

Allied Engineering J-741
32 Discovery Drive
Bozeman, MT 59718

STATE OF MONTANA
DEPARTMENT OF ENVIRONMENTAL QUALITY
CERTIFICATE OF SUBDIVISION PLAT APPROVAL
(Section 76-4-101 et seq.)

TO: County Clerk and Recorder
Gallatin County
Bozeman, Montana

E.Q. # 22-1995

THIS IS TO CERTIFY THAT the plans and supplemental information relating to the subdivision known as:

Bridger Shadows East Subdivision

LOT 1 of MINOR SUBDIVISION NO. 502, located in the NW¼ of Section 20, Township 1 South, Range 5 East, P.M.M., Gallatin County, Montana as found in the records of the Gallatin County Clerk & Recorder, containing 23.56 acres and subject to any existing easement of record.

Consisting of 15 lots (Lots 1-13, Open Space A and B) having been reviewed by personnel of the Water Quality Division, and,

THAT the documents and data required by ARM Chapter 17 Section 36 have been submitted and found to be in compliance therewith, and,

THAT the purpose of this proposal is to lift sanitary restrictions from the Lots and Open Spaces, and,

THAT the approval of the Plat and changes made to the previous Certificate of Subdivision Approval is made with the understanding that the following conditions shall be met:

THAT the lot size(s) as indicated on the Plat to be filed with the county clerk and recorder will not be further altered without approval, and,

THAT Open Space A and Open Space B shall be used only for roadways and stormwater ponds as shown on the approved lot layouts, and,

THAT Lots 1-13 shall be used for one living unit not to exceed 5 bedrooms, and,

THAT the number of bedrooms on any lot may be restricted due to engineering design constraints and/or site characteristics of the lot, and,

THAT the approved proposed locations of the individual drinking water well and wastewater treatment system primary disposal and replacement areas shall be staked by the engineer or site evaluator prior to any construction on the lot, and,

THAT the proposed individual drinking water system will consist of a well drilled to a minimum depth of 25 feet constructed in accordance with the criteria established in Title 17, Chapter 36, Sub-Chapters 1, 3, and 6 ARM and the most current standards of the Department of Environmental Quality, and,

THAT data provided indicates an acceptable water source at a depth of approximately 50-70 feet, and,

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Bridger Shadows East

Gallatin County, Montana

EQ#22-1995 GCCHOA #23-113

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Page: 1 of 7 04/16/2024 02:43:30 PM Fee: \$56.00
Eric Semerad - Gallatin County, MT MISC



THAT the top of the well casing shall be sealed with a screened, vented sanitary well seal which, when installed, creates a watertight seal to prevent the entrance of water or foreign materials into the well, and,

THAT the individual wastewater treatment system will consist of a septic tank, effluent filter and a dose tank followed by an pressure-dosed Elevated Sand Mound, of such size and descriptions as will comply with Title 17, Chapter 36, Sub-Chapters 1, 3 & 6 ARM and the most current standards of the Department of Environmental Quality, and shall be constructed in accordance with the approved plans and specifications provided by Hyalite Engineering of Bozeman, MT, or by equivalent plans and specifications, and,

THAT the footprint of the elevated sand mound will also serve as the replacement area, and,

THAT the elevated sand mound location will need to be staked by a Professional Engineer or Qualified Site Evaluator prior to any construction on the lot, and,

THAT the sand bed part of the Elevated Sand Mound shall be sized at 0.8 gpd/SF, and,

THAT the basal area part of the Elevated Sand Mound shall be sized at 0.3 gpd/SF, and,

THAT the land area 25 feet from the toe of the infiltrative surface on the down gradient side of the elevated sand mound must not be disturbed, and,

THAT the onsite wastewater treatment system shall be protected from both vehicular traffic and livestock trampling, and,

THAT the bottom of the drainfield shall be at least four feet above the seasonal high groundwater table, and,

THAT no sewage treatment system shall be constructed within 100 feet of the maximum high-water level of a 100-year flood of any stream, lake, watercourse, or irrigation ditch, nor within 100 feet of any domestic water supply source, and,

THAT water supply systems, sewage treatment systems and storm drainage systems will be located as shown on the approved plans, and,

THAT the operation and maintenance of water supply, sewage treatment system, and stormwater facilities shall be the responsibility of the lot owner, and,

THAT the stormwater facilities plan was reviewed and approved under EQ#23-2490, dated 5/5/2022, and,

THAT if construction disturbance will exceed 1-acre, a construction stormwater permit from the Department will be required, and,

THAT the developer and/or owner of record shall provide each purchaser of property with a copy of the Plat approved location of water supply, sewage treatment system and storm drainage structures as shown on the attached lot layout, and a copy of this document, and,

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Bridger Shadows East

Gallatin County, Montana

EQ#22-1995 GCCHOA #23-113

THAT instruments of transfer for this property shall contain reference to these conditions, and,

THAT plans and specifications for any proposed sewage treatment systems will be reviewed and approved by the county health department and will comply with local regulations and ARM, Title 17, Chapter 36, Subchapters 3 and 9, in effect when the subdivision application was submitted, and,

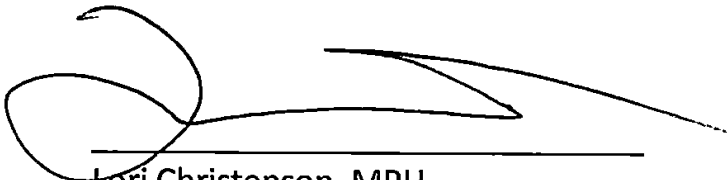
THAT departure from any criteria set forth in the approved plans and specifications and Title 17, Chapter 36, Sub-Chapters 1, 3, and 6 ARM when erecting a structure and appurtenant facilities in said subdivision without Department approval, is grounds for injunction by the Department of Environmental Quality, and,

Pursuant to Section 76-4-122 (2)(a), MCA, a person must obtain the approval of both the State under Title 76, Chapter 4, MCA, and local Board of Health under section 50-2-116(1)(i), before filing a subdivision plat with the county clerk and recorder.

YOU ARE REQUESTED to record this certificate by attaching it to the Plat filed in your office as required by law.

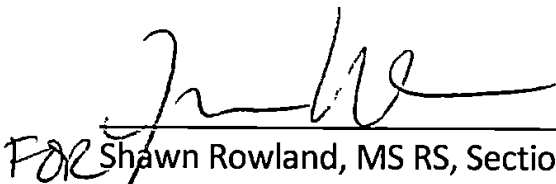
DATED this 9th day of May 2023.

