

L&B LAND COMPANY, LLC
WOODHAVEN
OLD VIKING BLVD.
CITY OF NOWTHEN, ANOKA COUNTY, MN
REVISED MAY, 2022
FINAL PLANS FOR CONSTRUCTION

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C0	Cover
C1	Site Plan
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C4	Seeding & Maintenance Plan
C5	SWPPP Narrative
C6	Details

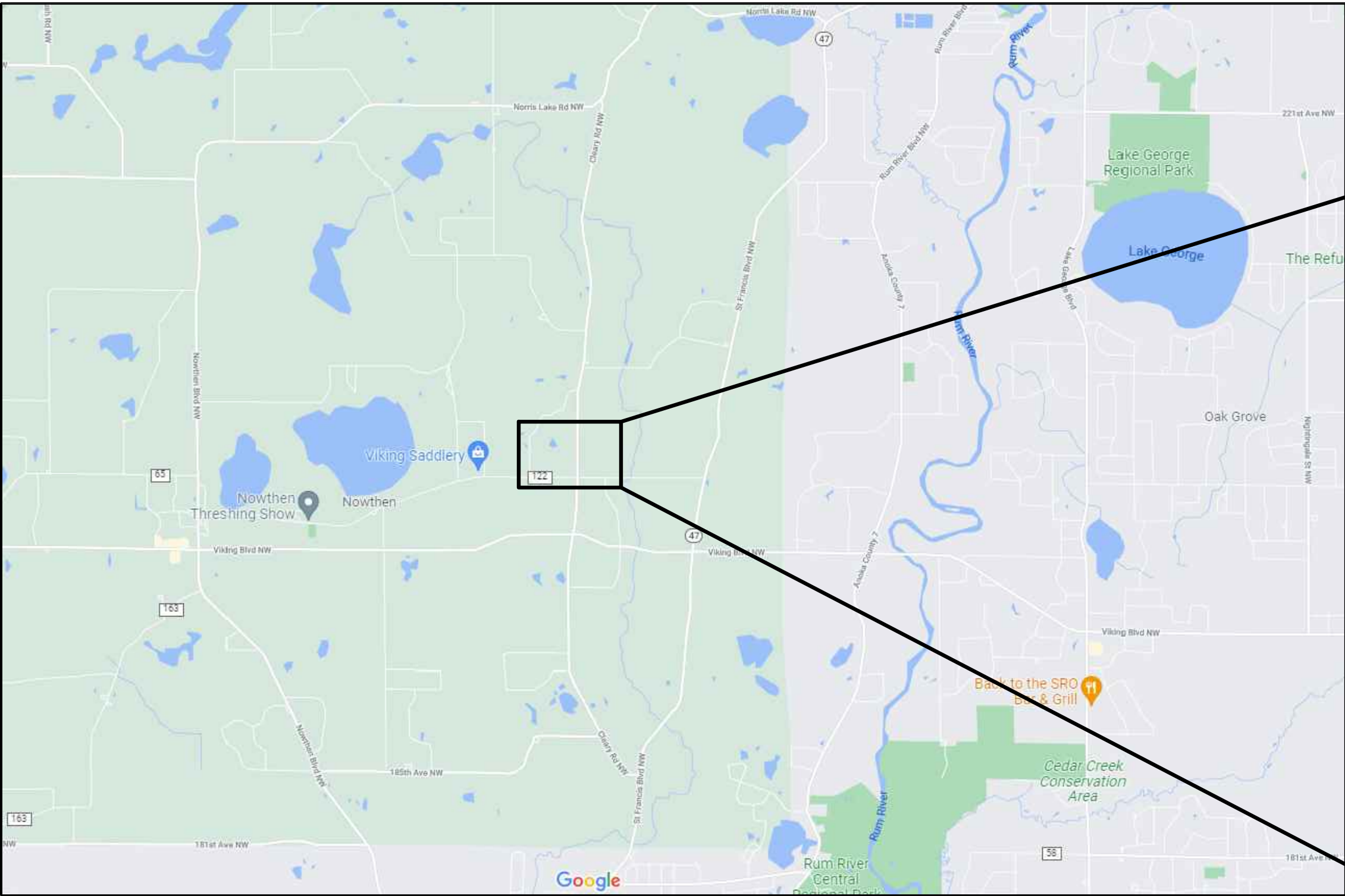
CIVIL & SURVEY PLANS PREPARED BY:



**Bogart, Pederson
& Associates, Inc.**

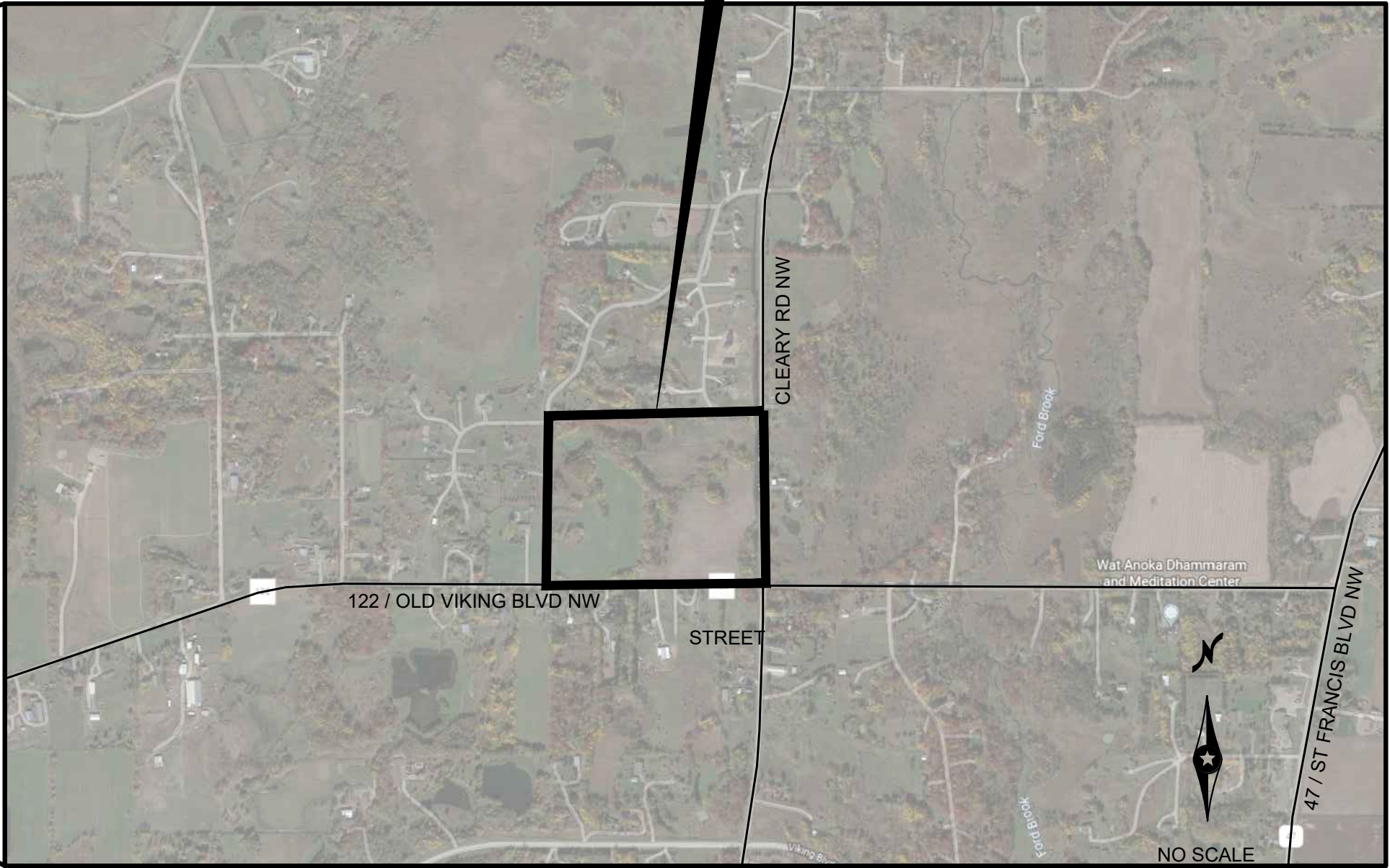
CIVIL ENGINEERING
LAND SURVEYING
ENVIRONMENTAL SERVICES

Traditional Values • Creative Solutions



ANOKA COUNTY, MINNESOTA

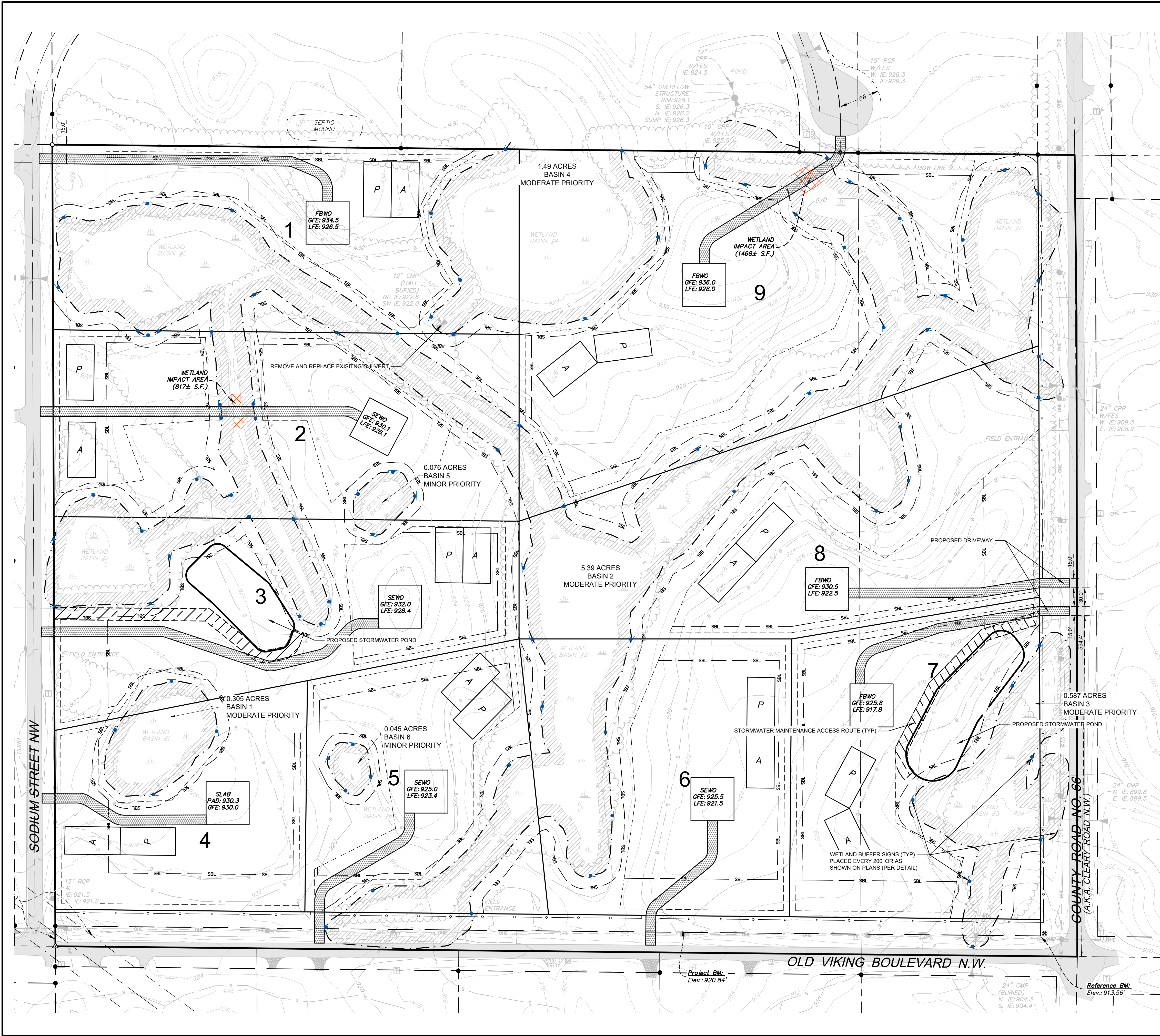
PROJECT LOCATION



VICINITY MAP

REV NO.	DATE	DESCRIPTION
-	03/25/2022	FINAL PLANS FOR CONSTRUCTION
1	05/25/2022	EAST CULVERT SIZE INCREASE

PRIVATE UTILITIES SHOWN ARE QUALITY LEVEL D.
QUALITY LEVEL D PROVIDES THE MOST BASIC LEVEL OF INFORMATION. IT INVOLVES
COLLECTING DATA FROM EXISTING UTILITY RECORDS. RECORDS MAY INCLUDE AS-BUILT
DRAWINGS, DISTRIBUTION AND SERVICES MAPS, EXISTING GEOGRAPHIC INFORMATION
SYSTEM DATABASES, CONSTRUCTION PLANS, ETC.



LEGEND:

- FBWO GFE: 936.0 LFE: 928.0 HOUSE TYPE GARAGE ELEVATION LOW FLOOR ELEVATION
- PROPOSED DRIVEWAY
- PROPOSED WETLAND BUFFER SIGN
- PROPOSED PRIMARY (P) AND SECONDARY (S) SEPTIC (EXACT LOCATION TO BE DETERMINED DURING HOUSE CONSTRUCTION)
- PROPOSED WETLAND BUFFER
- STORMWATER MAINTENANCE ACCESS ROUTES

SITE PLAN NOTES:

- CONTRACTOR SHALL FIELD VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES PRIOR TO THE START OF CONSTRUCTION.
- CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPLICABLE CITY, COUNTY AND STATE REGULATIONS.
- SITE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS APPROVED BY THE CITY.
- LANDSCAPING AND TURF ESTABLISHMENT PER LANDSCAPE PLANS & SPECIFICATIONS.
- SEE WOODHAVEN PRELIMINARY PLAT FOR ADDITIONAL DETAILS AND DIMENSIONS OF ITEMS.

SITE PLAN INFORMATION:

PARCEL AREA: • 47.48 ACRES ±		
EXISTING ZONING: • RESIDENTIAL DISTRICT		
PRINCIPAL STRUCTURE SETBACKS: • FRONT: 150' FROM COLLECTOR/ARTERIAL ROAD CENTERLINE. 120' FROM LOCAL ROAD CENTERLINE • SIDE: 20' • REAR: 35'		
SITE DATA	EXISTING	PROPOSED
PAVEMENT AREA	0 SF	0 SF
IMPERVIOUS AREA	0 SF	108,000 SF (12,000 SF PER LOT)
PERVIOUS AREA	2,068,229 SF	1,960,229 SF
TOTAL AREA	2,068,229 SF	2,068,229 SF

CALL 48 HOURS BEFORE DIGGING:
GOPHER STATE ONE CALL
TWIN CITY AREA 651-454-0002
MINNESOTA TOLL FREE 1-800-252-1166

DESCRIPTION

FINAL PLANS FOR CONSTRUCTION

EAST CULVERT SIZE INCREASE

DATE

03/25/2022

DESIGN BY:

CJN

DRAWN BY:

CJN

CHECKED BY:

CJD

DWG FILE:

SITE BASE

FILE NO.:

21-0257-00

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.

Signed: Christopher J. Dahm
Date: 05/25/2022 Lic. No. 58628

BOGART, PEDERSON & ASSOCIATES, INC.

