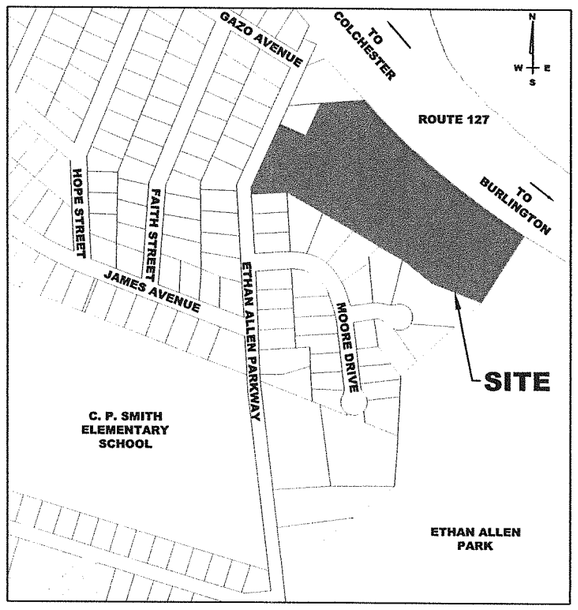
LIAHONA WAY

A 9 UNIT NEIGHBORHOOD

ETHAN ALLEN PARKWAY
BURLINGTON, VERMONT



LOCATION PLAN
N.T.S.

SHEET INDEX

OWNERS/APPLICANTS:

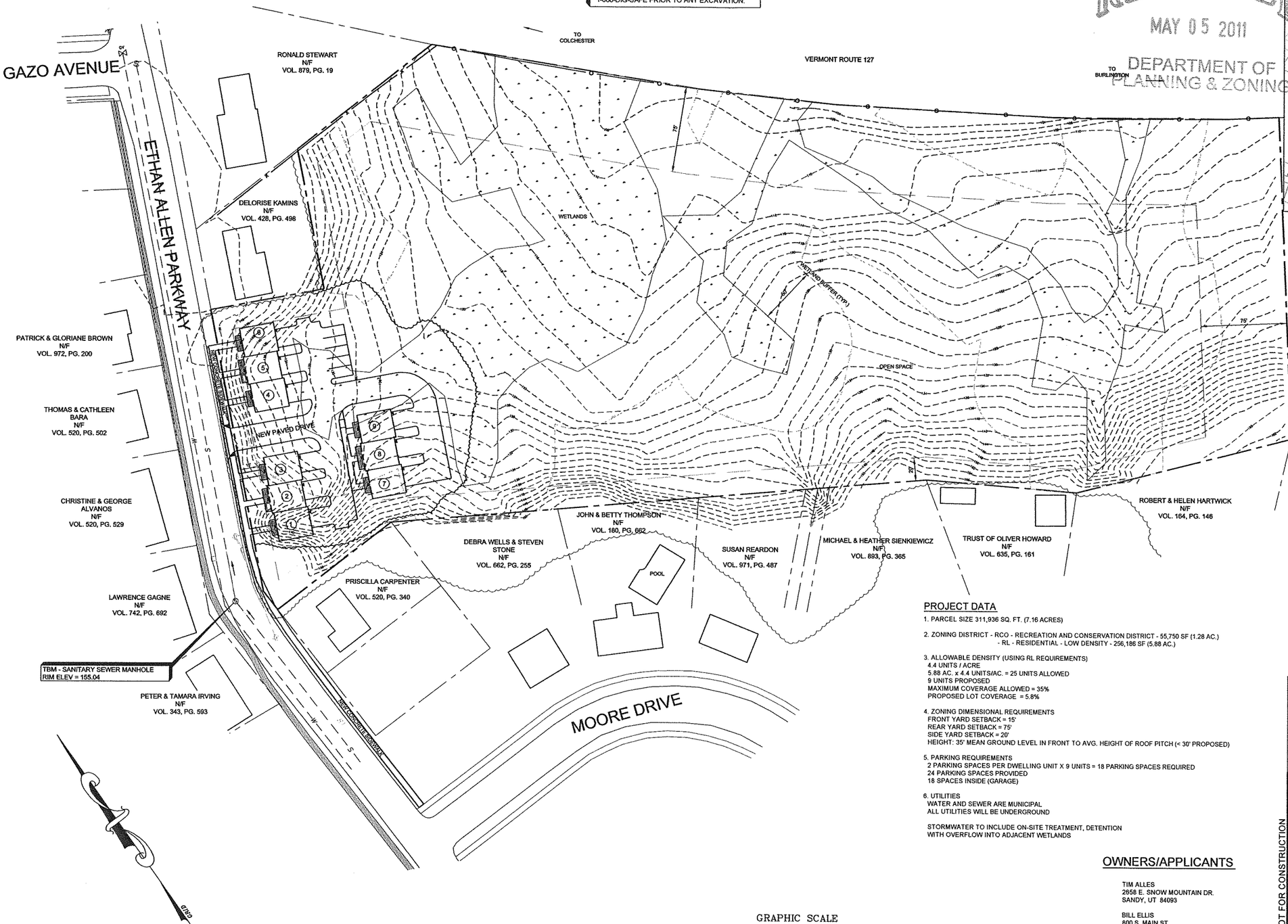
TIMOTHY G. ALLES
2658 E. SNOW MOUNTAIN DR.
SANDY, UT 84093

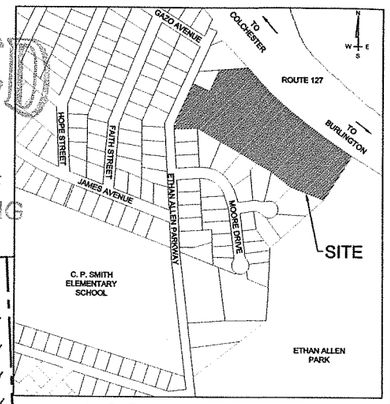
WILLIAM E. ELLIS
800 S. MAIN ST.
PLEASANT GROVE, UT 84062

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

07028 - title.DWG

THE CONTRACTOR SHALL NOTIFY "DIGSAFE" AT 1-888-DIG-SAFE PRIOR TO ANY EXCAVATION.





LOCATION PLAN

N.T.S.

ETHAN ALLEN PARK

LEGEND

- PROJECT BOUNDARY
- PROPERTY LINE
- BUILDING SETBACK
- N/F — NOW OR FORMERLY
- EXISTING GROUND CONTOUR
- EXISTING WATER LINE, GATE VALVE & HYDRANT
- EXISTING SANITARY SEWER LINE & MANHOLE
- EXISTING STORM LINE AND CATCH BASIN
- NEW TREE LINE
- NEW BUILDING MOUNTED LIGHT
- NEW WATER LINE, GATE VALVE AND HYDRANT
- NEW SANITARY SEWER LINE AND MANHOLE
- (9) PROPOSED UNIT NUMBER
- WETLAND

PROJECT DATA

1. PARCEL SIZE 311,936 SQ. FT. (7.16 ACRES)

2. ZONING DISTRICT - RCO - RECREATION AND CONSERVATION DISTRICT - 55,750 SF (1.28 AC.)
   - RL - RESIDENTIAL - LOW DENSITY - 256,186 SF (5.88 AC.)

3. ALLOWABLE DENSITY (USING RL REQUIREMENTS)
   4.4 UNITS / ACRE
   5.88 AC. x 4.4 UNITS/AC. = 25 UNITS ALLOWED
   9 UNITS PROPOSED
   MAXIMUM COVERAGE ALLOWED = 35%
   PROPOSED LOT COVERAGE = 5.8%

4. ZONING DIMENSIONAL REQUIREMENTS
   FRONT YARD SETBACK = 15'
   REAR YARD SETBACK = 75'
   SIDE YARD SETBACK = 20'
   HEIGHT: 35' MEAN GROUND LEVEL IN FRONT TO AVG. HEIGHT OF ROOF PITCH (< 30' PROPOSED)

5. PARKING REQUIREMENTS
   2 PARKING SPACES PER DWELLING UNIT X 9 UNITS = 18 PARKING SPACES REQUIRED
   24 PARKING SPACES PROVIDED
   18 SPACES INSIDE (GARAGE)

6. UTILITIES
   WATER AND SEWER ARE MUNICIPAL
   ALL UTILITIES WILL BE UNDERGROUND

   STORMWATER TO INCLUDE ON-SITE TREATMENT, DETENTION WITH OVERFLOW INTO ADJACENT WETLANDS

OWNERS/APPLICANTS

TIM ALLES
2658 E. SNOW MOUNTAIN DR.
SANDY, UT 84093

BILL ELLIS
800 S. MAIN ST.
PLEASANT GROVE, UT 84062

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

NOTES

1. THE BOUNDARY LINE BETWEEN THE RCO AND RL ZONING DISTRICTS IS APPROXIMATE ONLY AND IS BASED ON THE INFORMATION INDICATED AT THE CITY OF BURLINGTON WEB SITE AT THE FOLLOWING URL; WWW.CI.BURLINGTON.VT.US/PLANNING/ZONING/ZNMAP/Q92224.HTML.

2. THE BOUNDARIES OF THE PARCEL AND THE TOPOGRAPHIC DATA ARE BASED ON A PLAN ENTITLED "PROPOSED THREE LOT SUBDIVISION FOR ALAN GIGUERE" BY VERMONT LAND SURVEYORS, DATED 2/10/98.

3. THE SOILS ON THIS PROPERTY ARE A COMBINATION OF ADAMS AND WINDSOR LOAMY SANDS AND DUANE & DEERFIELD SOILS.

Date	Revision	By
4-4-11	REVISE LAYOUT	DLH
10-29-10	REVISE LAYOUT	DLH
8-26-10	GENERAL REVISIONS PER COURT APPEAL	DLH
9-11-09	REVISED PERVIOUS CONCRETE DETAILS	DLH
7-13-09	REVISED LIGHTING AND LANDSCAPING	DLH
1-9-08	REVISED DRIVEWAY LAYOUT	DLH
10-5-07	REVISED LAYOUT	DLH
8-7-07	REVISED LAYOUT	DLH

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

- ☐ Sketch/Concept
- ■ Preliminary
- ☐ Final Local Review
- ☐ Act 250 Review
- ☐ Construction
- ☐ Record Drawing

NOT FOR CONSTRUCTION

Lands of
Tim Alles & Bill Ellis
Ethan Allen Parkway, Burlington, Vermont

A PLANNED RESIDENTIAL DEVELOPMENT

OVERALL SITE PLAN

proj. no.	07028
survey	Others
design	DLH
drawn	SEA
checked	DJG
date	04/09/07
scale	1" = 40'
sht. no.	1 of 11

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

THE CONTRACTOR SHALL NOTIFY "DIGSAFE" AT 1-888-DIG-SAFE PRIOR TO ANY EXCAVATION.

LEGEND

- PROJECT BOUNDARY
- PROPERTY LINE
- BUILDING SETBACK
- N/F — NOW OR FORMERLY
- EXISTING GROUND CONTOUR
- EXISTING WATER LINE, GATE VALVE & HYDRANT
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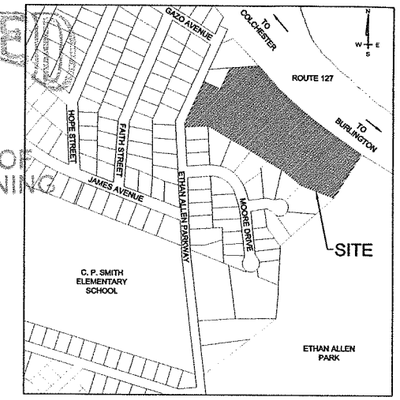
- WETLAND



LOCATION PLAN
N.T.S.

GAZO AVENUE
ETHAN ALLEN PARKWAY
TO COLCHESTER
VERMONT ROUTE 127
TO BURLINGTON
RONALD STEWART N/F VOL. 879, PG. 19
DELORISE KAMINS N/F VOL. 428, PG. 498
PATRICK & GLORIANE BROWN N/F VOL. 972, PG. 200
THOMAS & CATHLEEN BARA N/F VOL. 520, PG. 502
CHRISTINE & GEORGE ALVANOS N/F VOL. 520, PG. 529
LAWRENCE GAGNE N/F VOL. 742, PG. 692
PETER & TAMARA IRVING N/F VOL. 343, PG. 593
PRISCILLA CARPENTER N/F VOL. 520, PG. 340
DEBRA WELLS & STEVEN STONE N/F VOL. 662, PG. 255
JOHN & BETTY THOMPSON N/F VOL. 180, PG. 662
SUSAN REARDON N/F VOL. 971, PG. 487
MICHAEL & HEATHER SIENKIEWICZ N/F VOL. 893, PG. 365
TRUST OF OLIVER HOWARD N/F VOL. 635, PG. 161
ROBERT & HELEN HARTWICK N/F VOL. 164, PG. 146
ETHAN ALLEN PARK
WETLANDS
50' WETLAND BUFFER
POOL
MOORE DRIVE
RCO ZONING DISTRICT
RU ZONING DISTRICT
TBM - SANITARY SEWER MANHOLE
RIM ELEV = 155.04

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

Date	Revision	By
4-4-11	REVISE LAYOUT	DLH
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BILL ELLIS
800 S. MAIN ST.
PLEASANT GROVE, UT 84062