REVIEWED AND APPROVED BY:



Lori Christenson, MPH
Health Officer
Gallatin City-County Health Department

CHRISTOPHER DORRINGTON,
DIRECTOR



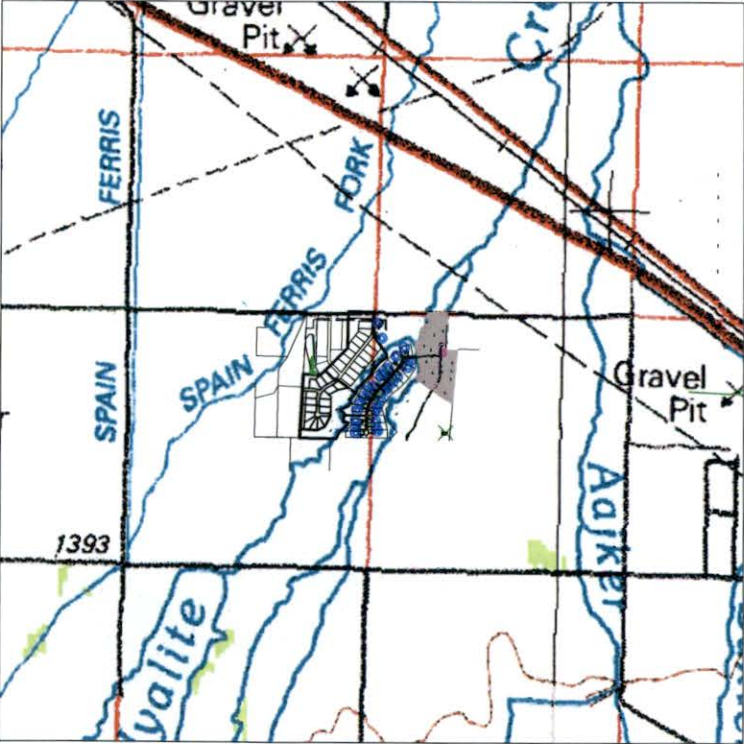
FOR Shawn Rowland, MS RS, Section Supervisor
Subdivision Section
Engineering Bureau
Water Quality Division
Department of Environmental Quality



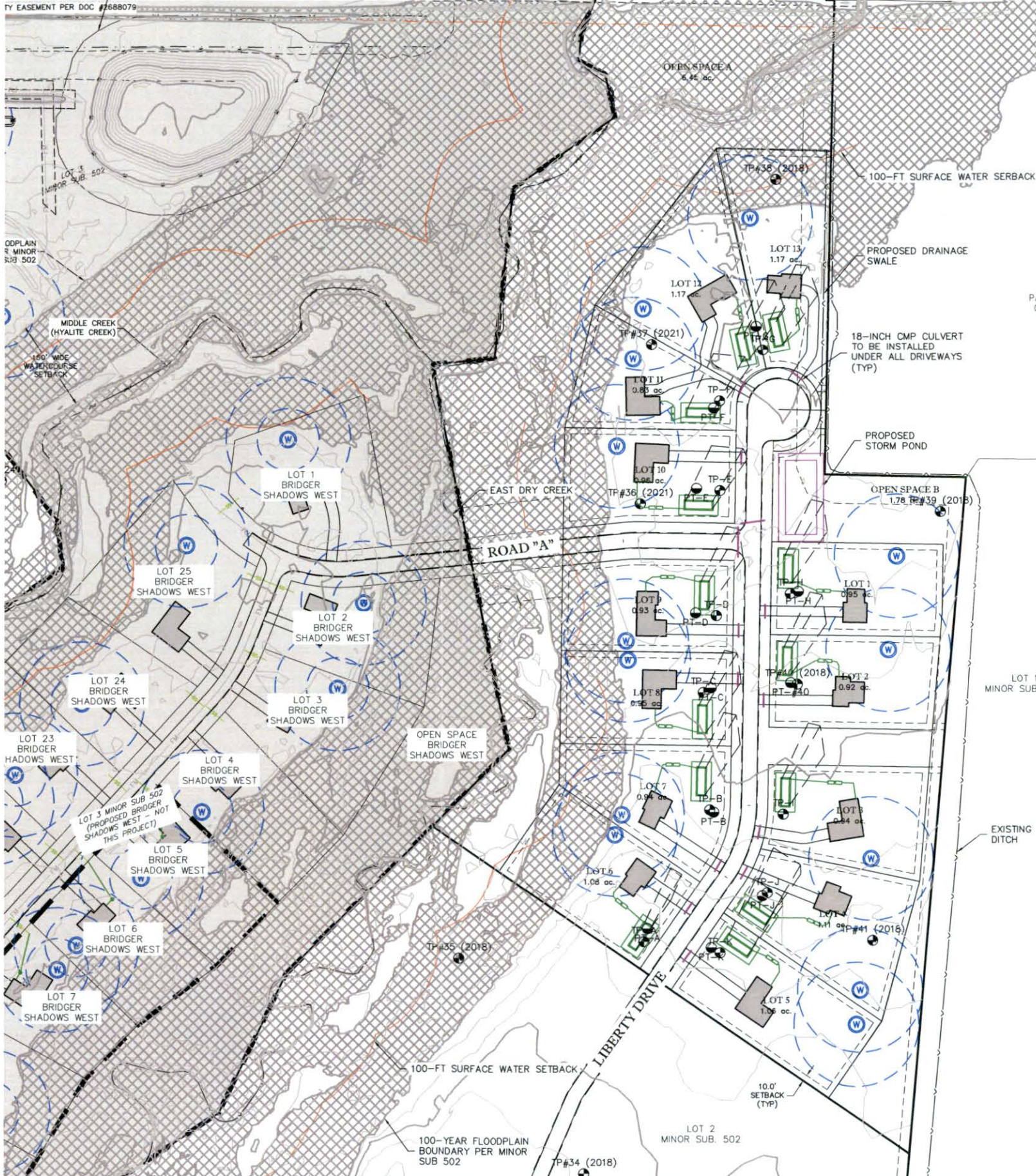
Owner's Name: XXX

- GENERAL NOTES:
- NO WELLS OR SURFACE WATER WITHIN 100' OF SAND MOUND AREAS.
 - WORK SHALL BE PERFORMED IN ACCORDANCE TO MDEQ CIRCULAR 4 AND GALLATIN COUNTY, MT.
 - CLOSED COMPONENTS (SEPTIC TANK, DOSING TANK, SERVICE PIPE, FORCEMAIN, ETC.) SHALL MAINTAIN 50' MINIMUM FROM SURFACE WATER AND WELLS.
 - INSTALL SEWER SERVICE CLEAN-OUTS AS REQUIRED BY GALLATIN COUNTY.
 - WASTEWATER SYSTEM COMPONENTS SHALL MAINTAIN 10' MINIMUM SEPARATION FROM ALL LOT LINES, WATER LINES, AND STRUCTURES.
 - CONTRACTOR RESPONSIBLE FOR UTILITY LOCATE PRIOR TO DIGGING OR DRILLING.
 - CONTRACTOR RESPONSIBLE FOR MEETING ALL UTILITY REQUIREMENTS.
 - INSTALLER SHALL BE LICENSED AND QUALIFIED TO INSTALL WASTEWATER SYSTEMS IN GALLATIN COUNTY, MT.
 - CONTRACTOR SHALL VERIFY ALL PROJECT SITE CONDITIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN WRITING.