LAND SURVEYING ENVIRONMENTAL SERVICES

13076 FIRST STREET, BECKER, MN 55009-9322

TEL: 763-262-8822 FAX: 763-262-8844

L&B LAND COMPANY, LLC

WOODHAVEN

FINAL PLANS FOR CONSTRUCTION

City of NOWTHEN, ANOKA County, MN

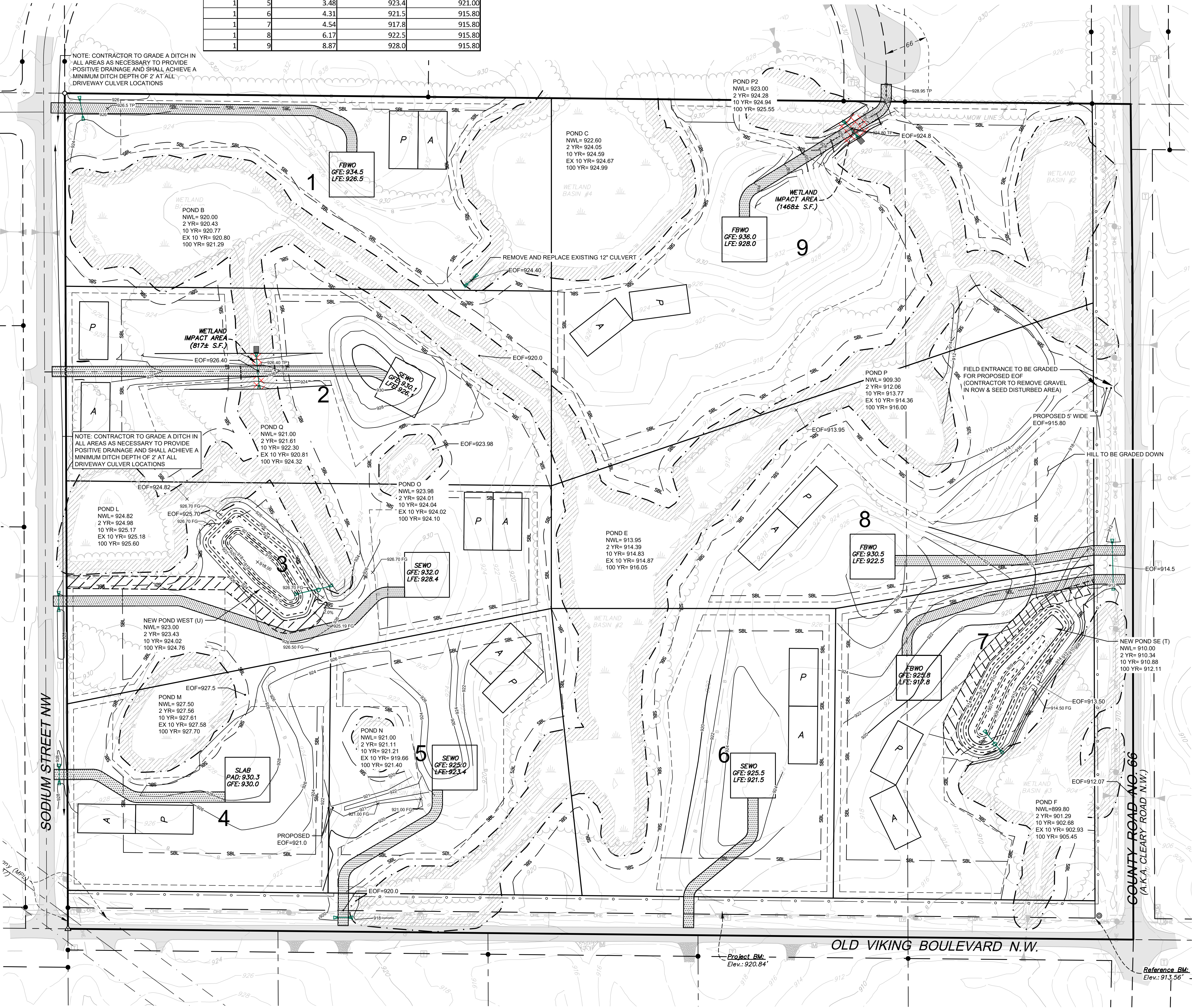
SITE PLAN

SHEET NO.

C1

Block	Lot	Total Lot Area (Ac)	Low Floor Elevation	Emergency Overflow
1	1	5.24	926.5	920.00
1	2	5.27	926.1	923.98
1	3	4.68	928.4	926.40
1	4	3.16	930.0	927.50
1	5	3.48	923.4	921.00
1	6	4.31	921.5	915.80
1	7	4.54	917.8	915.80
1	8	6.17	922.5	915.80
1	9	8.87	928.0	915.80

NOTE: CONTRACTOR TO GRADE A DITCH IN ALL AREAS AS NECESSARY TO PROVIDE POSITIVE DRAINAGE AND SHALL ACHIEVE A MINIMUM DITCH DEPTH OF 2' AT ALL DRIVEWAY CULVER LOCATIONS



LEGEND:

- TEMPORARY ROCK CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET (PER DETAIL)
- STORMWATER MAINTENANCE ACCESS ROUTES
- PROPOSED WETLAND BUFFER
- GRADING LIMITS AND PROPOSED TEMPORARY SILT FENCE
- PROPOSED RIP RAP
- NEW TOP OF GRAVEL ELEVATION
- NEW FINISHED GRADE ELEVATION
- EXISTING ELEVATION
- PROPOSED CONTOUR
- PROPOSED SLOPE
- EMERGENCY OVERFLOW

TYPICAL HOUSE PAD

- HOUSE TYPE
- GARAGE ELEVATION
- LOW FLOOR ELEVATION

FB = DENOTES FULL BASEMENT
FBLO = DENOTES FULL BASEMENT LOOKOUT
SWO = DENOTES SPLIT WALKOUT
FBWO = DENOTES FULL BASEMENT WALKOUT
SLAB = DENOTES SLAB ON GRADE

BENCHMARK AND DATUM:

BEARINGS ARE BASED ON THE ANOKA COUNTY COORDINATE SYSTEM (NAD83 96 ADJ.).

REFERENCE BENCHMARK:
ANOKA COUNTY BM NO. 3082 "GREEN 82". ELEVATION= 913.56 FEET (NAVD 88)

PROJECT BENCHMARK:
RAILROAD SPIKE IN W. FACE OF POWER POLE. 19+/- FEET N. OF OLD VIKING BLVD NW.
ELEVATION= 920.84 FEET (NAVD 88)

BUFFER ESTABLISHMENT AND SEED:

UNLESS OTHERWISE APPROVED BY THE TECHNICAL EVALUATION PANEL, ALL WETLAND BUFFERS MUST BE ESTABLISHED BY PLANTING THAT MEETS THE BELOW CRITERIA:

ALL BUFFERS (NATURAL OR CREATED) MUST BE PROTECTED DURING CONSTRUCTION WITH EROSION CONTROL.

- WHEN EXISTING VEGETATION IS NOT ACCEPTABLE FOR USE AS THE BUFFER, THEN A BUFFER MUST BE ESTABLISHED BY PLANTING. PLANTING MUST MEET THESE CRITERIA:
 - PLANTING MUST BE IDENTIFIED ON THE WETLAND REPLACEMENT PLAN OR GRADING PLAN.
 - PLANTING MUST BE DONE BY A QUALIFIED CONTRACTOR.
 - INSTALL IN ACCORDANCE WITH MOST CURRENT BWSR GUIDANCE.
 - REPLANT VEGETATION THAT IS UNSUCCESSFUL DURING THE FIRST TWO GROWING SEASONS.
 - NO FERTILIZER MAY BE USED UNLESS PRESCRIBED BY ACCREDITED SOIL TESTING LAB.
 - THE SEED PLANTED MUST BE:
 - A 100% NATIVE BWSR SEED MIX OR EQUIVALENT APPROVED BY PERMITTING AUTHORITIES, WITH THE EXCEPTION OF A 1-TIME ANNUAL NURSE OR COVER CROP SUCH AS OATS OR RYE.
 - OF LOCAL ECOTYPE ORIGINATING WITHIN 300 MILES.
 - NATIVE TREES/SHRUBS MAY SUBSTITUTE FORBS AT 60 PER ACRE.

BUFFER MONUMENTS
BUFFERS SHALL BE ADEQUATELY MARKED WITH SIGNAGE AT A MAXIMUM 200 FT SPACING. SIGNS SHOULD BE ERECTED BEFORE OCCUPATION OF THE NEW DEVELOPMENTS. MONUMENT REQUIREMENTS CAN BE WAIVED WHERE THE PERMITTING AUTHORITY DEEMS THEY WOULD SERVE NO PRACTICAL PURPOSE.

BUFFER MAINTENANCE
FIRST TWO FULL GROWING SEASONS -
DURING FIRST TWO FULL GROWING SEASONS THE APPLICANT MUST REPLANT ANY VEGETATION THAT DOES NOT SURVIVE.
MUNICIPALITIES ARE ENCOURAGED TO CONSIDER BUFFER ESTABLISHMENT AND MANAGEMENT IN ESCROWS.

AFTER THE FIRST TWO FULL GROWING SEASONS -
AFTER THE FIRST TWO FULL GROWING SEASONS THE BUFFER MUST BE RESEED IF THE BUFFER CHANGES AT ANY TIME THROUGH HUMAN INTERVENTION OR ACTIVITIES.

EXISTING BUFFERS THAT HAVE ESTABLISHED PERENNIAL VEGETATION WITH CONTINUOUS COVER AND ARE FREE OF NOXIOUS WEEDS DO NOT HAVE TO RE-ESTABLISH.

SEED MIX: 34-261 RIPARIAN SOUTH AND WEST (31.5 LB/AC)

GRADING GENERAL NOTES:

- THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS IN THE FIELD REPRESENTED WITHIN THE PLANS AS SHOWN AND ALERT THE ENGINEER BEFORE BIDDING THE PROJECT AND BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL LOCATE AND VERIFY ALL UTILITIES WHICH MAY AFFECT THIS WORK AND NOTIFY THE OWNER OF ANY CHANGES. CONTACT LOCAL UTILITY COMPANIES FOR EXACT LOCATIONS PRIOR TO BIDDING THE PROJECT AND COMMENCING WORK.
- CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT SILT AND DEBRIS RUN-OFF DURING GRADING OPERATIONS (I.E. SILT FENCE, STRAW BALES, ETC.).
- CONTRACTOR SHALL VERIFY CRITICAL ELEVATIONS TO ENSURE CONFORMANCE WITH GRADING PLAN, PARTICULARLY WITH EXISTING STRUCTURES AND/OR PAVEMENTS TO REMAIN. MEET EXISTING GRADES ALONG STREETS, PROPERTY LINES, AND DRIVEWAY ENTRANCES. RESTORE ALL PAVEMENTS THAT REMAIN TO THEIR ORIGINAL IF NOT BETTER CONDITION. NOTIFY OWNER OF ANY CONFLICTS PRIOR TO BIDDING THE PROJECT.
- TURF ESTABLISHMENT AREAS SHALL RECEIVE MINIMUM OF 4" DEPTH AS MEASURED IN PLACE OF TOPSOIL. TOPSOIL WILL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. ALL GRADED SLOPES GREATER THAN OR EQUAL TO 5:1 SHALL BE HYDROSEED, EROSION CONTROL BLANKETED, OR MULCHED TO HELP STABILIZE THE SLOPES BY GENERAL CONTRACTOR.

DATE: 03/25/2022

DESIGN BY: C/JN

DRAWN BY: C/JN

CHECKED BY: C/JD

DWG FILE: GRADING

FILE NO.: 21-0237.00

DESCRIPTION

FINAL PLANS FOR CONSTRUCTION

EAST CULVERT SIZE INCREASE

REV NO.

DATE

03/25/2022

05/25/2022

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.

Signed:

Christopher J. Dahm
Lic. No. 58628

Date: 05/25/2022

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ENVIRONMENTAL SERVICES
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TEL: 763-262-8822 FAX: 763-262-8844

L&B LAND COMPANY, LLC

WOODHAVEN

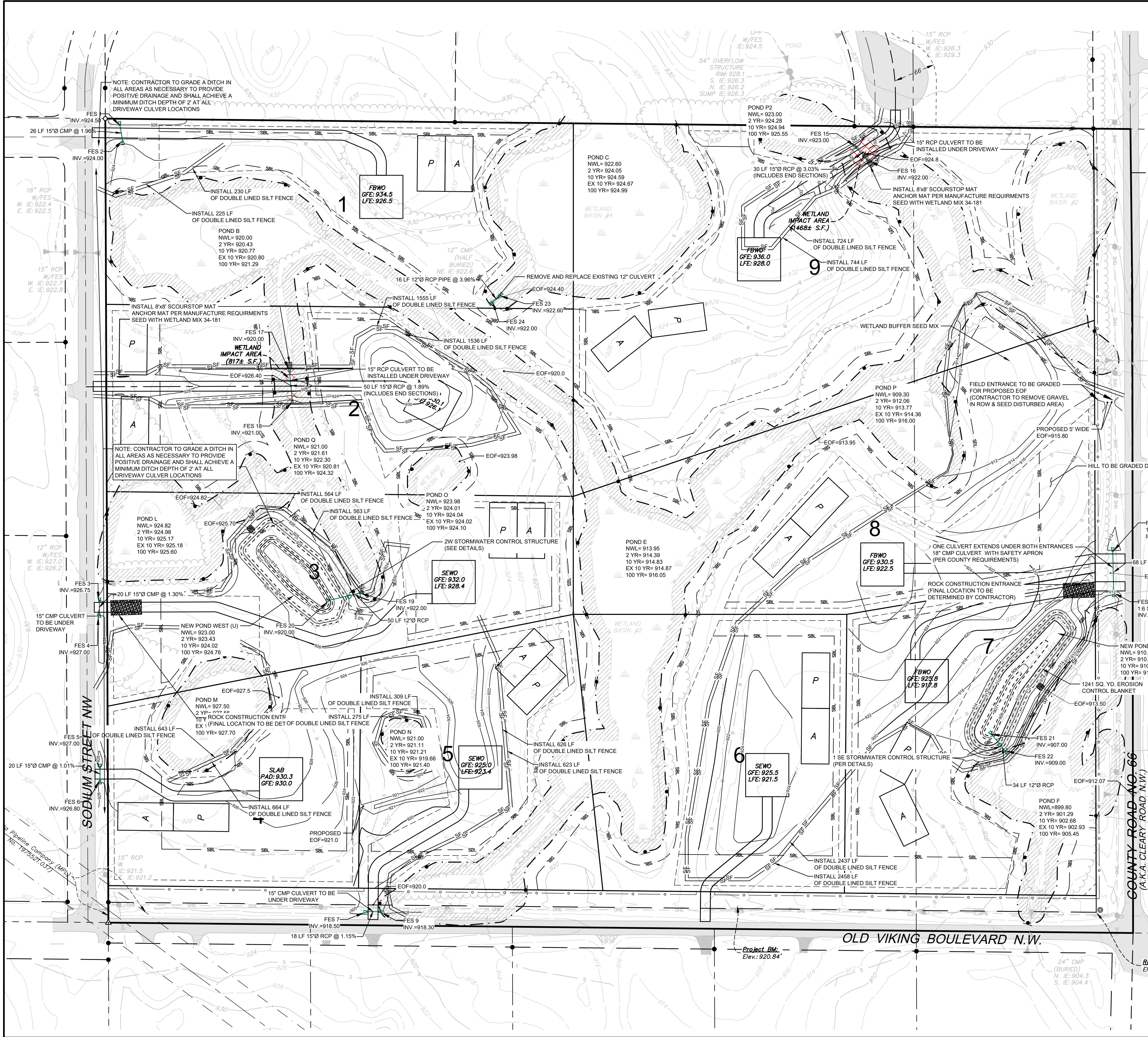
FINAL PLANS FOR CONSTRUCTION

City of NOWTHEN, ANOKA County, MN

SHEET NO.

