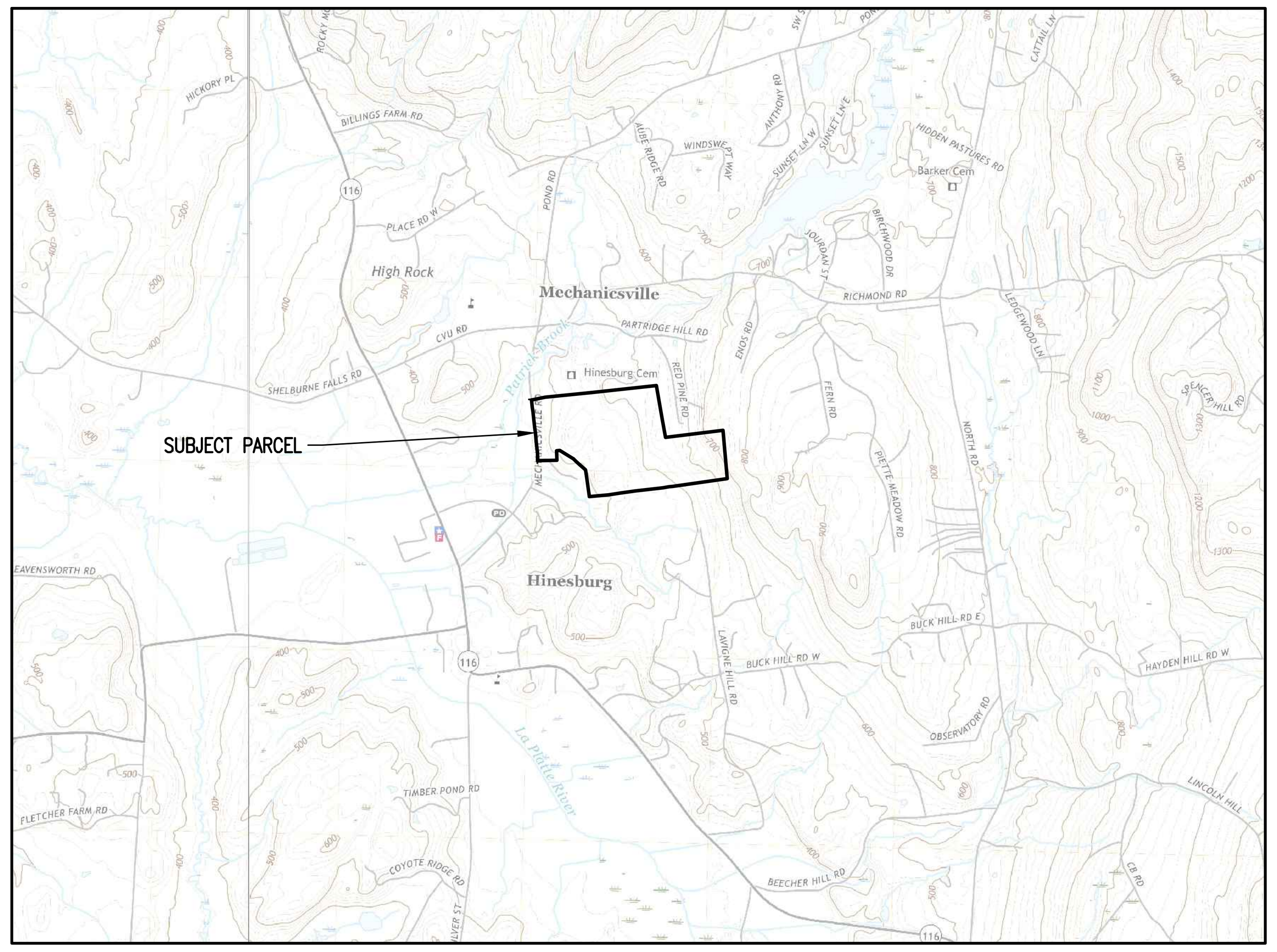
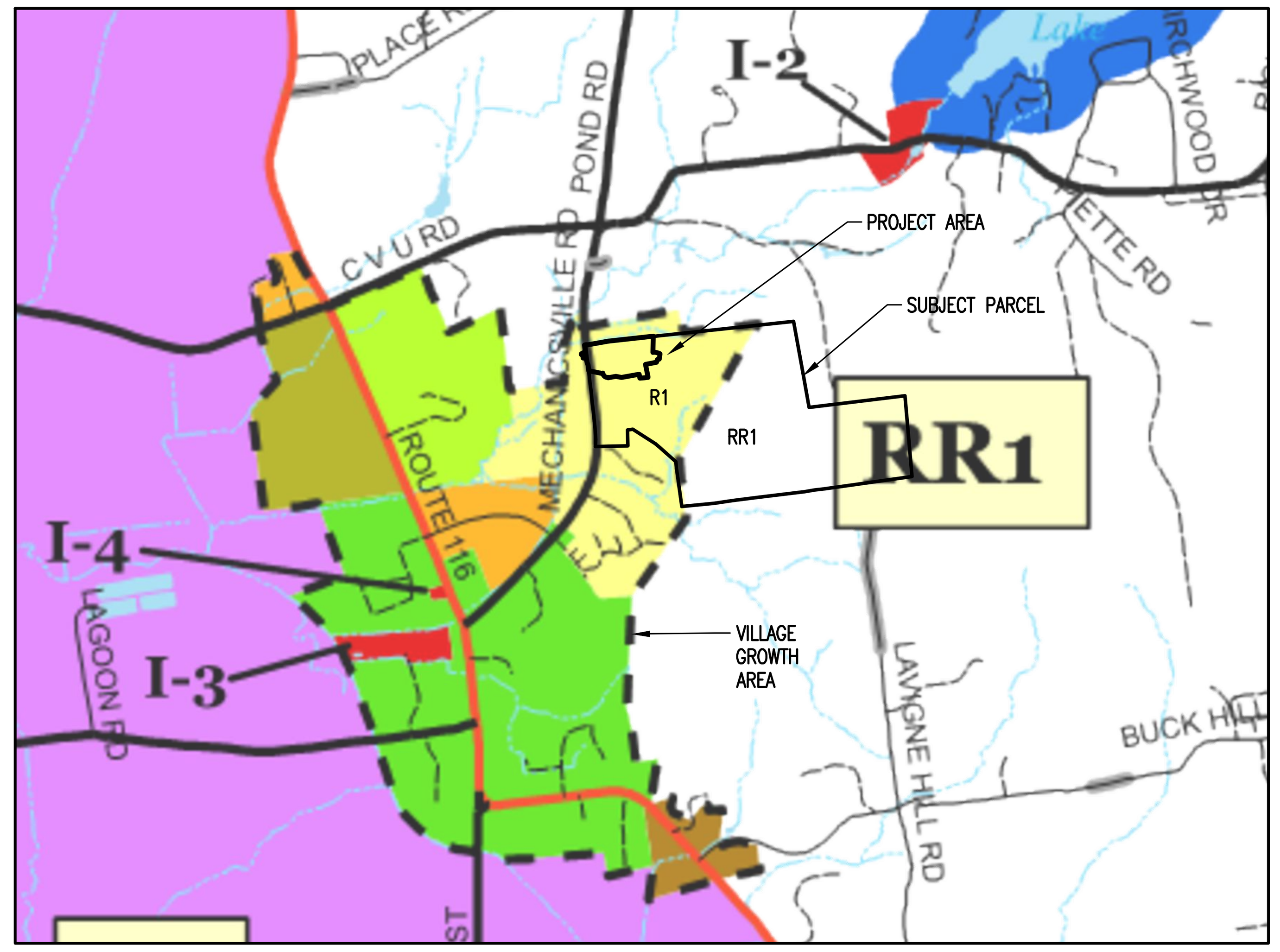
PLOTTED: 5/25/2023 2:12 PM

PROPOSED SUBDIVISION, LASTER PROPERTY
HINESBURG, VERMONT



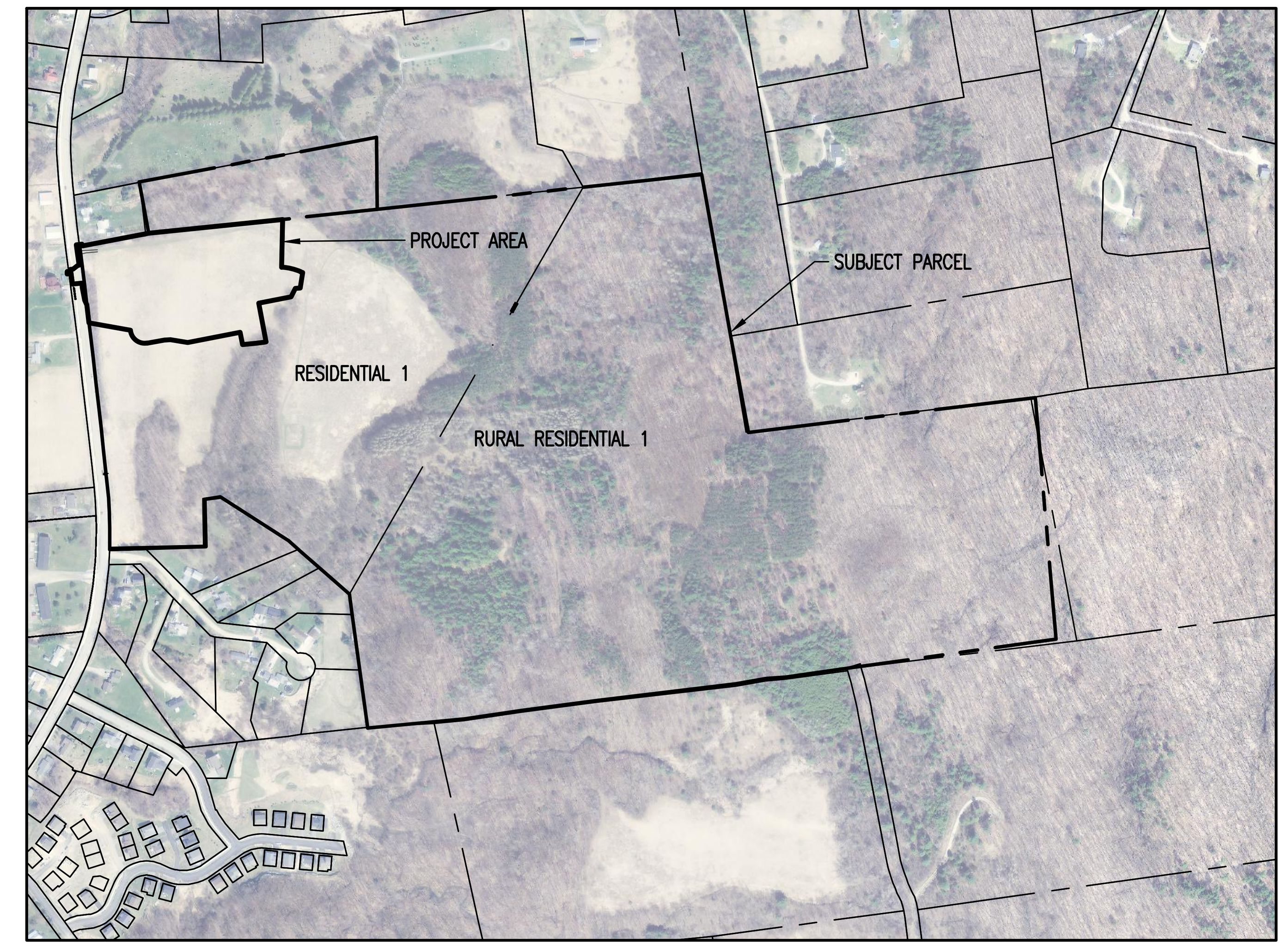
LOCAITON MAP

SCALE: 1" = 2,500'



ZONING MAP

SCALE: 1" = 1,500'



AERIAL PHOTO

SCALE: 1" = 500'

CONSULTANTS

CIVIL ENGINEER:
ENGINEERING VENTURES, PC
208 FLYNN AVE, SUITE 2A
BURLINGTON, VT 05401

LAND SURVEYOR:
VERMONT MAPPING & SURVEY CO., LLC
8 ESSEX WAY, SUITE 200B
ESSEX JUNCTION, VT 05452

LANDSCAPE ARCHITECT:
WAGNER HODGSON
7 MARBLE AVENUE
BURLINGTON, CT 05401

TRAFFIC CONSULTANT:
WALL CONSULTANT GROUP
2139 S 1260 W
SALT LAKE CITY, UT 84119-1464

ARCHITECT:
TRUEX CULLINS
209 BATTERY STREET
BURLINGTON, VT 05401

OWNER/APPLICANT

JOSEPH LASTER
1139 LANIER BLVD
ATLANTA, GA 30306
(404) 822-6990

SUBJECT PROPERTY

PARCEL ID: 17-22-62.100
LOCATION: EAST SIDE OF MECHANICSVILLE ROAD
BETWEEN HAWK LANE AND THE TOWN CEMETERY

ZONING DISTRICT DIMENSIONAL STANDARDS

Residential 1 District	Required	Proposed							
		Lot 1	Lot 2	Lot 3	Lot 4	Lot 5	Lot 6	Lot 7	Lot 8
Lot Area	6,000-sf minimum	36,452-sf	17,374-sf	19,288-sf	20,451-sf	18,469-sf	20,745-sf	18,081-sf	13,189-sf
Lot Frontage	60-ft minimum	72.18-ft	90.04-ft	104.33-ft	104.81-ft	104.33-ft	104.79-ft	104.00-ft	114.71-ft
Lot Depth	100-ft minimum	249.90-ft	189.31-ft	189.31-ft	171.15-ft	170.48-ft	204.30-ft	200.22-ft	100.00-ft
Front Setback	10-ft (from ROW edge)	10-ft	10-ft	10-ft	10-ft	10-ft	10-ft	10-ft	10-ft
Side Setback	10-ft	10-ft	10-ft	10-ft	10-ft	10-ft	10-ft	10-ft	10-ft
Rear Setback	10-ft	10-ft	10-ft	10-ft	10-ft	10-ft	10-ft	10-ft	10-ft
Lot Coverage (max.)	60%	11%	20%	35%	35%	35%	35%	35%	35%

PLAN SHEET REFERENCE

Stamp

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A, Burlington, VT 05401 s 802-863-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 s 603-442-9333
414 Union Street, Schenectady, NY 12305 s 518-630-9614
www.engineeringventures.com

JOE LASTER
1139 Lanier Boulevard
Atlanta, GA 30306
404.822.6990

Sheet Title: Cover Sheet

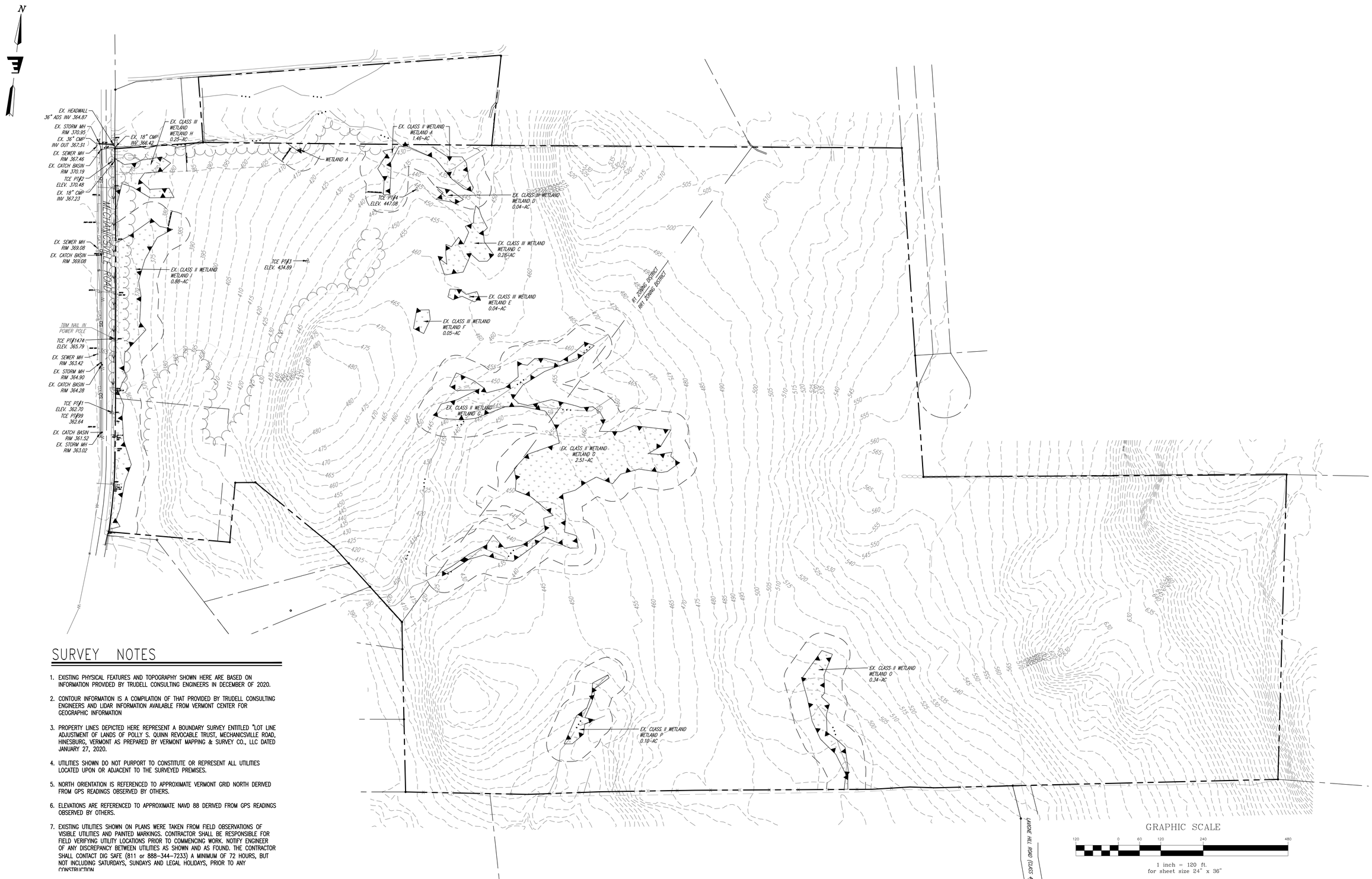
Project Title: PROPOSED SUBDIVISION
LASTER PROPERTY
TOWN OF HINESBURG, CHITTENDEN COUNTY, VERMONT

EV Project # 20542
Drawn By: HKW
Checked By: KW
Scale: as noted
Date: 04/01/2022

No.	Description	Date
3	TOWN DEVELOPMENT REVIEW BOARD COMMENT RESPONSE	05/25/2023

C0.0

PLOTTED: 4/5/2023 11:55 AM



SURVEY NOTES

1. EXISTING PHYSICAL FEATURES AND TOPOGRAPHY SHOWN HERE ARE BASED ON INFORMATION PROVIDED BY TRUDELL CONSULTING ENGINEERS IN DECEMBER OF 2020.
2. CONTOUR INFORMATION IS A COMPILATION OF THAT PROVIDED BY TRUDELL CONSULTING ENGINEERS AND LIDAR INFORMATION AVAILABLE FROM VERMONT CENTER FOR GEOGRAPHIC INFORMATION
3. PROPERTY LINES DEPICTED HERE REPRESENT A BOUNDARY SURVEY ENTITLED "LOT LINE ADJUSTMENT OF LANDS OF POLLY S. QUINN REVOCABLE TRUST, MECHANICSVILLE ROAD, HINESBURG, VERMONT AS PREPARED BY VERMONT MAPPING & SURVEY CO., LLC DATED JANUARY 27, 2020.
4. UTILITIES SHOWN DO NOT PURPORT TO CONSTITUTE OR REPRESENT ALL UTILITIES LOCATED UPON OR ADJACENT TO THE SURVEYED PREMISES.
5. NORTH ORIENTATION IS REFERENCED TO APPROXIMATE VERMONT GRID NORTH DERIVED FROM GPS READINGS OBSERVED BY OTHERS.
6. ELEVATIONS ARE REFERENCED TO APPROXIMATE NAVD 88 DERIVED FROM GPS READINGS OBSERVED BY OTHERS.
7. EXISTING UTILITIES SHOWN ON PLANS WERE TAKEN FROM FIELD OBSERVATIONS OF VISIBLE UTILITIES AND PAINTED MARKINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING UTILITY LOCATIONS PRIOR TO COMMENCING WORK. NOTIFY ENGINEER OF ANY DISCREPANCY BETWEEN UTILITIES AS SHOWN AND AS FOUND. THE CONTRACTOR SHALL CONTACT DIG SAFE (811 or 888-344-7233) A MINIMUM OF 72 HOURS, BUT NOT INCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS, PRIOR TO ANY CONSTRUCTION.

GRAPHIC SCALE

120 0 60 120 240 480

1 inch = 120 ft.
for sheet size 24" x 36"

Stamp

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85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 s 603-442-9333
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www.engineeringventures.com

JOE LASTER

1139 Lanier Boulevard
Atlanta, GA 30306
404.822.6990

Sheet Title: OVERALL EXISTING CONDITIONS PLAN

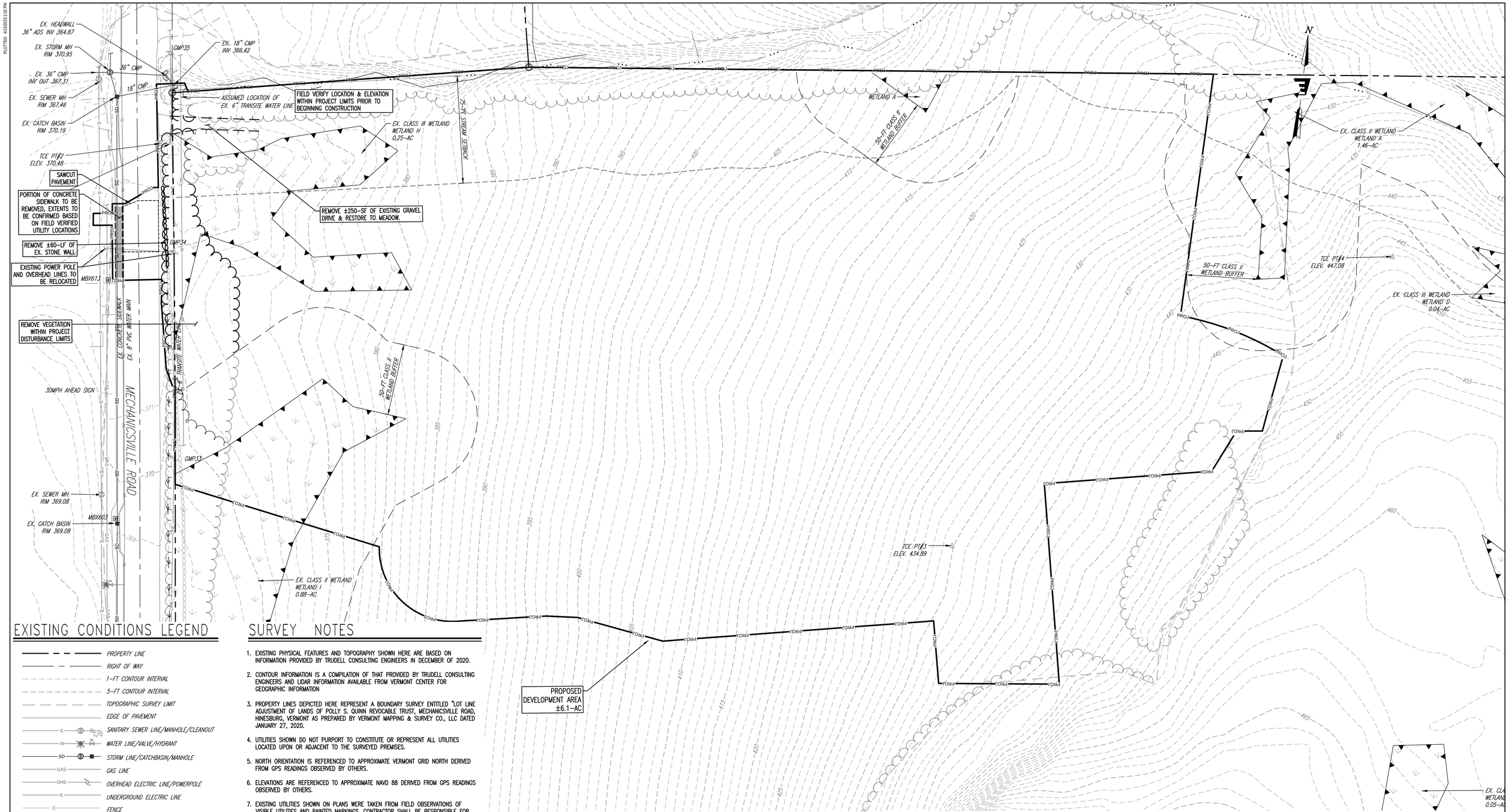
Project Title: PROPOSED SUBDIVISION
LASTER PROPERTY
TOWN OF HINESBURG, CHITTENDEN COUNTY, VERMONT

EV Project #	20542
Drawn By:	HKW
Checked By:	KW
Scale:	1" = 120'
Date:	03/01/2023

No.	Description	Date
1	TOWN & ANR STORMWATER COMMENT RESPONSE	04/12/2023

C1.0

PLOTTED: 4/13/2023 1:02 PM



EXISTING CONDITIONS LEGEND

- PROPERTY LINE
- RIGHT OF WAY
- 1-FT CONTOUR INTERVAL
- 5-FT CONTOUR INTERVAL
- TOPOGRAPHIC SURVEY LIMIT
- EDGE OF PAVEMENT
- SANITARY SEWER LINE/MANHOLE/CLEANOUT
- WATER LINE/VALVE/HYDRANT
- STORM LINE/CATCHBASIN/MANHOLE
- GAS LINE
- OVERHEAD ELECTRIC LINE/POWERPOLE
- UNDERGROUND ELECTRIC LINE
- FENCE
- TREELINE
- STONE WALL
- WATERCOURSE
- 75-FT STREAM SETBACK
- EDGE OF WETLAND (CLASS II OR CLASS III)
- 50-FT CLASS II WETLAND BUFFER

SURVEY NOTES

1. EXISTING PHYSICAL FEATURES AND TOPOGRAPHY SHOWN HERE ARE BASED ON INFORMATION PROVIDED BY TRUDELL CONSULTING ENGINEERS IN DECEMBER OF 2020.
2. CONTOUR INFORMATION IS A COMPILATION OF THAT PROVIDED BY TRUDELL CONSULTING ENGINEERS AND LIDAR INFORMATION AVAILABLE FROM VERMONT CENTER FOR GEOGRAPHIC INFORMATION
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8. WETLAND DELINEATION SHOWN ON THIS PLAN WAS PERFORMED ON 10/16/2020 & 10/17/2020 BY BRITTANY LEBEAU OF TRUDELL CONSULTING ENGINEERS AND CONFIRMED BY VERMONT STATE WETLANDS COORDINATOR LAURA LAPIERRE ON 10/23/2020.

