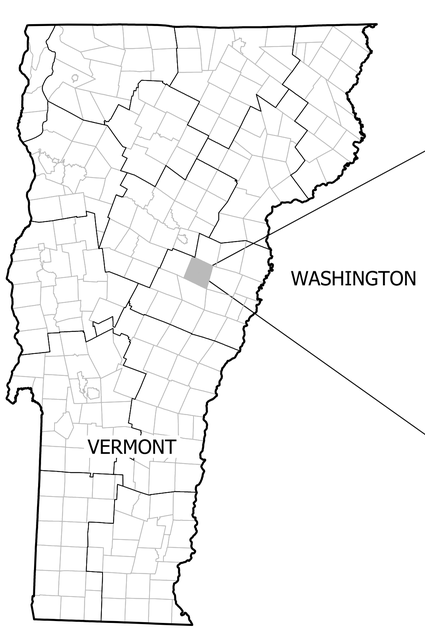
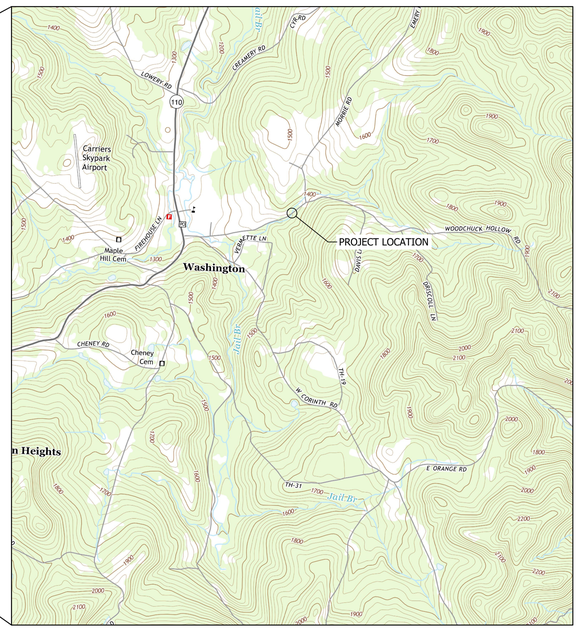
WINOOSKI NATURAL RESOURCES CONSERVATION DISTRICT

WOODCHUCK HOLLOW ROAD CULVERT REPLACEMENT PERMIT PLANS

WASHINGTON, VT

MAY, 2025





LOCATION PLAN

SCALE: 1" = 2000'

SHEET LIST:

OWNER:

TOWN OF WASHINGTON
2895 VT-110
WASHINGTON, VT 05675
(802) 833-2218

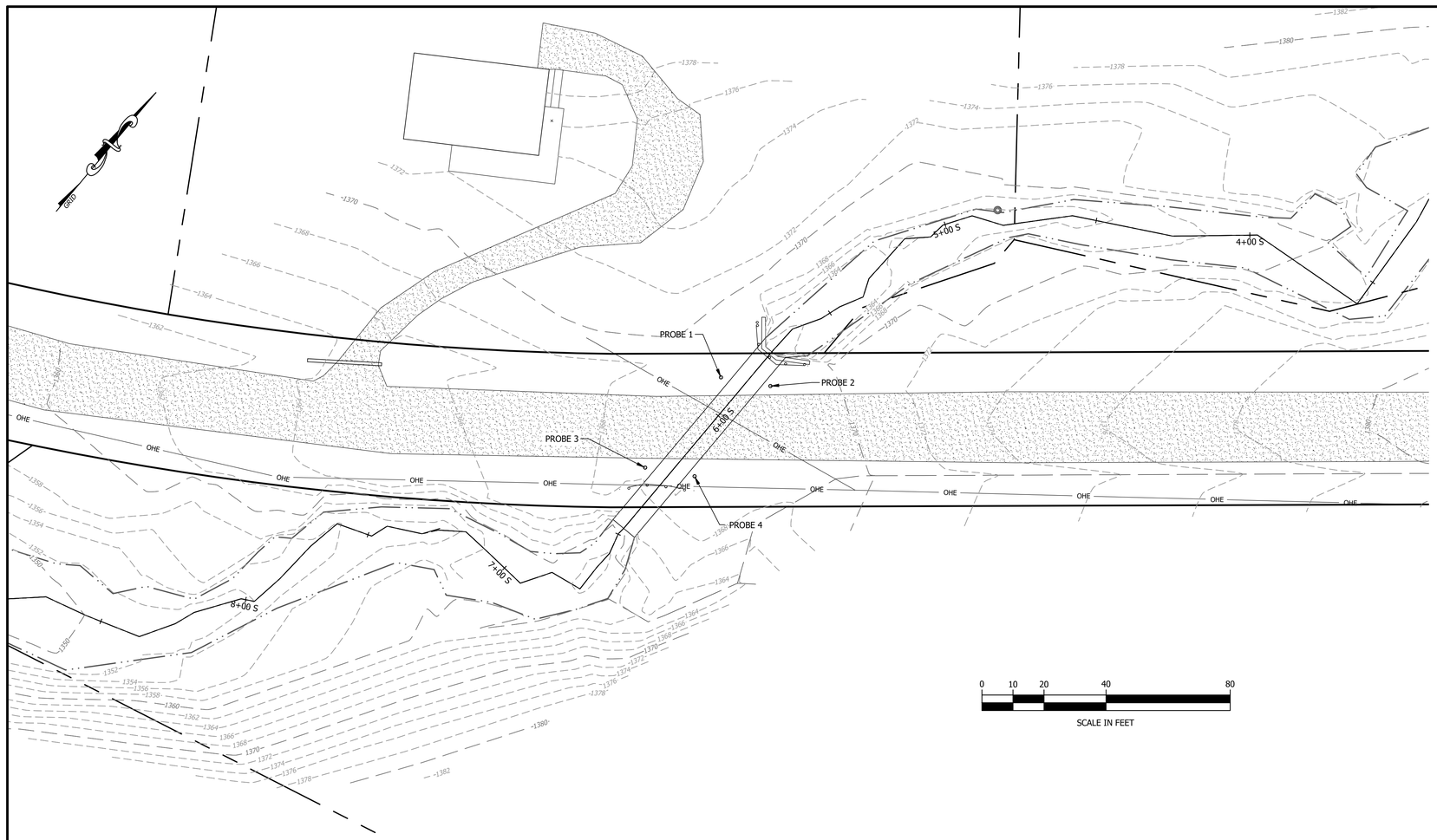
ENGINEER & SURVEYOR:

horizons Engineering

4930 VT ROUTE 14, UNIT 2
SHARON, VT 05065
(603) 444-4111

FOR PERMIT REVIEW AND BIDDING
NOT FOR CONSTRUCTION

DATE OF PRINT
MAY 16 2025
HORIZONS ENGINEERING



LEGEND

- MAJOR CONTOUR, 2-FOOT INTERVAL
- MINOR CONTOUR, 10-FOOT INTERVAL
- PROPERTY LINE
- EDGE OF BROOK
- GUARDRAIL
- OHE — OVERHEAD UTILITY LINE
- UTILITY POLE
- GUY WIRE
- GRAVEL

