



**MINNESOTA
COOK COUNTY
(R09) EASTERN REGION
SUPERIOR NATIONAL FOREST
TOFTE AND GUNFLINT RANGER DISTRICTS**

EAST ZONE ROAD IMPROVEMENTS



TRAVEL DIRECTIONS:

FR 164: From Tofte Ranger Station go east on MN61 for 1.1 miles. Turn onto CC2 for 11 miles. Turn right onto FR164.

FR325: From Gunflint Ranger Station head east on MN61 for 2 miles. Turn left on CC12 and continue for 17.2miles. Turn left onto FR325.

FR326: From Gunflint Ranger Station head east on MN61 for 2 miles. Turn left onto CC12 and continue for 4 miles. Turn left onto CC8 and go 5.7 miles. Turn right onto CC27 and continue for 5 miles. Then turn left onto FR 170 and follow for 10.2 miles and turn right onto FR 326.

FR336: From Tofte Ranger Station go east on MN61 for 5.7 miles. Turn left onto FR336.

[illegible]

RECOMMENDED BY:

FOREST ENGINEER

DATE _____

DISTRICT RANGER

DATE _____

FOREST SUPERVISOR

DATE _____

RO FACILITIES PROGRAM MANAGER

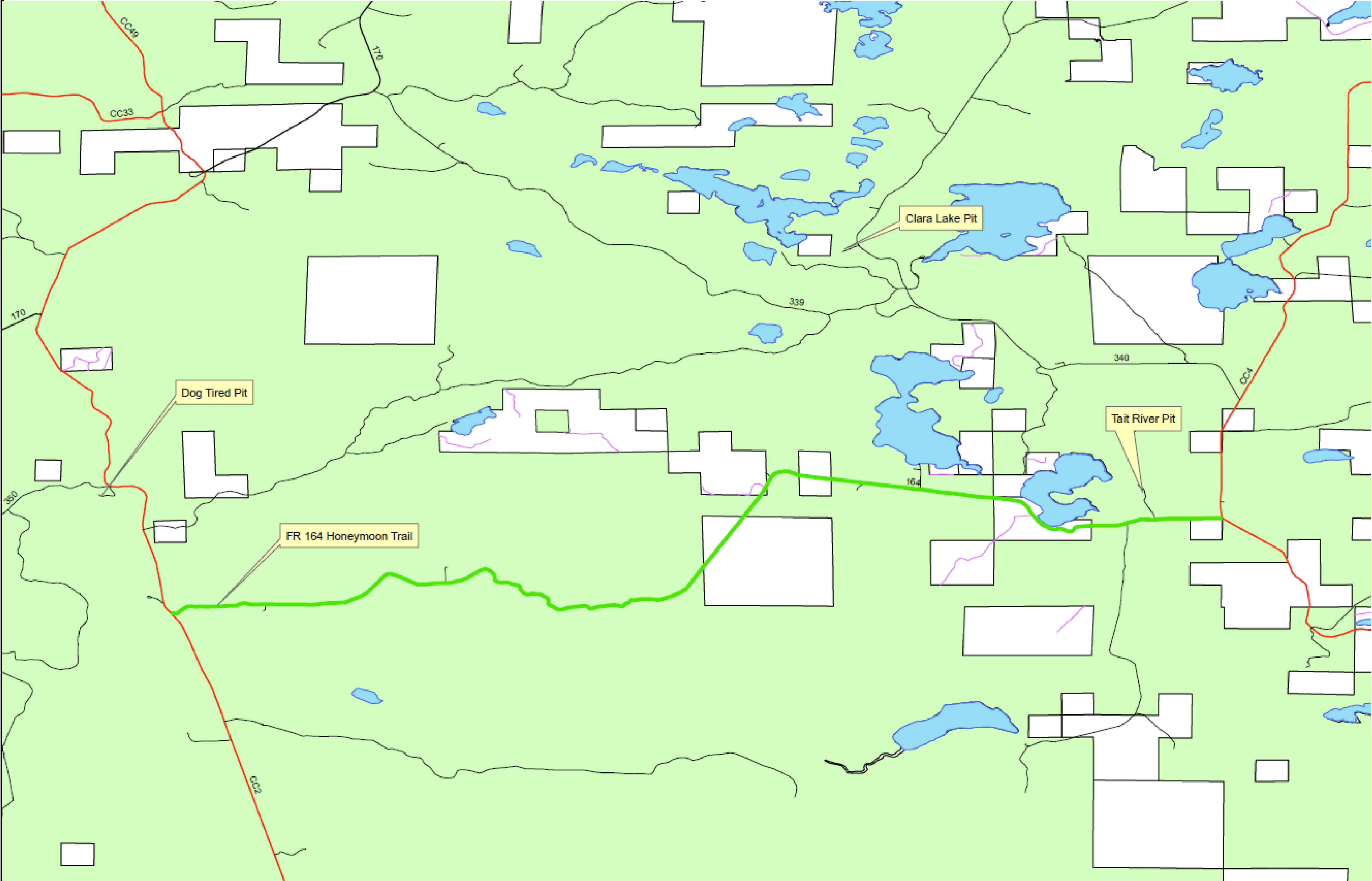
DATE _____

APPROVED:

DIRECTOR OF ENGINEERING

DATE _____

2/23/23 14:01 PLINDGREN C:\USERS\PLINDGREN\DOCUMENTS\ROAD MAINTENANCE - COPY\2023 ROAD MTCEGAOA ROAD CONTRACT\164 DRAWING SET.DWG.



United States Department of Agriculture
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(R09)
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STAMPS, LOGOS, AND SEALS

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PROJECT NAME

EAST ZONE ROAD
IMPROVEMENTS

SUPERIOR NATIONAL
FOREST

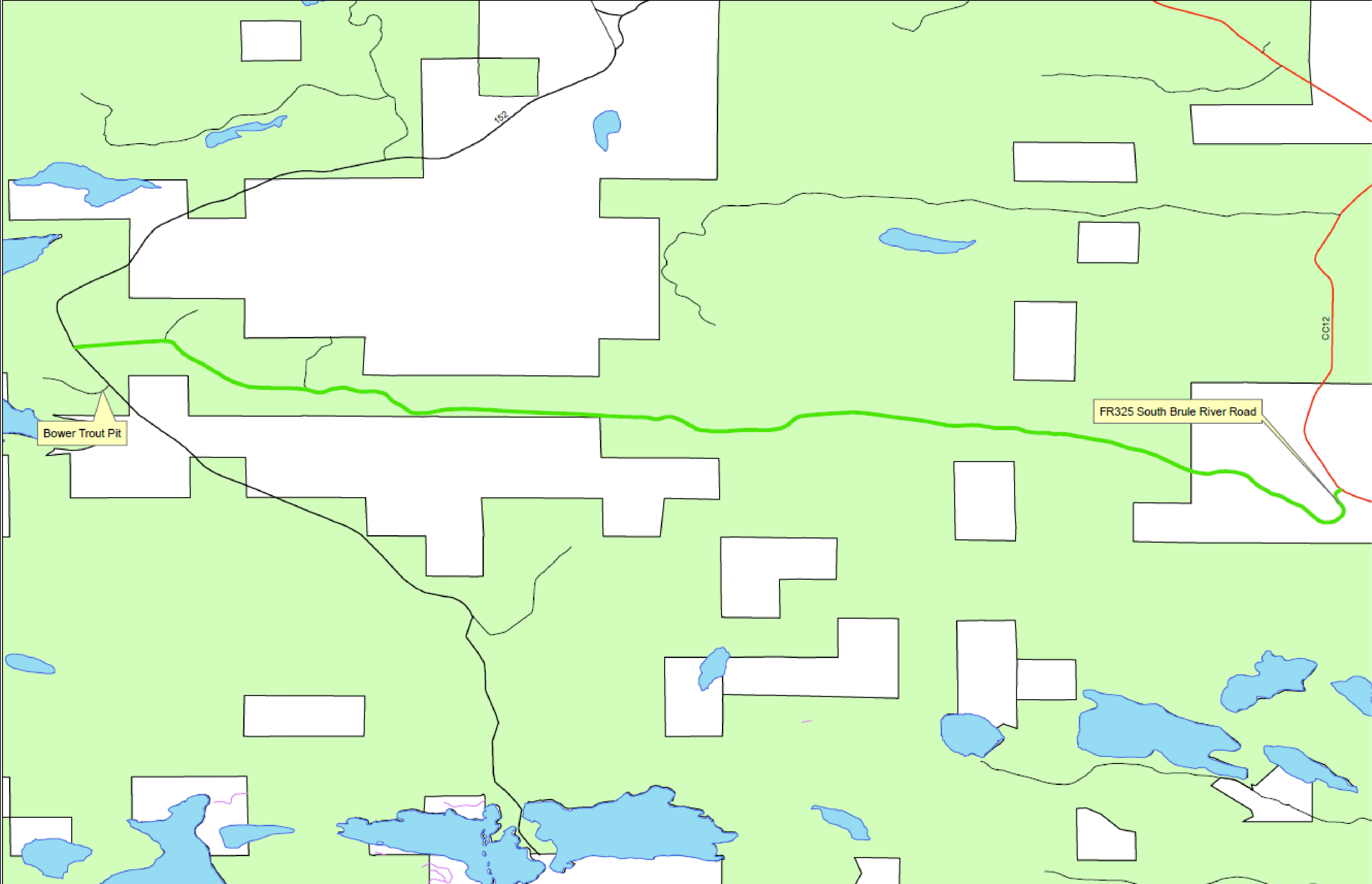
TOFTE AND GUNFLINT RANGER
DISTRICTS


DRAWING TITLE

FR 164 HONEYMOON
TRAIL LOCATION MAP

DATE 02/23/2023	ARCHIVE NO.
DESIGNER P. LINDGREN	DRAWING SHEET NO. 02
DRAWN P. LINDGREN	
CHECKED J. STREZISHAR	
PROJECT NO.	SHEET 002 OF 026

2/23/23 12:49 PLINDGREN C:\USERS\PLINDGREN\DOCUMENTS\ROAD MAINTENANCE - COPY\2023 ROAD MTCEGAOA ROAD CONTRACT\325 DRAWING SET.DWG.





