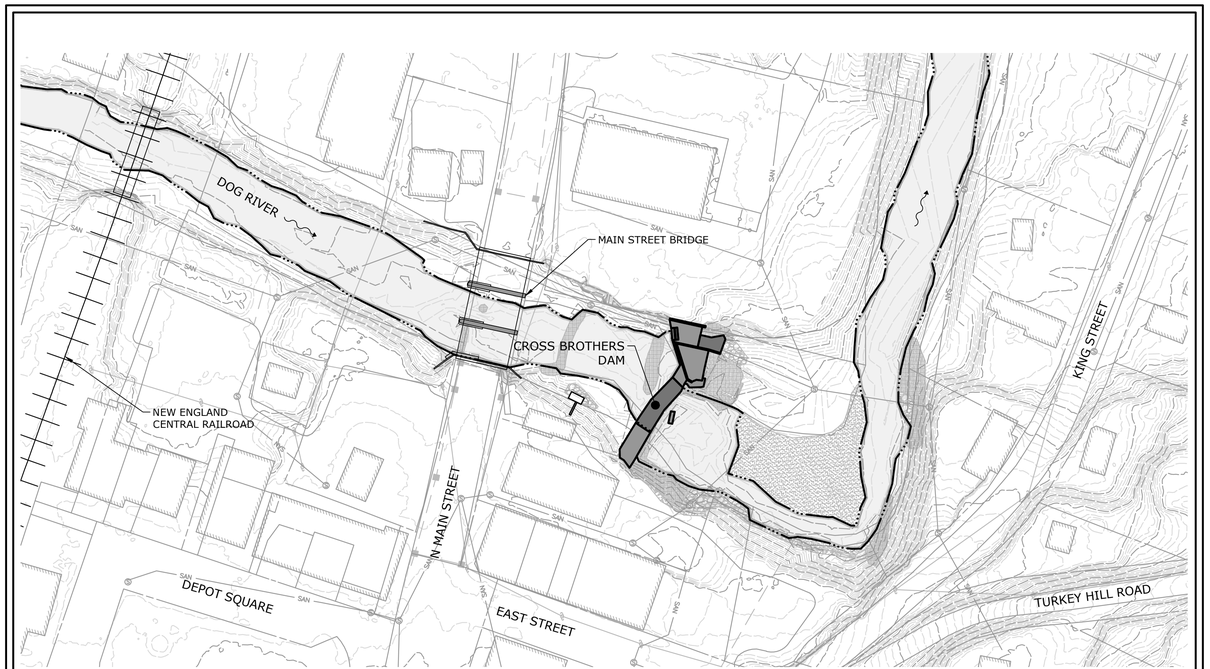
CROSS BROTHERS DAM REMOVAL

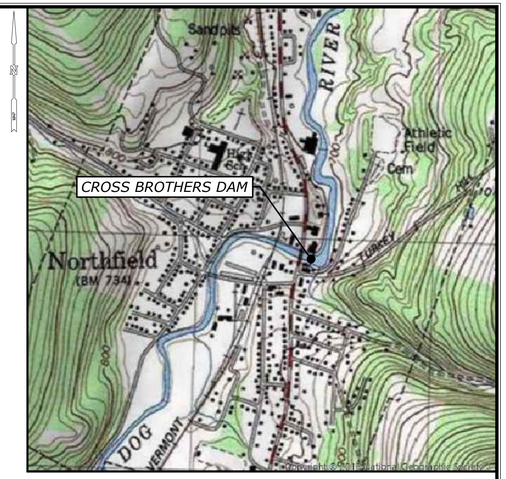
DOG RIVER
NORTHFIELD, VT

FINAL DESIGN
FEBRUARY 27, 2025



PROJECT SITE VICINITY MAP:

0' 35' 70'
0 1/2" 1"
SCALE 1" = 60'



LOCATION MAP:

0' 500' 1000'
0 1/2" 1"
SCALE 1" = 60'

PREPARED FOR:

TOWN OF NORTHFIELD
51 SOUTH MAIN STREET
NORTHFIELD, VERMONT 05663

VERMONT NATURAL RESOURCES COUNCIL
11 BALDWIN STREET
MONTPELIER, VT 05602

VNRC
VERMONT NATURAL RESOURCES COUNCIL

PREPARED BY:

SLR

1 SOUTH MAIN STREET
WATERBURY, VT 05676
802.882.8335
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LIST OF DRAWINGS

NO.	NAME	TITLE
1	--	TITLE SHEET
2 - 3	EX-1 - EX-2	SITE PLAN - EXISTING CONDITIONS
4	SP-1	SITE PLAN - PROPOSED LAYOUT
5	SP-2	SITE PLAN - GRADING
6	SP-3	SITE PLAN - RESTORATION
7	PR-1	DOG RIVER PROFILE
8	ST-1	STRUCTURE - SEWER PROFILE
9 - 10	XS-1 - XS-2	RIVER CROSS SECTIONS
11	ST-2	STRUCTURE - REMOVALS
12	CON-1	SITE PLAN - CONSTRUCTION
13 - 14	DE-1 - DE-2	SITE DETAILS

811
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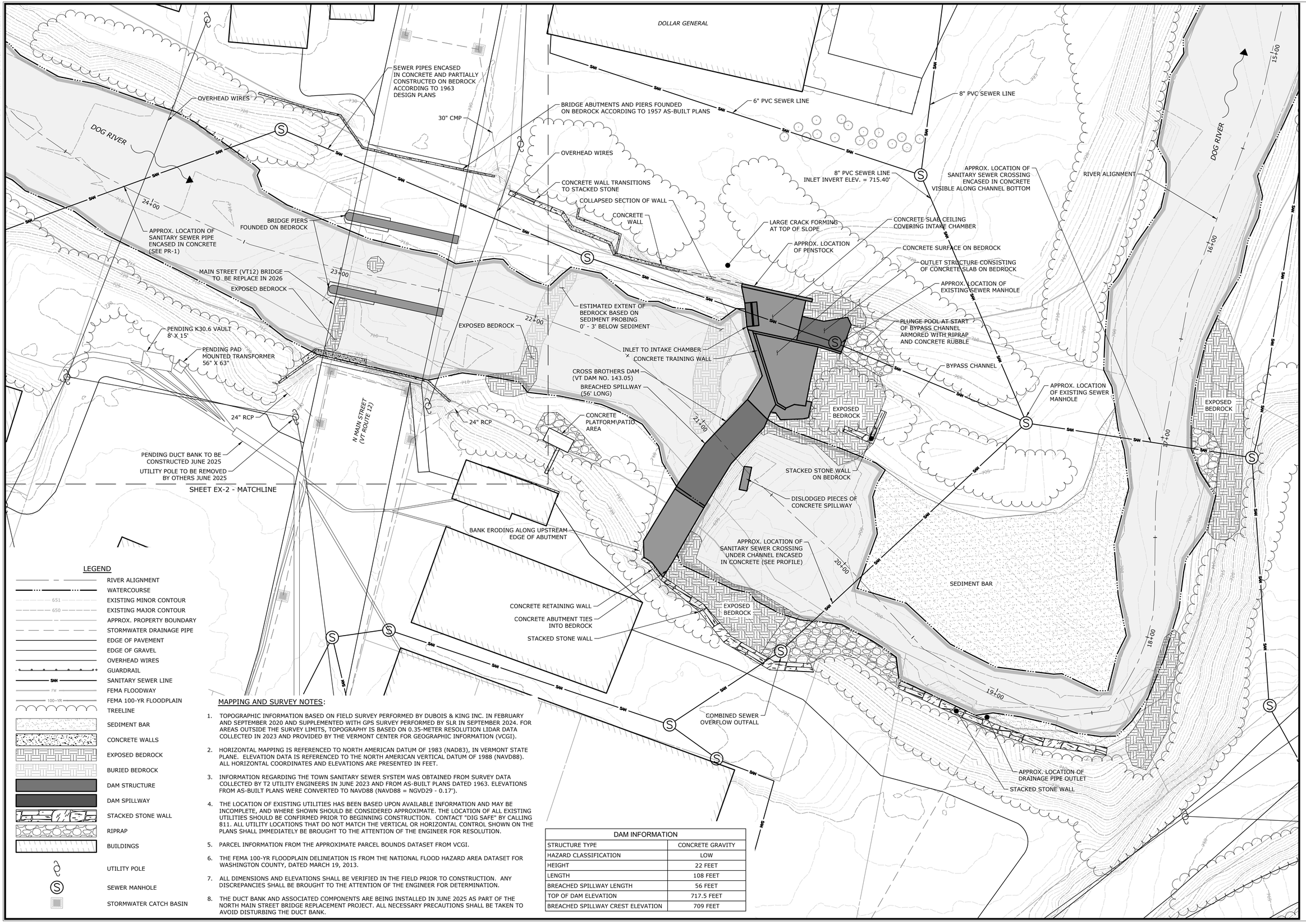

LEGEND

- RIVER ALIGNMENT
- WATERCOURSE
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- APPROX. PROPERTY BOUNDARY
- STORMWATER DRAINAGE PIPE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- OVERHEAD WIRES
- GUARDRAIL
- SANITARY SEWER LINE
- FEMA FLOODWAY
- FEMA 100-YR FLOODPLAIN
- TREELINE
- SEDIMENT BAR
- CONCRETE WALLS
- EXPOSED BEDROCK
- BURIED BEDROCK
- DAM STRUCTURE
- DAM SPILLWAY
- STACKED STONE WALL
- RIPRAP
- BUILDINGS
- UTILITY POLE
- SEWER MANHOLE
- STORMWATER CATCH BASIN

MAPPING AND SURVEY NOTES:

1. TOPOGRAPHIC INFORMATION BASED ON FIELD SURVEY PERFORMED BY DUBOIS & KING INC. IN FEBRUARY AND SEPTEMBER 2020 AND SUPPLEMENTED WITH GPS SURVEY PERFORMED BY SLR IN SEPTEMBER 2024. FOR AREAS OUTSIDE THE SURVEY LIMITS, TOPOGRAPHY IS BASED ON 0.35-METER RESOLUTION LIDAR DATA COLLECTED IN 2023 AND PROVIDED BY THE VERMONT CENTER FOR GEOGRAPHIC INFORMATION (VCGI).
2. HORIZONTAL MAPPING IS REFERENCED TO NORTH AMERICAN DATUM OF 1983 (NAD83), IN VERMONT STATE PLANE. ELEVATION DATA IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). ALL HORIZONTAL COORDINATES AND ELEVATIONS ARE PRESENTED IN FEET.
3. INFORMATION REGARDING THE TOWN SANITARY SEWER SYSTEM WAS OBTAINED FROM SURVEY DATA COLLECTED BY T2 UTILITY ENGINEERS IN JUNE 2023 AND FROM AS-BUILT PLANS DATED 1963. ELEVATIONS FROM AS-BUILT PLANS WERE CONVERTED TO NAVD88 (NAVD88 = NGVD29 - 0.17').
4. THE LOCATION OF EXISTING UTILITIES HAS BEEN BASED UPON AVAILABLE INFORMATION AND MAY BE INCOMPLETE, AND WHERE SHOWN SHOULD BE CONSIDERED APPROXIMATE. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE CONFIRMED PRIOR TO BEGINNING CONSTRUCTION. CONTACT "DIG SAFE" BY CALLING 811. ALL UTILITY LOCATIONS THAT DO NOT MATCH THE VERTICAL OR HORIZONTAL CONTROL SHOWN ON THE PLANS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION.
5. PARCEL INFORMATION FROM THE APPROXIMATE PARCEL BOUNDS DATASET FROM VCGI.
6. THE FEMA 100-YR FLOODPLAIN DELINEATION IS FROM THE NATIONAL FLOOD HAZARD AREA DATASET FOR WASHINGTON COUNTY, DATED MARCH 19, 2013.
7. ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR DETERMINATION.
8. THE DUCT BANK AND ASSOCIATED COMPONENTS ARE BEING INSTALLED IN JUNE 2025 AS PART OF THE NORTH MAIN STREET BRIDGE REPLACEMENT PROJECT. ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO AVOID DISTURBING THE DUCT BANK.

DAM INFORMATION	
STRUCTURE TYPE	CONCRETE GRAVITY
HAZARD CLASSIFICATION	LOW
HEIGHT	22 FEET
LENGTH	108 FEET
BREACHED SPILLWAY LENGTH	56 FEET
TOP OF DAM ELEVATION	717.5 FEET
BREACHED SPILLWAY CREST ELEVATION	709 FEET

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WATERBURY, VT 05676
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DESCRIPTION	DATE	BY

SITE PLAN - EXISTING CONDITIONS

CROSS BROTHERS DAM REMOVAL

DOG RIVER
NORTHFIELD, VT

EE	EE	RS
DESIGNED	DRAWN	CHECKED

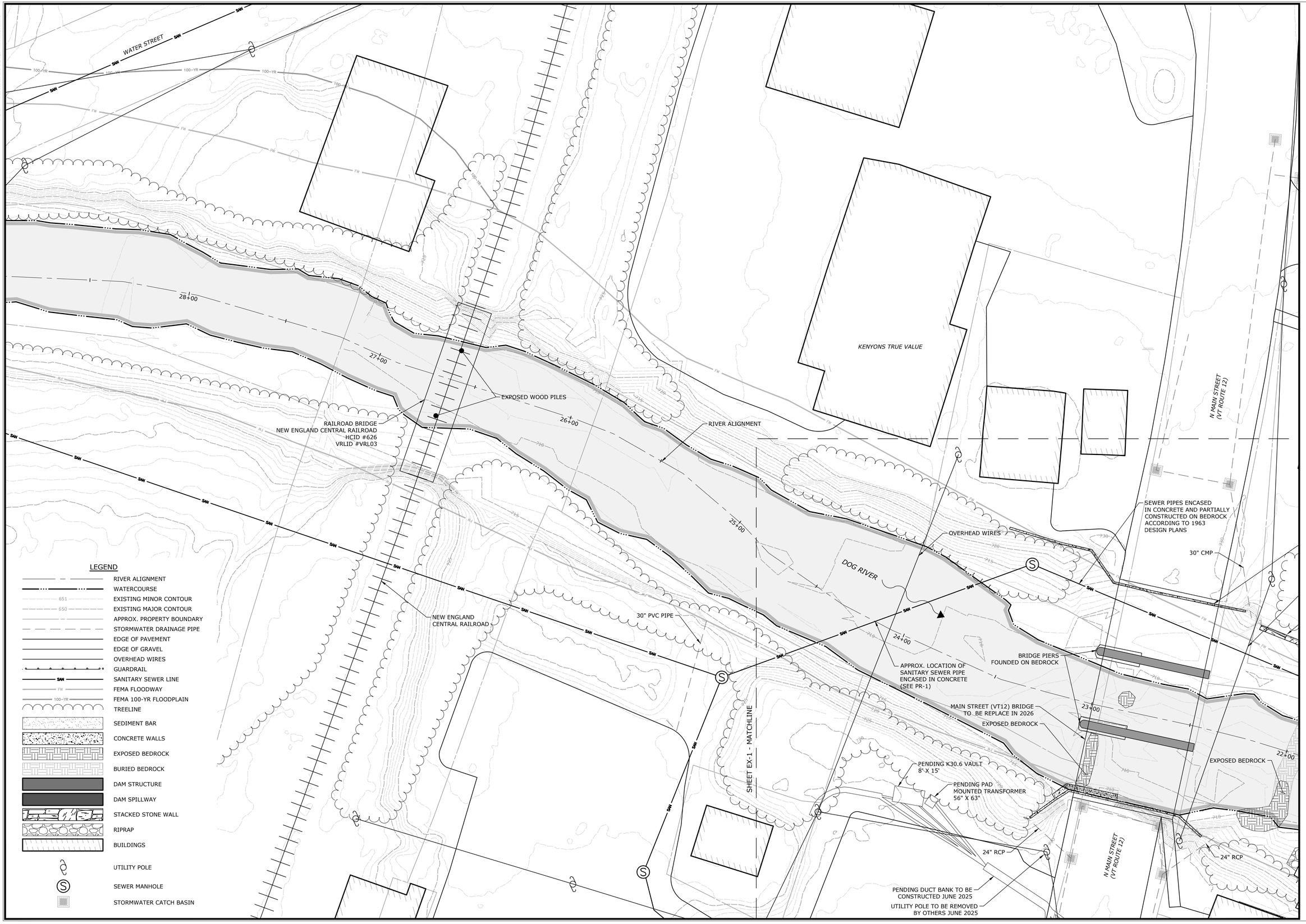
1"=20'
SCALE

FEBRUARY 27, 2025
DATE

146.300263.00001
PROJECT NO.

2 OF 14
SHEET NO.

EX-1
SHEET NAME



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SITE PLAN - EXISTING CONDITIONS

