Item 5E.
BCWMC 6-18-15
Full plan set onlline

2015 BASSETT CREEK RESTORATION PROJECT

FOR THE

CITY OF GOLDEN VALLEY

CONSTRUCTION PLAN FOR: STREAMBANK STABILIZATION AND HABITAT RESTORATION LOCATED ON BASSETT CREEK

PROJECT LOCATION: RHODE ISLAND AVE TO DULUTH STREET

PLAN SYMBOLS

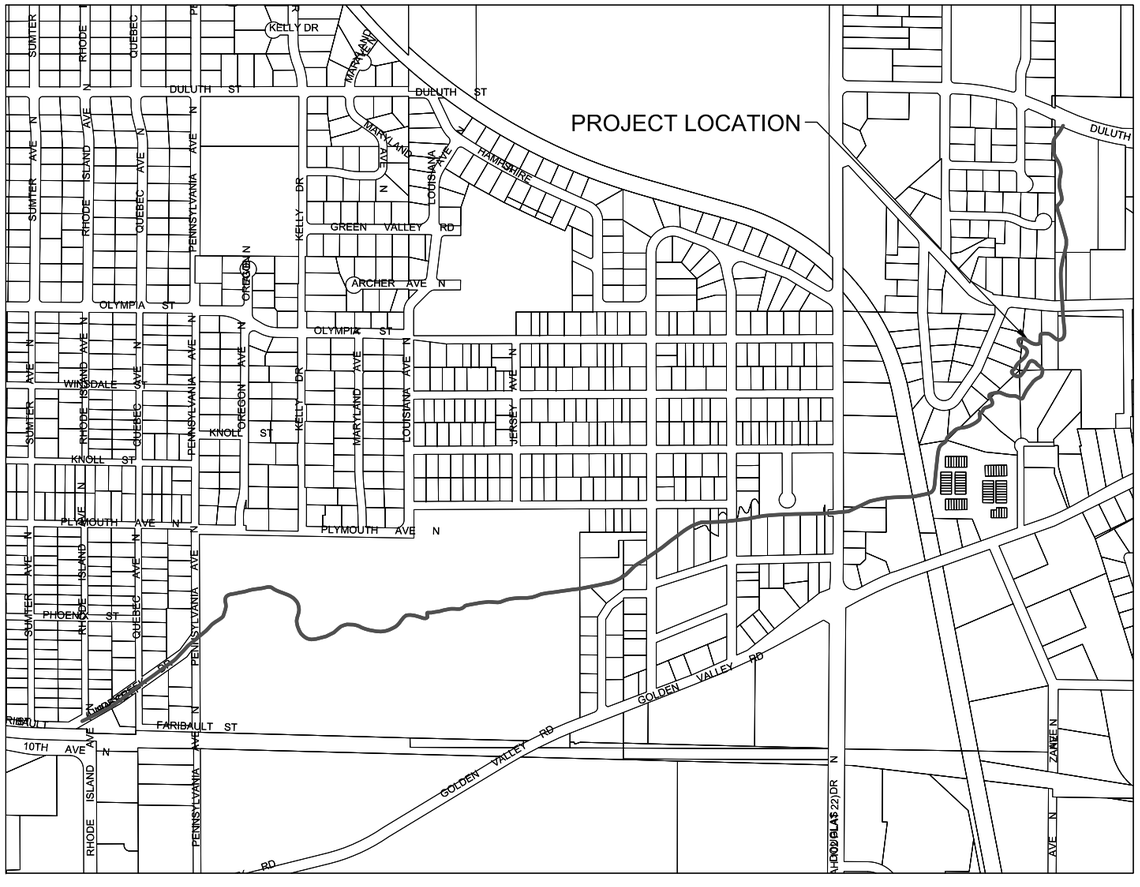
STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT-OF-WAY LINE
SLOPE EASEMENT — SE
PRESENT RIGHT-OF-WAY
CONTROL OF ACCES LINE
PROPERTY LINES (EXCEPT LAND LINES)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE — T.H. 55
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY
RIVER OR CREEK — NAME
DRY RUN
DRAINAGE DITCH — SIZE
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE — CL
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER
SPRINGS
MARSH
TIMBER
ORCHARD — (TIMBER)
BRUSH
NURSERY
CATCH BASIN — CB
FIRE HYDRANT
CATTLE GUARD
OVERPASS (HIGHWAY OVER) — ROAD
UNDERPASS (HIGHWAY UNDER)
BRIDGE
BUILDING (ONE STORY FRAME) — 1-S-F 55 / 75
F – FRAME C – CONCRETE
S – STONE T – TILE
B – BRICK ST– STUCCO
IRON ROD OR PIPE
MONUMENT (STONE, CONCRETE, OR METAL) — MONU.
WOODEN HUB
GRAVEL PIT — G
SAND PIT — S
BORROW PIT — B
ROCK QUARRY — Q

UTILITY SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER
ON POWER POLE
ON TELEPHONE POLES
ANCHOR
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL) — PED.
GAS MAIN — G
WATER MAIN
CONDUIT
TELEPHONE CABLE IN CONDUIT — T
ELECTRIC CABLE IN CONDUIT — P
TELEPHONE MANHOLE — T
ELECTRIC MANHOLE — P
BURIED TELEPHONE CABLE — T-BUR
BURIED ELECTRIC CABLE — P-BUR
AERIAL TELEPHONE CABLE — T-AE
SEWER (SANITARY OR STORM)
SEWER MANHOLE

SCALES

INDEX MAP 0 500 1000
PLAN 0 30 60
PROFILE HORIZ. 0 30 60
VERT. 0 5 10



THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF PRIVATE UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS TO DETERMINE THE TYPE AND LOCATION OF PRIVATE UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEDICATION OF EXISTING SUBSURFACE UTILITY DATA."

EXCAVATION NOTICE SYSTEM

A CALL TO GOPHER STATE ONE (651-454-0002) IS REQUIRED A MINIMUM OF 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION.

GOVERNING SPECIFICATIONS

SSETT CREEK RESTORATION PROJECT SPECIAL PROVISIONS
SSETT CREEK PLANS
OLDEN VALLEY GENERAL CONDITIONS
NDARD SPECIFICATIONS
EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION."

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL COMFORM TO THE MN MUTCD INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS, DATED JANUARY 2014. ALL TRAFFIC CONTROL DEVICES SHALL HAVE RETROREFLECTIVE SHEETING.

STORM SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY ENGINEERS ASSOCIATION OF MINNESOTA STANDARD UTILITIES SPECIFICATIONS.

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES
3–6	STREAMBANK STABILIZATION DETAILS
7	IMPROVEMENT LOCATION OVERVIEW MAP
8–12	CONSTRUCTION LIMITS & ACCESS MAPS
13–17	CONSTRUCTION PLAN
17–22	EROSION & SEDIMENT CONTROL PLAN
23	STORM SEWER PLAN & PROFILE
24–27	SWPPP NARRATIVE

ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

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INFRASTRUCTURE ENGINEERING PLANNING CONSTRUCTION

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

ENGR. _____
PETER R. WILLENBRING
DATE _____ LIC. NO. 15998

PLAN REVIEW:

Prepared for:

City of Golden Valley
7800 Golden Valley Road
Golden Valley, Minnesota 55427
(763)-593-8000

WSB PROJECT 2032-090
CITY PROJECT NO. 13-25

SHEET NO. 1 OF 27 SHEETS

SPECIAL NOTE

THE PLANS OUTLINED HEREIN GENERALLY DESCRIBE THE PROPOSED IMPROVEMENTS FOR THE MAIN STEM OF BASSETT CREEK RESTORATION PROJECT. AS PART OF CONSTRUCTION FOR THESE PROPOSED IMPROVEMENTS, THE CONTRACTOR IS EXPECTED TO WORK CLOSELY, IN THE FIELD, WITH THE OWNERS REPRESENTATIVE REGARDING THE FINAL EXTENT AND LOCATION TO WHICH THE PROPOSED IMPROVEMENTS ARE INSTALLED. THIS COORDINATION SHOULD BE INCLUDED WITH THE UNIT BID PRICES.

SITE ACCESS

SITE ACCESS AND LIMITS OF CONSTRUCTION ARE IDENTIFIED ON THE PLANS. ACTUAL ACCESS ROUTES AND LIMITS OF CONSTRUCTION WILL BE STAKED IN THE FIELD BY THE ENGINEER. CONTRACTOR MAY OBTAIN ADDITIONAL ACCESS AT THEIR OWN EXPENSE.

GENERAL CONSTRUCTION NOTES

1. CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
2. EXISTING ROADS, PARKING LOTS, TRAILS, FENCES SIGNS, UTILITIES, IRRIGATION SYSTEMS AND ALL OTHER ASSOCIATED AND EXISTING FACILITY SITE FEATURES SHALL BE PROTECTED DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL DAMAGE THAT OCCURS TO EXISTING FACILITIES.
3. CONTRACTOR SHALL INSTALL ALL EROSION CONTROL BMPS PRIOR TO COMMENCEMENT OF GRADING.
4. ALL TREES WITH A DIAMETER OF 4 INCHES OR LARGER SHALL BE MARKED FOR REMOVAL BY OWNER OR OWNER'S REPRESENTATIVE. TREES REMOVED THAT ARE NOT MARKED SHALL BE REPLACED IN KIND AT CONTRACTORS EXPENSE.
5. ALL DISTURBED AREAS MUST BE TEMPORARILY STABILIZED WITHIN 48 HOURS OF INACTIVITY.
6. ALL GROUND DISTURBANCE GENERATED BY GRADING ACTIVITIES SHALL BE STABILIZED AND RESTORED BY FINISH GRADING WITH TOPSOIL, APPLYING NATIVE SEED W/COVER CROP AND EROSION CONTROL BLANKET INCLUDING ACCESS ROUTES AND STOCKPILE
7. SEED BED SHALL BE PREPARED WITH A MINIMUM OF 4 INCHES OF TOPSOIL WITH NO EXTRANEOUS MATERIAL OVER ¾ INCHES ON THE SURFACE.
8. EROSION CONTROL BLANKET SHALL BE MNDOT CATEGORY 4 OR OTHERWISE AS SPECIFIED.
9. VEGETATIVE AND BIOENGINEERING SOLUTIONS SHALL BE INCORPORATED WHEREVER APPROPRIATE AND FEASIBLE.

RECOMMENDED CONSTRUCTION SEQUENCE

1. PROVIDE TRAFFIC CONTROL SIGNS AS NEEDED
2. INSTALL SILT CURTAIN AND OTHER SEDIMENT CONTROLS
3. REMOVE SELECTED TREES AND STUMPS AS MARKED AND DIRECTED IN THE FIELD BY THE ENGINEER
4. STRIP IN PLACE TOPSOIL IN AREAS TO BE DISTURBED AND STOCKPILE.
5. SHAPE AND GRADE CHANNEL BANKS TO PROPOSED TYPICAL SECTION (3:1 SLOPES MAX FROM EXISTING TOE OF BANK)
6. INSTALL SELECTED STREAMBANK STABILIZATION METHOD IDENTIFIED WITHIN THE PLANS (SEE DETAILS)
7. FINISH GRADE DISTURBED AREAS, SPREAD TOPSOIL, SEED, AND STABILIZE WITH SELECTED METHOD
8. INSTALL CATEGORY 4 EROSION CONTROL BLANKET (ON SLOPES STEEPER THAN 4:1) OR STRAW MULCH OVER DISTURBED AREAS
9. REMOVE SILT CURTAIN, OTHER SEDIMENT CONTROLS AND ANY MISCELLANEOUS DEBRIS THAT WAS REMOVED FROM THE CHANNEL

TREE AND STUMP REMOVAL NOTE

THE ENGINEER WILL SELECT THE TREES AND STUMPS THAT ARE TO BE REMOVED TO GAIN ACCESS TO AND TO PROVIDE THE REQUIRED MAINTENANCE AREAS. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE TREES, BRUSH, STUMPS, AND ROOTS FROM THE AREA DESIGNATED FOR CLEARING AND GRUBBING.

UTILITY COORDINATION AND CONFLICT:

UTILITY LOCATE INFORMATION IS LOCATED IN AN A APPENDIX OF THE SPECIFICATIONS AND NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL SCHEDULE OR REDIRECT HIS/HER WORK TO ENSURE THAT UTILITY COMPANY RELOCATES, INSTALLATIONS AND/OR REMOVALS DO NOT IMPEDE PROGRESS OF THE PROJECT. THE CONTRACTOR SHALL ALSO COORDINATE ALL UNANTICIPATED UTILITY RELOCATIONS OR ADJUSTMENTS DETERMINED TO BE NECESSARY TO COMPLETE THE WORK. NO CLAIMS FOR EXTRA COMPENSATION TO PERFORM THE WORK IN ACCORDANCE WITH THE PLANS THAT ARE DUE TO CONFLICTS WITH IN-PLACE UTILITIES SHALL BE CONSIDERED.

CONTRACTOR RESPONSIBILITY

CONTRACTOR IS RESPONSIBLE TO PROTECT THE PROJECT AREA, INCLUDING AREAS THAT HAVE BEEN RESTORED AND AREAS THAT HAVE NOT BEEN COMPLETED, CONSTRUCTION EQUIPMENT, AND CONSTRUCTION MATERIALS DURING ADVERSE WEATHER CONDITIONS AND PERIODS OF HIGH FLOWS WITHIN THE CHANNEL AT ALL TIMES. NO COMPENSATION WILL BE MADE TO THE CONTRACTOR FOR ADDITIONAL COSTS INCURRED FOR REPAIR OR REPLACEMENT OF ANY DAMAGE THAT MAY OCCUR DUE TO ADVERSE WEATHER CONDITIONS.

DESCRIPTION OF PROPOSED IMPROVEMENTS

THE TECHNIQUES DISCUSSED BELOW ARE COMMONLY USED IN STREAMBANK RESTORATION . THEY WERE INCLUDED IN THE DESIGN FOR THEIR FUNCTIONALITY WITH THE EXPECTATION THAT MOST CONTRACTORS HAVE HAD EXPERIENCE WITH THESE TECHNIQUES AND UNDERSTAND HOW TO INSTALL THEM. THIS DESIGN INCORPORATES THE MOST APPROPRIATE MEASURES TO USE AT EACH INDIVIDUAL SITE IN ORDER TO MEET THE STABILIZATION OBJECTIVES . THE FINAL SIZE, DEPTH, AND LOCATION OF THESE BMPs SHALL BE FINALIZED IN THE FIELD, BY THE PROJECT AND FIELD ENGINEER, DURING CONSTRUCTION. IT SHOULD BE NOTED THAT EARTHWORK FOR THIS PROJECT WILL LIKELY NOT BALANCE AND THAT IMPORTED MATERIALS WILL REQUIRE AN EQUAL (OR NEAR EQUALL VOLUME OF MATERIAL REMOVED.

SLOPE SHAPING

THIS WORK CONSISTS OF SHAPING THE CONTOURS OF THE MAINTENANCE AREAS TO ACHIEVE SLOPES AS SHOWN ON THE PLANS. SLOPE PREPARATION WILL AID IN THE PLACEMENT OF THE SELECTED SLOPE STABILIZATION METHOD. IT IS ANTICIPATED THAT EARTHWORK ON THIS PROJECT WILL BALANCE ON SITE (SEE DETAIL). CONTRACTOR TO BALANCE MATERIALS ON SITE TO THE MAXIMUM EXTENT FEASIBLE. IN AREAS WHERE MATERIAL CANNOT BE BALANCED ON SITE, THE EXCESS MATERIAL SHALL BE REMOVED AND PAID FOR BY THE COMMON EXCAVATION CONTRACT ITEM.

FIELDSTONE BOULDER

FIELDSTONE BOULDER WILL BE USED TO PROTECT THE TOE OF THE STREAM BANK. IN STREAM TYPICALLY CONSISTS OF BOULDER-SIZED ROCK (30 INCHES TO 34 INCHES IN DIAMETER) PLACED OVER A HALF FOOT THICK LAYER OF CLASS I FIELDSTONE RIP RAP AND A HALF FOOT LAYER OF COARSE FILTER AGGREGATE. THE BOULDER WILL EXTEND UP THE RESHAPED SLOPE AND CANNOT EXTEND PAST THE TOP OF BANK. THE EXACT LOCATION AND ELEVATION OF THE BOULDER TOE WILL BE STAKED IN THE FIELD BY THE ENGINEER(SEE DETAIL). **PLACEMENT OF FIELDSTONE BOULDERS MUST NOT RESULT IN A DECREASE OF CHANNEL CROSS SECTION.**

FIELDSTONE RIP RAP

FIELDSTONE RIP RAP WILL BE USED TO PROTECT THE TOE OF THE STREAM BANK. IN STREAM SYSTEMS, RIP RAP CONSISTS OF COBBLE-SIZED ROCK (12 INCHES TO 18 INCHES IN DIAMETER). THE RIPRAP IS KEYED IN TO THE STREAMBED AND EXTENDS UP THE RESHAPED SLOPE AND CANNOT EXTEND PAST THE TOP OF BANK. THE EXACT LOCATION AND ELEVATION OF THE STONE TOE WILL BE STAKED IN THE FIELD BY THE ENGINEER. HAND PLACEMENT OF FIELDSTONE RIP RAP WILL BE REQUIRED AND WILL BE DIRECTED BY THE ENGINEER (SEE DETAIL). **PLACEMENT OF FIELDSTONE RIP RAP MUST NOT RESULT IN A DECREASE OF CHANNEL CROSS SECTION.**

LIVE STAKES

LIVE STAKES ARE DORMANT STEM CUTTINGS, TYPICALLY WILLOW AND DOGWOOD SPECIES. THEY ARE COLLECTED AND INSTALLED DURING THE DORMANT SEASON AND GROW NEW ROOTS AND LEAVES REVEGETATING A STREAM BANK. MATERIALS WILL BE CUT AND PLACED IN A CONTAINER OF WATER TO BE TRANSPORTED TO THE SITE AND KEPT IN WATER UNTIL INSTALLED. TAPER THE CUTTING WITH THE END GOING INTO THE GROUND AT RIGHT ANGLES TO THE SLOPE FACE, 2/3 - 3/4 OF THEIR LENGTH. CARE SHALL BE TAKEN NOT TO SPLIT THE ENDS OR DAMAGE THE BARK OF THE CUTTINGS. THE ENGINEER SHALL STAKE THE LOCATION OF LIVE STAKES IN THE FIELD (SEE DETAIL).

SEEDING SPECIFICATIONS:

SEEDING NATIVE GRASSES

RESHAPED AND DISTURBED AREAS ALONG BASSETT CREEK WILL BE REESTABLISHED WITH THE FOLLOWING:

- **SEED MIX**(S) PRAIRIE RESTORATION INC. (PRI) SHORELINE GRASS MIX OR SAVANNA GRASS MIX TO BE APPLIED AT @ 20 LBS/AC.
  - THE **PRI SHORELINE SEED** MIX IS A SHADE TOLERANT MIX THAT IS ABLE TO WITHSTAND INUNDATION FOR SEVERAL DAYS. THE **PRI SHORELINE SEED** MIX WILL BE USED ALONG THE DISTURBED SLOPES OF BASSETT CREEK FROM THE TOP OF STONE TO THE APPROXIMATE 10 YEAR STAGE ELEVATION, TO BE STAKED IN THE FIELD.
  - THE **PRI SAVANNA SEED** MIX IS A SHADE TOLERANT MIX THAT IS SUITABLE FOR UPLAND AREAS. THE **PRI SAVANNA SEED** MIX WILL BE USED ALONG THE DISTURBED SLOPES OF BASSETT CREEK FROM THE APPROXIMATE 10 YEAR STAGE ELEVATION TO THE TOP OF SLOPE, TO BE STAKED IN THE FIELD.
  - THE PLACEMENT OF THESE SEED MIXES WILL BE DIRECTED BY THE ENGINEER IN THE FIELD
- **ADDITIONAL TEMPORARY SEED:** ADDITIONAL OATS OR WINTER WHEAT SHALL BE MIXED INTO PRI MIXES @ 50 LBS/AC TO PROVIDE A FAST GROWING VEGETATIVE COVER.

SOIL STABILIZATION REQUIREMENTS FOR SEEDING NATIVE GRASSES:

- **STRAW MULCH** @ 2 TON/AC (SLOPES LESS THAN 4:1)
- **BLANKET** MNDOT TYPE IV FOR (SLOPES GREATER THAN 4:1)
- THE PLACEMENT OF SOIL STABILIZATION MEASURES WILL BE DIRECTED BY THE ENGINEER IN THE FIELD.

TURF ESTABLISHMENT

AREAS DISTURBED DURING CONSTRUCTION THAT ARE NOT IMMEDIATELY ADJACENT TO BASSETT CREEK OR IN NON-MAINTAINED AREAS SHALL BE REESTABLISHED WITH THE FOLLOWING:

- **SEED MIX** MNDOT 260 @ 100 LBS/AC
- **FERTILIZER** MNDOT TYPE 2 @ 200 LBS/AC
- **STRAW MULCH** @ 2 TON/AC AND DISC ANCHORED MULCHED (SLOPES LESS THAN 4:1)
- **EROSION BLANKET** MNDOT TYPE 4 FOR (SLOPES GREATER THAN 4:1)
- AREAS REQUIRING TURF ESTABLISHMENT WILL BE DIRECTED BY THE ENGINEER IN THE FIELD AND INCLUDE EITHER TYPE I MULCH MATERIAL OR CATEGORY 4 EROSION CONTROL BLANKET.

