURE



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PROJECT

**CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL**

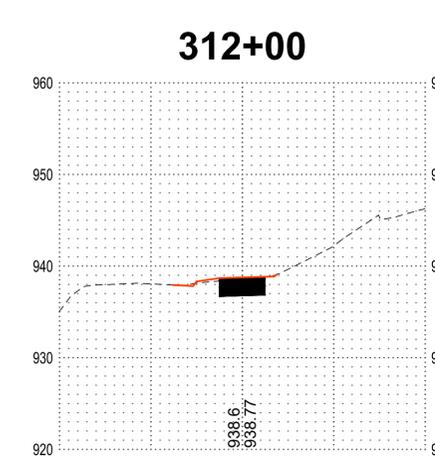
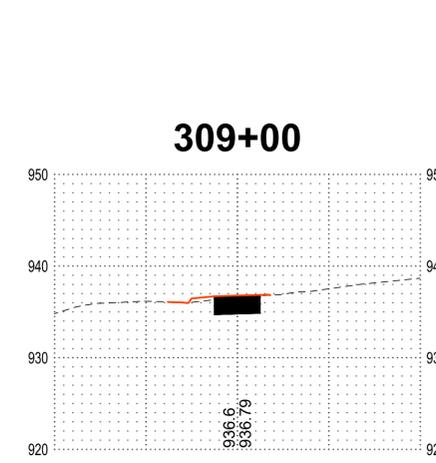
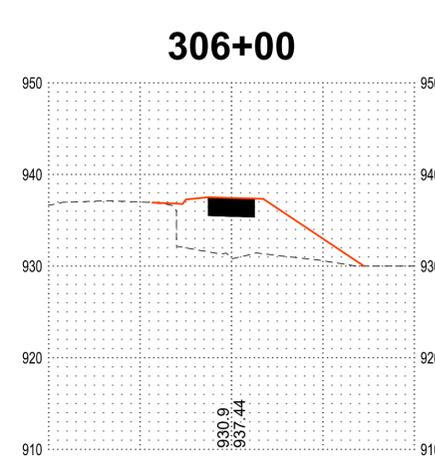
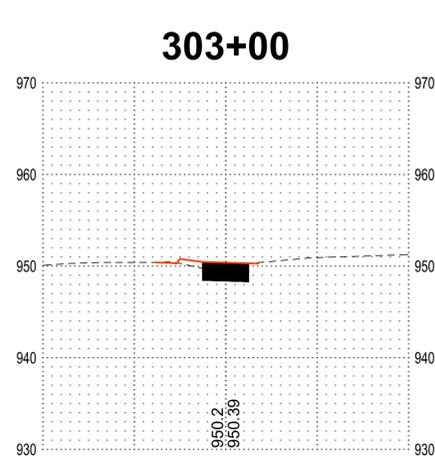
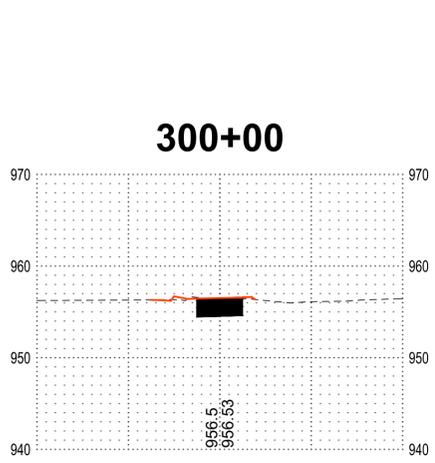
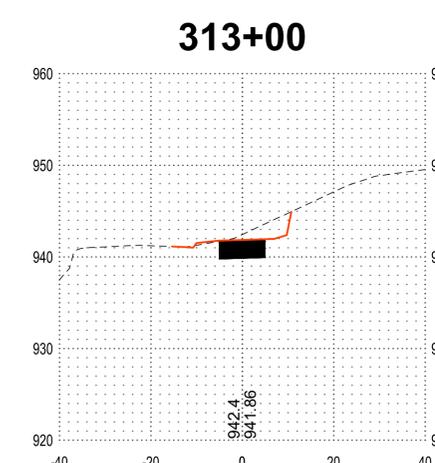
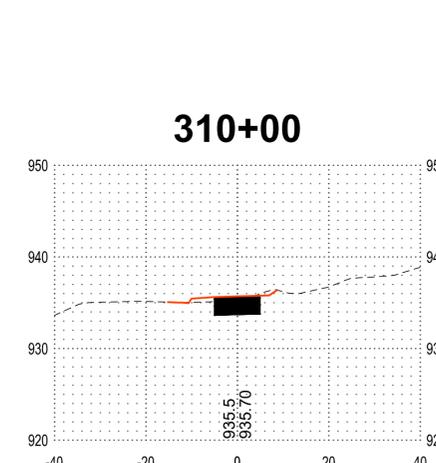
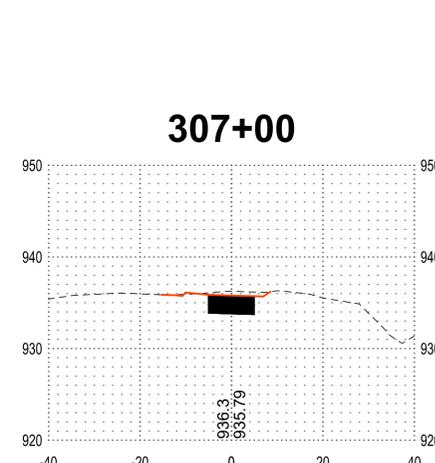
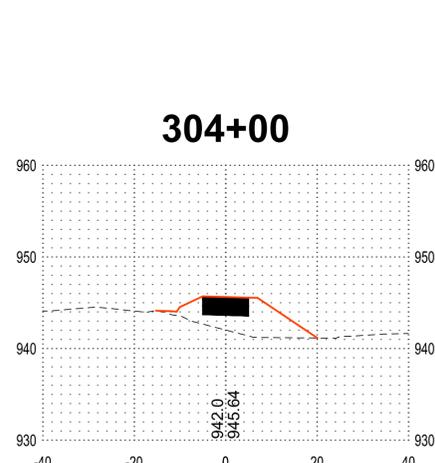
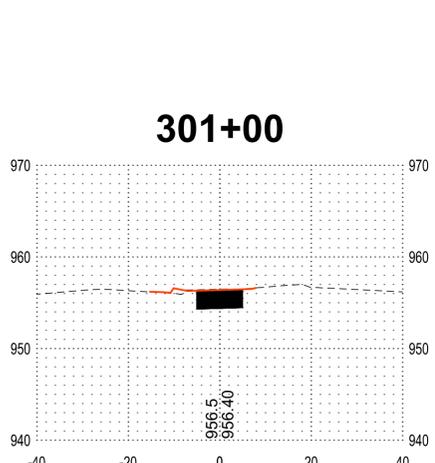
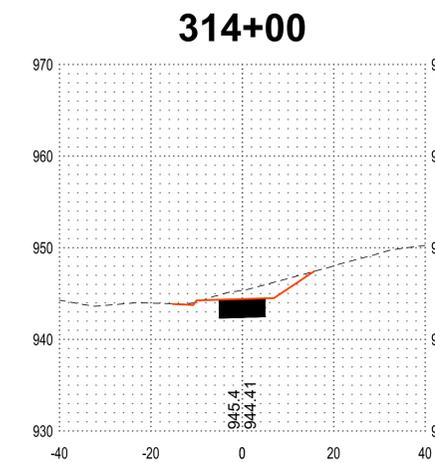
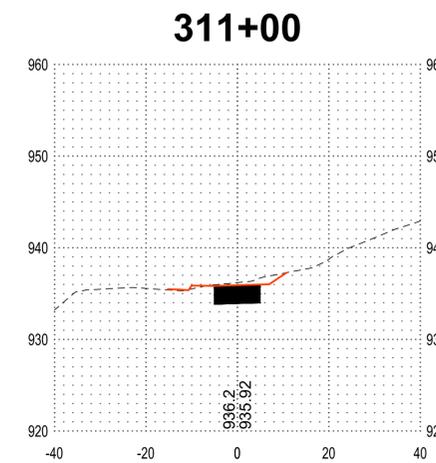
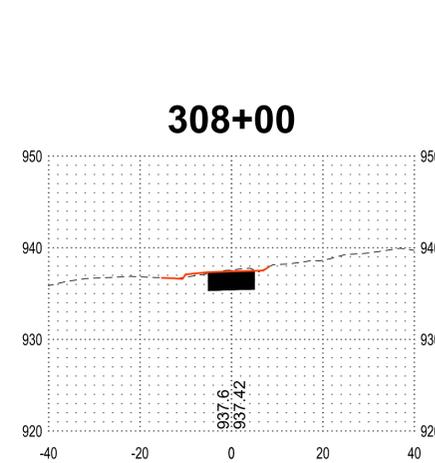
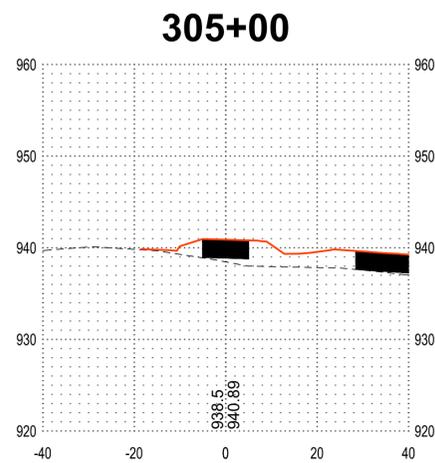
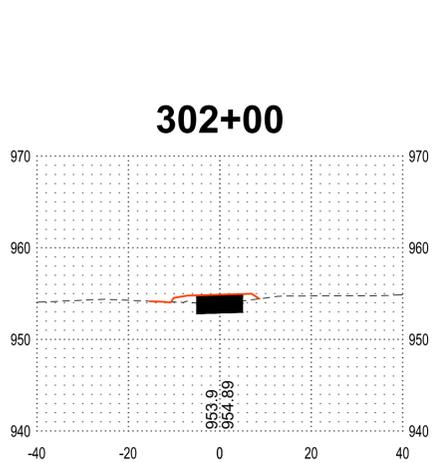
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-X SECTIONS-SEGMENT D
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

**CROSS SECTIONS
(SEGMENT D)**

SHEET **85** OF ---



SECTION VIEW LEGEND

NOTE: AS VIEWED IN THE DIRECTION OF INCREASING STATION

—	EXISTING GROUND
—	PROPOSED GROUND
—	EXISTING PAVEMENT
—	PROPOSED PAVEMENT
—	EXISTING GROUND E
—	PROPOSED GROUND E



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PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

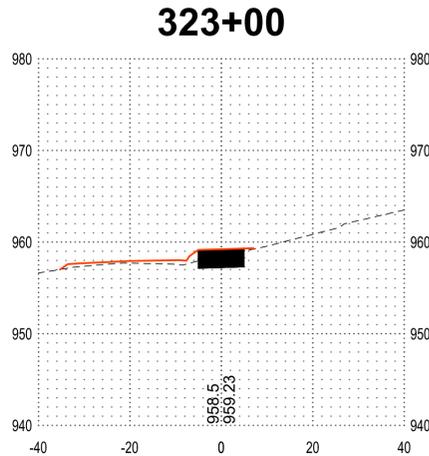
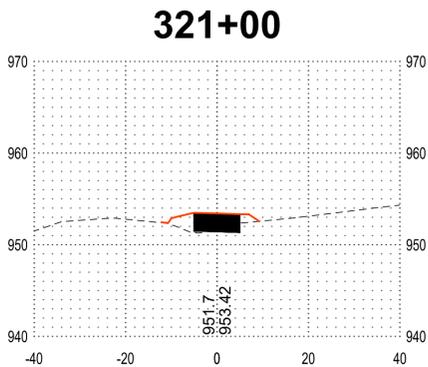
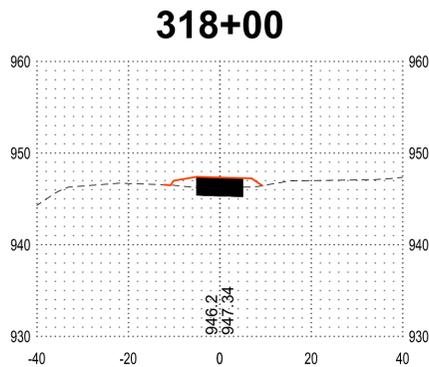
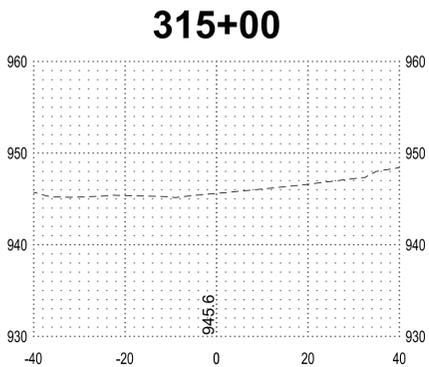
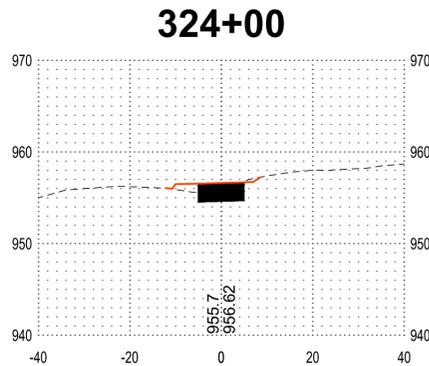
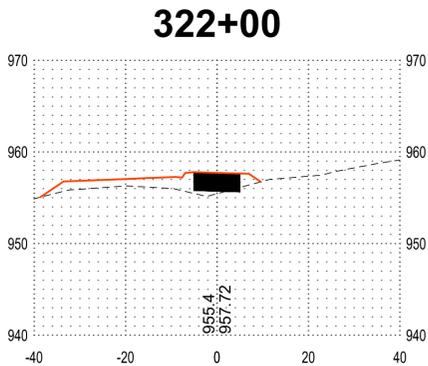
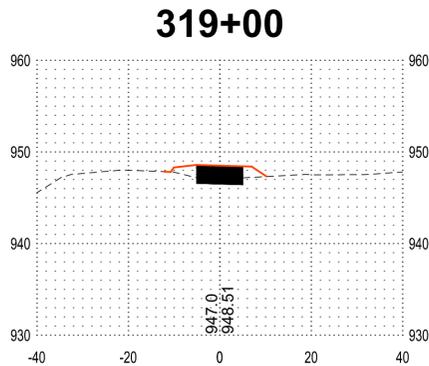
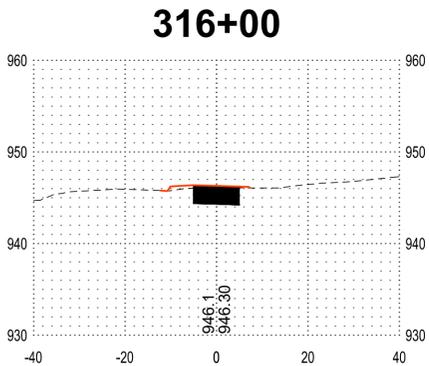
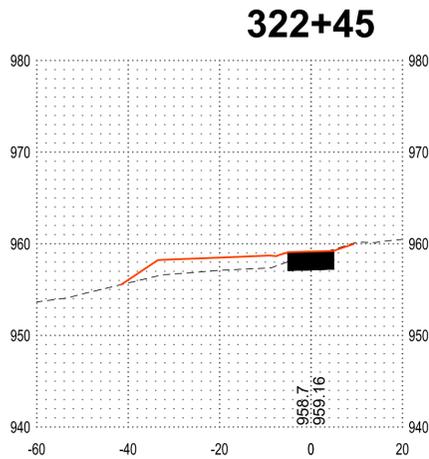
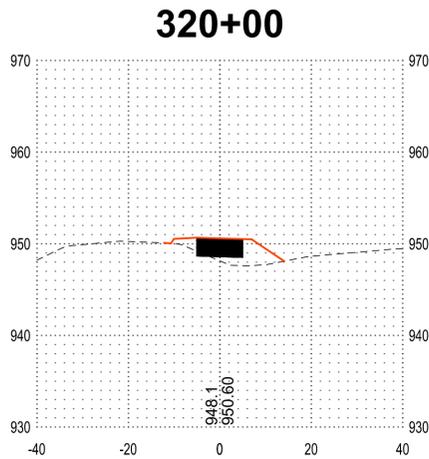
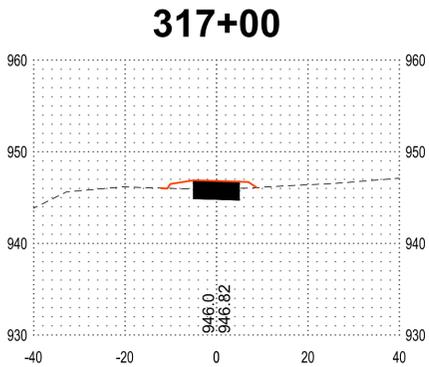
PROJECT NO.	23-30059
FILE NAME	30059-X SECTIONS-SEGMENT D
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE

CROSS SECTIONS (SEGMENT D)

SHEET

86 OF ---



SECTION VIEW LEGEND

NOTE: AS VIEWED IN THE DIRECTION OF INCREASING STATION

—	EXISTING GROUND
—	PROPOSED GROUND
—	EXISTING GROUND E
—	PROPOSED GROUND E



DEPARTMENT OF NATURAL RESOURCES



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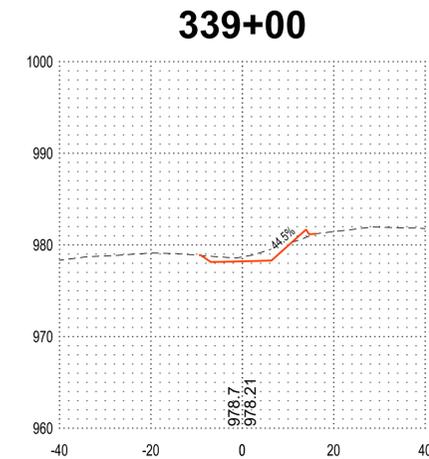
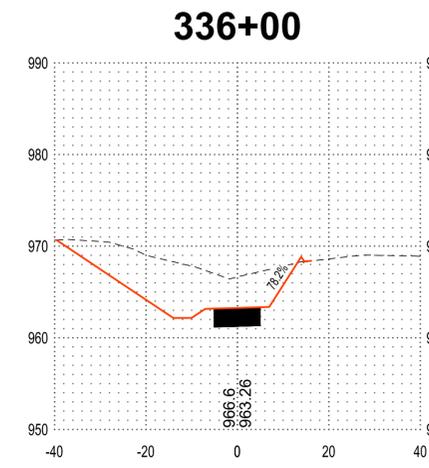
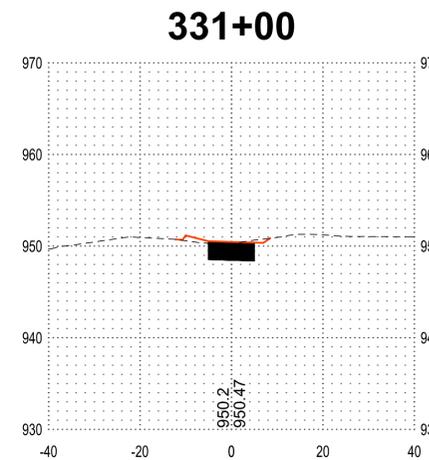
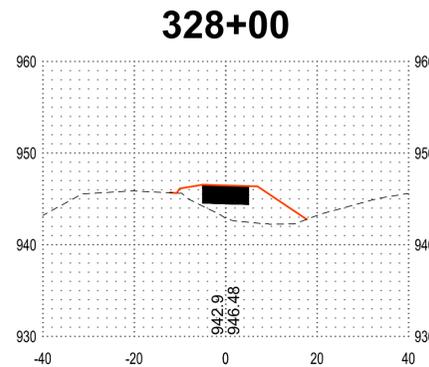
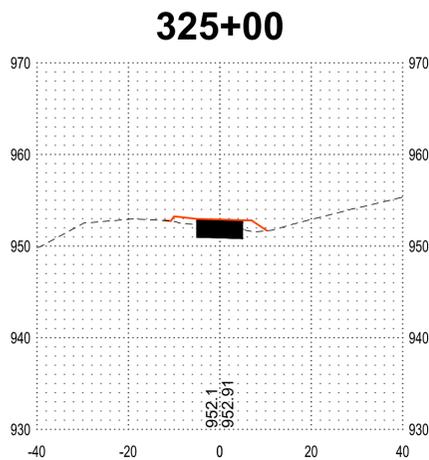
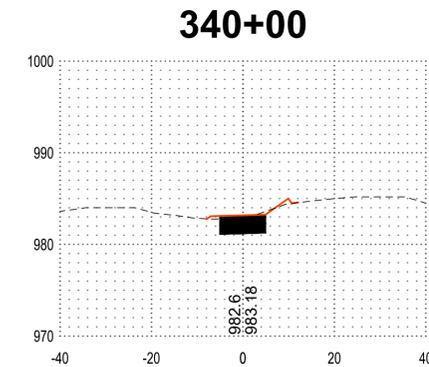
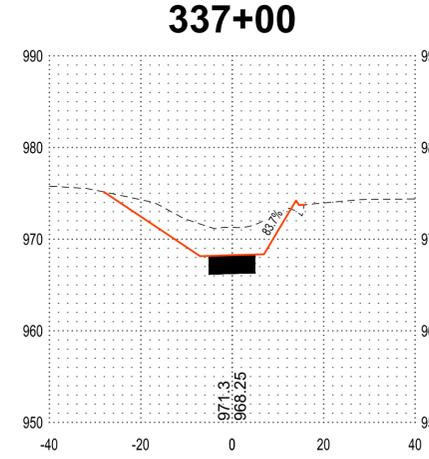
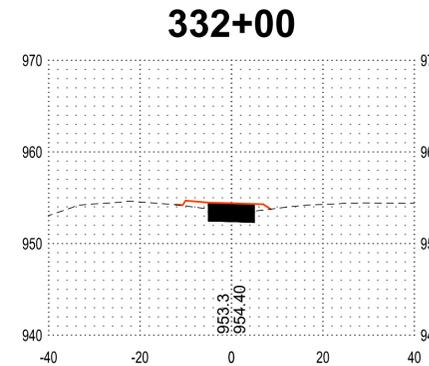
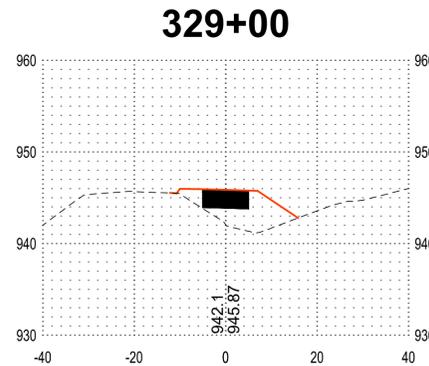
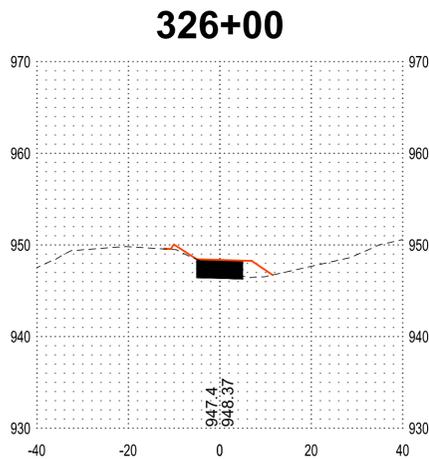
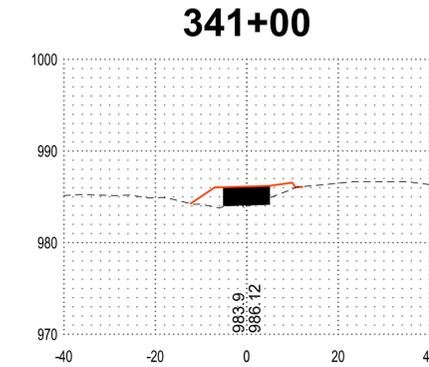
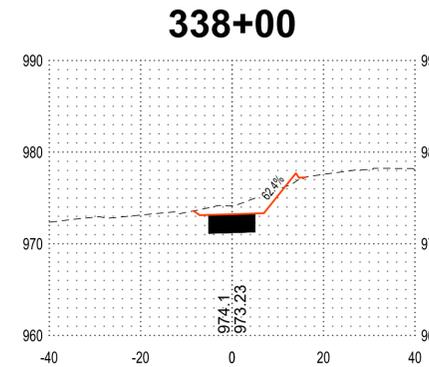
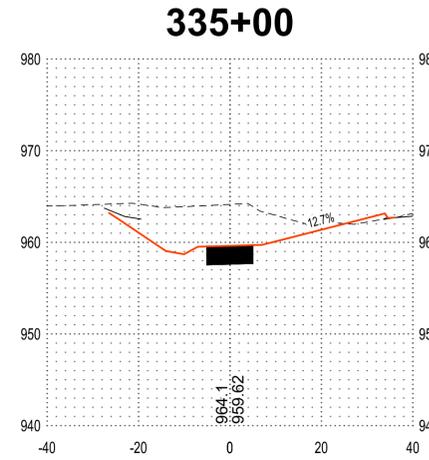
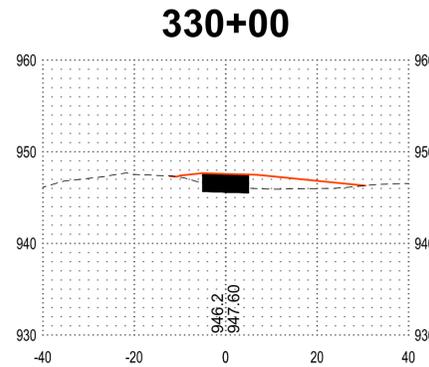
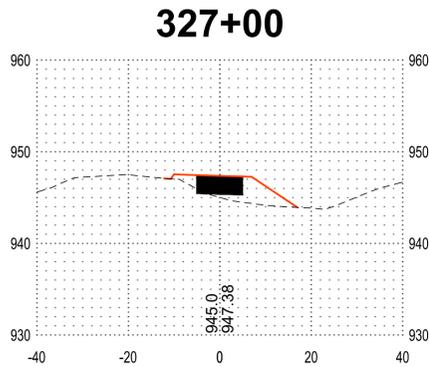
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-X SECTIONS-SEGMENT D
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
CROSS SECTIONS (SEGMENT D)

SHEET
87 OF ---



SECTION VIEW LEGEND

NOTE: AS VIEWED IN THE DIRECTION OF INCREASING STATION

—	EXISTING GROUND
—	PROPOSED GROUND
—	EXISTING GROUND 'E'
—	PROPOSED GROUND 'E'