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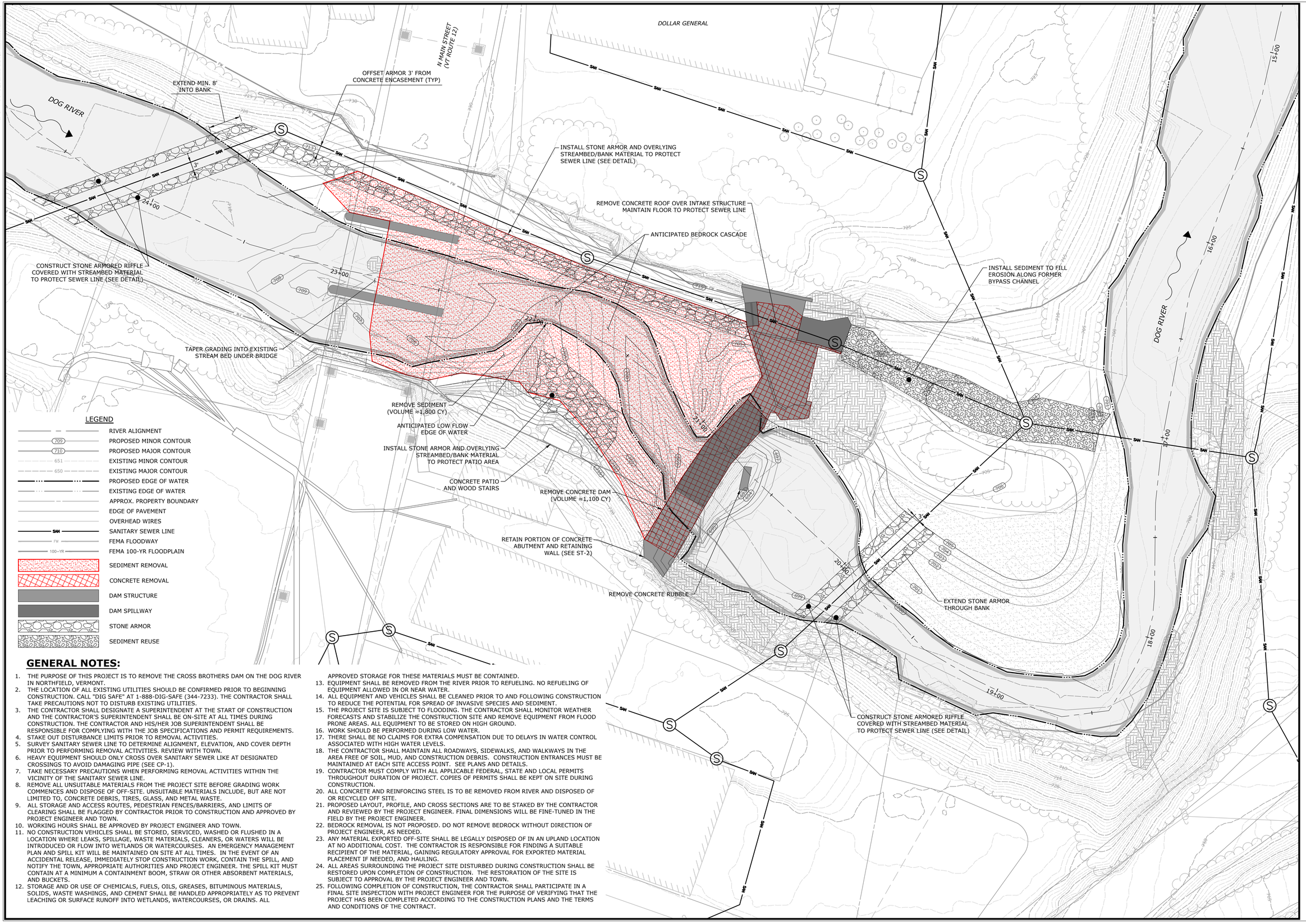
PROJECT NO.

3 OF 14
SHEET NO.

EX-2
SHEET NAME



LEGEND

- RIVER ALIGNMENT
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED EDGE OF WATER
- EXISTING EDGE OF WATER
- APPROX. PROPERTY BOUNDARY
- EDGE OF PAVEMENT
- OVERHEAD WIRES
- SANITARY SEWER LINE
- FEMA FLOODWAY
- FEMA 100-YR FLOODPLAIN
- SEDIMENT REMOVAL
- CONCRETE REMOVAL
- DAM STRUCTURE
- DAM SPILLWAY
- STONE ARMOR
- SEDIMENT REUSE

GENERAL NOTES:

1. THE PURPOSE OF THIS PROJECT IS TO REMOVE THE CROSS BROTHERS DAM ON THE DOG RIVER IN NORTHFIELD, VERMONT.
2. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE CONFIRMED PRIOR TO BEGINNING CONSTRUCTION. CALL "DIG SAFE" AT 1-888-DIG-SAFE (344-7233). THE CONTRACTOR SHALL TAKE PRECAUTIONS NOT TO DISTURB EXISTING UTILITIES.
3. THE CONTRACTOR SHALL DESIGNATE A SUPERINTENDENT AT THE START OF CONSTRUCTION AND THE CONTRACTOR'S SUPERINTENDENT SHALL BE ON-SITE AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR AND HIS/HER JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR COMPLYING WITH THE JOB SPECIFICATIONS AND PERMIT REQUIREMENTS.
4. STAKE OUT DISTURBANCE LIMITS PRIOR TO REMOVAL ACTIVITIES.
5. SURVEY SANITARY SEWER LINE TO DETERMINE ALIGNMENT, ELEVATION, AND COVER DEPTH PRIOR TO PERFORMING REMOVAL ACTIVITIES. REVIEW WITH TOWN.
6. HEAVY EQUIPMENT SHOULD ONLY CROSS OVER SANITARY SEWER LIKE AT DESIGNATED CROSSINGS TO AVOID DAMAGING PIPE (SEE CP-1).
7. TAKE NECESSARY PRECAUTIONS WHEN PERFORMING REMOVAL ACTIVITIES WITHIN THE VICINITY OF THE SANITARY SEWER LINE.
8. REMOVE ALL UNSUITABLE MATERIALS FROM THE PROJECT SITE BEFORE GRADING WORK COMMENCES AND DISPOSE OF OFF-SITE. UNSUITABLE MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, CONCRETE DEBRIS, TIRES, GLASS, AND METAL WASTE.
9. ALL STORAGE AND ACCESS ROUTES, PEDESTRIAN FENCES/BARRIERS, AND LIMITS OF CLEARING SHALL BE FLAGGED BY CONTRACTOR PRIOR TO CONSTRUCTION AND APPROVED BY PROJECT ENGINEER AND TOWN.
10. WORKING HOURS SHALL BE APPROVED BY PROJECT ENGINEER AND TOWN.
11. NO CONSTRUCTION VEHICLES SHALL BE STORED, SERVICED, WASHED OR FLUSHED IN A LOCATION WHERE LEAKS, SPILLAGE, WASTE MATERIALS, CLEANERS, OR WATERS WILL BE INTRODUCED OR FLOW INTO WETLANDS OR WATERCOURSES. AN EMERGENCY MANAGEMENT PLAN AND SPILL KIT WILL BE MAINTAINED ON SITE AT ALL TIMES. IN THE EVENT OF AN ACCIDENTAL RELEASE, IMMEDIATELY STOP CONSTRUCTION WORK, CONTAIN THE SPILL, AND NOTIFY THE TOWN, APPROPRIATE AUTHORITIES AND PROJECT ENGINEER. THE SPILL KIT MUST CONTAIN AT A MINIMUM A CONTAINMENT BOOM, STRAW OR OTHER ABSORBENT MATERIALS, AND BUCKETS.
12. STORAGE AND OR USE OF CHEMICALS, FUELS, OILS, GREASES, BITUMINOUS MATERIALS, SOLIDS, WASTE WASHINGS, AND CEMENT SHALL BE HANDLED APPROPRIATELY AS TO PREVENT LEACHING OR SURFACE RUNOFF INTO WETLANDS, WATERCOURSES, OR DRAINS. ALL APPROVED STORAGE FOR THESE MATERIALS MUST BE CONTAINED.
13. EQUIPMENT SHALL BE REMOVED FROM THE RIVER PRIOR TO REFUELING. NO REFUELING OF EQUIPMENT ALLOWED IN OR NEAR WATER.
14. ALL EQUIPMENT AND VEHICLES SHALL BE CLEANED PRIOR TO AND FOLLOWING CONSTRUCTION TO REDUCE THE POTENTIAL FOR SPREAD OF INVASIVE SPECIES AND SEDIMENT.
15. THE PROJECT SITE IS SUBJECT TO FLOODING. THE CONTRACTOR SHALL MONITOR WEATHER FORECASTS AND STABILIZE THE CONSTRUCTION SITE AND REMOVE EQUIPMENT FROM FLOOD PRONE AREAS. ALL EQUIPMENT TO BE STORED ON HIGH GROUND.
16. WORK SHOULD BE PERFORMED DURING LOW WATER.
17. THERE SHALL BE NO CLAIMS FOR EXTRA COMPENSATION DUE TO DELAYS IN WATER CONTROL ASSOCIATED WITH HIGH WATER LEVELS.
18. THE CONTRACTOR SHALL MAINTAIN ALL ROADWAYS, SIDEWALKS, AND WALKWAYS IN THE AREA FREE OF SOIL, MUD, AND CONSTRUCTION DEBRIS. CONSTRUCTION ENTRANCES MUST BE MAINTAINED AT EACH SITE ACCESS POINT. SEE PLANS AND DETAILS.
19. CONTRACTOR MUST COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL PERMITS THROUGHOUT DURATION OF PROJECT. COPIES OF PERMITS SHALL BE KEPT ON SITE DURING CONSTRUCTION.
20. ALL CONCRETE AND REINFORCING STEEL IS TO BE REMOVED FROM RIVER AND DISPOSED OF OR RECYCLED OFF SITE.
21. PROPOSED LAYOUT, PROFILE, AND CROSS SECTIONS ARE TO BE STAKED BY THE CONTRACTOR AND REVIEWED BY THE PROJECT ENGINEER. FINAL DIMENSIONS WILL BE FINE-TUNED IN THE FIELD BY THE PROJECT ENGINEER.
22. BEDROCK REMOVAL IS NOT PROPOSED. DO NOT REMOVE BEDROCK WITHOUT DIRECTION OF PROJECT ENGINEER, AS NEEDED.
23. ANY MATERIAL EXPORTED OFF-SITE SHALL BE LEGALLY DISPOSED OF IN AN UPLAND LOCATION AT NO ADDITIONAL COST. THE CONTRACTOR IS RESPONSIBLE FOR FINDING A SUITABLE RECIPIENT OF THE MATERIAL, GAINING REGULATORY APPROVAL FOR EXPORTED MATERIAL PLACEMENT IF NEEDED, AND HAULING.
24. ALL AREAS SURROUNDING THE PROJECT SITE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED UPON COMPLETION OF CONSTRUCTION. THE RESTORATION OF THE SITE IS SUBJECT TO APPROVAL BY THE PROJECT ENGINEER AND TOWN.
25. FOLLOWING COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL PARTICIPATE IN A FINAL SITE INSPECTION WITH PROJECT ENGINEER FOR THE PURPOSE OF VERIFYING THAT THE PROJECT HAS BEEN COMPLETED ACCORDING TO THE CONSTRUCTION PLANS AND THE TERMS AND CONDITIONS OF THE CONTRACT.

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DESCRIPTION	DATE	BY

SITE PLAN - PROPOSED LAYOUT

CROSS BROTHERS DAM REMOVAL

DOG RIVER
NORTHFIELD, VT

EE	EE	RS
DESIGNED	DRAWN	CHECKED

1"=20'
SCALE

FEBRUARY 27, 2025
DATE

146.300263.00001
PROJECT NO.

4 OF 14
SHEET NO.

SP-1
SHEET NAME

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DESCRIPTION | DATE | BY

SITE PLAN - GRADING

CROSS BROTHERS DAM REMOVAL

DOG RIVER
NORTHFIELD, VT

EE	EE	RS
DESIGNED	DRAWN	CHECKED

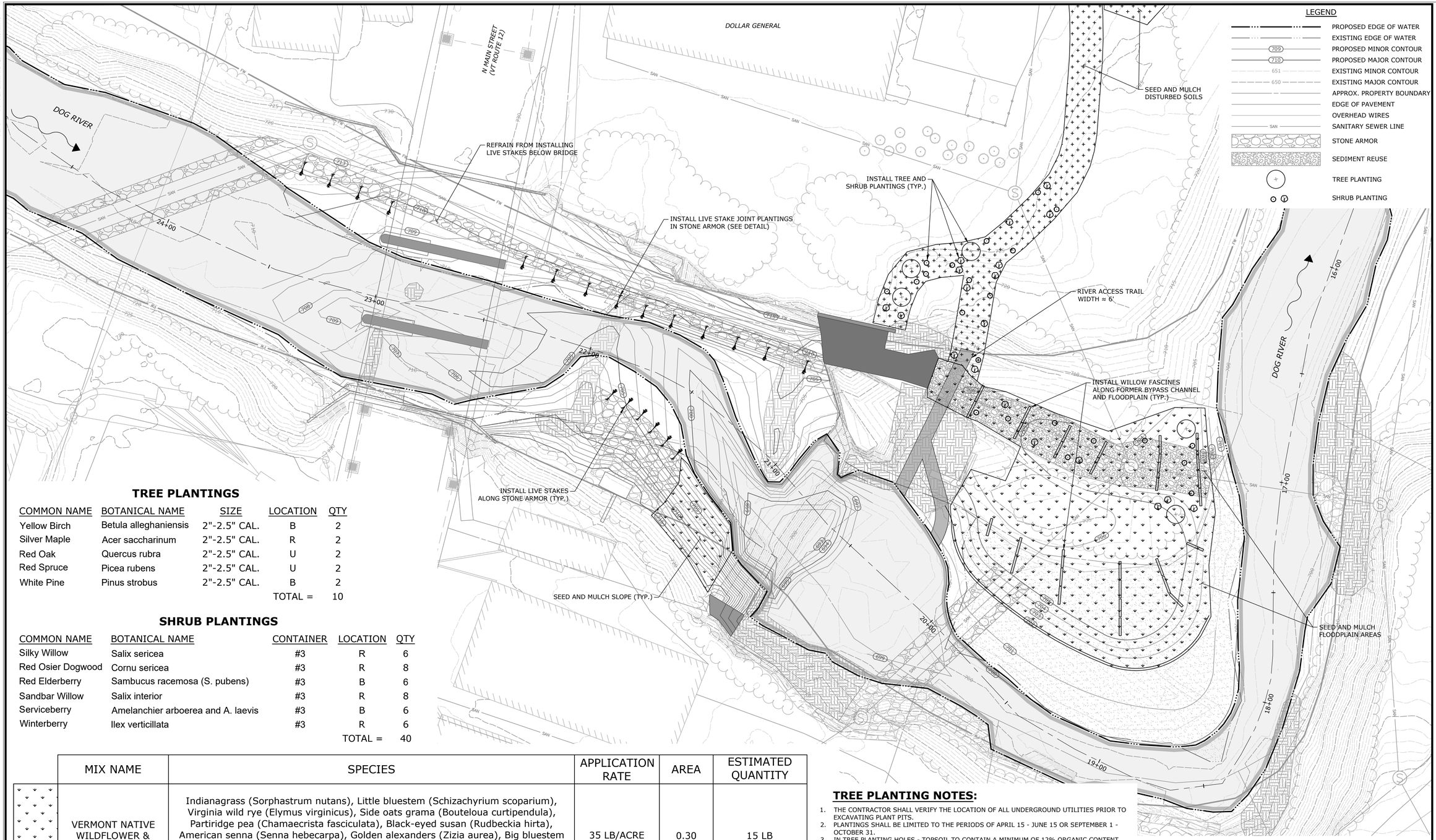
SCALE: 1"=20'

DATE: FEBRUARY 27, 2025

PROJECT NO.: 146.300263.00001

SHEET NO.: 5 OF 14

SHEET NAME: SP-2



TREE PLANTINGS

COMMON NAME	BOTANICAL NAME	SIZE	LOCATION	QTY
Yellow Birch	Betula alleghaniensis	2"-2.5" CAL.	B	2
Silver Maple	Acer saccharinum	2"-2.5" CAL.	R	2
Red Oak	Quercus rubra	2"-2.5" CAL.	U	2
Red Spruce	Picea rubens	2"-2.5" CAL.	U	2
White Pine	Pinus strobus	2"-2.5" CAL.	B	2
			TOTAL =	10

SHRUB PLANTINGS

COMMON NAME	BOTANICAL NAME	CONTAINER	LOCATION	QTY
Silky Willow	Salix sericea	#3	R	6
Red Osier Dogwood	Cornu sericea	#3	R	8
Red Elderberry	Sambucus racemosa (S. pubens)	#3	B	6
Sandbar Willow	Salix interior	#3	R	8
Serviceberry	Amelanchier arboerea and A. laevis	#3	B	6
Winterberry	Ilex verticillata	#3	R	6
			TOTAL =	40