REVISION NO. / DATE / EXPLANATION

SCALE: AS NOTED
PLAN BY: JHA | DESIGN BY: JHA
CHECKED BY: PRW | PROJECT NO: 02032-09
RECORD COPY BY: | DATE

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PETER R. WILLENBRING, PROFESSIONAL ENGINEER
DATE: _____ LIC. NO: 15998

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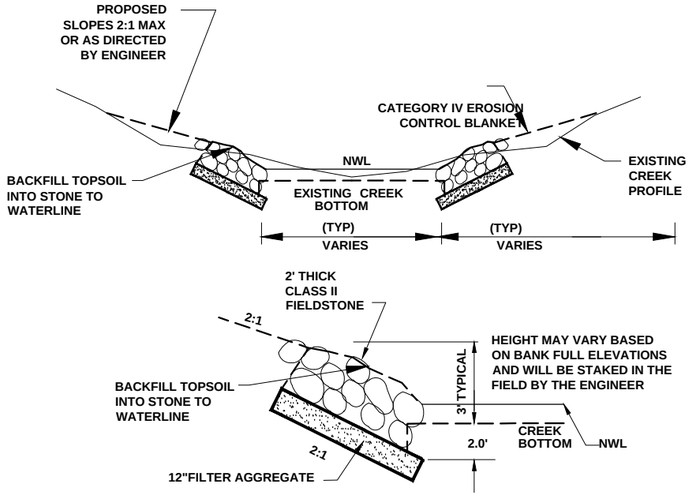
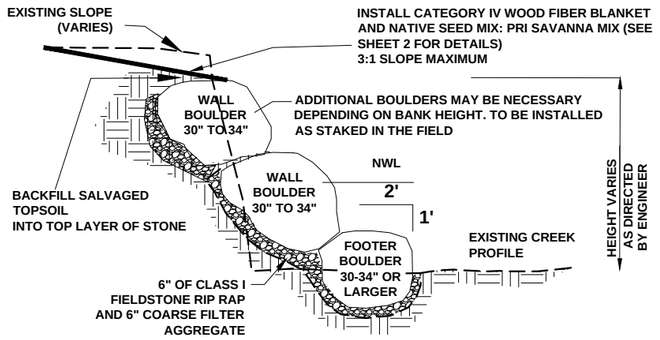
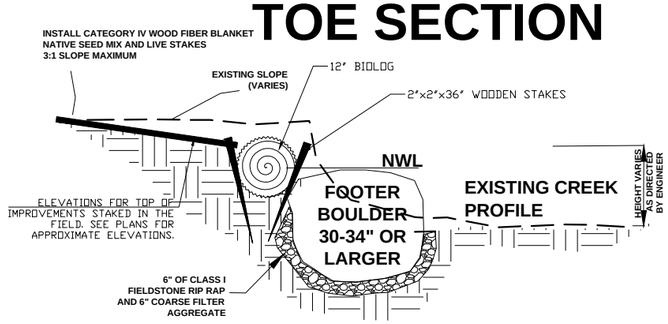
RIP RAP TOE STABILIZATION



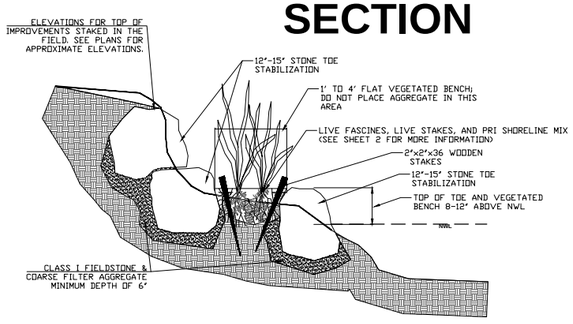
BOULDER WALL SECTION



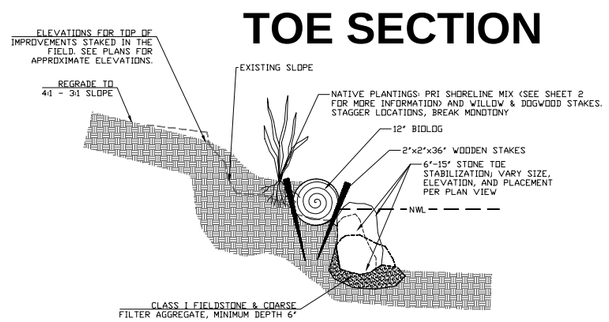
BIOLOG & BOULDER TOE SECTION



VEGETATED BENCH SECTION



BIOLOG & STONE TOE SECTION



CONSTRUCTION NOTES:

1. NO NET CUT/FILL ALLOWED WITHIN CHANNEL CROSS SECTION, EXISTING CHANNEL SECTION AREA MUST BE MAINTAINED. FILL VOLUMES RESULTING FROM BOULDERS, AGGREGATE, AND OTHER MATERIALS BROUGHT IN FOR STABILIZATION WILL BE OFFSET WITH AN EQUAL VOLUME OF COMMON EXCAVATION. SEE SPECIFICATIONS FOR MORE INFORMATION ON COMMON EXCAVATION. THE OVERALL EARTHWORK WILL LIKELY NOT BALANCE AND THAT IMPORTED ROCK AND OTHER MATERIAL WILL REQUIRE AN EQUAL AMOUNT OF EXCAVATION.

2. ALL IMPROVEMENTS SHALL FOLLOW THE MEANDERS AND CURVES OF THE EXISTING STREAMBANK AS INDICATED ON PLANS AND AS STAKED/DIRECTED IN THE FIELD. ALL PREEXISTING POOLS AND RIFFLES SHALL BE PROTECTED AND MAINTAINED.

3. EACH AREA (A THROUGH E) TO BE INSPECTED AND REVIEWED BY OWNER AND ENGINEER FOLLOWING CONSTRUCTION TO ENSURE PROPER INSTALLATION.

4. QUANTITIES FOR MATERIALS USED IN EACH CONSTRUCTION AREA WILL BE TABULATED AND AGREED UPON PRIOR TO BEGINNING CONSTRUCTION IN EACH AREA.

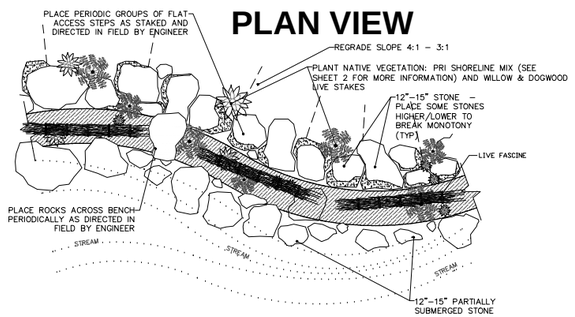
5. DUE TO UNCERTAINTY IN MATERIAL DELIVERY QUANTITIES AND WEIGHTS, A RANGE OF ACCEPTABLE QUANTITIES MAY BE AGREED UPON PRIOR TO CONSTRUCTION IN EACH AREA. CONTRACTOR MAY NOT INSTALL ANY QUANTITIES IN EXCESS OF PLANNED OR AGREED UPON NUMBERS WITHOUT FIRST CONSULTING THE ENGINEER.

6. FINAL HEIGHTS OF IMPROVEMENTS TO BE STAKED IN THE FIELD BY THE ENGINEER. SEE THE PLANS FOR APPROXIMATE ELEVATIONS FOR TOP OF IMPROVEMENTS.

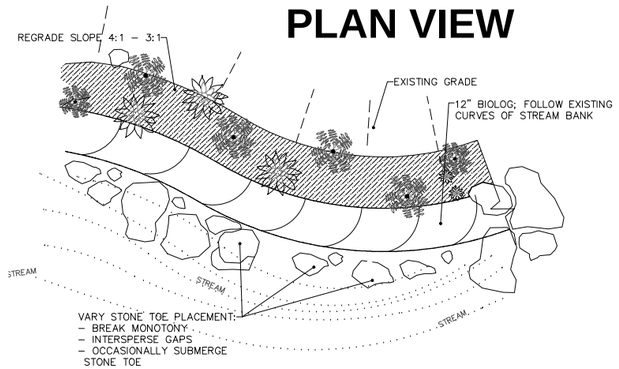
APPROXIMATE ELEVATIONS

AREA	TOP OF BANK	NWL
A	882	878
B	881	867
C	868 - 870	864 - 867
D	865-866; 862 in sinuous, meandering area	858 - 863
E	860-862	856 - 858

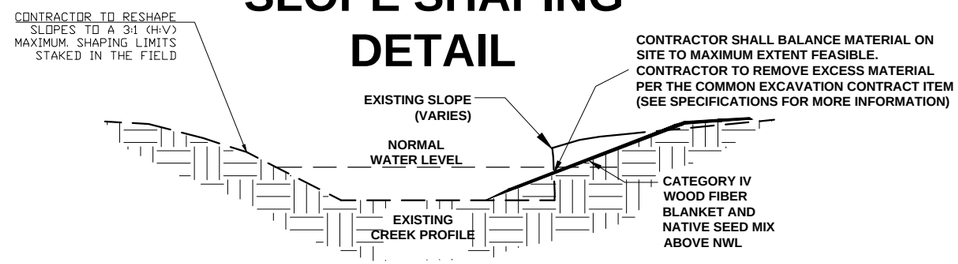
VEGETATED BENCH PLAN VIEW



BIOLOG & STONE TOE PLAN VIEW



SLOPE SHAPING DETAIL



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CITY PROJECT NUMBER 13-25
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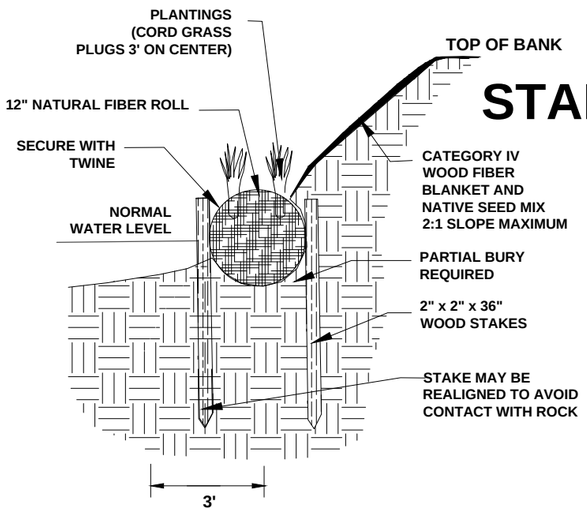
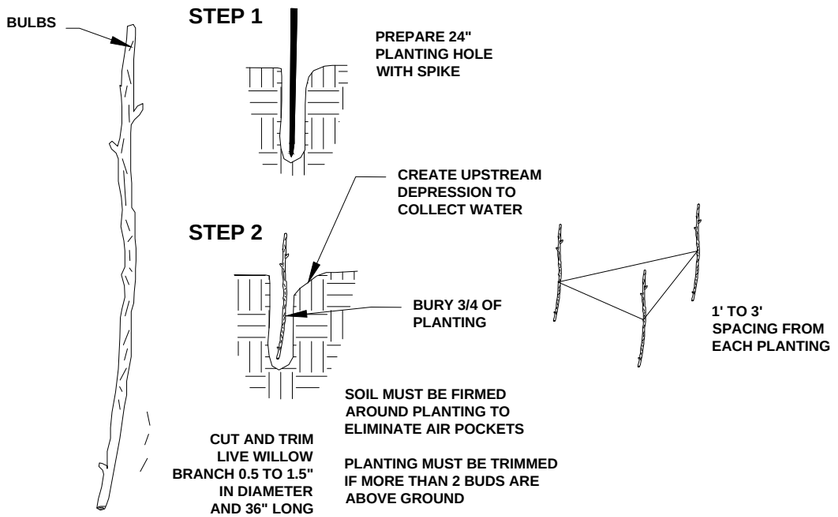
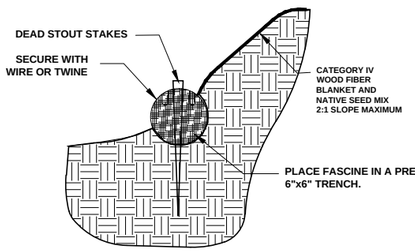
STREAMBANK STABILIZATION DETAILS

BIO-LOG STABILIZATION DETAIL

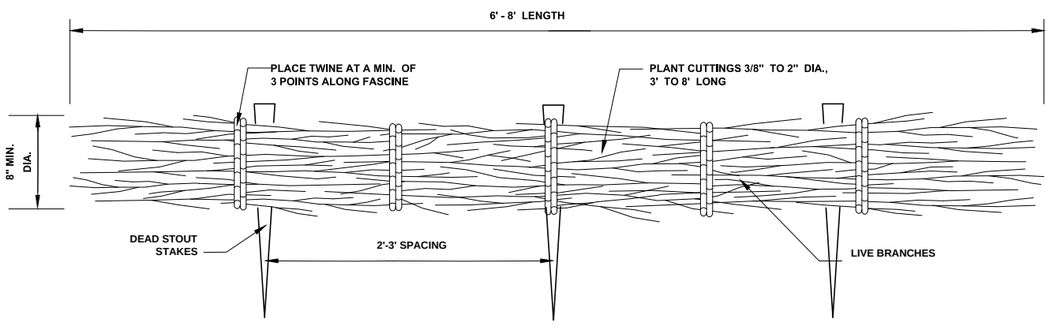


LIVE STAKE DETAIL

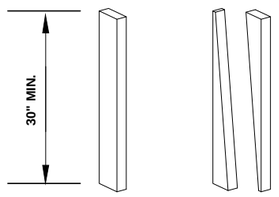




LIVE FASCINE INSTALLATION DETAIL



DEAD STAKE DETAIL



SAW A 2 x 4 DIAGONALLY TO PRODUCE 2 DEAD STOUT STAKES

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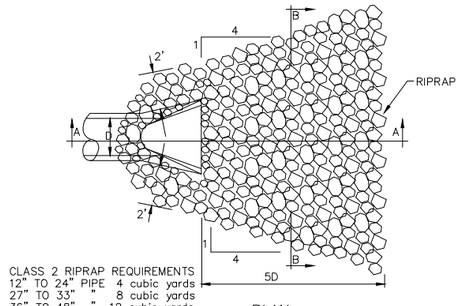
CITY OF GOLDEN VALLEY

WSB & Associates, Inc.
701 Xenia Avenue South, Suite 300
Minneapolis, MN 55416
www.wsbeng.com
763-541-4800 - Fax 763-541-1700
INFRASTRUCTURE ENGINEERING PLANNING CONSTRUCTION

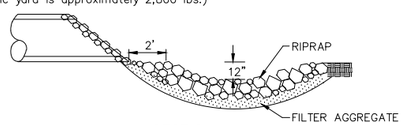
K:\02032-090\Cad\Proposed\02032-090 - Edgewood Storm.dwg

RIP RAP AT FES DETAIL



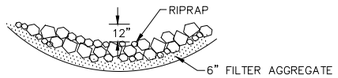
PLAN

CLASS 2 RIPRAP REQUIREMENTS
12" TO 24" PIPE 4 cubic yards
27" TO 33" " 8 cubic yards
36" TO 48" " 12 cubic yards
54" AND UP " 16 cubic yards
(One cubic yard is approximately 2,800 lbs.)



SECTION A–A

NOTE
COARSE FILTER AGGREGATE REQUIRED UNDER RIPRAP

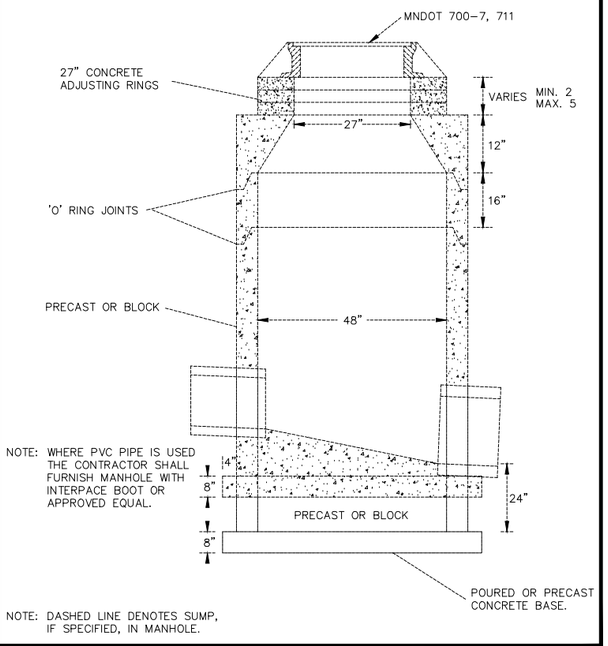


SECTION B–B

APPROVED MAY 1, 2001 CITY ENGINEER REG 23110	RIPRAP AT OUTLETS	Golden Valley

GV-EC-060

TYPICAL MANHOLE DETAIL



NOTE: WHERE PVC PIPE IS USED THE CONTRACTOR SHALL FURNISH MANHOLE WITH INTERPACE BOOT OR APPROVED EQUAL.

NOTE: DASHED LINE DENOTES SUMP, IF SPECIFIED, IN MANHOLE.

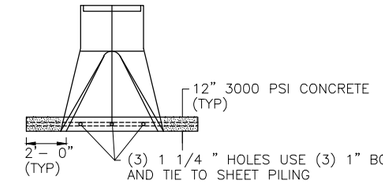
APPROVED MAY 1, 2001 CITY ENGINEER REG 23110	STORM SEWER MANHOLE	Golden Valley

GV-ST-010

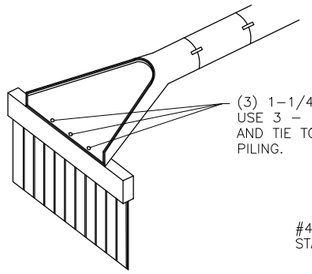
FES SHEETPILING DETAIL

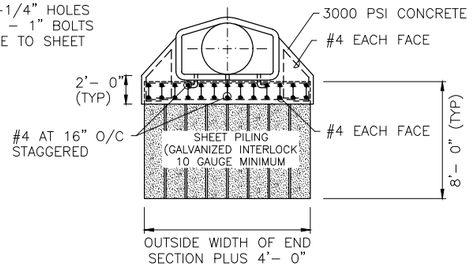
NOTE:

THIS DRAWING IS TYPICAL FOR FLARED END IDENTIFIED IN THE PLANS.
ALL TRASH GUARDS WILL BE GALVANIZED.



PLAN





PILING FOR FLARED END SECTION — ELEVATION

NO SCALE

REVISION NO. DATE	EXPLANATION			
SCALE: AS NOTED	PLAN BY: JHA	DESIGN BY: JHA	CHECKED BY: PRW	PROJECT NO: 02032–09
RECORD COPY BY:	DATE			

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

PETER R. WILLENBRING, PROFESSIONAL ENGINEER
DATE: _____ LIC. NO: 15998

2015 MAIN STEM OF BASSETT CREEK RESTORATION PROJECT
CITY OF GOLDEN VALLEY

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Minneapolis, MN 55416
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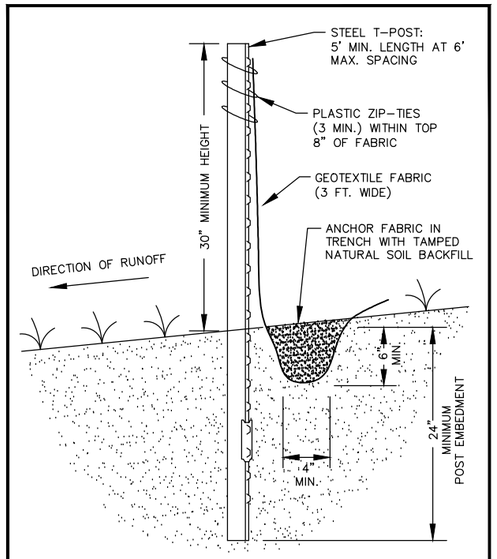
WSB & Associates, Inc.
INFRASTRUCTURE ▪ ENGINEERING ▪ PLANNING ▪ CONSTRUCTION

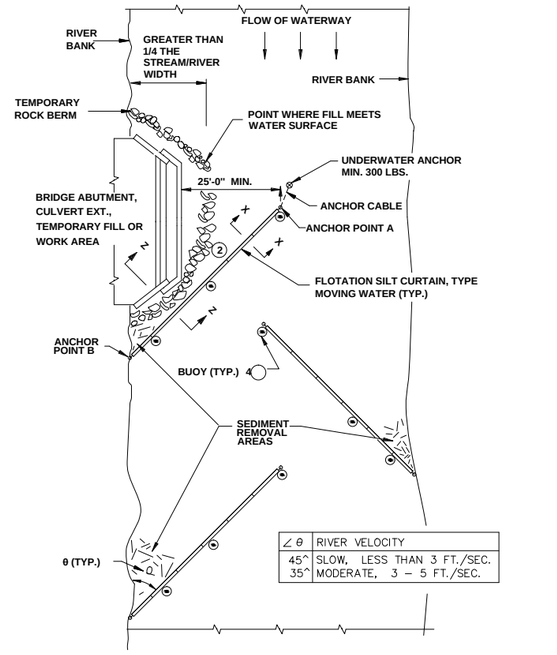
CITY PROJECT NUMBER 13–25
PROJECT NUMBER 02032–09
STREAMBANK STABILIZATION DETAILS
SHEET 5 OF 27 SHEETS

K:\02032–090\Cad\Proposed\02032–090 – Edgewood Storm.dwg

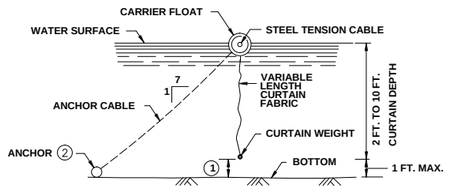


APPROVED FEBRUARY 1, 2007	TYPICAL SILT FENCE INSTALLATION	Golden Valley
CITY ENGINEER REG 23110		GV-EC-010

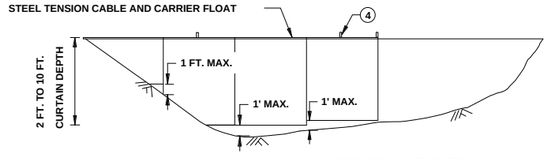
FLOATING SILT CURTAIN DETAIL



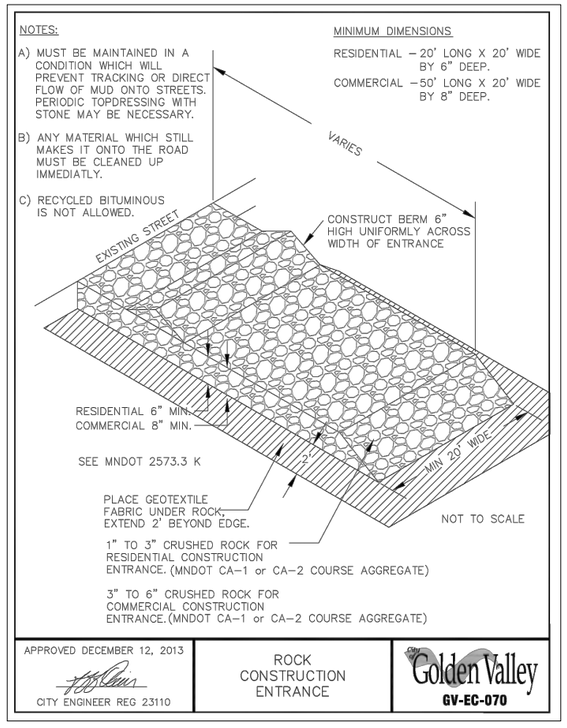
PLAN VIEW (TYPE: MOVING WATER)



SECTION X-X

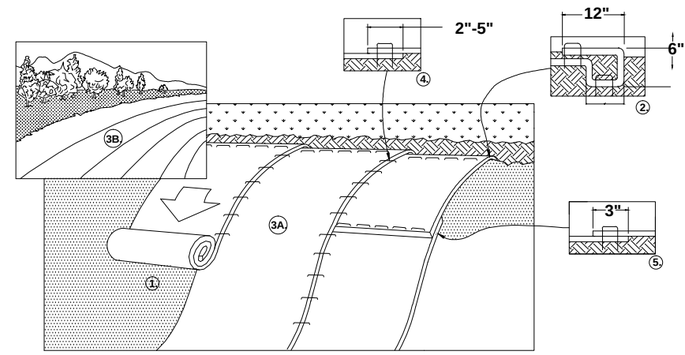


USE FOR SMALLER RIVERS WITH SLOW AND MODERATE VELOCITIES ⑤



APPROVED DECEMBER 12, 2013	ROCK CONSTRUCTION ENTRANCE	City of Golden Valley
CITY ENGINEER REG 23110		GV-EC-070

EROSION CONTROL BLANKET INSTALLATION DETAIL



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" (15cm) DEEP X 6" (15cm) WIDE TRENCH 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.