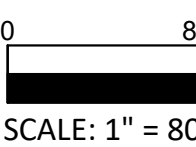
C2

GRADING PLAN



LEGEND:

- PROPOSED FLARED END SECITON
- PROPOSED RIP RAP
- PROPOSED STORM SEWER
- PROPOSED WETLAND BUFFER
- TEMPORARY ROCK CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET (PER DETAIL)
- GRADING LIMITS AND PROPOSED TEMPORARY SILT FENCE



UTILITY GENERAL NOTES:

- CONTRACTOR SHALL LOCATE AND VERIFY ALL UTILITIES WHICH MAY AFFECT THIS WORK AND NOTIFY OWNER OF ANY CHANGES. CONTACT LOCAL UTILITY COMPANIES FOR EXACT LOCATIONS PRIOR TO BIDDING THE PROJECT AND COMMENCING WORK.
- CONTRACTOR SHALL VERIFY CRITICAL ELEVATIONS TO ENSURE CONFORMANCE WITH GRADING PLAN AND EXISTING UTILITIES, PARTICULARLY WITH EXISTING STRUCTURES AND/OR PAVEMENTS TO REMAIN.
- THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AS EXISTING IN THE FIELD AND AS REPRESENTED WITHIN THE PLANS AS SHOWN AND ALERT THE ENGINEER BEFORE BIDDING THE PROJECT AND BEGINNING CONSTRUCTION.
- ALL STORM SEWER SHALL BE PVC SCHEDULE 40 WHEN LESS THAN 8" IN DIAMETER. ALL RCP STORM SEWER SHALL BE CLASS V PIPE UNLESS OTHERWISE NOTED.
- IF DEWATERING IS REQUIRED FOR THIS PROJECT, THE PUMP DISCHARGE SHALL BE TREATED PRIOR TO BEING DISCHARGED OFF-SITE OR INTO A SURFACE WATER. THE DISCHARGE SHALL BE VISUALLY CHECKED TO ENSURE THAT IT IS VISIBLY CLEAN WATER. NO DEWATERING IS EXPECTED FOR THIS SITE DUE TO SANDY SOIL CONDITIONS.
- FINAL CULVERT LOCATIONS AND INVERTS SHALL BE VERIFIED BY CONTRACTOR.

SEEDING NOTES:

- ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED AND VEGETATED AS SOON AS POSSIBLE. ANY FINISHED AREAS SHALL BE SEEDED AND MULCHED WITHIN 7 DAYS AFTER FINISHED GRADING IS COMPLETED IN ACCORDANCE TO MNDOT 2575.
- PLANTING SOIL SHALL CONSIST 1:1:1 CONSISTING OF 33% SELECT LOAMY TOPSOIL, 33% PEAT MOSS, 33% PIT RUN SAND.
- ALL DISTURBED AREAS NOT IN WETLAND BUFFERS SHALL BE REVEGETATED WITH MNDOT SEED MIX, MULCHED, FERTILIZED & DISK ANCHORED, PER THE FOLLOWING SCHEDULE:

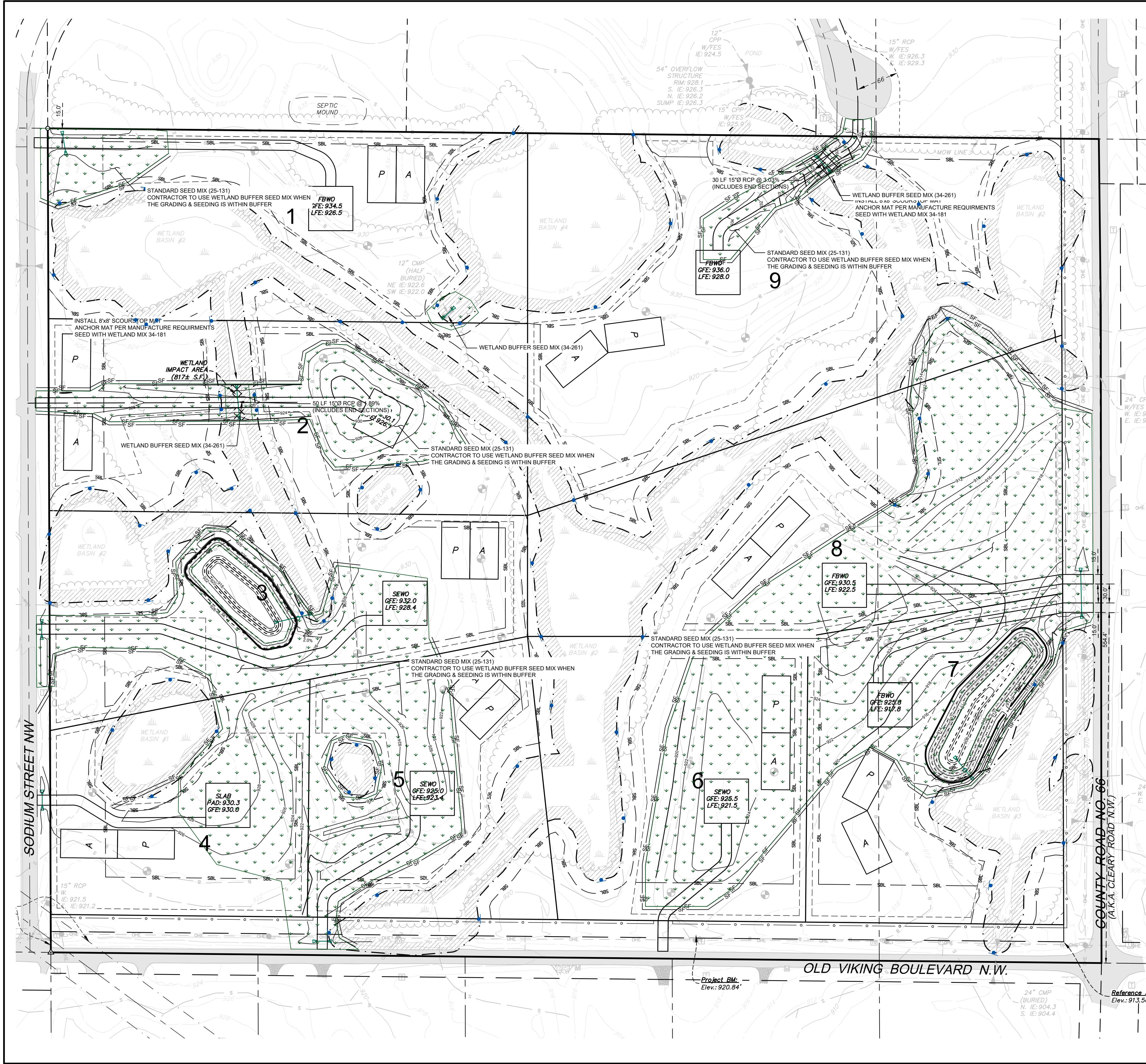
STANDARD SEED MIX 25-131:	220 LB/AC.
FERTILIZER 22-5-10:	350 LB/AC.
MULCH TYPE 3:	2 TONS/AC.
- ALL DISTURBED AREAS IN WETLAND BUFFERS SHALL BE REVEGETATED WITH MNDOT SEED MIX, MULCHED, FERTILIZED & DISK ANCHORED, PER THE FOLLOWING SCHEDULE:

WETLAND BUFFER SEED MIX 34-261:	31.5 LB/AC.
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EROSION CONTROL NOTES:

- CONTRACTOR SHALL CONFINE CONSTRUCTION OPERATIONS TO THE CONSTRUCTION/GRADING LIMITS SHOWN.
- ALL WORK SHALL CONFORM TO THE MINNESOTA POLLUTION CONTROL AGENCY'S STORM WATER PERMIT REQUIREMENTS. CONTRACTOR SHALL OBTAIN ALL PERMITS AND COMPLY WITH ALL PERMIT REQUIREMENTS.
- THE SITE SOIL EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE INSTALLED PRIOR TO ANY DEMOLITION OR GRADING OPERATIONS AND MAINTAINED TO CONFORM WITH THE STANDARDS SPECIFIED BY THE PERMIT.
- CONTRACTOR SHALL INSPECT TEMPORARY EROSION CONTROL MEASURES ON THE ENTIRE SITE AT LEAST EVERY 7 DAYS AND WITHIN 24 HOURS OF ANY MEASURABLE RAINSTORM. DAMAGED SILT FENCE OR OTHER EROSION CONTROL DEVICES OR PRACTICES SHALL BE REPAIRED IMMEDIATELY. INSPECTION AND MAINTENANCE OF DEVICES SHALL CONTINUE UNTIL THE SITE HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO THE MPCA.
- ALL GRADING OPERATIONS SHALL BE CONDUCTED IN A MANNER TO MINIMIZE THE POTENTIAL FOR SITE EROSION.
- THE SITE SOIL EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE INSTALLED AND MAINTAINED TO CONFORM WITH THE STANDARDS SPECIFIED BY THE CITY OF NOWTHEN AND THE MPCA.
- EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE DISTURBANCE OF ANY AREAS AND MAINTAINED UNTIL ALL TRIBUTARY DISTURBED AREAS ARE RESTORED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL EROSION CONTROL MEASURES, INCLUDING SILT FENCE AND BALES, UPON ESTABLISHMENT OF PERMANENT VEGETATION IN SAID AREAS.
- ALL SOILS TRACKED ONTO PAVEMENT OR ANY OTHER OFF-SITE AREA SHALL BE REMOVED DAILY.
- THE SITE SEDIMENT CONTROL FACILITIES FOR THE PROJECT MUST BE INSTALLED PRIOR TO ANY GRADING OPERATION.
- SEPTIC SITES SHALL BE PROTECTED WITH ORANGE CONSTRUCTION FENCE PRIOR TO GRADING.

DATE:	03/25/2022	DESIGN BY:	CJN	DRAWN BY:	CJN	CHECKED BY:	CJD	DWG FILE:	UTILITY	FILE NO.:	21-0237.00
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.											
Signed:										Christopher J. Dahm	58628
Date:										05/25/2022	Lic. No.
BOGART, PEDERSON & ASSOCIATES, INC. LAND SURVEYING ENVIRONMENTAL SERVICES 13076 FIRST STREET, BECKER, MN 55508-9222 TEL: 763-262-8822 FAX: 763-262-8844											
L&B LAND COMPANY, LLC WOODHAVEN FINAL PLANS FOR CONSTRUCTION City of NOWTHEN, ANOKA County, MN UTILITY & EROSION PLAN											
SHEET NO.											
C3											



LEGEND:

- EROSION CONTROL BLANKET (PER DETAIL)
- SEEDING (STANDARD MIX 25-131)
(BASIN SEED MIX 33-261)
- PROPOSED CONTOUR
- GRADING LIMITS AND PROPOSED
TEMPORARY SILT FENCE

SEEDING & MAINTENANCE (PER MNDOT):

ALL DISTURBED AREAS SHALL BE REVEGETATED WITH MNDOT SEED MIX, MULCHED, FERTILIZED & DISK ANCHORED, PER THE FOLLOWING SCHEDULE:

STANDARD SEED MIX 25-131:	220 LB/AC.
WETLAND BUFFER SEED MIX 34-261:	31.5 LB/AC.
FERTILIZER 22-5-10:	350 LB/AC.
MULCH TYPE 3:	2 TONS/AC.

- SEEDING
- A) SITE PREPARATION - THE SITE SHOULD BE PREPARED BY LOOSENING TOPSOIL TO A MINIMUM DEPTH OF 3 INCHES.
- B) FERTILIZER - USE A FERTILIZER ANALYSIS BASED ON A SOIL TEST OR A GENERAL RECOMMENDATION IS A 10-10-10 (NPK) COMMERCIAL GRADE ANALYSIS AT 200 LBS/ACRE.
- C) SEED INSTALLATION - SEED SHOULD BE INSTALLED WITH A DROP SEEDER THAT WILL ACCURATELY METER THE TYPES OF SEED TO BE PLANTED, KEEP ALL SEEDS UNIFORMLY MIXED DURING THE SEEDING AND CONTAIN DROP SEED TUBES FOR SEED PLACEMENT (BRILLIANT-TYPE), THE DROP SEEDER SHOULD BE EQUIPPED WITH A CULTPACKER ASSEMBLY TO ENSURE SEED-TO-SOIL CONTACT.
- D) SEEDING RATES - RATES ARE SPECIFIED IN THE MIXTURE TABULATION FOR THE SPECIFIED MIX.
- E) PACKING - IF THE DROP SEEDER IS NOT EQUIPPED WITH A CULTPACKER, THE SITE SHOULD BE CULTPACKED FOLLOWING THE SEEDING TO ENSURE SEED-TO-SOIL CONTACT.
- F) MULCH - THE SITE SHOULD BE MULCHED AND DISK-ANCHORED FOLLOWING CULTPACKING. THE STANDARD MULCH IS MNDOT TYPE 1 AT A RATE OF 2.0 TONS/ACRE. ALSO SEE TEMPORARY EROSION CONTROL FOR ADDITIONAL INFORMATION.

SEED MIXTURE MAINTENANCE (25-131)

- YEAR 1
- 1) PROVIDE WATER IF NECESSARY TO AID ESTABLISHMENT.
- 2) AFTER TURF GRASSES REACH A HEIGHT OF 6 INCHES, INITIALLY MOW TO A HEIGHT OF 2 TO 3 INCHES.
- LONG TERM
- 1) FERTILIZE AND WATER AS NEEDED.
- 2) MOW A MINIMUM OF ONCE EVERY 2 WEEKS.

