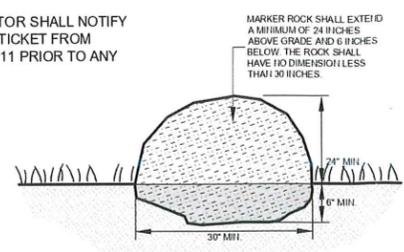
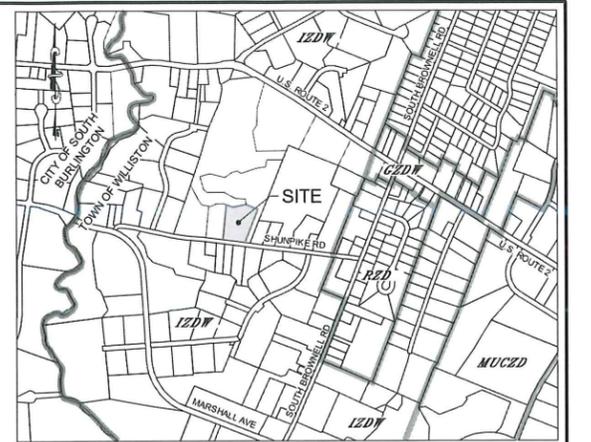


THE CONTRACTOR SHALL NOTIFY AND OBTAIN A TICKET FROM "DIGSAFE" AT 811 PRIOR TO ANY EXCAVATION.

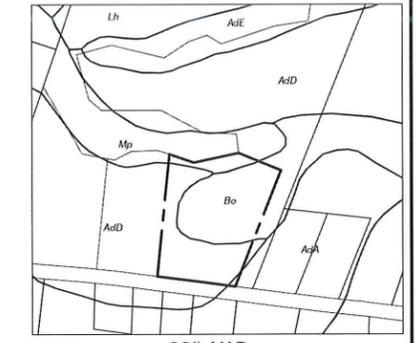


BOULDERS SHALL BE INSTALLED ALONG THE EDGE OF THE CLASS 2 WETLAND BUFFER / WATERSHED PROTECTION BUFFER AT A MAXIMUM SPACING OF 50 FEET

WATERSHED PROTECTION BUFFER DEMARCATION N.T.S.



LOCATION MAP (WITH ZONING) N.T.S.



SOIL MAP N.T.S.

LEGEND

- PROJECT BOUNDARY
- ABUTTING PROPERTY LINE
- SIDELINE OF EASEMENT
- EXISTING CONTOUR
- EDGE OF WETLAND
- EDGE OF WETLAND BUFFER
- PROPOSED FEICE
- PROPOSED BUILDING
- PROPOSED PAVED OR GRAVEL SURFACE

LANDSCAPING REQUIREMENTS

- STREET TREES: 40 FEET SPACING ALONG SHUNPIKE ROAD
- SIDEYARDS: 9 FEET WIDE TYPE III LANDSCAPE BUFFER
- REAR YARD: EXISTING VEGETATION & 9 FEET WIDE TYPE III LANDSCAPE BUFFER

PLANTING SCHEDULE

Key	Botanical Name	Common Name	Size	Remarks
Large Trees				
At	<i>Acer s. freemanii 'Suma'</i>	Freeman Maple	2" to 2 1/2" caliper	B&B, container
Ba	<i>Betula nigra 'Heritage'</i>	River Birch	2" to 2 1/2" caliper	B&B, container
Cop	<i>Celtis occidentalis 'Prince of Wales'</i>	Common Hackberry	2" to 2 1/2" caliper	B&B, container
Co	<i>Catalpa bignonioides</i>	Northern Catalpa	2" to 2 1/2" caliper	B&B, container
Gd	<i>Gymnocladia dioica</i>	Kentucky Coffeetree	2" to 2 1/2" caliper	B&B, container
Gi	<i>Gleditsia triacanthoides 'Shademaster'</i>	Honeylocust	2" to 2 1/2" caliper	B&B, container
Q	<i>Quercus robur</i>	Northern Red Oak	2" to 2 1/2" caliper	B&B, container
Ua	<i>Ulmus americana 'Folco Fage'</i>	American Elm	2" to 2 1/2" caliper	B&B, container
Small Trees				
Ac	<i>Amelanchier canadensis 'Traditonal'</i>	Shadblow Serviceberry	1" to 2" caliper	B&B, container
Cc	<i>Caryopteris fortunei 'moms'</i>	Cockspur Hawthorn	1" to 2" caliper	B&B, container
Cv	<i>Chaenactis virginica</i>	White Fringetree	1" to 2" caliper	B&B, container
Co	<i>Cotinus obovata</i>	American Smoketree	1" to 2" caliper	B&B, container
Hc	<i>Halesia carolina</i>	Carolina Silverbell	1" to 2" caliper	B&B, container
Hm	<i>Heptacodium miconioides</i>	Sweet Six Feet	1" to 2" caliper	B&B, container
Hv	<i>Hamelia virginiana</i>	Witchhazel	1" to 2" caliper	B&B, container
Jv	<i>Juniperus virginiana 'Compass'</i>	Red Cedar	1" to 2" caliper	B&B, container
Ov	<i>Ostrya virginiana</i>	Eastern Hopbalm	1" to 2" caliper	B&B, container
Vp	<i>Viburnum prunifolium</i>	Blackhaw	1" to 2" caliper	B&B, container
Shrubs				
Am	<i>Aronia melanocarpa 'Black'</i>	Black Chokeberry	18" to 24" Height	Container
Bv	<i>Berberis vulgaris 'Winter Red'</i>	Winterberry (female)	18" to 24" Height	Container
Fm	<i>Ficus virens 'Southern Gentleman'</i>	Waterberry (male)	18" to 24" Height	Container
Mp	<i>Morella pennsylvanica</i>	Northern Bayberry	18" to 24" Height	Container
Pm	<i>Prunella maritima</i>	Beach Plum	18" to 24" Height	Container
Po	<i>Physocarpus opulifolius 'Crown of Gold'</i>	Common Nivea	18" to 24" Height	Container
Re	<i>Rhus copallina 'Prune Flava'</i>	Winged Sassa	18" to 24" Height	Container

RECEIVED
MAR 04 2019
PLANNING/ZONING

APPLICANT
HJ PROPERTIES, LLC
150 KRUPP DRIVE
WILLISTON, VT 05495

LANDOWNER
THE THELMA L. ROBEAR
REVOCABLE TRUST
4864 WILLISTON ROAD
WILLISTON, VT 05495

UPON FINDING THAT THE FINAL PLANS COMPLIED WITH ALL REQUIREMENTS OF THE WILLISTON DEVELOPMENT BYLAW AND ALL CONDITIONS IMPOSED ON THE APPROVAL OF DISCRETIONARY PERMIT DP-19-06, WHICH WAS APPROVED BY THE DEVELOPMENT REVIEW BOARD ON FEBRUARY 28, 2019, THE ADMINISTRATOR / DRB APPROVED THE FINAL PLANS FOR HJ PROPERTIES (LOT 6 - ROBEAR SUBDIVISION) ON THE 4th DAY OF MARCH 2019.



LEGEND SOIL DESCRIPTION

AdA	ADAMS & WINDSOR LOAMY SAND, 0-5% SLOPES
AdD	ADAMS & WINDSOR LOAMY SAND, 12-30% SLOPES
AdE	ADAMS & WINDSOR LOAMY SAND, 30-60% SLOPES
Bo	BLOWN-OUT LAID
Mp	MUCK AND PEAT
Lh	LIVINGSTON CLAY

PARCEL DATA

PARCEL NUMBER	07-105-009
TOTAL PROJECT AREA	3.32 ACRES
ZONING DISTRICT	INDUSTRIAL ZONING DISTRICT WEST
MINIMUM LOT AREA	NONE
MINIMUM LOT FRONTAGE	40 FEET
MINIMUM LOT DEPTH	40 FEET
BUILDING SETBACKS	FRONT YARD: 35 FEET
MAX. BUILDING HEIGHT	36 FEET
UTILITIES	MUNICIPAL WATER & SANITARY SEWER (EFFLUENT) ONSITE STORMWATER INFILTRATION

NOTES:
1. SEE ROBEAR SUBDIVISION PLAN FOR EASEMENT #11 INFORMATION.
2. WETLAND DELINEATION PERFORMED BY PETER SPEAR, NATURAL RESOURCE CONSULTING SERVICES, IN THE FALL OF 2016. THE WETLAND DELINEATION WAS ACCEPTED BY THE VT WETLANDS OFFICE ON 12-06-16.

03-01-19	ADJUST PARKING SPACES/FENCE AND DIMENSION	ABR
02-17-19	CORRECT BLDG DIMENSION - BUILDING 4	ABR

These plans shall only be used for the purpose shown below:

<input type="checkbox"/> Sketch/Concept	<input type="checkbox"/> Act 250 Review
<input type="checkbox"/> Preliminary	<input type="checkbox"/> Construction
<input checked="" type="checkbox"/> Final Local Review	<input type="checkbox"/> Record Drawing

HJ PROPERTIES, LLC
SHUNPIKE ROAD WILLISTON, VT

SITE & LANDSCAPING PLAN

Lamoureux & Dickinson
Consulting Engineers, Inc.
14 Morse Drive, Essex, VT 05452
802-878-4450 www.LDengineering.com

Project No. 17031M
Survey MJB
Design NDS
Drawn ABR
Checked DJG
Date 12-28-18
Scale 1" = 30'
Sheet number 1

FINAL PLANS DP 19-06

TAX PARCEL # 07-105-009 DP# 19-06

THE CONTRACTOR SHALL NOTIFY AND OBTAIN A TICKET FROM "DIGSAFE" AT 811 PRIOR TO ANY EXCAVATION.

