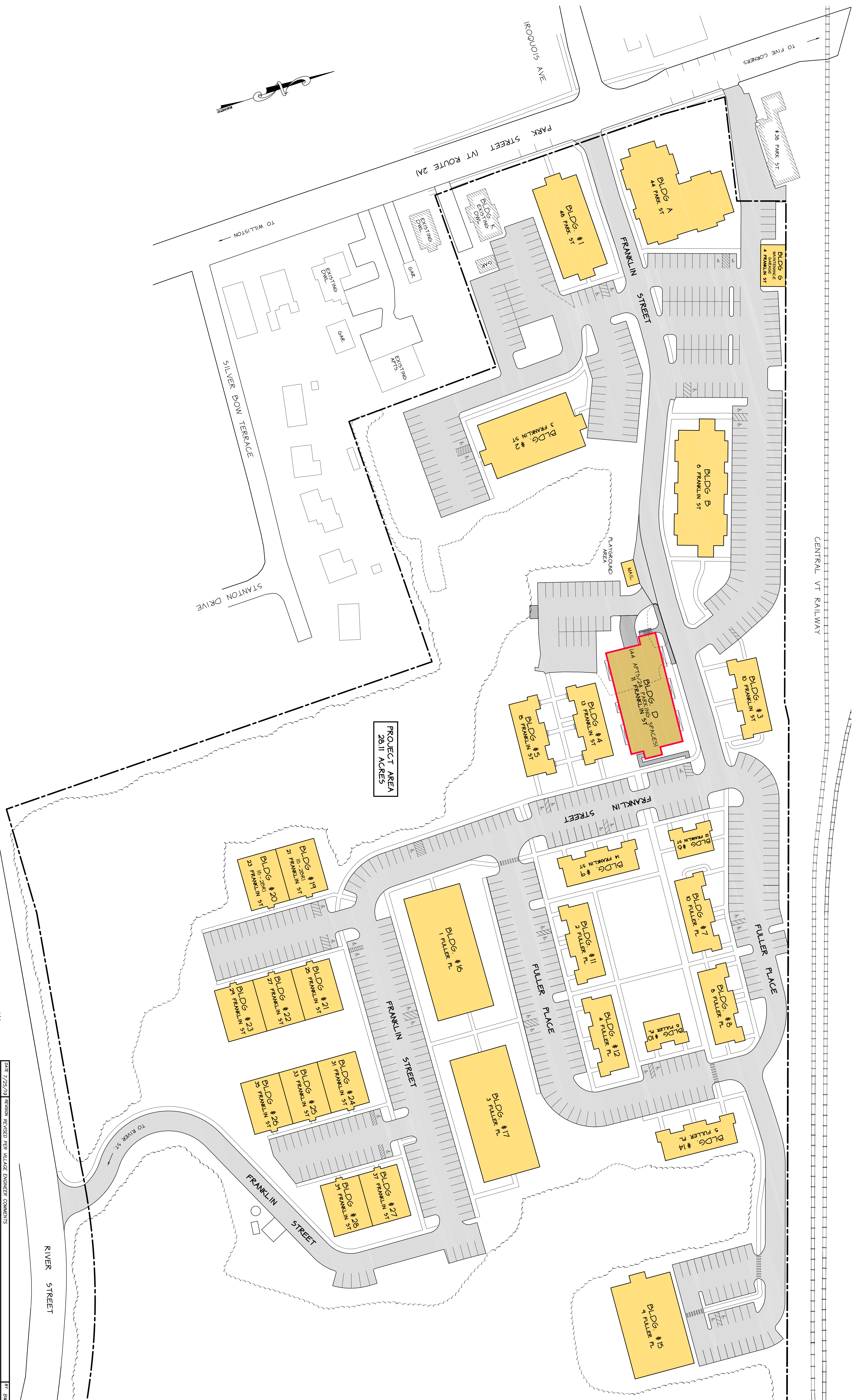


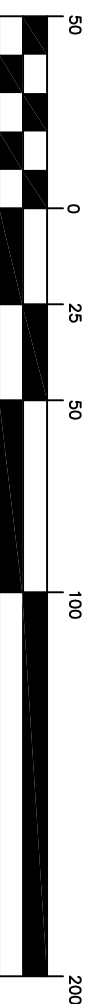
CENTRAL VT RAILWAY



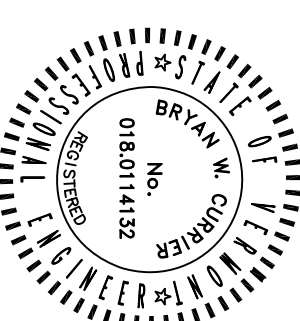
OWNER

222 FRANKLIN, INC.
44 PARK STREET
ESSEX JCT., VT 05452

GRAPHIC SCALE



(IN FEET)
1 inch = 50 ft

[illegible]

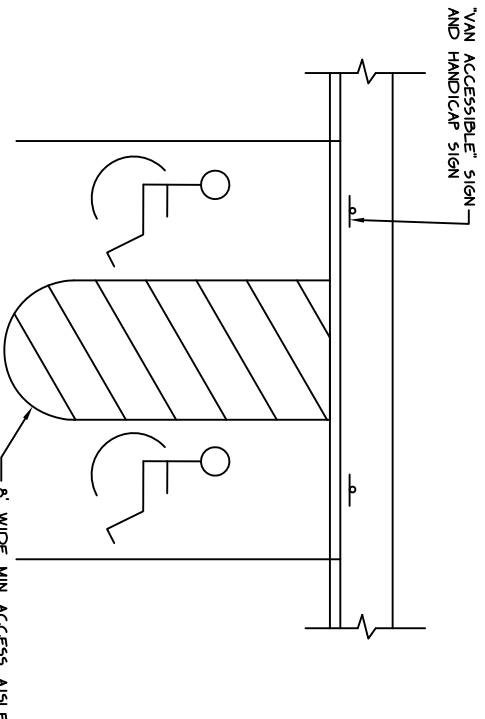
GENERAL CONSTRUCTION SPECIFICATIONS

- ALL WORK AND MATERIALS SHALL BE APPROVED BY AND IN ACCORDANCE WITH THE LATEST VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE VILLAGE OF ESSEX JUNCTION LAND DEVELOPMENT CODE, THE WRITTEN TECHNICAL SPECIFICATIONS, AND THESE PLANS.
- THE CONTRACTOR SHALL CONTACT ALL UTILITIES BEFORE EXCAVATION TO VERIFY THE LOCATION OF ANY UNDERGROUND LINES. THE CONTRACTOR SHALL NOTIFY TIGSAFEV AT 1-888-344-7233 AND THE VILLAGE OF ESSEX JUNCTION PUBLIC WORKS DEPARTMENT 48 HOURS PRIOR TO ANY EXCAVATION.
- UTILITIES INFORMATION SHOWN HEREON WERE OBTAINED FROM BEST AVAILABLE SOURCE, AND MAY OR MAY NOT BE EITHER ACCURATE OR COMPLETE. CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO EXCAVATION. CONTRACTOR SHALL CONNECT OR RECONNECT ALL UTILITIES TO THE NEAREST SOURCE THROUGH COORDINATION WITH UTILITY OWNER.
- 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 ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE AT HIS OWN EXPENSE FOR ENSURING THAT THE DUST FROM THE CONSTRUCTION ACTIVITIES DOES NOT PRESENT A HEALTH HAZARD, WHEN AND WHEN DEEMED NECESSARY BY THE ENGINEER. 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.
- 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.
- THE DESIGN ON THESE PLANS SHALL BE INSPECTED BY O'LEARY-BURKE CIVIL ASSOCIATES, ESSEX JUNCTION, VERMONT, TO ENSURE COMPLIANCE WITH THE PLANS AND ANY REQUIREMENTS OF THE VERMONT DEPARTMENT OF TRANSPORTATION AND LOCAL ORDINANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ANY TEMPORARY TRAFFIC OR WHEN DEEMED NECESSARY BY THE VILLAGE OF ESSEX JUNCTION OR STATE. TEMPORARY CONSTRUCTION SIGNS AND TRAFFIC CONTROL SIGNS SHALL BE ERRECTED BY THE CONTRACTOR IN ACCORDANCE WITH STATE AND THE VILLAGE OF ESSEX JUNCTION LAND DEVELOPMENT CODE.
- TO ENSURE COMPLIANCE WITH THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE VILLAGE OF ESSEX JUNCTION PUBLIC WORKS DEPARTMENT 48 HOURS IN ADVANCE OF STARTING ANY WORK, CUTTING THE PAVEMENT, BEGINNING THE INSTALLATION OF ANY UTILITIES, BRINGING IN ANY NEW GRAVEL FOR THE NEW DRIVE, PARKING, AND TRAIL, INSPECTION.
- THE HORIZONTAL AND VERTICAL SEPARATION FOR SEWER, WATER AND STORM LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE VILLAGE LAND DEVELOPMENT CODE.
- TOPSOIL SHALL BE STOCKPILED, SEEDDED, AND MULCHED UNTIL REUSED. SILT FENCES SHALL BE PLACED AND STAKED CONTINUOUSLY AROUND THE BOTTOM OF THE TOPSOIL PILES.
- HEALTHY EXISTING TREES ON AND ADJACENT TO THE SITE SHALL BE SAVED AND PROTECTED AS ORDERED BY THE ENGINEER.
- OPEN CUT AREAS SHALL BE MULCHED OUTSIDE OF ACTUAL WORK AREAS, AND BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED TO CONTINUE SHEET WASH AND RUNOFF TO THE IMMEDIATE OPEN AREA AS ORDERED BY THE ENGINEER. THE CONTRACTOR SHALL REFERENCE ALL STORMWATER BMP'S PROVIDED BY THE STATE OF VERMONT.
- AT COMPLETION OF GRADING, SLOPES, DITCHES, AND ALL DISTURBED AREAS SHALL BE SMOOTH AND FREE OF POCKETS WITH SUFFICIENT SLOPE TO ENSURE DRAINAGE.
- FINISH SLOPES, DITCHES AND DISTURBED AREAS SHALL RECEIVE A MINIMUM OF 4 INCHES OF TOPSOIL, AND BE FERTILIZED, SEEDDED, LIMED, AND MULCHED. TURF ESTABLISHMENT SHALL BE SPECIFICATIONS AND THE SPECIFICATIONS INCLUDED ON THESE PLANS.
- 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.
- DRAINAGE COURSES AND STREAMS SHALL BE CONTROLLED IN DISTURBED CONSTRUCTION AREAS BY THE FOLLOWING METHODS:
 - PRESERVING NATURAL VEGETATION WHENEVER POSSIBLE;
 - AVOIDING UNNECESSARY DISTURBANCE OF SOILS;
 - MINIMIZING ANY DISTURBANCE TO EXISTING STREAMS AND DITCHES;
 - SEEDING AND MULCHING DIRECTLY UPON COMPLETION OF CONSTRUCTION;
 - CONSTRUCTION OF EROSION CONTROL DEVICES AS DIRECTED BY THE ENGINEER.
- THE SILT FENCES, DITCHES, AND OTHER EROSION CONTROL DEVICES, SHALL BE INSPECTED, MAINTAINED AND REPAIRED BY THE CONTRACTOR AFTER EVERY RAINFALL OR AS ORDERED BY THE ENGINEER. THE MAINTENANCE OF THE EROSION CONTROL DEVICES WILL INCLUDE REMOVAL OF ANY ACCUMULATED SEDIMENTATION.
- PRIOR TO CONSTRUCTION, ALL MATERIALS SHALL BE APPROVED BY THE ENGINEER. ALL MATERIALS TO BE TAKEN OVER BY THE VILLAGE OF ESSEX JUNCTION SHALL BE APPROVED BY THE PUBLIC WORKS DEPARTMENT.
- ALL WORK SHALL CONFORM TO THE VILLAGE OF ESSEX JUNCTION LAND DEVELOPMENT CODE.

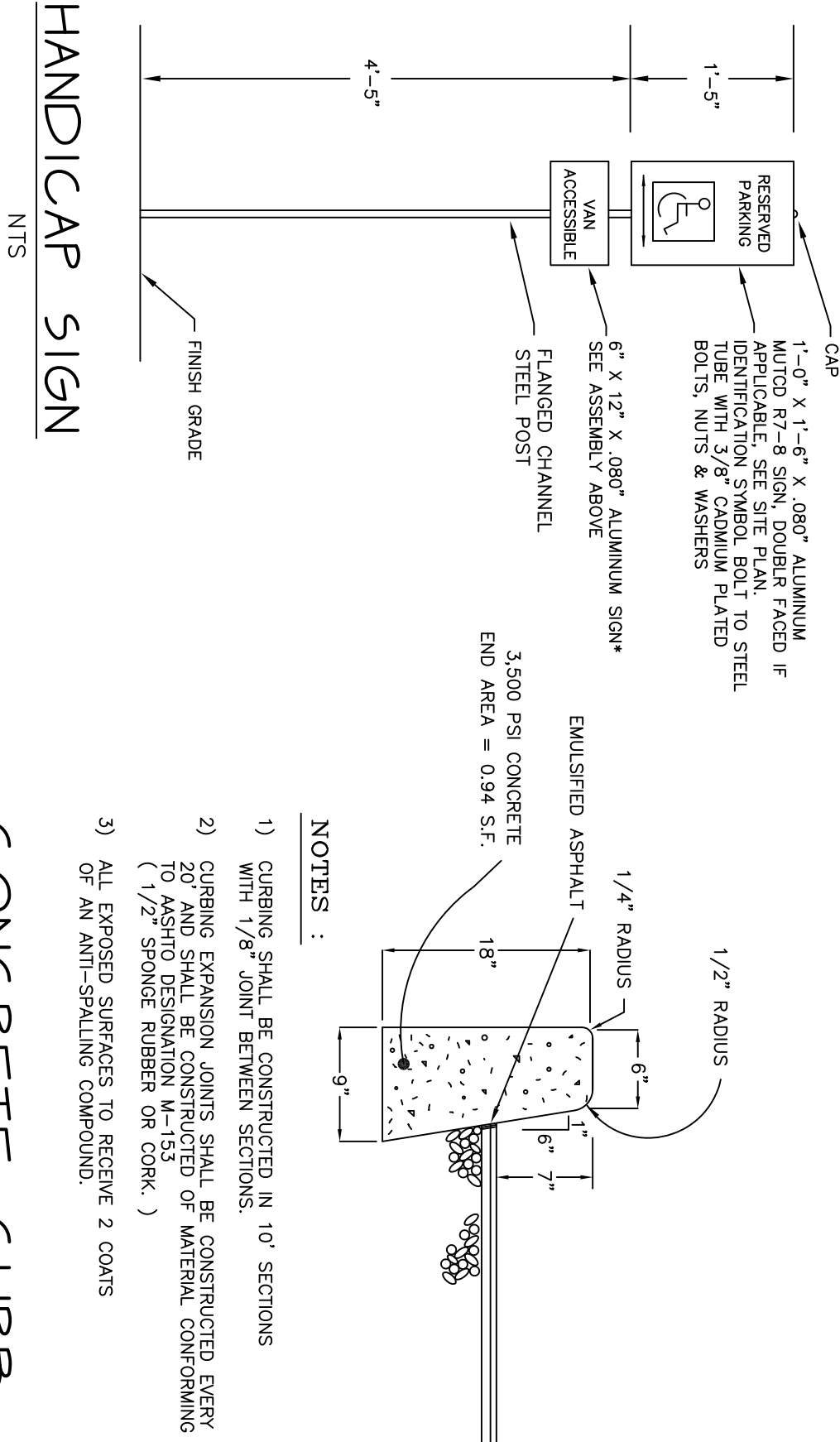
STUMP DISPOSAL SPECIFICATIONS

ALL SUITABLE TREES THAT MUST BE CUT WILL BE USED AS FUELWOOD OR TIMBER. THE STUMPS, BRUSH, AND EXCESS UNSUITABLE EARTH WILL BE DISPOSED OF AT THE LOCATION DESIGNATED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND OBTAINING A PERMIT TO OFF-SITE TO STATE-APPROVED LANDFILL. IF ON-SITE STUMP DISPOSAL IS IMPLEMENTED, THE FOLLOWING GUIDELINES SHALL BE MET:

- WHENEVER POSSIBLE, STUMP DISPOSAL SITES SHOULD BE LOCATED ON NEARLY LEVEL TO MODERATELY SLOPING LANDS (SLOPES LESS THAN 12%).
- DISPOSAL SITES WILL NOT BE LOCATED IN OR WITHIN 100 FEET OF FLOWING WATERCOURSES OR STREAMS OR IN ACTIVELY ERODING GULLIES.
- DISPOSAL SITES SHALL NOT BE LOCATED IN FLOODED OR FLOOD-PRONE LANDS, MARSHES, OR OTHER AQUIFER RECHARGE AREAS.
- STUMPS WILL BE PLACED ON THE SITE IN A SINGLE LIFT PRIOR TO BACKFILLING. WHEN ADDITIONAL STUMPS ARE TO BE DEPOSITED ON THE SAME SITE, EACH SUCCESSIVE LAYER OR LIFT OF STUMPS WILL BE BACKFILLED.
- STUMPS DEPOSITED IN DRAINAGEWAYS OR DEPRESSIONS SHALL BE BACKFILLED AND BERMED SO AS TO DIVERT OVERLAND FLOWS FROM THE DISPOSAL AREA.
- A MINIMUM OF TWO FEET (2') OF OVERBURDEN WILL BE PLACED OVER ALL DISPOSAL SITES.
- THE TWO FEET OF OVERBURDEN WILL BE COVERED WITH A MINIMUM OF FOUR INCHES (4") OF TOPSOIL, GRADED, SEEDDED, AND MULCHED IN ACCORDANCE WITH THE SPECIFICATIONS.

