

BRIARWOOD NATURE AREA WATER QUALITY IMPROVEMENT PROJECT

FOR THE CITY OF GOLDEN VALLEY

CREATION OF A STORMWATER POND, IRON AND SAND FILTRATION SYSTEM,
CONSTRUCTION PLAN FOR: STORM SEWER, AND VEGETATION RESTORATION

LOCATED AT: SOUTH OF DAWNVIEW TERRACE AND EAST OF UNITY AVENUE

Item 6F.
BCWMC 9-18-14

SPECIFICATIONS
CITY IMPROVEMENT PROJECT SPECIAL PROVISIONS
CITY IMPROVEMENT PROJECT PLANS
CONDITIONS

TEAM STANDARD SPECIFICATIONS
THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION."

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MN MUTCD INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS, DATED JANUARY, 2004. 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	EXISTING CONDITIONS PLAN
3	GRADING PLAN
4	STORM SEWER PLAN
5-6	DETAILS
7-10	SWPPP
11	EROSION & SEDIMENT CONTROL/STAGING PLAN

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



701 Xenia Avenue South, Suite 300
Minneapolis, MN 55416
www.wsben.com

763-541-4800 - Fax 763-541-1700
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
PETER R. WILLENBRING
DATE 06/30/2014 LIC. NO. 15998

PLAN REVIEW:
02/18/2014 CITY COMMENTS
03/03/2014 BASSETT CREEK WATERSHED MANAGEMENT COMMISSION 50% PLAN REVIEW
06/30/2014 FINAL REVIEW COMMENTS

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

PLAN SYMBOLS

- STATE LINE
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT-OF-WAY LINE
- SLOPE EASEMENT
- PRESENT RIGHT-OF-WAY
- CONTROL OF ACCESS LINE
- PROPERTY LINES (EXCEPT LAND LINES)
- VACATED PLATTED PROPERTY
- CORPORATE OR CITY LIMITS
- TRUNK HIGHWAY CENTER LINE
- RETAINING WALL
- RAILROAD
- RAILROAD RIGHT-OF-WAY
- RIVER OR CREEK
- DRY RUN
- DRAINAGE DITCH
- DRAIN TILE
- CULVERT
- DROP INLET
- GUARD RAIL
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- 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
- BRUSH
- NURSERY
- CATCH BASIN
- FIRE HYDRANT
- CATTLE GUARD
- OVERPASS (HIGHWAY OVER)
- UNDERPASS (HIGHWAY UNDER)
- BRIDGE
- BUILDING (ONE STORY FRAME)
- F - FRAME C - CONCRETE
- S - STONE T - TILE
- B - BRICK ST - STUCCO
- IRON ROD OR PIPE
- MONUMENT (STONE, CONCRETE, OR METAL)
- WOODEN HUB
- GRAVEL PIT
- SAND PIT
- BORROW PIT
- ROCK QUARRY

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)
- GAS MAIN
- WATER MAIN
- CONDUIT
- TELEPHONE CABLE IN CONDUIT
- ELECTRIC CABLE IN CONDUIT
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- BURIED TELEPHONE CABLE
- BURIED ELECTRIC CABLE
- AERIAL TELEPHONE CABLE
- SEWER (SANITARY OR STORM)
- SEWER MANHOLE

SCALES

INDEX MAP	
PLAN	
PROFILE	HORIZ.
	VERT.



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."

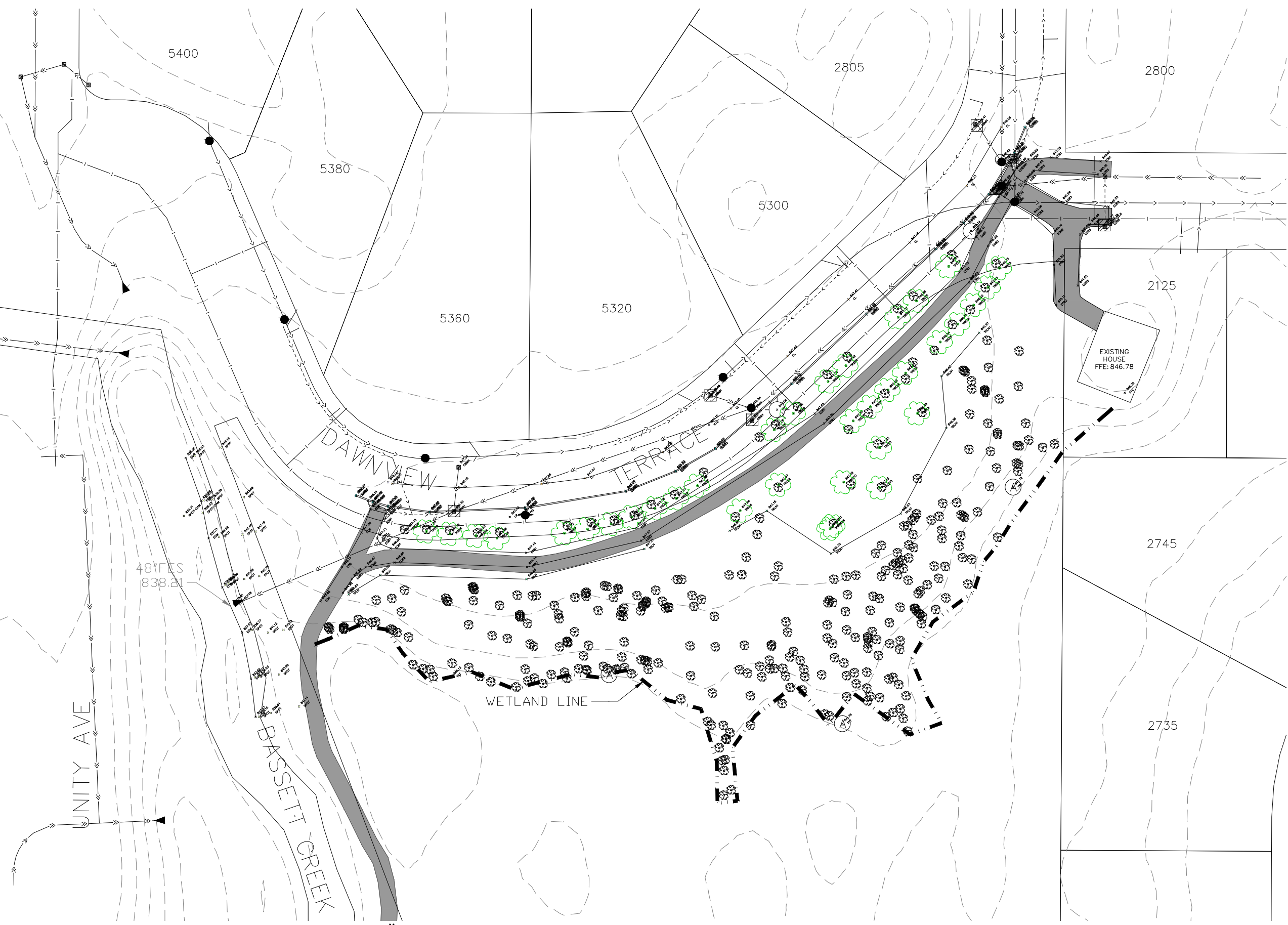
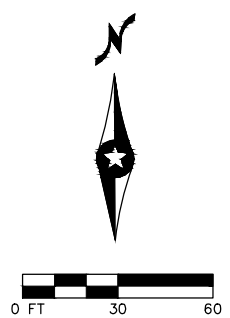
EXCAVATION NOTICE SYSTEM

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

WSB PROJECT 2032-08
CITY PROJECT NO. 12-26

SHEET NO. 1 OF 11 SHEETS

HWY 100



ESTIMATED TREE REMOVALS: 320 AND 3 TREES OVER 42"
DO NOT DISTURB 35 TREES ALONG DAWNVIEW TERRACE

REVISION NO.	DATE	EXPLANATION
02/18/2014	CITY COMMENTS	
03/03/2014	BCW/C 50% REVIEW COMMENTS	
06/30/2014	FINAL REVIEW COMMENTS	
09/05/2014	DESIGN REVISIONS	