INFILTRATION TRENCH DATA

CB#1 - CB#2
INFILTRATION TRENCH WIDTH = 5 FEET

CB#2 - CB#3
INFILTRATION TRENCH WIDTH = 7 FEET

CB#4 - CB#5
INFILTRATION TRENCH WIDTH = 4 FEET

CB#6 OUTLET
INFILTRATION TRENCH WIDTH = 12 FEET

SEWER MANHOLE DATA

SM#1
EXIST. FORCEMAIN CLEANOUT MANHOLE
EXIST. RIM = 333.1
NEW RIM = 333.95

CATCHBASIN DATA

CB#1
RIM = 334.50
12" I/M = 331.50

CB#2
RIM = 333.50
(2) 12" I/M = 331.50

CB#3
RIM = 333.50
12" I/M = 331.50

CB#4
RIM = 333.00
12" I/M = 333.00

CB#5
RIM = 333.00
12" I/M = 333.00

CB#6
RIM = 334.00
12" I/M = 332.00

LEGEND

- PROJECT BOUNDARY
- ABUTTING PROPERTY LINE
- SIDELINE OF EASEMENT
- EXISTING CONTOUR
- EXISTING TREELINE
- OH --- EDGE OF WETLAND BUFFER
- F --- EXISTING FIBER OPTIC BURIED UTILITY
- T --- EXISTING TELECOM DUCT BANK
- AT&T --- EXISTING TELECOM DUCT BANK
- G --- EXISTING GAS MAIN
- W --- EXISTING WATERMAIN
- FM --- LOW PRESSURE EFFLUENT FORCEMAIN
- 6' --- PROPOSED 6' HIGH FENCE
- 336 --- FINISH GRADE CONTOUR
- ST --- STORM PIPE (INFILTRATION TRENCH)
- U --- UNDERGROUND BUILDING UTILITY SERVICES
- --- PROPOSED TREELINE

ELECTRIC & TELECOMMUNICATION CONSTRUCTION NOTES:

- CONDUITS SHALL BE INSTALLED ALLOWING FOR SERVICE EXTENSIONS FOR GREEN MOUNTAIN POWER, FAIRPOINT, AND COMCAST, UNLESS OTHERWISE DIRECTED. GMP HAS STATED THAT ELECTRICAL SERVICE MAY BE OBTAINED FROM THE UTILITY POLE AND TRANSFORMER (POLE MOUNTED) LOCATED AT THE SOUTHEAST CORNER OF THE PROJECT PARCEL.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONFIRM THE SERVICE REQUIREMENTS, METER / TERMINAL BOX LOCATIONS, AND CONDUIT SIZE WITH EACH UTILITY COMPANY AND ELECTRICIAN/INSTALLER.
- THE CONTRACTOR SHALL FOLLOW EACH UTILITY'S CONSTRUCTION SPECIFICATIONS AND INSTALLATION REQUIREMENTS.
- THE OWNER'S ELECTRICAL SHALL PROVIDE THE ELECTRICAL DISTRIBUTION DESIGN FOR THE SITE LIGHTING. THE CONTRACTOR SHALL INSTALL THE NECESSARY CONDUIT FOR THE SITE LIGHTING BETWEEN BUILDINGS, CONTROLS, AND POWER SUPPLY. SEE SHEET 6 FOR LIGHTING.

FIRE DEPARTMENT COORDINATION:

- THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE FIRE DEPARTMENT TO INCORPORATE THE FOLLOWING ELEMENTS INTO THE CONSTRUCTION:
- KEY SAFE BOX FOR KIOSK ENTRY AND GATE ACCESS
 - SERVAGE TO COMPLY WITH 911 SITE ADDRESSING

CONSTRUCTION NOTES:

- PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY ALL BUILDING DIMENSIONS AND THE LOCATION AND ELEVATION OF ALL ENTRANCES, DOORS/THRESHOLDS, AND UTILITY SERVICES WITH THE ARCHITECTURAL PLANS.
- IN ADDITION TO NOTIFYING DIGSAFE, THE CONTRACTOR SHALL ALSO NOTIFY THE TOWN OF WILLISTON WATER AND SEWER DEPARTMENT A MINIMUM OF 48 HOURS IN ADVANCE FOR LOCATION OF EXISTING WATER AND SEWER LINES.
- SEE BUILDING ARCHITECTURAL PLANS FOR BUILDING CONSTRUCTION DETAILS. SEE BUILDING ARCHITECTURAL PLANS FOR FROST HEAVE PREVENTION MEASURES AT BUILDING ENTRANCES.
- SEE OTHER SHEETS OF THESE PLANS FOR ADDITIONAL SITE IMPROVEMENTS, DETAILS AND SPECIFICATIONS.
- ALL WORK INVOLVING PUBLIC UTILITIES OR WITHIN THE PUBLIC RIGHT OF WAY SHALL BE COORDINATED WITH THE WILLISTON PUBLIC WORKS DEPARTMENT. THE CONTRACTOR SHALL PROVIDE NOTICE TO THE DPW A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK WITHIN THE PUBLIC RIGHT OF WAY OR ON PUBLIC UTILITIES.

DRIVEWAY UTILITY CROSSING NOTES

- THE PROPOSED DRIVEWAY CROSSES A TELECOM DUCT BANK AND FIBER OPTIC CABLE. THE CONTRACTOR SHALL HAVE ALL UTILITIES MARKED PRIOR TO CONSTRUCTION AND SHALL COORDINATE WITH THE RESPECTIVE UTILITY COMPANY ON CONSTRUCTION OF THE PROPOSED DRIVEWAY.
- THE CONTRACTOR SHALL EXCAVATE THE TELECOM DUCT BANK AT THE DRIVEWAY CROSSING AND PLACE A 4" THICK X 30" WIDE CONCRETE CAP ALONG THE LENGTH OF THE DUCT BANK EXTENDING 4 FEET BEYOND EACH EDGE OF THE DRIVEWAY. THE CONCRETE CAP SHALL BE PLACED ON SAND BEDDING 4" ABOVE THE TOP OF THE DUCT BANK.

UPON FINDING THAT THE FINAL PLANS COMPLIED WITH ALL REQUIREMENTS OF THE WILLISTON DEVELOPMENT BYLAW AND ALL CONDITIONS IMPOSED ON THE APPROVAL OF DISCRETIONARY PERMIT DP-19-05, WHICH WAS APPROVED BY THE DEVELOPMENT REVIEW BOARD ON FEBRUARY 26, 2019, THE ADMINISTRATOR / DRB APPROVED THE FINAL PLANS FOR HJ PROPERTIES / LOT 6 - ROBLEAR SUBDIVISION ON THE 13TH DAY OF MARCH, 2019.

Matthew Stanger
DEVELOPMENT REVIEW BOARD CHAIRMAN / ADMINISTRATOR'S SIGNATURE

Date	Revision	ABR	By
03-01-19	ADJUST PARKING SPACES/FENCE AND DIMENSION		

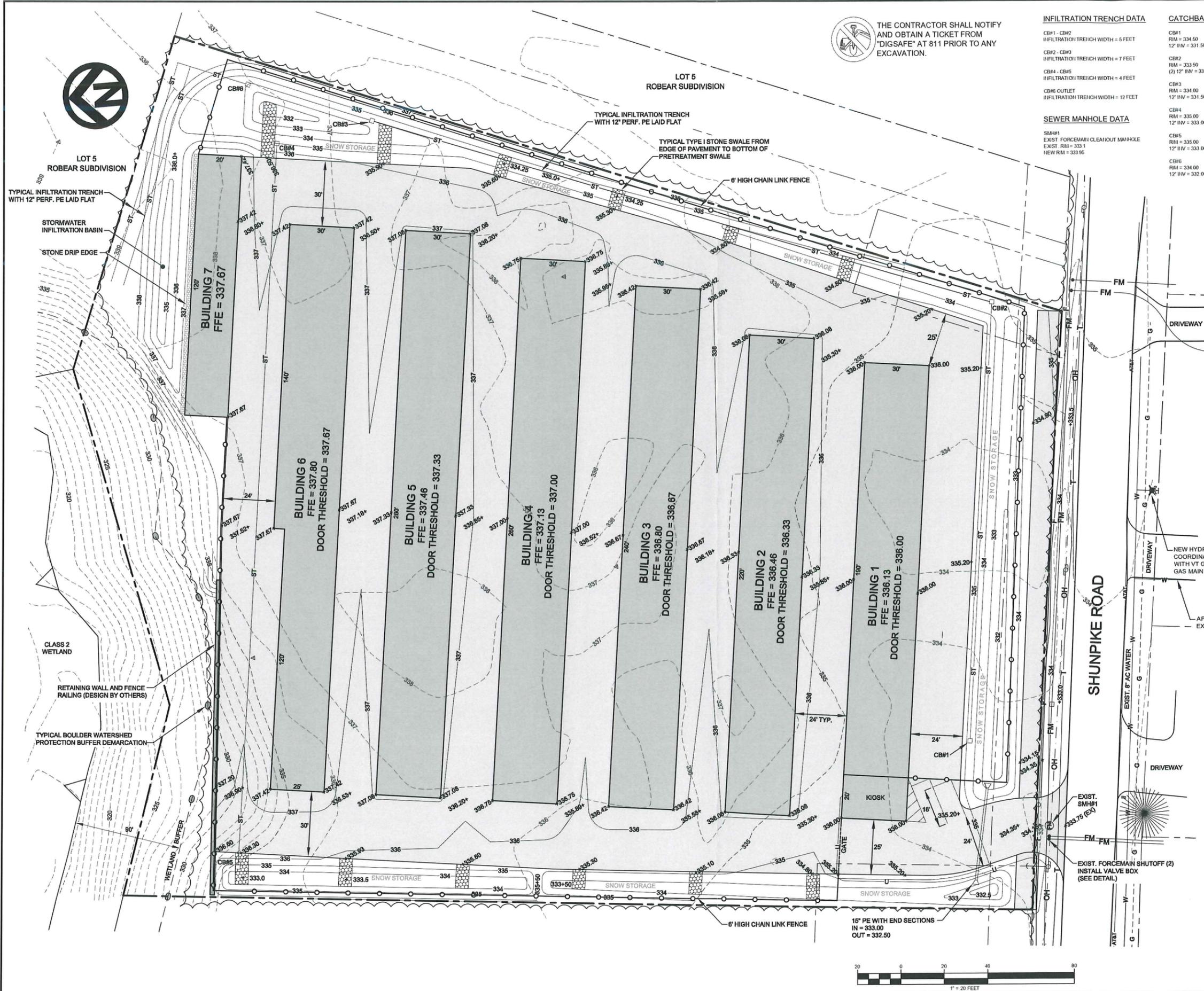
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<input checked="" type="checkbox"/> Final Local Review	<input type="checkbox"/> Record Drawing

