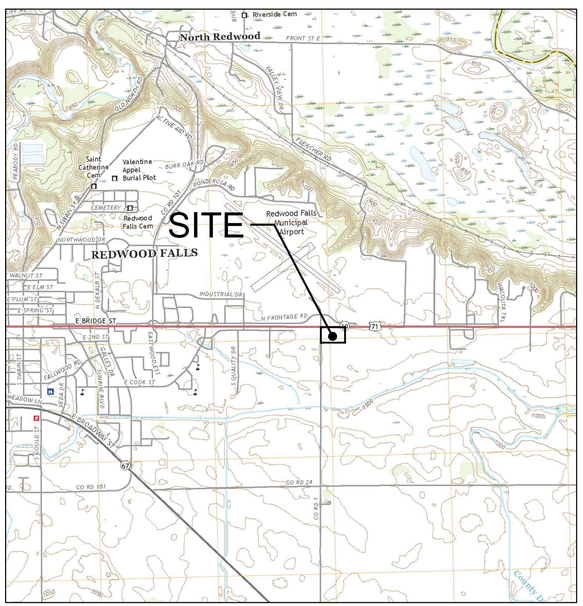
KWIK TRIP STORE #1203

PERMIT SET

CITY OF REDWOOD FALLS
REDWOOD COUNTY, MINNESOTA



SITE LOCATION MAP

AERIAL LOCATION MAP

DRAWING INDEX

OWNER
KWIK TRIP, INC
EMILY HELWID
1626 OAK STREET
LA CROSSE, WI 54602
PHONE: 608-791-7443
EMAIL: ehelwig@kwiktrip.com

CIVIL ENGINEER
CARLSON MCCAIN, INC.
JOSEPH RADACH
3890 PHEASANT RIDGE DR NE, #100
BLAINE, MN 55449
PHONE: 763-489-7912
EMAIL: jradach@carlsonmccain.com

SITE DESIGNER
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EMAIL: jradach@carlsonmccain.com

SURVEYOR
EG RUD & SONS
SAMUEL NIEMELA
990 5TH AVE SE, STE 2
HUTCHINSON, MN 55350
PHONE: 320-587-2025
EMAIL: sniemela@egrud.com

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
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FAX (608) 781-8960

CARLSON McCAIN
3890 PHEASANT RIDGE DRIVE NE, SUITE 100, BLAINE, MN 55449
TEL 763.489-7900 \ FAX 763.489.7959 \ CARLSONMCCAIN.COM

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.

Name: Joseph T. Radach, P.E.
Signature:
Date: 01/03/22 License #: 45889

COVER SHEET

CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
& SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

DRAWN BY	JTR
SCALE	GRAPHIC
PROJ. NO.	9721-00
DATE	2022-01-03
SHEET	1203 T1

ALTA/NSPS LAND TITLE SURVEY

~for~ KWIK TRIP, INC.

~part of~ NE 1/4 SEC. 5, TWP. 112, R. 35, REDWOOD FALLS, REDWOOD COUNTY, MN.

GRAPHIC SCALE

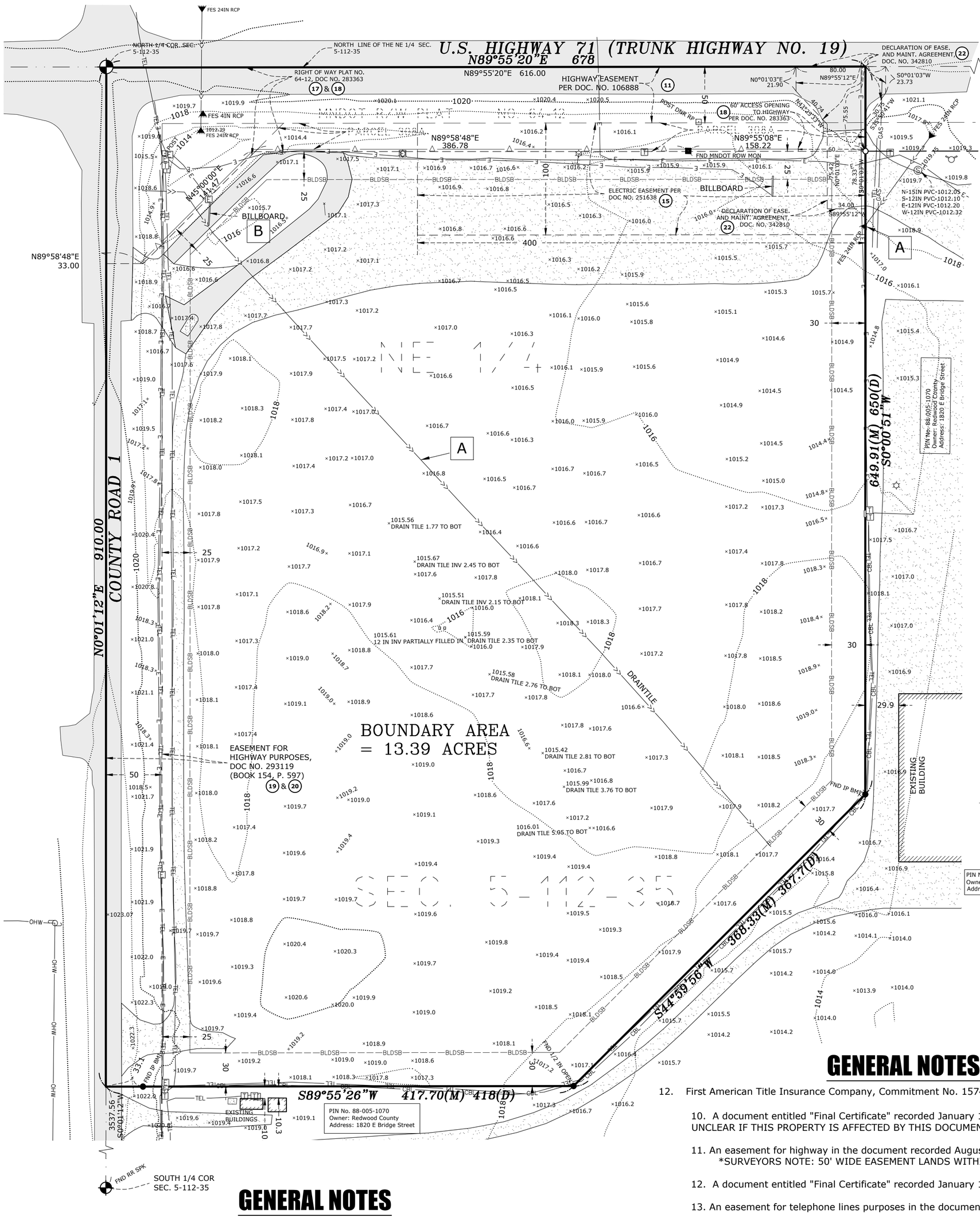
60 0 30 60 120 240

1 INCH = 60 FEET

NORTH

BENCHMARK

BENCHMARK: MNDOT GSID STATION #103971
MNDOT NAME: 6404 D RESET
ELEVATION: 1016.002 NAVD88



VICINITY MAP

PART OF SEC. 05, TWP. 112, RNG. 35

REDWOOD COUNTY, MINNESOTA
(NO SCALE)

LEGEND

- DENOTES IRON MONUMENT FOUND AS LABELED
- DENOTES IRON MONUMENT SET, MARKED RLS# 45356/52705
- DENOTES MNDOT RIGHT-OF-WAY MONUMENT
- DENOTES REDWOOD COUNTY SECTION CORNER
- DENOTES ELECTRICAL BOX
- X 952.36 DENOTES EXISTING SPOT ELEVATION
- DENOTES HYDRANT
- DENOTES LIGHT POLE
- DENOTES POWER POLE
- DENOTES SANITARY SEWER MANHOLE
- DENOTES SIGN
- DENOTES STORM SEWER APRON
- DENOTES TELEPHONE PEDESTAL
- DENOTES WATER VALVE
- DENOTES EXISTING CONTOURS
- DENOTES EXISTING SANITARY SEWER
- DENOTES EXISTING STORM SEWER
- OHW DENOTES OVERHEAD WIRE
- E DENOTES UNDERGROUND ELECTRIC LINE
- GAS DENOTES UNDERGROUND GAS LINE
- TEL DENOTES UNDERGROUND TELEPHONE LINE
- BLDSB DENOTES BUILDING SETBACK LINE
- DENOTES RESTRICTED ROAD ACCESS
- DENOTES BITUMINOUS SURFACE
- DENOTES CONCRETE SURFACE
- DENOTES GRAVEL SURFACE
- DENOTES ADJACENT PARCEL OWNER INFORMATION (PER REDWOOD COUNTY TAX INFORMATION)
- (M) DENOTES DISTANCE MEASURED
- (D) DENOTES DISTANCE PER DESCRIPTION
- (11) DENOTES TITLE COMMITMENT SCHEDULE B-II RELATED ITEM

GENERAL NOTES

1. Fee ownership is vested in Ronald A. Kohls and Charlene R. Kohls, husband and wife, as joint tenants, an undivided one-half interest; Gregory B. Weelborg and Susan R. Weelborg, husband and wife, as joint tenants, an undivided one-half interest.

   The Land referred to herein below is situated in the County of Redwood, State of MN, and is described as follows:

   A tract of land located in the Northeast Quarter (NE1/4) of Section 5, Township 112 North, Range 35 West, described as follows: Commencing at the North Quarter Corner of Section 5 in Township 112 North, Range 35 West of the 5th Principal Meridian, thence East a distance of 678 feet, thence South a distance of 650 feet, thence South 45° West a distance of 367.7 feet, thence West a distance of 418 feet to a point situated on the North and South Quarter line of said Section 5, thence North a distance of 910 feet to the place of beginning, except Parcel 308A of Minnesota Department of Transportation Right-of-Way Plat No. 64-12, Redwood County, Minnesota.

   Parcel ID Number: 88-005-1040

2. Address of the surveyed premises: *Not yet assigned by the City of Redwood Falls Minnesota.

3. Bearings shown hereon are based on the Redwood County Coordinate System, NAD83 (1996 Adj.)

4. Surveyed premises shown on this survey map is in Flood Zone X (Areas determined to be outside the 0.2% annual chance floodplain.), according to Flood Insurance Rate Map Community No. 270644 Panel No. 0162 Suffix C by the Federal Emergency Management Agency, effective date JULY 16TH, 2013.

5. Boundary area of the surveyed premises: 13.39 acres.

6. A zoning letter from the City of Redwood Falls lists the surveyed premises being zoned B-3-(Auto-Oriented). Under the applicable zoning regulations, the current setbacks are:

   Building: Front = 25 feet
   Side = 10 feet
   Rear = 30 feet

   Parking: Front = 25 feet
   Side = 25 feet
   Rear = 25 feet

   For additional information contact the City of Redwood Falls at (507) 616-7400.

7. There are 0 marked or striped parking areas onsite. (0 regular, 0 handicapped)

8. The surveyed premises has access to County Road No. 1 AND U.S. Highway 71, a public road.

9. Location of utilities existing on or serving the surveyed property determined by:
   - Observed evidence collected pursuant to Section 5.E.iv.
   - Markings requested by E.G. Rud And Sons INC. per Gopher State One Call Ticket No. 211744465 & 211744340.
   - Record drawings provided by the City of Redwood Fall's engineering department.

   Excavations were not made during the process of this survey to locate underground utilities and/or structures. The location of underground utilities and/or structures may vary from locations shown hereon and additional underground utilities and/or structures may be encountered. Contact Gopher State One Call Notification Center at (651) 454-0002 for verification of utility type and field location, prior to excavation.

10. Subsurface and environmental conditions were not examined or considered during the process of this survey. No statement is made concerning the existence of underground or overhead containers or facilities that may affect the use or development of the surveyed premises.

11. There are no proposed right-of-way changes per Redwood County Highway Department and the City of Redwood Falls. There was no evidence of recent street or sidewalk construction or repairs observed in the process of conducting the field work.

GENERAL NOTES CONT.

12. First American Title Insurance Company, Commitment No. 1574634-1, Schedule B-II Survey Related Exceptions:

    10. A document entitled "Final Certificate" recorded January 19, 1954 as Doc. No. 168036 of Official Records. *NOT SURVEY RELATED (IT IS UNCLEAR IF THIS PROPERTY IS AFFECTED BY THIS DOCUMENT AS IT DOES NOT INCLUDE ANY DESCRIBED PROPERTY)

    11. An easement for highway in the document recorded August 31, 1927 as Doc. No. 106888, Book 23 of Misc., page 463 of Official Records. *SURVEYORS NOTE: 50' WIDE EASEMENT LANDS WITHIN EXISTING HIGHWAY 71 ROAD RIGHT-OF-WAY AS SHOWN HEREON

    12. A document entitled "Final Certificate" recorded January 19, 1954 as Book 47 of Misc., page 416 of Official Records. *NOT SURVEY RELATED

    13. An easement for telephone lines purposes in the document recorded May 18, 1966 as in Book 59 of Misc., page 571 of Official Records.

    The above document has been assigned by document dated December 15, 2010, and recorded August 15, 2011, as Doc. No. A338640.

    The above document has been assigned by document dated March 08, 2012, and recorded May 07, 2012, as Doc. No. A341262.

    Affidavit of Identity recorded August 06, 2012, Doc. No. A342145. *SURVEYORS NOTE: BLANKET EASEMENT OVER THE THIS PROPERTY. DOES NOT DESCRIBE EASEMENT BUT STATES CONSTRUCTING, MAINTAINING AND TRIMMING TREES FOR TELEPHONE LINES NEAR THE PROPERTY LINE OF THIS PARCEL

    14. A document entitled "Redwood Falls Municipal Airport Zoning Ordinance" recorded September 18, 1974 as Book 78 of Misc., page 196 of Official Records. *NOT SURVEY RELATED

    15. An easement for electric line purposes in the document recorded April 23, 1987 as Book 112 of Misc., page 115 as Doc. No. 251638 of Official Records. *SURVEYORS NOTE: SHOWN HEREON

    16. The terms and provisions contained in Conditional Use Permit recorded June 07, 1993, in Book 134 of Misc., page 241. *NOT SURVEY RELATED

    17. A document entitled "Right of Way Plat No. 64-12" recorded September 23, 1996 as Doc. No. 283363, Plat Cabinet 239B of Official Records. *SURVEYORS NOTE: SHOWN HEREON

    18. Access Control shown in Minnesota Department of Transportation Right of Way Plat No. 64-12 recorded September 23, 1996 as Doc. No. 283363, Plat Cabinet 239B *SURVEYORS NOTE: SHOWN HEREON

    19. An easement for highway purposes in the document recorded May 21, 1999 as Book 154 of Misc., page 597 of Official Records. *SURVEYORS NOTE: SHOWN HEREON

    20. An easement for highway purposes in the document recorded May 21, 1999 as Doc. No. 293119 of Official Records. *SURVEYORS NOTE: SHOWN HEREON

    21. The terms and provisions contained in the document entitled "Ordinance No. 61, Third Series" recorded October 01, 2001 as Book 163 of Misc., page 95 as Doc. No. 301417 of Official Records. *SURVEYORS NOTE: DESCRIBES ENTIRE PROPERTY BUT IS NOT SURVEY RELATED

    22. The easements, terms and provisions contained in the document entitled "Declaration of Easement and Maintenance Agreement" recorded October 08, 2012 as Doc. No. 342810 of Official Records. *SURVEYORS NOTE: SHOWN HEREON

CERTIFICATION

I hereby certify to Kwik Trip, Inc., a Wisconsin corporation and to First American Title Insurance Company, that this is a survey of:

A tract of land located in the Northeast Quarter (NE1/4) of Section 5, Township 112 North, Range 35 West, described as follows: Commencing at the North Quarter Corner of Section 5 in Township 112 North, Range 35 West of the 5th Principal Meridian, thence East a distance of 678 feet, thence South a distance of 650 feet, thence South 45° West a distance of 367.7 feet, thence West a distance of 418 feet to a point situated on the North and South Quarter line of said Section 5, thence North a distance of 910 feet to the place of beginning, except Parcel 308A of Minnesota Department of Transportation Right-of-Way Plat No. 64-12, Redwood County, Minnesota.

and is based upon information found in the commitment for title insurance prepared by First American Title Insurance Company, File No. 1574634-1, dated effective May 12, 2021 at 8:00 A.M., and that all easements, if any, listed in Schedule B-II on the herein referenced commitment for title insurance, are shown hereon; and that this map or plat and the survey on which it is based were made (i) in accordance with "Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys," jointly established and adopted by ALTA and NSPS in 2021, and (ii) pursuant to the Accuracy Standards as adopted by ALTA and NSPS and in effect on the date of this certification, the undersigned further certifies that in my professional opinion, as a land surveyor licensed in the State of Minnesota, the Relative Positional Accuracy of this survey does not exceed that which is specified therein and includes Items 1, 2, 3, 4, 6(a)(b), 7(a), 8, 9, 11(a)(b), 14, 17, 18 and 20 (location of utilities per visible, above ground on-site observation and available mapping) of Table A thereof. The field work was completed on June 30, 2021.

I further certify that this survey was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Date: 9/9/2021

E.G. Rud & Sons, Inc.

Samuel N. Niemela, Land Surveyor
Minnesota License No. 52705

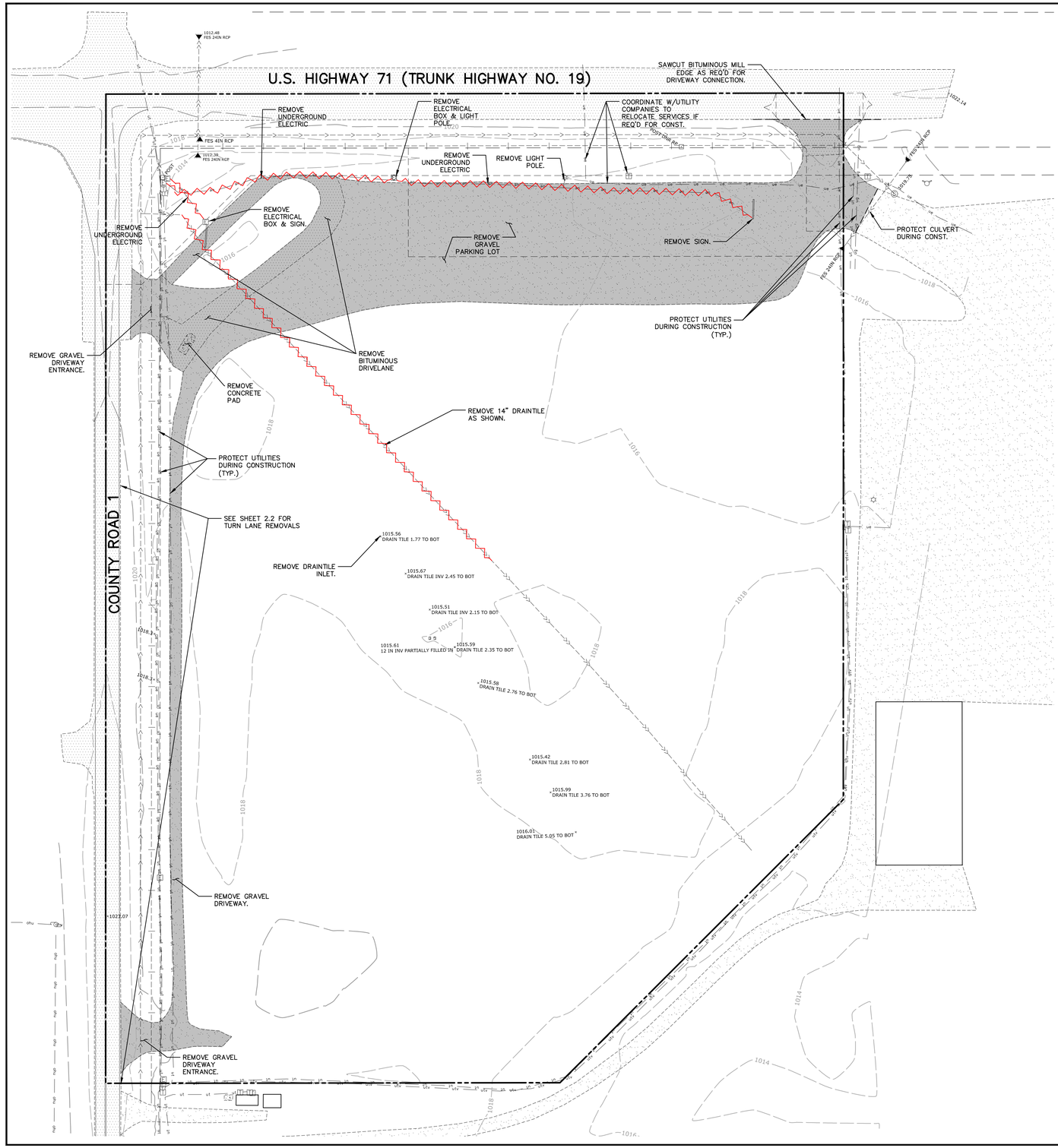
E. G. RUD & SONS, INC.
EST. 1977
Professional Land Surveyors
990 - 5th Avenue SE, Suite 2
HUTCHINSON, MN 55350
TEL. HUTCHINSON: (320) 587-2025 TEL. GAYLORD: (507) 237-5212
www.egrud.com

DENOTES ENCROACHMENTS

- A DRAINTILE & STORM SEWER WITHOUT EASEMENT
- B BILLBOARD WITHOUT EASEMENT

DRAWN BY: CBS	JOB NO: 210853AS	DATE: 9/9/2021
CHECK BY: SNN	FIELD CREW: CBS/BCK	

NO.	DATE	DESCRIPTION	BY
1	9SEP21	TITLE EXAMINER COMMENTS	SNN
2			
3			



PLAN LEGEND

	EXISTING	REMOVAL
CURB		
BITUMINOUS		
CONCRETE PAVEMENT		
GRAVEL		
PROPERTY LINE		
EASEMENT LINE		
STORM SEWER		AS NOTED
SANITARY SEWER		
WATER MAIN		
UNDERGROUND GAS		
UNDERGROUND TELEPHONE		
UNDERGROUND ELECTRIC		
OVERHEAD UTILITY		
TELEPHONE PEDESTAL		
POWER POLE		
SANITARY MANHOLE		
LIGHT POLE		
SIGN		
HYDRANT		
WATER VALVE		
ELECTRICAL BOX		

REMOVAL PLAN NOTES

1. ALL EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION, DEPTH AND TYPES OF EXISTING UTILITIES AND TO NOTIFY THE OWNER AND ENGINEER IMMEDIATELY OF ANY DISCREPANCIES OR VARIATIONS FROM THE PLANS.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL EXISTING UTILITIES, APPURTENANCES AND STRUCTURES NOT INDICATED FOR REMOVAL. DAMAGE CAUSED BY DEMOLITION OPERATIONS SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
3. CONTRACTOR TO REMOVE/RELOCATE EXISTING PRIVATE UTILITIES AS NECESSARY. THE CONTRACTOR SHALL COORDINATE THESE ACTIVITIES WITH THE UTILITY COMPANIES.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL THE REMOVALS SHOWN ON THE PLANS AND SHALL CONFORM/ADHERE TO ALL GOVERNING STATE AND LOCAL REGULATIONS. ALL PERMITS, APPLICATIONS AND FEES ARE THE RESPONSIBILITY OF THE CONTRACTOR.

0 25 50 100
(IN FEET)

BENCHMARKS

1. TOP OF MNDOT GEODETIC MONUMENT "6404 D RESET" GSID STATION #103971

ELEVATION = 1016.002 (NAVD 88)

CALL BEFORE YOU DIG

811 Know what's below. Call before you dig.

KWIK TRIP

KWIK STAR

KWIK TRIP, Inc.
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Name: Joseph T. Radach, P.E.
Signature:
Date: 01/03/22 License #: 45889

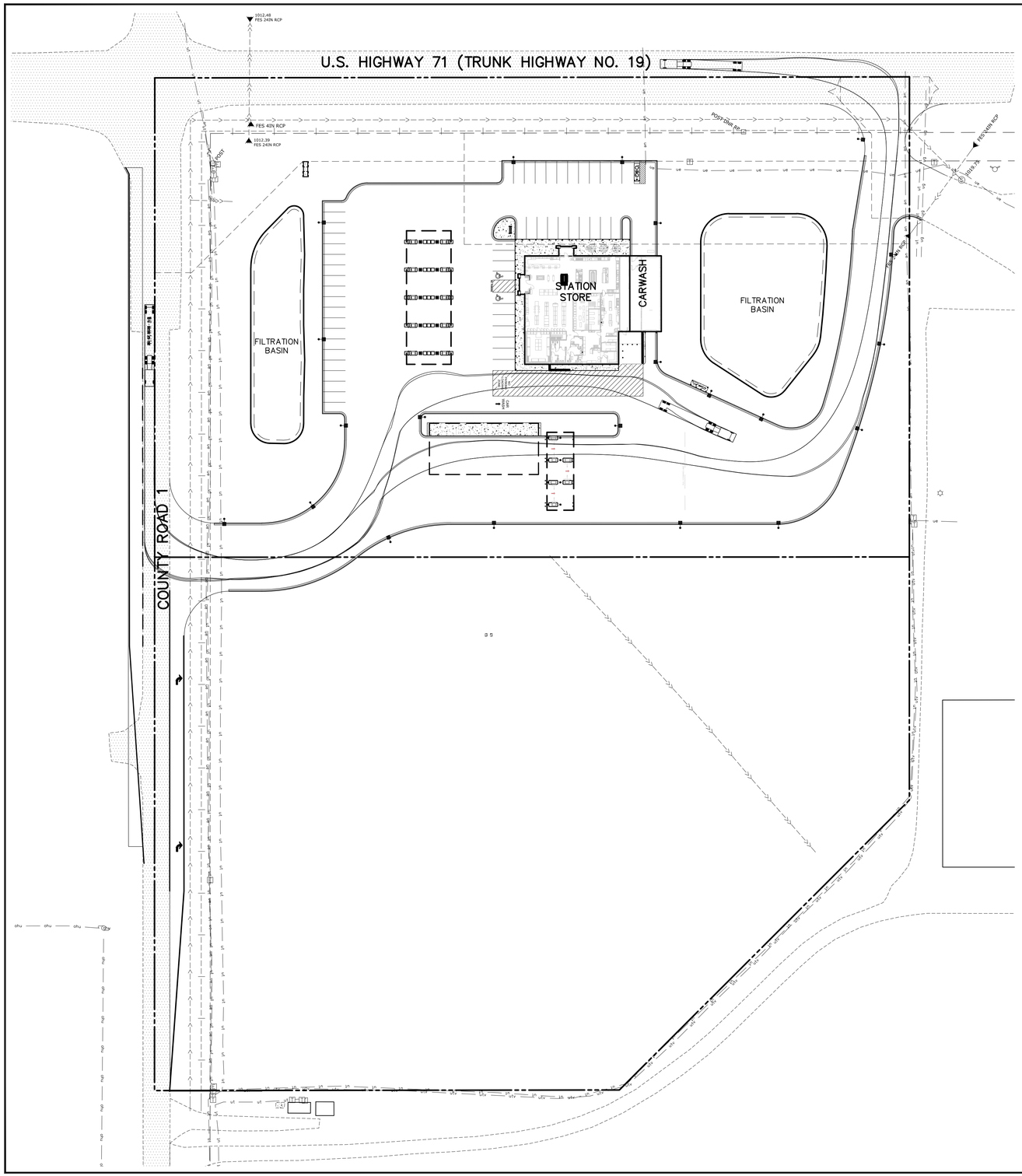
DEMO PLAN

CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
& SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS.

