

AGENDA
GRAND MARAIS PLANNING COMMISSION
May 1, 2019, 4:00 P.M.

A. CALL TO ORDER

B. ROLL CALL

C. ADOPT AGENDA

D. APPROVE MINUTES

E. PUBLIC HEARINGS

-McDonnel MacKenzie Conditional Use Permit

F. OLD BUSINESS

-None

G. NEW BUSINESS

-Winterstone Final Plat

ADJOURN

Planning Commission
Minutes
April 10, 2019

Meeting was called to order by Chair Tim Kennedy at 4:01 p.m.

Members present: Stacey Hawkins, Tim Kennedy, Michael Mchugh, and Michael Garry
Absent: Hal Greenwood
Staff Present: Mike Roth, Patrick Knight, and Haden Hinchman
Others Present:

Motion by Garry, seconded by Hawkins to approve the proposed agenda. Approved unanimously.

Motion by Hawkins, seconded by Garry to approve the minutes of the March 6, 2019 meeting. Approved unanimously.

The Commission discussed the housing study proposals requested by the City. They questioned the merits and background of each company in the proposal. The Commission also examined the proposed budget for each company.

Motion by Hawkins, seconded by Garry to recommend the Council approve the housing study proposal from HKGI. Approved unanimously.

There being no further business, the meeting adjourned at 4:45 p.m.

City of Grand Marais

MEMO

TO: Grand Marais Planning Commissioners
FROM: Mike Roth
DATE: April 24, 2019
SUBJECT: McDonnel MacKenzie Conditional Use Request

Request: Jack McDonnel and Danna MacKenzie are requesting a conditional use permit to operate a single unit lodging facility located in an existing single family structure on a property zoned RCN Resort Commercial Neighborhood located at 107 5th Avenue W.

Location of Property: Lots 6 except the North 12', Lot 7, and the North 12' of lot 8, Block 13 Harbor Addition

Condition of Property: This developed property is zoned RCN Resort Commercial Neighborhood. The lot has a single family structure, attached single car garage, and small driveway. Neighboring uses include residential, lodging, commercial, and government uses.

Items To Be Considered: In the City of Grand Marais a conditional use permit can be granted only if all of the following apply:

1. The use conforms to the land use or comprehensive plan of the City.
2. The use is compatible with the existing neighborhood.
3. The use will not impede the normal and orderly development and improvement in the surrounding area of uses permitted by right in the zone district.
4. The location and character of the proposed use is considered to be consistent with a desirable pattern of development for the area.

Relevant Zoning Purpose Statement:

19.13 RCN RESORT/COMMERCIAL NEIGHBORHOOD

Subdivision 1. Purpose

The RCN District is intended to provide for a mix of residential, low intensity commercial, and governmental uses. It is further specifically intended that the internal development be of a residential scale and appearance comparable with the surrounding residential area. The purpose and intent of the resort/commercial neighborhood district is to permit the designation of suitable locations for small scale low intensity resort/commercial facilities within or adjacent to areas or neighborhoods which are essentially residential in nature.

Subdivision 2. Permitted Principal Uses

Within an RCN District, unless otherwise provided by this chapter, no uses are permitted except the following:

1. One and two family attached dwellings, including mobile/manufactured homes.
2. Parks and recreational areas owned or operated by governmental agencies.
3. Accessory uses.

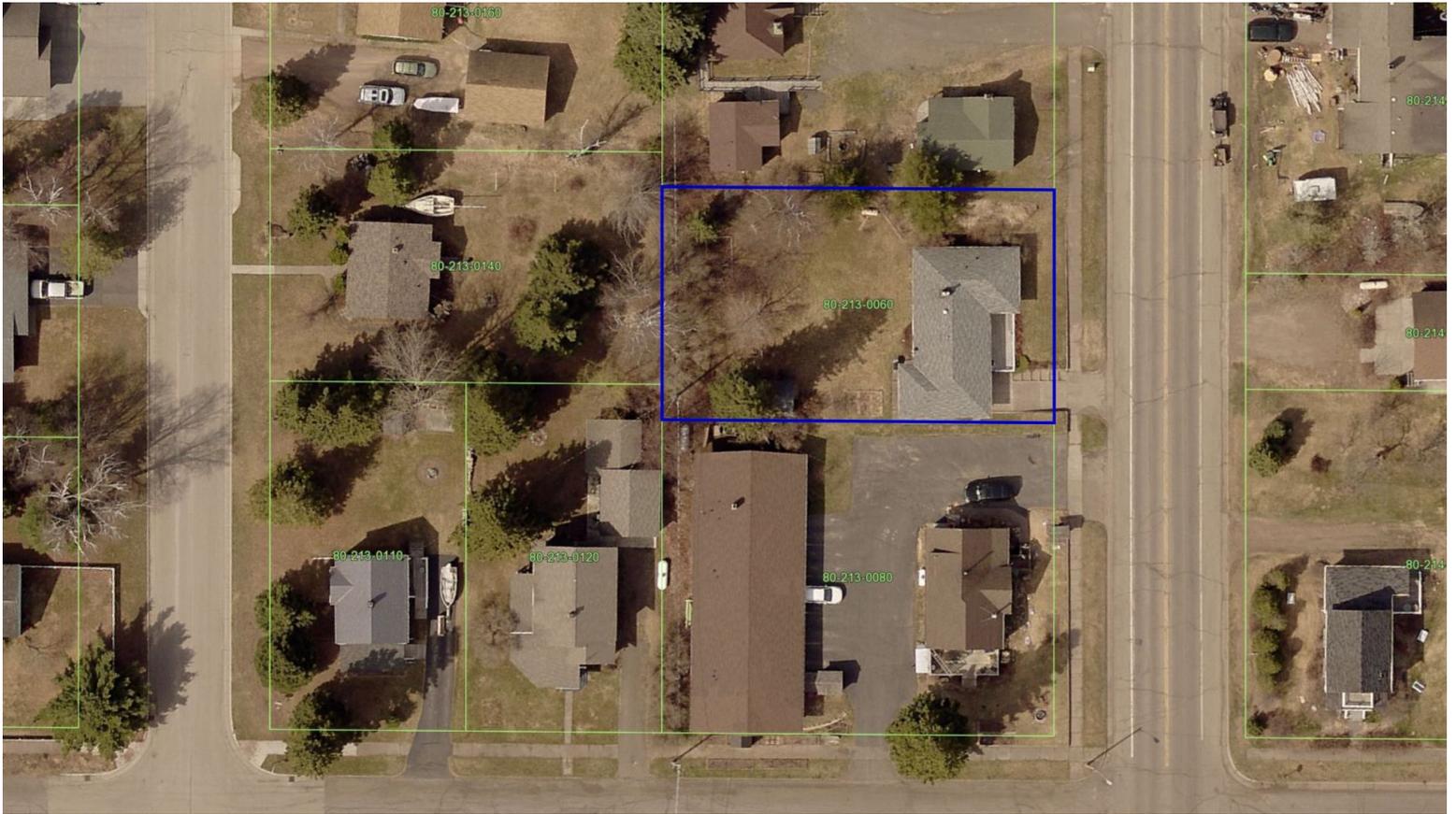
Subdivision 3. Uses by Conditional Use Permit

Buildings or land may be used for the following if granted a Conditional Use Permit as provided in Section 19.17:

1. Motels.
2. Bed and Breakfast homes/boarding houses.
3. Government building, provided that no building shall be located within fifty (50) feet of any abutting lot in any residential district.
4. Home occupations as defined in Section 19.02m Subdivision 2.
5. Self-service laundromats and car washes.
6. Apartment buildings and multiple dwelling units.
7. Planned unit developments.
8. Churches, parish homes, convents, children's nurseries and schools, provided that no building shall be located within fifty (50) feet of any abutting lot in any residential district.

F. Parking

One off-street parking space is required for each rental or living unit. One additional off-street parking space is required for each non-resident employee.



City of Grand Marais

MEMO

TO: Planning Commission
FROM: Mike Roth
DATE: April 25, 2019
SUBJECT: Winterstone Final Plat Application

Application

Attached is the Final Plat entitled Winterstone submitted by Taiga Design+Build, LLC. This plat consists of 2.74 acres of property zoned R-1 split into 8 lots intended for single-family homes, and one outlot. The plat includes one new gravel public street, storm water ditches and pond, and new municipal utilities.

Preliminary Plat Approved

The City approved the preliminary plat in August of 2018. Included in that approval were the following three variances:

1. Allowing a 50' right of way, contingent on the final street, storm water, and utility design.
2. Allowing Lot 2, Block 1 to be 9,636sq', short of the required 10,000, as it necessary to avoid wetlands on the development.
3. Allowing Lot 2, Block 2, to be 124' by 101', short of the required 120' of depth, as it provides adequate development space and allows for the avoidance of wetlands by the road.

Commission Review

Included in the packet is a plat drawing and final draft engineering for streets, storm water, and utilities. Issues that the commission may wish to review include compliance with the preliminary plat and planned infrastructure. Potential contingencies you may want to include in your consideration are: (1) that the City Engineer sign off on the design, (2) that the Council enter into a developer's agreement to address the adequacy of the design, construction, and financing of public improvements, (3) that the developer receive all necessary permits and approvals for the proposed work.

Below are the requirements for a final plat included in City Code. My notes, where appropriate, are included after each plat requirement in ***bold italics***.

Final Plat Requirements

CITY CODE CHAPTER 62 SUBDIVISIONS DIVISION 3. FINAL PLAT

Sec. 62-86. Supplementary documents and information.

The final plat shall be accompanied by the following supplementary documents and information:

- (1) A complete set of street profiles showing grade lines as constructed.
- (2) Copies of any private restrictions or protective covenants affecting the subdivision or any part thereof.

ARTICLE IV. DESIGN STANDARDS

My comments are included after each design standard in bold italic.

Sec. 62-106. Blocks.

(a) *Block length.* In general, intersecting streets, determining block lengths, shall be provided at such intervals as to serve cross traffic adequately and to meet existing streets. Where no existing plats control, the blocks in residential subdivisions shall normally not exceed 1,000 feet in length, except where topography or other conditions justify a departure from this maximum. In blocks longer than 800 feet, pedestrian ways and/or easements within a block may be required. The width and location of such pedestrian ways shall be subject to the approval of the council. Blocks for business or industrial use should normally not exceed 600 feet in length. ***Both proposed blocks meet the requirement.***

(b) *Block width.* The width of the block shall normally be sufficient to allow two tiers of lots of appropriate depth. Blocks intended for business or industrial use shall be of such width as to be considered most suitable for their respective use, including adequate space for off-street parking and deliveries. ***Due to the use of the adjacent 2nd Avenue right of way for drainage, the blocks have one or two lots of depth.***

Sec. 62-107. Streets and alleys.

(a) Arrangement of arterials and collector streets shall conform as nearly as possible to the city comprehensive plan. Except for dead-end streets, streets normally shall connect with streets already dedicated in adjoining or adjacent subdivisions, or provide for future connections to adjoining unsubdivided tracts, or shall be a reasonable projection of streets in the nearest subdivided tracts. The arrangement of arterial and

collector streets shall be considered in their relation to the reasonable circulation of traffic, to topographic conditions, to runoff of surface water, to public convenience and safety, and their appropriate relation to the proposed use of the area to be served. ***One street is proposed, which connects The Gunflint Trail in the South to 9th Street in the North.***

(b) Minor streets should be so planned as to discourage their use by nonlocal traffic. Dead-end streets shall be permitted where topography or other conditions justify their use. Dead-end streets shall not be longer than 500 feet, including a terminal turnaround, which shall be provided at the closed end, with a right-of-way radius of not less than 60 feet. *N/A*

(c) Where the plat to be submitted includes only part of the tracts owned or intended for development by the subdivider, a tentative plan of a proposed future street system for the unsubdivided portion shall be prepared and submitted by the subdivider. *N/A*

(d) When a tract is subdivided into larger than normal building lots or parcels, such lots or parcels shall be so arranged as to permit the logical location and opening of future streets and appropriate resubdivision, with provision for adequate utility connections for such resubdivision. *N/A*

(e) Under normal conditions, streets shall be laid out so as to intersect as nearly as possible at right angles except where topography or other conditions justify variations. The minimum angle of intersection of streets shall be 80 degrees. Street intersection jogs with an offset of less than 125 feet shall be avoided. ***Intersections are at 90 degrees.***

(f) Wherever the proposed subdivision contains or is adjacent to the right-of-way of a U.S. or state highway, provision may be made for a marginal access street approximately parallel with and adjacent to the boundary of such right-of-way, or for a street at a distance suitable for the appropriate use of land between such street and right-of-way. Such distance shall be determined with due consideration of the minimum distance required for approach connections to future grade separations, grade crossings or lot depths. *N/A*.

(g) Alleys shall be provided in commercial and industrial districts, except that this requirement may be waived where other definite and assured provision is made for service access, such as off-street loading, unloading and parking consistent with and adequate for uses proposed. Except where justified by special conditions, such as the continuation of an existing alley in the same block, alleys will not be approved in residential districts. Alleys, where provided, shall not be less than 14 feet wide for residential alleys and not less than 20 feet for commercial and industrial alleys. Dead-end alleys shall not be permitted. ***The development includes no alleys, but all lots created provide adequate space for off street parking.***

(h) Dedication of half streets will not be approved, except where it is essential to the reasonable development of the subdivision and in conformity with the other requirements of these regulations, where it is found that it will be practical to require the dedication of the other half when adjoining property is subdivided, or where it becomes necessary to acquire the remaining half by condemnation so it may be improved in the public interest. ***No half streets are included.***

(i) For all public ways hereafter dedicated and accepted, the minimum right-of-way widths for streets shall be as shown in the comprehensive plan and where not shown therein, the minimum right-of-way width for streets, alleys, or pedestrian ways included in any subdivision shall not be less than the minimum dimensions for each classification as follows:

- (1) Arterial street: 100 feet.
- (2) Collector street: 66 feet.
- (3) Minor street: 66 feet.
- (4) Marginal access street: 50 feet.
- (5) Residential alley: 14 feet.
- (6) Industrial commercial alley: 20 feet.
- (7) Pedestrian way: 10 feet.

Where existing or anticipated traffic on arterial streets warrants greater width of rights-of-way, these shall be required. ***The proposed right-of-way width is less than the required 66', approved in the preliminary plat contingent on acceptance of the engineered plans.***

(j) Street grades. The grades in all streets and alleys in any subdivision shall not be greater than the maximum grades for each classification as follows:

- (1) Arterial streets: 5 percent.
- (2) Collector streets: 6 percent.
- (3) Minor streets: 10 percent.
- (4) Alleys: 10 percent.

In addition, there shall be a minimum grade on all streets of not less than four-tenths of one percent. ***The proposed grade is less than the maximum of 10%.***

(k) All streets shall be so laid out as to avoid dangerously sharp corners or curves or abrupt or unnecessary changes in grade. ***No sharp curves are included.***

(l) All proposed streets shall be offered for dedication as public streets. No private streets shall be permitted, except as set forth in other ordinances. ***The proposed street is public.***

Sec. 62-108. Lots.

(a) The minimum lot area, width and depth shall not be less than that established in the zoning ordinance. *Two lot dimension variances were granted with the preliminary plat: Lot 2, Block 1, is proposed at 9,636 sq', less than the required 10,000. Lot 2, Block 2 is 101' deep, less than the required 120'. All other lots are sufficient.*

(b) Corner lots for residential use shall have an additional width to permit appropriate building setback from both streets as defined in the zoning ordinance. *All corner lots have sufficient room to build outside of setback areas.*

(c) Side lines of lots shall be approximately at right angles to street lines or radial to curved street lines. *Development meets this requirement.*

(d) Double-frontage lots shall be avoided except where lots back on an arterial street, or where topographic or other conditions render subdividing otherwise unreasonable. Such double-frontage lots shall have an additional depth of at least 20 feet in order to allow space for screen planting along the back lot line. *No double frontage lots included.*

(e) Every lot must have at least the minimum required frontage on a public dedicated street other than an alley. *Development meets this requirement.*

Sec. 62-109. Easements.

(a) Easements across lots or centered on rear or side lines shall be provided for utilities and drainage where necessary and shall be at least 20 feet wide. If necessary for the extension of main water or sewer lines or similar utilities, easements of greater width may be required along lot lines or across lots. *N/A.*

(b) Utility easements shall connect with easements established in adjoining properties. These easements, when approved, shall not thereafter be changed without the approval of the council by ordinance, upon the recommendation of the planning commission. *N/A.*

(c) Where a subdivision is traversed by a watercourse, drainageway, channel or stream, a stormwater easement, drainage right-of-way or park dedication, whichever the council may deem the most adequate, conforming substantially with the lines of such watercourses, shall be provided, together with such further width or construction, or both, as will be adequate for the surface water drainage of the area. The width of such easements shall be determined by the council. *No drainageways are identified on the plat. A wetland delineation is included.*

Sec. 62-110. Public sites and open spaces.