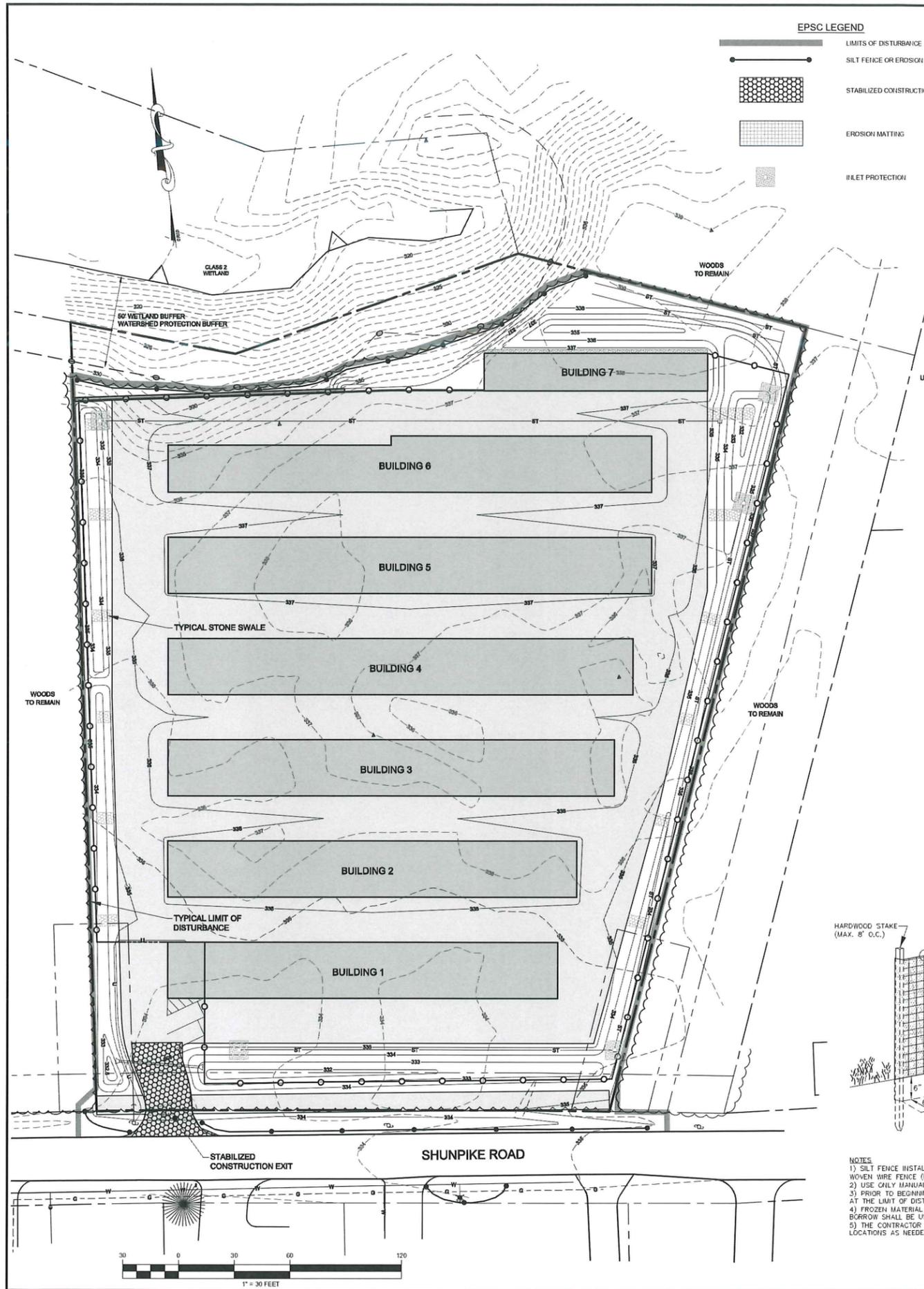
HJ PROPERTIES, LLC		Project No. 17031M
SHUNPIKE ROAD WILLISTON, VT		Survey MJB
GRADING & UTILITY PLAN		Design NDS
		Drawn ABR
		Checked DJG
		Date 12-28-18
		Scale 1" = 30'
		Sheet number
		2

TAX PARCEL # 07.105.069 DP# 19-06

Lamoureux & Dickinson
Consulting Engineers, Inc.
14 Morse Drive, Essex, VT 05452
802-878-4450 www.LDengineering.com

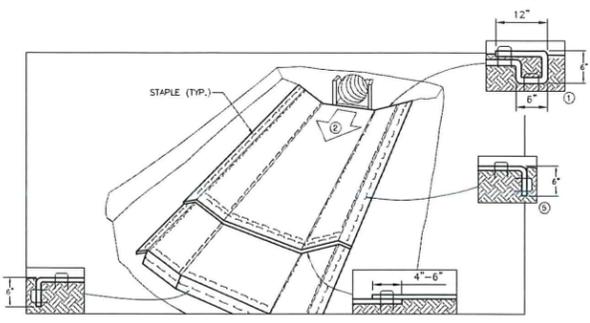


FINAL PLANS



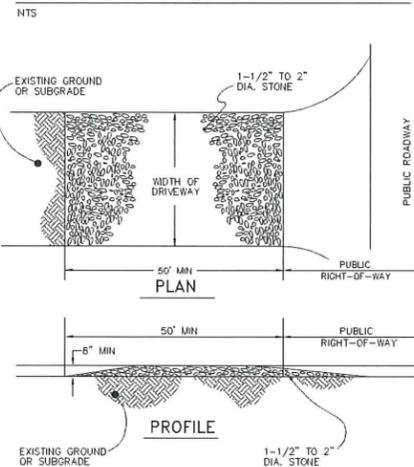
EPSC LEGEND

- LIMITS OF DISTURBANCE
- SILT FENCE OR EROSION LOG (12" DIA)
- STABILIZED CONSTRUCTION EXIT
- EROSION MATTING
- INLET PROTECTION



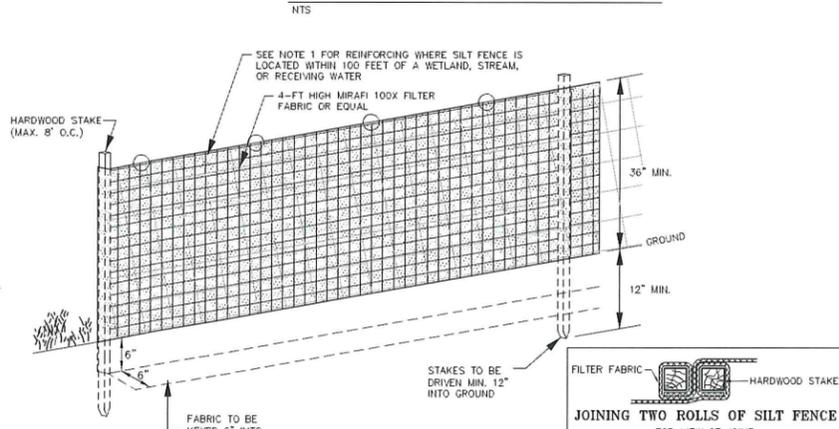
1. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. FOLD REMAINING 12" PORTION OF BLANKET BACK OVER COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
2. ROLL BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN ABOVE IN THE STAPLE PATTERN GUIDE.
3. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE BLANKETS.
4. FULL LENGTH EDGE OF BLANKETS ALONG SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
5. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

EROSION MATTING FOR CHANNELS



- NTS
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT TRACKED, SPILLED, OR WASHED ONTO PUBLIC RIGHTS-OF-WAY SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
 2. THE USE OF CALCIUM CHLORIDE OR WATER MAY BE NECESSARY TO CONTROL DUST DURING THE SUMMER.
 3. PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND PUBLIC RIGHT-OF-WAY.

STABILIZED CONSTRUCTION EXIT



- NTS
- 1) SILT FENCE INSTALLED WITHIN 100 FEET OF A WETLAND, STREAM, OR RECEIVING WATER SHALL BE REINFORCED WITH WOVEN WIRE FENCE (MIN. 14 GAUGE WIRE WITH 6" MAX. MESH SPACINGS)
 - 2) USE ONLY MANUAL METHODS OF INSTALLATION AND CLEANING WITHIN WETLAND AND BUFFER ZONE.
 - 3) PRIOR TO BEGINNING OF CONSTRUCTION OR EARTHMOVING, THE CONTRACTOR SHALL INSTALL A CONTINUOUS SILT FENCE AT THE LIMIT OF DISTURBANCE SHOWN ON THE SITE PLAN.
 - 4) FROZEN MATERIAL SHALL NOT BE USED TO KEY IN THE BOTTOM OF THE SILT FENCE. IF NECESSARY, GRANULAR BORROW SHALL BE USED BY THE CONTRACTOR TO KEY IN THE SILT FENCE RATHER THAN FROZEN NATIVE MATERIAL.
 - 5) THE CONTRACTOR SHALL INSTALL SILT FENCE AROUND THE PERIMETER OF TOPSOIL STOCKPILES AND AT OTHER LOCATIONS AS NEEDED.

TEMPORARY SILT FENCE

NTS

EROSION PREVENTION AND SEDIMENT CONTROL PERMIT REQUIREMENTS

PRIOR TO CONSTRUCTION, THE SITE CONTRACTOR SHALL OBTAIN CO-PERMITTEE COVERAGE UNDER GENERAL PERMIT 3-9020 WHICH REGULATES STORMWATER RUNOFF FROM CONSTRUCTION SITES.

THIS PROJECT QUALIFIES AS HAVING A LOW RISK FOR IMPACTS TO WATER QUALITY, BASED UPON THE FOLLOWING:

- LESS THAN 2 ACRES WILL BE DISTURBED AT ANY TIME
- A MAXIMUM OF 21 CONSECUTIVE DAYS BEFORE DISTURBED EARTH IS TEMPORARILY OR PERMANENTLY STABILIZED.

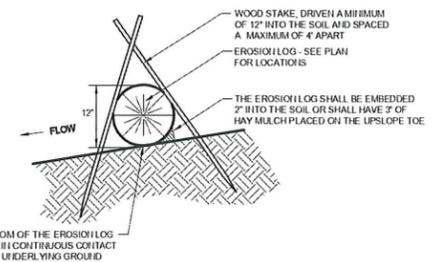
THESE CRITERIA FORM THE BASIS FOR THE LOW RISK DETERMINATION. ANY CHANGES TO THESE CRITERIA REQUIRE THAT THE RISK ANALYSIS BE RE-EVALUATED TO DETERMINE IF THE POTENTIAL RISK TO WATER QUALITY, AND THE RELATED PERMITTING REQUIREMENTS, HAVE CHANGED.