DRAWN BY	JTR
SCALE	GRAPHIC
PROJ. NO.	9721-00
DATE	2022-01-03
SHEET	1203 DM1



PLAN LEGEND

	EXISTING	PROPOSED
CURB		
BITUMINOUS		
CONCRETE PAVEMENT		
CONCRETE WALK		
PROPERTY LINE		
EASEMENT LINE		
STORM SEWER		
SANITARY SEWER		
WATER MAIN		
WATER MAIN		
UNDERGROUND GAS		
UNDERGROUND TELEPHONE		
UNDERGROUND ELECTRIC		
OVERHEAD UTILITY		
TELEPHONE PEDESTAL		
POWER POLE		
SANITARY MANHOLE		
LIGHT POLE		
SIGN		
HYDRANT		
WATER VALVE		
ELECTRICAL BOX		

0 25 50 100
(IN FEET)

BENCHMARKS

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Name: Joseph T. Radach, P.E.
Signature:
Date: 01/03/22 License #:45889

SITE CIRCULATION PLAN

CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
& SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

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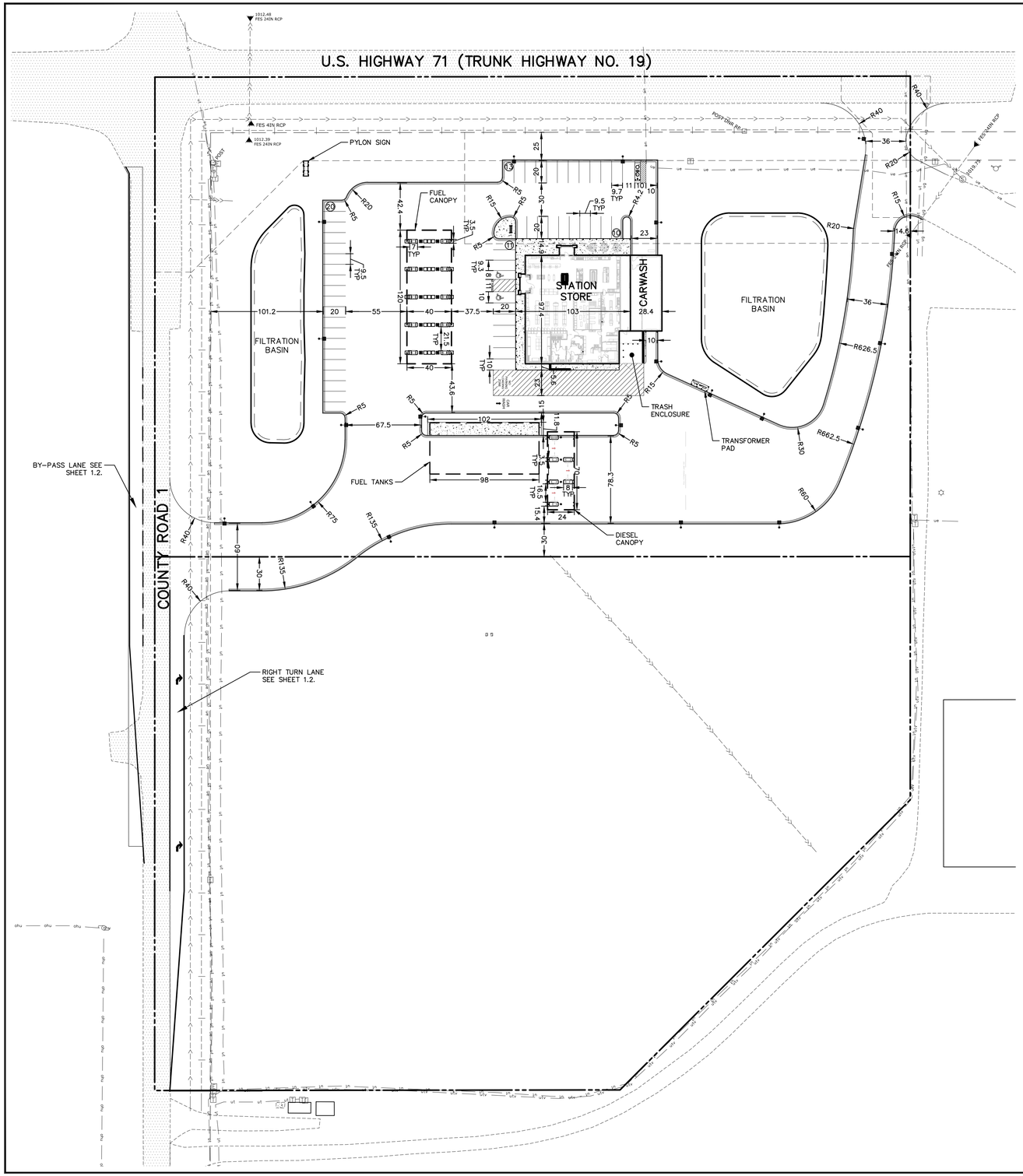

PLAN LEGEND

	EXISTING	PROPOSED
CURB		
BITUMINOUS		
CONCRETE PAVEMENT		
CONCRETE WALK		
PROPERTY LINE		
EASEMENT LINE		
STORM SEWER		
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WATER MAIN		
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TELEPHONE PEDESTAL		
POWER POLE		
SANITARY MANHOLE		
LIGHT POLE		
SIGN		
HYDRANT		
WATER VALVE		
ELECTRICAL BOX		

SITE PLAN NOTES

1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. CONCRETE CURB AND GUTTER SHALL BE B612 UNLESS OTHERWISE NOTED.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO THE START OF SITE WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF DISCREPANCIES OR VARIATIONS FROM THE PLAN.
4. UNLESS OTHERWISE SHOWN ON THIS DRAWING, CONTRACTOR SHALL PROVIDE CONTROL JOINTS, CONSTRUCTION JOINT AND EXPANSION JOINTS IN SLAB ON GRADE, SIDEWALKS AND DRIVES PER THE FOLLOWING REQUIREMENTS:

   CONTROL JOINT MAX. SPACING: WALKS–8' O.C.
   ALL OTHERS–10' O.C.

   SAW CUT CONTROL JOINTS MINIMUM ¼ CONCRETE THICKNESS.

   EXPANSION JOINT MAX. SPACING: WALKS–24' O.C.
   *ALL OTHERS–40' O.C.

   *ALL POINTS WHERE A CHANGE IN PAVEMENT THICKNESS OCCURS SHALL HAVE AN EXPANSION JOINT.

   DOWELL ALL EXPANSION JOINTS: 24" O.C. MAX.

   CONCRETE SEALER SHALL BE TK–26UV.
5. CONCRETE IN ISLAND COMPLEX SHALL BE SMOOTH BROOM FINISHED.

SITE DATA

ZONING:	B–3
PARCEL AREA:	292,275 SF
HARD SURFACE AREA:	
STATION STORE:	9,126 SF 3%
CARWASH:	1,930 SF 1%
PAVEMENT:	140,171 SF 48%
TOTAL:	151,227 SF 52%
PERVIOUS SURFACE AREA:	139,948 SF 48%
BUILDING HEIGHTS	
STATION STORE:	24.0 FT
CARWASH:	14.0 FT
FUEL CANOPIES:	15.5 FT

PARKING SUMMARY

STANDARD STALLS	52
HANDICAP STALLS	2
FUEL CANOPY STALLS	20
DIESEL CANOPY STALLS	3
TOTAL STALLS	77

0 25 50 100
(IN FEET)

BENCHMARKS

1. TOP OF MNDOT GEODETIC MONUMENT "6404 D RESET" GSID STATION #103971

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Name: Joseph T. Radach, P.E.
Signature:
Date: 01/03/22 License #: 45889

SITE DIMENSION PLAN

CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
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HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

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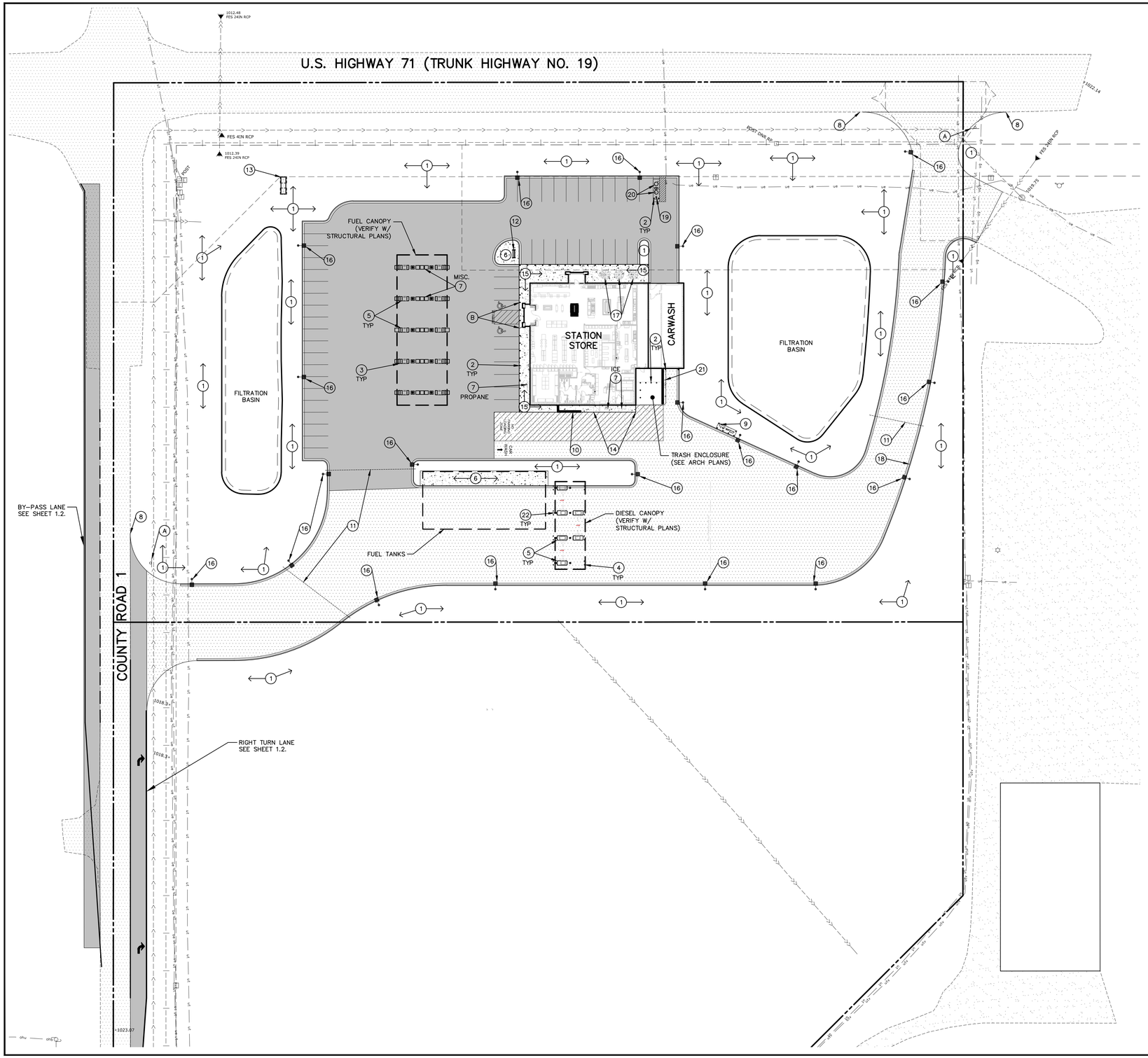

PLAN LEGEND

	EXISTING	PROPOSED
CURB		
BITUMINOUS		
CONCRETE PAVEMENT		HEAVY DUTY 67,524 SF LIGHT DUTY 44,060 SF
CONCRETE WALK		
PROPERTY LINE		
EASEMENT LINE		
STORM SEWER		
SANITARY SEWER		
WATER MAIN		
UNDERGROUND GAS		
UNDERGROUND TELEPHONE		
UNDERGROUND ELECTRIC		
OVERHEAD UTILITY		
TELEPHONE PEDESTAL		
POWER POLE		
SANITARY MANHOLE		
LIGHT POLE		
SIGN		
HYDRANT		
WATER VALVE		
ELECTRICAL BOX		

PLAN KEYNOTES

1. LANDSCAPE AREA. SEE SHEET L1.
2. 30" HEIGHT, 6" DIAMETER CONCRETE FILLED PIPE BOLLARD. SEE DETAIL 6/SP5.
3. 36" HEIGHT, 6" DIAMETER CONCRETE FILLED PIPE BOLLARD. SEE DETAIL 7/SP5.
4. 48" HEIGHT, 6" DIAMETER CONCRETE FILLED PIPE BOLLARD. SEE DETAIL 8/SP5.
5. CONCRETE ISLAND WITH 6" EXPOSURE WITH FUEL DISPENSER. DISPENSER PER OWNER.
6. 4" CONCRETE WALK.
7. OUTDOOR MERCHANDISING.
8. MATCH EXISTING CURB & GUTTER/SIDEWALK/PAVEMENT.
9. TRANSFORMER LOCATION.
10. TOTE SCREENING WALL. SEE ARCHITECTURAL PLANS.
11. PVC IRRIGATION SLEEVE UNDER PAVEMENT. VERIFY WITH IRRIGATION PLAN FOR EXACT SIZE AND LOCATION BEFORE INSTALLATION.
12. BIKE RACK PER OWNER.
13. PYLON SIGN.
14. PAINT FACE OF CURB TRANSITION WITH HIGH VISIBILITY YELLOW PAINT.
15. 6" INTEGRAL CONCRETE WALK/CURB.
16. SITE AREA LIGHT WITH CONCRETE BASE PER DETAIL 5/SP5.
17. PICNIC TABLE PER OWNER.
18. 5 FT. DROP CURB FOR EOF.
19. "FREE AIR" COMPRESSOR PER OWNER. PROVIDE SIGNAGE PER OWNER.
20. AUTO VACUUM PER OWNER ON CONCRETE ISLAND WITH 6" EXPOSURE. PROVIDE TRASH CONTAINER PER OWNER.
21. CARWASH KEYPAD PER OWNER. PROVIDE TRASH CONTAINER PER OWNER.
22. DIESEL TRUCK AIR MACHINE.

SIGNAGE & STRIPING NOTES

1. ALL SIGNS SHALL BE PLACED 18" MINIMUM BEHIND CURB UNLESS OTHERWISE NOTED.
2. SIGNAGE SHALL INCLUDE SIGN, POST, HARDWARE, CONCRETE FOOTING AND STEEL CASING (IF REQUIRED).
3. PARKING LOT STRIPING SHALL BE 4" HIGH VISIBILITY SOLID YELLOW PAINT.
4. PAVEMENT HATCHING, LANE MARKINGS AND TEXT SHALL BE 4" HIGH VISIBILITY PAINT.

   COLORS: HANDICAP – BLUE
   ALL OTHERS – YELLOW
5. HANDICAP PARKING PROVIDED PER ADA CODE.

SIGN SCHEDULE (PER MMUTCD)

Ⓐ STOP SIGN: R1-1 (30"x30")

Ⓑ HANDICAP PVC BOLLARD SLEEVE PER OWNER. SEE DETAIL 4/SP7.

0 20 40 80
(IN FEET)

BENCHMARKS

1. TOP OF MNDOT GEODETIC MONUMENT "6404 D RESET" GSID STATION #103971

   ELEVATION = 1016.002 (NAVD 88)

CALL BEFORE YOU DIG

811
Know what's **below.**
Call before you dig.

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KWIK STAR

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960

CARLSON McCAIN
3890 PHEASANT RIDGE DRIVE NE, SUITE 100, BLAINE, MN 55449
TEL 763.489-7900 \ FAX 763.489.7959 \ CARLSONMCCAIN.COM

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.

Name: Joseph T. Radach, P.E.
Signature:
Date: 01/03/22 License #: 45889

SITE KEYNOTE PLAN

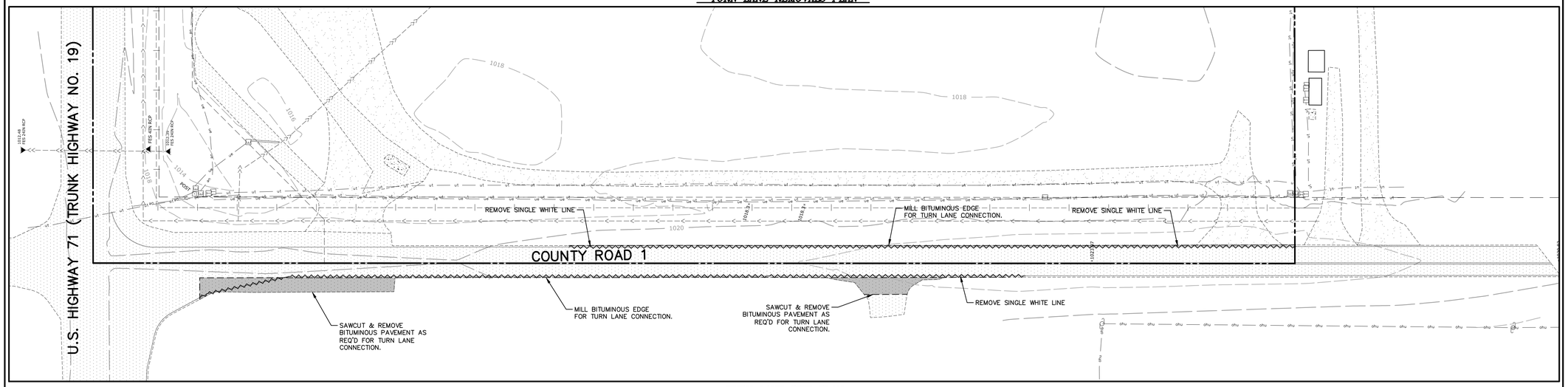
CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
& SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

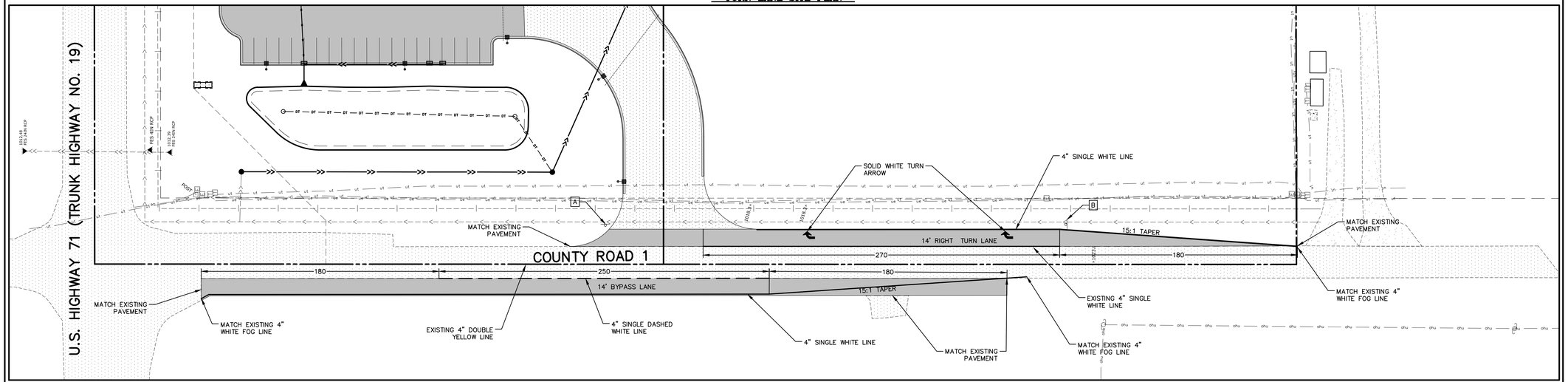
#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

DRAWN BY	JTR
SCALE	GRAPHIC
PROJ. NO.	9721-00
DATE	2022-01-03
SHEET	1203 SP1.1

TURN LANE REMOVALS PLAN



TURN LANE SITE PLAN



PLAN LEGEND

	EXISTING	PROPOSED
CURB		
BITUMINOUS		
CONCRETE PAVEMENT		
GRAVEL		
PROPERTY LINE		
EASEMENT LINE		
STORM SEWER		
SANITARY SEWER		
WATER MAIN		
UNDERGROUND GAS	ug	ug
UNDERGROUND TELEPHONE	ut	ut
UNDERGROUND ELECTRIC	ue	ue
OVERHEAD UTILITY	ohu	ohu
TELEPHONE PEDESTAL		
POWER POLE		
SANITARY MANHOLE		
LIGHT POLE		
SIGN		
HYDRANT		
WATER VALVE		
ELECTRICAL BOX		
5' CONTOUR	905	905
1' CONTOUR	904	904
SPOT ELEVATION (CURB ELEVATIONS ARE TO GUTTER LINE)		00.0 x
SILT FENCE		

TURN LANE PLAN NOTES

1. THE LATEST EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN ALL WORK.
2. PAVEMENT SECTION FOR RIGHT TURN LANE TO MATCH EXISTING PAVEMENT SECTION OF COUNTY ROAD 1.
3. ALL SAWCUTS SHALL BE FULL DEPTH. STEP MILLING SHALL BE USED WHERE NEW PAVEMENT ABUTS EXISTING PAVEMENT.
4. ALL STRIPING SHALL BE COMPLETED USING EPOXY PAINT. COORDINATE STRIPING WITH REDWOOD COUNTY.
5. ALL CONFLICTING PAVEMENT MARKINGS SHALL BE REMOVED.
6. TRAFFIC CONTROL SHALL BE PER MMUTCD, LATEST EDITION. COORDINATE TRAFFIC CONTROL WITH REDWOOD COUNTY.
7. CONTRACTOR SHALL COORDINATE WORK AROUND AND RELOCATE SMALL UTILITIES AS REQUIRED.

SIGN SCHEDULE

SIGN	SIGN NO.	SIZE	QUANTITY
(A) STOP	R1-1	30" X 30" (WHITE ON RED)	(INCLUDED IN SITE PLANS)
(B) RIGHT TURN LANE	R3-7R	30" X 30" (BLACK ON WHITE)	1

0 20 40 80
(IN FEET)

BENCHMARKS

1. TOP OF MNDOT GEODETIC MONUMENT "6404 D RESET" GSID STATION #103971

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Signature:
Date: 01/03/22 License #: 45889

TURN LANE PLAN

CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
& SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

DRAWN BY	JTR
SCALE	GRAPHIC
PROJ. NO.	9721-00
DATE	2022-01-03
SHEET	1203 SP1.2

GOVERNING SPECIFICATIONS

1. THE LATEST EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION".
2. THE LATEST EDITION OF THE CITY OF REDWOOD FALLS STANDARD DETAILS AND SPECIFICATIONS.
3. THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD).
4. THE LATEST EDITION OF THE CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM) STANDARD SPECIFICATIONS.

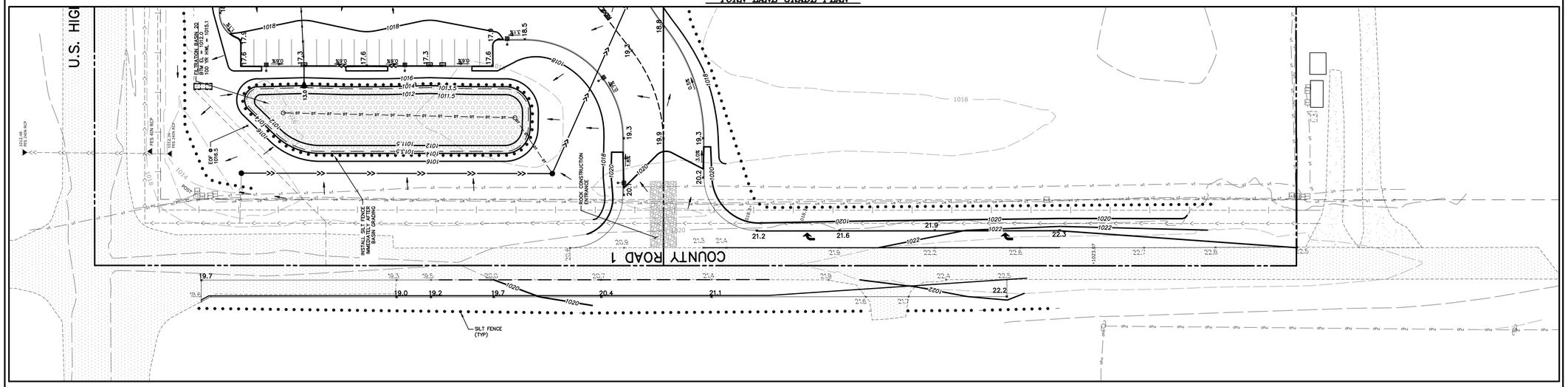
GRADING NOTES

1. SILT FENCE AND EXISTING CATCH BASIN INLET PROTECTION SHALL BE INSTALLED PRIOR TO GRADING CONSTRUCTION, AND SHALL BE MAINTAINED UNTIL SITE HAS BEEN STABILIZED.
2. CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND PAVEMENTS PRIOR TO THE START OF GRADING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF DISCREPANCIES OR VARIATIONS FROM THE PLAN.
3. CONTRACTOR SHALL STRIP, STOCKPILE AND RESPREAD SUFFICIENT TOPSOIL TO PROVIDE A MINIMUM OF 4" OF TOPSOIL OVER ALL DISTURBED AREAS THAT WILL BE SODDED, SEEDED OR LANDSCAPED.

PLAN LEGEND

	EXISTING	PROPOSED
CURB		
BITUMINOUS		
CONCRETE PAVEMENT		
CONCRETE WALK		
PROPERTY LINE		
EASEMENT LINE		
STORM SEWER		
SANITARY SEWER		
WATER MAIN		
UNDERGROUND GAS	ug	ug
UNDERGROUND TELEPHONE	ut	ut
UNDERGROUND ELECTRIC	ue	ue
OVERHEAD UTILITY	ohu	ohu
DRAINTILE		DT
TELEPHONE PEDESTAL	T	
POWER POLE		
SANITARY MANHOLE	S	
LIGHT POLE		
SIGN		
HYDRANT		
WATER VALVE		
ELECTRICAL BOX	E	
5' CONTOUR	905	905
1' CONTOUR	904	904
SPOT ELEVATION (CURB ELEVATIONS ARE TO GUTTER LINE)		00.0
SILT FENCE		

TURN LANE GRADE PLAN



0 20 40 80
(IN FEET)

BENCHMARKS

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GRADE PLAN (TURN LANE)

CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
& SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

DRAWN BY	JTR
SCALE	GRAPHIC
PROJ. NO.	9721-00
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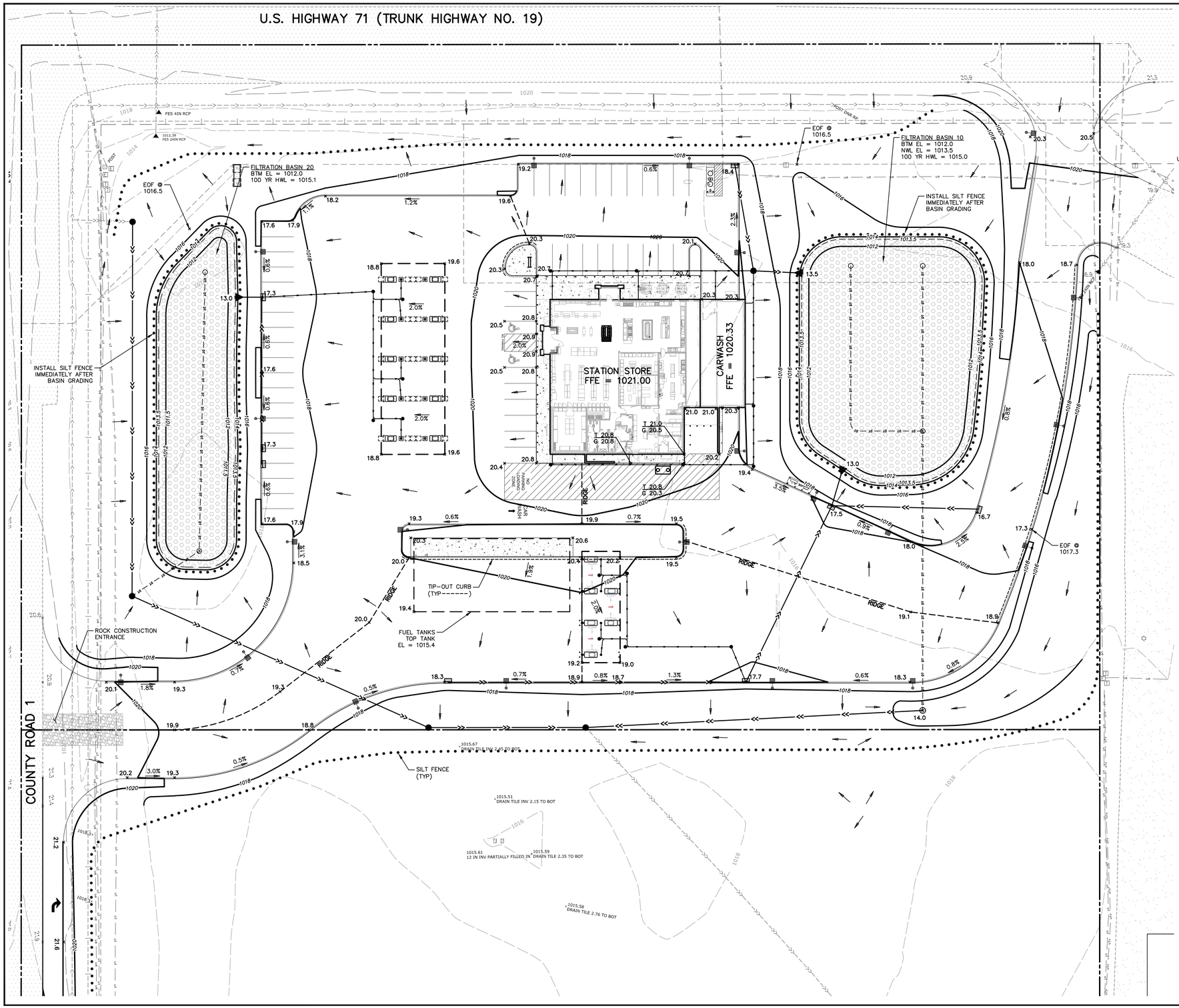
SHEET	1203 SP2.1



PLAN LEGEND

	EXISTING	PROPOSED
CURB		
BITUMINOUS		
CONCRETE PAVEMENT		
CONCRETE WALK		
PROPERTY LINE		
EASEMENT LINE		
STORM SEWER		
SANITARY SEWER		
WATER MAIN		
UNDERGROUND GAS	ug	ug
UNDERGROUND TELEPHONE	ut	ut
UNDERGROUND ELECTRIC	ue	ue
OVERHEAD UTILITY	ohu	ohu
DRAINTILE		dt dt dt dt
TELEPHONE PEDESTAL		
POWER POLE		
SANITARY MANHOLE		
LIGHT POLE		
SIGN		
HYDRANT		
WATER VALVE		
ELECTRICAL BOX		
5' CONTOUR	905	905
1' CONTOUR	904	904
SPOT ELEVATION (CURB ELEVATIONS ARE TO GUTTER LINE)	00.0	00.0
SILT FENCE		

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0 15 30 60
(IN FEET)

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GRADE PLAN

CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
& SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

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PROJ. NO.	9721-00
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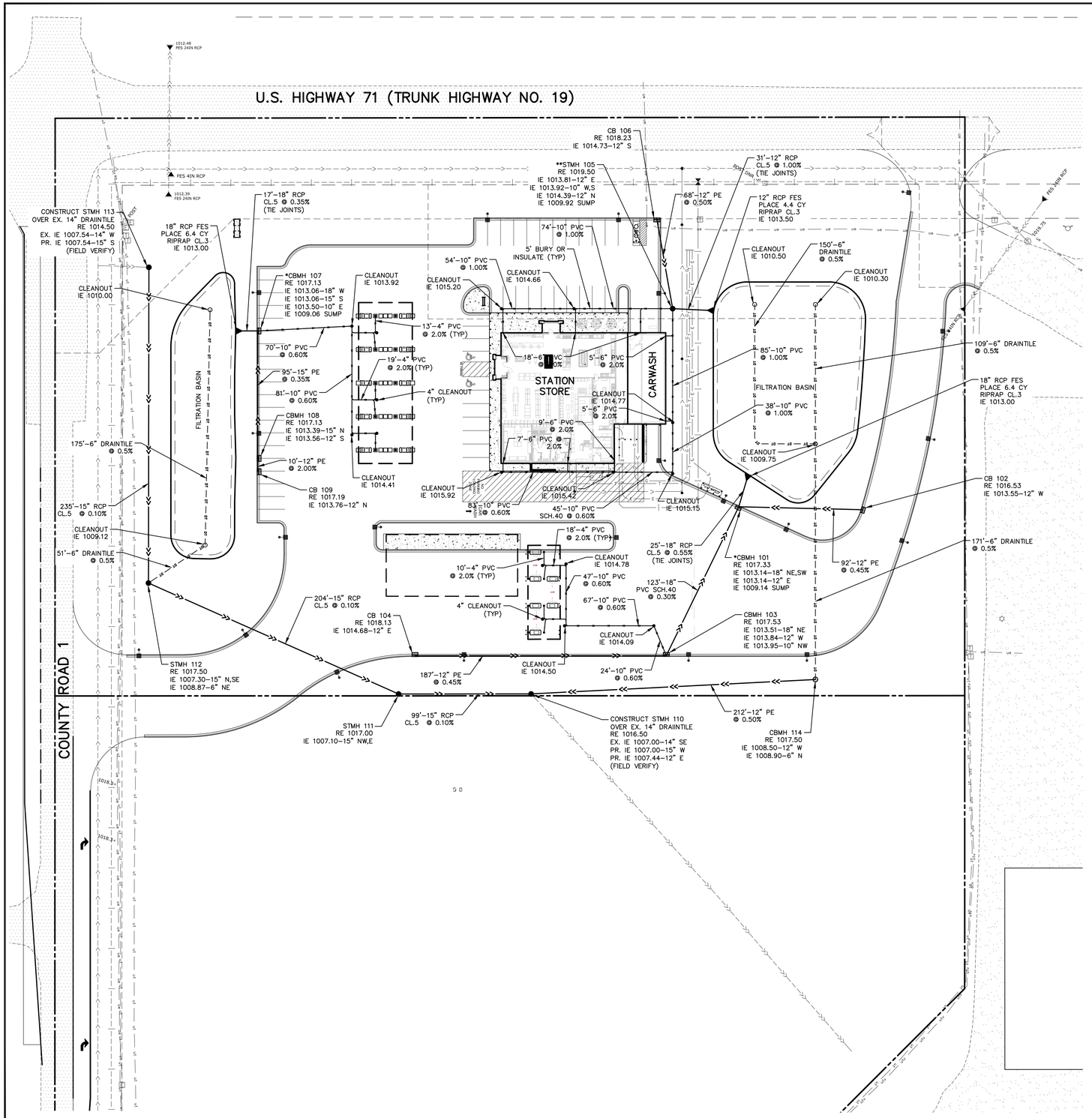

PLAN LEGEND

	EXISTING	PROPOSED
CURB		
BITUMINOUS		
CONCRETE PAVEMENT		
CONCRETE WALK		
PROPERTY LINE		
EASEMENT LINE		
STORM SEWER		
SANITARY SEWER		
WATER MAIN		
UNDERGROUND GAS	ug ug	G G G
UNDERGROUND TELEPHONE	ut ut	T T T
UNDERGROUND ELECTRIC	ue ue	E E E
OVERHEAD UTILITY	ohu ohu	
TELEPHONE PEDESTAL		
POWER POLE		
SANITARY MANHOLE		
LIGHT POLE		
SIGN		
HYDRANT		
WATER VALVE		
ELECTRICAL BOX		

STORM SEWER SCHEDULE

STRUCTURE TYPE & No.	STRUCTURE SIZE	NEENAH CASTING or EQUAL
CBMH-114	48" DIA.	R-4342
STMH-113	48" DIA.	R-1733
STMH-112	48" DIA.	R-1733
STMH-111	48" DIA.	R-1733
STMH-110	48" DIA.	R-1733
CB-109	24"x 36"	R-3067-V
CBMH-108	48" DIA.	R-3067-VB
*CBMH-107	48" DIA.	R-3067-VB
CB-106	24"x 36"	R-3067-V
**STMH-105	48" DIA.	R-1733
CB-104	24"x 36"	R-3067-VB
CBMH-103	72" DIA.	R-3067-VB
CB-102	24"x 36"	R-3067-VB
*CBMH-101	48" DIA.	R-3067-VB

* INSTALL 24R SNOUT OIL & DEBRIS STOP AS MANUFACTURED BY BMP, INC. ON OUTLET PIPE.