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SUPERIOR NATIONAL FOREST

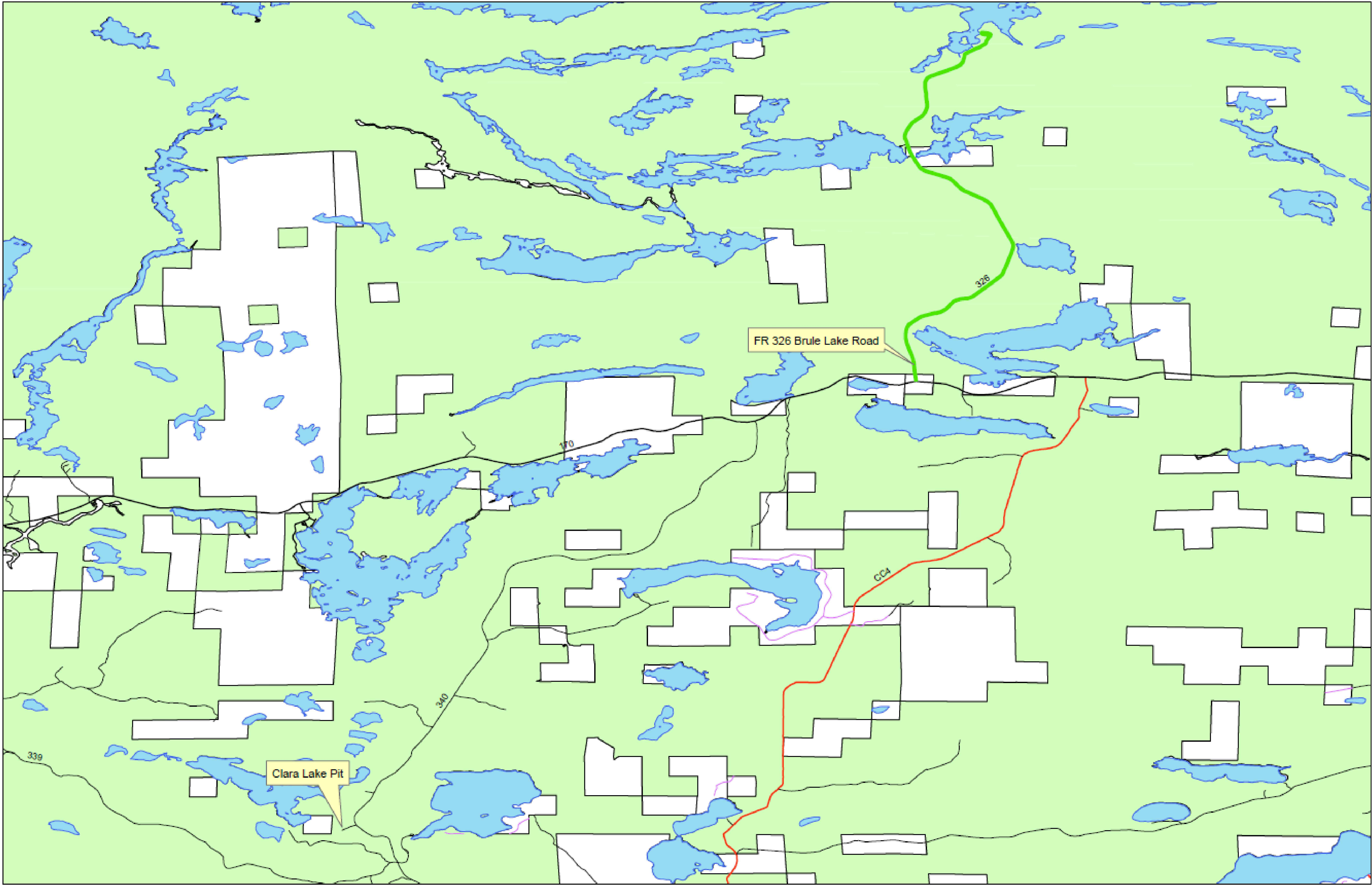
TOFTE AND GUNFLINT RANGER DISTRICTS

DRAWING TITLE

FR 325 SOUTH BRULE RIVER ROAD LOCATION MAP

DATE 04/01/2022	ARCHIVE NO.
DESIGNER A.HILL	DRAWING SHEET NO. 03
DRAWN A.HILL	
CHECKED J.STREZISHAR	
PROJECT NO.	SHEET 003 OF 026

2/23/23 13:04 PLINDGREN C:\USERS\PLINDGREN\DOCUMENTS\ROAD MAINTENANCE - COPY\2023 ROAD MTCEGAOA ROAD CONTRACT\326 DRAWING SET.DWG.



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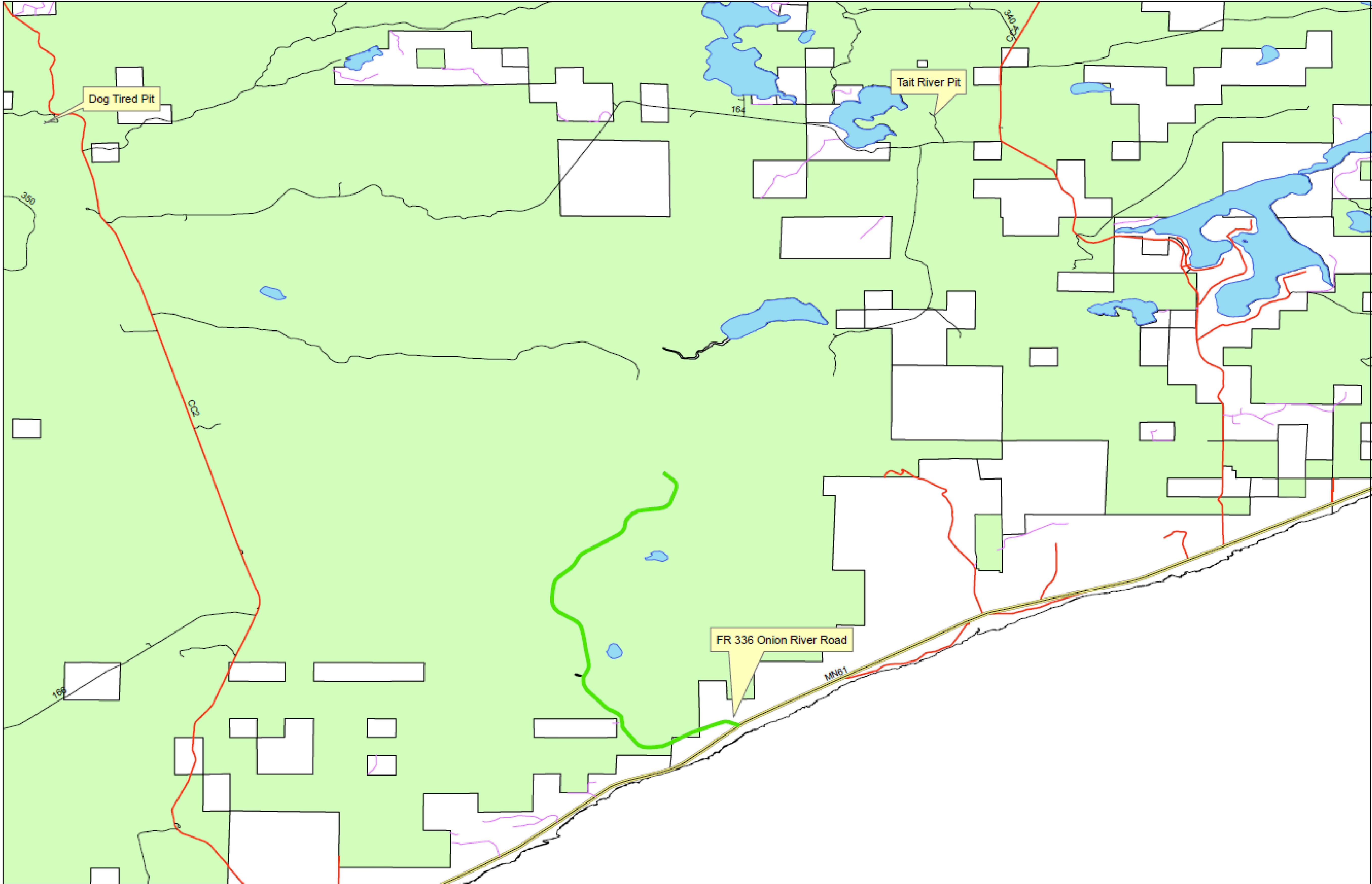
TOFTE AND GUNFLINT RANGER
DISTRICTS

DRAWING TITLE

FR 326 BRULE LAKE
ROAD LOCATION MAP

DATE 04/01/2022	ARCHIVE NO.
DESIGNER A.HILL	DRAWING SHEET NO. 04
DRAWN A.HILL	
CHECKED J.OLSON	
PROJECT NO.	SHEET 004 OF 026

2/23/23 13:16 PLINDGREN C:\USERS\PLINDGREN\DOCUMENTS\ROAD MAINTENANCE - COPY\2023 ROAD MTCEGAOA ROAD CONTRACT\336 DRAWING SET.DWG



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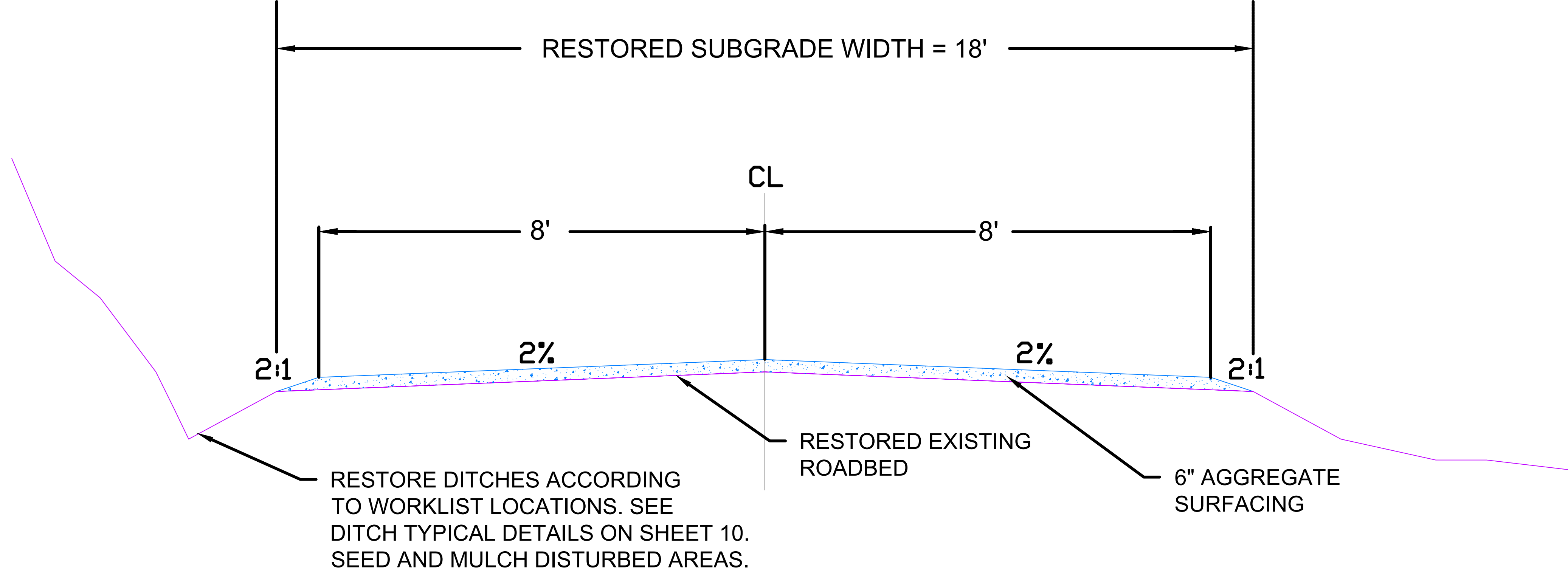
DRAWING TITLE

FR 336 ONION RIVER
ROAD LOCATION MAP

DATE 04/01/2022	ARCHIVE NO.
DESIGNER A.HILL	DRAWING SHEET NO. 05
DRAWN A.HILL	
CHECKED J.OLSON	
PROJECT NO.	SHEET 005 OF 026

2/23/23 10:57 P.LINDGREN C:\USERS\P.LINDGREN\DOCUMENTS\ROAD MAINTENANCE - COPY\2023 ROAD MTCEGAOA ROAD CONTRACT\DRAWING\164 TYPICAL.DWG;

FR 164 HONEYMOON TRAIL
TYPICAL AGGREGATE ROAD CROSS SECTION



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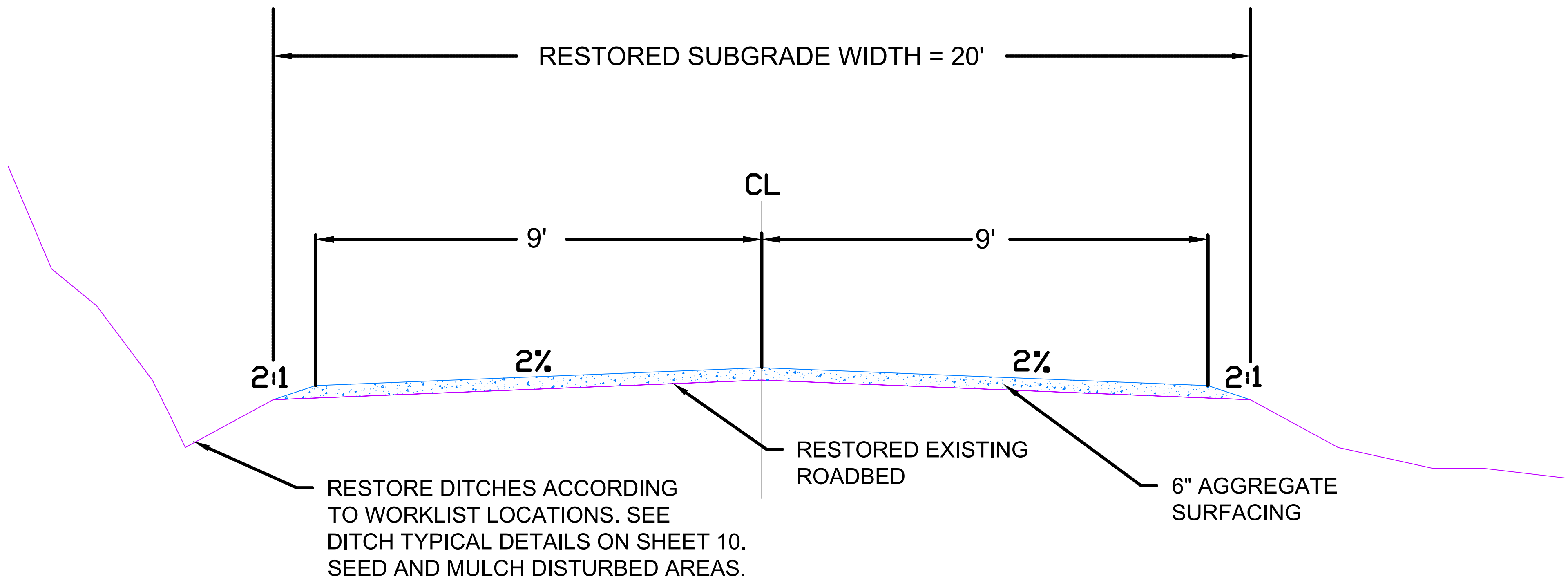
DRAWING TITLE

FR 164 HONEYMOON
TRAIL TYPICAL CROSS
SECTION

DATE 02/23/2023	ARCHIVE NO.
DESIGNER P.LINDGREN	DRAWING SHEET NO. 06
DRAWN P.LINDGREN	
CHECKED J.STREZISHAR	
PROJECT NO.	SHEET 006 OF 026

2/23/23 12:49 P.LINDGREN C:\USERS\P.LINDGREN\DOCUMENTS\ROAD MAINTENANCE - COPY\2023 ROAD MTCEGAOA ROAD CONTRACT\325 DRAWING SET.DWG.

