

# MINNESOTA DEPARTMENT OF TRANSPORTATION

## CONSTRUCTION PLAN FOR GRADING, ROUNDABOUT, BITUMINOUS MILLING AND SURFACING, DRAINAGE, AND LIGHTING.

LOCATED ON TH 59 FROM 3055' NORTH OF CO RD 61 TO CO RD 53  
 LOCATED ON TH 59 FROM 2590' NORTH OF CSAH 26 TO TH 92

FED. PROJ. NO. NHPP-HSIP 0059(324)

### GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION  
 'STANDARD SPECIFICATIONS FOR CONSTRUCTION' SHALL GOVERN.

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XS1-XS218	CROSS SECTIONS

STATE PROJ. NO. 5705-61  
 GROSS LENGTH 112,249.46 FEET 21.259 MILES  
 BRIDGES-LENGTH FEET MILES  
 EXCEPTIONS-LENGTH 60,406.65 FEET 11.441 MILES  
 NET LENGTH 51,842.81 FEET 9.819 MILES  
 REF. POINT 355+00.981 TO REF. POINT 346+00.106

STATE PROJ. NO. 6303-42  
 GROSS LENGTH FEET MILES  
 BRIDGES-LENGTH FEET MILES  
 EXCEPTIONS-LENGTH FEET MILES  
 NET LENGTH FEET MILES  
 REF. POINT 346+00.106 TO REF. POINT 334+00.665

TH 59  
R.P. = STATION

335 = 750+81.11	346 = 156+44.85
336 = 698+05.38	347 = 103+81.76
337 = 645+25.41	348 = 50+82.39
338 = 592+45.90	349 = 514+76.72
339 = 539+63.26	350 = 462+32.99
340 = 486+73.38	351 = 407+36.99
341 = 433+90.03	352 = 355+22.68
342 = 381+18.04	353 = 302+15.95
343 = 329+35.35	354 = 251+32.53
344 = 276+26.39	355 = 199+61.14
345 = 222+66.47	

TH 59 EQUATIONS

STA 448+96.76 (BK) = STA 450+66.71 (AH)
STA 517+36.38 (BK) = STA 0+32.17 (AH)
STA 195+75.27 (BK) = STA 209+29.60 (AH)
STA 320+89.46 (BK) = STA 320+93.46 (AH)
STA 473+20.28 (BK) = STA 473+27.09 (AH)

POSSIBLE AGGREGATE SOURCES

STATE PIT NO. 60027  
SECTION 12, T149N, R42W, PART OF S 1/2, SE 57/64 - 19.52 ACRE

STATE PIT NO. 63008  
SECTION 20, T151N, R42W, E 1/2, NW 1/4 - 20 ACRE

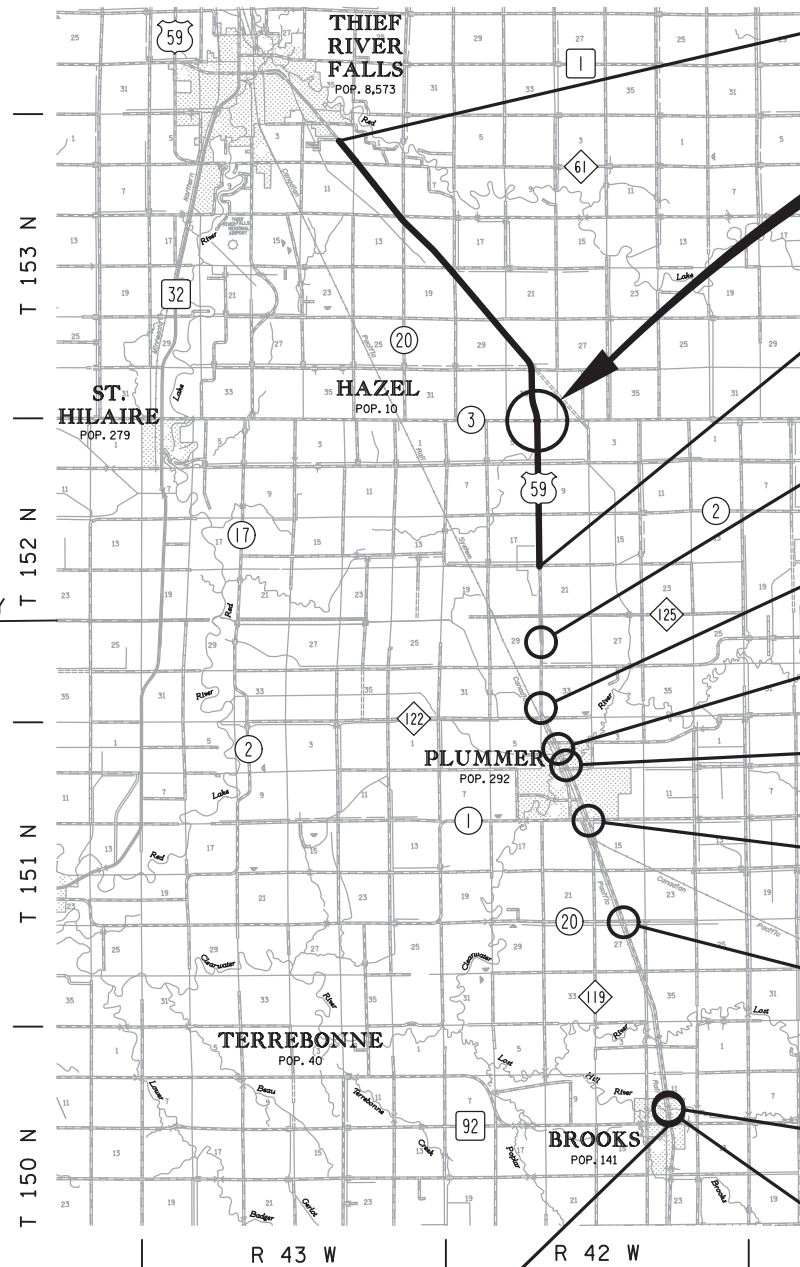
STATE PIT NO. 63014  
SECTION 22, T150N, R41W, S 1/2, NE 1/4, NE 1/4 - 10.95 ACRE

SCALES

PLAN	50'
INDEX MAP	10,000'
GENERAL LAYOUT	500'

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

Design ESALS 2020 = 997,000 Design Speed 65 MPH  
 ADT 2020 = 5610 Based on STOPPING Sight Distance 570'  
 ADT (Future Year) 2040 = 6968 Height of eye 3.5'  
 DHV (Design Hr. Vol.) 2034 = Height of object 2.0'  
 D (Directional Distr.) = T (Heavy Commercial) = 8.0%  
 Design Speed not achieved at: Roundabout and Roundabout approaches.