In subdividing land or resubdividing an existing plat, due consideration shall be given by the subdivider to the dedication or reservation of suitable sites for schools, parks, playgrounds, conservation areas, or other public or semipublic recreational areas or open spaces. Areas so dedicated or reserved shall conform as nearly as possible to the comprehensive plan. All areas to be reserved for or dedicated to public use shall be indicated on the preliminary plat in order that it may be determined when and in what manner such areas will be dedicated to or acquired by the appropriate agency. *One open space outlot is included in the plat.*

WINTERSTONE

LOTS 1-20, BLOCK 22 OF BLACKWELL'S ADDITION TO THE VILLAGE OF GRAND MARAIS.
LOCATED WITHIN: SEC. 16 T. 61 N., R. 1E., COOK COUNTY, MN.
DOC. #126159

CURVE TABLE

Curve	Delta Angle	Radius	Arc	Tangent	Chord	Chord Bearing
1	43°22'11"	97.35	73.69	38.71	71.94	S 20°57'27"E
2	111°06'52"	107.84	209.14	157.25	177.87	S 12°54'53"W
3	67°44'42"	85.48	101.05	57.37	95.26	S 34°35'59"W
4	43°22'11"	72.35	54.76	28.77	53.47	S 20°57'27"E
5	43°22'11"	122.35	92.61	48.65	90.42	S 20°57'27"E
6	6°30'19"	132.84	15.08	7.55	15.07	S 39°23'23"E
7	58°22'48"	132.84	130.72	71.20	125.51	S 7°45'50"E
8	29°33'37"	132.84	68.54	35.05	67.78	S 35°01'23"W
9	18°40'09"	132.84	43.28	21.84	43.09	S 59°08'15"W
10	24°07'36"	82.84	34.89	17.70	34.63	S 30°34'43"E
11	86°53'16"	82.84	125.77	78.60	114.04	S 24°58'42"W
12	6°09'53"	110.46	11.89	5.95	11.88	S 65°23'23"W
13	38°08'46"	60.46	40.25	20.90	39.51	S 49°23'57"W
14	15°42'28"	85.46	23.43	11.79	23.36	S 60°37'06"W

KNOW ALL PERSONS BY THESE PRESENTS: That Anton Moody, a married man, is the owner of the following described property situated in the County of Cook, State of Minnesota:

Lot Six (6), Seven (7), Eight (8), Nine (9) and Ten (10), Block Twenty-two (22), BLACKWELL'S ADDITION to the Village, now City, of Grand Marais, Cook County, Minnesota.

AND

Lots 1, 2, 3, 4, 5, 11, 12, 13, 14, 15, 16, 17, 18, 19 and 20, Block 22, Blackwell's Addition to the Village (now City) of Grand Marais, according to the map or plat thereof on file and of record in the office of the County Recorder, Cook County, Minnesota.

AND

Vacated Alley within Block 22, BLACKWELL'S ADDITION to the Village, now City, of Grand Marais, Cook County, Minnesota.

AND

The East Half of the Vacated portion of Van Buren Street (3rd Avenue West) adjacent to Lots 15 through 20, Block 22, BLACKWELL'S ADDITION to the Village, now City, of Grand Marais, Cook County, Minnesota.

Have caused the same to be surveyed and platted as WINTERSTONE and does hereby dedicate to the public for public use Winterstone Drive and/or the drainage and utility easement(s) as created herewith, and does hereby donate to the City of Grand Marais, Outlot A as shown on this plat for drainage purposes.

IN WITNESS WHEREOF, Anton Moody has caused these presents to be signed this _____ day of _____, 2019

Anton Moody

STATE OF MINNESOTA
COUNTY OF COOK

The foregoing instrument was acknowledged before me this _____ day of _____, 2019,
by Anton Moody.

Notary Public for the State of Minnesota

My Commission expires _____

I hereby certify that this plat was prepared by me or under my direct supervision; that I am a duly Licensed Land Surveyor in the State of Minnesota; that this plat is a correct representation of the boundary survey; that all mathematical data and labels are correctly designated on this plat; that all monuments depicted on this plat have been, or will be correctly set within one year; that all water boundaries and wet lands, as defined in Minnesota Statutes, Section 505.01, Subd. 3, as of the date of this certificate are shown and labeled on this plat; and all public ways are shown and labeled on this plat.

Dated this _____ day of _____, 2019.

Richard J. Tofte, Licensed Land Surveyor
Minnesota License No. 16461

STATE OF MINNESOTA
COUNTY OF COOK

The foregoing Surveyors Certificate was acknowledged before me this _____ day of _____, 2019 by Richard J. Tofte, Minnesota License Number 16461.

Notary Public for the State of Minnesota

My Commission expires _____

I hereby certify that proper evidence has been presented to and examined by me and I hereby approve this plat as to form and execution. Dated this _____ day of _____, 2019.

Attorney for City of Grand Marais: _____

Approved by the City of Grand Marais, Minnesota, this _____ day of _____, 2019

Mayor

City Clerk

I hereby certify that there are no current or delinquent taxes due for land described on this plat as of this _____ day of _____, 2019

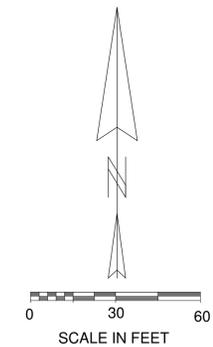
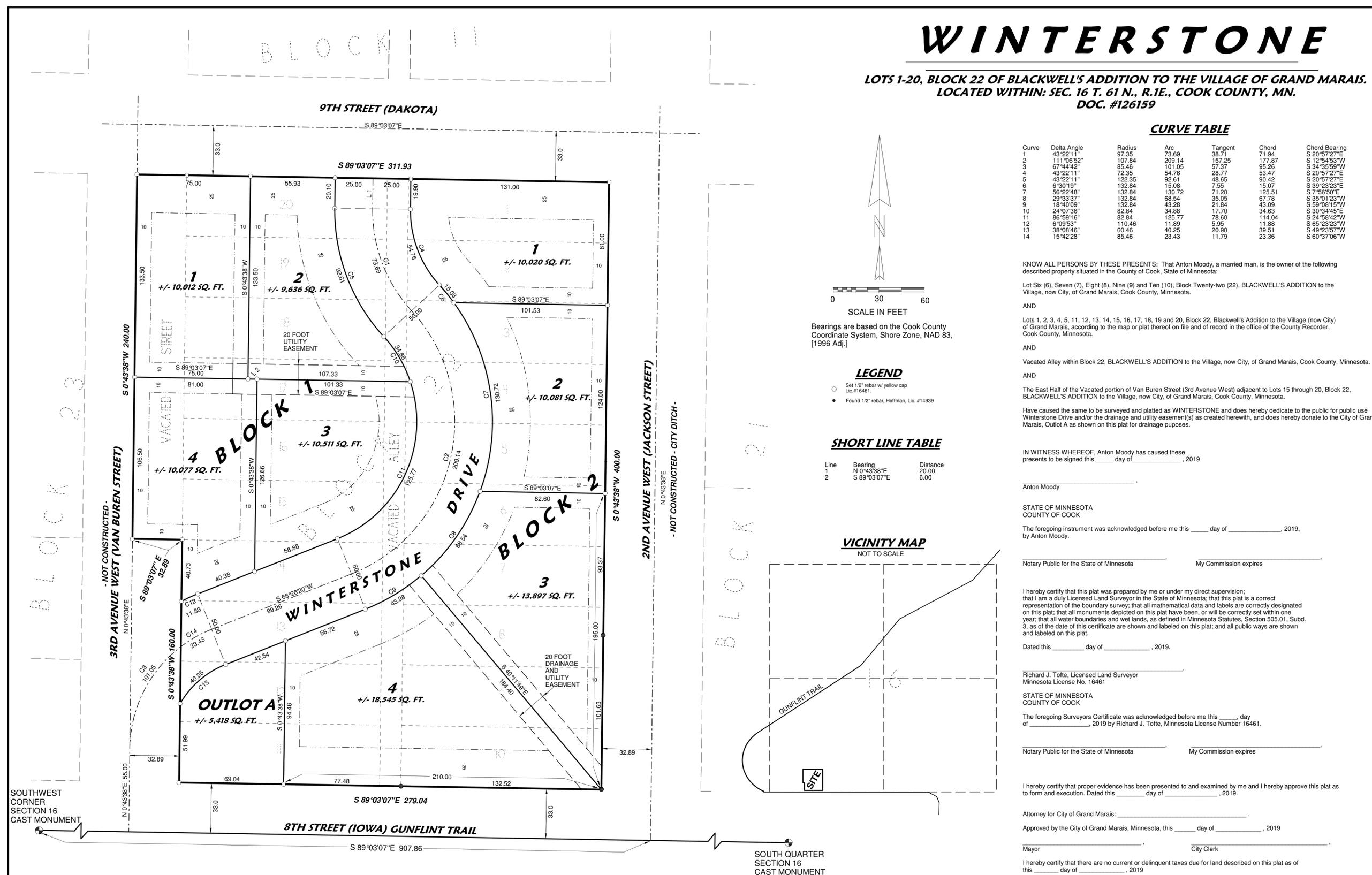
_____, Cook County Auditor / Treasurer

STATE OF MINNESOTA
COUNTY OF COOK

I hereby certify that the within plat has been filed in the Office of Cook County Recorder for record on this _____ day of _____, 2019, at _____ o'clock _____ M.

Cook County Recorder

NORTH SHORE
LAND SURVEYING
P.O. Box 565 Grand Marais, MINNESOTA 55604
(218) 387-1726

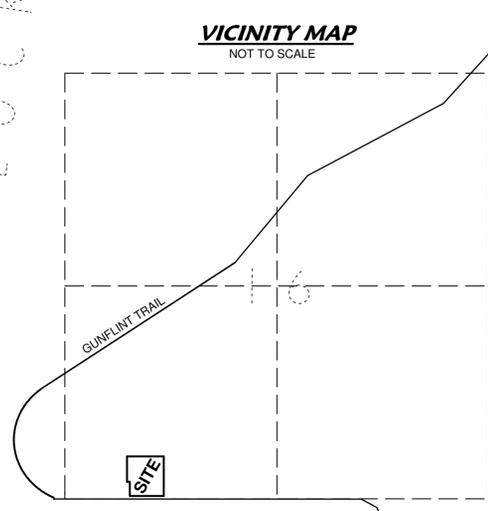


Bearings are based on the Cook County Coordinate System, Shore Zone, NAD 83, [1996 Adj.]

LEGEND
○ Set 1/2" rebar w/ yellow cap Lic.#16461.
● Found 1/2" rebar, Hoffman, Lic. #14939

SHORT LINE TABLE

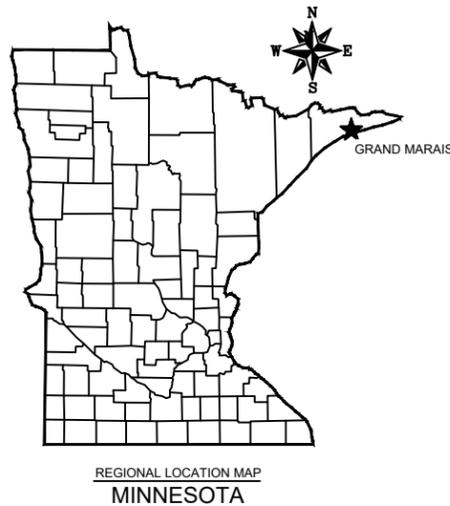
Line	Bearing	Distance
1	N 0°43'38"E	20.00
2	S 89°03'07"E	6.00



PRELIMINARY

WINTERSTONE DEVELOPMENT

CITY OF GRAND MARAIS COOK COUNTY, MINNESOTA



SHEET INDEX

<u>G - GENERAL SHEETS</u>	
G 1	TITLE SHEET
G 2	EXISTING SITE PLAN
G 3-7	DETAILS
G 8	SWPPP NOTES
<u>ST - SITE PLANS</u>	
ST 1	CLEARING & DEMOLITION PLAN
ST 2	GRADING PLAN
ST 3	EROSION CONTROL PLAN
ST 4	SITE UTILITY PLAN
<u>R - ROAD CONSTRUCTION & UTILITIES PLANS</u>	
R 1	PLAN & PROFILE

LEGEND

	EXISTING WATER MAIN
	EXISTING GATE VALVE & HYDRANT
	WATER SERVICE & CURB STOP
	PROPOSED WATERMAIN, VALVE, & HYDRANT
	PROPOSED WATER SERVICE & CURB STOP
	EXISTING SANITARY SEWER & MANHOLE
	EXISTING FORCEMAIN
	EXISTING STORM SEWER & INLET
	PROPOSED STORM SEWER & INLET
	PROPOSED STORM SEWER & MANHOLE
	PROPOSED SANITARY SEWER & MANHOLE
	BURIED ELECTRIC
	BURIED GAS & VALVE
	BURIED CABLE TELEVISION
	BURIED TELEPHONE
	BURIED FIBER OPTICS
	OVERHEAD UTILITY
	RAILROAD TRACKS
	EXISTING CURB & GUTTER
	PROPOSED CURB & GUTTER
	EXISTING SIDEWALK
	PROPOSED SIDEWALK
	EXISTING CULVERT PIPE
	PROPOSED CULVERT PIPE
	FENCE LINE
	DRAINAGE ARROW
	SILT FENCE
	RIGHT-OF-WAY
	BASELINE
	PROPERTY LINE
	TREE LINE
	BENCHMARK
	IRON PIPE
	IRON ROD
	CONTROL POINT
	UTILITY POLE & GUY
	SOIL BORING
	LIGHT POLE
	PEDESTAL
	STREET SIGN
	MAILBOX
	FLAGPOLE
	TREE - DECIDUOUS
	TREE - CONIFEROUS
	TREE TO BE REMOVED

UTILITIES

ELECTRIC:
ARROWHEAD COOPERATIVE
218-663-7239

WATER/SEWER/ELECTRIC:
GRAND MARAIS UTILITIES
218-387-1848

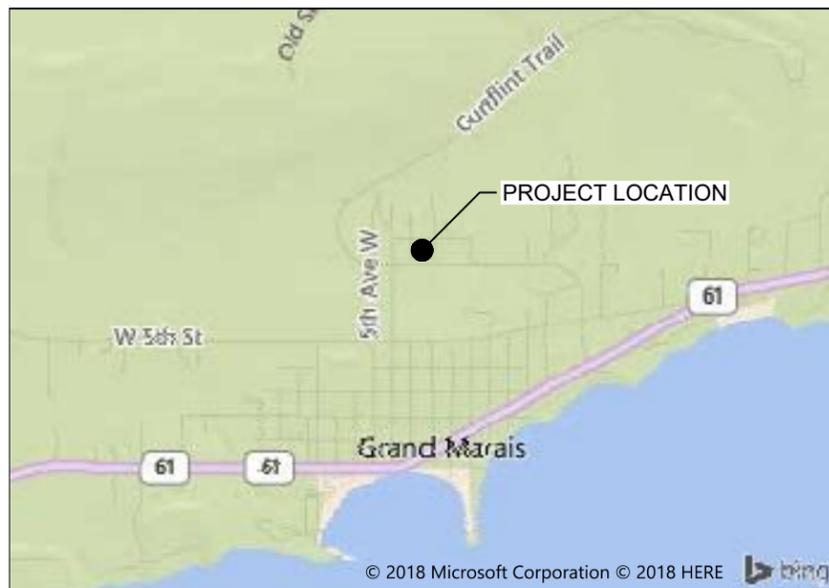
TELEPHONE:
CENTURYLINK
800-283-4237

CATV:
MEDIACOM CABLEVISION
845-443-2840

WARNING
LOCATION OF UNDERGROUND UTILITIES
TO BE VERIFIED BY CONTRACTOR
GOPHER STATE ONE CALL
CALL BEFORE DIGGING,
1-800-252-1166
REQUIRED BY LAW

NOTE:
UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE AND CONTRACTOR
SHALL HAVE APPROPRIATE UTILITY MARK EXACT LOCATIONS PRIOR TO CONSTRUCTION.

GSOC DESIGN #182483060



LOCATION MAP

NO SCALE

PROJECT NO.: 17454001	SCALE: AS SHOWN	NO.	DATE	REVISION	BY
PROJECT DATE: 12-14-2018	DRAWN BY: JAS				
F.B.:	CHECKED BY: AKB				
PLOT DATE: 1/17/19, P:\17400s\17450a\17454\17454001\CADD\Construction Drawings\17454001 Title Sheet.dwg					

I HEREBY CERTIFY THAT THIS PLAN, REPORT, OR SPECIFICATION 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.

1/10/2019
50396
License No.
JOSEPH L. REWICKA



ENGINEERING | ARCHITECTURE | SURVEYING
FUNDING | PLANNING | ENVIRONMENTAL
332 W Superior Street, Duluth MN 55802
(218) 722-3915 www.msa-ps.com
© MSA Professional Services, Inc.