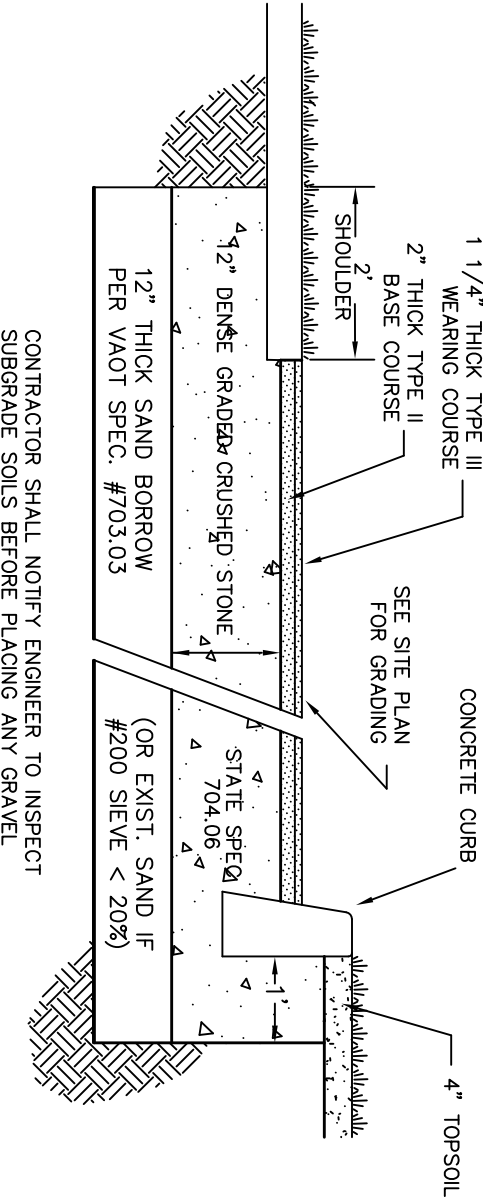


VAN-ACCESSIBLE PARKING



HANDICAP SIGN

CONCRETE CURB

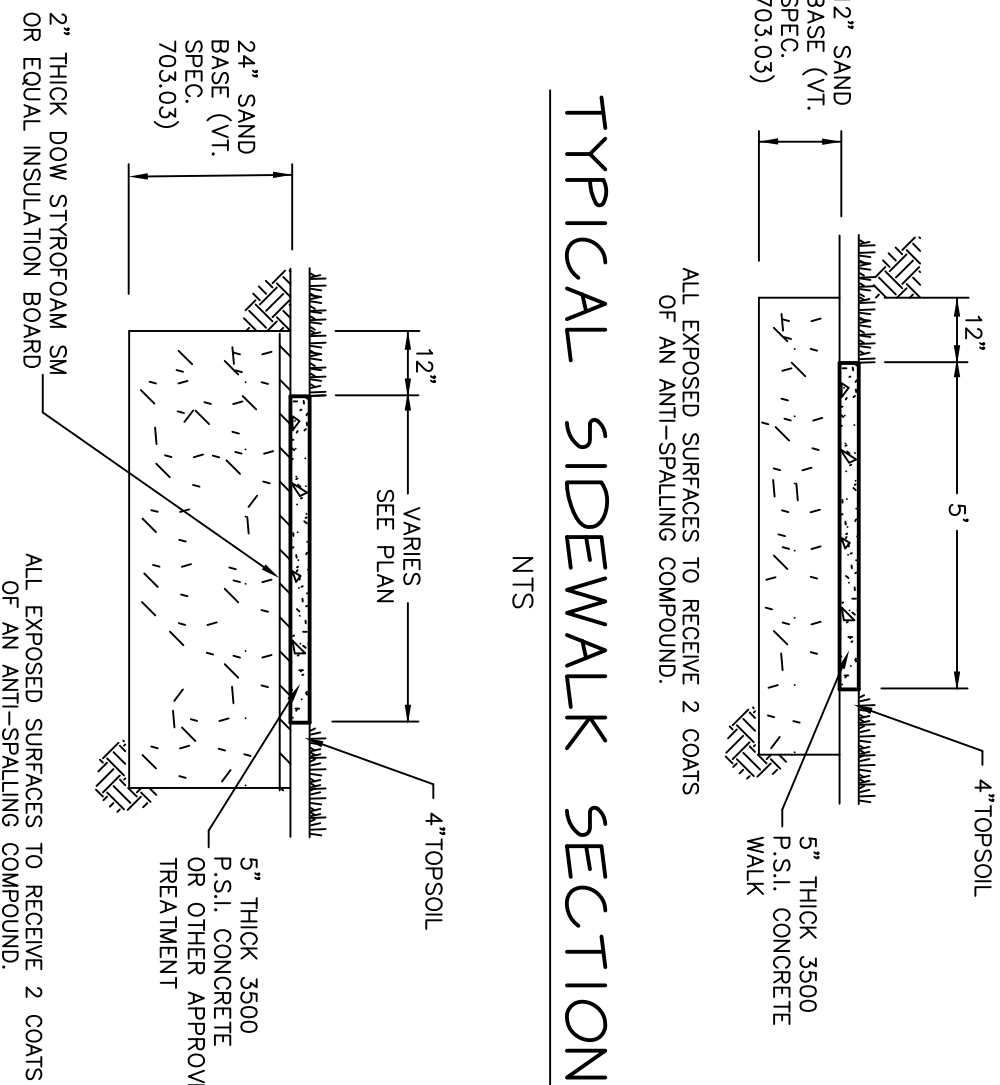


CAR PARKING/ROADWAY AREA DETAIL

NTS

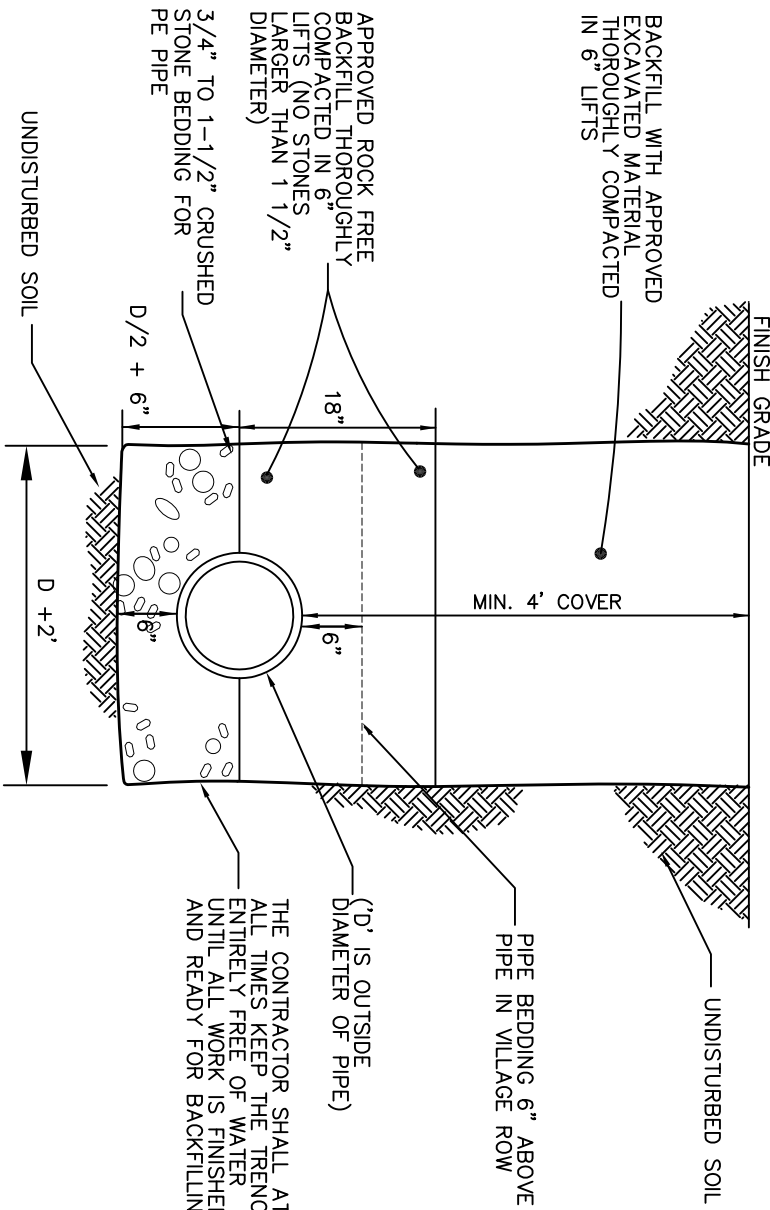
TYPICAL SIDEWALK SECTION

NTS



TYPICAL SIDEWALK SECTION ADJACENT TO BUILDING

NTS

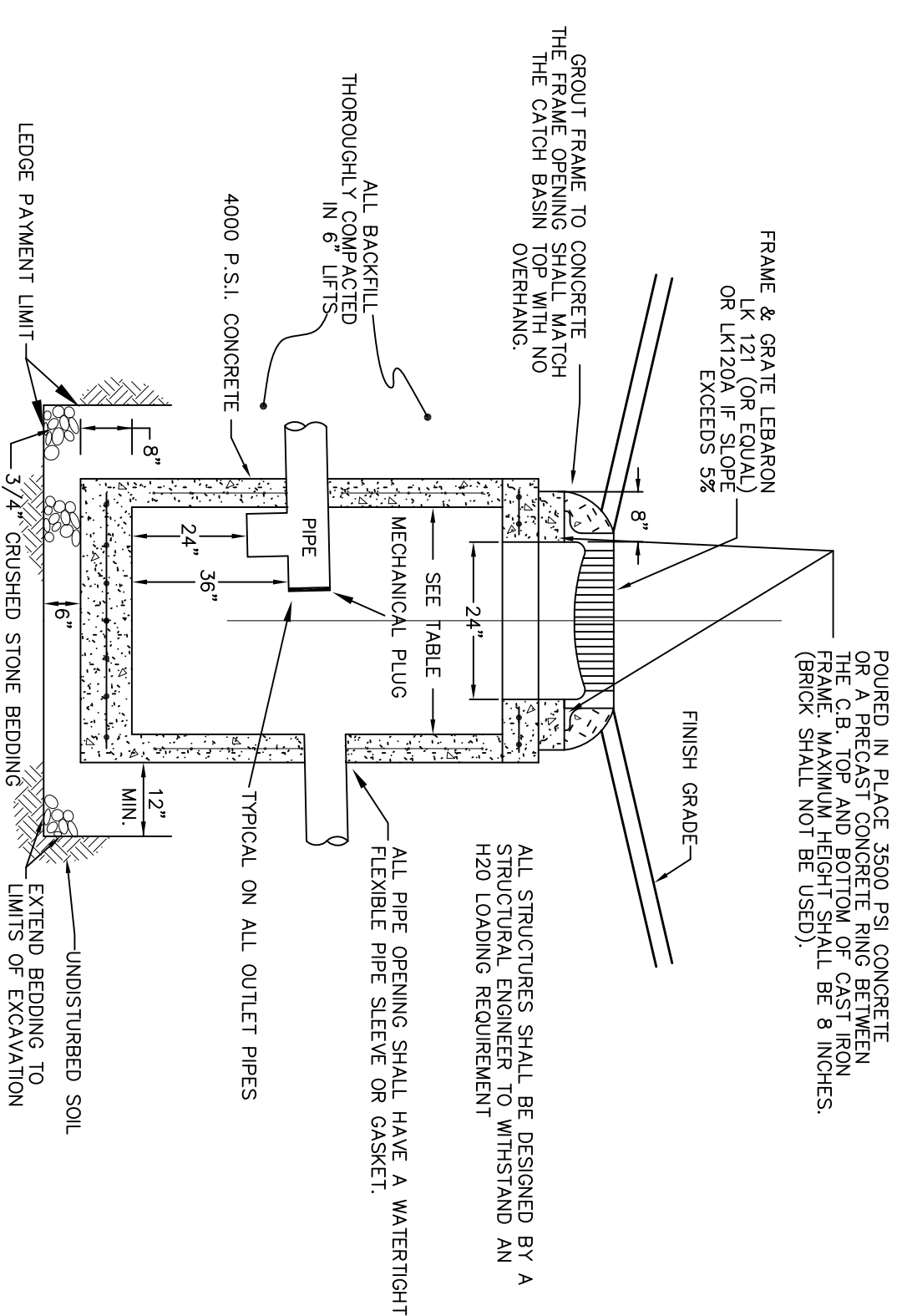
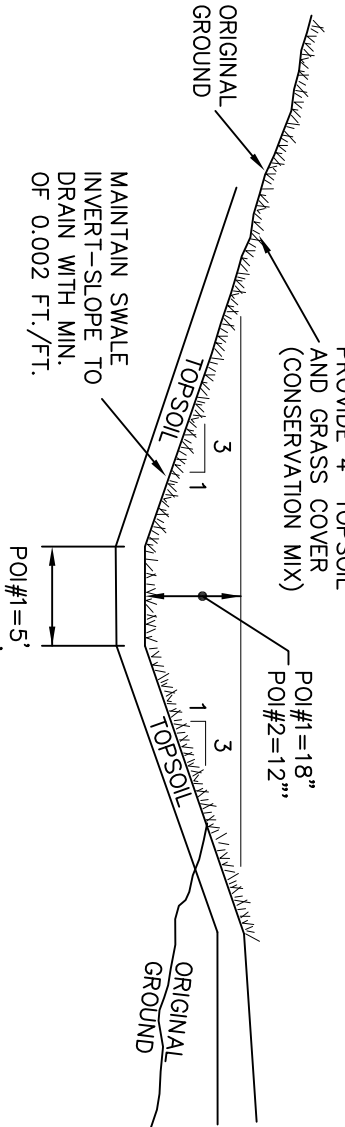


STORM DRAIN TRENCH

NTS

GRASSSED DRAINAGE SWALE

NTS



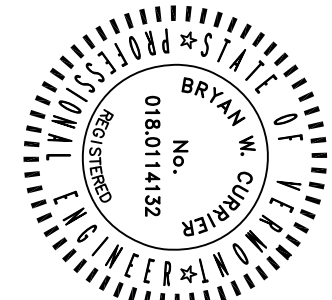
CATCH BASIN DIAMETER	LARGEST SIDEWALK CONCRETE COVER THICKNESS
48"	4"
60"	5"
72"	6"
84"	7"
96"	8"

CATCH BASINS SHALL BE SIZED SUCH THAT:

- AT ANY ELEVATION, A MINIMUM OF 60% OF THE CIRCUMFERENCE SHALL BE CONCRETE.
- THE MINIMUM DISTANCE, AS MEASURED ALONG THE CIRCUMFERENCE, BETWEEN TWO CONCRETE BASINS SHALL BE 12 FEET.
- THE BASINS SHALL ALSO MEET THE FOLLOWING MINIMUM REQUIREMENTS:

PRECAST CATCH BASIN

NTS



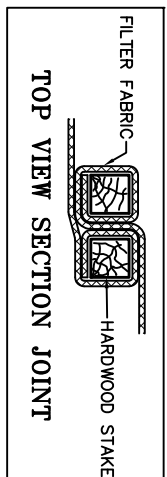
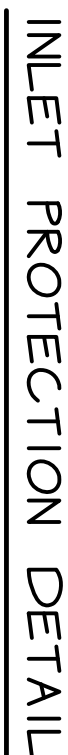
DATE 7/23/19	REVISION PER VILLAGE ENGINEER COMMENTS	DATE 8/7 BWC
SUBMIT	<input type="checkbox"/> RECORD DRAWING	<input type="checkbox"/> REVISIONARY
DESIGN	<input checked="" type="checkbox"/> FINAL	<input type="checkbox"/> SITE/CIVIL/CONCRETE
DRGA		
ENR		
CHECKED		
P.L.O		
SCALE		
NTS		
Riverside in the Village		DATE 8/7 BWC
Building D - Essex Junction, VT		DATE 8/7 BWC
Roadway & Stormwater Details		DATE 8/7 BWC
P.L.O		DATE 8/7 BWC
5		DATE 8/7 BWC

LEGEND

- | | |
|--|-------------------------|
| | PROJECT BOUNDARY |
| | EXISTING ROADWAY |
| | RAIL ROAD TRACK |
| | TREELINE |
| | EDGE OF PAVEMENT |
| | EXISTING CONTOURS |
| | FINISHED GRADE CONTOURS |
| | SILT FENCE |
| | CONSTRUCTION TAPE |

PROJECT BOUNDARY
EXISTING ROADWAY
RAIL ROAD TRACK
TEE LINE
EDGE OF PAVEMENT
EXISTING CONTOURS
FINISHED GRADE CONTOURS
SILT FENCE
CONSTRUCTION TARE

- PROVIDE GEOTEXTILE FABRIC (MIN. 140N OR EQUAL) INSIDE CATCH BASIN GRATE TO TRAP ANY ESCAPED SEDIMENT AS FABRIC TO BE CLEANED OR REPLACED AFTER ANY STORM AS NECESSARY. THE FABRIC IS TO WRAPPED AROUND THE CATCH BASIN GRATE AND SECURED SO THE FABRIC AND TRAPPED SEDIMENT WILL NOT FALL INTO BASIN ONCE FABRIC IS REMOVED.