STA. 147+91.45  
R.P. 355+00.981  
BEGIN S.P. 5705-61 (TH 59)

ROUNDABOUT LOCATION  
S.P. 057-070-020

END S.P. 5705-61 (TH 59)  
BEGIN S.P. 6303-42 (TH 59)  
STA. 151+00.00  
R.P. 346+00.106

LOCATION A  
STA. 243+42.00  
R.P. 344+00.622

LOCATION B  
STA. 312+02.00  
R.P. 343+00.328

LOCATION C  
STA. 358+57.73  
R.P. 342+00.431

LOCATION D  
STA. 377+57.00  
R.P. 342+00.071

LOCATION E  
STA. 439+84.00  
R.P. 340+00.888

LOCATION F  
STA. 551+90.00  
R.P. 338+00.763

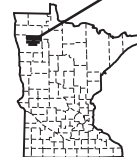
LOCATION G  
STA. 751+43.00  
R.P. 334+01.002

LOCATION H  
STA. 754+66.00  
R.P. 334+00.931

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO. CHARGE IDENTIFIER  
 5705-61  
 6303-42

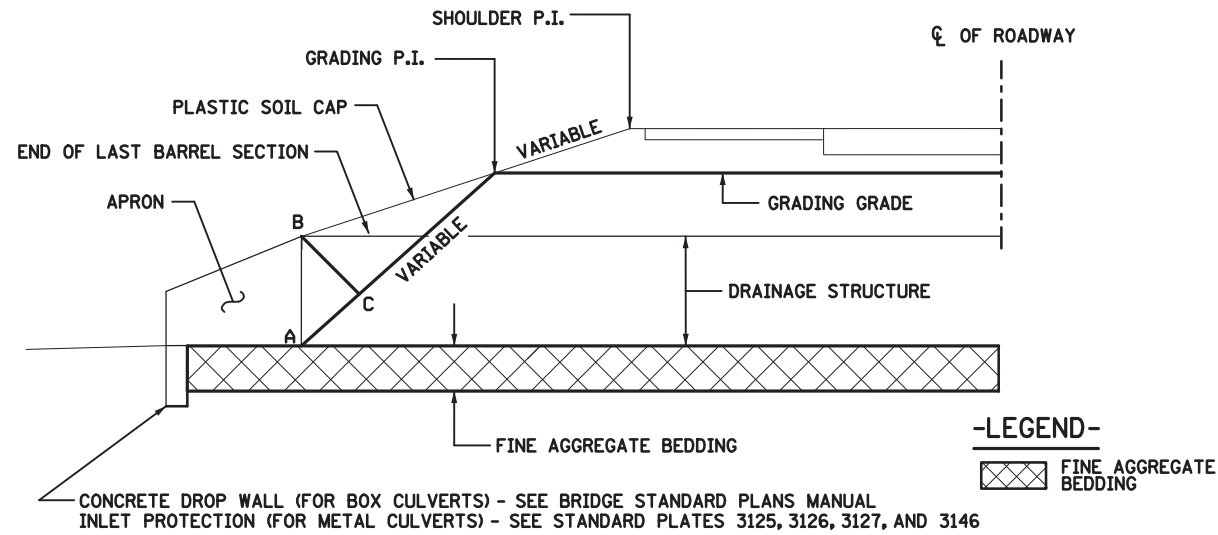
PROJECT LOCATION  
 COUNTY : PENNINGTON,  
 RED LAKE  
 DISTRICT : 2



STATE PROJ. NO. 6303-42 (TH 59 = 174)  
 STATE AID PROJ. NO. 057-070-020 (TH 59 = 174)  
 STATE PROJ. NO. 5705-61 (TH 59 = 174)