WINTERSTONE DEVELOPMENT
TAIGA DESIGN+BUILD, LLC
GRAND MARAIS MINNESOTA

TITLE SHEET

FILE NO.
17454001
SHEET
G1

BENCHMARK TABLE

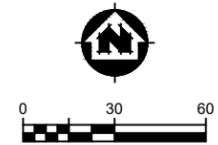
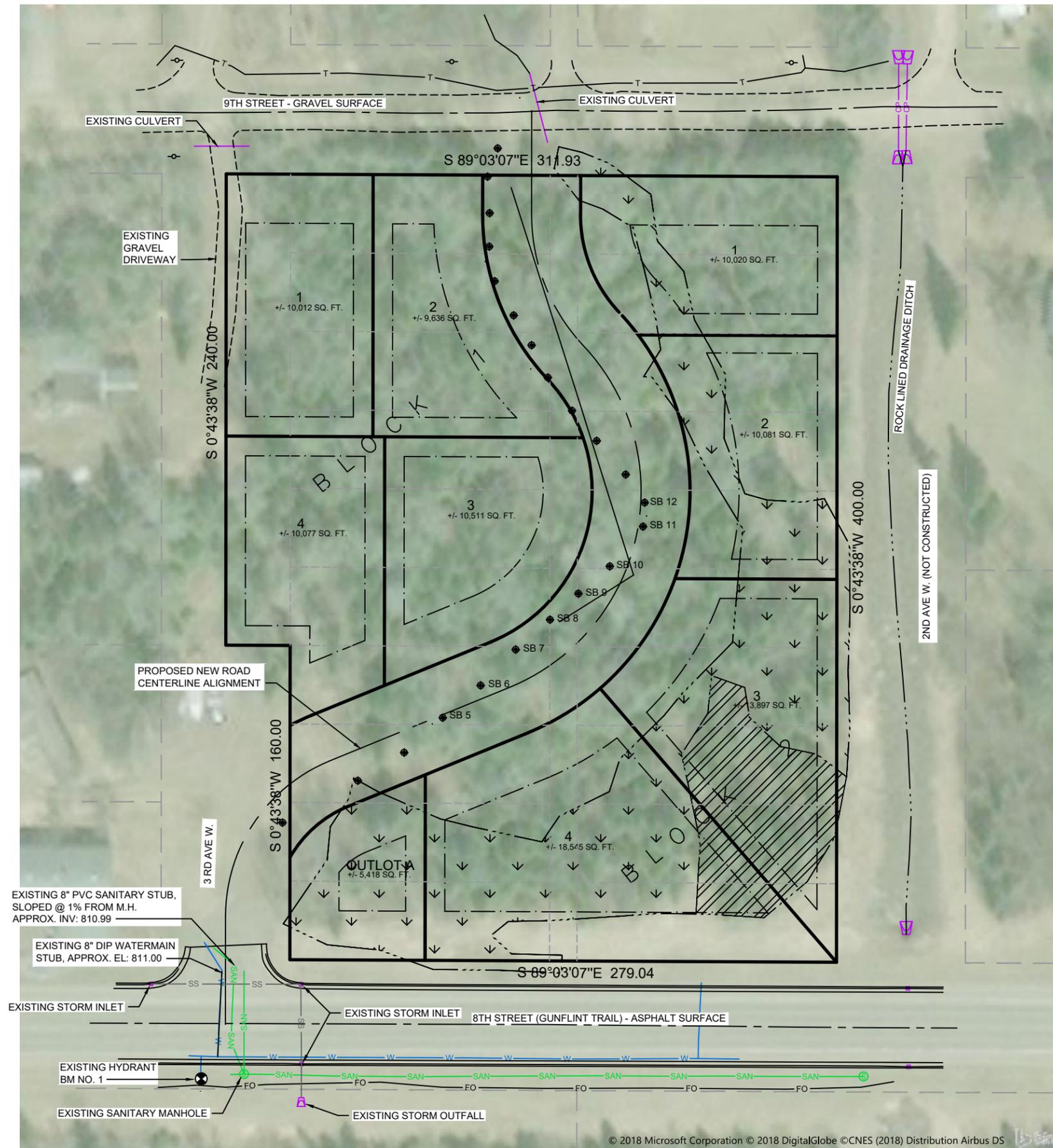
BM. NO.	STATION	DESCRIPTION	ELEV.
1	1+22 LT	TOP NUT ON HYDRANT	824.25

LEGEND

	WETLAND
	WETLAND / NON- WETLAND MOSAIC APPROX. 42% WETLAND
	WATER MAIN
	BURIED TELEPHONE
	SANITARY SEWER
	FIBER OPTIC
	DRAINAGE CENTERLINE
	SETBACK LINE
	CULVERT
	PROPERTY LINE

GENERAL CONSTRUCTION NOTES:

- ALL WORK SHALL COMPLY WITH THE STANDARD CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM) SPECIFICATIONS.
- ALL MATERIALS SHALL MEET THE REQUIREMENTS OF THE CITY OF GRAND MARAIS. ALTERNATES ARE REQUIRED TO BE APPROVED IN WRITING BY THE CITY.



EXISTING 8" PVC SANITARY STUB,
SLOPED @ 1% FROM M.H.
APPROX. INV: 810.99

EXISTING 8" DIP WATERMAIN
STUB, APPROX. EL: 811.00

EXISTING STORM INLET

EXISTING HYDRANT
BM NO. 1

EXISTING SANITARY MANHOLE

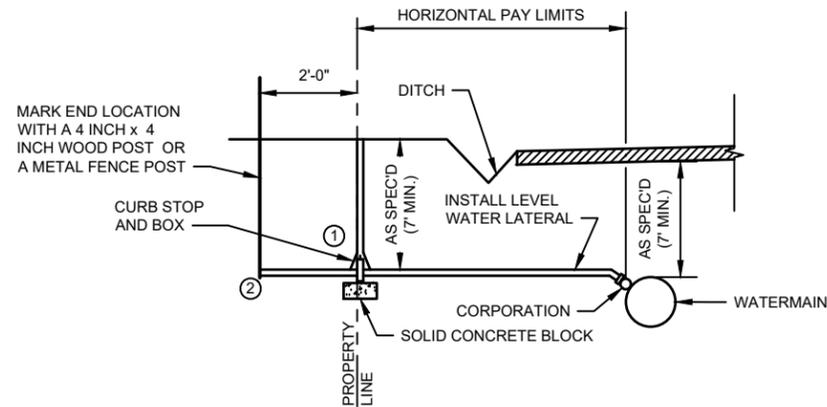
EXISTING STORM INLET

EXISTING STORM OUTFALL

© 2018 Microsoft Corporation © 2018 DigitalGlobe © CNES (2018) Distribution Airbus DS

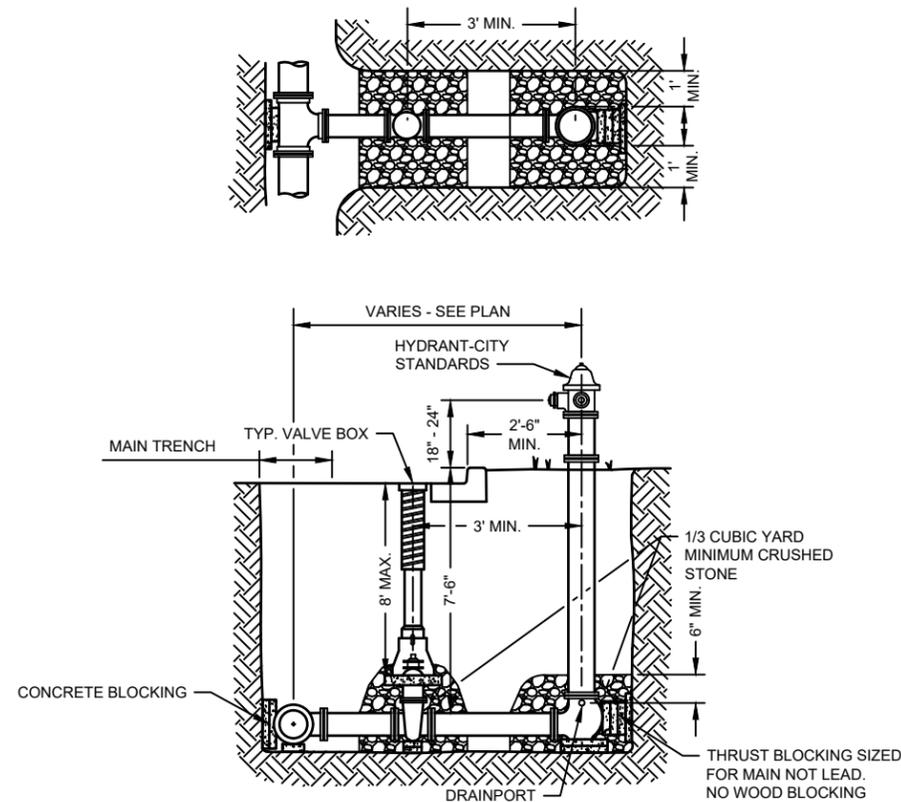
PROJECT NO.: 17454001	SCALE: AS SHOWN	NO.:	DATE:	REVISION:	BY:	1/10/2019	50396	<p>ENGINEERING ARCHITECTURE SURVEYING FUNDING PLANNING ENVIRONMENTAL 332 W Superior Street, Duluth MN 55802 (218) 722-3915 www.msa-ps.com © MSA Professional Services, Inc.</p>	<p>WINTERSTONE DEVELOPMENT TAIGA DESIGN+BUILD, LLC GRAND MARAIS MINNESOTA</p>	<p>EXISTING SITE PLAN</p>	FILE NO.: 17454001
PROJECT DATE: 12-14-2018	DRAWN BY: JAS	NO.:	DATE:	REVISION:	BY:	50396	SHEET G2				
F.B.:	CHECKED BY: AKB	NO.:	DATE:	REVISION:	BY:	50396					

PLOT DATE: 1/17/19, P:\17400s\17450a\17454\17454001\CADD\Construction Drawings\17454001 Existing Site Plan.dwg

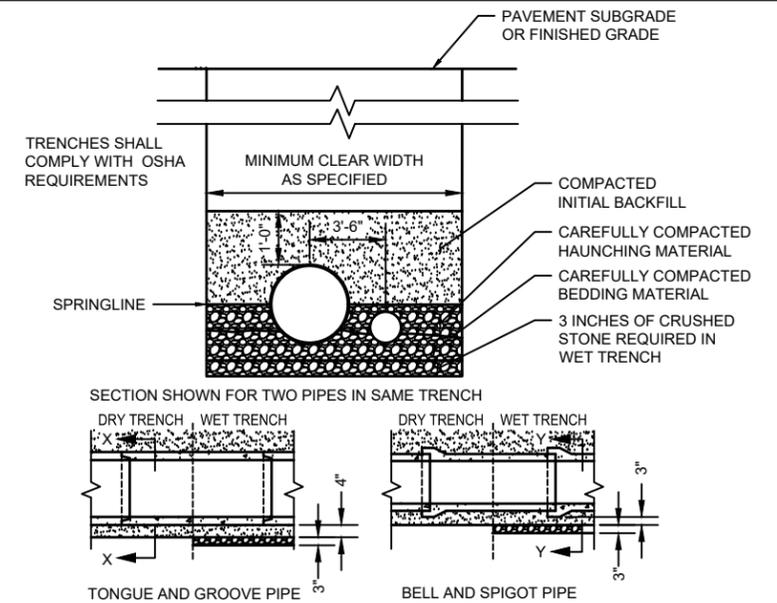


- GENERAL NOTES:**
- SEE PLANS AND SPECIFICATIONS FOR SIZE AND TYPE OF CURB STOP AND BOX CORPORATION AND SERVICE LINE.
 - WATER SERVICES SHALL BE 1" COPPER.
 - COMMUNITY STANDARDS SHALL SUPERSEDE THE DIMENSIONS FROM THE PROPERTY LINE.

WATER SERVICE DETAIL
NO SCALE



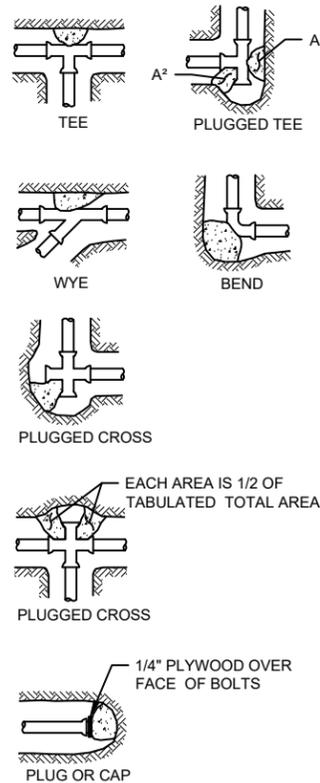
TYPICAL HYDRANT & VALVE SETTING DETAIL
NO SCALE



- GENERAL NOTES:**
- BEDDING AND HAUNCHING MATERIAL SHALL BE WELL-GRADED 3/4 TO 1/4 INCH CRUSHED STONE OR OTHER NONE COHESIVE MATERIAL NOT SUBJECT TO MIGRATION AND FREE OF DEBRIS, ORGANIC MATERIAL, AND LARGE STONES.
 - BEDDING MATERIAL TO BE PLACED BEFORE SETTING PIPE, 4 INCH MINIMUM UNDER BARREL WITH 3 INCH MINIMUM UNDER BELL.
 - INITIAL BACKFILL SHALL BE DENSELY COMPACTED, NON-COHESIVE FINELY DIVIDED MATERIAL FREE OF DEBRIS, ORGANIC MATERIAL, AND LARGE STONES.
 - IN ROCK OR OTHER INCOMPRESSIBLE MATERIALS THE TRENCH SHALL BE OVEREXCAVATED A MINIMUM OF 6-INCHES AND REFILLED WITH GRANULAR MATERIAL.

CLASS "B" EMBEDMENT FOR RIGID PIPE DETAIL
NO SCALE

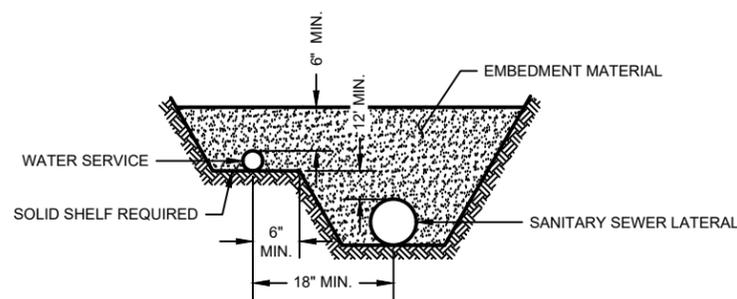
NOMINAL FITTING SIZE (INCHES)	TEE, WYE, PLUG OR CAP	90° BEND, PLUGGED CROSS	TEE PLUGGED ON RUN		45° BEND	22 1/2° BEND	11 1/4° BEND
			A ¹	A ²			
4	1.0	1.4	1.9	1.4	1.0	---	---
6	2.1	3.0	4.3	3.0	1.6	1.0	---
8	3.8	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	8.4	11.8	8.4	4.6	2.6	1.2
12	8.5	12.0	17.0	12.0	6.6	3.4	1.7
14	11.5	16.3	23.0	16.3	8.9	4.6	2.3
16	15.0	21.3	30.0	21.3	11.6	6.0	3.0
18	19.0	27.0	38.0	27.0	14.6	7.6	3.8
20	23.5	33.3	47.0	33.3	18.1	9.4	4.7
24	34.0	48.0	68.0	48.0	26.2	13.6	6.8



- NOTE**
- CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
 - KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
 - IF NOT SHOWN ON PLANS, REQUIRED BEARING AREAS AT FITTING SHALL BE AS INDICATED ABOVE, ADJUSTED IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) AND ALLOWABLE SOIL BEARING STRESS(ES).
 - BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN IN THIS STANDARD DETAIL.
 - ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 P.S.I. AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION:

$$\text{BEARING AREA} = (\text{TEST PRESSURE}/150) \times (2000/\text{SOIL BEARING STRESS}) \times (\text{TABLE VALUE}).$$

THRUST BLOCKING DETAIL
NO SCALE



- GENERAL NOTES:**
- WATER SERVICES 3 INCHES IN DIAMETER AND LARGER SHALL BE LAID WITH A CLEAR HORIZONTAL SEPARATION NOT LESS THAN 2 FEET FROM THE SANITARY LATERAL.

WATER SERVICE AND SANITARY SEWER TRENCH DETAIL
NO SCALE

NOT USED

PROJECT NO.:	17454001	SCALE:	AS SHOWN	NO.	DATE	REVISION	BY
PROJECT DATE:	12-14-2018	DRAWN BY:	JAS				
F.B.:		CHECKED BY:	AKB				

I HEREBY CERTIFY THAT THIS PLAN, REPORT, OR SPECIFICATION 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.