Lands of
Tim Alles & Bill Ellis
Ethan Allen Parkway, Burlington, Vermont

A PLANNED RESIDENTIAL DEVELOPMENT

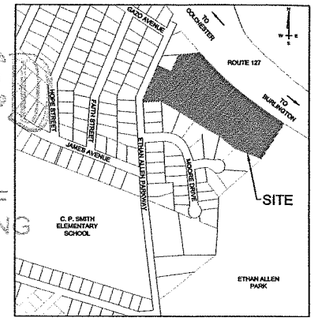
EXISTING CONDITIONS SITE PLAN

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

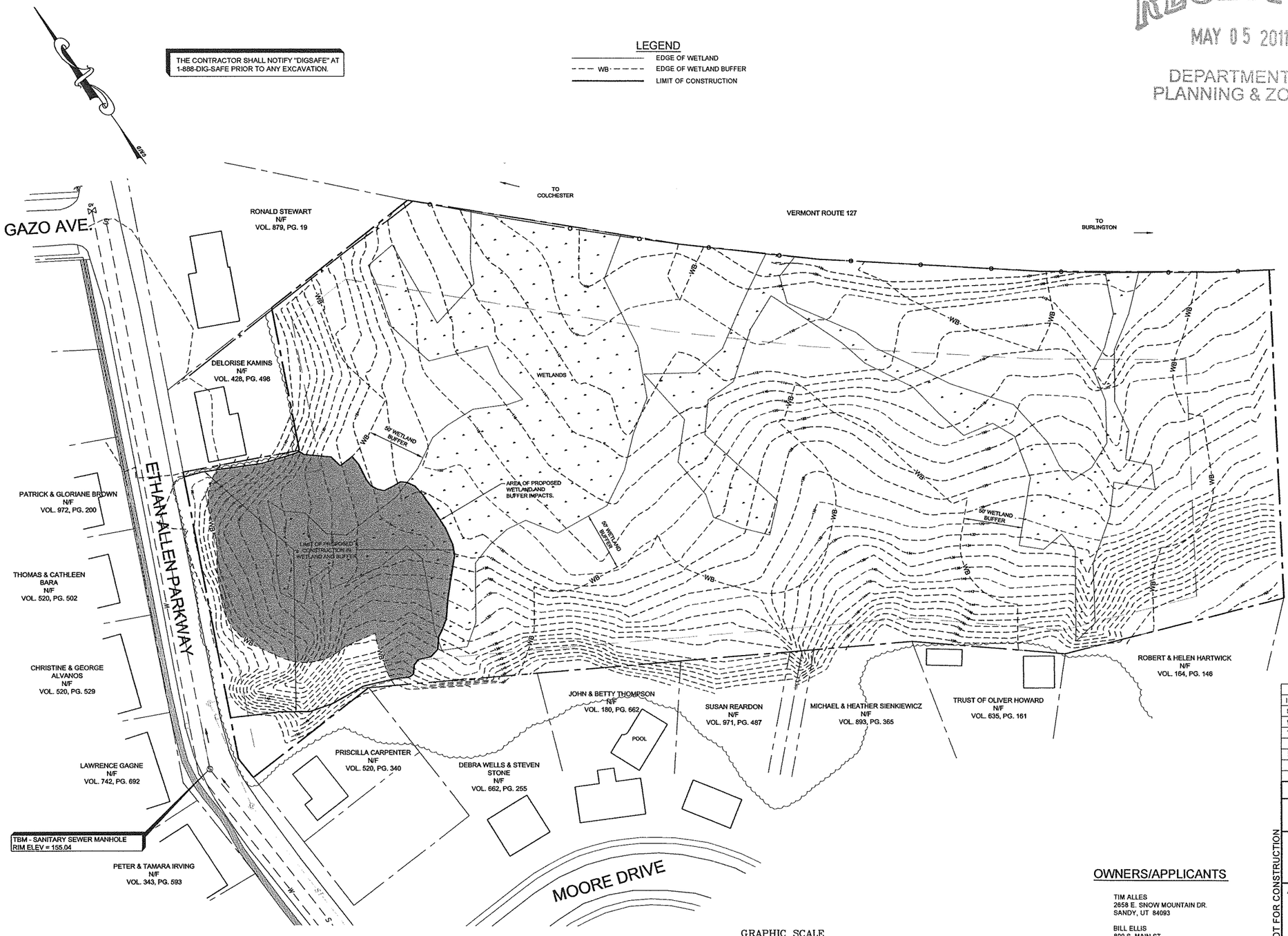
proj. no.	07028
survey	Others
design	DLH
drawn	SEA
checked	DJG
date	04/09/07
scale	1" = 40'
sht. no.	2 of 11

THE CONTRACTOR SHALL NOTIFY "DIGSAFE" AT 1-888-DIG-SAFE PRIOR TO ANY EXCAVATION.

LEGEND
- EDGE OF WETLAND
- WB - - - EDGE OF WETLAND BUFFER
- LIMIT OF CONSTRUCTION



LOCATION PLAN
N.T.S.



GRAPHIC SCALE
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(IN FEET)
1 inch = 40 ft.

OWNERS/APPLICANTS

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Date	Revision	By
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NOT FOR CONSTRUCTION

Lands of
Tim Alles & Bill Ellis
Ethan Allen Parkway, Burlington, Vermont

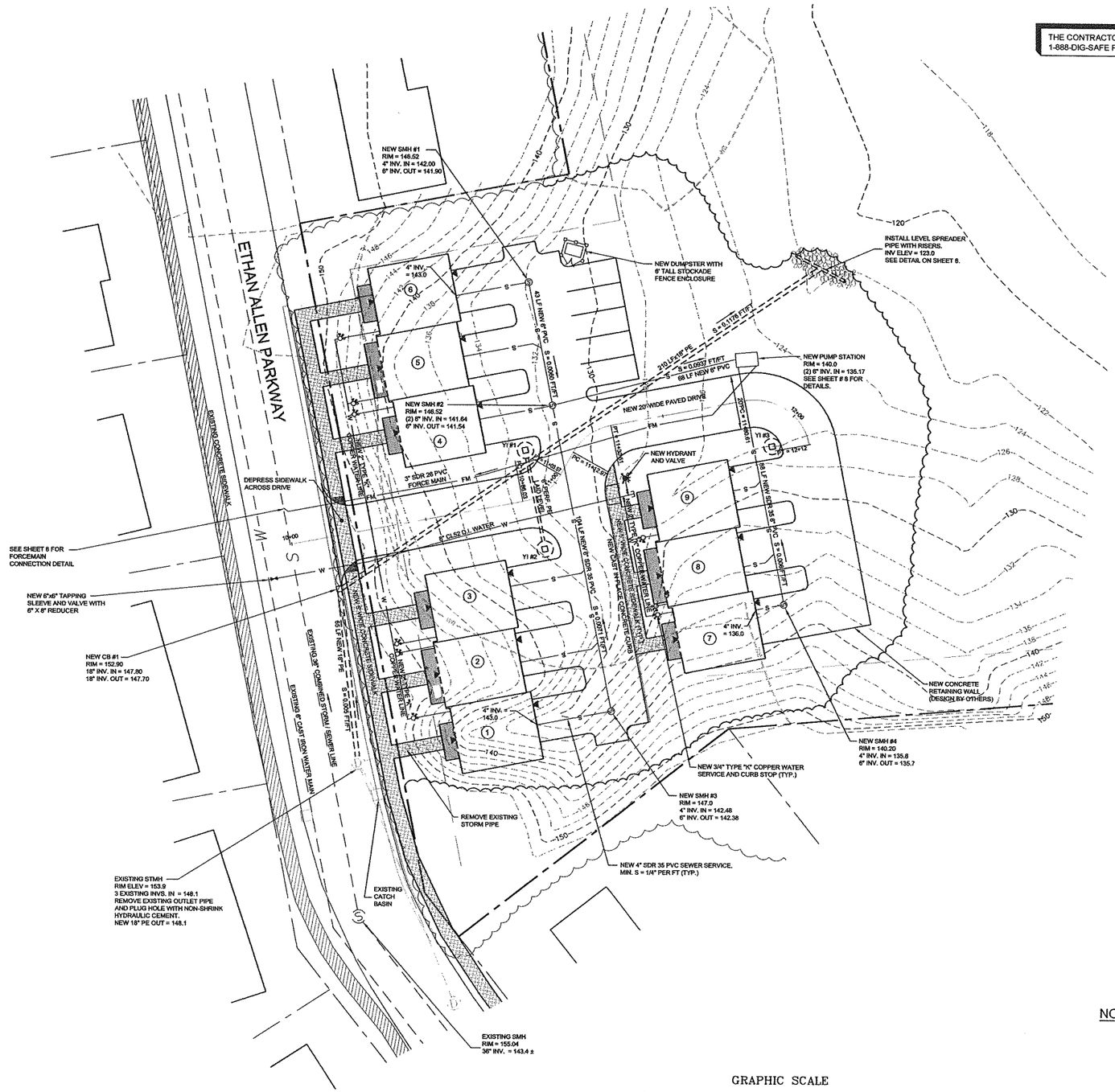
A PLANNED RESIDENTIAL DEVELOPMENT

WETLANDS PLAN

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

proj. no.	07028
survey	Others
design	DLH
drawn	SEA
checked	DJG
date	04/09/07
scale	1" = 40'
sht. no.	3 of 11

THE CONTRACTOR SHALL NOTIFY "DIGSAFE" AT 1-888-DIG-SAFE PRIOR TO ANY EXCAVATION.



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

YARD INLET DATA

YI #1 RIM ELEV = 144.7 INSTALLED ON DRYWELL 6" INV OUT = 143.25
YI #2 RIM ELEV = 144.7 INSTALLED ON DRYWELL 6" INV OUT = 143.25
YI #3 RIM ELEV = 136.7 INSTALLED ON DRYWELL

LEGEND

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- PROPERTY LINE
- BUILDING SETBACK
- N/F — NOW OR FORMERLY
- EXISTING GROUND CONTOUR
- EXISTING WATER LINE, GATE VALVE & HYDRANT
- EXISTING SANITARY SEWER LINE & MANHOLE
- EXISTING STORM LINE AND CATCH BASIN
- NEW TREE LINE
- NEW BUILDING MOUNTED LIGHT
- NEW WATER LINE, GATE VALVE AND HYDRANT
- NEW SANITARY SEWER LINE AND MANHOLE
- (9) — NEW STORM LINE AND CATCH BASIN
- PROPOSED UNIT NUMBER
- AB-1 / ±40 — BORING NUMBER / DEPTH (FT) TO EVIDENCE OF HIGH GROUNDWATER — AUGER BORING LOCATION

VTRANS SPECIFICATION 703.03

SIEVE DESIGNATION	PERCENTAGE BY WEIGHT PASSING SQUARE MESH SCREEN
2 INCH	100
1½ INCH	90 TO 100
½ INCH	70 TO 100
NO. 4	60 TO 100
NO. 100	0 TO 20
NO. 200	0 TO 8

NOTES:

1. THE DRIVE AND ALL SIDEWALKS ARE TO BE CONSTRUCTED OF PERVIOUS CONCRETE.
2. THE FILL MATERIAL USED ON THE PROJECT SHALL BE NATIVE MATERIAL OR IMPORTED MATERIAL MEETING VTRANS COMMON FILL SPECIFICATION 703.03.

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8-7-07	REVISED LAYOUT	DLH

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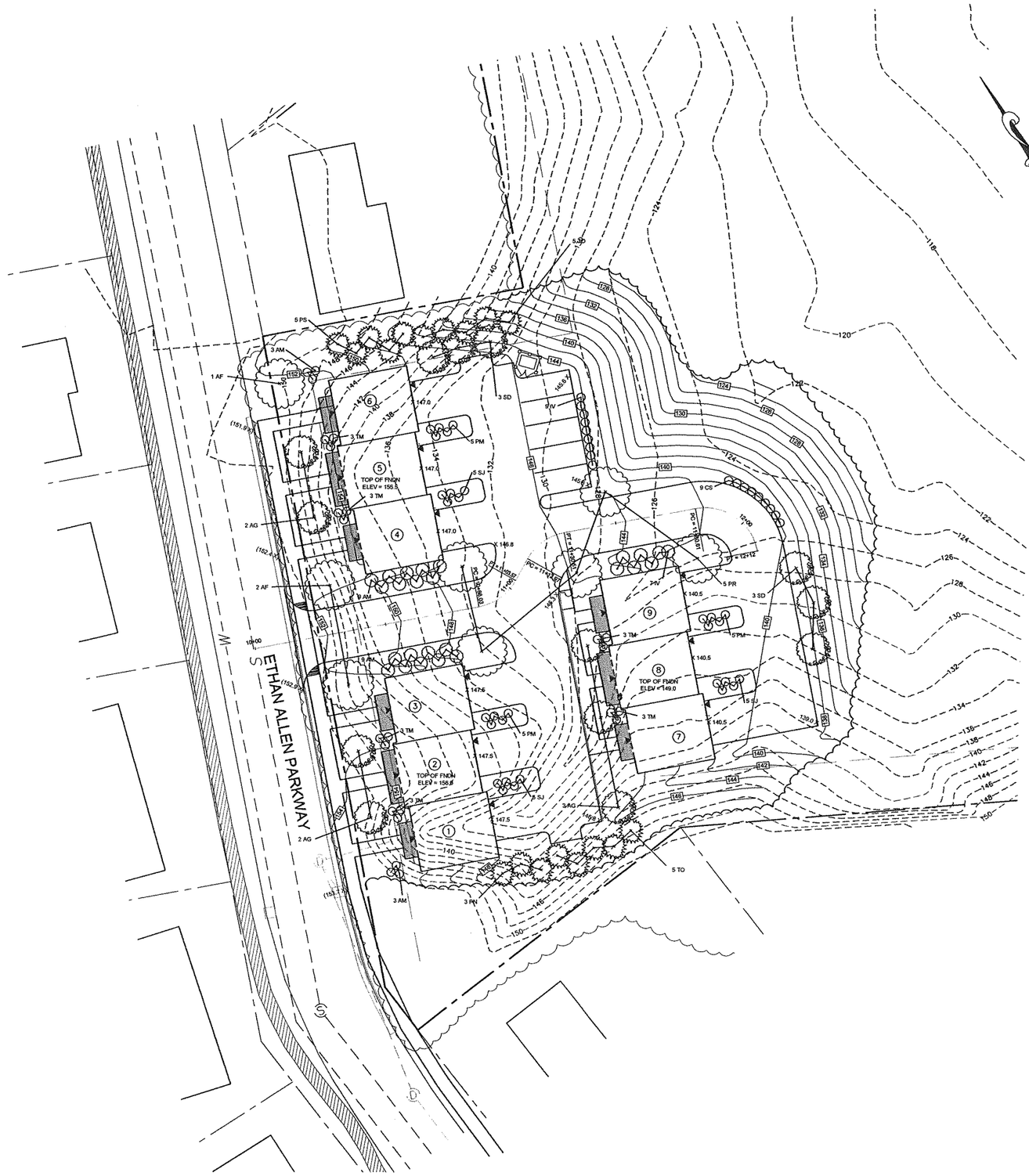
NOT FOR CONSTRUCTION