TEMPORARY SILT FENCE
NTS

1. ALL DRAINAGE STRUCTURES MUST BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS.
2. ALL SILT FENCE OR OTHER PRACTICES REQUIRING EARTH DISTURBANCE SHALL BE IN PLACE PRIOR TO GROUND FREEZING.
3. WHEN MULCH IS REQUIRED FOR STABILIZATION DOUBLE THE STANDARD RATE SHALL BE APPLIED.
4. TO ENSURE COVER OF DISTURBED SOIL IN ADVANCE OF A MELT EVENT, AREAS OF DISTURBED SOIL MUST BE STABILIZED AT THE END OF EACH WORK DAY, WITH THE FOLLOWING EXCEPTIONS:
 - A. IF NO PRECIPITATION WITHIN 24 HOURS IS FORECAST AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS, DAILY STABILIZATION IS NOT NECESSARY.
 - B. DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS HOUSE FOUNDATIONS OR OPEN UTILITY TRENCHES.
 - C. REPAIRING/REBUILDING AND PAVING WHERE SITE IS IN A DEPRESSION AND STORMWATER IS TRAPPED.
5. PRIOR TO STABILIZATION SNOW AND ICE MUST BE REMOVED TO DEPTH OF NO LESS THAN 1 IN.
6. ALL DISTURBED AREAS MUST BE SEEDED AND MULCHED WITHIN 48 HOURS OF BEING BROUGHT TO FINISH GRADE.
7. DURING WINTER SEASON MULCH SHALL BE APPLIED AT DOUBLE THE RATE OR NETTING OR OTHER APPROACH SHALL BE USED TO PREVENT REMOVAL BY WIND.

SLN

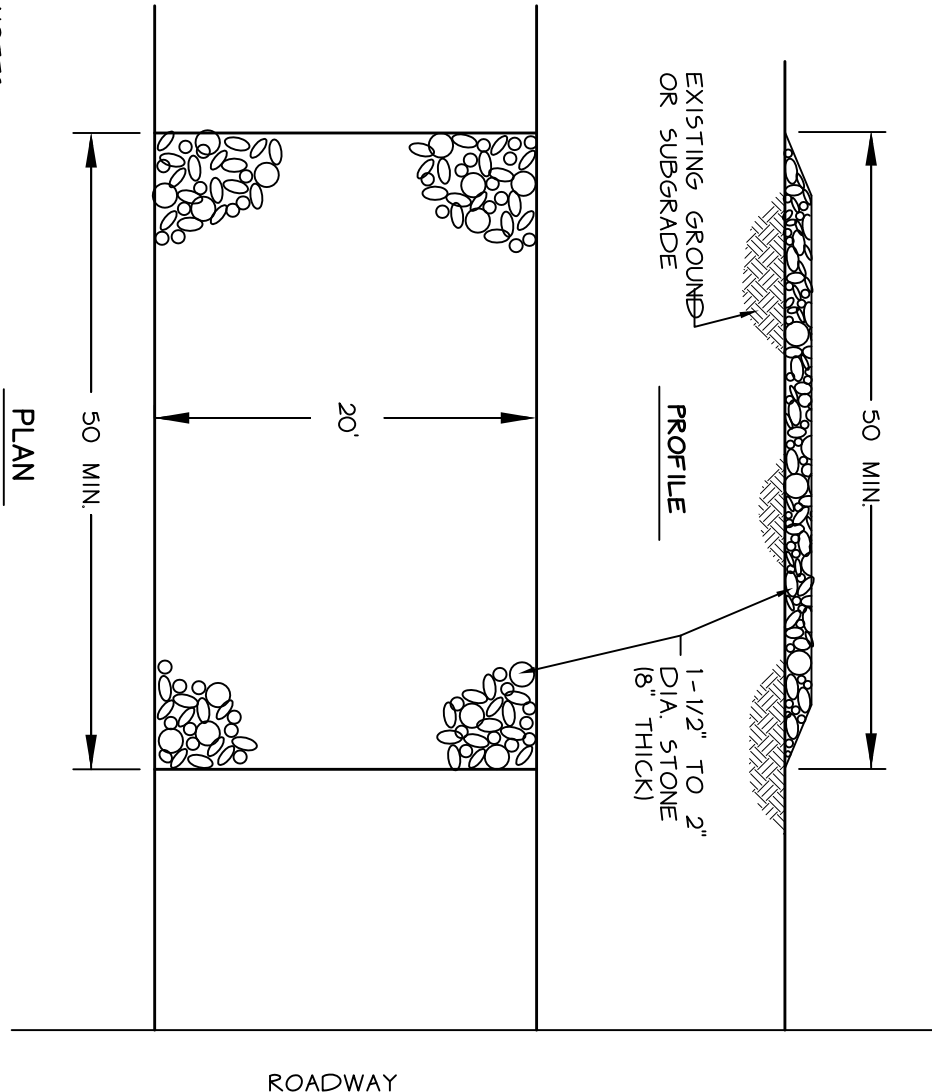
NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT THE COLLAPSE OF THE ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. CONDITIONS SHOULD BE TAKEN TO PREVENT THE ENTRANCE FROM BEING USED AS A DRAINAGE SOURCE AND REPAIR AND/OR CLEANSUP OF ANY MEASURES USED TO TREAT SEDIMENT.

2. ALL SEDIMENT TRACKED, DISCHARGED OR WASHED ONTO PUBLIC RIGHTS-OF-WAY SHALL BE REMOVED FROM THE SITE.

3. THE USE OF CALCIUM CHLORIDE OR WATER MAY BE NECESSARY TO CONTROL EROSION.

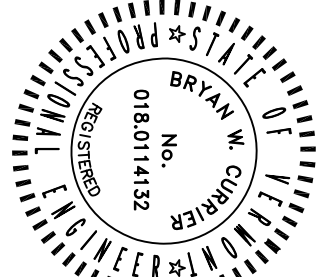
4. DURING THE SUMMER MONTHS, A TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND PUBLIC RIGHT-OF-WAY.



PLAN

(IN FEET)

1 inch = 20 ft.

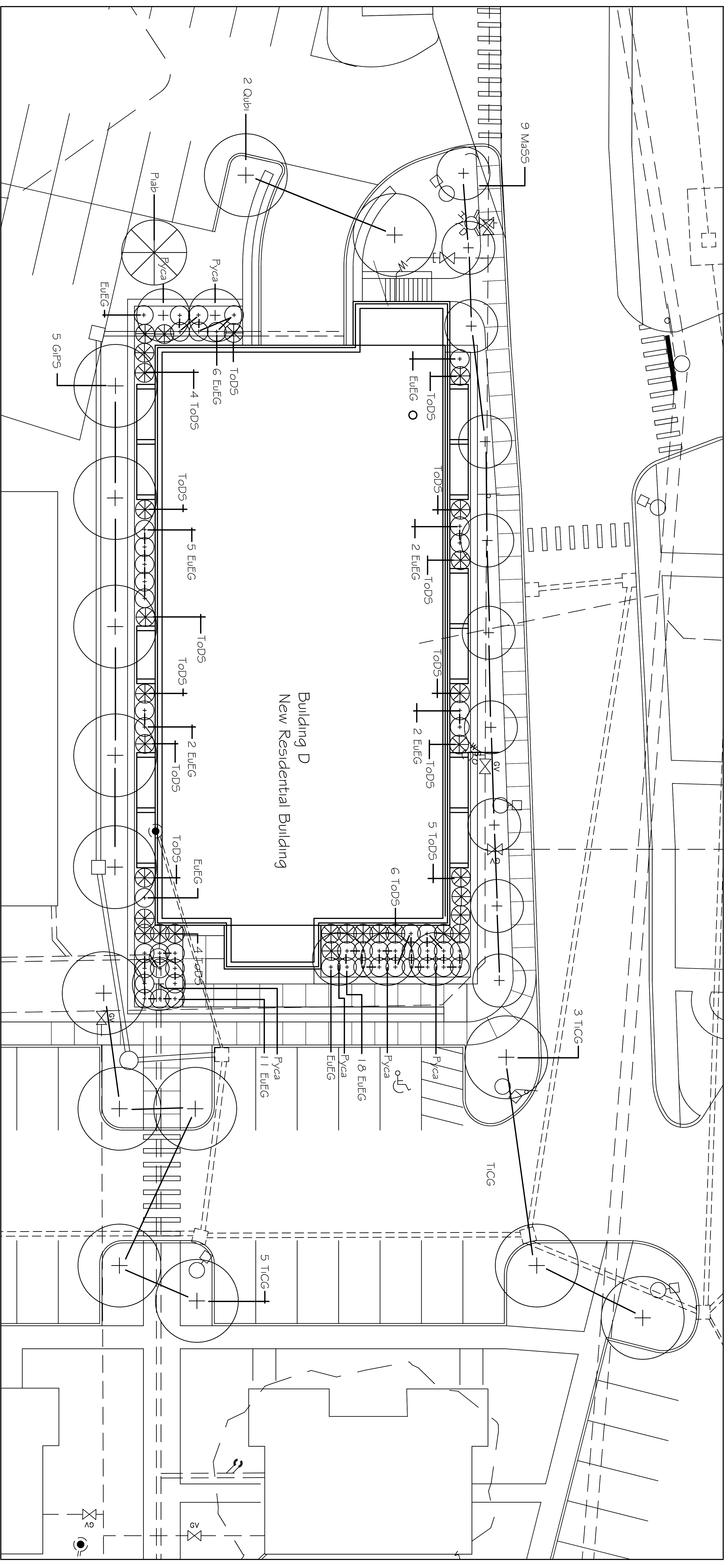


13 CORPORATE DRIVE
ESSEX JCT., VT
PHONE: 878-9990

Riverside in the Village
Building D - Essex Junction, VT
EPSC Plan

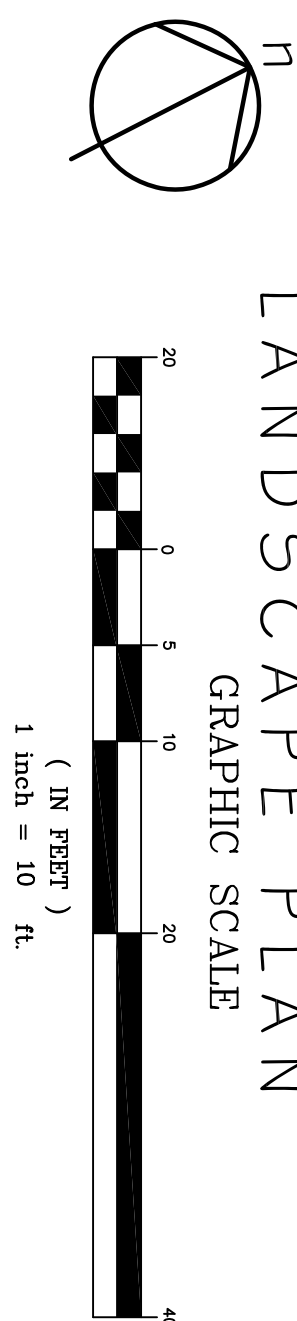
EPSC Plan

 ∞




LANDSCAPE PLAN

GRAPHIC SCALE



Plant List

Key	Quan	Scientific Name	Common Name	Size/Spec.
EEEG	49	Euonymus fortunei 'Emerald & Gold'	Emerald & Gold Wintercreeper	3 Gallon
GFPS	5	Ginkgo biloba 'Princeton Sentry'	Princeton Sentry Ginkgo	2-5-3 inch
MaBS	10	Malus Spring Snow	Spring Snow Crabapple	2-2-5 inch
Pab	1	Picea abies	Norway Spruce	8-10 ft.
Pyca	6	Pyrus calleryana 'Chanticleer'	Chanticleer Pear	2-5-3 inch
Quib	2	Quercus incolor	Swamp White Oak	2-5-3 inch
TCCG	7	Tilia cordata 'Greenspire'	Greenspire Little Leaf Linden	2-2-5 inch
TODS	30	Tilia occidentalis 'DeGroot's Spire'	DeGroot's Spire Aromatis	5-6 ft.



Michael Lawrence Associates
 10000 Highway 100, Suite 100
 Littleton, Colorado 80120
 Phone: 303-796-7272
 Fax: 303-796-7273

DATE _____
 BY _____
 REVISION _____

☐ RECORD ☐ DRAFTING ☐ PRELIMINARY
☒ FINAL ☐ SITE/PAVING/CONCRETE

O'LEARY-BURKE
CIVIL ASSOCIATES, P.C.

73 CORPORATE DRIVE
 SUITE 100
 E. ASHLAND, VT 05832
 PHONE: 877-9000
 FAX: 877-9001

Riverside in the Village
 Building D - Essex Junction, VT

Landscape Plan

1" = 16'
 SCALE

4/28/2014
 FILE
 BLOC-40
 PLAIN SHEET #
L-1



O'Leary-Burke Civil Associates, PLC

CIVIL ENGINEERING | REGULATORY AND PERMIT PREPARATION | LAND SURVEYING | CONSTRUCTION SERVICES | LAND USE PLANNING

July 1, 2019

Robin Pierce
Community Development Director
Village of Essex Junction
2 Lincoln Street

RE: Riverside in the Village
Site Plan Application – Building D / 11 Franklin St
Essex Junction, VT

Dear Robin:

We are writing on behalf of 222 Franklin, Inc. c/o Al Bartlett to apply for site plan review of a proposed 4 story apartment building with a 8,465 SF footprint in the residential planned unit development 'Riverside in the Village'. The proposed building will have 40 1-bedroom units and 4 studio units. The building will be very similar to Building B that was approved in 2016 and constructed in 2017-2018. The site is located at 6 Franklin Street, Essex Jct. within the 28.1 acre 'Riverside in the Village' development (Tax Map 21, Lots 46,47) in the Mixed Commercial Use (MCU) zoning district.

In order to make room for the new building the last of original NECI apartment buildings needs to be removed (Buildings B / 11 Franklin St). The original buildings are constructed on concrete slabs and have had a variety of maintenance issues in the past. Buildings D currently has 4 2-bedroom units. In addition, the northern half of an existing parking lot will also be removed as part of the project. The project will result in a net increase of 40 units in the development.

Water & Sewer

The proposed building will have access to municipal water and sewer connections. The proposed building will have 40 1-bedroom units and 4 studio units that will require 6,160 gpd of sewer allocation and 5,940 gpd of potable water allocation (140 gpd per unit for sewer and water allocation). The current development is permitted for 63,779 gpd of sewer allocation and 70,470 gpd of water allocation based on the state permit WW-4-0953-8.