- SITE SPECIFIC NOTES:
- ALL ELEVATED SAND MOUNDS WERE DESIGNED WITH PRESSURE-DOSED 3-FT WIDE GRAVEL-LESS INFILTRATOR CHAMBERS TO SERVE ONE (1) SINGLE FAMILY DWELLING WITH UP TO 5-BEDROOMS (400-GPD).
 - SIZING OF THE WASTEWATER TREATMENT SYSTEM WAS BASED ON AN APPLICATION RATE OF 0.8 GPD/FT², RESULTING IN A REQUIRED TOTAL AREA OF 500 SQ FT OF BED AREA FOR ALL LOTS. SEE DETAILS FOR PRIMARY & 100% REPLACEMENT BASAL AREA DIMENSIONS.
 - THE 2" SCH 40 PVC FORCEMAIN SHALL MAINTAIN GRADE TO ELEVATED SAND MOUND SO 100% DRAINAGE CAN BE OBTAINED BETWEEN DOSE CYCLES. (I.E. NO HUMPS OR BELLIES) TO MINIMIZE FREEZING POTENTIAL.
 - CONTRACTOR SHALL INSTALL ALL OTHER COMPONENTS IN COMPLIANCE WITH GALLATIN COUNTY AND DEQ CIRCULAR 4 REGULATIONS.
 - CONTRACTOR SHALL INSULATE ALL APPLICABLE WASTEWATER TREATMENT SYSTEM COMPONENTS NECESSARY TO MINIMIZE FREEZING POTENTIAL.
 - CONTRACTOR TO COORDINATE ALL UTILITY CROSSINGS AND POTENTIAL CONFLICTS WITH APPROPRIATE UTILITY AGENCIES/COMPANIES. CONTRACTOR TO FIELD VERIFY ACTUAL LOCATIONS AND DEPTHS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
 - EASEMENTS SHOWN MAY NOT INCLUDE ALL EASEMENTS OF RECORD, MAY NOT REFLECT EASEMENTS THAT HAVE SUBSEQUENTLY BEEN VACATED/REMOVED, AND ARE SHOWN FOR CONCEPTUAL/PLANNING PURPOSES ONLY.
 - SETBACKS SHOWN MAY NOT BE ALL INCLUSIVE, REPRESENT THE BEST AVAILABLE INFORMATION TO THE ENGINEER AT THIS TIME, AND ARE SHOWN FOR CONCEPTUAL/PLANNING PURPOSES ONLY.
 - ON-SITE GRADING MAY REQUIRE MODIFICATION TO SEWER SERVICE, SEPTIC TANK, AND DOSING TANK LOCATIONS. ENGINEER MUST BE CONTACTED TO CONDUCT A PRESSURE DESIGN PRIOR TO RELOCATION OF COMPONENTS.
 - CONTRACTOR TO FIELD VERIFY ALL EXISTING WASTEWATER AND POTABLE WATER SUPPLY LOCATIONS.
 - INSTALL 15" DIAMETER CMP CULVERT (OR APPROVED EQUIVALENT) AT THE DRIVEWAY APPROACHES FOR ALL LOTS.
 - POTENTIAL LOCATIONS OF HOMES, DRIVEWAYS, SEPTIC TANKS, DOSE TANKS, FORCE MAINS, ETC. HAVE BEEN SHOWN FOR CONCEPTUAL PURPOSES ONLY. FUTURE LOCATIONS OF AFOREMENTIONED ITEMS MAY VARY FROM LOT LAYOUT. VERIFY SETBACKS WITH ZONING REQUIREMENTS AND ANY OTHER SETBACK REQUIREMENTS.
 - ALTERNATE: IN LIEU OF GRAVEL-LESS INFILTRATOR CHAMBERS, A GRAVEL BED SYSTEM MAY BE INSTALLED. IF ALTERNATIVE IF PROPOSED, CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO CONSTRUCTION.
 - ROAD DRAINAGE SHALL BE DIRECTED TO THE NORTHERN STORMWATER POND/EASEMENT SHOWN.



VICINITY MAP
NOT TO SCALE



Reviewed by the Local Reviewing Authority
Under contract with the
Department of Environmental Quality
Local Reviewer: *[Signature]* Date: 05/09/23
Accepted under contract
DEQ Representative: *[Signature]* Date: 5/19/23

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Bridger Shadows East
Gallatin County, Montana
EQ#22-1995 GCCHOA #23-113

NOTE: MONITORING WELLS INSTALLED IN 2018 & 2021 ARE NOTED.

LEGEND

- PROPOSED ELEVATED SAND MOUND
- PROPOSED WELL WITH 100-FT ISOLATION ZONE
- PROPOSED WELL LOCATIONS FOR BRIDGER SHADOWS WEST (NOT THIS PROJECT, SUBJECT TO CHANGE)
- CONCEPTUAL LOCATION OF SINGLE FAMILY HOME W/ UP TO 5-BEDROOMS AND DRIVEWAY
- PROPOSED 4" PVC SEWER SERVICE CONNECTING TO 1,500 GAL SEPTIC TANK (MIN) WITH EFFLUENT FILTER, 1,000 GAL DOSE TANK (MIN), AND 2" PVC FORCEMAIN

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SCALE (FEET)

PROJECT ENGINEER: MAF

DRAWN BY: EVR

DESIGNED BY: EVR

REVIEWED BY: MAF

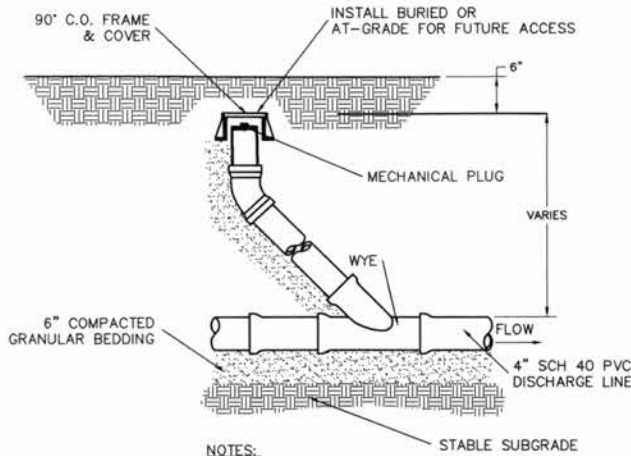
**BRIDGER SHADOWS EAST
WASTEWATER SITE PLAN**
NE 1/4 SEC 19 & NW 1/4 SEC 20, T1S, R5E, P.M.M., GALLATIN COUNTY

32 DISCOVERY DRIVE
BOZEMAN, MT 59718
PHONE (406) 582-0221
FAX (406) 582-5770
www.alliedengineering.com

**Civil Engineering
Geotechnical Engineering
Land Surveying**



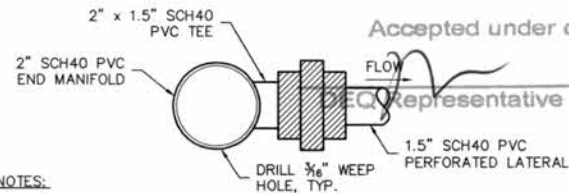
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| PROJECT #18-014.20 | SHEET |
| DATE: 03/03/2023 | WW-1 |
| BRIDGER SHADOWS EAST | |



NOTES:

1. USE INLAND FOUNDRY MODEL 240 FRAME & COVER IN ALL TRAFFIC AREAS.
2. COVER AND FRAME SHALL BE GRAY CAST IRON ASTM A-48, CLASS 30.
3. COVER AND FRAME TO BE MACHINED TO A TRUE BEARING ALL AROUND.
4. PROVIDE 6\"/>

1
WW-2
DETAIL
4\"/>



NOTES:

1. ALL PIPE TO BE SCHEDULE 40 UNLESS SPECIFICALLY APPROVED BY DESIGNER.
2. ORIFICES TO BE 1/2\"/>
3. A SUCCESSFUL SQUIRT TEST WILL DEMONSTRATE LESS THAN 10% VARIATION IN FLOW ACROSS THE FIELD.