0 10 20 40 80

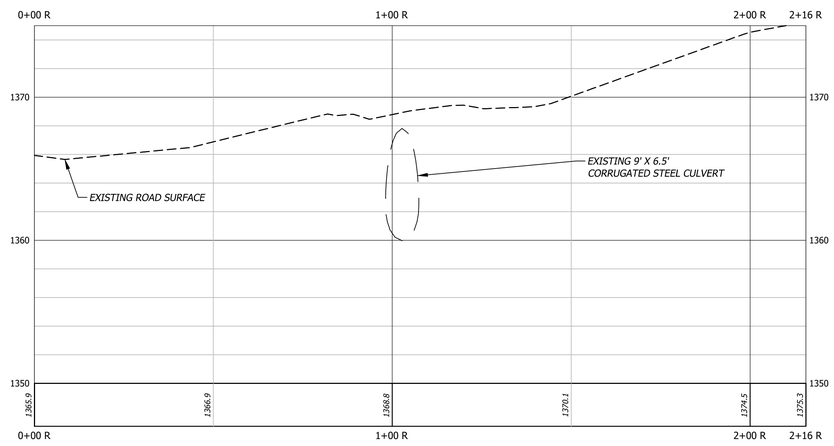
SCALE IN FEET

GENERAL NOTES

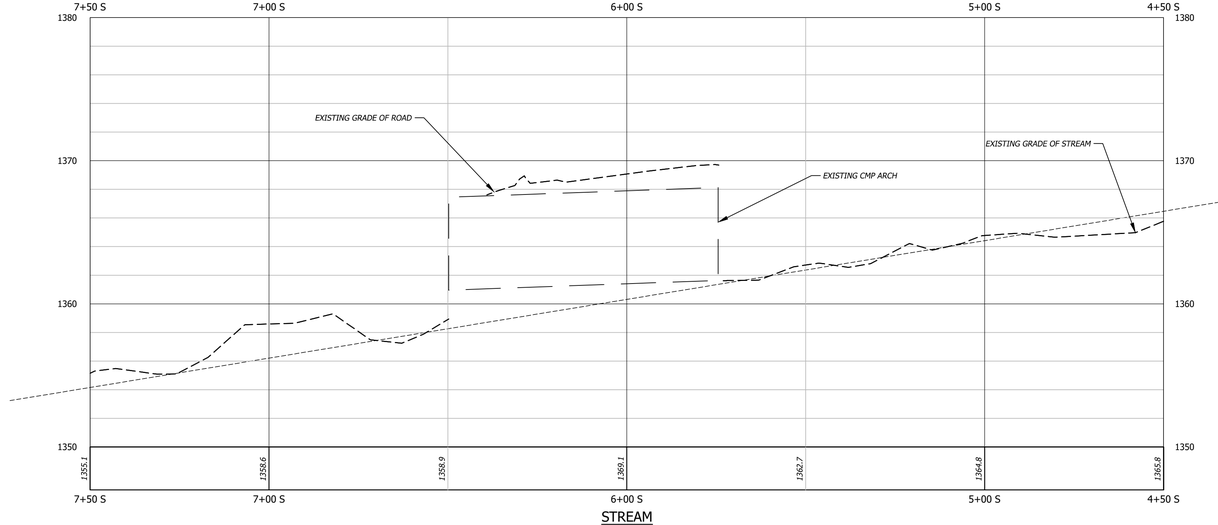
1. THE HORIZONTAL DATUM IS ON THE VERMONT STATE PLANE COORDINATE SYSTEM NAD83 (2011) GRID. THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. THIS PLAN IS BASED ON A FIELD SURVEY COMPLETED IN SEPTEMBER OF 2023 WITH SOKKIA GRX3 DUAL FREQUENCY SURVEY GRADE GPS RECEIVERS AND A LEICA TS13 ROBOTIC TOTAL STATION.
3. THE PROPERTY LINES SHOWN HEREON ARE APPROXIMATE PER THE VERMONT CENTER FOR GEOGRAPHIC INFORMATION PARCEL PROGRAM AT THE TIME THIS PLAN WAS PREPARED. RIGHT-OF-WAY DETERMINATION WILL BE COMPLETED AND EASEMENTS ACQUIRED AS NECESSARY PRIOR TO THE START OF CONSTRUCTION.

LEDGE PROBES

PROBE #	REFUSAL DEPTH (FT)	LEDGE ELEV. (FT)
1	19	1,350
2	15.5	1,354
3	17.5	1,351
4	18	1,350



WOODCHUCK HOLLOW ROAD
STA: 0+00 TO 2+16



STREAM
STA: 4+50 TO 7+50

0 10H 20H 40H 80H
0 2.5V 5V 10V 20V
SCALE IN FEET

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MAY 16 2025
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WINOOSKI NATURAL RESOURCES CONSERVATION DISTRICT

WOODCHUCK HOLLOW ROAD CULVERT REPLACEMENT

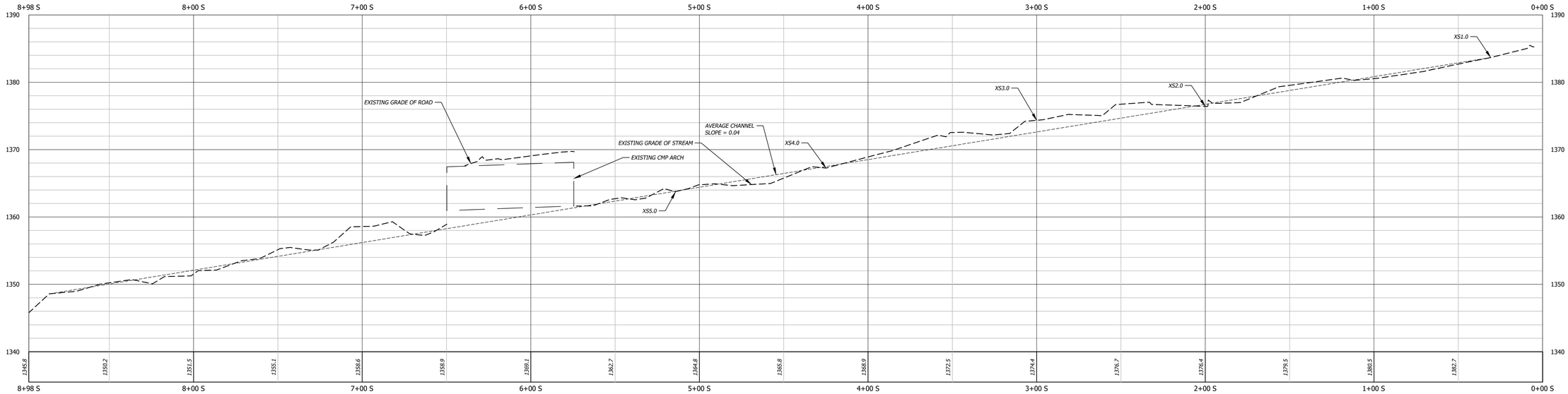
WASHINGTON, VT

EXISTING CONDITIONS

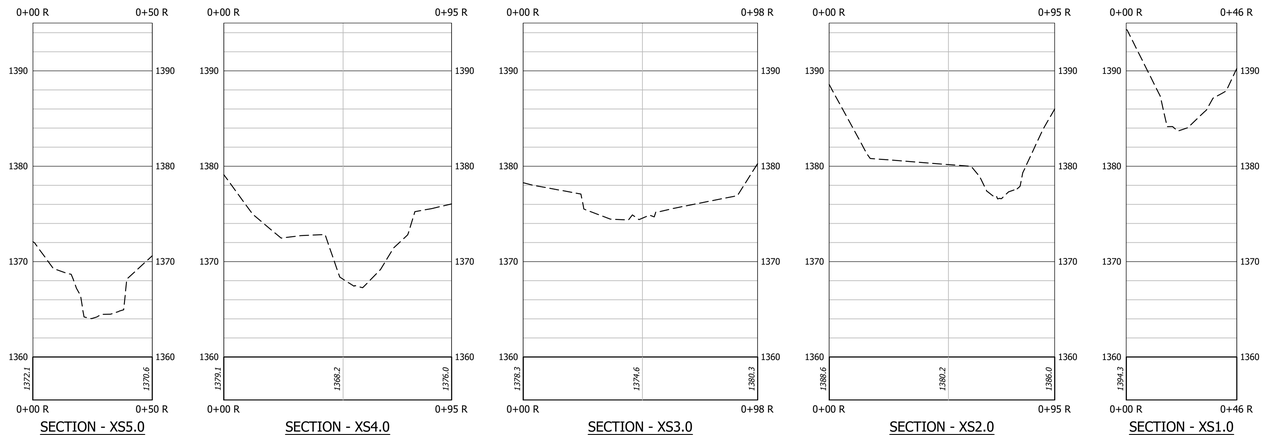
NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE: APR. 2024	PROJECT #: 230436
SURV'D BY: -	DRAWN BY: APH
CHECK'D BY: CJH	ARCHIVE #: H-___