Lands of
Tim Alles & Bill Ellis
Ethan Allen Parkway, Burlington, Vermont

A PLANNED RESIDENTIAL DEVELOPMENT
SITE & UTILITY PLAN

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

proj. no.	07028
survey	Others
design	DLH
drawn	SEA
checked	DJG
date	04/09/07
scale	1" = 20'
sht. no.	4 of 11



LEGEND

	PROJECT BOUNDARY
	PROPERTY LINE
	SIDELINE OF EASEMENT
	BUILDING SETBACK
N/F	NOW OR FORMERLY
110	EXISTNG GROUND CONTOUR
	EXISTING WATER LINE, GATE VALVE & HYDRANT
	EXISTING SANITARY SEWER LINE & MANHOLE
	EXISTING STORM LINE AND CATCH BASIN
	NEW TREE LINE
	NEW WATER LINE, GATE VALVE AND HYDRANT
	NEW SANITARY SEWER LINE AND MANHOLE
	NEW STORM LINE AND CATCH BASIN
(9)	PROPOSED UNIT NUMBER
GFE	GARAGE FLOOR ELEVATION
136	PROPOSED FINISH GRADE CONTOUR
X 144.60	PROPOSED FINISH SPOT GRADE
(151.6 X)	EXISTING SPOT GRADE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PLANTING SCHEDULE

Key	Botanical Name	Common Name	Size	Quantity	Remarks
Trees					
AF	*Acer x freemanii 'Autumn Blaze'*	Freeman Maple	2 1/2" to 3" Cal.	3	B&B, Minimum 6 foot branching height
AG	*Amelanchier x grandiflora*	Apple Serviceberry	1 3/4" to 2" Cal.	4	B&B, Minimum 6 foot branching height
PN	*Pinus nigra*	Austrian Pine	5' to 6' Height	3	B&B
PR	*Prunus Sargentii*	Sargent Cherry	2 " to 2 1/2" Cal.	5	B&B
PS	*Pinus sylvestris*	Scots Pine	5' to 6' Height	5	B&B
SD	*Sorbus decora*	Showy Mountainash	1 3/4" to 2" Cal.	6	B&B, Minimum 6 foot branching height
TO	*Thuja occidentalis*	Arborvitae	5' to 6' Height	5	B&B
Shrubs					
AM	*Aronia melanocarpa var. elata*	Black Chokeberry	24" to 30" Height	22	B&B or Container
CS	*Cornus sericea*	Red Osier Dogwood	24" to 30" Height	9	B&B or Container
IV	*Ilex verticillata*	Winterberry	24" to 30" Height	15	B&B or Container
PM	*Prunis maritima*	Beach Plum	24" to 30" Height	15	B&B or Container
SJ	*Spirea japonica*	Japanese Spirea	24" to 30" Height	15	B&B or Container
TM	*Taxus x media*	Yew	24" to 30" Height	18	B&B or Container

Date	Revision	By
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NOT FOR CONSTRUCTION

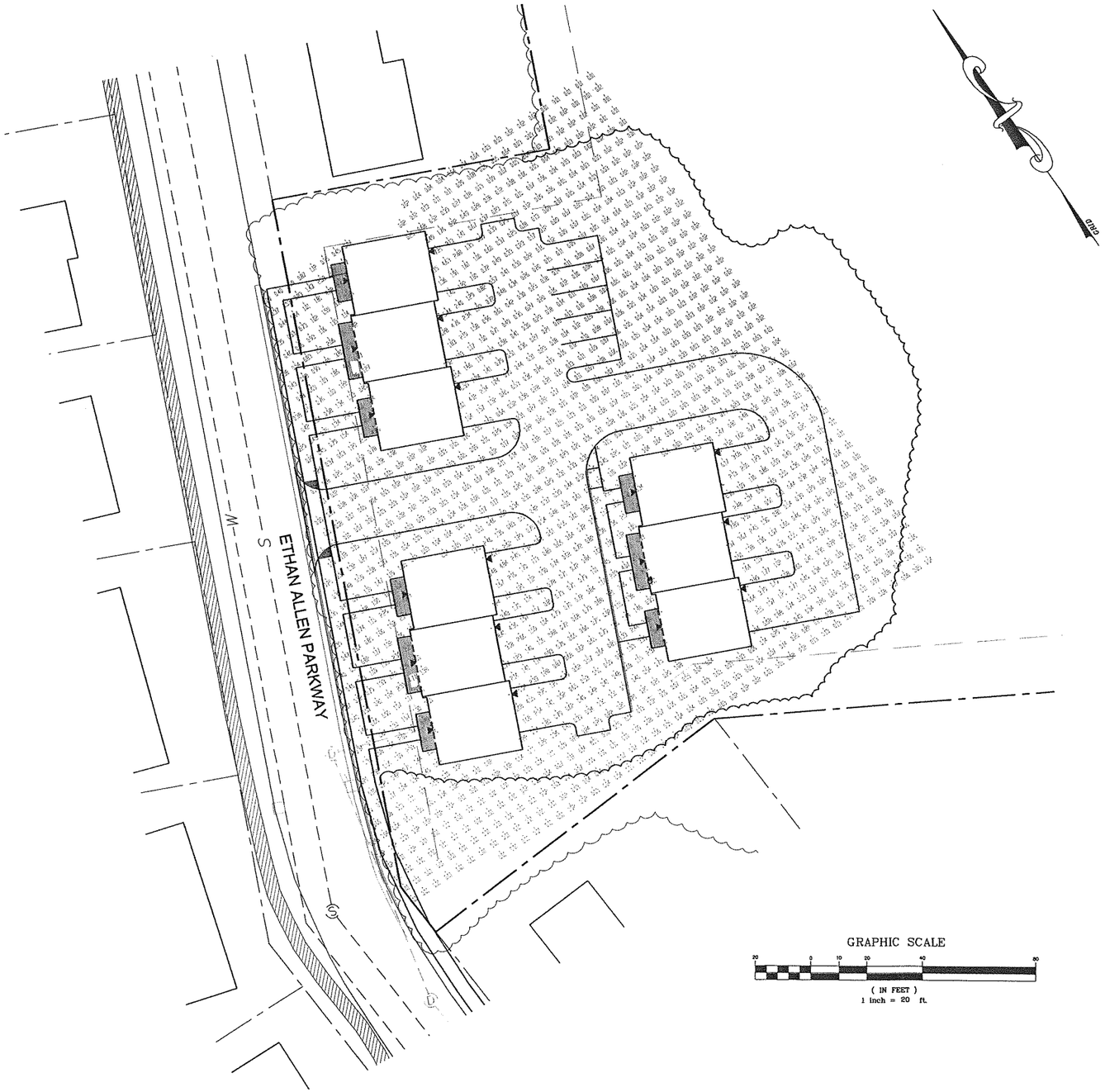
Lands of
Tim Alles & Bill Ellis
Ethan Allen Parkway, Burlington, Vermont

A PLANNED RESIDENTIAL DEVELOPMENT

LANDSCAPING & GRADING PLAN

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

proj. no. 07028
survey Others
design DLH
drawn SEA
checked DJG
date 04/09/07
scale 1" = 20'
sht. no. 5 of 11



CALCULATION SUMMARY						
# PTS	SPACING	AVE	MAX	MIN	MAX/MIN	AVE/MIN
1248	5'	0.63	10.00	0.01	1984.07	125.07

Ellis/Alles (07028-11) LUMINAIRE SCHEDULE							
TYP	SYMBOL	DESCRIPTION	LAMP	LUMENS	MOUNTING HEIGHT	LLF	QTY
WM1	◀	ARCHITECTURAL A (1) "WALL" M3-CF-PLT42	(1) PLT42	3200	8'	1.00	18

0.2 LIGHTING SPOT LEVEL (IN FOOT CANDLES)

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NOT FOR CONSTRUCTION

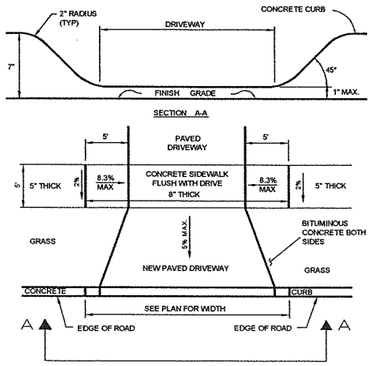
Lands of
Tim Alles & Bill Ellis
Ethan Allen Parkway, Burlington, Vermont

A PLANNED RESIDENTIAL DEVELOPMENT

LIGHTING GRID PLAN

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

proj. no. 07028
survey Others
design DLH
drawn SEA
checked DJG
date 04/09/07
scale 1" = 20'
sht. no. 6 of 11

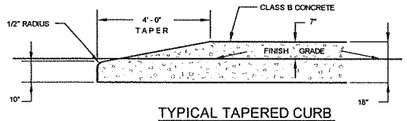


DRIVEWAY NOTES

1. THE NEW APRON AT DRIVEWAYS SHALL BE 3" TYPE III PAVEMENT (PLACED IN 2 LIFTS) OVER 8" CRUSHED GRAVEL (#704.05 FINE GRADED).
2. 6" THICK SIDEWALK EXTENDS 5' BEYOND BOTH SIDES OF THE DRIVEWAY

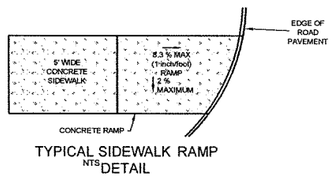
DRIVEWAY APRON & CURB CUT WITH GRASS STRIP

NTS



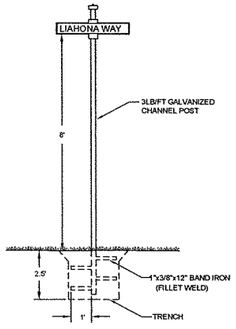
TYPICAL TAPERED CURB

NTS

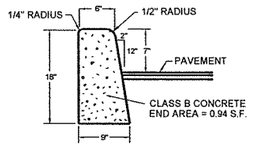


TYPICAL SIDEWALK RAMP DETAIL

NTS



STREET NAME SIGN



CONCRETE CURB

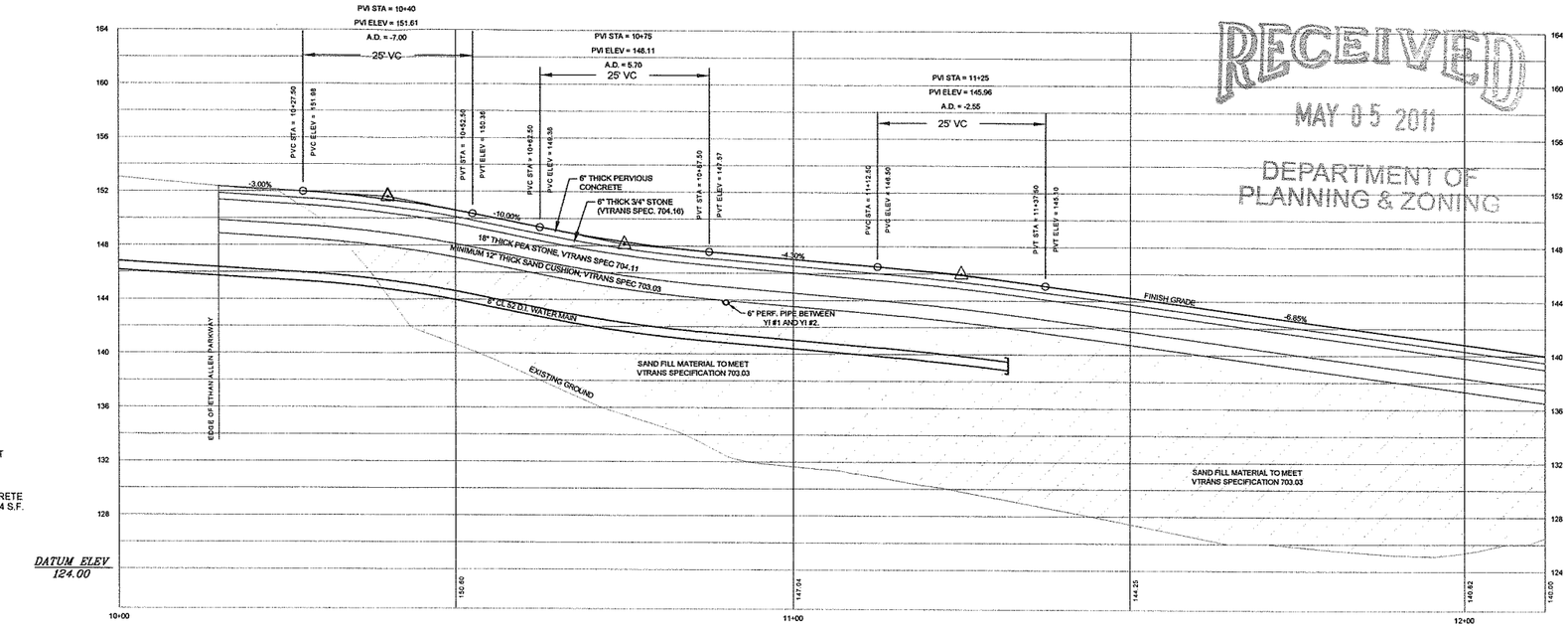
NTS

NOTES:

1) CURBING SHALL BE CONSTRUCTED IN 10' SECTIONS WITH 1/8" JOINT BETWEEN SECTIONS.