1/10/2019
50396
License No.
JOSEPH L. KREWICKA

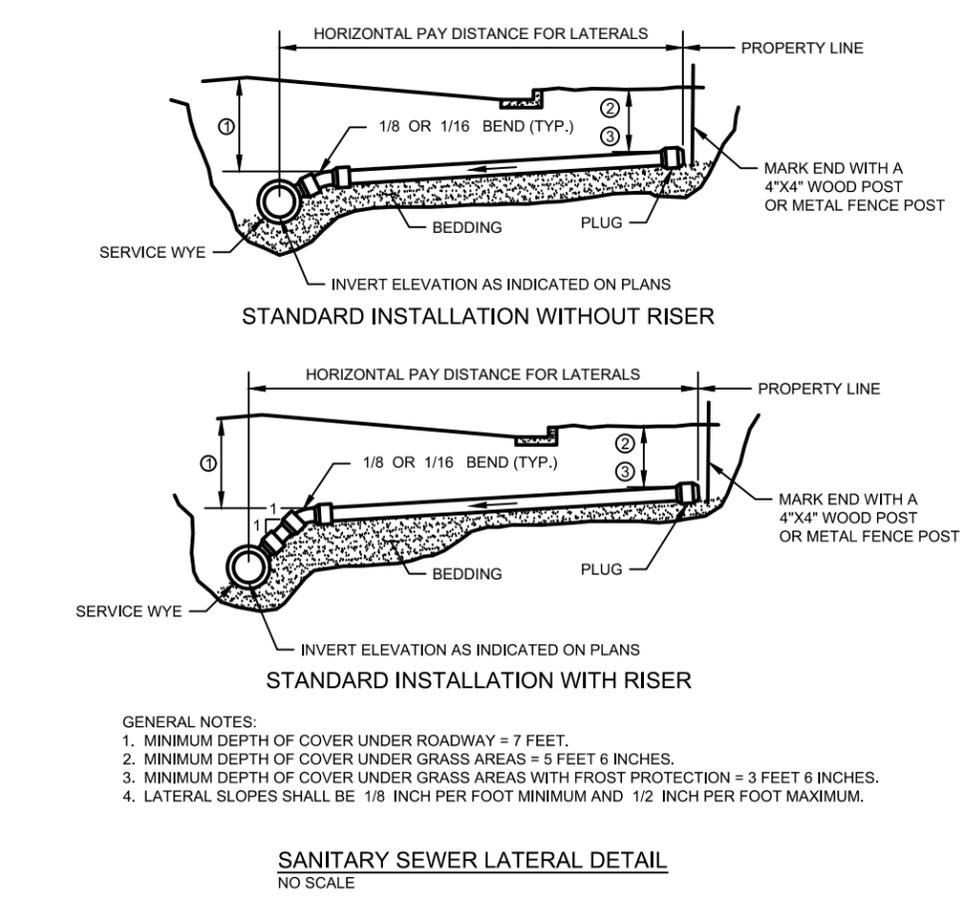
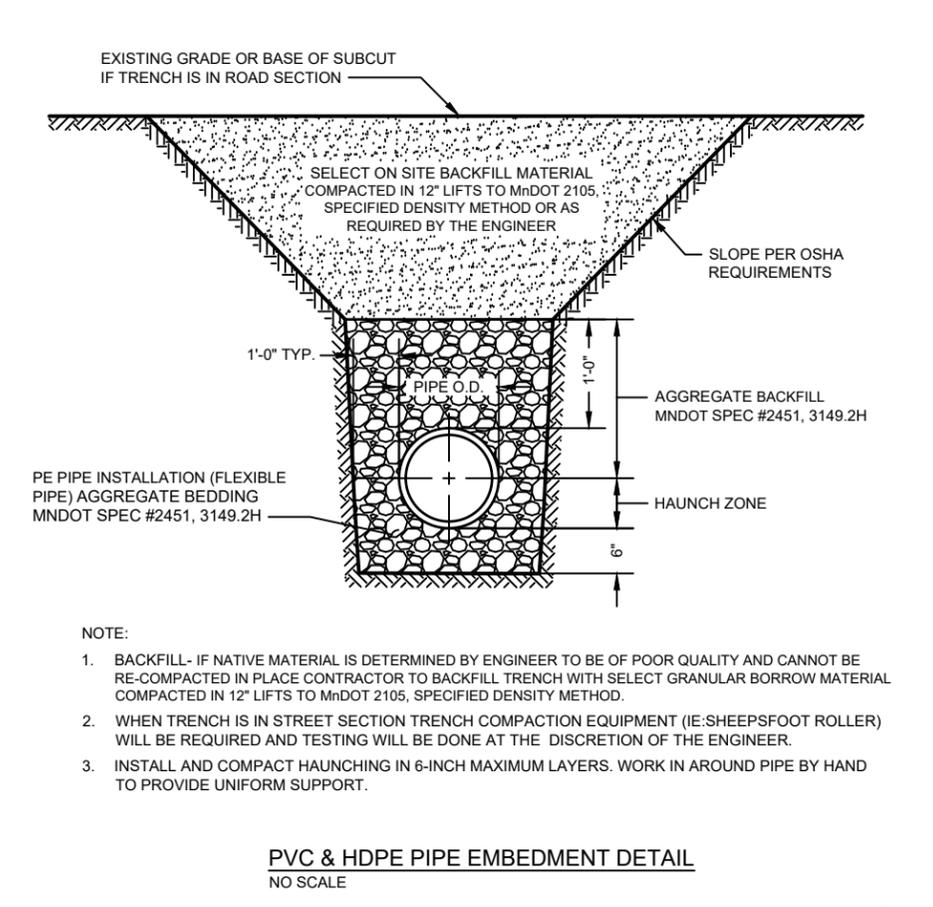
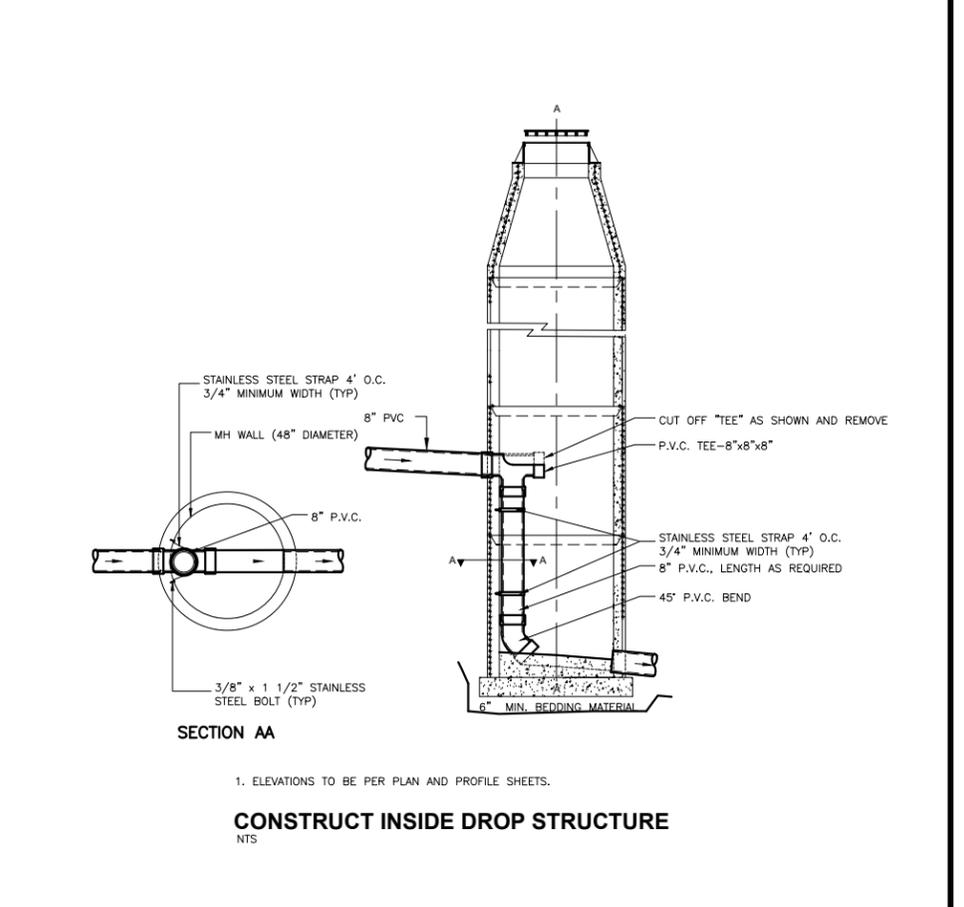
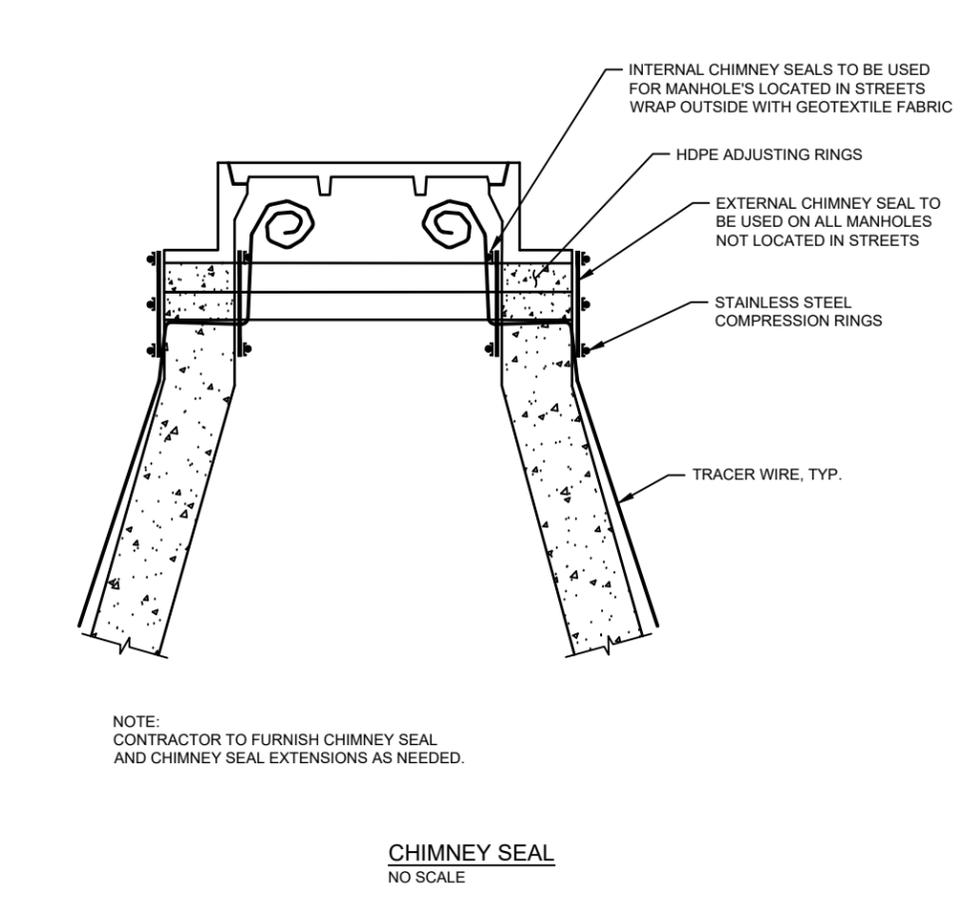
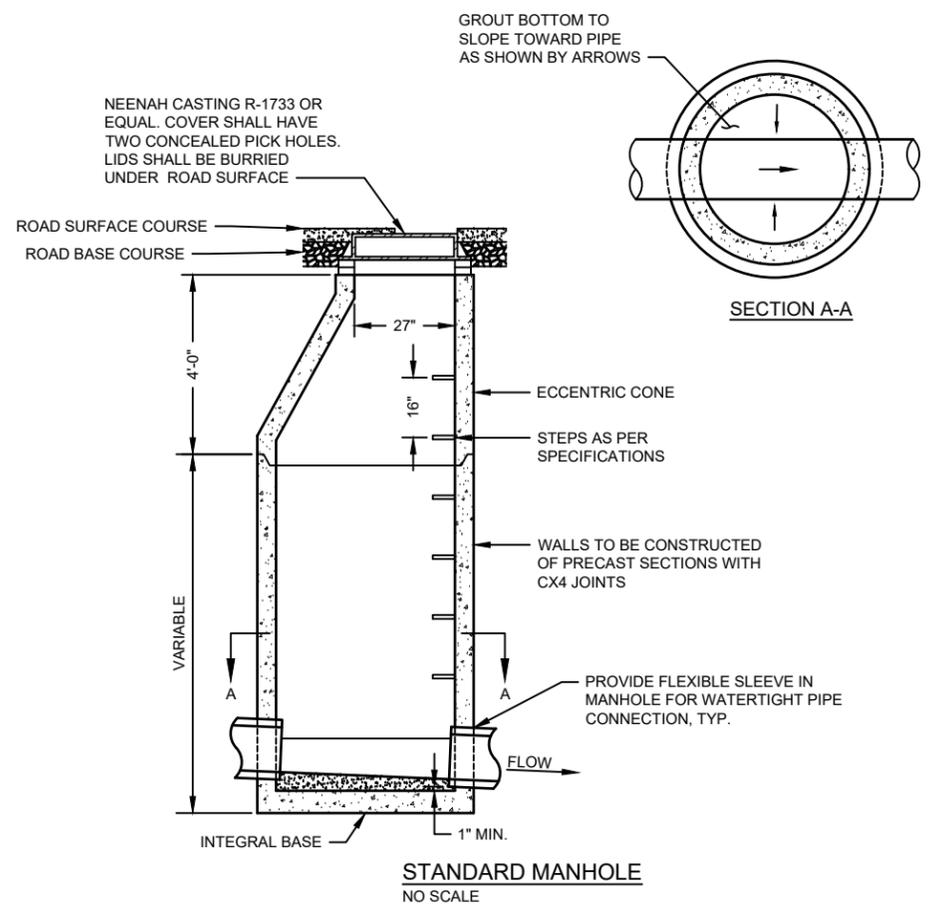


ENGINEERING | ARCHITECTURE | SURVEYING
FUNDING | PLANNING | ENVIRONMENTAL
332 W Superior Street, Duluth MN 55802
(218) 722-3915 www.msa-ps.com
© MSA Professional Services, Inc.

WINTERSTONE DEVELOPMENT
TAIGA DESIGN+BUILD, LLC
GRAND MARAIS MINNESOTA

WATER DETAILS

FILE NO.
17454001
SHEET
G3



NOT USED

PROJECT NO.:	17454001	SCALE:	AS SHOWN	NO.	DATE	REVISION	BY
PROJECT DATE:	12-14-2018	DRAWN BY:	JAS				
F.B.:		CHECKED BY:	AKB				

PLOT DATE: 1/17/19, P:\17400s\1745001\17454001\CADD\Construction Drawings\17454001 Details.dwg

I HEREBY CERTIFY THAT THIS PLAN, REPORT, OR SPECIFICATION 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.

1/10/2019
50396
License No.
JOSEPH L. REWICKA

MSA

ENGINEERING | ARCHITECTURE | SURVEYING
FUNDING | PLANNING | ENVIRONMENTAL

332 W Superior Street, Duluth MN 55802
(218) 722-3915 www.msa-ps.com

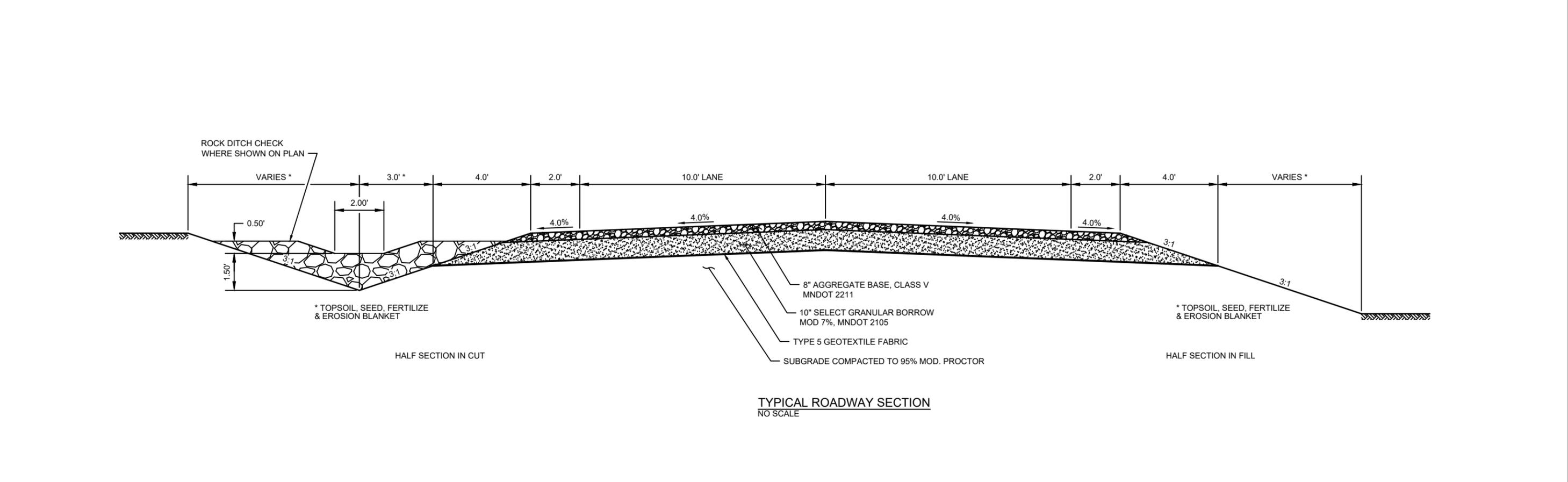
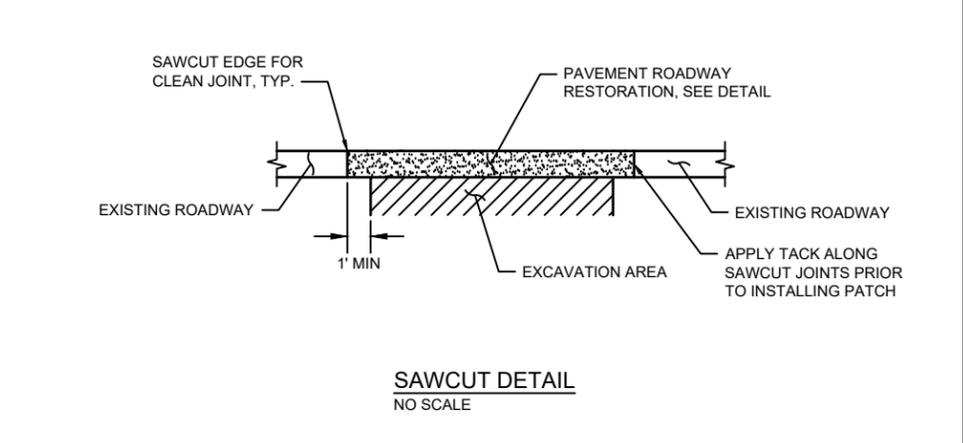
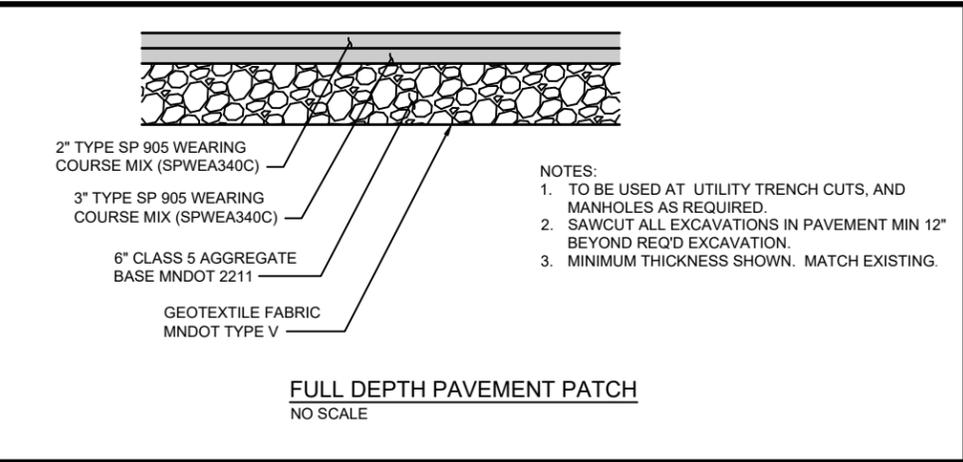
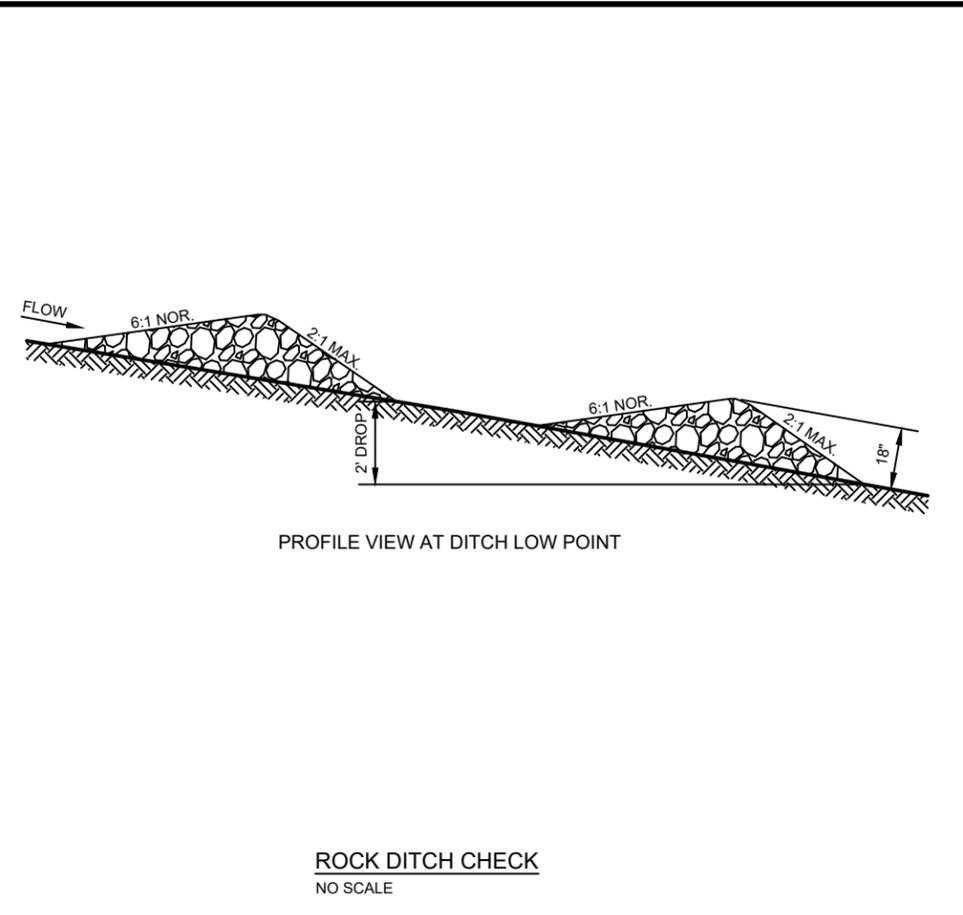
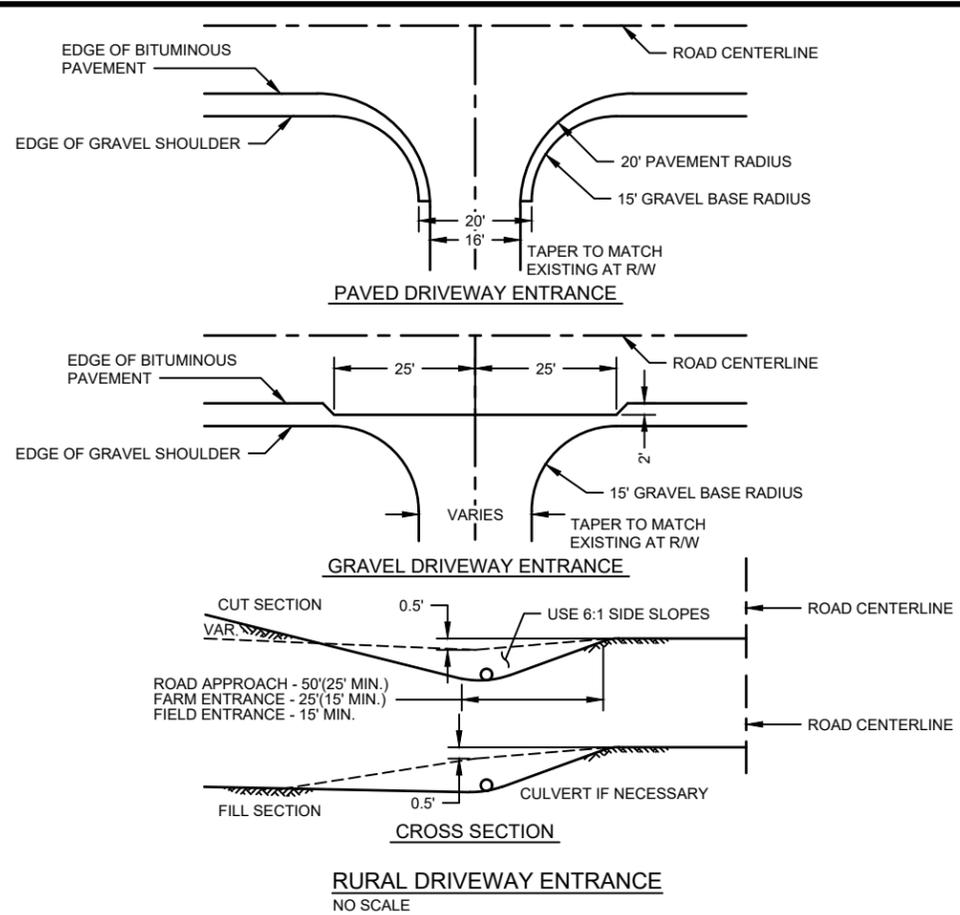
© MSA Professional Services, Inc.