FR 325 SOUTH BRULE RIVER ROAD
TYPICAL AGGREGATE ROAD CROSS SECTION



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SUPERIOR NATIONAL FOREST

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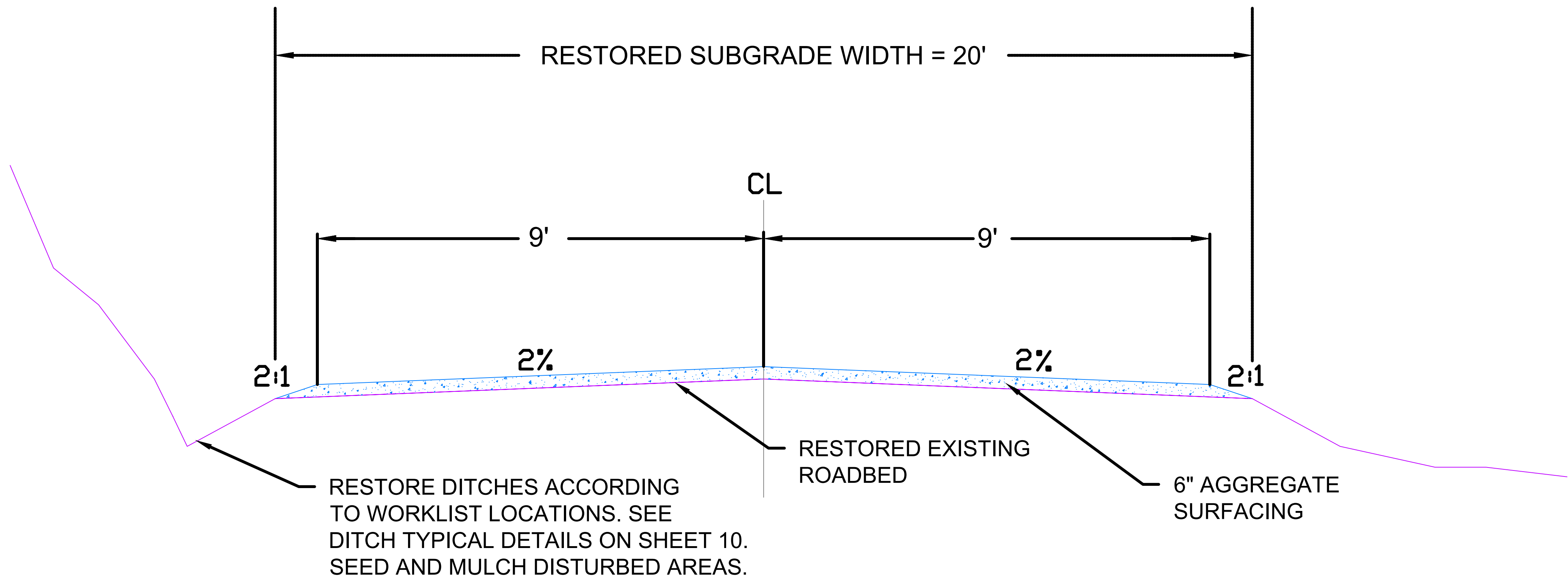
DRAWING TITLE

FR 325 SOUTH BRULE RIVER ROAD TYPICAL CROSS SECTION

DATE 02/23/2023	ARCHIVE NO.
DESIGNER P.LINDGREN	DRAWING SHEET NO. <div>07</div>
DRAWN P.LINDGREN	
CHECKED J.STREZISHAR	
PROJECT NO.	SHEET 007 OF 026

2/23/23 13:04 PLINDGREN C:\USERS\PLINDGREN\DOCUMENTS\ROAD MAINTENANCE - COPY\2023 ROAD MTCEGAOA ROAD CONTRACT\326 DRAWING SET.DWG.

FR 326 BRULE LAKE ROAD
TYPICAL AGGREGATE ROAD CROSS SECTION



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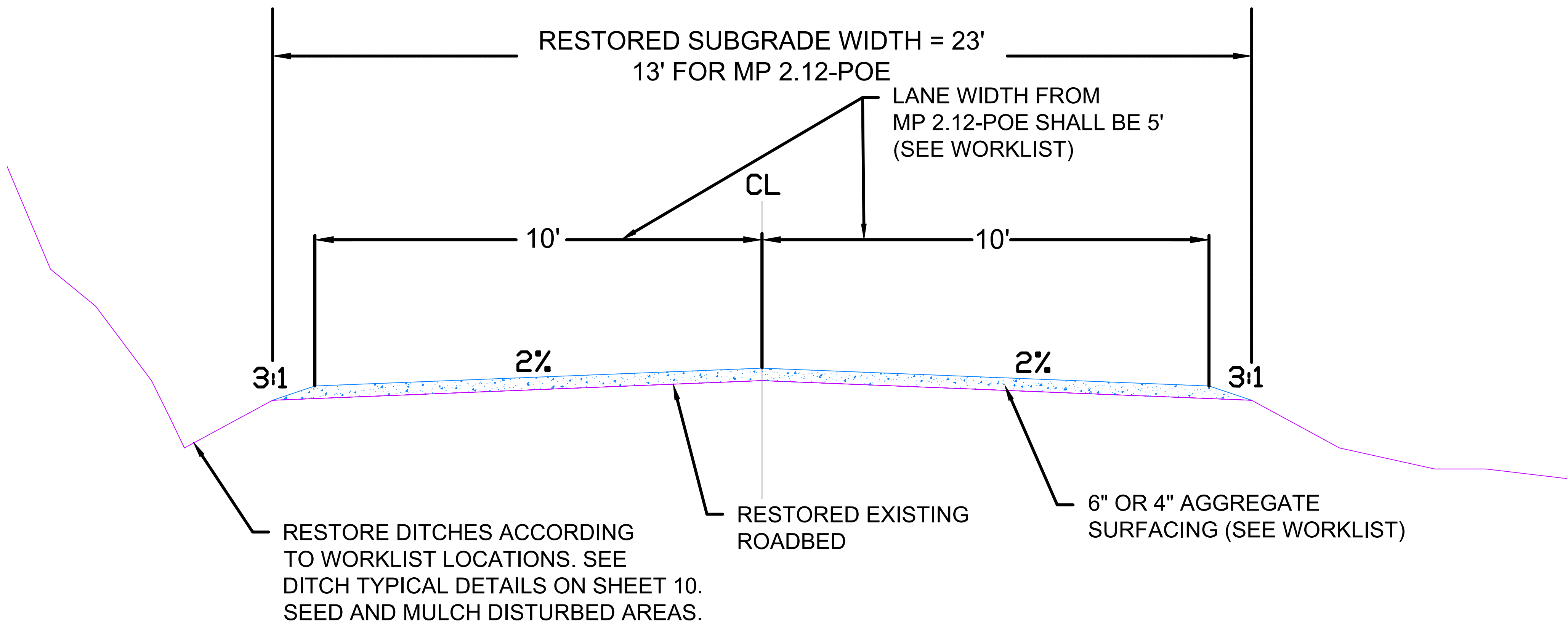
DRAWING TITLE

FR 326 BRULE LAKE ROAD TYPICAL CROSS SECTION

DATE 04/01/2022	ARCHIVE NO.
DESIGNER A.HILL	DRAWING SHEET NO. <div>08</div>
DRAWN A.HILL	
CHECKED J.OLSON	
PROJECT NO.	SHEET 008 OF 026

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FR 336 ONION RIVER ROAD
TYPICAL ROAD CROSS SECTION



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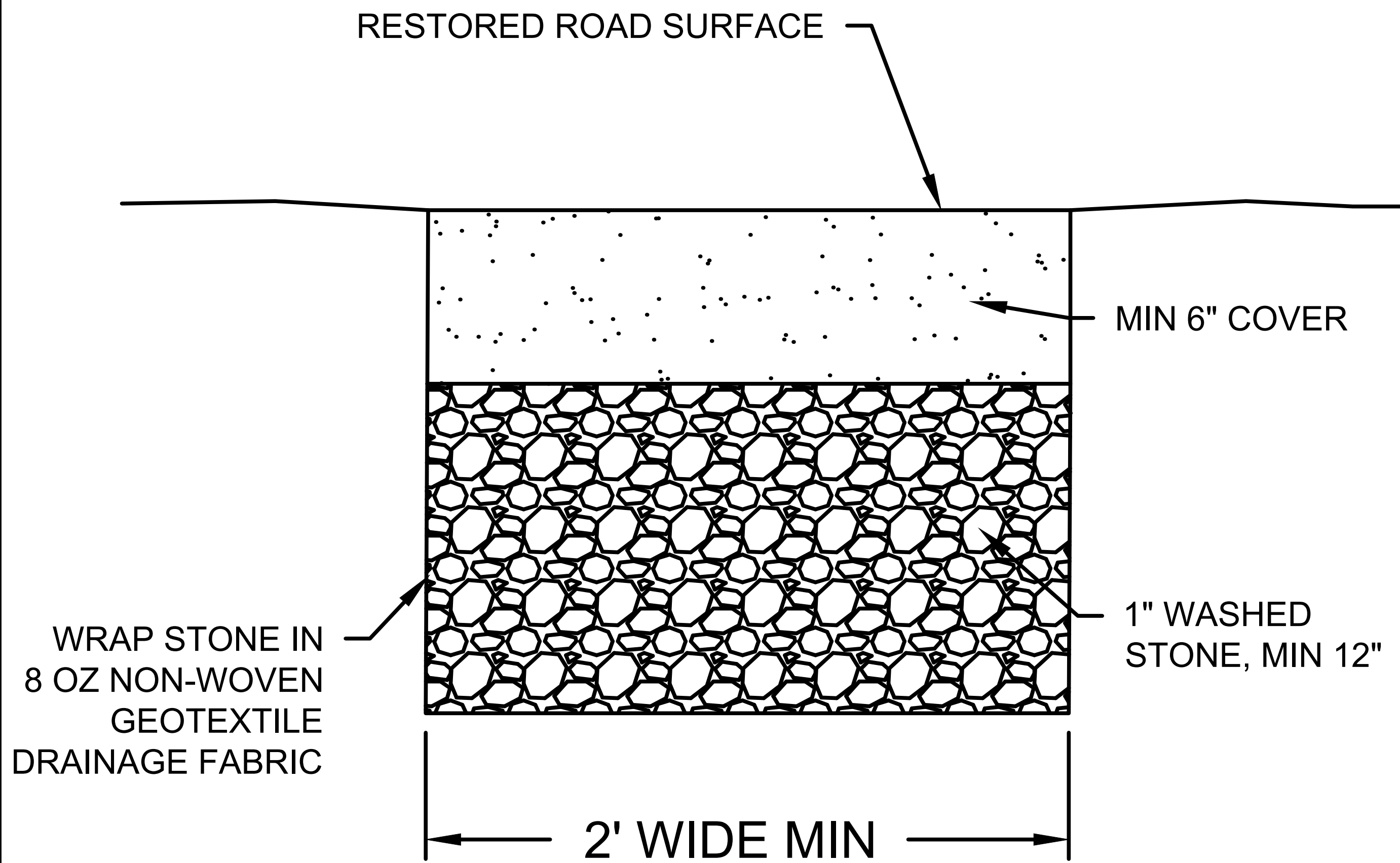
TOFTE AND GUNFLINT RANGER
DISTRICTS