C1.01



STREAM
STA: 0+00 TO 8+98



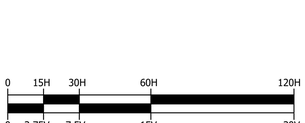
SECTION - XS5.0
STA: 0+00 TO 0+50

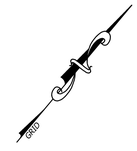
SECTION - XS4.0
STA: 0+00 TO 0+95

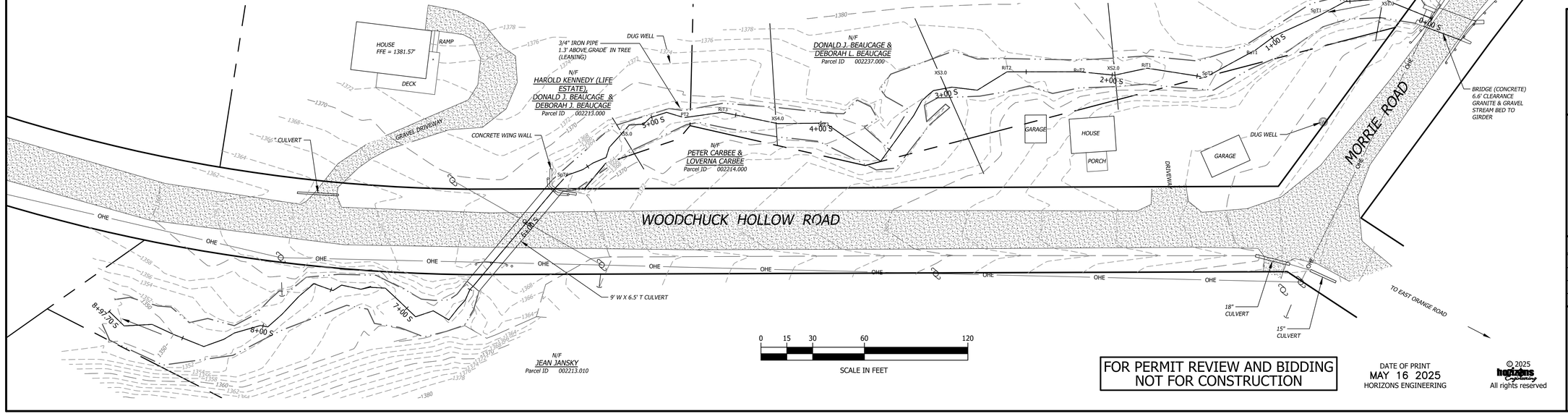
SECTION - XS3.0
STA: 0+00 TO 0+98

SECTION - XS2.0
STA: 0+00 TO 0+95

SECTION - XS1.0
STA: 0+00 TO 0+46







0 15 30 60 120
SCALE IN FEET

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WINOOSKI NATURAL RESOURCES CONSERVATION DISTRICT

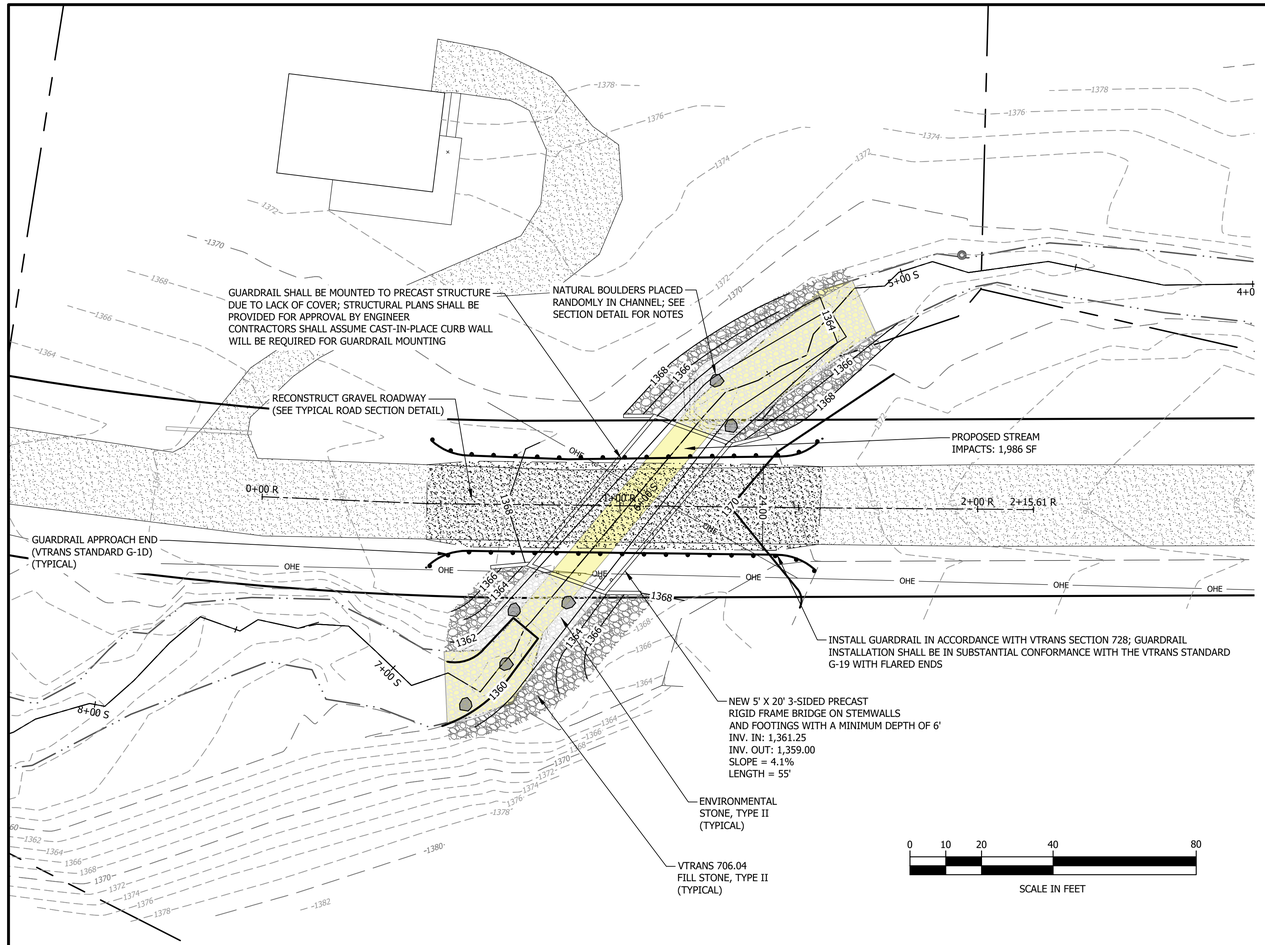
WOODCHUCK HOLLOW ROAD CULVERT REPLACEMENT
WASHINGTON, VT

EXISTING CONDITIONS

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

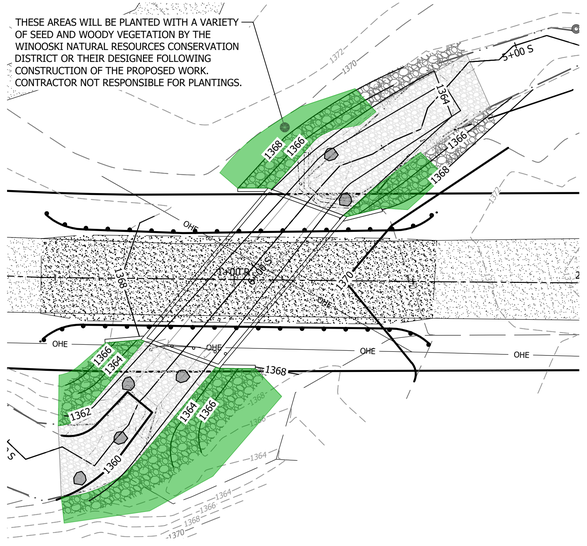
DATE: JUL. 2024	PROJECT #: 230436
SURV'D BY: -	DRAWN BY: APH
CHECK'D BY: CJH	ARCHIVE #: H-___