The project will take credit for the apartment units being removed, which include 4 2-bedroom units. These units have 840 gpd of sewer allocation and 1,080 gpd of water allocation. The new building will need 5,320 gpd of additional sewer allocation and 5,080 gpd

of additional water allocation. This will increase the total allocation for the Riverside in the Village development to 69,099 gpd of sewer allocation and 75,550 gpd of water allocation. A revised state WW permit will be needed with additional Village allocation letters if approval is granted.

Traffic

Please refer to the traffic report completed by Roger Dickinson of Lamoureux & Dickinson Consulting Engineers dated June 27, 2019 for the proposed project. The new 44 unit apartment building will increase the estimated AM peak hour trips and PM peak hour trips by 12 trips and 15 trips respectively. This will increase the total existing AM peak hour trips in the development from 129 trips to 141 trips. It will also increase the total existing PM peak hour trips from 162 to 177 trips.

The traffic report summarizes the levels of service for the Park St / Iroquois Ave / Franklin St intersection in the full buildout scenario for the proposed project. The results are in the table below:

Approach & Lane Group	2020 PM Peak Hour (DHV)			
	Riverside Approved Full Buildout			
	LOS	Delay	V/C	Max Q
Iroquois Ave EB LT/TH/RT	D	49.3	0.68	162'
Franklin St WB LT/TH/RT	C	24.8	0.29	55'
Park St NB LT/TH/RT	B	17.3	0.71	871'
Park St SB LT/TH/RT	B	11.7	0.49	525'
Overall	B	18.0		

The traffic report concludes the intersection capacity analysis at the Park St / Iroquois Ave / Franklin St intersection will remain at an acceptable level of service with the proposed project.

Parking

The required parking space calculations for the 'Riverside in the Village' development are based on 1.5 spaces/1-bedroom unit, 2 spaces/2-bedroom unit, and 1 guest space/10 units. The proposed 44 unit building and the removal of a 4 2-bedroom building will bring the total required spaces of the development to 722 spaces. The development currently has 644 constructed parking spaces and is approved to add an additional 5 spaces along the entrance to River Street for a total of 649. The project proposes to eliminate 30 parking spaces adjacent to Building D / 11 Franklin St and add 24 underground spaces as part of the proposed Building D. The development will have a total of 643 spaces.

A parking count was completed in order to observe the current parking availability within the development. The count was performed on a weekday at 5:00 AM during a “no vacancy” period when the parking lots would be at maximum use. The count revealed a total of 487 parked cars when all 370 units in the development were occupied. The analysis shows 1.32 spaces per unit were necessary during the parking count. In the full buildout and “no vacancy” scenario (410 units), the development would use approximately 542 spaces based on the parking count. The development is being proposed at 643 spaces, 101 more spaces than the parking count indicated are necessary. In order to only add needed impervious surfaces within the development, the applicant is requesting a parking waiver to be granted.

Stormwater

The project will contribute 9,950 SF of redeveloped impervious and 150 SF of new impervious for a total of 10,100 SF (0.23 acres) of overall coverage. Riverside has had a number of stormwater amendments over the years, one of them being stormwater discharge permit #4125-INDS where the project used site balancing to bring a portion of grandfathered impervious up to current standards in exchange for the construction of 3 parking lot expansions and a new building at 44 Park Street. All of the approved elements in #4125-INDS were constructed with the exception of 1 of the parking expansions along the developments entrance on River Street. In addition, another one of the parking lot expansions was amended under #4125-INDS.A and designed with its own “disconnected” stormwater treatment system. Since 2 of the parking expansion no longer utilize the impervious coverage approved using the site balancing stormwater improvements, the proposed project will connect to the existing stormwater system along Franklin Street. In order to do so, the applicant has agreed to amend the #4125-INDS permit to reduce the approved, but not constructed, parking expansion along the developments entrance to River Street from 24 spaces to 5 spaces. In doing so, all of the impervious surfaces associated with the proposed project will be offset by the stormwater improvements constructed as part of the #4125-INDS authorization. The applicants engineer emailed the State Stormwater Program in June 2019 and the Stormwater Program agreed with this approach taken by the applicant and commented that the 2017 redevelopment water quality standard would be a reduction in treatment from the 2002 water quality standard. A confirmation email from the Stormwater Program and a more detailed description of the projects stormwater discharge permit history has been included as an attachment.

Please find the following information attached. If you have any question or need additional information, please let me know.

- 1) Residential Site Plan Review Fee: \$4,410
 - a. 44 units x 100 per unit= \$4,400
 - b. \$10 recording fee
- 2) Two (2) full size sets of plans
 - a. Two (2) full size and eight (8) 18"x24" copies will be provided once the application is deemed complete
- 3) Water and Sewer Allocation Calculations
- 4) Signed Planning and Zoning Application
- 5) Completed Site Plan Checklist
- 6) Required Parking Calculations
- 7) Landscaping Schedule/Budget – Michael Lawrence, ASLA
- 8) State Stormwater Program Email
- 9) Traffic Study – Roger Dickinson, PE

Sincerely,



Bryan Currier, PE

Development Application

SP# _____

Planned Development:	Minor _____	Minimal _____	Major _____
Conceptual _____	Preliminary _____	Final _____	
Site Plan: Minor _____	Major _____	Conceptual _____	Final <input checked="" type="checkbox"/>
Subdivision: Sketch _____	Preliminary _____	Final _____	Variance: _____ Conditional Use: _____

Property description (address) for application 11 Franklin Street, Essex Jct., VT 05452 (Building D)

General Information

Applicant 222 Franklin, Inc. Day Phone# _____Address 44 Park Street, Essex Jct., VT 05452

Owner of Record (attach affidavit if not applicant)

Name 222 Franklin, Inc. Day Phone# _____Address 44 Park Street, Essex Jct., VT 05452

Applicant's agents

Name Bryan Currier - O'Leary-Burke Civil Associates Day Phone# 802-878-9990Address 13 Corporate Drive, Essex Jct., VT 05452

Property information

Zoning District MCU Current Use Apartments Tax Map# 21 Lot# 46,47 Lot size sf 28.11

Other Information

Street frontage (public or private) 275 feet Proposed number of stories & height 4 storiesEstimated completion date Spring 2021 Landscape cost \$32,417 with parking garageProposed Parking Spaces 638 Required spaces 716

Lot coverage (include all structures and impervious surface)

Existing (sq ft.) 444,907 plus proposed (sq .ft.) 150 equals 445,057 total sq .ft. divided by 1,224,471 lot s.f. equals 36.4% percent lot coverage

The increase in the amount of existing impervious coverage is approx. 150 SF, as the project is mostly redevelopment.

Submit two (2) full size copies, a PDF copy, GIS and supportive documentation required by the Code and the appropriate completed checklist for initial review by Staff. After Staff determines the application is complete attach two (2) full size copies and eight (8) 18" x 24" copies of your proposal, forty-five (45) days prior to a scheduled meeting. Applications that are not complete cannot be accepted for review.

Briefly describe your proposal (attach separate sheet if necessary) 222 Franklin, Inc. is applying for site plan review of a proposed 4 story (with underground parking) apartment building (8,465 SF footprint) in the residential planned unit development 'Riverside in the Village'. In order to construct the proposed building, the existing apartment building at 11 Franklin St (Building D) will be removed. The proposed building will have 40 1-bedroom units and 4 studio units. The building will be very similar to Building B that was approved in 2016 and constructed in 2017-2018. The site is located at 6 Franklin Street, Essex Jct. within the 28.1 acre 'Riverside in the Village' development in the MCU zoning district.

Describe all waiver requests (if applicable) _____

Parking waiver as described in cover letter

I certify that the information on this application is true and correct. I agree to abide by all the rules and regulations as specified in the land development code and any conditions placed upon approval of this application. In accordance with the Essex Junction Trustees Policy for Funding Engineer Plan Review and Inspections, the applicant by signing this form agrees to pay for the actual cost of engineering plan review and construction inspections by the Village Engineer.

Applicant _____

Date _____

Land Owner (if different) _____

Date _____

Staff Action

Date received _____

Meeting date: _____

Commission /Board Action Approved _____ Denied _____ Date: _____

Other approvals /conditions _____

**** Fee based on s.f. of improved area per current Fee Schedule**

Staff Signature

Date

Fee Amount _____ **

Fee Verified _____

Riverside in the Village' Development Flows - Building D / 11 Franklin St

	Existing Use (WW-4-0953-7)	Proposed Use	Existing Water (gpd)	Proposed Water (gpd)	Existing Wastewater (gpd)	Proposed Wastewater (gpd)
Existing Building B	(40) 1 bedroom apts. 4 studio apts.	(40) 1 bedroom apts. 4 studio apts.	5,400 540	5,400 540	5,600 560	5,600 560
Proposed Building D	(4) 2 bedroom apts.	(40) 1 bedroom apts. 4 studio apts.	1,080	5,600 560	840	5,600 560
Existing Building K	4-Bedroom Single Family Home	4-Bedroom Single Family Home	540	540	210	210
Existing Building 1	24 1-Bedroom Units	24 1-Bedroom Units	3,240	3,240	3,360	3,360
Existing Building 2	36 1-Bedroom Units	36 1-Bedroom Units	4,860	4,860	5,040	5,040
Existing Building 3	(6) 2 bedroom apts.	(6) 2 bedroom apts.	1,620	1,620	1,260	1,260
Existing Building 4	(6) 2 bedroom apts.	(6) 2 bedroom apts.	1,620	1,620	1,260	1,260
Existing Building 5	(6) 2 bedroom apts.	(6) 2 bedroom apts.	1,620	1,620	1,260	1,260
Existing Building 6	(3) 2 bedroom apts.	(3) 2 bedroom apts.	810	810	630	630
Existing Building 7	(5) 2 bedroom & (2) 1 bedroom apts.	(5) 2 bedroom & (2) 1 bedroom apts.	1,350 270	1,350 270	1,050 280	1,050 280
Existing Building 8	(4) 2 bedroom & (4) 1 bedroom apts.	(4) 2 bedroom & (4) 1 bedroom apts.	1,080 540	1,080 540	840 560	840 560
Existing Building 9	(6) 2 bedroom apts.	(6) 2 bedroom apts.	1,620	1,620	1,260	1,260
Existing Building 10	(6) 2 bedroom apts.	(6) 2 bedroom apts.	1,620	1,620	1,260	1,260
Existing Building 11	(6) 2 bedroom apts.	(6) 2 bedroom apts.	1,620	1,620	1,260	1,260
Existing Building 12	(6) 2 bedroom apts.	(6) 2 bedroom apts.	1,620	1,620	1,260	1,260
Existing Building 14	(6) 2 bedroom apts.	(6) 2 bedroom apts.	1,620	1,620	1,260	1,260
Existing Building 15	(24) 1 bedroom apts.	(24) 1 bedroom apts.	3,240	3,240	3,360	3,360
Existing Building 16	(6) 2 bedroom apts.	(6) 2 bedroom apts.	1,620	1,620	1,260	1,260
Existing Building 16	(30) 1 bedroom apts.	(30) 1 bedroom apts.	4,050	4,050	4,200	4,200
Existing Building 17	(18) 2 bedroom apts.	(18) 2 bedroom apts.	4,860	4,860	3,780	3,780
Existing Building 17	(12) 1 bedroom apts.	(12) 1 bedroom apts.	1,620	1,620	1,680	1,680
Existing Building 19	(6) 2 bedroom units	(6) 2 bedroom units	1,620	1,620	1,260	1,260
Existing Building 20	(6) 2 bedroom units	(6) 2 bedroom units	1,620	1,620	1,260	1,260
Existing Building 21	(6) 2 bedroom units	(6) 2 bedroom units	1,620	1,620	1,260	1,260
Existing Building 22	(6) 2 bedroom units	(6) 2 bedroom units	1,620	1,620	1,260	1,260
Existing Building 23	(6) 2 bedroom units	(6) 2 bedroom units	1,620	1,620	1,260	1,260
Existing Building 24	(6) 2 bedroom units	(6) 2 bedroom units	1,620	1,620	1,260	1,260
Existing Building 25	(6) 2 bedroom units	(6) 2 bedroom units	1,620	1,620	1,260	1,260
Existing Building 26	(6) 2 bedroom units	(6) 2 bedroom units	1,620	1,620	1,260	1,260
Existing Building 27	(6) 2 bedroom units	(6) 2 bedroom units	1,620	1,620	1,260	1,260
Existing Building 28	(6) 2 bedroom units	(6) 2 bedroom units	1,620	1,620	1,260	1,260
40 Park Street	(48) 1 bedroom apts. 20 Employees Office/Storage	(48) 1 bedroom apts. 20 Employees Office/Storage	6,480 270	6,480 270	6,720 240	6,720 240
Infiltration					1,309	1,309
Total Development Allocation			70,470	75,550	63,779	69,099
Total Development Allocation Increase				5,080		5,320

Parking Calculations - Building D / 11 Franklin St
Riverside in the Village

Building	Units	Bedrooms	Proposed Use	Spaces	per Units	Calc. Required	Total Required
Building #1	24	1-Bedroom	Apartments	1.5	Spaces/Unit	36	39
					Guest (1 Space/10 Units)	2.4	
Building #2	36	1-Bedroom	Apartments	1.5	Spaces/Unit	54	58
					Guest (1 Space/10 Units)	3.6	
Buildings #3 - #14	6	1-Bedroom	Apartments	1.5	Spaces/Unit	9	132
	58	2-Bedroom	Apartments	2	Spaces/Unit	116	
					Guest (1 Space/10 Units)	6.4	
Building #15	24	1-Bedroom	Senior Housing	0.5	Spaces/Unit	12	12
Building #17	12	1-Bedroom	Apartments	1.5	Spaces/Unit	18	57
	18	2-Bedroom	Apartments	2	Spaces/Unit	36	
					Guest (1 Space/10 Units)	3.0	
Building #16	36	1-Bedroom	Apartments	1.5	Spaces/Unit	54	58
					Guest (1 Space/10 Units)	3.6	
Building #19 - #28	60	2-Bedroom	Condominiums	2	Spaces/Unit	120	126
					Guest (1 Space/10 Units)	6.0	
Building B	44	1-Bedroom (4 studio units)	New Apartments	1.5	Spaces/Unit	66	71
					Guest (1 Space/10 Units)	4.4	
Proposed Building D	44	1-Bedroom (4 studio units)	New Apartments	1.5	Spaces/Unit	66	71
					Guest (1 Space/10 Units)	4.4	
40 Park Street	48	1-Bedroom Units	Apartments	1.5	Spaces/Unit	72	98
		6000 SF	Office Space		Guest (1 Space/10 Units)	4.8	
				3.5	Spaces/1,000 SF	21	

Total Units 410

Total Required Spaces 722

Total Existing Spaces* 649

Total Proposed Spaces 643

*Includes 5 approved spaces that have not yet been constructed



Michael Lawrence Associates PLC

Landscape Architects / Site Planning Consultants

June 24, 2019

222 Franklin, Inc.
25 Pinecrest Drive
Essex Junction, VT 05452

Via email—bcurrier@olearyburke.com

Re: Cost Estimate Landscaping for Building D—Riverside in the Village, Essex Junction, Vermont

PLANT LIST AND ESTIMATE

<u>Key</u>	<u>Qu</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Size/Spec</u>	<u>Unit</u>	<u>Semi-Tot</u>
<u>EuEG</u>	<u>49</u>	<u><i>Euonymus fortune</i> 'Emerald & Gold'</u>	<u>E&G Wintercreeper</u>	<u>3 gal.</u>	<u>62.50</u>	<u>3,062</u>
<u>GiPS</u>	<u>5</u>	<u><i>Ginkgo biloba</i> 'Princeton Sentry'</u>	<u>Princeton Sentry Ginkgo</u>	<u>2.5-3 in.</u>	<u>925</u>	<u>4,625</u>
<u>MaSS</u>	<u>10</u>	<u><i>Malus</i> 'Spring Snow'</u>	<u>Spring Snow Crabapple</u>	<u>2-2.5 in.</u>	<u>542</u>	<u>5,420</u>
<u>Piab</u>	<u>1</u>	<u><i>Picea abies</i></u>	<u>White Spruce</u>	<u>8-10 ft.</u>	<u>725</u>	<u>725</u>
<u>Pyca</u>	<u>6</u>	<u><i>Pyrus calleryana</i> 'Chanticleer'</u>	<u>Chanticleer Pear</u>	<u>2.5-3 in.</u>	<u>660</u>	<u>3,960</u>
<u>Qubi</u>	<u>2</u>	<u><i>Quercus bicolor</i></u>	<u>Swamp White Oak</u>	<u>2.5-3 in.</u>	<u>775</u>	<u>1,550</u>
<u>TiCG</u>	<u>7</u>	<u><i>Tilia cordata</i> 'Greenspire'</u>	<u>Greenspire Linden</u>	<u>2-2.5 in.</u>	<u>625</u>	<u>4,375</u>
<u>ToDS</u>	<u>30</u>	<u><i>Thuja occidentalis</i> 'DeGroot's Spire'</u>	<u>DeGroot's Spire Arborvitae</u>	<u>5-6 ft.</u>	<u>290</u>	<u>8,700</u>

TOTAL

\$32,417

MEMBER
American Society
of Landscape Architects

Eight Linden Lane Essex Junction, Vermont, 05452
PH/FAX 802-878-2778 C 802-578-9591
mike@mclasla.com

Bryan Currier

From: Wilson, William <William.Wilson@vermont.gov>
Sent: Thursday, June 13, 2019 3:23 PM
To: Bryan Currier
Subject: RE: Building D - Riverside in the Village (4125-INDS.A)

As long as the expansion area would fall under the area permitted in excess, it could move forward with a plan amendment and not a change to the treatment system. This wouldn't work if for example a pond was oversized but the additional impervious runoff was not previously permitted. Since the redevelopment area already meets the 2002 water quality standard, the 2017 redevelopment standard would be a reduction in treatment so the existing permitted system would stay in place for this area as well.