**INSTALL 18R SNOUT OIL & DEBRIS STOP AS MANUFACTURED BY BMP, INC. ON OUTLET PIPE.

0 20 40 80
(IN FEET)

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STORM SEWER PLAN

CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
& SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
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DRAWN BY	JTR
SCALE	GRAPHIC
PROJ. NO.	9721-00
DATE	2022-01-03
SHEET	1203 SP3

STORM DRAINAGE:

1. Unless otherwise indicated, use reinforced, precast, concrete maintenance holes and catchbasins conforming to ASTM C478, furnished with water stop rubber gaskets and precast bases. Joints for all precast maintenance hole sections shall have confined, rubber "O"-ring gaskets in accordance with ASTM C443. These joints are normally used in sewers to hold infiltration and exfiltration to a practical minimum and are adequate for hydrostatic heads up to 30'. The inside barrel diameter shall not be less than 48 inches.
2. Install catchbasin castings with specified rim elevation as shown.

3. All joints and connections in the storm sewer system shall be gastight or watertight. Use flexible compression joints to make watertight connections to manholes in accordance with Minnesota Rules part 4714.0719.6. Where permitted by the administrative authority, approved resilient rubber seals or waterstop gaskets may be used in order to make watertight connections to manholes, catchbasins, and other structures. Use Fernco "Concrete Manhole Adaptors" or "Large Diameter Waterstops", Press-Seal "Waterstop Grouting Rings", or approved equal. Cement mortar joints alone are not allowed unless making repairs or connections to existing lines having such joints.
4. The building sewer starts 2 feet outside of the building. See Uniform Plumbing Code (UPC) part 715.1. Material installed within 2 feet of the building must be of materials approved for use inside of or within the building.
5. The exterior storm water piping must comply with the following requirements: (A) Double wyes may not be used for drainage fittings in the horizontal position (see Minnesota Rules, Chapter 4714, Section 310.5), because proper pipe slope cannot be maintained on both of the lateral branches. (B) Changes in direction in drainage piping must be made by appropriate use of wyes and bends (see Minnesota Rules, Chapter 4714, Section 706.0). When connecting any vertical drop to a horizontal run, use a wye and a 1/8 bend (45 deg), or a sanitary combo. A sanitary combo is a combination wye and a 1/8 bend combined in a single fitting. The reason is to form a long radius bend in order to insure that the waste is directed in the downstream direction as it enters the horizontal run. Tees are not allowed where the direction of flow changes from either vertical to horizontal or horizontal to horizontal.
6. PVC Pipe (Outside of the Building): Use solid-core, Schedule 40 Polyvinyl Chloride (PVC) Plastic Pipe for all designated PVC storm sewer services outside of the building. The PVC pipe shall meet or exceed the industry standards and requirements as set forth by the American Society for Testing and Materials (ASTM) D1785 and D2665. Fittings must comply with ASTM D1866, D2665, or F794. Joints must be approved mechanical or push-on utilizing an elastomeric seal. Use of solvent cement joints is allowed for building services. Solvent cement joints in PVC pipe must include use of ASTM F656 purple primer and cement in accordance with Uniform Plumbing Code (UPC), part 605.13.2. Pipe with solvent cement joints shall be joined with PVC cement conforming to ASTM D2564. The installation must comply with ASTM D2321, which requires open-trench installation on a continuous granular bed.
7. Cleanouts: Install cleanouts on all roof drains. Cleanouts shall be installed at every wye, sweep, and bend. Install cleanouts on all storm sewer services in accordance with UPC part 719.0 and 1101.12. The distance between cleanouts in horizontal piping shall not exceed 100 feet for pipes 4-inch and over in size. Cleanouts shall be of the same nominal size as the pipes they serve. Include frost sleeves and concrete frame and pipe support. Install a meter box frame and solid lid (Neenah R-1914-A, or approved equal) over all cleanouts. Provide cleanouts at the base of the roof leader connections at the gas island pump stations.
8. Fittings: Provide directional fittings for the storm piping serving the gas island pump stations. All changes in direction of flow in drain piping shall be made by the appropriate use of 45 degree wyes, long or short sweep quarter bends, sixth, eighth, or sixteenth bends, or by a combination of these or other equivalent fittings.
9. RCP: Reinforced concrete pipe (RCP) and fittings shall conform to ASTM C76, Design C, with circular reinforcing for the class of pipe specified. Use Class IV RCP for pipes 21" and larger. Use Class V RCP for pipes 18" and smaller. Joints shall be made up of concrete surfaces with a groove on the spigot for an O-ring rubber gasket (also referred to as a confined O-ring type joint) in accordance with ASTM C361. These joints are normally used in gravity sewers where exceptional tightness is required. This type of joint provides excellent inherent water tightness in both the straight and deflected position and meets all the joint requirements of ASTM C443.
10. RC Aprons: Install a reinforced concrete apron on the free end of all daylighted RCP storm sewer pipes. Tie the last three sections (including apron) of all daylighted RCP storm sewer with a minimum of two tie bolt fasteners per joint. This requirement applies to both upstream and downstream pipe inlets and outlets. For concrete culverts, tie all joints. Ties to be used only to hold the pipe sections together, not for pulling the sections tight. Nuts and washers are not required on inside of 675 mm (27 inch) or less diameter pipes.
11. Grates on horizontal pipes: Install safety-trash grates on all horizontal inlets/outlets greater than 6 inches in diameter. The grates shall be placed so that the rods or bars are not more than 3 inches downstream of the inlet/outlet. Rods or bars shall be spaced so that the openings do not permit the passage of a 6-inch sphere.
12. Testing: Test all portions of storm sewer that are within 10 feet of buildings, within 10 feet of buried water, lines, within 50 feet of water wells, or that pass through soil or water identified as being contaminated in accordance with the Minnesota Rules part 4714.1109 and UPC part 1109.0. Test all flexible storm sewer lines for deflection after the sewer line has been installed and backfill has been in place for at least 30 days. No pipe shall exceed a deflection of 5%. If the test fails, make necessary repairs and retest.
13. Draintile: In accordance with Minnesota Rules part 4714.1102.5, use perforated polyvinyl chloride PVC (ASTM D2729) or corrugated polyethylene PE (ASTM F405) on all draintile 3-inches to 6-inches in diameter. **Install draintile with high permittivity circular knit polymeric filament filter sock per ASTM D6707-01. MnDot 3733 Type I sewn seam non-woven fabric shall not be used. Draintile pipe directly connected to the storm sewer is classified as storm sewer. Draintile inlet elevations to the catch basins must be above the storm sewer outlet elevations.**
14. Use Neenah R-3067-DR/DL casting with curb box, or approved equal, on CB #1, CB#2, CB#4 and CB #5. Casting shall include the "NO DUMPING, DRAINS TO RIVER." environmental notice.
15. Use Zurn Z886 trench drain model 8606N with black acid resistant epoxy coated ductile grate – Class C for proposed trench drain.
16. Use Neenah Foundry Co. R-1642 casting with self-sealing, solid, type B lid, or approved equal, on all storm sewer maintenance holes. Covers shall bear the "Storm Sewer" label.
17. Trace Wire: Install locating wires on all conductive and non-conductive storm sewer, sanitary sewer, and water lines in accordance with the Minnesota Rural Water Association (MRWA) Trace Wire Specification Guide and Details (www.mrwa.com/PDF/TraceWireSpecGuideFinalweb9.pdf). Use #12 HDPE-insulated copper-clad steel wire rated for underground service. The color of the insulating jacket shall be as follows: groundnred, storm sewer=green, sanitary sewer=green, and water lines=blue. Install the wire on the bottom side of the pipe below the spring line. Fasten the wire to the pipe with tape or plastic ties at 5' intervals. Do not wrap the trace wire around the corresponding utility. Do not connect the trace wire to existing conductive utilities. Use Copperhead Dryconn 3-Way or Locking Snake Bite connectors rated for underground direct bury applications or approved equal at all crossings or service connections. Twist on connectors are not allowed. Trace wire must be properly grounded at all dead ends and services. Install grade-level/in-ground trace wire access boxes and drive-in magnesium grounding anodes at all dead ends, services, and fire hydrants. Trace wire access boxes shall be color coded as follows: storm sewer=green, sanitary sewer=green, and water lines=blue.
18. Detectable Warning Tape: Install detectable underground warning tape directly above all underground utilities at a depth of 457 mm (18 inches) below finished grade, unless otherwise indicated. Underground warning tape shall be 3-inches wide with a minimum 5.0 mil overall thickness. Tape shall be manufactured using a 0.8 mil clear virgin polypropylene film, reverse printed and laminated to a 0.35 mil solid aluminum foil core, and then laminated to a 3.75 mil clear virgin polyethylene film. The aluminum backing makes underground assets easy to find using a non-ferrous locator. Tape shall be printed using a diagonally striped design for maximum visibility and meet the APWA Color-Code standard for identification of buried utilities. Use Pro-Line Safety Products (www.prolinesafety.com) detectable marking tape or approved equal.
19. Install anti-seepage diaphragms at the locations indicated on the plan in accordance with MNDOT Standard Specification 2501 and MNDOT Standard Plate No. 3146C.
20. The minimum depth of cover for building and canopy roof drain leaders without insulation is 5 feet. Insulate roof drain leaders at locations where the depth of cover is less than 5 feet. Provide a minimum insulation thickness of 2 inches. The insulation must be at least 4 feet wide and centered on the pipe. Install the insulation boards 6 inches above the tops of the pipes on mechanically compacted and leveled pipe bedding material. Use high density, closed cell, rigid board material equivalent to DOW Styrofoam HI-40 plastic foam insulation.
21. Install all pipe with the ASTM identification numbers on the top for inspection. Commence pipe laying at the lowest point in the proposed sewer line. Lay the pipe with the bell end or receiving groove end of the pipe pointing upgrade. When connecting to an existing pipe, uncover the existing pipe in order to allow any adjustments in the proposed line and grade before laying any pipe. Do not lay pipes in water or when the trench conditions are unsuitable for such work.
22. Line ponds with 2' thick impervious clay liner per detail.
23. Clean sediment and debris from sewers, sumps and stormwater basins prior to final owner acceptance.
24. Televise all existing lines prior to connection.
25. Provide a final storm water management report that will serve to verify that the intent of the approved storm water management design has been met. The report shall include record drawings, measurements, and photographic evidence of the as-built storm water management system. The report shall substantiate that all aspects of the original design have been adequately provided for by the construction of the project.
26. Install finger drains at each and every proposed catchbasin (see detail). Finger drains around catch basin inlets shall not be installed below the crown of the storm drain piping.

HDPE REQUIREMENTS:

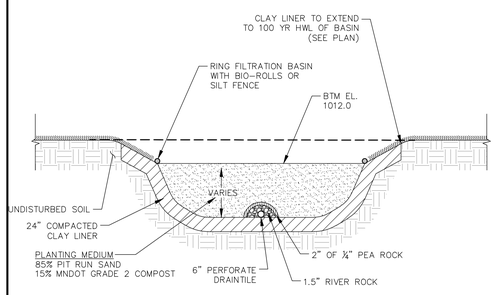
1. Install dual-wall, smooth interior, corrugated high-density polyethylene (HDPE) pipe at locations indicated on the plan. High-density polyethylene (HDPE) storm sewers must meet ASTM F714 (see Minnesota Rules, Chapter 4714 and Installation Standard 1).
2. Dual-wall, smooth interior, corrugated high-density polyethylene (HDPE) pipe shall conform to the requirements of AASHTO M252 for pipe sizes 4-inch to 10-inch diameter. Dual-wall, smooth interior, corrugated high-density polyethylene (HDPE) pipe shall conform to the requirements of ASTM F2306 (virgin PE material) for pipe sizes 12-inch to 60-inch diameter.
3. All fittings must comply with ASTM Standard D3212.
4. Water-tight joints must be used at all connections (including structures) in conformance with ASTM F2510.
5. HDPE pipe connections into all concrete structures must be made with water tight materials utilizing Nyoplast "Manhole Adaptors" along with Press-Seal or Kor-N-Seal "Watertight Connector", Cast-A-Seal "Precast Watertight Connector", or approved equals. Where the alignment precludes the use of the above approved watertight methods, Conseal 231 WaterStop sealant, or approved equal will only be allowed as approved by the Administrative Authority.
6. Lay all HDPE pipe on a continuous granular bed. Installation must comply with ASTM D2321. All sections of the corrugated HDPE pipe shall be coupled in order to provide water-tight joints.
7. Perform deflection tests on all HDPE pipe after the sewer lines have been installed and backfill has been in place for at least 30 days. No pipe shall exceed a deflection of 5%. If the test fails, make necessary repairs and perform the test again until acceptable. Supply the mandrel for deflection testing. If the deflection test is to be run using a rigid ball or mandrel, it shall have a diameter equal to 95% of the inside diameter of the pipe. The ball or mandrel shall be clearly stamped with the diameter. Perform the tests without mechanical pulling devices.

INFILTRATION AREA CONSTRUCTION:

1. Protect the infiltration area from compaction and disturbance of existing soils.
2. Report any signs of high water table or compaction of the in place soils to the Engineer.
3. Schedule the construction so that excavation of the infiltration system to final grade occurs after the contributing drainage areas have been constructed and fully stabilized. Excavate the infiltration areas to within one foot of final grade initially. Delay final excavation of the basin floor until all disturbed areas tributary to the basin are stabilized. Utilize tracked excavation equipment that has relatively light bearing pressures. No heavy equipment is allowed on the infiltration areas before or after construction.
4. Delineate the location of infiltration areas (e.g. with flags, stakes, signs, silt fence, etc.) before work begins so that heavy construction equipment will not compact the soil in the proposed infiltration system.
5. Excavation of infiltration areas shall be completed using a backhoe with a toothed bucket.
6. The bottom excavations surface of infiltration areas shall be level without dips or swales.
7. Native soils in infiltration areas shall be de-compacted to a minimum depth of 18 inches prior to placing planting media or rock.
8. Planting media and rock shall remain uncontaminated (not mixed with other soil) before and during installation.
9. During construction, stormwater must be routed around infiltration areas until all construction activity has ceased and tributary surface are cleaned of sediment.
10. Installation of infiltration practices shall be done during periods of dry weather and completed before the rainfall event. Placement of planting media or rock shall be on dry native soil only.
11. Use rigorous erosion prevention and sediment controls (e.g. diversion berms) during the construction of the infiltration system in order to keep sediment and runoff completely away from the infiltration area.
12. Inspect all infiltration areas in order to ensure that no sediment from ongoing construction activity is reaching the infiltration areas and that these areas are protected from compaction due to construction equipment driving across the infiltration areas.
13. Prior to construction, provide dual-ring infiltrometer testing (ASTM D-3385) at the infiltration site in order to to verify infiltration rates used for the basin design. The tests shall be performed at the bottom elevation of the infiltration basin and shall be performed by a qualified geotechnical professional. Do not begin construction until soil type and infiltration rate verification has been reported. Perform a minimum of 2 tests at each infiltration site (0.5-acre bottom area or less). Perform 2 additional tests for every additional 0.5-acre of bottom area. Verify the number of tests with the geotechnical professional and the governing authorities.
14. 2.5' of engineered soil is to be used as the surface layer of the infiltration basin. It shall consist of 40% by volume silica sand, topsoil (20% by volume if loam texture, 30% by volume if sandy loam or loamy sand texture), and 30%-40% by volume compost material.
15. Coarse filter aggregate shall be a free draining mineral product, excluding crushed carbonate quarry rock, limestone, crushed concrete, and salvaged bituminous mixture.
16. After final grading, till the floor of the infiltration area to a depth of at least 18 inches in order to provide a well aerated, porous surface texture. Till in 6 inches of compost material if the soils become compacted.
17. Place all excavated materials downstream and away from the infiltration area during and after excavation.
18. Stabilize the bottom and sideslopes of the infiltration area immediately following construction of the basin.
19. Use native MN state seed mixture 33-261. Apply seed mixture at a rate of 35 lbs per acre in accordance with MNDOT Standard Spec. 2575. Incorporate a Type 3 fertilizer (slow release type with 10 week residual) consisting of 22-5-10 (%N-P-K) into the soil at an application rate of 200 lbs per acre by disking prior to seeding. Prepare the soil in accordance with MNDOT Standard Spec. 2574.3
20. Establish native seed mix in accordance with MNDOT Standard Spec. 2575.3. Seed native mixes with a native seed drill, a drop type seeder, or a hydro seeder at the adjusted bulk application rate of each mixture. Use a drill capable of accurately metering the types of seed planted and capable of maintaining a uniform mixture of seeds during drilling. Use a drill with disk furrow openers and a packer assembly to compact the soil directly over the drill row. Seed native mixes in rows spaced no greater than 8 inches apart. Place seeds to a final planting depth from ¼ inch to ½ inch. Perform drill seeding at a right angle to surface drainage. A drop type seeder equipped with a separate seed box for the fluffy seed and a soil packer assembly may be used in lieu of a drill with disc openers. Use a cyclone or spinner type seeder on areas no greater than 1 acre or on areas inaccessible to other equipment, as approved by the Engineer. Lightly harrow or rake the site following the seeding operation. Pack the site following harrowing in order to ensure a firm seed-bed.
21. Comply with the requirements of MNDOT Standard Spec. Table 2575-1 for season of planting native seed mixtures. The appropriate dates for spring seeding are from April 15 through July 20. Fall seeding dates are from September 20 to October 20. Dormant seeding dates are from October 20 to November 15. Dormant seeding will only be allowed if the maximum soil temperature at a depth of 1 inch does not exceed 40 degrees F in order to prevent germination. When the dates in the season of planting prohibit seeding of the permanent seed mixture, apply temporary seeding and mulch in order to comply with the requirements of the GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY and then apply permanent seeding at a later date.
22. Water and maintain seeded areas on a timely day-to-day basis. In the event of a seeding failure, reseed and mulch the areas where the original seed has failed to grow and perform additional watering as necessary at no additional cost to the Owner.
23. Maintenance of Areas Planted With Native Seeds: To reduce weed establishment, mow 2 to 3 times (30 days apart) during the first year with the mower deck about 6" – 8" off the ground. Mow one time during the 2nd year before weeds set their seeds. Mow once every 3 to 5 years following the initial 2 years of maintenance in order to remove dead plant material and stimulate new seed.

INFILTRATION AREA PERFORMANCE TESTING:

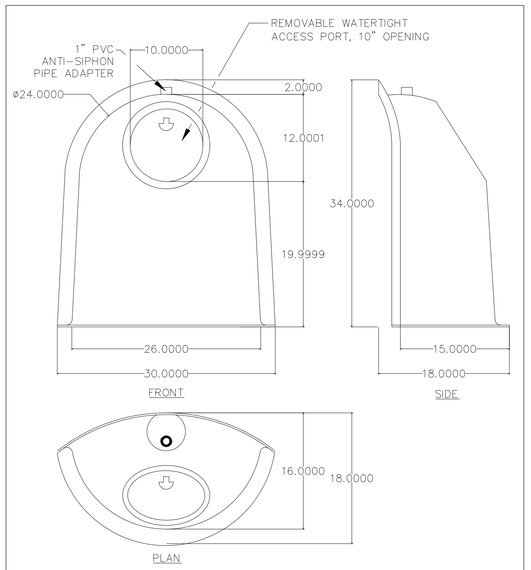
1. After construction, provide dual-ring infiltrometer testing (ASTM D-3385) at the infiltration site in order to verify the performance of the as-built infiltration system. The tests shall be performed at the bottom elevation of the infiltration basin and shall be performed by a qualified geotechnical professional.
2. Perform a minimum of 2 tests at each infiltration site (0.5-acre bottom area or less). Perform 2 additional tests for every additional 0.5-acre of bottom area. Verify the number of tests with the geotechnical professional and the governing authorities.
3. The average of the measured infiltration rates must meet or exceed the infiltration rate used for the basin design. If the measured infiltration rate does not meet or exceed the required rate, the Contractor shall perform the necessary soil corrective and/or soil replacement work within the infiltration area at the Contractor's expense until the measured infiltration rate meets or exceeds the required rate. All re-testing shall be at the Contractor's expense.



CLAY LINER SPECIFICATION

- 50 PERCENT FINES (200 SIEVE), OR MORE
- IN-PLACE HYDRAULIC CONDUCTIVITY OF 1 X 10^-7 CM/S OR LESS
- AVERAGE LIQUID LIMIT OF 25 OR GREATER WITH NO VALUE LESS THAN 10
- AVERAGE PI OF 12 OR MORE, WITH NO VALUES LESS THAN 10
- CLAY INSTALLED WET OF OPTIMUM IF USING STANDARD PROCTOR, AND 2 PERCENT WET OF OPTIMUM IF USING MODIFIED PROCTOR
- SOIL COMPACTION AND DOCUMENTATION PER NRCS WISCONSIN CONSTRUCTION SPECIFICATION 300

FILTRATION BASIN



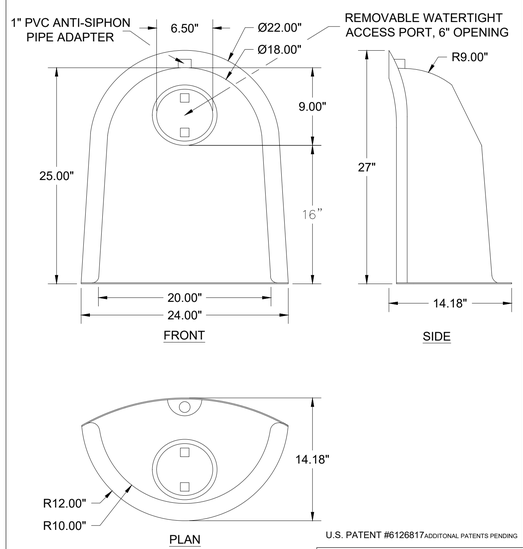
DESIGNED TO FIT 48"-60" DIAM. STRUCTURES

RECOMMENDED SUMP DEPTH 2.5 TO 3X OUTLET PIPE I.D.

U.S.PATENT #6126817 ADDITIONAL PATENTS PENDING

BMP, INC.
53 MT. ARCHER ROAD, LYME, CT. 06371
(800) 504-8008 FAX: (860)434-3195

DESCRIPTION	DATE	SCALE
24R SNOUT OIL & DEBRIS STOP	09/13/99	NONE
	DRAWING NUMBER 24R	



U.S. PATENT #6126817 ADDITIONAL PATENTS PENDING

DESIGNED TO FIT 48"-60" DIAM. STRUCTURES

RECOMMENDED SUMP DEPTH 2.5 TO 3X OUTLET PIPE I.D.

BMP, INC.
53 MT. ARCHER ROAD, LYME, CT. 06371
(800) 504-8008 FAX: (860)434-3195

DESCRIPTION	DATE	SCALE
18R SNOUT OIL & DEBRIS STOP	09/06/99	NONE
	DRAWING NUMBER 18R	

KWIK TRIP

KWIK STAR

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960

CARLSON McCAIN
3890 PHEASANT RIDGE DRIVE NE, SUITE 100, BLAINE, MN 55449
TEL 763.489-7900 \ FAX 763.489.7959 \ CARLSONMCCAIN.COM

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.

Name: Joseph T. Radach, P.E.
Signature: Joe T. R
Date: 01/03/22 License #: 45889

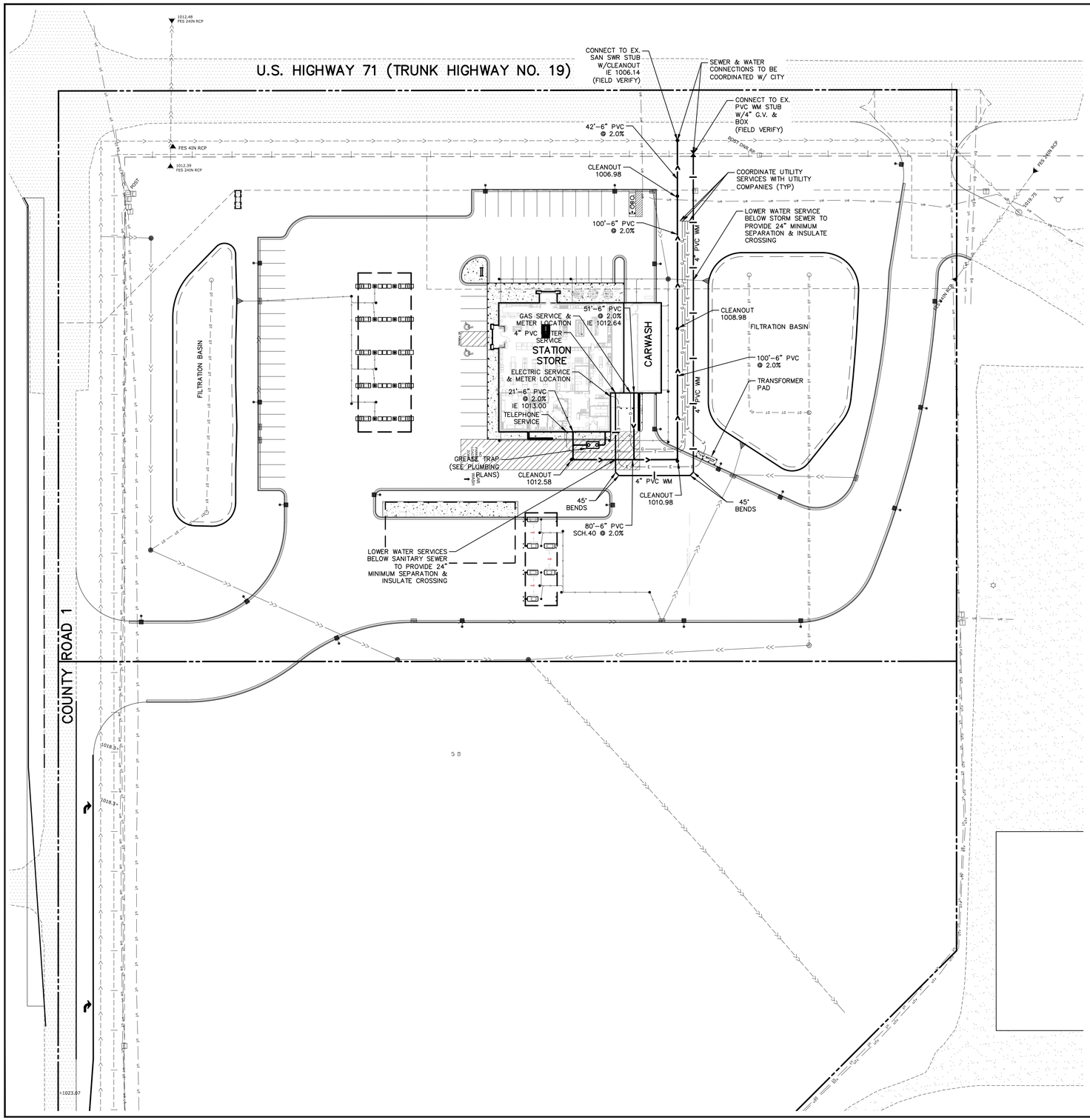
STORM SEWER NOTES & DETAILS

CONVENIENCE STORE #1203 WITH 1-BAY CARWASH & SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

DRAWN BY	JTR
SCALE	GRAPHIC
PROJ. NO.	9721-00
DATE	2022-01-03
SHEET	1203 SP3.1



PLAN LEGEND

	EXISTING	PROPOSED
CURB		
BITUMINOUS		
CONCRETE PAVEMENT		
CONCRETE WALK		
PROPERTY LINE		
EASEMENT LINE		
STORM SEWER		
SANITARY SEWER		
WATER MAIN		
UNDERGROUND GAS		
UNDERGROUND TELEPHONE		
UNDERGROUND ELECTRIC		
OVERHEAD UTILITY		
TELEPHONE PEDESTAL		
POWER POLE		
SANITARY MANHOLE		
LIGHT POLE		
SIGN		
HYDRANT		
WATER VALVE		
ELECTRICAL BOX		

0 20 40 80
(IN FEET)

BENCHMARKS

1. TOP OF MNDOT GEODETIC MONUMENT "6404 D RESET" GSID STATION #103971

ELEVATION = 1016.002 (NAVD 88)

CALL BEFORE YOU DIG

811 Know what's below. Call before you dig.

KWIK TRIP

KWIK STAR

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960

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3890 PHEASANT RIDGE DRIVE NE, SUITE 100, BLAINE, MN 55449
TEL 763.489-7900 \ FAX 763.489.7959 \ CARLSONMCCAIN.COM

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.