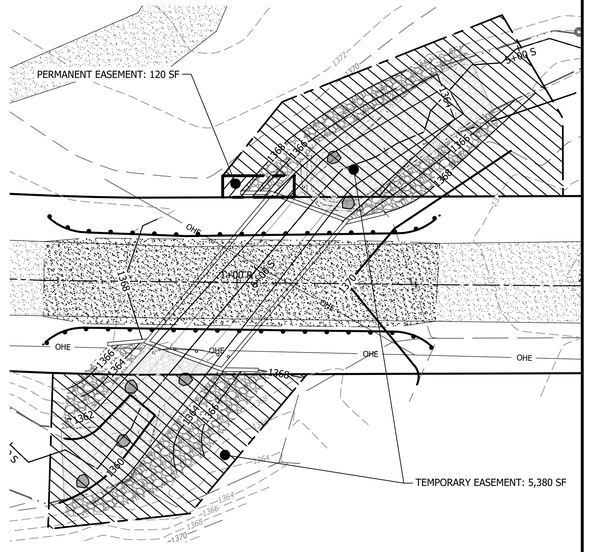
C1.02



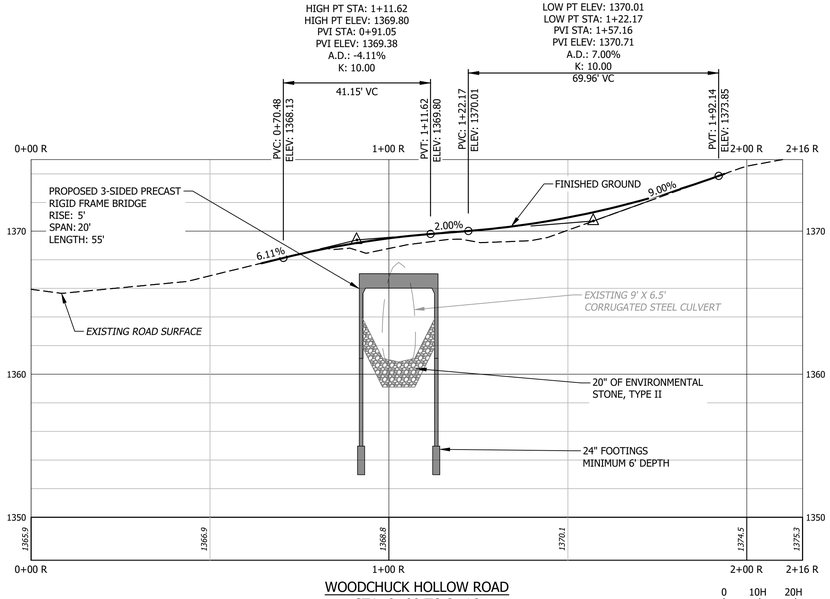
LEGEND

- MAJOR CONTOUR, 2-FOOT INTERVAL
- MINOR CONTOUR, 10-FOOT INTERVAL
- PROPERTY LINE
- EDGE OF BROOK
- GUARDRAIL
- OHE — OVERHEAD UTILITY LINE
- UTILITY POLE
- GUY WIRE
- GRAVEL
- AREA TO BE REPLANTED
- PROPOSED STREAM IMPACTS
- TEMPORARY EASEMENT
- PERMANENT EASEMENT

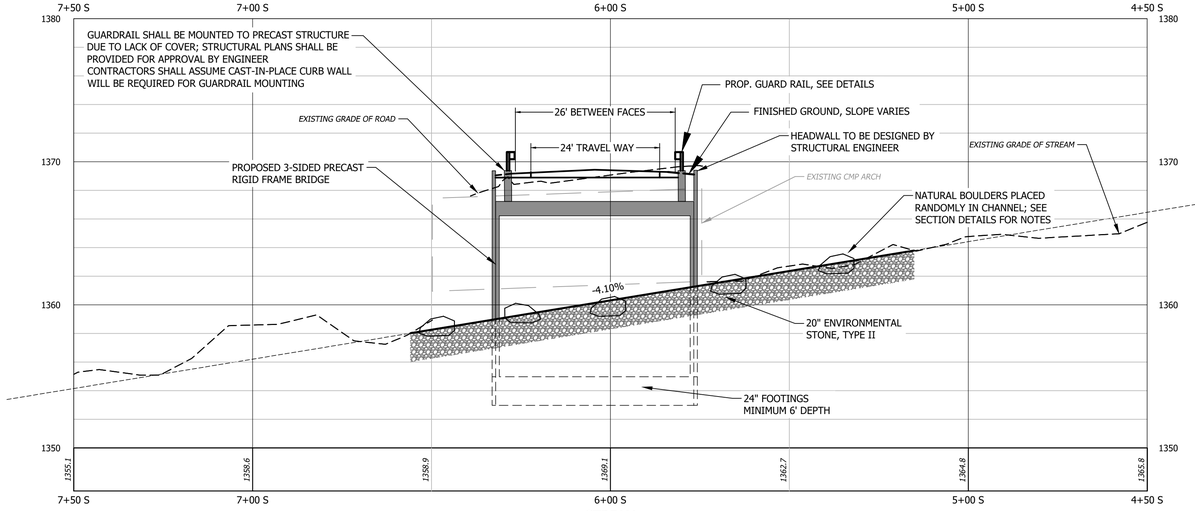




0 10 20 40 80
SCALE IN FEET



WOODCHUCK HOLLOW ROAD
STA: 0+00 TO 2+16



STREAM
STA: 4+50 TO 7+50

0 10H 20H 40H 80H
0 2.5V 5V 10V 20V
SCALE IN FEET

HALL BE MOUNTED TO PRECAST STRUCTURE OF COVER; STRUCTURAL PLANS SHALL BE

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WINOOSKI NATURAL RESOURCES CONSERVATION DISTRICT

WOODCHUCK HOLLOW ROAD
CULVERT REPLACEMENT
WASHINGTON, VT

SITE PLAN

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE: MAY 2025	PROJECT #: 230436
SURV'D BY: -	DRAWN BY: APH
CHECK'D BY: CJH	ARCHIVE #: H-___

C2.01

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SEEDING RECOMMENDATIONS

SEE ADDITIONAL PLANTING NOTES IN STREAM SECTION DETAIL

1. GRADING AND SHAPING

A. SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.

2. SEEDBED PREPARATION

A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.

B. STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE AMENDED WITH ORGANIC MATTER AND TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME THOROUGHLY INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

3. ESTABLISHING VEGETATION

A. NO FERTILIZER SHALL BE USED ON THIS PROJECT DUE TO PROXIMITY TO THE LAKE WATERS.

B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING, AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH .25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.