SHEET NO. 1 OF 258 SHEETS

### BOX CULVERT BEDDING



**-LEGEND-**  
 FINE AGGREGATE BEDDING

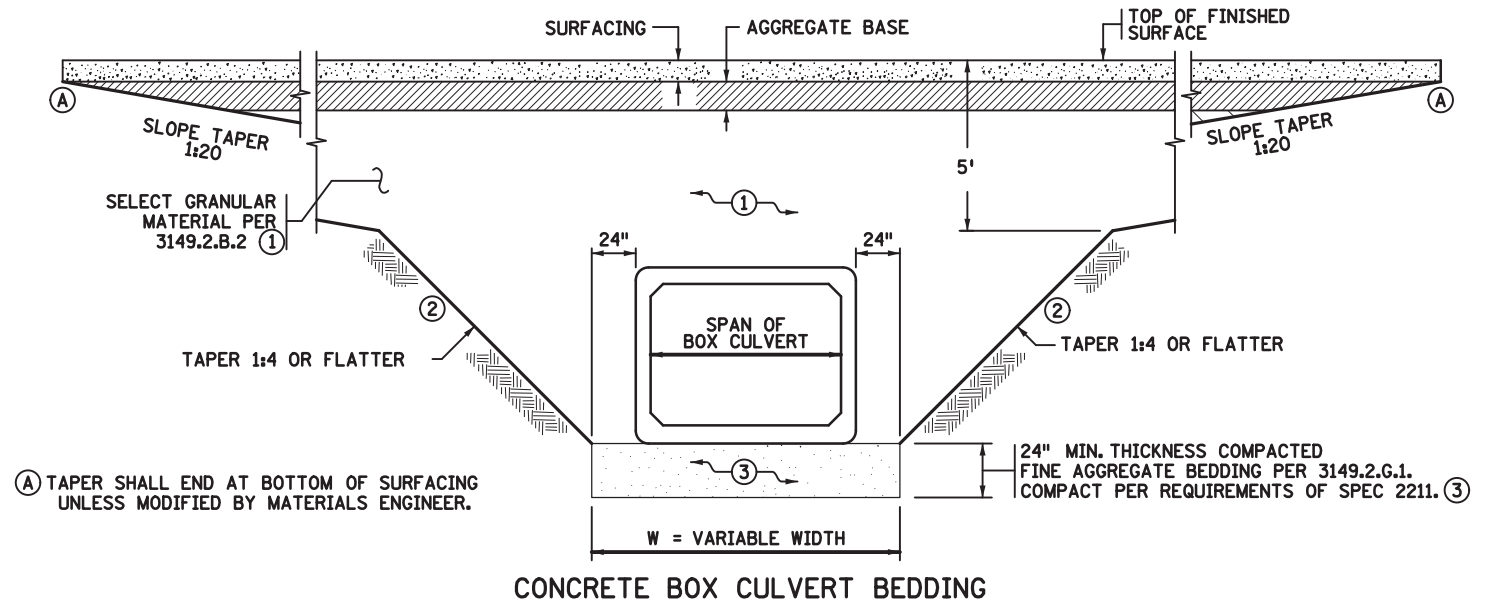
CONCRETE DROP WALL (FOR BOX CULVERTS) - SEE BRIDGE STANDARD PLANS MANUAL  
 INLET PROTECTION (FOR METAL CULVERTS) - SEE STANDARD PLATES 3125, 3126, 3127, AND 3146

#### NOTES

- THE TREATMENT WILL BE RECOMMENDED BY THE DISTRICT MATERIALS/SOILS ENGINEER.
- WIDTH OF PLASTIC SOIL CAP:  
 A) FOR PLASTIC SOIL EMBANKMENT - FULL WIDTH OF THE GRANULAR TREATMENT PLUS 2' ON EACH END.  
 B) FOR GRANULAR SOIL EMBANKMENT - A MINIMUM OF ONE DIAMETER OR WIDTH OF STRUCTURE ON EITHER SIDE OF THE STRUCTURE.
- THE TREATMENT IS NORMALLY REQUIRED ON THE INLET END.
- THE THICKNESS OF THE PLASTIC SOILS CAP (B-C) IS 3' MINIMUM AND 6' MAXIMUM.  
 A) FILL HEIGHTS LESS THAN 15'.  
 - NORMALLY EXTEND THE LINE THRU (A-C) TO GRADING P.I. HOWEVER, IF THIS RESULTS IN A THICKNESS (B-C) GREATER THAN 6', REDUCE B-C TO 6' OR LESS AND INTERSECTION THE FILL SLOPE RATHER THAN THE P.I..  
 B) FILL HEIGHTS GREATER THAN 15'.  
 - THE LINE THRU A-C NEED NOT INTERSECT THE GRADING P.I. INSTEAD INTERSECT THE FILL SLOPE AT A POINT NOT LESS THAN 5' ABOVE THE STRUCTURE MAINTAINING AT LEAST A MINIMUM THICKNESS (B-C) OF 3'.

#### PLASTIC SOIL CAP

PLASTIC SOIL CAP CONSIST OF SOILS IDENTIFIED BY PRESSING A MOIST SAMPLE BETWEEN THE THUMB AND INDEX FINGER TO FORM A THIN RIBBON UNTIL IT BREAKS UNDER ITS OWN WEIGHT IN A HORIZONTAL POSITION. THE MINIMUM LENGTH OF RIBBON IS 1 INCH.



A) TAPER SHALL END AT BOTTOM OF SURFACING UNLESS MODIFIED BY MATERIALS ENGINEER.

#### NOTES

- EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS. ALL SLOPES SHOWN AS (V) : (H)
- 1) MAXIMUM EMBANKMENT PARTICLE SIZE WITHIN 2 FT. OF CULVERT IS 3" PER SPEC. TABLE 2106-4.
- 2) OVER EXCAVATION BENEATH TAPERS IS NOT PERMITTED UNLESS REQUIRED BY OSHA. (TYP.)
- 3) IF APPROVED BY THE ENGINEER IN WET CONDITIONS THE CONTRACTOR MAY SUBSTITUTE 24" OF COARSE FILTER AGGREGATE PER 3149.2.H COMPACTED TO THE QUALITY COMPACTION REQUIREMENTS OF SPEC. 2211.3.D.2.b. WRAP WITH GEOTEXTILE FABRIC TYPE IV PER SPEC 3733. SEAM ALL FABRIC SIDES AND ENDS PER SPEC TABLE 3733-1 INCLUDING FOOTNOTE (e) OR OVERLAP A MINIMUM OF 3 FT. ALL AT NO ADDITIONAL COST.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: DJC				
DESIGNER: CCG				
CHECKED BY: REP				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Certified By: CHLOE C. GLOECKNER Lic. No. 58766  
 Printed Name: CHLOE C. GLOECKNER Date: 08/08/2022