Name: Joseph T. Radach, P.E.
Signature:
Date: 01/03/22 License #: 45889

UTILITY PLAN

CONVENIENCE STORE #1203 WITH 1-BAY CARWASH & SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

DRAWN BY	JTR
SCALE	GRAPHIC
PROJ. NO.	9721-00
DATE	2022-01-03
SHEET	1203 SP4

GENERAL:

1. Existing boundary, location, topographic, and utility information shown on this plan is from a field survey by **E.G. Rud & Sons, Inc. dated 9/9/21.** The Engineer is not responsible for inaccuracies related to the survey information.
2. Perform all construction work in accordance with State and Local requirements.
3. Perform all construction activity in accordance with the Minnesota Pollution Control Agency GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY issued August 1, 2018 and all subsequent amendments thereto.
4. Comply with all applicable local, state, and federal safety regulations. Comply with the work safety practices specified by the Occupational Safety and Health Administration (OSHA). OSHA prohibits entry into "confined spaces," such as manholes and inlets (see 29 CFR Section 1910.146), without undertaking certain specific practices and procedures. Bench or slope sidewalls in order to provide safe working conditions and stability for the placement of engineered fill. Perform excavations in accordance with the requirements of O.S.H.A. 29 CFR, Part 1926, Subpart P, Excavations. The Contractor is responsible for naming the "Competent Individual" in accordance with CFR 1926.6. Sloping or benching for excavations greater than 20 feet deep must be approved by a registered professional engineer (www.osha.gov).
5. Safety is solely the responsibility of the Contractor, who is also solely responsible for the construction means, methods, techniques, sequences or procedures, and for safety precautions and programs in connection with the Work.
6. The Engineer shall not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work. The Engineer's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures.
7. Examine all local conditions at the site, and assume responsibility as to the grades, contours, and the character of the earth, existing conditions, and other items that may be encountered during excavation work above or below the existing grades. Review the drawings, specifications, and geotechnical report covering this work and become familiar with the anticipated site conditions.
8. Refer to the architectural plans for building and stoop dimensions, site layout and dimensions, pavement sections and details, striping, and other site features.
9. A licensed surveyor shall perform construction staking. The Contractor shall provide and be responsible for the staking. Verify all plan and detail dimensions prior to construction staking. Stake the limits of walkways and curbing prior to valvebox, maintenance hole, and catchbasin installation. Adjust valvebox and maintenance hole locations in order to avoid conflicts with curb and gutter. Adjust catchbasin locations in order to align properly with curb and gutter.
10. Provide temporary fences, barricades, coverings, and other protections in order to preserve existing items to remain, and to prevent injury or damage to person or property.
11. Provide all traffic control required in order to construct the proposed improvements. Traffic control design and associated government approvals are the responsibility of the Contractor. Comply with local authorities and the latest version of the Minnesota Manual on Uniform Traffic Control Devices (MMUTCD), including the Field Manual for Temporary Traffic Control Zone Layouts. If the temporary traffic control zone affects the movement of pedestrians, provide adequate temporary pedestrian access and walkways. If the temporary traffic control zone affects an accessible and detectable pedestrian facility, maintain accessibility and detectability along the alternate pedestrian route in accordance with the provisions for pedestrian and worker safety contained in Part 6 of the MMUTCD.
12. Connect to existing sanitary sewer MH's by coredrilling. Connect to existing storm sewer MH's by either sawcutting or coredrilling. Use saws or drills that provide water to the blade. Meet all City standards and specifications for the the connection. Reconstruct inverts after installation. Use water stop gaskets in order to provide watertight seals when penetrating a structure wall with a pipe. Take measurements before beginning construction to ensure that service connections do not cut into maintenance access structure joints or pipe barrel joints.
13. Completely remove existing concrete and masonry structures that are located within the proposed building and future building expansion areas. All other existing sewer and watermain pipes that are to be abandoned shall either be removed, or completely filled with sand or controlled low strength material (CLSM) also known as flowable concrete fill. Bulkhead ends of the pipe segment to be decommissioned with concrete. All other existing sanitary sewer and storm sewer structures that are to be abandoned in place shall be abandoned as follows: (1) remove castings, rings, and top sections, (2) bulkhead any pipe openings, (3) break two 4-inch diameter holes in the barrel at the bottom of the structures for drainage and cover the holes with geotextile filter fabric, and (4) fill the structures with sand or CLSM.
14. Testing and Inspections: All plumbing installations, including water and sewer services, must be tested and inspected in accordance with the requirements of the Minnesota Plumbing Code (Minnesota Rules Chapter 4714). Coordinate testing and inspection with the State Health Department and the City Public Works Department. No drainage or plumbing work may be covered prior to completing the required tests and inspections.
15. Coordinate building utility connection locations at 2 ft. out from the proposed building with the interior Plumbing Contractor prior to construction. Verify water and sewer service locations, sizes, and elevations with the Mechanical Engineer prior to construction. Coordinate construction and connections with the Mechanical Contractor.
16. The subsurface utility information shown on this plan is utility Quality Level D. This quality level was determined according to the guidelines of CI/ASCE 38-02, entitled "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data" by the FHA.
17. The locations of existing utilities shown on this plan are from record information. The Engineer does not guarantee that all existing utilities are shown or, if shown, exist in the locations indicated on the plan. It is the Contractor's responsibility to ascertain the final vertical and horizontal location of all existing utilities (including water and sewer lines and appurtenances). Notify the Engineer of any discrepancies.
18. The Contractor is solely responsible for all utility locates. Contact utility companies for locations of all public and private utilities within the work area prior to beginning construction. Contact GOPHER STATE ONE CALL at (651) 454-0002 in the Minneapolis/St. Paul metro area, or 1-800-252-1166 elsewhere in Minnesota for exact locations of existing utilities at least 48 working hours (not including weekends and holidays) before beginning any construction in accordance with Minnesota Statute 216D. Obtain ticket number and meet with representatives of the various utilities at the site. Provide the Owner with the ticket number information. Gopher State One Call is a free service that locates municipal and utility company lines, but does not locate private utility lines. Use an independent locator service or other means in order to obtain locations of private utility lines including, but not limited to, underground electric cables, telephone, TV, and lawn sprinkler lines.
19. Pothole to verify the positions of existing underground facilities at a sufficient number of locations in order to assure that no conflict with the proposed work exists and that sufficient clearance is available.
20. Where existing gas, electric, cable, or telephone utilities conflict with the Work, coordinate the abandonment, relocation, offset, or support of the existing utilities with the appropriate local utility companies. Coordinate new gas meter and gas line installation, electric meter and electric service installation, cable service, and telephone service installation with the local utility companies.
21. When working near existing telephone or electric poles, brace the poles for support. When working around existing underground utilities that become exposed, provide sufficient support in order to prevent excessive stress on the existing piping. The location and preservation of existing underground utilities is solely the responsibility of the Contractor.
22. Temporary support systems are the responsibility of the Contractor, who is also solely responsible for the construction means, methods, techniques, sequences or procedures, and for safety precautions and programs in connection with the temporary support systems. Temporary support systems include, but are not limited to, shoring, sheeting, bracing, anchorages, excavation support walls, directional boring, auger jacking, soil stabilization, and other methods of protecting existing improvements.
23. Arrange for and secure suitable disposal areas off-site. Dispose of all excess soil, waste material, debris, and all materials not designated for salvage. Waste material and debris includes trees, stumps, pipe, concrete, asphaltic concrete, cans, or other waste material from the construction operations. Obtain the rights to any waste area for disposal of unsuitable or surplus material either shown or not shown on the plans. All work in disposing of such material shall be considered incidental to the work. All disposal must conform to applicable solid waste disposal permit regulations. Obtain all necessary permits at no cost to the Owner.
24. Store and protect existing site features that need to be removed and replaced in connection with the Work. Replace damaged or stolen site features at no additional cost to the Owner.
25. Straight line saw-cut existing bituminous or concrete surfacing at the perimeter of pavement removal areas. Use saws that provide water to the blade. Do not allow the slurry produced by this process to be tracked outside of the immediate work area or discharged into the sewer system. Tack and match all connections to existing bituminous pavement.
26. Relocate overhead power, telephone, and cable lines as required. Seal and report any existing unused on-site wells and septic systems in accordance with Minnesota Department of Health (MDH) requirements. Provide the MDH with a Well and Boring Sealing Record, or certify in writing that there are no unused wells on the property.
27. All materials required for this work shall be new material conforming to the requirements for class, kind, grade, size, quality, and other details specified herein or as shown on the Plans. Do not use recycled or salvaged aggregate, asphaltic pavement, crushed concrete, or scrap shingles. Unless otherwise indicated, the Contractor shall furnish all required materials and labor in order to perform the construction in accordance with the construction documents, specifications, and regulatory agencies.
28. Reconstruct driveways and patch street to match existing pavement section and grade. Sod right-of-way. Restore the public right-of-way at temporary construction entrance locations. Replace any concrete curb and gutter, bituminous pavement, sidewalk, or vegetative cover damaged by the construction activity. Restore damaged turf with sod within the public right-of-way. The work area shown is general and may need to be adjusted in the field.
29. Cut turf edges in order to allow for a uniform straight edge at locations where new sod meets existing turf. No jagged or uneven edges are allowed. Remove topsoil as required at joints between existing and new turf in order to allow the surface of the new sod to be flush with the existing.
30. Document existing conditions (photographs, video, field survey, etc.) in order to enable restoration to match existing conditions and in order to ensure that restored areas have positive drainage similar to existing conditions.
31. Provide positive drainage away from buildings at all times. Provide and maintain temporary drainage throughout construction until the permanent drainage system and structures are in place and operational. Install temporary ditches, piping, pumps, or other means as necessary in order to insure proper drainage at all times. Provide low points at building pads or roadways with positive outfalls. Do not block drainage from or direct excess drainage to adjacent property.
32. Protect all structures and landscaping not labeled for demolition from damage during construction. Provide protective coverings and enclosures as necessary to prevent damage to existing work that is to remain. Existing work to remain may include items such as trees, shrubs, lawns, sidewalks, drives, curbs, utilities, buildings and/or other structures on or adjacent to the site. Provide temporary fences and barricades as required for the safe and proper execution of the work and the protection of persons and property. Provide building surveys and seismic monitoring in locations where demolition, excavation, underpinning, pile driving, compacting, or similar work is to be performed adjacent to or in the vicinity of existing structures. Return any on-site or off-site areas disturbed directly or indirectly due to construction to a condition equal to or better than the existing condition.
33. Protect sub grades from damage by surface water runoff.
34. Full design strength is not available in bituminous pavement areas until the final lift of asphalt is compacted into place. Protect pavement areas from overloading by delivery trucks, construction equipment, and other vehicles.
35. When sawing or drilling concrete or masonry, use saws that provide water to the blade. Do not allow the slurry produced by this process to be tracked outside of the immediate work area or discharged into the sewer system.
36. Adjust all public and private structures including curb stops, valve boxes, maintenance hole castings, catchbasin castings, cleanout covers, and similar items to finished grade. Comply with the requirements of each structure's owner. Structures being reset in paved areas must meet the owner's requirements for traffic loading.
37. 2% maximum slope in all directions in handicapped accessible parking areas. 2% maximum cross slope and 5% maximum longitudinal slope on all sidewalks.
38. Install all pipe with the ASTM identification numbers on the top for inspection. Commence pipe laying at the lowest point in the proposed sewer line. Lay the pipe with the bell end or receiving groove end of the pipe pointing upgrade. When connecting to an existing pipe, uncover the existing pipe in order to allow any adjustments in the proposed line and grade before laying any pipe. Do not lay pipes in water or when the trench conditions are unsuitable for such work.
39. Obtain and pay for all permits, tests, inspections, etc. required by agencies that have jurisdiction over the project including the NPDES permit from the State. The Contractor is responsible for all bonds, letters of credit, or cash sureties related to the work. Execute and inspect work in accordance with all local and state codes, rules, ordinances, or regulations pertaining to the particular type of work involved.
40. Measure pipe lengths from center-of-structure to center-of-structure, or to the end of aprons.
41. Obtain permits from the City for work in the public right-of-way.
42. Refer to the geotechnical report by the Soils Engineer for dewatering requirements.
43. Test boring data shown on the plans were accumulated for designing and estimating purposes. Their appearance on the plan does not constitute a guarantee that conditions other than those indicated will not be encountered.
44. The minimum depth of cover for building and canopy roof drain leaders without insulation is 5 feet. Insulate roof drain leaders at locations where the depth of cover is less than 5 feet. Provide a minimum insulation thickness of 2 inches. The insulation must be at least 4 feet wide and centered on the pipe. Install the insulation boards 6 inches above the tops of the pipes on mechanically compacted and leveled pipe bedding material. Use high density, closed cell, rigid board material equivalent to DOW Styrofoam HI-40 plastic foam insulation.
45. Insulate utility lines at locations indicated on the plans. Provide a minimum insulation thickness of 4 inches. The insulation must be at least 4 feet wide and centered on the pipe. Install the insulation boards 6 inches above the tops of the pipes on mechanically compacted and leveled pipe bedding material. Use high density, closed cell, rigid board material equivalent to DOW Styrofoam Highload 40 Polystyrene Insulation. Individual insulation board dimensions typically measure 4' wide by 8' long by 2" thk.
46. Construct sanitary sewer, watermain, and storm sewer utilities in accordance with the City Engineer's Association of Minnesota Standard Specifications sections 2600, 2611, and 2621 dated 2013, or the latest revised edition.
47. These plans, prepared by Carlson McCain, LLC., do not extend to or include systems pertaining to the safety of the construction contractor or its employees, agents, or representatives in the performance of the work. The seal of Carlson McCain's registered professional engineer hereon does not extend to any such safety systems that may nor or hereafter be incorporated into these plans. The construction contractor shall prepare or obtain the appropriate safety systems which may be required by U.S. Occupational Safety and Health Administration (OSHA) and/or local regulations.
48. Existing utilities shown on this plan are located as accurately as possible. However, the Engineer does not guarantee that all utilities are shown, or if shown are in the exact locations indicated on the plan. It is the Contractor's responsibility to ascertain the final vertical and horizontal location of all existing utilities (including municipal water and sewer lines and appurtenances) and to notify the owners of the utilities a minimum of 48 working hours before starting construction in a given area, requesting location in the field, as exact as possible, of all utilities which may be affected by the construction.
49. Trace Wire: Install locating wires on all conductive and non-conductive storm sewer, sanitary sewer, and water lines in accordance with the Minnesota Rural Water Association (MRWA) Trace Wire Specification Guide and Details (www.mrwa.com/PDF/TracerWireSpecGuideFinalweb9.pdf). Use #12 HDPE-insulated copper-clad steel wire rated for underground service. The color of the insulating jacket shall be as follows: ground=red, storm sewer=green, sanitary sewer=green, and water lines=blue. Install the wire on the bottom side of the pipe below the spring line. Fasten the wire to the pipe with tape or plastic ties at 5' intervals. Do not wrap the trace wire around the corresponding utility. Do not connect the trace wire to existing conductive utilities. Use Copperhead Dryconn 3-Way or Locking Snake Bite connectors rated for underground direct bury applications or approved equal at all crossings or service connections. Twist on connectors are not allowed. Trace wire must be properly grounded at all dead ends and services. Install grade-level/in-ground trace wire access boxes and drive-in magnesium grounding anodes at all dead ends, services, and fire hydrants. Trace wire access boxes shall be color coded as follows: storm sewer=green, sanitary sewer=green, and water lines=blue.
50. Detectable Warning Tape: Install detectable underground warning tape directly above all underground utilities at a depth of 457 mm (18 inches) below finished grade, unless otherwise indicated. Underground warning tape shall be 3-inches wide with a minimum 5.0 mil overall thickness. Tape shall be manufactured using a 0.8 mil clear virgin polypropylene film, reverse printed and laminated to a 0.35 mil solid aluminum foil core, and then laminated to a 3.75 mil clear virgin polyethylene film. The aluminum backing makes underground assets easy to find using a non-ferrous locator. Tape shall be printed using a diagonally striped design for maximum visibility and meet the APWA Color-Code standard for identification of buried utilities. Use Pro-Line Safety Products (www.prolinesafety.com) detectable marking tape or approved equal.
51. See architectural for building waterproofing and foundation drainage.
52. Place #3 rebar at 3' on center in all 6" thick concrete pavement locations. Place #4 rebar at 4' on center in all 8" thick concrete pavement locations.
53. Place #4 x 2'-0" tie bar at 3' on center in all concrete curb and gutter.
54. Record as-built information as construction progresses or at appropriate construction intervals. Secure and deliver to the Owner as-built information showing locations, top, and invert elevations of manhole covers, catchbasins, cleanouts, inlet and outlet pipes, valves, hydrants, and related structures. Location ties shall be to permanent landmarks or buildings.
55. Test reports required for project close-out include, but are not limited to: density test reports, bacteriological tests on the water system, pressure tests on the water system, leak tests on the sewer system, deflection tests on all HDPE pipe, and infiltration testing at the storm water infiltration site.
56. Removing Markings: Markings that are no longer applicable for roadway conditions or restrictions and that might cause confusion for the road user shall be removed or obliterated to be unidentifiable as a marking as soon as practical. Pavement marking obliteration shall remove the non-applicable pavement marking material, and the obliteration method shall minimize pavement scarring. Painting over existing pavement markings with black paint or spraying with asphalt shall not be accepted as a substitute for removal or obliteration.
57. Completely remove marking from locations shown on the plan in accordance with MnDOT Standard Specification Section 2102. Use one or a combination of dit blasting, water blasting, and grinding. Provide a dust control system and remove accumulated sand or other materials. Collect, haul, and dispose of dust or residue from removals.

WATER DISTRIBUTION SYSTEM:

1. Bring all site utilities to 2' outside of the building line with the exception of the water service. Extend water service into the building and up to the entrance for the water meter. Do not install PVC water service pipe under or within any building, structure, or part thereof.
2. Separation of Water and Sewer: Construct sewer and water services in accordance with Minnesota Rules, part 4714.0721 and Uniform Plumbing Code (UPC) parts 720.0 and 721.0. Provide a minimum horizontal separation of 10 feet between all water and sewer lines, including manholes, catch basins, storm sewer, sanitary sewer, draintile, or other potential sources for contamination. Measure the separation distance from the outer edge of the pipe to the outer edge of the contamination source (outer edge of structures, piping, etc.) At water and sewer crossings, the bottom of the water pipe located within ten feet of the point of crossing must be at least 12-inches above the top of the sewer. When this is not feasible, the sewer pipe material must be approved for use inside of or within a building in accordance with the requirements of Minnesota Rules part 4714.0701 and UPC part 701.0. No joints or connections are allowed on the water line within 10-feet of the crossing.
3. Watermain Depth: Maintain 8-feet of cover over the top of the water lines to the finished grade. Verify elevation of proposed and existing water lines at all utility crossings. Install the water lines at greater depths in order to clear storm sewers, sanitary sewers, or other utilities as required. Include costs to lower water lines in the base bid.
4. Disinfection: Disinfect all completed watermains in accordance with AWWA Standard C651. If the tablet or continuous feed methods are used, disinfect using with water that contains at least 50 ppm of available chlorine in accordance with Minnesota Rules, part 4714.0609 and UPC part 609.9. Do not use the tablet method on solvent-welded plastic or on screwed-joint steel pipe because of the danger of fire or explosion from the reaction of the joint compounds with the calcium hypochlorite. Retain the treated water in the pipeline for at least 24 hours. Measure the chlorine residual at the end of the 24 hour period. The free chlorine residual must be at least 10 mg/l measured at any point in the line. Measurement of the chlorine concentration at regular intervals shall be in accordance with Standard Methods, AWWA M-12, or using appropriate chlorine test kits.
5. Testing: Pressure test and perform bacteriological tests on all water lines under the supervision of the City Public Works Department. Notify the City at least 24 working hours prior to any testing. Pressure test the water system in accordance with the UPC part 609.4. Pressurize the waterline to a water pressure of 1034-kPa (150-psi) gauge pressure (measured at the point of lowest elevation) by means of a pump connected to the pipe in a satisfactory manner. Do not add water to the watermain in order to maintain the required pressure during the water main pressure testing. Minnesota Department of Labor and Industry: The test section of pipe shall withstand the test without leaking for a period of not less than 15 minutes. Minnesota Department of Health: The watermain shall be pressure tested at 150-psi for at least two hours with not more than a 2-psi pressure drop during the last hour of the test.
6. All water supply piping connected to municipal water main must have a 150 psi minimum pressure rating.
7. Copper tube for water services must comply with ASTM B88 and shall have a weight not less than Type L (in accordance with Minnesota Rules part 4714.0604 and UPC part 604.0.)
8. Ductile iron pipe (DIP) water services must comply with AWWA C151/ANSI A21.51 or AWWA C115/ANSI A21.15 (See Minnesota Rules part 4714.0604 and UPC part 604.0.). Use Thickness Class 52 DIP with push-on joints. Use petroleum resistant gaskets, Nitrile (NBR), or approved equal. Use only ANSI 304 stainless steel bolts and nuts on all watermain fittings, valves, and hydrants. The exterior of ductile iron pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179. The interior cement mortar lining shall be applied without asphalt seal coating. Polyethylene encasement is required on all ductile iron pipe. Use V-Bio Enhanced Polyethylene Encasement or approved equal.
9. Polyvinyl Chloride (PVC) Building Water Services must comply with ASTM D1785, ASTM D2241, or AWWA C900; pressure rated for water (See Minnesota Rules part 4714.0604 and UPC part 604.0.). Do not install PVC water service pipe under or within any building, structure, or part thereof.
10. Polyvinyl Chloride (PVC) Watermain: Use AWWA C900 for all PVC watermain furnished with integral elastomeric bell and spigot joints; minimum pressure Class 150; dimension ratio not greater than 18; laying length 20 feet. Use EBAA Iron, Inc., "Series 2000 PV Megalug," or approved equal for restraint on C900 PVC watermain. Use only ANSI 304 stainless steel bolts and nuts on all watermain fittings, valves, and hydrants.
11. Use mechanical joint restraint devices for joint restraint on all watermain bends having a vertical or horizontal deflection of 22-1/2 degrees or greater, all valves, stubs, extensions, tees, crosses, plugs, all hydrant valves, and all hydrants in accordance with City requirements. Use "Series 1100 Megalug" manufactured by EBAA Iron Inc., Eastland, Texas, or approved equal, installed in accordance with manufacturer's recommendations for restraint on Ductile Iron Pipe. Restraining devices are to have epoxy coating or approved equivalent. Restraining device hardware shall be ANSI 304 stainless steel, or approved equivalent.
12. Watermain Valves: At all valve locations which require a 12" or smaller valve, install gate valves which are of the compression resilient seated (CRS) type. Use American Flow Control's Series 2500 Ductile Iron Resilient Wedge Gate Valve, or approved equal. Gate valves shall conform to AWWA C509. Install cast iron valve boxes conforming to ASTM A48 at each valve location. Valve boxes shall be the three-piece type with 5-1/4" shafts. Use Tyler 6860-G with No. 6 base, or equivalent. Valve boxes shall have at least 6" of adjustment above and below finished grade. Drop covers on valve boxes shall be round and bear the word "WATER" cast on the top. Use Tyler 6860-G "Stopcut" covers with extended skirt, or equivalent. All valve hardware shall be ANSI 304 stainless steel, or approved equivalent.
13. Curb Valves and Boxes: Use Mueller H-10334 extension type curb box with Minneapolis pattern base, or approved equal, at all $\frac{3}{4}$" through 2" curb stop locations. Stationary rod is required on all curb stops. Use Mueller Company Mark II Oriseal No. H-15154N curb stop, or approved equal, and stainless steel stem rod.
14. Fire hydrants shall be in accordance with the requirements of the local municipality. Do not connect hydrant drains to sanitary sewers or storm sewers. Do not locate hydrants within 10 feet of sanitary sewers or storm sewers. When placing fire hydrants in locations where the groundwater table is less than 8 feet below the ground surface, plug the hydrant drain holes and equip the hydrants with a tag stating the need for pumping after use. Maintain a 3-foot clear space around the circumference of all fire hydrants. All hydrant hardware shall be ANSI 304 stainless steel, or approved equivalent.
15. Do not connect new watermain to existing until the new water main is pressure tested and disinfected.
16. Trace Wire: Install locating wires on all conductive and non-conductive storm sewer, sanitary sewer, and water lines in accordance with the Minnesota Rural Water Association (MRWA) Trace Wire Specification Guide and Details (www.mrwa.com/PDF/TracerWireSpecGuideFinalweb9.pdf). Use #12 HDPE-insulated copper-clad steel wire rated for underground service. The color of the insulating jacket shall be as follows: ground=red, storm sewer=green, sanitary sewer=green, and water lines=blue. Install the wire on the bottom side of the pipe below the spring line. Fasten the wire to the pipe with tape or plastic ties at 5' intervals. Do not wrap the trace wire around the corresponding utility. Do not connect the trace wire to existing conductive utilities. Use Copperhead Dryconn 3-Way or Locking Snake Bite connectors rated for underground direct bury applications or approved equal at all crossings or service connections. Twist on connectors are not allowed. Trace wire must be properly grounded at all dead ends and services. Install grade-level/in-ground trace wire access boxes and drive-in magnesium grounding anodes at all dead ends, services, and fire hydrants. Trace wire access boxes shall be color coded as follows: storm sewer=green, sanitary sewer=green, and water lines=blue.
17. Detectable Warning Tape: Install detectable underground warning tape directly above all underground utilities at a depth of 457 mm (18 inches) below finished grade, unless otherwise indicated. Underground warning tape shall be 3-inches wide with a minimum 5.0 mil overall thickness. Tape shall be manufactured using a 0.8 mil clear virgin polypropylene film, reverse printed and laminated to a 0.35 mil solid aluminum foil core, and then laminated to a 3.75 mil clear virgin polyethylene film. The aluminum backing makes underground assets easy to find using a non-ferrous locator. Tape shall be printed using a diagonally striped design for maximum visibility and meet the APWA Color-Code standard for identification of buried utilities. Use Pro-Line Safety Products (www.prolinesafety.com) detectable marking tape or approved equal.
18. Threaded hose connections including hose bibbs and hydrants must include a back flow prevention device in accordance with Minnesota Rules, part 4714.0603 and UPC part 603.0. Wall hydrants must meet ASSE Standard 1019 (see Table 603.2). Where permitted by the administrative authority, wall hydrants may utilize non-removable ASSE 1052 backflow preventers or non-removable ASSE 1011 vacuum breakers and provision is made to protect from freezing (see Minnesota Rules, Chapter 4714, Sections 603.5.7, 312.6, and 301.1.2).
19. All newly installed or replacement pipes, pipe fittings, plumbing fittings and fixtures, including backflow preventers, that are installed on potable water systems or systems that are designed to distribute water for potable use, are required to meet the Reduction of Lead in Drinking Water Act, which establishes a maximum lead content of 0.25 percent by weighted average of the wetted surfaces. Solder and flux for potable water systems shall contain less than 0.2 percent lead. Joints must include non-corrosive non-toxic paste-type flux complying with ASTM B813 (see Minnesota Rules, Chapter 4714, Section 605.3.4). See Minnesota Rules, part 4714.0604 and UPC part 604.11.
20. Do not exceed the manufacturer's specifications for curvature of pipe and deflection at pipe joints. Securely close all open ends of pipe and fittings with watertight plugs when work is not in progress. Keep the interior of all pipes clean and remove any dirt or debris from joint surfaces after the pipes have been lowered into the trench. Install all valves plumb and located according to the plans.
21. Insulate the watermain at locations indicated on the plans. Provide a minimum insulation thickness of 4 inches. The insulation must be at least 4 feet wide and centered on the pipe. Install the insulation boards 6 inches above the tops of the pipes on mechanically compacted and leveled pipe bedding material. Use high density, closed cell, rigid board material equivalent to DOW Styrofoam Highload 40 Polystyrene Insulation. Individual insulation board dimensions typically measure 4' wide by 8' long by 2" thk.