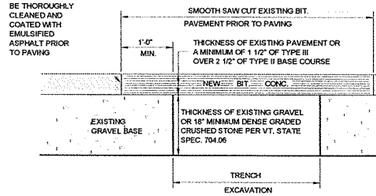
2) CURBING EXPANSION JOINTS SHALL BE CONSTRUCTED EVERY 20' AND SHALL BE CONSTRUCTED OF MATERIAL CONFORMING TO AASHTO DESIGNATION M-153 (1/2" SPONGE RUBBER OR CORK.).

3) ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 28 DAYS, SHALL BE AIR ENTRAINED AT NOT LESS THAN 5% AND NOT MORE THAN 7%, AND SHALL HAVE MINIMUM 20% FLY ASH CONTENT.



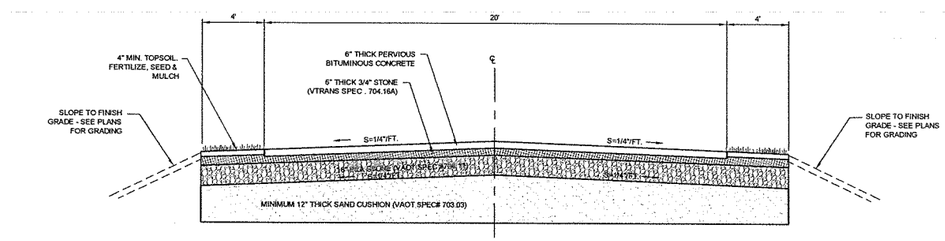
DRIVE PROFILE

SCALE; H: 1" = 10', V: 1" = 5'



REPLACEMENT of EXISTING BITUMINOUS PAVEMENT

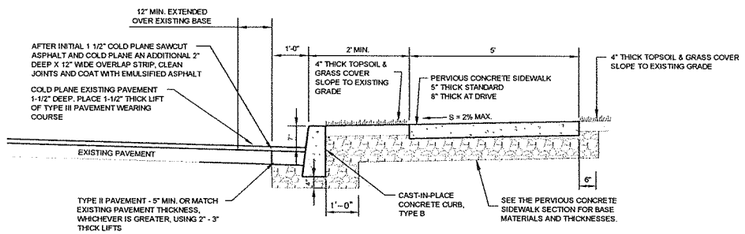
NTS



TYPICAL DRIVE CROSS-SECTION

NTS

GRADATION REQUIREMENTS		
MATERIAL	SIEVE SIZE	PERCENT (%) PASSING
SAND CUSHION - VT SPEC 703.03	2"	100 %
	1 1/2"	90-100 %
	1/2"	70-100 %
	#4	60-100 %
	#100	0-20 %
	#200	0-6%
CRUSHED GRAVEL FOR SUBBASE VT SPEC 704.05 FINE	2"	100 %
	1 1/2"	90-100 %
	#4	30-60 %
	#100	0-12 %
	#200	0-6 %
DENSE GRADED CRUSHED STONE VT SPEC 704.06	3 1/2"	100 %
	3"	90-100%
	2"	75-100%
	1"	50-80%
	1/2"	30-60%
	#4	15-40%
	#200	0-6 %

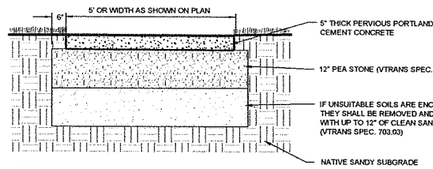


CONCRETE SIDEWALK SECTION ALONG ETHAN ALLEN PARKWAY

NTS

PAVING NOTES

1. THE CONTRACTOR SHALL APPLY EMULSION TO THE FULL WIDTH OF THE BASE COURSE/EXISTING PAVEMENT BEFORE INSTALLING THE TYPE III PAVEMENT OVERLAY.
2. A MINIMUM OF ONE (1) GRADATION TEST SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE FOR A COMPACTION EVERY 100' SECTION OF SIDEWALK. TESTS SHALL ALSO BE PERFORMED AT THE CONTRACTORS EXPENSE EVERY 50' SECTION OF SIDEWALK OR MORE OFTEN IF THE TEST FAILS TO MEET THE COMPACTION REQUIREMENTS. THE TEST LOCATIONS SHALL BE SELECTED BY THE ENGINEER. ALL TESTS SHALL BE PERFORMED BY AN INDEPENDENT OUTSIDE FIRM.
3. EMULSION SHALL BE PLACED ON THE FACE OF THE CURB WHERE IT WILL BE IN CONTACT WITH THE PAVEMENT.
4. THE NEW APRON AT DRIVEWAYS SHALL BE 2" THICK TYPE III PAVEMENT OVER 8" THICK CRUSHED GRAVEL #704.05 FINE GRADED. MATCH INTO EXISTING PAVEMENT WITH SAW CUT JOINTS COATED WITH EMULSIFIED ASPHALT.
5. EMULSIFIED ASPHALT, TO BE APPLIED AT THE RATE OF 0.015 GAL./SQ YD
6. BITUMINOUS CONCRETE PAVEMENT TOLERANCE = +1/4" - (FOR TOTAL THICKNESS OF BINDER AND/OR WEARING COURSE).
7. BITUMINOUS CONCRETE PAVEMENT SHALL BE 75 BLOW MARSHALL MIX AND PERFORMANCE GRADED BINDER SHALL BE PG 58-34.



NOTES:

1. PRIOR TO PLACING THE CRUSHED STONE SUBBASE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR INSPECTION OF THE SUBGRADE SOILS.
2. AT BUILDING ENTRANCES, THE DEPTH OF CRUSHED STONE SHALL BE INCREASED TO 24" AND THE DEPTH OF SAND BORROW SHALL BE INCREASED TO 24" AND TAPERED TO THE STANDARD DEPTH OVER A MINIMUM TRANSITION DISTANCE OF 10 FEET.
3. THE CONCRETE MIX DESIGN SHALL BE SUBMITTED FOR REVIEW PRIOR TO CONSTRUCTION. THE PERVIOUS CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI, AND A MINIMUM PERMEABILITY OF 300 IN/HR.
4. CONSTRUCTION JOINTS SHALL BE MADE WITH A ROLLING JOINT TOOL (NOT CUT) AT INTERVALS OF 10 FEET TO A DEPTH EQUAL TO ⅓ OF THE CONCRETE THICKNESS.
5. CONCRETE SHALL BE CURED FOR A MINIMUM OF 7 DAYS AS REQUIRED BY THE WRITTEN TECHNICAL SPECIFICATIONS.

PERVIOUS CONCRETE SIDEWALK SECTION

NTS

RECEIVED
MAY 05 2011
DEPARTMENT OF PLANNING & ZONING

Date	Revision	By
4-4-11	REVISE LAYOUT	DLH
10-29-10	REVISE LAYOUT	DLH
8-26-10	GENERAL REVISIONS PER COURT APPEAL	DLH
9-11-09	REVISED PERVIOUS CONCRETE DETAILS	DLH
7-13-09	REVISED LIGHTING AND LANDSCAPING	DLH
1-9-08	REVISED DRIVEWAY LAYOUT	DLH
10-5-07	REVISED LAYOUT	DLH
8-7-07	REVISED LAYOUT	DLH

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- ☐ Record Drawing

NOT FOR CONSTRUCTION

Lands of

Tim Alles & Bill Ellis

Ethan Allen Parkway, Burlington, Vermont

A PLANNED RESIDENTIAL DEVELOPMENT

DRIVE PROFILE, TYPICALS AND SPECIFICATIONS

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

proj. no. 07028
survey Others
design DLH
drawn SEA
checked DJG
date 04/09/07
scale N.T.S.
sht. no. 7 of 11

GENERAL CONSTRUCTION NOTES

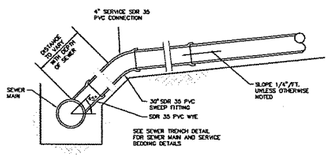
1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION 2006, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES(2003 EDITION), THE BURLINGTON ZONING ORDINANCE REQUIREMENTS AND THESE PLANS.
2. THE CONTRACTOR SHALL CONTACT ALL UTILITIES BEFORE EXCAVATION TO VERIFY THE LOCATION OF ANY UNDERGROUND LINES. THE CONTRACTOR SHALL NOTIFY "DIGSAFE" AT 1-888-344-7233 (1-888-DIG-SAFE) & THE CITY OF BURLINGTON AT (802)865-5830 PRIOR TO ANY EXCAVATION.
3. UTILITIES INFORMATION SHOWN HEREON WERE OBTAINED FROM BEST AVAILABLE SOURCES AND MAY OR MAY NOT BE EITHER ACCURATE OR COMPLETE. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF 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 LOGICAL POINT OF CONNECTION WITH UTILITY OWNER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND REMOVAL OF ALL EXISTING SURFACES, SOILS, 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 ENGINEER.
5. THE CONTRACTOR SHALL BE RESPONSIBLE 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 ENGINEER OR 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. 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.
7. CONSTRUCTION OBSERVATION AND CERTIFICATION IS OFTEN REQUIRED AS A CONDITION OF STATE AND LOCAL PERMITS. IT IS RECOMMENDED THAT CONSTRUCTION OF THE IMPROVEMENTS DETAILED ON THESE PLANS BE OBSERVED BY LAMOUREUX & DICKINSON CONSULTING ENGINEERS INC. (L&D) TO DETERMINE IF THE WORK IS BEING PERFORMED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS . L&D WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS THAT MAY ARISE FROM: FAILURE TO FOLLOW THESE PLANS AND SPECIFICATIONS AND THE DESIGN INTENT THAT THEY CONVEY, ANY CHANGES MADE IN THE PLANS AND SPECIFICATIONS OR IN THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS WITHOUT L&D's PRIOR KNOWLEDGE AND CONSENT, AND/OR FAILURE TO SCHEDULE OBSERVATION OF THE WORK AND TESTING IN PROGRESS.
8. FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY A MINIMUM OF ONE-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. CONTINUOUS TWO-WAY TRAFFIC WILL BE REQUIRED AT NIGHT, DURING PEAK-HOURS, AND WHENEVER POSSIBLE DURING ACTUAL CONSTRUCTION ACTIVITIES. TEMPORARY CONSTRUCTION SIGNS AND TRAFFIC CONTROL SIGNS SHALL BE ERECTED BY THE CONTRACTOR IN ACCORDANCE WITH STATE AND CITY STANDARDS.
9. TO ASSURE COMPLIANCE WITH THE PLAN(S), THE CONTRACTOR SHALL NOTIFY THE ENGINEER 24 HOURS IN ADVANCE OF STARTING ANY WORK, BEGINNING INSTALLATION OF ANY UTILITIES, BRINGING IN ANY NEW GRAVEL FOR THE NEW PAVED AREAS, PAVING, AND FINAL INSPECTION.
10. TOPSOIL SHALL BE STOCKPILED, SEEDED, AND MULCHED UNTIL REUSED. SILT FENCE SHALL BE PLACED AND STAKED CONTINUOUSLY AROUND THE DOWNSLOPE PERIMETER OF THE TOPSOIL PILES.
11. HEALTHY EXISTING TREES AS SHOWN ON THE SITE PLAN TO BE SAVED SHALL BE PROTECTED BY THE CONTRACTOR.
12. OPEN CUT AREAS SHALL BE MULCHED OUTSIDE OF ACTUAL WORK AREAS, AND SILT FENCE SHALL BE EMPLOYED TO CONFINE SHEET WASH AND RUNOFF TO THE IMMEDIATE OPEN AREA AS ORDERED BY THE ENGINEER.
13. AT COMPLETION OF GRADING, SLOPES, DITCHES, AND ALL DISTURBED AREAS SHALL BE SMOOTH AND FREE OF POCKETS WITH SUFFICIENT SLOPE TO ENSURE DRAINAGE.
14. ALL FILL SHALL BE PLACED IN 6 INCH LIFTS AND THOROUGHLY COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698 STANDARD PROCTOR, UNLESS OTHERWISE SPECIFIED.

SANITARY & STORM SPECIFICATIONS

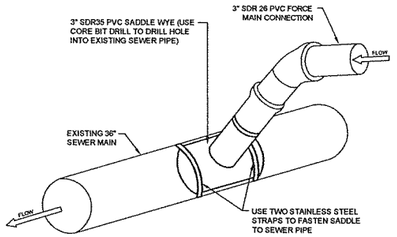
1) SANITARY AND STORM SEWER PIPES SHALL BE OF THE SIZE AND TYPE INDICATED ON THE PLANS. PVC PIPE SHALL BE SDR 35 CONFORMING TO ASTM D-3034, ASTM D-3212, AND ASTM F-477. CORRUGATED METAL PIPE SHALL CONFORM TO AASHTO M-190 FOR ACCOMP PIPE AND AASHTO M-246 TYPE BFOR POLYMERIC COATED STEEL PIPE. CORRUGATED POLYETHYLENE PIPE SHALL CONFORM TO AASHTO M294, TYPE S (SMOOTH LINED).