THE CONTRACTOR SHALL REFER TO THE LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL MEASURES TO BE IMPLEMENTED ON THE SITE. AT A MINIMUM, THESE SHALL INCLUDE:

- MARKING THE LIMITS OF DISTURBANCE TO PRESERVE EXISTING VEGETATION OUTSIDE THE LIMITS OF CONSTRUCTION
- LIMITING THE DISTURBED AREA TO THAT WHICH IS ACTIVELY BEING WORKED
- INSTALLATION OF A STABILIZED CONSTRUCTION EXIT
- INSTALLATION OF SILT FENCE ALONG THE DOWNSLOPE PERIMETER OF THE DISTURBED AREA AND AROUND SOIL STOCKPILES
- PLACEMENT OF EROSION MATTING IN CHANNELS, ON ALL SLOPES 3H:1V OR STEEPER, AND MULCHING ALL OTHER DISTURBED AREAS
- SWEEPING PAVED AREAS TO REMOVE SEDIMENT

EPSC - INFILTRATION BASIN NOTE:

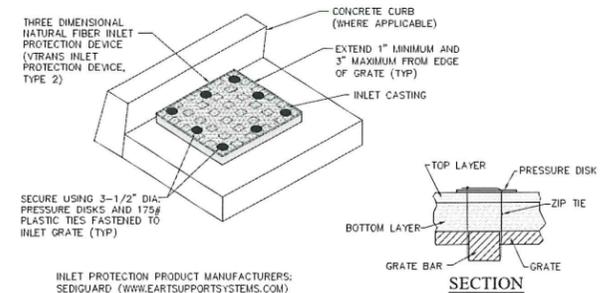
1. THROUGHOUT ALL CONSTRUCTION ACTIVITIES, THE OPERATION OF HEAVY EQUIPMENT OVER THE AREA OF THE PROPOSED STORMWATER INFILTRATION BASINS & TRENCHES SHALL BE RESTRICTED TO PREVENT COMPACTION OF THE UNDERLYING SOILS AND REDUCTION OF THE SOIL PERMEABILITY. IF EQUIPMENT MUST BE USED IN THE INFILTRATION BASINS FOR BUILDING OR UTILITY CONSTRUCTION, A MINIMUM OF 2 FEET OF OVERBURDEN SHALL BE IN PLACE TO MINIMIZE COMPACTION OF THE UNDERLYING SOILS.



- NTS
1. TIGHTLY BUT THE ENDS OF THE EROSION LOGS - NO GAPS.
 2. INSTALL EROSION LOGS PARALLEL TO CONTIGUOUS AS SHOWN ON THE PLANS

EROSION LOG SECTION

NTS



INLET PROTECTION

NTS

Date	Revision	By
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<input type="checkbox"/> Sketch-Concept	<input type="checkbox"/> Act 250 Review	
<input type="checkbox"/> Preliminary	<input type="checkbox"/> Construction	
<input checked="" type="checkbox"/> Final Local Review	<input type="checkbox"/> Record Drawing	

HJ PROPERTIES, LLC
 SHUNPIKE ROAD WILLISTON, VT
EROSION PREVENTION & SEDIMENT CONTROL PLAN

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 14 Morse Drive, Essex, VT 05452
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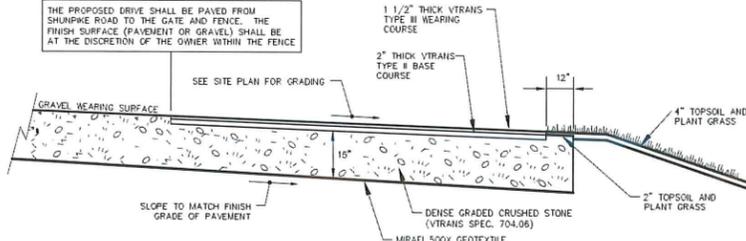
FINAL PLANS

TAX PARCEL # 07-105-069 DP# 19-06

UPON FINDING THAT THE FINAL PLANS COMPLIED WITH ALL REQUIREMENTS OF THE WILLISTON DEVELOPMENT BYLAW AND ALL CONDITIONS IMPOSED ON THE APPROVAL OF DISCRETIONARY PERMIT DP-19-06, WHICH WAS APPROVED BY THE DEVELOPMENT REVIEW BOARD ON FEBRUARY 28, 2019, THE ADMINISTRATOR/DRB APPROVED THE FINAL PLANS FOR HJ PROPERTIES (LOT 6 - ROBEAR SUBDIVISION) ON THE DAY OF SIGNATURE.

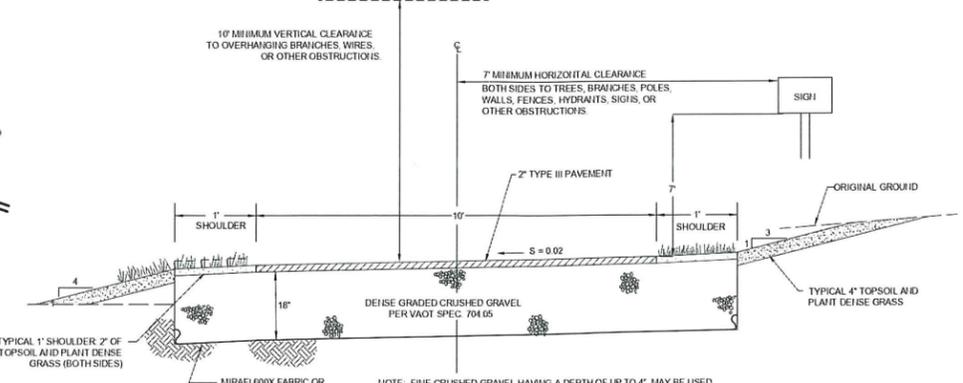
Matthew Selway
 DEVELOPMENT REVIEW BOARD CHAIR / ADMINISTRATOR'S SIGNATURE



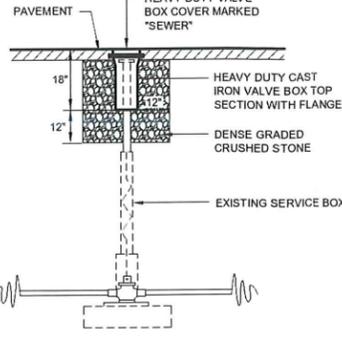


- NOTES:**
1. IN ALL AREAS WHERE UNSTABLE/UNSATURABLE SUBGRADE SOILS ARE PRESENT, THE SUBGRADE SHALL BE OVER-EXCAVATED TO REMOVE THE UNSUITABLE MATERIAL AND BACKFILLED WITH SAND BORROW OR SELECT NATIVE MATERIAL.
 2. SUBGRADE SOIL AND NEW SUBBASE GRAVEL SHALL BE ADEQUATELY COMPACTED IN LIFTS TO NOT LESS THAN 95% OF THE OPTIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST (ASTM D698).
 3. THE SUBGRADE SHALL BE SLOPED TO DAYLIGHT THE SUBBASE MATERIAL WHEREVER POSSIBLE.

TYPICAL DRIVE & PARKING AREA CROSS SECTION
NTS



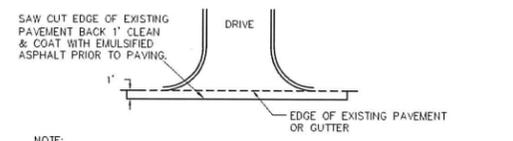
PAVED PATH CROSS SECTION
NTS



FORCEMAIN CURBSTOP LOCATED IN PAVEMENT
NTS

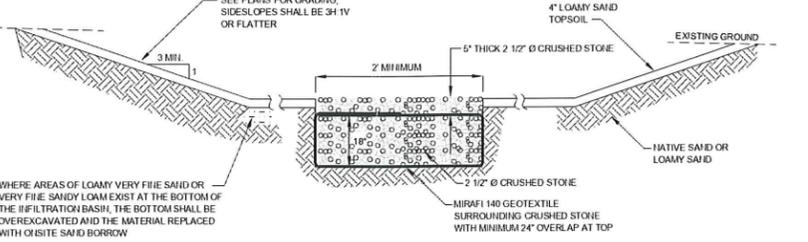
GENERAL CONSTRUCTION SPECIFICATIONS

1. ALL WORK AND MATERIALS SHALL BE APPROVED BY AID IN ACCORDANCE WITH THE LATEST VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE TOWN OF WILLISTON PUBLIC WORKS SPECIFICATIONS AND THESE PLANS.
2. THE CONTRACTOR SHALL CONTACT ALL UTILITIES BEFORE EXCAVATION TO VERIFY THE LOCATION OF ANY UNDERGROUND LINES. THE CONTRACTOR SHALL NOTIFY 'DISSAFE' AT 1-888-DISSAFE PRIOR TO ANY EXCAVATION. THE CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATIONS AS NEEDED TO DETERMINE THE ACTUAL LOCATION OF THE EXISTING PRIVATE UTILITIES WITHIN THE LIMITS OF THE PROPOSED WORK.
3. UTILITIES INFORMATION SHOWN HEREON WERE OBTAINED FROM LIMITED FIELD SURVEYS AND AVAILABLE SOURCES SUCH AS PRIOR SITE PLANS AND MAY OR MAY NOT BE EITHER ACCURATE OR COMPLETE. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY UTILITY, PUBLIC OR PRIVATE, SHOWN OR NOT SHOWN HEREON. THE CONTRACTOR SHALL CONNECT OR RECONNECT ALL UTILITIES TO THE NEAREST SOURCE THROUGH COORDINATION WITH UTILITY OWNER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND REMOVAL OF ALL EXISTING VEGETATION, PAVEMENT AND STRUCTURES NECESSARY TO CONSTRUCT THIS PROJECT UNLESS OTHERWISE NOTED ON THESE PLANS. THE CONTRACTOR SHALL REMOVE ALL EXCESS MATERIAL, DEBRIS AND TRASH FROM THE SITE UPON COMPLETION OF CONSTRUCTION, UNLESS OTHERWISE DIRECTED BY THE OWNER.
5. THE CONTRACTOR SHALL BE RESPONSIBLE AT HIS OWN EXPENSE FOR ENSURING THAT THE DUST CREATED AS A RESULT OF CONSTRUCTION DOES NOT CREATE A NUISANCE OR A SAFETY HAZARD WHERE AND WHEN DEEMED NECESSARY BY THE OWNER. THE CONTRACTOR SHALL BE REQUIRED TO WET SECTIONS OF THE CONSTRUCTION AREA WITH WATER, APPLY CALCIUM CHLORIDE OR SWEEP ASPHALT ROADS WITH A POWER BROOM AS DUST CONTROL.
6. THE CONTRACTOR SHALL ERECT TEMPORARY CONSTRUCTION SIGNS IN ACCORDANCE WITH STATE STANDARDS AND TOWN REQUIREMENTS. ADDITIONAL TEMPORARY CONSTRUCTION SIGNS SHALL BE IN PLACE WHILE ANY WORK IS UNDERWAY WITHIN THE PUBLIC RIGHT OF WAY. THE CONTRACTOR SHALL PROVIDE FLAGGERS FOR TRAFFIC CONTROL AT ALL TIMES THAT WORK IS UNDERWAY ON THE SHOULDER OR WITHIN THE PAVED PORTION OF THE PUBLIC RIGHT OF WAY.
7. ANY SURFACES, LINES, OR STRUCTURES WHICH HAVE BEEN DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO THE CONDITION AT LEAST EQUAL TO THAT IN WHICH THEY WERE FOUND IMMEDIATELY PRIOR TO THE BEGINNING OF OPERATIONS.
8. THE HORIZONTAL AND VERTICAL SEPARATION FOR SEWER, STORM, AND WATER LINES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE VERMONT ENVIRONMENTAL REGULATIONS AND THE VERMONT WATER SUPPLY RULES.
9. HEALTHY EXISTING TREES, AS SHOWN ON THE PLANS, ON AND ADJACENT TO THE SITE SHALL BE PROTECTED BY THE CONTRACTOR.
10. ALL FILL SHALL BE PLACED IN 8 INCH LIFTS AND THOROUGHLY COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698 STANDARD PROCTOR, UNLESS OTHERWISE SPECIFIED.
11. AT COMPLETION OF GRADING, SLOPES, DITCHES, AND ALL DISTURBED AREAS SHALL BE SMOOTH AND FREE OF POCKETS WITH SUFFICIENT SLOPE TO ENSURE DRAINAGE.