DRAWING TITLE

FR 336 ONION RIVER
ROAD TYPICAL CROSS
SECTION

DATE 04/01/2022	ARCHIVE NO.
DESIGNER A.HILL	DRAWING SHEET NO. 09
DRAWN A.HILL	
CHECKED J.OLSON	
PROJECT NO.	SHEET 009 OF 026

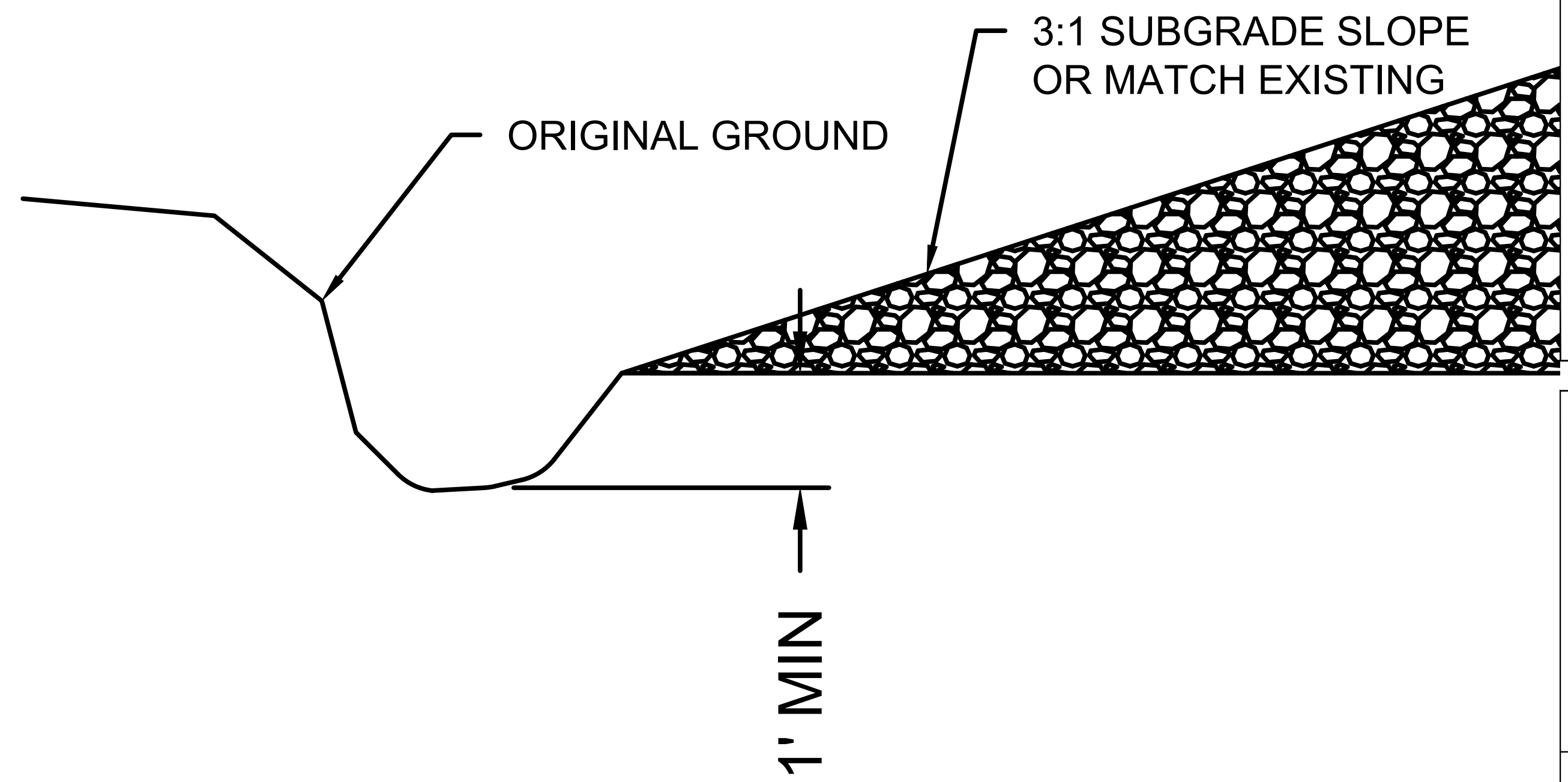
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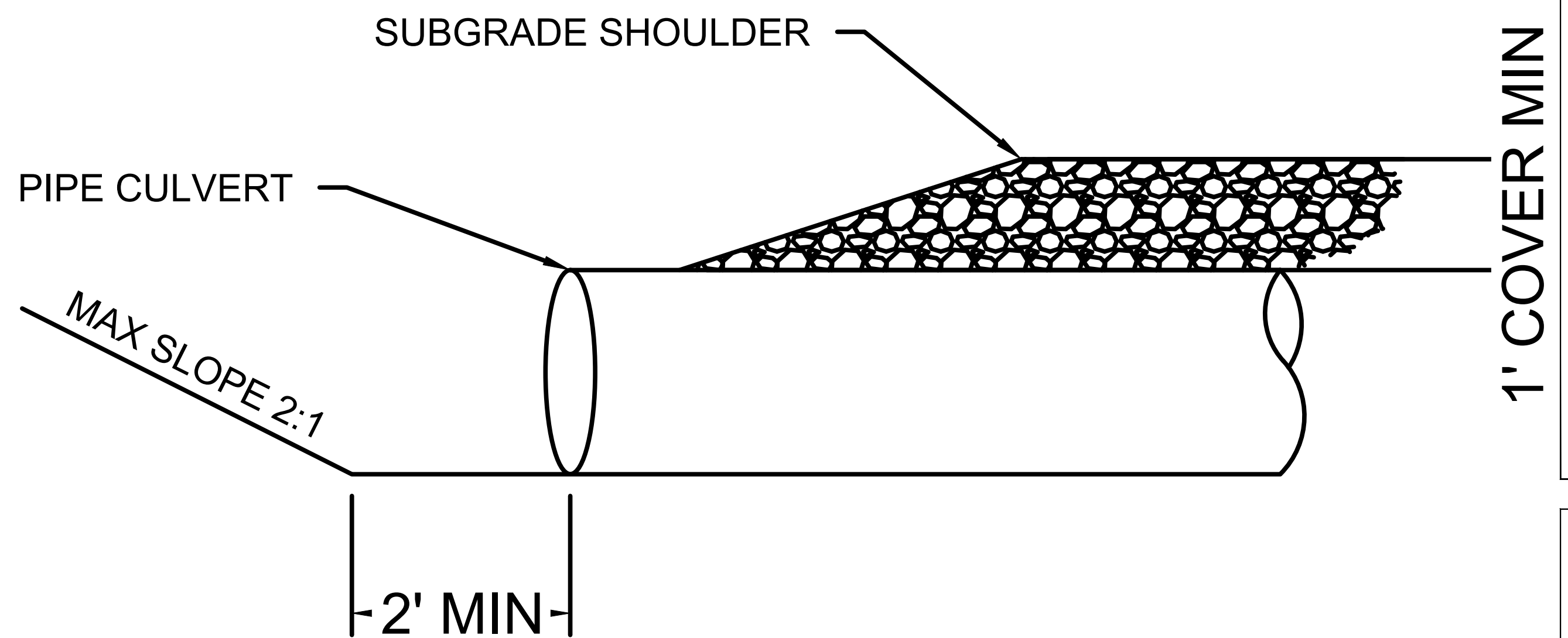
FRENCH DRAIN
NOT TO SCALE

NOTES:

1. DEPTH TO BEDROCK SHALL BE VERIFIED IN FIELD PRIOR TO INSTALLATION.
2. ROUND WASHED STONE IS PREFERRED FOR TRENCH FILL OVER ANGULAR. IF ROUND STONE IS NOT AVAILABLE, ENSURE THAT ANGULAR STONE IS CLEAN AND CONTAINS NO FINES TO PREVENT CLOGGING OF DRAIN.
3. DRAIN SHALL BE SLOPED IN THE DOWNHILL DIRECTION AT AN ANGLE GOING ACROSS ROAD AND ALLOWED TO DAYLIGHT INTO DITCH.



TYPICAL U-DITCH SECTION
NOT TO SCALE



INLET & OUTLET DITCH AT CULVERT
NOT TO SCALE

NOTE: INSTALL STEEL T-POST AT BOTH INLET AND OUTLET AS SPECIFIED IN DRAWINGS OR CONTRACT.



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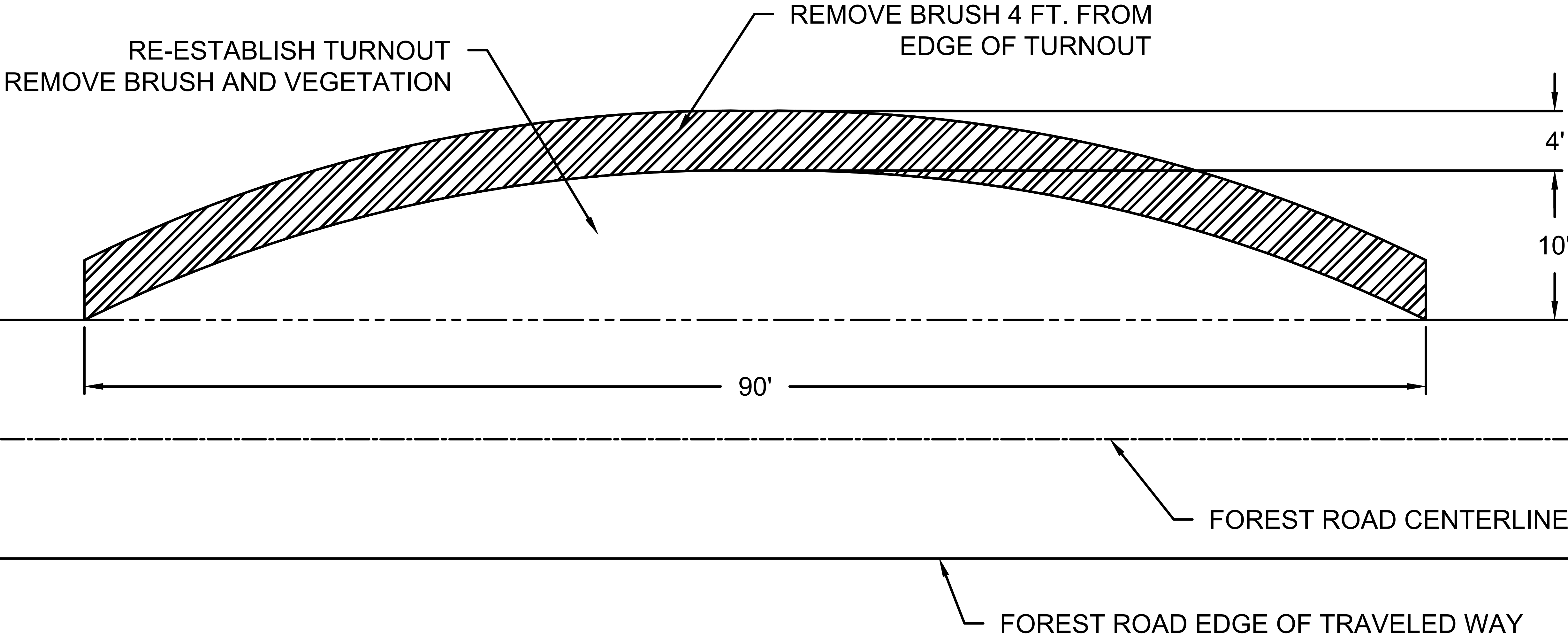
TOFTE AND GUNFLINT RANGER DISTRICTS

DRAWING TITLE

DRAINAGE TYPICALS

DATE 04/01/2022	ARCHIVE NO.
DESIGNER A.HILL	DRAWING SHEET NO. 10
DRAWN A.HILL	
CHECKED J.OLSON	
PROJECT NO.	SHEET 010 OF 026


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TYPICAL TURNOUT TOP VIEW
SCALE: NTS

GENERAL NOTES:

1. REMOVE ALL VEGETATION AND BRUSH FROM TURNOUT SURFACE AREA.
2. DISPOSAL OF BRUSH AND VEGETATION MAY BE SCATTERED OR REMOVED FROM PROJECT LOCATION TO GRAVEL PIT AT DIRECTION OF COR. NO BRUSH OR VEGETATION CAN BE SCATTERED IN ROAD DITCHES.
3. TURNOUT MUST BE GRADED IN A CONSISTENT MANNER TO BLEND INTO ROADWAY.
4. APPROXIMATELY 10 CY OF CRUSHED AGGREGATE WILL BE REQUIRED FOR EACH TURNOUT. CONTRACTOR IS RESPONSIBLE FOR ENSURING ACTUAL QUANTITIES TO COVER AREA.
5. REMOVE BRUSH 4FT FROM EDGE OF TURNOUT AREA.