3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE 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.

4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. 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 PREVIOUSLY INSTALLED BLANKET.

5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

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

REVISION NO. DATE	EXPLANATION

SCALE: AS NOTED
PLAN BY: JHA
DESIGN BY: JHA
CHECKED BY: PRW
PROJECT NO: 02032–09
RECORD COPY BY:
DATE

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

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EROSION AND SEDIMENT CONTROL DETAILS
PROJECT NUMBER 02032–09

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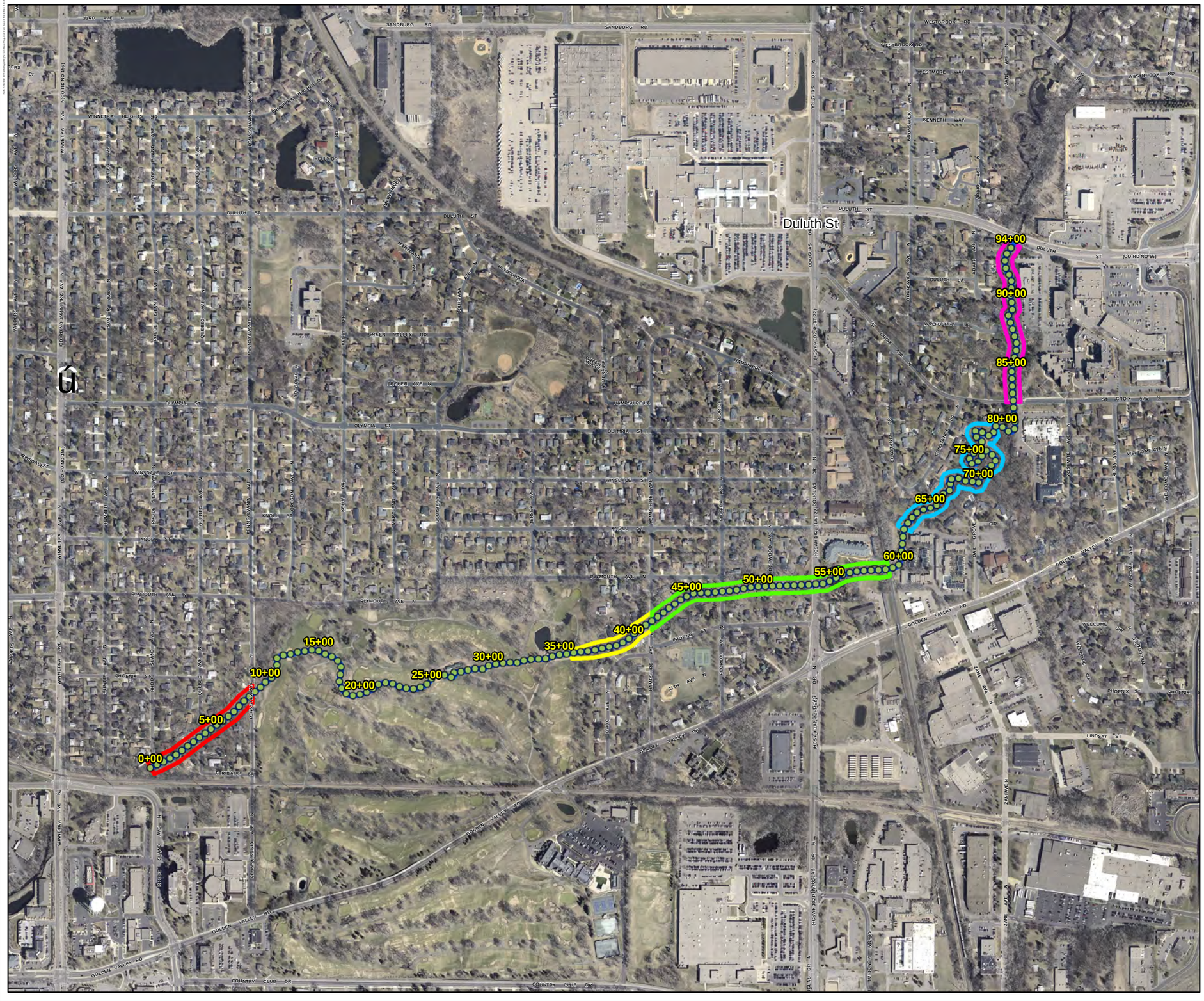


city of golden valley

Bassett Creek Watershed Management Commission

2015 Bassett Creek Main Stem Restoration Project
City of Golden Valley
Minnesota

Improvement Locations

Legend

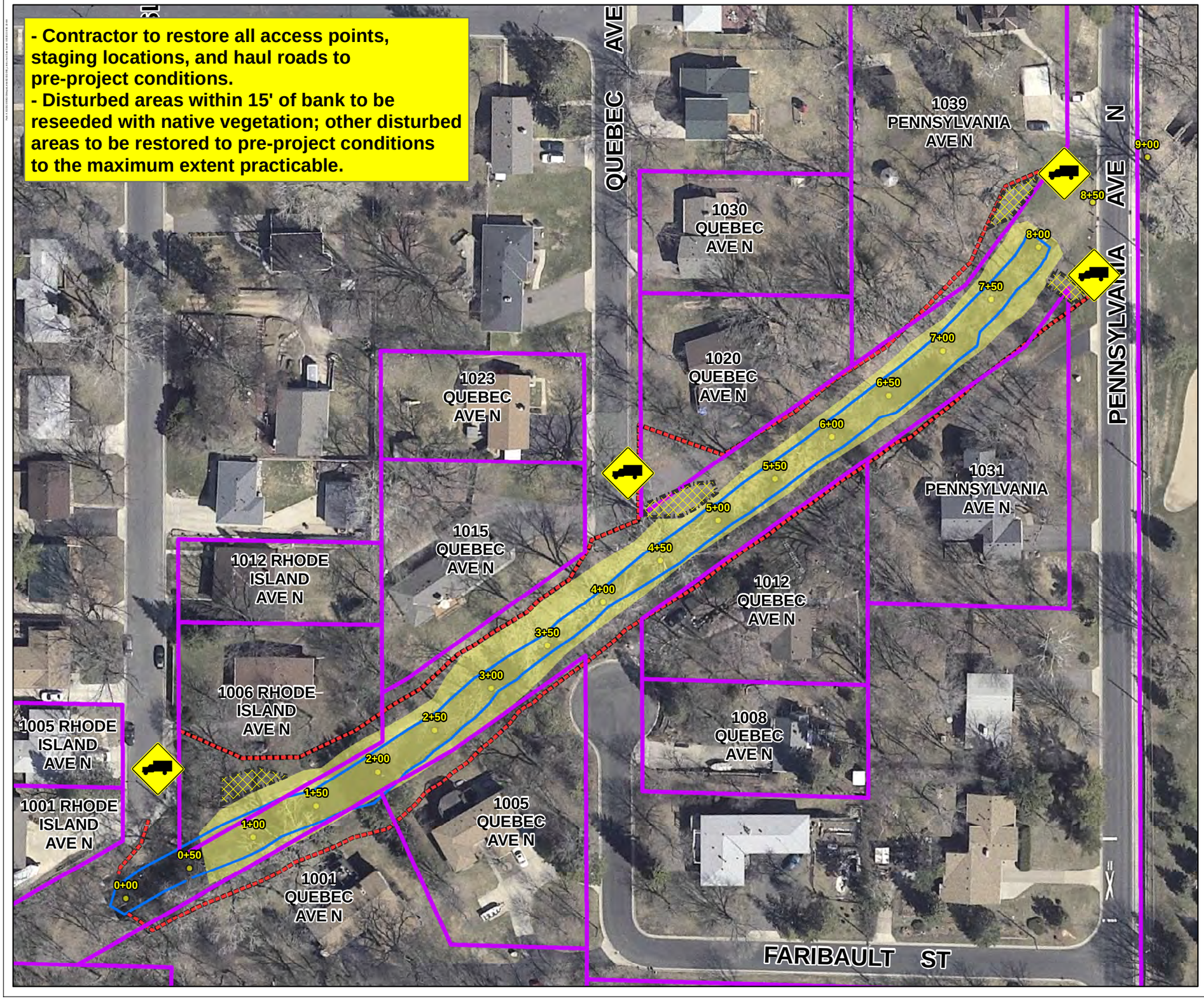
- Area A
- Area B
- Area C
- Area D
- Area E
- Creek Stationing

N

0 250 500 1,000 Feet

WSB & Associates, Inc.

- Contractor to restore all access points, staging locations, and haul roads to pre-project conditions.
- Disturbed areas within 15' of bank to be reseeded with native vegetation; other disturbed areas to be restored to pre-project conditions to the maximum extent practicable.



city of golden valley

Bassett Creek Watershed Management Commission

2015 Bassett Creek Main Stem Restoration Project
City of Golden Valley
Minnesota

Construction Zone and Access
Area A

Legend

- Staging
- Parcels
- 20' Construction Zone and Access
- Creek Edge
- Proposed Grading Limits
- Creek Stationing
- Preferred Access

WSB & Associates, Inc.

N

0 25 50 100 Feet

- Contractor to restore all access points, staging locations, and haul roads to pre-project conditions.
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PLYMOUTH AVE N

1231 HAMPSHIRE AVE N

1227 HAMPSHIRE AVE N

1229 HAMPSHIRE AVE N

1205 IDAHO AVE N

1121 IDAHO AVE N

1111 IDAHO AVE N

7001 GOLDEN VALLEY RD

HAMPSHIRE AVE N

AVE N

42+00 41+50 41+00 40+50 40+00 39+50 39+00 38+50 38+00 37+50 37+00 36+50 36+00 35+50 35+00 34+50 34+00 33+50 33+00 32+50 32+00 31+50 31+00 30+50 30+00 29+50 29+00 28+50 28+00 27+50 27+00 26+50 26+00

city of golden valley

Bassett Creek Watershed Management Commission

2015 Bassett Creek Main Stem Restoration Project
City of Golden Valley
Minnesota

Construction Zone and Access
Area B

Legend

- Access Route
- Staging
- Parcels
- 20' Construction Zone and Access
- Creek Edge
- Proposed Grading Limits
- Creek Stationing
- Preferred Access

N

0 25 50 100 Feet

WSB & Associates, Inc.

- Contractor to restore all access points, staging locations, and haul roads to pre-project conditions.
- Disturbed areas within 15' of bank to be reseeded with native vegetation; other disturbed areas to be restored to pre-project conditions to the maximum extent practicable.

HAMPSHIRE AVE N
DOUGLAS DR N
(HCSAH 102, PLAT 22)
FLORIDA AVE N
WOOD AVE N
PHOENIX ST
11TH AVE N

1571 CONSTANCE DR W
1350 DOUGLAS DR N
1300 DOUGLAS DR N
1317 DOUGLAS DR N
1333 DOUGLAS DR N
1315 EDGEWOOD AVE N
1317 EDGEWOOD AVE N
1335 EDGEWOOD AVE N
1300 FLORIDA AVE N
6621 PLYMOUTH AVE N
6601 PLYMOUTH AVE N
6501 PLYMOUTH AVE N
6509 PLYMOUTH AVE N
6508 PHOENIX ST
6522 PHOENIX ST
6500 PHOENIX ST
6620 PHOENIX ST
6424 PHOENIX ST
6436 PHOENIX ST
6336 PHOENIX ST
6306 PHOENIX ST
6316 PHOENIX ST
6400 PHOENIX ST
6200 GOLDEN VALLEY RD

42+00 42+50 43+00 43+50 44+00 44+50 45+00 45+50 46+00 46+50 47+00 47+50 48+00 48+50 49+00 49+50 50+00 50+50 51+00 51+50 52+00 52+50 53+00 53+50 54+00 54+50 55+00 55+50 56+00 56+50 57+00 57+50 58+00 58+50 59+00 59+50

city of golden valley

Bassett Creek Watershed Management Commission

2015 Bassett Creek Main Stem Restoration Project
City of Golden Valley
Minnesota

Construction Zone and Access
Area C

Legend

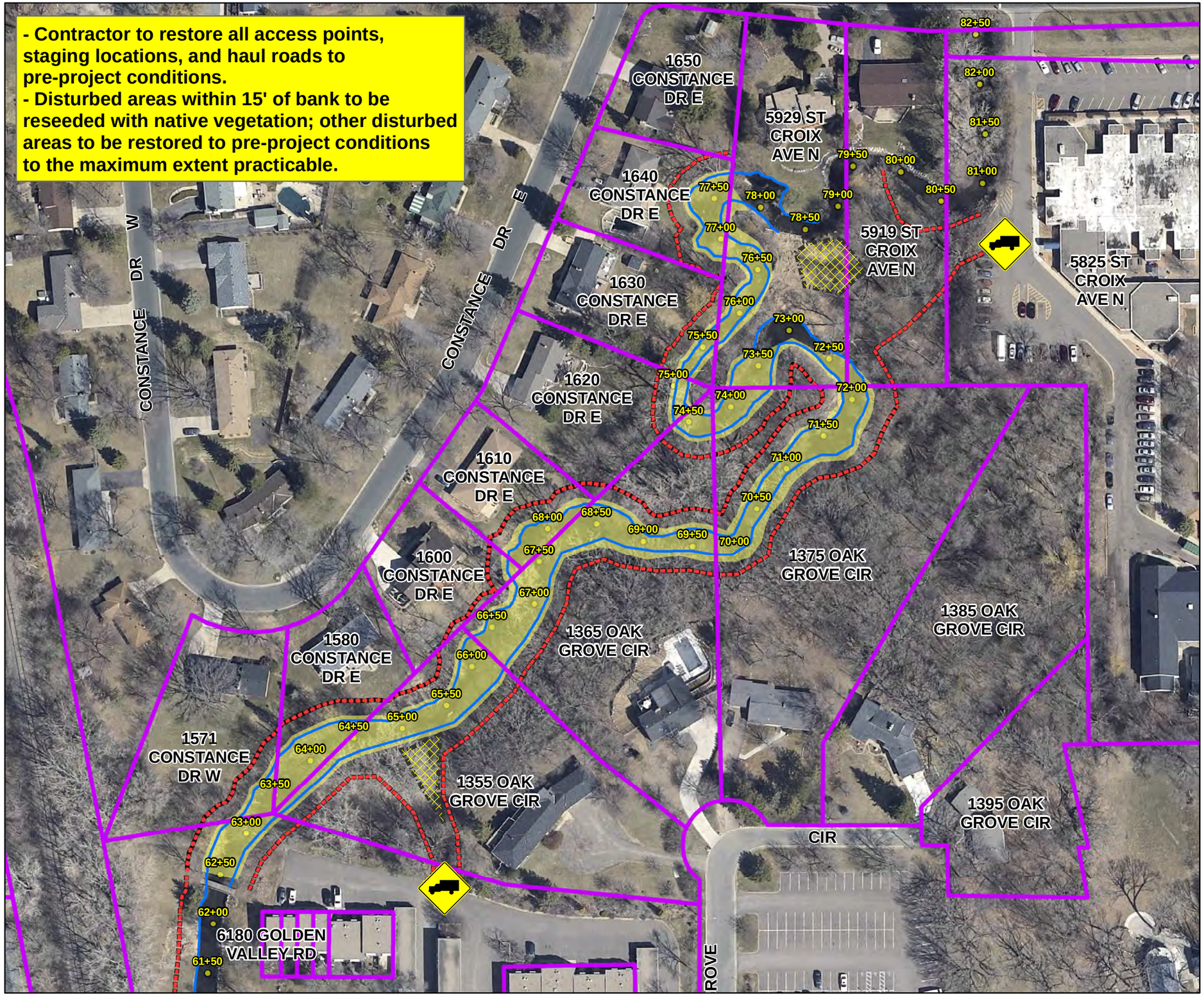
- Staging
- Parcels
- 20' Construction Zone and Access
- Creek Edge
- Proposed Grading Limits
- Creek Stationing
- Preferred Access

N

0 25 50 100 Feet

WSB & Associates, Inc.

- Contractor to restore all access points, staging locations, and haul roads to pre-project conditions.
- Disturbed areas within 15' of bank to be reseeded with native vegetation; other disturbed areas to be restored to pre-project conditions to the maximum extent practicable.



city of golden valley

Bassett Creek Watershed Management Commission

2015 Bassett Creek Main Stem Restoration Project
City of Golden Valley
Minnesota

Construction Zone and Access Area D

Legend

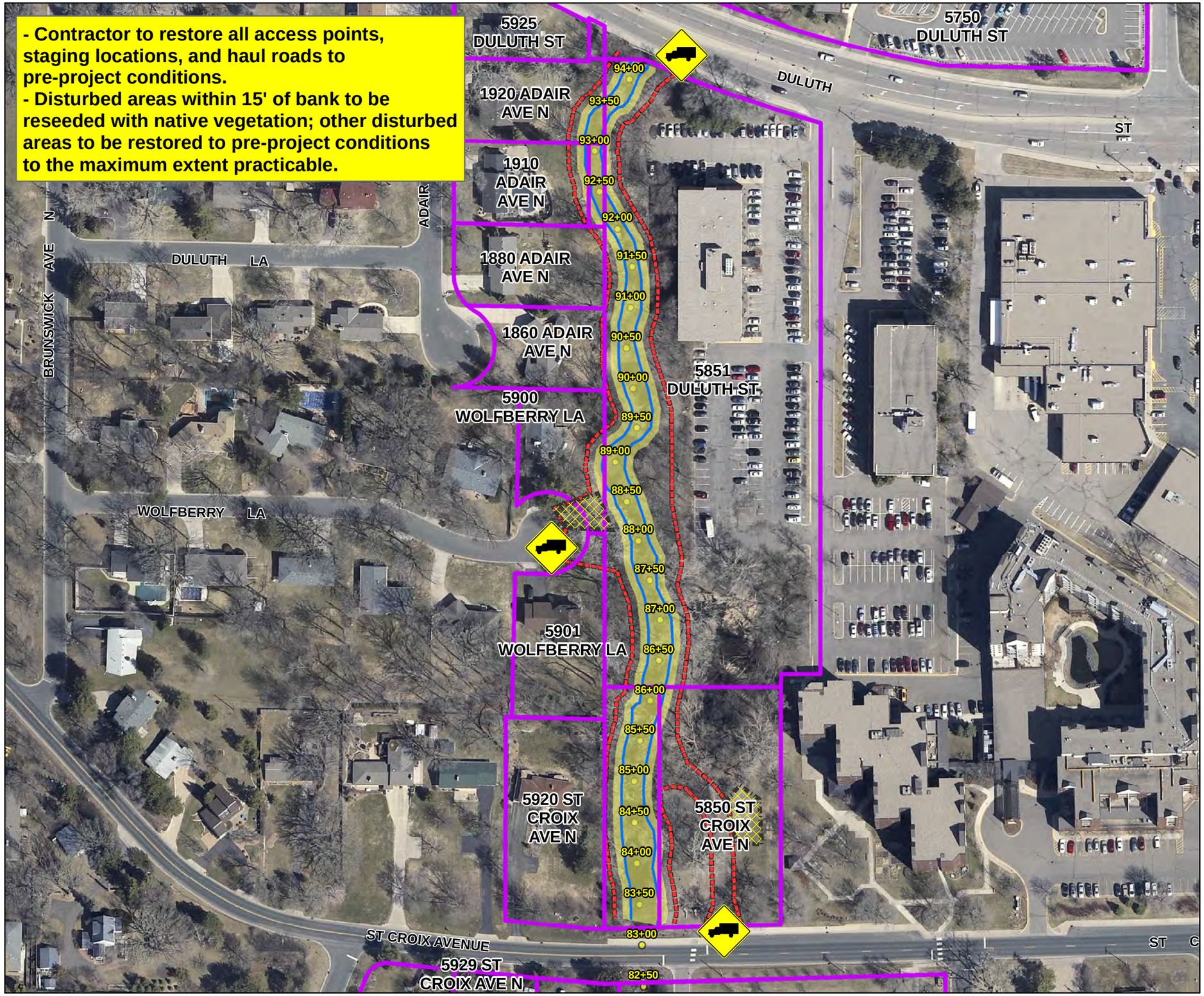
- Staging
- Parcels
- 20' Construction Zone and Access
- Creek Edge
- Proposed Grading Limits
- Creek Stationing
- Preferred Access

N

0 25 50 100 Feet

WSB & Associates, Inc.