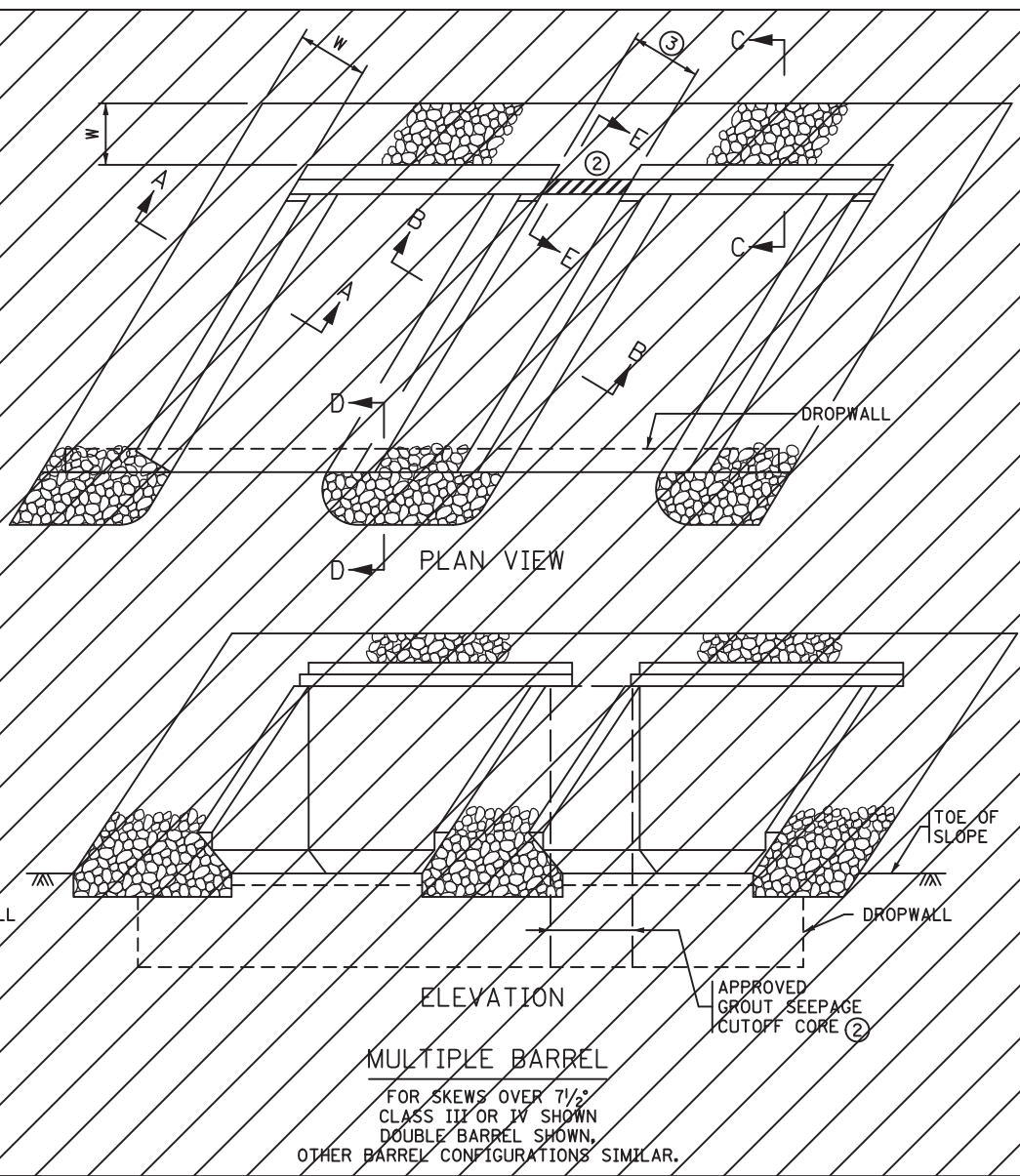
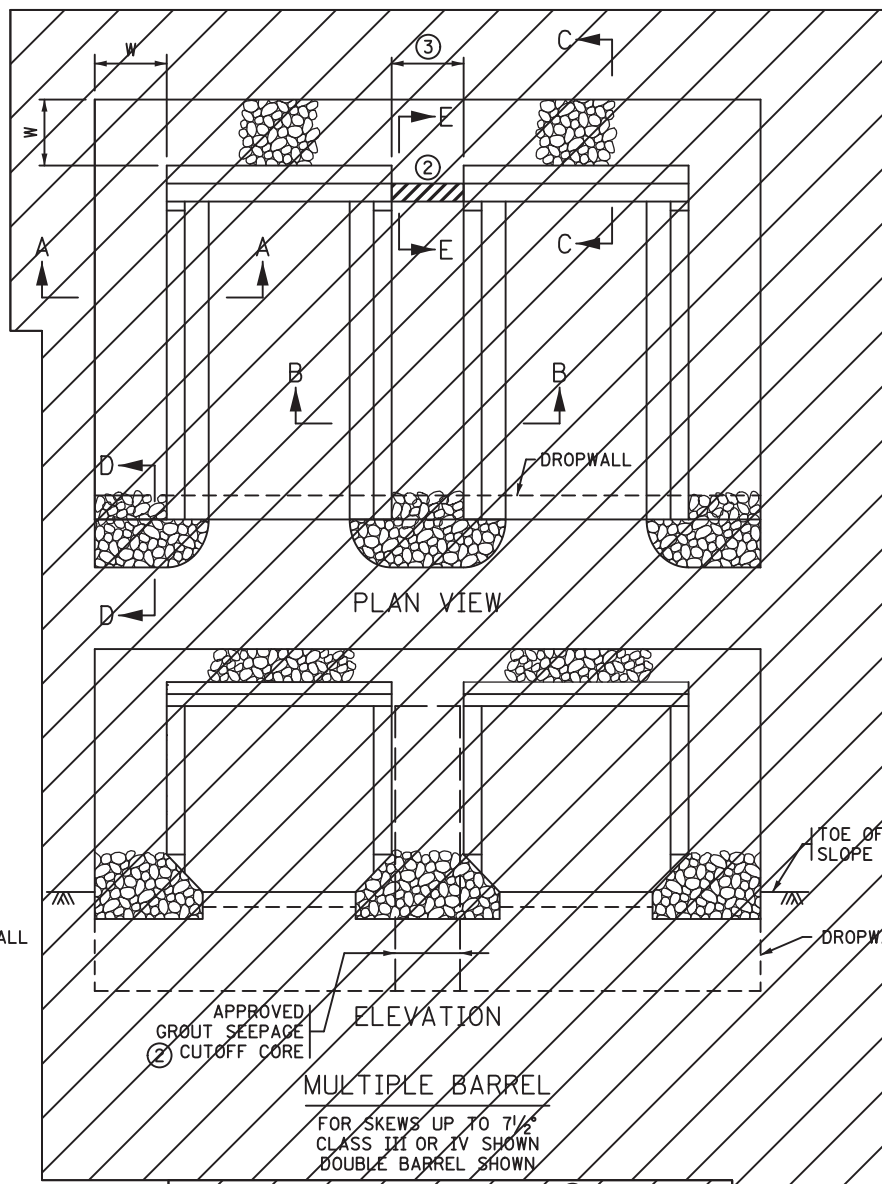
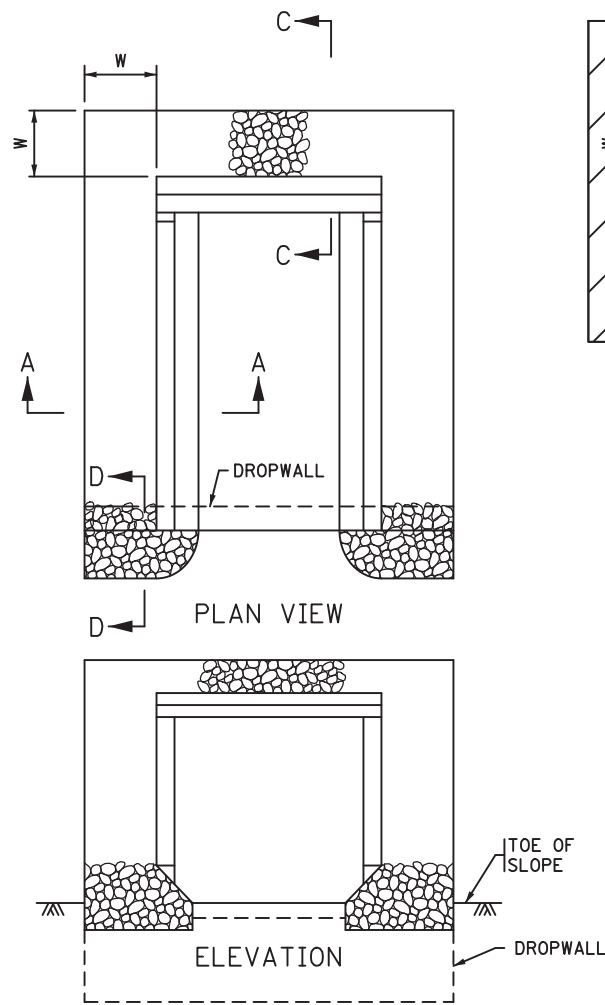
MINNESOTA DEPARTMENT OF TRANSPORTATION  
**TH 59**  
 S.P. NO. 5705-61 (TH 59)  
 S.P. NO. 057-070-020 (TH 59)