Let me know if you have any questions or clarification is needed.

Thanks,
Winn

Winn Wilson, *Environmental Analyst*
Vermont DEC- Stormwater Program
P: 802-490-8019 **Email :** william.wilson@vermont.gov
New Website: <http://dec.vermont.gov/watershed/stormwater>

From: Bryan Currier <bcurrier@olearyburke.com>
Sent: Thursday, June 13, 2019 1:58 PM
To: Wilson, William <William.Wilson@vermont.gov>
Subject: RE: Building D - Riverside in the Village (4125-INDS.A)

Hey Winn

Nice presentation yesterday!

I forwarded this email to Karl to see if it made sense to him and he had the same question as you. We think the 700 SF is already incorporated into the INDS.A.

Thanks
Bryan

From: Wilson, William [<mailto:William.Wilson@vermont.gov>]
Sent: Thursday, June 13, 2019 1:55 PM
To: Bryan Currier
Subject: RE: Building D - Riverside in the Village (4125-INDS.A)

Bryan,

I read through your e-mail and looked through the application material, it's unclear to me if the 700 sf would need to be added as new impervious or if there is existing "room" for this expansion due to what is permitted, site balanced and not built. In other words, change in layout aside, could this 700 sf expansion have been built under the current INDS.A permitted total, or would it need to be added as an increase in total permitted impervious area?

Thanks,
Winn

Winn Wilson, Environmental Analyst
Vermont DEC- Stormwater Program
P: 802-490-8019 Email : william.wilson@vermont.gov
New Website: <http://dec.vermont.gov/watershed/stormwater>

From: Bryan Currier <bcurrier@olearyburke.com>
Sent: Thursday, June 6, 2019 3:33 PM
To: Wilson, William <William.Wilson@vermont.gov>
Subject: Building D - Riverside in the Village (4125-INDS.A)

Good Afternoon Winn

I am working on a project in the Riverside in the Village development in Essex Junction. The project includes the demolition of Building D and part of the adjacent parking lot to construct a new apartment building. I have attached an existing conditions SH 1 – Overall Site Plan 5-30-18 and a Site Plan SKETCH of the proposed layout. The project would contribute about 9,200 SF of redeveloped impervious and 700 SF of new impervious for a total of 9,900 SF (0.23 acres) of impervious. Please bear with me as I go through some background info as I get to the point in the end... ☺

Riverside has had a number of stormwater amendments over the years, one of them being the original 4125-INDS application where we used site balancing to bring a section of grandfathered impervious up to current standards in exchange for the construction of 3 parking lots around the development and a new building at the corner of Park St and Franklin St (44 Park Street). These improvements allowed the new impervious to be connected to the “old” stormwater system approved under the original 4125-9010.R. Please see the attached Sheet 11 – Additional Parking Plan - REV for the location of the 3 parking lots. Only the building and parking expansion II & III have been constructed to date, while all of the stormwater improvements have been made.

The last application we had was 4125-INDS.A, submitted in May 2017. In this application we changed parking expansion III, originally approved under 4125-INDS using site balancing, to being treated by its own grassed channel/detention basin stormwater practice. This is shown on the approved (and attached) SH ST2 – Proposed Storm Conditions 7-11-17 as POI #7. By disconnecting parking expansion III, we requested the 0.16 acres (6,950 SF) of impervious associated with the parking lot expansion to be put into a “bank” and used on another future project since all of the storm site balancing improvements had been made. I attached our cover letter (Attachment 1 – Narrative) from the 4125-INDS.A application detailing this further under the Project Description section.

As stated above, parking expansion I was approved under 4125-INDS, but has not been constructed. The location of the parking spaces isn't ideal because to construct the spaces a fair amount of site work needs to happen including; relocating a storm pond, re-routing catch basins, relocating light poles, see attached Sheet 11 – Additional Parking Plan – REV. Instead of constructing the parking expansion as approved, the applicant would like to eliminate all of the parking spaces except for 6 spaces in between the existing pond and pump station. This would add another 2,950 SF to the “bank” of impervious area approved through site balancing as part of 4125-INDS, but not constructed.

The “bank” of future impervious would now total 9,900 SF; with the disconnect of parking expansion II (6,950 SF) and the reduction in parking expansion I (2,950 SF). We would like to proposed the Building D project (9,900 SF impervious) to be covered under 4125-INDS.A through an amendment by making a withdrawal from the impervious area in the “bank”. We would be proposing to connect the new Building D and associated drive/sidewalk to the existing stormwater system shown on SH ST2 – Proposed Storm Conditions 7-11-17 as POI#2, without additional treatment (the existing building is connected to POI #2). Again, this is due to the site balancing improvements already installed as part of the 4125-INDS approval.

Does this seem like an approach that could be approved by the Stormwater Program? As you know, the stormwater design is being reviewed more and more at the local level and I wanted to provide an email response from the Stormwater Program in support of the proposed stormwater design. Once the local approval is obtained, we will file an amendment application to validate the proposed revisions as I described above, and add the 700 SF of new impervious to the project._

Obviously there is a lot of history for this project, so if you have any questions or need additional information please let me know.

Thanks,

Bryan Currier, PE
O'Leary-Burke Civil Associates
13 Corporate Drive | Essex Jct., VT 05452
p: (802)878-9990
bcurrier@olearyburke.com

CHECKLIST – SITE PLAN/CONDITIONAL USE APPLICATION

The Land Development Code specifies procedures for Minor and Major Site Plan Amendments as well as new site plans. Please schedule an appointment with Staff to determine if you meet the amendment criteria prior to preparing your application. Staff will be able to determine if your proposal qualifies as an amendment. In addition, Staff can then advise you regarding the number of site plan drawings that will need to be submitted for review purposes. Generally, a new site plan and a major amendment will require a submittal of three (3) full size copies and eight (8) 18" x 24" copies of the proposed site plan. Please call 878-6950 if you have any questions.

Applicant Staff

- | | | |
|-------------------------------------|-------|---|
| <input checked="" type="checkbox"/> | _____ | Site plan, drawn to scale including a north arrow, certified by licensed Vermont professional. |
| <input checked="" type="checkbox"/> | _____ | Vicinity map. Specify adjoining land use/zoning. |
| <input checked="" type="checkbox"/> | _____ | Name, address, phone # of developer and all professionals working on the project |
| <input checked="" type="checkbox"/> | _____ | Survey prepared by certified land surveyor showing existing or proposed rights of way and easements. |
| <input checked="" type="checkbox"/> | _____ | Total land area and location. Size, height, and number of stories of existing and proposed structures and distance to property lines |
| <input checked="" type="checkbox"/> | _____ | Location and dimensions of existing and proposed easements, streets, driveways and infrastructure. |
| <input checked="" type="checkbox"/> | _____ | Description of proposed use and floor areas of all structures, and parking and loading calculations. All parking spaces shall be clearly indicated on the plan (See section 703). |
| <input checked="" type="checkbox"/> | _____ | Location and specifications for a bike path. |
| <input checked="" type="checkbox"/> | _____ | Topographic map with final ground contours at 2' intervals as if staff determined that such information is necessary. |
| <input checked="" type="checkbox"/> | _____ | Existing natural features including wetlands, rock outcroppings, excessive slope and tree groupings. |
| <input checked="" type="checkbox"/> | _____ | Professional landscape plan including the type, size, quantify, and location of plant materials, existing and proposed (see Sections 719 and 708). |
| <input checked="" type="checkbox"/> | _____ | Lighting plan with specifications (See section 704). |
| <input checked="" type="checkbox"/> | _____ | Impact analysis including traffic generation and impact on public and/or private infrastructure. |

- ☒ _____ Engineering design standards for all improvements. Include a description of the methodology proposed to control drainage, and construction plans as applicable.
- ☒ _____ Traffic study as deemed necessary by the Commission (or staff)
- ☒ _____ Written request for waivers of any requirements of this Code.
- ☒ _____ Location of proposed water/sewer service connections.
- ☒ _____ Proposed development schedule and phasing request.
- ☒ _____ Location and type of proposed screening or buffering.
- ☒ _____ Elevation of existing/proposed structures and proposed change to height of existing structures.
- ☒ _____ Location of fire lanes.
- ☒ _____ Percent of lot coverage of all structures and impervious surfaces.

This checklist is designed to assist the applicant with the preparation of the Site Plan. The applicant is solely responsible for meeting all of the requirements of the Land Development Code. Please contact staff at 878-6950 if you have any questions.

Building D - Riverside in the Village

Franklin Street, Essex Junction, VT

Traffic Impact Assessment

June 27, 2019

Project Introduction

This Project proposes to redevelop a portion of the Riverside in the Village development by demolishing existing Building D containing 4 apartment units, and constructing a new 44 unit apartment building (new Building D). The net increase resulting from this Project will be 40 new apartment units.

The primary point of access to the Project is the Park Street, Iroquois Avenue and Franklin Street signalized intersection. The Riverside in the Village development also has a second access through the 38 Park St parcel to the north and a third access onto Robinson Parkway, but those are not expected to be utilized to a significant degree by the new apartment units. Park Street is a Class 1 town highway (VT Route 2A) within the Village limits. Off-street parking will be provided within the Project.

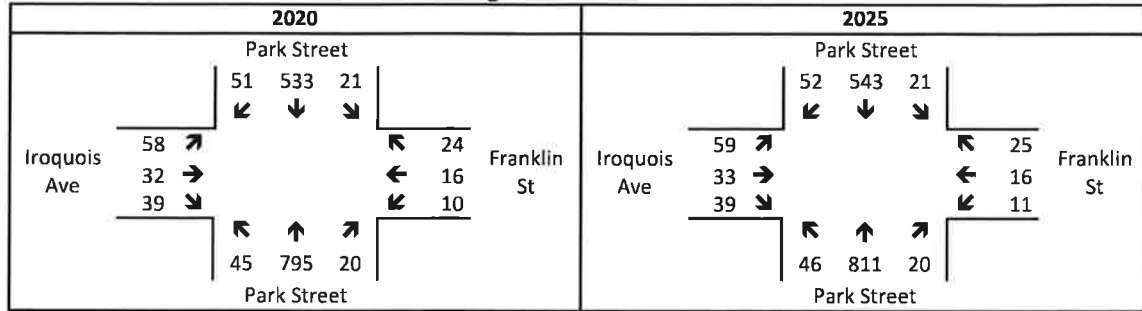
Background Traffic

Background traffic volumes were obtained from a weekday afternoon peak period turning movement count that was performed by this office at the Park Street/Iroquois Avenue/Franklin Street intersection from 4:00 - 6:00 pm on June 26, 2019. The peak one-hour period occurred between 4:45-5:45 pm. A copy of this count is enclosed as **Appendix A**.

The results of local traffic counts indicate that Essex Junction experiences its highest traffic volumes during the afternoon peak hour period. Similarly, data from continuous count stations (CTC) maintained by the Vermont Agency of Transportation (VTrans) in Chittenden County reinforce this. Thus, the pm peak hour is the time period during which the design hour volume (DHV) generally occurs. The DHV is the 30th highest hourly traffic volume that occurs in a given year, and is used in the design of highways and intersections to determine existing and future traffic congestion conditions. To adjust the observed peak hour volumes to a design hour (DHV) condition, 2013 DHV's at CTC D530 (VT 289 in Essex), D040 (US 7 in Colchester) and D129 (VT 2A in Williston) were compared to pm peak hour volumes on the corresponding day (June 27) in 2018. This comparison yielded an average DHV adjustment factor of 1.036.

Current VTrans traffic data and projections indicate a 1% growth rate in urban area traffic volumes from 2019 to 2020 (anticipated construction year), and predict a 3% growth rate in traffic volumes from 2019 to 2025 (a 5-year projection from 2020). Therefore, the observed pm peak hour volumes in the above turning movement count were increased by 4.6% and 6.7% to estimate year 2020 and 2025, respectively, no-build design hour volumes. Figure 1 presents the estimated 2020 and 2025 Base DHV turning movements at the Park St/Iroquois Ave/Franklin St intersection.

Figure 1 - Base DHV's



To the above must also be added traffic resulting from nearby other developments that have been permitted but not yet completed. There are several such developments that we are aware of in the immediate vicinity of this Project. They include a) Handy's senior apartments at 11 Park St; b) Milot Real Estate's proposed redevelopment of 9-11 Park St, and d) the Chittenden Crossing development. Additional pm peak hour Park St trips resulting from the latter two other developments were obtained from traffic impact assessments performed by this office for those developments. PM peak hour Park St trips were also estimated for Handy's senior apartments. The resulting other development traffic volumes are shown in Figure 2. Adding those to the Base DHV's provides the 2020 and 2025 No-Build DHV turning movements shown in Figure 3

Figure 2 - Other Development PM Peak Hour Trips

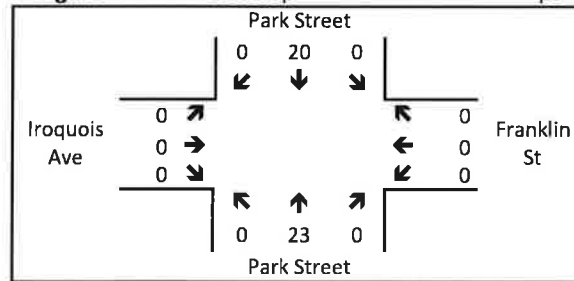
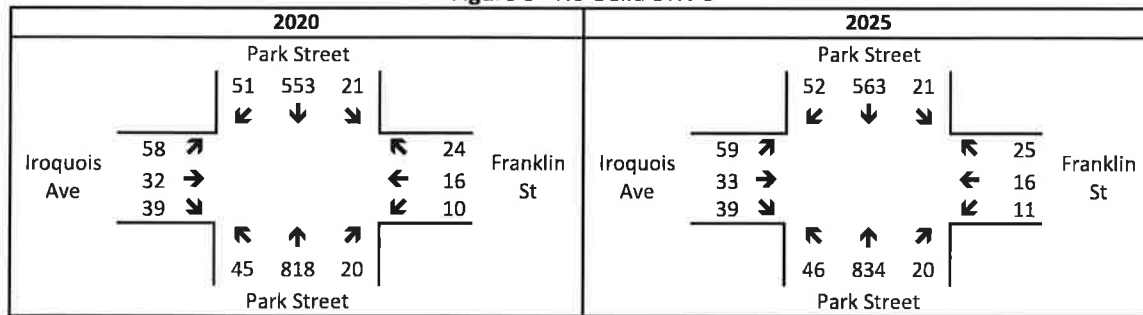


Figure 3 - No-Build DHV's



Project-Generated Trips

The weekday peak hour vehicular trip generation of the additional 40 apartments was estimated using published Institute of Transportation Engineers (ITE) trip generation rates¹ based on the number of units and the multifamily building type (low-rise or mid-rise). The ITE defines a low-rise multifamily residential units as being located in a building having 1-2 floors. A mid-rise multifamily residential unit is defined as being located in a building having 3-10 floors. With existing Building D having only two stories, the four units in that building are low-rise multifamily units. The new Building D, having additional floors, will provide mid-rise multifamily units similar to the other Riverside in the Village buildings.

Table 1 presents the resulting existing and proposed weekday peak hour trips.