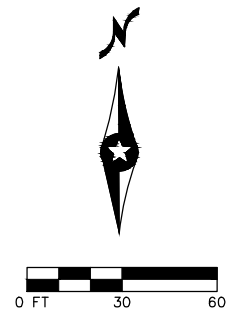
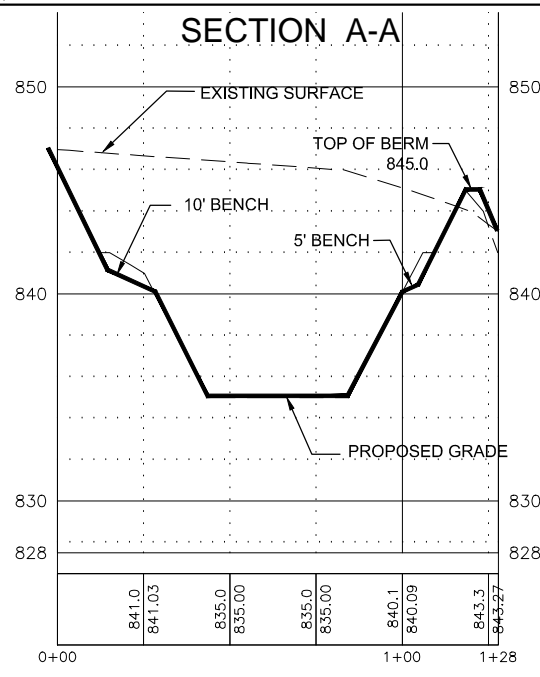
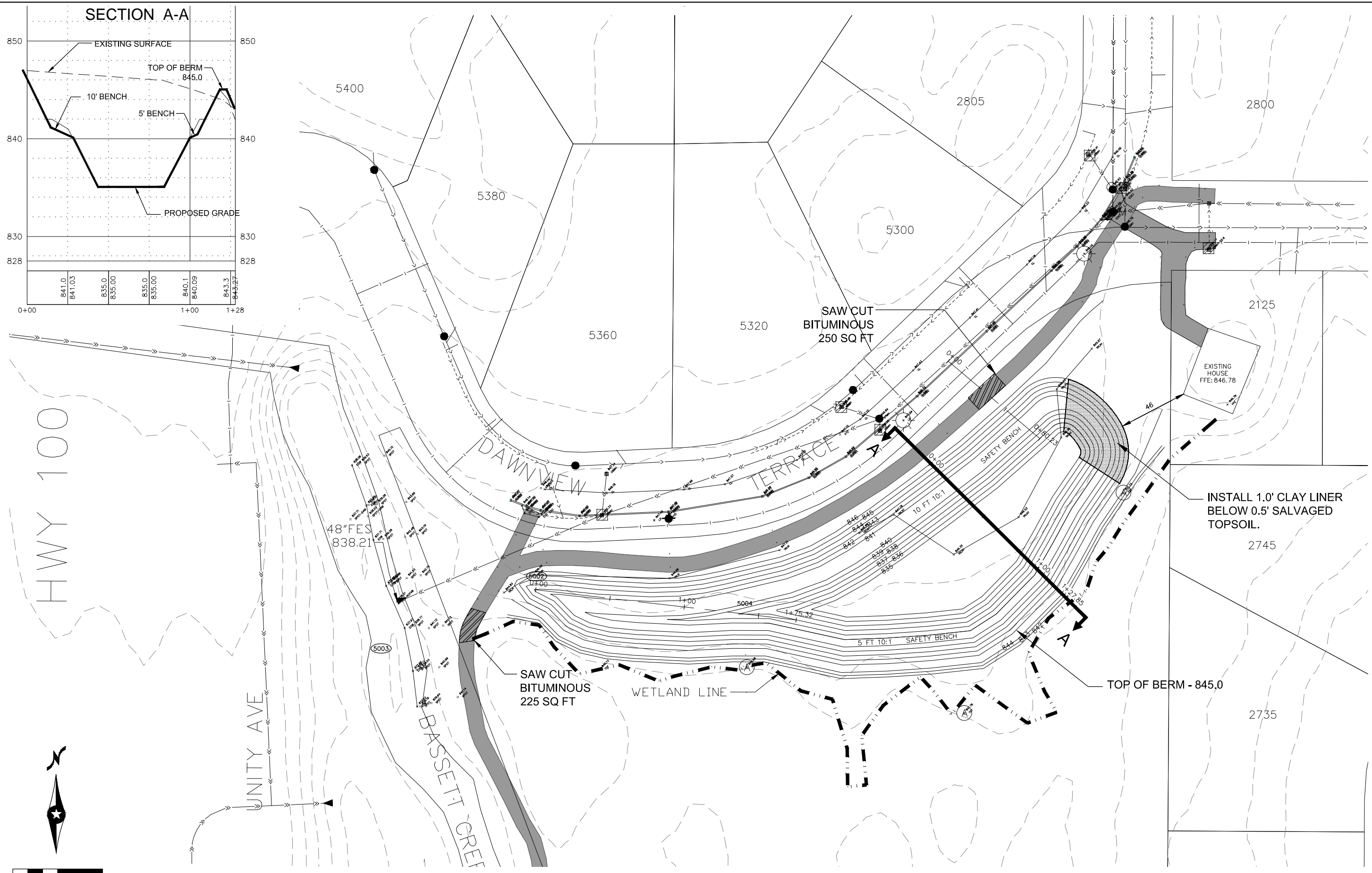
SCALE:	AS NOTED
PLAN BY: ESF	DESIGN BY: ESF
CHECKED BY: EY	PROJECT NO: 2032-08
RECORD COPY BY:	DATE:

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
DATE: 06/30/2014 UC NO: 15998

BRIARWOOD WATER QUALITY IMPROVEMENT PROJECT
CITY OF GOLDEN VALLEY

4150 Olson Memorial Highway
Suite 300
Minneapolis, MN 55422
763-541-4800
FAX 763-541-1700
WSB & Associates, Inc.
INFRASTRUCTURE ENGINEERS PLANNERS



ESTIMATED EXCAVATED VOLUME: 6,500 CY

REVISION NO.	DATE	DESCRIPTION
01	02/18/2014	CITY COMMENTS
02	03/03/2014	BC/MC 50% REVIEW COMMENTS
03	06/30/2014	FINAL REVIEW COMMENTS
04	09/05/2014	DESIGN REVISIONS

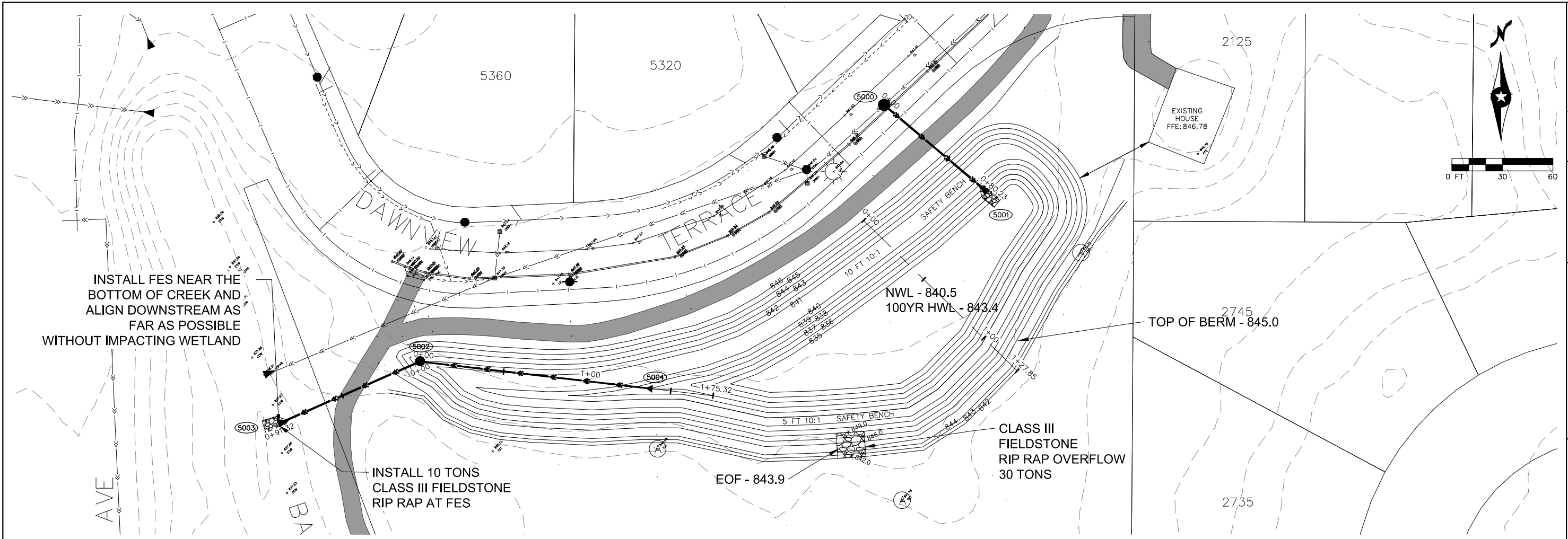
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DESIGN BY:	ESF
CHECKED BY:	EY
PROJECT NO.:	2032-08
DATE:	06/30/2014
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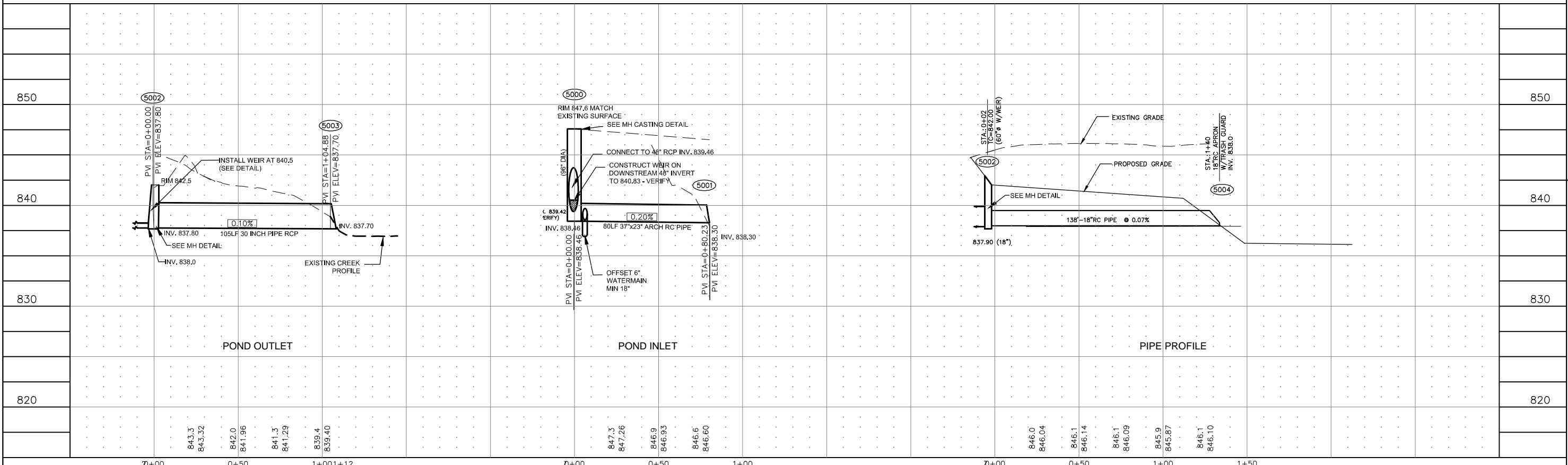