	MIX NAME	SPECIES	APPLICATION RATE	AREA	ESTIMATED QUANTITY
	VERMONT NATIVE WILDFLOWER & GRASS MIX	Indianagrass (Sorphastrum nutans), Little bluestem (Schizachyrium scoparium), Virginia wild rye (Elymus virginicus), Side oats grama (Bouteloua curtipendula), Partiridge pea (Chamaecrista fasciculata), Black-eyed susan (Rudbeckia hirta), American senna (Senna hebecarpa), Golden alexanders (Zizia aurea), Big bluestem (Andropogon gerardii), Smooth ox-eye (Heliopsis helianthoides), Maryland senna (Senna marilandica), Whorled rosinweed (Silphium trifoliatum), Narrow-leaved goldenrod (Euthamia graminifolia)	35 LB/ACRE	0.30	15 LB
	NEW ENGLAND ROADSIDE MATRIX UPLAND SEED MIX	Virginia Wild Rye (Elymus virginicus), Little Bluestem (Schizachyrium scoparium), Red Fescue (Festuca rubra), Big Bluestem (Andropogon gerardii), Indian Grass (Sorghastrum nutans), Switch Grass (Panicum virgatum), Partridge Pea (Chamaecrista fasciculata), Butterfly Milkweed (Asclepias tuberosa), Panicledleaf Tick Trefoil (Desmodium paniculatum), Beard Tongue (Penstemon digitalis), Black Eyed Susan (Rudbeckia hirta), Hollow-Stem Joe Pye Weed (Eupatorium fistulosum/Eutrochium fistulosum), Grey Dogwood (Cornus racemosa), Silky Dogwood (Cornus amomum), Staghorn Sumac (Rhus typhina)	35 LB/ACRE	0.15	5 LB

TREE PLANTING NOTES:

1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATING PLANT PITS.
2. PLANTINGS SHALL BE LIMITED TO THE PERIODS OF APRIL 15 - JUNE 15 OR SEPTEMBER 1 - OCTOBER 31.
3. IN TREE PLANTING HOLES - TOPSOIL TO CONTAIN A MINIMUM OF 12% ORGANIC CONTENT (BY WEIGHT), AMEND SOIL WITH ORGANIC MATTER (LEAF COMPOST).
4. THE LANDSCAPE CONTRACTOR SHALL PROVIDE A 4" MIN. DEPTH OF SHREDDED MULCH EXTENDING 1 FEET BEYOND PLANTING HOLE.
5. INSTALL ANTI-HERBIVORY DEVICE AROUND ALL PLANTED TREES.
6. QUANTITY AND PLACEMENT OF PLANTS ARE APPROXIMATE AND SHOULD BE ADJUSTED IN THE FIELD TO AVOID IMPACT TO EXISTING WOODY SHRUBS AND SMALL TREES ON THE SITE.
7. WHERE A SIZE RANGE IS SPECIFIED AT LEAST 50% OF PLANTS PROVIDED SHALL BE OF THE LARGER SIZE.
8. MAINTENANCE SHALL INCLUDE WATERING, MULCHING, REPLACEMENT OF SICK OR DEAD PLANTS, AND ALL OTHER CARE NEEDED FOR PROPER GROWTH OF THE PLANTS.
9. WATER PLANTS SEVERAL TIMES A WEEK FOR THE FIRST FEW WEEKS IF NO SUBSTANTIAL RAIN FALLS. ALSO WATER DURING DRY SPELLS FOR THE FIRST SUMMER.
10. ONE YEAR FROM THE DATE OF PLANTING, EVALUATE THE SURVIVAL RATE OF PLANTED TREES. IF MORE THAN 25% OF THE TREES ARE FOUND TO BE DEAD, REPLACE THE PLANTINGS TO ACHIEVE A MINIMUM OF 80% OF THE ORIGINAL PLANTING PLAN. ALL REPLACEMENTS SHALL BE OF THE SAME KIND AND SIZE OF PLANTS SPECIFIED IN THE PLANT LIST. THIS PLANTING PLAN HAS BEEN DEVELOPED TO ACHIEVE FULL RE-VEGETATION WITH 75% SURVIVAL.
11. TREES TRANSPLANTED FROM THE SITE ARE NOT INCLUDED IN THE EVALUATION OF THE SURVIVAL RATE AND ARE NOT INCLUDED IN THE CONTRACTORS REPLACEMENT REQUIREMENTS.
12. PLANT TREES/SHRUBS ACCORDING TO LOCATION IDENTIFIER (R = RIPARIAN FLOODPLAIN, U = UPLAND, B = BOTH).

RESTORATION NOTES:

1. SEED BYPASS CHANNEL AND FLOODPLAIN AREAS WITH VERMONT NATIVE WILDFLOWER & GRASS MIX. SEED ALL DISTURBED UPLAND SLOPES AND LAWN AREAS WITH NEW ENGLAND ROADSIDE MATRIX UPLAND SEED MIX. OBTAIN SEED FROM VERMONT WETLAND PLANT SUPPLY OR APPROVED EQUAL. ALSO SEED WITH FAST GROWING ANNUALS SUCH AS WINTER RYE, BUCKWHEAT, OR OATS. APPLICATION RATE VARIES BY SPECIES CHOSEN.
2. APPLY 2 INCHES STRAW MULCH OVER ALL SEEDED AREAS. HAY IS NOT ALLOWED.
3. ANY DISTURBED SOIL SLOPES 2:1 OR STEEPER SHALL BE STABILIZED WITH EROSION CONTROL BLANKET PER DIRECTION OF PROJECT ENGINEER, SEE DETAIL.
4. REMOVE TEMPORARY ACCESS ROADS AND TEMPORARY STOCKPILE AREAS.
5. RESTORE ALL ACCESS ROUTES USED DURING CONSTRUCTION TO PRE-EXISTING OR IMPROVED CONDITIONS, FILL RUTS CREATED BY EQUIPMENT TO RESTORE GRADE AND REVEGETATE AS NEEDED.
6. CONTRACTOR IS RESPONSIBLE FOR REPAIRS TO SITE FEATURES IF DAMAGED BY CONSTRUCTION ACTIVITIES.
7. RESTORE ALL OTHER DISTURBED AREAS WITHIN THE PROJECT SITE SUCH AS TEMPORARY ACCESS ROADS, STOCKPILE AREAS, STAGING AREAS, AND SURPLUS DISPOSAL AREAS TO ORIGINAL OR IMPROVED CONDITION.

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DESCRIPTION	DATE	BY

SITE PLAN - RESTORATION
CROSS BROTHERS DAM REMOVAL
DOG RIVER
NORTHFIELD, VT

EE	EE	RS
DESIGNED	DRAWN	CHECKED

1"=20'
SCALE

FEBRUARY 27, 2025
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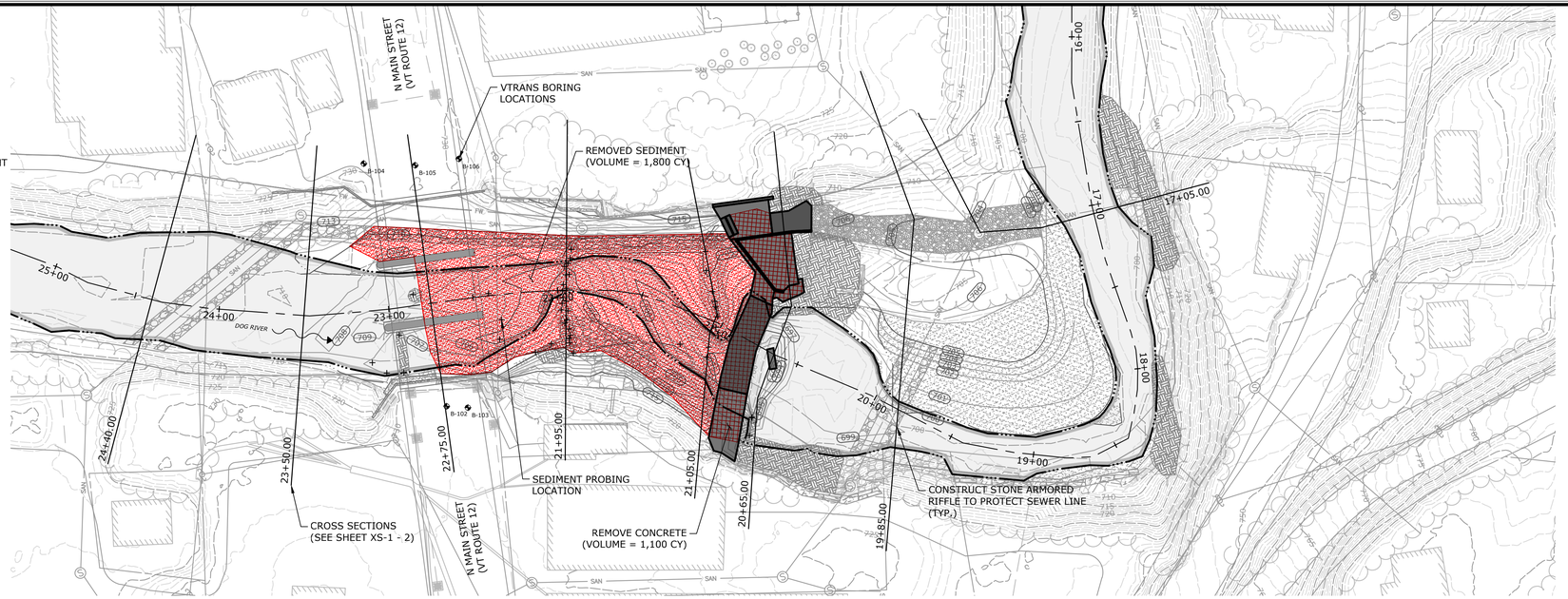
PROJECT NO.

6 OF 14
SHEET NO.

SP-3
SHEET NAME

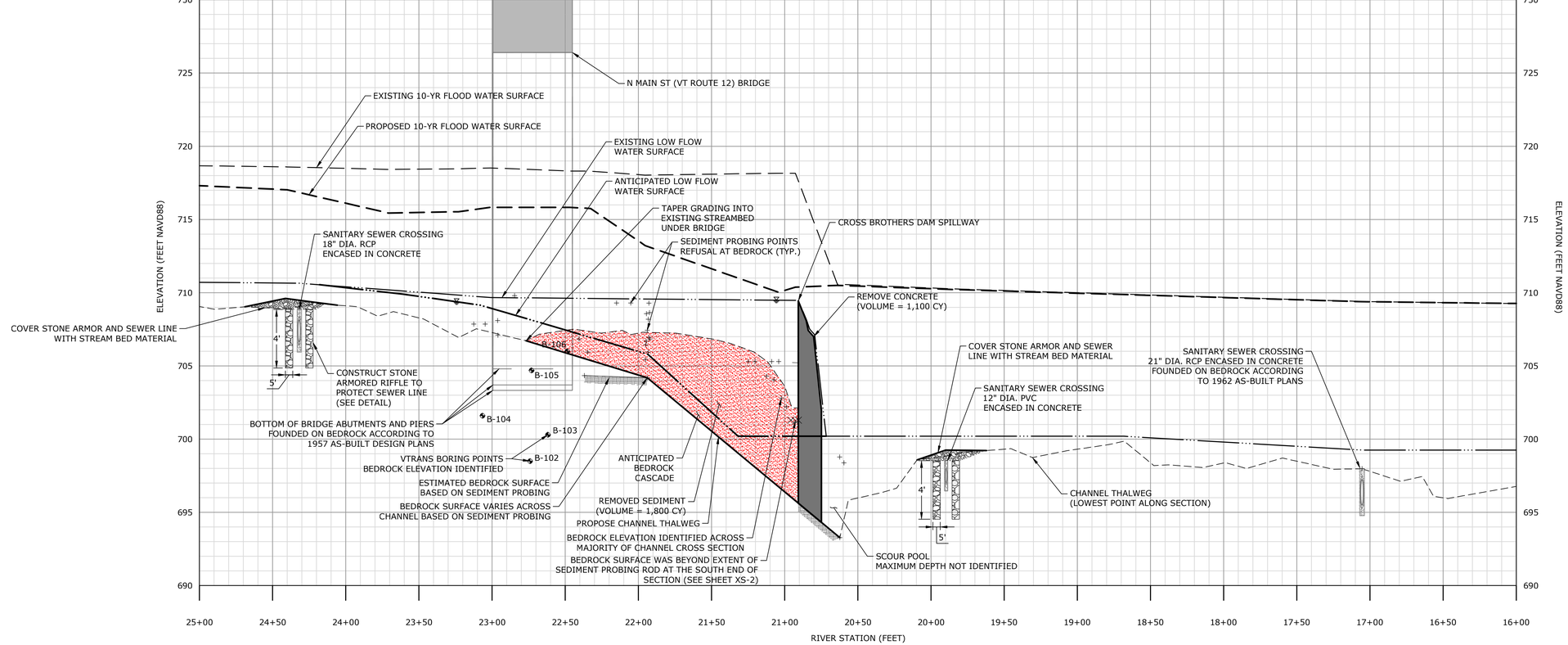
LEGEND

- PROPOSED GRADE
- EXISTING GRADE
- 709 PROPOSED MINOR CONTOUR
- 710 PROPOSED MAJOR CONTOUR
- 651 EXISTING MINOR CONTOUR
- 650 EXISTING MAJOR CONTOUR
- CONCRETE SEWER ENCASEMENT
- BEDROCK SURFACE
- SEDIMENT REMOVAL
- CONCRETE REMOVAL
- CONCRETE DAM STRUCTURE
- SEDIMENT REUSE
- PROPOSED STONE ARMOR
- + SEDIMENT PROBING POINT - REFUSAL AT BEDROCK
- × SEDIMENT PROBING POINT - BEDROCK NOT ENCOUNTERED



DOG RIVER - PLAN VIEW

SCALE: 1" = 40'



DOG RIVER - PROFILE VIEW

SCALE: 1" = 40' (H); 1"=4' (V)

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DESCRIPTION	DATE	BY

DOG RIVER PROFILE
CROSS BROTHERS DAM REMOVAL
DOG RIVER
NORTHFIELD, VT

EE	EE	RS
DESIGNED	DRAWN	CHECKED

SCALE:

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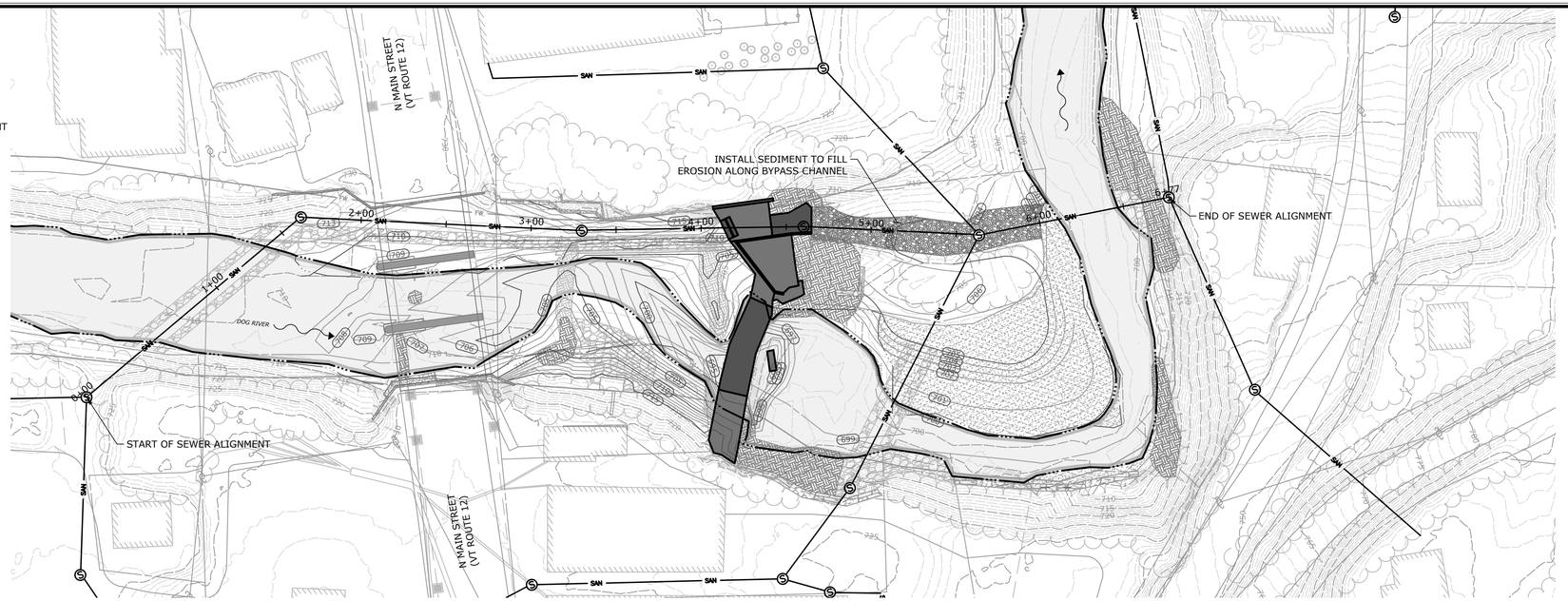
146.300263.00001
PROJECT NO.