2) ALL NEW GRAVITY SANITARY SEWER MAINS SHALL BE LEAK TESTED BY A LOW PRESSURE AIR TEST AND DEFLECTION TESTED. THE LOW PRESSURE AIR TEST WILL BE USED TO SIMULATE INFILTRATION OR EXFILTRATION INTO OR OUT OF ALL GRAVITY SANITARY SEWERS. ALL TESTING WILL BE CONDUCTED UNDER THE SUPERVISION OF THE ENGINEER. AIR TESTING SHALL BE PERFORMED IN ACCORDANCE WITH ASTM C828-80. THE MINIMUM ALLOWED TIME FOR A PRESSURE DROP FROM 3.5 PSI TO 2.5 PSI SHALL BE 1.2 MINUTES PER 100 FEET OF 6" SEWER. AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS, THE DEFLECTION TEST MAY BE PERFORMED. NO PIPE SHALL EXCEED A DEFLECTION OF FIVE PERCENT (5%). IF THE DEFLECTION TEST IS RUN USING A RIGID BALL OR MANDREL, IT SHALL SHALL HAVE A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE.THE TEST SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES. ALL MANHOLE AND PIPELINE MATERIALS, METHODS AND TESTING SHALL BE IN ACCORDANCE WITH CITY AND STATE STANDARDS AND THESE PLANS.

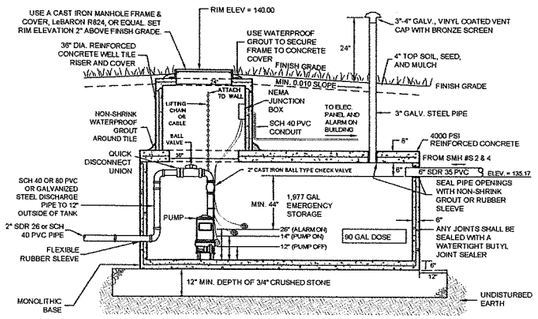
3) ALL SANITARY SEWER MANHOLES SHALL BE TESTED PRIOR TO CONSTRUCTION OF THE INVERT BY THE VACUUM TEST METHOD DESCRIBED IN THE TECHNICAL SPECIFICATIONS. FOR MANHOLES UP TO 10' DEEP THE MINIMUM ALLOWED TIME FOR A VACUUM DROP FROM 10" TO 9" OF MERCURY SHALL BE 2 MINUTES. FOR MANHOLES GREATER THAN 10' DEEP THE MINIMUM ALLOWED TIME SHALL BE 2 MINUTES AND 30 SECONDS.



SANITARY SEWER SERVICE CONNECTION
NTS



SANITARY SEWER FORCE MAIN CONNECTION INTO EXISTING SEWER MAIN
NTS



SECTION

SHARED PUMP STATION
N.T.S.

TESTING DATA

A. FORCE MAIN PRESSURE TEST: THE FORCE MAIN SHALL BE PRESSURE TESTED TO NOT LESS THAN 50 PSI AT THE HIGHEST POINT OF THE TEST SECTION. THE TEST SHALL BE OF A TWO HOUR DURATION AND THE TEST PRESSURE SHALL NOT VARY BY MORE THAN +/-.5 PSI. A LEAKAGE TEST SHALL BE PERFORMED CONCURRENTLY WITH THE PRESSURE TEST. THE ALLOWABLE LEAKAGE SHALL BE DETERMINED BY THE FOLLOWING FORMULA:

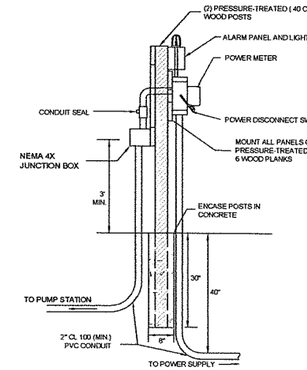
$$L = \frac{ND\sqrt{P}}{7400}$$

WHERE L = THE ALLOWABLE LEAKAGE IN GALLONS PER HOUR, N IS THE NUMBER OF JOINTS, D IS THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND P IS THE AVERAGE TEST PRESSURE IN PSI.

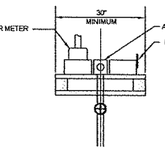
B. PUMP STATION TEST: THE STRUCTURE SHALL BE TESTED IN THE PRESENCE OF THE ENGINEER FOR EXFILTRATION BY FILLING THE STRUCTURES TO 1' BELOW THE ACCESS LID. A STABILIZATION PERIOD OF 1 HR SHALL BE PROVIDED TO ALLOW FOR ABSORPTION. AT THE END OF THE STABILIZATION PERIOD THE STRUCTURE SHALL BE REFILLED IF NECESSARY AND THE TEST PERIOD OF 48 HOURS SHALL BEGIN. AT THE END OF THE TEST PERIOD, THE VOLUME OF WATER CHANGE SHALL BE MEASURED. THERE SHALL BE NO VISIBLE OR MEASURABLE EXFILTRATION OR INFILTRATION OR THE TEST FAILS. IF THE TEST FAILS, THE CONTRACTOR SHALL REPAIR OR WATERPROOF AND RETEST.

C. PUMP STATION. THE CONTRACTOR AND ENGINEER SHALL BE PRESENT DURING STARTUP. A WATER SOURCE SHALL BE AVAILABLE TO PERFORM A FULL OPERATIONAL CHECK OF THE STATION INCLUDING ALL FLOAT FUNCTIONS, ALARM TESTING INDICATOR LIGHTS.

THE CONTROL SYSTEM SHALL BE CYCLED THROUGH MORE THAN ONCE TO INSURE PROPER SEQUENCING AND OPERATION OF THE PUMPS. THE PUMP SHALL BE FIELD TESTED TO INSURE THE PUMPING CAPACITY MEETS THE PROJECT REQUIREMENTS.



PUMP STATION CONTROL PANEL
SIDE VIEW



PUMP STATION CONTROL PANEL
TOP VIEW

PUMP STATION DATA

PUMP STATION SPECIFICATIONS:

1. THE PUMP STATION TANK SHALL HAVE SUFFICIENT CAPACITY TO ACCOMMODATE THE REQUIRED PUMP, THE SPECIFIED DOSE VOLUME, AND THE NECESSARY EMERGENCY STORAGE VOLUME.
2. LAMOUREUX & DICKINSON RECOMMENDS THE USE OF A WATERTIGHT, STEEL-REINFORCED, 4,000 PSI, 72" x 144" (LID) CONCRETE TANK CONSTRUCTED TO WITHSTAND EARTH LOADING. HOWEVER, THE OWNER, AT HIS/HER OWN DISCRETION, MAY USE AN ALTERNATIVE STRUCTURE IN CONFORMANCE WITH THE VERMONT ENVIRONMENTAL PROTECTION RULES.
3. THE TANK SHALL HAVE SUFFICIENT CAPACITY FOR THE SPECIFIED DOSE AND EMERGENCY STORAGE VOLUMES.
4. IF LEDGE IS ENCOUNTERED AT A DEPTH SHALLOWER THAN ACCOMMODATES THE SPECIFIED TANK, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR ALTERNATE TESTING RECOMMENDATIONS.
5. THE PUMP STATION SHALL BE CONSTRUCTED TO MINIMIZE THE RISK OF FREEZING OF EFFLUENT IN THE PIPES OR STRUCTURE.
6. BACKFILL SIDES AND TOP OF TANK WITH SAND OR GRAVEL. ALL BACKFILL MATERIAL AROUND THE TANK SHALL BE THOROUGHLY COMPACTED TO NOT LESS THAN 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY THE AASHTO-T-99 STANDARD PROCTOR.

PUMP STATION DESIGN COMPUTATIONS:

A. DAILY FLOW (BASED ON EPR DESIGN FLOWS):

DESIGN FLOW FROM 9 UNITS (210 GPD/UNIT)		1,890 GPD
SEWER MAIN INFILTRATION	87 GPD	87 GPD
TOTAL FLOW	1,977 GPD	1,977 GPD

B. AVERAGE FLOWRATE :

$$\frac{1{,}977\ \text{GPD}}{16\ \text{HR/DAY} \times 60\ \text{MIN/HR}} = 2.1\ \text{GPM}$$

C. HEAD LOSSES:

3" DELIVERY PIPE (200', SDR 26 PVC)	1.2 FT
STATIC LIFT (146-125)	21.0 FT
VALVES & FITTINGS	4.0 FT
TOTAL HEAD LOSS	26.2 FT

PUMP REQUIREMENTS - 1 SUBMERSIBLE SEWAGE EJECTOR PUMP CAPABLE OF PUMPING A MINIMUM OF 50 GPM AT 30 FT TOTAL HEAD, SINGLE PHASE (HYDROMATIC S83S OR EQUAL)

E. ELECTRICAL/CONTROLS: ALL ELECTRIC WIRING SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE.

F. FLOATS: MERCURY SWITCH TO BE COMPLETELY SEALED, MADE OF CORROSIVE RESISTANT SOLUTION AND INTRINSICALLY SAFE. ELECTRICAL CABLE TO BE FLEXIBLE TWO CONDUCTOR WITH NEOPRENE JACKET.

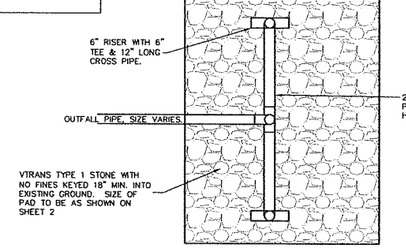
G. DOSE DESIGN:

WITH 12 HR/DAY FLOWRATE = 3 GPM
DAILY FLOW = 1,977 GPD
DOSE VOLUME FOR 30 MIN. MAXIMUM RETENTION TIME IS 3 GPM X 30 MINUTES = 90 GALLON DOSE.

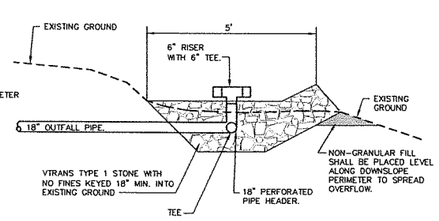
H. EMERGENCY STORAGE (BASED ON STATE DESIGN FLOWS WITH FUTURE EXPANSION):

PROVIDE 24 HOURS OF STORAGE
TOTAL DAILY FLOW (STATE FIGURES)= 1,977 GPD
1,977 GALLONS PROVIDED

I. SUBMITTALS REQUIRED: PUMP, ACCESS LID, WETWELL FLOATS AND FLOAT HANGER BRACKET, CHECK VALVES, GATE VALVES, SOLID SLEEVE COUPLINGS, AND OPERATION AND MAINTENANCE MANUALS

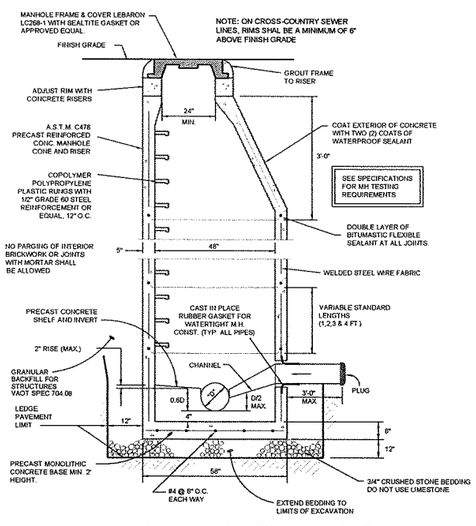


PLAN VIEW

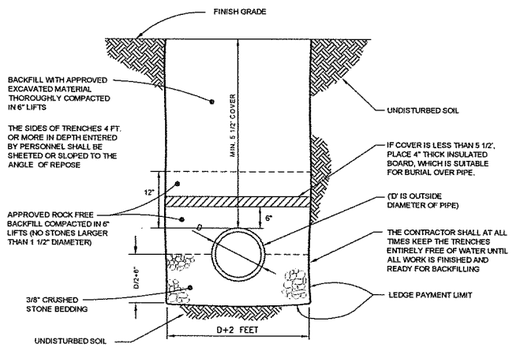


SECTION VIEW (AT PIPE)

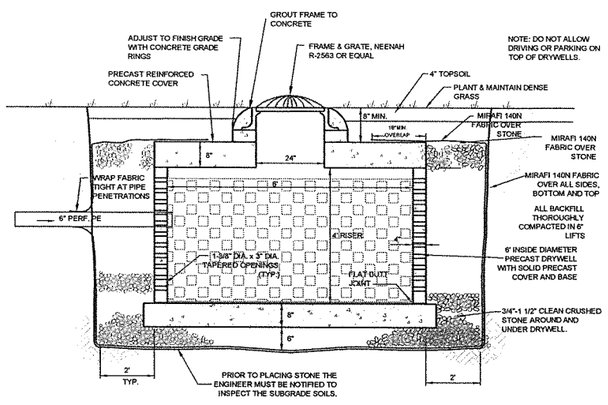
LEVEL SPREADER DETAIL
NTS



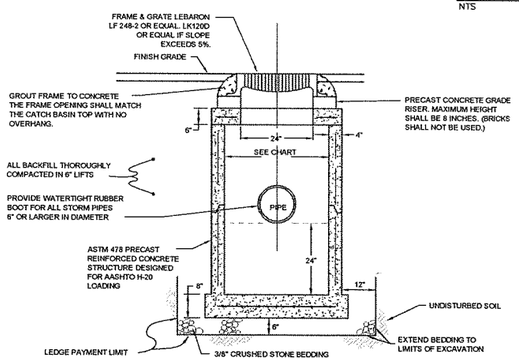
TYPICAL PRECAST SANITARY / STORM MANHOLE
NTS



TYPICAL SANITARY & STORM SEWER TRENCH
N.T.S.