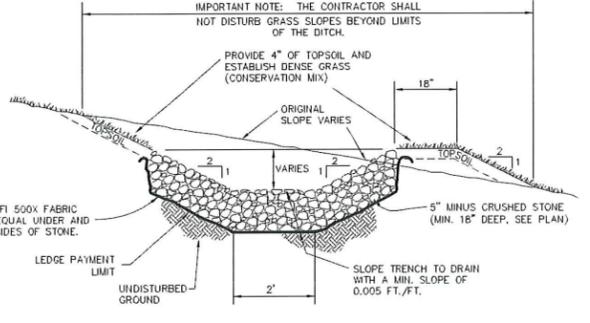
NOTE: THIS DETAIL SHALL APPLY TO ALL AREAS (DRIVES, STREETS, PARKING AREAS) WHERE NEW PAVEMENT SHALL BE CONSTRUCTED TO MATCH INTO AN EXISTING PAVED SURFACE.

NEW PAVEMENT TRANSITION DETAIL
NTS

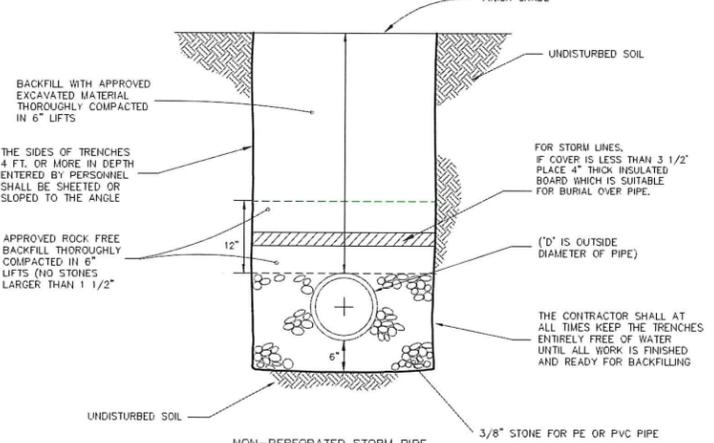


- INFILTRATION BASIN CONSTRUCTION NOTES**
1. THROUGHOUT ALL CONSTRUCTION ACTIVITIES, THE OPERATION OF HEAVY EQUIPMENT OVER THE AREA OF THE PROPOSED STORMWATER INFILTRATION BASINS SHALL BE RESTRICTED TO PREVENT COMPACTION OF THE UNDERLYING SOILS AND REDUCTION OF THE SOIL PERMEABILITY. IF EQUIPMENT MUST BE USED IN THE INFILTRATION BASINS FOR BUILDING OR UTILITY CONSTRUCTION, A MINIMUM OF 2 FEET OF OVERBURDEN SHALL BE IN PLACE TO MINIMIZE COMPACTION OF THE UNDERLYING SOILS.
 2. DURING EXCAVATION FOR THE INFILTRATION BASINS, THE CONTRACTOR SHALL TAKE CARE TO PREVENT CONTAMINATION OF THE NATIVE SOILS WITH SEDIMENT OR FILL MATERIAL. THE STORMWATER INFILTRATION BASINS SHALL NOT BE USED FOR CONCRETE WASHOUT AREAS.
 3. THE INFILTRATION BASINS SHALL BE USED TO CONTROL AND INFILTRATE RUNOFF FROM THE SITE DURING CONSTRUCTION. DURING THE INITIAL EXCAVATION OF THE BASINS, THE BOTTOM SHALL BE EXCAVATED TO 6" ABOVE THE FINISH GRADE ELEVATION. AFTER CONSTRUCTION OF THE BUILDING, DRIVES, AND PARKING ARE SUBSTANTIALLY COMPLETE, THE BOTTOM OF THE INFILTRATION BASINS AND SIDESLOPES SHALL BE EXCAVATED TO THE FINISH GRADES SHOWN. THE BOTTOM OF THE BASINS SHALL BE IN NATIVE SAND. ANY ACCUMULATED SEDIMENT SHALL BE REMOVED UPON FINAL STABILIZATION OF THE SLOPE CONTRIBUTING SWALES. IF ANY FILL MATERIAL IS REQUIRED TO FILL VOIDS, ONLY APPROVED CLEAN NATIVE SAND SHALL BE USED.
 4. A MINIMUM 4" THICK LOAMY SAND TOPSOIL SHALL BE PLACED OVER THE BOTTOM AND SIDESLOPES OF THE INFILTRATION BASIN. THE CONTRACTOR SHALL APPLY SOIL AMENDMENTS AS NECESSARY, BASED UPON A SOIL TEST.
 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A PERMANENT VIGOROUS GROWTH OF THICK GRASS THROUGHOUT THE BASIN AND CONTRIBUTING SWALES. ALL DISTURBED AREAS SHALL BE SEED WITH SEED MIX AT THE SPECIFIED RATE, PRIOR TO MULCHING.

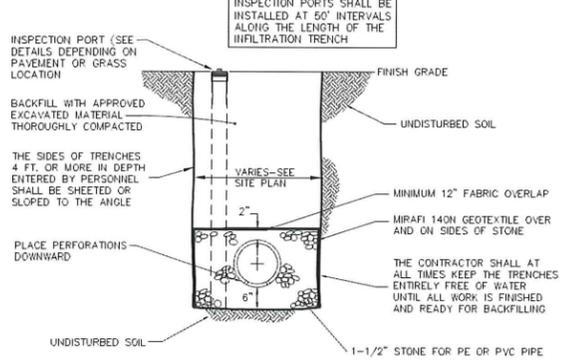
TYPICAL INFILTRATION BASIN



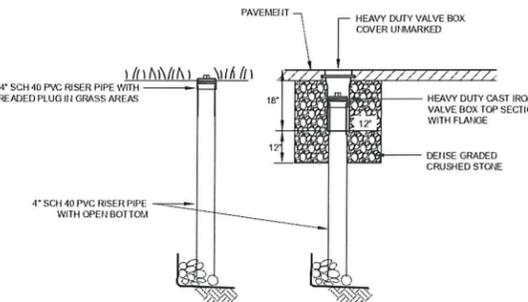
TYPICAL NEW STONE SWALE
NTS



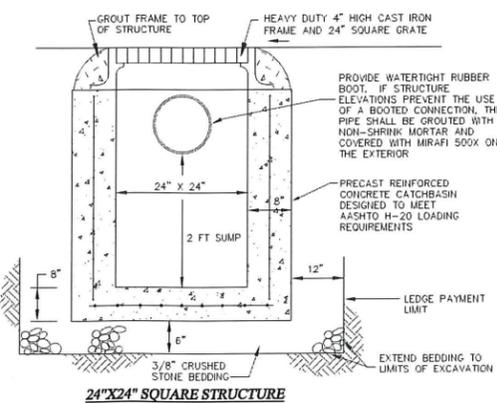
TYPICAL STORM TRENCH
NTS



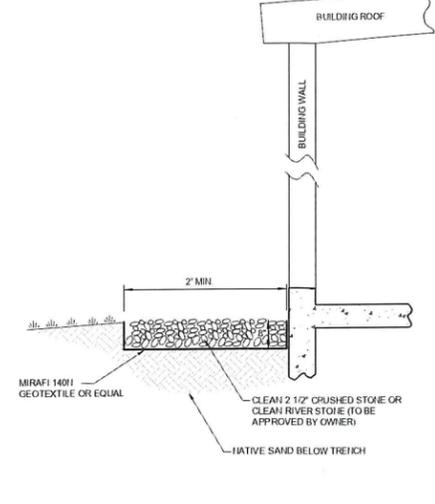
TYPICAL STORM INFILTRATION TRENCH
NTS



INFILTRATION TRENCH INSPECTION PORT
NTS



TYPICAL CATCHBASIN
NTS



DRIP EDGE AND INFILTRATION PIPE
NTS

UPON FINDING THAT THE FINAL PLANS COMPLIED WITH ALL REQUIREMENTS OF THE WILLISTON DEVELOPMENT BYLAW AND ALL CONDITIONS IMPOSED ON THE APPROVAL OF DISCRETIONARY PERMIT DP-19-06, WHICH WAS APPROVED BY THE DEVELOPMENT REVIEW BOARD ON FEBRUARY 26, 2019, THE ADMINISTRATOR / DRB APPROVED THE FINAL PLANS FOR THE PROPERTIES / LOT 6, ROBEAR SUBDIVISION ON THE 14th DAY OF MARCH, 2019.

DEVELOPMENT REVIEW BOARD CHAIR / ADMINISTRATOR'S SIGNATURE

Date	Revision	By
01-25-19	ADD INSPECTION PORT DETAIL TO INFILTRATION TRENCH	ABR

These plans shall only be used for the purpose shown below:

<input type="checkbox"/> Sketch/Concept	<input type="checkbox"/> Act 250 Review
<input type="checkbox"/> Preliminary	<input type="checkbox"/> Construction
<input checked="" type="checkbox"/> Final Local Review	<input type="checkbox"/> Record Drawing

Project No. 17031M	Survey MJB
Design NDS	Drawn ABR
Checked DJG	Date 12-28-18
Scale NTS	Sheet number 4

TAX PARCEL # 07-105-069 DP# 19-06

FINAL PLANS

HJ PROPERTIES, LLC
SHUNPIKE ROAD WILLISTON, VT
SITWORK DETAILS & SPECIFICATIONS

Lamoureux & Dickinson
Consulting Engineers, Inc.
14 Morse Drive, Essex, VT 05452
802-878-4450 www.LDengineering.com

WATER DISTRIBUTION SPECIFICATIONS

1.1 GENERAL:
This item shall consist of the labor, equipment, and material required for the complete construction of the new hydrant with wet top which shall include excavation, backfilling, pipe, valves, tees, hydrants, elbows, reducers, and all other appurtenances necessary for a complete watermain system as indicated on the accepted drawings. All materials and installations shall be approved by the local municipal water authority.