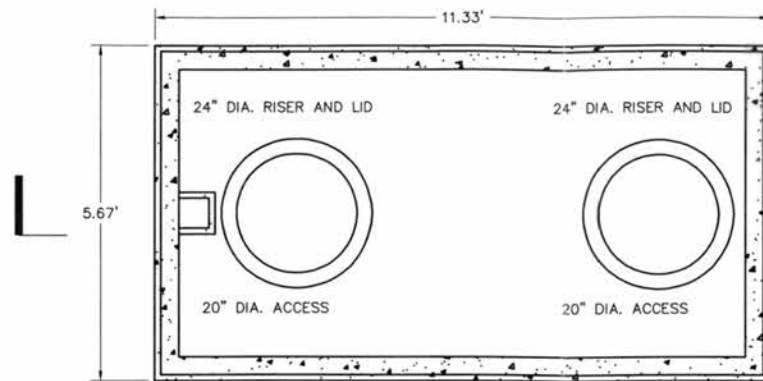
2
WW-2
DETAIL
END MANIFOLD CONNECTION
NOT TO SCALE

GENERAL NOTES:

1. WORK SHALL BE PERFORMED IN ACCORDANCE WITH CIRCULAR DEQ 4, AND GALLATIN COUNTY REGULATIONS.
2. CONTRACTOR SHALL BE LICENSED AND QUALIFIED TO INSTALL WASTEWATER TREATMENT SYSTEMS IN GALLATIN COUNTY, MONTANA.
3. NO WELLS OR SURFACE WATER EXIST WITHIN 100 FEET OF PRIMARY ABSORPTION AREA OR 100% REPLACEMENT AREA.
4. NO WELLS OR SURFACE WATER EXIST WITHIN 50 FEET OF WASTEWATER TREATMENT SYSTEM'S SEALED COMPONENTS.
5. SURFACE DRAINAGE IS ADEQUATE.

NOTES TO INSTALLER:

1. CONTRACTOR TO VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION ACTIVITIES.
2. CONTRACTOR TO VERIFY SEWER STUB LOCATIONS PRIOR TO INSTALLATION OF WASTEWATER TREATMENT SYSTEM.
3. CONTRACTOR TO FIELD VERIFY ALL APPLICABLE SETBACKS PRIOR TO INSTALLATION OF WASTEWATER TREATMENT SYSTEM. IF ANY DISCREPANCIES ARE DETERMINED BY CONTRACTOR, ENGINEER SHALL BE NOTIFIED IMMEDIATELY IN WRITING.
4. 10 FEET (MIN.) SEPARATION BETWEEN WATER AND SEWER LINES SHALL BE MAINTAINED.
5. THERE IS THREE INCHES (3\") OF FALL BETWEEN INLET AND OUTLET OF TANKS. INSTALLER TO PROVIDE 1% (MIN.) SLOPE BETWEEN OUTLET OF SEPTIC TANK AND INLET OF DOSE TANK.
6. ANY DESIGN CHANGES WITH RESPECT TO ORIENTATION, LAYOUT, MATERIALS, ETC. MUST BE APPROVED BY ENGINEER.
7. THE PRIMARY ABSORPTION AREA HAS BEEN DESIGNED TO COMPLETELY DRAIN TO THE DOSE TANK BETWEEN DOSES. CONTRACTOR SHALL INSTALL FORCEMAIN AT CONSTANT GRADE (I.E. NO HUMPS OR BELLIES) TO ALLOW FOR DRAINAGE.
8. CONTRACTOR SHALL INSULATE ALL APPLICABLE WASTEWATER TREATMENT SYSTEM COMPONENTS TO PROHIBIT FREEZING OF ANY AND ALL SYSTEM COMPONENTS.
9. ALL TANK DETAILS REFLECT STANDARD TANK CONSTRUCTION. CONTRACTOR MAY CHOOSE ALTERNATIVE. IF ALTERNATIVE IS CHOSEN, CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO CONSTRUCTION.
10. IF HOME LOCATIONS AND/OR TANK CONFIGURATIONS/LOCATIONS VARY FROM PROPOSED SITE PLAN, CONTRACTOR SHALL NOTIFY ENGINEER AND REQUEST VERIFICATION OF FLOAT SETTINGS, HYDRAULIC CALCULATIONS, ETC.
11. GRAVEL TRENCHES MAY BE USED IN LIEU OF INFILTRATOR CHAMBERS, CONTACT ENGINEER FOR DESIGN



*INSTALL SAFETY GRATES AT ALL SEPTIC TANK/DOSE TANK OPENINGS. CUT TO FIT AROUND EFFLUENT FILTER HANDLE AND PUMP DISCHARGE PIPING (IF NECESSARY).

ALTERNATE

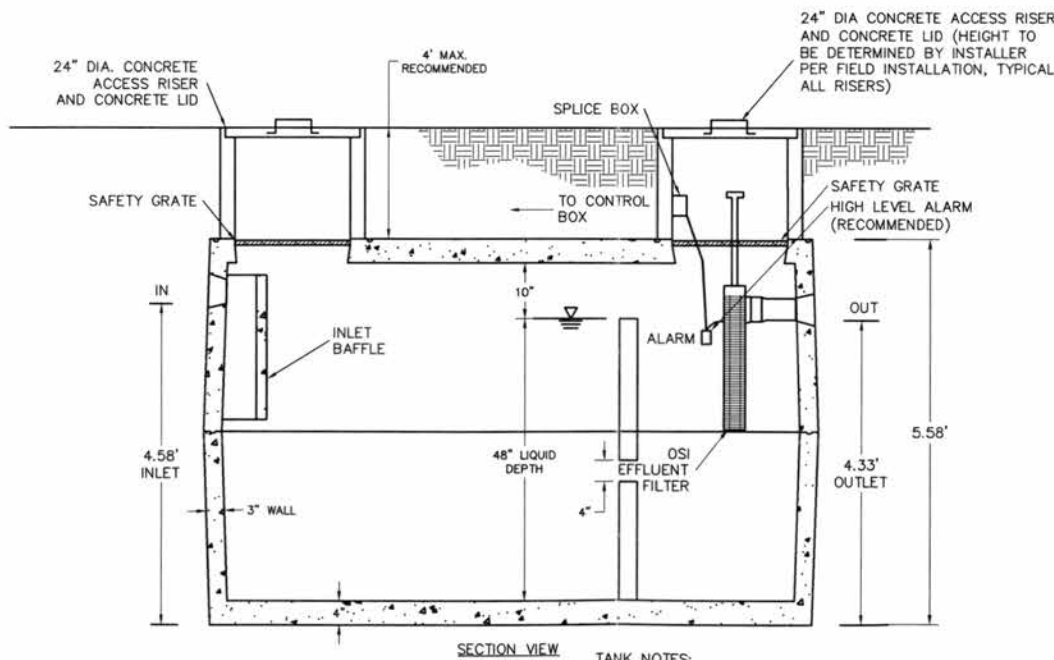
*OWNER MAY INSTALL FIBERGLASS RISERS AND LIDS IN LIEU OF CONCRETE. RISERS AND LIDS (TYPICAL ALL TANKS)

*PRIOR TO PLACEMENT OF TANKS CONTACT ENGINEER IF TANK DEPTHS ARE ANTICIPATED TO EXCEED 4' BURY DEPTH.