DEPARTMENT OF
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PROJECT

**CITY OF
NORTHFIELD
MILL TOWNS
STATE TRAIL**

NORTHFIELD MN

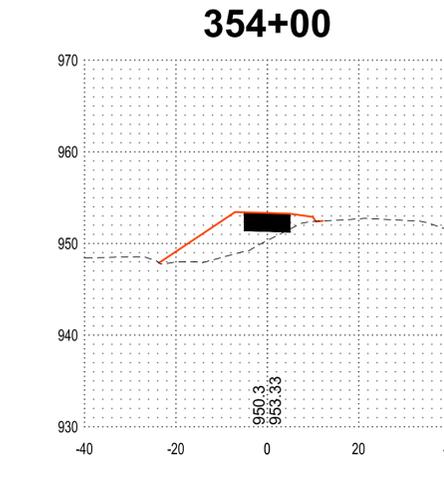
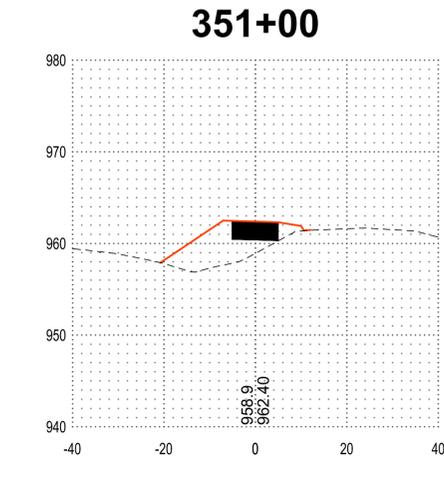
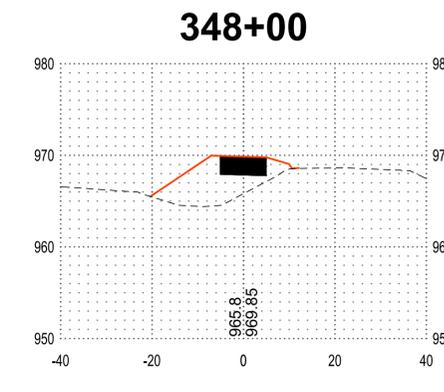
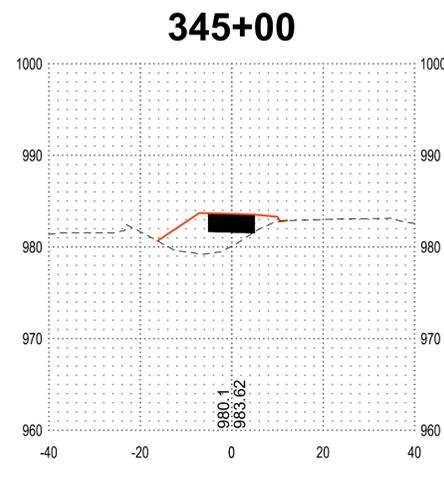
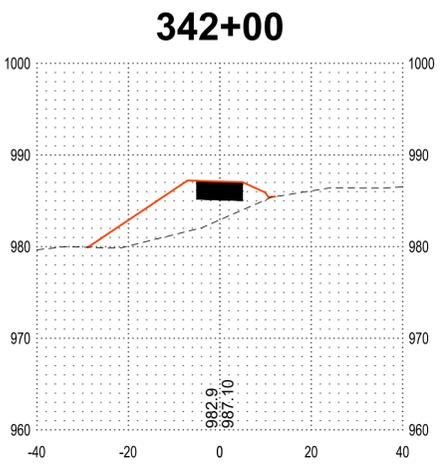
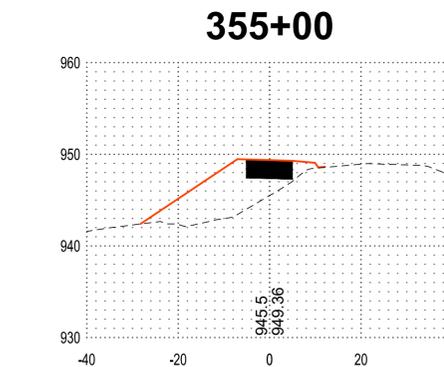
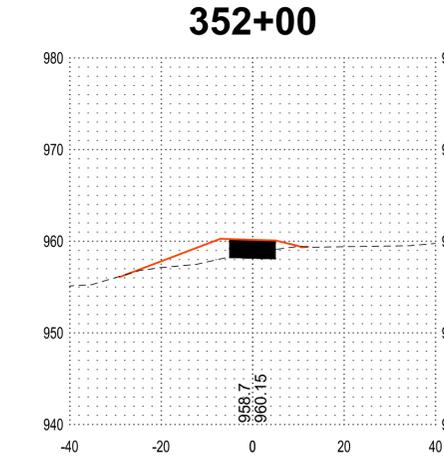
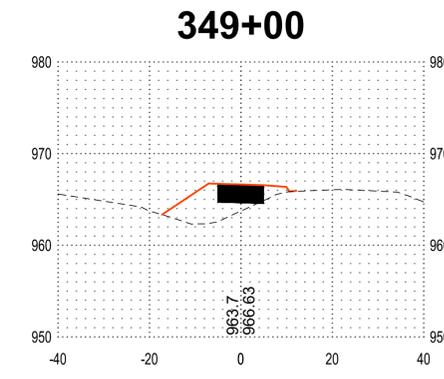
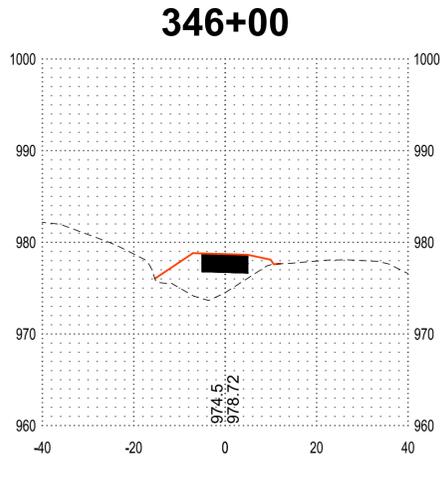
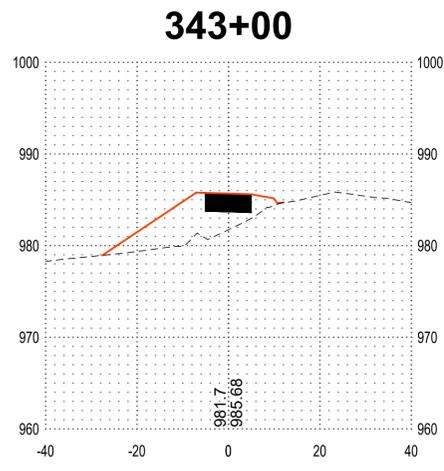
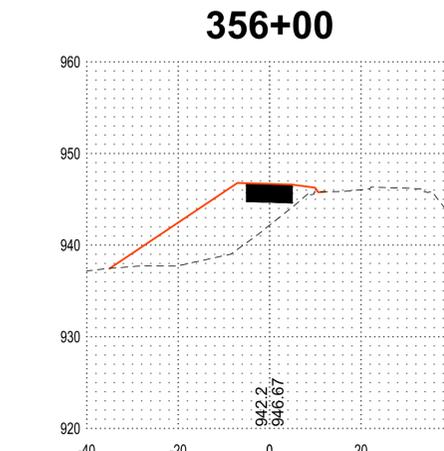
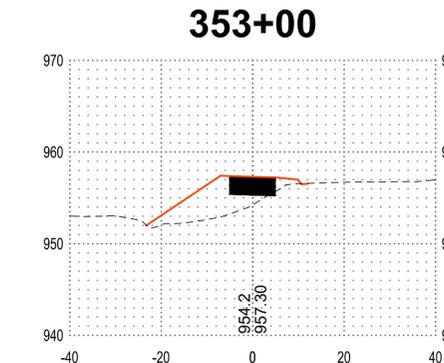
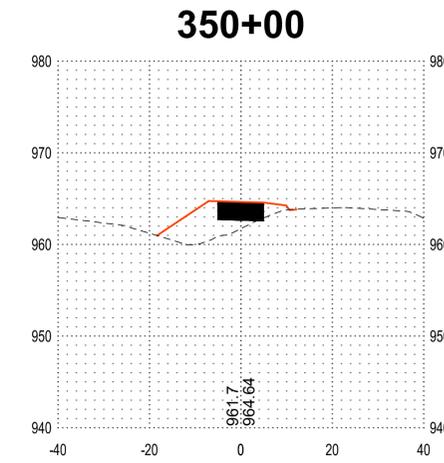
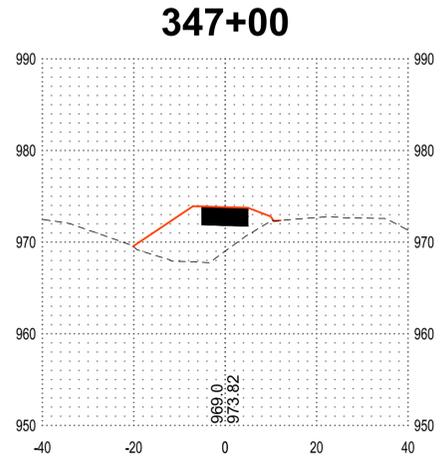
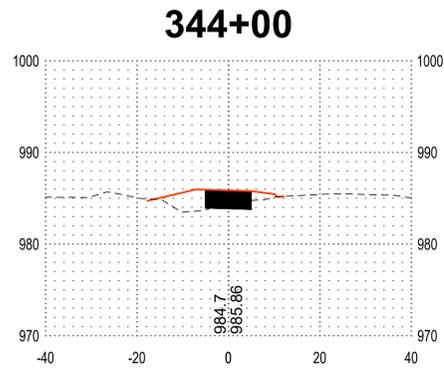
REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-X SECTIONS-SEGMENT D
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE

**CROSS SECTIONS
(SEGMENT D)**





SECTION VIEW LEGEND

NOTE: AS VIEWED IN THE DIRECTION OF INCREASING STATION

---	EXISTING GROUND
---	PROPOSED GROUND
---	EXISTING GROUND 'E'
---	PROPOSED GROUND 'E'



DEPARTMENT OF
NATURAL RESOURCES



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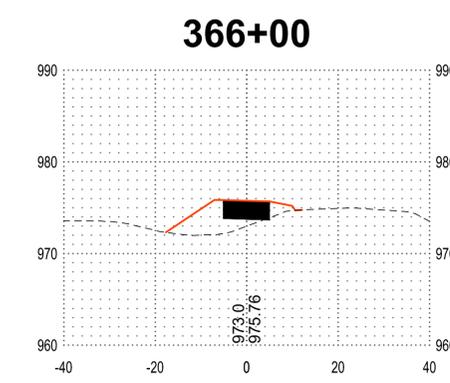
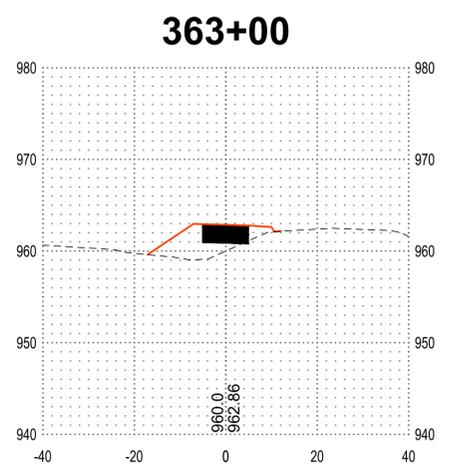
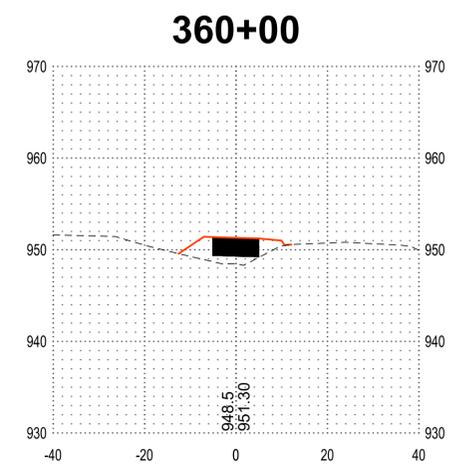
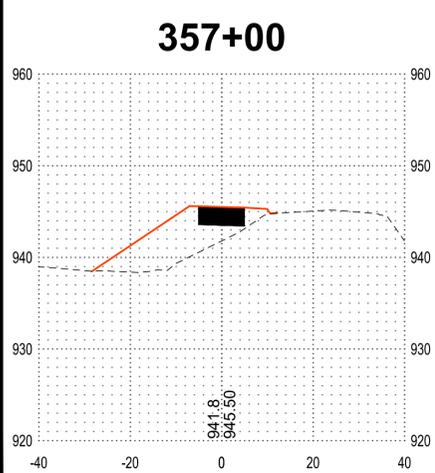
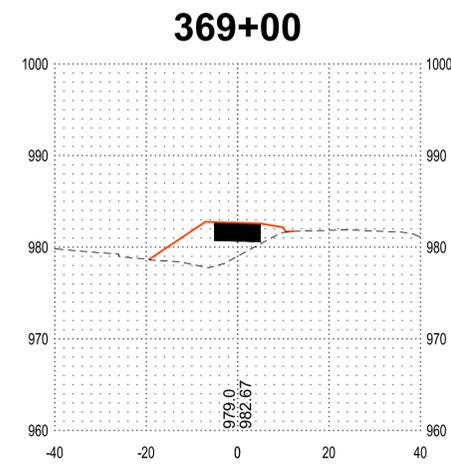
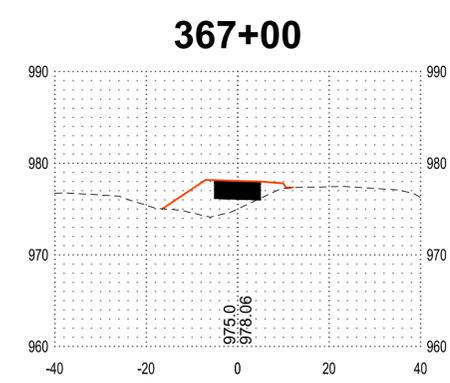
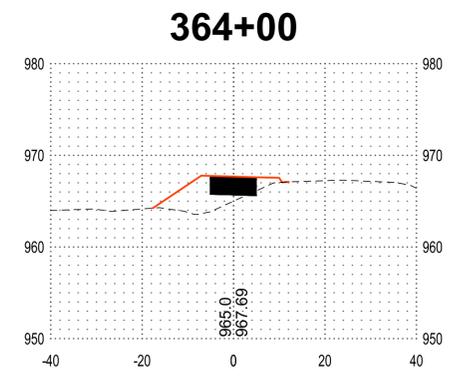
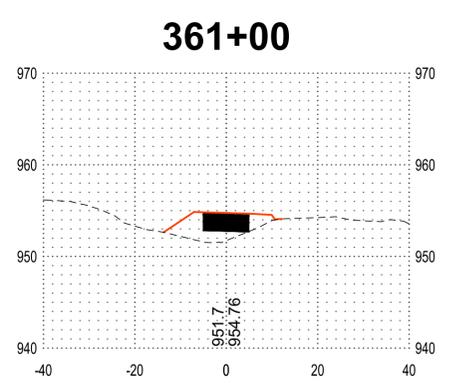
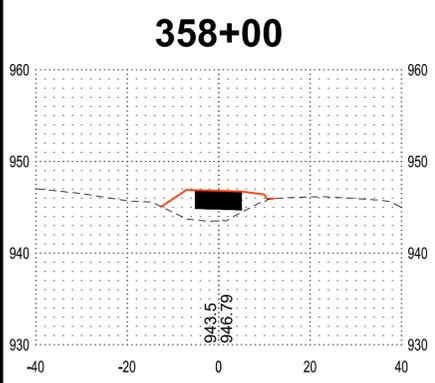
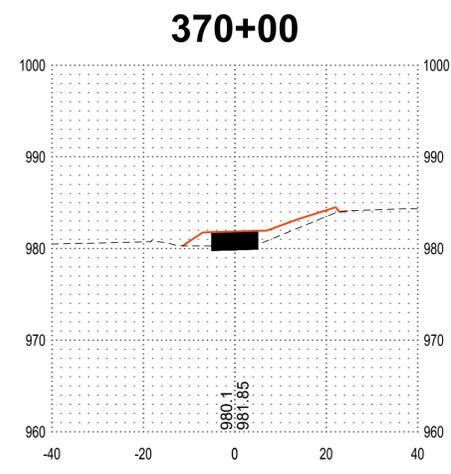
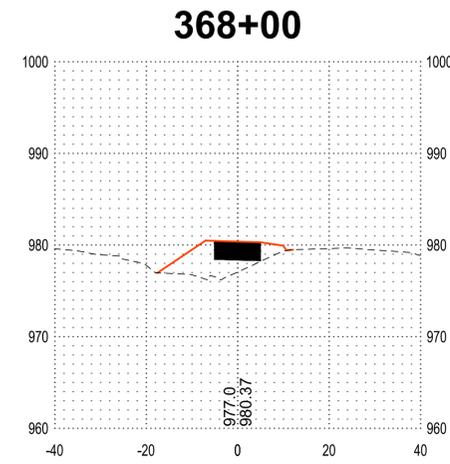
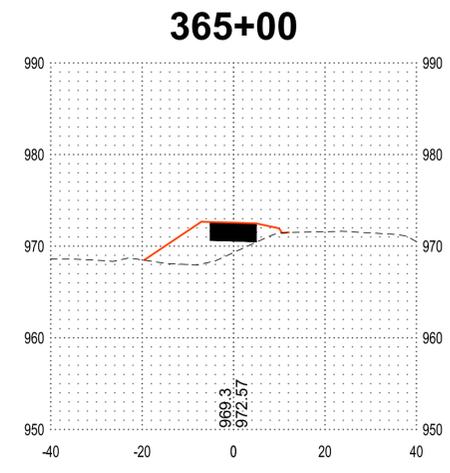
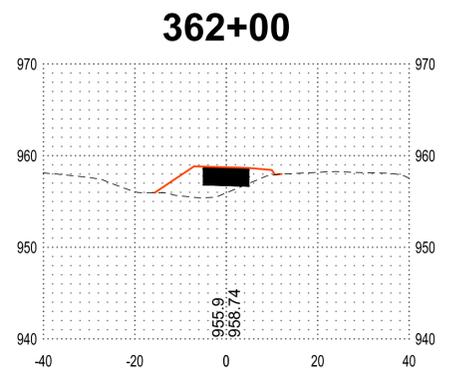
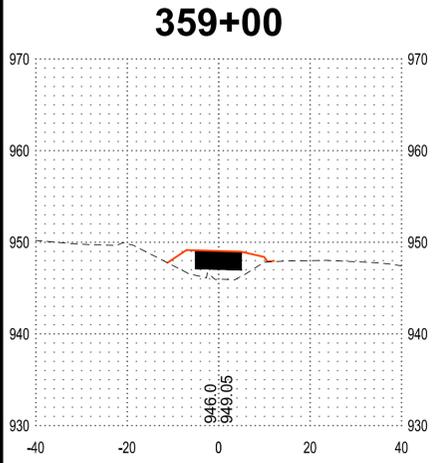
PROJECT
**CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL**