- Contractor to restore all access points, staging locations, and haul roads to pre-project conditions.
- Disturbed areas within 15' of bank to be reseeded with native vegetation; other disturbed areas to be restored to pre-project conditions to the maximum extent practicable.



2015 Bassett Creek Main Stem Restoration Project
City of Golden Valley
Minnesota

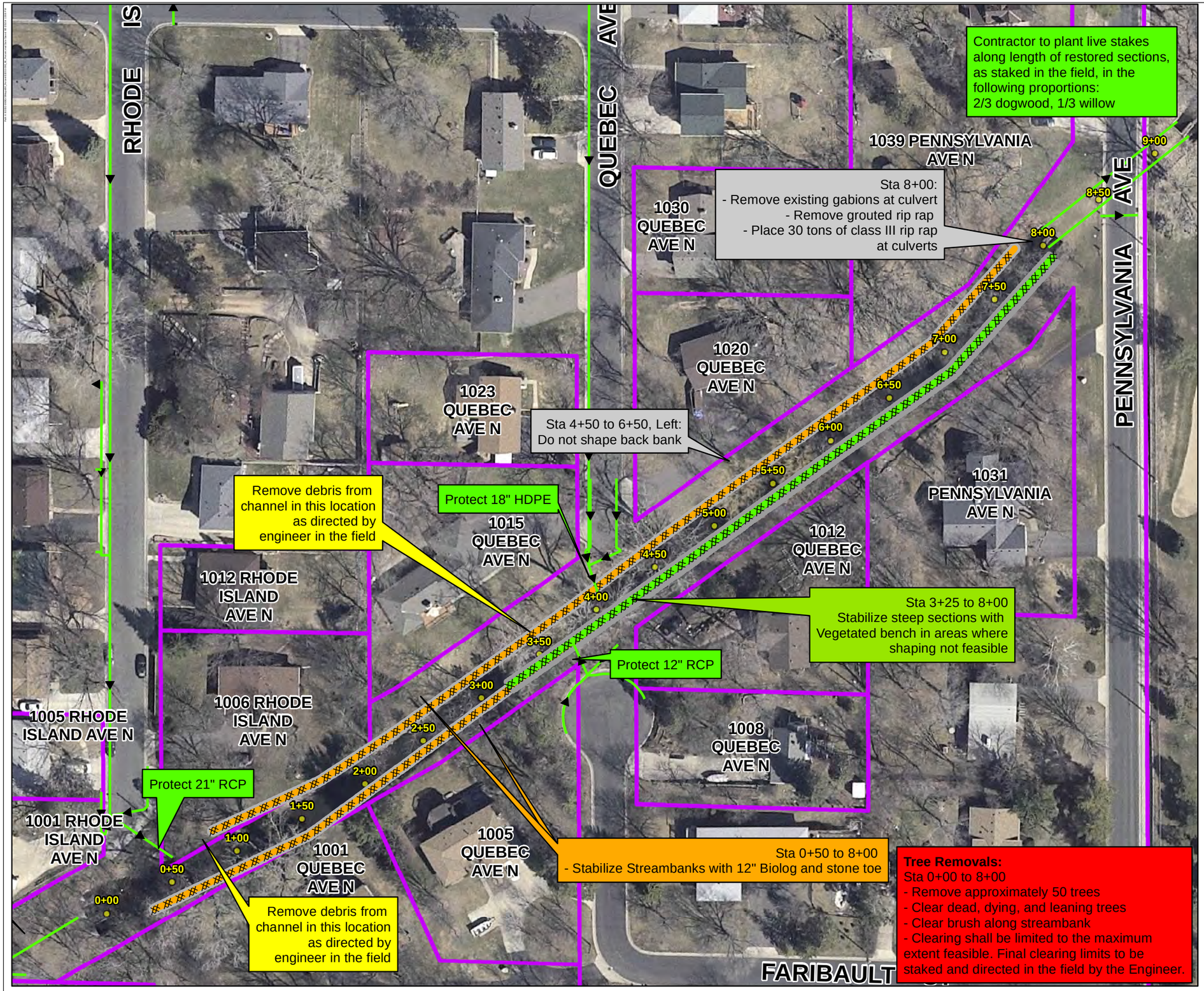
Construction Zone and Access Area E

Legend

- Staging
- Parcels
- 20' Construction Zone and Access
- Creek Edge
- Proposed Grading Limits
- Creek Stationing
- Preferred Access

N

0 25 50 100 Feet



city of golden valley

Bassett Creek Watershed Management Commission

2015 Bassett Creek Main Stem Restoration Project
City of Golden Valley
Minnesota

Construction Plans
Area A

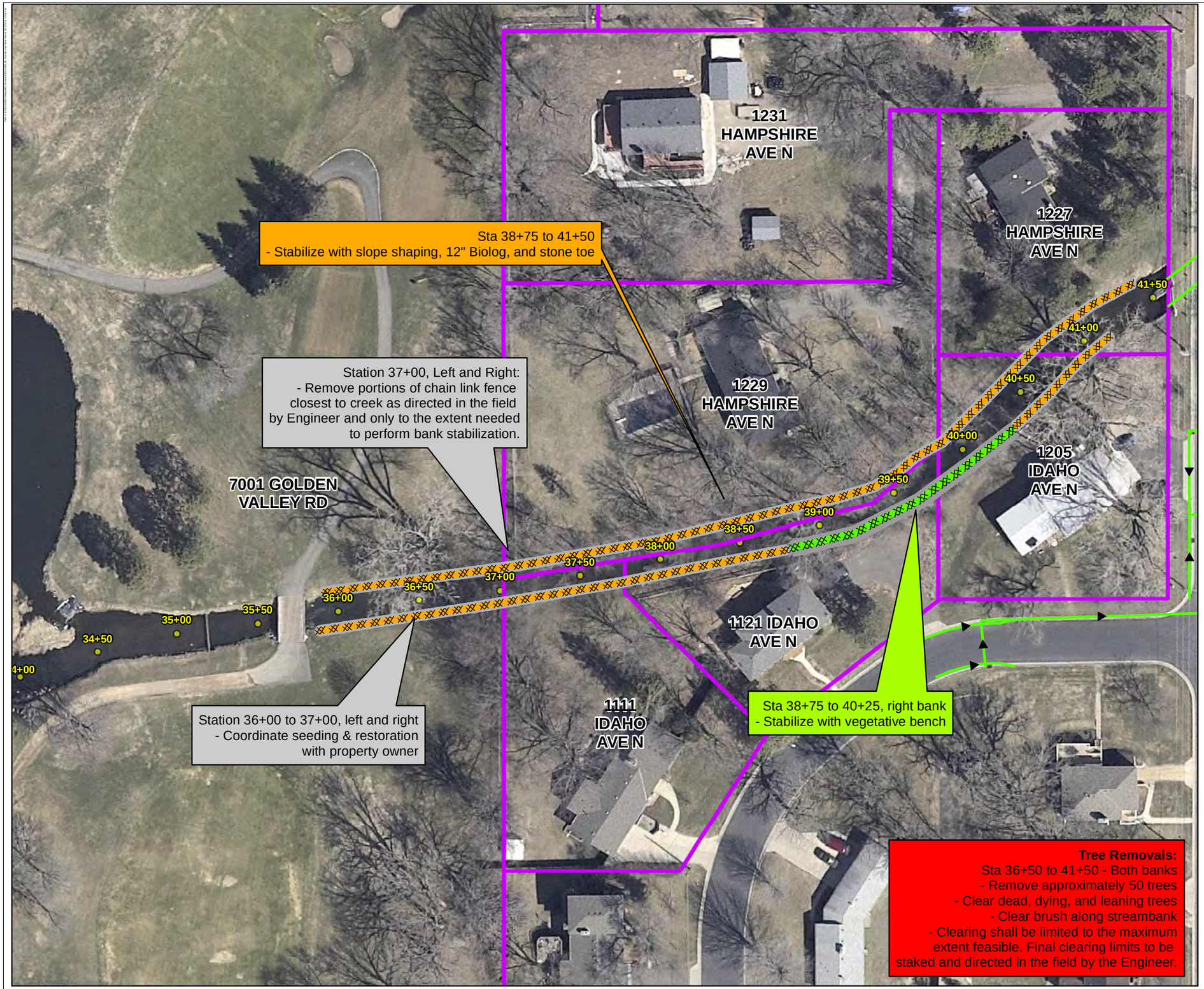
Legend

- Storm Sewer
- Vegetated Bench
- Biolog with Stone Toe
- Parcels
- Creek Stationing

WSB & Associates, Inc.

N

0 15 30 60 Feet



city of golden valley

Bassett Creek Watershed Management Commission

2015 Bassett Creek Main Stem Restoration Project
City of Golden Valley
Minnesota

Construction Plans
Area B

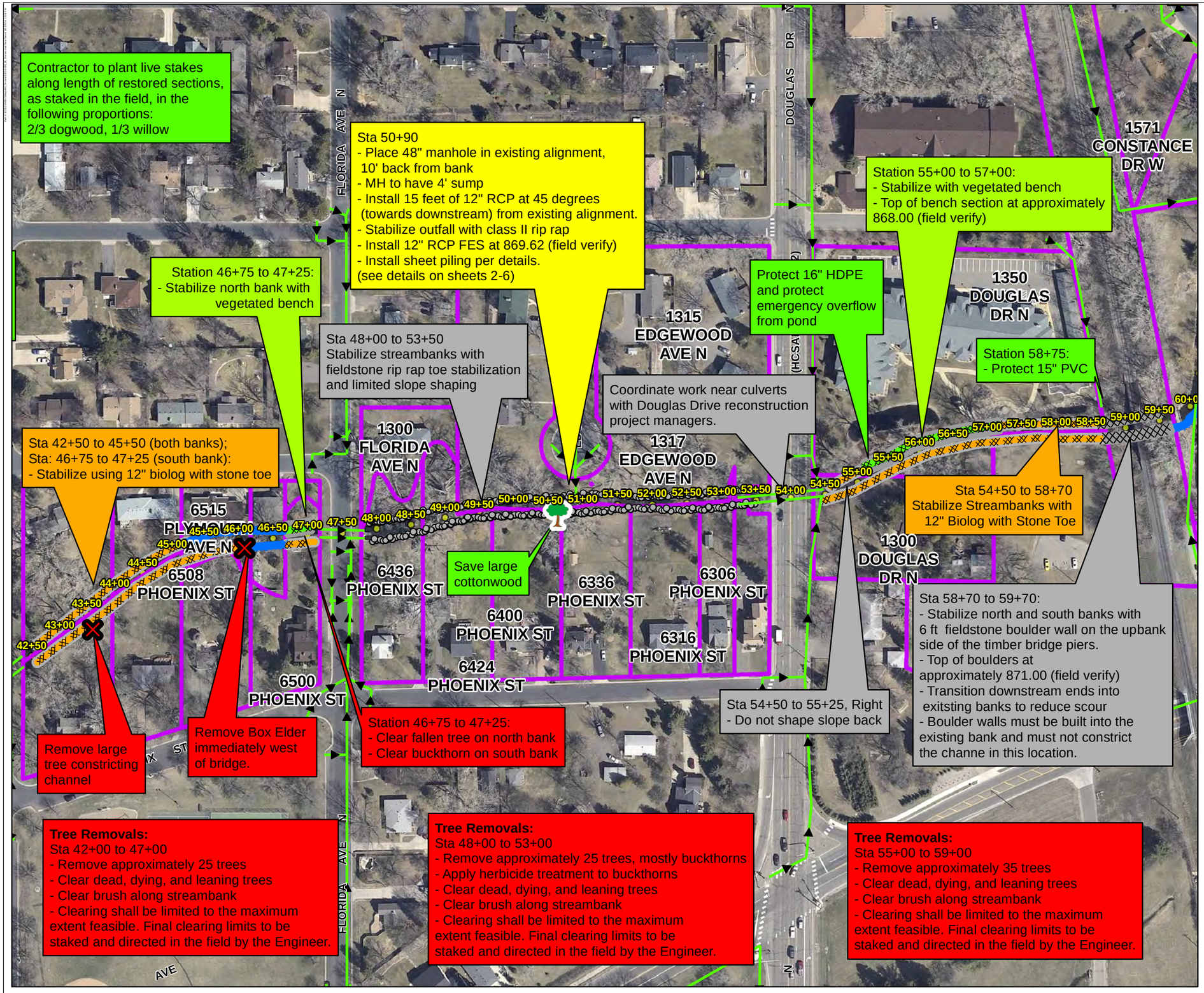
Legend

- Storm Sewer
- Vegetated Bench
- Biolog with Stone Toe
- Parcels
- Creek Stationing

WSB & Associates, Inc.

N

0 15 30 60 Feet



city of golden valley

Bassett Creek Watershed Management Commission

2015 Bassett Creek Main Stem Restoration Project
City of Golden Valley
Minnesota

Construction Plans
Area C

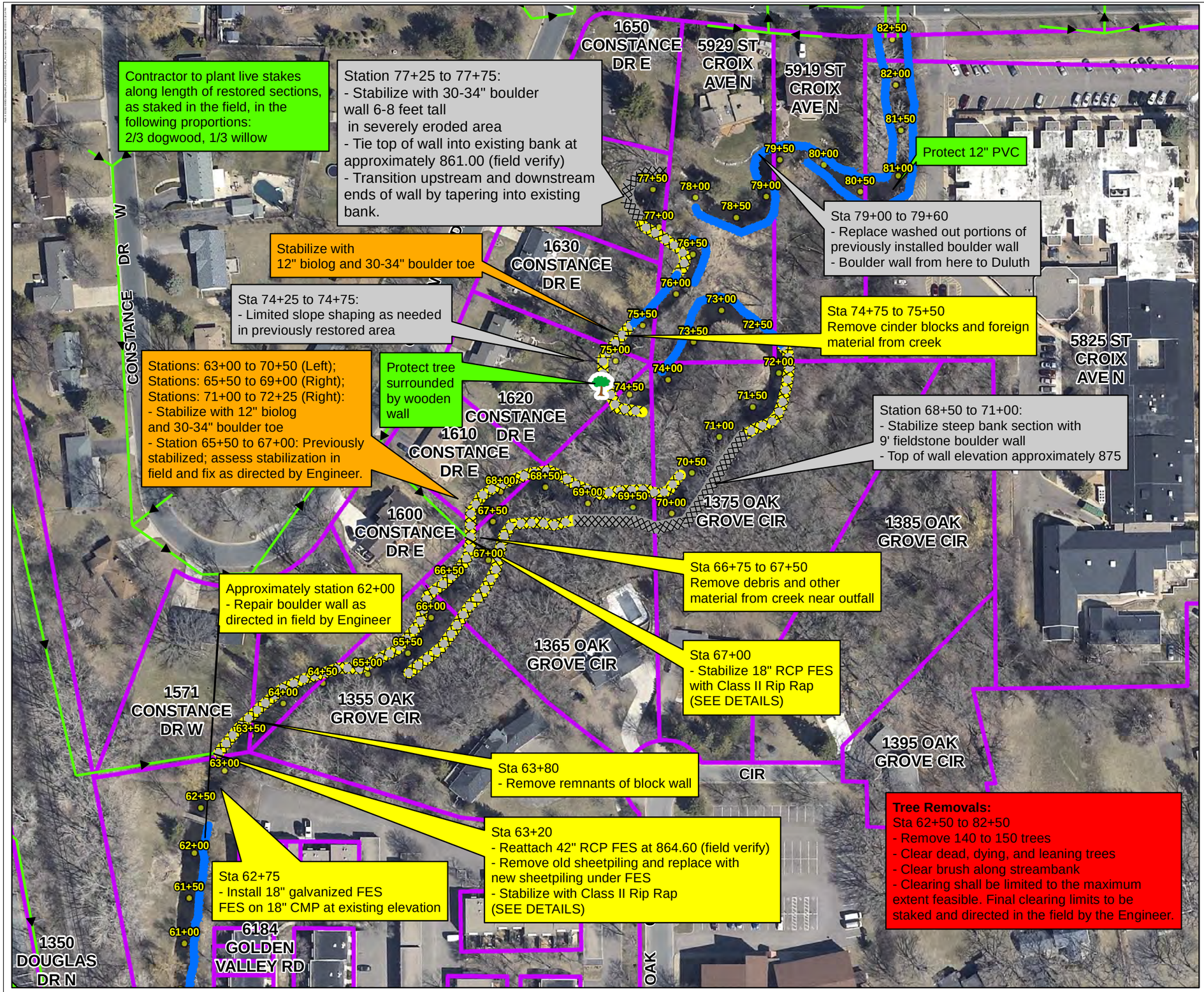
Legend

- Storm Sewer
- Rip Rap Toe Stabilization
- Boulder Wall
- Previously Stabilized
- Vegetated Bench
- Biolog with Stone Toe
- Parcels
- Creek Stationing

WSB & Associates, Inc.

N

0 40 80 160 Feet



city of golden valley

Bassett Creek Watershed Management Commission

2015 Bassett Creek Main Stem Restoration Project
City of Golden Valley
Minnesota

Construction Plans
Area D

Legend

- Storm Sewer
- Boulder Wall
- Previously Stabilized
- Biolog with Boulder Toe
- Parcels
- Creek Stationing

NOTE: The predominant restoration practice in this reach is the biolog and boulder toe. Other stabilization practices will be considered within this reach -- as topography and other conditions allow -- as directed in the field by the Engineer.

N

0 30 60 120 Feet

WSB & Associates, Inc.

Sta 83+00 to 94+00
- Stabilize streambanks with 12" biolog, slope shaping, and submerged stone toe
- See sheets 2-6 for details

Contractor to plant live stakes along length of restored sections, as staked in the field, in the following proportions:
2/3 dogwood, 1/3 willow

Save oak in yard near bank

Protect 12" PVC & 8" Steel Pipe

Sta 89+25
- Install FES on 12" CMP at 860.0 (field verify)
- Install FES on 10" PVC at 858.2 (field verify)
- Stabilize each outfall with Class II Rip Rap
(SEE DETAILS)

Sta 89+90
- Install FES on 12" RCP at 858.42 (field verify)
- Stabilize outfall with Class II Rip Rap
(SEE DETAILS)

Sta 87+60
- Install FES on 12" CMP at approximately 860.5 (field verify)
- Install FES on 24" RCP at approximately 860.0 (field verify)
- Stabilize outfalls with Class II Rip Rap
(SEE DETAILS)

Sta 87+90
- Install galvanized FES on 15" PVC pipe at 858.52 (field verify)
- Stabilize outfall with Class II Rip Rap
(SEE DETAILS)

Approximately Sta 86+00 to 88+00:
Realign trail to the east approximately 15' (where feasible) to provide room to pull back steep bank

Sta 86+50 to 86+70
- Remove gabion baskets

Place vegetated bench where trail realignment not feasible

Tree Removals:
Sta 83+00 to 94+00
- Remove 100 to 120 Trees
- Clear dead, dying, and leaning trees
- Clear brush along streambank
- Clearing shall be limited to the maximum extent feasible. Final clearing limits to be staked and directed in the field by the Engineer.