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06/30/2014		FINAL REVIEW COMMENTS
09/05/2014		DESIGN REVISIONS

SCALE:	AS NOTED
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CHECKED BY:	ESF
PROJECT NO.:	2032-08
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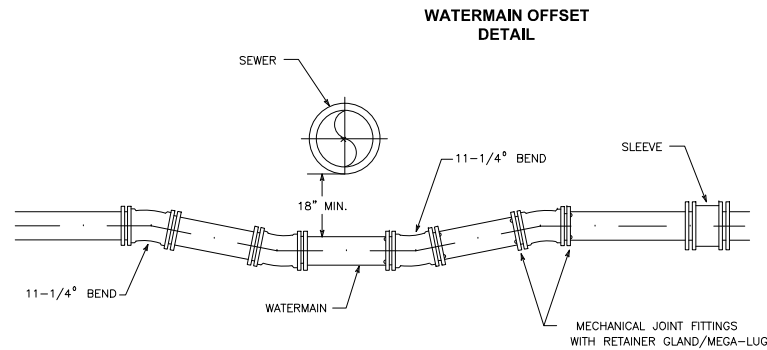
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CITY OF GOLDEN VALLEY

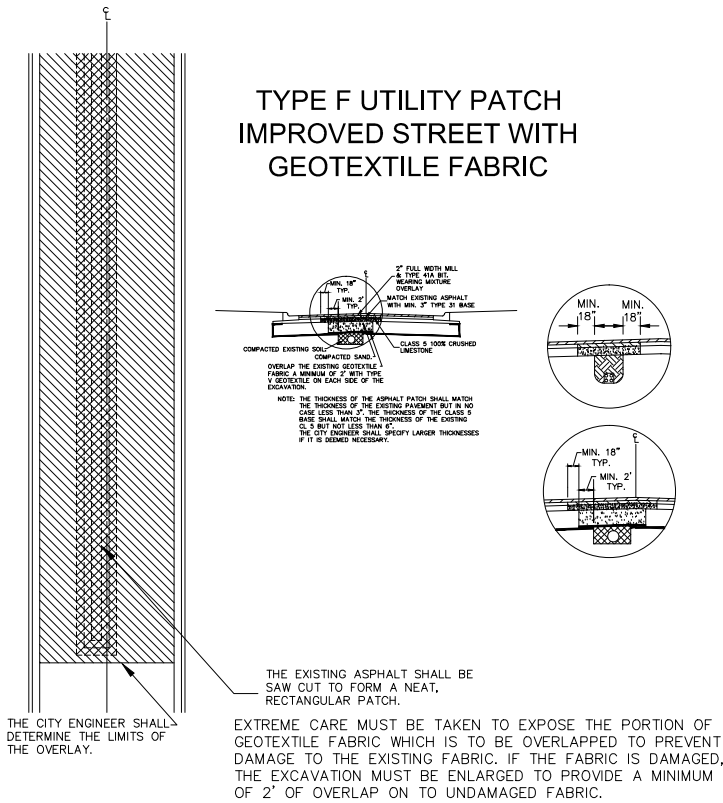
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WSB & Associates, Inc.
 INFRASTRUCTURE ENGINEERS PLANNERS



- NOTES:
1. MINIMUM OF FOUR (4) 11 1/4° BENDS
 2. 3/4" RODS INSTALLED WHERE NECESSARY TO RESTRAIN ALL JOINTS
 3. INSULATION IS REQUIRED WHEN 18" MINIMUM IS NOT MET

NO SCALE



THE CITY ENGINEER SHALL DETERMINE THE LIMITS OF THE OVERLAY.

THE EXISTING ASPHALT SHALL BE SAW CUT TO FORM A NEAT, RECTANGULAR PATCH.

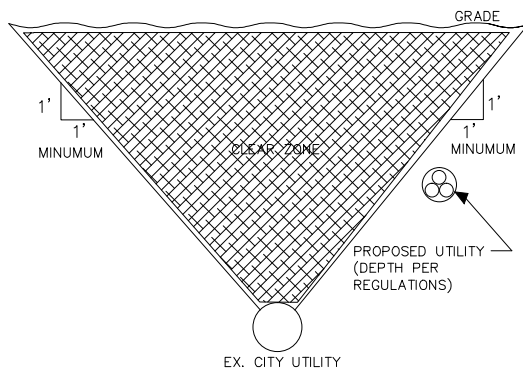
EXTREME CARE MUST BE TAKEN TO EXPOSE THE PORTION OF GEOTEXTILE FABRIC WHICH IS TO BE OVERLAPPED TO PREVENT DAMAGE TO THE EXISTING FABRIC. IF THE FABRIC IS DAMAGED, THE EXCAVATION MUST BE ENLARGED TO PROVIDE A MINIMUM OF 2' OF OVERLAP ON TO UNDAMAGED FABRIC.

EXCAVATIONS SHALL BE COMPACTED IN NO GREATER THAN 6" LIFTS.

AN INSPECTION BY THE CITY IS REQUIRED WHEN THE EXCAVATION HAS BEEN FILLED TO THE EXISTING GEOTEXTILE FABRIC AND BEFORE PLACEMENT OF SAND AND ALSO WHEN IT IS FILLED TO THE TOP OF THE CLASS 5, BEFORE PLACEMENT OF ASPHALT.

THE CONTRACTOR SHALL PROVIDE A DENSITY TEST ON THE COMPACTED SOILS FROM A TESTING COMPANY APPROVED BY THE CITY.