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TURNOUT TYPICAL

DATE 04/01/2022	ARCHIVE NO.
DESIGNER A.HILL	DRAWING SHEET NO. 11
DRAWN A.HILL	
CHECKED J.OLSON	
PROJECT NO.	SHEET 011 OF 026

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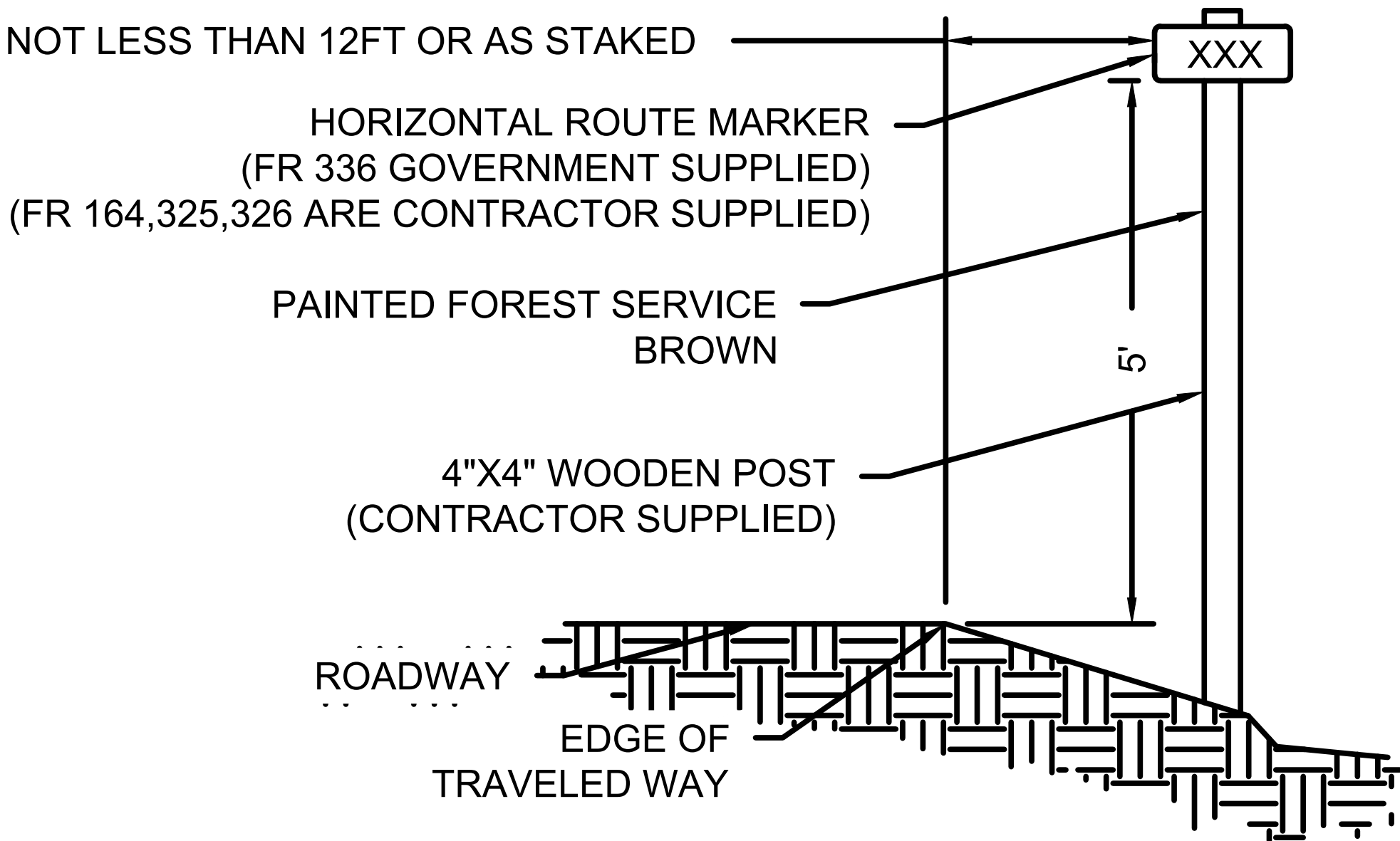
TYPICAL SIGN INSTALLATIONS

ROUTE NUMBER SIGN INSTALLATION GENERAL NOTES:

1. POSTS SHALL BE PROVIDED BY CONTRACTOR.
2. POSTS SHALL BE 4"X4" PRESSURE TREATED WOODEN POST. MATERIAL SHOULD BE PINE GRADE 2 OR EQUIVALENT.
3. MINIMUM BURIAL DEPTH IS 3FT DEEP.
4. ALL HARDWARE FOR INSTALLATION SHALL BE PROVIDED BY CONTRACTOR. HARDWARE SHOULD BE GALVANIZED OR ALUMINUM.
5. SIGNS SHOULD BE ATTACHED TO POSTS IN A MANNER THAT THE HARDWARE DOES NOT INTERFERE WITH LEGIBILITY OF SIGN.
6. SIGN POST SHALL BE PLACED FROM INTERSECTION 20-100FT AS DETERMINED BY FOREST SERVICE.
7. DISPOSE OF EXISTING POST OFF PROJECT AS REQUIRED BY STATE AND LOCAL LAWS.
8. HORIZONTAL ROUTE MARKER SIGN WILL BE PROVIDED BY FOREST SERVICE.
9. LOCATION OF SIGN CAN BE DETERMINED BY COR IN FIELD OR AS STAKED.
10. COMPLETE INSTALLATION GUIDELINES CAN BE FOUND IN THE FOREST SERVICE SIGN INSTALLATION GUIDE.

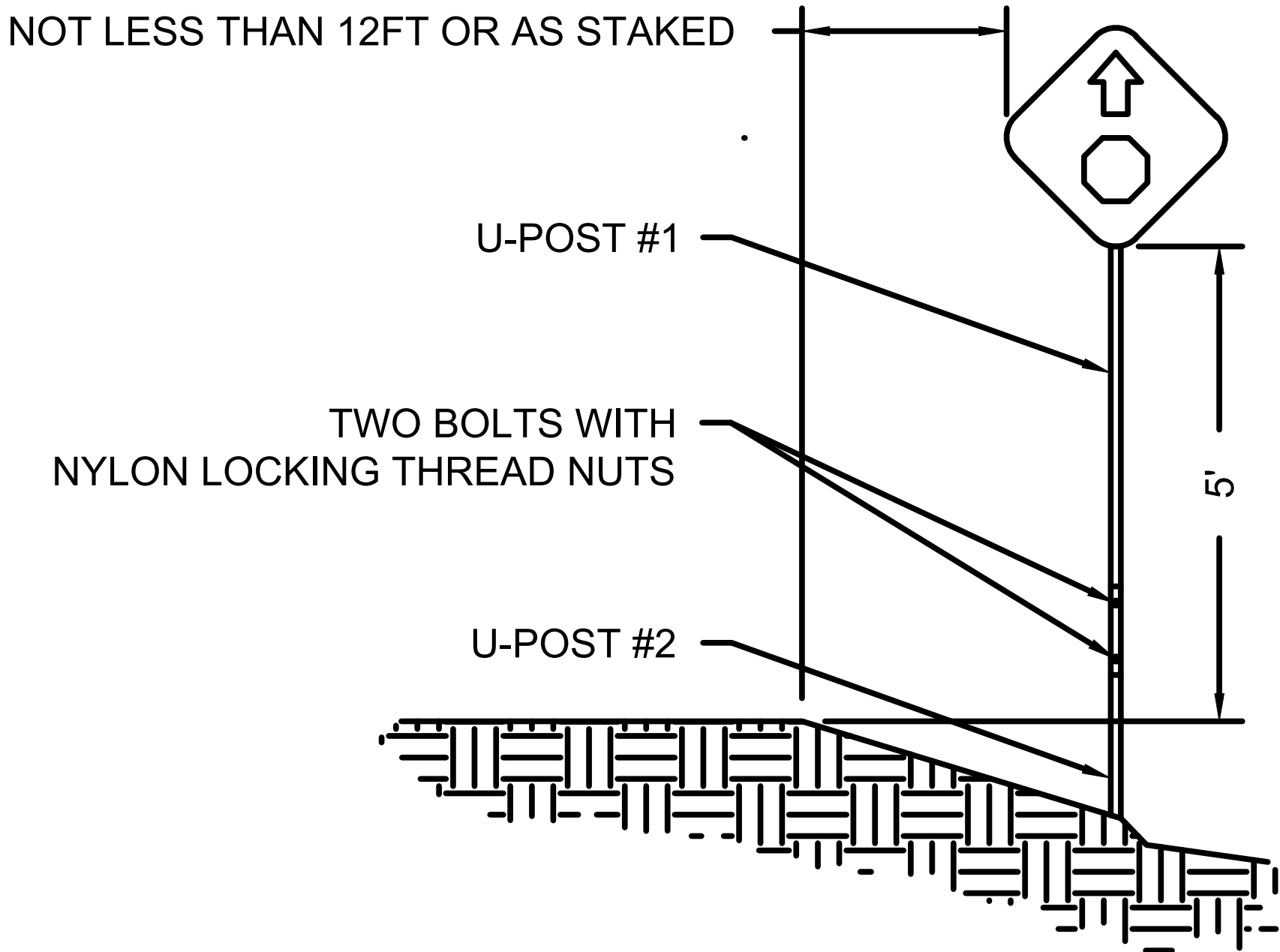
WARNING & REGULATORY SIGN INSTALLATION GENERAL NOTES:

1. U-POSTS AND SIGN SHALL BE PROVIDED BY CONTRACTOR.
2. POSTS SHALL BE GREEN STEEL.
3. TWO U-POSTS SHOULD BE BOLTED TOGETHER TO ACHIEVE REQUIRED HEIGHT.
4. ALL HARDWARE FOR INSTALLATION SHALL BE PROVIDED BY CONTRACTOR. HARDWARE SHOULD BE GALVANIZED OR ALUMINUM.
5. SIGNS SHOULD BE ATTACHED TO POSTS IN A MANNER THAT THE HARDWARE DOES NOT INTERFERE WITH LEGIBILITY OF SIGN.
6. DISPOSE OF EXISTING POST OFF PROJECT AS REQUIRED BY STATE AND LOCAL LAWS.
7. LOCATION OF SIGN CAN BE DETERMINED BY COR IN FIELD OR AS STAKED.
8. COMPLETE INSTALLATION GUIDELINES CAN BE FOUND IN THE FOREST SERVICE SIGN INSTALLATION GUIDE.



TYPICAL ROUTE NUMBER SIGN

NOT TO SCALE



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TOFTE AND GUNFLINT RANGER
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DRAWING TITLE

**TYPICAL SIGN
INSTALLATION**

DATE 04/01/2022	ARCHIVE NO.
DESIGNER A.HILL	DRAWING SHEET NO. 12
DRAWN A.HILL	
CHECKED J.OLSON	
PROJECT NO.	SHEET 012 OF 026

NOTE: CONTRACTOR IS RESPONSIBLE FOR CALLING (GOPHER STATE ONE) PRIOR TO DIGGING TO DETERMINE IF ANY UNDERGROUND CABLE IS PRESENT IN THE EXCAVATION AREA.

Install 6" x 12" Type 2 (OM2-2)
Object Marker Both
Sides, Both Posts,

Install 12" x 36" Barricade
Markers (Red/White) Both Sides
Each Gate Arm

Apply 16" Wide Red/White Reflective
Tape Both Sides Each Gate Arm

Slope to Drain
Away From Post

T-Lock-Bar

Sleeve

Install 12" x 36" Barricade
Markers (Red/White) Both Sides
Each Gate Arm

Install 6" x 12" Type 2
Object Marker Both
Sides, Both Posts,

Road Shoulder

(12'-14')

(36" MIN.)