GRAPHIC SCALE

30 0 15 30 60 120

1 inch = 30 ft.
for sheet size 24" x 36"

Stamp

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414 Union Street, Schenectady, NY 12305 s 518-630-9614
www.engineeringventures.com

JOE LASTER
1139 Lanier Boulevard
Atlanta, GA 30306
404.822.6990

Sheet Title: EXISTING CONDITIONS & DEMOLITION PLAN

Project Title: PROPOSED SUBDIVISION
LASTER PROPERTY
TOWN OF HINESBURG, CHITTENDEN COUNTY, VERMONT

EV Project #	20542
Drawn By:	HKW
Checked By:	KW
Scale:	1" = 30'
Date:	03/01/2023

No.	Description	Date
1	TOWN & ANR STORMWATER COMMENT RESPONSE	04/12/2023

C1.1

PLOTTED: 5/31/2023 9:46 AM

PEDESTRIAN WARNING SIGN C8

EX. HEADWALL 36" ADS INV 364.87

EX. STORM MH RIM 370.95

EX. 36" CMP INV OUT 367.31

EX. SEWER MH RIM 367.46

EX. CATCH BASIN RIM 370.19

EX. 18" CMP INV 367.23

GMP35

EX. 18" CMP INV 366.42

36" CMP

18" CMP

ASSUMED LOCATION OF EX. 6" TRANSITE WATER LINE

10-FT WIDE DRAINAGE EASEMENT

EX. CLASS III WETLAND WETLAND H 0.25-AC

75-FT STREAM SETBACK

PROPOSED LOT 1 0.84 ACRES

PROPOSED LOT 2 0.40 ACRES

PROPOSED LOT 3 0.44 ACRES

PROPOSED LOT 4 0.47 ACRES

WETLAND A

50-FT CLASS II WETLAND BUFFER

C9

10-FT WIDE DRAINAGE EASEMENT

EX. CLASS II WETLAND WETLAND A 1.46-AC

PROPOSED LOT 5 0.42 ACRES

50-FT CLASS II WETLAND BUFFER

EX. CLASS III WETLAND WETLAND D 0.04-AC

C11 C4 C1 C2 C3 C7

GMP34

MBX613

C8.1

EX. CONCRETE SIDEWALK

EX. 8" PVC WATER MAIN

EX. TRANSITE WATER LINE

MECHANICSVILLE ROAD

30MPH AHEAD SIGN

STORMWATER TREATMENT AREA #1

22.00'

12.50'

6.00'

50-FT CLASS II WETLAND BUFFER

50-FT RIGHT OF WAY

C6

10-FT FRONT LOT SETBACK

10-FT WIDE DRAINAGE EASEMENT

C5

22.0'

16.0'

PROPOSED LOT 9 96.16 ACRES REMAINING UNDEVELOPED LANDS

GMP33

PROPOSED LOT 10 2.24 ACRES ROADWAY & STORMWATER AREA

EX. SEWER MH RIM 369.08

EX. CATCH BASIN RIM 369.08

MBX603

PEDESTRIAN WARNING SIGN C8

STORMWATER TREATMENT AREA #2

PROPOSED LOT 8 0.31 ACRES

PROPOSED LOT 7 0.35 ACRES

PROPOSED LOT 6 0.42 ACRES

10-FT SIDE LOT SETBACK

10-FT REAR LOT SETBACK

EX. CLASS II WETLAND WETLAND I 0.88-AC

PROPOSED LOT 9 96.16 ACRES REMAINING UNDEVELOPED LANDS

SITE LEGEND

- PROPOSED PROPERTY LINE
- PROPOSED BUILDING ENVELOPE
- CALCULATED ENVELOPE POINT
- PROPOSED RIGHT-OF-WAY/EASEMENT
- EDGE OF PAVED DRIVE/CURB
- EDGE OF GRAVEL DRIVE
- EDGE OF MULTI USE PATH
- SPLIT RAIL FENCE
- LIMIT OF CLEARING
- PAVED DRIVE
- GRAVEL DRIVE
- MULTI USE PATH

REFER TO EXISTING CONDITIONS PLAN FOR LEGEND & NOTES

SITE SCHEDULE

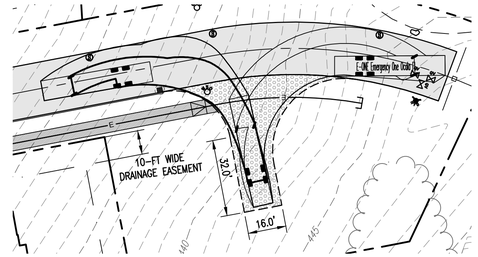
- C1 PROPOSED PRIVATE PAVED ROADWAY
- C2 PROPOSED CONCRETE CURB
- C3 PROPOSED MULTI USE SIDEWALK
- C4 PROPOSED PAVEMENT PATCH
- C5 PROPOSED FIRE TRUCK TURN AROUND
- C6 PROPOSED MAINTENANCE VEHICLE PARKING & TURN AROUND
- C7 PROPOSED SPLIT RAIL FENCE
- C8 PROPOSED SIGN WITH U-CHANNEL POSTS
- C8.1 PROPOSED CROSSWALK WITH PEDESTRIAN SIGNS WITH SQUARE POSTS
- C9 PROPOSED METAL GATE
- C10 PROPOSED BOULDERS DEMARCATING LIMIT OF CLASS II WETLAND BUFFER AREA
- C11 PROPOSED CONCRETE WALK & CURB, REPLACED TO PRE-EXISTING CONDITION WITH ADA ACCESSIBLE RAMPS ADJACENT TO NEW CROSSWALK

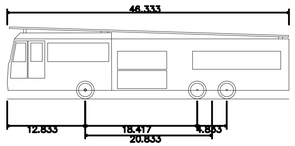
REFER TO NOTES & DETAILS ON SHEET C4.2

GRAPHIC SCALE

30 0 15 30 60 120

1 inch = 30 ft.
for sheet size 24" x 36"





E-ONE Emergency One Ocala FL
Overall Length 46.333ft
Overall Width 8.333ft

FIRE TRUCK TURNING MOVEMENTS

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1139 Lanier Boulevard
Atlanta, GA 30306
404.822.6990

Stamp

Sheet Title: SITE LAYOUT PLAN

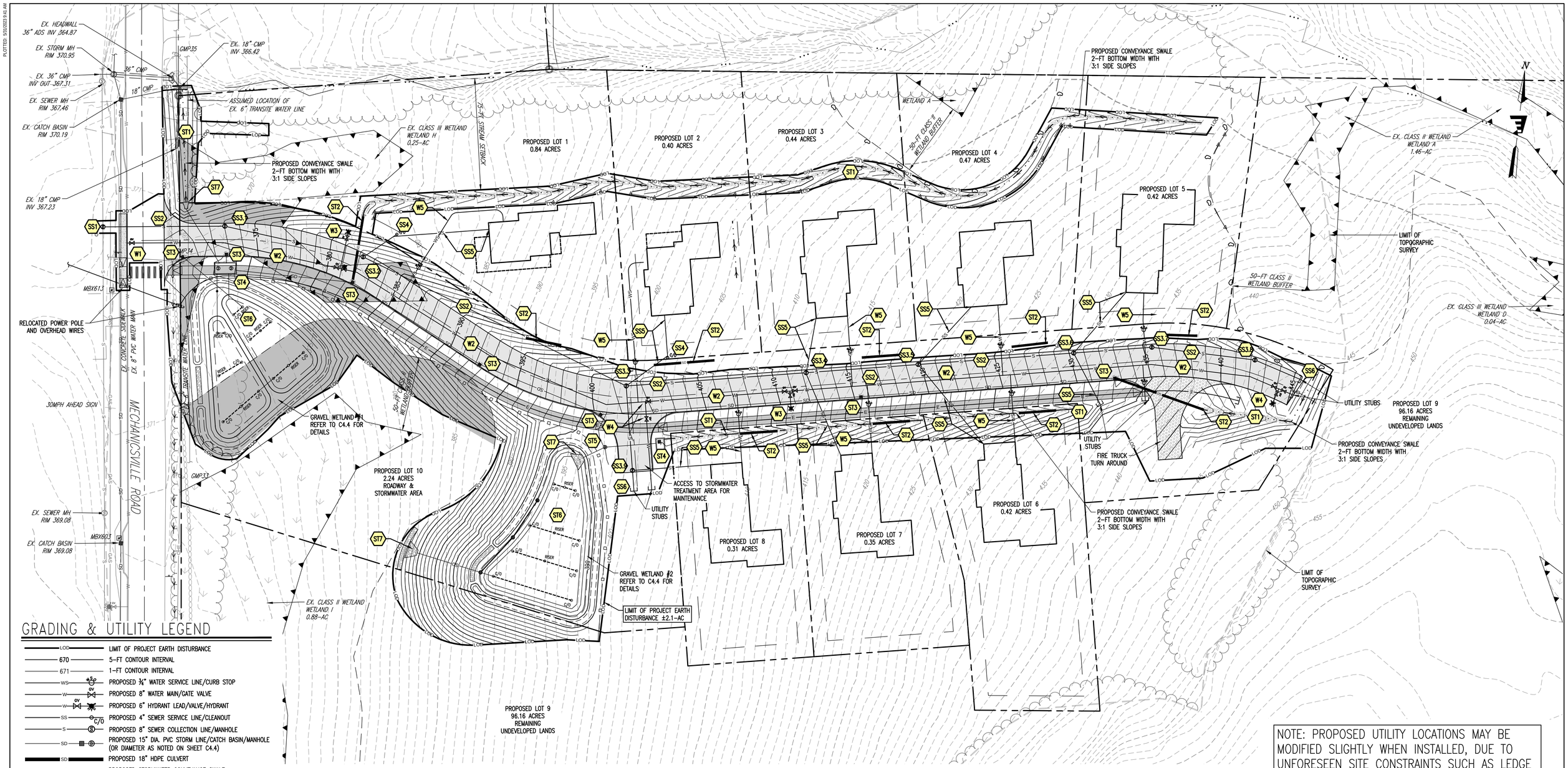
Project Title: PROPOSED SUBDIVISION
LASTER PROPERTY
TOWN OF HINESBURG, CHITTENDEN COUNTY, VERMONT

EV Project #	20542
Drawn By:	HKW
Checked By:	KW
Scale:	1" = 30'
Date:	03/01/2023

No.	Description	Date
1	TOWN & ANR STORMWATER COMMENT RESPONSE	04/12/2023
3	TOWN DEVELOPMENT REVIEW BOARD COMMENT RESPONSE	05/25/2023

C2.1

PLOTTED: 5/31/2023 9:41 AM



GRADING & UTILITY LEGEND

- LOD — LIMIT OF PROJECT EARTH DISTURBANCE
- 670 — 5-FT CONTOUR INTERVAL
- 671 — 1-FT CONTOUR INTERVAL
- WS — PROPOSED ¾" WATER SERVICE LINE/CURB STOP
- W — PROPOSED 8" WATER MAIN/GATE VALVE
- W — PROPOSED 6" HYDRANT LEAD/VALVE/HYDRANT
- SS — PROPOSED 4" SEWER SERVICE LINE/CLEANOUT
- S — PROPOSED 8" SEWER COLLECTION LINE/MANHOLE
- SD — PROPOSED 15" DIA. PVC STORM LINE/CATCH BASIN/MANHOLE (OR DIAMETER AS NOTED ON SHEET C4.4)
- SD — PROPOSED 18" HDPE CULVERT
- PROPOSED STORMWATER CONVEYANCE SWALE
- E — PROPOSED UNDERGROUND ELECTRIC/POWER LINES

STORMWATER SCHEDULE

- ST1 PROPOSED STORMWATER CONVEYANCE SWALE
- ST2 PROPOSED 18" HDPE CULVERT
- ST3 PROPOSED CATCH BASIN
- ST4 PROPOSED PRE-TREATMENT TANK
- ST5 PROPOSED DRAINAGE MANHOLE
- ST6 PROPOSED GRAVEL WETLAND TREATMENT AREA
- ST7 PROPOSED FLARED END SECTION WITH STONE APRON

REFER TO DETAILS & NOTES ON SHEETS C4.3 & C4.4

WATER SCHEDULE

REFER TO DETAILS & NOTES ON SHEET C4.0

- W1 PROPOSED 8" TAPPING SLEEVE AND VALVE FOR CONNECTION TO MUNICIPAL WATER LINE
- W2 PROPOSED 8" DIA. C900 PVC WATER MAIN, PROVIDE MIN. 6-FT BURY DEPTH
- W3 PROPOSED HYDRANT WITH 6" DIA. C900 PVC LEAD AND GATE VALVES ON THREE SIDES
- W4 PROPOSED GATE VALVE
- W5 PROPOSED WATER SERVICE FOR SINGLE FAMILY HOME PROVIDE 3/4" DIA. CTS PLASTIC WATER SERVICE LINE, WITH MIN. 6-FT BURY DEPTH AND CURB STOP WITHIN ROADWAY R.O.W.

SEWER SCHEDULE

REFER TO DETAILS & NOTES ON SHEET C4.1

- SS1 PROPOSED 4-FT I.D. SEWER DOGHOUSE MANHOLE
- SS2 PROPOSED 8" SDR35 PVC SEWER MAIN AT MIN. 0.6% SLOPE
- SS3 PROPOSED 4-FT I.D. SEWER MANHOLE
- SS4 PROPOSED SEWER CLEANOUT & FITTINGS
- SS5 PROPOSED SEWER SERVICE FOR SINGLE FAMILY HOME. PROVIDE 4" SDR 35 PVC AT MIN. 2% SLOPE
- SS6 PROPOSED 8" END CAP

ENVIRONMENTAL IMPACT SUMMARY

Environmental Impact Summary Table

Class II Wetland	0 sf
Class II Wetland Buffer	7996 sf
Class III Wetland	5925 sf
Stream Buffer Impact	1375 sf (drainage swale)
Stream Buffer Restoration	524 sf (remove ex. gravel)

GRAPHIC SCALE

30 0 15 30 60 120

1 inch = 30 ft.
for sheet size 24" x 36"

NOTE: PROPOSED UTILITY LOCATIONS MAY BE MODIFIED SLIGHTLY WHEN INSTALLED, DUE TO UNFORESEEN SITE CONSTRAINTS SUCH AS LEDGE

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JOE LASTER
1139 Lanier Boulevard
Atlanta, GA 30306
404.822.6990

Sheet Title: SITE GRADING & UTILITY PLAN

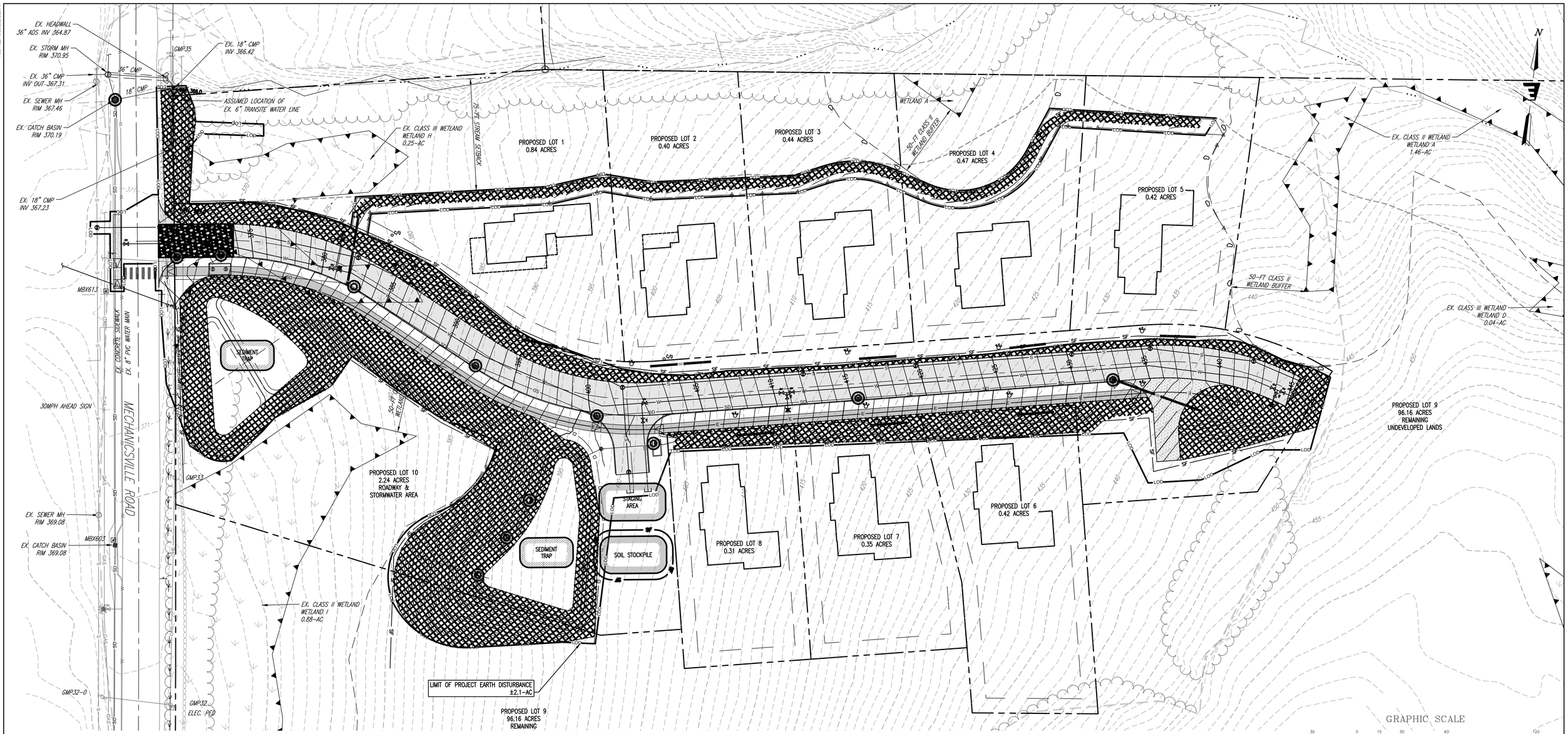
Project Title: PROPOSED SUBDIVISION
LASTER PROPERTY
TOWN OF HINESBURG, CHITTENDEN COUNTY, VERMONT

EV Project #	20542
Drawn By:	HKW
Checked By:	KW
Scale:	1" = 30'
Date:	03/01/2023

No.	Description	Date
1	TOWN & ANR STORMWATER COMMENT RESPONSE	04/12/2023
2	ANR STORMWATER & W-WW COMMENT RESPONSE	05/08/2023
3	TOWN DEVELOPMENT REVIEW BOARD COMMENT RESPONSE	05/25/2023

C2.2

PLOTTED: 5/30/2023 2:39 PM



EROSION CONTROL LEGEND

EROSION PREVENTION AND SEDIMENT CONTROL STRATEGY
THE FOLLOWING TECHNIQUES WILL BE UTILIZED AS PART OF A SEDIMENT AND EROSION CONTROL PROGRAM. THE SEDIMENT AND EROSION CONTROL PROGRAM WILL BE IMPLEMENTED IN STAGES. CERTAIN ITEMS FROM ONE STAGE WILL LIKELY OVERLAP OR TAKE PLACE CONCURRENTLY WITH ITEMS FROM OTHER STAGES.

TEMPORARY INLET PROTECTION – INSTALL AS INDICATED ON PLANS. STONE TO BE REMOVED AND REPLACED WITH CLEAN STONE WHEN SEDIMENT IS ≤ 1/2 DEPTH OF STONE. REMOVE ALL SEDIMENT IF COLLECTED IN STRUCTURE AS SOON AS POSSIBLE.

PERMANENT EROSION CONTROL NETTING.
THIS STRUCTURAL MEASURE IS INSTALLED IN AREAS THAT HAVE SLOPES 3:1 AND GREATER AND IN OTHER LOCATIONS INDICATED ON THIS PLAN TO STABILIZE THE SLOPE AND REDUCE THE EROSION POTENTIAL. THE NETTING IS TYPICALLY IMPREGNATED WITH GRASS SEED AND SOMETIMES STAPLED TO THE EXPOSED SOIL. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED.

TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
THIS STRUCTURAL MEASURE IS A STABILIZED PAD OF AGGREGATE UNDERLAIN WITH FILTER FABRIC LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE TO OR FROM A PUBLIC RIGHT-OF-WAY, STREET, ALLEY, SIDEWALK, OR PARKING AREA. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY OR STREETS. THIS WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED. ONCE REMOVED, THE IMPACTED AREA SHALL BE SEEDED AND MULCHED.

SEDIMENT TRAP
STAGING AREA
SOIL STOCKPILE

TEMPORARY SEDIMENT BASIN
THIS STRUCTURAL MEASURE INVOLVES CONSTRUCTING TEMPORARY SEDIMENT BASINS IN THE LOCATION OF PROPOSED STORMWATER PONDS. GENERALLY THE STORMWATER PONDS CAN BE CONSTRUCTED AS SHOWN ON THE PLANS HOWEVER ORIFICE ON THE OUTLET STRUCTURES SHALL BE OMITTED UNTIL THE SITE IS STABILIZED TO IMPOUND RUNOFF AND ALLOW FOR SETTLING OF SUSPENDED FINES. THIS WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED. ONCE THE SITE IS STABILIZED, SEDIMENT SHALL BE REMOVED FROM THE BASINS AND THE OUTLET ORIFICE SHALL BE DRILLED INTO THE OUTLET STRUCTURE AS NOTED ON THE PLANS.

TEMPORARY STAGING AND WASTE AREAS (APPROXIMATE)
THESE ARE APPROVED LOCATIONS WHERE NON-SOIL, NON-ERODIBLE MATERIALS MAY BE STORED. SOILS SHALL NOT BE STORED IN THESE AREAS.

TEMPORARY SOIL STOCKPILE AREAS (APPROXIMATE)
THESE ARE APPROVED LOCATIONS WHERE TOPSOIL AND OTHER SOIL MATERIALS MAY BE STORED. THESE STOCKPILES WILL BE PROTECTED FROM EROSION BY A NUMBER OF METHODS, INCLUDING INSTALLING SILT FENCING AROUND THE DOWN GRADIENT PERIMETER OF THE STOCKPILE AND SEEDING AND MULCHING THE STOCKPILE WHEN NOT IN USE FOR MORE THAN FIVE DAYS.

CONSTRUCTION (CF) OR CHAIN LINK (o) FENCING
THIS STRUCTURAL MEASURE IS INSTALLED ALONG THE PERIMETER OF THE PROJECT AREA. IN MANY CASES THE LIMIT OF DISTURBANCE WILL COINCIDE WITH THE FENCING OR INDICATE BUFFER AREAS TO BE PROTECTED. THE FENCING IS EFFECTIVE WHEN USED TO SEPARATE THE PROJECT AREA FROM ADJACENT AREAS USED BY THE PUBLIC. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED. CONFIRM LOCATION, EXTENTS AND GATES WITH OWNER. FENCE LOCATION AND GATES TO BE RE-ADJUSTED AS NECESSARY BASED ON OWNER REQUIREMENTS AND COORDINATION.