5925 DULUTH ST
1920 ADAIR AVE N
1910 ADAIR AVE N
1880 ADAIR AVE N
1860 ADAIR AVE N
5750 DULUTH ST
5851 DULUTH ST
5900 WOLFBERRY LA
5901 WOLFBERRY LA
5920 ST CROIX AVE N
5850 ST CROIX AVE N
5929 ST CROIX AVE N
DULUTH LA
BRUNSWICK AVE N
ADAIR AVE N
WOLFBERRY LA
(MEDICINE LAKE RD)
94+00
93+50
93+00
92+50
92+00
91+50
91+00
90+50
90+00
89+50
89+00
88+50
88+00
87+50
87+00
86+50
86+00
85+50
85+00
84+50
84+00
83+50
83+00
82+50

city of golden valley

Bassett Creek Watershed Management Commission

2015 Bassett Creek Main Stem Restoration Project
City of Golden Valley
Minnesota

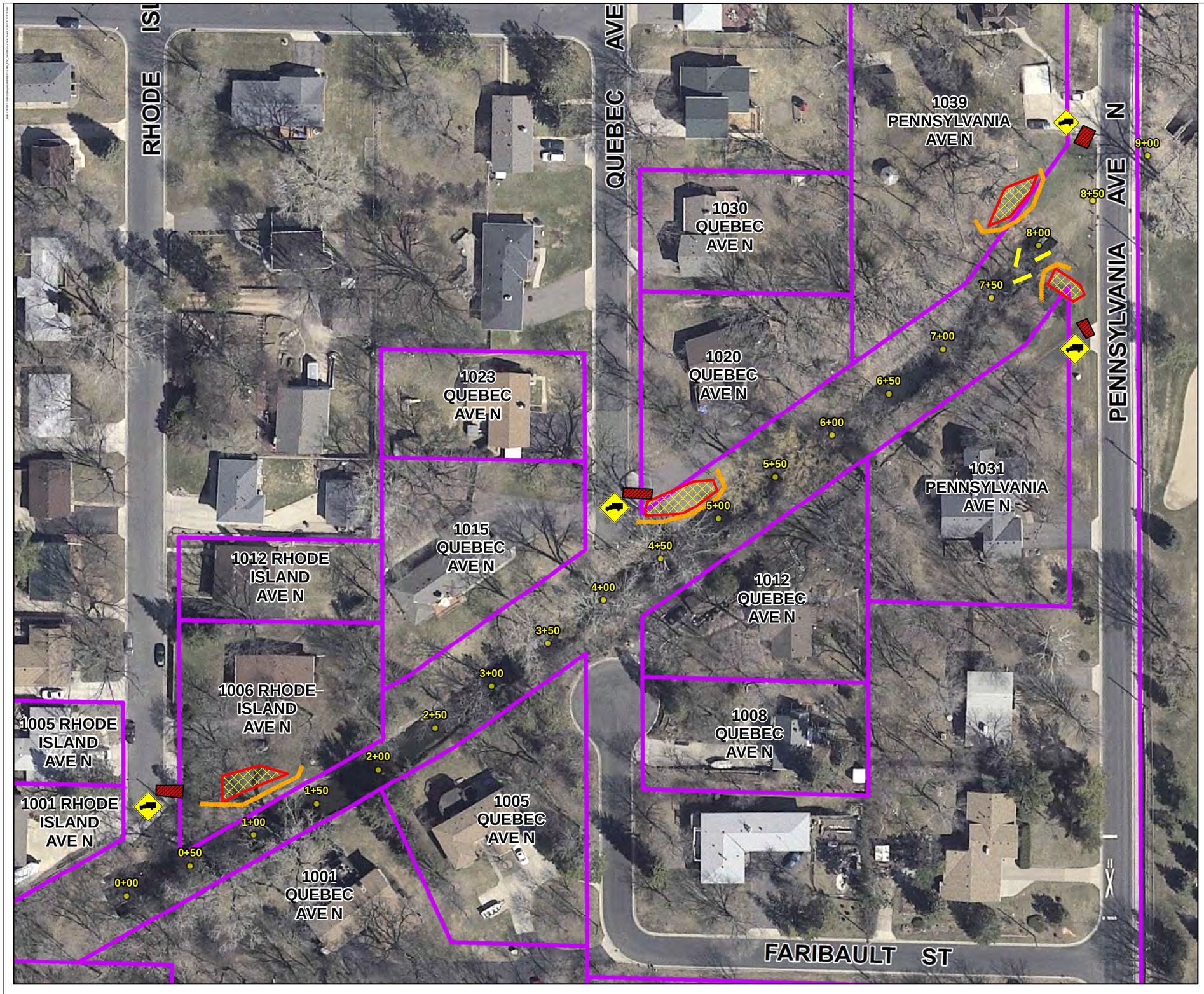
Construction Plans
Area E

Legend
- Storm Sewer
- Previously Stabilized
- Vegetated Bench
- Biolog with Stone Toe
- Parcels
- Creek Stationing

WSB & Associates, Inc.

N

0 35 70 140 Feet



city of golden valley

Bassett Creek Watershed Management Commission

2015 Bassett Creek Main Stem Restoration Project
City of Golden Valley
Minnesota

Erosion & Sediment Control
Area A

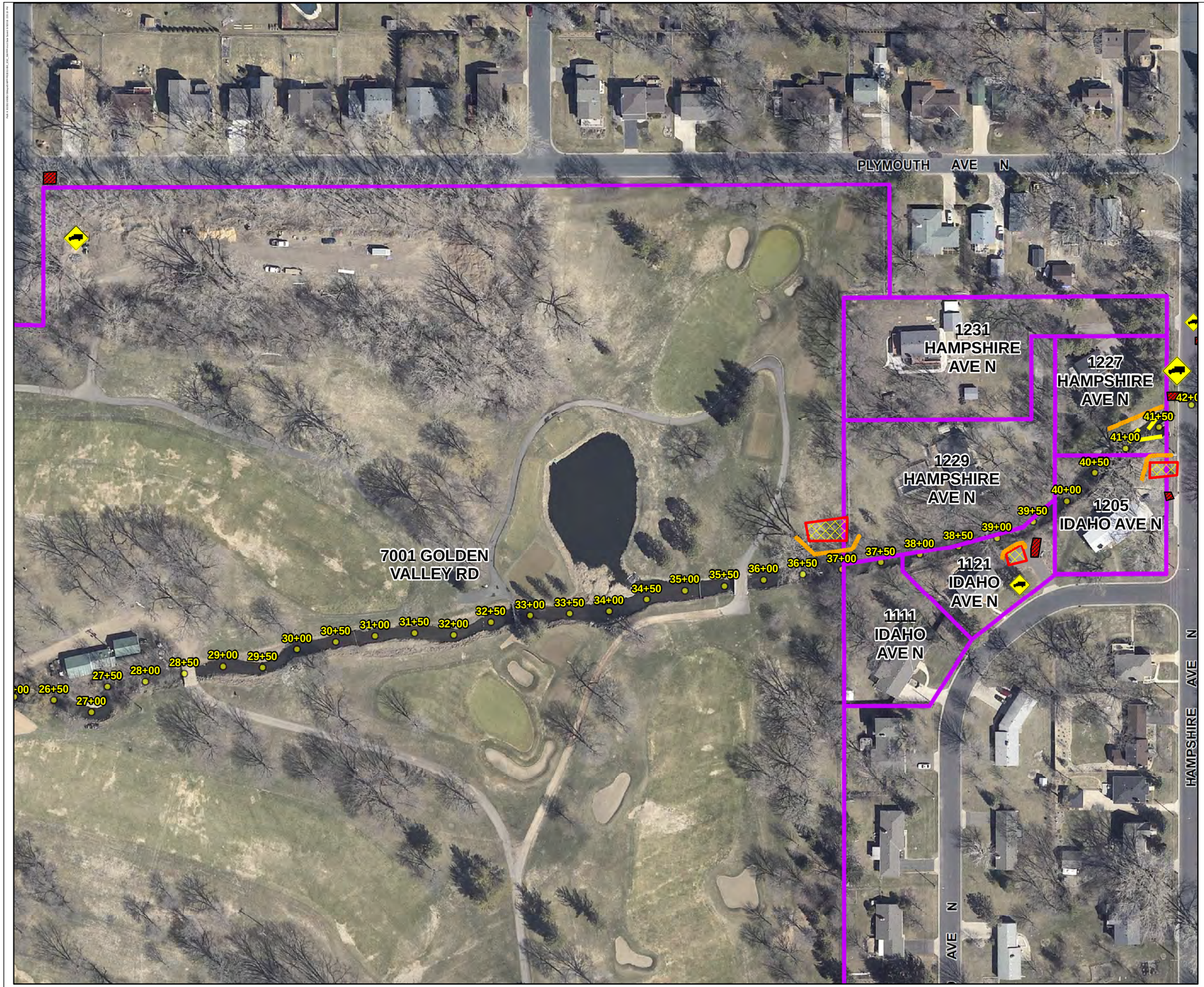
Legend

- Rock Construction Entrance
- SIlt Fence
- Floating Silt Fence
- Staging
- Parcels
- Creek Stationing
- Preferred Access

WSB & Associates, Inc.

N

0 25 50 100 Feet



city of golden valley

Bassett Creek Watershed Management Commission

2015 Bassett Creek Main Stem Restoration Project
City of Golden Valley
Minnesota

Erosion & Sediment Control
Area B

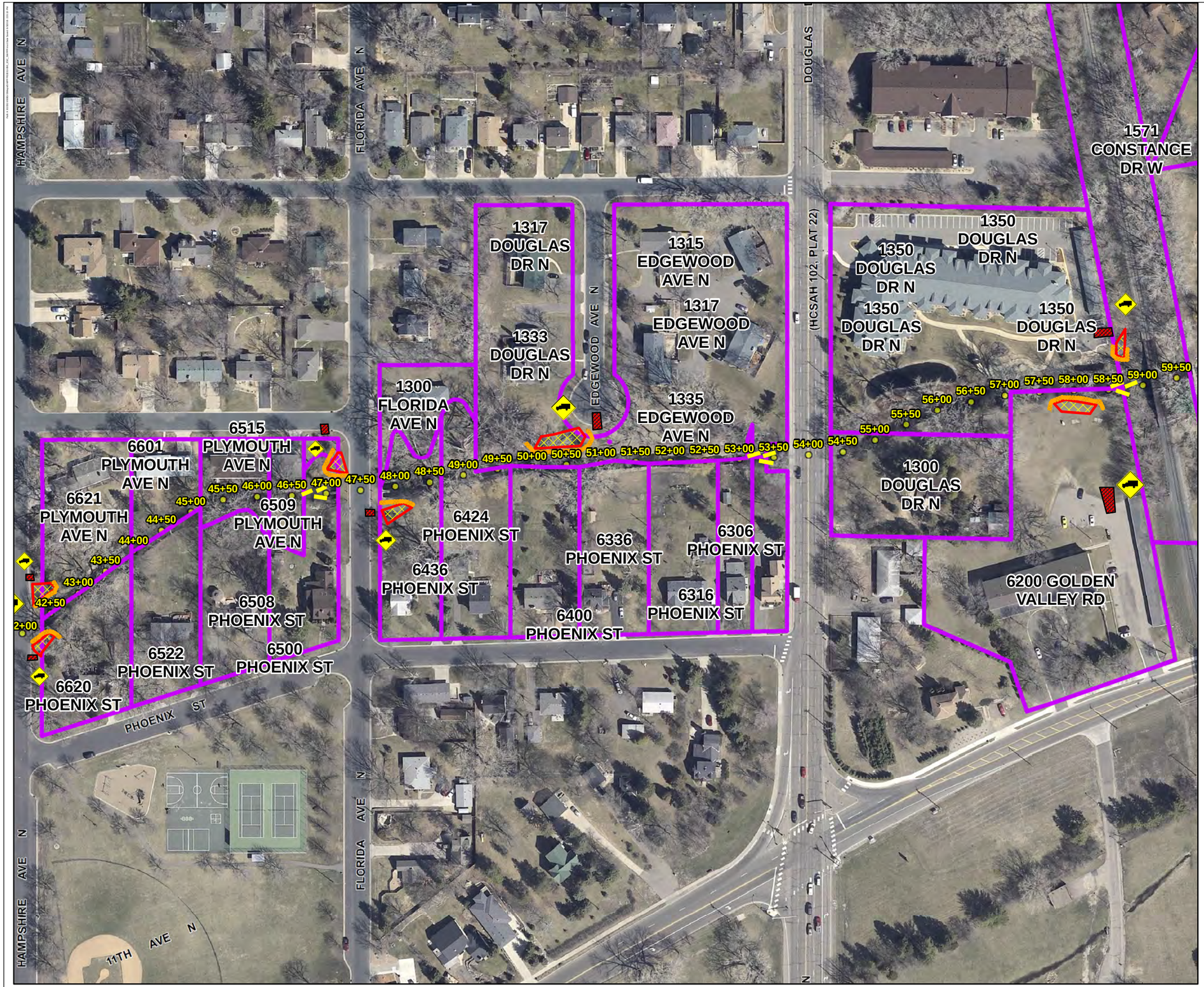
Legend

- Rock Construction Entrance
- SIlt Fence
- Floating Silt Fence
- Staging
- Parcels
- Creek Stationing
- Preferred Access

N

0 25 50 100 Feet

WSB & Associates, Inc.



city of golden valley

Bassett Creek Watershed Management Commission

2015 Bassett Creek Main Stem Restoration Project
City of Golden Valley
Minnesota

Erosion & Sediment Control
Area C

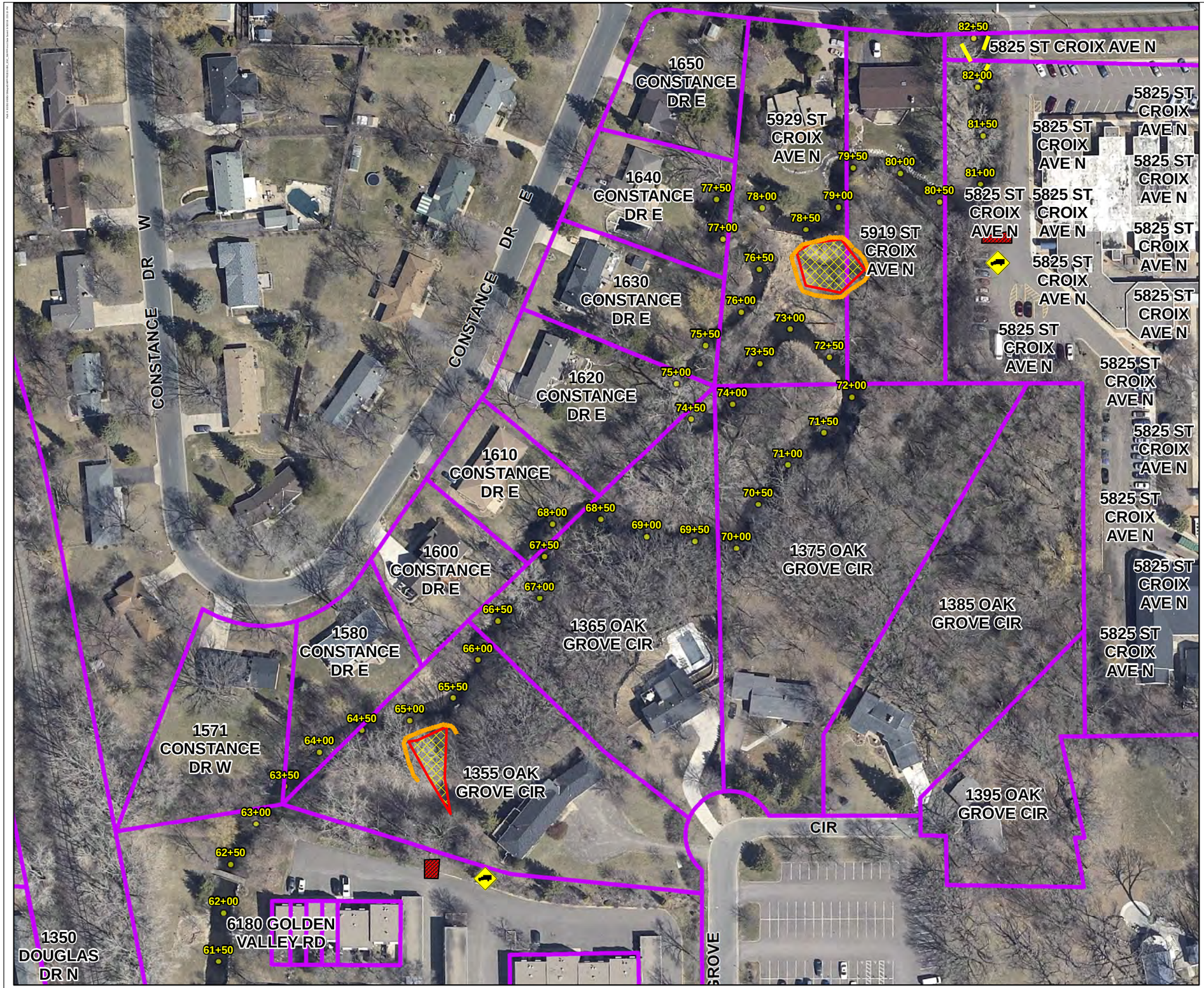
Legend

- Rock Construction Entrance
- SIlt Fence
- Floating Silt Fence
- Staging
- Parcels
- Creek Stationing
- Preferred Access

N

0 25 50 100 Feet

WSB & Associates, Inc.



city of golden valley

Bassett Creek Watershed Management Commission

2015 Bassett Creek Main Stem Restoration Project
City of Golden Valley
Minnesota

Erosion & Sediment Control
Area D

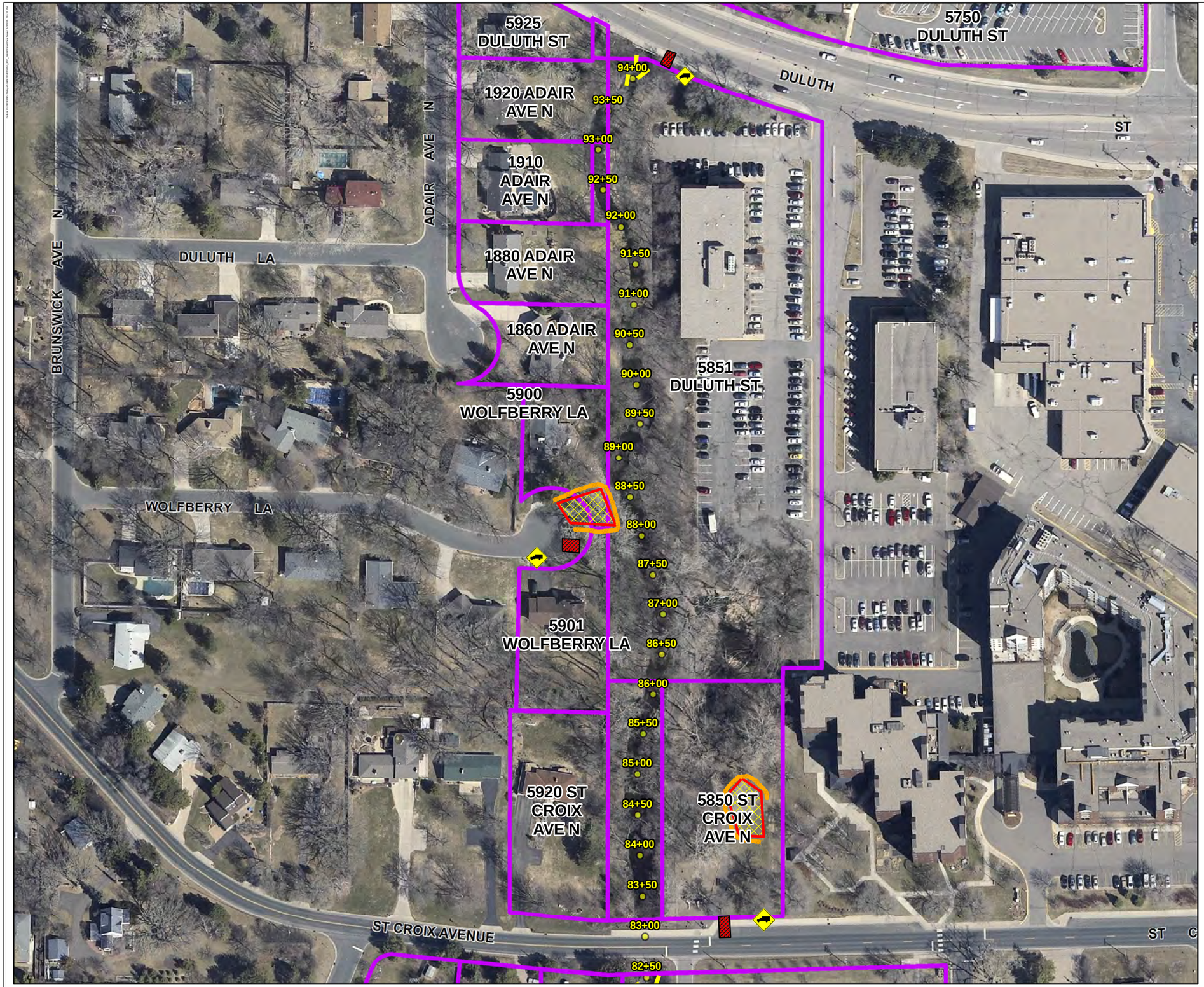
Legend

- Rock Construction Entrance
- SIlt Fence
- Floating Silt Fence
- Staging
- Parcels
- Creek Stationing
- Preferred Access

N

0 25 50 100 Feet

WSB & Associates, Inc.



city of golden valley

Bassett Creek Watershed Management Commission

2015 Bassett Creek Main Stem Restoration Project
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Erosion & Sediment Control
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- Rock Construction Entrance
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- Creek Stationing
- Preferred Access

N

0 25 50 100 Feet

WSB & Associates, Inc.


EXISTING CBMH
0+00
12"
PROP MH
873
872
871
870
869
868
867
STABILIZE OUTFALL WITH 5 CY COARSE FILTER AGGREGATE AND 5 CY CL III RIP RAP
REMOVE 20 LF OF 12" RCP AND REMOVE 12" FES
0+58.39
NEW FES
INSTALL 35 LF OF FLOATING SILT CURTAIN
880
870
860
Existing CBMH
Prop MH
New FES
EXISTING 12" RCP
CONNECT TO EXISTING 12" RCP AT 869.72 (FIELD VERIFY)
869.74(N)
867.87(SE)
863.87 (SUMP)
865.39(NW)
0+00
1+00

2015 MAIN STEM OF BASSETT CREEK RESTORATION PROJECT
CITY OF GOLDEN VALLEY

WSB & Associates, Inc.
701 Xenia Avenue South, Suite 300
Minneapolis, MN 55416
www.wsbeng.com
INFRASTRUCTURE | ENGINEERING | PLANNING | CONSTRUCTION

CITY PROJECT NUMBER 13-25
PROJECT NUMBER 02032-09

EDGEWOOD AVE STORM SEWER REPLACEMENT

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT SITE EVALUATION, ASSESSMENT, AND PLANNING

THIS NARRATIVE IS TO SERVE AS A GUIDANCE PLAN AND MUST BE AMENDED AND MODIFIED AS SITE CONDITIONS CHANGE DURING CONSTRUCTION.

PROJECT LOCATION/DESCRIPTION

PROJECT/SITE NAME: BASSETT CREEK 2015 RESTORATION
PROJECT NUMBERS: WSB #02032-09
PROJECT LOCATION: STREET: LEWIS RD, DULUTH ST, VALE CREST ROAD CITY/TOWNSHIP: GOLDEN VALLEY COUNTY: HENNEPIN
STATE: MINNESOTA ZIP: 55422
LATITUDE/LONGITUDE: 44.9931/-93.3602

CONTACT INFORMATION/RESPONSIBLE PARTIES

THE CITY OF GOLDEN VALLEY OWNS THE LAND, ADJACENT ROADS, AND EASEMENT AREAS ASSOCIATED WITH THE PROJECT. THE CITY OF GOLDEN VALLEY IS THE OWNER PERMITTEE APPLYING FOR PERMIT COVERAGE AND WILL BE RESPONSIBLE FOR DEVELOPING THIS SWPPP AND THE LONG-TERM MAINTENANCE PLAN OF THE PERMANENT STORMWATER MANAGEMENT SYSTEM FOR THIS PROJECT (IF APPLICABLE). THE OWNER WILL ENSURE THAT THE DESCRIBED WORK IN THE SWPPP IS BEING COMPLETED BY THE OPERATOR PERMITTEE.