1.2 WATER MAIN PIPE MATERIALS: DUCTILE IRON PIPE
Pipe shall be a minimum diameter of eight inches (8") and conform to current AWWA C600 or ANSI Specification A21.51. Push-on joint pipe shall be minimum thickness Class 52.
Pipe shall be cement mortar-lined on the inside in accordance with AWWA C151.51 or ANSI Specification A21.4 except that the cement-lining thickness shall not be less than three-sixteenths inch (3/16"). A plus tolerance of one-eighths inch (1/8") will be permitted.

1.3 FITTINGS:
Ductile iron fittings shall be cement-lined, have 350 pounds working pressure, and be in accordance with AWWA C-110/ANSI A21.10 and AWWA C152/ANSI 21.53 for compact fittings. Mechanical joint nuts and bolts shall be high strength, low alloy steel per ANSI A-21.11. Ductile iron fittings larger than twelve inches (12") shall have a standard body length equal to Class 250 cast iron fittings. Cast iron Class 250 fittings will be allowed in lieu of ductile iron fittings in sizes larger than twelve inches (12").

Megalog retainer glands or an approved equal shall be used on all vertical bends and as shown on the plans.

1.4 GATE VALVE RESILIENT SEAT:
Gate valves shall be AWWA C 509 Standard Gate Valves with mechanical joints of sizes as required on the plans. All valves shall be of cast or ductile iron body, parallel brass seats, non-rising stem, inside screw, double disk construction with "O" Ring Stem Seals. All valves to be equipped with a valve box for a minimum of 5.5' of cover material. The gate valves shall open left and be designed for a working pressure of 200 psi.
Each valve shall have maker's name, pressure rating, and year in which manufactured cast on the body. Prior to shipment from the factory, each valve shall be tested by hydrostatic pressure equal to twice the specified working pressure. Buried valves shall be installed with a valve box.

1.5 VALVE BOXES:
Cast iron three-piece slide-type; five and one-fourths inch (5 1/4") shaft; six foot (6') trench depth.
Cast iron cover marked "WATER" and indicating direction of opening.

1.6 FIRE HYDRANTS:
All hydrants are to be 3-way, 5" minimum diameter and limited to the following makes: Mueller Super Centurion or Kennedy Guardian K-81K, and shall conform with AWWA C602.
Main Valve Opening: 5 1/4 inches
Nozzle Arrangement: Two 2 1/2 inch hose nozzles NST threads.
Inlet Connection: One 4 1/2 inch pumper nozzle NST threads.
Outlet Connection: 6 inch mechanical joint, MEGA-LUG and thrust block
Operating Nut: Standard 1" pentagon
Direction of Opening: Counterclockwise
Color: Enameled hydrant red body, top color as determined by Town.
Depth of Bury: Hydrant shall be installed to the manufacturer's instructions with nozzles about 18" above finish grade.

1.7 HYDRANT BRANCHES:
Hydrant assemblies shall consist of a six inch (6") mechanical joint gate valve conforming to AWWA C-509, a length (6") Class 52 ductile iron pipe with a cement-lining, and the fire hydrant. MEGA-LUG retainer glands or approved equal shall be used.

1.8 CONSTRUCTION METHODS

A. INSPECTION AND TESTING
All pipe and fittings shall be inspected and tested in accordance with the manufacturer's specifications and the aforementioned AWWA Specifications. The Contractor shall furnish for approval certification from the pipe manufacturer that all tests have been performed with satisfactory results. Pipe shall not be installed without the Engineer's or Water Authority's approval.

B. INSTALLATION
Pipes, fittings, and accessories shall be carefully handled to avoid damage. Prior to the date of acceptance of the project work by the Owner, the Contractor shall replace any new pipe or accessory found to be defective at any time, including after installation, at no expense to the Owner. All installation and testing shall be done in accordance with AWWA Standard C-600 and ANSI Specification A21.11.
All pipes showing cracks shall be rejected. If cracks occur in the pipe, the Contractor may, at the own expense and with the approval of the Engineer, cut off the cracked portions at a point at least twelve inches (12") from the visible limits of the crack and use the sound portion of the pipe. All pipes and fittings shall be cleared of all foreign matter and debris prior to installation and shall be kept clean until the date of acceptance by the Owner.
At all times, when the pipe laying is not actually in progress, the open ends of the pipe shall be closed by temporary waterstop plugs or by other approved means. If water is in the trench when work is resumed, the plug shall not be removed until all danger of water entering the pipe has passed. The pipe shall be installed in trenches and at the line and grade shown on the Contract Drawings.
Any deflection joints shall be within the limits specified by the manufacturer. All piping and appurtenances connected to the equipment shall be supported so that no strain will be imposed on the equipment. If the equipment manufacturer's specifications include that piping loads are not to be transferred, the Contractor shall submit certification of compliance.
Concrete thrust blocks shall be installed on all tees, tees, and bends deflecting 1/4 degree or more. Care shall be taken to ensure that concrete will not come in contact with flanges, joints, or bolts. The required area of thrust blocks are indicated on the plans or shall be as approved by the Engineer.
Whenever sewers cross under watermain, the watermain shall be laid at such an elevation that the bottom of the watermain is at least 18 inches above the top of the sewer. This vertical separation shall be maintained for that portion of the watermain located within ten feet (10') horizontally of any sewer it crosses.
There shall be no physical connection between the distribution system and any pipes, pumps, hydrants, or tanks which are supplied or may be supplied with water that is, or may be, contaminated. In instances where the use of different types of pipe require joining, the Contractor shall furnish and install all necessary adapters.
All trenching safety standards shall be in conformance with all applicable State and Federal Guidelines and as specified on the Plans.
The Contractor shall, at all times, keep the trenches entirely free of water until all work is finished and ready for backfilling. After the various pipelines have been installed, the trenches and other areas to be filled shall be backfilled to subgrade with, wherever possible, material excavated from the trench. No backfilling will be allowed until any concrete masonry has set sufficiently, as determined by the Engineer.
All material for backfilling shall be free of roots, stumps, and frost. Materials used for backfilling trenches shall be free of stones weighing over 30 pounds. No stones measuring over one and one-half inches (1 1/2") in the longest dimension shall be placed within one foot (1') of the pipeline being backfilled.
Backfill for all pipelines shall be placed in six inch (6") layers, each layer being thoroughly compacted to not less than 95 percent of maximum dry density as determined by the AASHTO-T-99 Standard Proctor. Particular precautions shall be taken in the placement and composition of the backfill material in order not to damage the pipe or structures. The backfill shall be brought up evenly. All watermain shall be installed with a minimum cover depth of six (6').

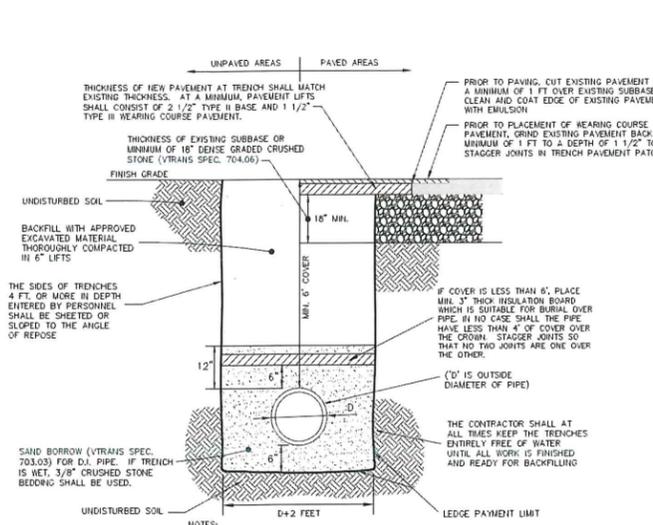
Surplus excavated materials not used for backfill shall be disposed of in a manner satisfactory to the Engineer. All surplus material or spoil shall be removed promptly and disposed of so as not to be objectionable to abutters or to the general public.
Valve boxes are to be installed on all buried valves. The boxes shall be cast iron with a minimum five and one-fourths inch (5 1/4") diameter and long enough to extend from the valve to finished grade. The boxes shall enclose the operating nut and stuffing box of the valve. Valve boxes shall not transfer loads into the valve. Covers shall be close fitting and dirt-tight with the top of the cover flush with the top of the box rim. Covers shall be marked "Water" with an arrow indicating the direction of opening. Valve boxes shall be three piece slip-type.
The contractor shall provide a stable, temporary PVC marker approved by the Engineer at all gate valves, curb stops, and at the end of waterlines to a point six inches (6") above finish grade. The marker shall be seated securely into the ground.

C. FIELD TESTING
Except as otherwise directed, all pipelines shall be tested. Pipelines laid in excavation or bedded in concrete shall be tested prior to backfilling or the placing of concrete, and any exposed piping shall be tested prior to final jointing. The Contractor shall furnish all gauges, testing plugs, caps, and all other necessary equipment and labor to perform leakage and pressure test in sections of an approved length. Each valved section or a maximum of one thousand feet (1,000') of pipe shall be tested. All water required for testing shall be potable. All testing shall be conducted in the presence of the Engineer.
For the pressure test, the Contractor shall develop and maintain 200 pounds per square inch for two hours. Failure to hold the designated pressure for the two-hour period constitutes a failure of the section tested. The leakage test shall be performed concurrently with the pressure test. During the test, the Contractor shall measure the quantity of water required to maintain the test pressure. Leakage shall not exceed the quantity given by:
 $L = SD (\text{Square root of } P) / 148,000$
where:
L = Leakage in gallons/hour
S = Length of pipeline tested
D = Diameter of pipe in inches
P = Average test pressure in psi

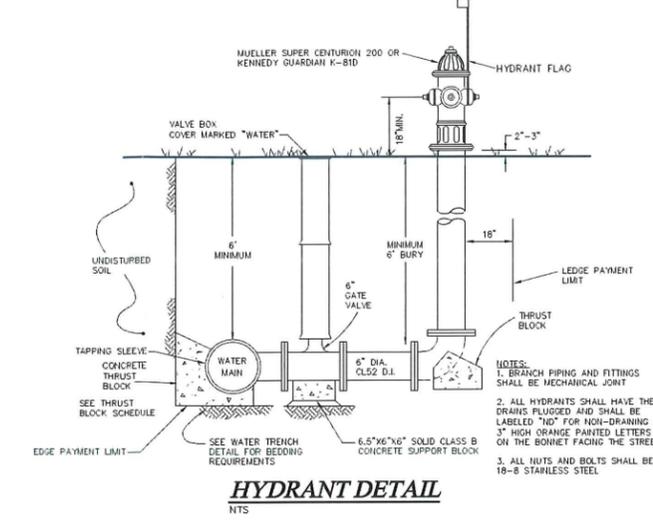
All testing shall be conducted in accordance with AWWA C-600 latest revision. Should any section of the pipe fail either the pressure or leakage tests, the Contractor shall do everything necessary to locate and repair or replace the defective pipe, fittings, or joints at no expense to the Owner.