NATIVE GRASS AND FORB MIXTURES (34-261)

- YEAR 1
- ESTABLISHMENT (SPRING SEEDING):
- 1) PREPARE SITE - LATE APRIL - MAY.
- 2) SEED - MAY 1 - JUNE 1.
- MAINTENANCE:
- 1) MOW (6-8 INCHES) - EVERY 30 DAYS AFTER PLANTING UNTIL SEPTEMBER 30.
- 2) WEED CONTROL - MOWING SHOULD HELP CONTROL ANNUAL WEEDS. SPOT SPRAY THISTLES ETC.
- ESTABLISHMENT (FALL SEEDING):
- 1) PREPARE SITE - LATE AUGUST - EARLY SEPTEMBER.
- 2) SEED - LATE SEPTEMBER TO FREEZE-UP.
- MAINTENANCE (FOLLOWING SEASON):
- 1) MOW (6-8 INCHES) - ONCE IN MAY, JUNE AND JULY.
- 2) WEED CONTROL - MOWING SHOULD KEEP ANNUAL WEEDS DOWN. SPOT SPRAY THISTLES ETC.
- EVALUATION:
- 1) COVER CROP GROWING WITHIN 2 WEEKS OF PLANTING (EXCEPT DORMANT PLANTINGS).
- 2) SEEDLINGS SPACED 1-6 INCHES APART IN DRILL ROWS.
- 3) NATIVE GRASS SEEDLINGS MAY ONLY BE 4-6 INCHES TALL.
- 4) IF THERE IS A FLUSH OF GROWTH FROM FOXTAIL ETC., MOW AS NECESSARY.
- YEAR 2
- MAINTENANCE:
- 1) MOW (6-8 INCHES) ONE TIME BETWEEN JUNE 1 - AUGUST 15 BEFORE WEEDS SET SEED.
- 2) WEED CONTROL - MOWING SHOULD KEEP ANNUAL WEEDS DOWN. SPOT SPRAY THISTLES ETC.
- 3) SOME SITES MAY NOT REQUIRE MUCH MAINTENANCE THE SECOND YEAR.
- EVALUATION:
- 1) COVER CROP WILL BE GONE UNLESS WINTER WHEAT WAS USED IN A FALL PLANTING.
- 2) GRASSES FORMING CLUMPS 1-6 INCHES APART IN DRILL ROWS, BUT STILL SHORT.
- 3) SOME FLOWERS SHOULD BE BLOOMING (BLACK-EYED SUSANS, BERGAMOT ETC.).
- 4) IF THERE IS A FLUSH OF GROWTH FROM FOXTAIL ETC., MOW SITE.
- YEAR 3
- MAINTENANCE:
- 1) MOW ONLY IF NECESSARY.
- 2) WEED CONTROL - SPOT SPRAY THISTLES, ETC.
- 3) SITES USUALLY DO NOT REQUIRE MUCH MAINTENANCE THE THIRD YEAR.
- EVALUATION:
- 1) PLANTING SHOULD BEGIN LOOKING LIKE A PRAIRIE - TALL GRASSES, FLOWERS ETC.
- LONG-TERM
- MAINTENANCE:
- 1) WEED CONTROL - SPOT SPRAY THISTLES ETC.
- 2) BURNING (3-5 YEAR ROTATION) ALTERNATE SPRING AND FALL IF POSSIBLE.
- 3) HAYING (3-5 YEAR ROTATION) LATE SUMMER OR EARLY FALL. ALTERNATE WITH BURN

ALL BUFFERS (NATURAL OR CREATED) MUST BE PROTECTED DURING CONSTRUCTION WITH EROSION CONTROL.

WHEN EXISTING VEGETATION IS NOT ACCEPTABLE FOR USE AS THE BUFFER, THEN A BUFFER MUST BE ESTABLISHED BY PLANTING. PLANTINGS MUST MEET THESE CRITERIA:

- PLANTING MUST BE IDENTIFIED ON THE WETLAND REPLACEMENT PLAN OR GRADING PLAN.
- PLANTING MUST BE DONE BY A QUALIFIED CONTRACTOR.
- INSTALL IN ACCORDANCE WITH MOST CURRENT BWSR GUIDANCE.
- REPLANT VEGETATION THAT IS UNSUCCESSFUL DURING THE FIRST TWO GROWING SEASONS.
- NO FERTILIZER MAY BE USED UNLESS PRESCRIBED BY ACCREDITED SOIL TESTING LAB.
- THE SEED PLANTED MUST BE:
 - A 100% NATIVE BWSR SEED MIX OR EQUIVALENT APPROVED BY PERMITTING AUTHORITIES, WITH THE EXCEPTION OF A 1-TIME ANNUAL NURSE OR COVER CROP SUCH AS OATS OR RYE.
 - OF LOCAL ECOTYPE ORIGINATING WITHIN 300 MILES.
- NATIVE TREES/SHRUBS MAY SUBSTITUTE FORBS AT 60 PER ACRE.

BUFFER MONUMENTS

BUFFERS SHALL BE ADEQUATELY MARKED WITH SIGNAGE AT A MAXIMUM 200 FT SPACING. SIGNS SHOULD BE ERECTED BEFORE OCCUPATION OF THE NEW DEVELOPMENTS. MONUMENT REQUIREMENTS CAN BE WAIVED WHERE THE PERMITTING AUTHORITY DEEMS THEY WOULD SERVE NO PRACTICAL PURPOSE.

BUFFER MAINTENANCE

FIRST TWO FULL GROWING SEASONS - DURING FIRST TWO FULL GROWING SEASONS THE APPLICANT MUST REPLANT ANY VEGETATION THAT DOES NOT SURVIVE. MUNICIPALITIES ARE ENCOURAGED TO CONSIDER BUFFER ESTABLISHMENT AND MANAGEMENT IN ESCROWS.

AFTER THE FIRST TWO FULL GROWING SEASONS - AFTER THE FIRST TWO FULL GROWING SEASONS THE BUFFER MUST BE RESEEDING IF THE BUFFER CHANGES AT ANY TIME THROUGH HUMAN INTERVENTION OR ACTIVITIES.

EXISTING BUFFERS THAT HAVE ESTABLISHED PERENNIAL VEGETATION WITH CONTINUOUS COVER AND ARE FREE OF NOXIOUS WEEDS DO NOT HAVE TO RE-ESTABLISHED.

CALL 48 HOURS BEFORE DIGGING.
GOPHER STATE ONE CALL
TWIN CITY AREA 651-454-0002
MINNESOTA TOLL FREE 1-800-252-1166

DESCRIPTION	
FINAL PLANS FOR CONSTRUCTION	
EAST CULVERT SIZE INCREASE	
DATE:	03/25/2022
DESIGN BY:	CJN
DRAWN BY:	CJN
CHECKED BY:	CJD
DWG FILE:	SEEDING
FILE NO.:	21-0207.00
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.	
Signed:	Christopher J. Dahm
Date:	05/25/2022
Lic. No.	58628
BOGART, PEDERSON & ASSOCIATES, INC. LAND SURVEYING ENVIRONMENTAL SERVICES 13076 FIRST STREET, BECKER, MN 55009-9322 TEL: 763-262-8822 FAX: 763-262-8844	
L&B LAND COMPANY, LLC WOODHAVEN FINAL PLANS FOR CONSTRUCTION City of NOWTHEN, ANOKA County, MN	
SEEDING & MAINTENANCE PLAN	
SHEET NO.	
C4	

STORM WATER POLLUTION PREVENTION PLAN NARRATIVE:

GENERAL INFORMATION

THIS STORMWATER POLLUTION PREVENTION PLAN IS PREPARED IN ACCORDANCE TO THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT NO. MN R1000001 FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY.
PROJECT NAME: WOODHAVEN
LOCATION: OLD VIKING BLVD NW, NOWTHEN MN. 55330
ANOKA COUNTY
LAT/LONG: 45.336673, -93.421222

DESCRIPTION OF CONSTRUCTION ACTIVITY:

DEVELOPMENT CONSISTS OF PAVING, GRADING, UTILITY INSTALLATION, AND TURF ESTABLISHMENT.

PROJECT CONTACTS

L&B Land Company AND THE CONTRACTOR ARE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMP'S BEFORE AND DURING CONSTRUCTION.

SWPPP PREPARATION:
SWPPP PREPARER: CHRISTOPHER DAHN
-BOGART, PEDERSON & ASSOCIATES
TRAINING: ENGINEER AND SWPPP DESIGNER (EXP 2022)
ADDRESS: 13076 FIRST STREET
BECKER, MN 53308-9322
TELEPHONE: 763-262-8822
EMAIL: CDAHN@BOGART-PEDERSON.COM
OWNER:
OWNER CONTACT: LARRY SKOGQUIST
ADDRESS: 6840 213TH AVE NW, ELK RIVER, MN 55330
TELEPHONE: (612)-282-7093
EMAIL: SKOGQUIST@AOL.COM

CONTRACTOR (TO BE FILLED OUT BY THE CONTRACTOR):

BUSINESS NAME _____
OWNER NAME _____
MAILING ADDRESS _____
CITY _____
TELEPHONE _____
EMAIL _____
CONTACT NAME _____
MAILING ADDRESS _____
CITY _____
TELEPHONE _____
EMAIL _____

ESTIMATED DATES OF CONSTRUCTION:

START DATE: __/__/__ (TO BE FILLED IN BY CONTRACTOR)
COMPLETION DATE: __/__/__ (TO BE FILLED IN BY CONTRACTOR)

PERMANENT STORMWATER DESIGN CALCULATIONS:

SEE THE STORM WATER MANAGEMENT REPORT FOR MORE INFORMATION. CONTACT BOGART, PEDERSON & ASSOCIATES FOR REPORT. PROPOSED FLOW RATE IS LIMITED THROUGH LESS IMPERVIOUS SURFACE AND STORM WATER BEING DIRECTED TO AN WET RETENTION BASIN.

SOIL GROUP: A

DESCRIPTION OF EROSION CONTROL ACTIVITY:

EROSION CONTROL CONSISTS OF SILT FENCE PERIMETER CONTROL, TURF ESTABLISHMENT THROUGH SEEDING AND EROSION CONTROL BLANKET, AND ROCK CONSTRUCTION ENTRANCE PLACEMENT.

CUMULATIVE IMPERVIOUS SURFACES:

AREA OF DISTURBANCE: 14.38 ACRES
PRE-CONSTRUCTION IMPERVIOUS AREA: 0.00 ACRES
POST CONSTRUCTION IMPERVIOUS AREA: 2.48 ACRES
NEW IMPERVIOUS AREA: 2.48 ACRES

RECEIVING WATERS:

STORM WATER FROM THIS SITE DISCHARGES INTO SURROUNDING WETLANDS AND WILL ULTIMATELY BE DISCHARGED TO FORD BROOK.

PLANS AND SPECIFICATIONS

- THE PLAN SHEETS OF THIS PLAN SET INDICATE THE FOLLOWING ITEMS:
- THE PROJECT LOCATION AND CONSTRUCTION LIMITS.
 - LOCATIONS OF IMPERVIOUS SURFACES.
 - LOCATIONS OF AREAS NOT TO BE DISTURBED (E.G., BUFFER ZONES, WETLANDS, ETC.).
 - STEEP SLOPE LOCATIONS.
 - LOCATIONS OF ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMP'S TO BE INSTALLED ON THE PROJECT.
 - THE DETAIL SHEETS INDICATE EROSION AND SEDIMENT CONTROL BMP'S TO BE INSTALLED ON THE PROJECT.
 - IF DEWATERING IS REQUIRED FOR THIS PROJECT, THE PUMP DISCHARGE SHALL BE TREATED PRIOR TO BEING DISCHARGED OFF-SITE OR INTO A SURFACE WATER. THE DISCHARGE SHALL BE VISUALLY CHECKED TO ENSURE THAT IT IS VISIBLY CLEAN WATER.

TEMPORARY SEDIMENT CONTROL PRACTICES

DOWN GRADIENT SILT FENCE AND SEDIMENT LOG INSTALLATIONS ARE TO BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY EARTHWORK OPERATIONS.

TOPSOIL IS TO BE WINDROWED ALONG THE CONSTRUCTION LIMITS AND PLACED AS SLOPE DRESSING IMMEDIATELY FOLLOWING COMPLETION OF THE GRADING OPERATIONS, AS THE GRADING OPERATIONS PROCEED.

TOPSOIL PLACEMENT ALONG THE EMBANKMENT SLOPES THOUGH THE WETLANDS AREA IS TO BE SPREAD BY A LOW IMPACT CRAWLER TRACTOR OPERATING UP AND DOWN THE SLOPES SO AS TO PROVIDE TRACK PRINTS PARALLEL WITH THE CONTOURS.

INSTALLATION OF MNDOT CATEGORY 3 EROSION CONTROL BLANKET ALONG THE EMBANKMENT SLOPES ADJACENT THE WETLANDS AREA.

ALL TEMPORARY SOILS STOCKPILES WILL REQUIRE AN EFFECTIVE MEANS OF SEDIMENT CONTROL SUCH AS AN EROSION CONTROL BLANKET COVERING OR SILT FENCE INSTALLATION ALONG THE TOE OF SLOPE.

ALL COMPLETED SWALES SLOPES AND BOTTOMS NOT DRAINING TOWARDS WETLAND AREAS ARE TO BE STABILIZED WITHIN 7 DAYS.

TEMPORARY STABILIZATION WILL BE REQUIRED IN AREAS WHERE GRADING OPERATIONS ARE SUSPENDED OR CEASED FOR A PERIOD OF 7 DAYS OR GREATER.

A ROCK CONSTRUCTION ENTRANCE FOR SEDIMENT CONTROL IS TO BE PROVIDED AT THE PROJECT ENTRANCE ON OLD VIKING BLVD.

STREET SWEEPING OF THE PAVED SURFACES WILL BE REQUIRED AS DIRECTED BY THE ENGINEER.

TIMING OF EROSION CONTROL:

SILT FENCE AND SEDIMENT LOGS WILL BE INSTALLED PRIOR TO CONSTRUCTION.

RIPRAP AND FILTER BLANKET WILL BE PLACED AT THE OUTLETS WITHIN 24 HOURS OF THE OUTLET PLACEMENT.

THE CONTRACTOR MUST STABILIZE ALL EXPOSED SOIL AREAS IMMEDIATELY FOLLOWING CONSTRUCTION WHEREVER CONSTRUCTION WILL NOT OCCUR FOR A PERIOD GREATER THAN OR EQUAL TO 7 DAYS.

STABILIZATION WORK MUST BE COMPLETE WITHIN 7 CALENDAR DAYS AFTER THE CONSTRUCTION WORK IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED.

AREAS THAT ARE WITHIN 200 FT OF A PUBLIC WATER MUST BE STABILIZED WITHIN 24 HOURS OF COMPLETING CONSTRUCTION DURING PERIODS OF "WORK IN WATER RESTRICTIONS" FOR TIME PERIODS DECLARED BY THE DNR.

THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN THE DISTURBED AREA UNTIL VEGETATION IS ESTABLISHED.

ONCE VEGETATION IS ESTABLISHED AND CONSTRUCTION IS COMPLETE, THE SILT FENCE AND ANY OTHER TEMPORARY EROSION CONTROL THAT IS NOT BIODEGRADABLE SHALL BE REMOVED.

STREET SWEEPING TO BE PROVIDED AS DIRECTED BY THE ENGINEER OR OWNER. THE CITY REQUIRES STREET SWEEPING TO OCCUR WITHIN 8 HOURS OF NOTICE FROM THE CITY.

APPLYING MULCH, HYDROMULCH, TACKIFIER, POLYACRYLAMIDE OR SIMILAR EROSION PREVENTION PRACTICES IS NOT ACCEPTABLE STABILIZATION IN ANY PART OF A TEMPORARY OR PERMANENT DRAINAGE DITCH OR SWALE. BLANKETS OR OTHER APPROVED, BY THE ENGINEER, METHOD SHALL BE USED.

INSPECTION AND MAINTENANCE ACTIVITIES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING THE WORK OF ALL OPERATIONS, INCLUDING SUBCONTRACTORS AND UTILITY COMPANIES, SUCH THAT EROSION AND SEDIMENT CONTROL MEASURES ARE FULLY EXECUTED FOR EACH OPERATION AND IN A TIMELY MANNER OVER THE DURATION OF THE PROJECT. OPERATORS HAVE DAILY ACCESS TO THE PROJECT SITE. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE SWPPP IMPLEMENTATION UNTIL THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION AND N.O.T HAS BEEN SUBMITTED TO THE MPCA.