WINTERSTONE DEVELOPMENT
TAIGA DESIGN+BUILD, LLC
GRAND MARAIS MINNESOTA

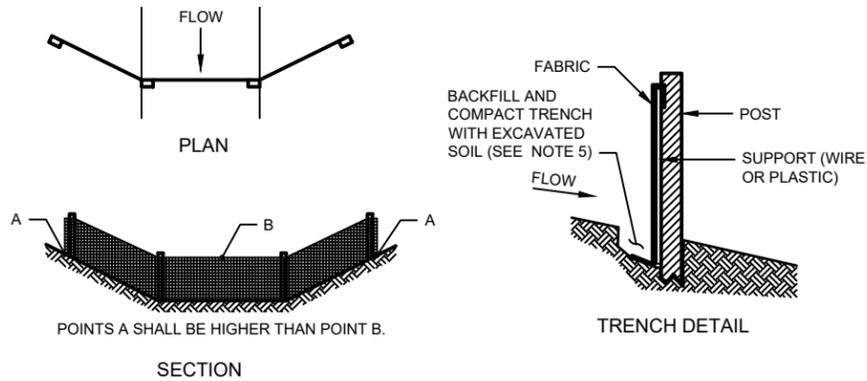
SANITARY DETAILS

FILE NO.
17454001

SHEET
G4



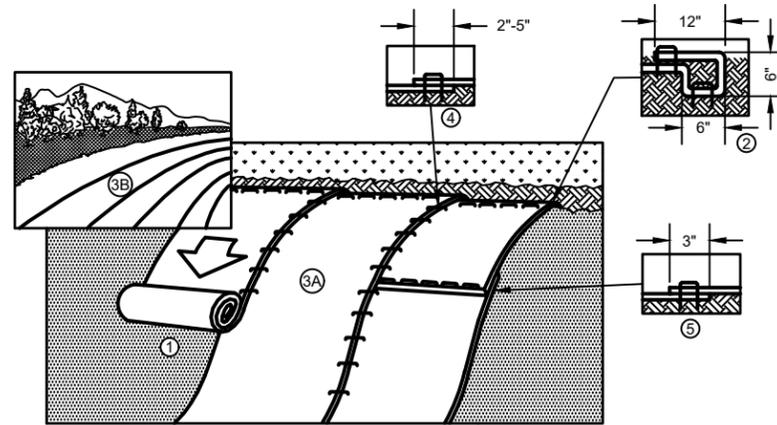
PROJECT NO.: 17454001	SCALE: AS SHOWN	NO.	DATE	REVISION	BY	I HEREBY CERTIFY THAT THIS PLAN, REPORT, OR SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. JOSEPH L. REWICKA License No. 50396 1/10/2019	ENGINEERING ARCHITECTURE SURVEYING FUNDING PLANNING ENVIRONMENTAL 332 W Superior Street, Duluth MN 55802 (218) 722-3915 www.msa-ps.com © MSA Professional Services, Inc.	WINTERSTONE DEVELOPMENT TAIGA DESIGN+BUILD, LLC GRAND MARAIS MINNESOTA	ROADWAY DETAILS	FILE NO. 17454001
PROJECT DATE: 12-14-2018	DRAWN BY: JAS				SHEET G5					
F.B.:	CHECKED BY: AKB									
PLOT DATE: 1/17/19, P:\17400s\17450a\17454\17454001\CADD\Construction Drawings\17454001 Details.dwg										



GENERAL NOTES:

1. DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.
2. WHEN POSSIBLE THE SILT FENCE SHOULD BE CONSTRUCTED IN AN ARC OR HORSESHOE SHAPE, WITH THE ENDS POINTING UPSLOPE TO MAXIMIZE BOTH STRENGTH AND EFFECTIVENESS.
3. CROSS BRACE WITH 2 INCH BY 4 INCH WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS AS DIRECTED BY THE ENGINEER.
4. MINIMUM 14 GAGE WIRE REQUIRED, FOLD FABRIC 3 INCHES OVER THE WIRE AND STAPLE OR PLACE WIRE RINGS 12 INCHES O.C.
5. EXCAVATE A TRENCH A MINIMUM OF 4 INCHES WIDE AND 6 INCHES DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD THE MATERIAL TO FIT TRENCH AND BACKFILL AND COMPACT TRENCH WITH EXCAVATED SOIL.
6. WIRE SUPPORT FENCE SHALL BE 14 GAGE MINIMUM WOVEN WIRE WITH A MAXIMUM MESH SPACING OF 6 INCHES, SECURE TOP OF GEOTEXTILE FABRIC TO TOP OF FENCE WITH STAPLES OR WIRE RINGS AT 12 INCHES O.C.
7. GEOTEXTILE FABRIC SHALL BE REINFORCED WITH AN INDUSTRIAL POLYPROPYLENE NETTING WITH A MAXIMUM MESH SPACING OF 3/4 INCH OR EQUAL. A HEAVY DUTY NYLON TOP SUPPORT CORD OR EQUIVALENT IS REQUIRED.
8. STEEL POSTS SHALL BE STUDDED "TEE" OR "U" TYPE WITH A MINIMUM WEIGHT OF 1.28 LBS./LIN. FT. (WITHOUT ANCHOR). FIN ANCHORS SUFFICIENT TO RESIST POST MOVEMENT ARE REQUIRED. WOOD POSTS SHALL BE 4 INCH IN DIAMETER OR 1- 1/2 INCH BY 3- 1/2 INCH EXCEPT WOOD POSTS FOR GEOTEXTILE FABRIC REINFORCED WITH NETTING SHALL BE A MINIMUM OF 1- 1/8 INCH BY 1- 1/8 INCH OAK OR HICKORY.

TYPICAL SILT FENCE INSTALLATION AT DRAINAGE WAYS DETAIL
NO SCALE

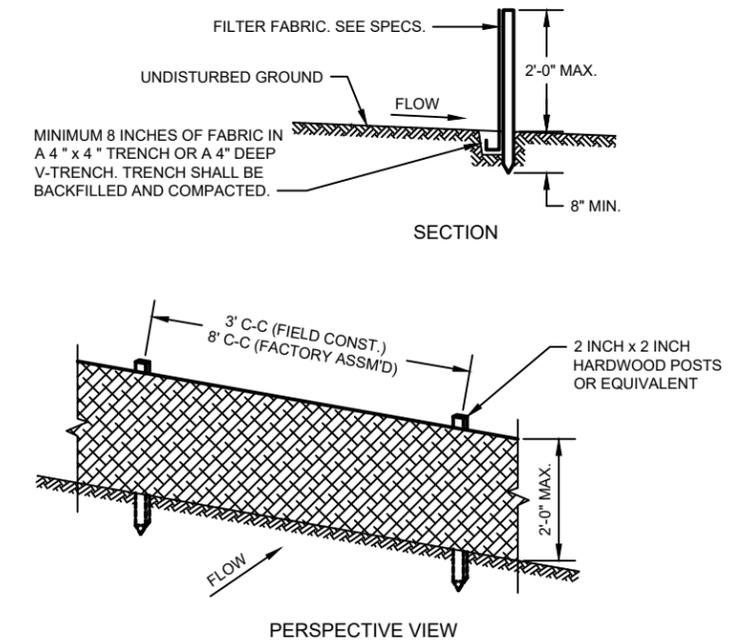


1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5 CM-12.5 CM) OVERLAP DEPENDING ON BLANKET TYPE.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE BLANKET WIDTH.

NOTE:

"IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

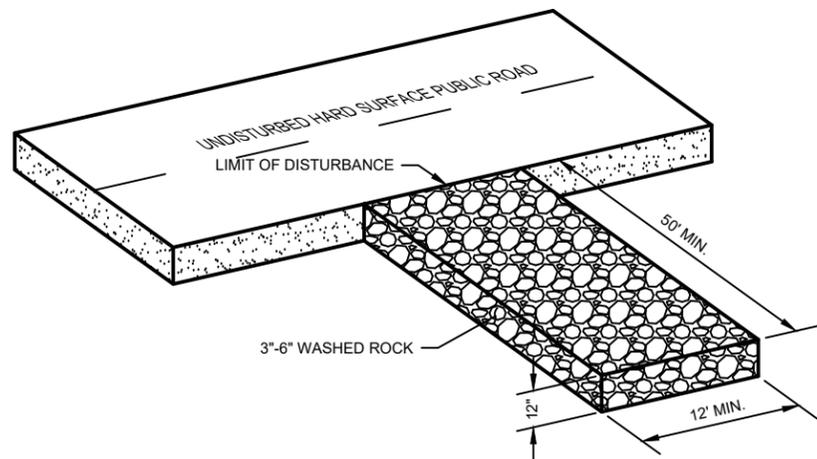
EROSION CONTROL BLANKET SLOPE INSTALLATION
NO SCALE



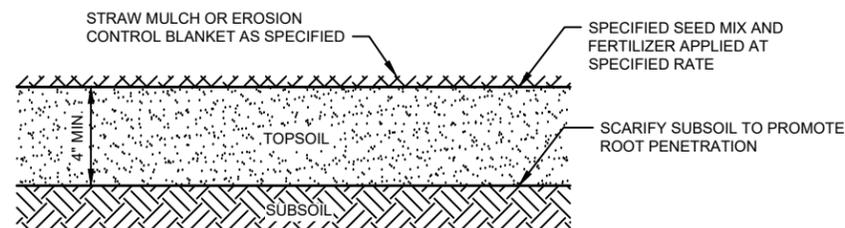
GENERAL NOTES:

1. ENDS OF FENCE SHALL BE TURNED UPSLOPE 1 TO 2 FEET IN ELEVATION TO PREVENT FLANKING.
2. STAPLE FABRIC WITH 1/2 INCH (MINIMUM) STAPLES TO THE UPSLOPE SIDE OF THE POSTS.
3. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.

TYPICAL SILT FENCE INSTALLATION AT SITE PERIMETER DETAIL
NO SCALE

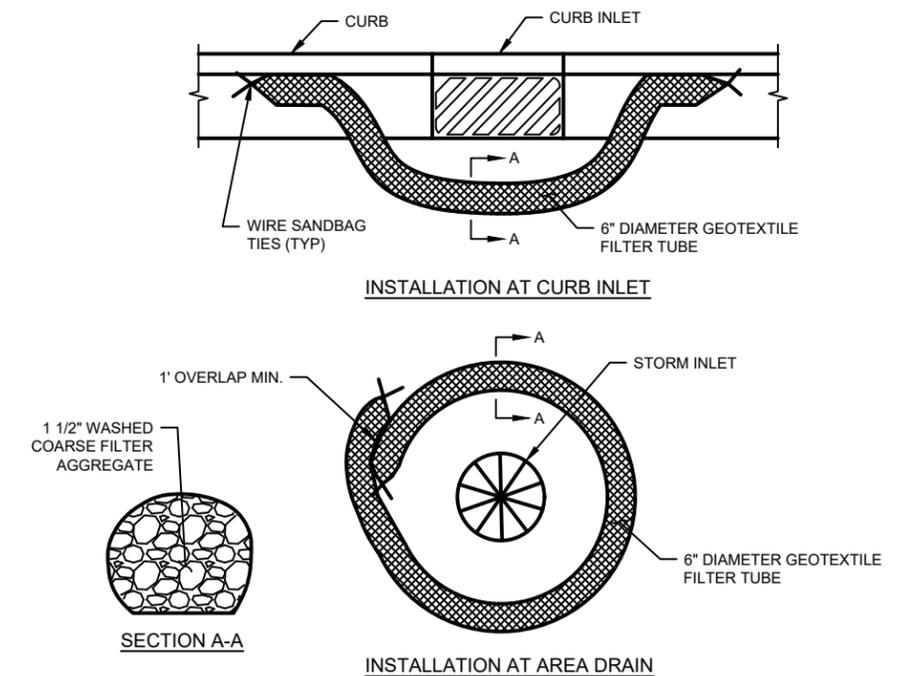


VEHICLE TRACKING PAD
NO SCALE



NOTE: WHERE REQUIRED, PLANT HERBACEOUS PLUGS ACCORDING TO PLAN, OR AS DIRECTED BY ENGINEER.

TOPSOIL AND SEEDING DETAIL
NO SCALE



NOTES:

1. ANCHOR AS NECESSARY
2. MAY ALSO BE USED AS SLOPE BREAK.
3. PROVIDE SHALLOW DEPRESSION UPSTREAM FOR SEDIMENT STORAGE WHERE POSSIBLE.
4. OVERLAP ENDS OF BAGS MINIMUM OF 1'.

FILTER ROCK LOG DETAIL
NO SCALE

PROJECT NO.:	17454001	SCALE:	AS SHOWN	NO.		DATE		REVISION		BY	
PROJECT DATE:	12-14-2018	DRAWN BY:	JAS								
F.B.:		CHECKED BY:	AKB								

I HEREBY CERTIFY THAT THIS PLAN, REPORT, OR SPECIFICATION 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.