OWNER/PERMITTEE: CITY OF GOLDEN VALLEY (ERIC ECKMAN)
7800 GOLDEN VALLEY ROAD
GOLDEN VALLEY, MN 55427
763-593-8084/EECKMAN@GOLDENVALLEYMN.GOV

THE PRIMARY CONTRACTOR WILL ENTER INTO A CONTRACT WITH THE CITY OF GOLDEN VALLEY TO COMPLETE THE REQUIRED WORK FOR THIS PROJECT. THE PRIMARY CONTRACTOR WILL BECOME (UNDER CONTRACT) THE OPERATOR CO-PERMITTEE ON THE NPDES PERMIT (THROUGH EXECUTION OF A NPDES PERMIT MODIFICATION FORM), AND THEREBY AGREE TO IMPLEMENT THIS SWPPP IN COOPERATION WITH THE OWNER. THE OPERATOR IS RESPONSIBLE FOR DEVELOPING A CHAIN OF RESPONSIBILITY PRIOR TO STARTING CONSTRUCTION (REFER TO SWPPP AMENDMENT SECTION). THE NPDES PERMIT MODIFICATION FORM SHALL BE SUBMITTED TO THE MPCA AFTER THE PROJECT IS AWARDED TO THE PRIMARY CONTRACTOR, PRIOR TO LETTING THE PROJECT.

THE OPERATOR WILL INSURE THAT INDIVIDUALS OVERSEEING OR IMPLEMENTING THE SWPPP HAVE BEEN PROPERLY TRAINED AND THAT CERTIFICATIONS WILL BE MADE AVAILABLE UPON REQUEST. THIS INCLUDES ANY SUB-CONTRACTORS THAT THE OPERATOR EMPLOYS UNDER SEPARATE CONTRACT. THE OPERATOR WILL PROVIDE THE CONTACT INFORMATION FOR THE EROSION CONTROL SUPERVISOR, SITE SUPERINTENDENT/FOREMAN, AND BMP INSTALLERS. THE EROSION CONTROL SUPERVISOR SHALL BE A RESPONSIBLE EMPLOYEE OF THE PRIME CONTRACTOR AND/OR DULY AUTHORIZED BY THE PRIME CONTRACTOR TO REPRESENT THE PRIME CONTRACTOR ON ALL MATTERS PERTAINING TO THE NPDES CONSTRUCTION STORMWATER PERMIT COMPLIANCE. THE EROSION CONTROL SUPERVISOR SHALL HAVE AUTHORITY OVER ALL OPERATOR OPERATIONS WHICH INFLUENCE NPDES PERMIT COMPLIANCE, INCLUDING GRADING, EXCAVATION, CULVERT INSTALLATION, CLEARING/GRUBBING, DEWATERING, AND ANY OTHER OPERATION THAT INCREASES THE EROSION POTENTIAL ON THE PROJECT.

THE OPERATOR WILL PERFORM A PRECONSTRUCTION SITE VISIT TO ADDRESS ANY AREAS OF CONCERN PERTAINING TO ENVIRONMENTAL COMPLIANCE. THE OPERATOR WILL IMPLEMENT AND MAINTAIN BMPS FOR THE DURATION OF CONSTRUCTION PROJECT. THE OPERATOR WILL COMPLETE THE REQUIRED SITE INSPECTIONS TO REMAIN IN COMPLIANCE WITH NPDES PERMIT REQUIREMENTS PART II.B, II.C, III.B-F, IV, V, AND APPLICABLE CONSTRUCTION ACTIVITY REQUIREMENTS FOUND IN APPENDIX A, PART C.

OPERATOR/PERMITTEE: (TO BE DETERMINED THROUGH TRANSFER OF NPDES-CSW PERMIT)

WSB & ASSOCIATES HAS BEEN CONTRACTED BY THE OWNER TO DEVELOP THE SWPPP PLAN FOR THIS PROJECT. THIS SWPPP WAS PREPARED BY AN INDIVIDUAL THAT HAS BEEN PROPERLY TRAINED IN ACCORDANCE TO PART III.F OF THE NPDES PERMIT (CERTIFICATION CARDS ARE AVAILABLE UPON REQUEST). WSB & ASSOCIATES WILL OFFER GUIDANCE FOR COMPLIANCE WITH THE NPDES PERMIT BEFORE, DURING, AND AFTER CONSTRUCTION OF THE PROJECT.

SWPPP DEVELOPER:
WSB & ASSOCIATES, INC. (GREG BECKIUS)
477 TEMPERANCE STREET
ST. PAUL, MN 55101
651-286-8468/GBECKIUS@WSBENG.COM

WATER RESOURCE ENGINEER:
WSB & ASSOCIATES, INC. (JOEY ABRAMSON)
701 XENIA AVE. SOUTH, SUITE 300
MINNEAPOLIS, MN 55416
763-270-3469/JABRAMSON@WSBENG.COM

AGENCY CONTACTS

AGENCY	PERMIT	NAME	PHONE NUMBER/E-MAIL
MPCA (EMERGENCY)	N/A	STATE DUTY OFFICER	1-800-422-0798
MPCA	NPDES-CSW #C000XXXXX	BRANDON DAHL	651-757-2279/BRANDON.DAHL@STATE.MN.US
ACOE	SECTION 404	N/A	651-290-5525
MN DNR	PUBLIC WATERS WORK PERMIT	N/A	651-296-6157
BASSETT CREEK WATERSHED MANAGEMENT COMMISSION	EROSION CONTROL	JIM HERBERT	952-832-2784

PROJECT DESCRIPTION & SCHEDULE

THE BASSETT CREEK RESTORATION PROJECT CONSISTS OF STREAM BANK RESTORATION TO TWO AREAS OF THE MAIN STEM OF BASSETT CREEK. AREA A IS LOCATED BETWEEN WISCONSIN AVENUE, JUST NORTH OF HIGHWAY 55, AND EXTENDS EAST 2,100 FEET TO 10TH STREET, JUST PAST WINNETKA AVE. THE SECOND AREA IS LOCATED NORTH OF DULUTH STREET, JUST WEST OF HIGHWAY 100, AND EXTENDS NORTH 4,000 FEET, TO THE GOLDEN VALLEY/CRYSTAL BORDER. THE DESIGNED STABILIZATION MEASURES FOR THE PROPOSED PROJECT WILL INCLUDE MAINTAINING THE CHANNELIZATION OF THE CREEK BY IMPLEMENTING THE FOLLOWING: REMOVE TREES THAT ARE LEANING OVER AND LIKELY TO FALL INTO THE CREEK, SHAPE ERODED SLOPES IN SELECTED AREAS OF THE CREEK TO PROVIDE A SUSTAINABLE SLOPE AND TO SUPPORT IMPROVED VEGETATION GROWTH, REPLACE AND INSTALL NEW STORM SEWER OUTFALLS THAT DISCHARGE INTO THE CHANNEL TO PREVENT FURTHER DAMAGE AND EROSION, AND ESTABLISH NATIVE VEGETATION ALONG DISTURBED STREAM BANKS.

TENTATIVE CONSTRUCTION SCHEDULE (OPERATOR SHOULD PROVIDE ESTIMATED CONSTRUCTION SCHEDULE TO THE ENGINEER)

CONSTRUCTION ACTIVITIES:	ESTIMATED DATES OF SOIL DISTURBANCE ACTIVITIES:
CLEARING AND GRUBBING OPERATIONS, GRADING	JUNE - NOVEMBER 2015
INITIAL TURF	NOVEMBER 2015
LANDSCAPING, FINAL TURF, MISC.	NOVEMBER 2015

PRE-CONSTRUCTION IMPERVIOUS SURFACE AND DISTURBED AREA CALCULATIONS

TOTAL AREA TO BE DISTURBED = 2.25 ACRES
IMPERVIOUS AREA: PRE-CONSTRUCTION = 0.00 ACRES/POST-CONSTRUCTION = 0.00 ACRES
NET INCREASE OF IMPERVIOUS AREA = 0.00 ACRES

PERMANENT STORMWATER MANAGEMENT SYSTEMS

THE NPDES DOES NOT REQUIRE PERMANENT WATER QUALITY VOLUME CONTROL (PART III.D) FROM THE NET NEW IMPERVIOUS SURFACES BECAUSE THE NET INCREASE IS LESS THAN ONE ACRE.

LOCATION OF SWPPP COMPONENTS

DESCRIPTION	TITLE	LOCATION
SWPPP NARRATIVE	STORMWATER POLLUTION PREVENTION PLAN NARRATIVE	PLAN SET
SITE CONDITIONS	STORMWATER POLLUTION PREVENTION PLAN NARRATIVE	PLAN SET
SITE MAP (SOILS, WATER RESOURCES, POTENTIAL POLLUTANT GENERATING ACTIVITIES)	SWPPP WATER RESOURCES & SOILS MAP, SWPPP NARRATIVE	PLAN SET
CONSTRUCTION PHASING/STAGING, BUFFERS, & AREAS NOT TO BE DISTURBED	SWPPP NARRATIVE	PLAN SET
DIRECTION OF FLOW (PRE- & POST-CONSTRUCTION)	DRAINAGE PLAN	PLAN SET
IMPERVIOUS SURFACES	CONSTRUCTION PLAN & PROFILE	PLAN SET
TEMPORARY EROSION & SEDIMENT CONTROL BMPS/STEEP SLOPES (3:1), DNR FISH EXCLUSION "WORK IN WATER RESTRICTIONS- REFER TO SWPPP"	TEMPORARY EROSION AND SEDIMENT CONTROL PLAN, SWPPP NARRATIVE	PLAN SET
PERMANENT EROSION CONTROL BMPS	TURF ESTABLISHMENT PLAN, SWPPP NARRATIVE	PLAN SET
STORM SEWER	DRAINAGE PLAN	PLAN SET
GRADING	GRADING PLAN	PLAN SET
ESTIMATED BMP QUANTITIES	ESTIMATED QUANTITIES	PLAN SET
BMP DETAILS/SPECIFICATIONS	MISC. DETAILS, SWPPP NARRATIVE	PLAN SET
HYDROLOGIC/WATER QUALITY MODELING		AVAILABLE UPON REQUEST

EXISTING SITE CONDITIONS, SOILS, & WATER RESOURCES

SOILS AND NATIVE TOPSOIL: NATIVE TOPSOIL WILL BE STRIPPED AND STOCKPILED FOR FINAL GRADING OPERATIONS, WHERE INDICATED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS. METHODS AND EQUIPMENT TO MINIMIZE SOIL COMPACTION (IN PROPOSED INFILTRATION AREAS, DRIP LINE OF TREES TO BE PRESERVED, ETC.) SHALL BE DETERMINED BY THE OPERATOR'S SWPPP AMENDMENT. TRACKED VEHICLES ARE PREFERRED AND WHEELED VEHICLES ARE DISCOURAGED IN THESE AREAS.

THE FOLLOWING USDA-NRCS MAPPED SOILS ARE SHOWN AS "NOT HIGHLY ERODIBLE LAND", "POTENTIALLY HIGHLY ERODIBLE LAND", AND "HIGHLY ERODIBLE LAND" ON THE SWPPP SITE MAP.

USDA-NRCS MAPPED SOIL SURVEY UNIT NO., NAME, TEXTURE, SLOPE PERCENTAGE	APPROXIMATE PARTICLE SIZE RANGE *(MM)*		
	SAND (0.05-2.00+)	SILT (0.002-0.05)	CLAY (<0.002)
L2B - MALARDI-HAWICK COMPLEX, 1-6% SLOPES	50-70%	0-50%	15-20%
L2C - MALARDI-HAWICK COMPLEX, 6-12% SLOPES	50-70%	0-50%	15-20%
L2D - MALARDI-HAWICK COMPLEX, 12-18% SLOPES	50-70%	0-50%	15-20%
L6A - BISCAY CLAY LOAM, 0-2% SLOPES	20-45%	15-52%	27-40%
L30A - MEDO SOILS, DEPRESSIONAL, 0-1% SLOPES	N/A	N/A	N/A
U1A - URBAN LAND-UDORTHENTS, WET SUBSTRATUM, COMPLEX, 0-2% SLOPES	N/A	N/A	N/A

DESCRIPTION OF RECEIVING WATERS (LOCATED WITHIN 1-MILE): STORMWATER FROM THIS PROJECT WILL DISCHARGE DIRECTLY TO BASSETT CREEK. STORMWATER RUNOFF IS FILTERED THROUGH THE VEGETATED SIDE SLOPES BEFORE SHEET FLOWING INTO THE CREEK. HYDROLOGIC AND WATER QUALITY MODELING DATA IS AVAILABLE UPON REQUEST.

DESCRIPTION OF IMPAIRED WATERS OR WATER SUBJECT TO TMDLS: A SPECIAL AND IMPAIRED WATERS SEARCH WAS COMPLETED USING THE MPCA SEARCH ENGINE (HTTP://PCA-GIS02.PCA.STATE.MN.US/CSW/INDEX.HTML) ON 05/21/2015. BASED ON THIS REVIEW, THE FOLLOWING SPECIAL OR IMPAIRED WATERS (WITH CONSTRUCTION RELATED IMPAIRMENTS) ARE LOCATED WITHIN ONE MILE OF, AND DOWNSTREAM OF ANY PROJECT DISCHARGE POINTS: BASSETT CREEK (AUID 07010206-538) IS IMPAIRED (CHLORIDE, FECAL COLIFORM, FISH BIOASSESSMENT), THEREFORE MPCA CGP APPENDIX A REQUIREMENTS APPLY TO THIS PROJECT.

REVISION NO. | DATE | EXPLANATION

SCALE: AS NOTED
PLAN BY: JHA | DESIGN BY: JHA
CHECKED BY: PRW | PROJECT NO: 02032-09
RECORD COPY BY: | DATE:

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.

PETER R. WILLENBRING, PROFESSIONAL ENGINEER
DATE: ____ LIC. NO: 15998

2015 MAIN STEM OF BASSETT CREEK RESTORATION PROJECT CITY OF GOLDEN VALLEY

WSB & Associates, Inc.
701 Xenia Avenue South, Suite 300
Minneapolis, MN 55416
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763-541-4800 - Fax 763-541-1700
INFRASTRUCTURE ENGINEERING PLANNING CONSTRUCTION

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ADDITIONAL BMPS FOR SPECIAL OR IMPAIRED WATERS DURING CONSTRUCTION ACTIVITY (MPCA CGP: APPENDIX A)

ALL REQUIREMENTS IN APPENDIX A ARE IN ADDITION TO BMPS ALREADY SPECIFIED IN THE PERMIT. WHERE PROVISIONS OF APPENDIX A CONFLICT WITH REQUIREMENTS ELSEWHERE IN THE PERMIT, THE PROVISIONS IN APPENDIX A TAKE PRECEDENCE. ALL BMPS USED TO COMPLY WITH THIS APPENDIX MUST BE DOCUMENTED IN THE SWPPP FOR THE PROJECT (APPENDIX A).

C.1.A EXPOSED SOILS: OPERATOR SHALL STABILIZE ALL EXPOSED SOIL AREAS WITHIN (7) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED (APPENDIX A.C.1.A).

C.1.B TEMPORARY BASIN: OPERATOR SHALL ADHERE TO THE REQUIREMENTS DESCRIBED IN PART III.B. 1-5 OF THE NPDES CONSTRUCTION PERMIT FOR COMMON DRAINAGE LOCATIONS THAT SERVE AN AREA WITH FIVE (5) OR MORE ACRES DISTURBED.

C.2 POST CONSTRUCTION: THE WATER QUALITY VOLUME THAT MUST BE TREATED BY THE PROJECT'S PERMANENT STORMWATER MANAGEMENT SYSTEM DESCRIBED IN PART III.C. SHALL BE ONE (1) INCH OF RUNOFF FROM THE NEW IMPERVIOUS SURFACES CREATED BY THE PROJECT. WHERE SITE CONDITIONS ALLOW, AT LEAST 1/2 INCH OF THE WATER QUALITY VOLUME MUST BE INFILTRATED. SEE PART III.C.2 FOR MORE INFORMATION ON INFILTRATION DESIGN AND APPROPRIATE SITE CONDITIONS. IF IT IS DETERMINED THAT SITE CONDITIONS ARE NOT APPROPRIATE FOR INFILTRATION (E.G. LACK OF 3 FT. OF SEPARATION TO SEASONALLY SATURATED GROUND WATER, PROXIMITY TO BEDROCK, CONTAMINATED SOILS) THE REASONS SHOULD BE DOCUMENTED IN THE SWPPP FOR THE PROJECT. INFILTRATION IS NOT REQUIRED IN HYDROLOGIC SOIL GROUP D SOILS.

C.3 BUFFER ZONE: AN UNDISTURBED BUFFER ZONE OF NOT LESS THAN 100 LINEAR FEET FROM THE SPECIAL WATER (NOT INCLUDING TRIBUTARIES) SHALL BE MAINTAINED AT ALL TIMES. EXCEPTIONS FROM THIS REQUIREMENT FOR AREAS, SUCH AS WATER CROSSINGS, LIMITED WATER ACCESS AND RESTORATION OF THE BUFFER ARE ALLOWED IF THE PERMITTEE FULLY DOCUMENTS IN THE SWPPP THE CIRCUMSTANCES AND REASONS THAT THE BUFFER ENCROACHMENT IS NECESSARY. REPLACEMENT OF EXISTING IMPERVIOUS SURFACE WITHIN THE BUFFER IS ALLOWED UNDER THIS PERMIT. ALL POTENTIAL WATER QUALITY, SCENIC AND OTHER ENVIRONMENTAL IMPACTS OF THESE EXCEPTIONS MUST BE MINIMIZED BY THE USE OF ADDITIONAL OR REDUNDANT BMPS AND DOCUMENTED IN THE SWPPP FOR THE PROJECT.

POTENTIAL FOR SEDIMENT AND/OR OTHER POLLUTANT(S) DISCHARGING FROM THE PROJECT SITE

THE TEMPORARY EROSION AND SEDIMENT CONTROL BMPS IN THIS SWPPP HAVE BEEN DESIGNED TO MINIMIZE THE POTENTIAL OF SEDIMENTS DISCHARGING OFF-SITE FROM A 0.5 INCH RAINFALL WITHIN A 24 HOUR PERIOD. THE NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATE FOR THE PROJECT LOCATION WAS REVIEWED AND USED FOR ANTICIPATED INSPECTION FREQUENCY, BMP DESIGN, AND ESTIMATING CONSTRUCTION ACTIVITIES IN THIS SWPPP. ATLAS 14 RESULTS DO NOT NECESSARILY REFLECT ANY DESIGN CRITERIA IN THE PERMANENT STORMWATER MANAGEMENT SYSTEM.

ROUTINE INSPECTION AND BMP MAINTENANCE BY THE OPERATOR IS CRUCIAL IN ENSURING THE FUNCTIONALITY OF EACH BMP. STEEP SLOPES AND OTHER ENVIRONMENTALLY SENSITIVE AREAS THAT ARE AT A HIGHER RISK OF SEDIMENTATION ARE DEFINED IN THE SWPPP (IF APPLICABLE).

CONSTRUCTION PHASING/STAGING, BUFFERS, & AREAS NOT TO BE DISTURBED

THE PRESERVED AREAS OF EXISTING VEGETATION WILL BE IDENTIFIED ON THE PLAN SHEETS AS "DO NOT DISTURB AREA". THE OPERATOR IS RESPONSIBLE FOR PRESERVING A 50 FOOT NATURAL BUFFER OR (IF INFEASIBLE) PROVIDE REDUNDANT SEDIMENT CONTROL BMPS, WHEN A SURFACE WATER IS LOCATED WITHIN 50 FEET AND RECEIVES DRAINAGE FROM THE PROJECT'S GRADING LIMITS. THIS REQUIREMENT DOES NOT APPLY TO ADJACENT ROAD SIDE DITCHES, JUDICIAL/COUNTY DITCHES, STORMWATER CONVEYANCES, STORM DRAIN INLETS, AND SEDIMENT BASINS.

THERE IS NO CONSTRUCTION PHASING OR STAGING DEFINED BY THE OWNER FOR THIS PROJECT. THE SCHEDULE FOR INSTALLING TEMPORARY BMPS SHALL BE INCORPORATED INTO THE OPERATOR'S WEEKLY SCHEDULE FOR EACH CONSTRUCTION STAGE AND PRESENTED TO THE OWNER'S REPRESENTATIVE (PER MNDOT SPEC 1717.D).

ENVIRONMENTALLY SENSITIVE AREAS

STEEP SLOPES: EXISTING AND PROPOSED SLOPES 1 IN 3 (33.33% AND STEEPER) THAT ARE PROPOSED TO BE DISTURBED ARE ILLUSTRATED ON THE PLAN SET. STEEP SLOPES MAYBE TEMPORARILY CREATED DURING GRADING OPERATIONS, AT WHICH TIME TEMPORARY BMPS MUST BE IMPLEMENTED BY THE OPERATOR (THROUGH AN APPROVED SWPPP AMENDMENT) WITHIN 7 DAYS OF NO LONGER WORKING THE STEEP SLOPE.

CONTAMINATED PROPERTIES: THE MPCA'S "WHAT'S IN MY NEIGHBORHOOD" DATABASE (PCA-GIS02.PCA.STATE.MN.US/WIMN2/INDEX.HTML) WAS REVIEWED ON 05/21/2015. THE RESULTS OF THIS REVIEW SHOW NO KNOWN CONTAMINATED PROPERTIES OR LEAK SOURCES LOCATED WITHIN AND ADJACENT TO THE PROJECT LIMITS.