D. DISINFECTATION:
Chlorination of the watermain shall be conducted only after the main has been flushed and a clear stream is obtained as determined by the Engineer.
The Contractor shall furnish all labor, equipment, materials, and tools necessary to disinfect the pipe and appurtenances in accordance with the AWWA Standard for Disinfecting Watermain, C-651, with the exception of the tablet method.
The method of disinfection shall be by the continuous feed method unless otherwise approved by the Engineer. After filling, flushing, and the addition of chlorine solution, the free chlorine concentration within the pipe shall be at least 25 mg/L. The chlorinated water shall remain in the main for a period of at least 24 hours. At the end of this period, the treated water in all portions of the main shall not have a residual of less than 10 mg/L of free chlorine. All disinfection shall be performed under the supervision of the Engineer. The disinfection process shall be deemed acceptable only after (2) samples of water from the flushed, disinfected main taken by the Engineer and tested at an approved laboratory show no evidence of bacteriological contamination. Disinfection shall conform to the latest AWWA C-651 revision.
The pipeline and appurtenances shall be maintained in an uncontaminated condition until final acceptance. Disinfection shall be repeated when and where required at no expense to the Owner until final acceptance by the Owner.

E. FROST PROTECTION OF SHALLOW WATERLINES
Waterlines with less than six feet (6') of cover over the crown, or where indicated on the plans, shall be protected against freezing by installation of four (4") thick Styrofoam SM insulating sheets with a total width of four feet (4') or twice the pipe diameter, whichever is greater. The sheets shall be placed six inches (6") above the crown of the main after completion of the six inch (6") fit immediately above the crown. Care shall be exercised by the Contractor during backfill and compaction over the styrofoam sheets to prevent damage to the sheets. Styrofoam SM sheets shall meet the compressive strength requirements of ASTM D1621-73 and shall be as manufactured by Dow Chemical Company, Midland, Michigan, or equivalent. In no case shall the waterlines have less than four feet (4') of cover over the top of the pipe.



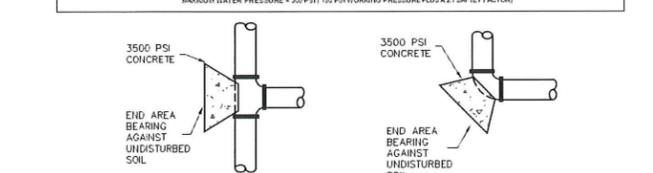
TYPICAL WATER TRENCH
NOTES:
1. ALL DUCTILE IRON PIPE SHALL HAVE 8 MIL POLYETHYLENE PER AWWA 105 / ANSI 21.5
2. A MINIMUM OF 3 BRASS WEDGES SHALL BE INSTALLED AT EACH PIPE JOINT FOR 8\"/>



HYDRANT DETAIL
NOTES:
1. BRANCH PIPING AND FITTINGS SHALL BE MECHANICAL JOINT
2. ALL HYDRANTS SHALL HAVE THE DRAINS PLUGGED AND SHALL BE LABELED "NO" FOR NON-DRAINING IN 3\"/>

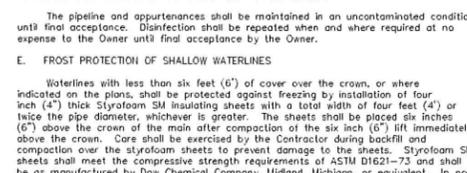
MINIMUM AREA OF BEARING SURFACE OF CONCRETE THRUST BLOCK (IN SQUARE FEET)																				
3"		4"		6"		8"		12"		SOIL CONDITION										
END	BEARING	END	BEARING	END	BEARING	END	BEARING	END	BEARING	END	BEARING									
10'	10'	10'	10'	10'	10'	10'	10'	10'	10'	10'	10'									
1.0	1.0	1.0	0.5	2.0	0.5	1.5	1.0	3.5	5.0	3.0	1.5	6.0	8.5	5.0	2.5	13.0	18.5	10.0	5.0	3.000
1.5	2.5	1.5	1.0	2.5	3.5	2.0	1.0	5.5	7.5	4.0	2.0	9.0	13.0	7.0	3.5	20.0	27.5	15.0	8.0	3.000
2.0	4.5	2.5	1.5	5.0	7.0	4.0	2.0	10.0	15.0	8.0	4.0	18.0	25.0	14.0	7.0	39.0	55.0	30.0	15.0	1.000

MAXIMUM WATER PRESSURE = 200 PSI / 150 PSI WORKING PRESSURE PLUS A 2:1 SAFETY FACTOR

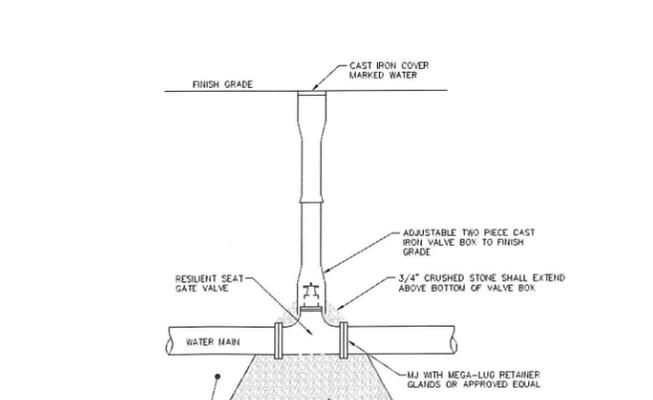


TYPICAL TEES-DRADENDS-CAPS and **TYPICAL BENDS**
NOTE: PLACE 4 mil POLYETHYLENE BETWEEN FITTING AND THRUST BLOCK

THRUST BLOCK END AREA
NTS



TAPPING VALVE and SLEEVE DETAIL
NOTES:
1. SLEEVES SHALL HAVE WORKING PRESSURE OF 150 PSI
2. ALL EXTERIOR EXPOSED SURFACES SHALL BE FUSION BONDED, EPOXY-COATED TO A MIN. 10 MIL THICKNESS
3. ALL NUTS AND BOLTS SHALL BE 18-8 STAINLESS STEEL
4. UPON FINAL TIGHTENING AND TESTING ALL BOLTS SHALL BE BRUSH COATED WITH BITUMASTIC GOLD APPLIED MATERIAL TO ALL EXPOSED NUTS & BOLTS



GATE VALVE DETAIL
NOTES:
1. VALVES SHALL BE MANUFACTURED TO MEET ALL REQUIREMENTS OF AWWA C509. CURRENT EDITION, VALVES TWELVE INCHES (12") AND SMALLER SHALL BE BUBBLE TIGHT, ZERO LEAKAGE AT 200 PSI WORKING PRESSURE. VALVES SHALL HAVE NON-RISING STEMS, OPEN COUNTER CLOCKWISE AND PROVIDE A TWO (2) SQUARE OPERATING NUT WITH AN ARROW CAST IN THE METAL INDICATING DIRECTION OF OPENING. EACH VALVE SHALL HAVE THE MAKER'S NAME, PRESSURE RATING AND YEAR IN WHICH IT WAS MANUFACTURED CAST ON THE BODY. VALVES SHALL BE MECHANICAL JOINT ON EACH END, AND SECURED TO THE ADJOINING PIPE WITH AN APPROVED RETAINER GLAND, PRIOR TO SHIPMENT FROM THE FACTORY EACH VALVE SHALL BE TESTED BY HYDROSTATIC PRESSURE EQUAL TO TWICE THE SPECIFIED WORKING PRESSURE.
2. BURIED VALVES SHALL BE PROVIDED WITH A TWO INCH (2") SQUARE WRENCH NUT AND SHALL BE INSTALLED WITH CAST IRON VALVE BOX AS REQUIRED TO ALLOW POSITIVE ACCESS TO THE VALVE OPERATING NUT AT ALL TIMES. IN INSTALLATIONS WHERE THE DEPTH FROM GRADE TO TOP OF VALVE OPERATING NUT IS GREATER THAN SIX (6) FEET, A VALVE STEM RISER SHALL BE PROVIDED AND INSTALLED SUCH THAT THE DEPTH FROM THE VALVE STEM RISER NUT TO GRADE IS FROM FOUR FEET TO SIX FEET (4'-6") (MINIMUM LENGTH OF VALVE STEM RISER IS TWO FEET (2')). VALVE STEM RISERS SHALL BE OF HIGH STRENGTH STAINLESS STEEL AND OF WELDED CONSTRUCTION.

TAPPING VALVE and SLEEVE DETAIL
NTS

GATE VALVE DETAIL
NTS

UPON FINDING THAT THE FINAL PLANS COMPLIED WITH ALL REQUIREMENTS OF THE WILLISTON DEVELOPMENT BYLAW AND ALL CONDITIONS IMPOSED ON THE APPROVAL OF DISCRETIONARY PERMIT DP 19-06, WHICH WAS APPROVED BY THE DEVELOPMENT REVIEW BOARD ON FEBRUARY 26, 2019, THE ADMINISTRATOR / DRB APPROVED THE FINAL PLANS FOR HJ PROPERTIES / LOT 6 - ROBEAR SUBDIVISION ON THE 14 DAY OF MARCH 2019.
MATT DELANEY
DEVELOPMENT REVIEW BOARD CHAIR / ADMINISTRATOR'S SIGNATURE

Date	Revision	By
These plans shall only be used for the purpose shown below:		
<input type="checkbox"/> Sketch/Concept	<input type="checkbox"/> Act 250 Review	
<input type="checkbox"/> Preliminary	<input type="checkbox"/> Construction	
<input checked="" type="checkbox"/> Final Local Review	<input type="checkbox"/> Record Drawing	
Project No. 17031M		
Survey MJB		
Design NDS		
Drawn ABR		
Checked DJG		
Date 12-28-18		
Scale		
Sheet number		
5		

Lamoureux & Dickinson
Consulting Engineers, Inc.
14 Morse Drive, Essex, VT 05452
802-878-4450 www.LDengineering.com

FINAL PLANS

TAX PARCEL # 07-105-069 DP# 19-06

WPLED13

RAB Outdoor



LED 10W & 13 Wattpacks. Patent Pending thermal management system 100,000 hour L70 lifespan 5-year, no-compromise warranty
Color Bronze Weight: 4.4 lbs

Project:	Type:
Prepared By:	Date:
Driver Info:	LED Info:
Type: Constant Current	Watts: 13W
120V: 0.13A	Color Temp: 4000 K
208V: 0.05A	Color Accuracy: 73 CRI
240V: 0.07A	L70 Lifetime: 100,000
277V: 0.06A	Lumens: 1,530
Input Watts: 15W	Efficiency: 101 LPW
Efficiency: 86%	

Technical Specifications

Listings:
UL Listing: Suitable for Wet Locations as a Downlight. Suitable for Damp Locations as an Uplight. Wall Mount only. Suitable for Mounting within 48" of ground.
IESNA LM-79 & IESNA LM-80 Testing: RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.
LED Characteristics:
Lifespan: 100,000-hour LED lifespan based on IES LM-80 results and 1M-21 calculations.
Color Temperature (Nominal CCT): 5000K.
Lumen Maintenance: The LED will deliver 70% of its initial lumens at 100,000 hours of operation.
Color Consistency: 7-step Macadam Elipse binning to achieve consistent future-to-future color.
Color Stability: LED color temperature is warranted to shift no more than 200K in CCT over a 5-year period.
Color Uniformity: RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction:
Cold Weather Starting: Minimum starting temperature is -40°C (-40°F).
Maximum Ambient Temperature: Suitable for use in 55°C (131°F).
Finish: Formulated for high-durability and long lasting color.
Green Technology: Mercury and UV-free. RoHS compliant components.
Gaskets: High Temperature Silicone.
Driver: Multi-chip 13W high output long life LED Driver. Constant Current. Class 2 100V - 277V, 50/60 Hz.
Surge Protection: 4kV.
THD: 16.4% at 120V, 16.7% at 277V.