MDEQ 5.1.2.1.1:

LIQUID CONNECTION BETWEEN COMPARTMENTS SHALL CONSIST OF A SINGLE OPENING COMPLETELY ACROSS THE COMPARTMENT WALL OR TWO OR MORE OPENINGS EQUALLY SPACED ACROSS THE WALL. THE TOTAL AREA OF THE OPENINGS SHALL BE AT LEAST THREE TIMES THE AREA OF THE INLET PIPE.

3
WW-2
DETAIL (PLAN VIEW) - PRIMARY HOME
1,500 GALLON DOUBLE COMPARTMENT SEPTIC TANK (NOT TRAFFIC RATED)
NOT TO SCALE

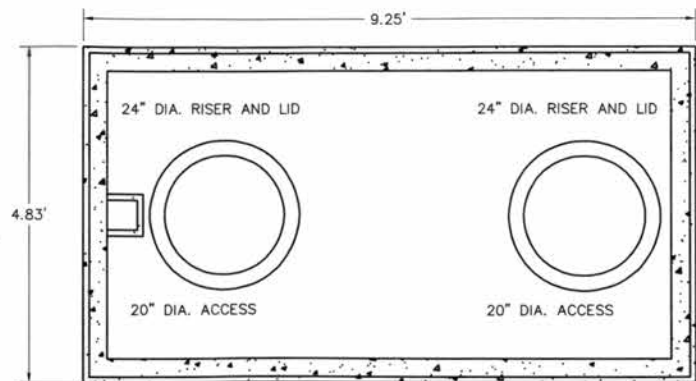


NOTES:

- ALL SEPTIC TANK DIMENSIONS HAVE BEEN SUPPLIED BY ANDERSON PRECAST & SUPPLY, INC (BOZEMAN, MT). CONTRACTOR MAY ELECT TO USE ALTERNATIVE SUPPLIER, IN WHICH CASE CONTRACTOR SHALL SUBMIT STANDARD SEPTIC TANK DETAILS PER SUPPLIERS PROPOSED CONSTRUCTION PRIOR TO INSTALLATION.
- WE RECOMMEND THE USE OF A HIGH LEVEL ALARM.

5
WW-2
DETAIL (PROFILE VIEW) - PRIMARY HOME
1,500 GALLON DOUBLE COMPARTMENT SEPTIC TANK (NOT TRAFFIC RATED)
NOT TO SCALE

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Bridger Shadows East
Gallatin County, Montana
EQ#22-1995 GCCHOA #23-113



*INSTALL SAFETY GRATES AT ALL SEPTIC TANK/DOSE TANK OPENINGS. CUT TO FIT AROUND EFFLUENT FILTER HANDLE AND PUMP DISCHARGE PIPING (IF NECESSARY).

ALTERNATE

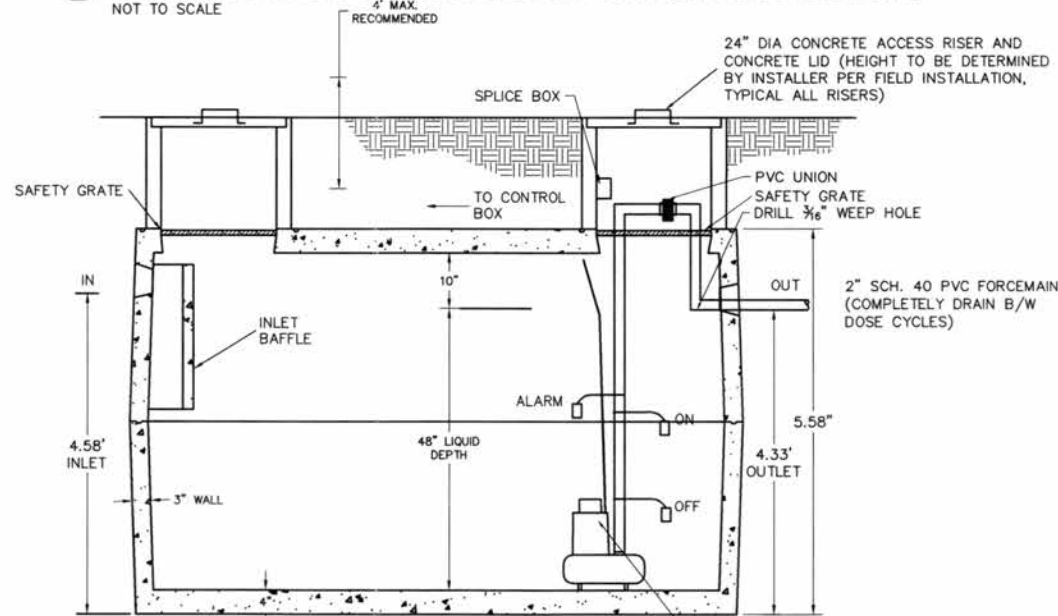
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MDEQ 5.1.2.1.1:

LIQUID CONNECTION BETWEEN COMPARTMENTS SHALL CONSIST OF A SINGLE OPENING COMPLETELY ACROSS THE COMPARTMENT WALL OR TWO OR MORE OPENINGS EQUALLY SPACED ACROSS THE WALL. THE TOTAL AREA OF THE OPENINGS SHALL BE AT LEAST THREE TIMES THE AREA OF THE INLET PIPE.

4
WW-2
DETAIL (PLAN VIEW)
1,000 GALLON SINGLE COMPARTMENT DOSE TANK (NOT TRAFFIC RATED)
NOT TO SCALE



TANK NOTES:

1. CONCRETE IS 5,000 PSI AT 28 DAYS
2. INLET AND OUTLET HAVE PLASTIC SEAL WHICH ACCEPTS SCH. 40 OR SEWER AND DRAIN PIPE.
3. NORMALLY SET IN ONE PIECE
4. SIDE INLET (KNOCK-OUTS) PROVIDED.
5. EACH SEGMENT IS POURED MONOLITHICALLY.
6. ALL HANDLES ARE 1/4\"/>
7. WEIGHT OF TANK IS 11,000 LBS.
8. REINFORCING = #3 REBAR GRADE 40.
9. ACTUAL CAPACITY = 996 GALLONS.
10. MAXIMUM EARTH COVER IS 4 FEET.
11. TANK JOINT IS SEALED WITH 3/4\"/>
12. ALL SEPTIC TANK DIMENSIONS HAVE BEEN SUPPLIED BY ANDERSON PRECAST & SUPPLY, INC (BOZEMAN, MT). CONTRACTOR MAY ELECT TO USE ALTERNATIVE SUPPLIER, IN WHICH CASE CONTRACTOR SHALL SUBMIT STANDARD SEPTIC TANK DETAILS PER SUPPLIERS PROPOSED CONSTRUCTION PRIOR TO INSTALLATION.