STORMWATER POLLUTION MITIGATION MEASURES (AS IDENTIFIED FROM ENVIRONMENTAL REVIEW): NO FORMAL ENVIRONMENTAL REVIEW WAS REQUIRED FOR THIS PROJECT, THEREFORE, NO ADDITIONAL STORMWATER RELATED MITIGATION MEASURES APPLY.

KARST AREAS: THERE ARE NO KNOWN KARST AREAS WITHIN OR ADJACENT TO THE PROJECT LIMITS.

SITE PLAN REQUIRED AREAS: NO AREAS OF "HIGH ENVIRONMENTAL RISKS" ARE KNOWN TO BE LOCATED WITHIN OR IMMEDIATELY ADJACENT TO THE PROJECT LIMITS.

FLOOD CONTINGENCY PLAN: PROJECT ACTIVITIES MAY OCCUR WITHIN THE 100-YEAR FLOODPLAIN OR FLOODWAY, THEREFORE, THE PROJECT ENGINEER (AT THEIR DISCRETION) MAY REQUIRE A PREVENTATIVE FLOOD CONTINGENCY PLAN FOR SPECIFIC PROJECT ACTIVITIES AND AREAS IF SEASONAL PRECIPITATION POSSES A POTENTIAL RISK OF FLOODING WORK AREAS WITHIN THE PROJECT LIMITS. THIS PLAN SHALL BE SUBMITTED BY THE OPERATOR TO THE PROJECT ENGINEER FOR APPROVAL A MINIMUM OF 72 HOURS PRIOR TO THE SCHEDULED WORK AND/OR DURING ACTIVE WORK WITHIN THE FLOODPLAIN. NO WORK WITHIN THE FLOODPLAIN CAN COMMENCE UNTIL WRITTEN APPROVAL/NOTICE TO PROCEED FROM THE PROJECT ENGINEER IS RECEIVED.

FISH EXCLUSION DATES: OPERATOR IS PROHIBITED FROM CONDUCTING IN-STREAM WORK DURING THE FISH SPAWNING AND MIGRATION DATES OF APRIL 15 TO JUNE 30 FOR NON-TROUT WATERS. IF WORK MUST BE CONDUCTING DURING THIS TIMEFRAME, CONTRACTOR SHALL CONTACT THE LOCAL DNR FISHERIES MANAGER FOR WRITTEN APPROVAL PRIOR TO CONDUCTING THE IN-STREAM WORK.

AQUATIC INVASIVE SPECIES: ALL IN-STREAM AND DEWATERING EQUIPMENT SHALL BE DECONTAMINATED OF ALL AQUATIC PLANTS AND PROHIBITED INVASIVE SPECIES PRIOR TO USING WITHIN SURFACE WATERS ON-SITE AND TRANSPORTING OFF-SITE. ALL DECONTAMINATION ACTIVITIES SHALL MEET THE CHAPTER 1 STANDARDS OF THE MINNESOTA DNR'S BEST PRACTICES MANUAL FOR MEETING DNR GENERAL PUBLIC WATERS WORK PERMIT GP 2004-0001.

WETLANDS: NO WETLAND IMPACTS ARE PROPOSED WITH THIS PROJECT.

APPLICABLE FEDERAL, TRIBAL, STATE OR LOCAL PROGRAMS: THE PROJECT FALLS UNDER THE JURISDICTION OF SEVERAL ENTITIES, AS IDENTIFIED IN THE "AGENCY CONTACTS' TABLE OF PAGE 1 OF THE SWPPP. THE MORE STRINGENT OF LOCAL VS. STATE VS. FEDERAL RULES SHALL APPLY WHERE THEY CONFLICT. INFORMATION PERTAINING TO THE STATE NPDES PERMIT CAN BE FOUND AT: (HTTP://WWW.PCA.STATE.MN.US/INDEX.PHP/WATER/WATER-TYPES-AND-PROGRAMS/STORMWATER/CONSTRUCTION-STORMWATER/INDEX.HTML). THE OPERATOR IS RESPONSIBLE TO COMPLY WITH ALL APPLICABLE PERMITS, MNDOT SPECIAL PROVISION, MNDOT SPEC BOOK (2014 EDITION), MNDOT SPECIFICATIONS 1717.

SEQUENCE OF CONSTRUCTION/TIMING OF BMP INSTALLATION

NO CONSTRUCTION OPERATIONS, INCLUDING REMOVALS, THAT REQUIRE EROSION & SEDIMENT CONTROL PER THE SWPPP CAN COMMENCE UNTIL THE OPERATOR'S EROSION CONTROL SUPERVISOR CERTIFIES THE PROPER INSTALLATION OF BMP'S AND A CHAIN OF RESPONSIBILITY FOR SWPPP IMPLEMENTATION IS CREATED FOR ALL OPERATORS ON THE SITE. PERIMETER SEDIMENT CONTROLS (SILT FENCE, INLET PROTECTION, CONSTRUCTION ENTRANCES, ETC.) SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION. THESE PRACTICES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION IS ACHIEVED. OPERATOR SHALL IMPLEMENT THE NECESSARY ON SITE BMP'S IN ACCORDANCE WITH THE NPDES PERMIT REQUIREMENTS TO PREVENT NUISANCE CONDITIONS (MN RULES 7050.2010) FROM ANY DISCHARGES UNDER COVERAGE OF THE NPDES PERMIT. IN SOME CASES, MULTIPLE OR REDUNDANT APPLICATIONS OF SOME BMP'S MAY BE NEEDED TO MEET THESE REQUIREMENTS.

INSPECTION, SWPPP AMENDMENTS, RECORD KEEPING, & TRAINING

1. THE SWPPP CHAIN OF RESPONSIBILITY MUST BE AMENDED BY THE OPERATOR WHEN THE IDENTITY OF RESPONSIBLE SITE OPERATORS (EROSION CONTROL SUPERVISOR, SUB-CONTRACTORS, ETC.) ARE KNOWN.

2. THE OPERATOR MUST INSPECT THE ENTIRE CONSTRUCTION SITE AT LEAST ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. THE OPERATOR SHALL PROVIDE A RAINFALL GAUGE ON-SITE, WITHIN ONE MILE OF THE SITE, OR SOURCE OF THE WEATHER REPORTING SYSTEM THAT USES SITE SPECIFIC RAINFALL DATA FROM RADAR SUMMARIES. THE LOCATION AND SOURCE OF THE RAINFALL GAUGE OR REPORTING SYSTEM MUST BE DOCUMENT IN THE FIRST SWPPP INSPECTION REPORT. THE INSPECTION FREQUENCY MAY BE REDUCED TO ONCE PER MONTH, IF SITE CONDITIONS MEET PART IV.E.3 OF THE NPDES PERMIT. ALL INSPECTIONS AND MAINTENANCE CONDUCTED MUST BE RECORDED IN WRITING BY THE OPERATOR AND RETAINED WITH THE SWPPP. RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY SHALL INCLUDE:
   A. DATE, TIME, AND NAME OF PERSON(S) CONDUCTING INSPECTIONS;
   B. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS;
   C. CORRECTIVE ACTIONS TAKEN (INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES); INCLUDING DOCUMENTATION/PHOTOS OF IMPLEMENTED BMPS INTENDED TO CORRECT A PROBLEM BUT FAILED.
   D. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 1/2 INCH (0.5 INCHES) IN 24 HOURS;
   E. DOCUMENTATION OF CHANGES MADE TO THE SWPPP.

3. SWPPP AMENDMENTS AND SITE PLANS WILL BE PREPARED BY THE OPERATOR AND SUBMITTED TO THE OWNER FOR REVIEW AND WRITTEN APPROVAL BY THE PROJECT OWNER (OR DESIGNATED REPRESENTATIVE). ALL OWNER ACCEPTED AND DENIED SWPPP AMENDMENTS AND SITE PLANS MUST BE RECORDED IN WRITING RETAINED WITH THE SWPPP.

4. THE SWPPP SHALL BE AMENDED TO INCLUDE ADDITIONAL OR MODIFIED BMPS, DESIGNED TO CORRECT IDENTIFIED PROBLEMS OR ADDRESS SITUATIONS (UNDER PART III.B OF THE NPDES PERMIT), PRIOR TO CONDUCTING SPECIFIC STAGES/PHASES OF THE PROJECT, AS REQUIRED BY THE OWNER AND DEFINED IN THIS PROJECT SWPPP.

SUMMARY OF OPERATOR PREPARED SWPPP AMENDMENTS (REQUIRED BY OWNER)

SWPPP AMENDMENT NAME	SWPPP AMENDMENT DETAILS	SUBMITTAL TIMEFRAME
OPERATOR CHAIN OF RESPONSIBILITY	REFER TO "CONTACT INFORMATION/RESPONSIBLE PARTIES" SECTION	7 DAY PRIOR TO INITIATING WORK
BMP AMENDMENTS	SUBSTITUTED, ADDITIONAL, OR REDUNDANT BMPS TO COMPENSATE FOR FAILING/FAILED BMPS	DURING/AFTER CONSTRUCTION ACTIVITIES
METHODS TO MINIMIZE SOIL COMPACTION	REFER TO "EXISTING SITE CONDITIONS, SOILS, AND WATER RESOURCES" SECTION	7 DAYS PRIOR TO WORK WITHIN INFILTRATION BASINS AND PRESERVED TREE AREAS
STEEP SLOPES PHASING PLAN	REFER TO "ENVIRONMENTALLY SENSITIVE AREAS" SECTION	
SPILL PREVENTION & RESPONSE PLAN	REFER TO "POLLUTION PREVENTION MEASURES"	7 DAY PRIOR TO INITIATING WORK
DEWATERING PLAN	REFER TO "DEWATERING" SECTION	7 DAYS PRIOR TO ACTIVITY

5. THE SWPPP (ORIGINAL OR COPIES), ALL CHANGES TO THE SWPPP, PROJECT MANUAL, AND INSPECTIONS/MAINTENANCE RECORDS MUST BE KEPT AT THE SITE DURING CONSTRUCTION BY THE OPERATOR WHO HAS OPERATIONAL CONTROL OF THAT PORTION OF THE SITE. THE SWPPP CAN BE KEPT IN THE FIELD OFFICE OR ON SITE VEHICLE DURING NORMAL WORKING HOURS.

6. THE OPERATOR MUST ASSIGN A TRAINED INDIVIDUAL(S) (PURSUANT TO PARTS III.A.3 & III.F) TO OVERSEE THE IMPLEMENTATION, MAINTENANCE, AND REPAIR OF BMPS. THIS INDIVIDUAL(S) SHALL ALSO PERFORM INSPECTIONS, REVISE/AMEND THE SWPPP (DOCUMENT IN SWPPP AS NECESSARY), AND BE AVAILABLE FOR AN ONSITE INSPECTION WITHIN 72 HOURS UPON REQUEST BY THE PERMITTED OWNER (OR ITS DESIGNEE), LOCAL GOVERNMENT UNITS, OR MPCA.

POLLUTION PREVENTION MANAGEMENT MEASURES

POTENTIAL SOURCES OF POLLUTANTS FROM CONSTRUCTION ACTIVITIES INCLUDE:

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

PETER R. WILLENBRING, PROFESSIONAL ENGINEER
DATE: _____ LIC. NO: 15998

2015 MAIN STEM OF BASSETT CREEK RESTORATION PROJECT CITY OF GOLDEN VALLEY

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- SEDIMENT AND FUGITIVE DUST GENERATED FROM CLEARING AND GRUBBING, IMPORT/EXPORT OPERATIONS, REMOVALS/COMPACTION, MASS/FINE GRADING, EXCAVATIONS, TRENCHING, TOPSOIL STRIPING STOCKPILING, WET/DRY PAVEMENT CUTTING, STREET CONSTRUCTION.
- BASIC/ACIDIC PH LEVELS FROM CURB AND GUTTER, MANHOLE STRUCTURES, SIDEWALKS, DRIVEWAY APRONS, FOUNDATIONS, BRIDGE ABUTMENTS, WET/DRY PAVEMENT CUTTING, MASONRY WASHOUT/CLEANOUT.
- EXCESS NUTRIENTS FROM LANDSCAPING INSTALLATIONS, SOIL ADDITIVES, FERTILIZATION, MULCHING
- HYDROCARBONS FROM STREET CONSTRUCTION, DEMOLITION/REMOVALS, WET/DRY PAVEMENT CUTTING

OPERATOR WILL COMPLY WITH ALL OF THE POLLUTION PREVENTION AND MANAGEMENT MEASURES IDENTIFIED IN THE NPDES-CSW PERMIT. OPERATOR WILL SUBMIT A SPILL PREVENTION AND RESPONSE PLAN (SPRP) TO THE ENGINEER PRIOR TO ANY CONSTRUCTION ACTIVITY. THE SPRP MUST SATISFACTORILY ADDRESS (AT A MINIMUM) THE FOLLOWING NPDES REQUIREMENTS BY THE PROPOSED IMPLEMENTATION AND MAINTENANCE OF APPROPRIATE BMPS:

NO-EXPOSURE: CONSTRUCTION AND BUILDING PRODUCTS (THAT HAVE THE POTENTIAL TO LEACH POLLUTANTS), PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPING MATERIALS MUST BE UNDER COVER (PLASTIC SHEETING OR TEMPORARY ROOFS) TO MINIMIZE CONTACT WITH STORMWATER AND PRECIPITATION.

SOLID WASTE: (SEDIMENT, ASPHALT, CONCRETE MILLINGS, CONSTRUCTION, AND DEMOLITION DEBRIS) AND OTHER WASTES MUST BE DISPOSED OF PROPERLY AND SHALL COMPLY WITH MPCA DISPOSAL REQUIREMENTS (CH. 7035).

HAZARDOUS MATERIALS: (E.G. GAS, DIESEL, OIL, ANTIFREEZE, PAINT SOLVENTS, SOAPS, DETERGENTS, WOOD PRESERVATIVES, CLEANING SOLVENTS, CURING COMPOUNDS, ACIDS, ETC.) MUST BE STORED IN SEALED CONTAINERS (WITH SECONDARY SPILL CONTAINMENT) IN RESTRICTED ACCESS AREAS TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTES AND MATERIALS MUST BE IN COMPLIANCE WITH MPCA REGULATIONS (CH. 7045) INCLUDING SECONDARY CONTAINMENT.

PORTABLE TOILETS: MUST BE POSITIONED AND SECURED SO THEY ARE NOT TIPPED OR KNOCKED OVER.

EQUIPMENT/VEHICLE FUELING, EXTERNAL WASHING, AND MAINTENANCE PRACTICES: ALL EQUIPMENT OPERATING WITHIN BASSETT CREEK CONSIST OF BIODEGRADABLE SUBSTANCES. WHEN VEHICLE FUELING, MAINTENANCE, OR EXTERNAL WASHING MUST OCCUR ON-SITE, THE ACTIVITY IS LIMITED TO A CONTAINED PORTION OF THE STAGING AREA, UNLESS INFEASIBLE THROUGH A SWPPP AMENDMENT. PROCEDURES FOR SPILL RESPONSE AND MATERIALS FOR CONTAINMENT AND CLEAN UP (DRIP PANS, DRY ABSORBENTS, AND SPILL KITS) WILL BE AVAILABLE AT ALL TIMES ON-SITE. ENGINE DEGREASING IS PROHIBITED ON-SITE.

CONCRETE, STUCCO, PAINT, CURING COMPOUNDS, SOLVENTS, AND OTHER WASHOUT WASTES: TEMPORARY OR LONG-TERM STORAGE OF WASHOUT WASTE IS PROHIBITED ON-SITE (SLURRY MUST BE HAULED IMMEDIATELY OFF-SITE). OPERATOR MUST SUBMIT A CONCRETE WASHOUT PLAN TO THE PROJECT ENGINEER FOR APPROVAL OF ALL ON-SITE WASHOUT LOCATIONS. ON-SITE WASHOUT LOCATIONS MUST BE LOCATED 200 FEET FROM AN ENVIRONMENTALLY SENSITIVE AREA AND SURFACE WATERS, HAVE "CONCRETE WASHOUT AREA" SIGNAGE, AND BE CONTAINED IN A LEAK PROOF CONTAINER OR IMPERMEABLE LINER. LIQUID AND SOLID WASTES SHOULD NOT CONTACT THE GROUND (UNLESS PERMITTED IN THE CONCRETE WASHOUT PLAN), BE CONTAINED TO PREVENT RUNOFF FROM THE WASHOUT LOCATION, AND MUST BE DISPOSED OF PROPERLY AND IN COMPLIANCE WITH MPCA REGULATIONS.

BURNING: BURNING OF GARBAGE, CONSTRUCTION DEBRIS, TREES, BRUSH, OR OTHER VEGETATIVE MATERIAL IS NOT ALLOWED ON SITE, UNLESS PRIOR APPROVAL IS GRANTED BY THE OWNER.

EROSION CONTROL PRACTICES, PROCEDURES, & MAINTENANCE STANDARDS

THE OPERATOR IS RESPONSIBLE FOR THE INSTALLATION, OPERATION, AND CONTINUED MAINTENANCE OF ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT BMPS, AS WELL AS ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS, FOR THE DURATION OF THE CONSTRUCTION WORK AT THE SITE, UNTIL FINAL STABILIZATION IS ACHIEVED. ALL BMPS MUST BE ADEQUATELY LOCATED, DESIGNED, INSTALLED, AND MAINTAINED TO PREVENT EROSION FROM A MINIMUM 0.5 INCH TOTAL RAINFALL EVENT WITHIN 24 HOURS.

ALL NONFUNCTIONAL BMPS MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPS BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS UNLESS ANOTHER TIME FRAME IS SPECIFIED IN THE SWPPP. ALL ERODED MATERIAL THAT LEAVES THE SITE SHALL BE COLLECTED BY THE OPERATOR AND RETURNED TO THE SITE AT THE OPERATOR'S EXPENSE AND INCIDENTAL TO THE PROJECT COST.

TEMPORARY OR PERMANENT STABILIZATION SHALL BE INITIATED AS SOON AS POSSIBLE, BUT NO LATER THAN THE END OF THE NEXT WORK DAY FOLLOWING THE DAY EARTH-DISTURBING ACTIVITIES IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. ALL EXPOSED SOIL AREAS SHALL BE STABILIZED WITHIN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. INITIATED STABILIZATION IS DEFINED AS COMPLETING ONE (OR MORE) OF THE FOLLOWING: SOIL PREPARATION FOR VEGETATION, MULCHING (OR OTHER TEMPORARY NON-VEGETATIVE BMP), SEEDING/PLANTING, OR SCHEDULING STABILIZATION MEASURES TO BE FULLY INSTALLED AND COMPLETED WITHIN THE 7 DAY TIMEFRAME.

ALL EXPOSED SOILS WITHIN 200 FEET AND DRAINING TO A DNR PUBLIC WATERS MUST BE STABILIZED WITHIN 24 HOURS OF TEMPORARILY OR PERMANENTLY CEASING WORK, DURING THE FISH SPAWNING PERIOD. TEMPORARY STOCKPILES WITHOUT SIGNIFICANT SILT, CLAY OR ORGANIC COMPONENTS (E.G., CLEAN AGGREGATE STOCKPILES, DEMOLITION CONCRETE STOCKPILES, SAND STOCKPILES) AND THE CONSTRUCTED BASE COMPONENTS OF ROADS, PARKING LOTS AND SIMILAR SURFACES ARE EXEMPT FROM THIS REQUIREMENT.

TEMPORARY STABILIZATION BMPS SHALL ONLY BE IMPLEMENTED WHEN PERMANENT STABILIZATION BMPS CANNOT BE IMPLEMENTED WITHIN THE 7 DAY TIMEFRAME FOR EXPOSED SOILS.

TEMPORARY/PERMANENT DRAINAGE DITCHES & SWALES: THE NORMAL WETTED PERIMETER (2-YEAR, 24-HOUR PRECIPITATION EVENT) OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH, CHANNEL, OR SWALE THAT DRAINS WATER FROM ANY PORTION OF THE CONSTRUCTION SITE, OR DIVERTS WATER AROUND THE SITE, MUST BE STABILIZED WITHIN THE LAST 200 LINEAL FEET FROM THE PROPERTY EDGE, OR FROM THE POINT OF DISCHARGE INTO ANY SURFACE WATER WITHIN 24 HOURS OF CONNECTION. STABILIZATION REMAINING OF THE REMAINING PORTIONS OF THE CHANNEL MUST BE STABILIZED WITHIN 7 DAYS. ALL STORMWATER CONVEYANCE CHANNELS MUST USE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES WITHIN AND ALONG THE LENGTH OF THE CHANNEL AND AT ANY OUTLETS. TEMPORARY OR PERMANENT DITCHES OR SWALES THAT ARE BEING USED AS A TEMPORARY SEDIMENT CONTAINMENT SYSTEM (WITH PROPERLY DESIGNED ROCK DITCH CHECKS, BIO ROLLS, SILT DIKES ETC.) DO NOT NEED TO BE STABILIZED. THESE AREAS MUST BE STABILIZED WITHIN 24 HOURS AFTER NO LONGER BEING USED AS A SEDIMENT CONTAINMENT SYSTEM. MULCH, HYDROMULCH, TACKIFIER, OR POLYARCRYLAMIDE BELOW THE WETTED PERIMETER OF A DITCH, SWALE, OR OTHER SURFACE WATER CONVEYANCE IS NOT ACCEPTABLE STABILIZATION.

EROSION CONTROL BLANKETS/MATS: OPERATOR SHALL VERIFY DURING REGULAR INSPECTIONS THAT NO GULLIES, RILLS, OR SCOUR HOLES HAVE FORMED UNDER EROSION CONTROL BLANKETS AND MATS. ALL REPAIRS MUST BE COMPLETED WITHIN 24 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.

MULCH: OPERATOR MUST APPLY MULCH IN A UNIFORM PATTERN OVER THE DISTURBED SOILS, TO ACHIEVE A MINIMUM OF 90% GROUND COVER.