**DESIGN DETAILS**  
 BOX CULVERT BEDDING

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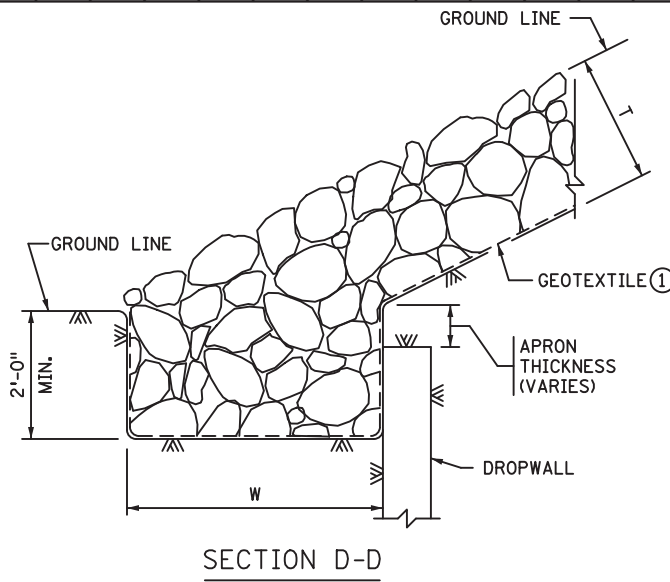
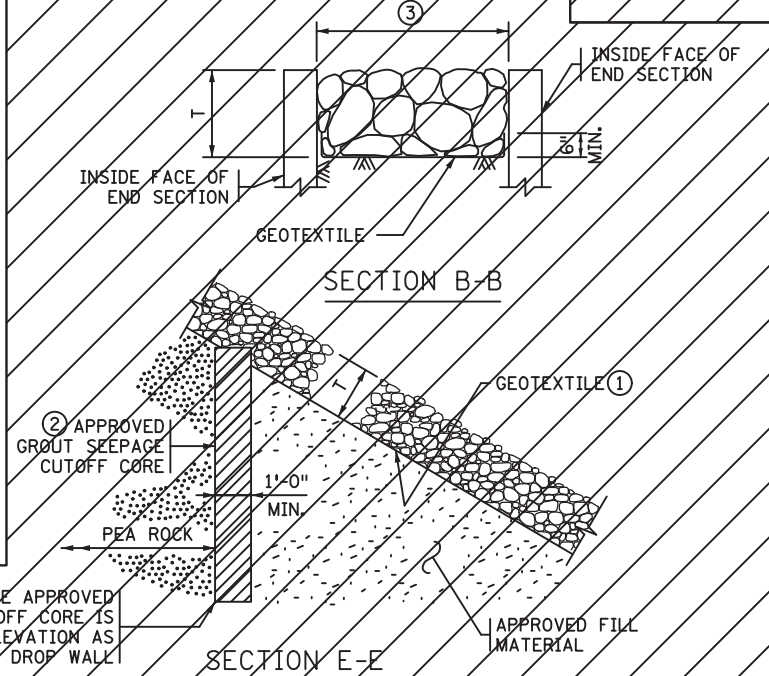
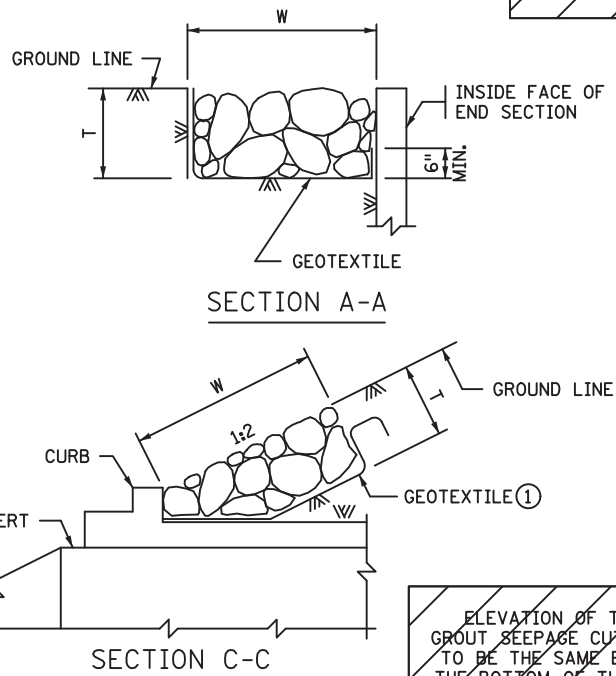
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**CONSTRUCTION NOTES**