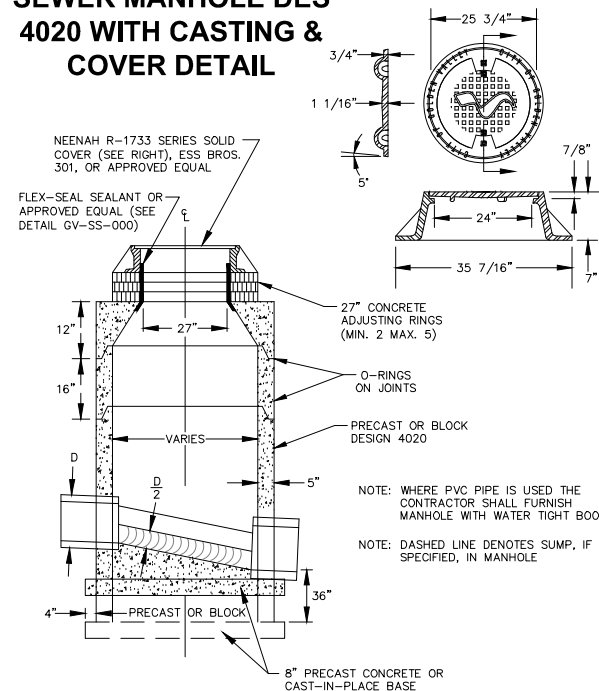
STANDARD UTILITY SEPARATION



NO PRIVATE FACILITIES ARE ALLOWED TO RUN PARALLEL TO PUBLIC FACILITIES IN THE CLEAR ZONE SHOWN ABOVE

NOTE:
MINIMUM SEPARATION
1:1
RISE-RUN

STANDARD STORM SEWER MANHOLE DES 4020 WITH CASTING & COVER DETAIL



NEENAH R-1733 SERIES SOLID COVER (SEE RIGHT), ESS BROS. 301, OR APPROVED EQUAL

FLEX-SEAL SEALANT OR APPROVED EQUAL (SEE DETAIL GV-SS-000)

NOTE: WHERE PVC PIPE IS USED THE CONTRACTOR SHALL FURNISH MANHOLE WITH WATER TIGHT BOOT.

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

2502 - DRAINAGE SYSTEM TYPE IESF (IRON ENHANCED SAND FILTER)

2502.1 - DESCRIPTION

IESF is a type of subcut drain described in 2502.1(b). The typical IESF includes perforated drantile, nonperforated pipe, appurtenant pipe fittings, nonwoven filter fabric, common excavation, common borrow, fine filter aggregate, coarse filter aggregate, and iron filings.

IESF-Low is a low profile sand filter subcut drain. IESF Low includes perforated drantile, nonperforated pipe, appurtenant pipe fittings, tenax TNT (or equal) drainage geotextile, common excavation, common borrow, fine filter aggregate, coarse filter aggregate, and 2400 grams per meter square weight iron wool.

2502.2 - MATERIALS

Perforated pipe is used in the rock media above and below the IESF and nonperforated pipe is used outside of the rock media.

Iron filings shall be Connely GPM ETI - CC - 1004 (-8+50) or approved equal. Filtration medium shall consist of a blend of 5% iron filings with 95% select granular borrow.

2502.3 - CONSTRUCTION REQUIREMENTS

Trench width and various material depth is provided on IESF detail. Iron/Sand, Sand and Course Filter aggregate dimensions can vary. Construction sequence is described on detail.

Discharge pipe connects to storm sewer system.

2502.4 - METHOD OF MEASUREMENT

B Granular material shall be measured by compacted volume (CV) using the trench dimensions shown on the detail.

2502.5 BASIS OF PAYMENT

All pipe fittings and appurtenant material not listed with a pay item on the detail sheet are incidental.

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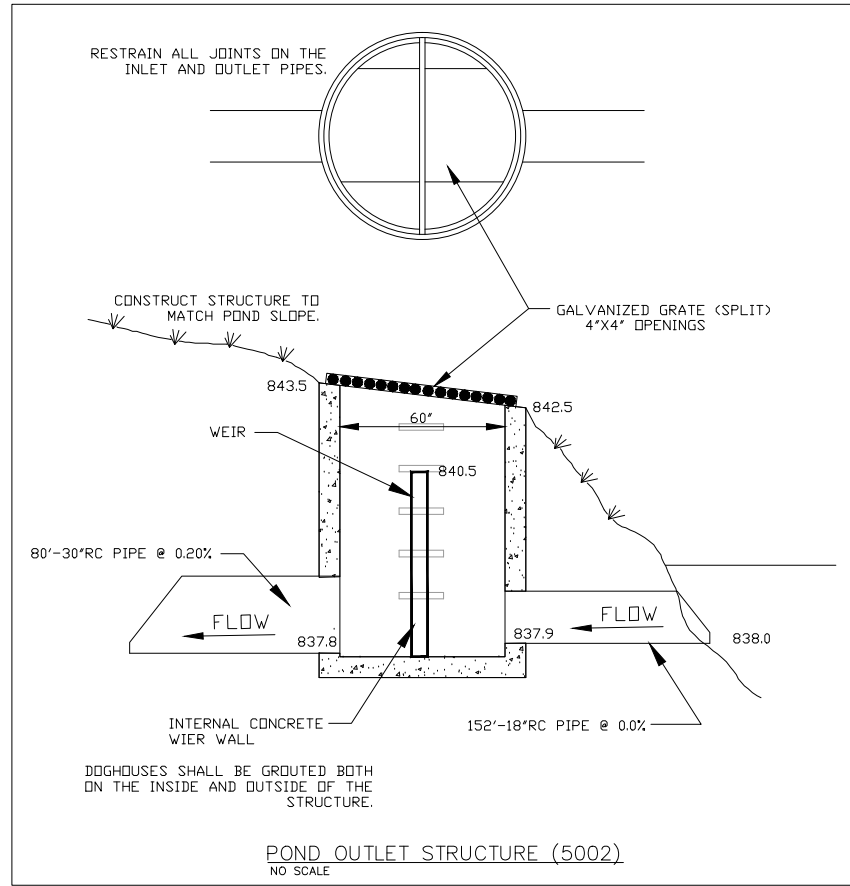


INFRASTRUCTURE ENGINEERS PLANNERS

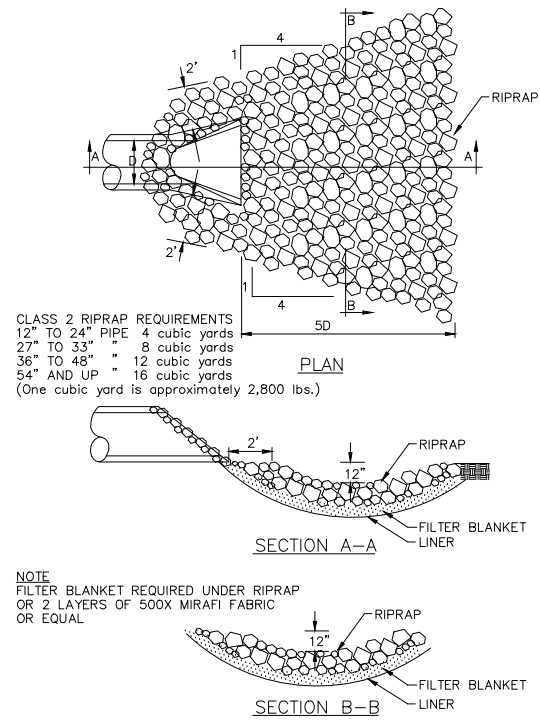
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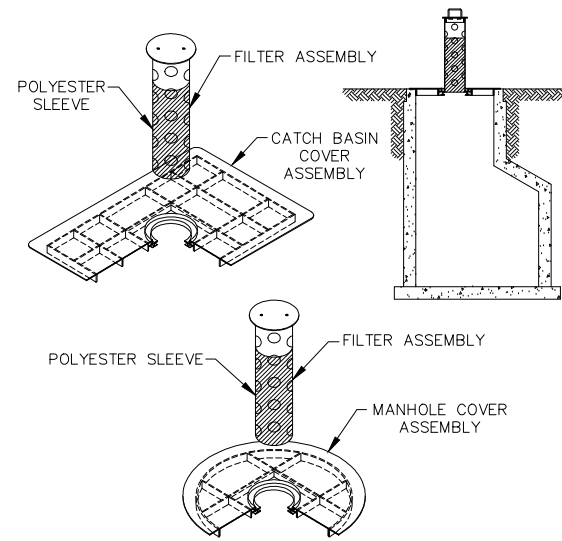
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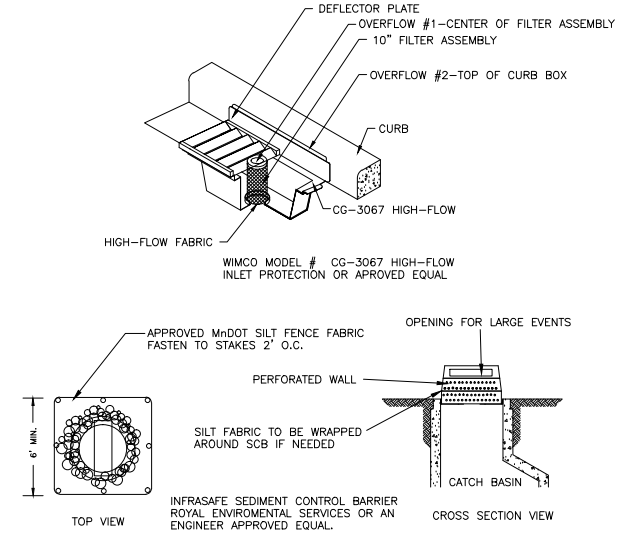
**RIP RAP INSTALLATION
DETAIL**