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-X SECTIONS-SEGMENT D
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
**CROSS SECTIONS
(SEGMENT D)**





SECTION VIEW LEGEND

NOTE: ALL VIEWED IN THE DIRECTION OF INCREASING STATION	
	EXISTING GROUND
	PROPOSED GROUND
	EXISTING GROUND E
	PROPOSED GROUND E



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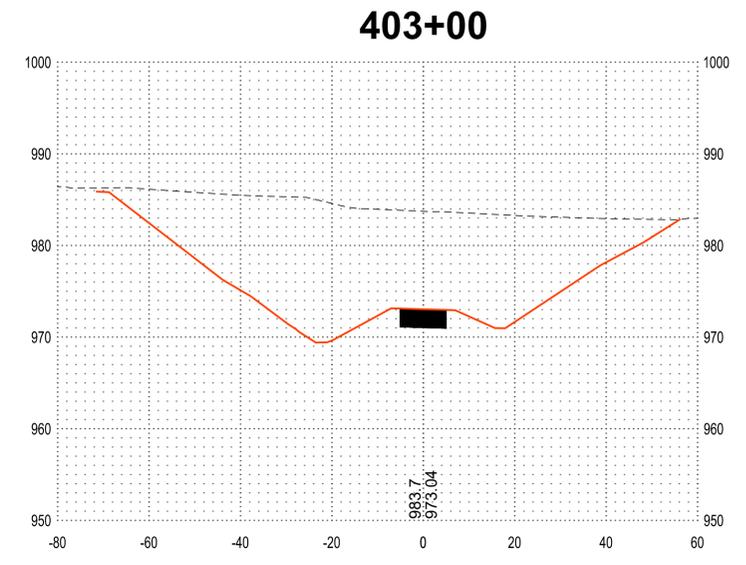
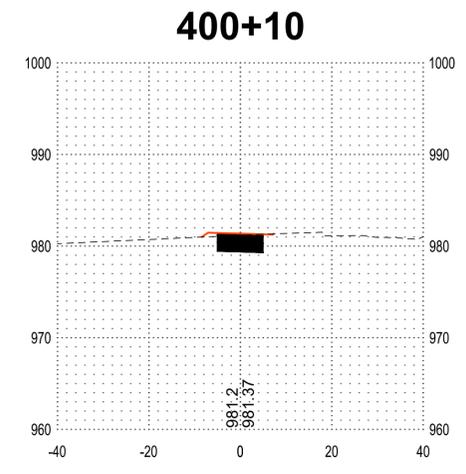
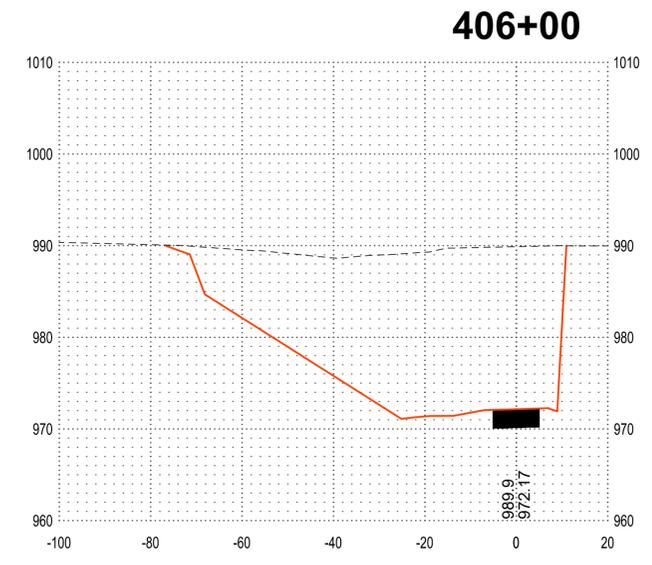
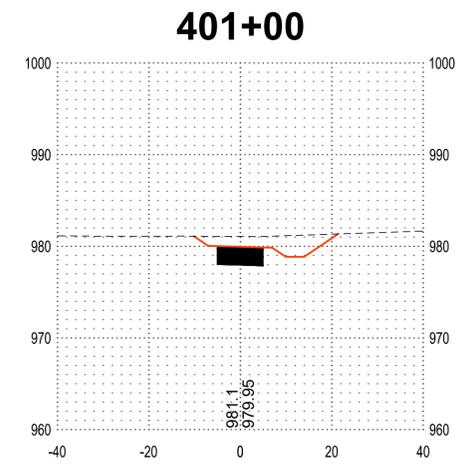
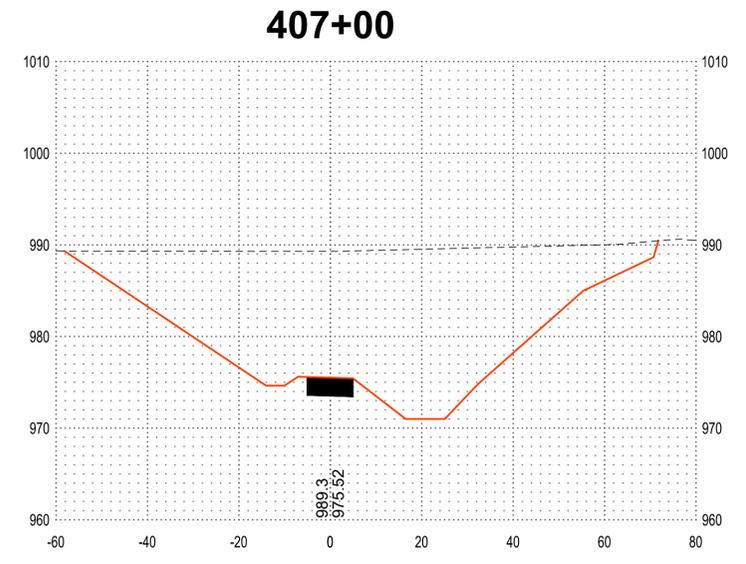
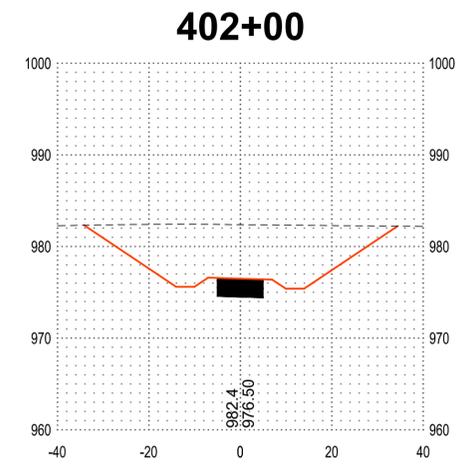
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-X SECTIONS-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
CROSS SECTIONS (SEGMENT E)

SHEET
90 OF ---





SECTION VIEW LEGEND

NOTE: ALL VIEWS IN THE DIRECTION OF INCREASING STATION

---	EXISTING GROUND
---	PROPOSED GROUND
---	PROPOSED GROUND 'E'
---	PROPOSED GROUND 'C'



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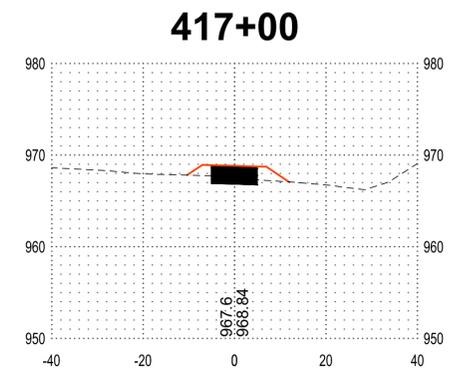
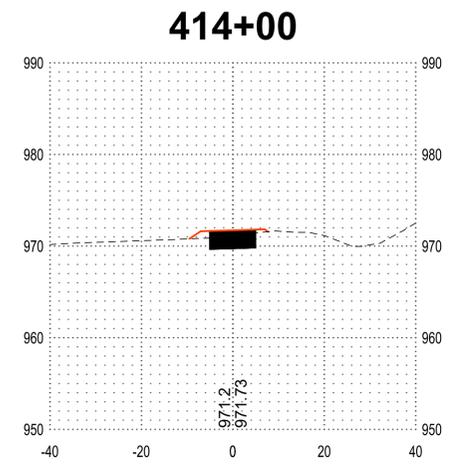
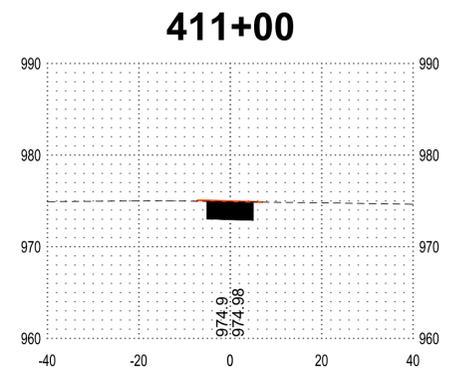
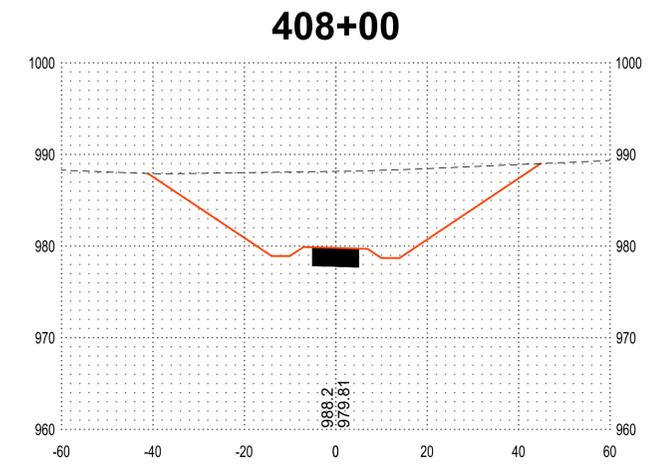
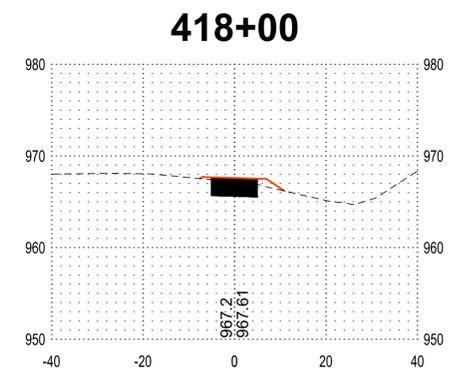
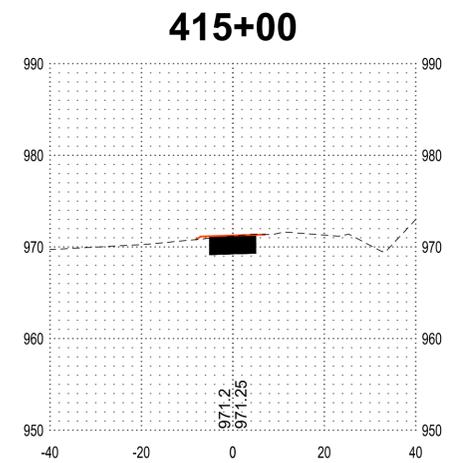
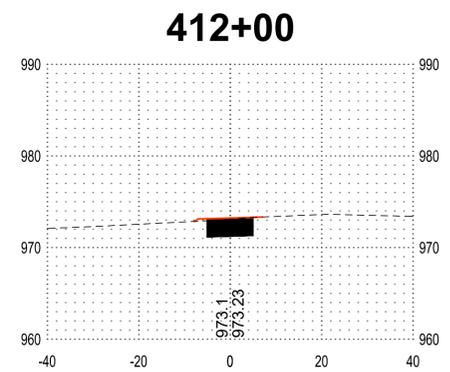
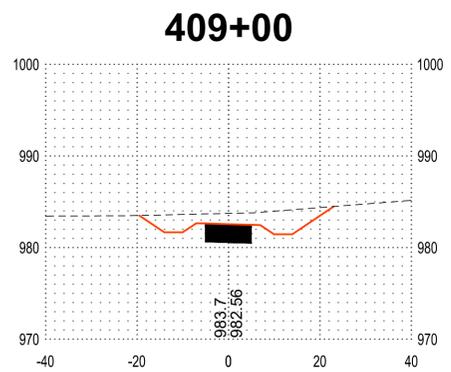
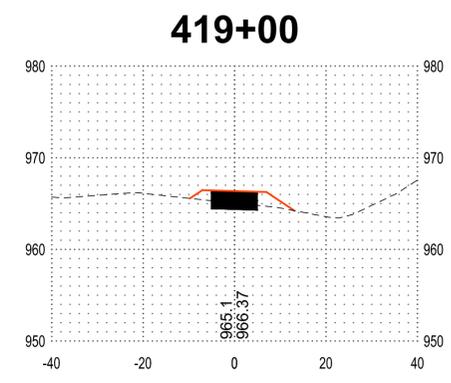
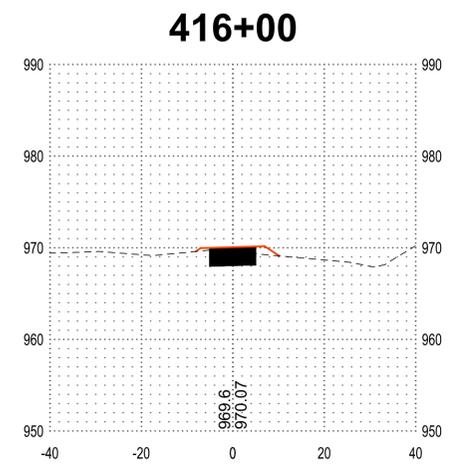
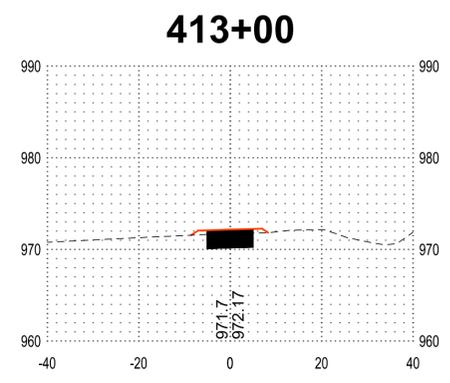
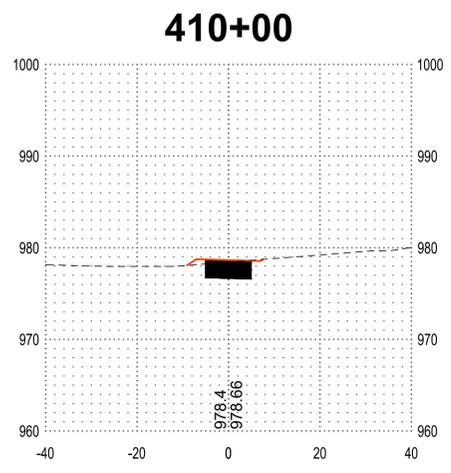
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
 NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-X SECTIONS-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
CROSS SECTIONS (SEGMENT E)