TEMPORARY SILT FENCING OR STRAW WATTLES
THIS STRUCTURAL MEASURE IS A TEMPORARY BARRIER OF GEOTEXTILE FABRIC USED TO INTERCEPT SEDIMENT LADEN RUNOFF FROM SMALL DRAINAGE AREAS OF DISTURBED SOIL. IT IS INSTALLED ALONG THE PERIMETER OF IMPACTED AREAS AND ALONG THE BASE OF THE FILL SLOPES, ADDITIONALLY, WHEN DESIGNATED ALONG THE LIMITS OF DISTURBANCE, INSTALL CONSTRUCTION FENCE BEHIND THE SILT FENCE. SILT FENCING IS EFFECTIVE IN REDUCING STORMWATER RUNOFF VELOCITIES, ASSIST IN THE DEPOSITION OF TRANSPORTED SEDIMENT LOAD AND PREVENT EROSION OF SOILS ONTO ADJACENT AREAS. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED.

LIMITS OF DISTURBANCE
THE CONTRACTOR SHALL CONTAIN ANY EARTH MOVING ACTIVITIES WITHIN THE DESIGNATED LIMITS SHOWN ON THIS PLAN. THE ENGINEER SHALL REVIEW THE SITE TO MAKE ANY ADJUSTMENTS TO ACCOUNT FOR ENVIRONMENTALLY SENSITIVE AREAS, SPECIMEN TREES AND SPECIAL AREAS OF CONCERN.

Stamp

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A, Burlington, VT 05401 s 802-863-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 s 603-442-9333
414 Union Street, Schenectady, NY 12305 s 518-630-9614
www.engineeringventures.com

JOE LASTER

1139 Lanier Boulevard
Atlanta, GA 30306
404.822.6990

Sheet Title: EROSION PREVENTION & SEDIMENT CONTROL PLAN

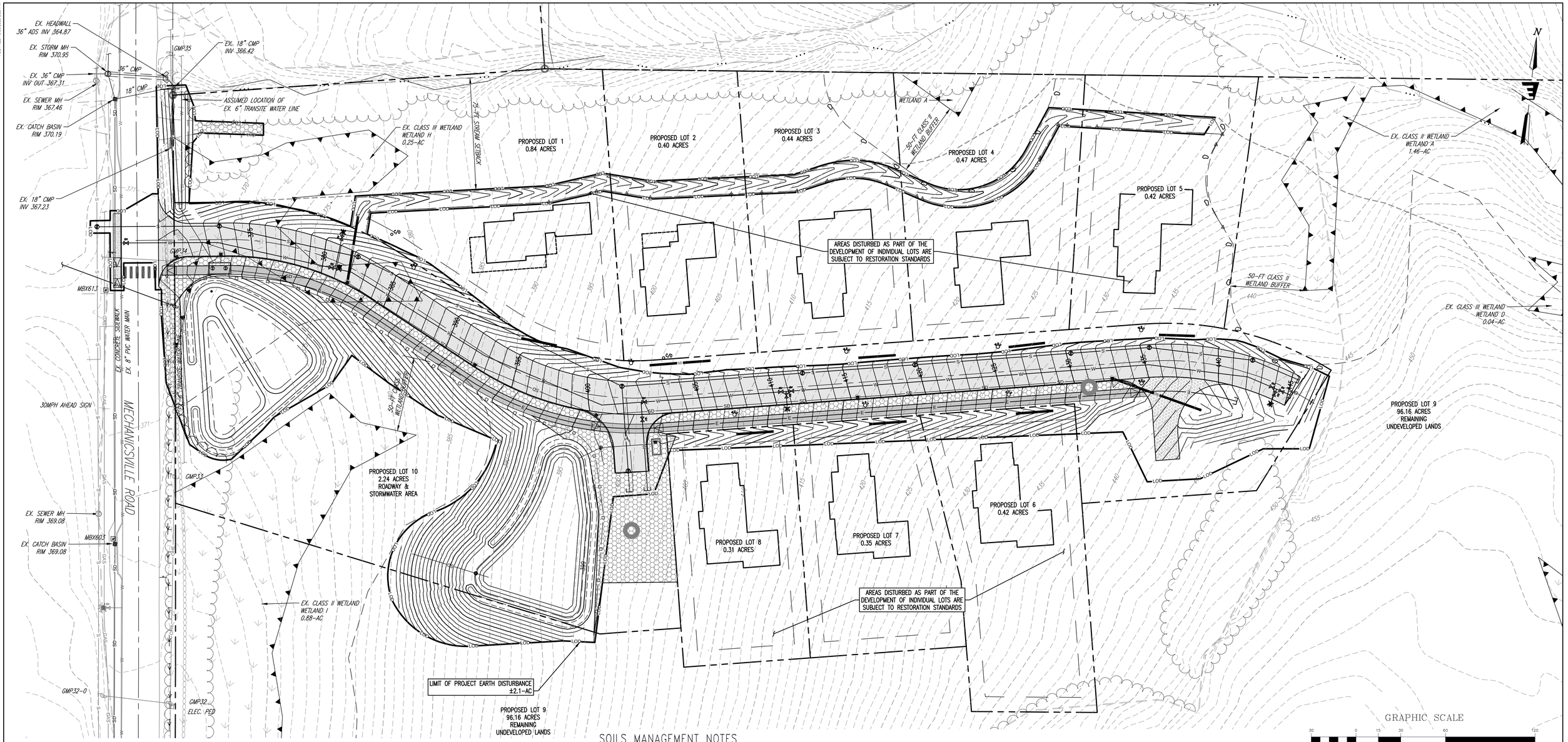
Project Title: PROPOSED SUBDIVISION
LASTER PROPERTY
TOWN OF HINESBURG, CHITTENDEN COUNTY, VERMONT

EV Project #	20542
Drawn By:	HKW
Checked By:	KW
Scale:	1" = 30'
Date:	03/01/2023

No.	Description	Date
1	TOWN & ANR STORMWATER COMMENT RESPONSE	04/12/2023
3	TOWN DEVELOPMENT REVIEW BOARD COMMENT RESPONSE	05/25/2023

C2.3

PLOTTED: 5/30/2023 2:29 PM



SOILS MANAGEMENT LEGEND

- LOD — LIMITS OF DISTURBANCE (±1.8-AC)
- DISTURBED SOILS SUBJECT TO RESTORATION STANDARDS (±0.3-AC)
- PROPOSED SOIL RESTORATION TESTING LOCATION (7 PER ACRE OF DISTURBED SUBJECT SOILS)

SOILS MANAGEMENT TESTING

ONCE SOIL QUALITY HAS BEEN RESTORED IN ACCORDANCE WITH THE SOIL RESTORATION METHODS OUTLINED, AND PRIOR TO PLANTING THE CONTRACTOR SHALL PERFORM FIELD TESTING OF RESTORED SOIL QUALITY. TESTING SHALL BE IN LOCATIONS SHOWN ON THE PLANS OR AS APPROVED BY THE ENGINEER. A MINIMUM OF NINE TEST HOLES PER ACRE SHALL BE DUG TO A DEPTH OF 8-INCHES AND SHALL BE AT LEAST 50-FEET APART. TESTING SHALL BE PERFORMED USING SPADE SHOVEL DRIVEN USING SOLELY BY THE WEIGHT OF THE INSPECTOR. CONTRACTOR SHALL PREPARE REPORTING FORM THAT INCLUDES THE FOLLOWING INFORMATION:

- DATE/TIME OF TEST
- PERSONS PERFORMING AND WITNESSING TESTING
- LOCATION OF TEST
- OBSERVATIONS SHALL NOTE: EASE OF DRIVING SPADE (DIFFICULT, MODERATE, EASY), VERIFICATION OF SOIL AMENDMENTS, NOTE OF MATERIAL THICKNESS, TEXTURE AND OTHER NOTABLE SOIL FEATURES.

TESTS THAT INDICATE DIFFICULTY IN DRIVING A SPADE, LACK OF SOILS AMENDMENTS, AND TEXTURES NOT CONSISTENT WITH RESTORATION PRACTICE OPTIONS NOTED ABOVE SHALL HAVE AN ADDITIONAL TEST PERFORMED WITHIN 50-FEET OF THE TEST SHOWING 'POOR' RESULTS. IF THREE CONSECUTIVE TESTS SHOWING POOR RESULTS ARE OBTAINED THE AREA TESTED SHALL BE SUBJECT TO REWORK IN ACCORDANCE WITH RESTORATION PRACTICES NOTED AND SUBSEQUENTLY RETESTED.

UPON COMPLETION OF SUCCESSFUL TESTING, SURFACES SHALL BE PLANTED WITH SEED AND STABILIZED IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS.

SOILS MANAGEMENT NOTES

FOLLOWING ROUGH SITE GRADING, INSTALLATION OF UTILITIES AND INFRASTRUCTURE; AND PRIOR TO PLANNING OF VEGETATIVE COVER, CONTRACTOR SHALL RESTORE SOIL QUALITY TO DISTURBED SOILS THAT WILL NOT BE COVERED BY IMPERVIOUS SURFACES, INCORPORATED INTO STRUCTURAL STORMWATER TREATMENT PRACTICES, ATHLETIC FIELDS, OR ENGINEERED STRUCTURAL FILL USING ONE OF THE FOLLOWING METHODS. CONTRACTOR SHALL PROVIDE NOTICE TO ENGINEER/OWNER PRIOR TO CONSTRUCTION OF SELECTED METHOD.

AREAS EXEMPT FROM THIS STANDARD INCLUDE UNDISTURBED AREAS, SLOPES GREATER THAN 33%, IMPERVIOUS AREAS AND PROPOSED STANDARD TREATMENT PRACTICES.

OPTION 1: AMEND EXISTING SITE TOPSOIL OR SUBSOIL IN PLACE

- SCARIFY OR TILL SUBSOILS TO 4-INCH DEPTH OR TO DEPTH NEEDED TO ACHIEVE A TOTAL DEPTH OF 8-INCHES OF UNCOMPACTED SOIL AFTER CALCULATED AMOUNT OF AMENDMENT IS ADDED. EXCEPT FOR WITHIN THE DRIP LINE OF EXISTING TREES, THE ENTIRE SURFACE SHALL BE DISTURBED BY SCARIFICATION.
- AMEND SOIL TO MEET ORGANIC CONTENT REQUIREMENT:
  - ** PRE APPROVED RATE: PLACE 1-INCH OF COMPOSTED MATERIAL WITH AN ORGANIC MATTER CONTENT BETWEEN 40 AND 60% AND ROTOTILL INTO 3-INCHES OR SOIL, OR
  - ** CALCULATED RATE: PLACE CALCULATED AMOUNT OF COMPOSTED MATERIAL OR APPROVED ORGANIC MATERIAL AND ROTOTILL INTO DEPTH OF SOIL NEEDED TO ACHIEVE 4-INCHES OF SETTLED SOIL AT 4% ORGANIC CONTENT.
- RAKE BEDS TO SMOOTH AND REMOVE SURFACE ROCKS LARGER THAN 2-INCHES IN DIAMETER
- WATER OR ROLL TO COMPACT SOIL IN TURF AREAS TO 85% OF MAXIMUM DRY DENSITY

OPTION 2: REMOVE AND STOCKPILE EXISTING TOPSOIL DURING GRADING.

- STOCKPILE SOIL ON SITE IN A DESIGNATED CONTROLLED AREA, AT LEAST 50-FEET FROM SURFACE WATER, WETLANDS, FLOODPLAINS, OR OTHER CRITICAL RESOURCE AREAS.
- SCARIFY OR TILL SUBGRADE TO A DEPTH OF 4-INCHES. EXCEPT FOR WITHIN THE DROP LINE OF EXISTING TREES, THE ENTIRE SURFACE SHALL BE DISTURBED BY SCARIFICATION.
- STOCKPILED TOPSOIL SHALL ALSO BE AMENDED, IF NEEDED, TO MEET THE ORGANIC CONTENT REQUIREMENTS:
  - ** PRE APPROVED RATE: COMPOST SHALL BE INCORPORATED WITH AN ORGANIC MATTER CONTENT BETWEEN 40 AND 65% INTO THE TOPSOIL AT A RATIO 1:3, OR
  - ** CALCULATED RATE: INCORPORATE COMPOSTED MATERIAL OR APPROVED ORGANIC MATERIAL AT A CALCULATED RATE TO ACHIEVE 4-INCHES OF SETTLED SOIL AT 4% ORGANIC CONTENT
- REPLACE STOCKPILED TOPSOIL PRIOR TO PLANTING
- RAKE TO LEVEL, AND REMOVE SURFACE ROCKS LARGER THAN 2-INCHES IN DIAMETER.

OPTION 3: IMPORT TOPSOIL MIX, OR OTHER MATERIALS FOR MIXING, INCLUDING COMPOST, OF SUFFICIENT ORGANIC CONTENT AND DEPTH.

- SCARIFY OR TILL SUBGRADE TO A DEPTH OF 4-INCHES. EXCEPT FOR WITHIN THE DRIP LINE OF EXISTING TREES, THE ENTIRE SURFACE SHALL BE DISTURBED BY SCARIFICATION
- PLACE 4-INCHES OF IMPORTED TOPSOIL MIX ON SURFACE. THE IMPORTED TOPSOIL MIX SHALL CONTAIN 4% ORGANIC MATTER. SOILS USED IN THE MIX SHALL BE SAND OR SANDY LOAM AS DEFINED BY THE USDA SOILS CLASSIFICATION SYSTEM.
- RAKE BEDS TO SMOOTH AND REMOVE SURFACE ROCKS LARGER THAN 2-INCHES IN DIAMETER.
- WATER OR ROLL TO COMPACT SOIL IN TURF AREAS TO 85% OF MAXIMUM DRY DENSITY.

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208 Flynn Avenue, Suite 2A, Burlington, VT 05401 s 802-863-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 s 603-442-9333
414 Union Street, Schenectady, NY 12305 s 518-630-9614
www.engineeringventures.com

JOE LASTER
1139 Lanier Boulevard
Atlanta, GA 30306
404.822.6990

Sheet Title: SOILS MANAGEMENT PLAN

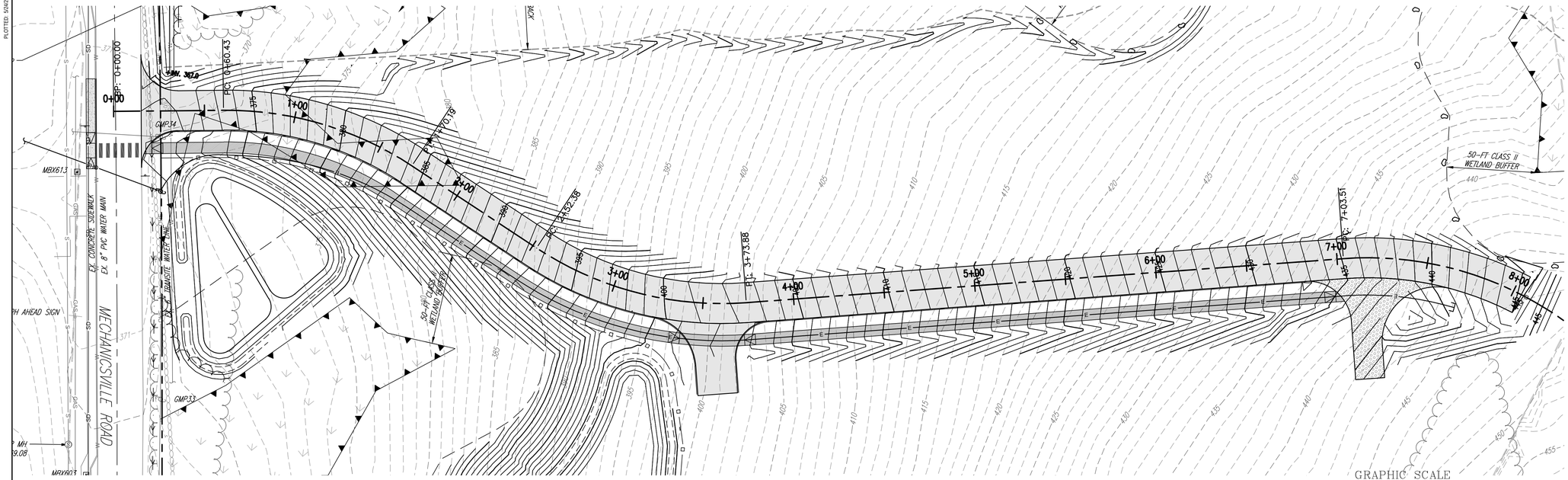
Project Title: PROPOSED SUBDIVISION
LASTER PROPERTY
TOWN OF HINESBURG, CHITTENDEN COUNTY, VERMONT

EV Project #	20542
Drawn By:	HKW
Checked By:	KW
Scale:	1" = 30'
Date:	03/01/2023

No.	Description	Date
2	ANR W-WW & STORMWATER COMMENT RESPONSE	05/08/2023
3	TOWN DEVELOPMENT REVIEW BOARD COMMENT RESPONSE	05/25/2023

C2.4

PLOTTED: 5/24/2023 5:40 PM



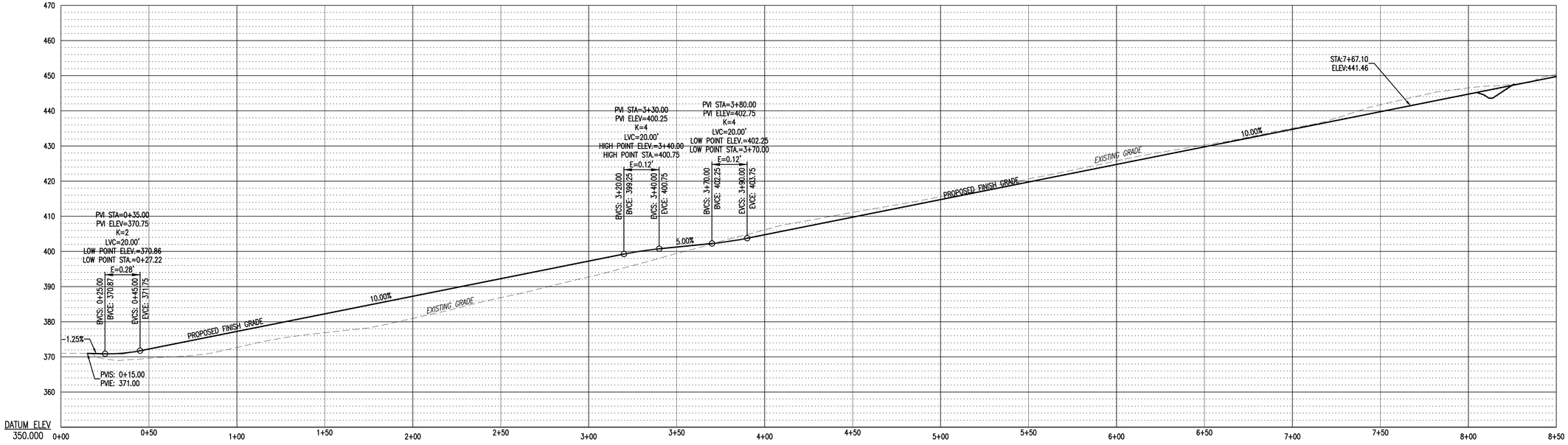
PROPOSED ROADWAY PLAN VIEW, STA. 0+00 – 8+50

SCALE: 1" = 30'

GRAPHIC SCALE

30 0 15 30 60 120

1 inch = 30 ft.
for sheet size 24" x 36"



PROPOSED ROADWAY PROFILE, STA. 0+00 – 8+50

SCALE: HORIZ. 1" = 30'
VERT.: 1" = 15'

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414 Union Street, Schenectady, NY 12305 s 518-630-9614
www.engineeringventures.com

JOE LASTER
1139 Lanier Boulevard
Atlanta, GA 30306
404.822.6990

Sheet Title: Roadway Plan & Profile

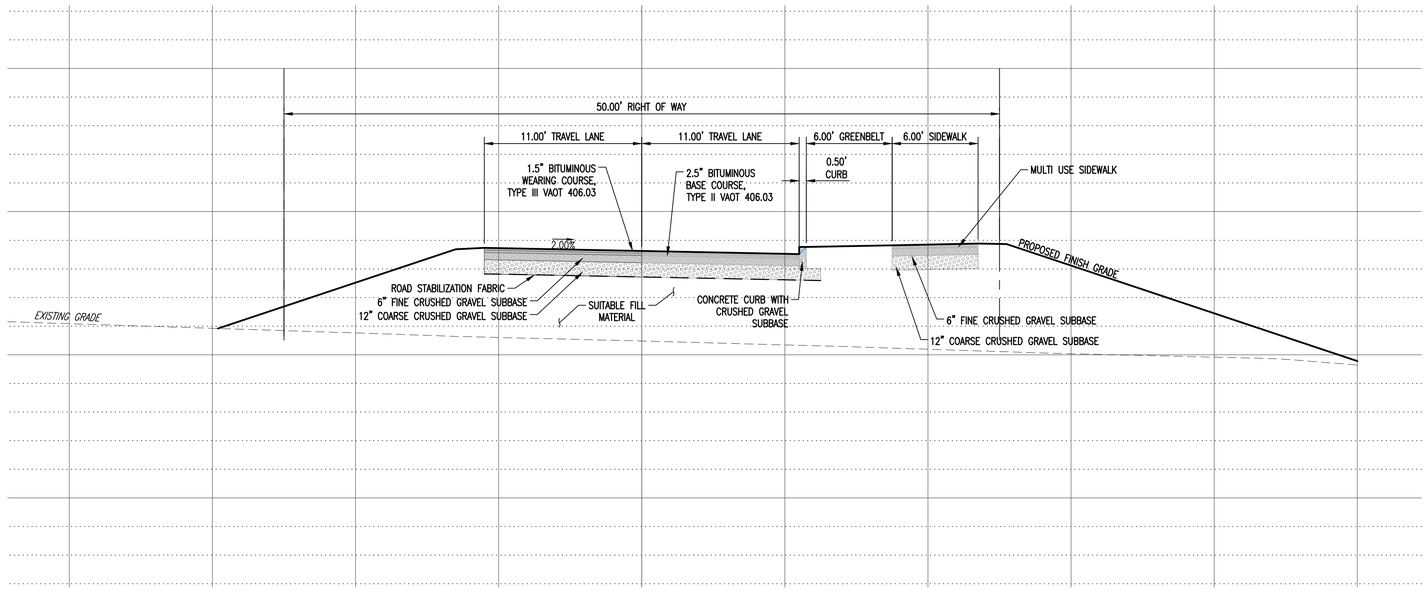
Project Title: PROPOSED SUBDIVISION
LASTER PROPERTY
TOWN OF HINESBURG, CHITTENDEN COUNTY, VERMONT

EV Project #	20542
Drawn By:	HKW
Checked By:	KW
Scale:	as noted
Date:	03/01/2023

No.	Description	Date
1	TOWN & ANR STORMWATER COMMENT RESPONSE	04/12/2023
3	TOWN DEVELOPMENT REVIEW BOARD COMMENT RESPONSE	05/25/2023

C3.1

PLOTTED: 3/3/2023 7:37 AM



TYPICAL ROADWAY SECTION, STA 2+00

SCALE: 1" = 5'

GRAPHIC SCALE

5 0 2.5 5 10 20

1 inch = 5 ft.
for sheet size 24" x 36"

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414 Union Street, Schenectady, NY 12305 s 518-630-9614
www.engineeringventures.com

JOE LASTER

1139 Lanier Boulevard
Atlanta, GA 30306
404.822.6990

Sheet Title: Typical Roadway Cross Section

Project Title: PROPOSED SUBDIVISION
LASTER PROPERTY
TOWN OF HINESBURG, CHITTENDEN COUNTY, VERMONT

EV Project #	20542
Drawn By:	HKW
Checked By:	KW
Scale:	1" = 5'
Date:	03/01/2023

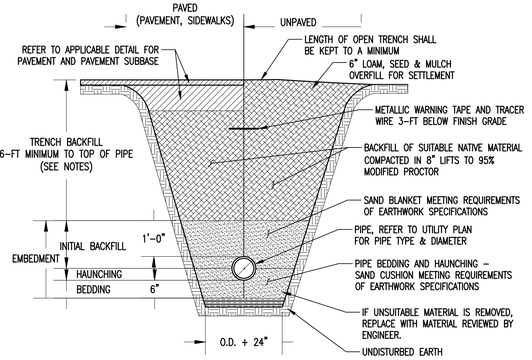
No.	Description	Date

C3.2

PLOTTED: 3/2/2023 7:43PM

WATER TRENCH DETAIL

NOT TO SCALE (1)



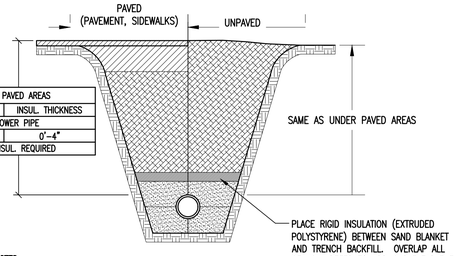
WATER TRENCH NOTES:

1. UNLESS OTHERWISE NOTED, ASSUME CLASS "C" SOILS. PERFORM ALL EXCAVATIONS TO OSHA REQUIREMENTS.
2. BEDDING TO PROVIDE A FIRM, STABLE, CONTINUOUS AND UNIFORM SUPPORT FOR FULL LENGTH OF PIPE.
3. PROVIDE 6-FT MINIMUM COVER OVER WATER PIPE.
4. INSTALL WATER PIPE IN ACCORDANCE WITH AWWA STANDARD C600.
5. BACKFILL SHALL BE OF A SUITABLE MATERIAL REMOVED FROM EXCAVATION EXCEPT WHERE OTHER MATERIAL IS SPECIFIED. DEBRIS, FROZEN MATERIAL, LARGE CLODS OR STONES, ORGANIC MATTER, OR OTHER UNSTABLE MATERIALS SHALL NOT BE USED FOR BACKFILL WITHIN TWO FEET OF THE TOP OF THE PIPE.
6. LEDGE, ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF FOUR INCHES BELOW AND ON EACH SIDE OF ALL PIPES.