6
WW-2
DETAIL (PROFILE VIEW)
1,000 GALLON SINGLE COMPARTMENT DOSE TANK (NOT TRAFFIC RATED)
NOT TO SCALE

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| PROJECT ENGINEER: MAF | DRAWN BY: EVR |
| DESIGNED BY: EVR | REVIEWED BY: MAF |

BRIDGER SHADOWS EAST
GENERAL DETAILS
NE 1/4 SEC 19 & NW 1/4 SEC 20, T1S, R5E, P.M.M., GALLATIN COUNTY

32 DISCOVERY DRIVE
BOZEMAN, MT 59718
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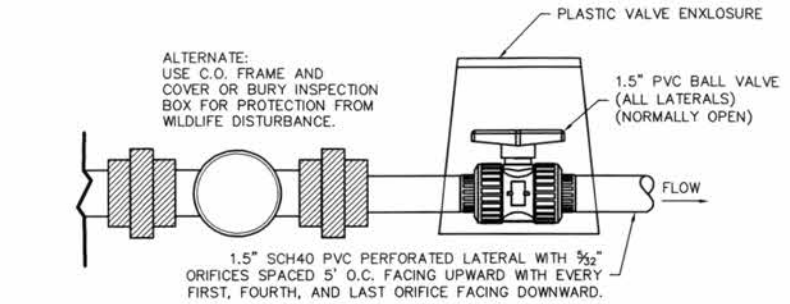
PROJECT #18-014-20
DATE: 03/03/2023

BRIDGER SHADOWS EAST

SHEET
WW-2

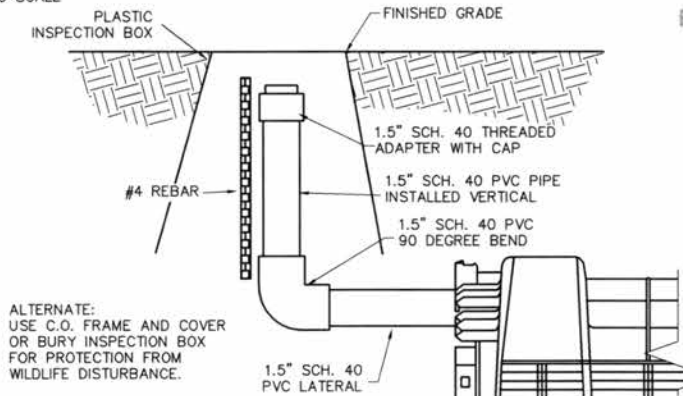
- SAND SPECIFICATIONS:
- SAND MUST BE WASHED FREE OF SILTS AND CLAYS. THE IN-PLACE FILL MATERIAL MUST MEET ONE OF THE FOLLOWING SPECIFICATIONS.
 - ASTM C-33 FOR FINE AGGREGATE, WITH A MAXIMUM OF 2-PERCENT PASSING THE No. 100 SIEVE.
 - FIT WITHIN THE FOLLOWING PARTICLE SIZE DISTRIBUTION:
- | SIEVE | PARTICLE SIZE(mm) | PERCENT PASSING |
|---------|-------------------|-----------------|
| No. 4 | 4.75 | 100 |
| No. 8 | 2.36 | 95-100 |
| No. 16 | 1.18 | 80-100 |
| No. 30 | 0.60 | 45-85 |
| No. 50 | 0.30 | 20-60 |
| No. 100 | 0.15 | 10-30 |
| | | 0-2 |
- C. HAVE AN EFFECTIVE SIZE (D10) OF 0.15-mm TO 0.30-mm WITH A UNIFORMITY COEFFICIENT (D60/D10) OF 4 TO 6, WITH A MAXIMUM OF 3-PERCENT PASSING THE No. 100 SIEVE.

- GENERAL MOUND NOTES:
- MINIMUM 4:1 SLOPES REQUIRED. CONTRACTOR MAY PROVIDE FLATTER SLOPES AS DIRECTED BY ENGINEER.
 - MOUND MUST BE COVERED BY A MINIMUM OF 12" (AT THE CENTER OF THE MOUND) AND 6" (AT THE EDGE OF THE MOUND) OF A SUITABLE MEDIUM, SUCH AS SANDY LOAM, LOAMY SAND OR SILT LOAM, TO PROVIDE DRAINAGE AND AERATION.
 - THE LAND AREA 25-FOOT DOWN SLOPE OF THE ELEVATED SAND MOUND MAY NOT BE REMOVED OR DISTURBED.
 - CONSTRUCTION SHALL OCCUR ON DRY DAYS. NOTE: IF A SAMPLE OF SOIL WITHIN THE WORKING DEPTH CAN BE EASILY ROLLED INTO THE SHAPE OF A WIRE OR CAST, THE SOIL MOISTURE CONTENT IS TOO HIGH FOR CONSTRUCTION.
 - THE AREA SURROUNDING THE ELEVATED SAND MOUND MUST BE GRADED TO PROVIDE FOR DIVERSION OF SURFACE RUNOFF WATERS.
 - AFTER INSTALLATION OF THE DISTRIBUTION SYSTEM, THE ENTIRE MOUND SHOULD BE COVERED WITH 6" OF A FINER TEXTURED SOIL MATERIAL, SUCH AS SAND LOAM TO LOAM. A 6" LAYER OF TOPSOIL SHOULD THEN BE ADDED. THE ENTIRE MOUND SHOULD BE SLOPED TO DRAIN, EITHER BY PROVIDING A CROWN AT THE CENTER OR A UNIFORM SLOPE ACROSS THE MOUND, WITH A MINIMUM SLOPE OF 1-PERCENT IN EITHER CASE. THE ENTIRE MOUND MUST BE SEEDED, SODDED, OR OTHERWISE PROVIDED WITH SHALLOW-ROOTED VEGETATIVE COVER TO ENSURE STABILITY OF THE INSTALLATION.
 - CONTRACTOR TO INSTALL NON-WOVEN FABRIC ACROSS SAND MOUND TO MINIMIZE POTENTIAL OF WILDLIFE DISTURBANCE.
 - ALTERNATE: IN LIEU OF GRAVEL-LESS INFILTRATOR CHAMBERS, A GRAVEL BED SYSTEM MAY BE INSTALLED. IF ALTERNATIVE IF PROPOSED, CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO CONSTRUCTION.

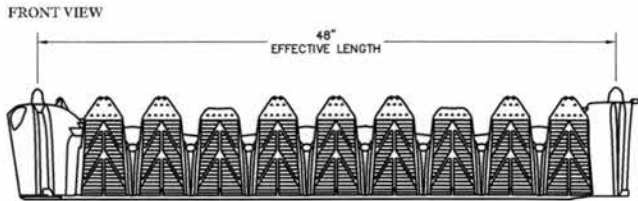
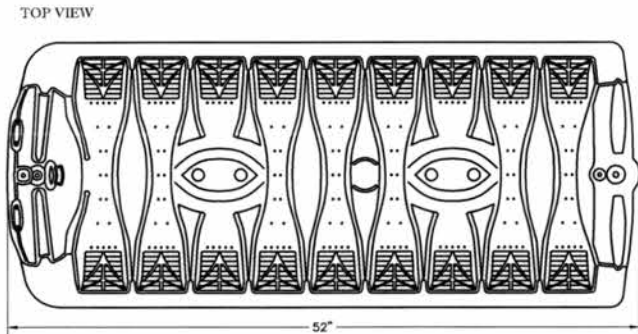


- NOTES:
- ALL PIPE TO BE SCHEDULE 40 PVC UNLESS SPECIFICALLY APPROVED BY DESIGNER.
 - ORIFICES TO BE 1/2" DIA. SPACED 5' ON CENTER FACING UPWARD WITH EVERY FIRST, FOURTH, AND LAST ORIFICE FACING DOWNWARD (USE ORIFICE SHIELD ON DOWNWARD FACING ORIFICES).
 - A SUCCESSFUL SQUIRT TEST WILL DEMONSTRATE 5' MINIMUM OF HEAD AT THE LAST ORIFICE AND LESS THAN 10% VARIATION IN FLOW ACROSS THE FIELD.
 - ADJUSTMENTS MAY BE MADE USING THE SPECIFIED HIGH PRESSURE GATE VALVE, MODEL VG 1500S.