SHEET
91 OF ---





SECTION VIEW LEGEND

NOTE: ALL VIEWS IN THE DIRECTION OF INCREASING STATION

	EXISTING GROUND
	PROPOSED GROUND
	PROPOSED GROUND E
	PROPOSED GROUND F



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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
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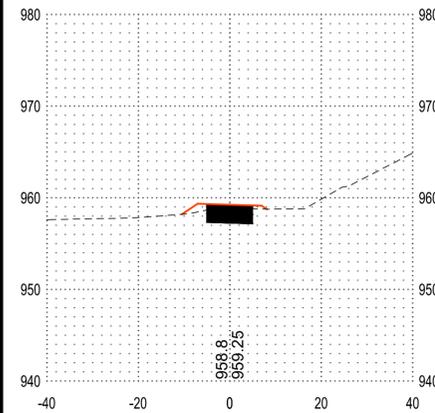
REVISION SCHEDULE		
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PROJECT NO.	23-30059
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DRAWN BY	OBO/BJK
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CLIENT PROJECT NO.	-

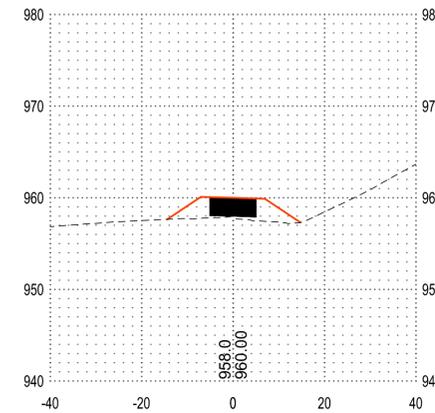
TITLE
CROSS SECTIONS (SEGMENT E)

SHEET
92 OF ---

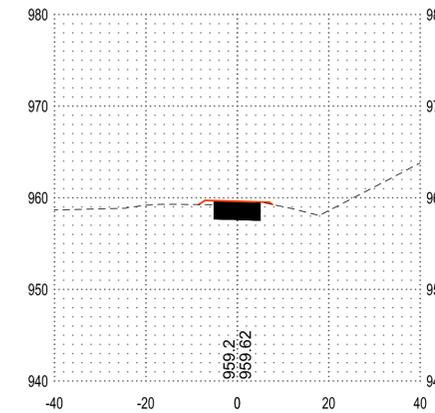
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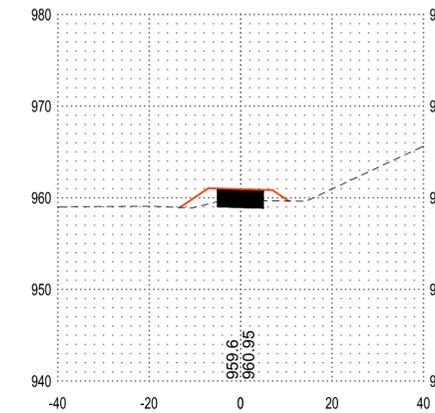
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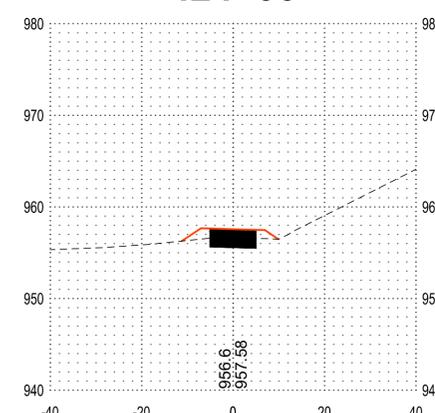
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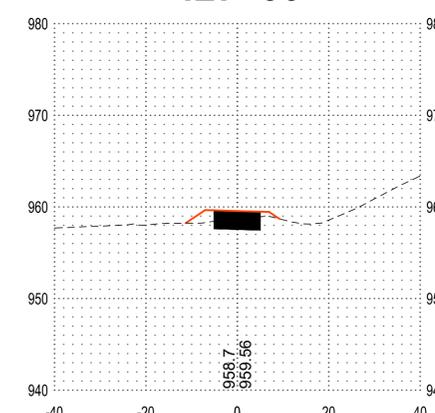
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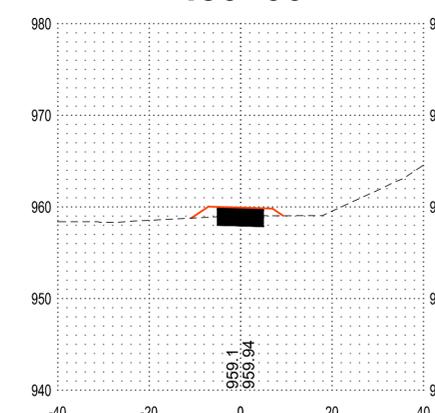
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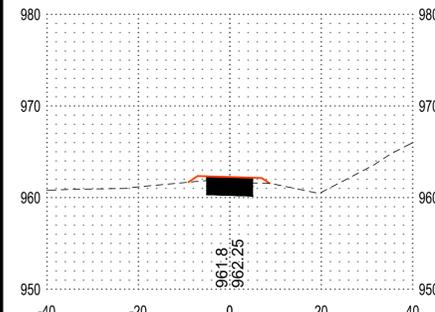
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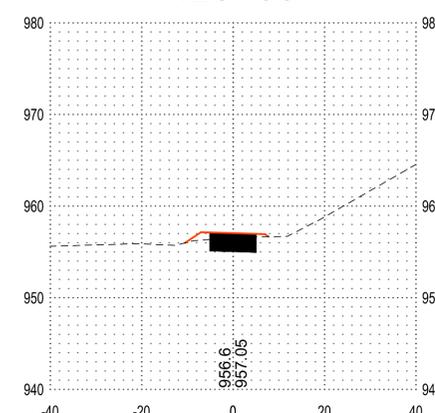
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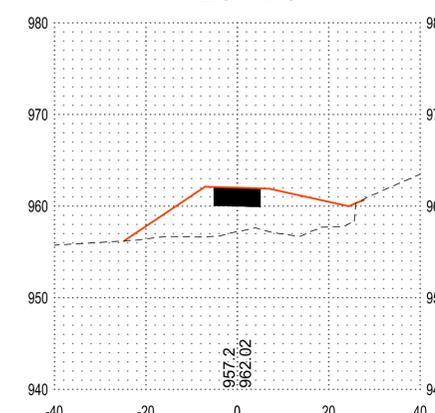
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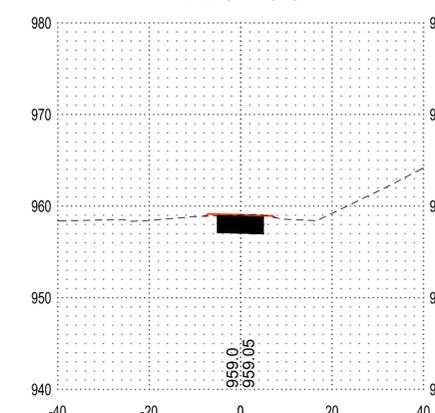
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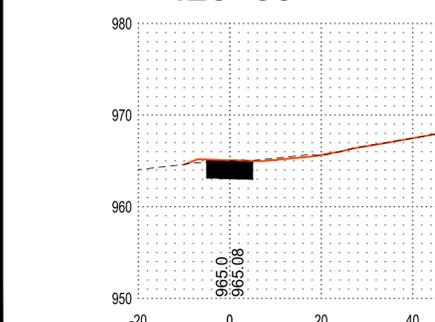
425+75



429+00



420+00





SECTION VIEW LEGEND

NOTE: ALL VIEWED IN THE DIRECTION OF INCREASING STATION

	EXISTING GROUND
	PROPOSED GROUND
	PROPOSED STRUCTURE
	PROPOSED SIDEWALK



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PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

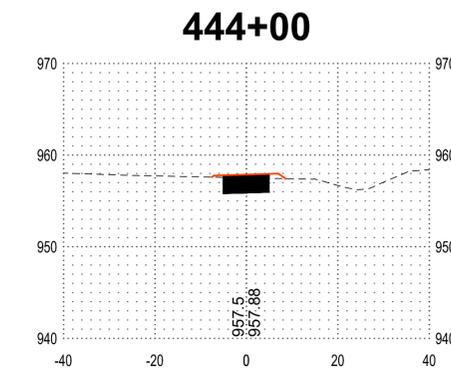
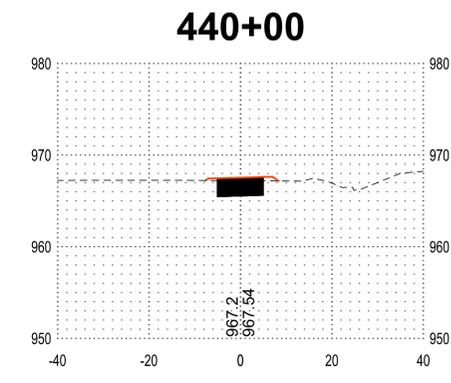
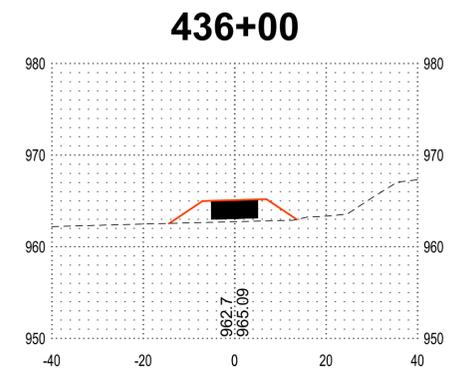
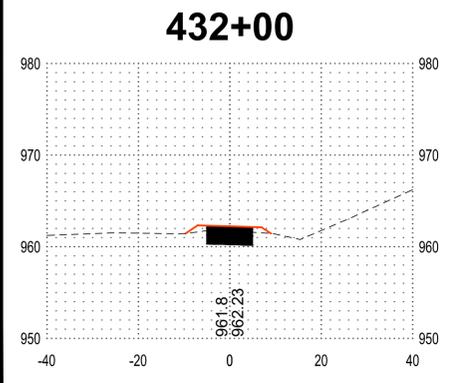
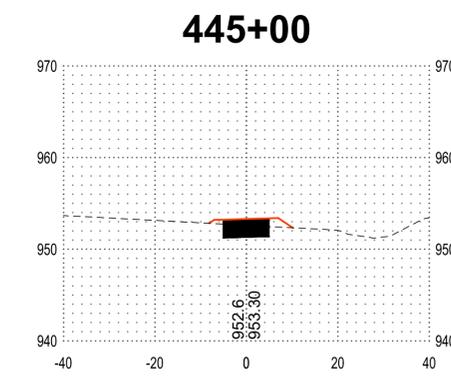
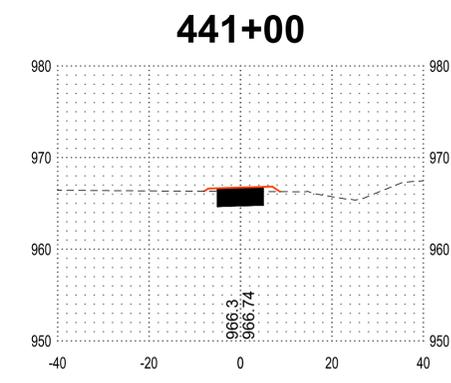
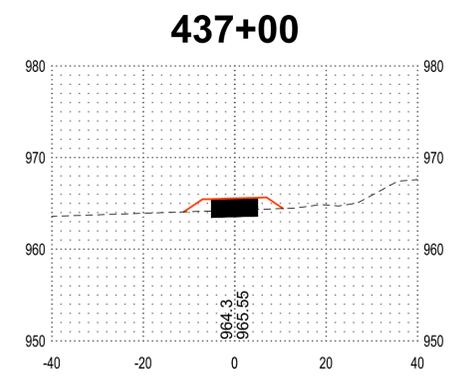
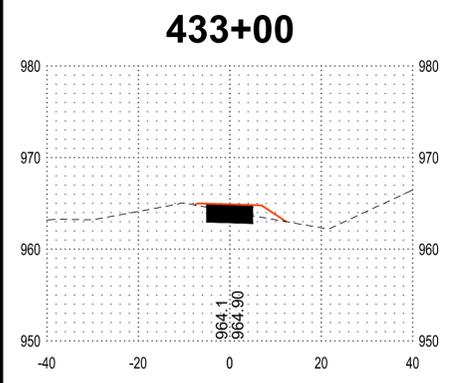
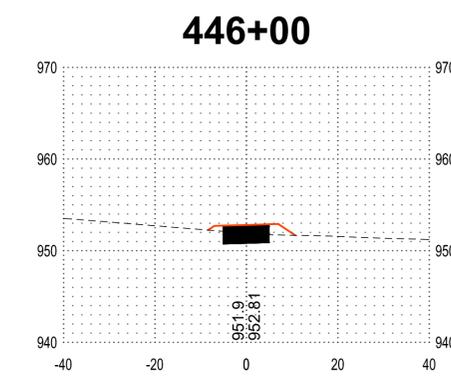
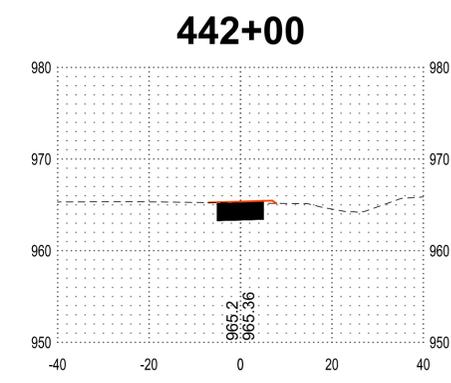
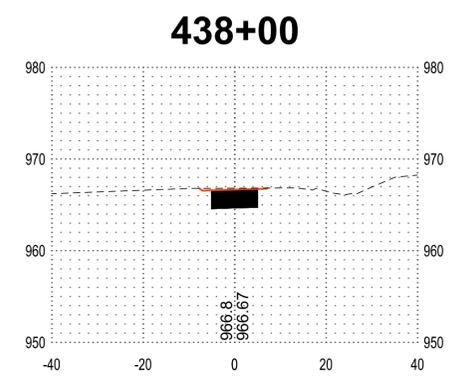
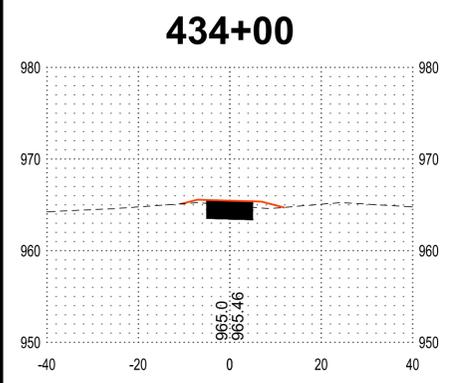
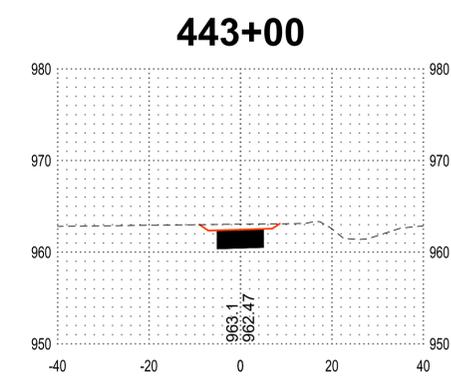
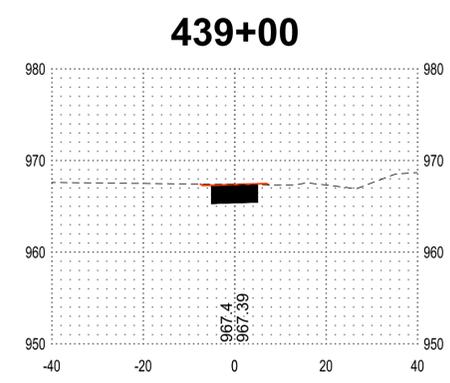
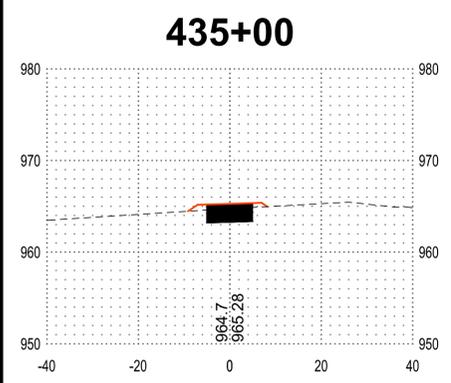
PROJECT NO.	23-30059
FILE NAME	30059-X SECTIONS-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
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CLIENT PROJECT NO.	-