INSULATION OVER SHALLOW WATER LINE DETAIL

NOT TO SCALE (2)

INSULATION IN PAVED AREAS		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'-3.5'	LOWER PIPE	
3.5'-6'	6'-0"	0'-4"
>6'	NO INSUL. REQUIRED	

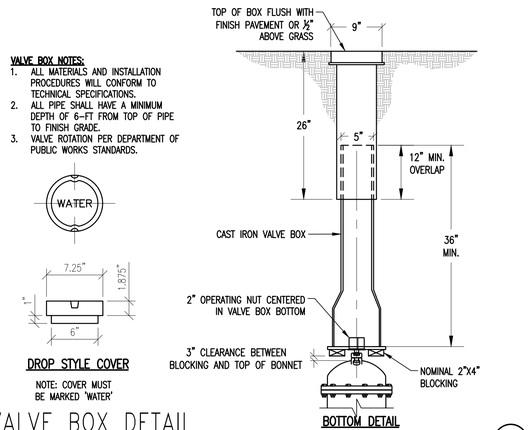


WATER INSULATION NOTES:

1. REFER TO APPLICABLE TRENCH DETAIL FOR SPECIFIC BACKFILL INFORMATION.
2. RIGID EXTRUDED POLYSTYRENE INSULATION SHALL CONFORM WITH ASTM C578 – STANDARD SPECIFICATION FOR RIGID CELLULAR POLYSTYRENE THERMAL INSULATION AND SHALL BE DOW STYROFOAM HIGH LOAD 40 OR EQUIVALENT.

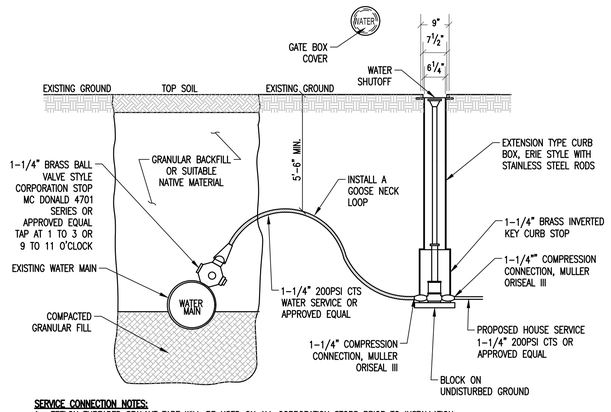
VALVE BOX DETAIL

NOT TO SCALE (3)



VALVE BOX NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHALL HAVE A MINIMUM DEPTH OF 6-FT FROM TOP OF PIPE TO FINISH GRADE.
3. VALVE ROTATION PER DEPARTMENT OF PUBLIC WORKS STANDARDS.



SERVICE CONNECTION NOTES:

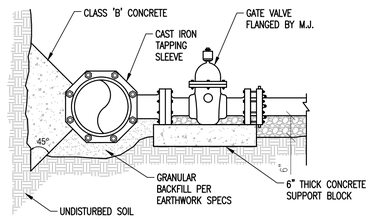
1. TEFLON THREADED SEALANT TAPE WILL BE USED ON ALL CORPORATION STOPS PRIOR TO INSTALLATION.
   A. SPIRAL WRAP COMPLETELY COVERING THE THREAD AREA WITH TWO WRAPS.
   B. PIPE DOPE OR OTHER LIQUID THREAD SEALANTS ARE NOT ACCEPTABLE.
2. LEAVE UP TO THREE THREADS SHOWING OUTSIDE OF PIPE. A TORQUE OF 35 POUNDS IS RECOMMENDED.
3. WATER SERVICE LINE AND CONNECTION SHALL BE INSTALLED ACCORDING TO THE TOWN OF HINESBURG PUBLIC WORKS DEPARTMENT STANDARDS.
4. HINESBURG WATER DEPARTMENT WILL PROVIDE A ¾ X ¾ WATER METER (FOR 1-20 GPM RESIDENTIAL OPERATING RANGE). HINESBURG WATER DEPARTMENT WILL BE RESPONSIBLE FOR INSPECTION, MAINTENANCE, REPAIR OR REPLACEMENT OF DEFECTIVE OR NON-WORKING METERS WITHIN THE WATER SYSTEM. THE OWNER SHALL PROVIDE ACCESS TO THE BUILDING UPON REQUEST AND SHALL BE RESPONSIBLE FOR TAKING REASONABLE MEASURE TO PROTECT THE INSIDE METER AND OUTSIDER READER FROM DAMAGE.

WATER SERVICE CONNECTION DETAIL

NOT TO SCALE (4)

TAPPING SLEEVE & VALVE NOTES:

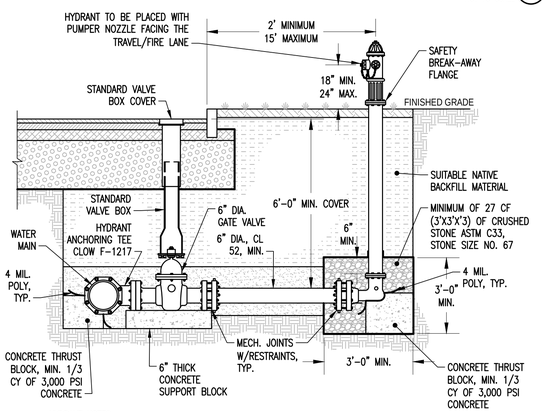
1. AREA OF THRUST BLOCK BEARING AGAINST UNDISTURBED SOIL SHALL BE THE SAME AS FOR 1/4" BEND (90°) BEND.
2. UTILIZE MEGALUG MECHANICAL JOINT RESTRAINT ON M.J. END.
3. SEE TYPICAL GATE VALVE DETAIL FOR VALVE BOX INFORMATION.
4. SEE TYPICAL WATER TRENCH DETAIL FOR PIPE BEDDING REQUIREMENTS.



SECTION VIEW

TAPPING SLEEVE AND VALVE DETAIL

NOT TO SCALE (5)



HYDRANT NOTES:

1. HYDRANT DRAIN SHALL BE PLUGGED.
2. ACCEPTABLE HYDRANT MAKE AND MODEL: MUELLER SUPER CENTURION 250 MODEL A-423 (NO HYDRANT DRAIN).
3. HYDRANT SHALL MEET OR EXCEED AWWA C502.
4. 5¼" VALVE OPENING.
5. ONE (1) 4½" NST PUMPER NOZZLE.
6. TWO (2) 2½" NST HOSE NOZZLE.
7. OPERATING NUT AND NOZZLE CAPS – NS#7 PENTAGON
8. SIX (6) INCH MECHANICAL JOINT CONNECTION WITH ACCESSORIES FOR 6.90 O.D. DI PIPE.
9. OPERATION: OPEN COUNTERCLOCKWISE (LEFT).
10. DEPTH AS REQUIRED.
11. CONTRACTOR TO SUPPLY AND INSTALL HYDRANT
12. TOP OF BLOCKING TO BE 2 INCHES FROM HYDRANT WEEP HOLES.

HYDRANT DETAIL

NOT TO SCALE (6)

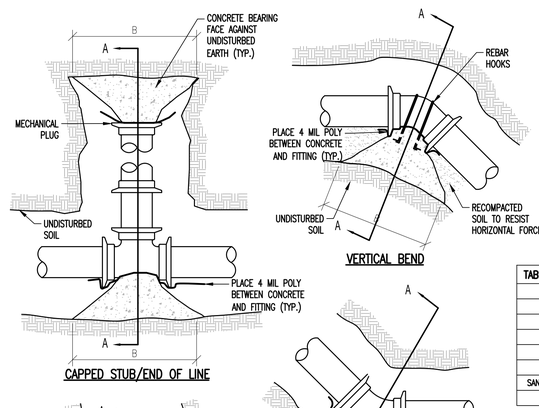


TABLE 1 – BEARING STRENGTH OF UNDISTURBED SOIL	
SOIL TYPE	BEARING STRENGTH
PEAT, ETC.	0 lb/ft²
SOFT CLAY	500 lb/ft²
SAND	1000 lb/ft²
SAND AND GRAVEL	1500 lb/ft²
SAND AND GRAVEL WITH CLAY	2000 lb/ft²
SAND AND GRAVEL CEMENTED WITH CLAY	4000 lb/ft²
HARD PAN	5000 lb/ft²

THRUST BLOCK NOTES:

1. PERFORM HYDROSTATIC AND LEAKAGE TEST PRESSURE PER SPECIFICATIONS.
2. PLACE 4 MIL POLYETHYLENE BETWEEN FITTINGS AND THRUST BLOCKS.
3. CONCRETE SHALL BE CLASS B.
4. ON ALL THRUST BLOCKS, B SHALL BE THE GREATER DIMENSION, USE 1.5:1 TO 2:1 FOR B:H.

TABLE 2 – THRUST DEVELOPED PER 100psi PRESSURE (lbs force)					
PIPE DIAMETER (INCHES)	VALVES AND DEAD ENDS, TEES	90° BENDS	45° BENDS	22½° BENDS	11¼° BENDS
4	1810	2560	1390	635	320
6	3740	5290	2860	1370	690
8	6430	9100	4920	2320	1170
10	9680	13680	7410	3610	1820
12	13690	19350	10470	5080	2550
14	18380	25990	14100	6100	3080
16	23780	33630	18280	7960	4020

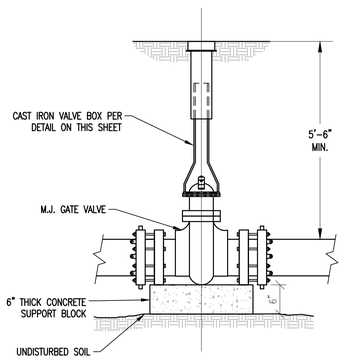
DETERMINING MINIMUM BEARING FACE AREA:

THE AREA (ft^2) SHALL BE CALCULATED BY DETERMINING THE TOTAL THRUST GENERATED AT THE FITTING.
DIVIDE THE THRUST DEVELOPED (lbs force) (FROM TABLE 2) BY THE BEARING STRENGTH OF THE SOIL (FROM TABLE 1). THE RESULT IS THE AREA OF THE SOIL REQUIRED TO RESIST THE THRUST (A).
THE AREA CALCULATED WILL BE FOR THE AREA OF CONCRETE UP AGAINST THE TRENCH WALL (i.e. THE BACK SIDE OF THE BLOCK). USE THE TEST PRESSURE TO DETERMINE THE TOTAL THRUST.

AREA = THRUST DEVELOPED (lbs force) / BEARING STRENGTH OF SOIL

TYPICAL BEARING THRUST BLOCK

NOT TO SCALE (7)



GATE VALVE NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TECHNICAL SPECIFICATIONS.
2. UTILIZE MEGALUG MECHANICAL JOINT RESTRAINT ON ALL M.J. GATE VALVES.
3. SEE TYPICAL WATER TRENCH DETAIL FOR PIPE BEDDING REQUIREMENTS.
4. IF DEPTH FROM GRADE TO TOP OF VALVE OPERATING NUT IS GREATER THAN 6'-0 , A VALVE STEM RISER MADE OF HIGH STRENGTH STEEL SHALL BE PROVIDED. DEPTH FROM VALVE STEM RISER NUT TO GRADE WILL BE 4 TO 6 FEET.

GATE VALVE DETAIL

NOT TO SCALE (8)

WATER NOTES

GENERAL

1. THE CONTRACTOR SHALL OBTAIN A BURIED UTILITY PERMIT FROM THE HINESBURG TOWN ADMINISTRATOR FOR WORK WHIN THE RIGHT-OF-WAY
2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE TOWN OF HINESBURG DPW AT LEAST 48 HOURS IN ADVANCE OF:
   2.1. BEGINNING WATER LINE WORK – TO SCHEDULE OVERSIGHT OF THE EXCAVATION WITH THE WATER WORKS DEPARTMENT
   2.2. METER INSTALLATION
   2.3. FINAL INSPECTION
3. THE CONTRACTOR SHALL COLLECT AND MAINTAIN "AS BUILT" INFORMATION DURING THE INSTALLATION OF THE WATER SYSTEM. "AS BUILT" DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR UPON COMPLETION OF THE WATER SYSTEM.

WATER MAINS

1. PERFORM FLUSHING, PRESSURE AND LEAKAGE TESTING ACCORDING TO AWWA C600 AND NFPA 24 (LATEST REVISION) ON EACH PIPE LINE.
2. THE ENGINEER SHALL BE GIVEN AT LEAST 48 HOURS NOTICE BEFORE THE TEST IS CONDUCTED. ALL TESTING MUST BE WITNESSED BY THE ENGINEER.
3. SPECIFIED TEST PRESSURE IS A MINIMUM OF 200 PSI OR 1.5X THE WORKING PRESSURE, WHICHEVER IS GREATER. THE PRESSURE DURING TEST SHALL NOT VARY BY MORE THAN 5 PSI.

EXISTING UTILITIES

1. LOCATION OF UTILITY INSTALLATIONS AND UNDERGROUND STRUCTURES ARE SHOWN AS APPROXIMATE ON THE CONTRACT DOCUMENTS.
2. ALL UTILITIES SHALL BE LOCATED BY THE CONTRACTOR PRIOR TO BEGINNING CONSTRUCTION.
3. EXISTING UTILITIES SHALL BE PROTECTED AND SUPPORTED DURING CONSTRUCTION.
4. ALL WATER, GAS, CABLE, TELEPHONE, ELECTRIC, SEWER, AND OTHER UTILITIES FOUND TO INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE RELOCATED IN A MANNER ACCEPTABLE TO THE ENGINEER.

PIPE BEDDING

1. SAND BEDDING MEETING REQUIREMENTS OF EARTHWORK SPECIFICATIONS.
2. SAND BLANKET MEETING REQUIREMENTS OF EARTHWORK SPECIFICATIONS.
3. TRENCH FINAL BACKFILL MATERIAL – MATERIAL WILL EXCLUDE PIECES OF PAVEMENT, ORGANIC MATTER, TOPSOIL, ALL WET OR SOFT MUCK, PEAT, CLAY, LARGE ROCKS (6" DIMENSION), OR ANY MATERIAL DETERMINED BY THE ENGINEER THAT WILL NOT BE SUITABLE.

PIPE TRENCH BACKFILL

1. MEET EARTHWORK SPECIFICATIONS FOR PLACEMENT AND COMPACTION.

DUCTILE IRON PIPE (WATER)

1. D.I. PIPE CONFORM TO AWWA/ANSI C151.
2. LININGS AND LINING REPAIR TO AWWA/ANSI C104.
3. JOINTS CONFORM TO AWWA/ANSI C111 AND C115.
4. FITTINGS CONFORM TO AWWA/ANSI C110, C153, C105.
5. KEEP INSIDE OF PIPE CLEAN AND FREE OF DEBRIS.
6. REJECT ANY PIPE WHICH IS DROPPED DURING HANDLING.
7. MECHANICAL JOINT GLANDS SHALL BE "MEGA-LUG" RETAINER GLANDS.
8. CAST IRON FITTINGS: ANSI A21.10, 250 PSI PRESSURE RATING.
9. DUCTILE IRON FITTINGS: ANSI A21.10, 350 PSI PRESSURE RATING.
10. JOINTS: MECHANICAL, PUSH-ON, AND FLANGED:
    10.1. RUBBER GASKET JOINT, ANSI A21.11
11. GASKETS:
    11.1. MECHANICAL AND PUSH-ON JOINTS: ANSI A21.11
    11.2. FLANGED JOINT: ⅛" THICK RING OR FULL FACED RUBBER, ANSI A21.15.
12. BOLTS/NUTS:
    12.1. MECHANICAL JOINT: ANSI A21.11
    12.2. FLANGED JOINT: ANSI A21.15
13. LININGS:
    13.1. INTERIOR –CEMENT LINED–DOUBLE THICKNESS WITH BITUMINOUS SEAL.
    13.2. EXTERIOR –BITUMINOUS COATING APPROX. 1 MIL THICK, ANSI A21.51, ANSI A21.15, AND ANSI A21.10.
    13.3. FLANGE MACHINED FACE COATING: ANSI A21.15.
14. LAYING PIPE:
    14.1. PIPE SHALL BE LAID WITH BELL ENDS FACING IN THE DIRECTION OF LAYING.
    14.2. WHERE PIPE IS LAID ON A SLOPE OF 5% OR MORE, THE LAYING SHALL START AT THE LOW END AND PROCEED UPHILL, WITH THE BELL ENDS UPGRADE.
    14.3. A WATERTIGHT PLUG SHALL BE PLACED IN THE OPEN ENDS OF INSTALLED PIPE WHEN PIPE LAYING IS NOT IN PROGRESS.
    14.4. MAX. PERMISSIBLE DEFLECTION IS 75% OF AWWA SPEC. C600.
15. SEPARATED SILICON BRONZE WEDGES:
    15.1. D.I. PIPE SIZE 3"-12" – 2 PER JOINT.
    15.2. D.I. PIPE SIZE >12" – 4 PER JOINT.

CHLORINATION OF DOMESTIC WATER LINES

1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 48 HOURS IN ADVANCE OF BEGINNING ANY DISINFECTION OF WATER MAINS
2. CONTRACTOR SHALL BE RESPONSIBLE FOR BACTERIOLOGICAL TESTING AS REQUIRED BY THIS SPECIFICATION AND REFERENCE STANDARDS MENTIONED.
3. DISINFECT ALL NEW PIPELINE SYSTEMS IN ACCORDANCE WITH AWWA C651, INCLUDING:
   3.1. METHOD OF CHLORINE APPLICATION. USE CONTINUOUS FEED METHOD OR SLUG METHOD. (TABLET METHOD IS NOT ACCEPTABLE.)
   3.2. FORM OF CHLORINE UTILIZED.
   3.3. FINAL FLUSHING.
   3.4. BACTERIOLOGICAL TESTING
   3.5. REPETITION OF PROCEDURE

GATE VALVES

1. RESILIENT SEAT GATE VALVES BY AMERICAN FLOW CONTROL (AFC), SERIES 2500, (HARTFORD, VT).
2. DUCTILE IRON BODY GATE VALVES TO MEET AWWA C515 AND SHALL BE EPOXY COATED (FUSION BONDED) INSIDE AND OUT.
3. STEM CONSTRUCTION: NON-RISING.
4. STEM SEALS: DOUBLE O-RING.
5. GATE: DUCTILE IRON RUBBER ENCAPSULATED WEDGE.
6. BONNET HARDWARE: STAINLESS STEEL.
7. OUTLET CONNECTION: STANDARD MECHANICAL JOINT
8. OPERATION: OPEN COUNTERCLOCKWISE.

TAPPING SLEEVES AND VALVES

1. TAPPING VALVES
   1.1. TAPPING VALVES TO MEET ANSI/AWWA C515, STANDARD FOR RESILIENT SEATED GATE VALVES.
   1.2. VALVES SHALL HAVE A MINIMUM WORKING PRESSURE OF 250 PSI.
   1.3. VALVES SHALL OPEN RIGHT.
   1.4. INLET FLANGES SHALL BE CLASS 125, ANSI B16.1, OR ANSI/AWWA C110/A21.10.
   1.5. OUTLET CONNECTION: STANDARDIZED MECHANICAL JOINT.
   1.6. STEM SEALS: O RING.
   1.7. STEM CONSTRUCTION: NON-RISING.
   1.8. SEATING: PARALLEL SEAT
   1.9. END CONNECTIONS: MECHANICAL ON RUN, FLANGED ON BRANCH.
2. TAPPING SLEEVES
   2.1. AWWA C515, LATEST REVISION.
   2.2. AWWA C207, CLASS D, MAX. WORKING PRESSURE OF 150 PSI.
   2.3. SLEEVES: SPLIT SLEEVES OF CAST IRON OR DUCTILE IRON.
   2.4. MECHANICAL JOINT ENDS WITH END AND GASKET SEALS.
   2.5. PROVIDE A ¾" NPT TEST PLUG OR OTHER PROVISION FOR AIR TESTING THE VALVE AND SLEEVE AT MAXIMUM WORKING PRESSURE.
   2.6. BOLTS AND NUTS, MECHANICAL JOINTS: HIGH STRENGTH CAST IRON OR HIGH STRENGTH LOW ALLOY STEEL, ANSI/AWWA C111/A21.11-90.
   2.7. BOLTS AND NUTS, FLANGED JOINTS: HIGH STRENGTH, LOW CARBON STEEL CONFORMING TO ANSI/AWWA C110/A21.10-87, APPENDIX A.
   2.8. COAT ALL NUTS AND BOLTS WITH A RUST RESISTANT LUBRICANT.
   2.9. ALL BOLTS AND NUTS USED WITH PIPE SLEEVES SHALL BE BRUSH COATED HEAVILY AFTER FINAL TIGHTENING WITH BITUMASTIC COLD-APPLIED MATERIAL TO THOROUGHLY COVER ALL EXPOSED SURFACES OF BOLTS AND NUTS.

VALVE BOXES

1. ACCEPTABLE MANUFACTURER'S: MUELLER, CLOW, OR EQUAL.
2. CLOW F-2452 SLIDING TYPE, TWO PIECE, OR EQUAL.
3. 5 ¼ INCH SHAFT.
4. SIZE: 664-A (40-60 INCH OVERALL LENGTH).
5. CAST IRON.
6. CLOW F-2490 LIDS OR EQUAL.
7. THE WORD "WATER" TO BE CAST INTO TOP OF COVERS, AND ARROW SHOWING DIRECTION OF OPENING.
8. IF DEPTH FROM GRADE TO TOP OF VALVE OPERATING NUT IS GREATER THAN E'-0 , A VALVE STEM RISER MADE OF HIGH STRENGTH STEEL SHALL BE PROVIDED. DEPTH FROM VALVE STEM RISER NUT TO GRADE WILL BE 4 TO 6 FEET.

CONCRETE

1. CLASS B CONCRETE SHALL HAVE:
   1.1. MIN. COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS
   1.2. AIR ENTRAINMENT OF 4% TO 6% BY VOLUME.
   1.3. MINIMUM CEMENT CONTENT FOR 4000 PSI CONCRETE IS 564 LBS PER CUBIC YARD.
   1.4. SLUMP OF 3 TO 5 INCHES.
2. CONCRETE SHALL NOT BE PLACED WHEN AMBIENT TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT OR MORE THAN 90 DEGREES FAHRENHEIT.
3. CONCRETE SHALL NOT BE DROPPED MORE THAN SIX FEET INSIDE A FORM.
4. MAINTAIN TEMPERATURE OF CONCRETE SURFACE AT MINIMUM 50 DEGREES FAHRENHEIT FOR 72 HOURS AFTER PLACING CONCRETE. PREHEAT ALL ENCLOSURES FOR A MINIMUM OF 2 HOURS TO PROVIDE A MIN. SURFACE TEMPERATURE OF 45 DEGREES FAHRENHEIT.
5. ALLOW TO SET AND CURE ALL THRUST BLOCKS, CONCRETE SUPPORTS, AND ANCHORS A MINIMUM OF 24 HOURS BEFORE BACKFILLING.
6. COMPLETELY CURE AND SET CONCRETE BEFORE ANY HYDROSTATIC OR LEAKAGE TESTING OF PIPELINE SYSTEMS.
7. NONSHRINK GROUT SHALL BE HALCO TRADEMARK, AS MANUFACTURED BY LEHN & FINK INDUSTRIAL PRODUCTS.
8. DO NOT PLACE ANY MORTAR OR GROUT WHEN AMBIENT TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT.
9. MORTAR FOR MANHOLES SHALL CONSIST OF THE FOLLOWING:
   9.1. CEMENT–TYPE II, ASTM C150.
   9.2. HYDRATED LIME–TYPE N, ASTM C207.
   9.3. SAND– ASTM C 33, FINE AGGREGATES FOR CONCRETE.
   9.4. WATER–CLEAN, SUITABLE FOR DRINKING.
10. MIX (BY VOLUME): 1 PART CEMENT, ½ PART LIME, 4 ½ PARTS SAND.