C. SEEDING GUIDE:

USE	SEEDING MIXTURE (SEE 3D)	SOIL TYPE			
		DROUGHTY	WELL DRAINED	MOD. WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD	FAIR
	B	POOR	GOOD	FAIR	FAIR
	C	FAIR	EXCELLENT	EXCELLENT	POOR
WATERWAYS, EMERGENCY SPILL-WAYS, AND OTHER CHANNELS WITH FLOWING WATER	A	GOOD	GOOD	GOOD	FAIR
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY USE RECREATION SITES	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	FAIR	POOR

D. SEEDING RATES:

	MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 SQ. FT.
A	TALL FESCUE	20	0.45
	CREEPING RED FESCUE	20	0.45
	REDTOP	2	0.05
	TOTAL:	42	0.95
B	TALL FESCUE	15	0.35
	CREEPING RED FESCUE	10	0.25
	CROWN VETCH **OR**	15 **OR**	0.35 **OR**
	FLATPEA	30	0.75
	TOTAL:	40 **OR** 55	0.95 **OR** 1.35
C	TALL FESCUE	20	0.45
	FLATPEA	30	0.75
	TOTAL:	50	1.20

E. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO SEPTEMBER 15. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 10 TO SEPTEMBER 1.

F. TEMPORARY SEEDING RATES:

SPECIES	POUNDS PER ACRE	POUNDS PER 1,000 SQ. FT.	REMARKS
WINTER RYE	112	2.5	BEST FOR FALL SEEDING. SEED FROM AUGUST TO SEPTEMBER 5TH FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.
OATS	80	2.0	BEST FOR SPRING SEEDING. SEED NO LATER THAN MAY 15TH FOR SUMMER PROTECTION. SEED TO A DEPTH OF 1 INCH.
ANNUAL RYEGRASS	40	1.0	GROWS QUICKLY, BUT IS OF SHORT DURATION. USE WHERE APPEARANCES ARE NOT IMPORTANT. SEED EARLY SPRING AND/OR BETWEEN AUGUST 15TH AND SEPTEMBER 15TH. COVER SEED WITH NO MORE THAN 0.25 INCH OF SOIL.
PERENNIAL RYEGRASS	30	0.7	GOOD COVER WHICH IS LONGER LASTING THAN ANNUAL RYEGRASS. SEED BETWEEN APRIL 1ST AND JUNE 1ST AND/OR BETWEEN AUGUST 15TH AND SEPTEMBER 15TH. MULCHING WILL ALLOW SEEDING THROUGHOUT THE GROWING SEASON. SEED TO A DEPTH OF APPROXIMATELY 0.5 INCH.

4. MULCH

A. HAY, STRAW, OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.

B. MULCH WILL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE BEST MANAGEMENT PRACTICE FOR MULCHING.

C. REFER TO LANDSCAPE ARCHITECTURAL DRAWINGS FOR ADDITIONAL SEEDING AND MULCH REQUIREMENTS.

5. MAINTENANCE TO ESTABLISH A STAND

A. PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.

B. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, OCCASIONAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.

WORK SCHEDULE & WINTER CONSTRUCTION NOTES

WINTER CONSTRUCTION IS NOT ANTICIPATED AT THIS TIME. WORK SHALL BE COMPLETED BETWEEN JUNE 1 AND OCTOBER 1 TO AVOID BROOK TROUT BREEDING SEASON. IF WORK IN THE STREAM IS REQUIRED OUTSIDE OF THE DEFINED DATES, MORE SUBSTANTIAL TEMPORARY MEASURES WILL BE REQUIRED. THE CONTRACTOR SHALL PROVIDE AN EROSION CONTROL AND TEMPORARY DIVERSION PLAN FOR APPROVAL BY THE ENGINEER AND OWNER PRIOR TO COMMENCING WITH WORK IN THE STREAM OUTSIDE OF THE DEFINED DATES. WINTER CONSTRUCTION FOR SPECIFIC AREAS MUST RECEIVE PRIOR APPROVAL BEFORE PROCEEDING AFTER OCTOBER 15TH, AND BEFORE MAY 1ST, WITH ANY TYPE OF EARTHWORK. SEVERE WASHOUT AND EROSION CAN OCCUR DURING THE WINTER MONTHS, IF THE GROUND IS NOT FROZEN. HEAVY DELUGES OF RAIN, AND/OR SNOW MELT DOWN WILL WASH ANY UNFROZEN MATERIAL AWAY FROM THE SITE. FOR THIS REASON, KEEP SOIL DISTURBANCE TO A MINIMUM ON ALL AREAS THAT COULD NOT BE STABILIZED BY VEGETATION AT THE END OF THE GROWING SEASON, WHICH IS EARLY OCTOBER, AND AN ABSOLUTE MINIMUM AFTER THE 15TH OF OCTOBER. ANY SOIL DISTURBANCE WHICH OCCURS BETWEEN OCTOBER 15TH AND MAY 1ST WILL BE TREATED AS "WINTER CONSTRUCTION."

a. ALL OF THE EROSION CONTROL MEASURES DESCRIBED ELSEWHERE IN THE PLANS CAN BE USED EFFECTIVELY TO PREVENT EROSION AND SEDIMENT PROBLEMS DURING RUNOFF PERIODS THAT OCCUR IN THE WINTER MONTHS. HOWEVER, THEY MUST BE MAINTAINED AT THEIR UTMOST AND CHECKED PRIOR TO ANY ANTICIPATED MELT DOWN OR PEAK RUNOFF EVENT.

b. SPECIFIC CONSIDERATION FOR ESTABLISHING EROSION CONTROL MEASURES DURING THE WINTER MONTHS MUST BE GIVEN TO THE FOLLOWING:

c. EROSION CONTROL MEASURES MUST BE ESTABLISHED PRIOR TO THE GROUND FREEZING. THE GROUND NORMALLY FREEZES DURING THE MONTH OF NOVEMBER. THEREFORE, THE EROSION CONTROL MEASURES SHOULD BE IN PLACE PRIOR TO THE FIRST OF NOVEMBER BEFORE ANY ANTICIPATED EARTH DISTURBANCE THAT IS TO OCCUR.

d. REMOVE ALL SNOW COVER FROM ANY AREA THAT IS TO BE GRADED, FERTILIZED, SEEDED AND MULCHED AND/OR STABILIZED IN ANYWAY.

e. PLAN FOR DOUBLE MANPOWER IN YOUR SCHEDULING DURING WINTER MONTHS AS ESTABLISHMENT OF EROSION CONTROLS IS MUCH MORE TIME CONSUMING.

f. WHEN SEEDING, MIX SCS MIX WITH THE SAME AMOUNT OF WINTER RYE (50-50 MIXTURE). APPLY TWICE AS MUCH SEED TO THE DISTURBED AREAS, AS SPECIFIED DURING NORMAL CONSTRUCTION IN NON-WINTER CONDITIONS (TWICE THE POUNDS PER ACRE AS ABOVE). PLAN ON RE-SEEDING IN EARLY SPRING WITH PERMANENT SEED MIXTURE.

g. INSTALL EROSION CONTROL FABRIC (WOVEN JUTE ONLY) ON ALL EARTH DISTURBED DURING WINTER CONSTRUCTION UNLESS MULCHING IS OTHERWISE APPROVED BY ONSITE ENGINEER. EROSION CONTROL FABRIC SHALL BE ANCHORED SECURELY TO UNFROZEN GROUND. WHEN MULCHING, APPLY AT LEAST 6 INCHES OF HAY, AND BE SURE TO COVER THE ENTIRE DISTURBED GROUND AREA. DO NOT CONSIDER MULCHING ALONE TO BE EFFECTIVE EROSION CONTROL. MULCHING MUST BE COUPLED WITH INTERCEPTOR DITCHES, SEDIMENT PONDS, PERIMETER DITCHES, AND STONE CHECK DAMS. INSTALL MATTING OVER ALL MULCH AND ANCHOR AS DESCRIBED ABOVE.

h. INSTALL ALL EROSION MEASURES PRIOR TO FREEZING OF THE GROUND, AS IT IS NON-EFFECTIVE WITHOUT PROPER INTERFACING WITH THE SOIL AT THE BASE. INSPECT FREQUENTLY AND REMOVE ANY COLLECTED SEDIMENT BEFORE ANY PREDICTED THAW OR RAINY PERIODS.