(48" MAX.)

Install 6" x 12" Type 2 (OM2-2)
Object Marker Both
Sides, Both Posts,

Install 2-4"x4"x 8' Cedar Posts 9" from end of
gate arm and 12" farther out from shoulder as
gate post. Set into ground approx. same depth
as gate post.

A tube 36"x4' = 1 yard of concrete

SINGLE LANE-DOUBLE ARM GATE TYPICAL INSTALLATION



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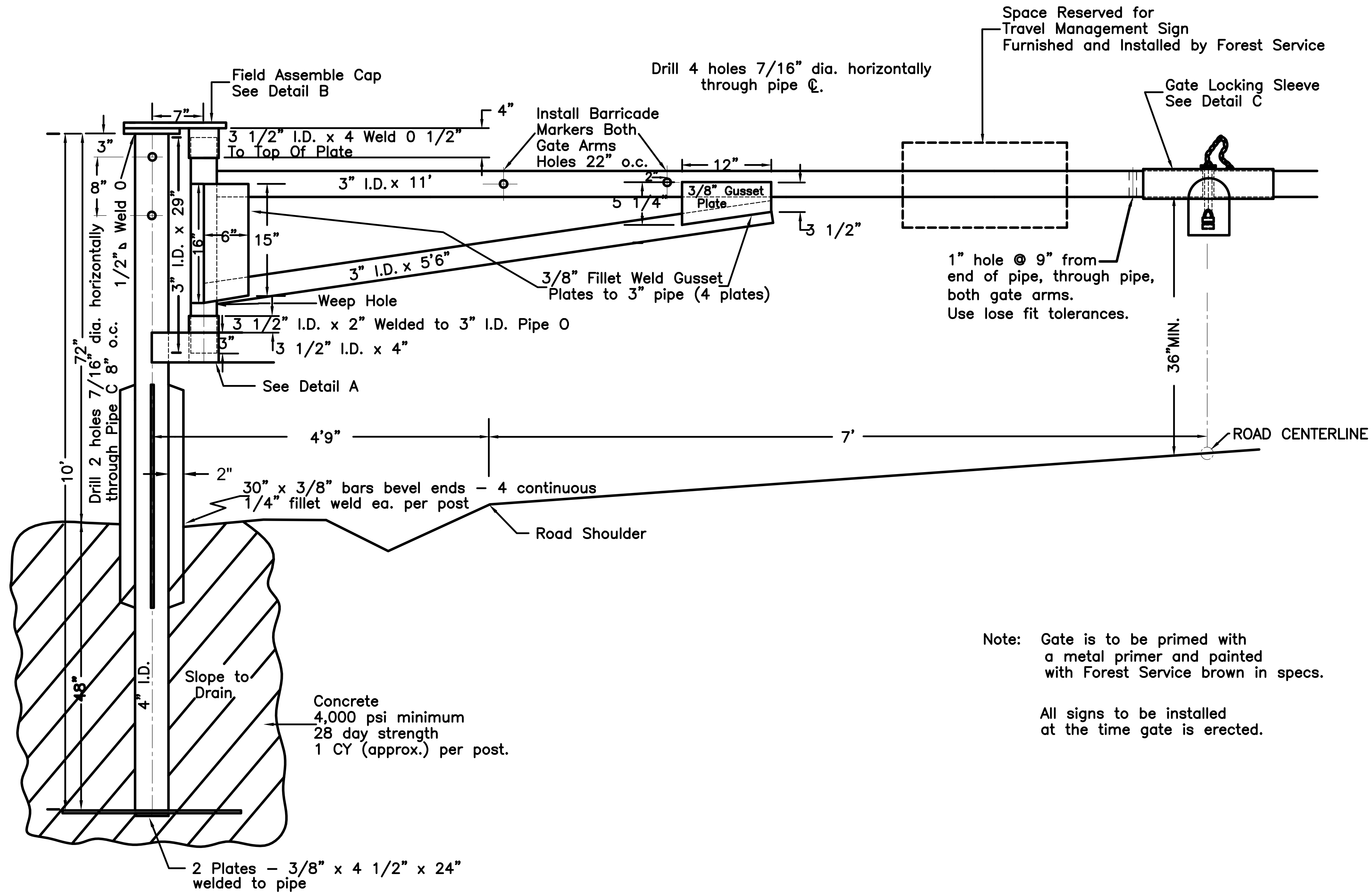
TOFTE AND GUNFLINT RANGER
DISTRICTS

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STANDARD GATE
INSTALLATION

DATE 04/01/2022	ARCHIVE NO.
DESIGNER A.HILL	DRAWING SHEET NO. 13
DRAWN A.HILL	
CHECKED J.OLSON	
PROJECT NO.	SHEET 013 OF 026

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Note: Gate is to be primed with
a metal primer and painted
with Forest Service brown in specs.

All signs to be installed
at the time gate is erected.



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**STANDARD GATE
INSTALLATION DETAILS**

DATE 04/01/2022	ARCHIVE NO.
DESIGNER A.HILL	DRAWING SHEET NO. 14
DRAWN A.HILL	
CHECKED J.OLSON	
PROJECT NO.	SHEET 014 OF 026

DOUBLE ARM GATE FOR SINGLE LANE ROAD

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HONEYMOON TRAIL (FR 164) Worklist							
Project Milepost from Sawbill Trail	TASK	Clean Ditch	Const/Recon Ditch	3" minus Select Granular	Additional Crushed	Replace Culvert	COMMENTS
0.771	SURFACING				10		Spread on FR164C
2.010	DITCHING		1000				CONSTRUCT DITCH RIGHT
2.334	SURFACING				100		Spread up FR1610 approx 3" (Radio tower road)
5.909	SURFACING				10		Spread on Driveway Left
6.049	SURFACING				50		Spread in Poplar River CG
7.243	SURFACING				100		Spread in White Pine Boat Access
7.758	SURFACING				30		FR 1266
7.760	DITCHING		500				Construct Ditch Left
7.819	SURFACING				10		Driveway Left
7.871	REPLACE CULVERT					21X15X26	Replace Culvert 21x15x26
7.896	REPLACE CULVERT					21X15X26	Replace Culvert 21x15x26
7.926	SURFACING				10		Driveway Right
7.975	SURFACING				10		Driveway Right
7.979	SURFACING				10		Driveway Left
8.095	SURFACING				10		Driveway Right
8.145	SURFACING				10		Driveway Left
8.170	SURFACING				10		Driveway Left
8.216	SURFACING				10		Driveway Left
8.219	SURFACING				20		Lund Road (Right)
8.277	REPLACE CULVERT					24X18X26	Replace Culvert 24x18x26
8.277	DITCHING	1000					Clean Ditch Right
8.294	SURFACING				10		Driveway Right
8.340	SURFACING				10		Driveway Right
8.395	SURFACING				10		Driveway Left
8.395	DITCHING	2500					Clean ditch as staked
8.408	SURFACING				10		Driveway Right
8.431	REPLACE CULVERT					21X15X26	Replace Culvert 21x15x26
8.492	SURFACING				10		Turnout Left
8.561	SURFACING				10		Driveway Left
8.584	REPLACE CULVERT					21X15X26	Replace Culvert 21x15x26
8.592	SURFACING				10		Driveway Left
8.610	SURFACING				20		Driveway Both Sides
8.679	REPLACE CULVERT					21X15X26	Replace Culvert 21x15x26
8.755	SURFACING				10		Driveway Left
9.039	SURFACING				30		FR 337 Barker Lake Road
9.207	DITCHING		1000				Construct Ditch Left
9.207	REPLACE CULVERT					21X15X28	Replace Culvert 21x15x28
9.265	DITCHING	1500					Clean ditch left
9.265	SURFACING				100		FR 164K Pit Road
9.395	REPLACE CULVERT					28X20X26	Replace Culvert 28x20x26
9.571	SURFACING				10		Driveway Right



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SUPERIOR NATIONAL FOREST

TOFTE AND GUNFLINT RANGER DISTRICTS

DRAWING TITLE

FR 164 HONEYMOON TRAIL WORKLIST #1

DATE 02/23/2023	ARCHIVE NO.
DESIGNER P.LINDGREN	DRAWING SHEET NO. 15
DRAWN P.LINDGREN	
CHECKED J.STREZISHAR	
PROJECT NO.	SHEET 015 OF 026

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9.687	REPLACE CULVERT					21X15X26	Replace Culvert 21x15x26
9.696	SURFACING				10		Driveway Right
		5000	2500	0	650		
HONEYMOON TRAIL (FR164)OPTIONAL BID ITEMS							
0.001	INSTALL /REPLACE SIGN						Install Stop sign
0.001	INSTALL /REPLACE SIGN						Install route marker
0.021	INSTALL /REPLACE SIGN						install stop ahead sign
0.068	REPLACE CULVERT					21X15X24	
0.432	REPLACE CULVERT					21X15X24	
0.645	REPLACE CULVERT					21X15X24	
0.823	REPLACE CULVERT					21X15X24	
0.969	REPLACE CULVERT					21X15X24	
1.088	REPLACE CULVERT					21X15X24	
1.247	REPLACE CULVERT					21X15X26	
1.416	REPLACE CULVERT					21X15X24	
1.485	REPLACE CULVERT					21X15X26	
1.720	REPLACE CULVERT					21X15X24	
1.756	REPLACE CULVERT					21X15X28	
1.849	REPLACE CULVERT					21X15X24	
1.900	REPLACE CULVERT					21X15X26	
1.986	REPLACE CULVERT					21X15X24	
2.658	REPLACE CULVERT					21X15X24	
3.251	REPLACE CULVERT					35X24X26	
3.270	REPLACE CULVERT					35X24X26	
3.597	REPLACE CULVERT					21X15X28	
3.920	REPLACE CULVERT					21X15X26	
4.310	REPLACE CULVERT					21X15X24	
4.594	REPLACE CULVERT					21X15X24	
4.810	REPLACE CULVERT					21X15X28	
4.944	REPLACE CULVERT					21X15X26	
5.022	REPLACE CULVERT					21X15X24	
5.190	REPLACE CULVERT					21X15X24	
5.900	REPLACE CULVERT					21X15X24	
6.050	REPLACE CULVERT					21X15X32	
6.381	REPLACE CULVERT					35X24X28	
6.483	REPLACE CULVERT					21X15X24	
6.713	REPLACE CULVERT					21X15X26	
7.052	REPLACE CULVERT					21X15X26	
7.228	REPLACE CULVERT					21X15X30	
7.353	REPLACE CULVERT					21X15X24	
7.395	REPLACE CULVERT					21X15X26	
7.458	REPLACE CULVERT					21X15X24	
7.646	REPLACE CULVERT					21X15X26	
9.039	INSTALL /REPLACE SIGN						Replace stop sign on FR337 Barker Lake Road
9.770	INSTALL /REPLACE SIGN						Replace Stop sign ahead
9.778	INSTALL /REPLACE SIGN						Install route marker
9.778	INSTALL /REPLACE SIGN						Replace Stop sign



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EASTERN REGION

STAMPS, LOGOS, AND SEALS

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NO.	REVISION / ISSUE	DATE
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PROJECT NAME
EAST ZONE ROAD IMPROVEMENTS

SUPERIOR NATIONAL FOREST

TOFTE AND GUNFLINT RANGER DISTRICTS

DATE
02/23/2023

ARCHIVE NO.

DESIGNER
P.LINDGREN

DRAWN
P.LINDGREN

CHECKED
J.STREZISHAR

DRAWING SHEET NO.
16

PROJECT NO.