THE CONTRACTOR IS TO PROVIDE A TRAINED INDIVIDUAL RESPONSIBLE FOR THE IMPLEMENTATION, INSPECTION AND MAINTENANCE OF THE EROSION AND SEDIMENT CONTROL BMP'S ON THE PROJECT. THAT INDIVIDUAL IS TO BE IDENTIFIED AT THE PRE-CONSTRUCTION CONFERENCE AND LISTED IN THE MINUTES THEREOF.

THE APPOINTED INDIVIDUAL IS TO PERFORM A ROUTINE INSPECTION OF THE ENTIRE SITE AT LEAST ONCE EVERY SEVEN DAYS DURING CONSTRUCTION OPERATIONS AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.

A INSPECTION FORM WILL BE PROVIDED BY THE CONTRACTOR. ANY DEFICIENCIES IN THE EROSION AND SEDIMENT CONTROL BMP'S ARE TO BE NOTED ON THE INSPECTION FORM AND CORRECTED BY THE END OF THE NEXT BUSINESS DAY.

PERIMETER CONTROL DEVICES ARE TO BE REPAIRED OR REPLACED WHEN THEY ARE NO LONGER EFFECTIVE OR WHEN THE SEDIMENT REACHES ONE-HALF THE HEIGHT OF THE DEVICE.

TRAINING DOCUMENTATION:
SWPPP IMPLEMENTATION, REVISING, AMENDING, AND INSPECTING (TO BE FILLED IN BY THE CONTRACTOR)

NAME OF INDIVIDUAL OVERSEEING & INSPECTING _____
DATE OF TRAINING _____
NAME OF INSTRUCTOR _____
ENTITY PROVIDING TRAINING _____
CONTENT OF TRAINING _____
TOTAL HOURS OF TRAINING _____

BMP INSTALLATION, MAINTENANCE, AND REPAIR (TO BE FILLED IN BY THE CONTRACTOR)

NAME OF INDIVIDUAL OVERSEEING & INSPECTING _____
DATE OF TRAINING _____
NAME OF INSTRUCTOR _____
ENTITY PROVIDING TRAINING _____
CONTENT OF TRAINING _____
TOTAL HOURS OF TRAINING _____

POLLUTION PREVENTION

FERTILIZERS ARE TO BE APPLIED ONLY IN THE AMOUNTS AS SPECIFIED AND WORKED INTO THE SOIL TO MINIMIZE EXPOSURE TO STORMWATER RUNOFF.

ONSITE REFUELING OPERATIONS ARE TO BE CONDUCTED WITH CARE. ANY INADVERTENT SPILLAGE OF FUEL OR CHEMICALS IS TO BE IMMEDIATELY CLEANED UP, REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE TO STATE AND LOCAL REGULATIONS. MAJOR SPILLS ARE TO BE REPORTED TO THE MPCA 24 HOUR NOTIFICATION NETWORK AT 800 422 0798. ALL VEHICLES ON-SITE ARE TO BE MONITORED FOR LEAKS AND SUBJECT TO ROUTINE PREVENTIVE MAINTENANCE EFFORTS TO REDUCE THE LIKELIHOOD OF LEAKAGE AND OR SPILLS.

PORTABLE SANITARY WASTE FACILITIES ARE TO BE PROVIDED ONSITE AND EMPTIED ON A BI-WEEKLY BASIS.

CONCRETE BATCH TRUCKS WILL NOT BE ALLOWED TO DISCHARGE DRUM AND CHUTE WASHOUT DIRECTLY ON THE GROUND. A PORTABLE WASHOUT RECEPTACLE IS TO BE PROVIDED BY THE CONTRACTOR AT THE LOCATION AS PROVIDED BY THE OWNER.

FINAL STABILIZATION

FINAL STABILIZATION OCCURS WHEN 70 PERCENT OF THE PERVIOUS AREA IS COVERED WITH UNIFORM, PERMANENT VEGETATION.

ALL TEMPORARY EROSION AND SEDIMENT CONTROL FEATURES ARE TO BE REMOVED AND THE NPDES NOTICE OF TERMINATION IS TO BE PREPARED AND SUBMITTED TO THE MPCA.

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN

DESCRIPTION TITLE LOCATION
EROSION CONTROL DETAILS CONSTRUCTION DETAILS C6
EROSION CONTROL LOCATIONS EROSION CONTROL LOCATIONS C3

24 HOUR MPCA EMERGENCY NOTIFICATION:
TELEPHONE NUMBERS: 651-649-5451
800-422-0798

ESTIMATED QUANTITIES:

THE FOLLOWING QUANTITIES IS AN ESTIMATED PRELIMINARY AMOUNT REQUIRED FOR SEDIMENT CONTROL BMP'S AT THE START OF THE PROJECT. THIS ESTIMATE IS PROVIDED AS REQUIRED BY THE MINNESOTA POLLUTION CONTROL AGENCY GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY. ANY ADDITIONAL AND/OR REPLACEMENT BMP'S QUANTITIES WILL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

ESTIMATED PRELIMINARY QUANTITIES AT START OF PROJECT:
ITEM UNIT ESTIMATED INITIAL QUANTITY
TEMPORARY CONSTRUCTION ENTRANCE EA 2
TEMPORARY SILT FENCE LF 14,186
EROSION CONTROL BLANKET FOR POND CU YD 2166

TEMPORARY EROSION AND SEDIMENT CONTROL SPECIFICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. PREVENTION OF SEDIMENTATION OF WATERWAYS, OPEN DRAINAGE WAYS, AND STORM AND SANITARY SEWERS DUE TO CONSTRUCTION ACTIVITIES.
- 1.02 REFERENCE STANDARDS
- A. GENERAL PERMIT AUTHORIZATION TO DISCHARGE STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM. MINNESOTA PERMIT NO: MN R100001.
- 1.03 PERFORMANCE REQUIREMENTS
- A. COMPLY WITH ALL REQUIREMENTS OF THE MINNESOTA POLLUTION CONTROL AGENCY FOR EROSION AND SEDIMENT CONTROL.
- B. DO NOT BEGIN CLEARING, GRADING, OR OTHER WORK INVOLVING DISTURBANCE OF GROUND SURFACE COVER UNTIL APPLICABLE PERMITS HAVE BEEN OBTAINED, FURNISH ALL DOCUMENTATION REQUIRED TO OBTAIN APPLICABLE PERMITS.
1. OBTAIN AND PAY FOR PERMITS REQUIRED BY AUTHORITY HAVING JURISDICTION.
- C. TIMING: PUT PREVENTIVE MEASURES IN PLACE PRIOR TO DISTURBANCE OF SURFACE COVER AND BEFORE PRECIPITATION OCCURS.
- D. EROSION OFF SITE: PREVENT EROSION OF SOIL AND DEPOSITION OF SEDIMENT ON OTHER PROPERTIES CAUSED BY WATER LEAVING THE PROJECT SITE DUE TO CONSTRUCTION ACTIVITIES FOR THIS PROJECT.
1. PREVENT TRACKING OF MUD ONTO PUBLIC ROADS OUTSIDE SITE.
2. PREVENT MUD AND SEDIMENT FROM FLOWING ONTO PAVEMENTS.
- E. SEDIMENTATION OF WATERWAYS OFF SITE: PREVENT SEDIMENTATION OF WATERWAYS OFF THE PROJECT SITE, INCLUDING RIVERS, STREAMS, LAKES, PONDS, OPEN DRAINAGE WAYS, STORM SEWERS, AND SANITARY SEWERS.
1. IF SEDIMENTATION OCCURS, INSTALL OR CORRECT PREVENTIVE MEASURES IMMEDIATELY AT NO COST TO OWNER. REMOVE DEPOSITED SEDIMENTS, COMPLY WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
- F. MAINTENANCE: MAINTAIN TEMPORARY PREVENTIVE MEASURES UNTIL PERMANENT MEASURES HAVE BEEN ESTABLISHED.

PART 2 PRODUCTS

2.01 MATERIALS

- A. TEMPORARY SILT FENCE: WOVEN POLYPROPYLENE GEOTEXTILE RESISTANT TO COMMON SOIL CHEMICALS, MILDEW, AND INSECTS; NON-BIODEGRADABLE; IN LONGEST LENGTHS POSSIBLE; FABRIC INCLUDING SEAMS WITH THE FOLLOWING MINIMUM AVERAGE ROLL LENGTHS:
1. AVERAGE OPENING SIZE: 20 U.S. STD. SIEVE, MAXIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM D4751.
2. PERMITTIVITY: 0.05 SEC-1, MINIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM D4491.
3. ULTRAVIOLET RESISTANCE: RETAINING AT LEAST 70 PERCENT OF TENSILE STRENGTH, WHEN TESTED IN ACCORDANCE WITH ASTM D4355/D4355M AFTER 500 HOURS EXPOSURE.
4. TENSILE STRENGTH: 100 LB-F, MINIMUM, IN CROSS-MACHINE DIRECTION; 124 LB-F, MINIMUM, IN MACHINE DIRECTION; WHEN TESTED IN ACCORDANCE WITH ASTM D4632.
5. ELONGATION: 15 TO 30 PERCENT, WHEN TESTED IN ACCORDANCE WITH ASTM D4632.
6. TEAR STRENGTH: 55 LB-F, MINIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM D4533.
7. COLOR: MANUFACTURER'S STANDARD, WITH EMBEDMENT AND FASTENER LINES PREPRINTED.
8. SILT FENCE POSTS: ONE OF THE FOLLOWING, MINIMUM 5 FEET LONG:
- a. STEEL U- OR T-SECTION, WITH MINIMUM MASS OF 1.33 LB PER LINEAR FOOT.
- b. SOFTWOOD, 4 BY 4 INCHES IN CROSS SECTION.
- c. HARDWOOD, 2 BY 2 INCHES IN CROSS SECTION.
- B. TEMPORARY SEDIMENT LOGS: FILTER LOGS SHALL CONSIST OF TYPE WOOD FIBER BIOROLLS AND THE REQUIREMENTS OF MNDOT SPEC. 3897.
1. SHALL BE ONE OF THE FOLLOWING.
- a. SHALL BE SILT-SOXX PERIMETER CONTROL BY FILTREXX, INC., OR EQUAL.
- C. TEMPORARY SEDIMENT FILTER
1. SHALL BE ONE OF THE FOLLOWING.
- a. DROP-IN SEDIMENT FILTER UNIT THAT INSERTS INTO THE INLET.
- 1) SHALL BE FLEXISTORM PURE: PERMANENT INLET FILTER BY ADS, INC., OR EQUAL.
- (a) PROVIDE CURB OPENING PROTECTION FOR EXISTING INLETS WITH CURB OPENINGS.
- D. TEMPORARY ROCK CONSTRUCTION ENTRANCE
1. ROCK SHALL BE CLEAN 1 TO 2 INCH WASHED ROCK.
- E. TEMPORARY SLOPE EROSION PROTECTION
1. SHALL BE ONE OF THE FOLLOWING.
- a. EROSION CONTROL BLANKET.
- 1) SHALL CONSIST OF A UNIFORM WEB OF INTERLOCKING STRAW OR WOOD FIBERS SANDWICHED BETWEEN AN ATTACHED TOP AND BOTTOM LAYER OF NET BACKING.
- 2) THE NETTING SHALL BE BIODEGRADABLE CONTAINING SUFFICIENT UV STABILIZATION FOR BREAKDOWN TO OCCUR WITHIN A NORMAL GROWING SEASON.
- 3) STAPLES USED TO ANCHOR THE BLANKETS SHALL BE U-SHAPED, 11 GAUGE OR HEAVIER STEEL WIRE HAVING A SPAN WIDTH OF 1 INCH AND A LENGTH OF 8 INCHES OR MORE FROM TOP TO BOTTOM AFTER BENDING.
- 4) THE EROSION CONTROL BLANKETS ACCEPTABLE FOR USE ON THIS PROJECT INCLUDE:
- (a) GEO-SYNTHETICS, INC. - LANDLOK 52.
- (b) NORTH AMERICAN GREEN - S150.
- (c) OR EQUAL.
- b. BONDED FIBER MATRIX.
- 1) THE FIBERS SHALL BE COMPOSED OF 100% WOOD OR WOOD BY-PRODUCTS. A MINIMUM OF 25% OF THE FIBERS SHALL AVERAGE 10 TO 16 MM (0.4 INCHES) IN LENGTH AND 50% OR MORE SHALL BE RETAINED ON A CLARK FIBER CLASSIFIER 24 MESH SCREEN. FIBERS SHALL BE COLORED WITH A WATER SOLUBLE, NON-TOXIC DYE, TO AID IN UNIFORM APPLICATION OVER THE SITE.
- 2) THE BINDER SHALL BE A HYDRO COLLOID BASED (GUAR GUM) WITH ADDED SLOW-RELEASE AND AGRICULTURAL BASED FERTILIZERS. THE BINDER SHALL NOT DISSOLVE OR DISPERSE UPON RETWETTING.
- 3) THE BFM SLURRY SHALL DRY TO FORM A CRUST APPROXIMATELY 3-6 MM (1/8 TO 1/4 INCHES) THICK ADHERING TO THE SOIL SURFACE.
- 4) THE MOISTURE CONTENT OF THE MATRIX SHALL BE 12% +/- 3% BY WEIGHT.
- 5) THE MATRIX SHALL CONSIST OF MATERIALS THAT ARE 100% BIODEGRADABLE AND 100% BENEFICIAL TO PLANT LIFE.
- 6) THE MATRIX SHALL PROVIDE 100% CONTINUOUS COVERAGE AND SHALL HAVE NO HOLES GREATER THAN 1MM IN SIZE.
- 7) THE HYDRATED MIXTURE DENSITY SHALL BE APPROXIMATED BY A SLUMP TEST PRIOR TO APPLICATION.
- 8) THE BFM MULCH: WATER RATIO SHALL BE AS MANUFACTURER RECOMMENDATIONS. THE MINIMUM BFM MULCH TO WATER RATIO IS 50LBS BFM MULCH AND 100 GALLONS WATER. THE WATER RATE WILL VARY BETWEEN 100 GALLONS AND 125 GALLONS PER 50LBS, DEPENDING ON WHICH OF THE PRODUCTS IS USED.
- 9) THE BONDED FIBER MATRIX MULCH PRODUCTS ACCEPTABLE FOR USE ON THIS PROJECT INCLUDE:
- (a) ECOAEGIS - MANUFACTURED BY CANFOR.
- (b) SOIL GUARD - MANUFACTURED BY MAT, INC.
- (c) CONVED 3000 - MANUFACTURED BY CONVED FIBERS, INC.
- F. TEMPORARY PUMPED SEDIMENT CONTROL DEVICE
1. NON-WOVEN GEOTEXTILE FABRIC SEWN INTO A BAG USING A DOUBLE NEEDLE MACHINE AND HIGH STRENGTH THREAD.
- a. SEAMS SHALL HAVE AN AVERAGE WIDTH STRENGTH OF 60LB/INCH AS PER ASTM D4883 AND MEET OR EXCEED THE FOLLOWING:
- 1) GRAB TENSILE OF 205 LBS AS PER ASTM D 4632.
- 2) PUNCTURE OF 110 LBS AS PER ASTM D 4833.
- 3) FLOW RATE OF 95 GAL/MIN/SF AS PER ASTM D 4491.
- 4) PERMITTIVITY OF 1.5 SEC-1 AS PER ASTM D 4491.
- 5) MULLEN BURST STRENGTH OF 350 PSI AS PER ASTM D 3786.
- 6) ACOF OF 80% US SIEVE AS PER ASTM D 4751.
2. SPOUT LARGE ENOUGH TO ACCOMMODATE A 4 INCH DISCHARGE HOSE WITH STRAP TO TIE UNIT CLOSED.
3. SHALL BE ONE OF THE FOLLOWING.
- a. DIRT BAG.
- b. ACF ENVIRONMENTAL, INC., 2831 CARDWELL ROAD, RICHMOND, VIRGINIA 23234, 800-448-3636.
- 1) DANDY DEWATERING BAG.
- 1) DANDY PRODUCTS, INC., P.O. BOX 1980, WESTERVILLE, OHIO 43086, 800-591-2294.
- c. OR EQUAL.