TITLE

CROSS SECTIONS (SEGMENT E)

SHEET

93 OF ---





SECTION VIEW LEGEND

NOTE: ALL VIEWED IN THE DIRECTION OF INCREASING STATION	
	EXISTING GROUND
	PROPOSED GROUND
	PROPOSED STRUCTURE
	PROPOSED SIDEWALK



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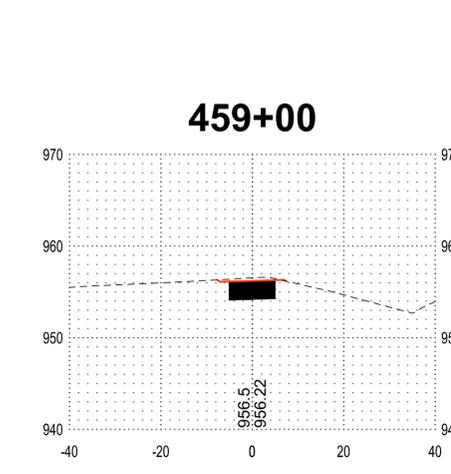
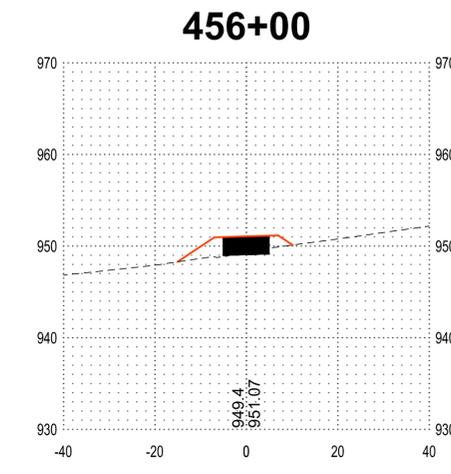
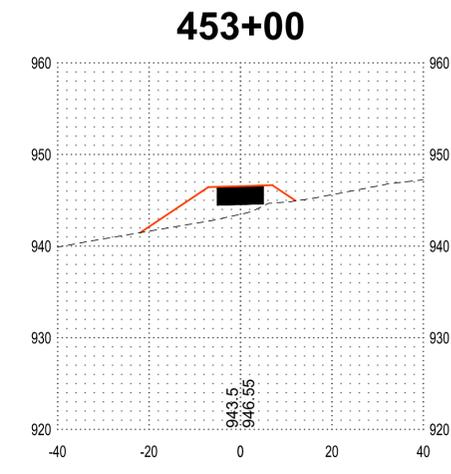
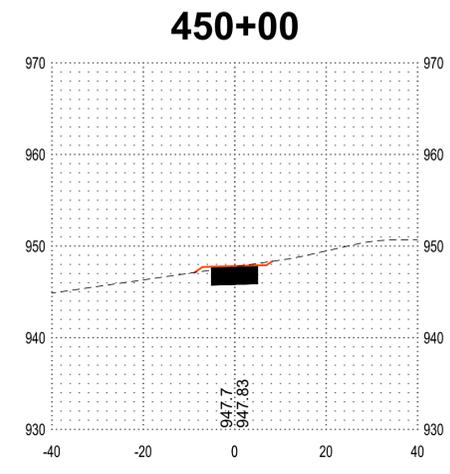
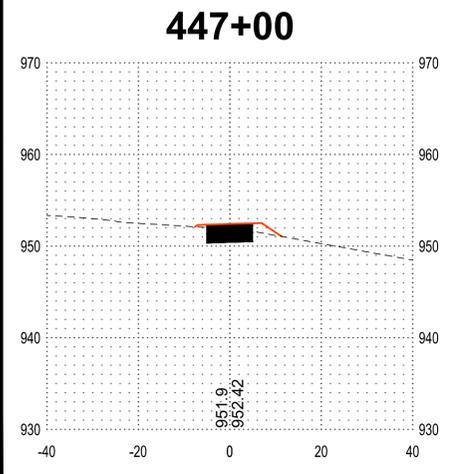
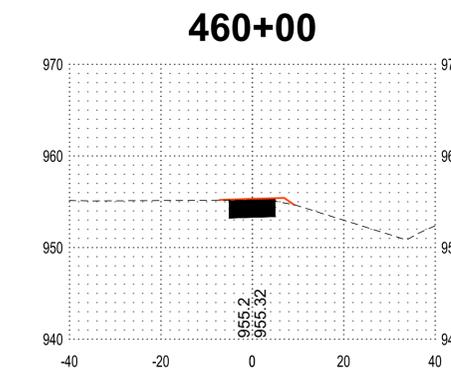
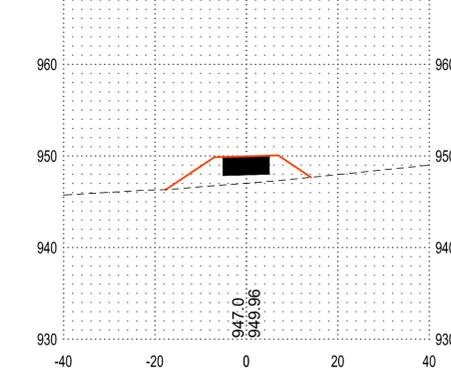
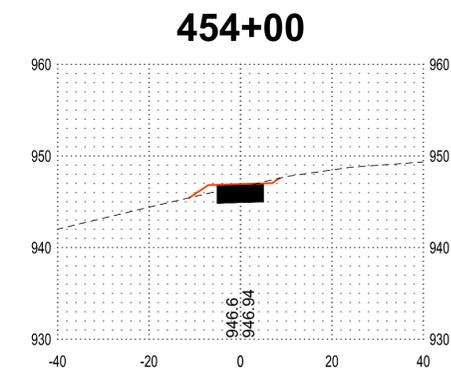
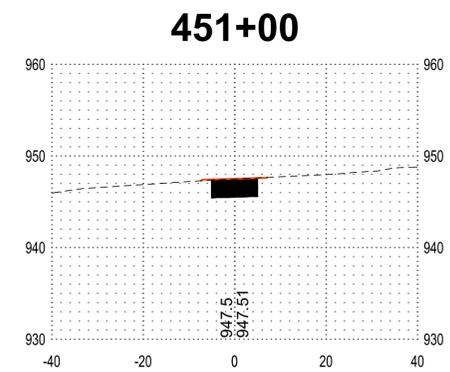
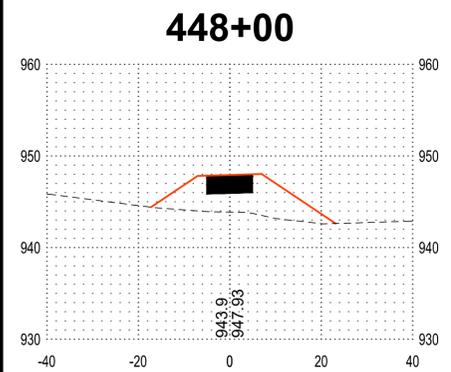
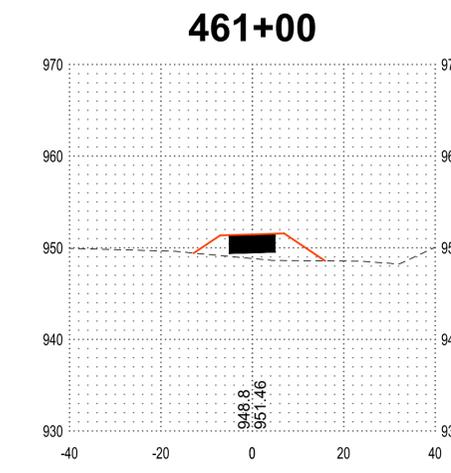
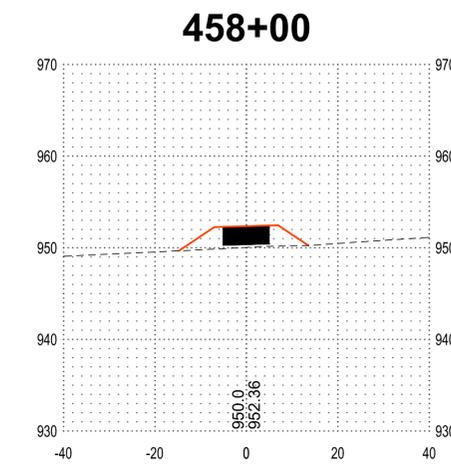
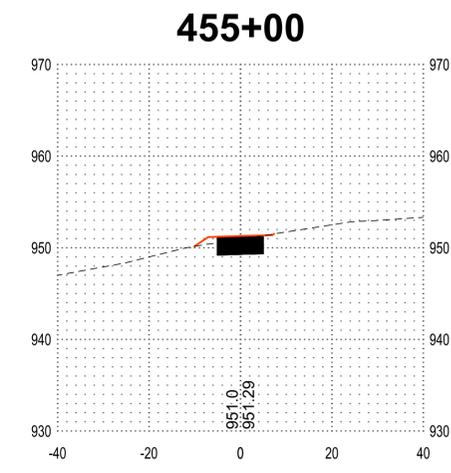
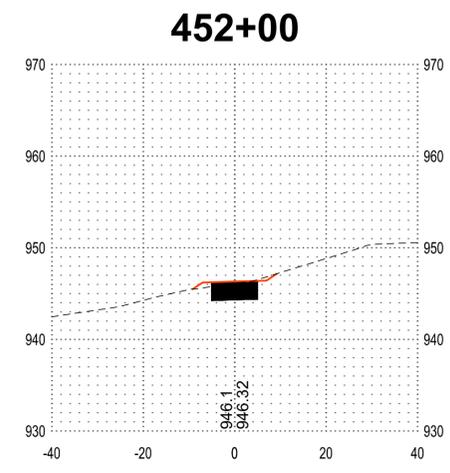
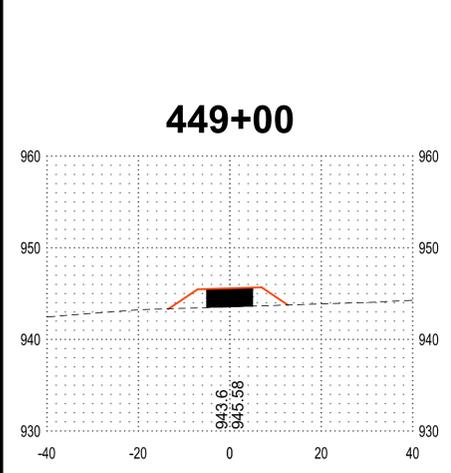
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
 NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-X SECTIONS-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
CROSS SECTIONS (SEGMENT E)

SHEET
94 OF ---





SECTION VIEW LEGEND

NOTE: ALL VIEWS IN THE DIRECTION OF INCREASING STATION.