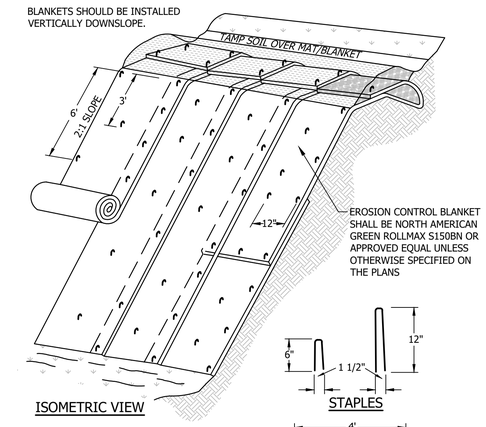
i. INSTALL SEDIMENT TRAPS, STONE CHECK DAMS, AND SEDIMENTATION BASINS PRIOR TO THE GROUND FREEZING (1 NOVEMBER). INSPECT THESE TRAPS AT LEAST WEEKLY AND MORE FREQUENTLY IF NECESSARY. INSPECT PRIOR TO ANY ANTICIPATED MELT DOWN OR RAINY PERIODS AND REMOVE ANY EXCESS SEDIMENT.

j. LEAVE ALL WINTER EROSION CONTROL MEASURES IN EFFECT THROUGH THE SPRING MONTHS, UNTIL STABILIZATION OF ALL AREAS HAS BEEN COMPLETED. ENSURE WEEKLY CHECKS AND PROPER MAINTENANCE OF ALL WINTER EROSION CONTROL MEASURES THAT HAVE BEEN ESTABLISHED.

k. ALL DISTURBED AREAS STILL OPEN OR NEWLY DISTURBED AFTER OCTOBER 15TH SHALL BE EITHER HYDROSEEDED OR SEEDED, FERTILIZED, LIMED, AND COVERED WITH AN EROSION CONTROL BLANKET (GEO-TEXTILE FABRIC, JUTE MATTING OR STRAW BLANKET).

RECOMMENDED CONSTRUCTION SEQUENCE

1. ORDER MAJOR MATERIAL COMPONENTS AND DEWATERING.
2. SUBMIT WATER DIVERSION PLAN TO PROJECT ENGINEER AND THE STATE RIVER ENGINEER FOR APPROVAL. ONCE APPROVED INSTALL WATER DIVERSION MEASURE.
3. REMOVE EXISTING STRUCTURE.
4. DIG AND INSTALL FOUNDATIONS.
5. PLACE STREAM BED STONE MATERIAL IN THE CHANNEL UNDER THE BRIDGE PRIOR TO PLACING THE PRECAST BRIDGE DECK. THIS WILL ASSIST IN SPREADING THE STONE UNDER THE BRIDGE WITH LIMITED HEAD ROOM.
6. PLACE ALL PRECAST OR CAST IN PLACE STRUCTURES.
7. BACKFILL AND BRING ALL DISTURBED AREAS TO GRADE.
8. FINISH STREAM CHANNEL FORMATION UNDERNEATH INLET AND OUTLET.
9. PLACE RIP-RAP MATERIALS AT INLET AND OUTLET.
10. REMOVE WATER DIVERSION METHOD
11. FERTILIZE, SEED AND MULCH INLET AND OUTLET SIDES.



ISOMETRIC VIEW

NOTES:

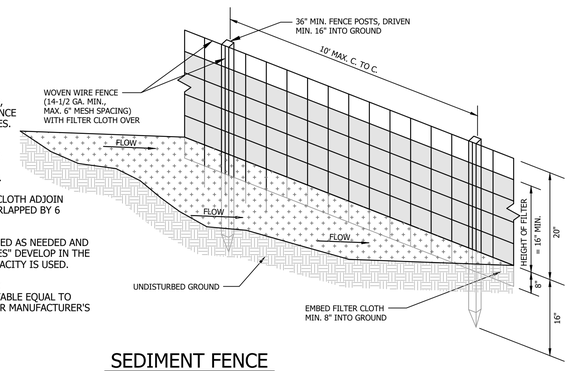
1. DIMENSION GIVEN IN THE DRAWINGS ARE EXAMPLES; DEVICE SHOULD BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
2. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
3. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
4. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

EROSION CONTROL BLANKET INSTALLATION DETAIL

NOT TO SCALE

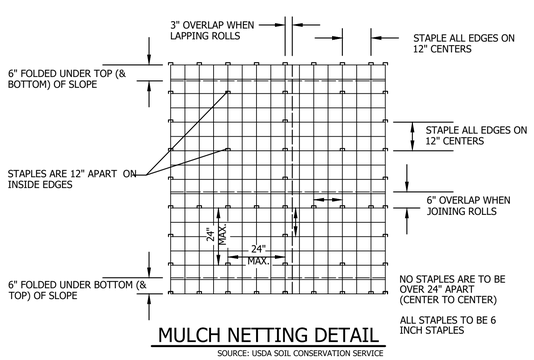
CONSTRUCTION NOTES FOR SEDIMENT FENCE

1. WOVEN WIRE FENCE, IF REQUIRED, TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP, MID SECTION, AND BOTTOM.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SEDIMENT FENCE, OR 50% OF CAPACITY IS USED.
5. 12" DIAMETER FILTREXX SILTSOXX SHALL BE CONSIDERED AN ACCEPTABLE EQUAL TO SEDIMENT FENCE IF INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.



SEDIMENT FENCE

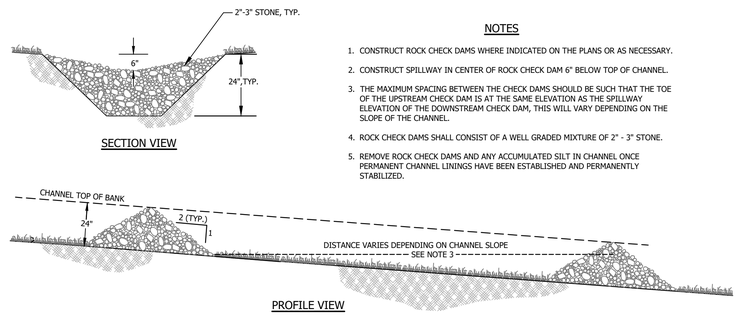
NO SCALE



MULCH NETTING DETAIL

SOURCE: USDA SOIL CONSERVATION SERVICE

NO SCALE

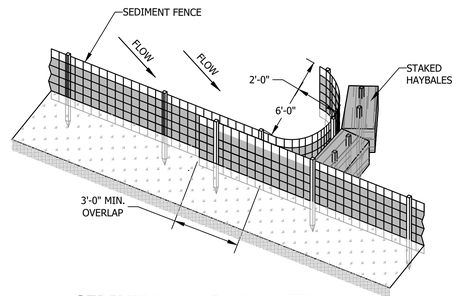


NOTES

1. CONSTRUCT ROCK CHECK DAMS WHERE INDICATED ON THE PLANS OR AS NECESSARY.
2. CONSTRUCT SPILLWAY IN CENTER OF ROCK CHECK DAM 6" BELOW TOP OF CHANNEL.
3. THE MAXIMUM SPACING BETWEEN THE CHECK DAMS SHOULD BE SUCH THAT THE TOE OF THE UPSTREAM CHECK DAM IS AT THE SAME ELEVATION AS THE SPILLWAY ELEVATION OF THE DOWNSTREAM CHECK DAM, THIS WILL VARY DEPENDING ON THE SLOPE OF THE CHANNEL.
4. ROCK CHECK DAMS SHALL CONSIST OF A WELL GRADED MIXTURE OF 2" - 3" STONE.
5. REMOVE ROCK CHECK DAMS AND ANY ACCUMULATED SILT IN CHANNEL ONCE PERMANENT CHANNEL LININGS HAVE BEEN ESTABLISHED AND PERMANENTLY STABILIZED.