- THIS PLAN SHEET IS FOR CULVERT EMBANKMENT PROTECTION ONLY. REFER TO THE GRADING PLANS FOR ADDITIONAL RIPRAP OR OTHER SCOUR PROTECTION MEASURES.
- PROVIDE RIPRAP IN ACCORDANCE WITH SPECS. 2511 AND 3601.
- EMBANKMENT PROTECTION, INCLUDING MATERIAL PLACED BETWEEN BARRELS THAT ARE LESS THAN 2'-0" APART, IS INCIDENTAL.
- 1 PROVIDE TYPE 7 GEOTEXTILE IN ACCORDANCE WITH SPEC. 3733. PROVIDE GEOTEXTILE STRIPS CONTINUOUS WITHOUT OVERLAPS, EXCEPT FOR THE TOP STRIP, WHICH SHOULD SHINGLE VERTICAL STRIPS. BURY THE TOP EDGE TO PREVENT UNDERMINING.
  - 2 IF THE DISTANCE BETWEEN DOUBLE BARRELS IS LESS THAN 2'-0" USE EITHER PEA ROCK OR LEAN MIX BACKFILL (SPEC. 2520) BETWEEN THE CULVERTS AS APPROVED BY THE ENGINEER. IF PEA ROCK IS USED PROVIDE APPROVED GROUT SEEPAGE CUTOFF CORE, MINIMUM 12" THICK BETWEEN THE CULVERT'S TWO ENDS AND PROVIDE CLASS I GROUTED RIPRAP IN LIEU OF CLASS III RIPRAP.
  - 3 REFER TO THE GENERAL PLAN AND ELEVATION SHEET FOR THE DISTANCE BETWEEN BARRELS OF ADJACENT BOXES.



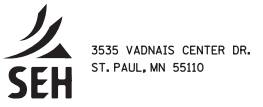
**RIPRAP CLASS**

RIPRAP CLASS	RIPRAP CLASS	T	W
☒	III	1'-6"	3'-0"
☐	IV	2'-0"	4'-0"

DESIGN TEAM			
DRAWN BY:	DJC		
DESIGNER:	CCG		
CHECKED BY:	REP		
NO.	BY	DATE	REVISIONS

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I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Certified By: \_\_\_\_\_ Lic. No. 58766  
Printed Name: CHLOE C. GLOCKNER Date: 08/08/2022



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**TH 59**  
S.P. NO. 5705-61 (TH 59)  
S.P. NO. 057-070-020 (TH 59)

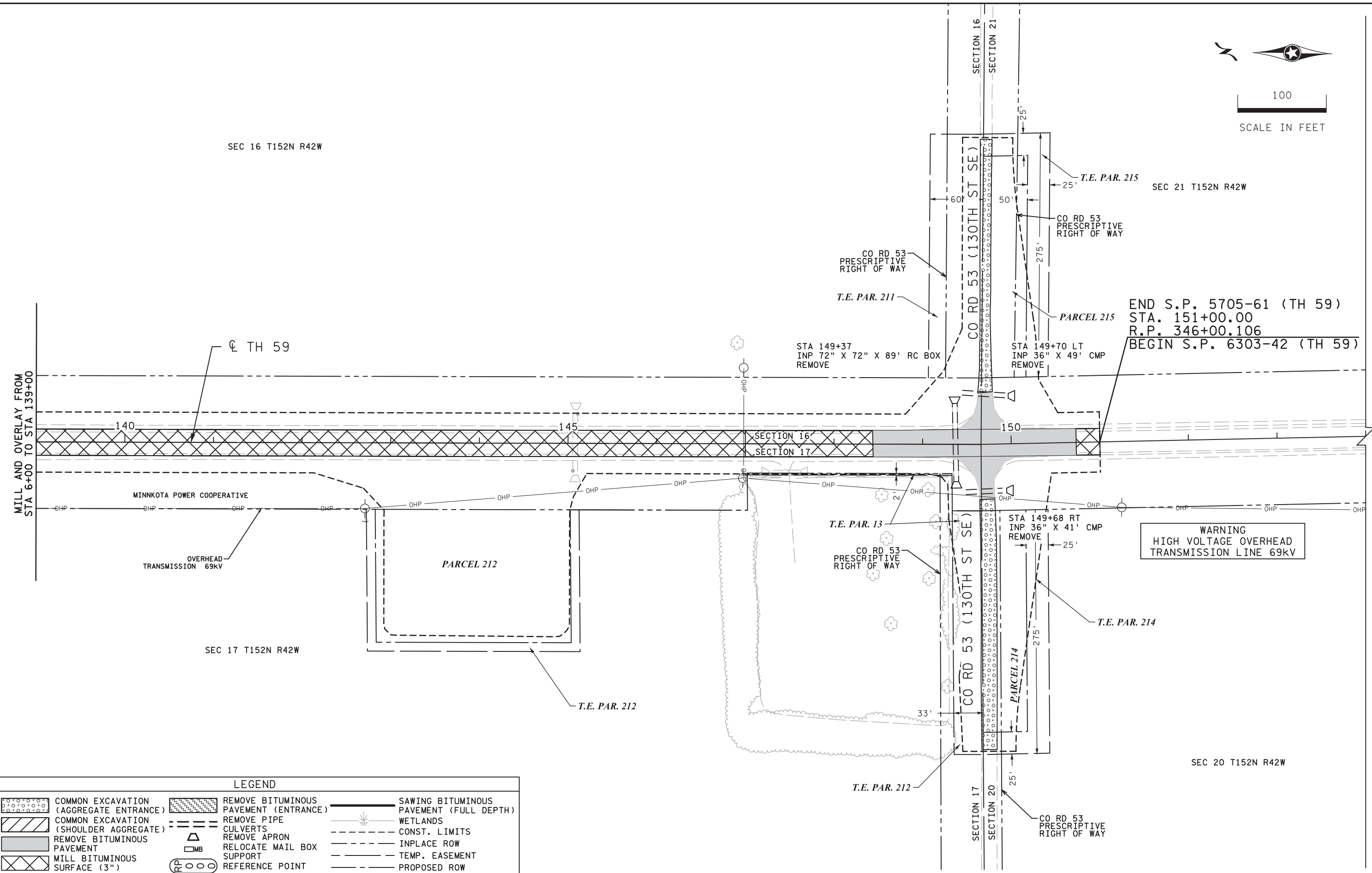
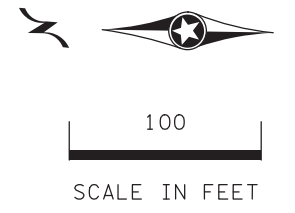
**DESIGN DETAILS**  
EMBANKMENT PROTECTION FOR BOX CULVERTS