---	EXISTING GROUND
---	PROPOSED GROUND
---	PROPOSED GROUND 'E'
---	PROPOSED GROUND 'C'



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PROJECT

CITY OF NORTHFIELD

MILL TOWNS STATE TRAIL

NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

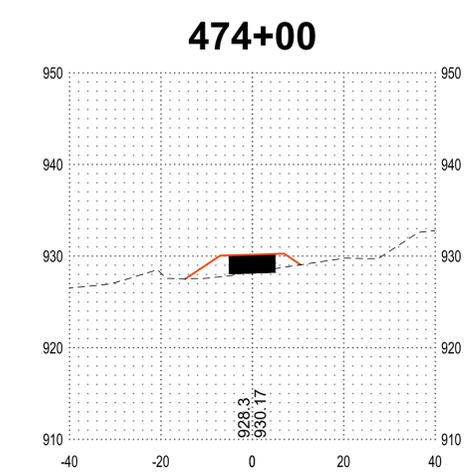
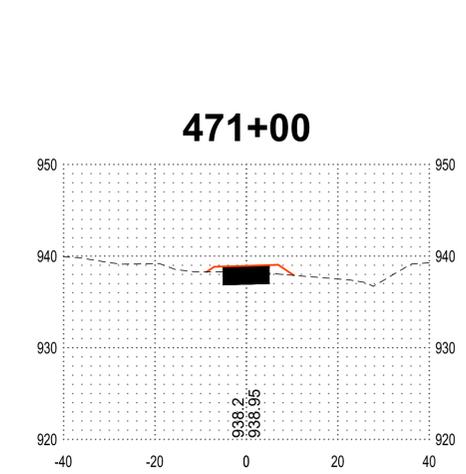
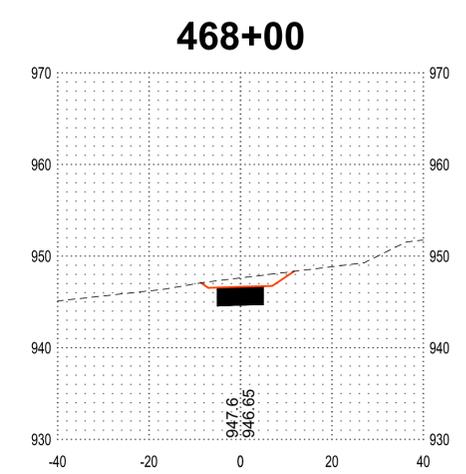
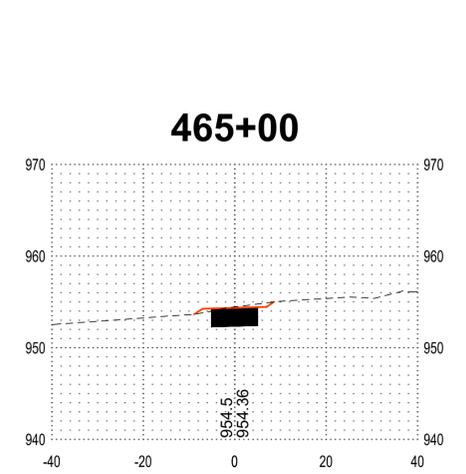
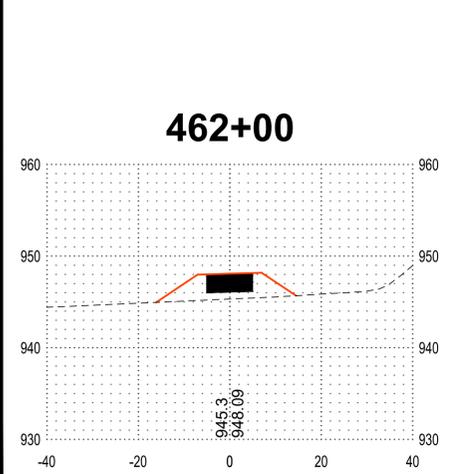
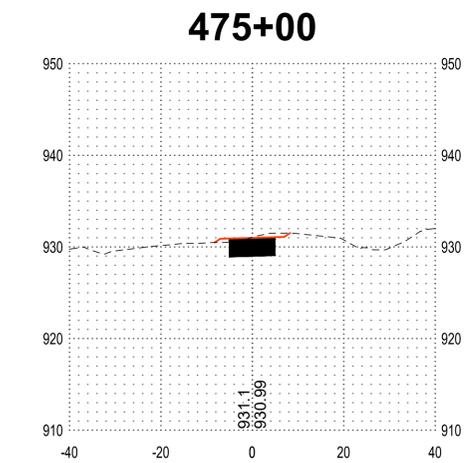
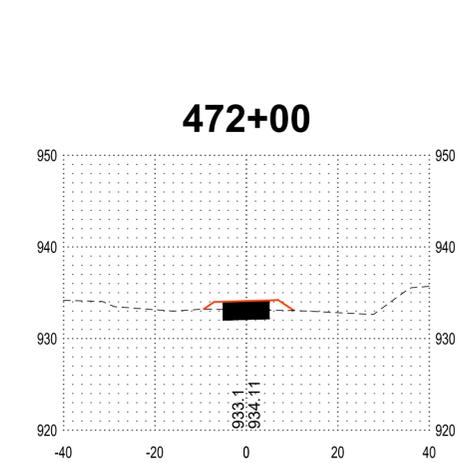
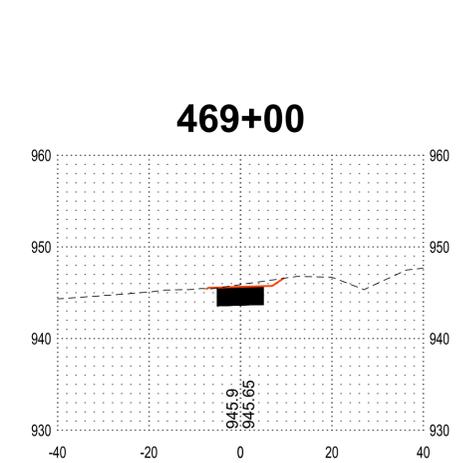
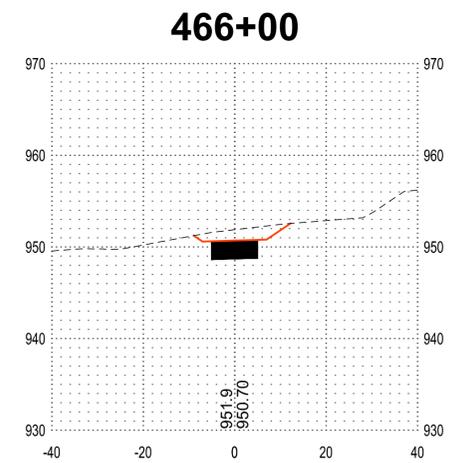
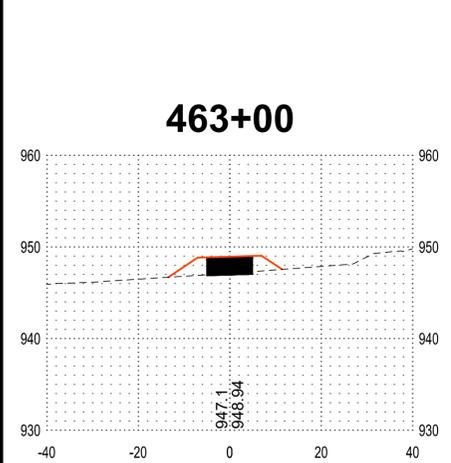
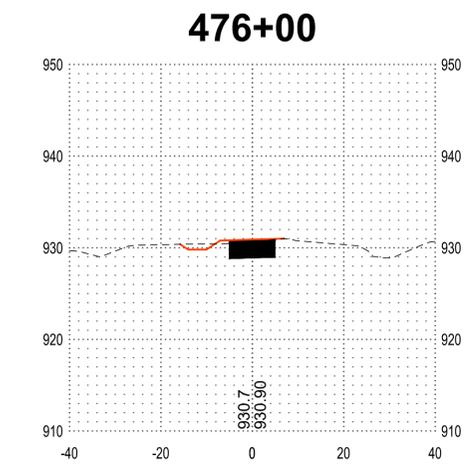
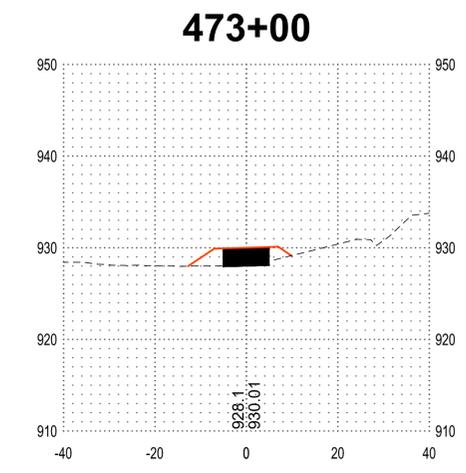
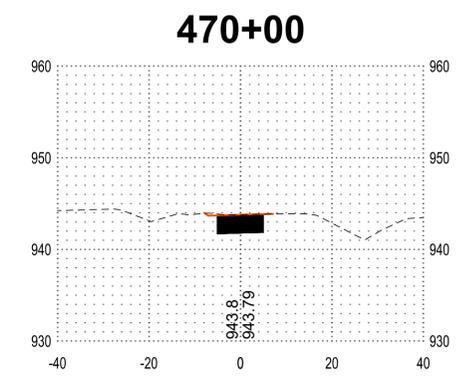
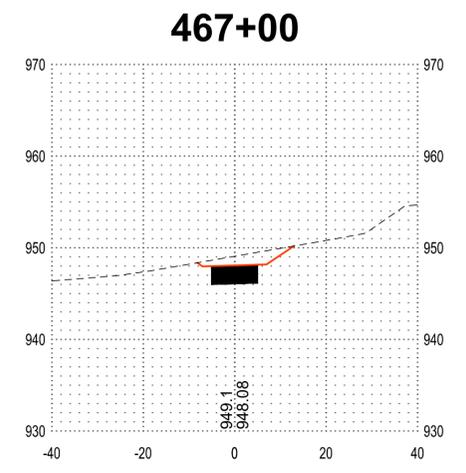
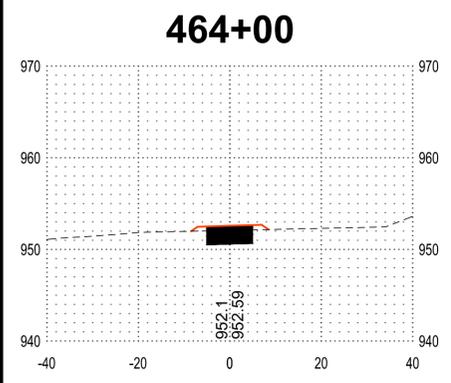
PROJECT NO.	23-30059
FILE NAME	30059-X SECTIONS-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE

CROSS SECTIONS (SEGMENT E)

SHEET

95 OF ---





SECTION VIEW LEGEND

NOTE: ALL VIEWS IN THE DIRECTION OF INCREASING STATION	
	EXISTING GROUND
	PROPOSED GROUND
	PROPOSED STRUCTURE
	PROPOSED PAVEMENT



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PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
 NORTHFIELD MN

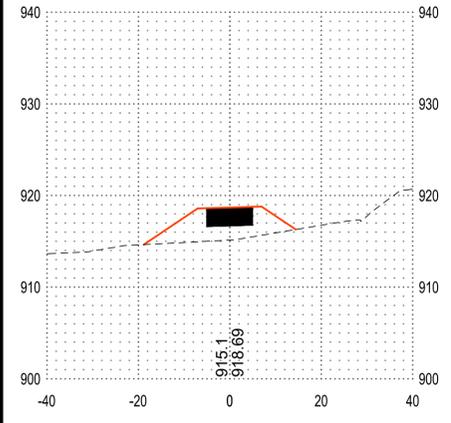
REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-X SECTIONS-SEGMENT E
DRAWN BY	OBO/BJK
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CLIENT PROJECT NO.	-

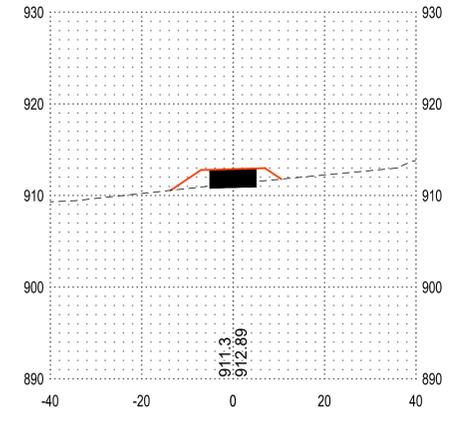
TITLE
CROSS SECTIONS (SEGMENT E)