7 OF 14
SHEET NO.

PR-1
SHEET NAME

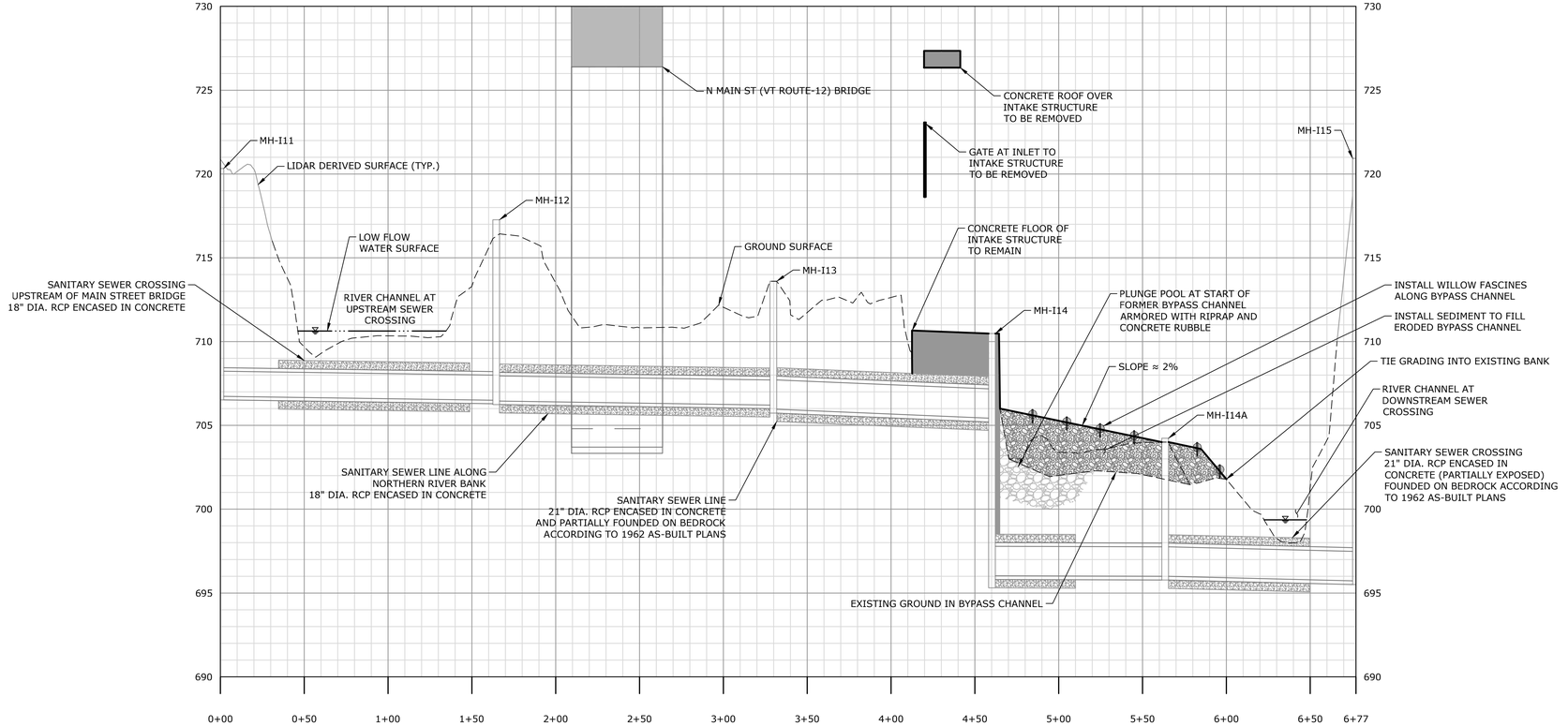
LEGEND

- PROPOSED GRADE
- EXISTING GRADE
- SAN — SANITARY SEWER LINE
- CONCRETE SEWER ENCASEMENT
- CONCRETE DAM STRUCTURE
- PROPOSED STONE ARMOR
- SEDIMENT REUSE



DOG RIVER - PLAN VIEW

SCALE: 1" = 40'



SANITARY SEWER - PROFILE VIEW

SCALE: 1" = 40' (H); 1"=4' (V)

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DESCRIPTION	DATE	BY

STRUCTURE - SANITARY SEWER LINE

CROSS BROTHERS DAM REMOVAL

DOG RIVER
NORTHFIELD, VT

EE	EE	RS
DESIGNED	DRAWN	CHECKED

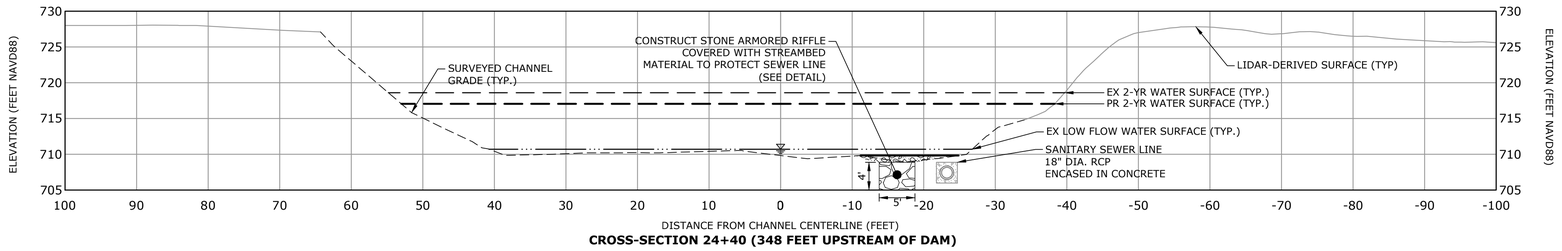
SCALE

FEBRUARY 27, 2025
DATE

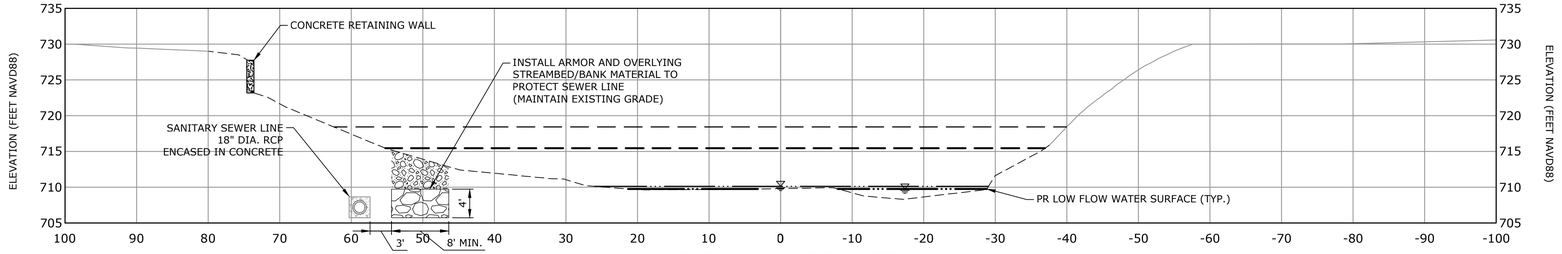
146.300263.00001
PROJECT NO.

8 OF 14
SHEET NO.

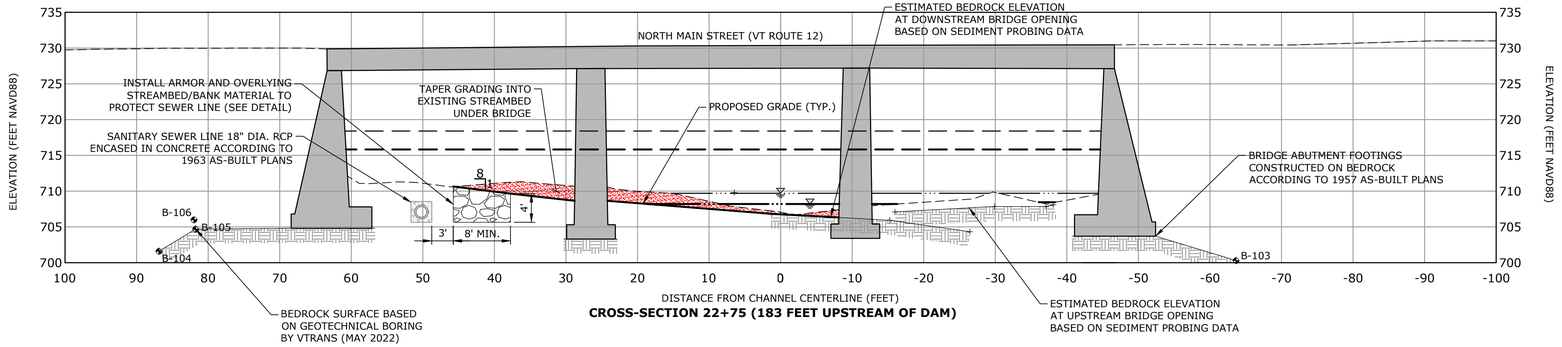
ST-1
SHEET NAME



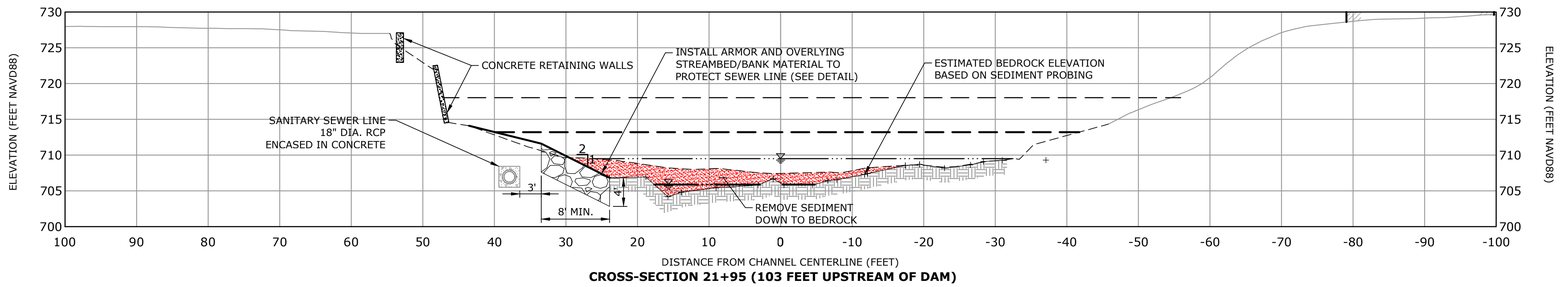
CROSS-SECTION 24+40 (348 FEET UPSTREAM OF DAM)



CROSS-SECTION 23+50 (258 FEET UPSTREAM OF DAM)



CROSS-SECTION 22+75 (183 FEET UPSTREAM OF DAM)



CROSS-SECTION 21+95 (103 FEET UPSTREAM OF DAM)

LEGEND

- 2023 LIDAR SURFACE
- EXISTING GRADE
- PROPOSED GRADE
- CONCRETE WALLS
- BEDROCK SURFACE
- CONCRETE REMOVAL
- SEDIMENT REUSE
- SEDIMENT REMOVAL
- CONCRETE DAM STRUCTURE
- STACKED STONE WALL
- PROPOSED STONE ARMORING
- BUILDINGS
- SEDIMENT PROBING POINT - REFUSAL AT BEDROCK

NOTE:

1) ALL SECTIONS VIEWED AS LOOKING DOWNSTREAM.
2) PROPOSED GRADE AS PRESENTED ON THIS PLAN INDICATE FINAL GRADE AFTER TOPSOIL, ROCKS, AND OTHER PROPOSED STRUCTURES AND FINISHED TREATMENTS ARE COMPLETED.

SLR
1 SOUTH MAIN STREET
WATERBURY, VT 05676
802.882.8355
SLRCONSULTING.COM

DESCRIPTION	DATE	BY

RIVER CROSS SECTIONS
CROSS BROTHERS DAM REMOVAL
DOG RIVER
NORTHFIELD, VT

EE	EE	RS
DESIGNED	DRAWN	CHECKED

1"=10'
SCALE

FEBRUARY 27, 2025
DATE

146.300263.00001
PROJECT NO.

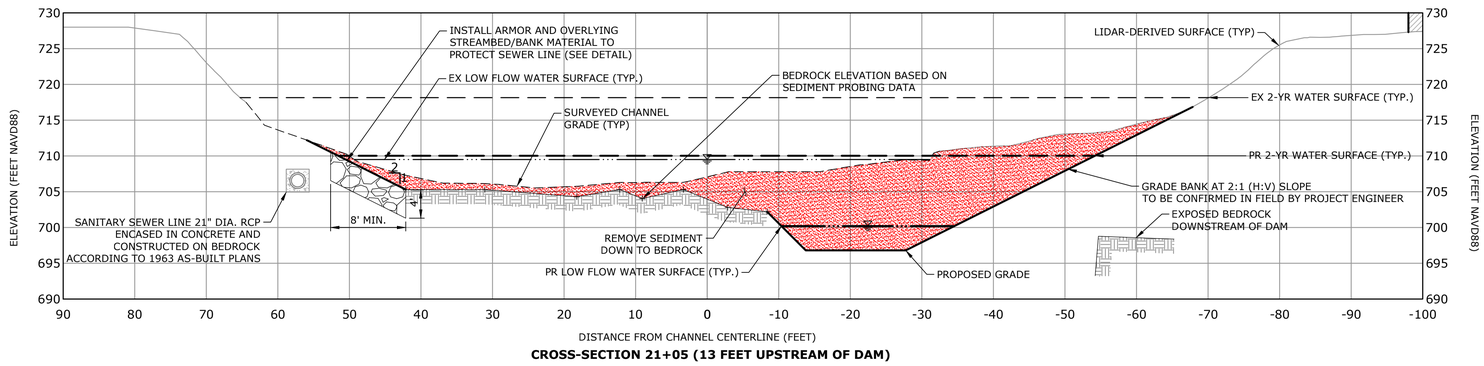
9 OF 14
SHEET NO.

XS-1
SHEET NAME

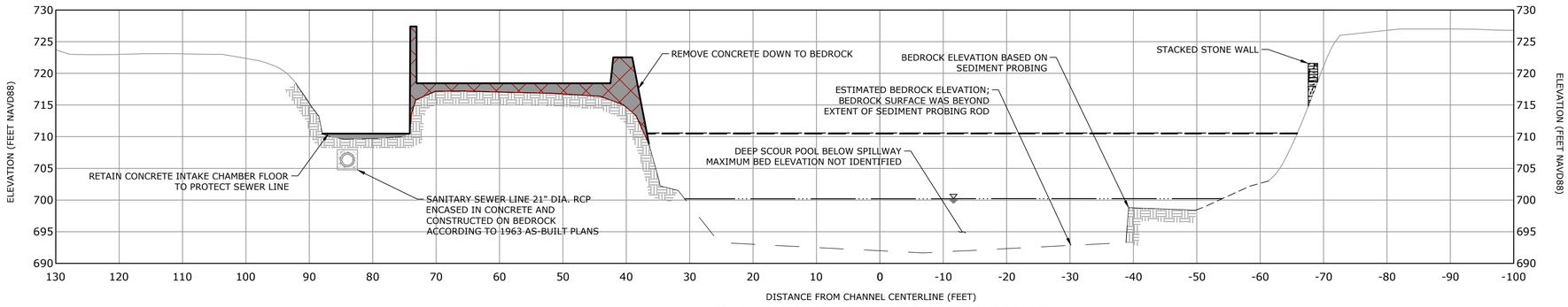
NOTE:
1) ALL SECTIONS VIEWED AS LOOKING DOWNSTREAM.
2) PROPOSED GRADE AS PRESENTED ON THIS PLAN INDICATE FINAL GRADE AFTER TOPSOIL, ROCKS, AND OTHER PROPOSED STRUCTURES AND FINISHED TREATMENTS ARE COMPLETED.