ROCK CHECK DAM DETAIL

NO SCALE



SEDIMENT FENCE POCKET

NO SCALE

FOR PERMIT REVIEW AND BIDDING
NOT FOR CONSTRUCTION

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WINOOSKI NATURAL RESOURCES CONSERVATION DISTRICT
WOODCHUCK HOLLOW ROAD CULVERT REPLACEMENT
WASHINGTON, VT
EROSION CONTROL NOTES AND DETAILS

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE: APR. 2024	PROJECT #: 230436
ENGIN'D BY: -	DRAWN BY: APH
CHECK'D BY: CJH	ARCHIVE #: H-___

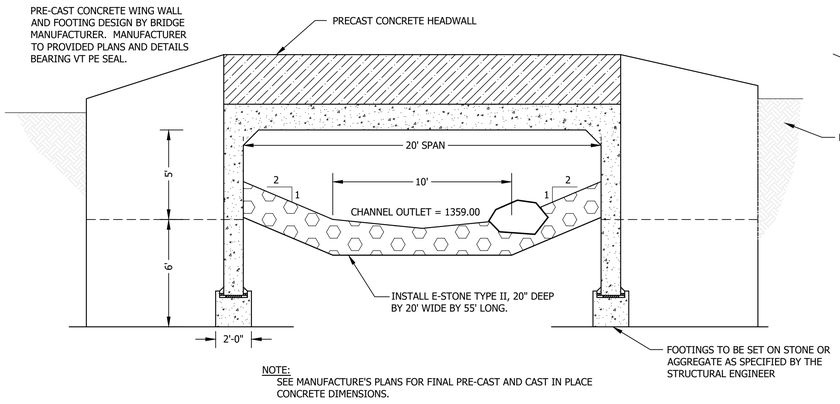
C3.01

GENERAL NOTES

1. CONTACT ENGINEER PRIOR TO CONSTRUCTION TO STAKE OUT, ESTABLISH ELEVATIONS, DISCUSS CONSTRUCTION MATERIALS AND PROCEDURES, AND ARRANGE FOR PERIODIC INSPECTIONS.
2. PERFORM ALL WORK IN THE STREAM PRIOR TO THE FIRST OF OCTOBER.
3. CONSULT WITH VERMONT STREAM CROSSING ENGINEER FOR PERMISSION TO CONSTRUCT BEFORE JUNE 1 OR AFTER OCTOBER 1 AND FOR ALL METHODS OF STREAM FLOWAGE CONTROL DURING CONSTRUCTION.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A DEWATERING AND STREAM DIVERSION PLAN TO THE PROJECT ENGINEER AND THE VERMONT RIVER ENGINEER FOR REVIEW AND APPROVAL.
5. PRIOR TO CONSTRUCTION INSTALL TEMPORARY STREAM WATER DIVERSION METHOD AS APPROVED BY THE ENGINEER.
6. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH VT AGENCY OF NATURAL RESOURCES (ANR) AND VT AGENCY OF TRANSPORTATION (VTRANS) STANDARDS.
7. CEMENT SHALL CONFORM TO AASHTO M85.
8. ALL CONCRETE TO BE 5,000 PSI HIGH PERFORMANCE CLASS AA, 28 DAY COMPRESSIVE STRENGTH = 5,000 PSI. MAXIMUM AGGREGATE SIZE TO BE ONE INCH (1"). WATER TO CEMENT RATIO 0.49.
9. ALL JOINTS TO BE IRREGULAR SHAPED ROUGH CONCRETE (NO KEYWAYS REQUIRED).
10. ALL CONCRETE SHALL BE WET CURED FOR MINIMUM OF 7 DAYS PRIOR TO ANY LOADING. NO BACK FILLING FOR 7 DAYS. DO NOT TRAVEL ON CULVERT WITH HEAVY EQUIPMENT FOR 28 DAYS.
11. ALL STEEL REINFORCING SHALL CONFORM TO GRADE 60, ASTM A615M, 60,000 PSI MINIMUM TENSILE STRENGTH. CONCRETE COVER SHALL BE 3".
12. SHOULD LEDGE BE ENCOUNTERED, DRILL AND PLACE DOWELS, 12" INTO LEDGE, AT 12" O.C.
13. CONSTRUCT WINGWALLS UPPER & LOWER SIDES AS SHOWN.
14. ALL MATERIALS AND WORKMANSHIP TO BE ACCOMPLISHED IN ACCORDANCE WITH VTRANS.
15. SIGNAGE TO BE PROVIDED FOR CONSTRUCTION AS PER TOWN REQUIREMENTS.
16. REBAR EQUIVALENT TO THAT SUPPLIED BY BARKER STEEL 1-508-413-0074. SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL.
17. FOLLOW VERMONT HANDBOOK FOR EROSION CONTROL TO PREVENT SILTATION FROM ENTERING STREAM. ALSO REFER TO C3.01 FOR OTHER EROSION CONTROL RECOMMENDATIONS.

PRECAST 3-SIDED RIGID FRAME NOTES

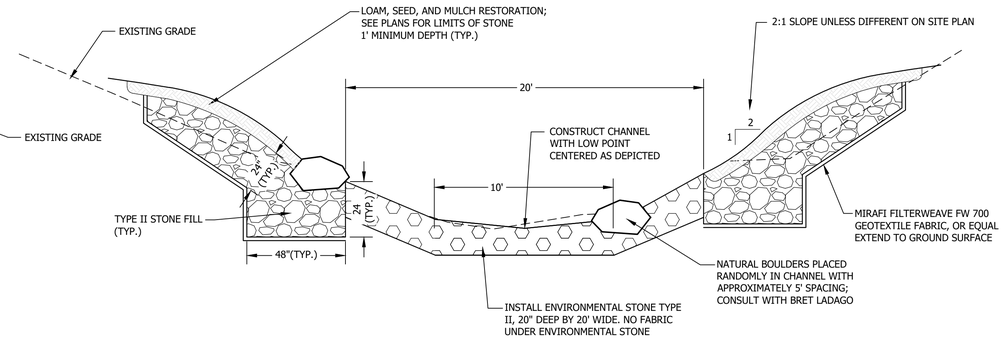
1. BRIDGE SHALL BE DESIGNED FOR A LOADING OF HL-93
2. SEAL TOP WITH AN APPROVED PREFORMED FLEXING JOINT SEALANT, AS APPROVED BY ENGINEER.
3. USE PRECAST RIGID FRAME BRIDGE AND WINGWALLS.. SUBMIT ENGINEER STAMPED DRAWINGS FOR APPROVAL.
4. GEOTECHNICAL INVESTIGATION WAS COMPLETED ON JANUARY 19, 2024. LEDGE DEPTHS ARE RECORDED ON SHEET C1.01.
5. FOOTING WIDTH AS SHOWN IS PRELIMINARY, AND IS DEPENDENT UPON SOILS ENCOUNTERED DURING CONSTRUCTION. FINAL WIDTH TO BE DETERMINED BY THE ENGINEER ONCE FOUNDATION SOILS ARE KNOWN.



NOTE:
SEE MANUFACTURE'S PLANS FOR FINAL PRE-CAST AND CAST IN PLACE CONCRETE DIMENSIONS.