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A, Burlington, VT 05401 s 802-863-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 s 603-442-9333
414 Union Street, Schenectady, NY 12305 s 518-630-9614
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JOE LASTER
1139 Lanier Boulevard
Atlanta, GA 30306
404.822.6990

Sheet Title: Water Details & Notes

Project Title: PROPOSED SUBDIVISION
LASTER PROPERTY
TOWN OF HINESBURG, CHITTENDEN COUNTY, VERMONT

EV Project #	20542
Drawn By:	HKW
Checked By:	KW
Scale:	not to scale
Date:	03/01/2023

No.	Description	Date

C4.0

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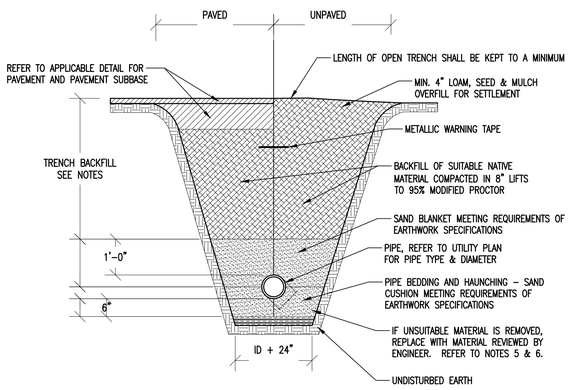
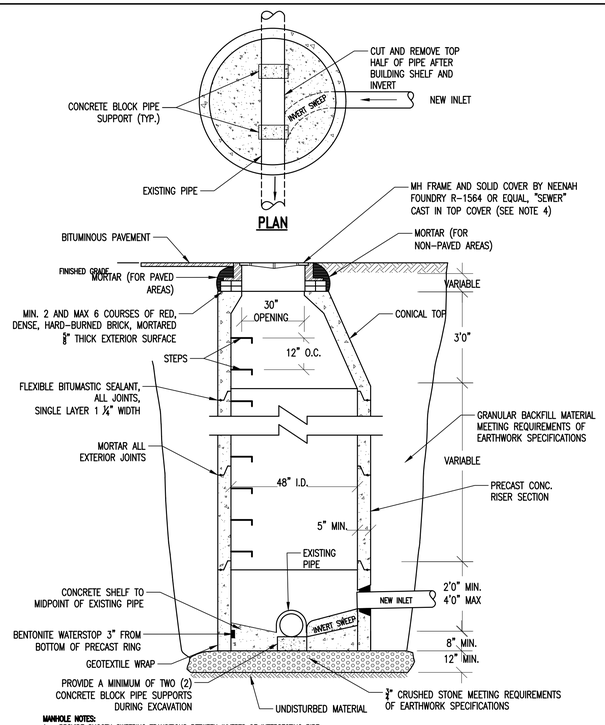


SANITARY SEWER TRENCH NOTES:

1. UNLESS OTHERWISE NOTED, ASSUME CLASS "C" SOILS. PERFORM ALL EXCAVATIONS TO OSHA REQUIREMENTS.
2. BEDDING TO PROVIDE A FIRM, STABLE, CONTINUOUS AND UNIFORM SUPPORT FOR FULL LENGTH OF PIPE.
3. FOR BUILDING SEWERS THE MINIMUM DEPTH TO THE TOP OF THE PIPE SHALL BE 4'-0". WHERE BUILDING SEWERS ARE TO BE INSTALLED AT A DEPTH LESS THAN 3'-0" UNDER DRIVEWAYS, EXTRA HEAVY CAST IRON OR OTHER HIGH STRENGTH PIPE SHALL BE USED. OTHERWISE, REFER TO INSULATION OVER SHALLOW SEWER LINE DETAIL.
4. FOR SEWER COLLECTION SYSTEMS THE MINIMUM DEPTH TO THE TOP OF THE PIPE SHALL BE 5'-0". THIS DEPTH SHALL BE INCREASED TO 6'-0" IN AREAS TO BE PLOWED DURING THE WINTER MONTHS. OTHERWISE, REFER TO INSULATION OVER SHALLOW SEWER LINE DETAIL.
5. BACKFILL SHALL BE OF A SUITABLE MATERIAL REMOVED FROM EXCAVATION EXCEPT WHERE OTHER MATERIAL IS SPECIFIED. DEBRIS, FROZEN MATERIAL, LARGE CLODS OR STONES, ORGANIC MATTER, OR OTHER UNSTABLE MATERIALS SHALL NOT BE USED FOR BACKFILL WITHIN TWO FEET OF THE TOP OF THE PIPE.
6. LEDGE, ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF FOUR INCHES BELOW AND ON EACH SIDE OF ALL PIPES.
7. SEWERS ON 20 PERCENT SLOPES OR GREATER SHALL BE ANCHORED SECURELY WITH CONCRETE ANCHORS OR EQUIVALENT, SPACED AS FOLLOWS:
   A. NOT OVER 36 FEET CENTER TO CENTER ON GRADES 20 PERCENT AND UP TO 35 PERCENT
   B. NOT OVER 24 FEET CENTER TO CENTER ON GRADES 35 PERCENT AND UP TO 50 PERCENT
   C. NOT OVER 16 FEET CENTER TO CENTER ON GRADES 50 PERCENT AND OVER

SANITARY SEWER TRENCH DETAIL

NOT TO SCALE 1

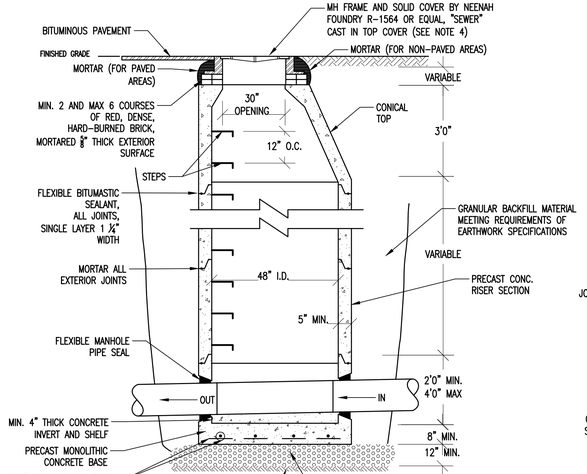


MANHOLE NOTES:

1. PROVIDE SMOOTH SWEEPING TRANSITIONS BETWEEN INVERTS OF INTERSECTING PIPE.
2. IF DEPTH OF MANHOLE IS 7 FT. OR LESS FROM RIM TO CENTERLINE INVERT, THEN A FLAT TOP WILL BE INSTALLED. IF DEPTH OF MANHOLE FROM RIM TO CENTERLINE INVERT IS GREATER THAN 7 FT. THEN A CONICAL TOP WILL BE INSTALLED.
3. MANHOLE AND COVER SHALL BE DESIGNED FOR H20 LOADING.
4. FOR MANHOLES THAT ARE NOTED ON THE PLAN AS HAVING A BOLTABLE COVER, PROVIDE A COVER THAT BOLTS TO THE FRAME WITH A MINIMUM OF (2) – 3/8" STAINLESS STEEL BOLTS.

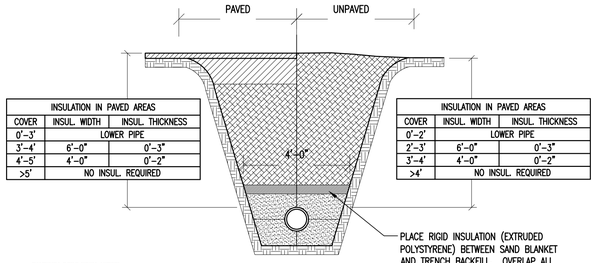
DOGHOUSE MANHOLE DETAIL

NOT TO SCALE 4



MANHOLE NOTES:

1. PROVIDE SMOOTH SWEEPING TRANSITIONS BETWEEN INVERTS OF INTERSECTING PIPE.
2. IF DEPTH OF MANHOLE IS 7 FT. OR LESS FROM RIM TO CENTERLINE INVERT, THEN A FLAT TOP WILL BE INSTALLED. IF DEPTH OF MANHOLE FROM RIM TO CENTERLINE INVERT IS GREATER THAN 7 FT. THEN A CONICAL TOP WILL BE INSTALLED.
3. MANHOLE AND COVER SHALL BE DESIGNED FOR H20 LOADING.
4. FOR MANHOLES THAT ARE NOTED ON THE PLAN AS HAVING A BOLTABLE COVER, PROVIDE A COVER THAT BOLTS TO THE FRAME WITH A MINIMUM OF (2) – 3/8" STAINLESS STEEL BOLTS.



INSULATION IN PAVED AREAS		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'–3'	LOWER PIPE	
3'–4'	6'–0"	0'–3"
4'–5'	4'–0"	0'–2"
>5'	NO INSUL. REQUIRED	

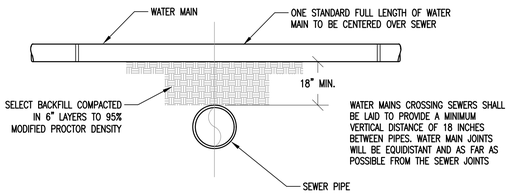
INSULATION IN PAVED AREAS		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'–2'	LOWER PIPE	
2'–3'	6'–0"	0'–3"
3'–4'	4'–0"	0'–2"
>4'	NO INSUL. REQUIRED	

SANITARY INSULATION NOTES:

1. REFER TO APPLICABLE TRENCH DETAIL FOR SPECIFIC BACKFILL INFORMATION.
2. RIGID EXTRUDED POLYSTYRENE INSULATION SHALL CONFORM WITH ASTM C578 – STANDARD SPECIFICATION FOR RIGID CELLULAR POLYSTYRENE THERMAL INSULATION AND SHALL BE DOW STYROFOAM HIGH LOAD 40 OR EQUIVALENT.

INSULATION OVER SHALLOW SEWER LINE DETAIL

NOT TO SCALE 2



WATER MAIN ABOVE SEWER

SEPARATION NOTES:

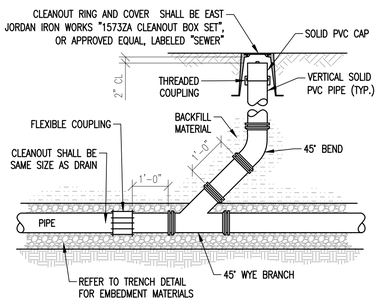
1. WATER MAIN RELATIONS TO SEWER SHALL BE IN ACCORDANCE WITH SECTION 8.6 OF APPENDIX A OF THE VERMONT WATER SUPPLY RULE.
2. WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED SEWERS. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IF THIS DISTANCE CANNOT BE OBTAINED, THEN THE PIPES SHALL BE INSTALLED IN A SEPARATE TRENCH AT AN ELEVATION SO THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.
3. WHEN IT IS IMPOSSIBLE TO MAINTAIN 18" VERTICAL SEPARATION OR WHERE THE SEWER MUST BE LAID ABOVE THE WATER MAIN; 1) THE CROSSING SHALL BE ARRANGED SO THAT ONE FULL LENGTH OF SEWER IS CENTERED ABOVE OR BELOW THE WATER LINE WITH SEWER JOINTS AS FAR AS POSSIBLE FROM WATER JOINTS; 2) THE SEWER PIPE MUST BE CONSTRUCTED TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 20 FEET EITHER SIDE OF THE CROSSING OR A TOTAL OF THREE PIPE LENGTHS, WHICH EVER IS GREATER; 3) THE SECTION CONSTRUCTED TO WATER MAIN STANDARDS MUST BE PRESSURE TESTED TO MAINTAIN 50 PSI FOR 15 MINUTES WITHOUT LEAKAGE PRIOR TO BACKFILLING BEYOND ONE FOOT ABOVE THE PIPE TO ASSURE WATER TIGHTNESS.

SANITARY SEWER / WATER LINE CROSSING

NOT TO SCALE 3

SANITARY SEWER MANHOLE DETAIL

NOT TO SCALE 5



SEWER CLEANOUT DETAIL

NOT TO SCALE 6

TOWN OF HINESBURG DEMAND FLOW BASIS

Existing Wastewater Design Flows
source: Vermont Wastewater System & Potable Water Supply Rule, dated April 2019
per table 8-1 for systems receiving 50,000 gpd or more of flow

Single Family Home	210 gal/day	per living unit	7 living units	**1470 gpd**
Accessory Structure	210 gal/day	per living unit	1 living unit	**210 gpd**
			Total	**1680 gpd**

Existing Water Design Flows
source: Vermont Water Supply Rule, dated April 2019
per table A2-1 for Single Family Dwellings

Single Family Home	150 gal/day	per bedroom	3 bedrooms	450 gpd
Accessory Structure	150 gal/day	per bedroom	2 bedrooms	300 gpd
		subtotal for (7) single family homes & accessory structure		3450 gpd
		Total , with 10% reduction applied for low flow fixtures		**3105 gpd**

Proposed Wastewater Design Flows
source: Vermont Wastewater System & Potable Water Supply Rule, dated April 2019
per table 8-1 for systems receiving 50,000 gpd or more of flow

Single Family Home	210 gal/day	per living unit	8 living units	**1680 gpd**
			Total	**1680 gpd**

Proposed Water Design Flows
source: Vermont Wastewater System & Potable Water Supply Rule, dated April 2019
per table A2-1 for Single Family Dwellings

Single Family Home	150 gal/day	per bedroom	3 bedrooms	450 gpd
Single Family Home	150 gal/day	per bedroom	2 bedrooms	300 gpd
		subtotal for (7) 3-bedroom homes & (1) 2-bedroom home		3450 gpd
		Total , with 10% reduction applied for low flow fixtures		**3105 gpd**

VT ANR DEMAND FLOW BASIS

Existing Wastewater Design Flows
source: Vermont Wastewater System & Potable Water Supply Rule, dated April 2019
per table 8-1 for systems receiving 50,000 gpd or more of flow

Single Family Home	210 gal/day	per living unit	1 living unit	**210 gpd**
Accessory Structure	210 gal/day	per living unit	1 living unit	**210 gpd**
			Total	**420 gpd**

Existing Water Design Flows
source: Vermont Wastewater System & Potable Water Supply Rule, dated April 2019
*per table 8-1 for systems serving 20 or more living units
** per 1-803(d)(1) with 2 people per bedroom

Single Family Home*	360 gpd	for a 3-bedroom living unit	**360 gpd**
Accessory Structure**	70 gpd/person/bedroom 2 bedrooms 2 people/bedroom		**280 gpd**
		Total	**640 gpd**

Existing Water Design Flows
source: Vermont Water Supply Rule, dated April 2019
per table A2-1 for Single Family Dwellings

Single Family Home	150 gal/day	per bedroom	3 bedrooms	450 gpd
Accessory Structure	150 gal/day	per bedroom	2 bedrooms	300 gpd
		Total , with 10% reduction applied for low flow fixtures		**675 gpd**

Proposed Wastewater Design Flows
source: Vermont Wastewater System & Potable Water Supply Rule, dated April 2019
per table 8-1 for systems receiving 50,000 gpd or more of flow

Single Family Home	210 gal/day	per living unit	1 living unit	**210 gpd**
			Total for (8) single family homes	**1680 gpd**

Proposed Water Design Flows
source: Vermont Wastewater System & Potable Water Supply Rule, dated April 2019
*per table 8-1 for systems serving 20 or more living units
** per 1-803(d)(1) with 2 people per bedroom

Single Family Home*	360 gpd	for a 3-bedroom living unit	**360 gpd**
Single Family Home**	70 gpd/person/bedroom 2 bedrooms 2 people/bedroom		**280 gpd**
		Tota for (7) 3-bedroom homes and (1) 2-bedroom home	**2800 gpd**

Proposed Water Design Flows
source: Vermont Wastewater System & Potable Water Supply Rule, dated April 2019
per table A2-1 for Single Family Dwellings

Single Family Home	150 gal/day	per bedroom	3 bedrooms	450 gpd
Accessory Structure	150 gal/day	per bedroom	2 bedrooms	300 gpd
		subtotal for (7) 3-bedroom homes and (1) 2-bedroom home		3450
		Total , with 10% reduction applied for low flow fixtures		**3105 gpd**

SANITARY SEWER NOTES

CONTRACTOR SHALL CONFORM TO GUIDELINES DETAILED IN THE VERMONT STATE SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR READING AND FOLLOWING THE FULL COMPLETE EDITION PROVIDED BY THE STATE.

A. THE BUILDING SEWER SHALL BE CONSTRUCTED IN A MANNER WHICH WILL PREVENT LEAKING, BREAKING OR CLOGGING.

B. SIZING AND SLOPE: MINIMUM BUILDING SEWER SIZE IS 4 INCHES (UNLESS SHOWN ON THE PLAN) AND A MINIMUM SLOPE IS 1/4" PER FOOT.

C. CLEANOUTS: CLEANOUTS SHALL BE PROVIDED AT EACH HORIZONTAL CHANGE IN DIRECTION OF THE BUILDING SEWER GREATER THAN 45 DEGREES AND WHERE INDICATED ON THE DESIGN DRAWINGS. BUILDING SEWER CHANGES IN DIRECTION WHICH EXCEED 45 DEGREES SHOULD BE MADE WITH TWO 45 DEGREE ELLS OR LONG SWEEP FITTINGS. MANHOLES ARE ACCEPTABLE IN LIEU OF CLEANOUTS. WHERE BUILDING SEWERS ARE TO BE INSTALLED AT A DEPTH OF LESS THAN 3 FEET UNDER DRIVEWAYS ARE ANTICIPATED, EXTRA HEAVY CAST IRON PIPE SHALL BE USED.

D. LEAKAGE: BUILDING SEWERS SHALL MEET THE LEAKAGE STANDARDS PRESCRIBED IN THE STATE OF VERMONT SPECIFICATIONS (EPR– CHAPTER 1). SEE BELOW FOR MORE DETAIL.

E. SLOPE, VELOCITY: ALL GRAVITY SEWER LINES SHALL BE INSTALLED WITH NOT LESS THAN THE SLOPES SHOWN BELOW:

PIPE SIZE (INCHES)	SLOPE (FEET/100 FEET)
4"	2%
6"	0.6%
8"	0.4%

F. CHANGES IN PIPE SIZE: WHEN A SMALLER SEWER JOINS A LARGE ONE, THE INVERT OF THE LARGER SEWER SHALL BE LOWERED SUFFICIENTLY TO MAINTAIN THE SAME ENERGY GRADIENT.

G. MATERIAL: PVC SDR 35, ASTM D3034, WITH PUSH–ON GASKETED JOINTS. GASKETS SHALL CONFORM TO ASTM D3212. SEWER JOINTS SHALL BE CONSTRUCTED TO MINIMIZE INFILTRATION AND TO PREVENT THE ENTRANCE OF ROOTS INTO THE SYSTEM.

H. TRENCHING: LEDGE, ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF FOUR INCHES BELOW AND ON EACH SIDE OF ALL PIPES.

I. BEDDING: SEE TRENCH DETAIL DRAWING FOR MATERIALS. TRENCH BACKFILL SHALL BE OF A SUITABLE NATIVE MATERIAL FREE FROM DEBRIS, FROZEN MATERIAL, LARGE CLODS OR STONES, ORGANIC MATTER, OR OTHER UNSTABLE MATERIALS.

J. LEAKAGE TESTS: UPON COMPLETION OF SEWER LINE CONSTRUCTION, THE SEWER LINE SHALL BE TESTED IN ACCORDANCE WITH THE STATE OF VERMONT SPECIFICATIONS (EPR – CHAPTER 1, APPENDIX "A").

LEAKAGE TESTS FOR GRAVITY SEWERS

PERFORM A PRESSURIZED AIR TEST ON THE GRAVITY LINE IN ACCORDANCE WITH THE VERMONT ENVIRONMENTAL PROTECTION RULES ON EACH SECTION OF THE GRAVITY SEWER. THE ENGINEER SHALL BE GIVEN 72 HOURS NOTICE BEFORE THE TEST IS CONDUCTED. TEST MUST BE WITNESSED BY THE ENGINEER.

PLUG ALL OPENINGS IN THE TEST SECTION. ADD AIR UNTIL THE INTERNAL PRESSURE OF THE LINE IS RAISED TO APPROXIMATELY 4.0 POUNDS/SQUARE INCH (PSI) GREATER THAN THE AVERAGE PRESSURE OF ANY GROUND WATER. AFTER THIS PRESSURE IS REACHED, ALLOW THE PRESSURE TO STABILIZE. THE PRESSURE WILL NORMALLY DROP AS THE AIR TEMPERATURE STABILIZES. THIS USUALLY TAKES 2 TO 5 MINUTES DEPENDING ON THE PIPE SIZE. THE PRESSURE MAY BE REDUCED TO 3.5 PSI BEFORE STARTING THE TEST.

WHEN THE PRESSURE HAS STABILIZED AND IS AT OR ABOVE THE STARTING TEST PRESSURE OF 3.5 PSI ABOVE THE PIPE, START THE TEST. IF THE PRESSURE DROPS MORE THAN 1.0 PSI DURING THE TEST TIME, THE LINE IS PRESUMED TO HAVE FAILED THE TEST. IF A 1.0 PSI DROP DOES NOT OCCUR WITHIN THE TEST TIME, THE LINE HAS PASSED THE TEST. THE TEST TIME SHALL BE DERIVED FROM THE FOLLOWING TABLE. IF THE SECTION OF LINE TO BE TESTED INCLUDES MORE THAN ONE PIPE SIZE, CALCULATE THE TEST TIME FOR EACH SIZE AND ADD THE TEST TIMES TO ARRIVE AT THE TOTAL TEST TIME FOR THE SECTION.

PIPE SIZE (IN)	T (TIME) (MIN./100FT)
3	0.2
4	0.3
6	0.7
8	1.2

K. INSTALLATION: PIPE SHALL BE LAID WITH BELL ENDS FACING UPGRADE AND LAYING SHALL START AT THE DOWNGRADE END.

L. WATER LINE SEPARATION

a. HORIZONTAL SEPARATION: SEWERS SHALL BE LAID FLAT AT LEAST TEN FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE.

WHERE IMPOSSIBLE OR IMPRACTICABLE TO MAINTAIN THE TEN FOOT SEWER/WATER PIPE HORIZONTAL SEPARATION, (DUE TO LEDGE, BOULDERS OR OTHER UNUSUAL CONDITIONS) THE WATER LINE MAY BE IN A SEPARATE TRENCH OR ON AN EARTH SHELF IN THE SEWER TRENCH PROVIDED THAT THE BOTTOM OF THE WATER LINE IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER. WHEREVER IMPOSSIBLE OR IMPRACTICAL TO MAINTAIN THE 18 INCH VERTICAL SEPARATION, THE SEWER LINE SHALL BE CONSTRUCTED USING PRESSURE PIPE TO NORMAL WATER LINE STANDARDS AND PRESSURE TESTED TO 50 PSI FOR 15 MINUTE PRIOR TO BACKFILLING.

b. CROSSINGS: SEWERS CROSSING WATER MAINS SHALL BE LAID BENEATH THE WATER MAIN WITH AT LEAST 18 INCHES VERTICAL CLEARANCE BETWEEN THE OUTSIDE OF THE SEWER AND THE OUTSIDE OF THE WATER MAIN. WHEN IT IS IMPOSSIBLE TO MAINTAIN THE 18 INCH VERTICAL SEPARATION;

1.) THE CROSSING SHALL BE ARRANGED SO THAT ONE FULL LENGTH OF SEWER IS CENTERED ABOVE OR BELOW THE WATER LINE WITH SEWER JOINTS AS FAR AWAY AS POSSIBLE FROM WATER JOINTS;
2.) THE SEWER PIPE MUST BE CONSTRUCTED TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 20 FEET EITHER SIDE OF THE CROSSING OR A TOTAL OF THREE PIPE LENGTHS, WHICHEVER IS GREATER;
3.) THE SECTION CONSTRUCTED TO WATER MAIN STANDARDS MUST BE PRESSURE TESTED TO MAINTAIN 50 PSI FOR 15 MINUTES WITHOUT LEAKAGE PRIOR TO BACKFILLING BEYOND ONE FOOT ABOVE THE PIPE TO ASSURE WATER TIGHTNESS;
4.) WHERE A WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE WATER MAIN.