DUST CONTROL: DUST FROM THE SITE WILL BE CONTROLLED BY INCREASED STREET SWEEPING AND/OR USING A MOBILE PRESSURE-TYPE DISTRIBUTOR TRUCK TO APPLY POTABLE WATER TO DISTURBED AREAS. THE MOBILE UNIT WILL APPLY WATER AT A RATE NECESSARY TO PREVENT RUNOFF AND PONDING.

STORM SEWER OUTLETS: PIPE OUTLETS MUST HAVE TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS AFTER HYDRAULIC CONNECTION TO A RECEIVING SURFACE WATER.

TEMPORARY & PERMANENT EROSION CONTROL BMPS

RAPID STABILIZATION METHOD #4: THIS METHOD SHALL CONSIST OF CATEGORY 3 EROSION CONTROL BLANKET (NATURAL NET ONLY) IN COMBINATION WITH MNDOT SEED MIX 22-111 (2 LBS PER 100 SQ. YD.) AND TYPE 3 SLOW RELEASE FERTILIZER (8 LBS PER 100 SQ. YD.) IS AN ACCEPTABLE BMP FOR DISTURBED AREAS ADJACENT TO ENVIRONMENTALLY SENSITIVE AREAS, SURFACE WATERS, AND WITHIN THE LAST 200 FEET OF DITCH BOTTOMS.

SOD/SEED MIX: MNDOT SEED MIX AND/OR SOD WITH APPROPRIATE MNDOT FERTILIZER WILL BE USED AS PERMANENT COVER FOR ALL EXPOSED GROUND AREAS PER MANUFACTURERS SPECIFICATIONS.

EROSION CONTROL BLANKET: A MNDOT CLASSIFIED EROSION CONTROL BLANKET SHALL BE ADDED IN COMBINATION WITH SEED MIX/FERTILIZER TO ALL AREAS SLOPED AT 3:1 OR GREATER, HIGH PRIORITY AREAS, AS WELL AS IN OR NEAR DITCH BOTTOMS TO ESTABLISH PERMANENT EROSION CONTROL.

TEMPORARY WINTER COVER: AREAS OF EXPOSED SOILS THAT ARE NOT COMPLETED BEFORE THE WINTER WILL BE STABILIZED WITH TYPE #3 (CERTIFIED AS WEED FREE) ADJACENT TO WETLAND OR STORMWATER PONDS. ALL OTHER DISTURBED AREAS SHALL BE STABILIZED WITH TYPE #1 MULCH, UNLESS ALTERNATIVE MORE PROTECTIVE BMPS ARE SPECIFIC WITHIN THE SWPPP. ALL EXPOSED SOILS SHALL BE STABILIZED BEFORE CONSTRUCTION IS COMPLETED FOR THE SEASON.

SEDIMENT CONTROL PRACTICES, PROCEDURES, & MAINTENANCE STANDARDS

DOWN GRADIENT SYSTEMS: IF THE DOWN GRADIENT TREATMENT SYSTEM IS OVERLOADED, ADDITIONAL UP GRADIENT SEDIMENT CONTROL PRACTICES OR REDUNDANT BMPS MUST BE INSTALLED TO ELIMINATE THE OVERLOADING, AND THE SWPPP MUST BE AMENDED TO IDENTIFY THESE ADDITIONAL PRACTICES.

PERIMETER CONTROL BMPS (SILT FENCES, CHIP/SLASH MULCH SACKS, BIOROLLS, FLOATING SILT CURTAIN, ETC.): PERIMETER CONTROL BMPS SHALL BE INSTALLED ON ALL DOWN GRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER AREAS, PRIOR TO INITIATING UPGRADIENT LAND DISTURBANCE ACTIVITIES. UPLAND PERIMETER CONTROLS BMPS SHALL BE PLACED AS CLOSE AS POSSIBLE TO FOLLOW A SINGLE CONTOUR ELEVATION. ALL SILT FENCES MUST BE REPAIRED, REPLACED, OR MAINTAINED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE HEIGHT OF THE FENCE. ALL REPAIRS MUST BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE FOR SHORELAND/IN-WATER SHORT-TERM CONSTRUCTION ACTIVITIES. AFTER THE SHORT-TERM ACTIVITY IN COMPLETE, AN UPLAND PERIMETER CONTROL MUST BE INSTALLED IF EXPOSED SOILS CONTINUE TO DRAIN TO THE SURFACE WATER.

50 FOOT NATURAL BUFFER(S): REFER TO "CONSTRUCTION PHASING/STAGING, BUFFERS, & AREAS NOT TO BE DISTURBED" SECTION OF THIS SWPPP.

TEMPORARY SEDIMENTATION BASINS: WHERE TEN (10) OR MORE ACRES OF DISTURBED SOIL DRAIN TO A COMMON LOCATION, A TEMPORARY SEDIMENT BASIN MUST BE PROVIDED PRIOR TO RUNOFF LEAVING THE CONSTRUCTION SITE OR ENTERING SURFACE WATERS. ALL TEMPORARY BASINS SHALL BE CONSTRUCTED AND OPERATIONAL PRIOR TO GRADING TEN (10) OR MORE ACRES. BASINS MUST PROVIDE A LIVE STORAGE VOLUME FROM A TWO YEAR 24-HOUR STORM EVENT FROM EACH ACRE (DISTURBED AND UNDISTURBED) DRAINING TO THE BASIN. AT A MINIMUM, IF CALCULATIONS ARE NOT PERFORMED THE BASIN SHALL PROVIDE 3,600 CUBIC FEET OF LIVE STORAGE FROM EACH ACRE. THE BASIN INTAKE MUST BE DESIGNED TO WITHDRAW WATER FROM THE SURFACE, PREVENT SHORT CIRCUITING AND THE DISCHARGE OF FLOATING DEBRIS, INCLUDE AN EMERGENCY OVERFLOW ABOVE THE LIVE STORAGE ELEVATION, AND PROVIDE ENERGY DISSIPATION AT THE BASIN OUTLET. BASINS MUST BE DRAINED AND SEDIMENT REMOVED WHEN THE DEPTH OF COLLECTED SEDIMENT IN THE BASIN REACHES 1/2 THE LIVE STORAGE VOLUME. DRAINAGE AND REMOVAL MUST BE COMPLETED WITHIN 72 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS. IF A BASIN IS INFEASIBLE WITHIN THE PROJECT LIMITS, EQUIVALENT SEDIMENT CONTROL BMPS MUST BE IMPLEMENTED AND DOCUMENTED IN THE SWPPP OR SWPPP AMENDMENT.

TEMPORARY STOCKPILES: ALL STOCKPILES MUST HAVE SILT FENCE OR EQUIVALENT PERIMETER SEDIMENT CONTROLS IMPLEMENTED AND MAINTAINED AT ALL TIMES. PILES CANNOT BE PLACED IN BUFFER AREAS OR SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES UNLESS THERE IS A BYPASS IN PLACE TO PREVENT STORMWATER RUN-ON INTO THE STOCKPILE.

CONSTRUCTION SITE ENTRANCE/VEHICLE TRACKING: OPERATOR MUST MINIMIZE SEDIMENT FROM LEAVING THE CONSTRUCTION SITE (OR ONTO STREETS WITHIN THE SITE) BY IMPLEMENTING BMPS SUCH AS ROCK PADS, SLASH MULCH, CONCRETE OR STEEL WASH RACKS, OR EQUIVALENT SYSTEMS. STREET SWEEPING MUST BE USED DAILY DURING CONSTRUCTION OPERATIONS IF SUCH BMPS ARE NOT ADEQUATE TO PREVENT SEDIMENT FROM BEING TRACKED ONTO THE STREET. TRACKED SEDIMENT MUST BE REMOVED FROM ALL PAVED SURFACES (ON AND OFF-SITE) WITHIN 24 HOURS OF DISCOVERY, OR SOONER AS DIRECTED BY THE PROJECT OWNER. MULTIPLE STREET SWEEPINGS AT THE OPERATOR'S EXPENSE MAY BE REQUIRED ON ALL ENTRY/EXIT POINTS TO THE SITE AT THE DISCRETION OF THE PROJECT OWNER.

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SURFACE WATERS: INCLUDING OFF-SITE AND DOWNSTREAM DRAINAGE DITCHES, CATCH BASINS, AND CONVEYANCE SYSTEMS, MUST BE INSPECTED FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION. THE REMOVAL AND STABILIZATION OF EXPOSED SOILS MUST TAKE PLACE WITHIN SEVEN (7) DAYS OF DISCOVERY UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL ACCESS CONSTRAINTS. IF PRECLUDED, REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN SEVEN (7) CALENDAR DAYS OF OBTAINING ACCESS. THE PERMITTEES ARE RESPONSIBLE FOR CONTACTING ALL LOCAL, REGIONAL, STATE AND FEDERAL AGENCIES AND RECEIVING ANY APPLICABLE PERMITS, PRIOR TO CONDUCTING ANY WORK.

INLET PROTECTION: ALL STORM DRAIN INLETS (INCLUDING DOWN GRADIENT, OFF-SITE) MUST BE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED. SILT FENCE IS NOT AN ACCEPTABLE CATCH BASIN INLET PROTECTION BMP. CONTACTOR SHALL CLEAN, REMOVE AND DISPOSE OF SEDIMENT, AND/OR REPLACE STORM DRAIN INLET PROTECTION ON A ROUTINE BASIS TO ENSURE THE DEVICE IS FULLY FUNCTIONAL PRIOR TO THE NEXT FORECASTED PRECIPITATION EVENT (30% OR GREATER). INLET PROTECTION MAY BE REMOVED FOR A PARTICULAR INLET IF A SPECIFIC SAFETY CONCERN (STREET FLOODING/FREEZING) HAS BEEN IDENTIFIED AND THE PERMITTEE(S) HAVE RECEIVED WRITTEN CORRESPONDENCE FROM THE JURISDICTIONAL AUTHORITY (E.G. CITY/COUNTY/TOWNSHIP/MNDOT ENGINEER) VERIFYING THE NEED FOR REMOVAL. WRITTEN CORRESPONDENCE MUST BE DOCUMENTED IN THE SWPPP AND AVAILABLE WITHIN 72 HOURS UPON REQUEST. PERMISSION TO REMOVE INLET PROTECTION BASED ON A SPECIFIC SAFETY CONCERN MUST STILL BE OBTAINED FROM THE LOCAL JURISDICTIONAL AUTHORITY WITHIN 30 DAYS OF REMOVAL.

CHEMICAL TREATMENTS: OPERATOR MUST AMEND THE SWPPP TO INCLUDE THE INTENDED USES AND LOCATIONS OF FLOCCULANTS, POLYMERS, AND OTHER SEDIMENTATION TREATMENT CHEMICALS. CHEMICAL TREATMENTS MAY ONLY BE APPLIED IN AREAS WHERE TREATED STORMWATER IS DIRECTED TO A RECEIVING SEDIMENT CONTROL SYSTEM (NOT DIRECTLY DISCHARGED TO NATURAL WATER BODIES). THIS INCLUDES DOCUMENTING THE EXPECTED SOIL TYPES, MANUFACTURER'S RECOMMENDED DOSING, APPLICATION RATES/QUANTITIES, AND MONITORING RESULTS (TURBIDITY, PH).

TEMPORARY & PERMANENT SEDIMENT CONTROL BMPS

SEDIMENT CONTROL LOGS: BIOROLLS WILL BE STAKED PLACED IN ACCORDANCE TO THE PLAN SHEETS WHERE THE SITE SLOPES OFF OF THE PROJECT LOCATION AT A 3:1 OR LESS AS WELL AS AROUND TEMPORARY STOCKPILES. BIOROLLS WILL BE FILLED WITH A STRAW MATERIAL AND CLEANED OUT OR REPLACED WHEN THE SEDIMENT REACHES 1/2 OF THE HEIGHT OF THE ROLL.

MACHINE SLICED SILT FENCE: SILT FENCE WILL BE PLACE IN ACCORDANCE TO THE PLAN SHEETS WHERE THE SITE SLOPES OFF OF THE PROJECT LOCATION AT MORE THAN 3:1 GRADIENT AS WELL AS NEAR CRITICAL WETLAND AREAS WITH A SECONDARY REDUNDANT BMP. THE BMP WILL BE CLEANED OUT OR REPLACED WHEN THE SEDIMENT REACHES 1/2 THE HEIGHT OF THE FENCE.

FLOATING SILT CURTAIN: FLOATING SILT CURTAIN WILL BE IN PLACE WHERE PROJECT ACTIVITIES ARE LOCATED WITHIN OR NEAR A SURFACE WATER/WETLAND. THE CURTAIN WILL BE LOCATED AS TIGHT TO THE SHORELINE AS POSSIBLE AND NOT TO EXCEED ¼ THE STREAM WIDTH. DOWN GRADIENT PERIMETER CONTROL MUST STILL BE INSTALLED AS WELL AS AN ADDITIONAL REDUNDANT BMP WHEN WORK IS WITHIN 50 FEET OF THE SURFACE WATER.

DEWATERING, STREAM DIVERSION, AND BASIN DRAINING

WHEN DEWATERING OR BASIN DRAINING IS REQUIRED, THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN AND NARRATIVE TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO UNDERTAKING THESE ACTIVITIES. DEWATERING PLAN MUST INCLUDE BMP'S TO PREVENT SEDIMENT TRANSPORT, EROSION, AND ADVERSE IMPACTS TO DOWNSTREAM RECEIVING WATERS. THE DEWATERING PLAN MUST ALSO INCLUDE ANY SPECIFIC CHEMICAL TREATMENTS (FLOC, POLYMERS, ETC.) THAT WILL BE USED. IF AN APPROVED TMDL WASTE LOAD ALLOCATION IS ESTABLISHED FOR CONSTRUCTION ACTIVITIES ON A RECEIVING WATERBODY, THE OPERATOR MUST IMPLEMENT ALL NECESSARY BMP'S TO MEET THE ASSIGNED WLA. THE DEWATERING PLAN AND DNR APPROPRIATIONS PERMIT WILL BECOME PART OF THE SWPPP. WATER THAT IS TURBID OR HAS SEDIMENT MUST BE DISCHARGED TO A TEMPORARY OR PERMANENT SEDIMENTATION BASIN (AND/OR OTHER APPROPRIATE BMPS) ON THE PROJECT SITE WHENEVER POSSIBLE. DISCHARGE FROM THE TEMPORARY OR PERMANENT SEDIMENTATION BASIN MUST BE VISUALLY CHECKED TO ENSURE ADEQUATE TREATMENT IS OBTAINED IN THE BASIN AND THAT NUISANCE CONDITIONS (SEE MINN. R. 7050.0210, SUBP. 2), IMPACTS TO WETLANDS, AND EROSION IN RECEIVING CHANNELS OR ON DOWNSLOPE PROPERTIES WILL NOT RESULT FROM THE DISCHARGE. THE DISCHARGE MUST BE DISPERSED OVER NATURAL ROCK RIPRAP, SAND BAGS, PLASTIC SHEETING, OR OTHER ACCEPTED ENERGY DISSIPATION MEASURES. ADEQUATE SEDIMENTATION CONTROL MEASURES AND ADDITIONAL FILTRATION BMPS ARE REQUIRED FOR DISCHARGE WATER THAT CONTAINS SUSPENDED SOLIDS, OIL, OR GREASE.

FINAL STABILIZATION

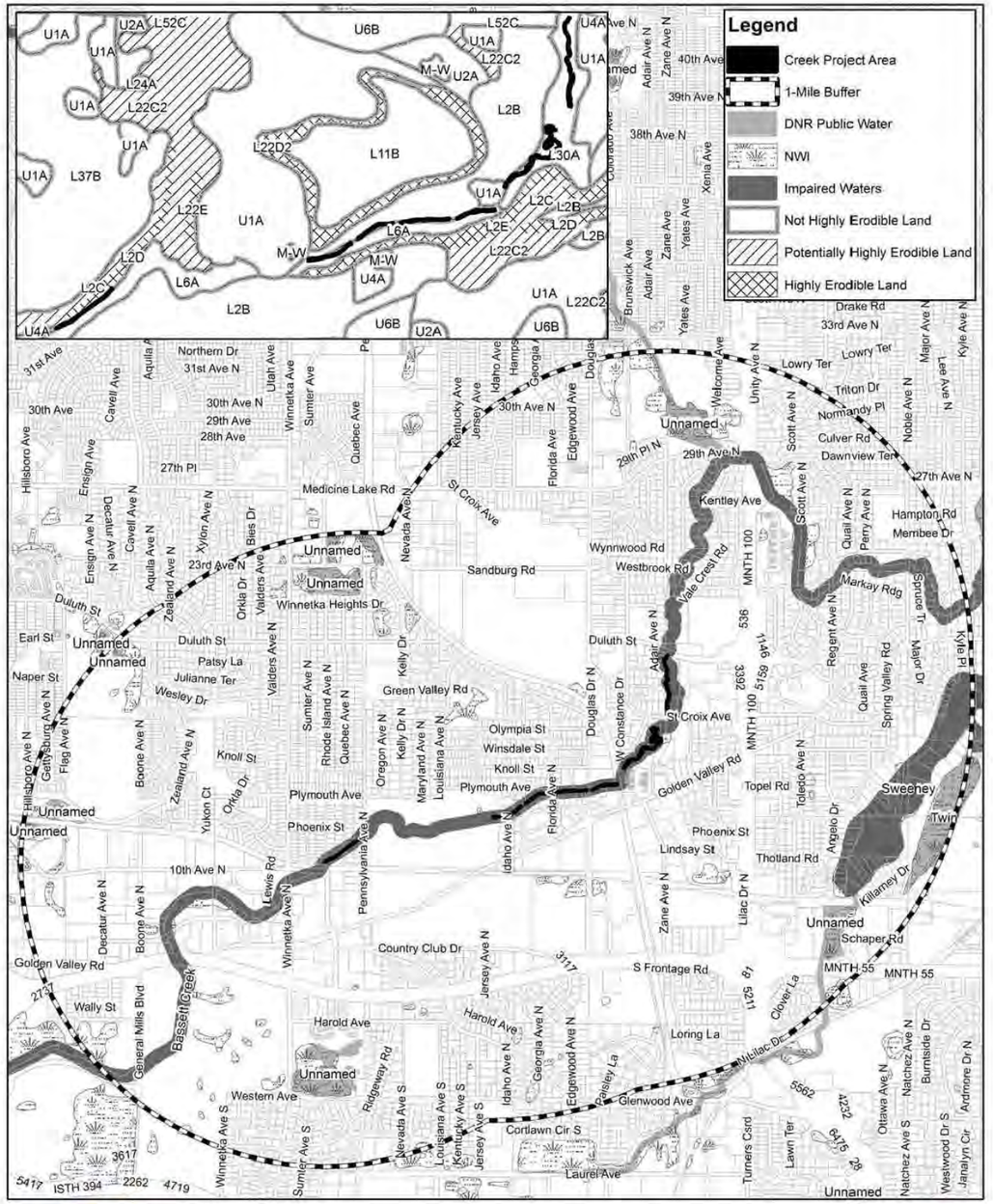
FINAL STABILIZATION IS ACHIEVED WHEN THE FOLLOWING FOUR PARAMETERS ARE COMPLETED, PRIOR TO SUBMISSION OF THE NOTICE OF TERMINATION TO MPCA. SEE PERMANENT EROSION CONTROL PRACTICES FOR SPECIFIC METHODS AND APPLICATIONS.

1. 70% VEGETATIVE COVER: ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND ALL EXPOSED SOILS ARE STABILIZED BY A UNIFORM, LIVE PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OVER THE ENTIRE PERVIOUS SURFACE AREA, OR OTHER EQUIVALENT MEANS NECESSARY TO PREVENT SOIL FAILURE UNDER EROSIVE CONDITIONS. REFER TO PART IV.G.5 IF THE PROJECT IS ON AGRICULTURAL LAND.

2. FINAL CLEAN OUT OF PERMANENT STORMWATER MANAGEMENT SYSTEMS & CONVEYANCE SYSTEMS: ALL SEDIMENT MUST BE REMOVED FROM PERMANENT STORMWATER MANAGEMENT SYSTEMS, CONVEYANCE SYSTEMS, AND DITCHES MUST BE STABILIZED WITH PERMANENT COVER.

3. REMOVAL OF ALL TEMPORARY SYNTHETIC BMPS: ALL TEMPORARY SYNTHETIC AND STRUCTURAL EROSION PREVENTION AND SEDIMENT CONTROL BMPS (SUCH AS SILT FENCE) MUST BE REMOVED ON THE PORTIONS OF THE SITE FOR WHICH THE PERMITTEE IS RESPONSIBLE. BMPS DESIGNED TO DECOMPOSE ON SITE (SUCH AS SOME COMPOST LOGS) MAY BE LEFT IN PLACE.

4. OPERATOR PROVIDES THE OWNER ALL INSPECTION AND SWPPP AMENDMENT RECORDS FOR THE PROJECT. OWNER IS RESPONSIBLE FOR KEEPING ALL RECORDS (AS DEFINED IN PART II.E.1-5) ON FILE FOR THREE YEARS AFTER SUBMITTAL OF THE NOTICE OF TERMINATION.



SWPPP: 2015 Main Stem of Bassett Creek Restoration Project City of Golden Valley, MN

Path: K:\02032-090\GIS\Maps\SWPPP Resource.mxd Date: 5/15/2015

REVISION NO. DATE	EXPLANATION

SCALE: AS NOTED
PLAN BY: JHA
DESIGN BY: JHA
CHECKED BY: PRW
PROJECT NO: 02032–09
RECORD COPY BY:
DATE

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

PETER R. WILLENBRING, PROFESSIONAL ENGINEER

DATE: ________ LIC. NO: 15998

2015 MAIN STEM OF BASSETT CREEK
RESTORATION PROJECT
CITY OF
GOLDEN VALLEY

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STORM WATER POLLUTION PREVENTION PLAN
CITY PROJECT NUMBER 13–25
PROJECT NUMBER 02032–09