LEGEND

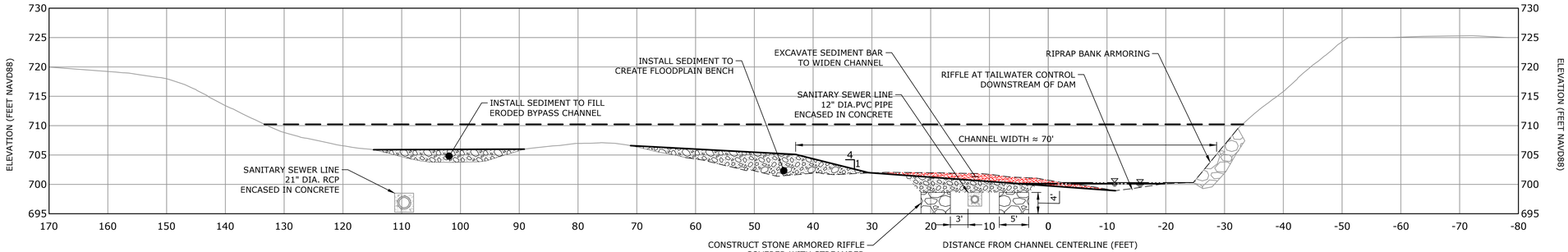
- 2023 LIDAR SURFACE
- EXISTING GRADE FROM SURVEY
- PROPOSED GRADE
- CONCRETE WALLS
- BEDROCK SURFACE
- CONCRETE REMOVAL
- SEDIMENT REUSE
- SEDIMENT REMOVAL
- CONCRETE DAM STRUCTURE
- STACKED STONE WALL
- PROPOSED STONE ARMORING
- BUILDINGS
- + SEDIMENT PROBING POINT - REFUSAL AT BEDROCK



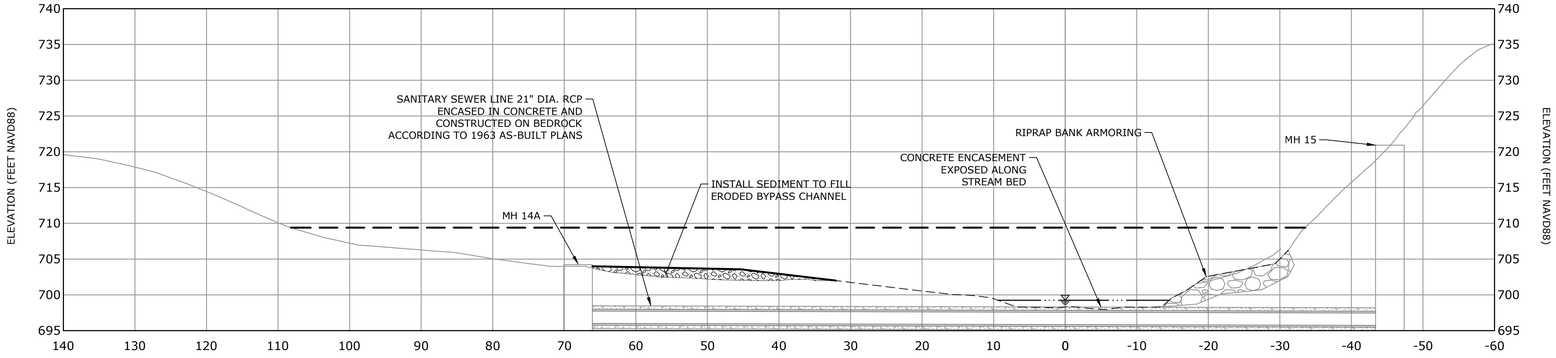
CROSS-SECTION 21+05 (13 FEET UPSTREAM OF DAM)



CROSS-SECTION 20+65 (27 FEET DOWNSTREAM OF DAM)



CROSS-SECTION 19+85 (107 FEET DOWNSTREAM OF DAM)



CROSS-SECTION 17+05 (387 FEET DOWNSTREAM OF DAM)

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DESCRIPTION	DATE	BY

RIVER CROSS SECTIONS
CROSS BROTHERS DAM REMOVAL
DOG RIVER
NORTHFIELD, VT

EE	EE	RR
DESIGNED	DRAWN	CHECKED

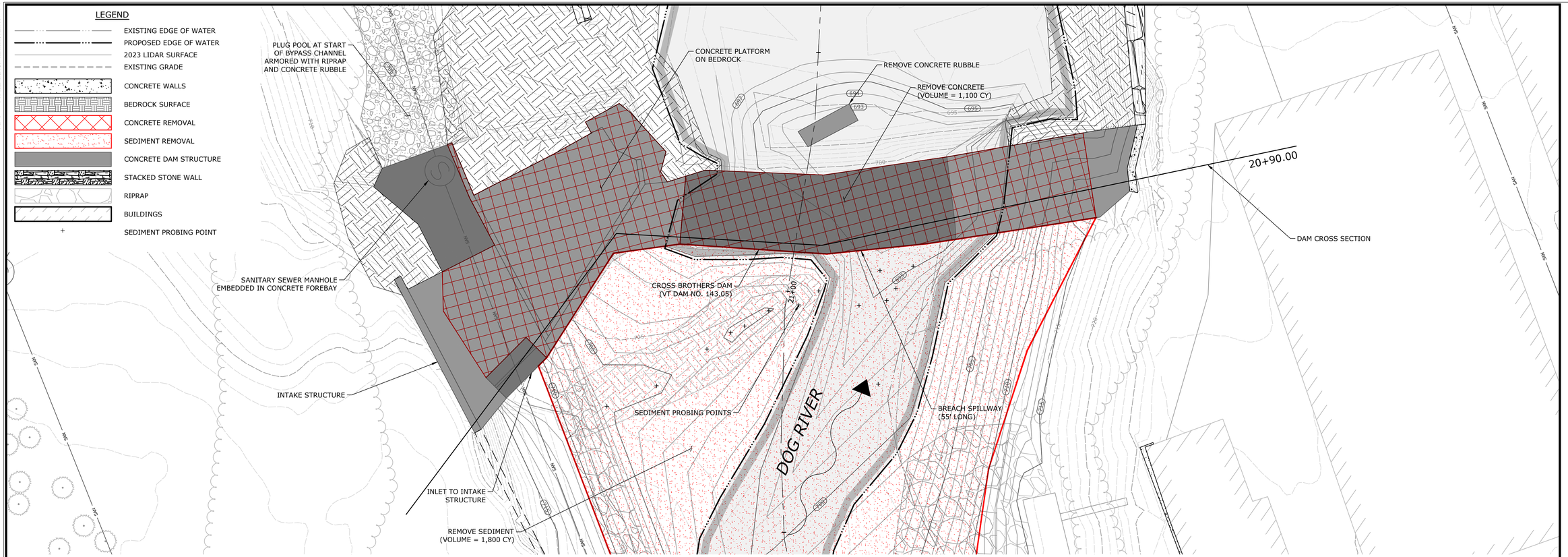
1"=10'
SCALE

FEBRUARY 27, 2025
DATE

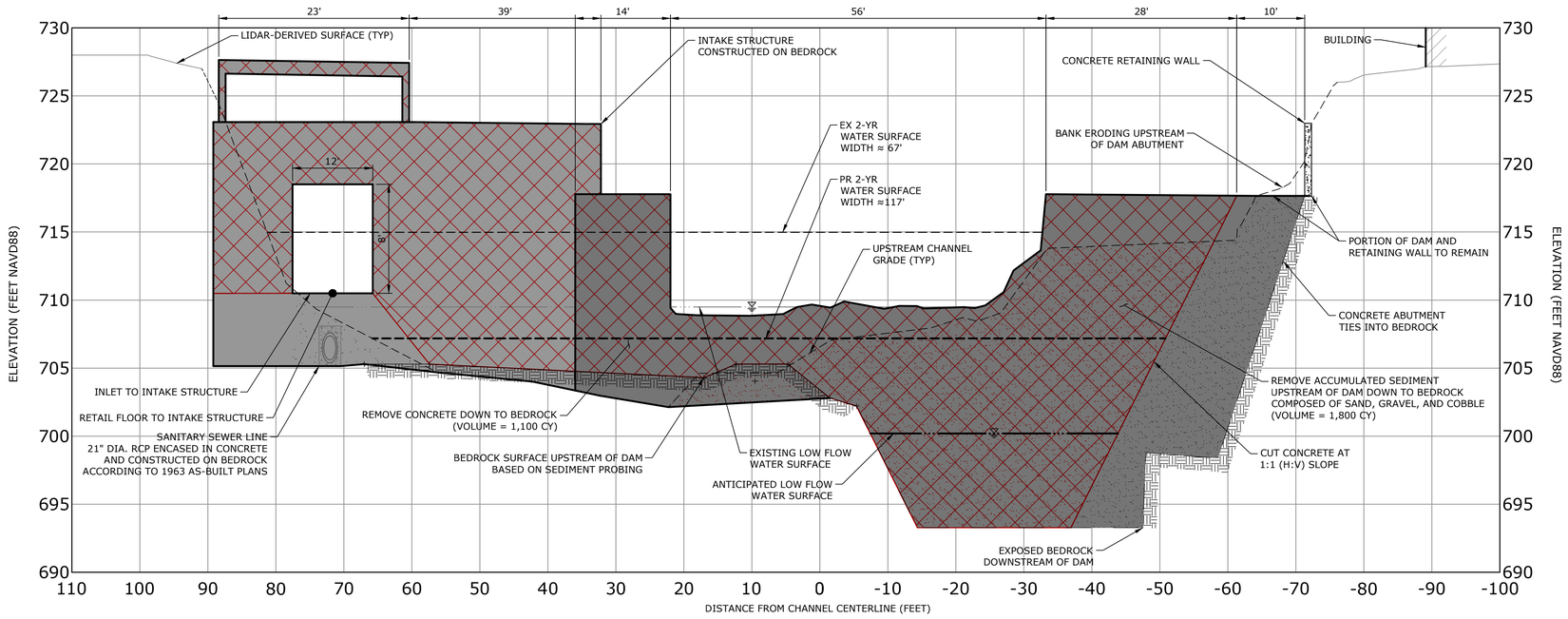
146.300263.00001
PROJECT NO.

10 OF 14
SHEET NO.

XS-2
SHEET NAME



DAM PLAN
SCALE: 1" = 10'



DAM ELEVATION
SCALE: 1" = 10' (H); 1"=5' (V)

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1 SOUTH MAIN STREET
WATERBURY, VT 05676
802.882.8355
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DESCRIPTION | DATE | BY

STRUCTURE - REMOVALS
CROSS BROTHERS DAM REMOVAL
DOG RIVER
NORTHFIELD, VT

EE	EE	RS
DESIGNED	DRAWN	CHECKED

SCALE: AS NOTED
DATE: FEBRUARY 27, 2025
PROJECT NO.: 146.300263.00001
SHEET NO.: 11 OF 14
SHEET NAME: ST-2

Drawing: W:\CADDESIGN\300263.00001-DE\CAD\CB-CONSTRUCTION.DWG Layout Tab:CON-1
Plotted by: EELY On this date: Thu, 2025 February 27 - 3:25pm

CONSTRUCTION NOTES:

1. PRIOR TO COMMENCEMENT OF WORK A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH REPRESENTATIVES OF THE TOWN OF NORTHFIELD, PROJECT ENGINEER, AND CONTRACTOR.
2. THE PROPOSED CONSTRUCTION SEQUENCE IS PROVIDED AS A RECOMMENDED APPROACH. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING A PROPOSED CONSTRUCTION SEQUENCE TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION.
3. SIGNIFICANT CHANGES TO THE CONSTRUCTION SEQUENCE OR PROJECT LAYOUT OR DESIGN WILL REQUIRE NOTIFICATION AND APPROVAL BY PRIOR TO IMPLEMENTATION.

CONSTRUCTION SEQUENCE NOTES:

THIS PROPOSED DAM REMOVAL SEQUENCE IS PROVIDED AS A RECOMMENDED APPROACH. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING A PROPOSED SEQUENCE TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION.

A STEP A - PRE-CONSTRUCTION ACTIVITIES:

1. SUBMIT A SEDIMENT AND EROSION CONTROL PLAN, CONSTRUCTION SEQUENCE, AND WATER CONTROL PLAN TO THE PROJECT ENGINEER FOR REVIEW SEVEN (7) DAYS PRIOR TO INITIATION OF CONSTRUCTION.
2. OBTAIN ANY NECESSARY WORK PERMITS AND SUBMIT SCHEDULES, PLANS, AND PRODUCT INFORMATION, INCLUDING THE EMERGENCY OPERATION PLAN TO THE PROJECT ENGINEER FOR REVIEW SEVEN (7) DAYS PRIOR TO INITIATION OF CONSTRUCTION.
3. CONTRACTOR SHALL PARTICIPATE IN A PRE-CONSTRUCTION SITE WALK WITH THE PROJECT ENGINEER AND OTHERS TO REVIEW ENVIRONMENTAL PERMIT REQUIREMENTS, CONTRACT PROVISIONS, PROJECT LIMITS, AND CONSTRUCTION DETAILS.

B STEP B - CONSTRUCTION SETUP ACTIVITIES:

1. INSTALL CONSTRUCTION WARNING SIGNS AND SAFETY FENCING. INITIATE TRAFFIC CONTROL, AS NEEDED.
2. INSTALL TRAFFIC BARRIERS WITHIN DOLLAR GENERAL PARKING LOT AND AT FERNANDEZ PROPERTY TO PARTITION CONSTRUCTION ACTIVITIES FROM PEDESTRIAN AND VEHICLE TRAFFIC.
3. STAKE OUT LIMITS OF WORK AND INSTALL SEDIMENT AND EROSION CONTROLS, SAFETY FENCING, TEMPORARY CONSTRUCTION ACCESS, STAGING AND STORAGE AREAS, ALL TO BE REVIEWED BY PROJECT ENGINEER.
4. INSTALL FENCING TO PROTECT SENSITIVE AREAS.
5. LOCATED AND MARK OUT SANITARY SEWER LINE AND DUCT BANK. INSTALL STEEL PLATES WHERE CONSTRUCTION VEHICLES CROSS SEWER LINE AND DUCT BANK.
6. WAIT FOR LOW FLOW TO BEGIN IN-CHANNEL WORK.

C STEP C - DRAIN IMPOUNDMENT:

1. REMOVE SEDIMENT AND DEBRIS FROM LEVEL OUTLET TO DIVERT FLOW FROM SPILLWAY AND LOWER UPSTREAM WATER LEVEL.
2. IF FLOWS EXCEED CAPACITY OF LOW FLOW OUTLET, NOTCH SPILLWAY CREST TO INCREMENTALLY LOWER WATER LEVEL.

D STEP D - SEDIMENT REMOVAL:

1. ALLOW SEDIMENT TO DEWATER PRIOR TO REMOVAL.
2. REMOVE SEDIMENT FROM IMPOUNDMENT. SEE SHEETS PR-1, XS-1, AND XS-2 FOR EXTENT OF SEDIMENT REMOVAL.
3. STOCKPILE BOULDERS EQUAL TO OR LARGER THAN 18-IN. DIAMETER FOR REUSE IN RESTORED CHANNEL.
4. STOCKPILE SAND AND GRAVEL MATERIAL FOR FILLING BYPASS CHANNEL.
5. REMOVAL AND DISPOSE OF ALL UNDESIRABLE MATERIALS.

E STEP E - DAM REMOVAL:

1. INCREMENTALLY LOWER DAM ALTERNATING WITH UPSTREAM SEDIMENT REMOVAL/CHANNEL RESTORATION.
2. REMOVE CONCRETE SPILLWAY AS SHOWN ON SHEETS SP-1 AND ST-2. RETAIN PORTION OF CONCRETE ABUTMENT AND RETAINING WALL ALONG SOUTHERN BANK (SEE ST-2).
3. REMOVE ROOF AND TRAINING WALLS OF INTAKE STRUCTURE. MAINTAIN FLOOR TO PROTECT SEWER LINE.
4. REMOVE ALL CONCRETE FROM BEDROCK ISLAND.

F STEP F - INSTALLATION OF STONE ARMOR:

4. INSTALL STONE ARMOR TO PROTECT SANITARY SEWER LINE ALONG NORTHERN RIVER BANK. INSTALL LIVE STAKE JOINT PLANTINGS ALONG BASE OF STONE ARMOR.
5. INSTALL STONE ARMORED RIFFLE AT SEWER CROSSINGS. TEMPORARILY DIVERT FLOWS AS NEED TO INSTALL STONE.
6. REUSE SAND AND GRAVEL STREAMBED/BANK MATERIAL TO FILL VOIDS BETWEEN STONES. COVER ARMOR WITH 6-INCH LAYER OF STREAMBED/BANK MATERIAL.

G STEP G - RESTORE DOWNSTREAM SEDIMENT BAR AND BYPASS CHANNEL:

1. GRADE DOWNSTREAM SEDIMENT BAR TO RESTORE BANKFULL CHANNEL AND FLOOD BENCH.
2. INSTALL SEDIMENT ALONG BYPASS CHANNEL TO REPAIR EROSIONS.
3. INSTALL WILLOW FASCINES ALONG FLOOD BENCH AND BYPASS CHANNEL.
4. ESTABLISH RIVER ACCESS PATH.
5. INSTALL TREE AND SHRUB PLANTINGS.

H STEP H - POST-CONSTRUCTION ACTIVITIES:

1. PERFORM SITE RECOVERY. REMOVE ALL ACCESS ROADS AND CONSTRUCTION ENTRANCES, AND STABILIZE AND RESTORE ALL DISTURBED AREAS. COMPLETE SITE RESTORATION. RESTORE TO ORIGINAL CONDITION, OR AS INDICATED ON THE PLANS.
2. COMPLETE POST-CONSTRUCTION SITE WALK WITH PROJECT ENGINEER.