Table 1 - Project-Generated Peak Hour Trips

ITE Land-Use Category	Determinant	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
<u>Existing Uses</u>							
#210 - Single Family Detached Housing	1 unit	0	1	1	1	0	1
#220 - Multifamily Housing (Low-Rise)	4 units	0	2	2	2	1	3
#221 - Multifamily Housing (Mid-Rise)	341 units	30	84	114	88	56	144
#251 - Senior Housing - Attached	24 units	2	3	5	3	3	6
#710 - General Office Building (40 Park)	6,000 sf	<u>6</u>	<u>1</u>	<u>7</u>	<u>1</u>	<u>7</u>	<u>8</u>
Subtotal		38	91	129	95	67	162
<u>Proposed Uses</u>							
#210 - Single Family Detached Housing	1 unit	0	1	1	1	0	1
#220 - Multifamily Housing (Low-Rise)	0 units	0	0	0	0	0	0
#221 - Multifamily Housing (Mid-Rise)	385 units	33	95	128	99	63	162
#251 - Senior Housing - Attached	24 units	2	3	5	3	3	6
#710 - General Office Building (40 Park)	6,000 sf	<u>6</u>	<u>1</u>	<u>7</u>	<u>1</u>	<u>7</u>	<u>8</u>
Subtotal		41	100	141	104	73	177
Net Additional Peak Hour Trips		3	9	12	9	6	15

The distribution of the additional new Building D generated pm peak hour trips shown in Figure 4 was estimated based on existing pm peak hour traffic patterns. Figure 5 presents the resulting 2020 and 2025 Build DHV's.

¹ Trip Generation, Institute of Transportation Engineers, 10th Edition

Figure 4 - Project PM Peak Hour Trip Distribution

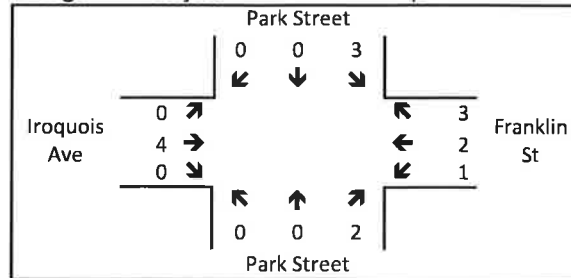
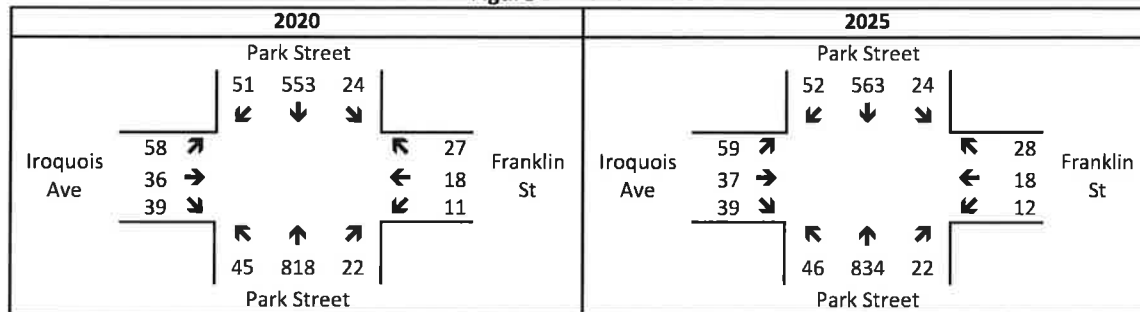


Figure 5 - Build DHV's



Traffic Congestion

Levels of service (LOS) at intersections are determined by average control delay; measured in seconds per vehicle. The methodology for analyzing LOS is established by the *Highway Capacity Manual (HCM)*.² The following analyses were performed using *Synchro v10*. Table 2 summarizes the delay thresholds for each LOS at signalized intersections.

Table 2 - Signalized Intersection Level of Service Criteria

LOS	Avg. Delay*	LOS	Avg. Delay*
A	≤10	D	≤55
B	≤20	E	≤80
C	≤35	F	>80

* seconds per vehicle

In Vermont, LOS C represents the desired design standard for roadways and signalized intersections.³ Reduced levels of service are acceptable on a case by case basis in densely settled areas where volume/capacity ratios remain below 1.0 and/or the improvements required to achieve LOS C would create adverse environmental and

² *Highway Capacity Manual*, Transportation Research Board, 2010

³ Vermont Agency of Transportation Highway Design "Level of Service" Policy, May 31, 2007

cultural impacts. Transportation demand management (TDM) strategies can also be used to help mitigate levels of service at locations not meeting the above standards.

This Project's impact on future levels of service and average delays was analyzed by performing both no-build and build capacity analyses, and comparing the results of the two sets of analyses. All analyses were performed using existing geometric conditions and signal phasing/cycle lengths. Additionally, the pedestrian phase was estimated to be used 12 times per hour (± 5 minute intervals). The results of those analyses, which are summarized in Table 3, indicate that this Project will have a negligible effect on existing and future traffic congestion conditions. Detailed analysis worksheets are enclosed in **Appendix B**.

Table 3 - Park St/Iroquois Ave/Franklin St Levels of Service

Approach & Lane Group	No-Build				Build			
	LOS	Delay	V/C	Max Q	LOS	Delay	V/C	Max Q
2020 PM Peak Hour (DHV)								
Iroquois Ave EB LT/TH/RT	D	46.8	0.65	154'	D	49.3	0.68	162'
Franklin St WB LT/TH/RT	C	24.6	0.26	51'	C	24.8	0.29	55'
Park St NB LT/TH/RT	B	17.3	0.71	869'	B	17.3	0.71	871'
Park St SB LT/TH/RT	B	11.5	0.49	518'	B	11.7	0.49	525'
Overall	B	17.6			B	18.0		
2025 PM Peak Hour (DHV)								
Iroquois Ave EB LT/TH/RT	D	48.3	0.66	158'	D	51.0	0.69	166'
Franklin St WB LT/TH/RT	C	24.6	0.27	52'	C	24.8	0.29	56'
Park St NB LT/TH/RT	B	17.7	0.72	891'	B	17.8	0.73	894'
Park St SB LT/TH/RT	B	11.7	0.50	532'	B	11.9	0.50	539'
Overall	B	18.0			B	18.4		

Safety

The posted speed limit on Park St equals 25 mph. It is a two-lane highway with sufficient width to provide on-street parking in front of adjacent businesses and residences in the vicinity of the Project.

VTrans identifies high crash intersections and high crash segments on major highways based on their five-year crash history. The most recent high crash report⁴ identifies two consecutive 0.3 mile long segments of VT Route 2A (Park St and Lincoln St) extending from mile marker (mm) 0.278 (just south of the South St/River St intersection) to mm 0.878 (north of the Five Corners) as high crash segments. Notably, both segments include intersections (including the Five Corners). Intersection crashes were included in segment tabulations, but none of the intersections themselves were identified as a high crash location.

Over the 2012-2016 five-year period, a total of 139 crashes occurred in above two segments, 130 of which resulted in property damage only. The remaining 9 crashes caused a total of 10 injuries. The majority of the crashes (86) were rear-end crashes, followed by broadside angle crashes (19) and same direction sideswipes (18).

Notwithstanding the above, it is our professional opinion that the additional traffic generated by this Project will not materially affect existing or future traffic safety conditions.

⁴ Vermont Agency of Transportation 2012-2016 High Crash Location Report, August 2017

Multi-Modal Facilities

Sidewalks are provided on both sides of Park St and on the south side of Iroquois Ave. Riverside in the Village (Franklin St) already includes existing internal sidewalks connecting to the Village's existing sidewalk network. The Park St/Iroquois Ave/Franklin St intersection has existing pedestrian signals (providing a protected pedestrian phase) and crosswalks on the east, west and north approaches. Green Mountain Transit provides local transit service at 15-minute headways along Park St during peak periods. There are bus stops on both sides of Park St in the immediate vicinity of this Project.

Transportation Impact Fees

Figure 4 shows 6 of the Project's 15 pm peak hour trips as traveling to/from the Five Corners and the proposed Crescent Connector, which has an established Act 145 transportation impact fee of \$2,788 per pm peak hour trip. That can be reduced by 15%, to \$2,370 per pm peak hour trip, because of this Project's sidewalk connections and pedestrian facilities (the Project paid for the installation of the traffic and pedestrian signals at the Park St/Iroquois Ave intersection). Thus, this Project would be responsible for contributing \$14,220 towards the cost of the Crescent Connector.

Conclusions

From the foregoing analyses, we have formed the following conclusions and recommendations regarding the potential traffic congestion and safety impacts of this Project:

- Intersection capacity analyses at the Park St/Iroquois Ave/Franklin St intersection indicate that acceptable levels of service will be maintained with this Project.
- Although the most recent five-year crash listing on Park St in the vicinity of this Project shows numerous crashes, they are predominantly minor in nature and largely associated with queuing on the approaches to the three major intersections that exist on Park St. The presence of on-street parking also has contributed to Park Street's crash experience. We have no reason to anticipate that the small volume of additional traffic resulting from this Project would adversely impact existing or future traffic safety conditions.



APPENDIX A

Park St/Iroquois Ave/Franklin St Turning Movement Count



Lamoureux & Dickinson
Consulting Engineers, Inc.

Lamoureux & Dickinson

14 Morse Drive, Essex, VT 05452

www.LDengineering.com

Intersection: Park & Iroquois

City/Town: Essex Jct.

By: R. Dickinson

Weather: sunny then rain

File Name : Park-Iroquois PM TMC

Site Code : 16024A

Start Date : 6/26/2019

Page No : 1

Groups Printed- Cars & Lt. Trucks - Trucks & Buses

	Park St Southbound					Riverside Westbound					Park St Northbound					Iroquois Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	117	6	0	123	2	0	5	0	7	12	174	4	0	190	16	5	10	0	31	351
04:15 PM	1	122	5	0	128	4	0	4	0	8	10	204	2	0	216	10	3	7	0	20	372
04:30 PM	2	134	9	0	145	3	4	4	0	11	7	169	5	0	181	9	2	15	0	26	363
04:45 PM	2	135	14	0	151	5	3	5	0	13	7	200	4	0	211	10	4	10	0	24	399
Total	5	508	34	0	547	14	7	18	0	39	36	747	15	0	798	45	14	42	0	101	1485
05:00 PM	4	121	8	0	133	1	5	5	0	11	14	187	10	0	211	13	9	5	0	27	382
05:15 PM	5	139	16	0	160	2	4	4	0	10	10	185	2	0	197	21	8	8	0	37	404
05:30 PM	9	114	11	0	134	2	3	9	0	14	12	188	3	0	203	11	10	14	0	35	386
05:45 PM	6	95	10	0	111	1	2	2	0	5	13	190	8	0	211	13	7	6	0	26	353
Total	24	469	45	0	538	6	14	20	0	40	49	750	23	0	822	58	34	33	0	125	1525
Grand Total	29	977	79	0	1085	20	21	38	0	79	85	1497	38	0	1620	103	48	75	0	226	3010
Apprch %	2.7	90	7.3	0		25.3	26.6	48.1	0		5.2	92.4	2.3	0		45.6	21.2	33.2	0		
Total %	1	32.5	2.6	0	36	0.7	0.7	1.3	0	2.6	2.8	49.7	1.3	0	53.8	3.4	1.6	2.5	0	7.5	
Cars & Lt. Trucks																					
% Cars & Lt. Trucks	100	95.9	100	0	96.3	100	100	100	0	100	98.8	98.9	100	0	98.9	100	100	100	0	100	98.1
Trucks & Buses																					
% Trucks & Buses	0	4.1	0	0	3.7	0	0	0	0	0	1.2	1.1	0	0	1.1	0	0	0	0	0	1.9

Lamoureux & Dickinson

14 Morse Drive, Essex, VT 05452

www.LDengineering.com

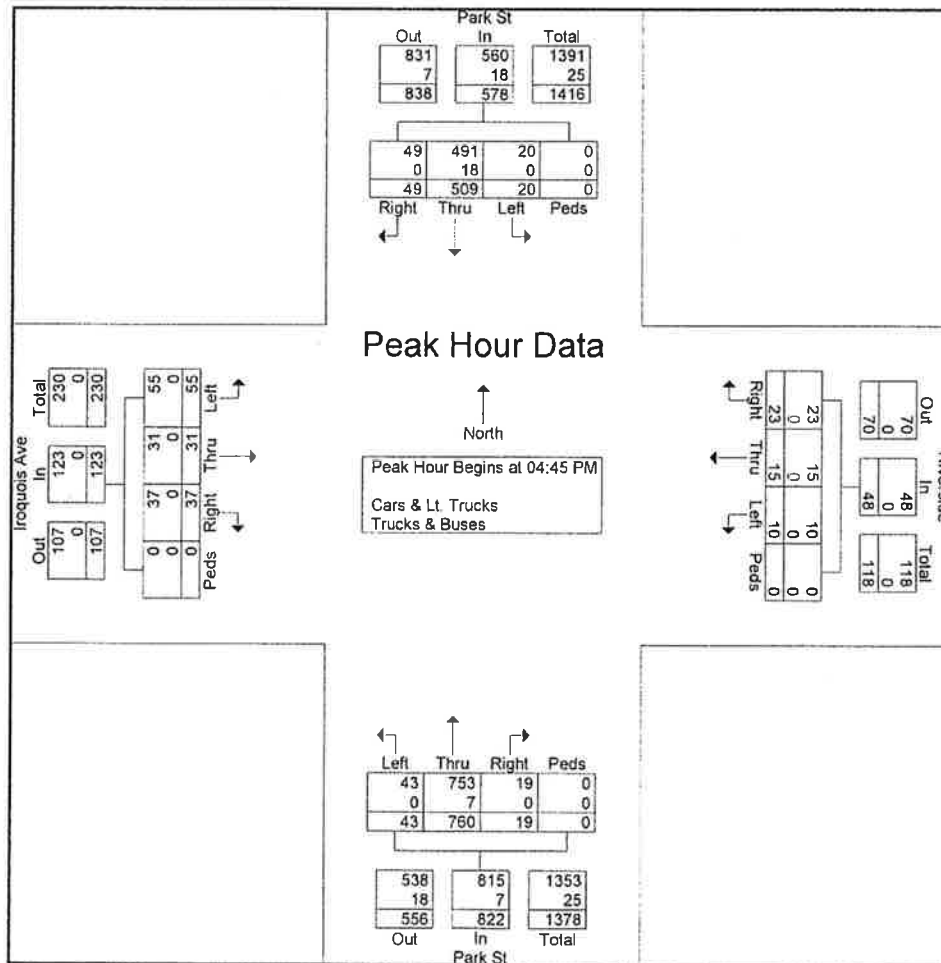
File Name : Park-Iroquois PM TMC

Site Code : 16024A

Start Date : 6/26/2019

Page No : 2

	Park St Southbound					Riverside Westbound					Park St Northbound					Iroquois Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App Total	Left	Thru	Right	Peds	App Total	Left	Thru	Right	Peds	App Total	Left	Thru	Right	Peds	App Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	2	135	14	0	151	5	3	5	0	13	7	200	4	0	211	10	4	10	0	24	399
05:00 PM	4	121	8	0	133	1	5	5	0	11	14	187	10	0	211	13	9	5	0	27	382
05:15 PM	5	139	16	0	160	2	4	4	0	10	10	185	2	0	197	21	8	8	0	37	404
05:30 PM	9	114	11	0	134	2	3	9	0	14	12	188	3	0	203	11	10	14	0	35	386
Total Volume	20	509	49	0	578	10	15	23	0	48	43	760	19	0	822	55	31	37	0	123	1571
% App. Total	3.5	88.1	8.5	0		20.8	31.2	47.9	0		5.2	92.5	2.3	0		44.7	25.2	30.1	0		
PHF	.556	.915	.766	.000	.903	.500	.750	.639	.000	.857	.768	.950	.475	.000	.974	.655	.775	.661	.000	.831	.972
Cars & Lt. Trucks																					
% Cars & Lt. Trucks	100	96.5	100	0	96.9	100	100	100	0	100	100	99.1	100	0	99.1	100	100	100	0	100	98.4
Trucks & Buses																					
% Trucks & Buses	0	3.5	0	0	3.1	0	0	0	0	0	0	0.9	0	0	0.9	0	0	0	0	0	1.6



APPENDIX B

Intersection Capacity Analysis Worksheets



















Lamoureux & Dickinson
Consulting Engineers, Inc.