STORMWATER DRYWELL DETAIL
NTS



PRECAST CATCH BASIN
NTS

TYPE	CATCH BASIN DIAMETER	LARGEST PIPE DIA. ALLOWED	SIDEWALL THICKNESS	CONCRETE COVER THICKNESS	BASE DIAMETER
I	36"	18"	4"	6"	52"
II	48"	30"	5"	10"	72"
III	60"	36"	6"	12"	84"
IV	72"	48"	7"	16"	96"

Date	Revision	By
4-4-11	REVISE LAYOUT	DLH
10-29-10	REVISE LAYOUT	DLH
8-26-10	GENERAL REVISIONS PER COURT APPEAL	DLH
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NOT FOR CONSTRUCTION

Lands of
Tim Alles & Bill Ellis
Ethan Allen Parkway, Burlington, Vermont

A PLANNED RESIDENTIAL DEVELOPMENT
SANITARY & STORM SEWER DETAILS AND SPECIFICATIONS

proj. no.	07028
survey	Others
design	DLH
drawn	SEA
checked	DJG
date	04/09/07
scale	N.T.S.
sht. no.	8 of 11

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

LANDSCAPE SPECIFICATIONS

TREE AND SHRUB PLANTINGS

1. ALL PLANT MATERIALS SHALL CONFORM TO THE INTERNATIONAL SOCIETY OF ARBORICULTURE *PRINCIPALS AND PRACTICES OF PLANTING TREES AND SHRUBS*, AND THE MOST RECENT VERSION OF THE *AMERICAN STANDARD FOR NURSERY STOCK* - ANSI Z60.1.
2. CONTRACTOR SHALL STAKE ALL PLANT LOCATIONS AND THE ENGINEER SHALL APPROVE PRIOR TO INSTALLATION.
3. CONTRACTOR SHALL PROTECT LANDSCAPE PLANTS AT ALL TIMES FROM SUN AND DRYING WINDS. PLANTS THAT ARE TO BE TEMPORARILY STORED ON SITE UNTIL READY FOR INSTALLATION SHALL BE KEPT SHADED AND PROTECTED WITH SOIL, BARK MULCH OR OTHER ACCEPTABLE MATERIAL AND REGULARLY WATERED.
4. DURING INSTALLATION OF LANDSCAPE PLANTINGS, CONTRACTOR SHALL DETERMINE WHERE EXISTING UNDERGROUND UTILITIES ARE LOCATED TO AVOID INTERFERENCE.
5. STREET TREES TO ARRIVE FROM NURSERY WITH 6 FEET/2 METERS BETWEEN THE FINISHED GRADE AND THE FIRST TREE BRANCH.
6. DO NOT PRUNE THE TREES OR SHRUBS AT PLANTING. PRUNE ONLY DEAD OR CRUSHED ROOTS AND DEAD OR INJURED BRANCHES.
7. TREES SHALL HAVE A MINIMUM 50% LIVE CROWN RATIO.
8. EACH TREE AND SHRUB MUST BE PLANTED SUCH THAT THE ROOT FLARE AND MAIN ORDER ROOTS ARE VISIBLE AT THE TOP OF THE ROOT BALL. WHERE THE MAIN ORDER ROOTS ARE NOT VISIBLE, EXCESS SOIL SHALL BE REMOVED TO LOCATE THEM. PLANT TREES AND SHRUBS SO THAT THE MAIN ORDER ROOTS ARE AT FINISHED GRADE. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL OR MULCH.
9. EXAMINE ENTIRE TREE AND SHRUB AND REMOVE ALL NURSERY TAGS, TREE WRAP, ROPE, STRING AND SURVEYOR TAPE PRIOR TO PLANTING TO PREVENT GIRDLING.
10. FOR ALL TREES AND SHRUBS:
    CUT AND REMOVE WIRE MESH BASKET. CUT AND REMOVE ROPE AND BURLAP WRAP FROM TOP 2/3 OF ROOTBALL AFTER PLACEMENT IN PLANTING PIT. LOOSEN REMAINING BURLAP TO ALLOW FOR ROOT DEVELOPMENT. IF THE TREE OR SHRUB HAS SYNTHETIC OR TREATED BURLAP, REMOVE IT ENTIRELY AFTER PLACING ROOT BALL IN PLANTING PIT.
11. BREAK APART EDGE OF EXCAVATION WITH SHOVEL AND BLEND PLANT MIX WITH EXISTING SOIL TO PROVIDE SOIL TRANSITION.
12. TREE PIT AREA SHALL HAVE A MINIMUM DEPTH OF 36". SHRUB PLANTING PIT SHALL HAVE A 24" MINIMUM DEPTH. THE TREE PIT AREA SHALL HAVE THE PLANT MIX SPECIFIEDBELOW.
13. STAKING REQUIRED ONLY IN SITUATIONS WHERE TREES WILL BE SUBJECTED TO WINDY CONDITIONS AS DETERMINED BY THE ENGINEER. STAKES SHALL BE REMOVED BY THE CONTRACTOR AT THE END OF THE WARRANTY PERIOD.
14. PLANT MIX SHALL CONSIST OF THE FOLLOWING RATIO: 1/3 PART COMPOST, 2/3 PARTS TOPSOIL. PLANT MIX TO BE TESTED AND APPROVED FOR QUALITY BY ENGINEER PRIOR TO INSTALLATION. THE CORRECT GRADE OF COMPOST IS AVAILABLE FROM, BUT NOT LIMITED TO, THE FOLLOWING MANUFACTURERS: INTERVALE COMPOST PRODUCTS, VERMONT NATURAL PRODUCTS AND VERMONT COMPOST COMPANY.
15. FOLLOWING PLANTING, FERTILIZER AND MYCORRHIZAL FUNGI SHALL BE APPLIED TO TREES AND SHRUBS.
16. ONCE ALL LANDSCAPE PLANTINGS HAVE BEEN INSTALLED, PLACE A LIGHT LAYER OF HEMLOCK OR PINE BARK MULCH; MAXIMUM OF 2" THICK, ON PLANTING BEDS. NO DYED MULCH WILL BE ACCEPTED.
17. WATER ALL TREES AND SHRUBS THOROUGHLY ONCE PLANTED TO FULL SOILS AGAINST ROOT BALL AND SETTLE AIR POCKETS. ADDITIONAL SOIL MAY BE NEEDED; WATER AGAIN TO ENSURE COMPLETE COMPACTION. RE-SET SETTLED PLANTS TO PROPER GRADE AND POSITION. RESTORE ADJACENT MATERIAL AND REMOVE DEAD MATERIAL. THERE SHALL BE NO WATERING BERM INSTALLED AROUND PLANTS.
18. CORRECT WORK AS SOON AS POSSIBLE AFTER DEFICIENCIES BECOME APPARENT AND WEATHER PERMITS.
19. CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL LANDSCAPE PLANTINGS AND SHALL INCLUDE PRUNING, CULTIVATING, WEEDING, WATERING, AND APPLICATION OF APPROPRIATE INSECTICIDES AND FUNGICIDES NECESSARY TO MAINTAIN PLANTS FREE OF INSECTS AND DISEASE DURING CONSTRUCTION AND WARRANTY AND UNTIL ACCEPTANCE. CONTRACTOR SHALL WATER ALL PLANTINGS DAILY.
20. ALL LANDSCAPE PLANTS SHALL BE GUARANTEED FOR A PERIOD OF TWO YEARS AFTER PLANTING.

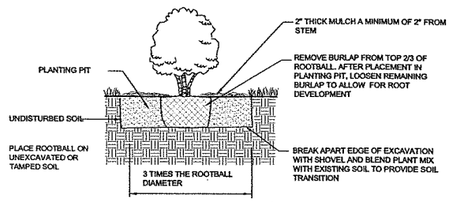
TURF ESTABLISHMENT

ALL DISTURBED AREAS THAT DO NOT HAVE AN IMPERVIOUS SURFACE (PAVEMENT, SIDEWALKS, ROOFS) SHALL BE STABILIZED WITH SEEDING AND MULCHING PRIOR TO OCTOBER 1. ANY WORK PERFORMED AFTER SEPTEMBER 15 OF EACH YEAR SHALL BE STABILIZED WITH MULCH OR NETTING SUFFICIENT TO PREVENT EROSION AND SHALL BE IMMEDIATELY SEEDED AND REMULCHED AS SOON AS WEATHER PERMITS IN THE SPRING. PLACEMENT OF TOPSOIL, AND THE APPLICATION OF SEED, FERTILIZER, LIME (WHERE APPLICABLE), AND MULCH SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

1. A MINIMUM OF 4" OF APPROVED TOPSOIL SHALL BE PLACED IN ALL AREAS. PLACEMENT OF TOPSOIL SHALL NOT BE DONE WHEN THE GROUND OR TOPSOIL IS FROZEN, EXCESSIVELY WET, OR OTHERWISE IN A CONDITION DETRIMENTAL TO THE WORK. FOLLOWING PLACEMENT OF TOPSOIL, THE SURFACE SHALL BE RAKED. ALL STONES, LUMPS, ROOTS, OR OTHER OBJECTIONAL MATERIAL SHALL BE REMOVED.
2. SEED MIXTURES SHALL CONFORM TO THE SEED MIX TABLES SHOWN ON THIS SHEET AND BE SPREAD UNIFORMLY IN ALL AREAS INDICATED ON THE PLANS AT THE SPECIFIED RATE. FOR SEEDING BETWEEN SEPTEMBER 1 AND OCTOBER 1, WINTER RYE SHALL BE OVERSEEDED AT AN APPLICATION RATE OF 100 POUNDS PER ACRE.
3. FERTILIZER SHALL CONFORM TO THE STANDARDS OF *THE ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS* AND BE APPLIED ONLY AFTER PERFORMING A SOIL TEST AND BE APPLIED BASED UPON SOIL DEFICIENCIES. LIME SHALL ONLY BE APPLIED AS NEEDED BASED UPON A SOIL pH TEST.
4. WITHIN 24 HOURS OF APPLICATION OF SEED, FERTILIZER AND LIME, THE SURFACE SHALL BE MULCHED WITH A HAY MULCH. MULCH SHALL BE SPREAD UNIFORMLY OVER THE AREA AT A MINIMUM RATE OF 2 TONS PER ACRE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A FULL GROWTH OF GRASS IN ALL DISTURBED AREAS TO BE RE-VEGETATED. VEGETATION GROWTH SHALL BE PERMANENT AND SUFFICIENT TO PREVENT EROSION OF THE UNDERLYING SOIL UNDER ALL CONDITIONS OF PRECIPITATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING AND CARING FOR SEEDED, MULCHED, AND AREAS OF ESTABLISHED VEGETATION UNTIL FINAL ACCEPTANCE OF THE WORK BY THE OWNER.

URBAN MIX GRASS SEED

% BY WEIGHT	LBS. LIVE SEED PER ACRE	TYPE OF SEED
37.5	45	CREEPING RED FESCUE
31.25	37.5	KENTUCKY BLUEGRASS
31.25	37.5	WINTER HARDY, PERENNIAL RYE
100	120 # LIVE SEED PER ACRE	



SHRUB PLANTING DETAIL

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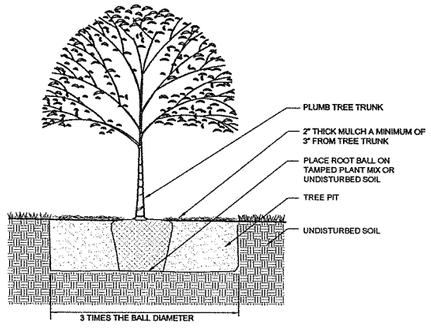

STREET TREE PLANTING DETAIL

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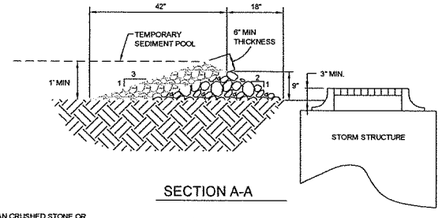
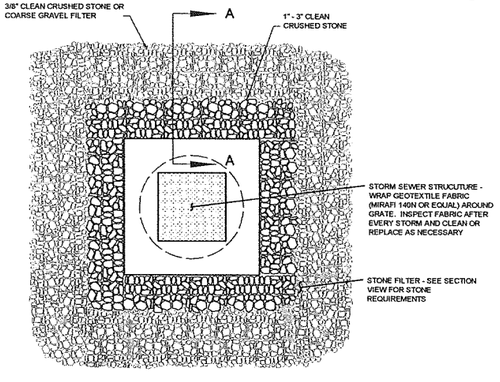


SECTION A-A



PLAN VIEW

NOTES:
1. INLET PROTECTION TO BE PROVIDED AT ALL CATCHBASINS OR YARD INLETS.
2. THE STONE FILTER SHALL BE INSPECTED FOLLOWING EACH STORM. ACCUMULATED SEDIMENTS SHALL BE REMOVED AND THE STONE REPLACED AS NECESSARY.
3. THE LIMITS OF THE STONE AROUND THE INLET MAY BE MODIFIED BY THE ENGINEER DEPENDING ON THE TOPOGRAPHY DIRECTING RUNOFF TO THE CATCHBASIN.