SHEET 016 OF 026

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SOUTH BRULE ROAD (FR 325) Worklist

Project Mpt from Gunflint Trail	TASK	Clean Ditch	Const/Recon Ditch	3" minus Select Granular	Additional Crushed	Replace Culvert	COMMENTS
0.0-.044	ROAD RECONDITIONING						Road recondition to 24' wide subgrade
0-6.043	ROAD RECONDITIONING						Road Reconditioning
0-6.043	ROAD RECONDITIONING						Remove sod from all curve widening and turn outs
0.010	ROAD RECONDITIONING						Subcut road 6"
.044 - 6.043	ROAD RECONDITIONING						Road recondition to 20' subgrade/restore turnouts
0.027	DITCHING	430					CI Dt 180' LT/250' RT
0.110	DITCHING	300					CL DT 150' both sides
0.154	SURFACING				15		Turnout Left
0.160	DITCHING	300					CL DT RT 300'
0.237	SURFACING				15		Turnout Left
0.260	DITCHING	220					Clean 220' RT
0.291	SURFACING				15		Turnout Left
0.346	SURFACING			20			Place pit run in soft spot about 20 CY
0.420	DITCHING	300					Clean 300' RT, maintain curve widening RT/LF
0.430	SURFACING				15		Turnout Right
0.455	SURFACING				15		Turnout Left
0.524	SURFACING				15		Turnout Right
0.559	REPLACE CULVERT					18" x 32'	Extend outlet 24".
0.561	SURFACING				15		Turnout Left
0.580	SURFACING				15		Turnout Right
0.610	DITCHING	1200					Clean 1200' rt
0.632	SURFACING				15		Turnout Left
0.660	REPLACE CULVERT					17" x 13" x 30'	Extend each side 12".
0.700	SURFACING				15		Turnout Right
0.778	SURFACING				15		Turnout Right
0.829	REPLACE CULVERT					18" x 28'	
0.887	SURFACING				15		Turnout Left
0.949	SURFACING				15		Turnout Left
1.076	REPLACE CULVERT					18" x 42'	
1.090	SURFACING				15		Turnout Right
1.187	REPLACE CULVERT					30" x 32'	Set 12" below. Add 10 cy fill around outlet.
1.253	SURFACING				15		Turnout Left
1.349	SURFACING				15		Turnout Right
1.380	DITCHING	50					Deepen ditch across old temp rd 50'
1.437	SURFACING				15		Turnout Right
1.450	DITCHING		100				Const DT 75' RT across old road
1.486	DITCHING	250					Clean DT 250' Rt
1.502	SURFACING				15		Turnout Left
1.525	REPLACE CULVERT					17" x 13" x 26'	
1.540	SURFACING				15		Turnout Right
1.595	REPLACE CULVERT					24" x 30'	Set 6" below.



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PROJECT NAME

EAST ZONE ROAD
IMPROVEMENTS

SUPERIOR NATIONAL
FOREST


TOFTE AND GUNFLINT RANGER
DISTRICTS

DRAWING TITLE

FR 325 SOUTH BRULE
RIVER ROAD
WORKLIST #1

DATE 02/23/2023	ARCHIVE NO.
DESIGNER P.LINDGREN	DRAWING SHEET NO. 17
DRAWN P.LINDGREN	
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1.630	SURFACING				15		Turnout Right
1.646	SURFACING				15		Turnout Left
1.659	REPLACE CULVERT					18" x 30'	
1.720	SURFACING				15		Turnout Left
1.750	SURFACING				15		Turnout Right
1.840	DITCHING	300					Clean DT 150' RT/150' LT
1.868	SURFACING				15		Turnout Left
1.921	REPLACE CULVERT					71" x 47" x 32'	Set 18" below. Optional?
1.991	SURFACING				15		Turnout Left
2.000	DITCHING	500					Clean 500' RT
2.081	SURFACING				15		Turnout Left
2.195	SURFACING				15		Turnout Left
2.197	REPLACE CULVERT					30" x 34'	Set 6" below.
2.250	DITCHING	500					Clean 500' RT
2.343	SURFACING				15		Turnout Left
2.420	DITCHING	100					Clean 100' RT
2.424	REPLACE CULVERT					18" x 38'	Ditch 30' around inlet and outlet.
2.486	SURFACING				15		Turnout Right
2.500	DITCHING	100					Clean 100' RT
2.594	REPLACE CULVERT					24" x 36'	Set 6" below.
2.638	REPLACE CULVERT					18" x 32'	
2.672	SURFACING				15		Turnout Right
2.704	SURFACING				15		Turnout Right
2.730	DITCHING						Clean 100' RT
2.780	DITCHING	230					Clean DT RT
2.796	SURFACING				15		Turnout Left
2.877	SURFACING				15		Turnout Left
2.885	REPLACE CULVERT					18" x 30'	
2.92	REPLACE CULVERT					18" x 30'	
2.950	SURFACING				15		Turnout Right
2.969	REPLACE CULVERT					18" x 32'	Add 2 CY 6 12" riprap at outlet.
3.050	SURFACING				15		Turnout Left
3.176	SURFACING				15		Turnout Left
3.260	DITCHING	700					Clean DT RT
3.307	SURFACING				15		Turnout Right
3.335	REPLACE CULVERT					18" x 28'	
3.350	DITCHING						Remove logging road, ditch across
3.360	SURFACING				15		Turnout Left
3.391	REPLACE CULVERT					18" x 36'	
3.438	SURFACING				15		Turnout Left
3.500	SURFACING				15		Turnout Right
3.580	SURFACING				15		Turnout Left
3.600	DITCHING	800					Clean 400' each side
3.632	SURFACING				15		Turnout Right
3.799	SURFACING				15		Turnout Left
3.900	DITCHING	350					Clean 175' each side
3.940	DITCHING	300					Clean 300' RT
3.965	SURFACING				15		Turnout Right
3.990	SURFACING				15		Turnout Right
4.030	DITCHING	250					Clean 250' RT
4.072	SURFACING				15		Turnout Left



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EAST ZONE ROAD IMPROVEMENTS

SUPERIOR NATIONAL FOREST

TOFTE AND GUNFLINT RANGER DISTRICTS

DRAWING TITLE

FR 325 SOUTH BRULE RIVER ROAD WORKLIST #2


DATE 02/23/2023	ARCHIVE NO.
DESIGNER P.LINDGREN	DRAWING SHEET NO.
DRAWN P.LINDGREN	18
CHECKED J.STREZISHAR	
PROJECT NO.	SHEET 018 OF 026

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4.160	DITCHING	175					Clean 175' RT
4.200	SURFACING				15		Turnout Right
4.210	DITCHING	100					Clean 100' RT
4.213	REPLACE CULVERT					18" x 32'	
4.322	REPLACE CULVERT					71" x 47" x 42'	Set 15" below.
4.387	SURFACING				15		Turnout Left
4.470	DITCHING	100					Clean 100' RT
4.539	SURFACING				15		Turnout Left
4.540	SURFACING				15		Turnout Right
4.547	REPLACE CULVERT					24" x 38'	
4.640	SURFACING				15		Turnout Left
4.73	REPLACE CULVERT					24" x 36'	
4.730	DITCHING	700					Clean 450' Rt/ 250' LT
4.853	SURFACING				15		Turnout Left
4.889	REPLACE CULVERT					24" x 36'	
4.900	DITCHING	500					Clean 250' each side
5.015	SURFACING				15		Turnout Left
5.047	REPLACE CULVERT					24" x 42'	
5.080	DITCHING	400					Clean 200' each side
5.130	SURFACING				15		Turnout Left
5.200	SURFACING				15		Turnout Left
5.233	SURFACING				15		Turnout Left
5.264	REPLACE CULVERT					24" x 36'	Extend inlet by 18", outlet by 30".
5.300	SURFACING				15		Turnout Right
5.302	REPLACE CULVERT					24" x 34'	Extend outlet 24".
5.375	SURFACING			50			Add pit run to soft spot 50 CY
5.404	REPLACE CULVERT					24" x 40'	
5.423	SURFACING				15		Turnout Right
5.450	DITCHING	225					Clean 225' Rt
5.504	SURFACING				15		Turnout Left
5.510	DITCHING	250					Clean 250' RT
5.587	SURFACING				15		Turnout Right
5.615	DITCHING	500					Clean 250' each side
5.713	REPLACE CULVERT					21" x 15" x 32'	Set 6" below.
5.730							
5.752	SURFACING				15		Turnout Left
5.77	REPLACE CULVERT					24" x 30'	Set 6" below.
5.920	DITCHING	160					Clean DT LT 160'
6.043							End of Road
		10290	100	70	915		

SOUTH BRULE ROAD (FR325)OPTIONAL BID ITEMS

0.000	INSTALL/REPLACE SIGN						Stop sign, FR325 route marker, "TWIN LAKES" Feature destination sign
0.100	INSTALL/REPLACE SIGN						Stop ahead sign
1.272	REPLACE CULVERT					18" x 30'	
1.369	REPLACE CULVERT					18" x 32'	
1.445	REPLACE CULVERT					17" x 13" x 30'	
2.000	REPLACE CULVERT					18" x 40'	



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EAST ZONE ROAD
IMPROVEMENTS

SUPERIOR NATIONAL
FOREST

TOFTE AND GUNFLINT RANGER
DISTRICTS

DRAWING TITLE

FR 325 SOUTH BRULE
RIVER ROAD
WORKLIST #3

DATE
02/23/2023

ARCHIVE NO.

DESIGNER
P.LINDGREN

DRAWN
P.LINDGREN

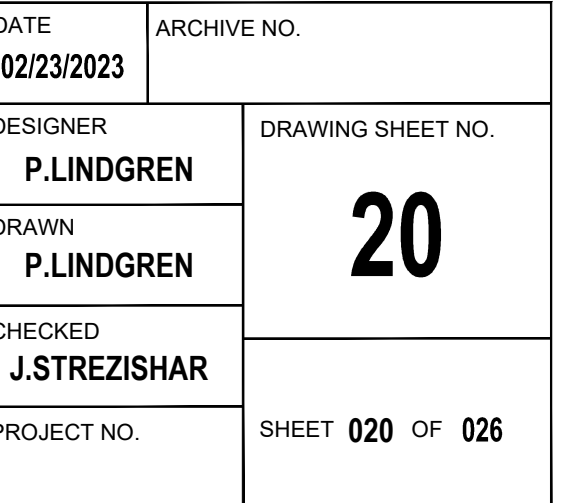
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J.STREZISHAR

PROJECT NO.

DRAWING SHEET NO.

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SHEET 019 OF 026



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BRULE LAKE ROAD (FR 326) Worklist

Project Mileage from FR170	TASK	Clean Ditch	Const/Recon Ditch	3" minus Select Granular	Additional Crushed	Replace Culvert	COMMENTS
0.672	Replace Culvert					60" x 44' Set 6-12" lower. Remove beaver dam downstream. Install beaver deceiver cage.	
0.875	Replace Culvert					24" x 36'	
1.251	Replace Culvert					21" x 36'	
1.641	Clean Ditch	30					Ditch left around culvert to prevent water from sitting in culvert.
1.641	Replace Culvert					21" x 36'	
1.696	Clean Ditch	300					Ditch both. 150' each side.
1.765	Replace Culvert					21" x 36'	
2.15	Surfacing				20		Spread in pull-through turnout at left near Tomash Lake.
2.532	Clean Ditch	300					Ditch both. 160' left, 140' right.
2.611	Replace Culvert					24" x 36'	Set 6-12" lower.
2.678	Clean Ditch	540					Ditch both. 270' each side.
2.795	Surfacing				10		Place in turnout.
3.01	Clean Ditch	160					Ditch Right.
3.155	Clean Ditch	220					Ditch both. 120' left, 100' right.
3.72	Surfacing				10		Place in right turnout at Star Lake parking area.
3.881	Replace Culvert					24" x 50'	Set 6" lower.
3.889	Surfacing				370		Spread throughout Homer Lake boat access drive and parking area.
4.4	Clean Ditch	300					Ditch Right.
4.548	Replace Culvert					21" x 62'	Located in deep fill.
4.85	Clean Ditch	415					Ditch Right.
5.018	Replace Culvert					24" x 46'	
5.251	Replace Culvert					24" x 54'	Install beaver cone on right side.
5.288	Replace Culvert					24" x 42'	Install beaver cone on right side.
5.37	Surfacing				10		Place in turnout at left.
5.471	Replace Culvert					21" x 52'	
5.646	Surfacing				400		Spread throughout Brule Lake boat access drive and parking area.
5.731	Replace Culvert					21" x 30'	Under parking lot entrance.
5.920	Replace Culvert					21" x 30'	Under parking lot exit.
		2265	0	0	820		

STAMPS, LOGOS, AND SEALS

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EAST ZONE ROAD
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TOFTE AND GUNFLINT RANGER
DISTRICTS

DRAWING TITLE

FR 326 BRULE LAKE
ROAD WORKLIST #1

DATE 02/23/2023	ARCHIVE NO.
DESIGNER P.LINDGREN	DRAWING SHEET NO.
DRAWN P.LINDGREN	21
CHECKED J.STREZISHAR	
PROJECT NO.	SHEET 021 OF 026