Lanes, Volumes, Timings

2020 DHV

1: Park St & Iroquois Ave/Franklin St

No-Build

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	32	39	10	16	24	45	818	20	21	553	51
Future Volume (vph)	58	32	39	10	16	24	45	818	20	21	553	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	15	12	12	15	12
Grade (%)		0%			0%			2%			-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959			0.935			0.997			0.989	
Flt Protected		0.978			0.990			0.997			0.998	
Satd. Flow (prot)	0	1782	0	0	1759	0	0	1966	0	0	1995	0
Flt Permitted		0.978			0.990			0.949			0.962	
Satd. Flow (perm)	0	1782	0	0	1759	0	0	1871	0	0	1923	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			24			2			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		566			413			514			448	
Travel Time (s)		12.9			9.4			11.7			10.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	5%	0%
Adj. Flow (vph)	58	32	39	10	16	24	45	818	20	21	553	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	129	0	0	50	0	0	883	0	0	625	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	0.89	1.01	0.99	0.87	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Total Split (s)	12.0	12.0		12.0	12.0		38.0	38.0		38.0	38.0	

Lane Group Ø9













Lane Configurations
 Traffic Volume (vph)
 Future Volume (vph)
 Ideal Flow (vphpl)
 Lane Width (ft)
 Grade (%)
 Lane Util. Factor
 Frt
 Flt Protected
 Satd. Flow (prot)
 Flt Permitted
 Satd. Flow (perm)
 Right Turn on Red
 Satd. Flow (RTOR)
 Link Speed (mph)
 Link Distance (ft)
 Travel Time (s)
 Peak Hour Factor
 Heavy Vehicles (%)
 Adj. Flow (vph)
 Shared Lane Traffic (%)
 Lane Group Flow (vph)
 Enter Blocked Intersection
 Lane Alignment
 Median Width(ft)
 Link Offset(ft)
 Crosswalk Width(ft)
 Two way Left Turn Lane
 Headway Factor
 Turning Speed (mph)
 Number of Detectors
 Detector Template
 Leading Detector (ft)
 Trailing Detector (ft)
 Detector 1 Position(ft)
 Detector 1 Size(ft)
 Detector 1 Type
 Detector 1 Channel
 Detector 1 Extend (s)
 Detector 1 Queue (s)
 Detector 1 Delay (s)
 Detector 2 Position(ft)
 Detector 2 Size(ft)
 Detector 2 Type
 Detector 2 Channel
 Detector 2 Extend (s)
 Turn Type
 Protected Phases 9
 Permitted Phases
 Detector Phase
 Switch Phase
 Minimum Initial (s) 5.0
 Minimum Split (s) 18.0
 Total Split (s) 18.0

Lanes, Volumes, Timings

2020 DHV

1: Park St & Iroquois Ave/Franklin St

No-Build

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	15.0%	15.0%		15.0%	15.0%		47.5%	47.5%		47.5%	47.5%	
Maximum Green (s)	6.0	6.0		6.0	6.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		8.0			7.8			53.2			53.2	
Actuated g/C Ratio		0.10			0.10			0.66			0.66	
v/c Ratio		0.65			0.26			0.71			0.49	
Control Delay		46.8			24.6			17.3			11.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		46.8			24.6			17.3			11.5	
LOS		D			C			B			B	
Approach Delay		46.8			24.6			17.3			11.5	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)		52			12			255			139	
Queue Length 95th (ft)		#154			51			#869			#518	
Internal Link Dist (ft)		486			333			434			368	
Turn Bay Length (ft)												
Base Capacity (vph)		198			197			1244			1281	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.65			0.25			0.71			0.49	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 17.6

Intersection LOS: B

Intersection Capacity Utilization 83.7%






ICU Level of Service E

Analysis Period (min) 60

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Park St & Iroquois Ave/Franklin St

			
Ø2 (R)	Ø4	Ø8	Ø9
38 s	12 s	12 s	18 s
			
Ø6 (R)			
38 s			

Lanes, Volumes, Timings
 1: Park St & Iroquois Ave/Franklin St

2020 DHV
 No-Build

















Lane Group	Ø9
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	12
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

2020 DHV

1: Park St & Iroquois Ave/Franklin St

Build

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	36	39	11	18	27	45	818	22	24	553	51
Future Volume (vph)	58	36	39	11	18	27	45	818	22	24	553	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	15	12	12	15	12
Grade (%)		0%			0%			2%			-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960			0.935			0.997			0.989	
Flt Protected		0.979			0.990			0.997			0.998	
Satd. Flow (prot)	0	1786	0	0	1759	0	0	1966	0	0	1996	0
Flt Permitted		0.979			0.990			0.949			0.955	
Satd. Flow (perm)	0	1786	0	0	1759	0	0	1871	0	0	1910	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			27			2			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		566			413			514			448	
Travel Time (s)		12.9			9.4			11.7			10.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	5%	0%
Adj. Flow (vph)	58	36	39	11	18	27	45	818	22	24	553	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	56	0	0	885	0	0	628	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	0.89	1.01	0.99	0.87	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Total Split (s)	12.0	12.0		12.0	12.0		38.0	38.0		38.0	38.0	

Lanes, Volumes, Timings

2020 DHV

1: Park St & Iroquois Ave/Franklin St

Build

Lane Group Ø9

Lane Configurations

Traffic Volume (vph)

Future Volume (vph)

Ideal Flow (vphpl)

Lane Width (ft)

Grade (%)

Lane Util. Factor

Frt

Flt Protected

Satd. Flow (prot)

Flt Permitted

Satd. Flow (perm)

Right Turn on Red

Satd. Flow (RTOR)

Link Speed (mph)

Link Distance (ft)

Travel Time (s)

Peak Hour Factor

Heavy Vehicles (%)

Adj. Flow (vph)

Shared Lane Traffic (%)

Lane Group Flow (vph)

Enter Blocked Intersection

Lane Alignment

Median Width(ft)

Link Offset(ft)

Crosswalk Width(ft)

Two way Left Turn Lane

Headway Factor

Turning Speed (mph)

Number of Detectors

Detector Template

Leading Detector (ft)

Trailing Detector (ft)

Detector 1 Position(ft)

Detector 1 Size(ft)

Detector 1 Type

Detector 1 Channel

Detector 1 Extend (s)

Detector 1 Queue (s)

Detector 1 Delay (s)

Detector 2 Position(ft)

Detector 2 Size(ft)

Detector 2 Type

Detector 2 Channel

Detector 2 Extend (s)

Turn Type

Protected Phases 9

Permitted Phases

Detector Phase

Switch Phase

Minimum Initial (s) 5.0

Minimum Split (s) 18.0













Total Split (s) 18.0

Lanes, Volumes, Timings

2020 DHV

1: Park St & Iroquois Ave/Franklin St

Build

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	15.0%	15.0%		15.0%	15.0%		47.5%	47.5%		47.5%	47.5%	
Maximum Green (s)	6.0	6.0		6.0	6.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		8.0			7.8			53.2			53.2	
Actuated g/C Ratio		0.10			0.10			0.66			0.66	
v/c Ratio		0.68			0.29			0.71			0.49	
Control Delay		49.3			24.8			17.3			11.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		49.3			24.8			17.3			11.7	
LOS		D			C			B			B	
Approach Delay		49.3			24.8			17.3			11.7	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)		55			14			256			141	
Queue Length 95th (ft)		#162			55			#871			#525	
Internal Link Dist (ft)		486			333			434			368	
Turn Bay Length (ft)												
Base Capacity (vph)		197			200			1244			1272	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.68			0.28			0.71			0.49	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 18.0

Intersection LOS: B

Intersection Capacity Utilization 82.9%






ICU Level of Service E

Analysis Period (min) 60

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Park St & Iroquois Ave/Franklin St

	Ø2 (R)		Ø4		Ø8		Ø9
38 s		12 s		12 s		18 s	
	Ø6 (R)						
38 s							

Lanes, Volumes, Timings
1: Park St & Iroquois Ave/Franklin St

2020 DHV
Build

Lane Group	Ø9
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	12
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

















Intersection Summary

Lanes, Volumes, Timings

2025 DHV

1: Park St & Iroquois Ave/Franklin St

No-Build

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	33	39	11	16	25	46	834	20	21	563	52
Future Volume (vph)	59	33	39	11	16	25	46	834	20	21	563	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	15	12	12	15	12
Grade (%)		0%			0%			2%			-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960			0.935			0.997			0.989	
Flt Protected		0.978			0.990			0.997			0.998	
Satd. Flow (prot)	0	1784	0	0	1759	0	0	1966	0	0	1995	0
Flt Permitted		0.978			0.990			0.948			0.962	
Satd. Flow (perm)	0	1784	0	0	1759	0	0	1869	0	0	1923	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			25			2			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		566			413			514			448	
Travel Time (s)		12.9			9.4			11.7			10.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	5%	0%
Adj. Flow (vph)	59	33	39	11	16	25	46	834	20	21	563	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	131	0	0	52	0	0	900	0	0	636	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	0.89	1.01	0.99	0.87	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Total Split (s)	12.0	12.0		12.0	12.0		38.0	38.0		38.0	38.0	













Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	18.0
Total Split (s)	18.0

Lanes, Volumes, Timings

2025 DHV

1: Park St & Iroquois Ave/Franklin St

No-Build

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	15.0%	15.0%		15.0%	15.0%		47.5%	47.5%		47.5%	47.5%	
Maximum Green (s)	6.0	6.0		6.0	6.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		8.0			7.8			53.2			53.2	
Actuated g/C Ratio		0.10			0.10			0.66			0.66	
v/c Ratio		0.66			0.27			0.72			0.50	
Control Delay		48.3			24.6			17.7			11.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		48.3			24.6			17.7			11.7	
LOS		D			C			B			B	
Approach Delay		48.3			24.6			17.7			11.7	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)		54			13			265			143	
Queue Length 95th (ft)		#158			52			#891			#532	
Internal Link Dist (ft)		486			333			434			368	
Turn Bay Length (ft)												
Base Capacity (vph)		197			198			1243			1281	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.66			0.26			0.72			0.50	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 18.0

Intersection LOS: B

Intersection Capacity Utilization 85.3%






ICU Level of Service E

Analysis Period (min) 60

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Park St & Iroquois Ave/Franklin St

			
Ø2 (R)	Ø4	Ø8	Ø9
38 s	12 s	12 s	18 s
			
Ø6 (R)			
38 s			

















Lane Group	Ø9
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	12
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

2025 DHV

1: Park St & Iroquois Ave/Franklin St

Build

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	37	39	12	18	28	46	834	22	24	563	52
Future Volume (vph)	59	37	39	12	18	28	46	834	22	24	563	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	15	12	12	15	12
Grade (%)		0%			0%			2%			-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.935			0.997			0.989	
Flt Protected		0.979			0.990			0.997			0.998	
Satd. Flow (prot)	0	1788	0	0	1759	0	0	1966	0	0	1996	0
Flt Permitted		0.979			0.990			0.948			0.955	
Satd. Flow (perm)	0	1788	0	0	1759	0	0	1869	0	0	1910	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			28			2			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		566			413			514			448	
Travel Time (s)		12.9			9.4			11.7			10.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	5%	0%
Adj. Flow (vph)	59	37	39	12	18	28	46	834	22	24	563	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	135	0	0	58	0	0	902	0	0	639	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	0.89	1.01	0.99	0.87	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Total Split (s)	12.0	12.0		12.0	12.0		38.0	38.0		38.0	38.0	

Lanes, Volumes, Timings
1: Park St & Iroquois Ave/Franklin St

2025 DHV
Build

Lane Group 09













Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Ideal Flow (vphpl)
Lane Width (ft)
Grade (%)
Lane Util. Factor
Frt
Flt Protected
Satd. Flow (prot)
Flt Permitted
Satd. Flow (perm)
Right Turn on Red
Satd. Flow (RTOR)
Link Speed (mph)
Link Distance (ft)
Travel Time (s)
Peak Hour Factor
Heavy Vehicles (%)
Adj. Flow (vph)
Shared Lane Traffic (%)
Lane Group Flow (vph)
Enter Blocked Intersection
Lane Alignment
Median Width(ft)
Link Offset(ft)
Crosswalk Width(ft)
Two way Left Turn Lane
Headway Factor
Turning Speed (mph)
Number of Detectors
Detector Template
Leading Detector (ft)
Trailing Detector (ft)
Detector 1 Position(ft)
Detector 1 Size(ft)
Detector 1 Type
Detector 1 Channel
Detector 1 Extend (s)
Detector 1 Queue (s)
Detector 1 Delay (s)
Detector 2 Position(ft)
Detector 2 Size(ft)
Detector 2 Type
Detector 2 Channel
Detector 2 Extend (s)
Turn Type
Protected Phases 9
Permitted Phases
Detector Phase
Switch Phase
Minimum Initial (s) 5.0
Minimum Split (s) 18.0
Total Split (s) 18.0

Lanes, Volumes, Timings

2025 DHV

1: Park St & Iroquois Ave/Franklin St

Build

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	15.0%	15.0%		15.0%	15.0%		47.5%	47.5%		47.5%	47.5%	
Maximum Green (s)	6.0	6.0		6.0	6.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		8.0			7.8			53.2			53.2	
Actuated g/C Ratio		0.10			0.10			0.66			0.66	
v/c Ratio		0.69			0.29			0.73			0.50	
Control Delay		51.0			24.8			17.8			11.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		51.0			24.8			17.8			11.9	
LOS		D			C			B			B	
Approach Delay		51.0			24.8			17.8			11.9	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)		56			14			266			145	
Queue Length 95th (ft)		#166			56			#894			#539	
Internal Link Dist (ft)		486			333			434			368	
Turn Bay Length (ft)												
Base Capacity (vph)		196			201			1243			1272	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.69			0.29			0.73			0.50	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 18.4

Intersection LOS: B

Intersection Capacity Utilization 84.4%






ICU Level of Service E

Analysis Period (min) 60

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Park St & Iroquois Ave/Franklin St

			
Ø2 (R)	Ø4	Ø3	Ø9
38 s	12 s	12 s	18 s
			
Ø6 (R)			
38 s			

Lanes, Volumes, Timings
1: Park St & Iroquois Ave/Franklin St

2025 DHV
Build


Lane Group	Ø9
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	12
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

2 Lincoln Street
Essex Junction, VT 05452-3154
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Staff Report

To: Planning Commission
From: Robin Pierce, Community Development Director 
Date: October 17, 2019
Re: Riverside in the Village Building D/11 Franklin Street by O'Leary-Burke Civil Associates PLC, agent for 222 Franklin, Inc., owners

EXISTING CONDITIONS AND GENERAL INFORMATION:

Project Location: 11 Franklin Street

Parcel Size: 27.87 acres

Lot Frontage: 275 feet

Existing Land Use: Residential and Commercial

Surrounding Land-Use: Residential and Commercial

Existing Zoning: Mixed Commercial Use

Review Procedure: Major Site Plan Amendment Review to a Planned Unit Development

Project Description: Demolition of an existing apartment building which is the last of the original NECI apartment buildings, and construction of a four storey apartment building with underground parking in an existing residential development. The proposed building will have 24 1-bedroom units and 20 studio units for a total of 44 apartments. This is a change of apartment type from the original proposal but it does not alter the wastewater requirements or invalidate the traffic count data. Adding more studio apartments is in line with market demands. This building design is consistent with the pattern language of the other structures on the site. The new building is in the center of the site and accessed off the main development road with 23 surface parking and 25 underground parking spaces for total of 48 proposed spaces. No bicycle racks are visible on the drawings. The existing site plan shows 43 surface parking, two of which are accessible there is no underground parking, this is modified and surface spaces are lost with this development

proposal.. There is no landscaping Plan there is a plant list sheet. A landscaping Plan should be brought to the Planning Commission meeting.

Plans reviewed for this application consisted of the following. O'Leary Burke Civil Associates, and Architectural Plans by Michael Dugan, Architect. :-

Sheet #	Sheet Name	Dated	Last Revised
Prepared By: O'Leary-Burke Civil Associates, PLC			
1	Overall Site Plan	05-21-19	7/25/19
2	Existing Conditions	05-21-19	7/25/19
3	Site Plan	05-21-19	9/24/19
4	Lighting Plan	05-21-19	9/24/19
5	Roadway & Stormwater Details	05-21-19	7/25/19
6	Water Details	05-21-19	9/24/19
7	Sewer Details	05-21-19	7/25/19
8	EPSC Plan	05-21-19	7/25/19
Prepared By: Michael Dugan, Architect.			
A1	Garage Plan	06/14/19	
A2	First Floor Plan	06/14/19	
A3	Elevations	06/14/19	

Section 615: Mixed Commercial Use District

A. Purpose. To provide areas for mixed use development in locations that have adequate public and compatible surrounding land uses. A mix of residential, retail and office use is encouraged.