1/10/2019
50396
License No.
JOSEPH L. REWICKA

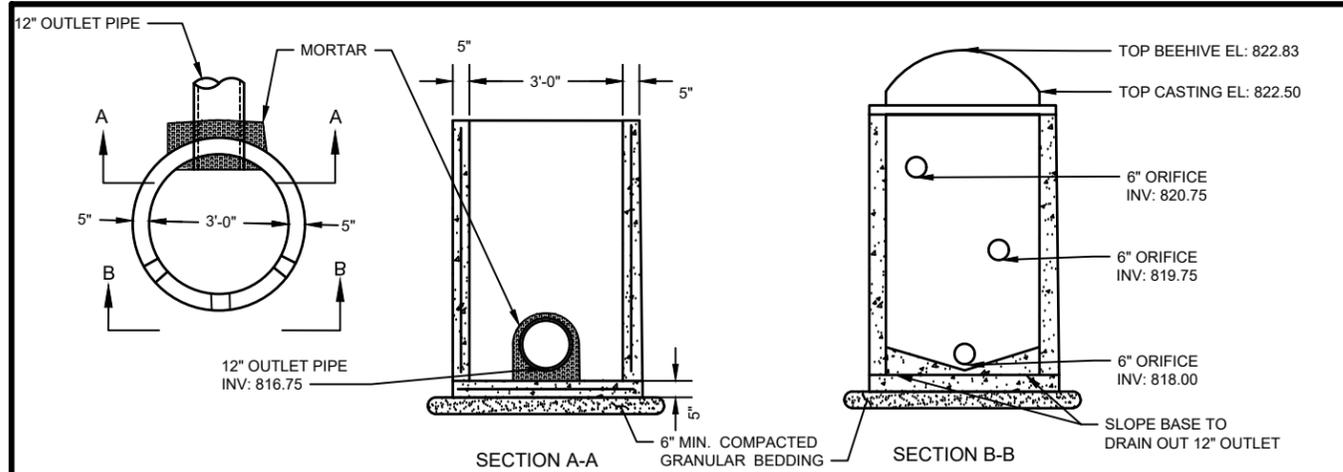


ENGINEERING | ARCHITECTURE | SURVEYING
FUNDING | PLANNING | ENVIRONMENTAL
332 W Superior Street, Duluth MN 55802
(218) 722-3915 www.msa-ps.com
© MSA Professional Services, Inc.

WINTERSTONE DEVELOPMENT
TAIGA DESIGN+BUILD, LLC
GRAND MARAIS MINNESOTA

EROSION CONTROL DETAILS

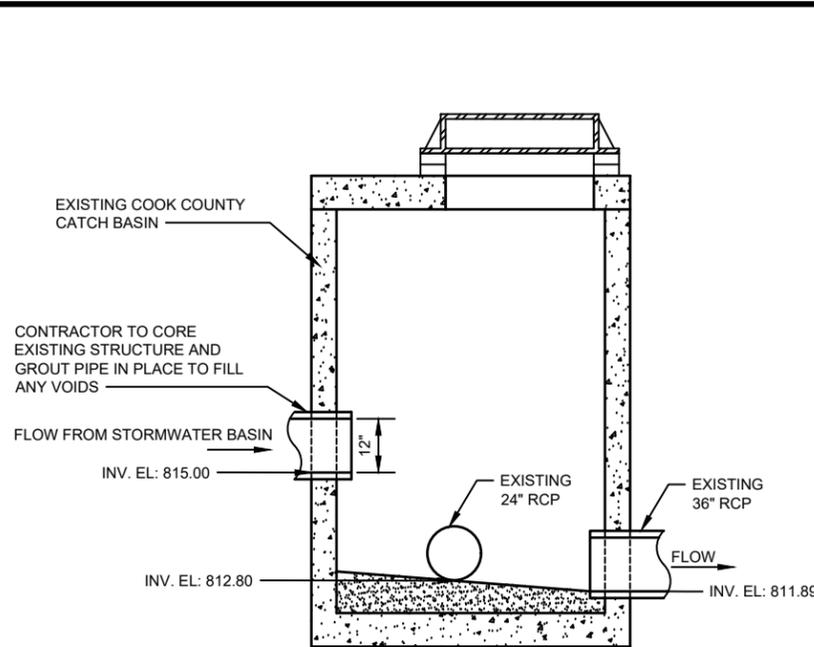
FILE NO.
17454001
SHEET
G6



GENERAL NOTES:

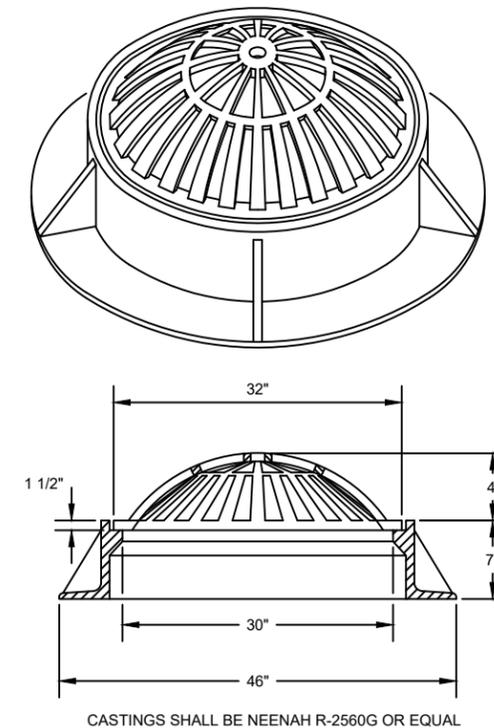
1. SEE PLANS FOR SIZE, NUMBER, AND LOCATION OF PIPES.
2. DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE SPECIFICATIONS.
3. DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.
4. ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.
5. PRECAST REINFORCED BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS FOR GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.
6. PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON THE STRUCTURES. THE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.
7. ALL BAR STEEL AND WELDED WIRE FABRIC REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
8. PRECAST REINFORCED CONCRETE RISERS SHALL BE PLACED WITH TONGUE DOWN.

DRAINAGE OUTLET STRUCTURE DETAIL
NO SCALE

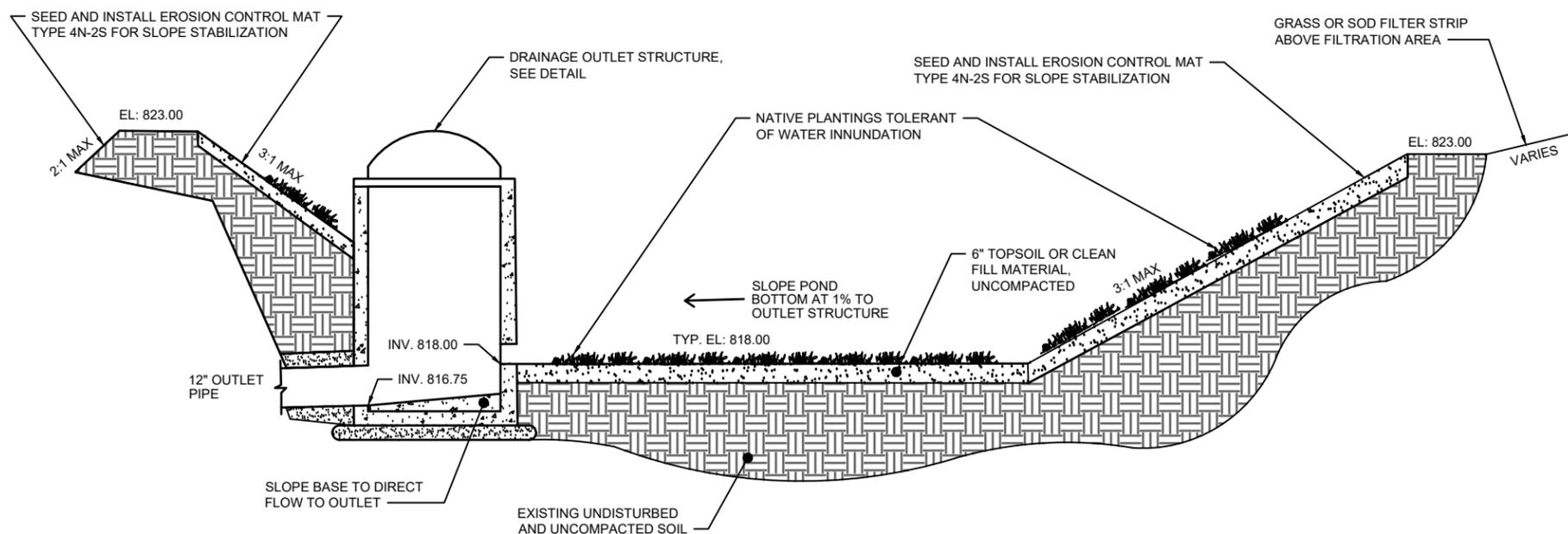


- NOTE:**
1. CONNECTION SHALL MEET THE CURRENT STANDARDS AS NOTED IN THE SPECIFICATIONS.

STORM SEWER CONNECTION
NO SCALE



BEEHIVE CASTING
NO SCALE



- NOTE:**
1. CLEAN SAND SHALL BE CONSISTENT WITH AASHTO M-6 ORASTM C-33 WITH A GRAIN SIZE OF 0.02" TO 0.04".
 2. ORGANIC COMPOST SHALL BE Mn/DOT GRADE 2.

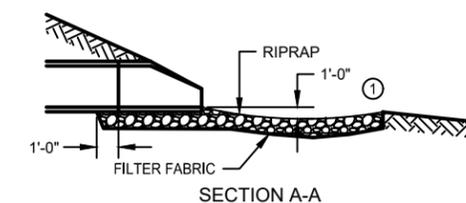
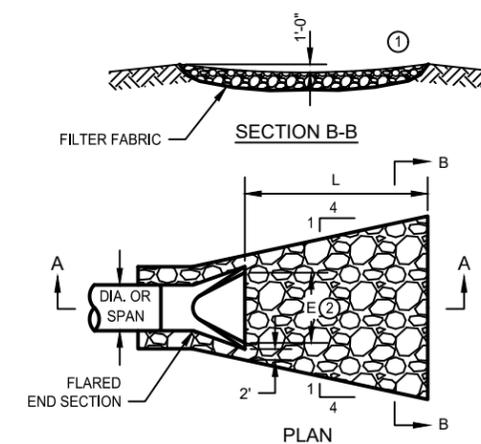
TYPICAL SECTION, STORMWATER BASIN
NO SCALE

**TABLE OF QUANTITIES
RIPRAP AT RCP OUTLETS**

DIA. OF ROUND PIPE (IN.)	L (FT.)	CLASS II	CLASS III	CLASS IV
		d50=6"	d50=9"	d50=12"
12	8	2.8	4.1	5.5
15	8	2.9	4.4	5.8
18	10	3.9	5.9	7.8
21	10	4.2	6.3	8.4
24	12	5.5	8.3	11.0
27	12	5.8	8.7	11.6
30	14	7.3	10.9	14.5
36	16	9.2	13.8	18.3
42	18	10.9	16.3	21.7
48	20	12.9	19.4	25.8

**TABLE OF QUANTITIES
RIPRAP AT RCP-A OUTLETS
OR BOXES OF EQUIVALENT SPAN WIDTH**

SPAN OF PIPE ARCH (IN.)	L (FT.)	CLASS II	CLASS III	CLASS IV
		d50=6"	d50=9"	d50=12"
22	10	3.9	5.9	7.8
28	12	5.5	8.2	10.9
36	14	7.2	10.8	14.3
43	16	9.2	13.7	18.3
51	18	10.9	16.3	21.7
58	20	12.7	19.0	25.4



- NOTES:**
- PIPE SIZES LARGER THAN THOSE SHOWN REQUIRE A SPECIAL DESIGN.
 - REQUIREMENTS FOR RIPRAP SIZE AND THICKNESS AND FILTER BLANKET WILL BE DESIGNATED IN THE PLANS.
 - ① FOR PIPES GREATER THAN OR EQUAL TO 30" USE 1.5'.
 - ② DIMENSION E IS GIVEN ON STANDARD PLATES 3100 AND 3110.

RIP RAP AT OUTLETS
NO SCALE

PROJECT NO.	17454001	SCALE	AS SHOWN	NO.	DATE	REVISION	BY
PROJECT DATE:	12-14-2018	DRAWN BY:	JAS				
F.B.:		CHECKED BY:	AKB				

I HEREBY CERTIFY THAT THIS PLAN, REPORT, OR SPECIFICATION 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.

1/10/2019
50396
License No.
JOSEPH J. REWICKA



ENGINEERING | ARCHITECTURE | SURVEYING
FUNDING | PLANNING | ENVIRONMENTAL
332 W Superior Street, Duluth MN 55802
(218) 722-3915 www.msa-ps.com
© MSA Professional Services, Inc.

WINTERSTONE DEVELOPMENT
TAIGA DESIGN+BUILD, LLC
GRAND MARAIS MINNESOTA

STORM DETAILS

FILE NO.
17454001
SHEET
G7

NPDES STORM WATER POLLUTION PREVENTION PLAN (SWPPP) CONSTRUCTION NOTES

THIS PROJECT INCLUDES THE DEVELOPMENT OF A 2.74 ACRE SITE IN GRAND MARAIS, IN COOK COUNTY, MINNESOTA. THIS DEVELOPMENT WILL INCLUDE THE CONSTRUCTION OF A GRAVEL ROAD, INSTALLATION OF UTILITIES AND ROUGH GRADING OF 8 BUILDING LOTS. THIS PROJECT WILL RESULT IN AN OVERALL INCREASE OF IMPERVIOUS AREA OF 0.835 ACRES TOTAL. THE SITE WILL BE DRAINED TO A STORMWATER COLLECTION POND ON THE SOUTH WEST SIDE OF THE PROPERTY WITH SOME OF THE PROPERTY DRAINING TO THE EXISTING ROCK LINED COUNTY DITCH TO THE EAST OF THE PROPERTY. EXCESS FLOW DURING FLOOD CONDITIONS WILL RUNOFF TO THE ROCK LINED COUNTY DITCH TO THE EAST BASED ON THE HISTORICAL DRAINAGE OF THE SITE.

PROJECT ENGINEER: MSA PROFESSIONAL SERVICES JOSEPH J. JUREWICZ, P.E. 332 W. SUPERIOR STREET, SUITE 600 DULUTH, MN 55802 (218) 499-3176 jjurewic@msa-ps.com	AREA HYDROLOGIST: MINNESOTA DNR CLIFF BENTLEY 1568 HWY 2 TWO HARBORS, MN 55616 (218) 834-1441 cliff.bentley@state.mn.us	PROJECT OWNER: TAIGA DESIGN + BUILD, LLC ANTON MOODY, OWNER P.O. BOX 1428 GRAND MARAIS, MN 55604 (218) 370-0944 Anton.Moody@gmail.com	COOK COUNTY SOIL AND WATER CONSERVATION DISTRICT: ILENA HANSEL, DISTRICT MANAGER 411 W. 2ND ST. GRAND MARAIS, MN 55604 (218) 387-3648 ilena.hansel@co.cook.mn.us
--	---	---	--

TIMING OF BMP INSTALLATION

THE EROSION AND SEDIMENTATION CONTROL BMPS SHALL BE INSTALLED AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND CAPTURE SEDIMENT ON SITE, AND SHALL MEET THE NPDES PERMIT PART IV CONSTRUCTION ACTIVITY REQUIREMENTS.

- TEMPORARY PERIMETER CONTROL BMPS WILL BE INSTALLED BEFORE ANY UP GRADIENT SOIL DISTURBANCE OCCURS.
- PERMANENT AND TEMPORARY SEDIMENT TRAPS AND BASINS (IF APPLICABLE) WILL BE CONSTRUCTED BEFORE ANY CONVEYANCE OR DEWATERING OCCURS.
- TOPSOIL AND TEMPORARY EROSION CONTROL BMPS SHALL BE PLACED WITHIN 3 DAYS OF COMPLETION OF EMBANKMENT.
- PLACEMENT OF RIPRAP SHALL BE COMPLETED WITHIN 24 HOURS OF SHORELINE DISTURBANCE OR CULVERT PLACEMENTS AND DONE IN ONE CONTINUOUS OPERATION.
- ONCE CONSTRUCTION ACTIVITY CEASES FOR 3 DAYS OR MORE IN AN AREA, THAT AREA WILL BE STABILIZED WITH TEMPORARY OR PERMANENT BMPS FOR EROSION.

CALCULATIONS

TOTAL DISTURBED AREA = 1.74 ACRES
ACRES POST CONSTRUCTION IMPERVIOUS AREA = 0.868 ACRES
EXISTING IMPERVIOUS AREA = 0.00 ACRES
IMPERVIOUS NET = 0.868 ACRES

- CONSTRUCTION SHALL BE GOVERNED BY THE APPLICABLE DEMOLITION PERMITS AND MN/DOT SPECIFICATIONS (WHERE APPLICABLE).
- THE CONTRACTOR SHALL KEEP WRITTEN INSPECTION AND MAINTENANCE LOGS (INCLUDING ALL CLEAN OUT AND CORRECTIVE ACTIONS) IN ACCORDANCE WITH THIS SWPPP AND ALL PERMITS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION AND MAINTENANCE OF THE EROSION AND SEDIMENT CONTROL BMPS BEFORE AND DURING CONSTRUCTION.
- ALL MATERIAL SHALL BE MAINTAINED IN STOCKPILE AREAS, PROTECTED AS NOTED. NO ADDITIONAL IMPERVIOUS AREA SHALL BE CREATED THROUGH THE PROPOSED ACTION.