PART 3 EXECUTION

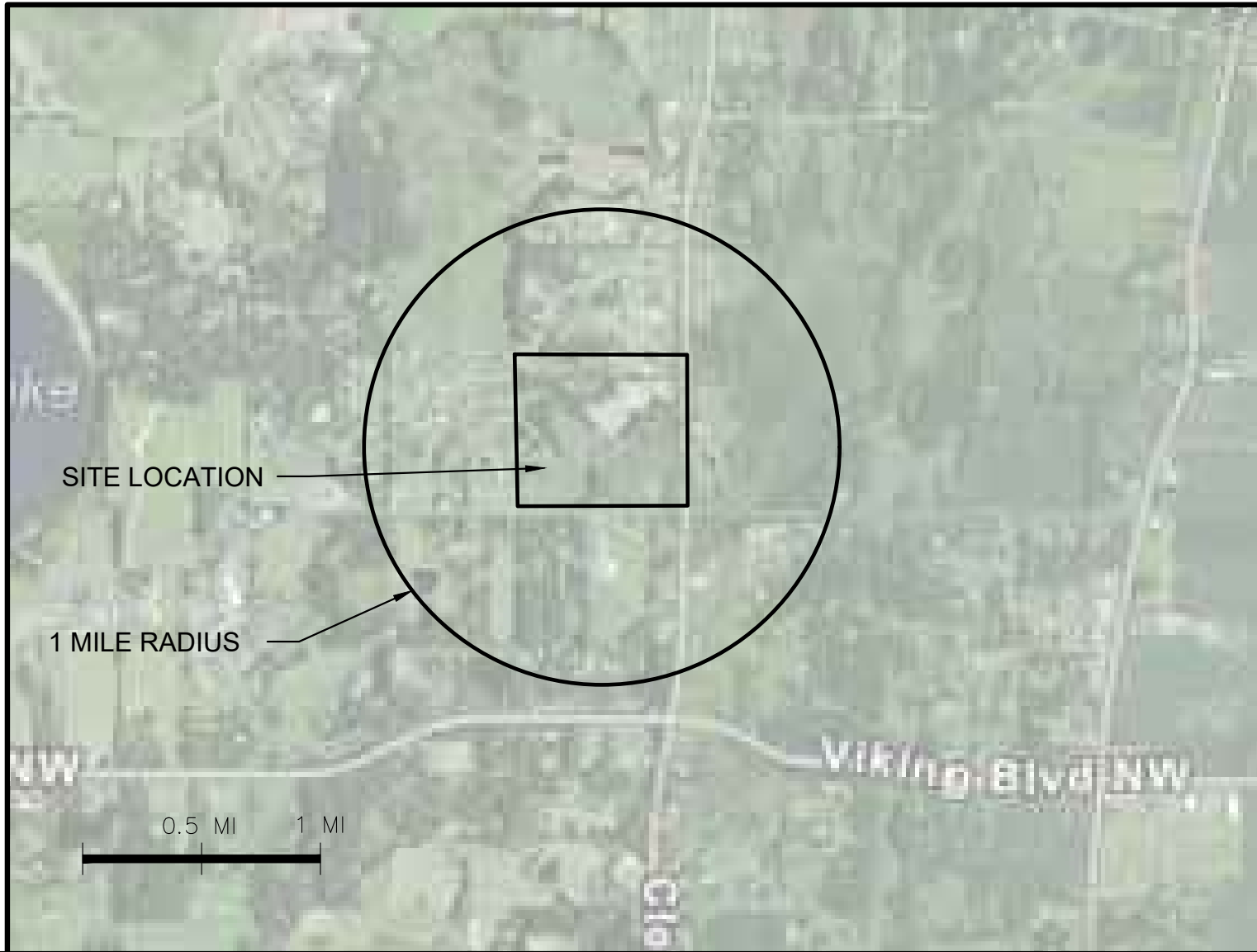
3.01 PREPARATION

- A. SCHEDULE WORK SO THAT SOIL SURFACES ARE LEFT EXPOSED FOR THE MINIMUM AMOUNT OF TIME.
- B. THE CONSTRUCTION SITE OPERATOR SHALL FOLLOW ALL REQUIREMENTS OF THE MINNESOTA STORMWATER PERMIT NO. MN R100001.
- C. THE CONTRACTOR SHALL COMPLETE AND SIGN THE NOTICE OF INTENT, OBTAIN THE OWNER'S SIGNATURE, AND SUBMIT TO THE MPCA.
1. PROVIDE A SIGNED COPY TO THE OWNER.

3.03 INSTALLATION

- A. TEMPORARY ROCK CONSTRUCTION ENTRANCE.
1. THE ROCK AREA SHALL BE A MINIMUM OF 6 INCHES DEEP, EXTEND THE FULL WIDTH OF THE EGRESS AREA AND SHALL BE AT LEAST 50FT LONG, HOWEVER, LONGER ENTRANCES MAY BE REQUIRED TO ADEQUATELY CLEAN THE TIRES.
2. GEOTEXTILE FABRIC MAY BE USED TO PREVENT MIGRATION OF MUD FROM THE UNDERLYING SOIL INTO THE ROCK.
- B. TEMPORARY SILT FENCES:
1. STORE AND HANDLE FABRIC IN ACCORDANCE WITH ASTM D4873.
2. USE NOMINAL 30 INCH HIGH BARRIERS, MINIMUM 60 INCH LONG POSTS SPACED AT 6 FEET MAXIMUM SPACING.
3. EMBED BOTTOM OF FABRIC IN A TRENCH ON THE UPSLOPE SIDE OF FENCE, WITH 6 INCHES OF FABRIC LAID FLAT ON BOTTOM OF TRENCH FACING UPSLOPE; BACKFILL TRENCH AND COMPACT.
4. MINIMUM POST EMBEDMENT
- a. STEEL POST = 24 INCHES, MINIMUM.
- b. WOOD POST = 18 INCHES, MINIMUM.
5. DO NOT SPLICE FABRIC WIDTH; MINIMIZE SPLICES IN FABRIC LENGTH; SPLICE AT POST ONLY, OVERLAPPING AT LEAST 18 INCHES, WITH EXTRA POST.
6. FASTEN FABRIC TO WOOD POSTS USING ONE OF THE FOLLOWING:
- a. FOUR NAILS PER POST WITH 3/4 INCH DIAMETER FLAT OR BUTTON HEAD, 1 INCH LONG, AND 14 GAGE, 0.083 INCH SHANK DIAMETER.
- b. FIVE STAPLES PER POST WITH AT LEAST 17 GAGE, 0.0453 INCH WIRE, 3/4 INCH CROWN WIDTH AND 1/2 INCH LONG LEGS.
7. FASTEN FABRIC TO STEEL POSTS USING WIRE, NYLON CORD, OR INTEGRAL POCKETS.
- C. TEMPORARY SEDIMENT LOGS:
1. PERIMETER CONTROL SHOULD BE INSTALLED PARALLEL TO THE BASE OF THE SLOPE OR OTHER DISTURBED AREA.
2. STAKES SHOULD BE INSTALLED THROUGH THE MIDDLE OF THE PERIMETER CONTROL ON 10 FT CENTERS, USING 2 IN BY 2 IN BY
- 3 FT WOODEN STAKES. IN THE EVENT STAKING IS NOT POSSIBLE, I.E. WHEN PERIMETER CONTROL IS USED ON PAVEMENT, HEAVY CONCRETE BLOCKS SHALL BE USED BEHIND THE PERIMETER CONTROL TO HELP STABILIZE DURING RAIN EVENTS.
- D. TEMPORARY SEDIMENT FILTERS.
1. DROP-IN SEDIMENT TRAP.
- a. PLACE AS RECOMMENDED BY THE MANUFACTURER.
- E. TEMPORARY PUMPED SEDIMENT CONTROL DEVICE
1. INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.
- F. TEMPORARY SLOPE EROSION PROTECTION.
1. PLACE AT ANY AND ALL FINISH SLOPES THAT ARE STEEPER THAN 10H:1V.
2. SEED AND FERTILIZE PER SPECIFICATION 32 9219 PRIOR TO INSTALLING TEMPORARY SLOPE EROSION PROTECTION.
3. BONDED FIBER MATRIX.
- a. INSTALL THE BFM AS PER THE MANUFACTURER'S INSTRUCTIONS WITH THE FOLLOWING MINIMUM GUIDELINES.
- 1) THE BFM SHALL BE APPLIED WITH HYDRAULIC SPRAY EQUIPMENT BY A MANUFACTURER'S CERTIFIED APPLICATOR.
- 2) APPLICATION SHALL BE DONE AT LEAST 24 HOURS IN ADVANCE OF PROJECTED RAINFALL TO ALLOW THE BFM MULCH ADEQUATE TIME TO DRY.
- 3) THE BFM MULCH SHALL BE APPLIED IN TWO STAGES (ONE-HALF RATE) WITH AMPLE TIME TO DEWATER THE FIRST APPLICATION.
- 4) THE BFM MULCH SHALL BE APPLIED FROM AT LEAST TWO ALTERNATE DIRECTIONS, PREFERABLY 90 DEGREES APART, IF POSSIBLE, TO ENSURE ALL SOIL FACES ARE COVERED.
- 5) THE INSTALLATION RATE OF THE BFM MULCH SHALL BE 3500 LBS PER ACRE, MINIMUM AND 100% COVERAGE.
4. EROSION CONTROL BLANKET.
- a. INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.
- 3.04 MAINTENANCE
- A. INSPECT PREVENTIVE MEASURES WEEKLY, WITHIN 24 HOURS AFTER THE END OF ANY STORM THAT PRODUCES 0.5 INCHES OR MORE RAINFALL AT THE PROJECT SITE, AND DAILY DURING PROLONGED RAINFALL.
- B. REPAIR DEFICIENCIES IMMEDIATELY.
- C. TEMPORARY SILT FENCES:
1. PROMPTLY REPLACE FABRIC THAT DETERIORATES UNLESS NEED FOR FENCE HAS PASSED.
2. REMOVE SILT DEPOSITS THAT EXCEED ONE-THIRD OF THE HEIGHT OF THE FENCE.
3. REPAIR FENCES THAT ARE UNDERCUT BY RUNOFF OR OTHERWISE DAMAGED, WHETHER BY RUNOFF OR OTHER CAUSES.
- D. TEMPORARY CONSTRUCTION EXIT
1. PERIODIC ADDITION OF ROCK OR REMOVAL AND REPLACEMENT OF PAD SHALL BE PROVIDED AS VOIDS BECOME FILLED WITH SOIL.
- E. TEMPORARY PUMPED SEDIMENT CONTROL DEVICE
1. REPLACE THE UNIT WHEN 1/2 FULL OF SEDIMENT OR WHEN SEDIMENT HAS REDUCED THE FLOW RATE OF THE PUMP DISCHARGE TO AN IMPRACTICAL RATE.
- F. PLACE SEDIMENT IN APPROPRIATE LOCATIONS ON SITE; DO NOT REMOVE FROM SITE.
- 3.05 CLEAN UP
- A. REMOVE TEMPORARY MEASURE AFTER PERMANENT VEGETATION HAS BEEN ESTABLISHED.
- B. WHERE REMOVAL OF TEMPORARY MEASURES WOULD LEAVE EXPOSED SOIL, SHAPE SURFACE TO AN ACCEPTABLE GRADE AND FINISH TO MATCH ADJACENT GROUND SURFACES.
- END OF SECTION

IMPAIRED WATERS MAP



DATE:	03/25/2022	REV NO.	03/25/2022	DESCRIPTION	FINAL PLANS FOR CONSTRUCTION
DESIGN BY:	CJN				EAST CULVERT SIZE INCREASE
DRAWN BY:	CJN				
CHECKED BY:	CJD				
DWG FILE:	SWPPP				
FILE NO.:	21-0237.00				

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.

Signed: Christopher J. Dahn
Date: 05/25/2022
Lic. No. 58628

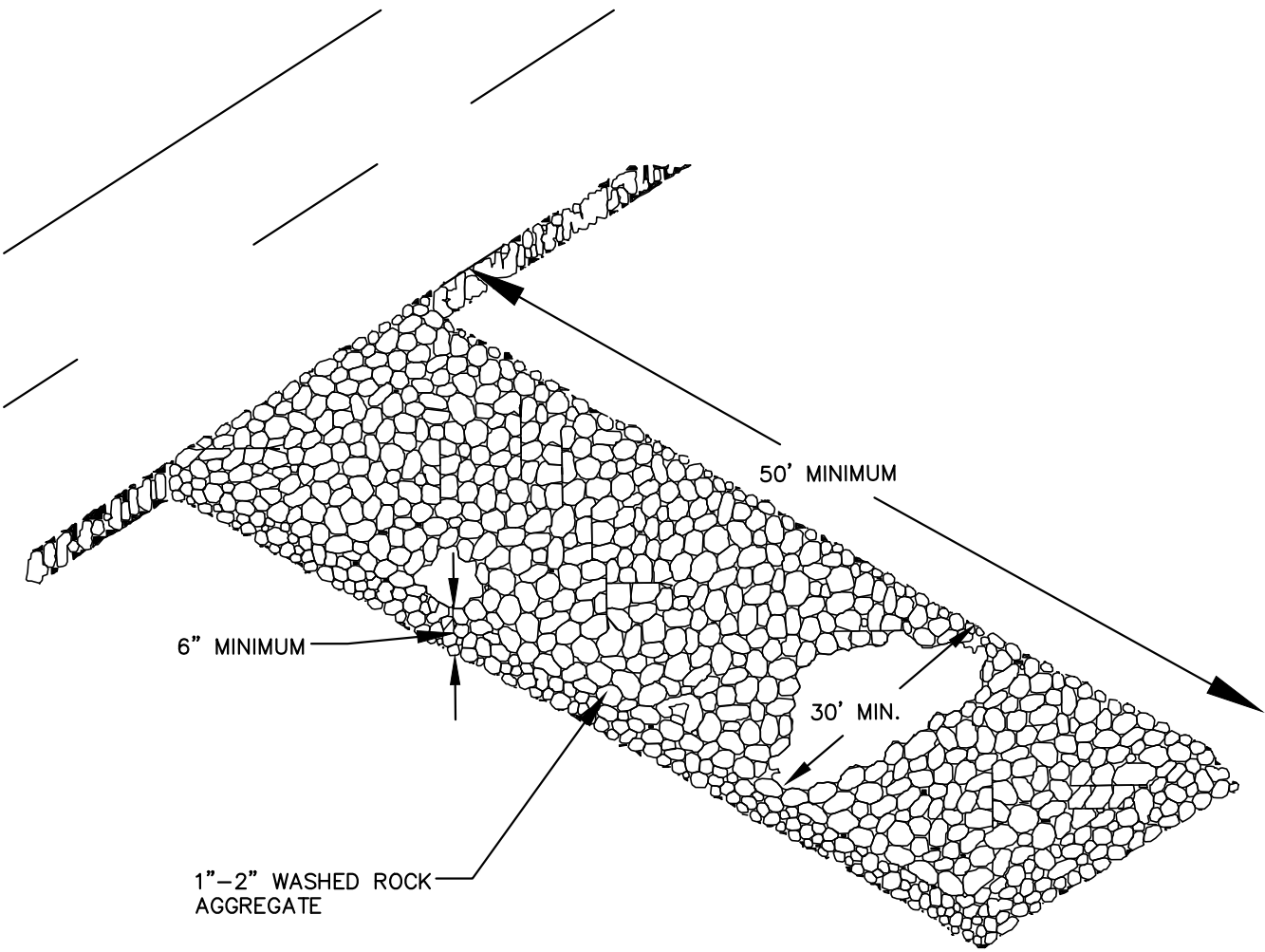
BOGART, PEDERSON & ASSOCIATES, INC.
LAND SURVEYING
ENVIRONMENTAL SERVICES
13076 FIRST STREET, BECKER, MN 55308-9322
TEL: 763-262-8822 FAX: 763-262-8844