M. MANHOLES

a. DIAMETER: THE MINIMUM DIAMETER OF MANHOLES SHALL BE 48 INCHES; LARGE DIAMETERS ARE PREFERRED FOR CONNECTION TO LARGE DIAMETER SEWERS. A MINIMUM ACCESS DIAMETER OF 24 INCHES SHALL BE PROVIDED.
b. FLOW CHANNEL: FLOW CHANNELS SHALL BE PROVIDED IN THE BASE OF ALL MANHOLES AND THE FLOW CHANNEL THROUGH MANHOLES SHOULD BE MADE TO CONFORM IN SHAPE AND SLOPE TO THAT OF THE SEWERS.
c. MANHOLES SHALL BE OF THE PRE–CAST CONCRETE OR POUR–IN PLACE CONCRETE TYPE. MANHOLES SHALL BE WATERPROOFED ON THE EXTERIOR.
d. INLET AND OUTLET PIPES SHALL BE JOINED TO THE MANHOLE WITH A RUBBER–GASKETED FLEXIBLE WATERTIGHT CONNECTION THAT ALLOWS DIFFERENTIAL SETTLEMENT OF THE PIPE AND MANHOLE WALL TO TAKE PLACE.
e. ALL MANHOLES SHALL BE TESTED FOR LEAKAGE. LEAKAGE TESTING OF GRAVITY SEWERS UTILIZING THE WATER TESTING PROCEDURES TAKES INTO ACCOUNT THE LEAKAGE FROM ONE MANHOLE IN THE TEST SECTION. OTHERWISE, MANHOLES SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

AFTER THE MANHOLE HAS BEEN ASSEMBLED IN PLACE, ALL LIFTING HOLES AND EXTERIOR JOINTS SHALL BE FILLED WITH AND POINTED WITH AN APPROVED NON–SHRINKING MORTAR. ALL PIPES AND OTHER OPENINGS INTO THE MANHOLE SHALL BE SUITABLY PLUGGED AND THE PLUGS PLACED TO PREVENT BLOWOUT.

EACH MANHOLE SHALL BE CHECKED FOR INFILTRATION BY FILLING WITH WATER TO THE TOP OF THE CONE SECTION. A STABILIZATION PERIOD OF ONE HOUR SHALL BE PROVIDED TO ALLOW FOR ABSORPTION. AT THE END OF THIS PERIOD, THE MANHOLE SHALL BE REFILLED TO THE TOP OF THE CONE. IF NECESSARY, AND THE MEASURING TIME OF AT LEAST SIX HOURS BEGUN. AT THE END OF THE TEST PERIOD, THE MANHOLE SHALL BE REFILLED TO THE TOP OF THE CONE MEASURING THE VOLUME OF WATER ADDED. THIS AMOUNT SHALL BE CONVERTED TO A 24 HOUR RATE AND THE LEAKAGE DETERMINED ON THE BASIS OF DEPTH. THE LEAKAGE FOR EACH MANHOLE SHALL NOT EXCEED ONE GALLON PER VERTICAL FOOT FOR A 24 HOUR PERIOD FOR EXFILTRATION AND THERE SHALL BE NO VISIBLE INFILTRATION. IF AN AIR TEST IF PERFORMED ON THE MANHOLE, INSTEAD OF THE WATER TEST, THE MANHOLE SHALL REMAIN UN–BACKFILLED DOWN TO THE SEWER LINE INVERTS DURING THE AIR TEST.

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208 Flynn Avenue, Suite 2A, Burlington, VT 05401 s 802-863-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 s 603-442-9333
414 Union Street, Schenectady, NY 12305 s 518-630-9614
www.engineeringventures.com
Stamp

JOE LASTER
1139 Lanier Boulevard
Atlanta, GA 30306
404.822.6990

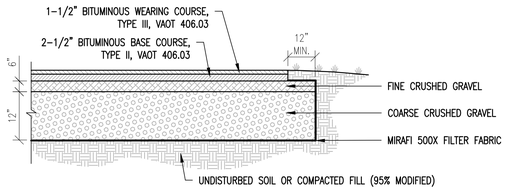
Sheet Title: Sanitary Details & Notes

Project Title: PROPOSED SUBDIVISION
LASTER PROPERTY
TOWN OF HINESBURG, CHITTENDEN COUNTY, VERMONT

EV Project #	20542
Drawn By:	HKW
Checked By:	KW
Scale:	not to scale
Date:	03/01/2023

No.	Description	Date

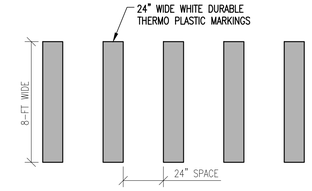
C4.1



NOTES:
1. IN ALL PAVEMENT AREAS TO BE PATCHED, SAW CUT AND REMOVE EXISTING PAVEMENT.
2. EXCAVATE BASE MATERIAL AND SUB-BASE MATERIAL IF INADEQUATE.
3. ALL SUBBASE MATERIALS SHALL BE PLACED IN 6" LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY ACCORDING TO ASTM D-1557 (MODIFIED PROCTOR).

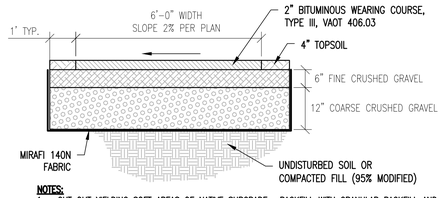
PAVEMENT DETAIL

NOT TO SCALE 1



TYPICAL CROSSWALK LAYOUT

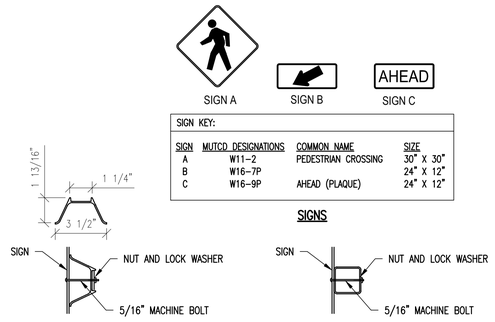
NOT TO SCALE 5



NOTES:
1. CUT OUT YIELDING SOFT AREAS OF NATIVE SUBGRADE. BACKFILL WITH GRANULAR BACKFILL AND COMPACT TO DENSITY EQUAL TO OR GREATER THAN REQUIREMENTS FOR SUBSEQUENT FILL MATERIAL.
2. ALL SUBBASE MATERIALS SHALL BE PLACED IN MAXIMUM LIFTS OF 6" AND COMPACTED TO 95% MAXIMUM DENSITY ACCORDING TO ASTM D-1557 (MODIFIED PROCTOR).

BITUMINOUS PAVED PATH DETAIL

NOT TO SCALE 2



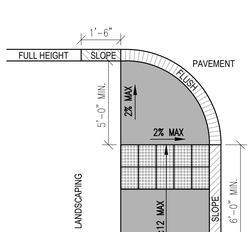
SIGN KEY:

SIGN	MUTCD DESIGNATIONS	COMMON NAME	SIZE
A	W11-2	PEDESTRIAN CROSSING	30" X 30"
B	W16-7P		24" X 12"
C	W16-9P	AHEAD (PLAQUE)	24" X 12"

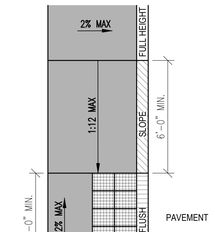
SIGNS

U-CHANNEL POST SECTION AND SIGN MOUNTING

SQUARE TUBE POST SECTION AND SIGN MOUNTING



TYPE "A" CURB RAMP



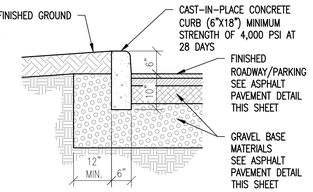
TYPE "B" CURB RAMP

TYPE "C" CURB RAMP

CURB RAMP DETAILS

NOT TO SCALE 7

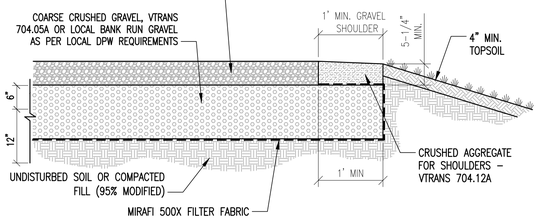
NOTES:
1. CLASS B CONCRETE SHALL HAVE:
   - A. MIN. COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS
   - B. AIR ENTRAINMENT OF 5% TO 7% BY VOLUME.
   - C. MAXIMUM WATER:CEMENT RATIO= 0.60.
   - D. SLUMP: 2-4 INCHES BEFORE ADDITION OF WATER REDUCER, 6-8 INCHES AFTER THE ADDITION OF WATER REDUCER.
2. PROVIDE EQUALLY SPACED CONTROL JOINTS AT SPACING AND PATTERN INDICATED ON PLANS (NOT TO EXCEED 5'-0").
3. PROVIDE EXPANSION JOINT EVERY 20'-0" MAX.



CONCRETE CURB DETAIL

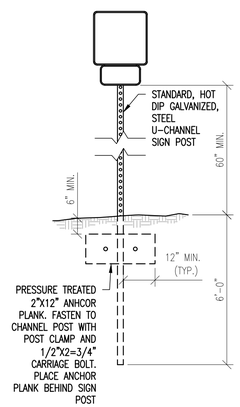
NOT TO SCALE 3

NOTES:
1. CUT OUT YIELDING SOFT AREAS OF NATIVE SUBGRADE. BACKFILL WITH GRANULAR BACKFILL AND COMPACT TO DENSITY EQUAL TO OR GREATER THAN REQUIREMENTS FOR SUBSEQUENT FILL MATERIAL.
2. ALL SUBBASE MATERIALS SHALL BE PLACED IN MAXIMUM LIFTS OF 6" AND COMPACTED TO 95% MAXIMUM DENSITY ACCORDING TO ASTM D-1557 (MODIFIED PROCTOR).

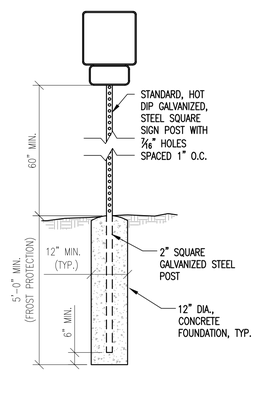


GRAVEL ROADWAY DETAIL

NOT TO SCALE 4



U-CHANNEL SIGN POST INSTALLATION



SQUARE TUBE SIGN POST INSTALLATION

SIGN AND POST DETAILS

NOT TO SCALE 6

SITE/EARTHWORK SPECIFICATIONS

1. PRIOR TO THE START OF WORK, A PRE-CONSTRUCTION MEETING WILL BE HELD WITH THE OWNER, CONTRACTOR, AND PROJECT ENGINEER AND TOWN DPW TO REVIEW PROCEDURES, IDENTIFY RESPONSIBILITIES. FOUR WEEKS NOTICE SHALL BE GIVEN TO THE TOWN PRIOR TO START OF CONSTRUCTION. UNLESS STATED OTHERWISE, ALL MATERIALS AND METHODS SHALL BE IN ACCORDANCE WITH THE MOST RECENT VERSION OF VERMONT AGENCY OF TRANSPORTATION SPECIFICATIONS.
2. CLEARING AND GRUBBING– SITE TO BE RESTORED TO PRE-CONSTRUCTION CONDITIONS, INCLUDING DRIVEWAYS, STONE WALLS, AND GRASS AREAS. THE DRIVEWAY SUB-GRADE MATERIAL SHALL EXTEND ONE FOOT BEYOND THE EDGE OF PAVING.
3. COMPACTION OF ALL MATERIALS SHALL BE PERFORMED USING VIBRATORY ROLLERS AND WATER IN LIFTS OF NO GREATER THAN TWELVE INCHES. COMPACTION SHALL BE PERFORMED UNTIL THE REQUIRED DENSITY IS ACHIEVED. DENSITY SHALL BE DETERMINED BY ASTM D2922 AND SHALL NOT BE LESS THAN THE REQUIRED AMOUNT AS DETERMINED IN ACCORDANCE WITH ASTM D1557.
4. COMPACTION TESTING SHALL BE PERFORMED FOR EVERY LAYER OF MATERIAL PLACED AND FOR EVERY 2,500 SQUARE FEET OF AREA.
5. PAVEMENT SHALL MEET THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS PUBLISHED BY VTRANS.
6. PAVEMENT SHALL NOT BE INSTALLED WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT, NOR WHEN THE ROAD BASE TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT. PAVEMENT SHALL NOT FALL BELOW 185 DEGREES FAHRENHEIT PRIOR TO THE COMPLETION OF ROLLING. PAVEMENT SHALL NOT BE INSTALLED WHEN THE SUBGRADE IS FROZEN OR THE GRADES ARE INCORRECT.
7. ALL REMAINING DISTURBED AREAS SHALL BE FERTILIZED AND SEEDED IN ACCORDANCE WITH APPLICABLE STATE SPECIFICATIONS FOR EROSION CONTROL.
8. THE SEEDING OF 10% OR GREATER SLOPES SHALL REQUIRE THE USE OF EROSION CONTROL MATTING.
9. THE COST OF INITIAL INSPECTION AND TESTING SHALL BE PAID BY THE OWNER. SUBSEQUENT TESTING DUE TO FAILURE SHALL BE PAID BY THE CONTRACTOR.
10. ALL EARTHWORK MATERIALS SHALL BE OBTAINED FROM APPROVED SOURCES. THEY SHALL CONSIST OF SATISFACTORILY GRADED, FREE DRAINING MATERIAL, REASONABLY FREE FROM LOAM, SILT, CLAY AND ORGANIC MATERIAL. EARTHWORK MATERIALS SHALL MEET THE REQUIREMENTS OF THE FOLLOWING TABLES:

A. SAND BLANKET/BEDDING:

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
2 INCHES	100
1-1/2 INCHES	90 – 100
1/2 INCH	70 – 100
NO. 4	60 – 100
NO. 100	0 – 20
NO. 200	0 – 8

B. 3/4" CRUSHED STONE:

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
1 INCH	100
3/4 INCHES	90 – 100
3/8 INCH	20 – 55
NO. 4	0 – 10
NO. 8	0 – 5

C. 1-1/2" CRUSHED STONE:

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
2 INCH	100
1-1/2 INCH	95 – 100
3/4 INCH	35 – 70
3/8 INCH	10 – 30
NO. 4	0 – 5

D. COARSE CRUSHED GRAVEL:

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
4 INCHES	95 – 100
NO. 4	25 – 50
NO. 100	0 – 12
NO. 200	0 – 6

E. FINE CRUSHED GRAVEL:

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
2 INCHES	100
1-1/2 INCHES	90 – 100
NO. 4	30 – 60
NO. 100	0 – 12
NO. 200	0 – 6

F. GRANULAR BACKFILL:

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
3 INCHES	100
2 1/2 INCHES	90 – 100
NO. 4	45 – 75
NO. 100	0 – 12
NO. 200	0 – 6

G. DRAINAGE AGGREGATE:

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
1 INCHES	100
3/4 INCH	90 – 100
3/8 INCH	20 – 55
NO. 4	60 – 100
NO. 100	0 – 10
NO. 200	0 – 5

H. AGGREGATE FOR SHOULDERS

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
1 1/2 INCHES	100
1 INCH	90 – 100
NO. 4	45 – 65
NO. 100	0 – 15
NO. 200	0 – 12

I. AGGREGATE FOR EROSION PREVENTION & SEDIMENT CONTROL

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
4 INCHES	80 – 100
3 INCHES	40 – 60
2 INCHES	0 – 20

J. DENSE GRADED CRUSHED STONE FOR SUBBASE

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
3 1/2 INCHES	100
3 INCHES	90 – 100
2 INCHES	75 – 100
1 INCH	50 – 80
1/2 INCHES	30 – 60
NO. 4	15 – 40
NO. 200	0 – 6

K. 2-INCH ROUNDED RIVER STONE: CLEAN, ROUNDED STONE MATERIAL WITHOUT SHARP, ANGULAR FACES AND RANGING IN SIZE FROM 1 INCH TO 2 INCHES (CONFIRMED BY SQUARE SIEVE). MATERIAL SHALL BE GRAY GRANITE APPROVED BY THE OWNER PRIOR TO DELIVERY OR INSTALLATION.

L. TYPE I STONE FOR STONE FILL: THE LONGEST DIMENSION OF THE STONE SHALL VARY FROM 1 INCH TO 12 INCHES, AND AT LEAST 50 PERCENT OF THE VOLUME OF THE STONE IN PLACE SHALL HAVE A LEAST DIMENSION OF FOUR INCHES.

M. TYPE II STONE FOR STONE FILL: THE LONGEST DIMENSION OF THE STONE SHALL VARY FROM TWO INCHES TO 36 INCHES, AND AT LEAST 50 PERCENT OF THE VOLUME OF THE STONE IN PLACE SHALL HAVE A LEAST DIMENSION OF 12 INCHES.

N. TOPSOIL SHALL MEET THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE SPECIFICALLY STATED IN THE CONTRACT DOCUMENTS:
1. THE pH OF THE MATERIAL SHALL BE BETWEEN 5.5 AND 7.6.
2. THE ORGANIC CONTENT SHALL BE NOT LESS THAN 2% NOR MORE THAN 20%.
3. GRADATION:

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
2 INCHES	100
1 INCH	85 – 100
1/4 INCH	65 – 100
NO. 200	20 – 80

THE CONTRACTOR MAY AMEND NATURAL TOPSOIL WITH APPROVED MATERIALS AND BY APPROVED METHODS TO MEET THE ABOVE SPECIFICATIONS.

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www.engineeringventures.com

JOE LASTER
1139 Lanier Boulevard
Atlanta, GA 30306
404.822.6990

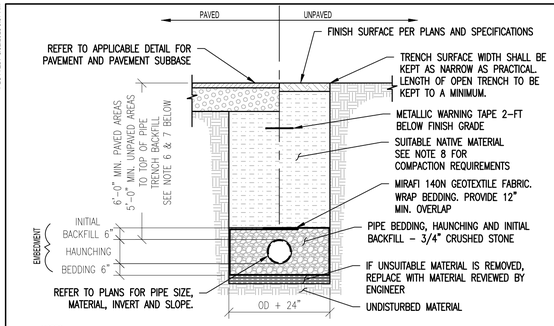
Sheet Title: Site Details & Notes

Project Title: PROPOSED SUBDIVISION
LASTER PROPERTY
TOWN OF HINESBURG, CHITTENDEN COUNTY, VERMONT

EV Project #	20542
Drawn By:	HKW
Checked By:	KW
Scale:	not to scale
Date:	03/01/2023

No.	Description	Date
1	TOWN & ANR STORMWATER COMMENT RESPONSE	04/12/2023
3	TOWN DEVELOPMENT REVIEW BOARD COMMENT RESPONSE	05/25/2023

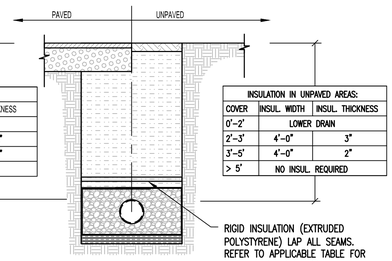
C4.2



NOTES:
1. UNLESS OTHERWISE NOTED, ASSUME CLASS "C" SOILS. PERFORM ALL EXCAVATIONS TO OSHA REQUIREMENTS.
2. BEDDING TO PROVIDE A FIRM, STABLE, CONTINUOUS AND UNIFORM SUPPORT FOR THE FULL LENGTH OF PIPE.
3. PROVIDE 6' OF COVER OVER DRAIN PIPE IN PAVED AREAS AND 5' OF COVER OVER PIPE IN UNPAVED AREAS. OTHERWISE, REFER TO INSULATION OVER SHALLOW DRAIN LINE DETAIL.
4. WHEN APPLICABLE INSTALL PIPE WITH BELL ENDS DOWN SLOPE. PREVENT SEDIMENT FROM ENTERING NEW STORM DRAIN SYSTEM DURING CONSTRUCTION.
5. NO MECHANICAL TAMPERS SHALL BE USED DIRECTLY OVER PIPE TO INSURE PIPE IS NOT DAMAGED.
6. TRENCH BACKFILL MATERIAL, INCLUDING ROADWAY LOCATIONS, SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION AND FREE OF UNSUITABLE MATERIALS AS DEFINED THE EARTHWORK SPECIFICATIONS.
7. LEDGE, ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF SIX INCHES BELOW AND ON EACH SIDE OF ALL PIPES.
8. BACKFILL MATERIALS SHALL BE COMPACTED, IN 12" LAYERS, TO 92% OF MODIFIED PROCTOR (ASTM 1557) TO WITHIN 3 FEET OF FINISHED GRADE. IN AREAS UNDER ROADWAYS, DRIVES, AND PARKING THE UPPER 3 FEET SHALL BE COMPACTED, IN 6" LAYERS, TO 95% MODIFIED PROCTOR (ASTM 1557) AND IN LAWN OR OTHER UNDEVELOPED SPACE THE UPPER 3 FEET SHALL BE COMPACTED TO 92% MODIFIED PROCTOR.

TYPICAL STORM DRAIN TRENCH DETAIL

NOT TO SCALE 1



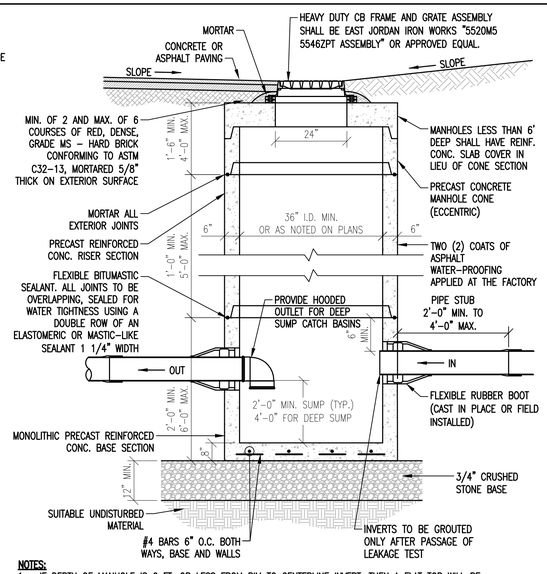
INSULATION IN PAVED AREAS:		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'-3"	LOWER DRAIN	
3'-4"	4'-0"	3"
4'-6"	4'-0"	2"
> 6'	NO INSUL. REQUIRED	

INSULATION IN UNPAVED AREAS:		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'-2'	LOWER DRAIN	
2'-3'	4'-0"	3"
3'-5'	4'-0"	2"
> 5'	NO INSUL. REQUIRED	

NOTES:
1. REFER TO APPLICABLE TRENCH DETAIL FOR SPECIFIC BACKFILL INFORMATION.
2. NOTIFY DEPARTMENT OF PUBLIC WORKS TO REVIEW INSTALLATION AND BACKFILL.
3. ALL SHALLOW DRAIN INSTALLATIONS MUST BE APPROVED BY ENGINEER PRIOR TO INSTALLATION.

INSULATION OVER SHALLOW DRAIN DETAIL

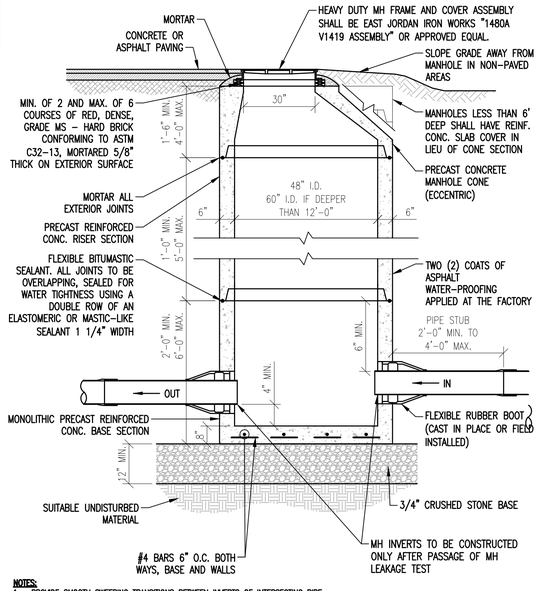
NOT TO SCALE 2



NOTES:
1. IF DEPTH OF MANHOLE IS 6 FT. OR LESS FROM RIM TO CENTERLINE INVERT, THEN A FLAT TOP WILL BE INSTALLED. IF DEPTH OF MANHOLE FROM RIM TO CENTERLINE INVERT IS MORE THAN 6 FT., THEN AN ECCENTRIC CONICAL TOP WILL BE INSTALLED.
2. CATCH BASIN AND GRATE SHALL BE DESIGNED FOR H20 LOADING.
3. PROVIDE A 3 FLANGE GRATE AND FRAME NEXT TO CURBS AND A 4 FLANGE FRAME AND GRATE AT ALL OTHER LOCATIONS.