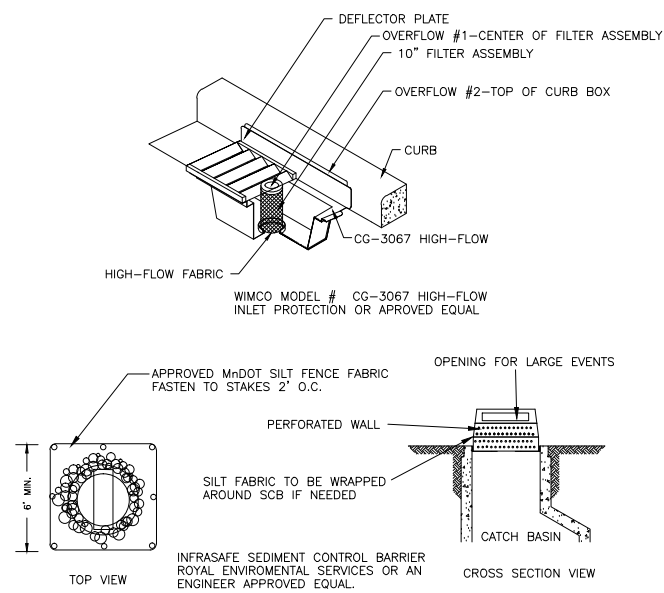
**TEMPORARY WIMCO
INLET PROTECTION
DETAIL**



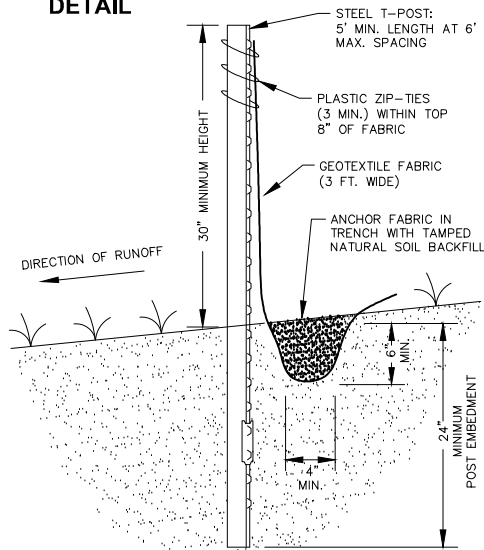
**TYPICAL WIMCO INSTALLATION
DETAIL**



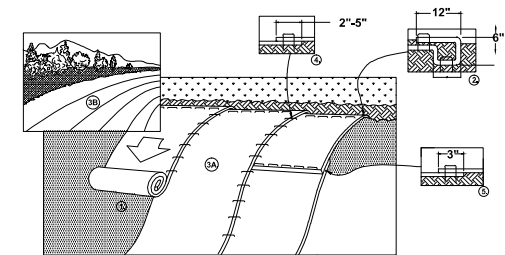
**TYPICAL WIMCO INSTALLATION
DETAIL**



**TYPICAL SILT FENCE
INSTALLATION
DETAIL**



**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 SPICED 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.

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IMPROVEMENT PROJECT
CITY OF GOLDEN VALLEY**

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INFRASTRUCTURE ENGINEERS PLANNERS



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: BRIARWOOD NATURE AREA WATER QUALITY IMPROVEMENT PROJECT
 PROJECT NUMBERS: CITY NO 12-26 WSB 2032-08
 PROJECT LOCATION: STREET: DAWNVIEW TERRACE CITY/TOWNSHIP: GOLDEN VALLEY COUNTY: HENNEPIN
 STATE: MINNESOTA ZIP: 55367
 LATITUDE/LONGITUDE: 45.0084/-93.3471 SECTION: 7 TOWNSHIP: 29 RANGE: 24

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 ENSURING THE LONG-TERM MAINTENANCE OF THE POST-CONSTRUCTION PERMANENT STORMWATER MANAGEMENT SYSTEM, AS SPECIFIED IN THE SWPPP. THE CITY OF GOLDEN VALLEY WILL ENSURE THAT THE DESCRIBED WORK IN THE SWPPP IS BEING COMPLETED BY THE PRIMARY CONTRACTOR.

OWNER/PERMITTEE: CITY OF GOLDEN VALLEY (JEFF OLIVER, CITY ENGINEER)
 7800 GOLDEN VALLEY ROAD
 GOLDEN VALLEY, MN 55427
 763-593-8000/JOLIVER@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) A 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 CITY OF GOLDEN VALLEY. THE PRIMARY CONTRACTOR 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 PRIMARY CONTRACTOR WILL ENSURE 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 PRIMARY CONTRACTOR EMPLOYS UNDER SEPARATE CONTRACT. THE PRIMARY CONTRACTOR WILL PROVIDE THE CONTACT INFORMATION FOR THE SITE SUPERINTENDENT/FOREMAN, ESC SUPERVISOR, AND BMP INSTALLERS.

THE PRIMARY CONTRACTOR WILL PERFORM A PRECONSTRUCTION SITE VISIT TO ADDRESS ANY AREAS OF CONCERN PERTAINING TO ENVIRONMENTAL COMPLIANCE. THE PRIMARY CONTRACTOR WILL IMPLEMENT AND MAINTAIN BMPs FOR THE DURATION OF CONSTRUCTION PROJECT. THE PRIMARY CONTRACTOR 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.

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

WSB & ASSOCIATES HAS BEEN CONTRACTED BY THE CITY OF GOLDEN VALLEY TO DEVELOP THE SWPPP PLAN FOR THIS PROJECT. THIS SWPPP WAS PREPARED BY AN INDIVIDUAL THAT HAS BEEN PROPERLY TRAINED TO ADHERE TO THE REQUIREMENTS OF THE MPCA AND 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. 701 XENIA AVE. SOUTH, SUITE 300 MINNEAPOLIS, MN 55416 763-512-5251/EFRANCIS@WSBENG.COM
 WATER RESOURCE ENGINEER: PETE WILLENBRING 701 XENIA AVE. SOUTH, SUITE 300 MINNEAPOLIS, MN 55416 763-287-7188/PWILLENBRING@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 #C000XXXX	TYLER HASTINGS	651-757-2882/TYLER.HASTINGS@STATE.MN.US
ACOE	N/A	N/A	N/A
DNR	N/A	N/A	N/A
BASSETT CREEK WSC	WCA	N/A	N/A
WATERSHED DISTRICT	N/A	N/A	N/A

PROJECT DESCRIPTION & SCHEDULE

THIS PROJECT CONSISTS OF THE EXCAVATION OF AN APPROXIMATELY 8,000 CUBIC YARD WATER QUALITY POND ON THE DOWNSTREAM END OF AN 182 ACRE WATERSHED THAT CURRENTLY HAS NO PRETREATMENT WHEN IT DISCHARGES INTO BASSETT CREEK. IN ADDITION, THIS POND WILL BE INCORPORATING AN IRON ENHANCED SAND FILTER TO PROVIDE ADDITIONAL PHOSPHORUS REMOVAL.