CONSTRUCTION ACCESS NOTES:

1. CONSTRUCTION ACCESS ROUTES SHOWN ARE SCHEMATIC IN NATURE - FINAL ROUTES TO BE NEGOTIATED WITH THE OWNER/ENGINEER PRIOR TO START OF CONSTRUCTION.
2. TEMPORARY CONSTRUCTION ACCESS ROADS TO BE RESTORED UPON PROJECT COMPLETION.
3. STOCKPILE AREA TO BE FLAGGED PRIOR TO CONSTRUCTION AND APPROVED BY ENGINEER. ALL STORAGE AND ACCESS ROUTES, PEDESTRIAN FENCES/BARRIERS, WORKING HOURS, AND LIMITS OF CLEARING SHALL BE APPROVED BY TOWN OF NORTHFIELD, LANDOWNERS, AND THE PROJECT ENGINEER.
4. STOCKPILE AREAS TO BE ENCLOSED BY FILTER FABRIC AND STRAW BALES. SEE DETAILS
5. PROTECT PARKING LOT SURFACE OF DOLLAR GENERAL. ANY PAVEMENT DAMAGE SHALL BE RESTORED FOLLOWING CONSTRUCTION ACTIVITIES.
6. ALL FEATURES, SUCH AS PAVEMENT, SIGNAGE, WALKWAYS, PRIVATELY OWNED LAWNS, GARDENS, SHRUBS, TREES, FENCING, AND OTHER YARD FEATURES, SHALL BE RESTORED OR REPAIRED AT PROJECT COMPLETION AT THE DIRECTION OF THE OWNER/ENGINEER.
7. UNDERGROUND UTILITIES SHALL BE LOCATED AND AVOIDED WHEN PLANNING THE CONSTRUCTION ACCESS ROUTES. ANY DISRUPTION OR DAMAGE TO EXISTING UTILITIES, SHALL BE REPAIRED BY THE CONTRACTOR.

TRAFFIC MANAGEMENT NOTES:

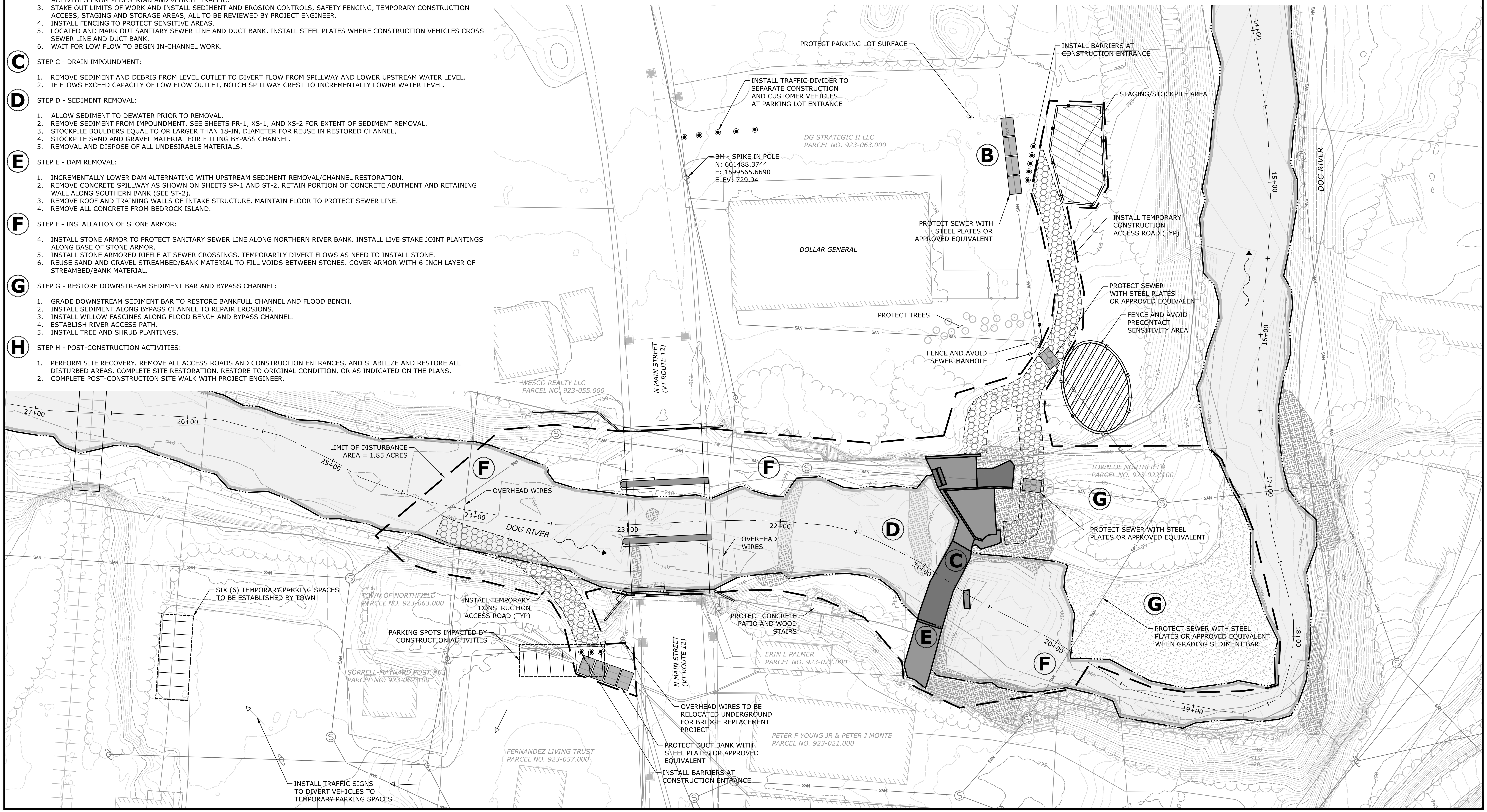
1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS.
2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. ALL CONSTRUCTION SIGNS SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF WORK.
4. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
5. BARRICADE ACCESS POINTS WHEN NOT WORKING.

INVASIVE SPECIES HANDLING NOTES:

1. LOCATE AND USE STAGING AREAS THAT ARE FREE OF INVASIVE SPECIES TO AVOID SPREADING SEEDS AND OTHER VIABLE PLANT PARTS.
2. PLAN WORK SEQUENCE SO CONSTRUCTION EQUIPMENT IS MOVED FROM AREAS NOT INFESTED BY INVASIVE SPECIES, MOVING INTO AREAS INFESTED WITH INVASIVE SPECIES WHENEVER POSSIBLE.
3. ALL EQUIPMENT, MACHINERY, AND HAND TOOLS USED IN AREAS WHERE INVASIVE PLANTS OCCUR SHOULD BE CLEANED OF ALL VISIBLE SOIL AND PLANT MATERIALS BEFORE LEAVING THE SITE OR MOVING TO AREAS NOT ALREADY INFESTED. CLEANING SHOULD OCCUR WITHIN THE AREA ALREADY INFESTED. ACCEPTABLE CLEANING METHODS INCLUDE:
   - 3.1. PORTABLE WASH STATION THAT CONTAINS RUNOFF FROM WASHED EQUIPMENT
   - 3.2. HIGH PRESSURE AIR
   - 3.3. BRUSH, BROOM, OR HAND TOOLS USED WITHOUT WATER.
4. EXCAVATED MATERIAL TAKEN FROM SITS THAT CONTAIN INVASIVE PLANTS CANNOT BE USED AWAY FROM THE SITE OF INFESTATION UNTIL ALL VIABLE PLANT MATERIAL IS RENDERED NONVIABLE. EXCAVATED MATERIAL MAY BE REUSED WITHIN THE EXACT LIMITS OF INFESTATION. ANY EXTRA EXCAVATED MATERIAL CONTAINING INVASIVE PLANT MATERIAL MUST BE STOCKPILED ON AN IMPERVIOUS SURFACE UNTIL VIABLE PLANT MATERIAL IS DESTROYED OR DISPOSED OF BY BURYING 5 FEET BELOW GROUND FOR KNOTWEED AND PHRAGMITES OR 3 FEET FOR OTHER SPECIES.
5. SOIL AND OTHER MATERIALS CONTAINING INVASIVE PLANT MATERIAL MUST BE COVERED DURING TRANSPORTATION.
6. INVASIVE SPECIES CAN BE RENDERED NONVIABLE BY THE FOLLOWING METHODS:
   - 6.1. BURNING NOXIOUS WEEDS THAT ARE NOT SEEDING OR FLOWERING IS ACCEPTABLE. PLANT MATERIAL SHOULD BE TAKEN TO A DESIGNATED BURN PILE. MAKE SURE THAT ANY REMAINING ROOTS OR ROOT FRAGMENTS ARE NON-VIABLE. OBTAIN ALL NECESSARY PERMITS BEFORE BURNING.
   - 6.2. BURYING NOXIOUS WEEDS IS ACCEPTABLE. SOME WEEDS SUCH AS KNOTWEED SHOULD BE BURIED AT LEAST 6' DEEP AND IDEALLY WOULD HAVE A BARRIER ON TOP OF THE DISPOSAL SITE.
   - 6.3. CHEMICAL TREATMENT BY A CERTIFIED APPLICATOR WHO FOLLOWS THE LABEL DIRECTIONS IS ACCEPTABLE.
7. INVASIVE SPECIES INCLUDING KNOTWEED WILL BE MONITORED BY OTHERS CONCURRENTLY WITH THE ACOE MONITORING REQUIREMENTS AND ANY OBSERVATIONS AND/OR PROPOSED MANAGEMENT WILL BE INCLUDED IN THE ACOE REPORT.

LEGEND

Symbol	Description
651	MINOR CONTOUR
650	MAJOR CONTOUR
	APPROX. PROPERTY BOUNDARY
	EDGE OF PAVEMENT
	OVERHEAD WIRES
SAN	SANITARY SEWER LINE
FW	FEMA FLOODWAY
100-YR	FEMA 100-YR FLOODPLAIN
OHW	ORDINARY HIGH WATER
	TREELINE
	CONSTRUCTION ACCESS ROAD
	LIMIT OF DISTURBANCE
	STAGING/STOCKPILE AREA
	UTILITY POLE
S	SEWER MANHOLE



SLR

99 REALTY DRIVE
CHESHIRE, CT 06410
203.271.1773
SLRCONSULTING.COM

DESCRIPTION	DATE	BY

SITE PLAN - CONSTRUCTION

CROSS BROTHERS DAM REMOVAL

DOG RIVER
NORTHFIELD, VT

EE	EE	RS
DESIGNED	DRAWN	CHECKED

SCALE: 1"=30'

DATE: FEBRUARY 27, 2025

PROJECT NO.: 146.300263.00001

SHEET NO.: 12 OF 14

SHEET NAME: CON-1

WATER CONTROL NOTES

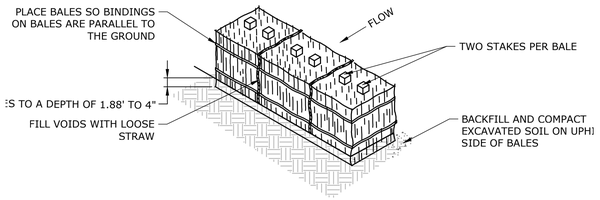
1. THE PROPOSED WATER CONTROL PLAN IS PROVIDED AS A RECOMMENDED APPROACH TO DEWATER THE WORK AREA TO MINIMIZE THE RELEASE OF SEDIMENTS. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING A PROPOSED WATER CONTROL PLAN TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION
2. BEGIN WORK DURING LOW WATER.
3. RIPRAP FILTER BERM OF EXISTING RIVERBED MATERIAL, OR SANDBAGS CAN BE USED TO DIVERT WATER FROM THE WORK AREA AS NEEDED.
4. AS MUCH WORK AS POSSIBLE TO BE COMPLETED IN THE DRY TO MINIMIZE RIVER CHANNEL DISTURBANCE. WORK IS ANTICIPATED TO BE IN THE WATER AT TIMES. ISOLATION BERMS OR OTHER BARRIERS SHOULD ISOLATE ACTIVE WORK AREAS FROM FLOWING WATER.
5. INSTALL DEWATERING BASIN OR OTHER APPROVED DEWATERING DEVICE TO RECEIVE WET SEDIMENT IF NOT IMMEDIATELY REMOVED FROM THE SITE. NO PERMANENT DISTURBANCE SHOULD TAKE PLACE DUE TO DEWATERING BASIN PLACEMENT.
6. INCREMENTALLY LOWER IMPOUNDMENT BY ALTERNATING BETWEEN REMOVAL OF DAM AND SEDIMENT SO THAT DAM CONTINUES TO HOLD UPSTREAM SEDIMENT IN PLACE. MINIMIZE SEDIMENT MOBILIZATION AS MUCH AS POSSIBLE.
7. COFFERDAMS MAY BE USED TO DIRECT WATER AWAY FROM CURRENT WORK AREAS. ALL COFFERDAMS NEED TO BE REMOVED AT END OF PROJECT.
8. REMOVE DEWATERING BASIN AND STONE FILTER BERM AND DISPOSE OF COLLECTED SEDIMENT IN LEGAL AREA OUTSIDE OF FLOODPLAIN OR WETLAND AREAS.
9. PUMPING IS NOT EXPECTED TO BE NECESSARY FOR THIS PROJECT. TEMPORARY ISOLATION BERMS WILL BE USED TO SEPARATE THE WORK FROM NORMAL LOW FLOW. SHOULD THE CONTRACTOR FEEL PUMPING IS BENEFICIAL, PRIOR APPROVAL WILL BE REQUIRED, AND PUMPING WILL BE PERFORMED AT THE CONTRACTORS EXPENSE. DIRTY WATER SHALL BE DISCHARGED TO A DEWATERING DISCHARGE BASIN OR OTHER DEVICE APPROVED BY THE PROJECT ENGINEER.
10. IN THE EVENT OF A HIGH FLOW EVENT DURING CONSTRUCTION THE CONTRACTOR WILL HAVE A REPRESENTATIVE ON SITE TO MONITOR THE SITE AND REPORT TO PROJECT ENGINEER ON SITE CONDITIONS.
11. TEMPORARY STABILIZATION MAY BE REQUIRED DURING AND AFTER A HIGH FLOW EVENT.
12. THE PROJECT ENGINEER SHALL BE ON SITE FOR AND APPROVE ALL DAM REMOVAL STAGES.

EROSION CONTROL NOTES

1. THE SEDIMENT AND EROSION CONTROL PRACTICES IMPLEMENTED AS PART OF THE PROJECT SHALL BE IMPLEMENTED AND MAINTAINED ACCORDING TO "THE LOW RISK SITE HANDBOOK FOR EROSION PROTECTION AND SEDIMENT CONTROL" GUIDANCE DOCUMENT FROM THE VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION, WHERE APPLICABLE IN CONSULTATION WITH PROJECT ENGINEER.
2. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
3. CLEARING OF NATIVE VEGETATION FOR CONSTRUCTION ACCESS SHALL BE MINIMIZED.
4. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES. THE CONTRACTOR WILL VERIFY THE MAINTENANCE WEEKLY AND AFTER RAIN EVENTS AND REPORT IN WRITING TO PROJECT ENGINEER.
6. THE PROJECT ENGINEER IS TO BE NOTIFIED IMMEDIATELY IF EXCESSIVE SEDIMENT EROSION TAKES PLACE, IF SIGNIFICANT FINE GRAINED SEDIMENT IS ENCOUNTERED, OR IF POTENTIALLY CONTAMINATED SEDIMENTS ARE ENCOUNTERED (OILY, DARK COLOR, CHEMICAL ODOR).
7. PERFORM WORK DURING LOW FLOW PERIODS. IF A LARGE FLOOD IS PREDICTED, STOP WORK, STABILIZE THE SITE AND REMOVE EQUIPMENT FROM FLOOD PRONE AREAS.
8. STOCKPILE AND STAGING LOCATIONS AS INDICATED ON THE PLANS AND AS APPROVED BY THE PROJECT ENGINEER, SHALL BE PLACED WITHIN THE LIMIT OF DISTURBANCE. WETLANDS OUTSIDE OF THE PROJECT AREA SHALL BE PROTECTED AND REMAIN UNDISTURBED THROUGHOUT THE DURATION OF THE PROJECT.
9. NO DISTURBED EARTH WILL REMAIN EXPOSED FOR MORE THAN SEVEN (7) CONSECUTIVE DAYS WITHOUT APPLYING TEMPORARY OR PERMANENT STABILIZATION MEASURES AT DIRECTION OF ENGINEER.
10. EXPOSED AREAS SHALL BE SEEDED AND MULCHED OR PROTECTED WITH EROSION CONTROL MATTING WITHIN 48 HOURS OF ACHIEVING FINAL GRADE.
11. ANY DISTURBED SLOPES 2:1 OR STEEPER SHALL BE STABILIZED WITH EROSION CONTROL BLANKET PER DIRECTION OF PROJECT ENGINEER, SEE DETAIL.