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DISTRICTS

DRAWING TITLE

FR 326 BRULE LAKE
ROAD WORKLIST #2

DATE 02/23/2023	ARCHIVE NO.
DESIGNER P.LINDGREN	DRAWING SHEET NO. 22
DRAWN P.LINDGREN	
CHECKED J.STREZISHAR	
PROJECT NO.	SHEET 022 OF 026

BRULE LAKE ROAD (FR326)OPTIONAL BID ITEMS

0.06	Replace sign/post.						Install "Stop" sign.
0.1	Replace sign/post						Install Route Marker sign and post.
0.123	Replace sign/post						Install "Stop Ahead" sign.
0.178	Clean Ditch	560					Ditch both. 260' left, 300' right. Clean brush from ditches. Pull in slope.
0.276	Clean Ditch	320					Ditch Right.
1.518	Clean Ditch	680					Ditch both. 340' each side.
3.155	Clean Ditch	220					Ditch both. 120' left, 100' right.
3.72	Replace sign/post						Install sign/post: 4 x 4 post, 10 x 28 "STAR LAKE" feature destination sign and 12 x 12 canoeing symbol sign (RS-079)
3.89	Replace sign/post						Install "Stop" sign at end of Homer Lake boat landing road.
5.9	Replace sign/post						Remove and reinstall "No Camping" sign, install "One Way" (R6-1) arrow sign on same post.
5.91	Remove Structures						Remove and dispose of ~40 timber parking curb wheelstops within parking area.
5.92	Replace sign/post						Install "Stop" sign. Install "Do Not Enter" sign at parking lot exit.
		1780					

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ONION RIVER ROAD (FR 336) Worklist

Project M _p from FR170	TASK	Clean Ditch	Const/Recon Ditch	3" minus Select Granular	Additional Crushed	Replace Culvert	COMMENTS
0.028	Install Structure						Install french drain along left side of road to help drain wet area.
2.120							Reset culvert underneath ski trail crossing along right side of road with minimum 1' of cover.
2.12	Replace Culvert					18" x 18'	Set 6-12" lower.
2.200	Select Borrow			60			Raise low area min 6" select borrow. Spread over 150'.
2.206	Replace Culvert					24" x 32'	Set 6" lower.
2.216	Surfacing				20		Right turnout.
2.277	Replace Culvert					30" x 32'	Set 6" lower
2.285	Clean Ditch	180					Clean Ditch Right
2.500	Construct Ditch		50				50' ditch across old road to divert runoff right side.
2.536	Replace Culvert					42" x 46'	Set 12" lower
2.680	Select Borrow			50			Place additional aggregate in low spot to raise grade 6".
2.746	Clean Ditch	50					Clean Ditch Left
2.746	Surfacing				10		Ditch around culvert inlet. Replace fill over and around inlet (left side).
2.909	Replace Culvert					42" x 29" x 30"	Set 6" lower. Return surrounding slope on left side of road to 2:1.
3.047	Replace Culvert					18" x 26'	
3.050	Ditch Construction						Lower ditch block 6" below finished road grade.
3.050	Select Borrow			180			Raise grade 3" with additional aggregate for 1000' traveling uphill.
3.19	Replace Culvert					21" x 28'	
3.240	Construct Ditch		30				Remove culvert underneath ski trail, reinstall ditch, taper backslope of bank 10'.
3.28	Replace Culvert					32" x 24" x 30"	Set 6" lower. Set ditch block 6" lower than road grade.
3.3	Replace Culvert					18" x 16'	Under ski trail. Remove. Reinstate ditch line and taper back slope.
3.350	Surfacing				10		Turnout right.
3.380	Rock Removal						Remove 2 rocks
3.470	Surfacing/ Select Borrow			30	10		Raise grade 6". Turnout left.
3.520	Surfacing				10		Turnout left.
3.630	Select Borrow			25			Raise grade 6" for 100' uphill.
3.641	Replace Culvert					24" x 34'	Fix bank around culvert to be 2:1.
3.680	Clean Ditch	150					Clean Ditch Right
3.817	Surfacing				10		Turnout right.
3.850	Clean Ditch	550					Clean Ditch Right
3.850	Select Borrow			150			Raise grade 3" for 900', up and over hill to bottom.
3.857	Replace Culvert					42" x 29" x 34"	Set 6" lower.
4.020	Surfacing				10		Turnout right.
4.038	Clean Ditch	100					Clean Ditch Right
4.083	Clean Ditch	950					Clean Ditch Right
4.147	Replace Culvert					72" x 52'	Set 24" lower than existing stream grade.
4.200	Surfacing				10		Turnout left.
4.410	Surfacing				10		Turnout right.
4.411	Culvert Dispoal						Remove old culvert debris in woods on left side of road.
4.411	Replace Culvert					30" x 38'	Set 6" lower.
4.428	Rock Removal						Remove 3 rocks



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PROJECT NAME

EAST ZONE ROAD
IMPROVEMENTS

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TOFTE AND GUNFLINT RANGER
DISTRICTS

DRAWING TITLE

FR 336 ONION RIVER
ROAD WORKLIST #1

DATE 02/23/2023	ARCHIVE NO.
DESIGNER P.LINDGREN	DRAWING SHEET NO. 23
DRAWN P.LINDGREN	
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PROJECT NO.	SHEET 023 OF 026

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4.431	Select Borrow			500			Raise grade 6" for approximately 1500' on road going uphill through muddy areas.
4.558	Replace Culvert					18" x 30'	
4.597	Replace Culvert					35" x 24" x 34'	Set 6" lower. Set ditch block 6" lower than road grade.
4.610	Surfacing				10		Turnout left.
4.666	Replace Culvert					21" x 15" x 34'	
4.799	Replace Culvert					21" x 32'	
4.822	Replace Culvert					21" x 15" x 28'	Set ditch block 6" below road grade.
4.830	Surfacing/ Select Borrow			90	10		Raise grade 3" for 530'. Turnout right.
4.830	Surfacing			40	20		Create parallel parking spaces on left side of road for bike trail. Slope edge at 2:1.
5.000	Surfacing				10		Turnout right.
5	Replace Culvert					21" x 36'	Set 6" lower.
5.077	Replace Culvert					24" x 36'	Set 6" lower.
5.100	Surfacing				20		Place additional agg 20 yd, left side, for increased road width in area.
5.229	Surfacing				10		Turnout right.
5.320	Surfacing				10		Turnout right.
5.326	Replace Culvert					18" x 26'	
5.389	Replace Culvert					42" x 30'	Set 12 24" lower, currently perched, set beneath 10' fill. Place rip rap around outlet.
5.430	Rock Removal						Remove rock from ditch.
5.430	Select Borrow			100			Raise grade 6" to end of road.
5.571	Surfacing				100		Spread approximately 100 cy at dead end turnaround for overflow parking area.
		1980	80	1225	290		

ONION RIVER ROAD (FR336)OPTIONAL BID ITEMS

2.12	Surfacing				670		Place 670 cy approximately 6" throughout parking areas and drive.
0.010	Install Sign/post						Install "Stop" sign at HWY 61 intersection.
0.015	Install Sign/post						Install Route Marker
0.189	Install Sign/post						Install "Stop Ahead" sign.
2.120	Install Sign/post						Install "Stop" sign at end of Oberg Mtn. parking lot loop and at FR336 intersection. Replace Recreation ID sign. Replace "Dead End" sign.
2.12	Surfacing				1630		Place additional 2" 12' lift top agg surfacing MNDOT Class 1. From Oberg Mtn. parking lot to POE.
2.144	Install Structure						Install gate.
2.144	Install Sign/post						Replace "Dead End" sign.
2.580	Clean Ditch	550					Clean Ditch both sides. 250 left 300 right.
		550			2300		

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STAMPS, LOGOS, AND SEALS

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PROJECT NAME

EAST ZONE ROAD
IMPROVEMENTS

SUPERIOR NATIONAL
FOREST

TOFTE AND GUNFLINT RANGER
DISTRICTS

DRAWING TITLE

FR 336 ONION RIVER
ROAD WORKLIST #2

DATE 02/23/2023	ARCHIVE NO.
DESIGNER P.LINDGREN	DRAWING SHEET NO. 24
DRAWN P.LINDGREN	
CHECKED J.STREZISHAR	
PROJECT NO.	SHEET 024 OF 026

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FR 164 Honeymoon Trail Culvert Schedule

	New Size	New Length
MP	span x rise (in)	(ft.)
7.871	21x15	26
7.896	21x15	26
8.277	24x18	26
8.431	21x15	26
8.584	21x15	26
8.679	21x15	26
9.207	21x15	28
9.395	28x20	26
9.687	21x15	26
Option Item Culverts		
0.068	21x15	24
0.432	21x15	24
0.645	21x15	24
0.823	21x15	24
0.969	21x15	24
1.088	21x15	24
1.247	21x15	26
1.416	21x15	24
1.485	21x15	26
1.720	21x15	24
1.756	21x15	28
1.849	21x15	24
1.900	21x15	26
1.986	21x15	24
2.658	21x15	24
3.251	35x24	26
3.270	35x24	26
3.597	21x15	28
3.920	21x15	26
4.310	21x15	24
4.594	21x15	24
4.810	21x15	28
4.944	21x15	26
5.022	21x15	24
5.190	21x15	24
5.900	21x15	24
6.050	21x15	32
6.381	35x24	28
6.483	21x15	24
6.713	21x15	26
7.052	21x15	26
7.228	21x15	30
7.353	21x15	24
7.395	21x15	26
7.458	21x15	24
7.646	21x15	26

All culverts will be polymer coated and one piece. No Bands. Unless otherwise noted all culverts will be 14ga.


FR325 South Brule River Road Culvert Schedule

	New Size	New Length
MP	span x rise (in)	(ft.)
0.559	18	32
0.660	17X13	30
0.829	18	28
1.076	18	42
1.187	30	32
1.525	17X13	26
1.595	24X30	30
1.659	18	30
1.921	71X47	32
2.197	30	34
2.424	18	38
2.594	24	36
2.638	18	32
2.885	18	30
2.92	18	30
2.969	18	32
3.335	18	28
3.391	18	36
4.213	18	32
4.322	71X47	42
4.547	24	38
4.73	24	36
4.889	24	36
5.047	24	42
5.264	24	36
5.302	24	34
5.404	24	40
5.713	21X15	32
5.77	24	30
Option Item Culverts		
1.272	18	30
1.369	18	32
1.445	17X13	30
2.000	18	40
2.124	18	44
3.217	24	40

All culverts will be polymer coated and one piece. No Bands. Unless otherwise noted all culverts will be 14ga.

14ga 5"x1" corrugations

14ga 5"x1" corrugations



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CULVERT SCHEDULE #1

DATE 02/23/2023	ARCHIVE NO.
DESIGNER P.LINDGREN	DRAWING SHEET NO. <div>25</div>
DRAWN P.LINDGREN	
CHECKED J.STREZISHAR	
PROJECT NO.	SHEET 025 OF 025

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FR326 Brule lake Road Culvert Schedule

	New Size	New Length
MP	span x rise (in)	(ft.)
0.672	60	44
0.875	24	36
1.251	21	36
1.641	21	36
1.765	21	36
2.611	24	36
3.881	24	50
4.548	21	62
5.018	24	46
5.251	24	54
5.288	24	42
5.471	21	52
5.731	21	30
5.920	21	30
Option Item Culverts		

14ga 5"x1" corrugations

All culverts will be polymer coated and one piece. No Bands. Unless otherwise noted all culverts will be 14ga.


FR336 Onion River Road Culvert Schedule

	New Size	New Length
MP	span x rise (in)	(ft.)
2.12	18	18
2.206	24	32
2.277	30	32
2.536	42	46
2.909	42x29	30
3.047	18	26
3.19	21	28
3.28	32x24	30
3.3	18	16
3.641	24	34
3.857	42x29	34
4.147	72	52
4.411	30	38
4.558	18	30
4.597	35x24	34
4.666	21x15	34
4.799	21	32
4.822	21x15	28
5	21	36
5.077	24	36
5.326	18	26
5.389	42	30
Option Item Culverts		

12ga

12ga

All culverts will be polymer coated and one piece. No Bands. Unless otherwise noted all culverts will be 14ga.



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CULVERT SCHEDULE #2

DATE 02/23/2023	ARCHIVE NO.
DESIGNER P.LINDGREN	DRAWING SHEET NO. <div>26</div>
DRAWN P.LINDGREN	
CHECKED J.STREZISHAR	
PROJECT NO.	SHEET 026 OF 026