1
WW-3
DETAIL
FLOW CONTROL VALVE
NOT TO SCALE

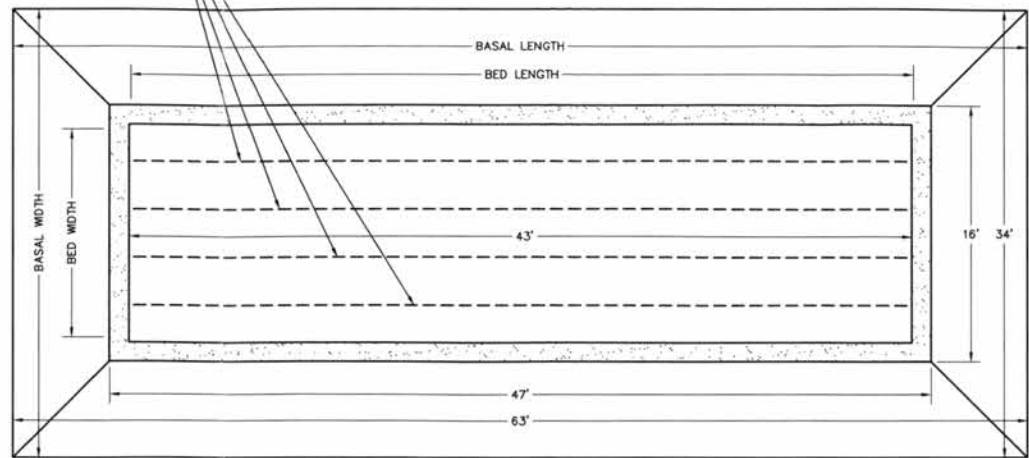


2
S-3
DETAIL
DRAINFIELD RISER
NOT TO SCALE

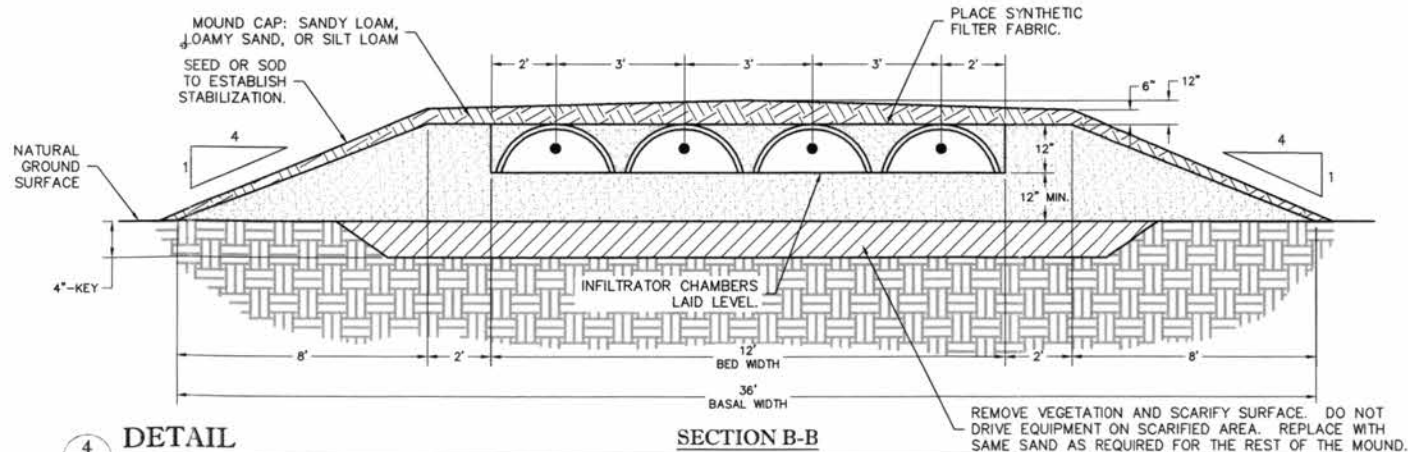
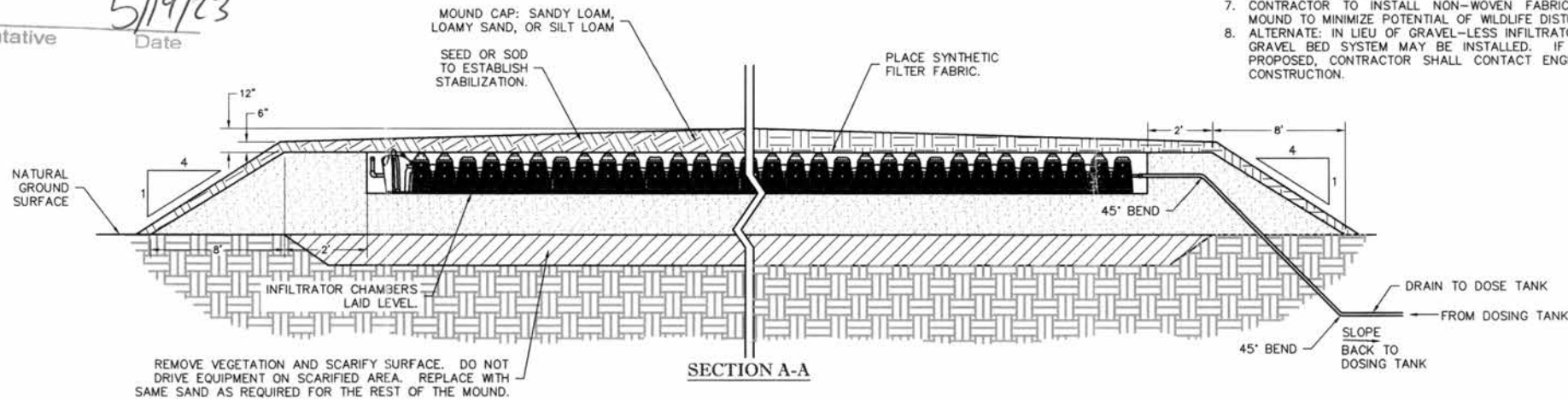


3
WW-3
DETAIL (PROFILE VIEW)
INFILTRATOR CHAMBER (QUICK4 EQUILIZER)
NOT TO SCALE

INSTALL FOUR (4) 43-FT LONG SCH40 PERFORATED PVC LATERALS WITH 1/2" DIA. ORIFICES SPACED 5-FT ON-CENTER IN 3-FT WIDE GRAVEL-LESS INFILTRATOR CHAMBERS SPACED 3-FT ON-CENTER.