EROSION CONTROL MAINTENANCE INTERVALS

EROSION CONTROL MEASURE	CONTROL OBJECTIVE	INSPECTION/MAINTENANCE	FAILURE INDICATORS	REMOVAL
SILT FENCE	- INTERCEPT, AND REDIRECT/DETAIN SMALL AMOUNTS OF SEDIMENT FROM SMALL DISTURBED AREAS. - DECREASE VELOCITY OF SHEET FLOW. - PROTECT SENSITIVE SLOPES OR SOILS FROM EXCESSIVE WATER FLOW.	INSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL OF 0.5 INCHES OR MORE. ACCUMULATED SEDIMENT MUST BE REMOVED ONCE ITS DEPTH IS EQUAL TO ½ THE TRENCH HEIGHT. INSPECT FREQUENTLY DURING PUMPING OPERATIONS IF USED FOR DEWATERING OPERATIONS.	- PHYSICAL DAMAGE OR DECOMPOSITION - EVIDENCE OF OVERTOPPED OR UNDERCUT FENCE - EVIDENCE OF SIGNIFICANT FLOWS EVADING CAPTURE - REPETITIVE FAILURE	SILT FENCE MAY BE REMOVED AFTER UPHILL AND SENSITIVE AREAS HAVE BEEN PERMANENTLY STABILIZED.
PUMP WATER SETTLING BASIN	- DETAIN SEDIMENT-LADEN RUNOFF FROM SMALL DEWATERING PUMPS LONG ENOUGH TO ALLOW THE SEDIMENT TO SETTLE OUT.	INSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL OF 0.5 INCHES OR MORE. STONE OUTLET SHOULD BE AT LEAST SIX (6) INCHES BELOW CREST OF EMBANKMENT. SEDIMENT MUST BE REMOVED WHEN ACCUMULATION REACHES ½ OF THE REQUIRED WET STORAGE.	- TURBID DISCHARGE WATER - EXCESSIVE SEDIMENT ACCUMULATION - OVERTOPPING EVIDENCE	BASIN MAY BE REMOVED ONCE THE DEWATERING PUMP IS NO LONGER NECESSARY
STABILIZED CONSTRUCTION ENTRANCE	- REDUCE THE TRACKING OF SEDIMENT OFF-SITE ONTO PAVED SURFACES.	INSPECT AT THE END OF EACH WORK DAY AND IMMEDIATELY REPAIR DAMAGES. PERIODIC ADDITION OF STONE, OR LENGTHENING OF ENTRANCE MAY BE REQUIRED AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES AS A RESULT OF INEFFICIENCY OF CONSTRUCTION ENTRANCE SHALL BE IMMEDIATELY REMOVED.	- SEDIMENT IN ROADWAY ADJACENT TO SITE	CONSTRUCTION ENTRANCE MAY BE REMOVED ONCE THE SITE HAS BEEN PERMANENTLY STABILIZED, AND ALL OTHER SECTIONS OF ROADWAY HAVE BEEN PERMANENTLY PAVED.

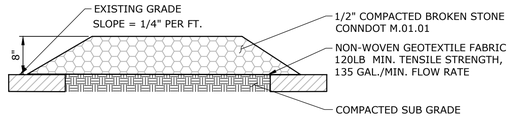


NOTES:

1. IDEALLY BALES SHOULD BE ENTRENCHED 2 TO 4 INCHES AND TIGHTLY BUTTED TOGETHER. BALES CAN BE SUCCESSFULLY PLACED WITHOUT A TRENCH IF GOOD GROUND CONTACT IS MADE. REMOVE HEAVY BRUSH AND FILL ALL VOIDS WITH LOOSE STRAW.
2. BALES SHALL BE ONLY USED AS A TEMPORARY BARRIER AND FOR NO LONGER THAN 60 DAYS.
3. WHEN SEDIMENTATION DEPOSITS REACH WITHIN 3" OF THE TOP OF BALES, REMOVE THE SEDIMENTATION OR ADD ADDITIONAL BALES ON SEDIMENTATION DIRECTLY BEHIND FIRST ROW OF BALES AS DIRECTED BY THE ENGINEER.
4. UPON ESTABLISHMENT OF GROUND COVER ON DISTURBED AREAS AND WHEN DIRECTED BY THE ENGINEER, STRAW BALES WILL BE REMOVED AND USED AS MULCH. ANY SEDIMENTATION WILL BE THINLY SPREAD UPON ESTABLISHED GROUND COVER.

STRAW BALE BARRIER PROTECTION

NOT TO SCALE

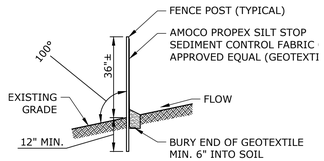


NOTES:

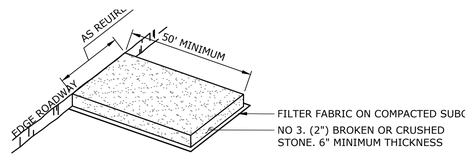
1. STRIP TOP SPOIL AND STORE FOR REUSE.
2. BROKEN STONE TO BE REMOVED UPON COMPLETION OF CONSTRUCTION, AND REPLACED WITH TOPSOIL. DISTURBED AREAS TO BE SEEDED AND MULCHED ACCORDING TO THE RESTORATION PLAN.

TEMPORARY CONSTRUCTION ACCESS ROAD

NOT TO SCALE



SEDIMENT FILTER FENCE

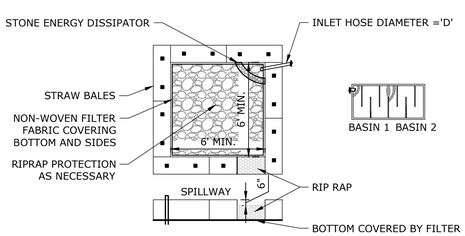


NOTES:

1. CONSTRUCTION ENTRANCE PAD SHALL BE INSTALLED AND MAINTAINED DURING OPERATIONS WHICH GENERATE VEHICULAR TRACKING OF MUD.

CONSTRUCTION ENTRANCE PAD

NOT TO SCALE

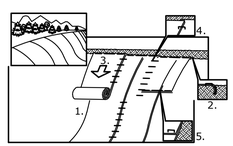


NOTES:

1. IF PUMPING VOLUME EXCEEDS BASIN CAPACITY, BASIN MAY BE USED IN SERIES.
2. INCREASE RIPRAP SIZE ON BASIN BOTTOM AS NECESSARY TO MAINTAIN SEDIMENT-FREE D

PUMP SETTLING BASIN

NOT TO SCALE



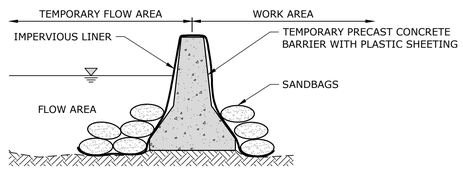
NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING SCC225, DO NOT SEED PREPARED AREA. SCC225 MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS DOWN THE SLOPE IN THE DIRECTION OF THE WATER FLOW.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 6" OVERLAP. STAPLE THROUGH OVERLAP AREA, APPROXIMATELY 12" APART.

REFER TO GENERAL STAPLE PATTERN GUIDE IN NORTH AMERICAN GREEN CATALOG FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS.

APPLICATION OF EROSION CONTROL BLANKET ON SLOPES

NOT TO SCALE

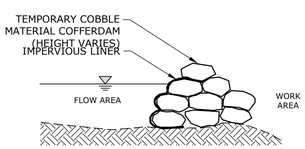


NOTES:

1. COFFER DAM AND PUMP SYSTEM TO BE SIZED FOR NORMAL FLOW CONDITIONS.

TEMPORARY CONCRETE COFFERDAM

NOT TO SCALE



NOTES:

1. COFFER DAM AND PUMP SYSTEM TO BE SIZED FOR NORMAL F

TEMPORARY COBBLE COFFERDAM

NOT TO SCALE

SLR
1 SOUTH MAIN STREET
WATERBURY, VT 05676
802.882.8355
SLRCONSULTING.COM

DESCRIPTION | DATE | BY

SITE DETAILS - SEDIMENT AND EROSION CONTROL

CROSS BROTHERS DAM REMOVAL

DOG RIVER
NORTHFIELD, VT

EE	EE	RS
DESIGNED	DRAWN	CHECKED

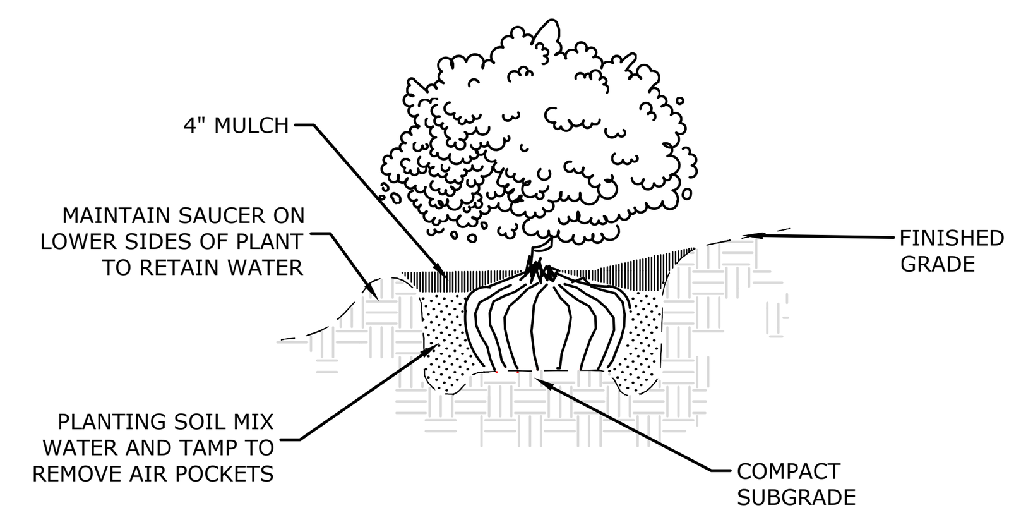
SCALE

FEBRUARY 27, 2025
DATE

146.300263.00001
PROJECT NO.

13 OF 14
SHEET NO.

DE-1
SHEET NAME



NOTE:
UNLESS OTHERWISE DIRECTED SHREDDED MULCH SHALL BE PLACED TO A LIMIT OF ONE FOOT BEYOND THE CENTER OF THE OUTERMOST SHRUBS IN PLANTING BED.

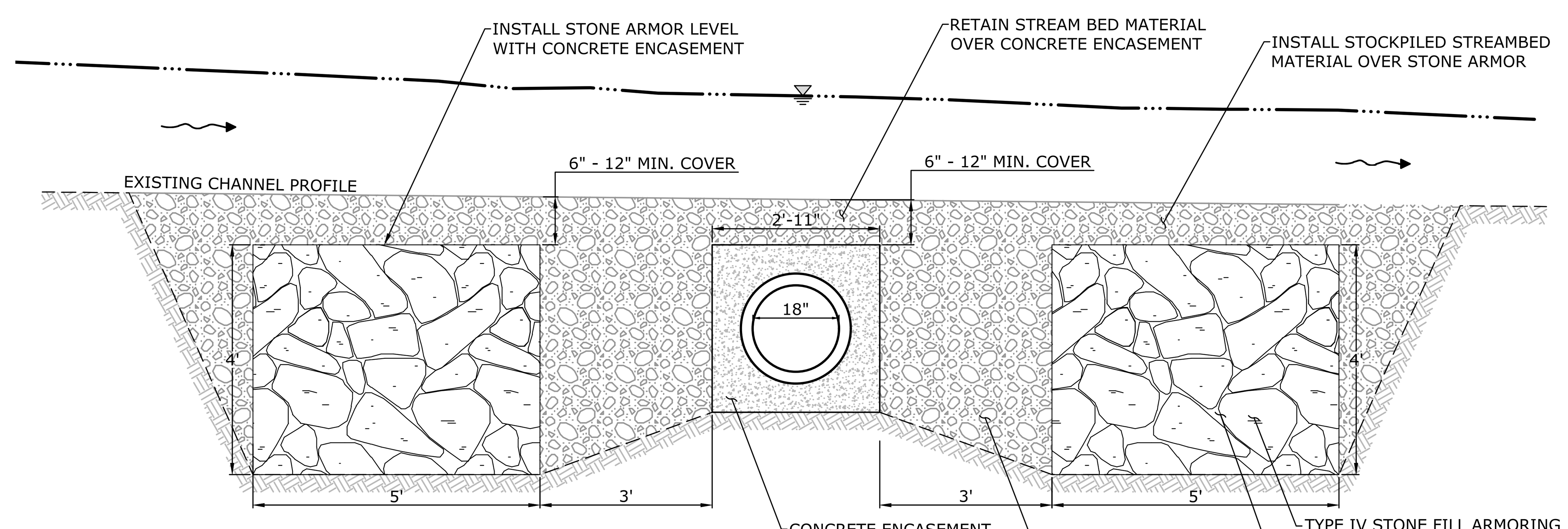
SHRUB PLANTINGS

NOT TO SCALE

NOTES:
PLANTING OF LIVE SHRUBS SHOULD OCCUR BETWEEN APRIL 1 AND JUNE 15, OR SEPTEMBER 1 AND OCTOBER 31.

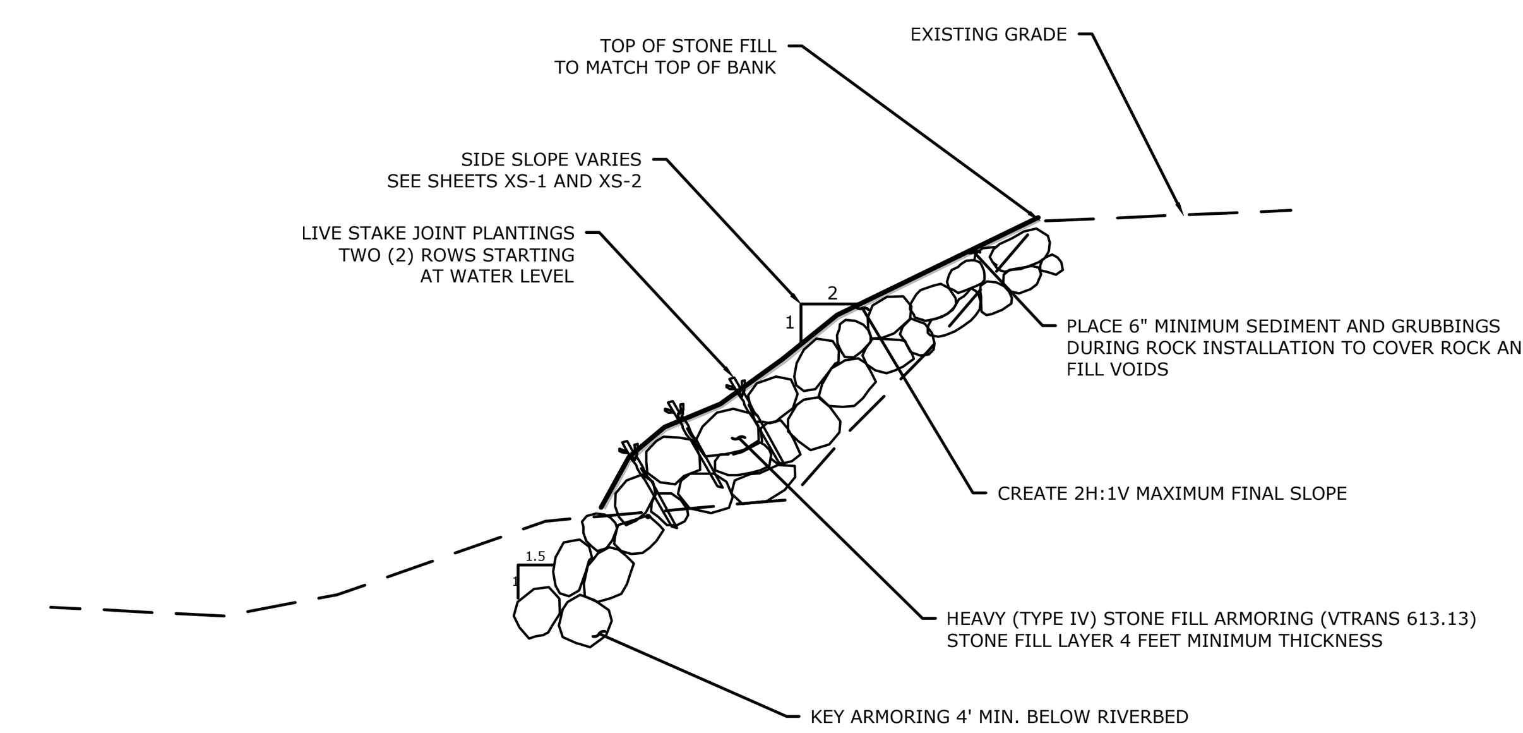
GENERAL PLANTING NOTES:

1. TO THE MAXIMUM EXTENT POSSIBLE, OBTAIN SHRUB PLANTINGS FROM LOCAL NURSERY.
2. PLACE 4 INCHES OF TOPSOIL AS SHOWN IN DETAIL.
3. PLANT VARIOUS SPECIES, SPECIFIED IN THE SHRUB PLANTING LIST, THROUGHOUT PROJECT SITE AND PLANTED ACCORDING TO DETAIL.
4. LIGHTLY TAMP TOPSOIL AROUND EACH PLANT, APPLY 2" LAYER OF MULCH, AND SATURATE WITH WATER.
5. PLANT MATERIALS SHOULD BE PLANTED THE DAY THEY ARRIVE ON SITE. PLANTS AND CUTTINGS THAT CANNOT BE PLANTED THE DAY THEY ARRIVE SHALL BE STORED ON SITE UNDER A WET TARP TO PROTECT THEM FROM WIND, DIRECT SUNLIGHT, DRYING OR OTHER DAMAGE. CUTTINGS OR UNROOTED STOCK THAT IS NOT PLANTED WITHIN TWO DAYS AFTER ARRIVAL ON THE SITE SHALL BE DISCARDED UNLESS REFRIGERATED AT 40 TO 50 DEGREES FAHRENHEIT.
6. SPECIES AND SOURCES SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.