SANITARY SEWER:

1. Unless otherwise indicated, use reinforced, precast, concrete maintenance holes conforming to ASTM C478, furnished with precast bases. Sanitary sewer maintenance holes shall be supplied with pre-formed inverts and flexible neoprene sleeve connections for all lateral lines 375 mm (15 inches) in diameter or less, unless otherwise indicated. Joints for all precast maintenance hole sections shall have confined, rubber "O"-ring gaskets in accordance with ASTM C443. These joints are normally used in sewers to hold infiltration and exfiltration to a practical minimum and are adequate for hydrostatic heads up to 30'. The inside barrel diameter shall not be less than 48 inches.
2. All joints and connections in the sewer system shall be gastight or watertight. Use flexible compression joints to make watertight connections to manholes in accordance with Minnesota Rules part 4714.0719.6. Where permitted by the administrative authority, approved resilient rubber joints or waterstop gaskets must be used in order to make watertight connections to manholes and other structures. Use Fernco "Concrete Manhole Adaptors" or "Large Diameter Waterstops", Press-Seal "Waterstop Grouting Rings", or approved equal. Cement mortar joints are permitted only for repairs or connections to existing lines having such joints.
3. The building sewer starts 2 feet outside of the building. See Uniform Plumbing Code (UPC) part 715.1. Material installed within 2 feet of the building must be of materials approved for use inside of or within the building.
4. The exterior sanitary sewer piping must comply with the following requirements: (A) Double wyes may not be used for drainage fittings in the horizontal position (see Minnesota Rules, Chapter 4714, Section 310.5). Proper pipe slope cannot be maintained on both of the offset branches. (B) Changes in direction in drainage piping must be made by appropriate use of wyes and bends (see Minnesota Rules, Chapter 4714, Section 706.0). Tees are not allowed where the direction of flow changes from either vertical to horizontal or horizontal to horizontal.
5. Pipe: Use solid-core, Schedule 40 Polyvinyl Chloride (PVC) Plastic Pipe for all designated PVC sanitary sewer services outside of the building. The PVC pipe shall meet or exceed the industry standards and requirements as set forth by the American Society for Testing and Materials (ASTM) D1785 and D2665. Fittings must comply with ASTM D1866, D2665, or F794. Joints must be approved mechanical or push-on utilizing an elastomeric seal. Use of solvent cement joints is allowed for building services. Solvent cement joints in PVC pipe must include use of ASTM F656 purple primer and cement in accordance with Uniform Plumbing Code (UPC), part 605.13.2. Pipe with solvent cement joints shall be joined with PVC cement conforming to ASTM D2564. The installation must comply with ASTM D2321, which requires open-trench installation on a continuous granular bed.
6. Cleanouts: Install cleanouts on all sanitary sewer services in accordance with UPC part 719.0 and 1101.12. The distance between cleanouts in horizontal piping shall not exceed 100 feet for pipes 4-inch and over in size. Cleanouts shall be of the same nominal size as the pipes they serve. Include frost sleeves and concrete frame and pipe support. Install a meter box frame and solid lid (Neenah R-1914-A, or approved equal) over all cleanouts.
7. Testing: Pressure test all sanitary sewer lines in accordance with the Minnesota Rules parts 4714.0712 and 4714.0723 and UPC parts 712.0 and 723.0. Test all flexible sanitary sewer lines for deflection after the sewer line has been installed and backfill has been in place for at least 30 days. No pipe shall exceed a deflection of 5%. If the test fails, make necessary repairs and retest.
8. Install flexible watertight frame/chimney seals on all sanitary sewer maintenance holes in order to seal the outside of the chimney from the cast iron frame down to the cone. The seal shall be a continuous seamless band made of high quality EPDM (Ethylene Propylene Diene Monomer) rubber with a minimum thickness of 65 mils. Use Internal/External Adapter Seal as manufactured by Adaptor, Inc. (www.adaptorinc.com/wp-content/uploads/2019/04/ADAP_IEManholeSeal.pdf), Infi-Shield Uni-band one piece molded sealing system as manufactured bySealing Systems, Inc. (www.ssisealingsystems.com), or approved equal.
9. Use Neenah Foundry Co. R-1642 casting with self-sealing, solid, type B lid, or approved equal, on all sanitary sewer maintenance holes. Covers shall bear the "Sanitary Sewer" label.
10. Trace Wire: Install locating wires on all conductive and non-conductive storm sewer, sanitary sewer, and water lines in accordance with the Minnesota Rural Water Association (MRWA) Trace Wire Specification Guide and Details (www.mrwa.com/PDF/TracerWireSpecGuideFinalweb9.pdf). Use #12 HDPE-insulated copper-clad steel wire rated for underground service. The color of the insulating jacket shall be as follows: ground=red, storm sewer=green, sanitary sewer=green, and water lines=blue. Install the wire on the bottom side of the pipe below the spring line. Fasten the wire to the pipe with tape or plastic ties at 5' intervals. Do not wrap the trace wire around the corresponding utility. Do not connect the trace wire to existing conductive utilities. Use Copperhead Dryconn 3-Way or Locking Snake Bite connectors rated for underground direct bury applications or approved equal at all crossings or service connections. Twist on connectors are not allowed. Trace wire must be properly grounded at all dead ends and services. Install grade-level/in-ground trace wire access boxes and drive-in magnesium grounding anodes at all dead ends, services, and fire hydrants. Trace wire access boxes shall be color coded as follows: storm sewer=green, sanitary sewer=green, and water lines=blue.
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12. The minimum depth of cover for sanitary sewer without insulation is 5 feet. Insulate sanitary sewer services at locations where the depth of cover is less than 5 feet. Provide a minimum insulation thickness of 4 inches. The insulation must be at least 4 feet wide and centered on the pipe. Install the insulation boards 6 inches above the tops of the pipes on mechanically compacted and leveled pipe bedding material. Use high density, closed cell, rigid board material equivalent to DOW Styrofoam Highload 40 Polystyrene Insulation. Individual insulation board dimensions typically measure 4' wide by 8' long by 2" thk.
13. Install all pipe with the ASTM identification numbers on the top for inspection. Commence pipe laying at the lowest point in the proposed sewer line. Lay the pipe with the bell end or receiving groove end of the pipe pointing upgrade. When connecting to an existing pipe, uncover the existing pipe in order to allow any adjustments in the proposed line and grade before laying any pipe. Do not lay pipes in water or when the trench conditions are unsuitable for such work.
14. All saddle tee or wye fittings must provide an integrally molded pipe stop in the branch for positive protection against service pipe insertion beyond the inside of the sewer main pipe wall.
15. Terminate all new sewer stubs with a water-tight gasketed cap properly braced in order to withstand the infiltration-exfiltration test. Install grade-level/in-ground trace wire access boxes and drive-in magnesium grounding anodes at the end of all stubs.
16. Televise all existing lines prior to connection.

KWIK TRIP

KWIK STAR

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960

CARLSON McCAIN
3890 PHEASANT RIDGE DRIVE NE, SUITE 100, BLAINE, MN 55449
TEL 763.489-7900 \ FAX 763.489.7959 \ CARLSONMCCAIN.COM

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.

Name: Joseph T. Radach, P.E.
Signature:
Date: 01/03/22 License #: 45889

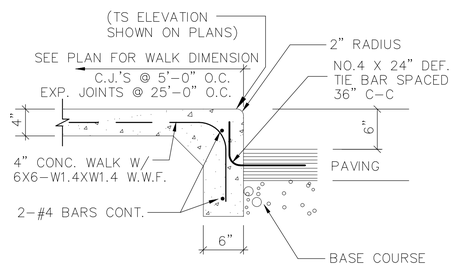
UTILITY NOTES

CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
& SIDE DIESEL

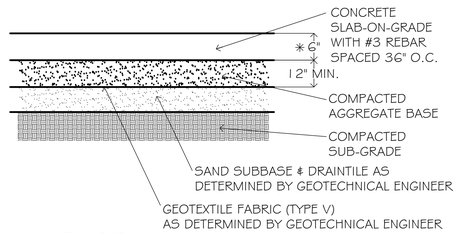
HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

DRAWN BY	JTR
SCALE	GRAPHIC
PROJ. NO.	9721-00
DATE	2022-01-03
SHEET	1203 SP4.1



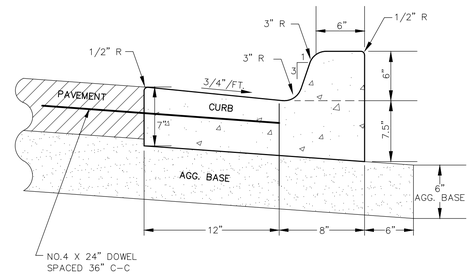
1 SP5 SIDEWALK/ CURB DETAIL
NO SCALE



HEAVY DUTY
INCREASE TO 8" THICK W/ #4 REBAR SPACED 36" O.C. AS NOTED ON PLANS (I.E. OVER TANKS & AT ENTRANCES)

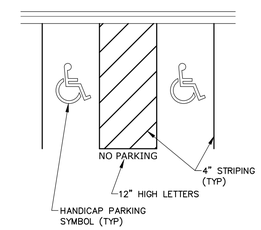
NOTE:
PAVEMENT SECTION TO BE VERIFIED W/ GEOTECHNICAL REPORT.

2 SP5 6" CONCRETE PAVEMENT SECTION (LIGHT DUTY)
NO SCALE

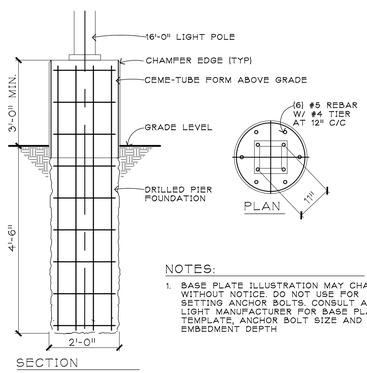


* TIPOUT CURB SHALL SLOPE OUT AT 3/4" PER FOOT.

3 SP5 B-612 CONCRETE CURB & GUTTER
NO SCALE



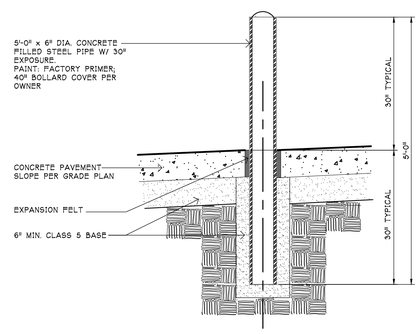
4 SP5 HANDICAP PARKING SPACE STRIPING
NO SCALE



NOTES:
1. BASE PLATE ILLUSTRATION MAY CHANGE WITHOUT NOTICE. DO NOT USE FOR SETTING ANCHOR BOLTS. CONSULT AREA LIGHT MANUFACTURER FOR BASE PLATE TEMPLATE, ANCHOR BOLT SIZE AND EMBEDMENT DEPTH

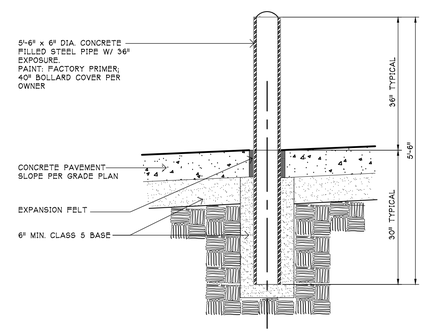
5 SP5 ROUND AREALIGHT FOUNDATION
NO SCALE

NOTE: SEE ARCHITECTURAL PLANS FOR REMOVABLE BOLLARD LOCATION AND DETAIL



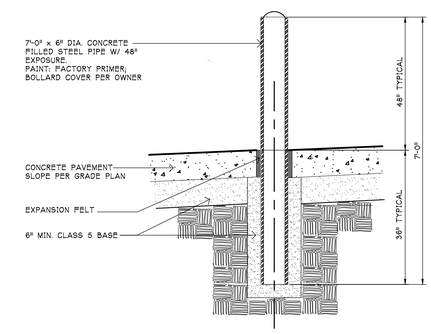
6 SP5 6" PIPE BOLLARD - 5'
NO SCALE

NOTE: SEE ARCHITECTURAL PLANS FOR REMOVABLE BOLLARD LOCATION AND DETAIL

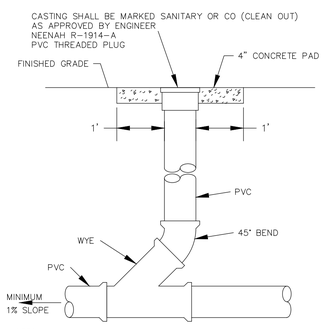


7 SP5 6" PIPE BOLLARD - 5'-6"
NO SCALE

NOTE: SEE ARCHITECTURAL PLANS FOR REMOVABLE BOLLARD LOCATION AND DETAIL

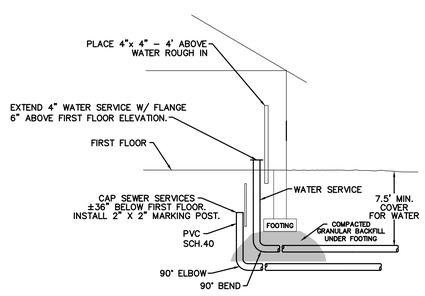


8 SP5 6" PIPE BOLLARD - 7'-0"
NO SCALE



NOTES:
- ALL JOINTS SHALL BE SOLVENT WELD EXCEPT AS NOTED.
- CLEAN OUTS ARE REQUIRED AT 100' SPACING AND AT CHANGE OF DIRECTION.
- ALL CLEAN OUTS SHALL BE EQUIPPED WITH A FROST SLEEVE.

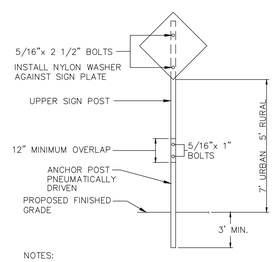
9 SP5 SERVICE CLEAN OUT
NO SCALE



WATER NOTES: 4" WATER SERVICE W/FLANGE SHALL BE EXTENDED TO 6" ABOVE FIRST FLOOR ELEVATION. ALL SERVICES SHALL BE MARKED WITH A 4" X 4" POST, 4' ABOVE GRADE.

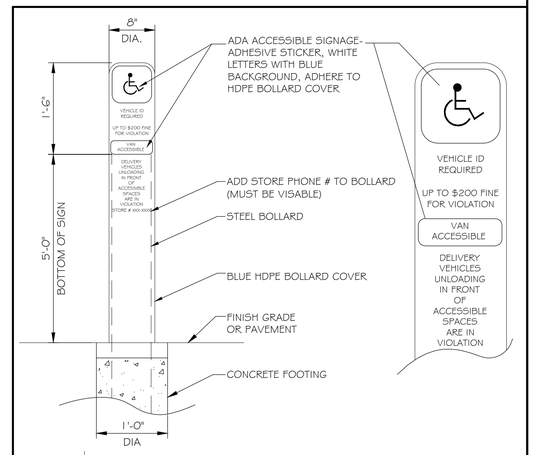
SEWER NOTES: SANITARY SEWER SERVICES FOR BUILDINGS SHALL BE EXTENDED VERTICALLY TO APPROXIMATELY 36" BELOW FIRST FLOOR ELEVATION AND CAPPED. ALL SERVICES SHALL BE MARKED WITH A 2" X 2" POST.

10 SP5 SANITARY & WATER SERVICE INSTALLATION
NO SCALE



NOTES:
1. MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH CITY SPECIFICATIONS.
2. SIGN PANELS-REFLECTIVE SHEETING, VIP DIAMOND GRADE.
3. BOLTS SHALL BE TAMPER PROOF.
4. FLANGED CHANNEL SIGN POSTS SHALL BE PAINTED GREEN, 3 LB./L.F. AND 7' LONG.
5. SIGNS INSTALLED IN CONCRETE SHALL HAVE AN APPROVED BREAK-AWAY DEVICE.
6. EDGE OF SIGN SHALL BE MINIMUM 18" FROM BACK OF CURB.

11 SP5 TRAFFIC SIGN INSTALLATION
NO SCALE



12 SP5 ADA BOLLARD SIGNAGE
NO SCALE

KWIK TRIP

KWIK STAR

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3890 PHEASANT RIDGE DRIVE NE, SUITE 100, BLAINE, MN 55449
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I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Name: Joseph T. Radach, P.E.
Signature:
Date: 01/03/22 License #: 45889

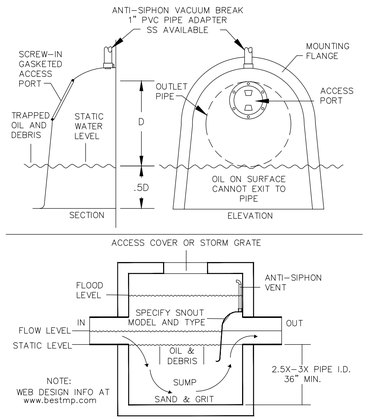
SITE PLAN DETAILS

CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
& SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

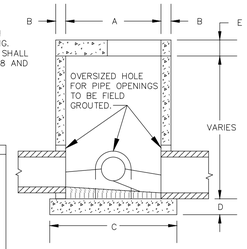
DRAWN BY	JTR
SCALE	GRAPHIC
PROJ. NO.	9721-00
DATE	2022-01-03
SHEET	1203 SP5



1 SP6 "SNOUT" OIL-WATER-DEBRIS SEPARATOR

NO SCALE

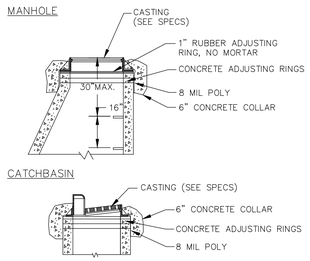
NOTES:
1. 54" THRU 120" DIA. STRUCTURES ARE MANUFACTURED WITH BELL END FACING DOWN.
2. STRUCTURES ARE MANUFACTURED IN ACCORDANCE WITH ASTM C-478 AND WDOT 611 WITH RUBBER GASKET JOINTS.
3. PROVIDE MORTAR FILLETS TO FIT THE BOTTOM PORTION OF PIPE TO DIRECT FLOW TO OUTLET HALF-WAY UP PIPE MINIMUM.
4. COVER SLAB DESIGN VARIES WITH CASTING.
5. REINFORCING STEEL SHALL BE PER ASTM C-478 AND WDOT 611.



A	B	C	D	E
48"	5"	64"	8"	8"
54"	5.5"	72"	8"	8"
60"	6"	78"	8"	8"
66"	6.5"	85"	8"	8"
72"	7"	92"	8"	8"
78"	7.5"	100"	8"	8"
84"	8"	106"	8"	8"
90"	8.5"	114"	8"	8"
96"	9"	120"	8"	8"
102"	9.5"	127"	12"	8"
108"	10"	132"	12"	12"
120"	10"	146"	12"	12"

2 SP6 STANDARD STORM SEWER CATCH BASIN/MANHOLE & MANHOLE

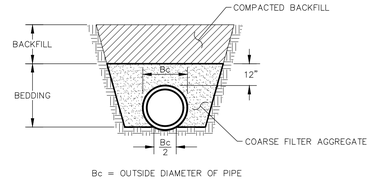
NO SCALE



NOTES:
1. USE MINIMUM OF 2-0.2' ADJUSTING RINGS, MAXIMUM OF 5-0.2' ADJUSTING RINGS, ALL SET IN MORTAR.
2. MANHOLE STEPS SHALL BE PER MNDOT PLATE 4180, TYPE W. STEPS SHALL BE LOCATED ON UPSTREAM WALL FOR PIPE SIZES UP TO AND INCLUDING 15" AND ON SIDE WALL FOR GREATER THAN 15".
3. LIDS FOR SANITARY SEWER SHALL BE MARKED "SANITARY"

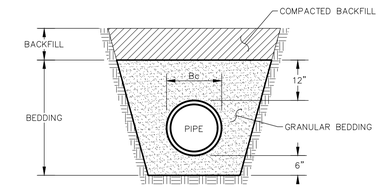
3 SP6 ADJUSTING RINGS & STEPS

NO SCALE



4 SP6 DIP & RCP PIPE BEDDING

NO SCALE



5 SP6 PVC PIPE BEDDING

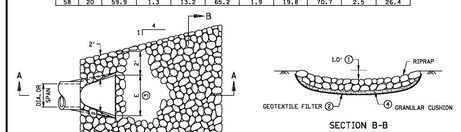
NO SCALE

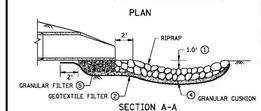
TABLE OF QUANTITIES
RIPRAP AT RCP OUTLETS

DIA. OF ROUND PIPE (IN.)	L (FT.)	CLASS II d_{50} = 6" GEO-TEXTILE FILTER (SQ.YD.)	CLASS II d_{50} = 6" GRANULAR FILTER UNDER APRON (CU.YD.)	CLASS II d_{50} = 6" 12" DEPTH RIPRAP (CU.YD.)	CLASS III d_{50} = 9" GEO-TEXTILE FILTER (SQ.YD.)	CLASS III d_{50} = 9" GRANULAR FILTER UNDER APRON (CU.YD.)	CLASS III d_{50} = 9" 18" DEPTH RIPRAP (CU.YD.)	CLASS IV d_{50} = 12" GEO-TEXTILE FILTER (SQ.YD.)	CLASS IV d_{50} = 12" GRANULAR FILTER UNDER APRON (CU.YD.)	CLASS IV d_{50} = 12" 24" DEPTH RIPRAP (CU.YD.)
12	8	16.9	0.2	3.0	19.6	0.3	4.4	22.6	0.3	5.9
15	8	18.0	0.2	3.2	20.8	0.3	4.8	23.5	0.4	6.4
18	10	22.4	0.3	4.3	25.6	0.4	6.4	29.0	0.5	8.5
21	10	24.1	0.4	4.7	27.4	0.6	7.1	30.9	0.7	9.4
24	12	29.7	0.5	6.2	33.4	0.8	9.2	37.3	1.0	12.3
27	12	31.4	0.6	6.6	35.2	0.9	9.9	39.2	1.2	13.2
30	14	37.4	0.8	8.2	41.6	1.1	12.3	46.0	1.5	16.4
36	16	45.9	1.1	10.6	50.5	1.6	15.8	55.4	2.1	21.1
42	18	52.8	1.2	12.5	57.8	1.7	18.7	63.0	2.3	24.9
48	20	61.1	1.5	14.8	66.5	2.2	22.2	72.0	2.9	29.6

TABLE OF QUANTITIES
RIPRAP AT RCP-A OUTLETS

SPAN OF PIPE ARCH (IN.)	L (FT.)	CLASS II d_{50} = 6" GEO-TEXTILE FILTER (SQ.YD.)	CLASS II d_{50} = 6" GRANUL FILTER UNDER APRON (CU.YD.)	CLASS II d_{50} = 6" 12" DEPTH RIPRAP (CU.YD.)	CLASS III d_{50} = 9" GEO-TEXTILE FILTER (SQ.YD.)	CLASS III d_{50} = 9" GRANUL FILTER UNDER APRON (CU.YD.)	CLASS III d_{50} = 9" 18" DEPTH RIPRAP (CU.YD.)	CLASS IV d_{50} = 12" GEO-TEXTILE FILTER (SQ.YD.)	CLASS IV d_{50} = 12" GRANUL FILTER UNDER APRON (CU.YD.)	CLASS IV d_{50} = 12" 24" DEPTH RIPRAP (CU.YD.)
22	10	22.4	0.3	4.1	25.6	0.4	6.1	29.0	0.5	8.1
28	12	29.5	0.5	5.7	33.2	0.7	8.5	37.1	0.9	11.3
36	14	37.3	0.8	7.5	41.5	1.1	11.2	45.8	1.5	14.9
43	16	45.9	1.1	9.5	50.5	1.6	14.3	55.3	2.1	19.0
51	18	52.5	1.2	11.3	57.5	1.7	16.9	62.7	2.3	22.5
58	20	59.9	1.3	13.2	65.2	1.9	19.8	70.7	2.5	26.4





NOTES:
REQUIREMENTS FOR GEOTEXTILE TYPE, RIPRAP SIZE AND THICKNESS WILL BE DESIGNATED IN THE PLANS.

PIPE SIZES LARGER THAN THOSE SHOWN REQUIRE A SPECIAL DESIGN.

① FOR PIPES GREATER THAN OR EQUAL TO 30", USE 1.5'.
② GEOTEXTILE FILTER, SPEC. 3733, SHALL COVER THE BOTTOM AND SIDES OF THE AREA EXCAVATED FOR THE RIPRAP, GRANULAR FILTER MATERIALS.
③ DIMENSION E IS GIVEN ON STANDARD PLATES 3100 AND 3110.
④ GRANULAR FILTER, 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 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.

APPROVED DECEMBER 9, 2013 STATE DESIGN ENGINEER	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION RIPRAP AT RCP OUTLETS	SPECIFICATION REFERENCE 3100 3110 3601 3733 2511	STANDARD PLATE NO. 3133D

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Name: Joseph T. Radach, P.E.
Signature:
Date: 01/03/22 License #: 45889

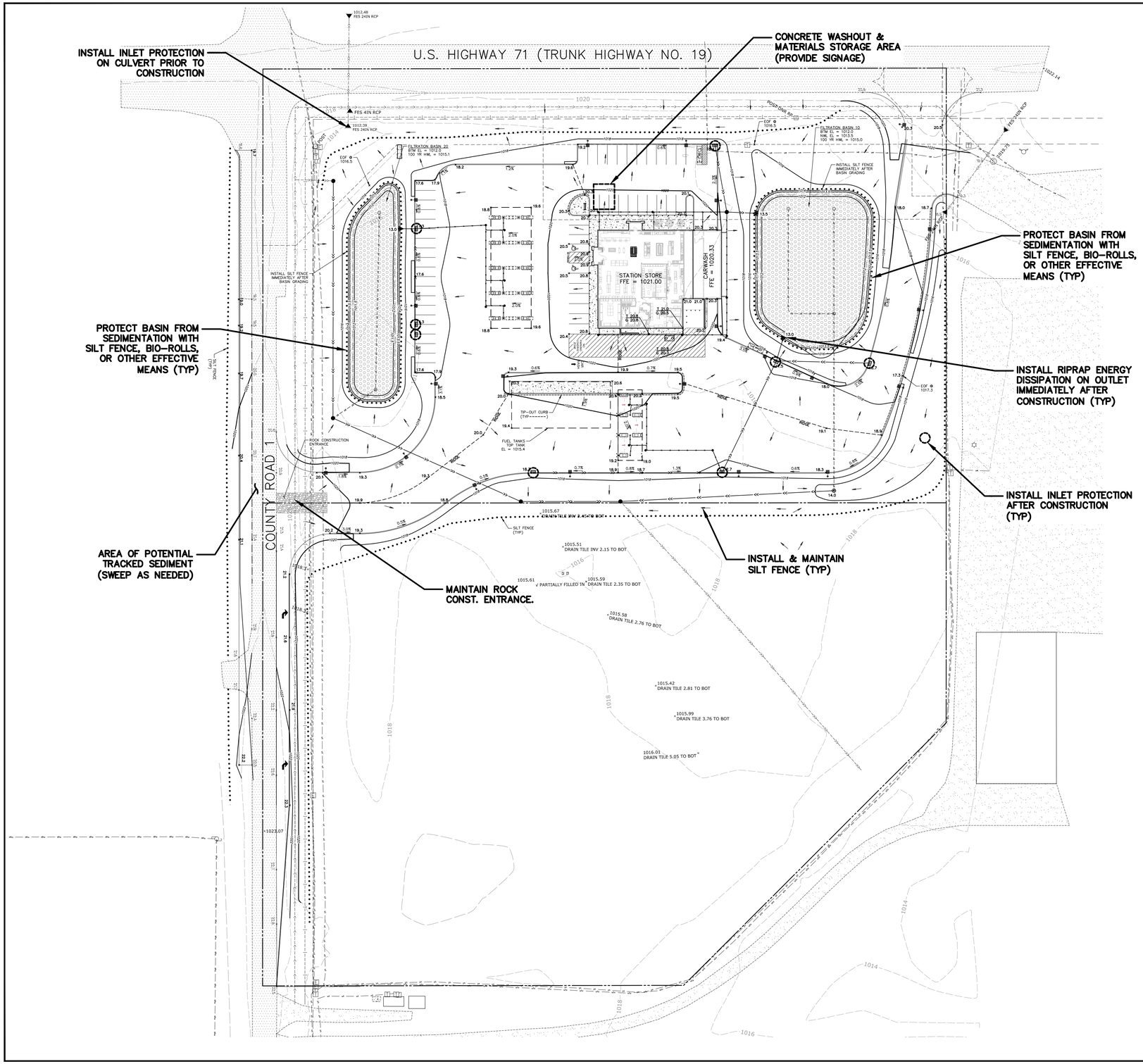
SITE PLAN DETAILS

CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
& SIDE DIESEL

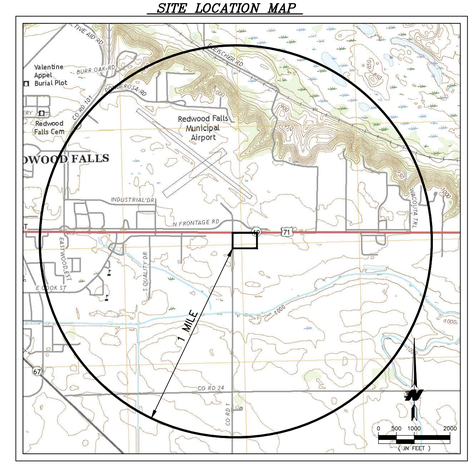
HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

DRAWN BY	JTR
SCALE	GRAPHIC
PROJ. NO.	9721-00
DATE	2022-01-03
SHEET	1203 SP6



SITE LOCATION MAP



QUANTITIES

THE FOLLOWING TABLE PROVIDES ESTIMATED QUANTITIES FOR STORMWATER POLLUTION PREVENTION THROUGHOUT THE PROJECT.