Reviewed by the Local Reviewing Authority
Under contract with the
Department of Environmental Quality
B. J. J. J. 05/09/23
Local Reviewer Date
Accepted under contract
5/19/23
DEQ Representative Date



4
WW-3
DETAIL
ELEVATED SAND MOUND (ALL LOTS EXCEPT LOTS 1 AND 3)
NOT TO SCALE

| NO. | REVISIONS | DRAWN BY | DATE |
|-----|-----------|----------|------|
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SCALE AS NOTED

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| PROJECT ENGINEER: MAF | DRAWN BY: EVR |
| DESIGNED BY: EVR | REVIEWED BY: MAF |

BRIDGER SHADOWS EAST
GENERAL DETAILS
NE 1/4 SEC 19 & NW 1/4 SEC 20, T1S, R5E, P.M.M., GALLATIN COUNTY

32 DISCOVERY DRIVE
BOZEMAN, MT 59718
PHONE (406) 582-0221
FAX (406) 582-5770
www.alliedengineering.com

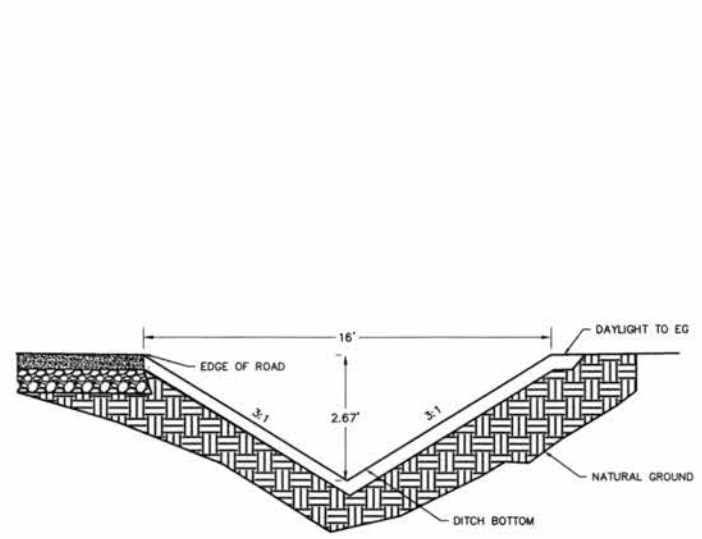
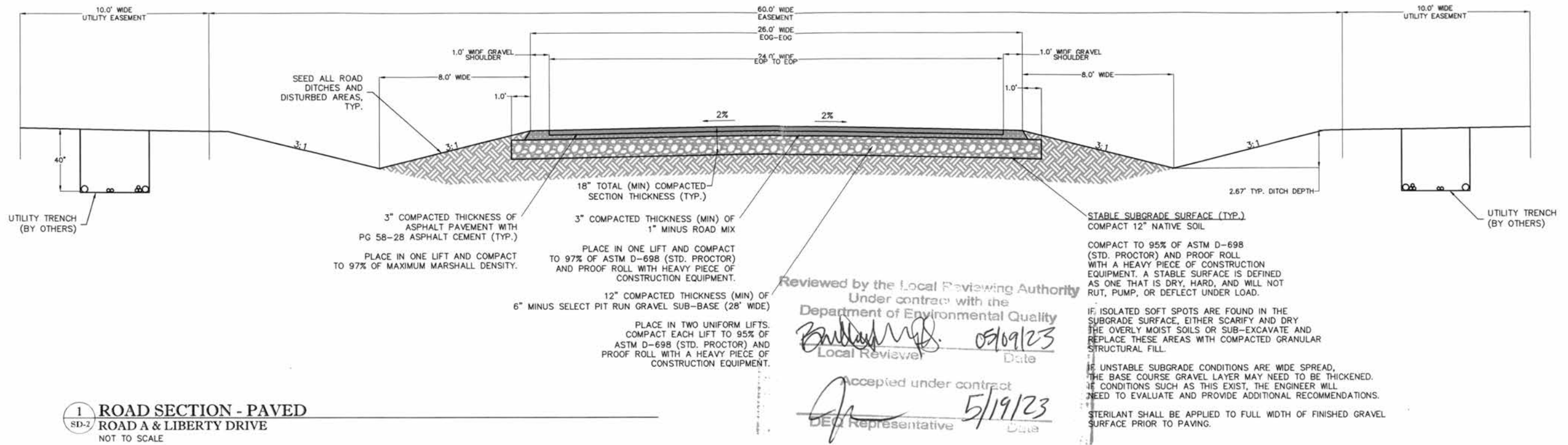
Civil Engineering
Geotechnical Engineering
Land Surveying



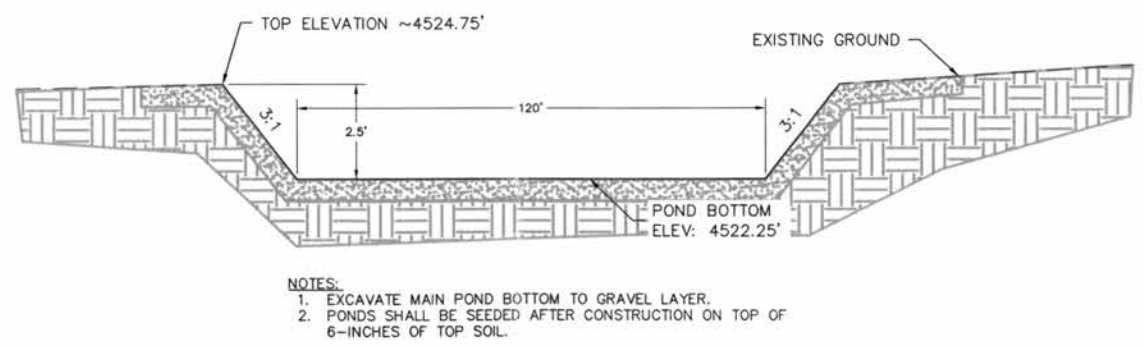
PROJECT #18-014-20
DATE: 03/03/2023

BRIDGER SHADOWS EAST

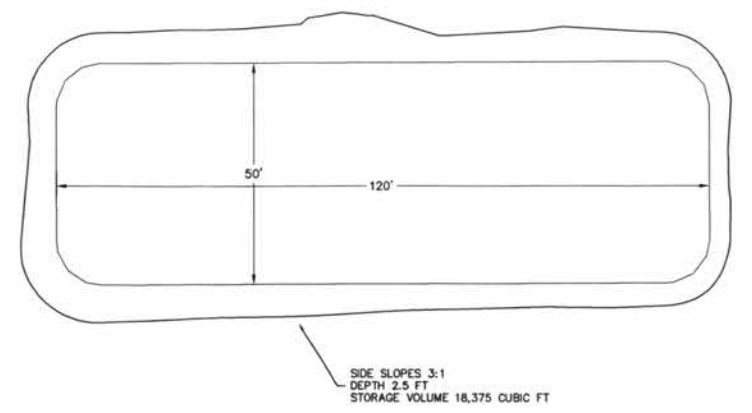
SHEET
WW-3



2 SECTION
SD-2 ROADSIDE DITCH
NOT TO SCALE



3 SECTION - STORM POND (MAIN)
SD-2 STORM POND
NOT TO SCALE



4 PLAN - STORM POND (MAIN)
SD-2 STORM POND
NOT TO SCALE

| NO. | REVISIONS | DRAWN BY | DATE |
|-----|-----------|----------|------|
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| PROJECT ENGINEER: MAF | DRAWN BY: EVR |
| DESIGNED BY: EVR | REVIEWED BY: MAF |

BRIDGER SHADOWS EAST
GENERAL DETAILS
NE 1/4 SEC 19 & NW 1/4 SEC 20, T1S, R5E, P.M.M., GALLATIN COUNTY

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BOZEMAN, MT 59718
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Civil Engineering
Geotechnical Engineering
Land Surveying



| | |
|----------------------|-------|
| PROJECT #18-014.20 | SHEET |
| DATE: 03/03/2023 | WW-4 |
| BRIDGER SHADOWS EAST | |