TENTATIVE CONSTRUCTION SCHEDULE (CONTRACTOR SHOULD PROVIDE ESTIMATED CONSTRUCTION SCHEDULE TO THE ENGINEER)	
CONSTRUCTION ACTIVITIES:	ESTIMATED DATES OF SOIL DISTURBANCE ACTIVITIES:
CLEARING AND GRUBBING OPERATIONS	SEPTEMBER - OCTOBER 2014
POND EXCAVATION	OCTOBER - NOVEMBER 2014
STORM SEWER INSTALLATION	OCTOBER - NOVEMBER 2014
VEGETATION ESTABLISHMENT AND LANDSCAPING	OCTOBER - NOVEMBER 2014

PRE-CONSTRUCTION IMPERVIOUS SURFACE AND DISTURBED AREA CALCULATIONS

TOTAL AREA TO BE DISTURBED = 1.05 ACRES
 IMPERVIOUS AREA: PRE-CONSTRUCTION = 0.0
 NET INCREASE OF IMPERVIOUS AREA = 0.0

LOCATION OF SWPPP COMPONENTS		
DESCRIPTION	TITLE	LOCATION
SWPPP NARRATIVE	STORM WATER POLLUTION PREVENTION PLAN NARRATIVE	SHEET 7
SITE CONDITIONS	STORM WATER POLLUTION PREVENTION PLAN NARRATIVE	SHEET 7
SITE MAP	STEEP SLOPES (3:1) , IMPERVIOUS SURFACES, POTENTIAL POLLUTANT GENERATING ACTIVITIES, SOILS, WATER RESOURCES, DNR FISH EXCLUSION "WORK IN WATER RESTRICTIONS- REFER TO SWPPP"	PROJECT SPECIFICATIONS
CONSTRUCTION PHASING/STAGING & AREAS NOT TO BE DISTURBED	STORM WATER POLLUTION PREVENTION PLAN NARRATIVE	SHEET 3
DIRECTION OF FLOW (PRE- & POST- CONSTRUCTION)	DRAINAGE PLAN	SHEET 3
TEMPORARY EROSION & SEDIMENT CONTROL BMPs	TEMPORARY EROSION AND SEDIMENT CONTROL PLAN	SHEET 11
PERMANENT EROSION CONTROL BMPs	TURF ESTABLISHMENT PLAN	SHEET 11
STORM SEWER	DRAINAGE PLAN	SHEET 4
GRADING	GRADING PLAN	SHEET 3
ESTIMATED BMP QUANTITIES	ESTIMATED QUANTITIES	PROJECT SPECIFICATIONS
BMP DETAILS		SHEET 6
HYDROLOGIC/WATER QUALITY MODELING		PROJECT SPECIFICATIONS

EXISTING SITE CONDITIONS, SOILS, & EXPECTED PRECIPITATION

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 CONTRACTOR'S SWPPP AMENDMENT. THE FOLLOWING USDA-NRCS MAPPED SOILS ARE SHOWN AS "NOT HIGHLY ERODIBLE", POTENTIALLY HIGHLY ERODIBLE, AND HIGHLY ERODIBLE" 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)
U1A URBAN LAND	50-70%	0-50%	15-20%
U2A UDORTHERTS	20-50%	50-87%	0-27%

REVISION NO.	DATE	DESCRIPTION
02/18/2014		CITY COMMENTS
03/03/2014		BCWMC 50% REVIEW COMMENTS
06/30/2014		FINAL REVIEW COMMENTS
09/05/2014		DESIGN REVISIONS

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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 DATE: 06/30/2014 UC. NO. 15998

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CONSTRUCTION ACTIVITIES ASSOCIATED WITH POTENTIAL POLLUTANTS		
(CHECK IF POLLUTANT APPLIES TO SITE.)		
ACTIVITY TYPE	POLLUTANT	VISUALLY OBSERVABLE
SOIL DISTURBANCE		
<input checked="" type="checkbox"/> INSTALLATION OF STABILIZED EXITS, TURBID WATER, CLOUDY AIR SEDIMENT AND EROSION CONTROL BMPs	SEDIMENT AND ORGANICS, FUGITIVE DUST	
<input checked="" type="checkbox"/> REMOVALS/COMPACTION	SEDIMENT, FUGITIVE DUST	TURBID WATER, CLOUDY AIR
<input checked="" type="checkbox"/> MASS/FINE GRADING	SEDIMENT, FUGITIVE DUST	TURBID WATER, CLOUDY AIR
<input checked="" type="checkbox"/> EXCAVATIONS, TRENCHING	SEDIMENT, FUGITIVE DUST	TURBID WATER, CLOUDY AIR
<input checked="" type="checkbox"/> TOPSOIL STRIPPING, STOCKPILING	SEDIMENT, FUGITIVE DUST	TURBID WATER, CLOUDY AIR
ASPHALT		
<input checked="" type="checkbox"/> STREET CONSTRUCTION, IMPROVEMENTS	HYDROCARBONS, FUGITIVE DUST	OILY SHEEN, CLOUDY AIR
<input checked="" type="checkbox"/> STREET REMOVAL, DEMOLITION	HYDROCARBONS, FUGITIVE DUST	OILY SHEEN, CLOUDY AIR
CONCRETE LADEN LIQUID		
<input checked="" type="checkbox"/> CURB AND GUTTER, MANHOLE STRUCTURES	PH	CLOUDY TO MILKY WATER
<input checked="" type="checkbox"/> SIDEWALKS, DRIVEWAY APRONS	PH	CLOUDY TO MILKY WATER
<input checked="" type="checkbox"/> FOUNDATIONS, BRIDGE ABUTMENTS	PH	CLOUDY TO MILKY WATER
<input checked="" type="checkbox"/> WET/DRY PAVEMENT CUTTING, REMOVAL/DEMO	PH, FUGITIVE DUST	CLOUDY TO MILKY WATER, CLOUDY AIR
<input checked="" type="checkbox"/> MASONRY, WASHOUT/CLEAN UP	PH	CLOUDY TO MILKY WATER
GENERAL		
<input checked="" type="checkbox"/> LANDSCAPE	CONTAINERS, MULCH, SOIL, ORGANIC MATERIALS,	VARIES
<input type="checkbox"/> OTHER POTENTIAL SOURCES OF POLLUTION:		

POLLUTION PREVENTION MANAGEMENT MEASURES

CONTRACTOR WILL COMPLY WITH ALL OF THE POLLUTION PREVENTION AND MANAGEMENT MEASURES IDENTIFIED IN THE NPDES-CSW PERMIT. **CONTRACTOR WILL SUBMIT A SPILL PREVENTION AND COUNTER MEASURE PLAN (SPCMP) TO THE ENGINEER PRIOR TO ANY CONSTRUCTION ACTIVITY.** THE SPCMP 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).

PORTABLE TOILETS: MUST BE POSITIONED AND SECURED SO THEY ARE NOT TIPPED OR KNOCKED OVER (PART IV.F.1.E).

EQUIPMENT/VEHICLE FUELING, EXTERNAL WASHING, AND MAINTENANCE PRACTICES: WHEN VEHICLE FUELING OR EXTERNAL WASHING MUST OCCUR ON-SITE, THE ACTIVITY IS LIMITED TO A CONTAINED PORTION OF THE STAGING AREA, UNLESS INFEASIBLE THROUGH 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, AND OTHER WASHOUT WASTES: CONTRACTORS/SITE OPERATOR MUST SUBMIT A CONCRETE WASHOUT PLAN TO THE PROJECT ENGINEER FOR APPROVAL, IF WASHOUT OPERATIONS WILL BE CONDUCTED ON-SITE. TEMPORARY OR LONG-TERM STORAGE OF WASHOUT WASTE IS PROHIBITED ON-SITE (SLURRY MUST BE HAULED IMMEDIATELY OFF-SITE). ALL LIQUID AND SOLID WASTES MUST NOT CONTACT THE GROUND, AND THERE MUST NOT BE RUNOFF FROM THE WASHOUT OPERATIONS OR AREAS. LIQUID AND SOLID WASTES 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 PROJECT ENGINEER.

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)

SEQUENCE OF CONSTRUCTION/TIMING OF BMP INSTALLATION:

NO CONSTRUCTION OPERATIONS, INCLUDING REMOVALS, THAT REQUIRE EROSION & SEDIMENT CONTROL PER THE SWPPP CAN COMMENCE UNTIL THE CONTRACTOR'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. CONTRACTOR 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, RECORD KEEPING, & SWPPP AMENDMENTS