CONSTRUCTION PRACTICES TO MINIMIZE STORM WATER CONTAMINATION

TO PREVENT STORM WATER CONTAMINATION FROM OCCURRING, THE FOLLOWING BMPS WILL BE IMPLEMENTED:

- ALL AREAS THAT ARE ROUGH GRADED MUST BE KEPT IN A SMOOTH CONDITION TO ALLOW SHEET FLOW OF STORM WATER WHEREVER PRACTICAL AND ALWAYS READY FOR SURFACE APPLICATION OF DEGRADABLE OR NON-DEGRADABLE BLANKETS, MULCH, OR OTHER PROTECTIVE COVERS.
- A STABILIZED CONSTRUCTION ENTRANCE/EXIT WILL BE CONSTRUCTED TO REDUCE VEHICLE TRACKING OF SEDIMENTS OFF THE PROJECT SITE.
- ALL SOLID WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER OR OTHER APPROVED CONTAINMENT METHOD AT THE END OF EACH DAY. ANY ALTERNATIVE TO A METAL DUMPSTER MUST BE SUBMITTED IN WRITING FOR APPROVAL BY THE PROJECT ENGINEER. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED AS NECESSARY TO FUNCTION AS INTENDED FOR DEBRIS COLLECTION. NO CONSTRUCTION MATERIALS WILL BE BURIED ON-SITE. THE CONTRACTOR'S EROSION CONTROL SUPERVISOR WILL INSTRUCT ALL PERSONNEL REGARDING THE CORRECT PROCEDURE FOR DISPOSAL.
- RECYCLABLE MATERIALS MUST BE SEPARATED ON-SITE AND SEGREGATED IN DESIGNATED CONTAINERS.
- A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR WILL COLLECT ALL SANITARY WASTE FROM THE PORTABLE UNITS AT A RATE NECESSARY TO MAINTAIN DESIGNED FUNCTION.
- ALL VEHICLES ON SITE WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE.
- FERTILIZERS WILL BE STORED IN A COVERED SHED AND PARTIALLY USED BAGS WILL BE TRANSFERRED TO A SEALABLE BIN TO REDUCE THE CHANCE OF SPILLAGE.
- PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS, WHICH ARE CLEARLY LABELED.
- SPILL KITS WILL BE INCLUDED WITH ALL FUELING SOURCES AND MAINTENANCE ACTIVITIES. SECONDARY CONTAINMENT MEASURES WILL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR.
- ANY ASPHALT SUBSTANCES USED ON SITE WILL BE APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
- ALL PAINT CONTAINERS AND CURING COMPOUNDS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM WATER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTION.
- MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEAN-UP SHALL BE READILY AVAILABLE AND BE KEPT IN AN ENCLOSED TRAILER OR SHED ON SITE. EQUIPMENT WILL INCLUDE, BUT NOT LIMITED TO, BROOMS, MOPS, DUST PANS, RAGS, GLOVES, GOGGLES, ABSORBENT (KITTY LITTER, OIL ABSORBENT BOOMS AND DIAPERS) AND BUCKETS.
- ALL SPILLS WILL BE CONTAINED AND CLEANED UP IMMEDIATELY UPON DISCOVERY. SPILLS LARGE ENOUGH TO REACH THE STORM WATER CONVEYANCE SYSTEM WILL BE REPORTED TO THE MPCA DUTY OFFICER AT 1-800-422-0798.
- CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE UNLESS DONE IN AN ENGINEERED CONTAINMENT SYSTEM. THE ENGINEERED SYSTEM MUST INCLUDE SITE DRAWINGS FOR THE PROJECT FILE AND WRITTEN ASSURANCE THAT THE SYSTEM WILL WORK AS DESIGNED AND LEAVE NO DISCHARGE OF CONCRETE OR CONCRETE RESIDUE POTENTIAL TO ENTER WATERS OF THE STATE.
- FORM RELEASE OIL USED FOR CONCRETE WORK MUST BE APPLIED OVER A PALLET CONTAINING ABSORBENT WORK TO COLLECT EXCESS LIQUID. THE ABSORBENT MATERIAL WILL BE REPLACED AND PROPERLY DISPOSED OF WHEN SATURATED.
- DISCHARGES FROM BASIN DEWATERING OPERATIONS THAT ARE TURBID OR SEDIMENT LADEN SHALL BE DISCHARGED TO TEMPORARY SEDIMENT BASINS CONSTRUCTED ON THE SITE TO PROVIDE TREATMENT PRIOR TO DISCHARGE TO A WATER OF THE STATE.

TMDL IMPLEMENTATION PLANS CONTAINING STORM WATER REQUIREMENTS

NO TMDL IMPLEMENTATION PLANS CURRENTLY EXIST FOR THE RECEIVING WATERS ON THIS PROJECT.

SUMMARY OF EROSION CONTROL ITEMS		
LOCATION	SILT FENCE	INLET PROTECTION
PROJECT SITE	900 LF	3

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN		
DESCRIPTION	TITLE	LOCATION
SUMMARY OF PERVIOUS AND IMPERVIOUS	SWPPP NOTES	SHEET G8
DIRECTION OF FLOW/DRAINAGE AREA	GRADING PLAN	SHEET ST2
RECEIVING SURFACE WATERS	SWPPP NOTES	SHEET G8
NO DISTURBANCE AREAS AND AREAS OF PHASED CONSTRUCTION	NA	NA
DRAINAGE STRUCTURES	STORM DETAILS	SHEET G7
DRAINAGE TABULATIONS	SWPPP NOTES	SHEET G8
EROSION CONTROL TABULATIONS	SWPPP NOTES	SHEET G8
EROSION CONTROL SHEETS	EROSION CONTROL PLAN	SHEET ST3
EROSION CONTROL DETAILS	EROSION CONTROL DETAILS	SHEET G6
SEDIMENT CONTROL PRACTICES	SWPPP NOTES	SHEET G8
FINAL STABILIZATION	SWPPP NOTES	SHEET G8
SEDIMENT BASIN (POND) TABULATIONS	NA	NA
POND SHEETS (SEDIMENT BASINS)	GRADING PLAN/STORM DTL	SHEET ST2 & G7
LOCATIONS OF PONDS	GRADING PLAN	SHEET ST2

SWPPP IMPLEMENTATION CONTACTS			
AGENCY	PERMIT	NAME	PHONE/E-MAIL
CONTRACTOR'S EROSION CONTROL SUPERVISOR		ANTON MOODY	(218) 262-6622 anton.moody@gmail.com
MPCA	NPDES	JIM DEXTER	(218) 302-6632 james.dexter@state.mn.us
SWCD	N/A	ILENA HANSEL	218-387-3648 ilena.hansel.co.cook.mn.us
MnDNR WATERS AREA HYDROLOGIST	N/A	CLIFF BENTLEY	(218) 834-1441 cliff.bentley@state.mn.us
CORPS OF ENGINEERS	N/A		651-290-5525
STATE DUTY OFFICER	N/A	MPCA	800-422-0798

EROSION CONTROL NOTES

- MNDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION (2016 EDITION) SHALL APPLY.
 - SUBMIT INITIAL EROSION CONTROL (EC) SCHEDULE AT OR BEFORE THE PRECONSTRUCTION CONFERENCE.
 - SUBMIT EC SCHEDULE ALTERATIONS/ADJUSTMENTS WEEKLY THEREAFTER FOR ENGINEER'S APPROVAL.
- THE CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL QUALITY CONTROL (WC) ON THIS PROJECT. CONTRACTOR SHALL PHASE/SEQUENCE THE PROJECT TO MINIMIZE EXPOSURE TO EROSION. CONTRACTOR SHALL PLACE OR OTHERWISE CONSTRUCT EROSION CONTROL AND SEDIMENT CONTAINMENT DEVICES TO MINIMIZE THE RUNOFF, TRACKING, AND SEDIMENT LOSS FROM DISTURBED AREAS OF THE PROJECT SITE.
- DISTURBED SLOPES NOT ACTIVELY WORKED SHALL BE PROTECTED FROM SOIL EROSION WITH TEMPORARY OR PERMANENT COVER WITHIN 3 DAYS OF BEING WORKED. EROSION CONTROL BLANKET AND SOIL STAPLES SHALL BE USED.
- AT MINIMUM, THE FOLLOWING CONTROLS WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE:
 - EROSION CONTROL BLANKETS SHALL BE USED ON ALL SLOPES 1:3(V:H) OR STEEPER
 - SILT FENCES SHALL BE USED IN CONJUNCTION WITH OTHER EROSION BMPS
 - ROCK DITCH CHECKS OR APPROVED EQUAL ARE TO BE USED TO REDUCE DITCH VELOCITIES AND REDUCE EROSION
 - STORM INLET AND OUTLET AREAS SHALL BE CONTINUOUSLY PROTECTED WITH MNDOT APPROVED DEVICES/METHODS
 - STABILIZED CONSTRUCTION ENTRANCE, OR REUSABLE MUD MAT SHALL BE USED TO REDUCE SEDIMENT TRACKING
 - PERMANENT VEGETATION WILL BE ESTABLISHED IMMEDIATELY AFTER TOPSOIL IS SPREAD
 - CONTROL ALL SITE SOLID WASTE, DEBRIS, MATERIAL STORAGE AND CONCRETE WASHOUT ON SITE. NO MIGRATION OF SEDIMENT OFFSITE OR INTO DITCHES/STORM SYSTEMS PERMITTED
- ALL SLOPES AND DITCHES SHALL BE STABILIZED PRIOR TO OPENING NEW CULVERTS INTO EXISTING DRAINAGE WAYS.
- IF ANY STOCKPILE IS TO REMAIN IN PLACE FOR MORE THAN THREE DAYS.
- WATER PUMPED OR OTHERWISE DISCHARGED FROM THE SITE DURING CONSTRUCTION DEWATERING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS.
- THE CONTRACTOR SHALL TAKE ALL POSSIBLE PRECAUTIONS TO PREVENT APPRECIABLE SOIL TRACKING ONTO ROADWAYS. APPRECIABLE SOIL, MUD, OR DEBRIS WASHED, TRACKED, OR DEPOSITED ONTO PAVED SURFACES SHALL BE REMOVED PRIOR TO THE END OF EACH WORK DAY.
- STABILIZED CONSTRUCTION ENTRANCE(S) SHALL BE REMOVED AND AREA RESTORED AFTER GRADING IS COMPLETE.
- THE CONTRACTOR QC PROGRAM SHALL ENSURE THAT A COMPETENT INDIVIDUAL SHALL INSPECT EROSION AND SEDIMENT CONTROL DEVICES WEEKLY AND AFTER EACH RAIN EVENT. ALL NONFUNCTIONAL DEVICES SHALL BE REPAIRED/REPLACED/CLEANED. MAINTAIN A WRITTEN LOG OF ALL WEEKLY INSPECTIONS AND RAIN EVENTS - INCLUDE THE CORRECTIVE ACTIONS THAT WERE TAKEN.
- THE CONTRACTOR SHALL MAINTAIN THE CAPABILITY TO IMPLEMENT RAPID STABILIZATION METHOD 4 (MNDOT 2573.4) AT ALL TIMES. INCLUDES CAT III EROSION CONTROL BLANKET (ECB) [N. AMERICAN GREEN S150 OR APPROVED EQUAL] ALONG WITH SEED MIXTURE, FERTILIZER, AND SOIL STAPLES PER 2573-3. THE UPGRADIENT END OF EACH BLANKET STRIP SHALL BE BURIED AT LEAST 6 INCHES IN A VERTICAL CHECK SLOT. STAPLES SHALL BE PLACED AT SEAMS AND THROUGHOUT THE BLANKET AT A MAXIMUM SPACING IN ALL DIRECTIONS OF 2 FEET. PAYMENT ALLOWED SHALL BE PER CONTRACT BID PRICE OR IN ABSENCE OF CONTRACT BID PRICE IN ACCORDANCE WITH MNDOT SPECIFICATION 2575.5
- COVER DEBRIS AND CRUSHING STOCKPILES. PROVIDE SILT FENCING AROUND PERIMETER OF STOCKPILE AREAS.
- REPLACE TOPSOIL AND SEED ALL AREAS DISTURBED BY WORK.

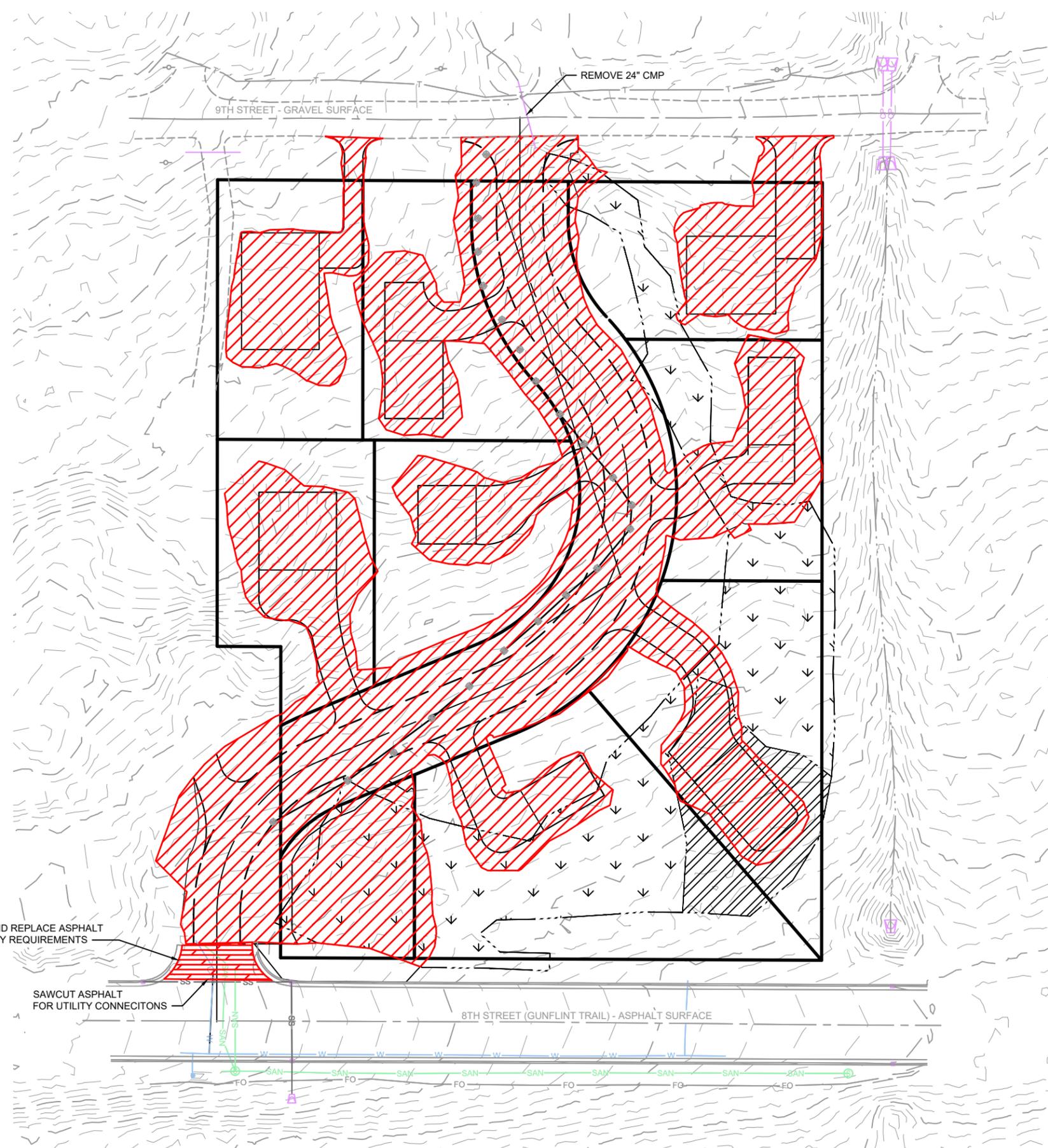
TRAINING

TRAINING IS REQUIRED FOR ALL PERMITTED PROJECTS AFTER FEBRUARY 1, 2010. IT MUST BE PROVIDED BY ENTITIES W/ EXPERTISE IN EROSION PREVENTION, SEDIMENT CONTROL OR PERMANENT STORMWATER MANAGEMENT. TRAINING MUST BE FOCUSED ON THE INDIVIDUAL'S JOB DUTIES AS THEY RELATE TO PERMIT REQUIREMENTS (PART III.A.2).

INDIVIDUALS WHO MUST BE TRAINED INCLUDE:
A. INDIVIDUALS PREPARING THE SWPPP FOR THE PROJECT.

SWPPP DESIGNER:

NAME: JOSEPH J. JUREWICZ
TITLE: PROJECT ENGINEER
COMPANY: MSA PROFESSIONAL SERVICES, INC.
DATE OF TRAINING: FEBRUARY, 2013, NOVEMBER, 2015
TRAINING CERTIFICATION: DESIGN OF CONSTRUCTION SWPPP
EXPIRATION: 2019
TRAINING ENTITY: U. OF MINNESOTA, DEPT. OF BIOPRODUCTS AND BIOSYSTEMS ENGINEERING
INSTRUCTORS: JOHN CHAPMAN, TODD SMITH
PROFESSIONAL TRAINING HOURS: 12



LEGEND

CLEAR & GRUB 

REMOVE AND REPLACE ASPHALT 

CLEARING: 1.67 ACRES
WETLAND DISTURBANCE: 9,471 SF

REMOVE AND REPLACE ASPHALT PER COUNTY REQUIREMENTS

SAWCUT ASPHALT FOR UTILITY CONNECTIONS

8TH STREET (GUNFLINT TRAIL) - ASPHALT SURFACE

9TH STREET - GRAVEL SURFACE

REMOVE 24" CMP

PROJECT NO.	17454001	SCALE	AS SHOWN	NO.	DATE	REVISION	BY
PROJECT DATE:	12-14-2018	DRAWN BY:	JAS				
F.B.:		CHECKED BY:	AKB				

I HEREBY CERTIFY THAT THIS PLAN, REPORT, OR SPECIFICATION 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.

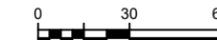
1/10/2019
50396
License No.
JOSEPH L. REMICK

MSA
ENGINEERING | ARCHITECTURE | SURVEYING
FUNDING | PLANNING | ENVIRONMENTAL
332 W Superior Street, Duluth MN 55802
(218) 722-3915 www.msa-ps.com
© MSA Professional Services, Inc.