Power Factor: 99.5% at 120V, 92.6% at 277V.

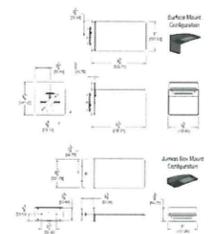
Other:
Patents: The design of the LPACK is protected by U.S. Pat. D004,504 and patents pending in Canada, China and Taiwan.
Warranty: RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and future finish. RAB's warranty is subject to all terms and conditions found at www.rablighting.com.
Equivalency: Equivalent to 100W Metal Halide.
Buy American Act Compliance: RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.
Optical: BUG Rating: B1 LU G0.

Need help? Tech help line: (888) RAB-1000 Email: sales@rablighting.com Website: www.rablighting.com
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WPLED13

RAB Outdoor

Dimensions



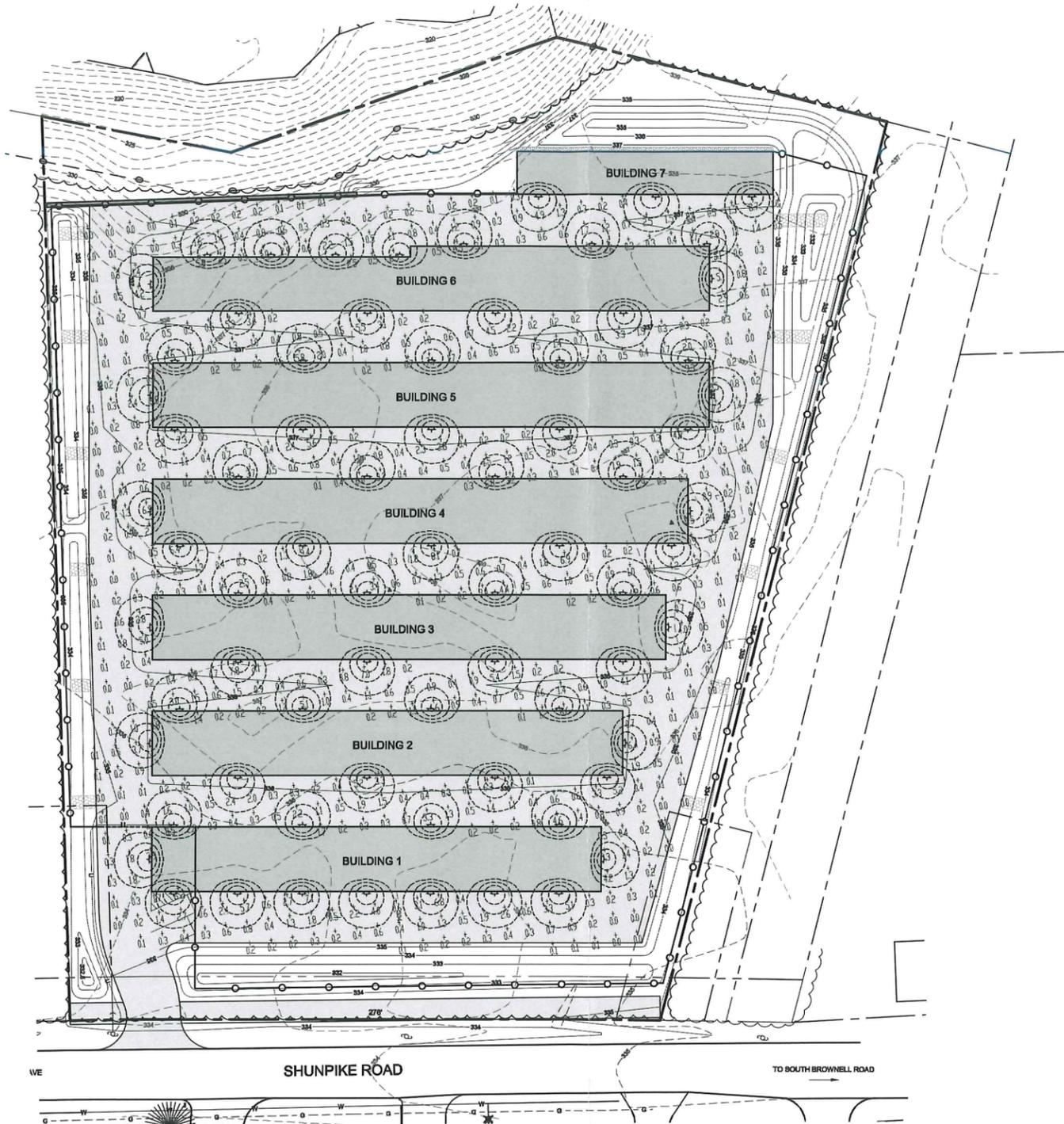
Features

High performance LED light engine
Maintains 70% of initial lumens at 100,000 hours
Weatherproof high temperature silicone gaskets
Superior heat sinking with die cast aluminum housing and external fin
5-Year, No-Compromise Warranty

Ordering Matrix

Family	Wattage	Color Temp	Sensor	Surface Plate	Surface Plate	Finish	Photocell	Other Options
WPLED	13	II			S	Blank	Blank	Blank = Standard USA = BAA Compliant
	10 = 10W	Blank = 5000K (Cool)	Blank = No Sensor	Blank = No Surface Plate	S = Surface Plate	Blank = Bronze	Blank = No Photocell	
	13 = 13W	Y = 3000K (Warm)	MS = M10 Sensor			W = White	PC = 120V Button	
	13W	N = 4000K (Neutral)					PCB = 277V Button	

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LEGEND	LUMINAIRE DESCRIPTION	MOUNTING HEIGHT
☆	RAB WPLED 13 WATT CUTOFF FIXTURE	8 FEET BLDG MOUNTED

ALL LED LIGHTS SHALL BE 4000K COLOR TEMPERATURE

UPON FINDING THAT THE FINAL PLANS COMPLIED WITH ALL REQUIREMENTS OF THE WILLISTON DEVELOPMENT BYLAW AND ALL CONDITIONS IMPOSED ON THE APPROVAL OF DISCRETIONARY PERMIT DP 19-06, WHICH WAS APPROVED BY THE DEVELOPMENT REVIEW BOARD ON FEBRUARY 26, 2019, THE ADMINISTRATOR/DRB APPROVED THE FINAL PLANS FOR HJ PROPERTIES / LOT 6 - ROBEAR SUBDIVISION ON THE 11TH DAY OF MARCH, 2019.

Matthew Blaney
DEVELOPMENT REVIEW BOARD CHAIR ADMINISTRATOR'S SIGNATURE

LIGHTING DATA
MINIMUM = 0.0 FOOTCANDELES
MAXIMUM = 9.3 FOOTCANDELES
AVERAGE = 1.2 FOOTCANDELES
UNIFORMITY RATIO = 1/8A (MINIMUM = 0)
MAXIMUM ALLOWABLE LIGHTING OUTPUT = 200,000 LUMENS / ACRE
PROPOSED LIGHTING OUTPUT = 78,686 LUMENS/ACRE (110,160 LUMENS / 1.4 ACRE = 78,686 LUMENS/ACRE)
MAXIMUM AVERAGE ILLUMINATION FOR SECURITY LIGHTING = 1.5 FC
PROPOSED AVERAGE = 1.2 FC

LIGHTING CONTROLS
PROPOSED SECURITY LIGHTING SHALL COMPLY WITH THE FOLLOWING:
- THE LIGHTS ON THE EAST & WEST FACES OF EACH BUILDING SHALL BE ON AT 25% OF FULL OUTPUT FROM DUSK TO DAWN. THESE LIGHTS SHALL BE CONTROLLED BY MOTION DETECTOR AND MAY BE INCREASED TO 100% OF FULL OUTPUT WHEN THERE IS SITE ACTIVITY. THESE LIGHTS SHALL BE REDUCED TO 25% OF FULL OUTPUT A MAXIMUM OF 15 MINUTES AFTER DEPARTURE.
- ALL OTHER LIGHTS SHALL BE CONTROLLED BY MOTION DETECTOR AND/OR GATE ACCESS TO OPERATE ONLY WHEN THERE IS SITE ACTIVITY. THESE LIGHTS SHALL BE SHUT OFF A MAXIMUM OF 15 MINUTES AFTER DEPARTURE.
SEE ELECTRICAL PLANS FOR SITE LIGHTING CONTROLS AND ELECTRICAL DISTRIBUTION SYSTEM DESIGN!

03-01-19	REVISE LIGHTING CONTROLS PER DRB REVIEW	ABR
Date	Revision	By
These plans shall only be used for the purpose shown below:		
<input type="checkbox"/> Sketch/Concept	<input type="checkbox"/> Act 250 Review	
<input type="checkbox"/> Preliminary	<input type="checkbox"/> Construction	
<input checked="" type="checkbox"/> Final Local Review	<input type="checkbox"/> Record Drawing	
<p>HJ PROPERTIES, LLC SHUNPIKE ROAD WILLISTON, VT</p> <p>LIGHTING PLAN</p>		<p>Project No. 17031M Survey MJB Design NDS Drawn ABR Checked DJG Date 12-28-18 Scale 1" = 30' Sheet number 6</p>
<p>Lamoureux & Dickinson Consulting Engineers, Inc. 14 Morse Drive, Essex, VT 05452 802-878-4450 www.LDengineering.com</p>		

TAX PARCEL # 07.105.069 DP# 19-06

FINAL PLANS