- THE SWPPP CHAIN OF RESPONSIBILITY MUST BE AMENDED BY THE PRIMARY CONTRACTOR WHEN THE IDENTITY OF RESPONSIBLE OPERATORS (SUB-CONTRACTORS) ARE KNOWN.
- THE CONTRACTOR/SITE 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 CONTRACTOR 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.
- ALL INSPECTIONS AND MAINTENANCE CONDUCTED MUST BE RECORDED IN WRITING AND RETAINED WITH THE SWPPP IN ACCORDANCE WITH PART III.D OF THE NPDES CONSTRUCTION PERMIT. AMENDMENTS TO THE SWPPP WILL BE MADE BY THE PROJECT ENGINEER OR THE CONTRACTOR AFTER WRITTEN APPROVAL BY THE PROJECT OWNER (OR DESIGNATED REPRESENTATIVE). RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY SHALL INCLUDE:
 - DATE, TIME, AND NAME OF PERSON(S) CONDUCTING INSPECTIONS;
 - FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS;
 - CORRECTIVE ACTIONS TAKEN (INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES); INCLUDING DOCUMENTATION/PHOTOS OF IMPLEMENTED BMPs INTENDED TO CORRECT A PROBLEM BUT FAILED.
 - DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 1/2 INCH (0.5 INCHES) IN 24 HOURS;
 - DOCUMENTATION OF CHANGES MADE TO THE SWPPP
- THE SWPPP SHALL BE AMENDED TO INCLUDE ADDITIONAL OR MODIFIED BMPs, DESIGNED TO CORRECT IDENTIFIED PROBLEMS OR ADDRESS SITUATIONS UNDER PART III.A.5 OF THE NPDES PERMIT.
 - THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASONAL CONDITIONS THAT HAVE A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR UNDERGROUND WATERS;
 - INSPECTIONS OR INVESTIGATIONS BY SITE OPERATORS, LOCAL, STATE OR FEDERAL OFFICIALS INDICATE THE SWPPP IS NOT EFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR UNDERGROUND WATERS OR THAT THE DISCHARGES ARE CAUSING WATER QUALITY STANDARD DEGRADATION (E.G. NUISANCE CONDITIONS AS DEFINED IN MINN. R. 7050.0210, SUBP. 2); OR
 - THE SWPPP IS NOT ACHIEVING THE GENERAL OBJECTIVES OF MINIMIZING POLLUTANTS IN STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY, OR THE SWPPP IS NOT CONSISTENT WITH THE TERMS AND CONDITIONS OF THIS PERMIT.
 - THE MPCA NOTIFIES THE PERMITTEE(S) IN WRITING THAT THE PROJECT'S STORMWATER DISCHARGES MAY CONTRIBUTE TO NON-ATTAINMENT OF ANY APPLICABLE WATER QUALITY STANDARDS, IMPAIRED WATERS STANDARDS, AND/OR TMDL WASTE LOAD ALLOCATIONS. IN RESPONSE, THE PERMITTEE(S) MUST DEVELOP A SUPPLEMENTAL BMP ACTION PLAN OR APPROPRIATE SWPPP
- 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 CONTRACTOR/SITE 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.
- THE CONTRACTOR/SITE OPERATOR MUST ASSIGN A TRAINED INDIVIDUAL(S) (PURSUANT TO PART III.A.3) 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. (PART III.F

EROSION CONTROL PRACTICES & PROCEDURES

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. 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 BEST MANAGEMENT PRACTICES

TEMPORARY STABILIZATION BMPs SHALL ONLY BE IMPLEMENTED WHEN PERMANENT STABILIZATION BMPs CANNOT BE IMPLEMENTED WITHIN THE

RAPID STABILIZATION METHOD #3: THIS WORK SHALL CONSIST OF OPERATIONS NECESSARY TO RAPIDLY STABILIZE SMALL CRITICAL AREAS WITHIN 200FT OF SURFACE WATERS, TO PREVENT OFF SITE SEDIMENTATION AND OR TO COMPLY WITH PERMIT REQUIREMENTS. INSTALL PER MNDOT SPECIFICATIONS 2575.3N.

REVISION NO.	DATE	DESCRIPTION
02/18/2014		CITY COMMENTS
03/03/2014		BOWM 50% REVIEW COMMENTS
06/30/2014		FINAL REVIEW COMMENTS
09/05/2014		DESIGN REVISIONS

SCALE: AS NOTED
 PLAN BY: ESF
 CHECKED BY: ESF
 PROJECT NO: 2032-08
 RECORD COPY #:

DATE: 06/30/2014

PETER R. WILLEBRING
 U.S. NO. 15998

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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CITY OF GOLDEN VALLEY

TEMPORARY/PERMANENT DRAINAGE DITCHES & SWALES: THE NORMAL WETTED PERIMETER 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 OR CONNECTION. STABILIZATION REMAINING OF THE REMAINING PORTIONS OF THE CHANNEL MUST BE STABILIZED WITHIN 14 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 POLYACRYLAMIDE BELOW THE WETTED PERIMETER OF A DITCH, SWALE, OR OTHER SURFACE WATER CONVEYANCE IS NOT ACCEPTABLE STABILIZATION. RAPID STABILIZATION METHOD #3 (WOOD FIBER, NATURAL NET ONLY) IS AN ACCEPTABLE BMP FOR THESE AREAS.

DUST CONTROL: DUST FROM THE SITE WILL BE CONTROLLED BY 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.

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. THE PROJECT AREA WILL POTENTIALLY BE STILL ACTIVE OVER THE 2014-2015 WINTER SEASON. ALL EXPOSED SOILS SHALL BE STABILIZED BEFORE CONSTRUCTION IS COMPLETED FOR THE 2014 SEASON.

PERMANENT BEST MANAGEMENT PRACTICES

HYDRO-MULCH TYPE #5: HYDRAULIC SOIL STABILIZER IN COMBINATION WITH A TACKIFIER WILL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS TO EXPOSED SOILS AREAS TO PROVIDE PERMANENT COVER FOR VEGETATION ESTABLISHMENT.

EROSION CONTROL BLANKETS/MATS: CONTRACTOR 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

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

SEDIMENT CONTROL PRACTICES & PROCEDURES

THE CONTRACTOR/SITE OPERATOR ARE 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 CONTRACTOR AND RETURNED TO THE SITE AT THE CONTRACTOR'S EXPENSE AND INCIDENTAL TO THE PROJECT COST.

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 SACKS, BIOROLLS, ETC.): PERIMETER CONTROL BMPS SHALL BE PLACED, AS CLOSE AS POSSIBLE TO FOLLOW A SINGLE CONTOUR ELEVATION. ALL SILT FENCES MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED 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

TEMPORARY AND PERMANENT SEDIMENTATION BASINS: WHERE TEN (10) OR MORE ACRES OF DISTURBED SOIL DRAIN TO A COMMON LOCATION, A TEMPORARY (OR PERMANENT) 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 PER THE PLANS AND SPECIFICATIONS, OR TO THE MINIMUM STANDARDS SPECIFIED IN PART III.C OF THE NPDES CONSTRUCTION PERMIT. BASINS MUST BE DRAINED AND SEDIMENT REMOVED WHEN THE DEPTH OF COLLECTED SEDIMENT IN THE BASIN REACHES 1/2 THE STORAGE VOLUME. DRAINAGE AND REMOVAL MUST BE COMPLETED WITHIN 72 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS (PART IV.E.4.B).

TEMPORARY STOCKPILES: ALL STOCKPILES MUST HAVE SILT FENCE OR EQUIVALENT PERIMETER SEDIMENT CONTROLS IMPLEMENTED AND MAINTAINED AT ALL TIMES. PILES CANNOT BE PLACED IN 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 (PART IV.C.5).

CONSTRUCTION SITE ENTRANCE/VEHICLE TRACKING: CONTRACTOR 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 TO COMPLY WITH PART IV.C.6 OF THE NPDES CONSTRUCTION PERMIT. MULTIPLE STREET SWEEPINGS AT THE CONTRACTOR'S EXPENSE MAY BE REQUIRED ON ALL ENTRY/EXIT POINTS TO THE SITE AT THE DISCRETION OF THE PROJECT OWNER.

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 (PART IV.E.5.C).

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 (PART IV.C.4).

CHEMICAL TREATMENTS: CONTRACTOR 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).

DEWATERING, STREAM DIVERSION, AND BASIN DRAINING

DEWATERING, STREAM DIVERSION, OR BASIN DRAINING IS ANTICIPATED DURING CONSTRUCTION OF THIS PROJECT. DITCH REALIGNMENT, CULVERT CONSTRUCTION, AND NEW POND GRADING WILL REQUIRE SITE DEWATERING. 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 (REFER TO "SEDIMENT CONTROL PRACTICES & PROCEDURES"). IF AN APPROVED TMDL WASTE LOAD ALLOCATION IS ESTABLISHED FOR CONSTRUCTION ACTIVITIES ON A RECEIVING WATERBODY, THE CONTRACTOR 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 ARE REQUIRED FOR DISCHARGE WATER THAT CONTAINS SUSPENDED SOLIDS (PART IV.D.1).

FINAL STABILIZATION

FINAL STABILIZATION IS ACHIEVED WHEN THE FOLLOWING THREE PARAMETERS ARE COMPLETED, PRIOR TO SUBMISSION OF THE PERMIT MODIFICATION FORM 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 PVIOUS SURFACE AREA, OR OTHER EQUIVALENT MEANS NECESSARY TO PREVENT SOIL FAILURE UNDER EROSION CONDITIONS.
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 BMPS: PRIOR TO SUBMISSION OF THE NOT, 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.