SHEET
96 OF ---

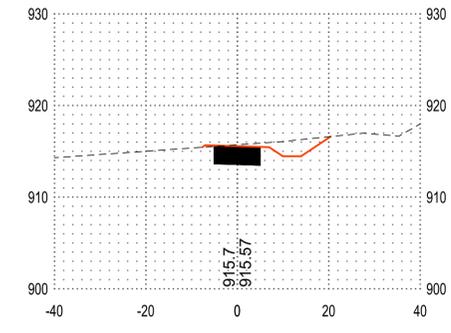
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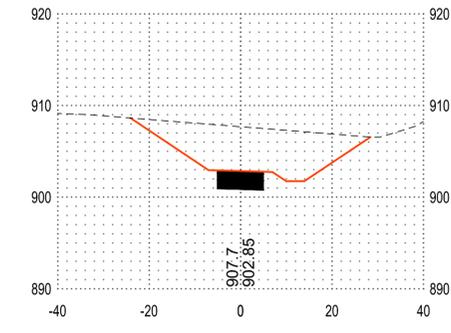
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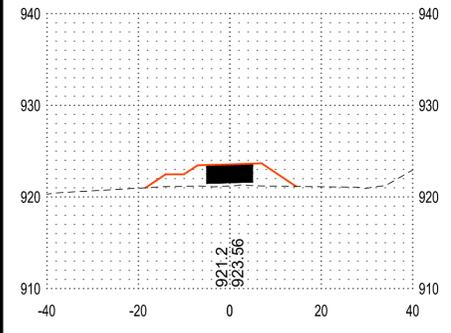
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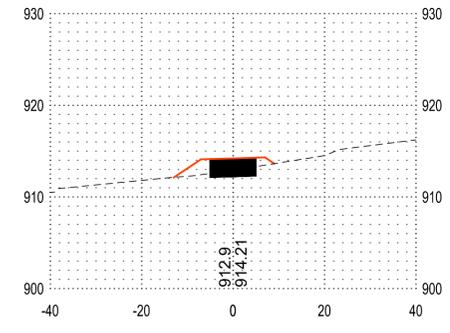
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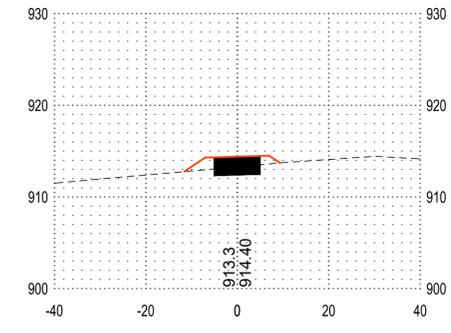
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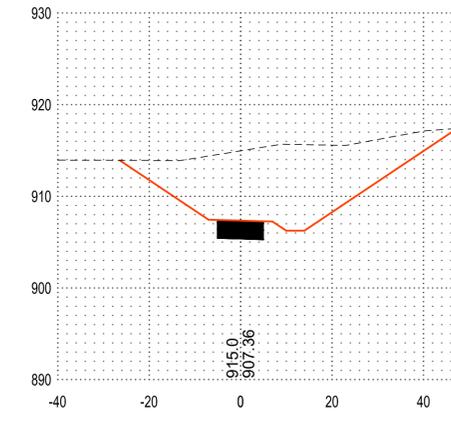
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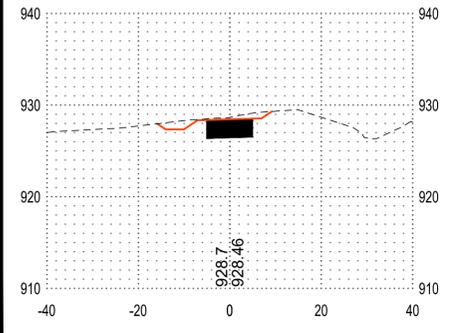
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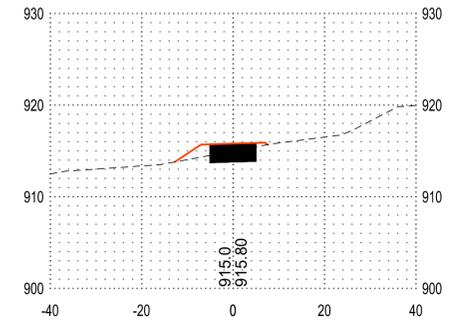
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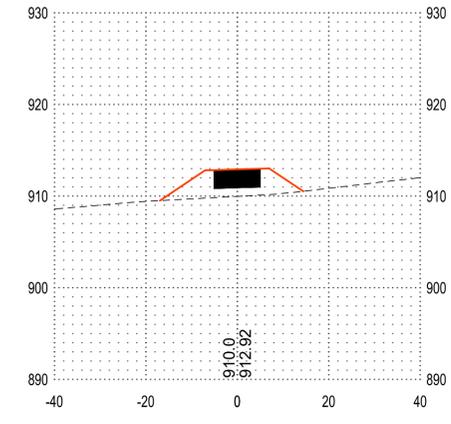
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SECTION VIEW LEGEND

NOTE: ALL VIEWED IN THE DIRECTION OF INCREASING STATION	
	EXISTING GROUND
	PROPOSED GROUND
	PROPOSED GROUND E
	PROPOSED GROUND E



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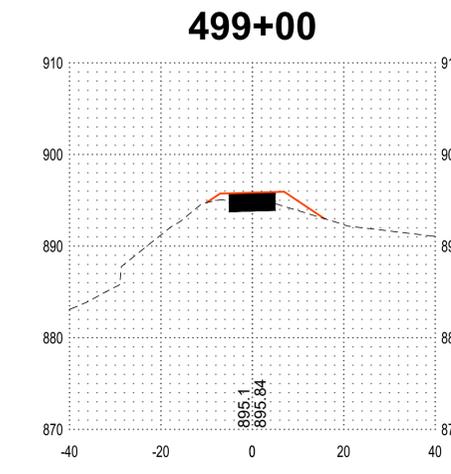
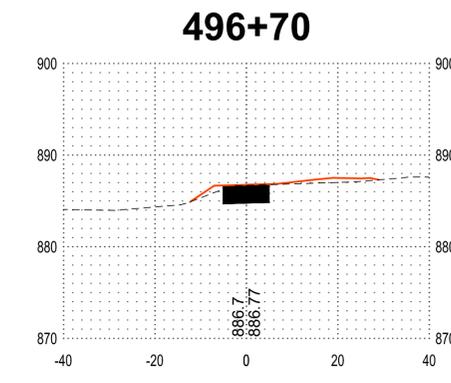
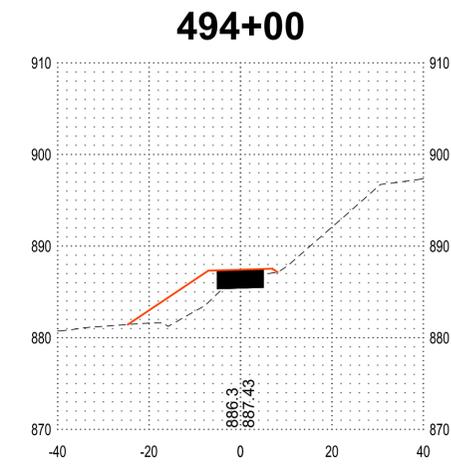
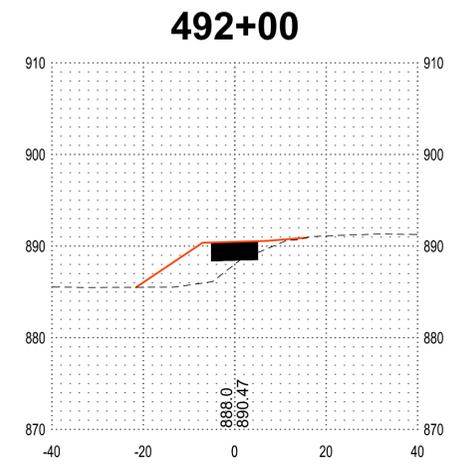
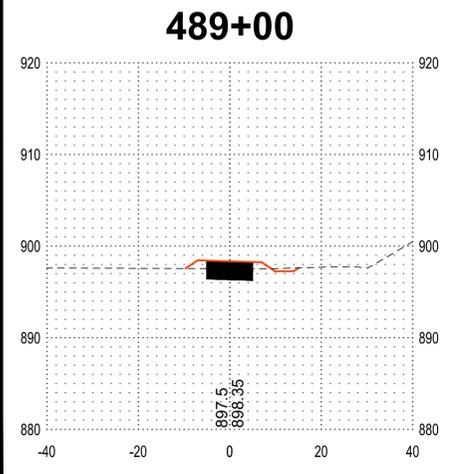
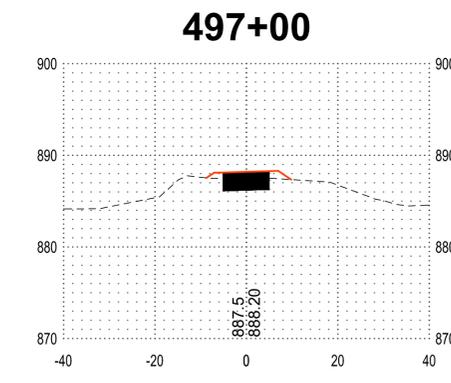
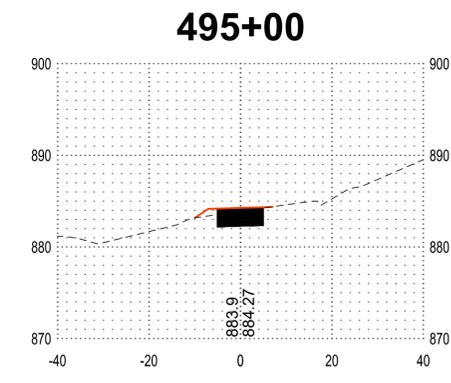
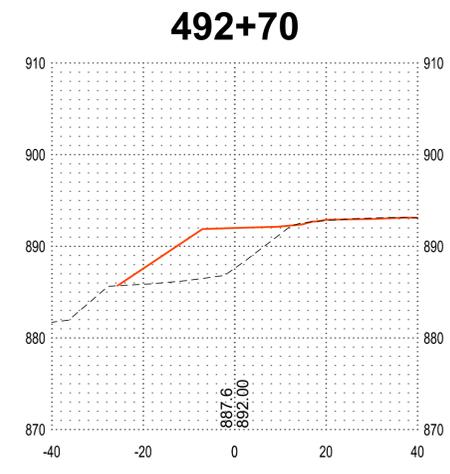
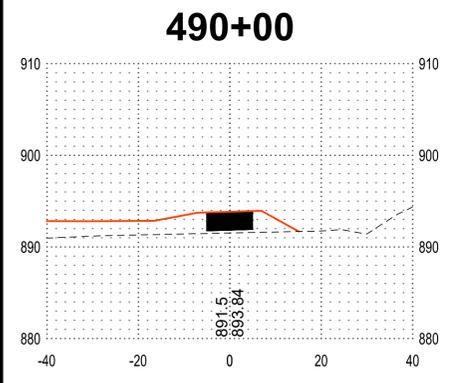
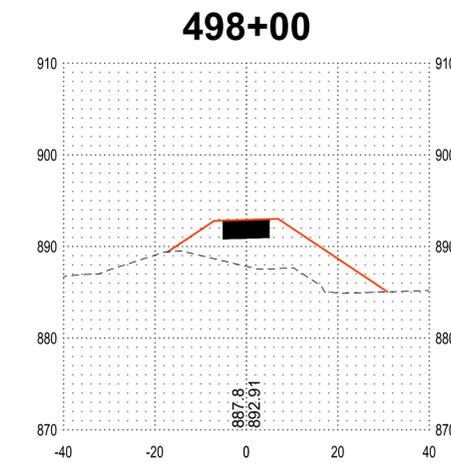
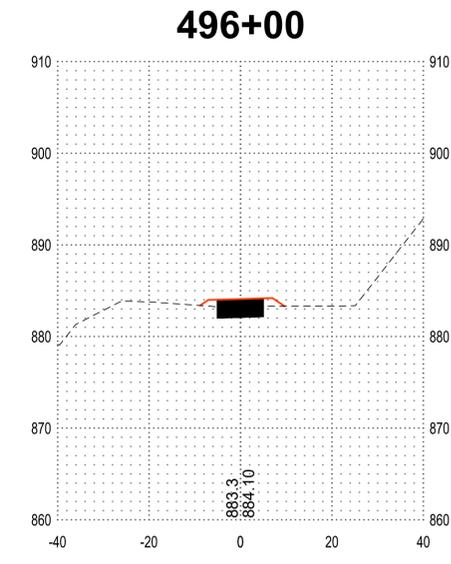
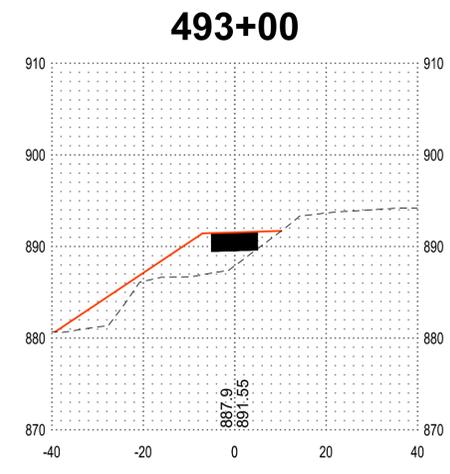
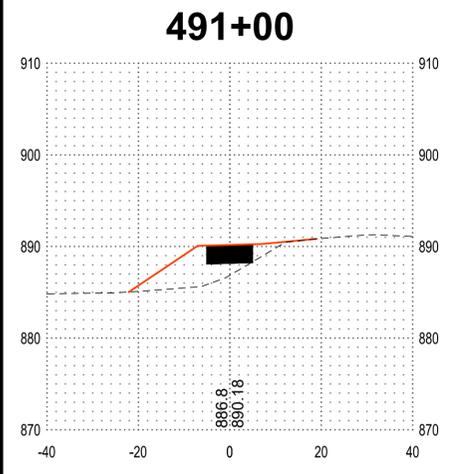
PROJECT
CITY OF NORTHFIELD
MILL TOWNS STATE TRAIL
 NORTHFIELD MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-30059
FILE NAME	30059-X SECTIONS-SEGMENT E
DRAWN BY	OBO/BJK
DESIGNED BY	KJR
REVIEWED BY	KJR
ORIGINAL ISSUE DATE	--/--
CLIENT PROJECT NO.	-

TITLE
CROSS SECTIONS (SEGMENT E)

SHEET
97 OF ---





SECTION VIEW LEGEND

NOTE: AS VIEWED IN THE DIRECTION OF INCREASING STATION	
	EXISTING GROUND
	PROPOSED GROUND
	PROPOSED GROUND E
	EXISTING GROUND E



DEPARTMENT OF
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**CITY OF
NORTHFIELD
MILL TOWNS
STATE TRAIL**

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REVISION SCHEDULE

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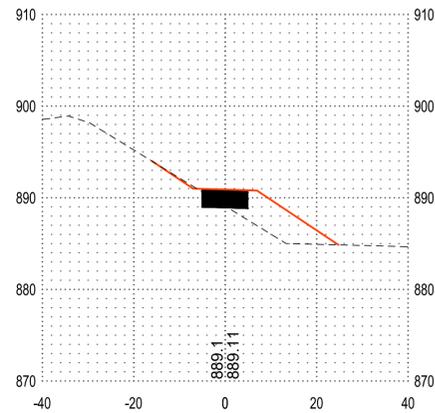
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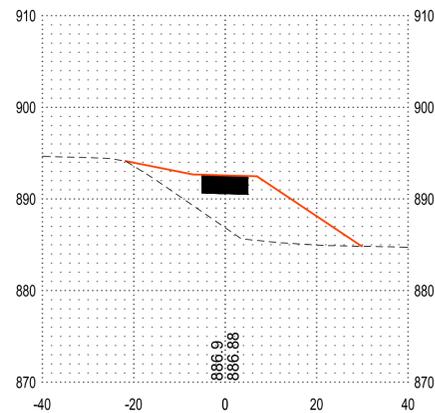
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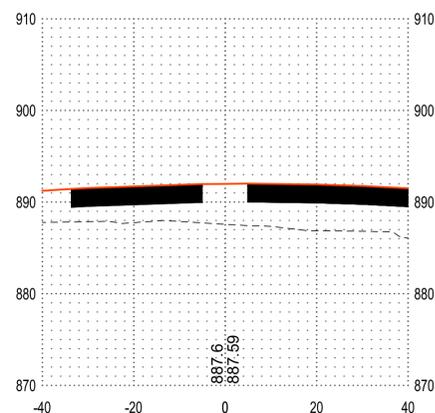
2+00



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