CATCH BASIN DETAIL

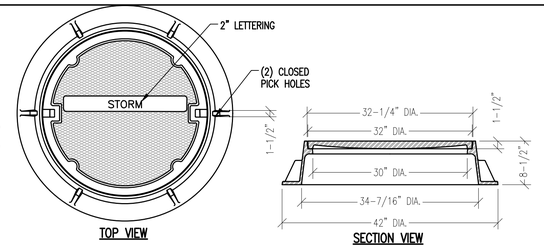
NOT TO SCALE 3



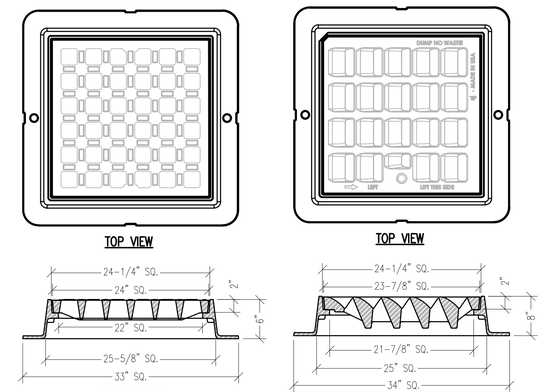
NOTES:
1. PROVIDE SMOOTH SWEEPING TRANSITIONS BETWEEN INVERTS OF INTERSECTING PIPE.
2. IF DEPTH OF MANHOLE IS 6 FT. OR LESS FROM RIM TO CENTERLINE INVERT, THEN A FLAT TOP WILL BE INSTALLED. IF DEPTH OF MANHOLE FROM RIM TO CENTERLINE INVERT IS MORE THAN 6 FT., THEN AN ECCENTRIC CONICAL TOP WILL BE INSTALLED.
3. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING.
4. MANHOLE AND COVER SHALL BE DESIGNED FOR H20 LOADING.

DRAINAGE MANHOLE DETAIL

NOT TO SCALE 4



STORM MANHOLE



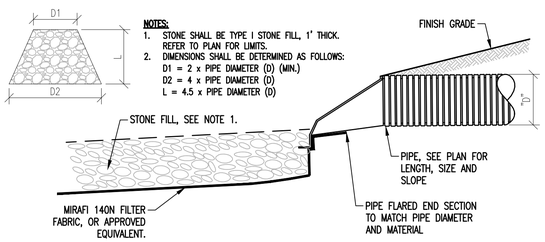
CATCH BASIN - SQUARE

CATCH BASIN - VANED

NOTES:
1. ALL DIMENSIONS SHOWN HERE ARE NOMINAL.
2. COVER SHALL BE HEAVY DUTY (H-20) LOAD RATED.
3. CATCH BASIN (SQUARE) FRAME AND GRATE ASSEMBLY SHALL BE EAST JORDAN IRON WORKS FRAME 5546Z (PRODUCT NUMBER 00554611 (4 FLANGE) OR 00554613 (3 FLANGE)) AND GRATE 5520M5 (PRODUCT NUMBER 00552060) OR APPROVED EQUAL.
3. CATCH BASIN - (VANED) FRAME AND GRATE ASSEMBLY SHALL BE EAST JORDAN IRON WORKS "5520M8 5521Z ASSEMBLY" (PRODUCT NUMBER 00552081A2) OR APPROVED EQUAL. FRAME AND GRATE VANE DIRECTION SHALL BE "LEFT" OR "RIGHT" DEPENDING ON THE DIRECTION OF FLOW AT EACH BASIN.
4. MANHOLE (MH) FRAME AND COVER ASSEMBLY SHALL BE EAST JORDAN IRON WORKS "1480A V1419 ASSEMBLY" OR APPROVED EQUAL.

STORMWATER MH COVERS AND CB GRATES

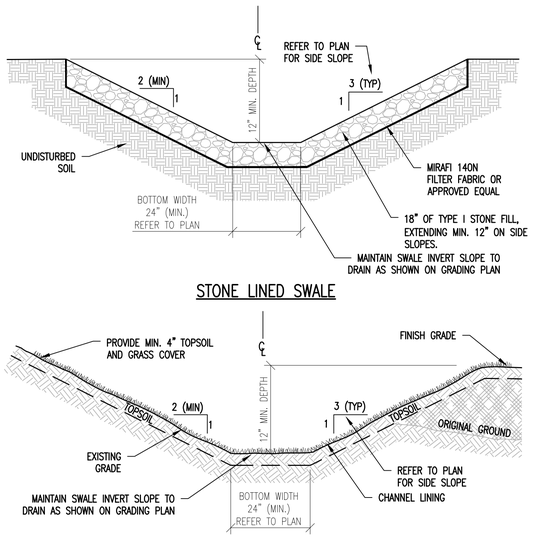
NOT TO SCALE 5



NOTES:
1. STONE SHALL BE TYPE I STONE FILL, 1' THICK. REFER TO PLAN FOR LIMITS.
2. DIMENSIONS SHALL BE DETERMINED AS FOLLOWS:
   D1 = 2 x PIPE DIAMETER (D) (MIN.)
   D2 = 4 x PIPE DIAMETER (D)
   L = 4.5 x PIPE DIAMETER (D)

FLARED END SECTION W/STONE APRON

NOT TO SCALE 6



STONE LINED SWALE

GRASS LINED SWALE

SWALE NOTES:
1. SWALES WITH A CENTERLINE SLOPE GREATER THAN 4% SHALL BE STONE LINED.
2. NORTH AMERICAN GREEN SC150 (OR APPROVED EQUIVALENT) EROSION CONTROL NETTING SHALL BE USED ON SLOPES OF 3H:1V OR GREATER AND FOR CHANNEL BOTTOMS TO STABILIZE NEWLY VEGETATED SWALES. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

CONVEYANCE SWALE DETAIL

NOT TO SCALE 9

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208 Flynn Avenue, Suite 2A, Burlington, VT 05401 s 802-863-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 s 603-442-9333
414 Union Street, Schenectady, NY 12305 s 518-630-9614
www.engineeringventures.com

JOE LASTER
1139 Lanier Boulevard
Atlanta, GA 30306
404.822.6990

Sheet Title: Stormwater Details (1 of 2)

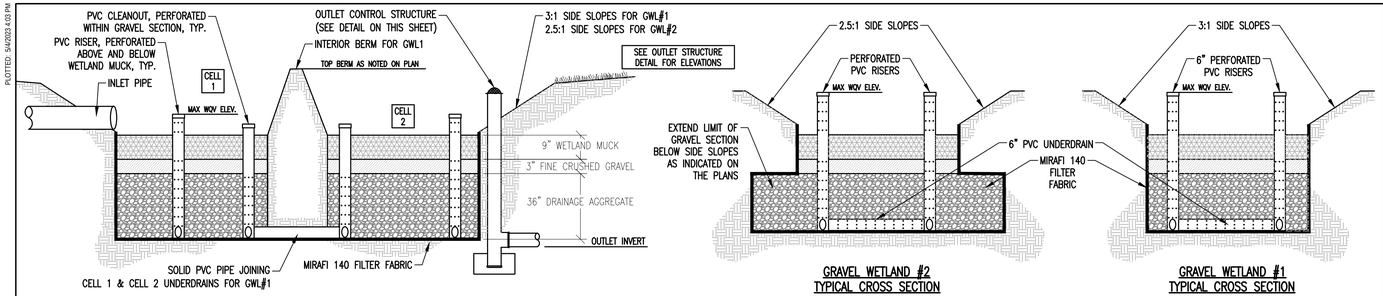
Project Title: PROPOSED SUBDIVISION
LASTER PROPERTY
TOWN OF HINESBURG, CHITTENDEN COUNTY, VERMONT

EV Project #	20542
Drawn By:	HKW
Checked By:	KW
Scale:	not to scale
Date:	03/01/2023

No.	Description	Date
1	TOWN & ANR STORMWATER COMMENT RESPONSE	04/12/2023
3	TOWN DEVELOPMENT REVIEW BOARD COMMENT RESPONSE	05/25/2023

C4.3

PLOTTED: 5/4/2023 4:03 PM

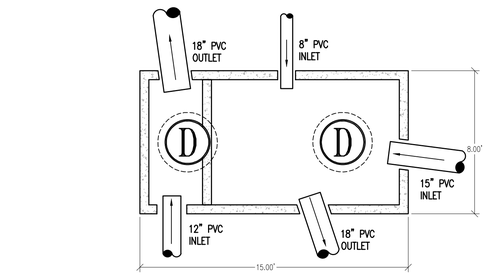


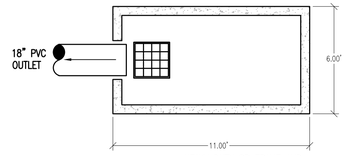
GRAVEL WETLAND #2 TYPICAL CROSS SECTION

GRAVEL WETLAND #1 TYPICAL CROSS SECTION

TYPICAL GRAVEL WETLAND DETAIL

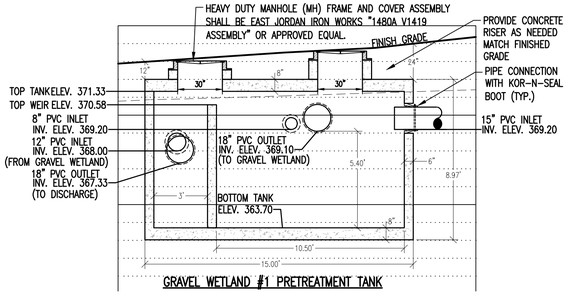
NOT TO SCALE (1)



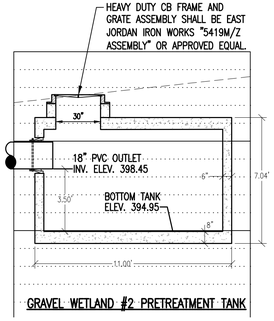


PRETREATMENT TANK NOTES:

1. TANK FOR GRAVEL WETLAND #1 SHALL BE CAMP PRECAST 7'X14' PRE-CAST HEAVY DUTY TANK AND PROVIDE A MINIMUM STORAGE VOLUME OF 450-CF BELOW THE LOWEST OUTLET.
2. TANK FOR GRAVEL WETLAND #2 SHALL BE CAMP PRECAST 5'X10' PRE-CAST HEAVY DUTY TANK AND PROVIDE A MINIMUM STORAGE VOLUME OF 175-CF BELOW THE LOWEST OUTLET.
3. TANK SHALL BE DESIGNED FOR H-20 LOADING.
4. THE EXTERIOR OF THE PRE-CAST CONCRETE STRUCTURE SHALL RECEIVE TWO COATS OF ASPHALT SEAL COATING AT THE FACTORY.
5. JOINTS BETWEEN THE CONCRETE SECTIONS SHALL BE SEALED BY BUTYL MASTIC (AASHTO M-198).
6. PIPE PENETRATIONS SHALL BE SEALED BY FLEXIBLE WATERTIGHT BOOTS WITH STAINLESS STEEL BANDS.
7. SHOP DRAWINGS OF THE PRETREATMENT TANK AND COMPONENTS SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.



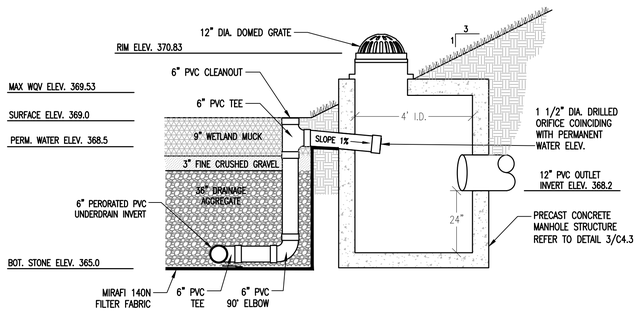
GRAVEL WETLAND #1 PRETREATMENT TANK

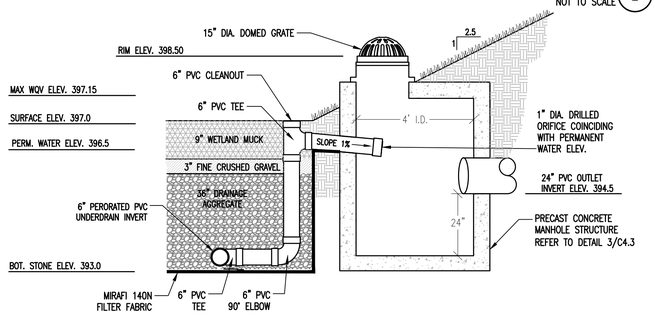


GRAVEL WETLAND #2 PRETREATMENT TANK

PRETREATMENT TANK DETAILS

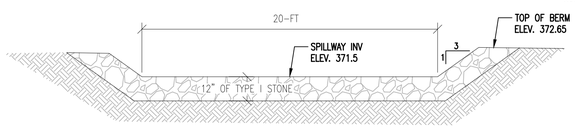
NOT TO SCALE (2)





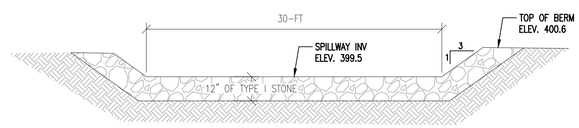
OUTLET STRUCTURE DETAIL GRAVEL WETLAND #1

NOT TO SCALE (3)



OUTLET CONTROL STRUCTURE DETAIL GRAVEL WETLAND #2

NOT TO SCALE (4)

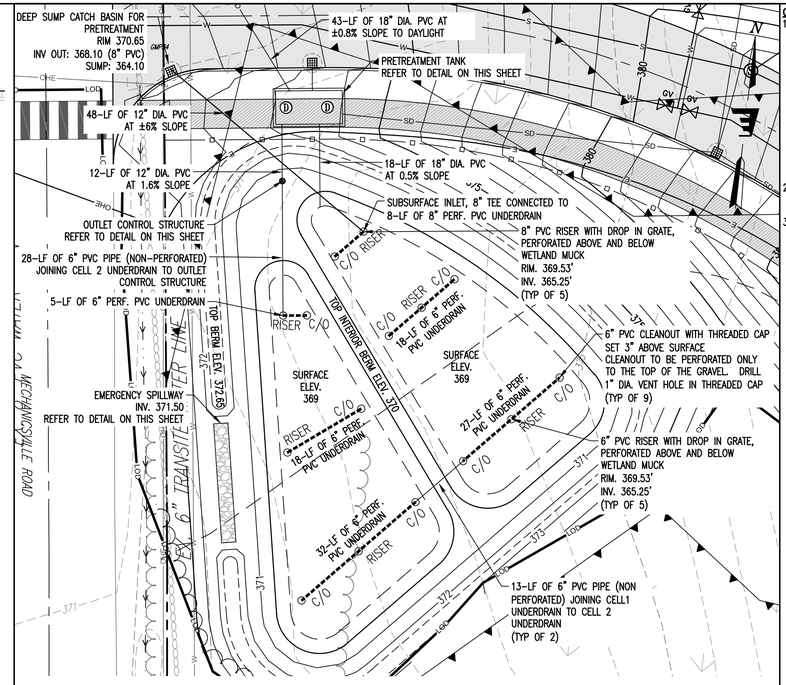


SPILLWAY DETAIL GRAVEL WETLAND #1

NOT TO SCALE (5)

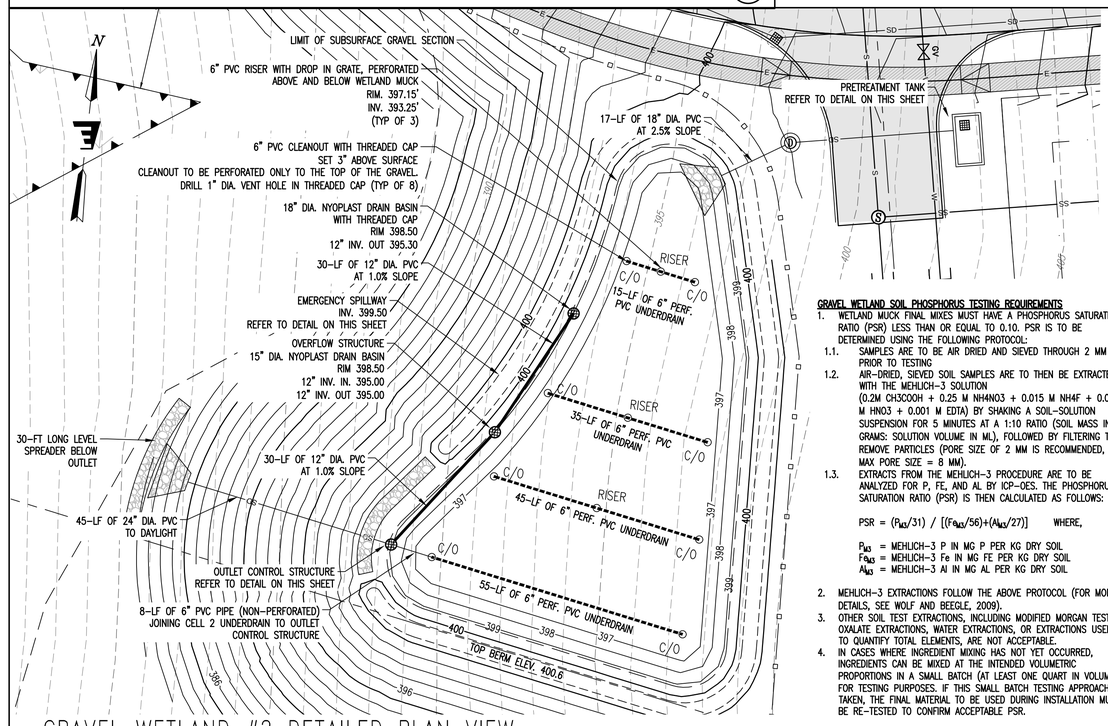
SPILLWAY DETAIL GRAVEL WETLAND #2

NOT TO SCALE (6)



GRAVEL WETLAND #1 DETAILED PLAN VIEW

1" = 15' (5)



GRAVEL WETLAND #2 DETAILED PLAN VIEW

1" = 15' (6)

GRAVEL WETLAND SOIL SPECIFICATION

1. WETLAND SOIL SHALL BE FINE-GRAINED, WORKABLE SOIL, FREE OF REFUSE, ROOTS, STONES, BRUSH, WEEDS, HAZARDOUS WASTES, OR OTHER MATERIAL THAT WOULD BE DETRIMENTAL TO THE PROPER DEVELOPMENT OF PLANT GROWTH. THIS MATERIAL IS TO BE BLENDED FROM GRANULAR AND ORGANIC MATERIALS AS INDICATED BELOW. WETLAND SOIL SHALL MEET THE REQUIREMENTS AS INDICATED BELOW. ANY BLENDED MATERIAL THAT IS STOCKPILED ON SITE SHALL BE LOCATED HIGH AND DRY, PROTECTED FROM PRECIPITATION, AND PREVENTED FROM MINGLING WITH STORMWATER RUNOFF. THE PROPOSED PARTICLE SIZE DISTRIBUTION (PSD) FOR WETLAND SOIL IS PROVIDED BELOW AND REFLECTS A POORLY DRAINED SOIL WITH A MEDIAN PARTICLE SIZE (D50) OF 0.15 MM AND IS A CLAY OR SILT LOAM IN THE USDA SOIL TEXTURAL TRIANGLE. THIS WILL ALLOW FOR POTENTIAL TO EMPLOY APPROPRIATE ONSITE EXCAVATED MATERIALS INTO SELECT SOIL MIXES. ONSITE MATERIALS SHOULD BE EVALUATED BY THE ENGINEER TO ENSURE APPLICABILITY.
2. THE PLACEMENT OF WETLAND SOIL SHALL OCCUR SUCH THAT THE WETLAND PLANTINGS CAN BE INSTALLED IMMEDIATELY THEREAFTER, OR AS SOON AS PRACTICABLE, AS APPROVED BY THE ENGINEER AND LANDSCAPE ARCHITECT.
3. WETLAND SOIL IN AN UNWORKABLE CONDITION DUE TO EXCESSIVE MOISTURE, FROST OR OTHER CONDITIONS SHALL NOT BE PLACED UNTIL IT IS SUITABLE FOR SPREADING. WETLAND SOIL SHALL BE PLACED ON THE DESIGNATED AREA AND SPREAD TO THE SPECIFIED THICKNESS. AFTER THE WETLAND SOIL IS SPREAD, ALL LARGE STIFF CLODS, ROCKS, ROOTS AND OTHER FOREIGN MATTER SHALL BE CLEARED AND DISPOSED OF BY THE CONTRACTOR SO THAT THE FINISHED SURFACE IS READY FOR PLANTING.
   A. GRANULAR SOIL SHALL BE GUARANTEED CLEAN FILL MATERIAL OBTAINED FROM A COMMERCIAL SAND AND GRAVEL PIT, NOT ORIGINATING FROM RECONSTITUTED OR RECYCLED PAVEMENT MATERIALS. THE GRANULAR SOIL PORTION SHALL CONSTITUTE 80% - 85% OF THE MIXTURE BY VOLUME, AND SHALL HAVE THE FOLLOWING GRADATION:

SIEVE SIZE	PERCENT PASSING BY WEIGHT
0.5	100 ±10.0
NO. 10	90-75 ±5.0
NO. 100	40-50 ±5.0
NO. 200	25-35 ±5.0

   B. THE ORGANIC PORTION SHALL CONSTITUTE 15%-20% OF THE MIXTURE, AND BE COMPRISED OF WELL PULVERIZED AND COMPOSTED LEAF MULCH.
   C. THE SURFACE INFILTRATION RATES OF THE GRAVEL WETLAND SOIL SHOULD BE SIMILAR TO A LOW HYDRAULIC CONDUCTIVITY WETLAND SOIL (0.1-0.01 FT/DAY = 3.5x10-5 CM/SEC TO 3.5x10-6 CM/SEC)
   D. SALINITY (ELECTRICAL CONDUCTIVITY) SHALL BE LESS THAN 0.1 S/m AS DETERMINED BY A 1:2 (BY VOLUME) SOIL TO WATER MIX. SALINITY TEST SAMPLES SHALL NOT BE OVEN DRIED.
   E. THE pH OF THE WETLAND SOIL SHALL BE NOT LESS THAN 6.0 OR GREATER THAN 7.0.

GRAVEL WETLAND NOTES:

1. FOR TREATMENT AREA ELEVATIONS, REFER TO OUTLET STRUCTURE DETAIL ON THIS SHEET.
2. REFER TO LANDSCAPING PLAN FOR PLAN SPECIES, PLANT LOCATIONS, SOURCES OF PLANT MATERIAL AND ANY REQUIRED SOIL AMENDMENTS.
3. NO WOODY VEGETATION GREATER THAN 2-INCHES IN DIAMETER SHALL BE PLANTED OR ALLOWED TO GROW ON THE DAM, WITHIN 15-FEET OF THE DAM OR THE TOE OF EMBANKMENT, OR WITHIN 25-FEET OF A PRINCIPAL SPILLWAY OUTLET.

GRAVEL WETLAND SOIL PHOSPHORUS TESTING REQUIREMENTS

1. WETLAND MUCK FINAL MIXES MUST HAVE A PHOSPHORUS SATURATION RATIO (PSR) LESS THAN OR EQUAL TO 0.10. PSR IS TO BE DETERMINED USING THE FOLLOWING PROTOCOL:
   1.1. SAMPLES ARE TO BE AIR DRIED AND SIEVED THROUGH 2 MM PRIOR TO TESTING
   1.2. AIR-DRIED, SIEVED SOIL SAMPLES ARE TO THEN BE EXTRACTED WITH THE MEHLICH-3 SOLUTION (0.2M CH3COOH + 0.25 M NH4NO3 + 0.015 M NH4F + 0.013 M HNO3 + 0.001 M EDTA) BY SHAKING A SOIL-SOLUTION SUSPENSION FOR 5 MINUTES AT A 1:10 RATIO (SOIL MASS IN GRAMS: SOLUTION VOLUME IN ML), FOLLOWED BY FILTERING TO REMOVE PARTICLES (PORE SIZE OF 2 MM IS RECOMMENDED, MAX PORE SIZE = 8 MM).
   1.3. EXTRACTS FROM THE MEHLICH-3 PROCEDURE ARE TO BE ANALYZED FOR P, FE, AND AL BY ICP-OES. THE PHOSPHORUS SATURATION RATIO (PSR) IS THEN CALCULATED AS FOLLOWS:

$$PSR = (P_{M3}/31) \,/\, [(Fe_{M3}/56)+(Al_{M3}/27)] \quad \text{WHERE,}$$

P_{M3} = MEHLICH-3 P IN MG P PER KG DRY SOIL
Fe_{M3} = MEHLICH-3 Fe IN MG FE PER KG DRY SOIL
Al_{M3} = MEHLICH-3 Al IN MG AL PER KG DRY SOIL

2. MEHLICH-3 EXTRACTIONS FOLLOW THE ABOVE PROTOCOL (FOR MORE DETAILS, SEE WOLF AND BEEGLE, 2009).
3. OTHER SOIL TEST EXTRACTIONS, INCLUDING MODIFIED MORGAN TESTS, OXALATE EXTRACTIONS, WATER EXTRACTIONS, OR EXTRACTIONS USED TO QUANTIFY TOTAL ELEMENTS, ARE NOT ACCEPTABLE.
4. IN CASES WHERE INGREDIENT MIXING HAS NOT YET OCCURRED, INGREDIENTS CAN BE MIXED AT THE INTENDED VOLUMETRIC PROPORTIONS IN A SMALL BATCH (AT LEAST ONE QUART IN VOLUME) FOR TESTING PURPOSES. IF THIS SMALL BATCH TESTING APPROACH IS TAKEN, THE FINAL MATERIAL TO BE USED DURING INSTALLATION MUST BE RE-TESTED TO CONFIRM ACCEPTABLE PSR.