FILE NO. **42**  
MNT02-156587  
DD4 OF DD10  
**258**

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8/8/2022

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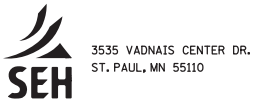


LEGEND			
	COMMON EXCAVATION (AGGREGATE ENTRANCE)		SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
	COMMON EXCAVATION (SHOULDER AGGREGATE)		WETLANDS
	REMOVE BITUMINOUS PAVEMENT		CONST. LIMITS
	MILL BITUMINOUS SURFACE (3")		INPLACE ROW
	REMOVE BITUMINOUS PAVEMENT (ENTRANCE)		TEMP. EASEMENT
	REMOVE PIPE CULVERTS		PROPOSED ROW
	REMOVE APRON		
	RELOCATE MAIL BOX SUPPORT		
	REFERENCE POINT		

DESIGN TEAM			
DRAWN BY:	DJC		
DESIGNER:	JLL		
CHECKED BY:	KAF		
NO.	BY	DATE	REVISIONS

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I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Certified By: Kyle A. Fitterer Lic. No. 52682  
Printed Name: KYLE A. FITTERER Date: 08/08/2022



MINNESOTA DEPARTMENT OF TRANSPORTATION  
**TH 59**  
S.P. NO. 5705-61 (TH 59)  
S.P. NO. 057-070-020 (TH 59)

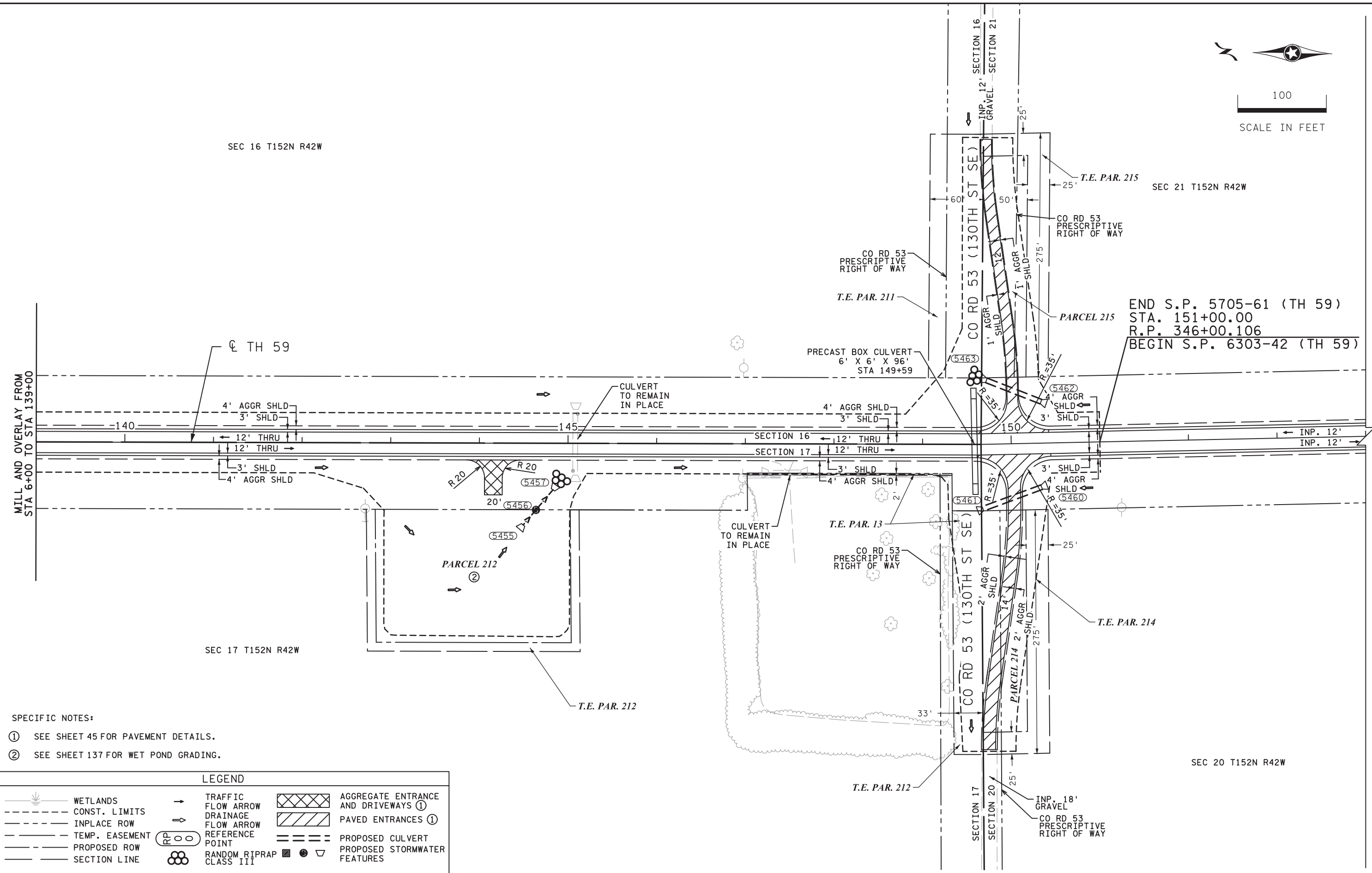
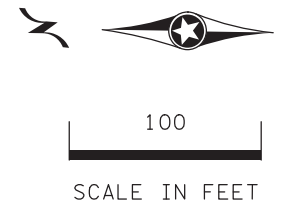
**INPLACE UTILITY, REMOVAL, AND TOPOGRAPHY PLANS**  
TH 59 STA 139+00 - 154+00