CATCH BASIN INLET PROTECTION

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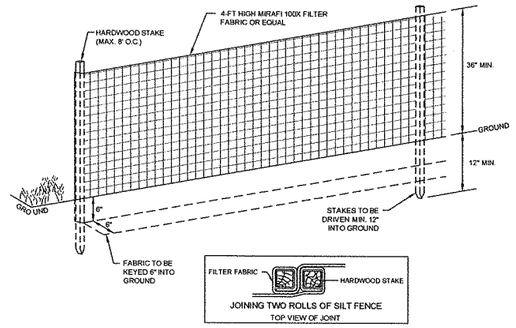

NOTES
1) USE ONLY MANUAL METHODS OF INSTALLATION AND CLEANING WITHIN WETLAND AND BUFFER ZONE.
2) PRIOR TO BEGINNING OF CONSTRUCTION OR EARTHMOVING, THE CONTRACTOR SHALL INSTALL A CONTINUOUS SILT FENCE AT THE LIMIT OF DISTURBANCE SHOWN ON THE SITE PLAN.
3) FROZEN MATERIAL SHALL NOT BE USED TO KEY IN THE 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.
4) THE CONTRACTOR SHALL INSTALL SILT FENCE AROUND THE PERIMETER OF TOPSOIL STOCKPILES AND AT OTHER LOCATIONS AS NEEDED.

TEMPORARY SILT FENCE

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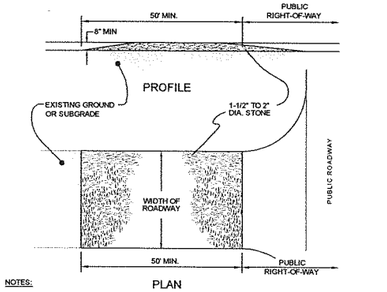

NOTES:

PLAN

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

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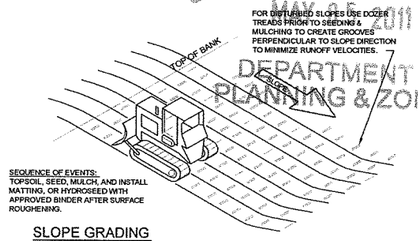

SLOPE GRADING

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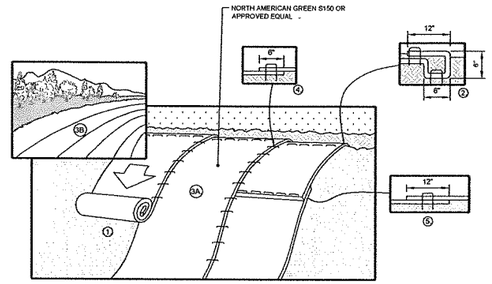

1. EROSION MATTING WILL BE USED ON SLOPES STEEPER THAN 3H:1V OR AS SHOWN ON THE PLANS.
2. PREPARE SOIL BEFORE INSTALLING MATTING, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. SOIL SURFACE SHALL BE GRADED SMOOTH WITHOUT ROOTS, STONES OR OTHER PROTUSIONS THAT WILL PREVENT THE MATTING FROM BEING APPLIED IN FULL CONTACT WITH THE SOIL SURFACE.
3. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE MATTING IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF MATTING EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE MATTING WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF MATTING BACK OVER SEED AND COMPACTED SOIL. SECURE MATTING OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" PART ACROSS THE WIDTH OF THE MATTING.
4. ROLL THE MATTING (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. INSURE THAT THE APPROPRIATE SIDE OF THE MATTING IS AGAINST THE SOIL SURFACE. ALL MATTING MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE MANUFACTURER'S STAPLE PATTERN GUIDE FOR THE PARTICULAR PRODUCT AND APPLICATION. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE MATTING.
5. THE EDGES OF PARALLEL MATTING MUST BE STAPLED WITH APPROXIMATELY 6" OVERLAP DEPENDING ON MATTING TYPE.
6. CONSECUTIVE MATTING SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE - WITH THE UPPER MATTING PLACED OVER THE TOP OF THE LOWER MATTING) WITH AN APPROXIMATE 12" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE MATTING WIDTH.

EROSION MATTING FOR SLOPES

NTS

Date	Revision	By
4-4-11	REVISE LAYOUT	DLH
10-29-10	REVISE LAYOUT	DLH
8-26-10	GENERAL REVISIONS PER COURT APPEAL	DLH
9-11-09	REVISED PERVIOUS CONCRETE DETAILS	DLH
7-13-09	REVISED LIGHTING AND LANDSCAPING	DLH
1-9-08	REVISED DRIVEWAY LAYOUT	DLH
10-5-07	REVISED LAYOUT	DLH
8-7-07	REVISED LAYOUT	DLH

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

- ☐ Sketch/Concept
- ☒ Preliminary
- ☐ Final Local Review
- ☐ Act 250 Review
- ☐ Construction
- ☐ Record Drawing

NOT FOR CONSTRUCTION

Lands of
Tim Alles & Bill Ellis
Ethan Allen Parkway, Burlington, Vermont

A PLANNED RESIDENTIAL DEVELOPMENT
LANDSCAPING & EROSION DETAILS AND SPECIFICATIONS

LAMOUREUX & DICKINSON
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proj. no. 07028
survey Others
design DLH
drawn SEA
checked DJG
date 04/09/07
scale N.T.S.
sht. no. 9 of 11

WATER DISTRIBUTION SPECIFICATIONS

1.1 GENERAL:

This item shall consist of the labor, equipment, and material required for the complete construction of the watermains and services 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 six inches (6") and conform to current AWWA C600 or ANSI Specification A21.51. Push-on joint pipe shall be minimum thickness Class 51.

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-104, C-110, C-111, C-153 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").

Megalug 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. Valves 12" and smaller shall be bubble tight, zero leakage at 200 psi working pressure. 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 counter clockwise and be provided with a 2" square operating nut with arrow cast in metal to indicate direction of opening.

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. Busted valves shall be installed with a valve box. All gate valves shall be Mueller or equal.

1.5 VALVE BOXES:

Valve boxes are to be installed on all buried valves. The boxes shall be cast iron with a minimum five and one quarter inch (5 1/4") diameter and long enough to extend from the valve to the finished grade. The boxes shall enclose the operating nut and the stuffing box of the valve. Valve boxes shall not transfer loads onto the valve. Covers shall be close fitting and dirt-tight with the top of the cover flush with the top of the rim box. Covers shall be marked "water" with an arrow indicating the direction of opening. Valve boxes shall be three piece, screw type manufactured by Kennedy figure 121 or equal.

1.6 FIRE HYDRANTS:

All hydrants are to be 3-way, 5" minimum diameter and limited to the following makes:
Mueller Centurion figure A-423 or Kennedy Guardian K-81KA, and shall conform with AWWA C502.
Main Valve Opening: 5 1/4 inches
Nozzle Arrangement: Two 2 1/2 inch hose nozzles NST threads.
One 4 1/2 inch pumper nozzle NST threads.
Inlet Connection: 6 inch mechanical joint, MEGA-LUG and thrust block
Operating Nut: Standard 1" pentagon
Direction of Opening: Counterclockwise
Color: Enameled hydrant red
Depth of Bury: Hydrant shall be installed to the manufacturer's instructions with nozzles about 18"-21" 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 of six inch (6") Class 51 ductile iron pipe with a cement-lining; and the fire hydrant. MEGA-LUG retainer glands or approved equal shall be used.

1.8 WATER SERVICE CONNECTION:

A. GENERAL REQUIREMENTS

The Contractor shall install three-fourths inch to two inch (3/4") copper type K services as indicated on the Contract Drawings or as directed by the Engineer. Each service shall consist of a corporation, curbstop, copper tubing, and a curb box with service rod. Corporation shall be attached to the ductile iron pipe by means of a direct tap.

B. CORPORATIONS

Corporations shall be Waterworks Brass and manufactured in accordance with AWWA C800. Corporations shall have Mueller threads, adopted as AWWA Figure # 1, at the inlet and a compression-type fitting at the outlet. Both inlet and outlet shall be of the same size. Corporations shall be used for all taps larger than three-fourths inch (3/4") in diameter.

Corporations shall be directly tapped into ductile iron pipe larger than two inches (2") in diameter. In no other instance, except when a tapping sleeve and valve is used, shall a tap be made and a corporation installed without the use of a tapping saddle. Corporations shall be Mueller H-15009 or equal.

C. CURBSTOPS

Curbstops shall be a quarter-turn, plug-type valve with an "O" ring-type seal and shall be manufactured of Waterworks Brass in accordance with AWWA C800. The curbstop shall open left and have a positive stop. No curbstop shall have the ability to drain the service line. Both inlet and outlet of the curbstop shall have compression-type fittings. The tee head of the curb- stop shall have provision for the connection of a service rod. Curbstops shall be Mueller H-15200 or equal. (Mueller 300 Ball Valves are not acceptable.)

D. SERVICE LINES

Copper tubing shall by type "K", soft-temper, conforming to ASTM B88. The name or trademark of the manufacturer and type shall be stamped at regular intervals along the pipe.

All domestic services and domestic fire sprinkler systems that are connected to the public water system shall be protected according to their degree of hazard, with a backflow prevention assembly, and with an appropriate thermal expansion system.

E. CURB BOXES AND RODS

Curb boxes shall be of the sliding adjustable-type capable of adjusting from five feet to six feet (5' - 6'). The base of the box shall be arch-type so as to prevent the box from resting directly on the curbstop. The adjustable upper section shall be one inch (1") in diameter for use with three-fourths and one inch (3/4" and 1") curbstops. For larger curbstops, the upper section shall be one and one-fourths inches (1 1/4") in diameter.

Stationary rods affixed to the key of the curbstop shall be thirty inches (30") in length for three-fourths and one inch (3/4" and 1") curbstops and twenty-four inches (24") for larger curbstops. The cover of the box shall be by "Mueller" with the two- hole cover. The word "WATER" shall be inscribed on the cover of the box. Both the cover and the upper section of the box shall be able to be located with an aqua-type metal locator.

F. BUILDING SERVICE CONSTRUCTION METHODS

The Contractor shall make all necessary taps into the watermain and will install for each unit an approved brass corporation stop.

The Contractor shall also connect the type "K" copper service pipe to the flanged joint, which shall be connected to the brass type curbstop with inlet and outlet for the appropriate type "K" copper service pipe. Such curbstop shall be located not less than six feet (6') below the ground surface and shall be accessible from the surface through an approved valve box.

Unit Connections: The unit connections shall be made by installing three-fourths inch (3/4") type 'K' copper pipe or approved equal on the end of the approved brass curbstop and proceeding through the cellar wall to an approved three-forths inch (3/4") meter spacer with spuds furnished by the Municipality and installed by the Contractor in accordance with good plumbing practices.

1.9 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 his 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 cleaned of all foreign matter and debris prior to installation and shall be kept clean until the time 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 watertight 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 plugs, tees, and bends deflecting 11 1/4 degrees 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 watermains, 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 a 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.

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 compaction of the backfill material in order not to damage the pipe or structure. The backfill shall be brought up evenly. All watermains 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.

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 field painting. 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 the 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 (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. DISINFECTION:

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.

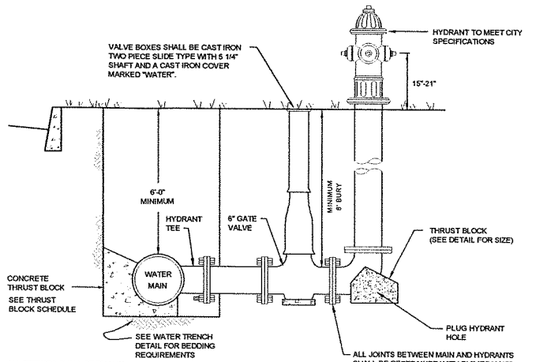
The Contractor shall furnish all labor, equipment, materials, and tools necessary to disinfect the pipe and appurtenances in accordance with the AWWA Standard for Disinfecting Watermains, C-651, with the exception of the tablet method.

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 where 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 two inch (2") 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 compaction of the six inch (6") lift 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.



ALL FITTINGS SHALL BE DI MJ IN CONFORMANCE WITH AWWA C-153 AND AWWA C-111

6" DIA. PIPE TO BE SAME MATERIAL AS WATER MAIN (CL52 DI)

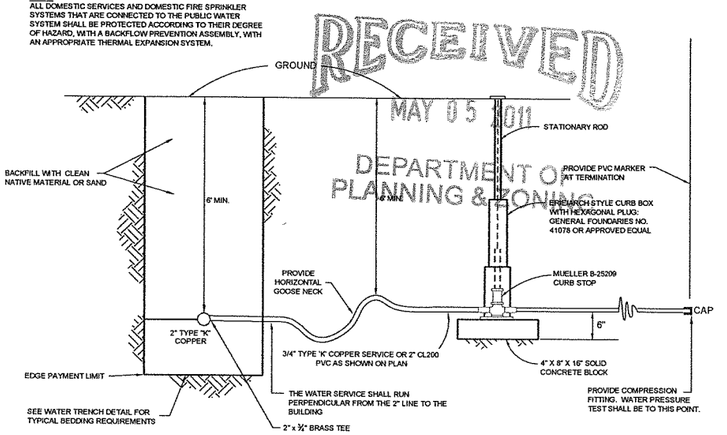
HYDRANT DETAIL

NTS

GATE VALVE NOTES

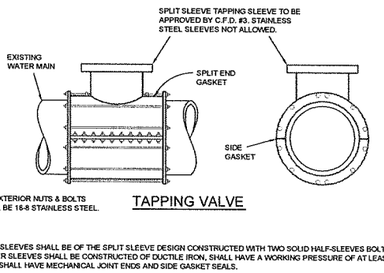
1. GATE VALVES SHALL CONFORM TO AWWA C500.
2. THE GATE VALVES SHALL OPEN LEFT AND BE DESIGNED FOR A WORKING PRESSURE OF 200 PSI
3. ALL GATE VALVES SHALL BE OF CAST OR DUCTILE IRON BODY, PARALLEL BRASS SEATS, NON-RISING STEM, INSIDE SCREW, RESILIENT WEDGE CONSTRUCTION WITH "O" RING STEM SEALS.
4. ALL VALVES SHALL BE EQUIPPED WITH A VALVE BOX FOR A MINIMUM OF 5' OF COVER MATERIAL.