WINTERSTONE DEVELOPMENT
TAIGA DESIGN+BUILD, LLC
GRAND MARAIS MINNESOTA

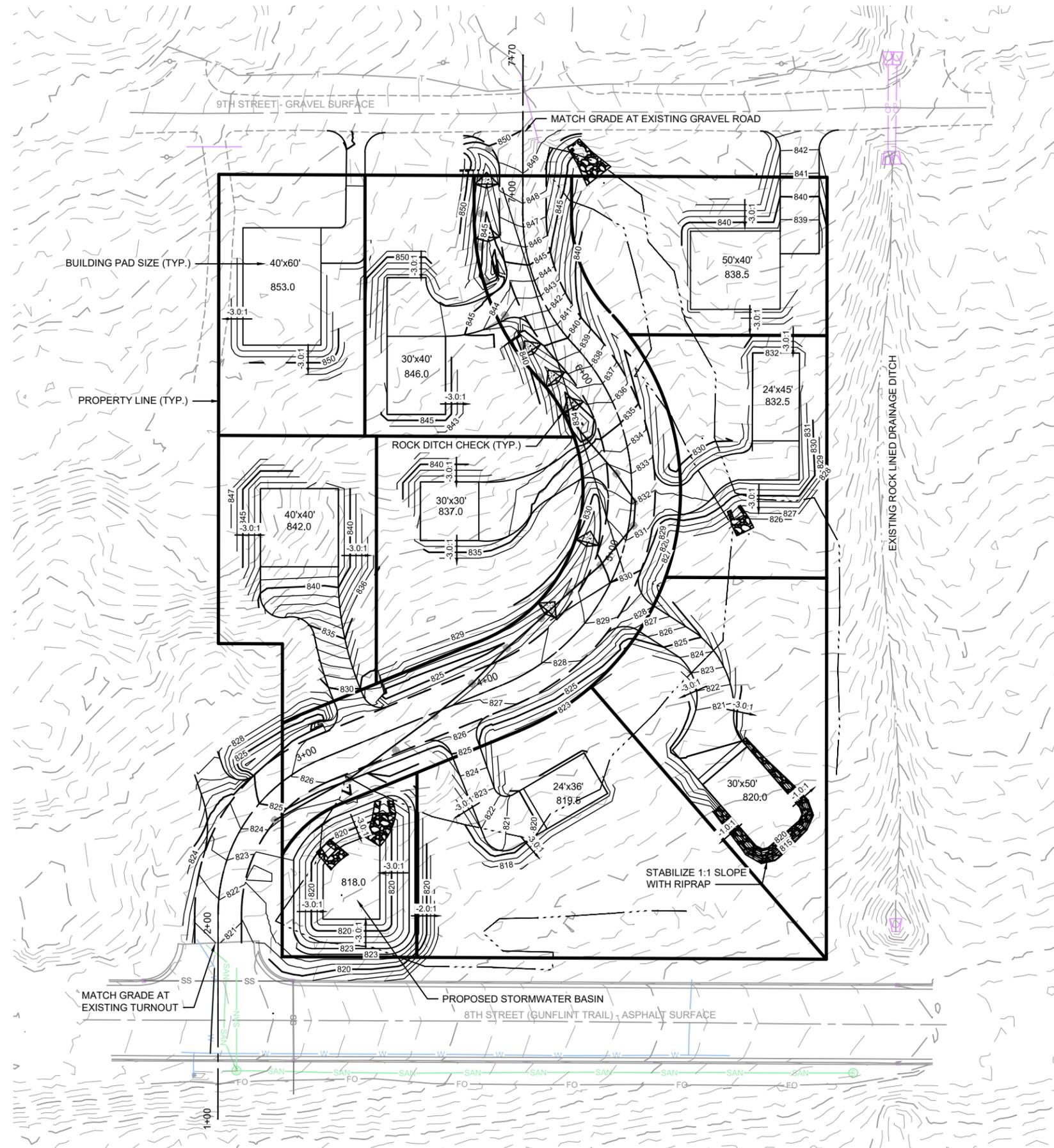
CLEARING & DEMOLITION
PLAN

FILE NO.
17454001
SHEET
ST1



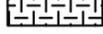
PROPOSED LAND USE BREAKDOWN:

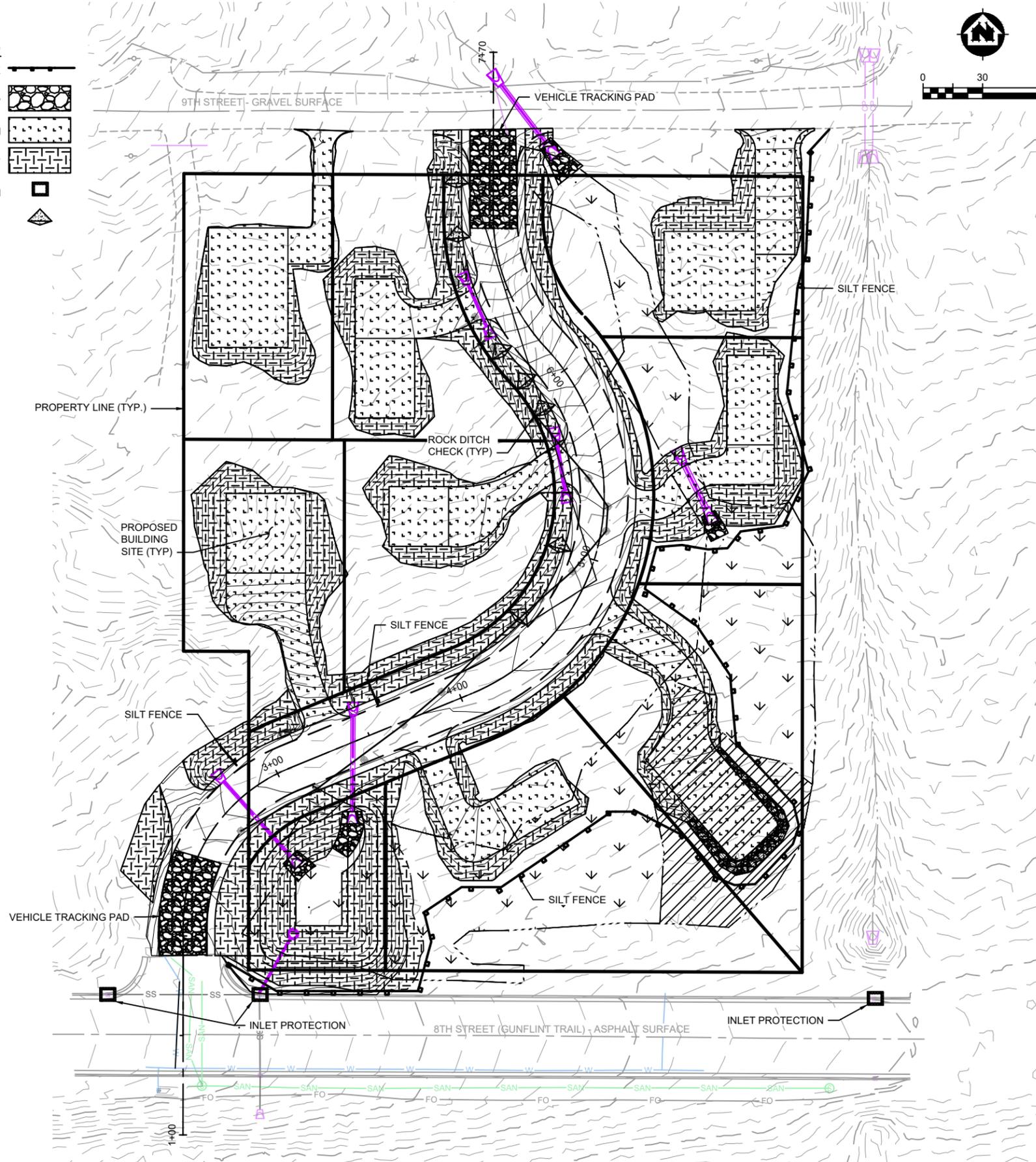
TOTAL PROPERTY AREA:	119,518 SF
AREA IMPACTED BY CONSTRUCTION:	72,699 SF
IMPERVIOUS AREA ADDED:	36,512 SF
PERVIOUS AREA:	78,992 SF
STORMWATER BASIN:	4,014 SF



PROJECT NO.: 17454001	SCALE: AS SHOWN	NO.	DATE	REVISION	BY	I HEREBY CERTIFY THAT THIS PLAN, REPORT, OR SPECIFICATION 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. JOSEPH L. KUREWICZ License No. 50396	ENGINEERING ARCHITECTURE SURVEYING FUNDING PLANNING ENVIRONMENTAL 332 W Superior Street, Duluth MN 55802 (218) 722-3915 www.msa-ps.com © MSA Professional Services, Inc.	WINTERSTONE DEVELOPMENT TAIGA DESIGN+BUILD, LLC GRAND MARAIS MINNESOTA	GRADING PLAN	FILE NO. 17454001
PROJECT DATE: 12-14-2018	DRAWN BY: JAS				SHEET ST2					
F.B.:	CHECKED BY: AKB									
PLOT DATE: 1/17/19, P:\17400s\17450a\17454\17454001\CADD\Construction Drawings\17454001 Grading Plan.dwg										

LEGEND

- SILT FENCE 
- RIPRAP 
- TOPSOIL, SEED, FERTILIZE, MULCH 
- TOPSOIL, SEED, FERTILIZE, MNDOT TYPE 4N-2S EROSION BLANKET 
- INLET PROTECTION 
- ROCK DITCH CHECK 



PROJECT NO.	17454001	SCALE	AS SHOWN	NO.	DATE	REVISION	BY
PROJECT DATE:	12-14-2018	DRAWN BY:	JAS				
F.B.:		CHECKED BY:	AKB				

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

1/10/2019

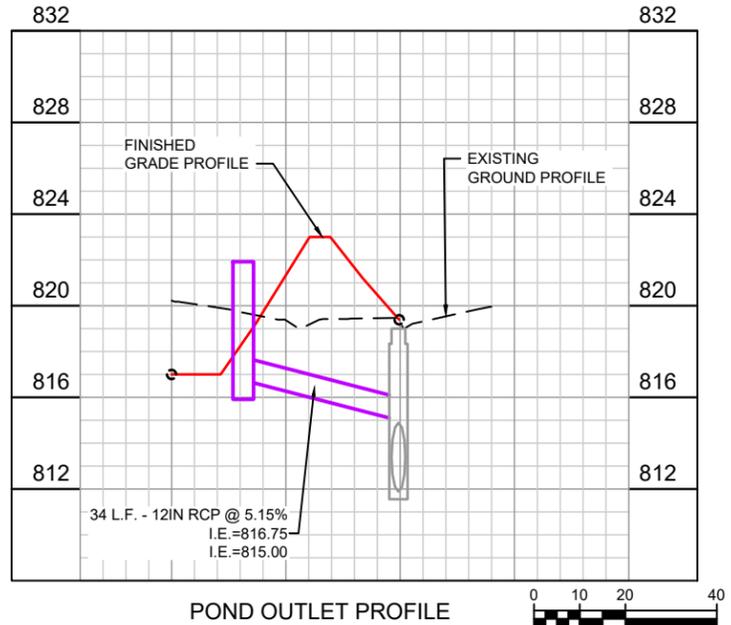
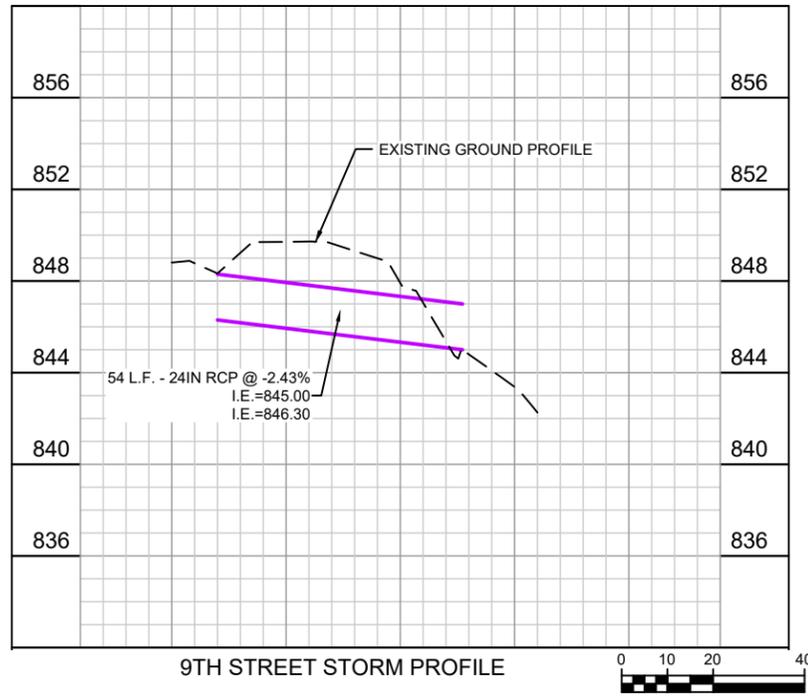
 License No. 50396
 JOSEPH L. REWICK

MSA
 ENGINEERING | ARCHITECTURE | SURVEYING
 FUNDING | PLANNING | ENVIRONMENTAL
 332 W Superior Street, Duluth MN 55802
 (218) 722-3915 www.msa-ps.com
© MSA Professional Services, Inc.

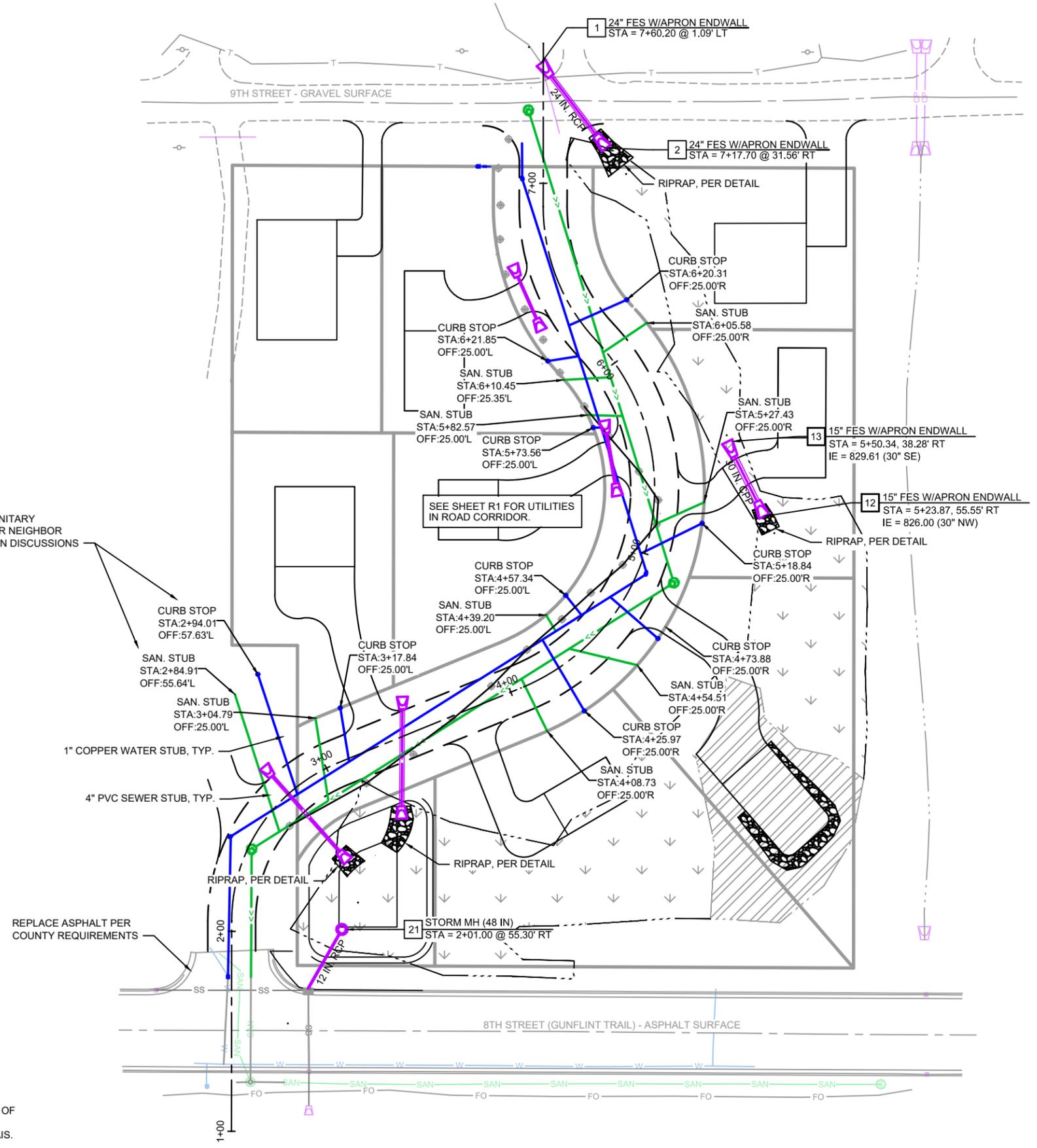
WINTERSTONE DEVELOPMENT
 TAIGA DESIGN+BUILD, LLC
 GRAND MARAIS MINNESOTA

EROSION CONTROL PLAN

FILE NO.
17454001
 SHEET
ST3



CURB STOP AND SANITARY STUB PROVIDED FOR NEIGHBOR PER R.O.W VACATION DISCUSSIONS



- GENERAL CONSTRUCTION NOTES:
- ALL WORK SHALL COMPLY WITH THE STANDARD CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM) SPECIFICATIONS.
 - ALL MATERIALS SHALL MEET THE REQUIREMENTS OF THE CITY OF GRAND MARAIS. ALTERNATES ARE REQUIRED TO BE APPROVED IN WRITING BY THE CITY.