L&B LAND COMPANY, LLC
WOODHAVEN
FINAL PLANS FOR CONSTRUCTION
City of NOWTHEN, ANOKA County, MN

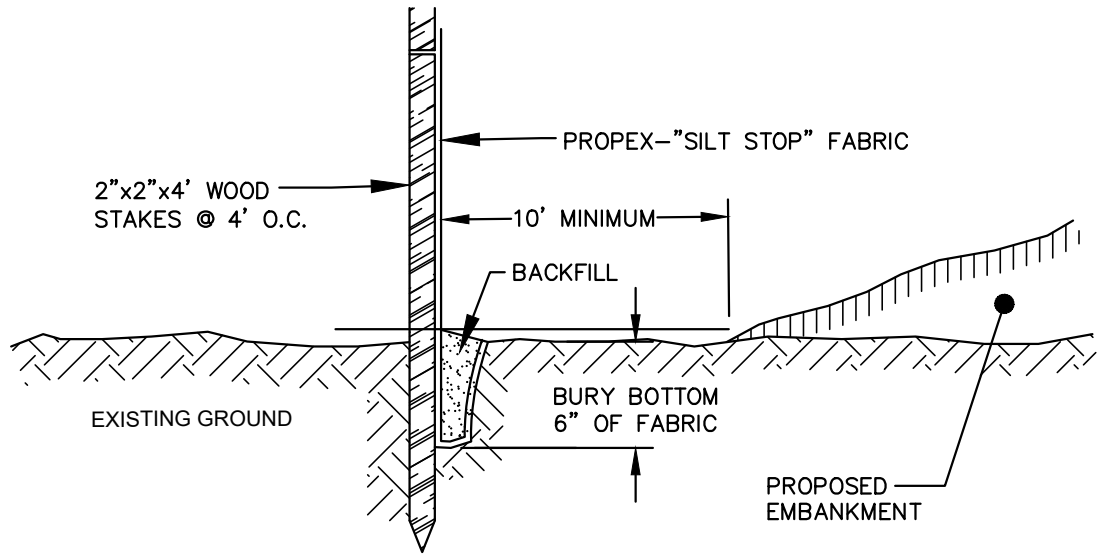
SWPPP NARRATIVE

SHEET NO.

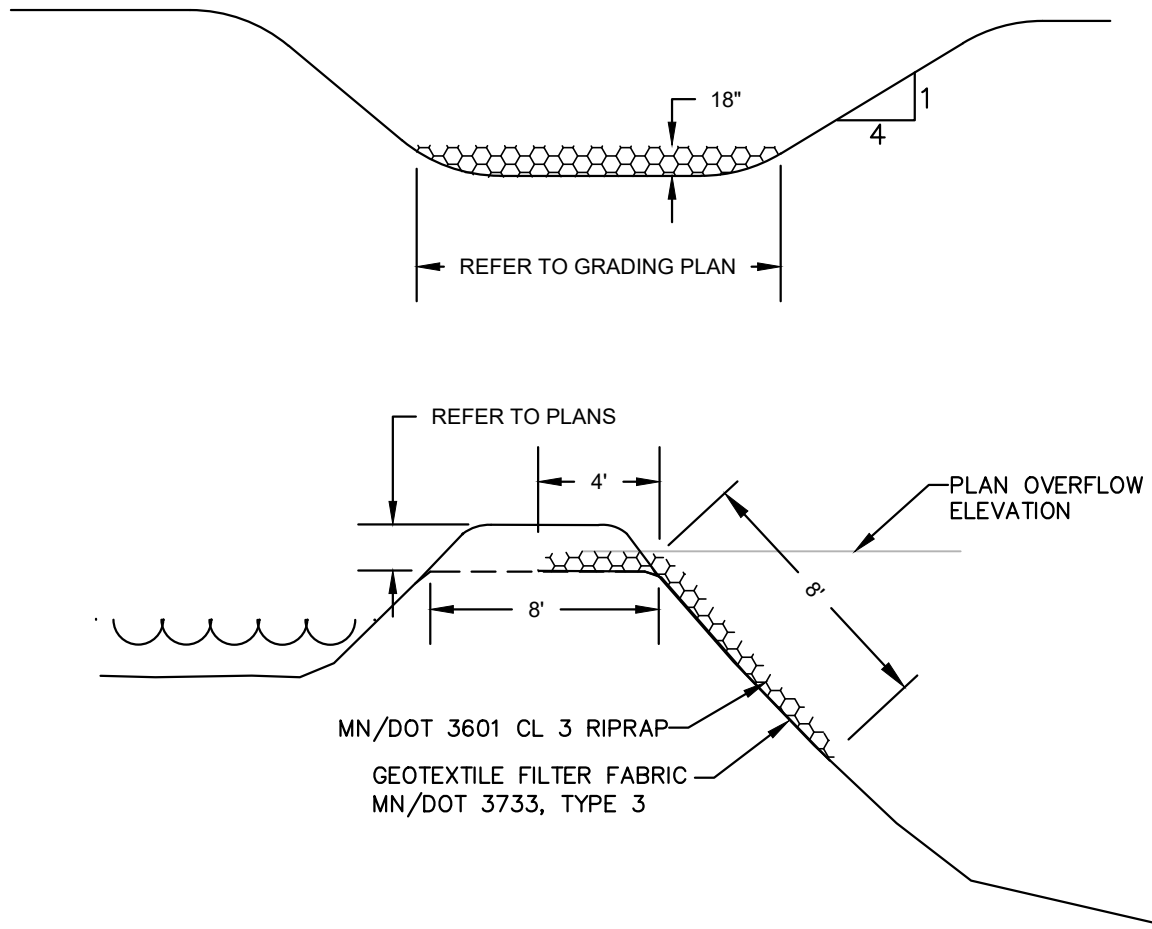
C5



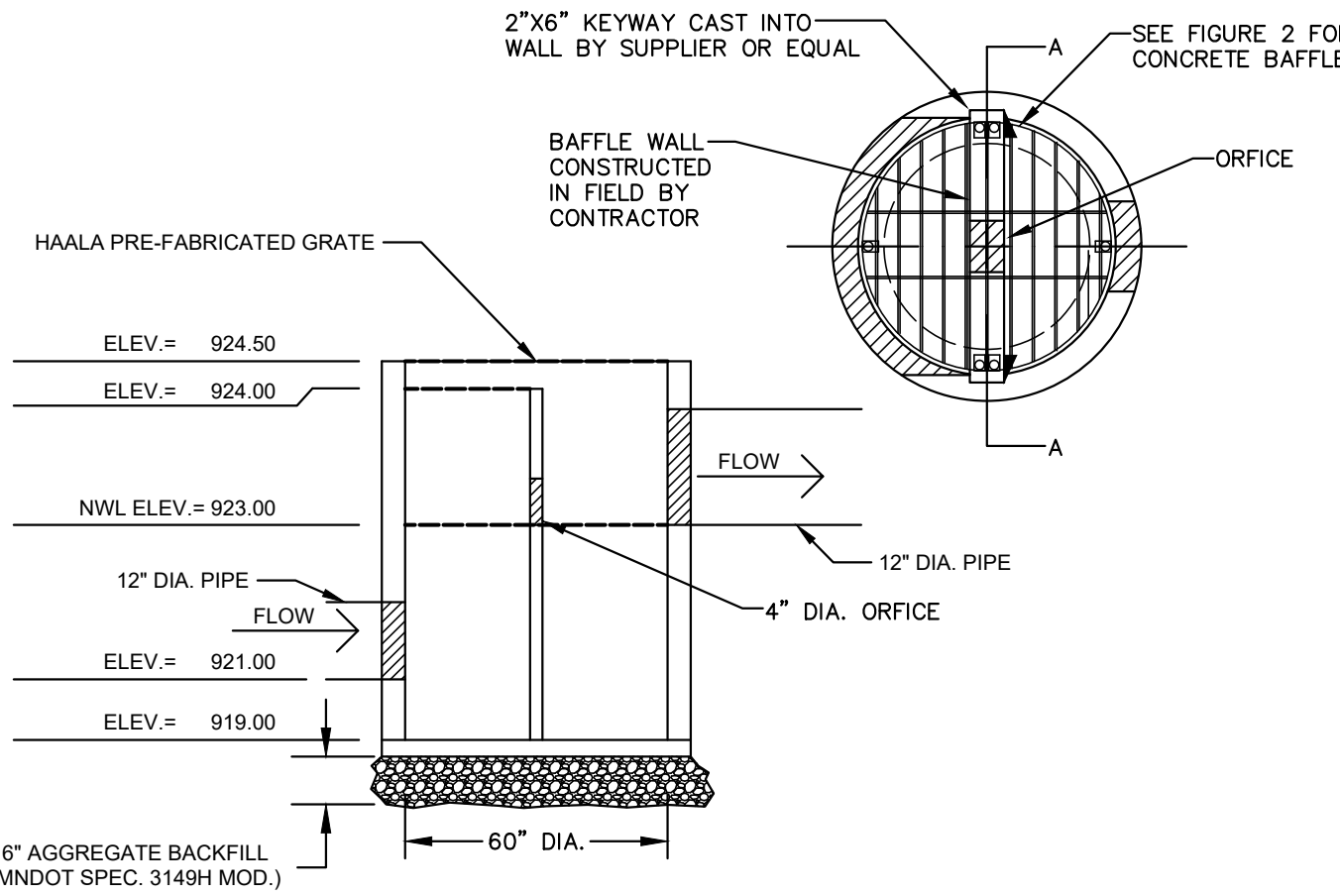
ROCK CONSTRUCTION ENTRANCE
N.T.S.



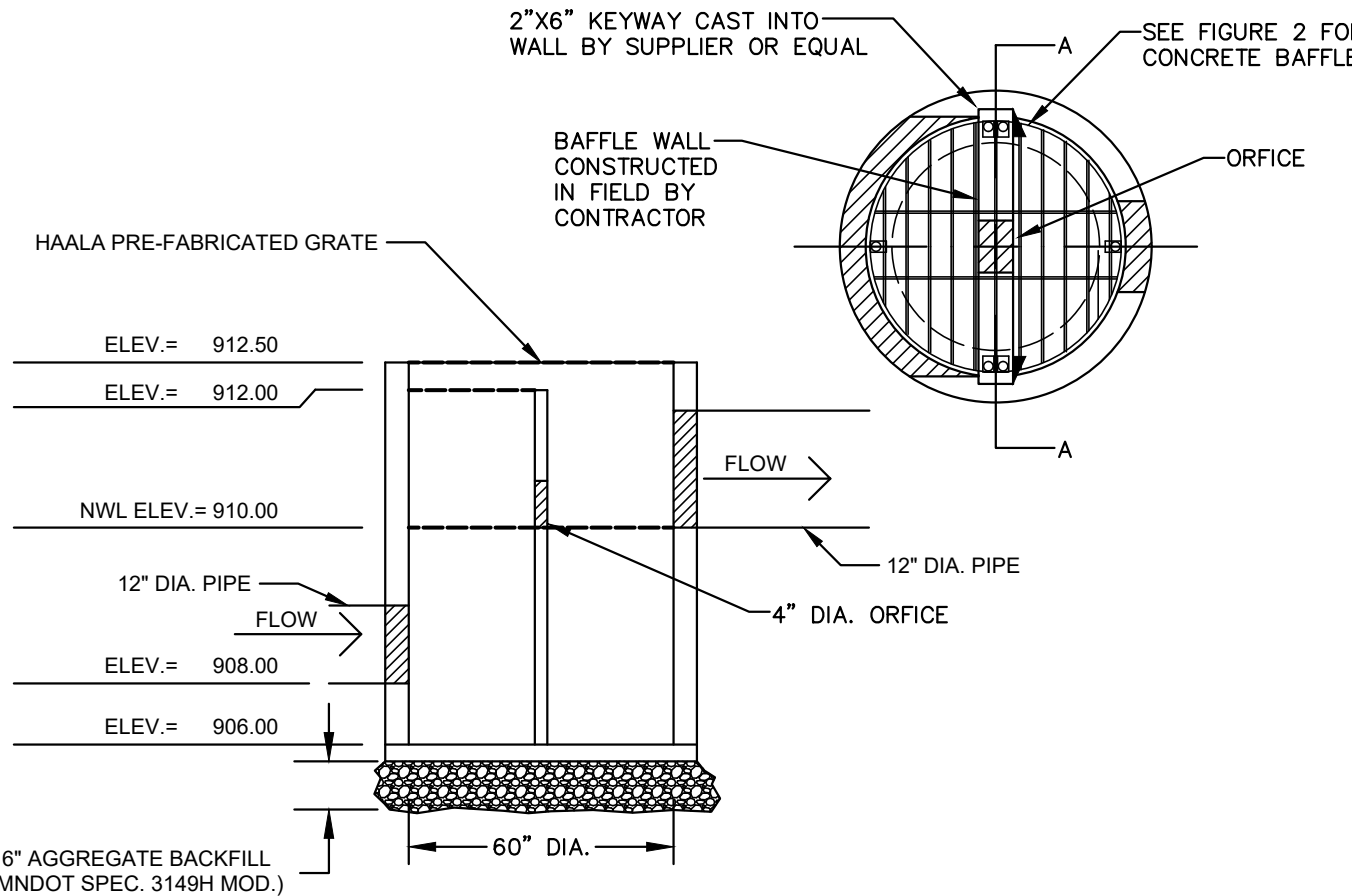
TEMPORARY SILT FENCE
N.T.S.