NOTE:
ALL DOMESTIC SERVICES AND DOMESTIC FIRE SPRINKLER SYSTEMS THAT ARE CONNECTED TO THE PUBLIC WATER SYSTEM SHALL BE PROTECTED ACCORDING TO THEIR DEGREE OF HAZARD, WITH A BACKFLOW PREVENTION ASSEMBLY, WITH AN APPROPRIATE THERMAL EXPANSION SYSTEM.



WATER SERVICE DETAIL

NTS



ALL EXTERIOR NUTS & BOLTS SHALL BE 18-8 STAINLESS STEEL.

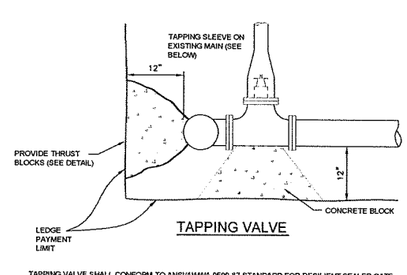
TAPPING VALVE

NOTES:

1. TAPPING SLEEVES SHALL BE OF THE SPLIT SLEEVE DESIGN CONSTRUCTED WITH TWO SOLID HALF-SLEEVES BOLTED TOGETHER SLEEVES SHALL BE CONSTRUCTED OF DUCTILE IRON, SHALL HAVE A WORKING PRESSURE OF AT LEAST 150 PSI, AND SHALL HAVE MECHANICAL JOINT ENDS AND SIDE GASKET SEALS.
2. ALL IRON BODY TAPPING SLEEVES SHALL BE PROVIDED WITH A 3/4" NPT TEST PLUG, OR OTHER PROVISIONS MUST BE MADE FOR AIR TESTING THE VALVE AND SLEEVE AT MAXIMUM WORKING PRESSURE, PRIOR TO TAPPING.
3. ALL BOLTS AND NUTS FOR FLANGED JOINTS OF TAPPING SLEEVES SHALL BE OF AISC TYPE 304 STAINLESS STEEL.
4. ALL EXTERIOR BOLTS AND NUTS FOR TAPPING SLEEVES OR VALVES SHALL BE STAINLESS STEEL.
5. ALL BOLTS AND NUTS SHALL BE SOUND, CLEAN, AND COATED WITH A RUST RESISTANT-LUBRICANT; THEIR SURFACES SHALL BE FREE OF OBJECTIONABLE PROTRUSIONS THAT WOULD INTERFERE WITH THEIR FIT IN THE MADE-UP MECHANICAL OR FLANGED JOINT.
6. ALL EXTERIOR EXPOSED SURFACES SHALL BE FUSION BOND, EPOXY COATED TO A MINIMUM OF 10 MIL. THICKNESS.
7. ALL BOLTS AND NUTS USED WITH ALL PIPE SLEEVES SHALL, UPON FINAL TIGHTENING AND TESTING, BE BRUSH COATED HEAVILY WITH BITUMASTIC COLD-APPLIED MATERIAL TO THOROUGHLY COVER ALL EXPOSED SURFACES OF THE BOLTS AND NUTS.

TAPPING VALVE and SLEEVE DETAIL

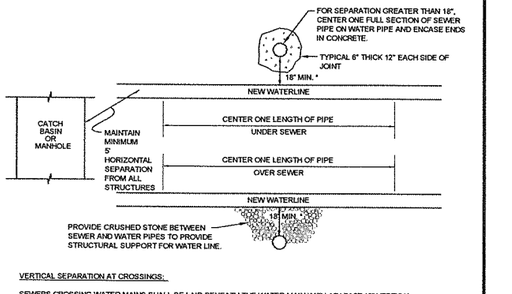
NTS



TAPPING VALVE

TAPPING VALVE SHALL CONFORM TO ANSI/AWWA 0509-87 STANDARD FOR RESILIENT-SEALED GATE VALVES FOR WATER AND SEWAGE SYSTEMS, EXCEPT AS MODIFIED HEREIN. VALVES SHALL OPEN COUNTERCLOCKWISE AND SHALL HAVE A MINIMUM WORKING PRESSURE OF 200 PSI. INLET FLANGES SHALL BE CLASS 125 CONFORMING TO ANSI SPECIFICATION B16.1 OR ANSI/ AWWA C110/A21.10, AND OUTLET CONNECTIONS SHALL BE STANDARDIZED MECHANICAL JOINTS.

BURIED TAPPING VALVES SHALL BE PROVIDED WITH A 2" SQUARE WRENCH NUT AND SHALL BE INSTALLED WITH A 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 IS GREATER THEN 6' 0", A VALVE STEM RISER SHALL BE PROVIDED AND INSTALLED SUCH THAT THE DEPTH FROM VALVE STEM RISER NUT TO GRADE IS FROM 4' 0" TO 6' 0" (MINIMUM LENGTH OF VALVE STEM RISER IS 2' 0"). VALVE STEM RISER SHALL BE OF HIGH STRENGTH STEEL AND OF WELDED CONSTRUCTION.



VERTICAL SEPARATION AT CROSSINGS:

SEWERS CROSSING WATER MAINS SHALL BE LAID BENEATH THE WATER MAIN WITH AT LEAST 18" VERTICAL CLEARANCE BETWEEN THE OUTSIDE OF THE SEWER AND THE OUTSIDE OF THE WATER MAIN. WHEN IT IS IMPOSSIBLE OR IMPRACTICAL TO MAINTAIN THE 18" VERTICAL SEPARATION OR WHERE THE SEWER MUST BE LAID ABOVE THE WATER MAIN, THE FOLLOWING CRITERIA APPLY:

(A) THE CROSSINGS 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;

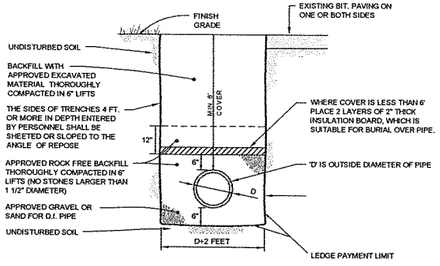
(B) THE SEWER PIPE MUST BE CONSTRUCTED TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 20 FEET EITHER SIDE OF THE CROSSING OR A TOTAL OF THREE PIPE LENGTHS, WHICHEVER IS GREATER;

(C) 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;

(D) WHERE A WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE WATER MAIN.

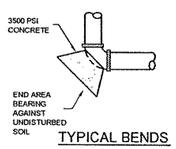
SEWER / WATER SEPARATION DETAIL FOR CROSSINGS

NTS

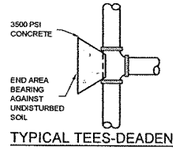


TYPICAL WATER TRENCH DETAIL

NTS



TYPICAL BENDS



TYPICAL TEES-DEADENDS-CAPS

NOTE: PLACE 4 mil POLYETHYLENE BETWEEN FITTING AND THRUST BLOCK

THRUST BLOCK END AREA
SOIL TYPE - SAND

FITTING \ SIZE	6"	8"	12"
11¼ & 22 ½	2	2	5
45°	2	4	9
90°	4	8	17
TEES OR END CAPS	3	6	12
VALVES	2	2	2

SQ FT BEARING AREA

BASED ON 100 PSI WORKING PRESSURE PLUS 100 PSI SURGE ALLOWANCE AND BEARING CAPACITY OF 2000 LBS/SQ FT

THRUST BLOCK DETAIL

NTS

4-4-11	REVISE LAYOUT	DLH
10-29-10	REVISE LAYOUT	DLH
8-26-10	GENERAL REVISIONS PER COURT APPEAL	DLH
9-11-09	REVISED PERVIOUS CONCRETE DETAILS	DLH
7-13-09	REVISED LIGHTING AND LANDSCAPING	DLH
1-9-08	REVISED DRIVEWAY LAYOUT	DLH
10-5-07	REVISED LAYOUT	DLH
8-7-07	REVISED LAYOUT	DLH
Date	Revision	By

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

- ☐ Sketch/Concept
- ☒ Preliminary
- ☐ Final Local Review
- ☐ Act 250 Review
- ☐ Construction
- ☐ Record Drawing

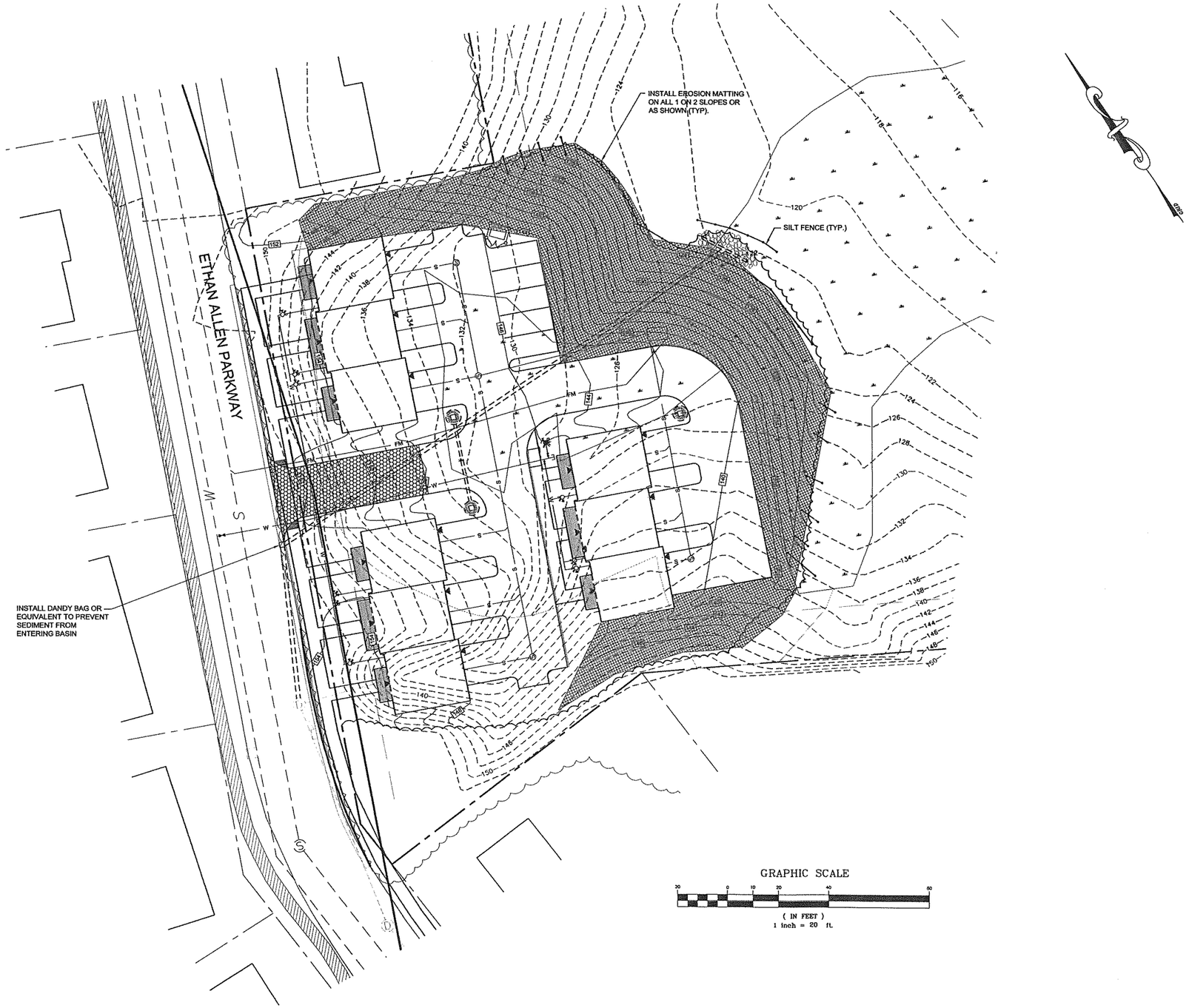
NOT FOR CONSTRUCTION

Lands of
Tim Alles & Bill Ellis
Ethan Allen Parkway, Burlington, Vermont

A PLANNED RESIDENTIAL DEVELOPMENT
WATER
DETAILS AND
SPECIFICATIONS

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

proj. no. 07028
survey Others
design DLH
drawn SEA
checked DJG
date 04/09/07
scale N.T.S.
sht. no. 10 of 11



LEGEND

- PROJECT BOUNDARY
- PROPERTY LINE
- SIDELINE OF EASEMENT
- BUILDING SETBACK
- N/F — NOW OR FORMERLY
- 110 — EXISTNG GROUND CONTOUR
- EXISTING WATER LINE, GATE VALVE & HYDRANT
- EXISTING SANITARY SEWER LINE & MANHOLE
- EXISTING STORM LINE AND CATCH BASIN
- NEW TREE LINE
- NEW STREET LIGHT
- NEW WATER LINE, GATE VALVE AND HYDRANT
- NEW SANITARY SEWER LINE AND MANHOLE
- NEW STORM LINE AND CATCH BASIN
- (9) — PROPOSED UNIT NUMBER

EPSC LEGEND

- STABILIZED CONSTRUCTION EXIT
- EROSION MATTING
- SILT FENCE
- STONE INET PROTECTION

Date	Revision	By
4-4-11	REVISE LAYOUT	DLH
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EROSION PREVENTION & SEDIMENT CONTROL PLAN

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14 Morse Drive
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Tel: 802-878-4450

proj. no.	07028
survey	Others
design	DLH
drawn	SEA
checked	DJG
date	04/09/07
scale	1" = 20'
sht. no.	11 of 11