EXPLANATION	REVISION NO.	DATE	BY
CITY COMMENTS	02/18/2014		
BC/MC 50% REVIEW COMMENTS	03/03/2014		
FINAL REVIEW COMMENTS	06/30/2014		
DESIGN REVISIONS	09/05/2014		

SCALE: AS NOTED
 PLAN BY: ESF
 CHECKED BY: ESF
 PROJECT NO: 2032-08
 DATE: 06/30/2014
 UG. NO.: 1998B
 PETER R. WILLEBRING
 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


BRIARWOOD WATER QUALITY IMPROVEMENT PROJECT
CITY OF GOLDEN VALLEY

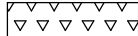
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 Suite 300
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 763-541-4800
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WSB & Associates, Inc.
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LEGEND

SEED MIX(S) PRAIRIE RESTORATION INC. (PRI) SHORELINE GRASS MIX OR SAVANNA GRASS MIX TO BE APPLIED AT 20 LBS/AC.

 PRI SHORELINE SEED MIX, SEEDED AREAS TO BE STAKED IN THE FIELD.

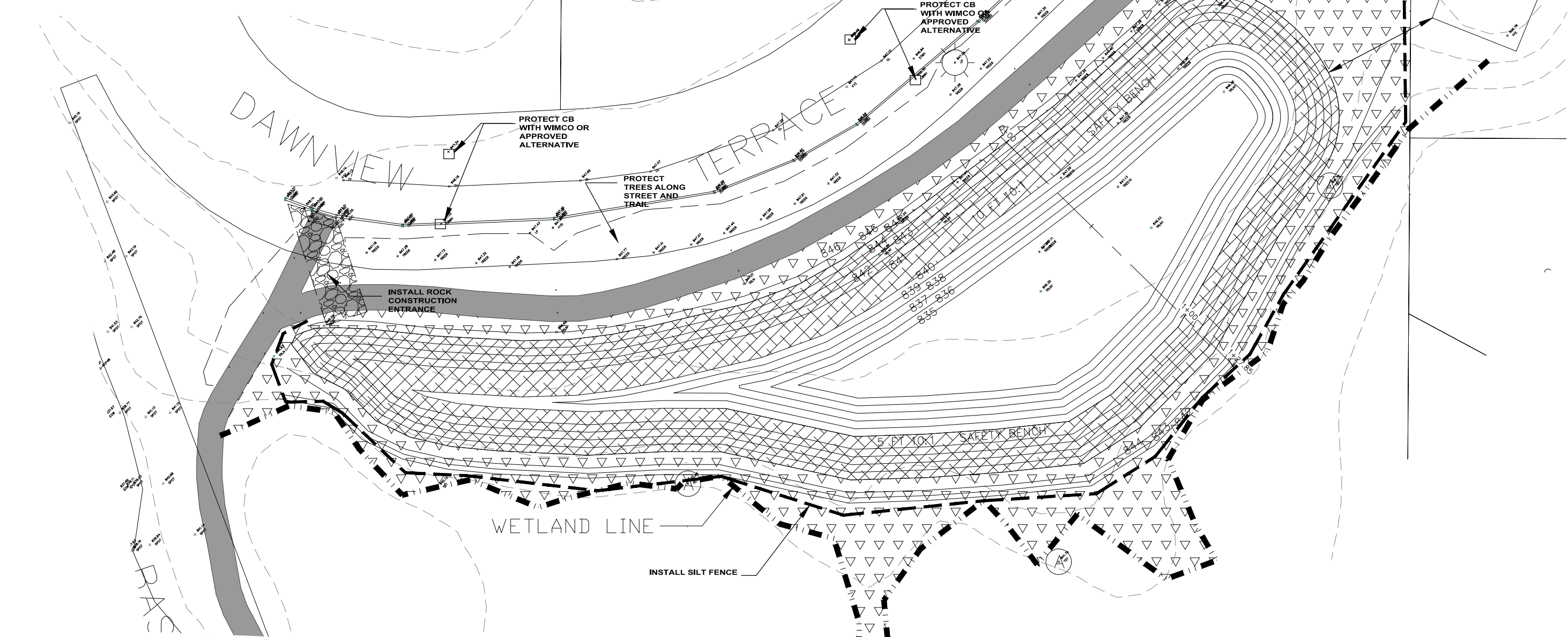
 PRI SAVANNA SEED MIX, SEEDS AREAS TO BE STAKED IN THE FIELD.

SPECIAL NOTE:

THE PLACEMENT OF THESE SEED MIXES WILL BE DIRECTED BY THE ENGINEER IN THE FIELD

ADDITIONAL TEMPORARY SEED: WINTER WHEAT IS REQUIRED BE MIXED INTO PRI MIXES @ 50 LBS/AC TO PROVIDE A FAST GROWING VEGETATIVE COVER.

DISTURBED AREAS SHALL BE STABILIZED WITH CATEGORY III EROSION CONTROL BLANKET



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**
- CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
 - 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.
 - CONTRACTOR SHALL INSTALL ALL EROSION CONTROL BMPS PRIOR TO COMMENCEMENT OF GRADING.
 - 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 CONTRACTOR'S EXPENSE.
 - ALL DISTURBED AREAS MUST BE TEMPORARILY STABILIZED WITHIN 7 DAYS OF INACTIVITY.
 - 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.
 - SEED BED SHALL BE PREPARED WITH A MINIMUM OF 4 INCHES OF TOPSOIL WITH NO EXTRANEUS MATERIAL OVER 3/4 INCHES ON THE SURFACE.
 - EROSION CONTROL BLANKET SHALL BE MNDOT CATEGORY III OR OTHERWISE AS SPECIFIED.
 - VEGETATIVE AND BIOENGINEERING SOLUTIONS SHALL BE INCORPORATED WHEREVER APPROPRIATE AND
- 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.

EROSION AND SEDIMENT CONTROL NOTES
LOCATION OF SILT FENCE SHOWN ON THE PLAN IS APPROXIMATE AND WILL BE STAKED IN THE FIELD PRIOR TO CONSTRUCTION.

ACCESS ROUTES MUST BE REGULARLY MAINTAINED AND IF ARE NOT BEING ACTIVELY USED MUST BE STABILIZED WITHIN 48 HOURS WITH A TEMPORARY SEED MIX AND STRAW MULCH.

EXPOSED SOILS IMMEDIATELY ADJACENT TO THE CREEK, WHICH ARE NOT ACTIVELY BEING WORKED MUST TO BE STABILIZED WITHIN 48 HOURS WITH A TEMPORARY SEED MIX AND STRAW MULCH.

THE CONTRACTOR SHALL PROVIDE APPROPRIATE EROSION AND SEDIMENT CONTROL DEVICES FOR ALL STOCKPILES.

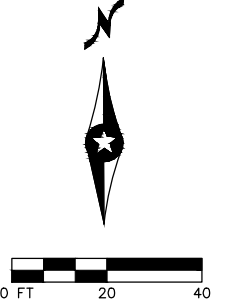
ROCK CONSTRUCTION ENTRANCES MUST BE INSTALLED AT EACH ACCESS POINT PRIOR TO COMMENCING WORK.

STREETS, DRIVEWAYS, AND PARKING LOTS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED WITHIN 24 HOURS, OR AS OFTEN TO ENSURE PUBLIC SAFETY.

DEWATERING WILL REQUIRE AN ADDITIONAL SITE PLAN.

UTILITY COORDINATION AND CONFLICT:
UTILITY LOCATE INFORMATION IS LOCATED IN AN 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.



REVISION NO.	DATE	EXPLANATION	
02/18/2014	03/03/2014	06/30/2014	09/05/2014
CITY COMMENTS	ECWMC 50% REVIEW COMMENTS	FINAL REVIEW COMMENTS	DESIGN REVISIONS
AS NOTED	SCALE:	PLAN BY:	CHECKED BY:
DESIGN BY:	PROJECT NO.:	DATE:	RECORD COPY #:
ESF	2032-08	06/30/2014	15998
ESF	EY	PETER R. WILLENBRING	UC. NO.:

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
DATE: 06/30/2014 UC. NO. 15998

BRIARWOOD WATER QUALITY IMPROVEMENT PROJECT
CITY OF GOLDEN VALLEY

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WSB & Associates, Inc.
INFRASTRUCTURE ENGINEERS PLANNERS

CITY PROJECT NUMBER 12-26
PROJECT NUMBER 2032-08

EROSION AND SEDIMENT CONTROL AND STAGING PLAN

SHEET 11 OF 11 SHEETS