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ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A, Burlington, VT 05401 s 802-863-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 s 603-442-9333
414 Union Street, Schenectady, NY 12305 s 518-630-9614
www.engineeringventures.com

JOE LASTER
1139 Lanier Boulevard
Atlanta, GA 30306
404.822.6990

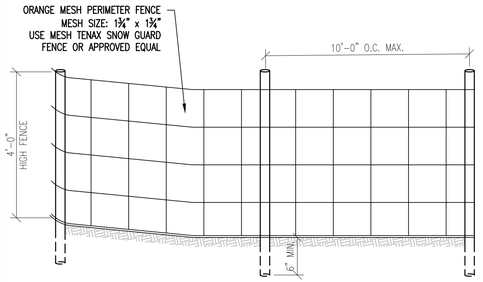
Sheet Title: Stormwater Details (2 of 2)

Project Title: PROPOSED SUBDIVISION
LASTER PROPERTY
TOWN OF HINESBURG, CHITTENDEN COUNTY, VERMONT

EV Project #	20542
Drawn By:	HKW
Checked By:	KW
Scale:	as noted
Date:	03/01/2023

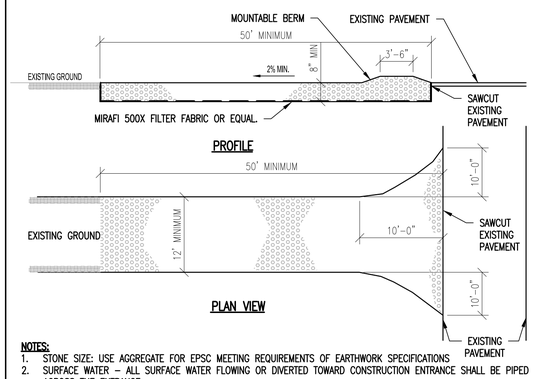
No.	Description	Date
1	TOWN & ANR STORMWATER COMMENT RESPONSE	04/12/2023
2	ANR W-WW & STORMWATER COMMENT RESPONSE	05/08/2023

C4.4



ORANGE CONSTRUCTION FENCE DETAIL

NOT TO SCALE 1

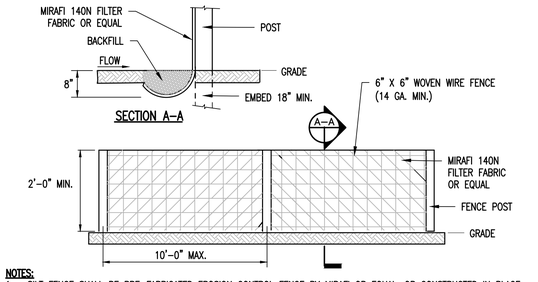


NOTES:

1. STONE SIZE: USE AGGREGATE FOR EPSC MEETING REQUIREMENTS OF EARTHWORK SPECIFICATIONS
2. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED ACROSS THE ENTRANCE.
3. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. REPAIR AND/OR CLEANOUT ANY MEASURES USED TO TRAP SEDIMENT. TRACKING ONTO PUBLIC RIGHT-OF-WAYS SHALL **NOT** BE ALLOWED. ALL SEDIMENT SPILLED, DROPPED, OR WASHED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY AND ANY WASH WATER MUST BE CONTAINED AND PROPERLY DISPOSED OF.
4. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.
5. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE 2

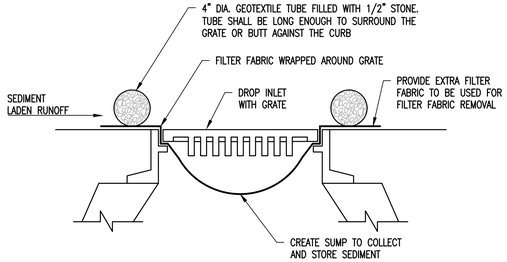


NOTES:

1. SILT FENCE SHALL BE PRE-FABRICATED EROSION CONTROL FENCE BY MIRAFI OR EQUAL, OR CONSTRUCTED IN PLACE AS SPECIFIED HEREIN.
2. CONSTRUCTED IN PLACE SILT FENCE:
   A. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
   B. FILTER FABRIC TO BE FASTENED SECURELY TO WOVEN WIRE FENCE TIES SPACED EVERY 24" AT TOP OF MID SECTION.
   C. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6", FOLDED AND STAPLED.
3. INSPECTION SHALL BE FREQUENT (MINIMUM ONCE A WEEK AND AFTER EVERY RAINFALL). MAINTENANCE SHALL BE PERFORMED AS NEEDED, AND SEDIMENT REMOVED WHEN "BULGES" DEVELOP IN SILT FENCE.

SILT FENCE DETAIL

NOT TO SCALE 3

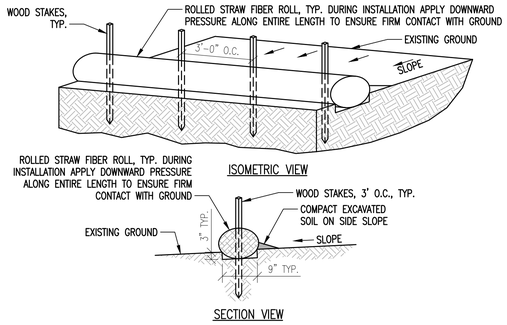


NOTES

1. CONTRACTOR TO CLEAN AFTER EVERY STORM. IF THE BARRIER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PASSES FILTERED WATER, THE SEDIMENT SHALL BE REMOVED AND THE BARRIER SHALL BE REPLACED. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
2. THE FABRIC SHALL BE REMOVED WHEN THE DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED.

INLET PROTECTION DETAIL

NOT TO SCALE 4

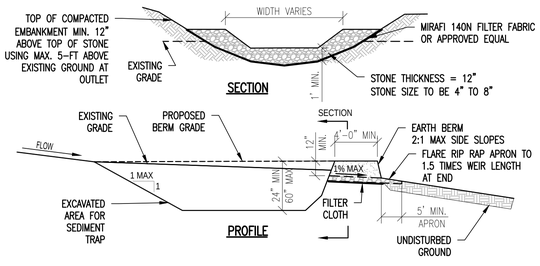


STRAW FIBER ROLL NOTES

1. INSTALL ROLLED STRAW FIBER ROLL PARALLEL ALONG THE CONTOUR OF THE SLOPE.
2. TO MAXIMIZE SEDIMENT CONTAINMENT WITH THE STRAW FIBER ROLL, PLACE THE INITIAL STRUCTURE AT THE TOP/CREST OF THE SLOPE IF SIGNIFICANT RUNOFF IS EXPECTED FROM ABOVE. IF NO RUNOFF FROM ABOVE IS EXPECTED, THE INITIAL STRAW WATTLE CAN BE INSTALLED AT THE APPROPRIATE DISTANCE DOWNHILL FROM THE TOP/CREST OF THE SLOPE. THE FINAL STRUCTURE SHOULD BE INSTALLED AT OR JUST BEYOND THE BOTTOM/TOE OF THE SLOPE. WATTLES SHOULD BE INSTALLED PERPENDICULAR TO THE PRIMARY DIRECTION OF OVERLAND FLOW

STRAW FIBER ROLL – SOIL

NOT TO SCALE 5

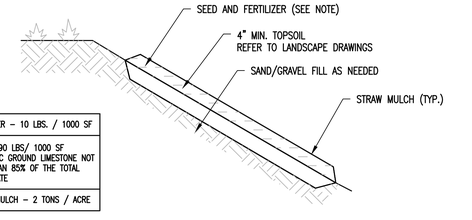


NOTES:

1. THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF EMBANKMENT SHALL BE FIVE (5) FEET, MEASURED AT CENTERLINE OF EMBANKMENT.
3. ALL FILL SLOPES SHALL BE 2:1 OR FLATTER, CUT SLOPES 1:1 OR FLATTER.
4. ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED THE HEIGHT OF EMBANKMENT.
5. STORAGE AREA PROVIDED SHALL BE FIGURED BY COMPUTING THE VOLUME AVAILABLE BEHIND THE OUTLET CHANNEL UP TO AN ELEVATION OF ONE (1) FOOT BELOW THE LEVEL WEIR CREST.
6. FILTER CLOTH SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL PRIOR TO PLACEMENT OF STONE. SECTIONS OF FABRIC MUST OVERLAP AT LEAST ONE (1) FOOT WITH SECTION NEAREST ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
7. STONE USED IN THE OUTLET CHANNEL SHALL BE FOUR (4) TO EIGHT (8) INCH RIP-RAP. TO PROVIDE A FILTERING EFFECT, A LAYER OF FILTER CLOTH SHALL BE EMBEDDED ONE (1) FOOT WITH SECTION NEAREST ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
8. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND STABILIZED.
9. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRED AS NEEDED.
10. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND SEDIMENT ARE CONTROLLED.
11. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
12. DRAINAGE AREA FOR THIS PRACTICE IS LIMITED TO 15 ACRES OR LESS.
13. SEDIMENT TRAPS SHALL MEET THE VERMONT HANDBOOK FOR SOIL EROSION AND SEDIMENT CONTROL ON CONSTRUCTION SITES.

TEMPORARY SEDIMENT TRAP W/RIP-RAP OUTLET

NOT TO SCALE 6



FERTILIZER – 10 LBS. / 1000 SF
LIME – 90 LBS/ 1000 SF DOLOMITIC GROUND LIMESTONE NOT LESS THAN 85% OF THE TOTAL CARBONATE
STRAW MULCH – 2 TONS / ACRE

NOTES:

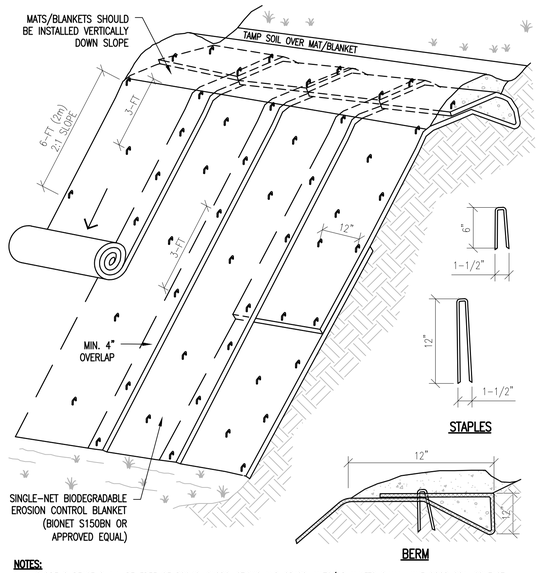
1. SEEDING AND MULCHING OF DISTURBED AREAS SHALL TAKE PLACE WITHIN 48 HOURS OF FINAL GRADING.
2. MULCH: HAY SHALL NOT BE USED. STRAW MULCH SHALL BE UTILIZED AND SHALL BE APPLIED AT A RATE OF 90–1,000 LBS/1,000 SF. MULCH SHALL NOT BE PLACED ON SLOPES OF GREATER THAN 3:1. SEED IMPREGNATED EROSION CONTROL NETTING SHALL BE USED IN ITS PLACE.
3. SEED: SEEDING SHALL OCCUR AFTER APRIL 15 AND PRIOR TO SEPTEMBER 15TH IN ORDER TO ESTABLISH A STAND OF GRASS PRIOR TO GROUND FREEZING. SEED SHALL BE IN ACCORDANCE WITH SEED SPECIFICATION ON THIS SHEET.
4. COVER SEED WITH ¼ INCH SOIL UNLESS A HYDROSEEDER IS USED.
5. MULCH ANCHORING: SHALL BE ACCOMPLISHED BY DEGRADABLE MULCH NETTING. USE WHEN SLOPES ARE GREATER THAN 10%.
6. TOPSOIL AND MULCHING NOT TO BE APPLIED IN AREAS OF TRAVEL WAYS.

URBAN MIX GRASS SEED (FOR USE IN GRASSED LAWN AREAS AROUND BUILDINGS AND PARKING)		
% BY WEIGHT	LBS. LIVE SEED BY ACRE	TYPE OF SEED
37.5	45	CREEPING RED FESCUE
31.3	37.5	KENTUCKY BLUEGRASS
31.3	37.5	WINTER HARDY, PERENNIAL RYE
100	120 LBS. LIVE SEED / ACRE	

CONSERVATION MIX GRASS SEED (FOR USE IN ALL OTHER AREAS)		
% BY WEIGHT	LBS. LIVE SEED BY ACRE	TYPE OF SEED
35	77	CREEPING RED FESCUE
20	44	KENTUCKY BLUEGRASS
15	33	CUTTER PERENNIAL RYE
15	33	ANNUAL RYE GRASS
10	22	TALL FESCUE
55	11	WHITE CLOVER
100	220 LBS. LIVE SEED / ACRE	

SEEDED AND MULCHED AREAS DETAIL

NOT TO SCALE 7



NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/ BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

EROSION CONTROL BLANKET

NOT TO SCALE 8

GENERAL EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL DESIGNATE AN "ON-SITE EROSION CONTROL PLAN COORDINATOR" WHO WILL BE PRESENT ON-SITE FROM DAY-TO-DAY, AND SHALL BE RESPONSIBLE FOR ENSURING THAT THE EROSION CONTROL MEASURES REQUIRED BY THE EROSION CONTROL PLAN, DETAILS AND NOTES, ARE PROPERLY INSTALLED AND MAINTAINED. THE ONSITE EROSION CONTROL PLAN COORDINATOR SHALL KEEP A WRITTEN RECORD OF INSPECTIONS AND MAINTENANCE OF EROSION CONTROL FEATURES. A COPY OF THESE PLANS AND INSPECTION/MAINTENANCE RECORDS SHALL BE KEPT ONSITE AT ALL TIMES.
2. THE CONTRACTOR SHALL NOTIFY THE TOWN OF HINESBURG DEPARTMENT OF PUBLIC WORKS DIVISION AT LEAST 24-HOURS PRIOR TO ANY EARTH DISTURBING ACTIVITIES AND SUBMIT THE NAME AND CONTACT INFORMATION (CELL PHONE AND EMAIL) OF THE ON-SITE EROSION CONTROL COORDINATOR FOR THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR POSTING THE EROSION PREVENTION AND SEDIMENT CONTROL PLAN NOTICE IN A VISIBLE LOCATION AT ALL TIMES DURING EARTH DISTURBANCE.
3. DISTURBANCE LIMITS ARE TO BE MARKED, AND THE FOLLOWING MANAGEMENT PRACTICES INSTALLED, PRIOR TO BEGINNING EARTHWORK IN ANY GIVEN AREA; SILT FENCE, CONSTRUCTION ENTRANCE, INLET PROTECTION & TREE PROTECTION FENCING.
4. COMPLY WITH VERMONT STATE GENERAL CONSTRUCTION PERMIT CONDITIONS. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE VERMONT DEC LOW RISK SITE HANDBOOK FOR EROSION PREVENTION & SEDIMENT CONTROL.
5. DURING THE NON-WINTER CONSTRUCTION SEASON, ALL DISTURBED AREAS ARE TO BE STABILIZED (TEMPORARY OR FINAL) WITHIN 14-DAYS OF INITIAL DISTURBANCE. AFTER THIS TIME, ANY DISTURBANCE WITHIN THIS WORK AREA MUST BE STABILIZED AT THE END OF EACH WORK DAY, WITH THE FOLLOWING EXCEPTIONS:
   A. STABILIZATION IS NOT REQUIRED IF WORK IS TO CONTINUE IN THE AREA WITHIN 24 HOURS AND NO PRECIPITATION IS FORECAST DURING THAT PERIOD
   B. WORK IS OCCURRING WITHIN A SELF-CONTAINED EXCAVATION, 2-FEET OR MORE IN DEPTH.
6. THE PERIOD BETWEEN NOVEMBER 1ST AND APRIL 15TH IS CONSIDERED THE "WINTER CONSTRUCTION PERIOD". IF SOILS WILL BE EXPOSED AFTER NOVEMBER 1ST, A PLAN FOR WINTER CONSTRUCTION MUST BE DEVELOPED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER ON OR BEFORE OCTOBER 1ST. THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL IS INSTALLED PRIOR TO THE SOIL FREEZING. AN INSPECTION WILL BE REQUIRED IF THE PROJECT IS COMPLETED DURING THE WINTER MONTHS TO ENSURE THE SITE IS SECURED FOR THE REMAINDER OF THE SEASON.
7. DURING THE WINTER CONSTRUCTION SEASON, ANY NEW DISTURBANCE MUST BE STABILIZED (TEMPORARY OR FINAL) AT THE END OF EACH WORK DAY, WITH THE FOLLOWING EXCEPTIONS:
   A. STABILIZATION IS NOT REQUIRED IF WORK IS TO CONTINUE IN THE AREA WITHIN 24 HOURS AND NO PRECIPITATION IS FORECAST DURING THAT PERIOD
   B. WORK IS OCCURRING WITHIN A SELF-CONTAINED EXCAVATION, 2-FEET OR MORE IN DEPTH.
8. IN NO CASE SHALL SOIL BE EXPOSED FOR MORE THAN 14 DAY WITHOUT BEING STABILIZED.
9. ALL DISTURBED AREAS ARE TO BE PERMANENTLY STABILIZED WITHIN 48 HOURS OF FINAL GRADING.
10. THE PERIMETER OF THE SITE AND ALL BMPS SHALL BE INSPECTED AT THE END OF EACH WORK DAY TO ENSURE SEDIMENT DOES NOT LEAVE THE SITE. IF SEDIMENT HAS TRAVELED BEYOND THE PROJECT LIMITS, IT SHALL BE RELOCATED IN AN UPGRADIENT AREA ON SITE AT THE END OF EACH WORK DAY.
11. ALL STABILIZATION INVOLVING SEEDING IS TO BE COMPLETED BY SEPTEMBER 15TH.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY INSPECTION OF THE ADJACENT ROADWAYS FOR OFF-SITE TRACKING OF SOIL MATERIALS. SOIL, STONE, AND DEBRIS FOUND LEAVING THE SITE ARE TO BE REMOVED (WHEN FOUND) BY SWEEPING AT THE END OF EACH CONSTRUCTION DAY, OR MORE FREQUENTLY WHEN NEEDED TO PREVENT IMPACTS TO ADJACENT ROADS AND SIDEWALKS.
13. IF DEWATERING IS REQUIRED FOR CONSTRUCTION, THE CONTRACTOR MUST UTILIZE SEDIMENT FILTER BAGS (OR ALTERNATE APPROVED BY THE ENGINEER) TO PREVENT DISCHARGE OF SEDIMENT-LADEN WATER OFF SITE.
14. EXCAVATED MATERIAL FROM EARTH EXCAVATION AND DITCH DIGGING SHALL BE PLACED ONSITE IN A LOCATION TO BE APPROVED OF BY THE OWNER AND/OR THE ENGINEER OR USED FOR PROJECT FILL MATERIAL IF DETERMINED SUITABLE BY THE OWNER'S REPRESENTATIVE.
15. STOCKPILED MATERIAL (TOPSOIL, BORROW, ETC.) SHALL HAVE SILT FENCE CONSTRUCTED AROUND THE PERIMETER. THE STOCKPILED MATERIAL SHALL BE SEEDED AND MULCHED AS SOON AS POSSIBLE TO PREVENT SOIL EROSION AND SEDIMENTATION OFF SITE. LOCATE STOCKPILES ON THE UPHILL SIDE OF DISTURBED AREAS, IF POSSIBLE. DURING WINDY CONDITIONS, STOCKPILED MATERIAL SHALL BE COVERED OR WATERED APPROPRIATELY TO PREVENT WIND EROSION.
16. SLOPES GREATER THAN 3:1 SHALL HAVE EROSION CONTROL MATTING INSTALLED TO STABILIZE THE SLOPE AND REDUCE THE EROSION POTENTIAL. MATTING SHALL BE BIODEGRADABLE WITH A 12 MONTH LONGEVITY, S150BN AS MANUFACTURED OR APPROVED EQUIVALENT. INSTALL MATTING OVER MULCHED SLOPES SO THAT ALL PARTS ARE IN CONTACT WITH THE SOIL AND MULCH. PIN MATTING WITH WIRE STAPLES 3 FEET O.C. TO ENSURE FULL BONDING WITH SOIL SURFACE. THE SLOPE SURFACES SHOULD BE LEFT SLIGHTLY ROUGHENED AND NOT SMOOTH. IF LARGE AMOUNTS OF OFFSITE WATER WILL DRAIN OVER THESE SLOPES, TEMPORARY DIVERSION SWALES SHALL BE INSTALLED UP SLOPE UNTIL THE SLOPE VEGETATION STABILIZES.
17. THE OWNER SHALL BE NOTIFIED WHEN SITE WORK IS COMPLETED AND THE SITE IS STABILIZED.

WINTER EROSION CONTROL NOTES

WINTER CONSTRUCTION PROCEDURES

1. DURING WINTER CONSTRUCTION, INSPECTIONS BY THE ON-SITE PLAN COORDINATOR SHALL OCCUR FOR ANY AREAS NOT FULLY STABILIZED, AND WEEKLY FOR THE ENTIRE SITE PRIOR TO ANY FORECASTED RAIN, THAW OR SPRING MELT WHEN TEMPORARY STABILIZATION IS IN PLACE.
2. IN AREAS TO BE STABILIZED BY VEGETATION, ALL SEEDING MUST BE COMPLETED BY SEPTEMBER 15 TO ALLOW GROWTH TO OCCUR PRIOR TO THE GROUND FREEZING. STABILIZATION OF ALL OTHER DISTURBED AREAS SHALL BE COMPLETED BY OCTOBER 15.
3. ENLARGED ACCESS POINTS, STABILIZED TO PROVIDE FOR SNOW STOCKPILING SHALL BE INSTALLED.
4. LIMITS OF DISTURBANCE SHALL BE MOVED OR REPLACED TO REFLECT BOUNDARY OF WINTER WORK.
5. SNOW WILL NOT BE PILED WITHIN 25 FEET OF PERIMETER CONTROLS (SUCH AS SILT FENCE) TO ALLOW FOR CLEARING AND MAINTENANCE. SNOW IS TO BE REMOVED FROM ALL STRUCTURAL EROSION PREVENTION AND SEDIMENTATION CONTROL MEASURES FOLLOWING EACH SIGNIFICANT SNOWFALL. NO SNOW STORAGE UP-GRADIENT OF DISTURBANCE. NO SNOW DISPOSAL IN SEDIMENT PONDS/BASINS. IF NECESSARY, SNOW/ICE MUST BE REMOVED PRIOR TO STABILIZATION OF DISTURBED AREAS. ACCESS POINTS SHALL BE ENLARGED AND STABILIZED TO ALLOW FOR SNOW STOCKPILING.
6. IN AREAS OF DISTURBANCE WITHIN 100 FT OF A RECEIVING WATER, SILT FENCE SHALL BE REINFORCED OR ELSE REPLACED WITH PERIMETER DIKES, SWALES OR OTHER PRACTICES RESISTANT TO THE FORCES OF SNOW LOADS.
7. DRAINAGE STRUCTURES SHALL BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS.
8. ALL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE TO BE IN PLACE BY OCTOBER 15, OR IF NOT POSSIBLE, THEN PRIOR TO GROUND FREEZE.
9. MULCH IS TO BE APPLIED AT THE END OF EACH WORKDAY TO ALL EXPOSED AREAS THAT HAVE NOT YET REACHED FINAL GRADE AT TWICE THE RATE INDICATED IN THE SEEDING AND MULCHING DETAIL FOR THE REGULAR CONSTRUCTION SEASON. MULCH SHALL BE TRACKED IN OR STABILIZED WITH NETTING.
10. TO ENSURE COVER OF DISTURBED SOIL IN ADVANCE OF A MELT EVENT, AREAS OF DISTURBED SOIL MUST BE STABILIZED AT THE END OF EACH WORK DAY, WITH THE FOLLOWING EXCEPTIONS:
    A. IF NO PRECIPITATION WITHIN 24 HOURS IS FORECAST AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS, DAILY STABILIZATION IS NOT NECESSARY.
    B. DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS HOUSE FOUNDATIONS OR OPEN UTILITY TRENCHES.
11. SNOW AND ICE SHALL BE REMOVED TO LESS THAN 1" THICKNESS PRIOR TO STABILIZATION.
12. STONE STABILIZATION, 10 TO 20 FT WIDE IN AREAS SUCH AS THE PERIMETER OF BUILDINGS UNDER CONSTRUCTION WHERE CONSTRUCTION VEHICLE TRAFFIC IS ANTICIPATED SHALL BE INSTALLED.

Stamp

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A, Burlington, VT 05401 s 802-863-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 s 603-442-9333
414 Union Street, Schenectady, NY 12305 s 518-630-9614
www.engineeringventures.com

JOE LASTER
1139 Lanier Boulevard
Atlanta, GA 30306
404.822.6990

Sheet Title: Erosion Prevention & Sediment Control Details & Notes

Project Title: PROPOSED SUBDIVISION LASTER PROPERTY
TOWN OF HINESBURG, CHITTENDEN COUNTY, VERMONT

EV Project #	20542
Drawn By:	HKW
Checked By:	KW
Scale:	not to scale
Date:	03/01/2023

No.	Description	Date

C4.5