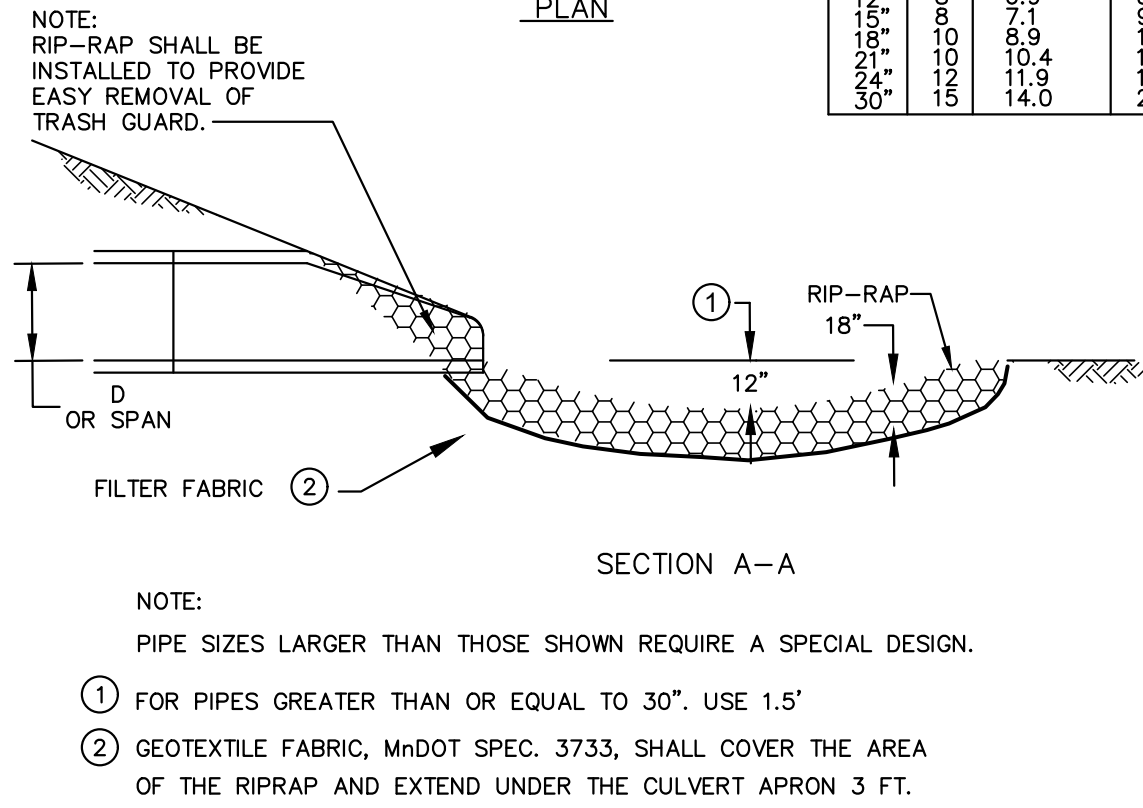
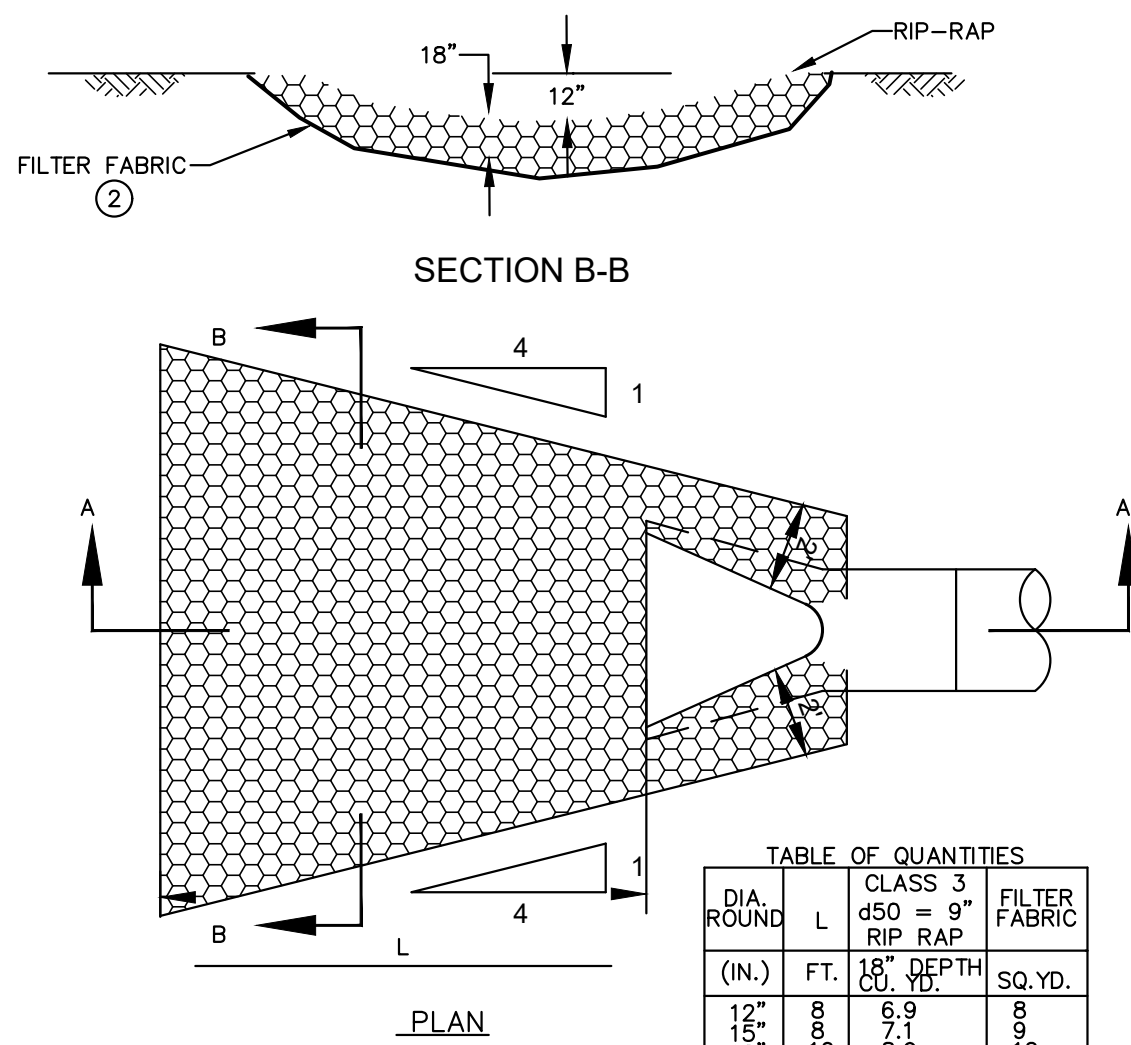
EMERGENCY OVERFLOW WEIR DETAIL
N.T.S.



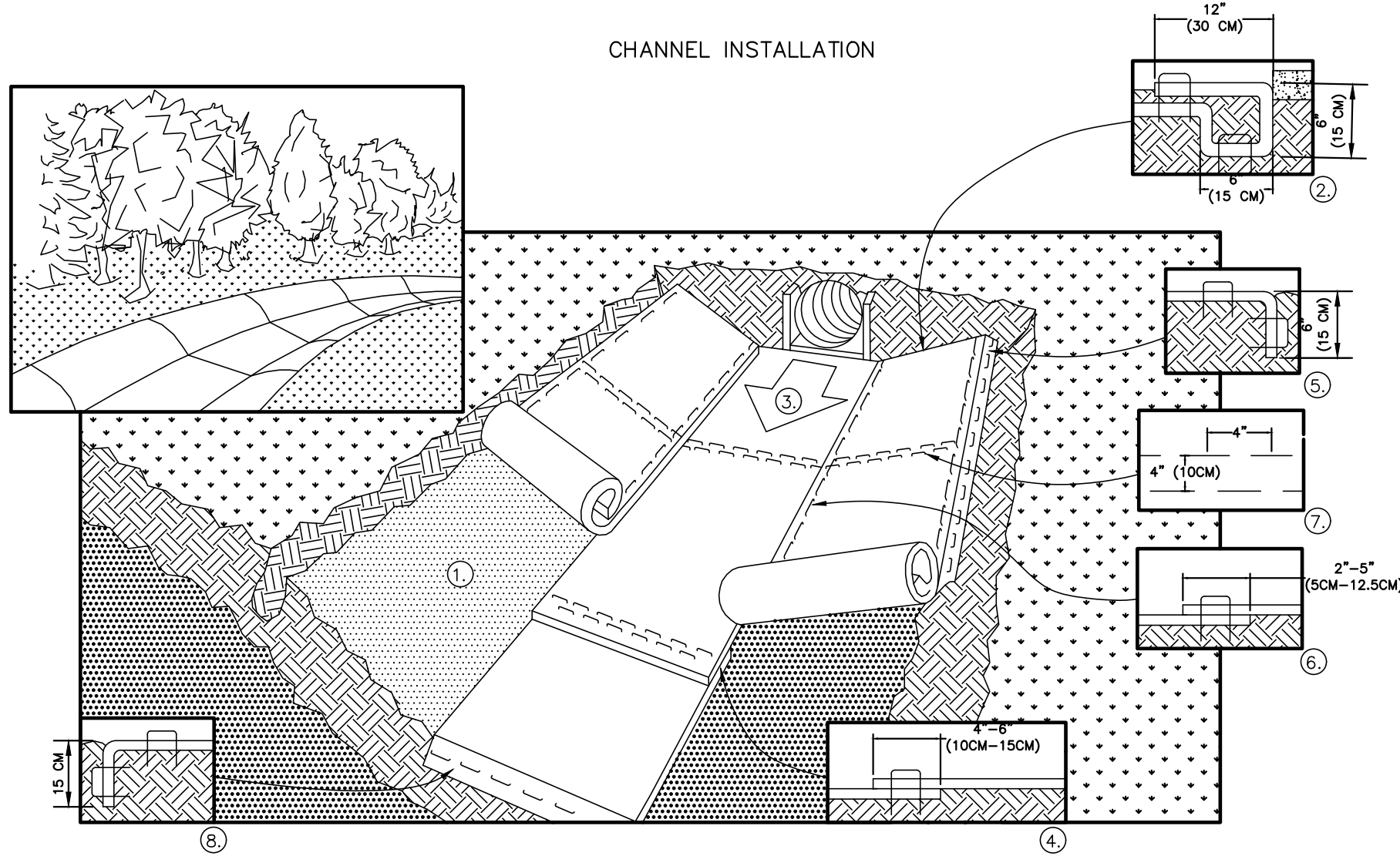
2 W STORMWATER CONTROL STRUCTURE
N.T.S.



1 SE STORMWATER CONTROL STRUCTURE
N.T.S.



RIP-RAP INSTALLATION
N.T.S.



WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.

WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.

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. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.

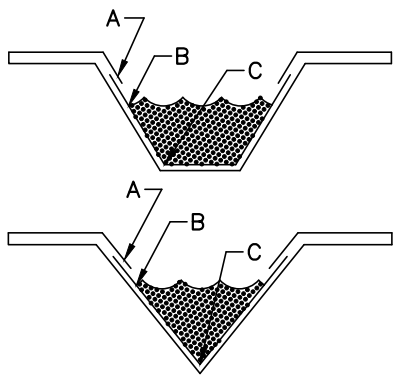
STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER TO SECURE BLANKETS.™

12" (30cm) APART IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE BLANKET BEING OVERLAPPED.

A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.

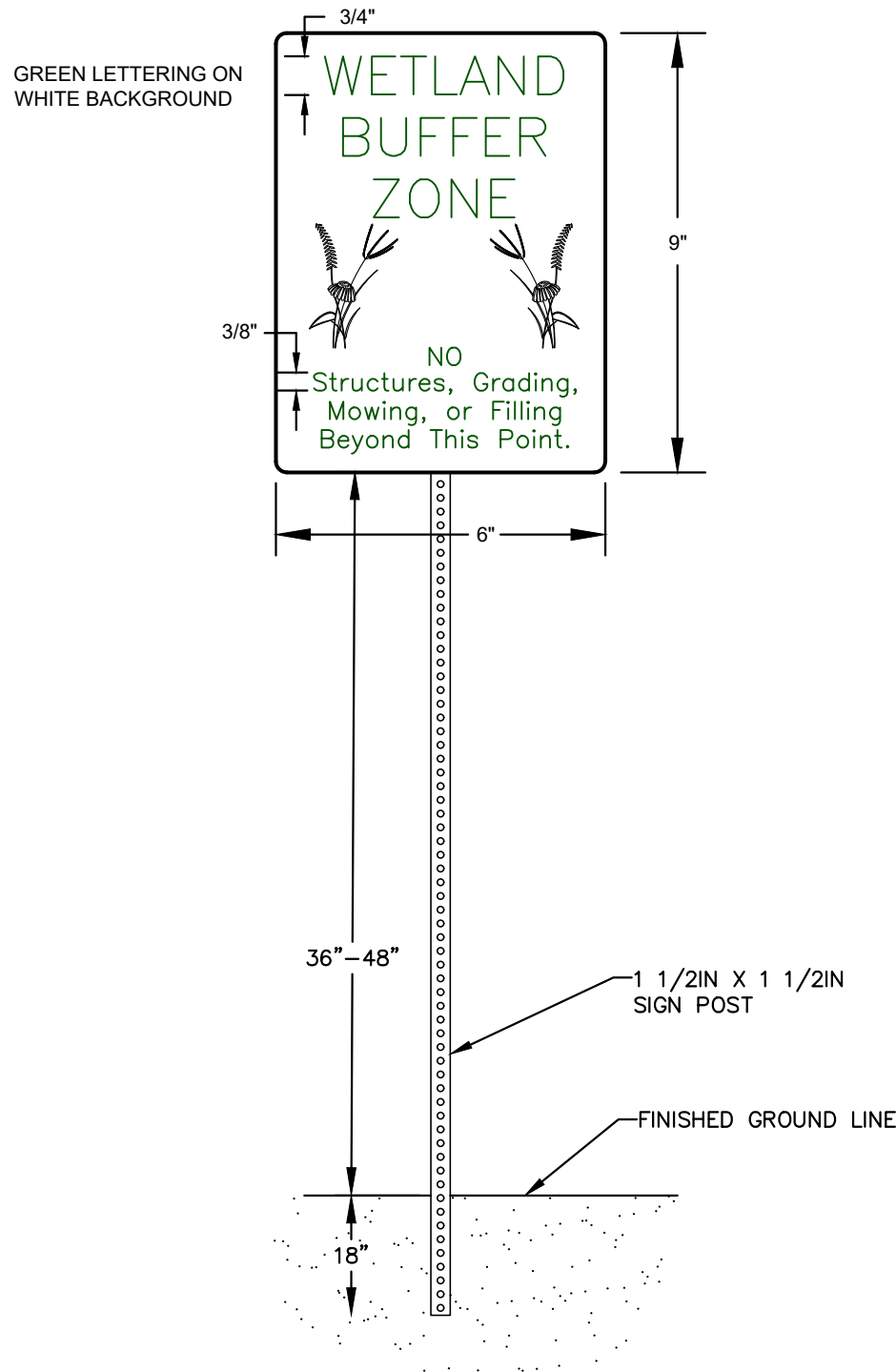
IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.



CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

NOTE:
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 cm) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

EROSION CONTROL MATTING (FOR POND)
N.T.S.



WETLAND BUFFER SIGN

DATE: 03/25/2022
DESIGN BY: C/JN
DRAWN BY: C/JN
CHECKED BY: C/JD
DWG FILE: DETAILS
FILE NO.: 21-0237.00

03/25/2022
C/JN
C/JN
C/JD
DETAILS
21-0237.00

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DETAILS

SHEET NO.

C6