20 FOOT SPAN RIGID FRAME BRIDGE SECTION

(MICHIE CORP. PRECAST RIGID FRAME BRIDGE OR APPROVED EQUIVALENT)
SCALE: 1" = 4'



NOTES:
1. CONSULT WITH BRET LADAGO, FISH & WILDLIFE DEPARTMENT, REGARDING PLACEMENT OF BOULDERS. 802-431-7550, bret.ladago@ vermont.gov; NOTIFY FISH & WILDLIFE DEPARTMENT IN ADVANCE OF STREAM BED CONSTRUCTION SO STAFF CAN BE PRESENT ON SITE TO OBSERVE CONSTRUCTION.
2. BOULDERS SHALL BE NATIVE, NATURAL UNSPLIT ROCK. COORDINATE WITH OWNER TO SOURCE MATERIALS.

STREAM BED SECTION

NTS

STONE SPECIFICATIONS

706.04 STONE FOR STONE FILL

STONE FOR STONE FILL SHALL BE APPROVED, HARD, BLASTED, ANGULAR ROCK OTHER THAN SERPENTINE ROCK CONTAINING THE FIBROUS VARIETY CHRYSOTILE (ASBESTOS). THE LEAST DIMENSION OF THE STONE SHALL BE GREATER THAN 33 PERCENT OF THE LONGEST DIMENSION. THE STONE FILL SHALL BE REASONABLY WELL GRADED FROM THE SMALLEST TO THE MAXIMUM SIZE STONE SPECIFIED SO AS TO FORM A COMPACT MASS WHEN IN PLACE.

(a) TYPE I. THE LONGEST DIMENSION OF THE STONE SHALL VARY FROM 25 TO 300 MM (1 TO 12 INCHES), AND AT LEAST 50 PERCENT OF THE VOLUME OF THE STONE IN PLACE SHALL HAVE A LEAST DIMENSION OF 100 MM (4 INCHES).

(b) TYPE II. THE LONGEST DIMENSION OF THE STONE SHALL VARY FROM 50 TO 900 MM (2 TO 36 INCHES), AND AT LEAST 50 PERCENT OF THE VOLUME OF THE STONE IN PLACE SHALL HAVE A LEAST DIMENSION OF 300 MM (12 INCHES).

(c) TYPE III. THE LONGEST DIMENSION OF THE STONE SHALL VARY FROM 75 TO 1200 MM (3 TO 48 INCHES), AND AT LEAST 50 PERCENT OF THE VOLUME OF THE STONE IN PLACE SHALL HAVE A LEAST DIMENSION OF 400 MM (16 INCHES).

(d) TYPE IV. THE LONGEST DIMENSION OF THE STONE SHALL VARY FROM 75 TO 1500 MM (3 TO 60 INCHES), AND AT LEAST 50 PERCENT OF THE VOLUME OF THE STONE IN PLACE SHALL HAVE A LEAST DIMENSION OF 500 MM (20 INCHES).

ENVIRONMENTAL STONE (E-STONE)

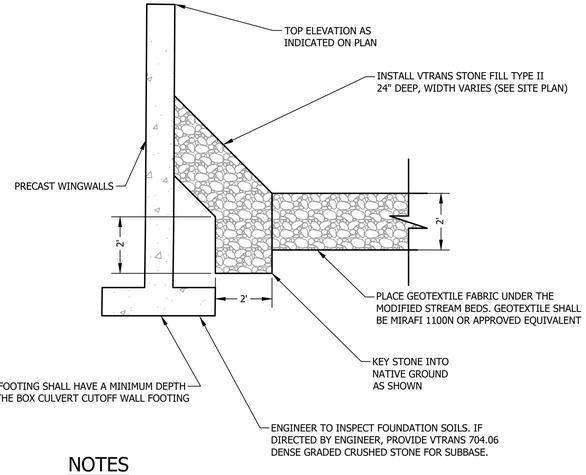
E-STONE FILL SHALL BE HARD, BLASTED, ANGULAR ROCK OTHER THAN SERPENTINE ROCK CONTAINING THE FIBROUS VARIETY CHRYSOTILE (ASBESTOS). E-STONE FILL MATERIAL OF THE TYPE SPECIFIED SHALL BE DEFINED AS FOLLOWS:

(a) E-STONE, TYPE I. THE LONGEST DIMENSION OF THE STONE SHALL BE AT LEAST 18 INCHES, AND AT LEAST 50% OF THE VOLUME OF THE STONE IN PLACE SHALL HAVE A LEAST DIMENSION OF 12 INCHES, AND AT LEAST 25% OF THE PARTICLES SHALL HAVE A MAXIMUM DIMENSION OF 2 INCHES AND BE WELL GRADED MATERIAL.

(b) E-STONE, TYPE II. THE LONGEST DIMENSION OF THE STONE SHALL BE AT LEAST 24 INCHES, AND AT LEAST 50% OF THE VOLUME OF THE STONE IN PLACE SHALL HAVE A LEAST DIMENSION OF 18 INCHES, AND AT LEAST 25% OF THE PARTICLES SHALL HAVE A MAXIMUM DIMENSION OF 2 INCHES AND BE WELL GRADED MATERIAL.

(c) E-STONE, TYPE III. THE LONGEST DIMENSION OF THE STONE SHALL BE AT LEAST 36 INCHES, AND AT LEAST 50% OF THE VOLUME OF THE STONE IN PLACE SHALL HAVE A LEAST DIMENSION OF 24 INCHES, AND AT LEAST 25% OF THE PARTICLES SHALL HAVE A MAXIMUM DIMENSION OF 2 INCHES AND BE WELL GRADED MATERIAL.

(d) E-STONE, TYPE IV. THE LONGEST DIMENSION OF THE STONE SHALL BE AT LEAST 48 INCHES, AND AT LEAST 50% OF THE VOLUME OF THE STONE IN PLACE SHALL HAVE A LEAST DIMENSION OF 36 INCHES, AND AT LEAST

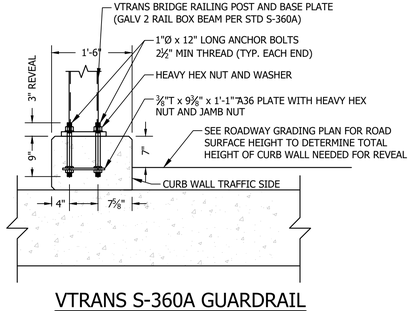


NOTES

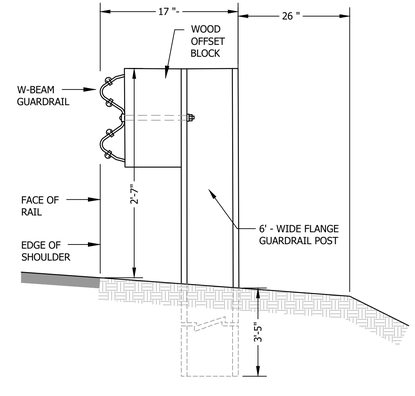
1. SUBMIT ENGINEER STAMPED SHOP DRAWINGS OF WINGWALL INCLUDING REINFORCEMENT BAR SCHEDULE TO ENGINEER FOR APPROVAL.

WINGWALL & SLOPE RIP RAP TYPICAL DETAIL

NOT TO SCALE

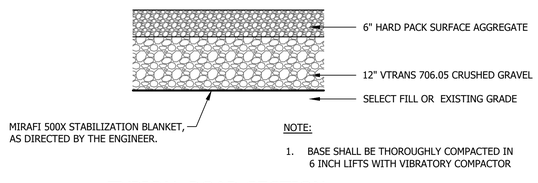


VTRANS S-360A GUARDRAIL ANCHORAGE DETAIL



BEAM GUARDRAIL / STEEL POSTS

PER VTRANS STANDARD DETAILS
621.07A, 621.07B, G-1D



NOTE:
1. BASE SHALL BE THOROUGHLY COMPACTED IN 6 INCH LIFTS WITH VIBRATORY COMPACTOR

TYPICAL ROAD SECTION

NOT TO SCALE

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C3.02