ITEM	UNIT	ESTIMATED QUANTITY
ROCK ENTRANCE	EA.	1
SILT FENCE/BIO-LOGS	L.F.	3,400
INLET PROTECTION	EA.	9
EROSION CONTROL BLANKET	S.Y.	3,110
TURF ESTABLISHMENT	AC.	2.1

0 25 50 100

(IN FEET)

BENCHMARKS

1. TOP OF MNDOT GEODETIC MONUMENT "6404 D RESET" GSID STATION #103971

ELEVATION = 1016.002 (NAVD 88)

CALL BEFORE YOU DIG.

811 Know what's below. Call before you dig.

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Signature:

Date: 01/03/22 License #: 45889

EROSION CONTROL PLAN

CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
& SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
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SHEET	1203 SWP1

GENERAL STORMWATER POLLUTION PREVENTION :

Apply for and obtain the General Storm Water Permit for Construction Activity from the Minnesota Pollution Control Agency.

Storm Water Pollution Prevention Plan (SWPPP): The SWPPP includes this narrative, Plan Sheets SWP1, SWP3 and SWP4, and the Storm water Management Calculations. Keep a copy of the SWPPP, all changes to it, and inspections and maintenance records at the site during the construction. During the construction process the SWPPP will have to be amended to the changes performed by the contractor. the owner shall be aware of the amendments prior to changes made in the SWPPP. All notes, photographs, recorded dates, sketches, references, and diagrams will have to be recorded and made available as part of the SWPPP permit.

Individual(s) preparing the SWPPP for the project, overseeing implementation of the SWPPP, revising and amending the SWPPP, and at least one individual on the project performing installation, inspection, maintenance, and repairs of BMP's must be trained. The training must be done by a local, state, federal agencies; professional organization; or other entities with expertise in erosion prevention, sediment control, or permanent Storm water management. Training information and those certified must be noted in the SWPPP. Documentation of this information must be included in the SWPPP or made available within 72 hours. All trained individuals must be identified, including DESIGNER, INSTALLER and INSPECTOR.

Responsible Parties: The contractor must designate a person knowledgeable and experienced in the application of erosion prevention and sediment control BMPs who will oversee the implementation of the SWPPP, and the installation, inspection, and maintenance of the erosion prevention and sediment control BMPs before and during construction.

CONTACT EMILY HELWIG
KWIK TRIP INC
1626 OAK STREET
LA CROSSE, WI 54602
608-791-7443

The owner is responsible for identifying who will have responsibility for the long term operation and maintenance of the permanent storm water management systems.

SITE INVESTIGATION, INSTALLATION, IMPLEMENTATION :

Contractor shall ensure a trained person will oversee the installation of all devices. Name and certification of individual(s) responsible for installation shall be in the SWPPP. those individuals include those overseeing implementation and/or performing or supervising the installation.

1. Prior to any work, contractor shall visit the site, document existing conditions as necessary(photos, notes, etc) and note existing drainage patterns on and off site that are related to the project. Installer and inspector of the SWPPP shall determine on site if there are additional ways to create buffer zones and or phasing of the project construction to limit the extent of exposed soils. If this is determined to be helpful, the SWPPP shall be amended accordingly. These notes and changes shall be part of the SWPPP.

2. Install all temporary erosion and sediment control measures including silt fence, rock construction entrance(s), erosion control berms, rock filters, silt sacks, rock /earth berms, and sedimentation basins. Protect all receiving waters, catch basins, ditches, inlets etc. in and around the site. All protective and preventative measures must be in place and inspected prior to beginning site clearing, grading, or other land-disturbing activity.

3. Prior to beginning site clearing and grading, protect all storm sewer inlets that receive runoff from disturbed areas. In order to prevent sediment from leaving the site and entering the downstream storm sewer system, seal all storm sewer inlets that are not needed for site drainage during construction. Protect all other storm sewer inlets by installing sediment control devices, such as silt sacks, or rocked filtration logs/weirs. Straw bales or fabric under the grates are not acceptable forms of inlet protection. Protect new storm sewer inlets as they are completed. Maintain storm sewer inlet protection in place until all sources with potential for discharging to the inlets are stabilized.

4. Before beginning construction, install a TEMPORARY ROCK CONSTRUCTION ENTRANCE at each point where vehicles exit the construction site When at all possible contractor shall designate only one access point for vehicles entering and exiting the site. The rock on the entrance will have to be inspected daily and replaced or rock supplemented by the contractor when over 50% of the voids in the rock are filled. A cleaning station should be made available to drivers and visibly signed to see. Provide shovels, brooms and/or hose with a wash out area so soils can be removed from vehicles on site.

5. Avoid entire removal of trees and surface vegetation all at once whenever possible as this limits the amount of site susceptible to erosion. Schedule construction zones and note this on the SWPPP in order to expose the smallest practical area of soil at any given time. Utilize vegetation removed by on site grinding and mulching and using this material to protect the soil from erosion.

6. Areas That Discharge to Special or Impaired Waters: As a general rule for areas draining less than 10 acres, additional or alternative measures shall take place which include but are not limited to installing multiple lines of silt fence, constructing small basins/sediment collection ditches, vegetative strips, tarps, mulching or forms of temporary vegetation. Following initial soil disturbance or re-disturbance, complete permanent or temporary stabilization against erosion due to rain, wind, and running water within 7 calendar days on all disturbed or graded areas. This requirement does not apply to those areas that are currently being used for material storage on a daily basis or for those areas on which grading, site building, or other construction activities are actively underway. Provide temporary cover on all stacked topsoil piles, and other areas of stockpiled excavated material in order to prevent soil erosion and rapid runoff during the construction period. Stockpiles can be mulched,covered with poly or fabric, and or seeded during prolonged exposure. Prolonged periods of open, bare earth without grass cover will not be permitted. Stabilize all disturbed green-space areas with a minimum of 4" topsoil immediately after final sub-grade completion. Seed and mulch, or sod and protect these areas within 48 hours after completion of final grading work (weather permitting). Stabilize all disturbed areas to be paved using early application of gravel base. Stabilize the normal wetted perimeter of any temporary or permanent drainage ditch that conveys water from the construction site, or diverts water around the construction site, within 200 lineal feet from the property edge, or within 200 feet from the point of discharge to any surface water. Stabilize temporary or permanent drainage ditches within 24 hours of connecting to a surface water. Protect outfalls minimum of 200feet down stream and to the side of the discharge point. Additional settling "pots" achieved by filter logs or filtered stick bales staked in the channel will dissipate the water energy. Provide pipe outlets with temporary or permanent energy dissipation within 24 hours of connection to a surface water.

7. Receiving Waters - It is the contractors responsibility to inspect the site discharge point as well as downstream to the receiving body of water(pond, lake, stream, etc.) on a regular basis including after each storm event and document if any differences or changes in normal in discharge and if material is leaving the construction site. If so it shall be documented and removed immediately. Contractor shall be aware of DNR "water restrictions" during specified fish spawning time frames and all exposed soil areas that are within 200 feet of the waters edge, and drain to these waters must complete the stabilization activities within 24 hours of the restriction period.

NOTE: ALL EROSION AND SEDIMENT CONTROL DEVICES WILL BE CHECKED BY THE CONTRACTOR AFTER EACH STORM EVENT AND BE MAINTAINED, OR IMPROVED UPON AFTER EVERY STORM EVENT TO ENSURE ADEQUATE PERFORMANCE.

POLLUTION CONTROL:

1. Designate a Concrete Wash-out and truck wash area:
   Make it visible in the field to vehicle operators and note this on the SWPPP.

   a. When washouts occur on the site, concrete washout water must be contained in a leak-proof containment facility or impermeable liner. Liquid and solid wastes may not touch the ground and there must not be runoff from the concrete washout operations or areas.

   b. Limit external washing of trucks and other construction vehicles to a defined area preferably before the construction access/exit point. Wash vehicles only on an area stabilized with stone that drains into an approved sediment trapping device. Contain runoff and properly dispose of waste. Engine degreasing is prohibited.

2. Solid Waste: Properly dispose of collected sediment, asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris, and other wastes in compliance with Minnesota Pollution Control Agency requirements.

3. Hazardous Materials: Properly dispose of all waste and unused building materials (including garbage debris, cleaning wastes, oil, gasoline, paint, wastewater, toxic materials, and hazardous materials) off-site. Do not allow waste and unused building materials to be carried by runoff into a receiving channel or storm sewer system. Properly store oil, gasoline, paint, and other hazardous materials in order to prevent spills, leaks, or other discharge. Include secondary containment. Restrict access to storage areas in order to prevent vandalism. Storage and disposal of hazardous materials must be in compliance with MPCA regulations.

4. Machinery: and mechanized equipment that leaks waste shall have a protective barrier or containment under the device adequate to contain the waste. Properly dispose of the waste.

5. Emergency spill station: Contractor shall locate and sign an emergency spill station that has necessary containment or cleanup devices for all workers to access.

EROSION CONTROL:

Apply necessary moisture to the construction area and haul roads to prevent the spread of dust.

Contractor shall utilize coarsely ground wood and tree mulches to cover exposed soils. Mulches shall be stored on site to supplement and use in problem areas during all phases of the construction project.

Contractor shall uses star tack or other organic substances in situations to prevent soil from eroding away by wind or rain.

Whenever possible contractor shall grade areas of soil to limit potential of erosion, to include tracking perpendicular to fall line of grades as well as diverting water flows from problematic areas on the site.

Seeding, fiber blankets, poly/tarps or cover mulches, disked mulches and compost can be used to cover temporarily exposed areas from wind and rain. Other methods by the contractor shall be documented in the SWPPP.

SEDIMENT CONTROL:

Inlet Sediment Control Protection Devices:
The following area approved Inlet Sediment Control Devices:

a. Road Drain Top Slab Model RD 23 (fits rough opening for 2'x3' inlet), Road Drain Top Slab Model RD 27 (fits rough opening for 27" inlet), or Road Drain Top Slab Model CG 3067 (fits Neenah Casting with 35-1/4"x17-3/4" dimensions) manufactured by:
WIMCO
799 Theis Drive
Shakopee, MN, 55379
Phone (952) 233-3055
or approved equal

b. Silt Sack manufactured by:
ACF ENVIRONMENTAL
2831 Cardwell Road
Richmond, VA, 23234
Phone (800) 448-3636
or approved equal

c. InfraSafe Sediment Control Barrier. Install geotextile sock on the outside of the barrier in order to trap additional fines. Standard frames are available to fit 24" to 30" diameter and 2'x3' openings.
Distributed by:
ROYAL ENTERPRISES AMERICA
30622 Forest Boulevard
Stacy, MN, 55079
Phone (651) 462-2130
or approved equal

d. Ridge Bag Rock Log. Use rock logs only for curb inlets after pavement is in place.
Manufactured by RED BARN RIDGE, 3135
County Road 136, Saint Cloud, MN, 35301
Phone (320) 253-3744
or approved equal

e. Inflatable drain plugs by Interstate Products www.interstateproducts.com or approved equal

Riprap:
Place a 450 mm (18 inch) thick layer of MNDOT 3601 Class III riprap onto a 225 mm (9 inch) thick layer of MNDOT 3601.2.B granular filter material at locations indicated on the plan in accordance with MNDOT 2511. Install two layers of MNDOT 3733 Type IV Geotextile fabric beneath the granular filter material. At pipe outfalls configure the installation as shown on MNDOT Standard Plate No. 3133C for the size of pipe indicated and extend the geotextile fabric under the culvert apron a minimum of 3 feet. For pipe sizes smaller than 300 mm (12 inch) diameter, the minimum quantity of riprap and filter blanket shall be no less than that required for 300 mm (12 inch) diameter pipes.

Silt Fence:
Install silt fence along the contour (on a level horizontal plane) with the ends turned up (J-hooks) in order to help pond water behind the fence. Install the silt fence on the uphill side of the support posts. Provide a post spacing of 1.2 m (4 feet) or less. Drive posts at least 0.6 m (2 feet) into the ground. Anchor the silt fence fabric in a trench at least 152 mm (6 inches) deep and 152 mm (6 inches) wide dug on the up-slope side of the support posts. Lay the fabric in the trench and then backfill and compact with a vibratory plate compactor. Make any splices in the fabric at a fence post. At splices, overlap the fabric at least 152 mm (6 inches), fold it over, and securely fasten it to the fence post. Silt fence supporting posts shall be 51 mm (2 inch) square or larger hardwood, pine, or standard T- or U-section steel posts. T- or U-section steel posts shall weigh not less than 1.8602 kg per meter (1.25 lb per lineal foot). Posts shall have a minimum length of 1524 mm (5 feet). Posts shall have projections to facilitate fastening the fabric and prevent slippage. Geo-textile fabric shall meet the requirements of MNDOT Standard Specification 3886 for pre-assembled silt fence, furnished in a continuous roll in order to avoid splices. Geo-textile fabric shall be uniform in texture and appearance and have no defects, flaws, or tears. The fabric shall contain sufficient ultraviolet (UV) ray inhibitor and stabilizers to provide a minimum two-year service life outdoors. Fabric color shall be international orange. In high traffic areas contractor shall reinforce silt fence with wire fencing and metal posts. extreme circumstances will require temporary concrete median sections to support material backing of stock piled soil or filled earth.

Install silt-fence, or other effective sediment controls, around all temporary soil stockpiles. Locate soil or dirt stockpiles containing more than 10 cubic yards of material such that the down-slope drainage length is no less than 8 m (25 feet) from the toe of the pile to a roadway or drainage channel. If remaining for more than seven days, stabilize the stockpiles by mulching, vegetative cover, tarps, or other means. Control erosion from all stockpiles by placing silt fence barriers around the piles. During street repair, cover construction soil or dirt stockpiles located closer than 8 m (25 feet) to a roadway or drainage channel with tarps, and protect storm sewer inlets with silt sacks or staked silt-fence. Do not stock pile soil or material near catch basins or drainage ways.

Temporary Rock Construction Entrance:
Use 25 mm (1 inch) to 50 mm (2 inch) diameter rock, MNDOT Standard Specification 3137 CA-1, CA-2, CA-3, or equal Coarse Aggregate. Place the aggregate in a layer at least 152 mm (6 inches) thick across the entire width of the entrance. Extend the rock entrance at least 15 m (50 feet) into the construction zone. Use a MNDOT Standard Specification 3733 Type V permeable geo-textile fabric material beneath the aggregate in order to prevent migration of soil into the rock from below. Maintain the entrance in a condition that will prevent tracking or flowing of sediment onto paved roadways. Provide periodic top dressing with additional stone as required. Close entrances not protected by temporary rock construction entrances to all construction traffic.

Temporary Sediment Basins
In the construction process or if noted on the plan the contractor shall construct temporary sediment basin(s). the basin shall be constructed before other construction starts. As per general rule the sediment basin shall be sized appropriately to a capacity related to the drainage area on a ratio of 3,600 cubic feet of sediment storage per acre of drainage zone entering the basin. Sediment basins shall be fenced if side slope exceed 4:1. Basins shall be inspected after every rainfall even. Sediment shall be removed at time of 1/2 the wetted volume/depth if filled. Sediment material shall be removed and stabilized. If changes to the basin are made, document and amend the SWPPP.

DEWATERING:

If de-watering is required and sump pumps are used, all pumped water must be discharged through an erosion control facility (temporary sedimentation basin, grit chamber, sand filter, up-flow chamber, hydro-cyclone, swirl concentrator, de-watering bag-not less than 100NTU's or other appropriate facility). Contractor shall allow silt and sediment to settle out in sediment basin prior to discharge and leaving the construction site. Proper energy dissipation must be provided at the outlet of the pump system. Discharge clear water only to vegetated areas, and must be discharged in a manner that does not cause nuisance conditions such as erosion in receiving channels or down slope properties. To achieve better separation of the material suspended in the water where soils are high in clay content, a biodegradable not toxic flocculent agent may be required.

If the contractor determines that de-watering will be necessary, a de-watering plan may have to be submitted to the watershed and/or DNR by the contractor for approval. A trench permit may also have to be submitted and will be the responsibility of the contractor. Water pumped from the site shall be pumped and treated for water quality per watershed and/or DNR.

Wet Basin gravity fed draw down shall be performed with a floating head intake "Faircloth skimmer" or similar device to remove clear un-silted water column in the ponds or temporary basins or excavated areas. Should areas need to be pumped contractor shall use a "Hale floating pump" to drawn down areas below gravity fed inverts.

For more information and materials on de-watering go to by Interstate Products www.interstateproducts.com
www.haleproducts.com and www.faircloth skimmer.com

INSPECTIONS - MAINTENANCE - DAILY RECORD - AMEND THE SWPP PLAN

Contractor must ensure that a trained person will oversee and inspect the construction site at least once every 7 days during active construction and within 24 hours after rainfall events greater that 0.5 inches in 24 hours.. Following an inspection that occurs within 24 hours after a rainfall event, the next inspection must be conducted within 7 days after the rainfall event. Note date and time in the SWPPP documents and name of person doing the inspections. Any changes made as the result of the inspection must be documented in the SWPPP.

1. Inspect all erosion and sediment control devices, stabilized areas, and infiltration areas on a daily basis until land-disturbing activity has ceased. Thereafter, inspect at least on a weekly basis until vegetative cover is established. Inspect all erosion and sediment control devices, stabilized areas, and infiltration areas within 24 hours after a rainfall event greater than 0.5 inches in 24 hours. Remove accumulated sediment deposits from behind erosion and sediment control devices as needed. Do not allow sediment to accumulate to a depth of more than one-third of the height of the erosion and sediment control devices. Immediately replace deteriorated, damaged, rotted, or missing erosion control devices. Document inspections and dates of rainfall events. Maintain a written log of all inspection, maintenance, and repair activities related to erosion and sediment control facilities. All nonfunctional BMPs must be repaired, replaced, or supplemented with functional BMPs within 24 hours after discovery, or as soon as field conditions allow access.

2. All inspections and maintenance activities must be recorded in writing DAILY in a detailed record(notes, photographs, sketches, etc, and kept with the SWPPP.

3. Remove all soils and sediments tracked or otherwise deposited onto adjacent property, pavement areas, sidewalks, streets, and alleys. Removal shall be on a daily basis throughout the duration of the construction. Clean paved roadways by shoveling or wet-sweeping. Do not dry sweep. If necessary, scrape paved surfaces in order to loosen compacted sediment material prior to sweeping. Haul sediment material to a suitable disposal area. Street washing is allowed only after sediment has been removed by shoveling or sweeping.

4. All soil hauled from the site shall be accounted for and documented in the SWPP. Its final destination and how the soil has been stored and stabilized.

5. Maintain all temporary erosion and sediment control devices in place until the contributing drainage area has been stabilized (hard-surfaced areas paved and vegetation established in green-space). Repair any rilling, gully formation, or washouts. After final establishment of permanent stabilization, remove all temporary synthetic, structural, and non-biodegradable erosion and sediment control devices and any accumulated sediments. Dispose-of off site. Restore permanent sedimentation basins to their design condition immediately following stabilization of the site.

6. Clean sedimentation basins, storm sewer catch basins, ditches, and other drainage facilities as required in order to maintain their effectiveness. Temporary and permanent sedimentation basins must be drained and the sediment removed when the depth of sediment collected in the basin reaches 1/2 of the storage volume. Drainage and removal must be completed within 72 hours, or as soon as field conditions allow access.

7. Inspect infiltration areas to ensure that no sediment from ongoing construction activities is accumulating. Remove sediment immediately ensuring sub-soils are not compacted by machinery.

8. Every vehicle shall not track material off-site. Clean the wheels of construction vehicles in order to remove soils before the vehicles leave the construction site. Wash vehicles only on an area stabilized with stone that drains into an approved sediment trapping device.

9. Reinforce erosion control facilities in areas where concentrated flows occur (such as swales, ditches, and areas in front of culverts and catch basins) by backing them with snow fence, wire mesh, or stiff plastic mesh reinforcement until paving and turf establishment operations have been completed. Posts for the reinforcing fence shall be 100 mm (4 inch) diameter wood posts, or standard steel fence posts weighing not less than 0.59 kg (1.3 lbs) per lineal foot, with a minimum length of 762 mm (30 inches) plus burial depth. Space posts for the reinforcing fence at intervals of 3 m (10 feet) or less. Drive posts for the reinforcing fence at least 0.6 m (2 feet) into the ground.

GENERAL SOIL STABILIZATION:
(SEE LANDSCAPE PLAN FOR MORE INFORMATION)

Establishment of lawn, prairie/wildflower and/or plant bed areas will be noted on the landscape plan to ensure stabilization of soils, re-staking of sod where applicable, proper watering and mulch maintenance will be required. Inspect seeded or sodded areas on a timely day-to-day basis. In the event of a seeding failure, reseed and re-mulch the areas where the original seed has failed to grow and perform additional watering as necessary at no additional cost to the Owner. Special maintenance provisions for wild and prairie grass seeded areas as noted in the landscape plan. Promptly replace all sod that dries out to the point where it is presumed dead and all sod that has been damaged, displaced, weakened, or heavily infested with weeds at no additional cost to the Owner.

In areas to be temporarily seeded, use seed mixture equivalent to MNDOT No. 21-113 (Soil Building Cover Crop). Apply seed mixture at a rate of 110 lb per acre in accordance with MNDOT Standard Spec. 3876-1. For permanent turf stabilization (not sodded) use seed mixture equivalent to MNDOT No. 25-131(Low Maintenance Turf). Apply seed mixture at a rate of 220 lb per acre in accordance with MNDOT Standard Spec. 3876-1. For permanent installations incorporate a fertilizer (slow release type with 10 week residual) consisting of 23-0-30 (?N-P-K) into the soil at an application rate of 200 lbs per acre by disking prior to seeding. In problematic areas it may be necessary to us a low phosphorus organic fertilizer in cases where seeds may not germinate. If this is the case, seed and fertilizer shall be disked into the surface and mulched properly to ensure germination and uptake of the Phosphorus by the seed.

For additional reference see MNDOT Standard Spec. Table 3876-1 for season of planting introduced seed mixtures. To ensure adequate germination of the seed the work will be performed as follows:
Spring- from April 1 through May 15.
Fall- from August 15 to September 20.
After September 20, wait until October 30 to perform dormant seeding. Dormant seeding will only be allowed if the maximum soil temperature at a depth of 25 mm (1 inch) does not exceed 4.44 degrees C (40 degrees F) in order to prevent germination.

In seeded areas with slopes steeper than 3:1 and lengths less than 15 meters (50 feet), install biodegradable erosion control blankets uniformly over the soil surface by hand within 24 hours after seeding in accordance with manufacturers recommendations. Use MNDOT Standard Spec. 3885 Straw 1S, or Wood Fiber 1S type blanket.

NOTE: THE PROJECT'S LANDSCAPE PLAN IS PART OF THE SWPP FOR SOIL STABILIZATION. REFERENCES SHALL BE MADE TO THE APPROVED LANDSCAPE PLAN. AMENDMENTS TO THE LANDSCAPE PLAN SHALL BE APPROVED BY THE OWNER AND DOCUMENTED AS PART OF THE SWPP

SWPPP DESIGN CERTIFICATION	SWPPP INSTALLER CERTIFICATION	SWPPP INSPECTOR CERTIFICATION
I, Joseph T. Radach, hereby certify that I have completed designer SWPP- Erosion and Stormwater Management Certification Program My certification expires May 2023	I hereby certify that I have completed Installer SWPP- Erosion and Stormwater Management Certification Program signed expiration	I hereby certify that I have completed Inspector SWPP- Erosion and Stormwater Management Certification Program signed expiration

KWIK TRIP

KWIK STAR

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960

CARLSON McCAIN
3890 PHEASANT RIDGE DRIVE NE, SUITE 100, BLAINE, MN 55449
TEL 763.489-7900 \ FAX 763.489.7959 \ CARLSONMCCAIN.COM

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.

Name: Joseph T. Radach, P.E.
Signature:
Date: 01/03/22 License #: 45889

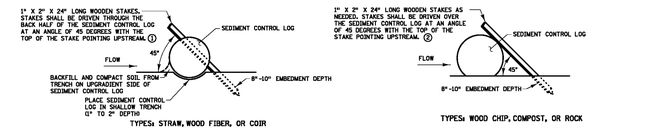
EROSION CONTROL NOTES

CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
& SIDE DIESEL

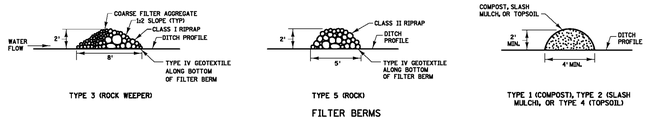
HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

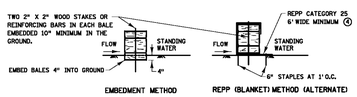
DRAWN BY	JTR
SCALE	GRAPHIC
PROJ. NO.	9721-00
DATE	2022-01-03
SHEET	1203 SWP2



SEDIMENT CONTROL LOGS



FILTER BERMS



BALE BARRIERS⑤

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3149, 3874, 3882, 3885, 3886, AND 3897.

① SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1' FOR DITCH CHECKS OR 2' FOR OTHER APPLICATIONS.

② PLACE STAKES AS NEEDED TO PREVENT MOVEMENT OF SEDIMENT CONTROL LOGS PLACED ON SLOPES OR AS NEEDED DUE TO OTHER FACTORS. STAKES SHALL BE INCIDENTAL.

③ TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS WHERE STANDING WATER OCCURS 6" MAXIMUM DEPTH. BALES SHALL CONSIST OF TYPE 1 MULCH OF APPROXIMATELY 14" X 18" X 36" LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES.

④ INSTEAD OF TRENCHING, PLACE BALE ON THE REPP (BLANKET) AND WRAP BLANKET AROUND THE BALE. PLACE STAKE THROUGH BALE AND BLANKET.

REVISION:
APPROVED: JANUARY 8, 2020
MARC KAWORSKI
CHIEF ENVIRONMENTAL OFFICER

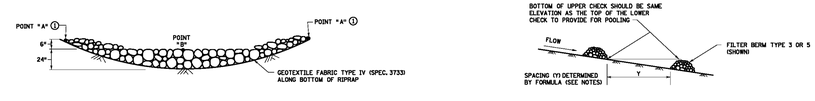
MINNESOTA DEPARTMENT OF TRANSPORTATION
STATE DESIGN ENGINEER
APPROVED: 1-8-2020
REVISED:

STANDARD PLAN 5-297.405 | 2 OF 8

TEMPORARY SEDIMENT CONTROL
FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

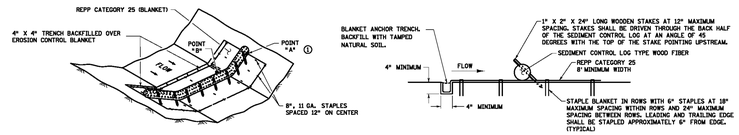
STATE PROJ. NO. (T.H.) SHEET NO. OF SHEETS

PLOTTED/REVISED: 04-JAN-2020
PLOT NAME: 405_2.dgn
PATH & FILENAME: O:\Design\Standards\Development\Develop\Plans\DT\405_Series\405_2.dgn

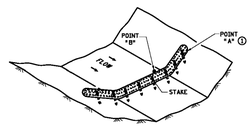


ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ③
FOR USE ON ROUGH-GRADED AREAS
ONLY FOR USE OUTSIDE CLEAR ZONE ②

DITCH CHECK SPACING
FOR ALL FILTER BERM TYPES



SEDIMENT CONTROL LOG TYPE REPP (BLANKET) SYSTEM ④



SEDIMENT CONTROL LOG TYPE WOOD FIBER, OR TYPE COMPOST ⑤
FOR USE ON ROUGH GRADED AREAS

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3601, 3733, 3885, 3886 & 3889.

FOR DITCH CHECKS, PLACE SEDIMENT CONTROL LOG PERPENDICULAR TO FLOW AND IN A CRESCENT SHAPE WITH THE ENDS FACING UPSTREAM.

APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:

APPROXIMATE SPACING OF DITCH CHECKS (FT) $Y = \frac{\text{DITCH CHECK HEIGHT (FT)}}{\text{\% CHANNEL SLOPE}} \times 100$

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.

② ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE ARE TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.

③ DITCH GRADE 3% - 5%, MAX. FLOW VELOCITY 12 FT./SEC.

④ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 4.5 FT./SEC.

⑤ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 1.5 FT./SEC.

REVISION:
APPROVED: JANUARY 8, 2020
MARC KAWORSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION
STATE DESIGN ENGINEER
APPROVED: 1-8-2020
REVISED:

STANDARD PLAN 5-297.405 | 3 OF 8

TEMPORARY SEDIMENT CONTROL
DITCH CHECK

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

PLOTTED/REVISED: 04-JAN-2020
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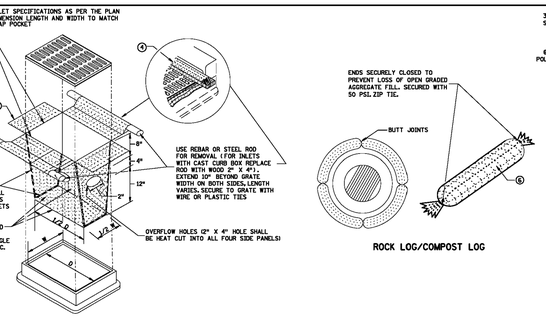
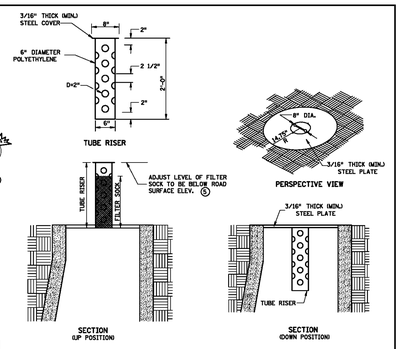
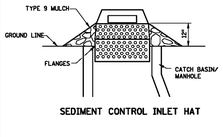


FILTER BAG INSERT ③
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)

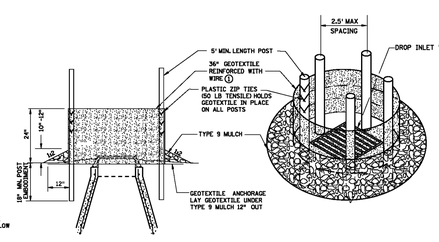
ROCK LOG/COMPOST LOG





SEDIMENT CONTROL INLET HAT

NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE. HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION. HAVE AN OVERFLOW OPENING. FLANGES AND A LID/COVER.