FILE NO. **103**  
MNT02-156587  
TP14  
OF TP15  
**258**

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- SPECIFIC NOTES:**
- ① SEE SHEET 45 FOR PAVEMENT DETAILS.
  - ② SEE SHEET 137 FOR WET POND GRADING.

LEGEND			
	WETLANDS		TRAFFIC FLOW ARROW
	CONST. LIMITS		DRAINAGE FLOW ARROW
	INPLACE ROW		REFERENCE POINT
	TEMP. EASEMENT		PROPOSED CULVERT
	PROPOSED ROW		PROPOSED STORMWATER FEATURES
	SECTION LINE		AGGREGATE ENTRANCE AND DRIVEWAYS ①
	RANDOM RIPRAP CLASS III		PAVED ENTRANCES ①

DESIGN TEAM			
DRAWN BY:	DJC		
DESIGNER:	JLL		
CHECKED BY:	KAF		
NO.	BY	DATE	REVISIONS

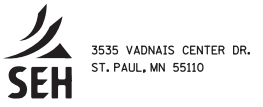
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Certified By: Kyle A. Fitterer Lic. No. 52682

Printed Name: KYLE A. FITTERER Date: 08/08/2022



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S.P. NO. 057-070-020 (TH 59)

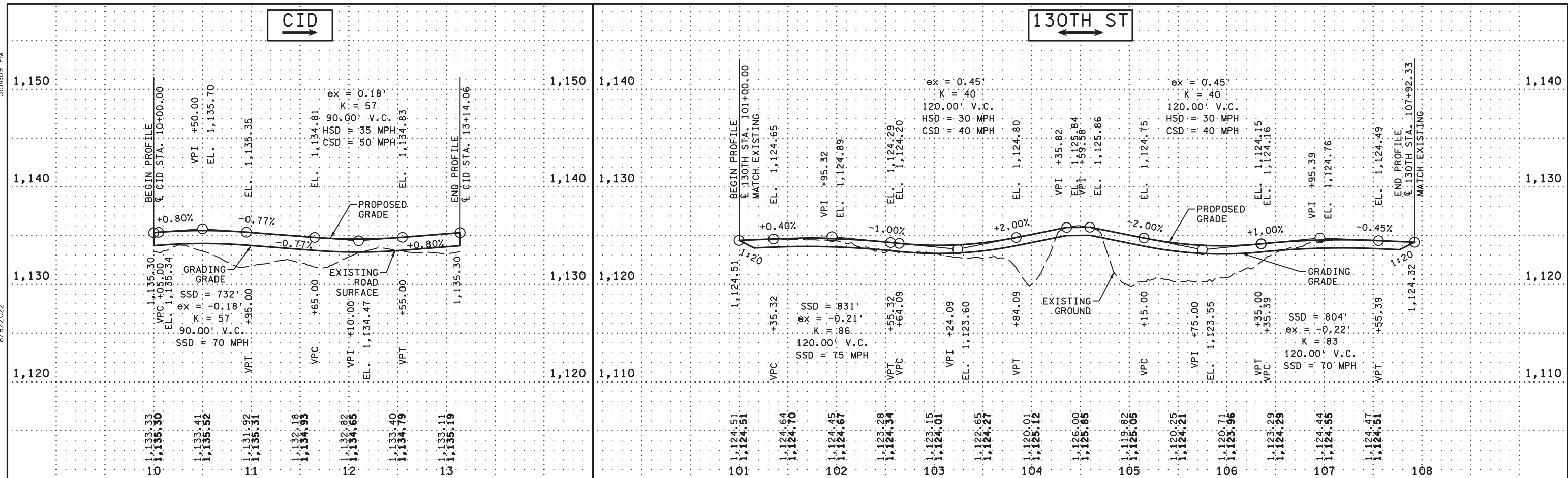
**CONSTRUCTION AND DRAINAGE PLANS**

TH 59 STA 139+00 - 154+00

FILE NO.	<b>118</b>
MNT02-156587	
CP14	
OF CP15	<b>258</b>

CID

130TH ST



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DRAWN BY:	DJC		
DESIGNER:	JLL		
CHECKED BY:	KAF		
NO.	BY	DATE	REVISIONS

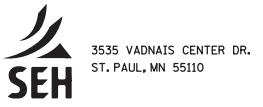
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Printed Name: KYLE A. FITTERER Date: 08/08/2022



MINNESOTA DEPARTMENT OF TRANSPORTATION

**TH 59**

S.P. NO. 5705-61 (TH 59)  
S.P. NO. 057-070-020 (TH 59)

**PROFILES**

CID AND 130TH ST

FILE NO.	<b>131</b>
MNT02-156587	
PR4 OF PR4	<b>258</b>