B. Lot Size/Lot Coverage.

1. The minimum lot size shall be fifteen thousand (15,000) square feet. The Mixed Commercial Use District shall not have a maximum allowable density. The maximum number of dwelling units shall be determined by the ability to meet the standards of the Land Development Code including, but not limited to, parking, setbacks lot coverage and building height.
2. The maximum total lot coverage shall be sixty-five (65) percent; the sixty-five (65) percent lot coverage may be increased up to eighty (80) percent through a waiver process granted by the Planning Commission using the same criteria outlined in Section 601.G.

C. Setback Requirements.

1. The minimum front yard setback shall be twenty (20) feet.
2. The minimum side yard setback shall be ten (10) feet.
3. The minimum rear yard setback shall be ten (10) feet.

F. Building Height. Building Heights shall not exceed four stories or fifty-eight (58) feet, whichever is less.

G. Planned Unit Development. The Planning Commission may approve a Planned Unit Development for use as a Commercial or Multi-Family Residential Development. In connection with such PUD approval, the Planning Commission may authorize the construction of structures and facilities to accommodate any of the uses allowed in the Mixed Commercial District. Any application for proposed development in the Mixed Commercial District may, at the applicant's request, be reviewed as a Planned Unit Development. Any application for proposed development in the Mixed Commercial District which contains more than two thousand five hundred (2,500) square feet of commercial space shall be reviewed as a Planned Unit Development or Multi-Family Residential Development unless this requirement is specifically waived by the Commission. Review standards and waiver requirements for a PUD are set forth in Section 511.B.1-3.

B. Review Requirements and Review Standards.

1. General Review Standards.

- (a) Physical characteristics of the site and relation to surrounding properties.
- (b) Relationship to major transportation facilities, including mass transit, walkways and bike paths.
- (c) Design characteristics of the proposal and compatibility to adjoining developed land.
- (d) Unique design or land planning characteristics.
- (e) Methods used to provide a transition between adjoining uses and proposed uses including, but not limited to, setbacks, screening, fencing, building design and parking design.
- (f) The preservation of unique natural physical characteristics.
- (g) Building design compatibility with adjoining structures.
- (h) Other criteria, as deemed necessary by the Commission to evaluate the merits of a specific proposal.

2. Specific Review Standards

- (a) Proposed traffic flow and circulation design.
- (b) Structural design and compatibility with adjoining developed properties.
- (c) Scale and design of proposed structures.
- (d) Location and setbacks of all proposed structures.
- (e) Unique physical characteristics of the proposed use.
- (f) Unique characteristics of the proposed use.

3. Waivers. The Commission may waive requirements for setbacks, parking and lot coverage, based upon the merits of the specific proposal. Waivers shall be based upon the following criteria and may include specific conditions.

- (a) Unique physical characteristics of the site proposed for development.
- (b) Superior building design, lot layout and landscaping design.
- (c) Provision of public open spaces or superior bicycle and pedestrian access.
- (d) Joint or combined vehicular access with adjoining properties.

Section 703: Parking

Multifamily developments require two parking spaces per dwelling unit plus one guest space for each ten (10) units. **A parking waiver is required. Accessible spaces per Village Code should be provided.**

In accordance with Section 703.K.11 bike racks shall be shown on the plans. **No bike racks are visible on the Plans. They should be provided.**

Section 704: Lighting

A lighting plan has not been submitted. **All proposed lighting shall meet the Village LDC requirements.**

Section 719: Landscaping

1. **No landscaping Plan has been submitted with this application, simply a sheet listing type and number of species. In lieu of landscaping not being equal to 2% of the buildings construction costs the PC might consider that the applicant provide funds for hard and soft landscaping in the Village Center District.**

Staff Comments.

General

- 1) We note that the Development Application form included in this submission was not signed by the applicant.
 - **The applicant has indicated that the hard copy of the Development Application form submitted to the Village was signed by the applicant. We defer to the Village Planning staff regarding this comment.**
- 2) The applicant will be required to request and obtain additional water and sewer allocation approvals from the Village for this project.
 - ✓ **The applicant indicated that “An allocation letter will [be] requested from the Village following Site Plan approval.” We find this acceptable.**
- 3) The cover letter provided by the applicant’s engineer indicates an estimated water demand of 5,940 gallons per day and an estimated sewer demand of 6,160 gallons per day for this new building. However, the water and sewer demand computations contained in the submittal documents indicate both a water and sewer demand of 6,160 gallons per day for this new building. The application documents should be revised to resolve this conflicting information. (We believe the 6,160 gallons per day is the correct water and sewer demand estimate for this proposed building, based on the most recent State Wastewater System and Potable Water Supply Rules.)
 - ✓ **The applicant has indicated that “The cover letter has been revised to state the estimated water and sewer demands for the project will be 6,160 gpd.” We find this acceptable.**
- 4) The Water Quality Superintendent requests that the DIGSAFE notification banner presented on Sheets #2 and #3 be revised to also require notification to the Village of Essex Junction prior to any excavation.
 - ✓ **This comment has been addressed.**
- 5) General Construction Specifications Note #10 presented on Sheet #5 should be revised to reference the requirements of the LDC for horizontal and vertical separation of water and sewer/storm utilities.

✓ **This comment has been addressed.**

- 6) We recommend a condition of any approval of this project to require the submission of record drawings for site utilities to the Village of Essex Junction upon completion of construction, in both AutoCAD and PDF format. The Village would also like to request this information be provided in shapefile format in Vermont State Plane Meters, NAD83.

➤ **The applicant has indicated “Understood.” We recommend that this be included as a condition of any approval of this project.**

Site Layout – Roadways, Drives, and Walkways

- 1) Sheet #2 shows existing sidewalks on the east side of Buildings #4 and #5. These existing sidewalks are not shown on Sheet #3. The applicant should provide clarification as to whether these existing sidewalks are proposed for removal.

✓ **This comment has been addressed. These existing sidewalks are now shown on Sheet #3.**

- 2) The applicant provided parking computations for the entire project development. These computations indicate that a total of 722 parking spaces are required by the LDC for the entire project development; with a total of 643 parking spaces provided throughout the project development with completion of this proposed building. The applicant performed a parking count during full occupancy of the current project development and calculated that using the actual parking ratio of spaces per unit, the full build-out scenario that includes this proposed project would require 542 spaces (with a total of 643 spaces being provided). The applicant is requesting a parking waiver in order to minimize impervious area coverage. We defer to the Village Planning staff and Planning Commission regarding this parking waiver request.

➤ **The applicant has indicated “Understood.” We continue to defer to the Village Planning staff and Planning Commission regarding this parking waiver request.**

- 3) On Sheet #3, the access drive from Franklin Street serving the parking area and parking beneath the proposed Building D is shown as approximately 22 feet wide. The LDC requires a minimum of 24' for 2-way traffic. We recommend that the width of this access drive be increased to 24 feet.

➤ **The applicant has indicated that “The 24' wide standard for 2-way traffic seems to be specific to commercial/industrial drives and 2-way parking lots according to the LDCs. As the proposed drive is neither and private, the applicant is comfortable moving forward with the underground parking ramp as proposed.” Our comment did not pertain to the underground parking ramp, but instead the 2-way access from Franklin Street. We continue to recommend a 24 foot wide access drive from Franklin Street serving the surface parking area and parking beneath the proposed building.**

- 4) We note for the record that the sidewalk and curb details presented on Sheet #5 are not acceptable for use within the Village of Essex Junction right-of-way.

✓ **The applicant has indicated “Understood. The sidewalk and curbing details proposed will not be within a Village right-of-way.” No further comment necessary.**

Grading & Drainage

- 1) Sheet #3 depicts a new dumpster pad on the south end of the parking located to the west of Building #5. This new pad appears to conflict with a portion of the existing retaining wall. The applicant should provide clarification regarding the proposed grading for this pad and its relationship to the existing retaining wall.

➤ **The applicant has indicated that “The dumpster pad is being proposed at the end of the retaining wall. The slab will be poured at the same elevation as the edge of pavement (Elev=334.37’) and will be tipped slightly towards the existing stormwater treatment swale. The dumpster pad will not conflict with the existing retaining wall.” The grading for this proposed dumpster pad and its relationship to the existing topography is unclear from the plans. The plans should be revised to present the proposed grading for this dumpster pad and its tie-in to the existing topography.**

The Water Quality Superintendent requested that the applicant be reminded of Section 706.J.2 of the LDC requiring that dumpsters be covered and have drain plugs installed.

- 2) The applicant is proposing to exchange previously approved but not yet constructed impervious area for the impervious area associated with this project. While we do not specifically object to this concept, which has support from the State Stormwater Program, we note that in consideration of the MS4 requirements applicable to the Village of Essex Junction, applicants are encouraged to provide on-site treatment and control of stormwater runoff to the maximum extent practicable; thereby decreasing the potential for additional improvements being required by the Village in the future as part of the MS4 permit and Flow Restoration Planning requirements. No changes to the proposed project design are required at this time.

✓ **No response necessary.**

- 3) The applicant should be required to submit copies of the stormwater system annual inspection reports to the Village of Essex Junction as a condition of approval.

➤ **The applicant has indicated “Understood.” We recommend this be a condition of any approval of this project.**

Water

- 1) The plans should be revised to depict the size of the proposed water service for the building.

✓ **This comment has been addressed. The new water service has been labeled as 6” ductile iron pipe.**

- 2) Water Specifications Note 1.2 should be revised to require water pipe materials and fittings to be double cement mortar lined. In addition, Note 1.2 Fittings should be revised to require retainer glands for all fittings, not just vertical bends as currently shown.

➤ **The plans have been revised to require fittings to be double cement lined; and to require retainer glands for all fittings. This note needs further revision to require water pipe material to be double cement lined.**

In addition, as the new building service is proposed to be 6" ductile iron pipe, this note should be revised to reflect a minimum size for ductile iron pipe to be 6" instead of 8" as currently shown.

- 3) Water Specifications Note 1.7E should be revised to require 6 feet of minimum cover for waterlines.

✓ **This comment has been addressed.**

- 4) The Water Trench detail presented on Sheet #6 should be revised to require 6 feet of minimum cover. In addition, this detail should be revised to include compaction requirements for pipe bedding and backfill materials.

✓ **This comment has been addressed.**

- 5) The Sewer/Water Separation Detail for Crossings presented on Sheet #6 and also on Sheet #7 should be revised to reflect the requirements of page D-15 of the LDC for separation between water and storm sewer utilities, in addition to sanitary sewer utilities.

✓ **This comment has been addressed.**

- 6) Sheet #3 calls for the abandonment of the existing water service for the existing Building D. The plans should be revised to require the abandonment to include a requirement to close the corporation stop at the water main and to disconnect the water service piping from the corporation stop.

✓ **This comment has been addressed.**

Sanitary Sewer

- 1) Sheet #3 calls for the abandonment of the existing sewer service for the existing Building D. The plans should be revised to require the abandonment to include the capping of the existing service line with a rigid, gasketed cap fitting.

✓ **This comment has been addressed.**

- 2) The plans should be revised to present the proposed building invert elevation for the proposed building sewer service.

✓ **This comment has been addressed.**

- 3) The plans should be revised to provide a 0.1' drop in the existing sewer manhole between the new building sewer service and the existing outlet invert in this structure.

✓ **This comment has been addressed.**

- 4) The plans should be revised to require that the connection of the new building sewer to the existing sewer manhole be inspected by an authorized representative of the Village of Essex Junction prior to backfilling.

✓ **This comment has been addressed.**

- 5) The Sewer Trench detail presented on Sheet #7 should be revised to include compaction requirements for pipe bedding and backfill materials.

✓ **This comment has been addressed.**

Erosion Prevention and Sediment Control

- 1) The EPSC Plan (Sheet #8) should be revised to include silt fence on the south end of the parking area located to the west of existing Building #5.
✓ **This comment has been addressed.**
- 2) The plans should be revised to require the use of non-Phosphorus based fertilizer unless otherwise warranted by soil testing. In addition, the plans should be revised to specify the seed mix(es) proposed for this project.
✓ **This comment has been addressed.**
- 3) The plans reference requirements for topsoil stockpiles surrounded by silt fence. The plans should be revised to depict the location(s) of proposed topsoil stockpiles.
✓ **The applicant has indicated that “It is likely that topsoil and other fill will be trucked off site due to the limited open space within the development.” We find this acceptable.**

Lighting

- 1) The plans should be revised to provide lighting for the new walk on the east side of the proposed building.
➤ **The plans have been revised in response to this comment. The illumination levels at the parking lot end of this sidewalk, in the vicinity of the accessible parking space, are below the minimum 0.2 footcandles required by the LDC. We note that it appears as though the existing lighting in the area of the accessible parking space have not been included in the analysis. The applicant should provide clarification and revisions as necessary.**
- 2) The LDC requires new light fixtures to be LED fixtures with a maximum CCT of 4300K. The plans shall be revised to specify fixtures with a CCT not exceeding 4300K.
✓ **This comment has been addressed.**

Traffic

- 1) The applicant provided a Traffic Impact Assessment prepared by Lamoureux & Dickinson Consulting Engineers, Inc. This assessment included intersection capacity analyses for the Park St/Iroquois Ave/Franklin St intersection both with and without this proposed project. The signal timings used in the analysis are indicated to be existing signal timings according to the applicant's engineer. We note that the signal timings used in the analyses differ from what we have in our files as the existing timings. The applicant should provide clarification as to the source of the existing signal timing information used in their analyses.
✓ **This comment has been addressed. The analyses have been updated to utilize signal timing information obtained from the Village of Essex Junction.**
- 2) The Traffic Impact Assessment concluded that “Intersection capacity analyses at the Park St/Iroquois Ave/Franklin St intersection indicate that acceptable levels of service will be maintained with this Project.” This document also included a discussion regarding safety and accidents along this section of Park Street, and concluded that “We have no reason to

anticipate that the small volume of additional traffic resulting from this Project would adversely impact existing or future traffic safety conditions.”

We recognize the urban nature of this area and the existing traffic congestion that exists along this section of Park Street. We also note that several modifications to the traffic flow, roadways, and intersections in this vicinity will be forthcoming with the anticipated construction of the Crescent Connector and associated changes to the Five Corners intersection. While the assessment includes estimated trips associated with the Crescent Connector and recently approved/proposed development projects not yet constructed, the assessment did not include a detailed analysis of the surrounding roadway network and its anticipated modifications. Without a detailed analysis, it is unclear as to what impacts these modifications will have relative to this project. We recommend that the Village require the applicant to perform a follow-up traffic study within 6 months of 50% occupancy of the proposed building in order to confirm the trip generation rate and to determine if traffic improvements are necessary.

- **The applicant has indicated “Understood.” We recommend that this be a condition of any approval of this project.**

Recommendations:

Staff recommends the Planning Commission approve this application with the following Conditions.

1. Require the submission of record drawings for site utilities to the Village of Essex Junction upon completion of construction, in both AutoCAD and PDF format. The Village would also like to request this information be provided in shapefile format in Vermont State Plane Meters, NAD83.
2. A total of 722 parking spaces are required by the LDC for the entire project development; there will be a total of 643 parking spaces provided throughout the project development with completion of this proposed building. Staff recommend a parking waiver as the parking spaces are rarely near full occupancy.
3. Accessible parking spaces should be added within the underground parking or in the surface parking lot to meet Village Code.
4. Dumpsters shall be covered and have drain plugs installed.
5. The applicant shall submit copies of the stormwater system annual inspection reports to the Village of Essex Junction as a condition of approval.
6. A follow-up traffic study within 6 months of 50% occupancy of the proposed building in order to confirm the trip generation rate and to determine if traffic improvements are necessary will be performed by the applicant.
7. No CO will be issued until all necessary approved State Permits including but not limited to; ACT 250, and Stormwater are submitted to the Village.

8. The applicant shall complete (to Staff's satisfaction) and sign a Sewer Capacity Voluntary Permit Revocation form prior to the Village releasing a Letter of Capacity to the State of Vermont.
9. All work shall comply with the Village of Essex Junction Land Development Code as amended December 13, 2016.
10. All Village Staff recommendations shall be complied with.
11. In lieu of landscaping for the project not equaling 2% of construction costs the difference shall be given to the Village for hard and soft landscaping in the Village Center District.
12. Bike racks shall be provided as part of this development proposal.