SILT FENCE RING AND ROCK FILTER BERM
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS

NOTES:
SEE SPECS. 2573, 3137, & 3886.

DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEDE TRAFFIC FLOW.

① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.

② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

③ INSTALLATION NOTES:
DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.

④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.

⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.

⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

REVISION:
APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION
STATE DESIGN ENGINEER
APPROVED: 2-28-2017
REVISED:

STANDARD PLAN 5-297.405 | 4 OF 8

TEMPORARY SEDIMENT CONTROL
STORM DRAIN INLET PROTECTION

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

PLOTTED/REVISED: 4-APR-2018
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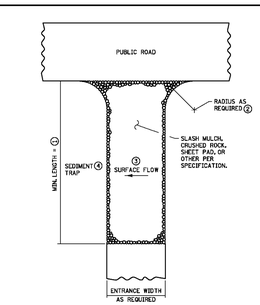
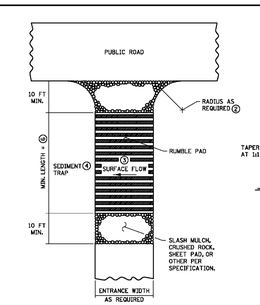
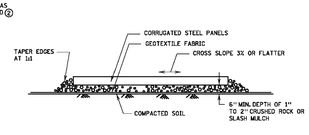


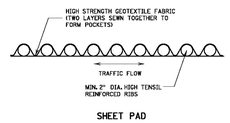
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



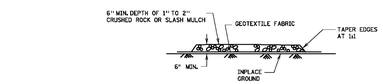
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:
SEE SPECS. 2573 & 3882.

① MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.

② PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.

③ IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.

④ IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.

⑤ IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.

⑥ MINIMUM LENGTH OF RUMBLE PAD SHALL BE 30 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.

⑦ MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

REVISION:
APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION
STATE DESIGN ENGINEER
APPROVED: 2-28-2017
REVISED:

STANDARD PLAN 5-297.405 | 5 OF 8

TEMPORARY SEDIMENT CONTROL
STABILIZED CONSTRUCTION EXIT

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

PLOTTED/REVISED: 4-APR-2018
PLOT NAME: 405_5.dgn
PATH & FILENAME: O:\Design\Standards\Development\Develop\Plans\DT\405_Series\405_5.dgn

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I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Name: Joseph T. Radach, P.E.
Signature:
Date: 01/03/22 License #: 45889

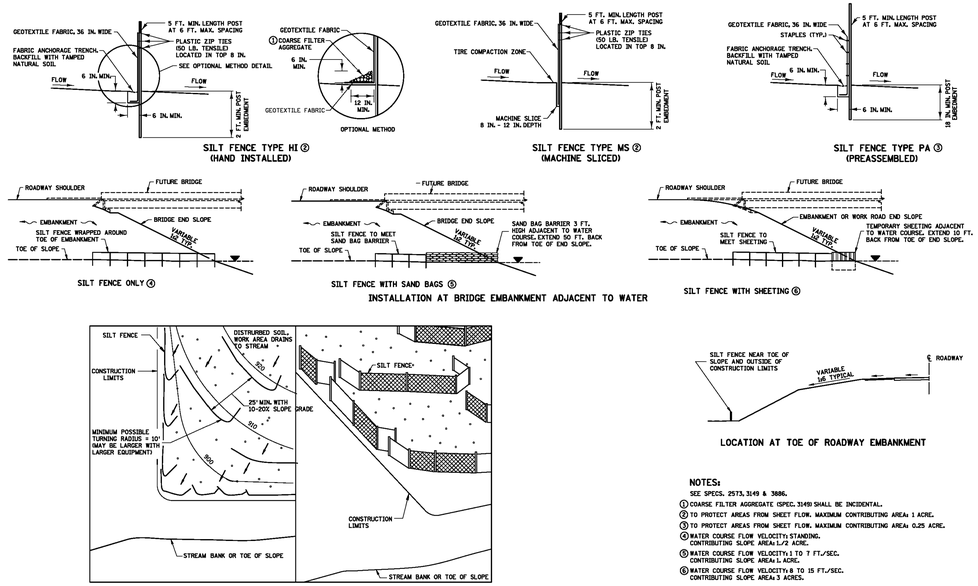
EROSION CONTROL DETAILS

CONVENIENCE STORE #1203 WITH 1-BAY CARWASH & SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

DRAWN BY	JTR
SCALE	GRAPHIC
PROJ. NO.	9721-00
DATE	2022-01-03
SHEET	1203 SWP3



NOTES:

SEE SPECS. 2573, 3149 & 3886.

① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.

② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.

④ WATER COURSE FLOW VELOCITY: STANDING. CONTRIBUTING SLOPE AREA: 1/2 ACRE.

⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC. CONTRIBUTING SLOPE AREA: 1 ACRE.

⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC. CONTRIBUTING SLOPE AREA: 3 ACRES.

REVISION:	MINNESOTA DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.405	6 OF 8	TEMPORARY SEDIMENT CONTROL
APPROVED: 2-28-2017	STATE DESIGN ENGINEER	APPROVED: 2-28-2017 REVISED:		SILT FENCE
		STATE PROJ. NO.	(T.H.)	SHEET NO. OF SHEETS

PLOTTED/REVISED: 4-APR-2018

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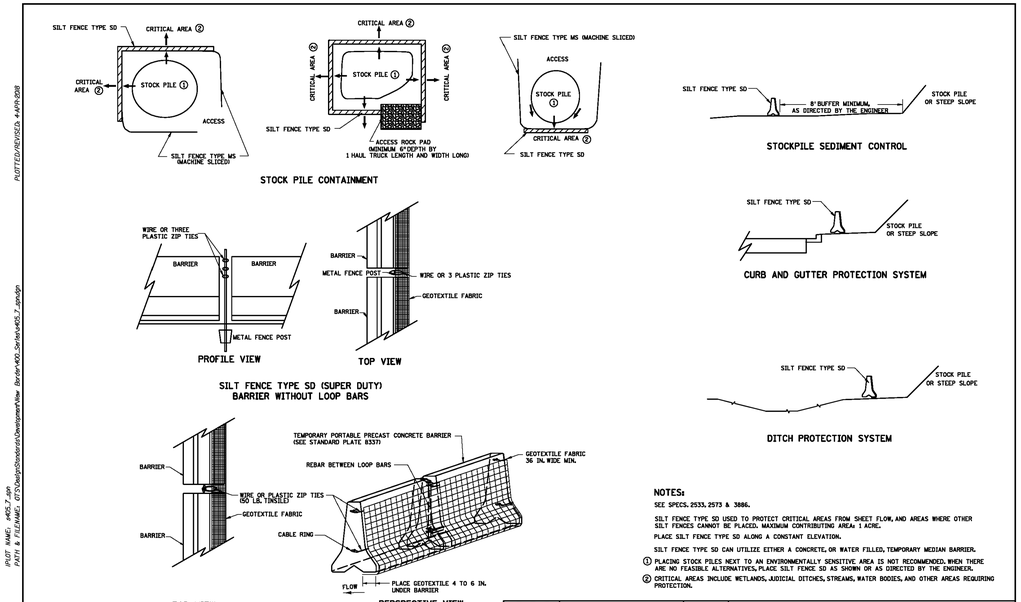

NOTES:

SEE SPECS. 2533, 2573 & 3886.

SILT FENCE TYPE SD USED TO PROTECT CRITICAL AREAS FROM SHEET FLOW, AND AREAS WHERE OTHER SILT FENCES CANNOT BE PLACED. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

PLACE SILT FENCE TYPE SD ALONG A CONSTANT ELEVATION.

SILT FENCE TYPE SD CAN UTILIZE EITHER A CONCRETE, OR WATER FILLED, TEMPORARY MEDIAN BARRIER.

① PLACING STOCK PILES NEXT TO AN ENVIRONMENTALLY SENSITIVE AREA IS NOT RECOMMENDED. WHEN THERE ARE NO FEASIBLE ALTERNATIVES, PLACE SILT FENCE SD AS SHOWN OR AS DIRECTED BY THE ENGINEER.

② CRITICAL AREAS INCLUDE WETLANDS, JUDICIAL DITCHES, STREAMS, WATER BODIES, AND OTHER AREAS REQUIRING PROTECTION.

REVISION:	MINNESOTA DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.405	7 OF 8	TEMPORARY SEDIMENT CONTROL
APPROVED: 2-28-2017	STATE DESIGN ENGINEER	APPROVED: 2-28-2017 REVISED:		SUPER DUTY SILT FENCE
		STATE PROJ. NO.	(T.H.)	SHEET NO. OF SHEETS

PLOTTED/REVISED: 4-APR-2018

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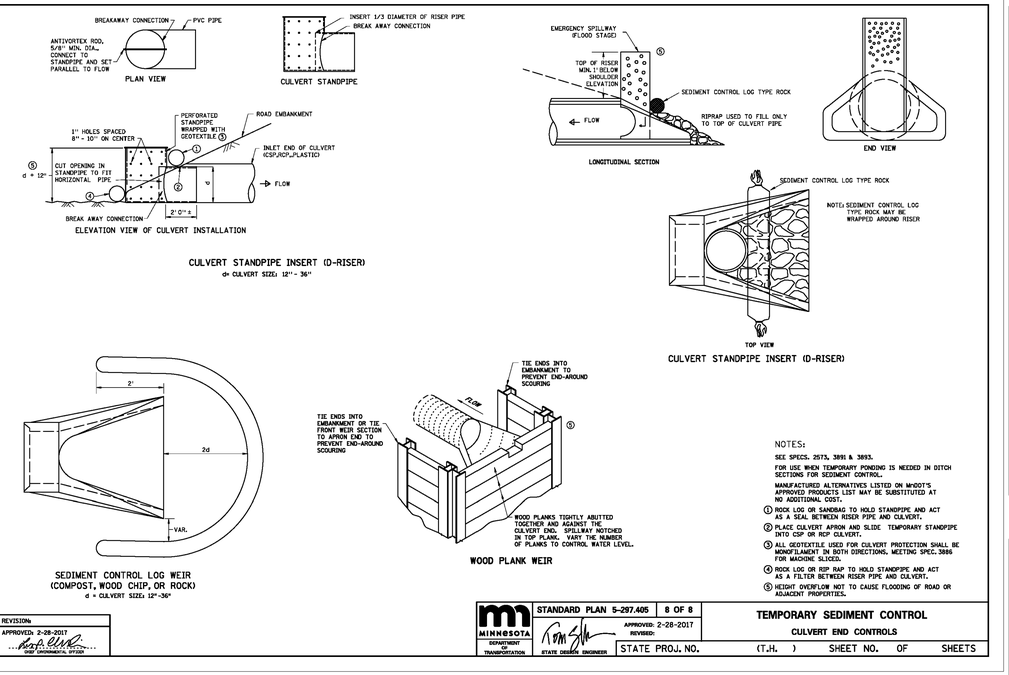

NOTES:

SEE SPECS. 2573, 3891 & 3893.

FOR USE WHEN TEMPORARY PONDING IS NEEDED IN DITCH SECTIONS FOR SEDIMENT CONTROL.

MANUFACTURED ALTERNATIVES LISTED ON MnDOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED AT NO ADDITIONAL COST.

① ROCK LOG OR SANDBAG TO HOLD STANDPIPE AND ACT AS A SEAL BETWEEN RISER PIPE AND CULVERT.

② PLACE CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO CSP OR RCP CULVERT.

③ ALL GEOTEXTILE USED FOR CULVERT PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886 FOR WACHINE SLICED.

④ ROCK LOG OR RIP RAP TO HOLD STANDPIPE AND ACT AS A FILTER BETWEEN RISER PIPE AND CULVERT.

⑤ HEIGHT OVERFLOW NOT TO CAUSE FLOODING OF ROAD OR ADJACENT PROPERTIES.

REVISION:	MINNESOTA DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.405	8 OF 8	TEMPORARY SEDIMENT CONTROL
APPROVED: 2-28-2017	STATE DESIGN ENGINEER	APPROVED: 2-28-2017 REVISED:		CULVERT END CONTROLS
		STATE PROJ. NO.	(T.H.)	SHEET NO. OF SHEETS

PLOTTED/REVISED: 4-APR-2018

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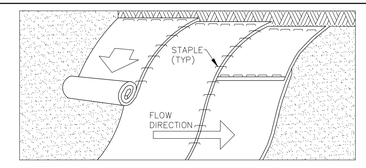
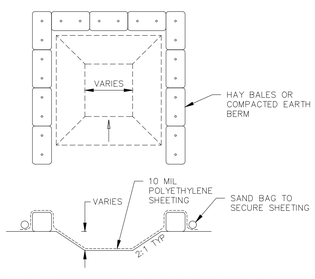


NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER AND/OR SEED.
2. BEGIN AT THE TOP OF THE SLOPE (OR CHANNEL) BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS DOWN (STARTING DOWNSTREAM PROCEEDING UPSTREAM) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH A MINIMUM 4" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH MINIMUM 6" OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE BLANKETS.
6. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A ROW OF STAPLES 4" APART OVER ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGGERED PATTERN.
7. THE TERMINAL ENDS OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

1 SWP4 EROSION CONTROL BLANKET
NO SCALE



NOTES:

1. THE WASHOUT MUST HAVE SUFFICIENT VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.
2. LIQUID AND SOLID WASHOUT WASTE SHALL NOT CONTACT THE GROUND.
3. LIQUID AND SOLID WASHOUT WASTE SHALL BE DISPOSED OF IN COMPLIANCE WITH MPCA RULES.
4. A SIGN SHALL BE INSTALLED INDICATING THE LOCATION OF THE WASHOUT FACILITY.

2 SWP4 CONCRETE WASHOUT
NO SCALE

1. TURF ESTABLISHMENT SHALL APPLY TO ALL DISTURBED AREAS AND SHALL BE ACCORDING TO MnDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION (LATEST EDITION) EXCEPT AS MODIFIED BELOW.
2. TURF ESTABLISHMENT SHALL OCCUR AS SOON AS POSSIBLE BUT IN NO CASE MORE THAN 7 DAYS.
3. SEED: MnDOT MIXTURE 25-141 AT 60 POUNDS PER ACRE.
4. DORMANT SEED: SHALL BE APPLIED AT TWICE THE NORMAL RATE AFTER NOVEMBER 1ST.
5. MULCH: TYPE 1 AT 2 TONS PER ACRE (DISK ANCHORED).
6. FERTILIZER: TYPE 10-10-10 AT 200 POUNDS PER ACRE.

3 SWP4 TURF ESTABLISHMENT
NO SCALE

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Signature:
Date: 01/03/22 License #: 45889

EROSION CONTROL DETAILS

CONVENIENCE STORE #1203 WITH 1-BAY CARWASH & SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

DRAWN BY	JTR
SCALE	GRAPHIC
PROJ. NO.	9721-00
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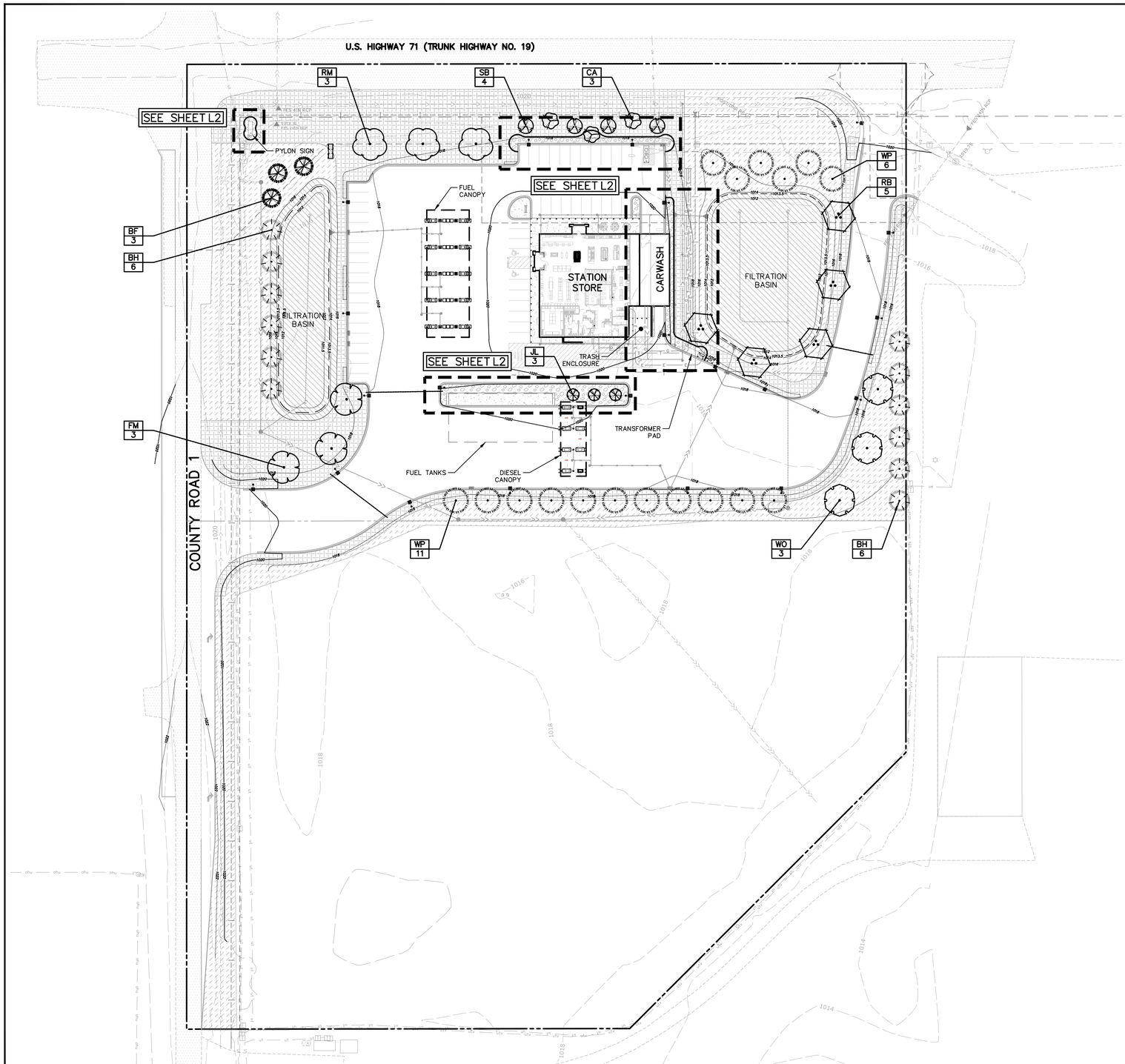
SHEET	1203 SWP4



1 / L1 OVERALL LANDSCAPE PLAN

CITY OF REDWOOD FALLS LANDSCAPE REQUIREMENTS

1. BASE PLANTINGS. THE BASE NUMBER OF LANDSCAPE PLANTINGS REQUIRED SHALL BE DETERMINED BY THE PERCENT OF IMPERVIOUS SURFACE ON THE PROPERTY AS SHOWN BELOW BASED ON TABLE 5.2 IN SECTION 5.14(A) OF THE UDC. NO MORE THAN 1/3 OF THE TOTAL REQUIRED PLANTINGS SHALL BE SHRUBS. PERENNIALS AND ANNUALS SHALL NOT QUALIFY AS SHRUBS. A MINIMUM OF 1/3 OF THE REQUIRED PLANTINGS SHALL BE A HEARTY SPECIES AND NATIVE TO THE REGION. A MINIMUM OF 50% OF THE REQUIRED BASE PLANTINGS SHALL BE LOCATED WITHIN THE REQUIRED FRONT BUILDING SETBACK AREA. IF THE PROPERTY HAS MORE THAN ONE STREET FRONTAGE, THE PLANTINGS REQUIRED WITHIN THIS SECTION SHALL BE EVENLY DIVIDED BETWEEN THE STREET FRONTAGES.

8 PLANTINGS PER ACRE (40–59% IMPERVIOUS) X 6.71 AC = 54 PLANTINGS REQUIRED

MINIMUM TREES REQUIRED (2/3) = 36 — MINIMUM SHRUBS REQUIRED (1/3) = 18
MINIMUM TREES PROVIDED (2/3) = 56 — MINIMUM SHRUBS PROVIDED (1/3) = 131

LANDSCAPE PLAN NOTES

1. EXISTING CONDITIONS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO BIDDING AND CONSTRUCTION START. ANY DISCREPANCIES FOUND THAT AFFECT THE WORK SHALL BE REPORTED TO THE OWNER/LANDSCAPE ARCHITECT FOR CLARIFICATION PRIOR TO BIDDING OR APPROVING ANY ADDITIONAL WORK REQUIRED.
2. UTILITY LOCATES. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL PUBLIC AND PRIVATE UTILITIES, INCLUDING IRRIGATION LINES, AT LEAST 48 HOURS BEFORE EXCAVATING OR IN ACCORDANCE WITH STATE LAW. IN MINNESOTA, CALL GOPHER STATE ONE–CALL AT 651–454–0002 FOR FIELD LOCATION OF PUBLIC UNDERGROUND UTILITY LINES. ALL LOCATES AND ITEMS NOTED AS 'FIELD VERIFY' ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR AT THEIR EXPENSE.
3. PERMITS. CONTRACTOR SHALL VERIFY WITH THE OWNER/LANDSCAPE ARCHITECT THAT THE REQUIRED PERMITS HAVE BEEN OBTAINED PRIOR TO CONSTRUCTION START. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE CODES, REGULATIONS, AND PERMITS GOVERNING THE WORK.
4. EXISTING ITEMS TO REMAIN. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING PAVEMENT, STRUCTURES, UTILITIES, TREES, SITE AMENITIES, ETC. THAT ARE TO REMAIN FROM DAMAGE DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY DAMAGE (AT CONTRACTOR'S EXPENSE) TO EXISTING ITEMS TO REMAIN.
5. CONSTRUCTION STAGING AND ACCESS. CONTRACTOR SHALL VERIFY THE LOCATION FOR CONSTRUCTION STAGING AND SITE ACCESS WITH THE OWNER/LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION START. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PEDESTRIAN AND VEHICLE ACCESS WITHIN AND ADJACENT TO THE SITE THROUGHOUT THE CONSTRUCTION PERIOD UNLESS OTHERWISE NOTED. LONG–TERM STORAGE OF MATERIALS OR SUPPLIES ON–SITE WILL NOT BE PERMITTED. ALL WASTE AND/OR UNUSED MATERIAL SHALL BE PROMPTLY REMOVED FROM THE SITE.
6. SITE REMOVALS. REFER TO CIVIL PLANS FOR GENERAL SITE REMOVALS. ALL ITEMS NOTED TO BE REMOVED SHALL BE COMPLETED BY THE CONTRACTOR AND IMMEDIATELY DISPOSED OF OFF–SITE, IN ACCORDANCE WITH LOCAL REGULATIONS, UNLESS OTHERWISE NOTED. COORDINATE WITH OWNER/LANDSCAPE ARCHITECT FOR ANY ITEMS NOTED AS 'REMOVED BY OTHERS' OR 'REMOVE AND SALVAGE.'
7. UTILITY COORDINATION. REFER TO CIVIL PLAN SHEETS FOR INFORMATION RELATED TO PROPOSED UTILITIES. COORDINATE WITH ELECTRICAL CONTRACTORS FOR SITE ELECTRICAL WORK AND SITE LIGHTING.
8. CONSTRUCTION STAKING. UNLESS OTHERWISE NOTED, CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING CONTROL POINTS AND ALL CONSTRUCTION FIELD STAKING DURING THE COURSE OF THE PROJECT.
9. DIMENSIONS. DIMENSIONS TAKE PRECEDENCE OVER SCALE. DIMENSIONS ARE TO FACE OF CURB, EDGE OF PAVEMENT/WALKWAY, OR OUTSIDE FACE OF BUILDING UNLESS OTHERWISE NOTED.
10. PLAN QUANTITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL MATERIAL QUANTITIES PER PLAN. MATERIAL SCHEDULES ARE PROVIDED SOLELY FOR CONTRACTOR'S CONVENIENCE.
11. REFERENCE SPECIFICATIONS. THE FOLLOWING SPECIFICATIONS SHALL GOVERN THIS PROJECT ACCORDING TO THE FOLLOWING ORDER:
    1. ADDENDA, WITH THOSE OF A LATER DATE HAVING PRECEDENCE OVER THOSE OF AN EARLIER DATE.
    2. LANDSCAPE SPECIFICATIONS.
    3. PLAN DRAWINGS.
    4. PLANT / MATERIAL SCHEDULES.
    5. CITY STANDARD SPECIFICATIONS AND DETAILS.
    6. MnDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, LATEST EDITION.

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Name: Ryan J. Ruttger, RLA
Signature:
Date: 01/03/22 License #: 56346

LANDSCAPE PLAN

CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
& SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

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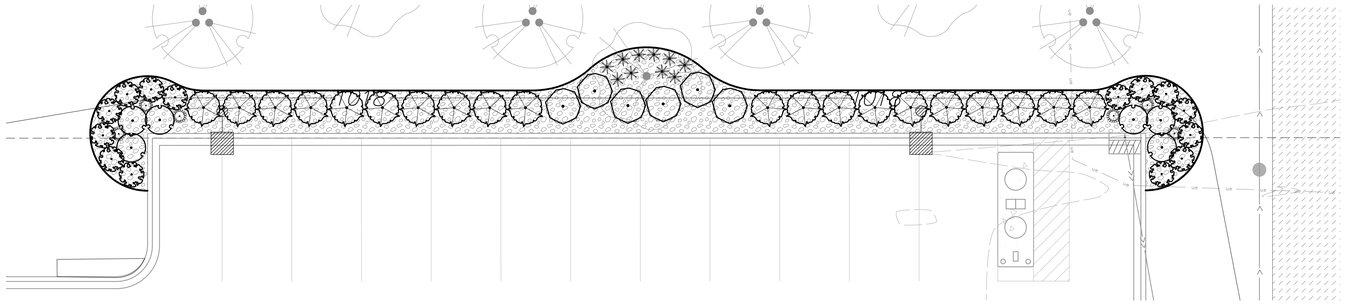
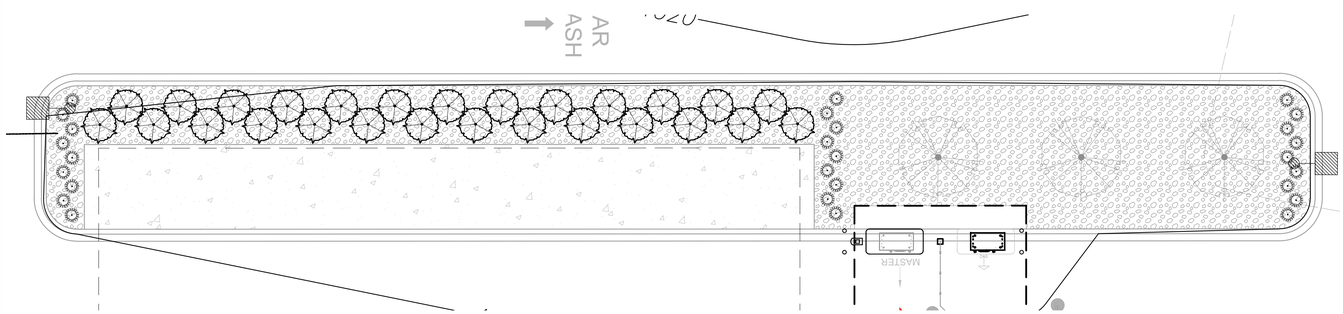
SHEET	1203 L1



1 L2 LANDSCAPE PLAN ENLARGEMENT



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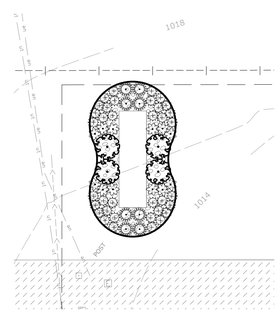
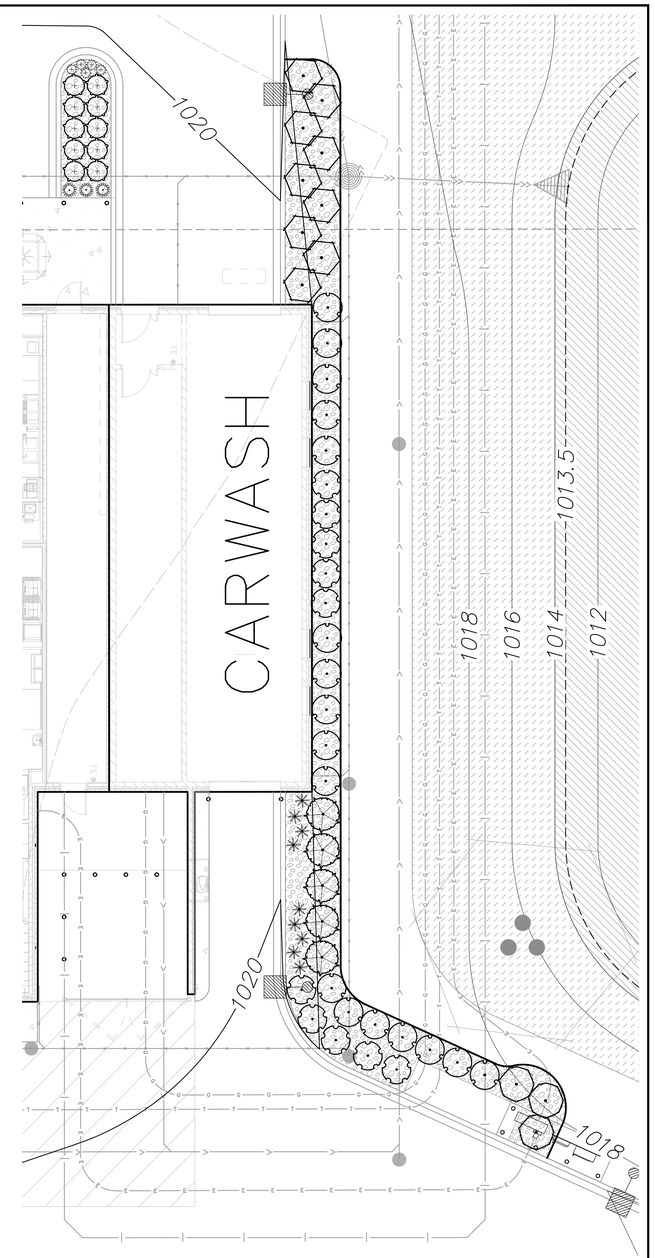
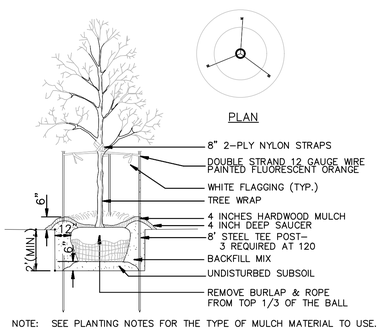


3 L2 MONUMENT SIGN



4 L2 LANDSCAPE PLAN ENLARGEMENT



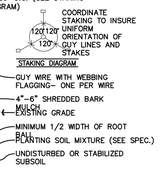
NOTE: SEE PLANTING NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.

A DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE

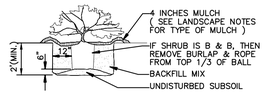
1. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING
2. TRIM OUT DEAD WOOD AND WEAK AND/OR DEFORMED TWIGS. DO NOT CUT A LEADER. DO NOT PAINT CUTS.
3. SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED BACKFILL SOIL. INSTALL PLANT SO THE ROOT FLARE IS AT OR UP TO 2" ABOVE THE FINISHED GRADE.
4. PLACE PLANT IN PLANTING HOLE WITH BURLAP AND WIRE BASKET, (IF USED), INTACT. BACKFILL WITHIN APPROXIMATELY 12" OF THE TOP OF ROOTBALL. WATER PLANT. REMOVE TOP 1/3 OF THE BASKET OR THE TOP TWO HORIZONTAL RINGS, WHICHEVER IS GREATER. REMOVE ALL BURLAP AND NAILS FROM TOP 1/3 OF THE BALL. REMOVE ALL TWINE.
5. PLUMB AND BACKFILL WITH BACKFILL SOIL.
6. WATER TO SETTLE PLANTS AND FILL VOIDS.
7. WATER WITHIN TWO HOURS OF INSTALLATION. WATERING MUST BE SUFFICIENT TO THOROUGHLY SATURATE ROOT BALL AND PLANTING HOLE.
8. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

NOTE: GUY ASSEMBLY OPTIONAL BUT CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR MAINTAINING TREE IN A PLUMB POSITION FOR THE DURATION OF THE GUARANTEE PERIOD.

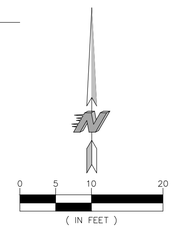
GUY ASSEMBLY- 16" POLYPROPYLENE OR POLYETHYLENE (40 MIL) 1-1/2" WIDE STRAP (TYP) DOUBLE STRAND TO GA. WIRE, 2-7' ROLLED STEEL POSTS (MnDOT 3401) @ 180° O.C. (SEE STAKING DIAGRAM)



B CONIFEROUS TREE PLANTING DETAIL
NOT TO SCALE



C SHRUB & CONTAINER PLANTING DETAIL
NOT TO SCALE



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LANDSCAPE PLAN

CONVENIENCE STORE #1203 WITH 1-BAY CARWASH & SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

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SHEET	1203 L2

PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
	RM	3	Acer rubrum `Northwood`	Northwood Red Maple	2" Cal.	B&B
	FM	3	Acer x freemanii `Sienna`	Sienna Glen Maple	2" Cal.	B&B
	RB	5	Betula nigra Clump Form, 2" Cal Equivalent	River Birch Multi-Trunk	8` Ht.	B&B
	WO	3	Quercus bicolor	Swamp White Oak	2" Cal.	B&B
CONIFEROUS TREES	**CODE**	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONTAINER**
	BF	3	Abies balsamea	Balsam Fir	6` Ht.	B&B
	BH	12	Picea glauca densata	Black Hills Spruce	6` Ht.	B&B
	WP	17	Pinus strobus	White Pine	6` Ht.	B&B
ORNAMENTAL TREES	**CODE**	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONTAINER**
	SB	4	Amelanchier x grandiflora `Autumn Brilliance` Clump Form, 1.5" Cal Equivalent	Autumn Brilliance Serviceberry	7` Ht.	B&B
	CA	3	Malus x `Prairifire` Red Flowers	Prairifire Crabapple	1.5" Cal.	B&B
	JL	3	Syringa reticulata `Ivory Silk` White Flowers	Ivory Silk Japanese Tree Lilac	1.5" Cal.	B&B
SHRUBS	**CODE**	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONTAINER**
	BCB	10	Aronia melanocarpa `Autumn Magic`	Autumn Magic Black Chokeberry	#5 Cont.	
	RTD	23	Cornus sericea `Alleman`s Compact`	Dwarf Red Twig Dogwood	#5 Cont.	
	DBH	18	Diervilla lonicera	Dwarf Bush Honeysuckle	#5 Cont.	
	JSG	52	Juniperus chinensis `Sea Green`	Sea Green Juniper	#5 Cont.	
	SPG	10	Spiraea x bumalda `Goldflame` Gold Foliage, Red Flowers	Goldflame Spirea	#5 Cont.	
	MKL	9	Syringa patula `Miss Kim`	Miss Kim Lilac	#5 Cont.	
	VBC	9	Viburnum trilobum `Bailey Compact` Red Fall Color	Bailey`s Compact American Cranberry Bush	#5 Cont.	
GRASSES	**CODE**	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONTAINER**
	KFG	44	Calamagrostis x acutiflora `Karl Foerster`	Feather Reed Grass	#3 Cont.	
	PDS	19	Sporobolus heterolepis	Prairie Dropseed	#3 Cont.	
PERENNIALS	**CODE**	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONTAINER**
	DLB	41	Hemerocallis x `Baja` Red Flowers	Baja Daylily	#1 Cont.	
	SCS	12	Sedum spectabile `Autumn Joy`	Stonecrop	#1 Cont.	
GROUND COVERS	**CODE**	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONTAINER**
	ROCK	4,722 sf	Rock Mulch Non-Woven Geotextile Incidental	1.5" Trap Rock Mulch	4" Depth	
	SOD	51,673 sf	Turf Sod Bluegrass	Kentucky Bluegrass	sod	
	TII	29,696 sf	Type II - Stormwater Seed Mix Refer to notes for acceptable seeding methods Seeding Rate 52.0 lb/ac	MnDOT Seed Mix 33-261	seed	
	TIV	68,598 sf	Type IV - Native Seed Mix Refer to notes for acceptable seeding methods. Seeding Rate 50.0 lb/ac	MnDOT Seed Mix 35-241	seed	

LANDSCAPE SPECIFICATIONS

1. TREE PROTECTION. ALL TREES NOT SPECIFICALLY NOTED OR MARKED ON SITE FOR REMOVAL SHALL REMAIN PROTECTED AND UNDISTURBED DURING CONSTRUCTION. TREE PROTECTION SHALL EXTEND TO THE DRIP LINE, WITHIN WHICH NO CONSTRUCTION ACTIVITY, MATERIAL STORAGE, OR VEHICLE PARKING SHALL BE PERMITTED. TREE PROTECTION FENCING SHALL BE ERECTED PRIOR TO CONSTRUCTION START PER PLANS OR AS DIRECTED BY OWNER/LANDSCAPE ARCHITECT AND SHALL CONSIST OF 4` TALL HEAVY DUTY ORANGE CONSTRUCTION FENCING WITH 6` STEEL FENCE POSTS SPACED 6` O.C. MAX.

2. EROSION CONTROL. REFER TO CIVIL PLAN SHEETS FOR STORMWATER POLLUTION PREVENTION PLAN (SWPPP), AND TEMPORARY AND PERMANENT STORMWATER BMPS, INCLUDING SILT FENCE, BIO-ROLLS, INLET PROTECTION, EROSION CONTROL BLANKETING, DUST CONTROL, SWEEPING AND ROCK CONSTRUCTION ENTRANCE. ALL DISTURBED AREAS SHALL RECEIVE PERMANENT STABILIZATION IN ACCORDANCE WITH THE LANDSCAPE PLAN WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE DISTURBED AREA HAS CEASED. IN THE EVENT PERMANENT STABILIZATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS, TEMPORARY STABILIZATION BMPS MUST BE IMPLEMENTED WITHIN 7 DAYS USING.

3. CLEARING AND GRUBBING. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING AND GRUBBING ALL AREAS INDICATED AS BEING DISTURBED OR OTHERWISE SHOWN ON PLANS. CLEARING AND GRUBBING SHALL INCLUDE REMOVAL AND DISPOSAL OF ALL TREES, STUMPS, BRUSH, GRASS, ROOTS AND OTHER ORGANIC MATERIAL AT AN APPROVED OFF-SITE DISPOSAL LOCATION.

4. SOIL PREPARATION. REFER TO GEOTECHNICAL REPORT FOR ANY REQUIRED SOIL CORRECTIONS, AMENDMENTS OR ADDITIONAL INFORMATION (IF APPLICABLE). EXISTING TOPSOIL SHALL BE STRIPPED FROM ALL DISTURBED AREAS AND STOCKPILED IN AN APPROVED LOCATION FOR RE-SPREAD. ALL AREAS WHERE SOIL HAS BEEN COMPACTED BY CONSTRUCTION ACTIVITY AND THAT ARE INDICATED TO BE SODDED, SEEDED OR PLANTING BED SHALL BE DE-COMPACTED TO A MINIMUM DEPTH OF 12 INCHES BY SOIL RIPPING, TILLING OR OTHER APPROVED SOIL LOOSENING METHOD.

5. TOPSOIL MATERIAL. ALL EXISTING, AMENDED OR IMPORTED TOPSOIL SHALL MEET THE REQUIREMENTS OF MNDOT TOPSOIL TYPE A. A MINIMUM 4 INCH DEPTH OF TOPSOIL SHALL BE PLACED ON ALL AREAS TO BE SODDED OR SEEDED. A MINIMUM 12 INCH DEPTH OF TOPSOIL SHALL BE PLACED WITHIN ALL PLANTING BED AREAS. ALL TOPSOIL SHALL BE FINE GRADED, RAKED AND DRAGGED TO PROVIDE A SMOOTH, UNIFORM SURFACE. TOPSOIL GRADES SHALL BE WITHIN .1 FEET OF INDICATED FINISHED GRADE AND SHALL BE TRUE TO GRADIENTS SHOWN ON PLANS. REFER TO CIVIL PLAN SHEETS FOR FILTRATION BASIN SOIL REQUIREMENTS.

6. SEEDING AND TURF ESTABLISHMENT. CONTRACTOR SHALL OBTAIN OWNER/LANDSCAPE ARCHITECT'S APPROVAL OF FINAL GRADES AND TOPSOIL PREP PRIOR TO SEEDING. APPLY 12-12-12 GRANULAR STARTER FERTILIZER AT A RATE OF 250 LBS PER ACRE PRIOR TO SEEDING.. SEEDS SHALL BE SOWED IN 2 PERPENDICULAR PASSES, EACH PASS AT ONE-HALF THE INDICATED RATE, VIA BROADCAST SPREADER, DROP SEEDER OR DRILL SEEDER. FOLLOWING SEED APPLICATION, INSTALL TYPE 3N EROSION CONTROL BLANKET ON ALL SLOPES GREATER THAN 4:1. IN ALL OTHER AREAS, APPLY HYDROMULCH COVER (MUST BE A SEPARATE OPERATION FROM SEEDING) AT A TARGETED DRY WEIGHT RATE OF 3500 LBS PER ACRE. SOIL SHALL BE KEPT MOIST DURING ESTABLISHMENT WITH ADDITIONAL RE-SEEDING AS NECESSARY TO ACHIEVE A HEALTHY, UNIFORM STAND OF GRASS, FREE OF WEEDS AND WITH COVERAGE EXCEEDING 75% IN ANY 10`x10` AREA PRIOR TO FINAL ACCEPTANCE.

7. SODDING. CONTRACTOR SHALL OBTAIN OWNER/LANDSCAPE ARCHITECT'S APPROVAL OF FINAL GRADES AND TOPSOIL PREP PRIOR TO SODDING. APPLY 12-12-12 GRANULAR STARTER FERTILIZER AT A RATE OF 250 LBS PER ACRE PRIOR TO SODDING AND ROLL TOPSOIL TO CREATE A UNIFORM SURFACE FOR LAYING SOD. SOD SHALL NOT BE CUT MORE THAN 24-HOURS IN ADVANCE OF INSTALLATION. CONTRACTOR SHALL KEEP SOD MOIST FOR A MINIMUM OF 30 DAYS AND SHALL BE RESPONSIBLE FOR MAINTAINING THE SOD UNTIL FINAL ACCEPTANCE.

8. PLANT MATERIAL. ALL PLANTING STOCK SHALL CONFORM TO THE "AMERICAN STANDARD FOR NURSERY STOCK," ANSI-Z60, LATEST EDITION, OF THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIALS. OWNER/LANDSCAPE ARCHITECT RESERVE THE RIGHT TO REJECT ANY PLANTS WHICH ARE DEEMED UNSATISFACTORY BEFORE, DURING, OR AFTER INSTALLATION. NO SUBSTITUTION OF PLANT MATERIAL SHALL BE ACCEPTED UNLESS APPROVED IN WRITING BY THE OWNER/LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

9. PLANT MATERIAL SUBSTITUTIONS. ALL REQUESTS FOR PLANT SUBSTITUTIONS SHALL BE MADE IN WRITING TO THE OWNER/LANDSCAPE ARCHITECT AND MUST BE APPROVED BY THE CITY.

10. PLANT INSTALLATION AND ESTABLISHMENT. REFER TO STANDARD PLANTING DETAILS. CONTRACTOR SHALL STAKE TREE LOCATIONS FOR APPROVAL BY OWNER/LANDSCAPE ARCHITECT PRIOR TO PLANTING. ANY PLANT MATERIAL WHICH DIES, TURNS BROWN, OR DEFOLIATES (PRIOR TO TOTAL ACCEPTANCE OF THE WORK) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE.

11. MULCH MATERIAL. DOUBLE SHREDDED HARDWOOD MULCH OR ROCK MULCH AS INDICATED ON PLANS. ALL MULCH SHALL BE CLEAN AND FREE OF NOXIOUS WEEDS, SOIL, OR OTHER DELETERIOUS MATERIAL, AND SHALL BE INSTALLED OVER A NON-WOVEN GEOTEXTILE FABRIC (INCIDENTAL) OR OTHER APPROVED WEED BARRIER TO A MINIMUM SETTLED DEPTH OF 4". MULCH SHALL BE HELD BACK FROM PLANT STEMS/TRUNKS A MINIMUM OF 3". WOOD MULCH SHALL BE PLACED AROUND INDIVIDUAL TREES TO A 4' MINIMUM DIAMETER. MULCH SHALL BE INSTALLED WITHIN 48-HOURS OF PLANT INSTALLATION.

12. LANDSCAPE EDGING. INSTALL LANDSCAPE EDGING BETWEEN ALL MULCH AREAS AND TURF. EDGING SHALL BE COMMERCIAL GRADE BLACK POLYETHYLENE OR VINYL EDGING, 0.1 INCH THICK BY 5 INCHES DEEP, V-LIPPED BOTTOM, HORIZONTALLY GROOVED, 1-INCH ROUND TOP, EXTRUDED IN STANDARD LENGTHS, WITH 9-INCH STEEL ANGLE STAKES.

13. IRRIGATION. DESIGN, FURNISH AND INSTALL A COMPLETE UNDERGROUND IRRIGATION SYSTEM FROM APPROVED POINT(S)-OF-CONNECTION WITHIN THE SITE COVERING ALL TURF AND PLANTING AREAS AS SHOWN ON THE LANDSCAPE PLAN. INCLUDES FLOW/PRESSURE TESTING, PLANS WITH DESIGN CALCULATIONS, AS-BUILT DRAWINGS, LABOR, MATERIALS, EQUIPMENT, AND SERVICES FOR THE TESTING, ADJUSTING, RETESTING AND READJUSTING AS REQUIRED TO PLACE THE SYSTEM IN AN APPROVED OPERATING CONDITION. THE IRRIGATION SYSTEM SHALL INCLUDE THE DESIGN AND INSTALLATION OF THE FOLLOWING: PIPING, METER AND BACKFLOW ASSEMBLIES, SPRINKLER HEADS, CABINETS, VALVES AND VALVE BOXES, CONTROLLERS, CONTROL WIRING, FITTINGS, ELECTRICAL CONNECTIONS, QUICK-COUPLERS, ALL OTHER NECESSARY ACCESSORIES, SYSTEM MANUALS, 1-YEAR MAINTENANCE PERIOD INCLUDING 1 FALL WINTERIZATION AND 1 SPRING START-UP. IRRIGATION PLANS TO BE PREPARED BY A QUALIFIED IRRIGATION DESIGNER AND SUBMITTED TO OWNER/LANDSCAPE ARCHITECT FOR APPROVAL.

14. MAINTENANCE. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER EACH PORTION OF THE WORK IS IN PLACE. PLANT MATERIAL SHALL BE PROTECTED AND MAINTAINED UNTIL THE INSTALLATION OF THE PLANTS IS COMPLETE, INSPECTION HAS BEEN MADE, AND PLANTINGS ARE ACCEPTED EXCLUSIVE OF THE GUARANTEE. MAINTENANCE SHALL INCLUDE MOWING, TRIMMING, WATERING, FERTILIZING, WEED AND PESTICIDE CONTROL, MULCHING, REMOVAL OF DEAD MATERIALS, RE-SETTING PLANTS TO PROPER GRADE AND KEEPING PLANTS IN A PLUMB POSITION. AFTER ACCEPTANCE, THE OWNER SHALL ASSUME MAINTENANCE RESPONSIBILITIES, HOWEVER, THE CONTRACTOR SHALL RETAIN RESPONSIBILITY FOR ALL PLANT MATERIAL THROUGH THE COMPLETION OF THE WARRANTY PERIOD.

15. WATERING. UPON ESTABLISHMENT OF SEED AND INSTALLATION OF PLANTS, CONTRACTOR SHALL MAINTAIN A WATERING SCHEDULE WHICH WILL THOROUGHLY WATER ALL PLANTS AND TURF AREAS A MINIMUM OF ONCE A WEEK. MORE FREQUENT WATERING MAY BE REQUIRED DURING PERIODS OF HOT, DRY WEATHER. CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS FOR WATER. IN THE ABSENCE OF PERMANENT IRRIGATION, TEMPORARY IRRIGATION, TREE WATERING BAGS, OR HAND-WATERING ARE ACCEPTABLE.

16. NATIVE PLANT ESTABLISHMENT. THIS PROJECT INCLUDES ONE OR MORE NATIVE PLANT SEED MIXES CONSISTING OF A VARIETY OF GRASSES, SEDGES AND FLOWERING FORBS. BECAUSE THESE PLANTS TYPICALLY HAVE A LONGER GERMINATION PERIOD, A COVER CROP SPECIES IS REQUIRED TO PROVIDE TEMPORARY COVER AND STABILIZATION. MAINTENANCE OF THESE SEEDED AREAS IS CRITICAL DURING THE FIRST SEVERAL YEARS TO ESTABLISH A SUCCESSFUL NATIVE PLANT COMMUNITY. SEEDED AREAS SHALL BE MOWED / WEED-WHIPPED TO A HEIGHT OF 6-10 INCHES IN MID-JULY AND EARLY SEPTEMBER DURING THE FIRST 2-3 YEARS OF ESTABLISHMENT. IN ADDITION, ALL NON-NATIVE SPECIES / WEEDS SHALL BE SPOT SPRAYED NO LESS THAN 3 TIMES A YEAR WITH HERBICIDE BY A LICENSED APPLICATOR. RE-SEEDING AS NECESSARY SHALL OCCUR IN MAY. A NATIVE PLANT COMMUNITY SHALL BE CONSIDERED SUCCESSFULLY ESTABLISHED NO SOONER THAT 3 YEARS AFTER INITIAL SEEDING - ONCE THE COVER CROP HAS BEEN SUFFICIENTLY REPLACED BY NATIVE PLANTS AND THE AREA IS FREE OF ALL NON-NATIVE AND INVASIVE SPECIES. AT THIS TIME, MAINTENANCE CAN BE REDUCED TO MOWING / WEED-WHIPPING TO A HEIGHT OF 6-10 INCHES ONCE A YEAR IN EARLY SEPTEMBER AND SPOT SPRAYING OF HERBACIDE ONLY AS NEEDED.

17. FINAL ACCEPTANCE. UPON SUBSTANTIAL COMPLETION OF THE WORK, CONTRACTOR SHALL REQUEST FINAL ACCEPTANCE OF THE WORK IN WRITING BY THE OWNER/LANDSCAPE ARCHITECT. IF ANY WORK IS FOUND TO BE INCOMPLETE OR UNSATISFACTORY IN THE OPINION OF THE OWNER/LANDSCAPE ARCHITECT, A WRITTEN PUNCH LIST WILL BE PREPARED LISTING ALL ITEMS THAT REQUIRE COMPLETING OR CORRECTING BEFORE FINAL ACCEPTANCE.

18. WARRANTY. ALL PLANTS, MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE, UNLESS OTHERWISE SPECIFIED. THE GUARANTEE SHALL COVER THE FULL COST OF REPLACEMENT INCLUDING LABOR AND MATERIAL.

MISCELLANOUS QUANTIITES

1. LANDSCAPE EDGING = 440 F

KWIK TRIP

KWIK STAR

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LA CROSSE, WI 54602-2107
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FAX (608) 781-8960

CARLSON McCAIN
3890 PHEASANT RIDGE DRIVE NE, SUITE 100, BLAINE, MN 55449
TEL 763.489-7900 \ FAX 763.489.7959 \ CARLSONMCCAIN.COM

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 Landscape Architect under the laws of the State of Minnesota.

Name: Ryan J. Ruttger, RLA
Signature:
Date: 01/03/22 License #: 56346

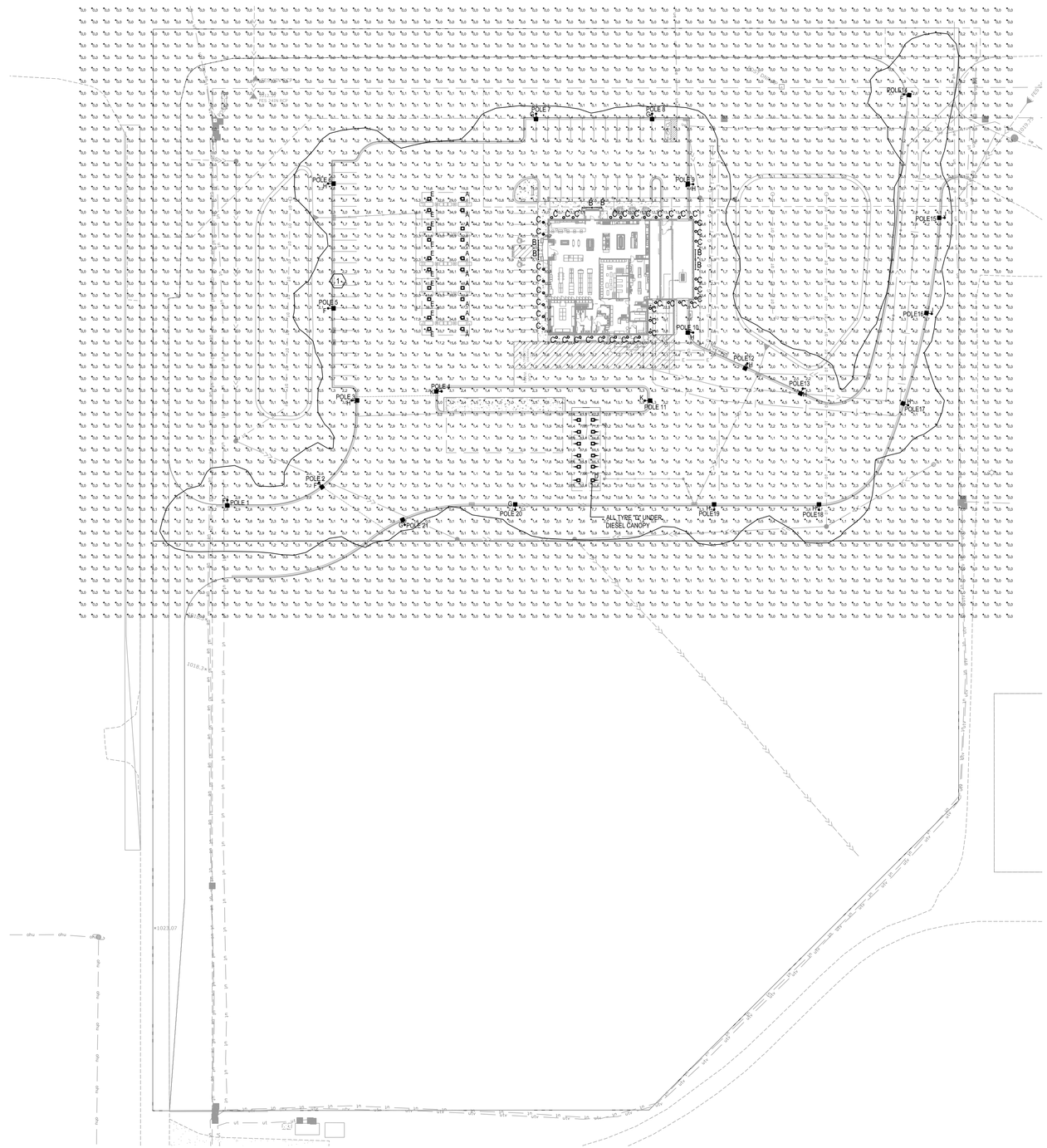
LANDSCAPE PLAN

CONVENIENCE STORE #1203
WITH 1-BAY CARWASH
& SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION
1	02/04/22	PER OWNER COMMENTS

DRAWN BY	RJR
SCALE	GRAPHIC
PROJ. NO.	9721-00
DATE	2022-01-03
SHEET	1203 L3



PHOTOMETRIC SITE PLAN
SCALE: 1" = 50'-0"

CALCULATION STATISTICS

OVERALL SITE:
AVERAGE: 2.5
MAXIMUM: 88.5
MINIMUM: 0.0

FIXTURE QUANTITIES

A - 10
B - 6
C - 40
D - 12
E - 10
F - 4
G - 4
H - 9
J - 2
K - 2

PROVIDE (21) 15' POLES

FIXTURE SYMBOLS:

A, D & E — LED LIGHT MOUNTED UNDER FUEL CANOPIES

B — LED STRIP LIGHT MOUNTED IN GABLE

C — RECESSED LED DOWNLIGHT

F, G, H, J & K — POLE MOUNTED LED FIXTURE

NOTE:

1. FOOTCANDLE LEVELS SHOWN ON THIS PLAN ARE CALCULATED AT GRADE LEVEL.

KEYED NOTES:

1. COORDINATE LOCATION AND MOUNTING HEIGHT OF SECURITY CAMERA WITH OWNER.

FIXTURE TYPES:

A - LSI LIGHTING: SCV-LED-23L-SCFT-UNV-DIM-50-WHT
MOUNTED UNDER GAS CANOPY
MOUNT FIXTURES WITH FORWARD THROW OPTIC AIMING AT STORE FRONT.

B - LED STRIP LIGHT MOUNTED IN GABLE
LITHONIA -TZL1N-L96-10000LM-FST-MVOLT

C - RECESSED LED DOWNLIGHT
GOTHAM EVO-35/30-8AR-WD-120-TRW

D - LSI LIGHTING: SCV-LED-23L-SCFT-UNV-DIM-50-BLK
MOUNTED UNDER DIESEL CANOPY
MOUNT FIXTURES WITH FORWARD THROW OPTIC AIMING IN DIRECTION OF ARROW.

E - LSI LIGHTING: SCV-LED-15L-SC-UNV-DIM-50-WHT
MOUNTED UNDER GAS CANOPY

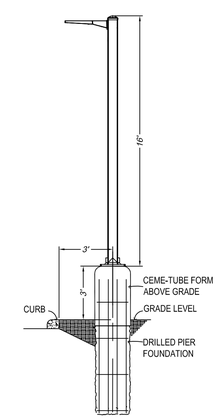
F - LSI LIGHTING: MRS-LED-12L-SIL-3-UNV-50-70CRI-WHT

G - LSI LIGHTING: MRS-LED-12L-SIL-3-UNV-50-70CRI-WHT-IL

H - LSI LIGHTING: MRS-LED-12L-SIL-FT-UNV-50-70CRI-WHT

J - LSI LIGHTING: MRS-LED-12L-SIL-FT-UNV-50-70CRI-WHT-IL

K - LSI LIGHTING: MRS-LED-12L-SIL-5W-UNV-50-70CRI-WHT-IL



LOT LIGHT ELEVATION DETAIL
NOT TO SCALE

2021-0195.56

GRAEF
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Milwaukee, WI 53203
414 / 259 1500
414 / 259 0037 fax

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KWIK STAR

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I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Name: JBryan TRUMAN
Signature:
Date: 10/08/21 License #: 55889

PRELIMINARY

PHOTOMETRIC SITE PLAN

CONVENIENCE STORE #1203 WITH 1-BAY CARWASH & SIDE DIESEL

HIGHWAY 71 & COUNTY ROAD 1
REDWOOD FALLS, MINNESOTA

#	DATE	DESCRIPTION

DRAWN BY	DLC
SCALE	GRAPHIC
PROJ. NO.	9721-00
DATE	2021-10-08
SHEET	E1