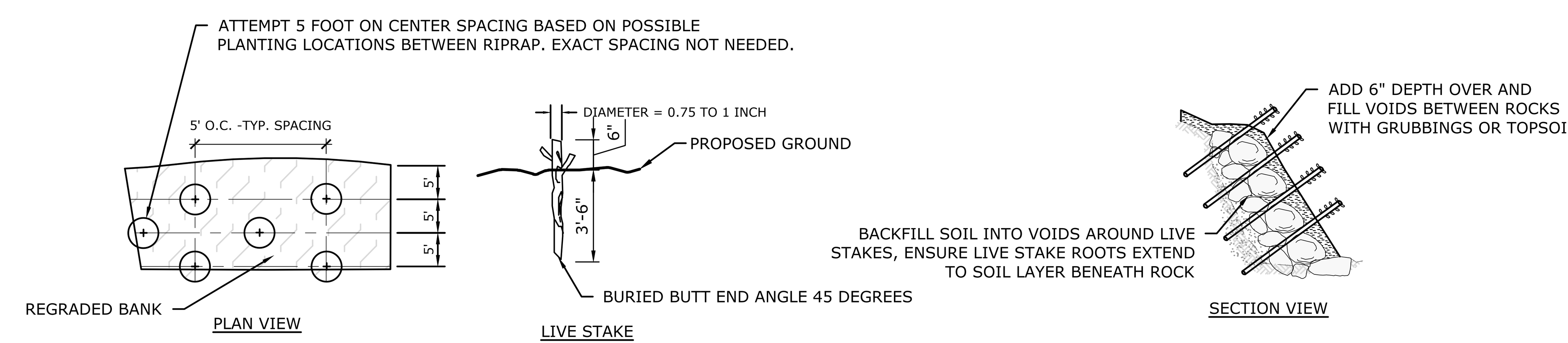
ARMORED RIFFLE PROTECTION FOR SANTIARY SEWER LINE

NOT TO SCALE



STONE ARMORED SLOPE

NOT TO SCALE



LIVE STAKE JOINT PLANTING NOTES:

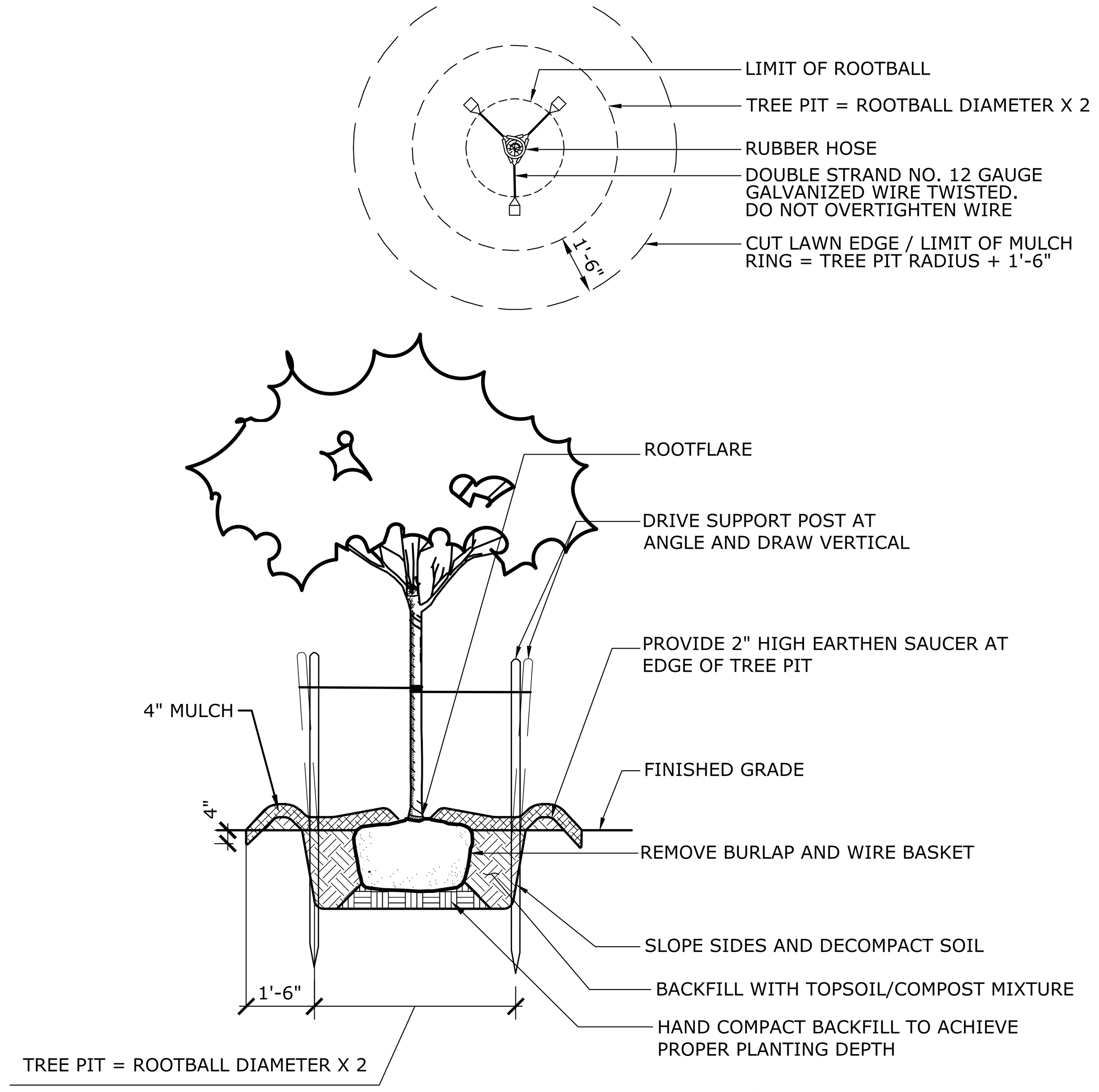
1. SHRUB WILLOW AND DOGWOOD BRANCHES MUST BE HARVESTED DORMANT. COLD STORAGE MUST BE MAINTAINED BEFORE PLANTING.
2. INSTALL RIPRAP PER PLAN, AND PLACE GRUBBINGS OR TOPSOIL TO FILL VOIDS AND 6 INCHES OF COVER OVER ROCK AS SHOWN IN DETAIL.
3. INSTALLATION SHOULD BE COMPLETED USING THE "STINGER" TOOL, PRYBARS, OR SIMILAR METHOD TO CREATE VOIDS IN THE ROCK.
4. INSTALL 4' LONG LIVE WILLOW AND RED OSIER DOGWOOD STAKES (*SALIX LUCIDA, CORNUS SERICEA,* OR SIMILAR NATIVE WILLOW AND DOGWOOD SPECIES) SPACED 3' ON CENTER. THESE ARE TO BE INSERTED INTO PREDRILLED PILOT HOLES SLIGHTLY LARGER THAN THE STAKE DIAMETER AND BACKFILLED. STAKES SHOULD BE INSERTED TO 36" DEPTH.
5. LIGHTLY TAMP TOPSOIL AROUND EACH STAKE AND SATURATE WITH WATER.
6. SEED BANK WITH RIPARIAN AREA SEED MIX SPECIFIED IN RESTORATION NOTES. THE SLOPE SHOULD BE HAND RAKED TO SCARIFY THE SOIL SURFACE, THEN HAND SEEDED, HYDROMULCHED OR HAND SPREAD WITH A STRAW MULCH, AND RAKED LIGHTLY TO ENSURE SEED TO SOIL CONTACT. SEE SEEDING NOTES BELOW FOR SEED MIX COMPOSITION.
7. PLANT MATERIALS SHOULD BE PLANTED THE DAY THEY ARRIVE ON SITE. PLANTS AND CUTTINGS THAT CANNOT BE PLANTED THE DAY THEY ARRIVE SHALL BE STORED ON SITE UNDER A WET TARP TO PROTECT THEM FROM WIND, DIRECT SUNLIGHT, DRYING OR OTHER DAMAGE. CUTTINGS OR UNROOTED STOCK THAT IS NOT PLANTED WITHIN TWO DAYS AFTER ARRIVAL ON THE SITE SHALL BE DISCARDED UNLESS REFRIGERATED AT 40 TO 50 DEGREES FAHRENHEIT.
8. WILLOW CUTTINGS FOR BIOENGINEERNIG SHOULD BE SOAKED 24 - 48 HOURS PRIOR TO INSTALLATION.
9. LIVE STAKES SHALL CARRY AN 80% SURVIVAL RATE GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF PROJECT COMPLETION.

LIVE STAKE PHOTOGRAPH

NOT TO SCALE

LIVE STAKE PLANTINGS

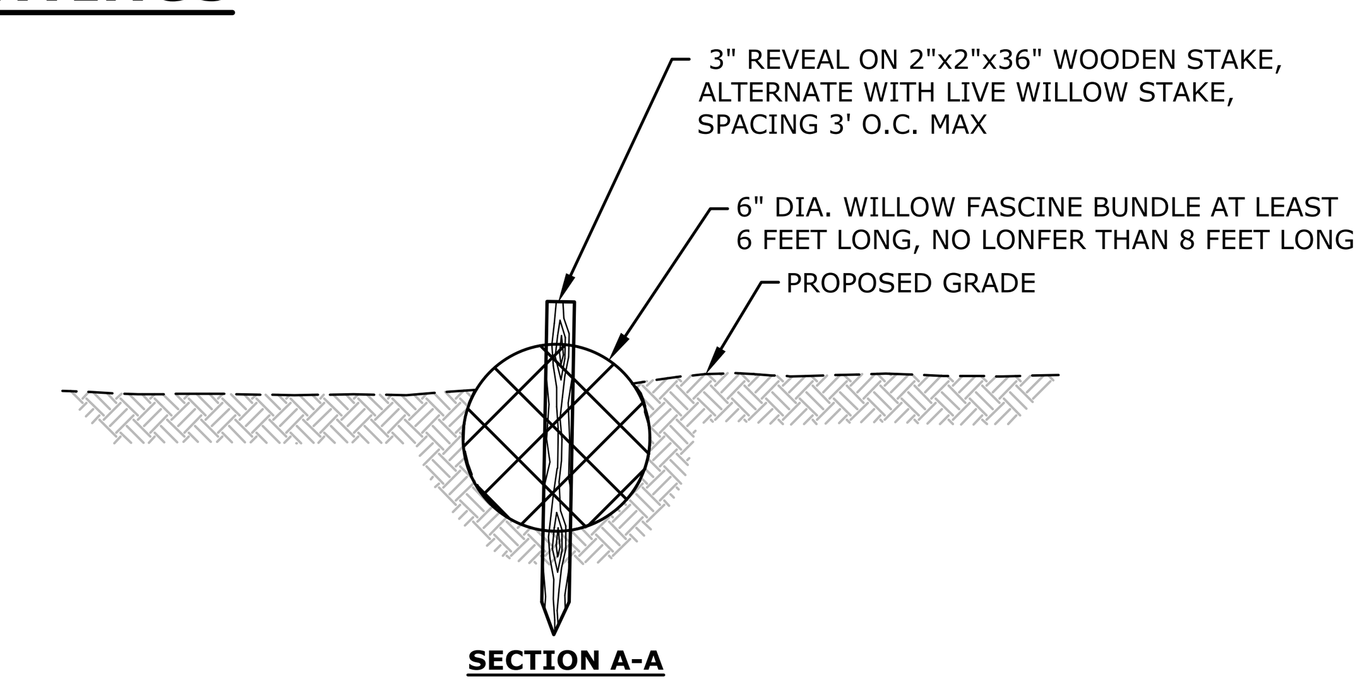
NOT TO SCALE

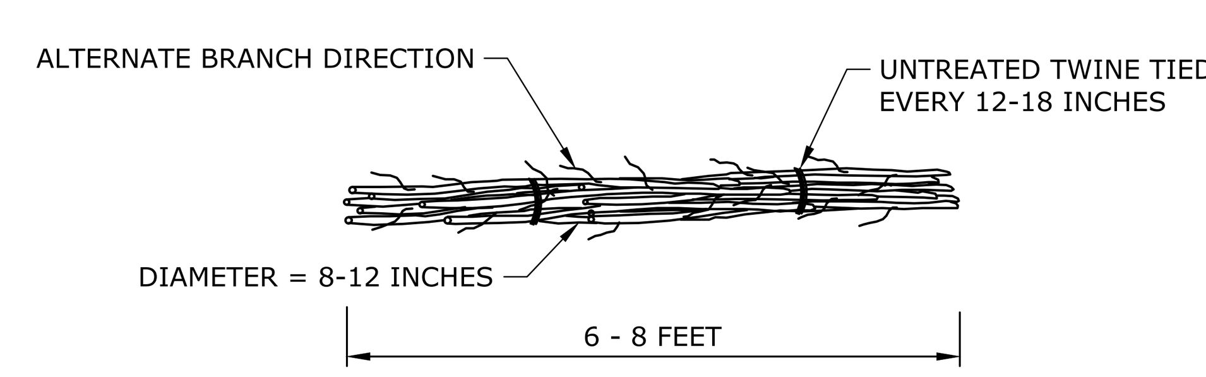


TREE PLANTING

NOT TO SCALE

NOTES:
1. TREE PLANTINGS TO BE INSTALLED THROUGHOUT THE PROPOSED FLOODPLAIN AND UPLAND AREAS AND WHERE SPECIFIED ON SHEET SP-3.
2. SUPPORT POSTS SHALL BE REMOVED BY THE CONTRACTOR ONE YEAR AFTER INSTALLATION.
3. WHERE TREES ARE PLANTED IN COMPACTED SOILS CONTRACTOR TO INSURE PLANT PIT DRAINS 1.5"/HOUR.
4. DO NOT COVER TREE TRUNK WITH MULCH.
5. PLANTING OF TREES SHOULD OCCUR BETWEEN APRIL 1 AND JUNE 15, OR SEPTEMBER 1 AND OCTOBER 31.





INSTALLATION NOTES:

1. EXCAVATE A 4-INCH TRENCH (1/3 DIA. OF THE FASCINE BUNDLE).
2. PLACE BUNDLE IN THE TRENCH SO THAT THE BOTTOM AND BACK ARE INTACT WITH THE FLOODPLAIN.
3. DRIVE STAKES DOWN ALONG THE CENTER OF THE BUNDLE AT 20-30 DEGREE ANGLE FACING UPHILL
4. LEAVE 3" OF EACH STAKE EXPOSED ABOVE FASCINE BUNDLE.
5. BACKFILL/COVER STAKED IN FASCINE WITH TOPSOIL/COMPOST MIXTURE AND TAMPED FIRMLY IN. 10-20% OF THE FASCINE SHOULD REMAIN EXPOSED AFTER BACKFILL.
6. VOIDS IN THE FASCINE SHOULD BE FILLED WITH SEDIMENT WITHOUT BEING COMPLETELY BURIED, AND WATERED TO REMOVE AIR SPACE.

WILLOW FASCINES

NOT TO SCALE

SLR
1 SOUTH MAIN STREET
WATERBURY, VT 05676
802.882.8335
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DESCRIPTION	DATE	BY

SITE DETAILS
CROSS BROTHERS DAM REMOVAL
DOG RIVER
NORTHFIELD, VT

EE	EE	RS
DESIGNED	DRAWN	CHECKED

SCALE

FEBRUARY 27, 2025
DATE

146.300263.00001
PROJECT NO.

DE-2
SHEET NAME