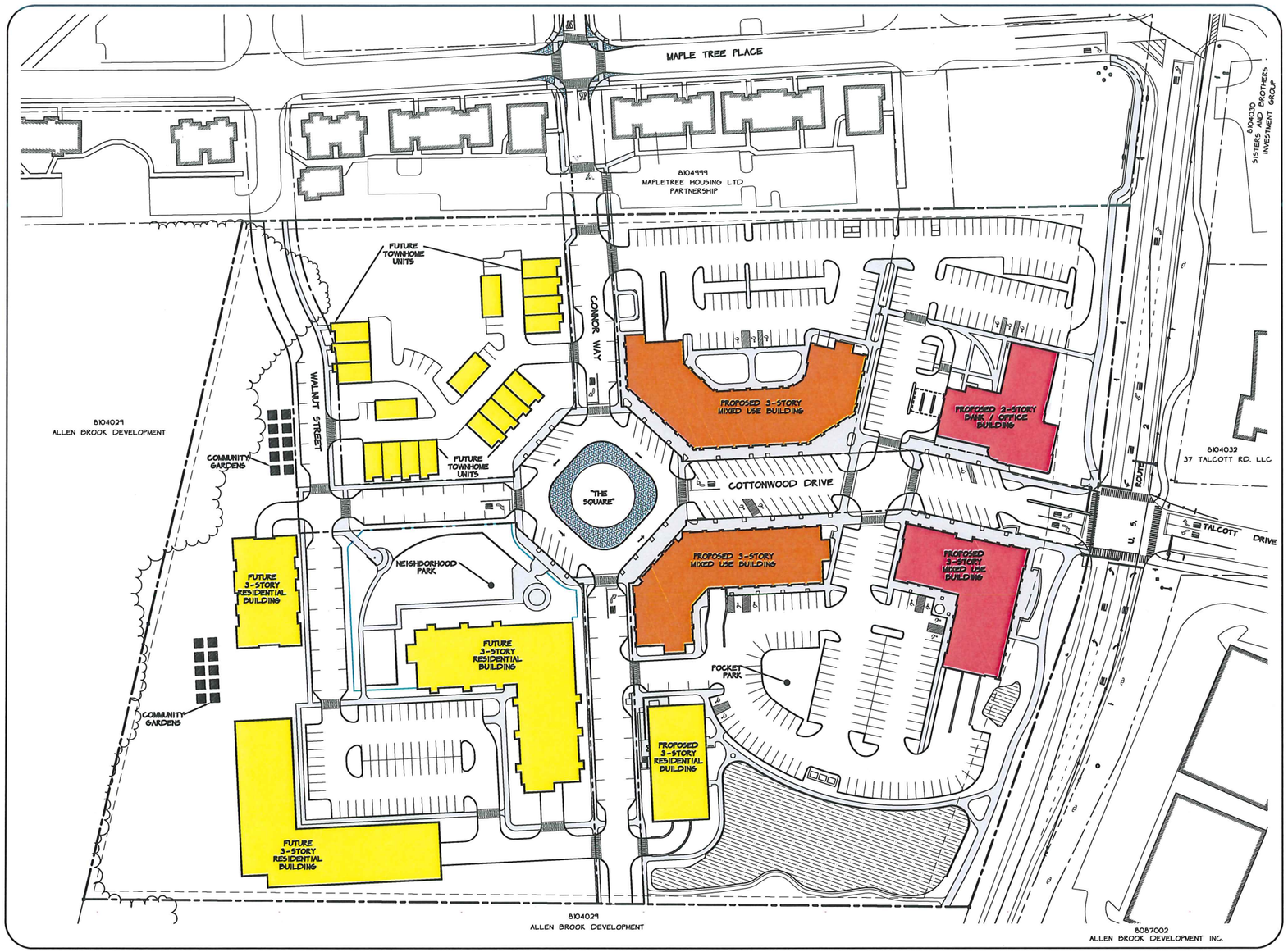
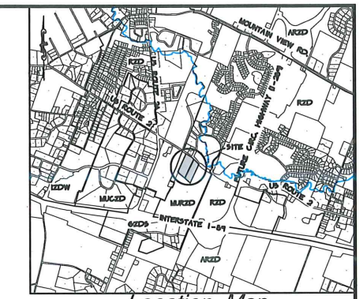
COTTONWOOD CROSSING

A MIXED USE DEVELOPMENT

US ROUTE 2 — WILLISTON, VT





Location Map
NTS

PLAN SHEET LIST

L-1	SITE DEVELOPMENT MASTER PLAN & TYPE III LANDSCAPE SCREEN
L-1A	SITE DEVELOPMENT PLAN - PHASE I
L-1B	SITE DEVELOPMENT PLAN - PHASE II (SEE DP 16-05.2)
1	MASTER PLAN
2	EXISTING CONDITIONS
3	PHASE I - SITE PLAN
3A	PHASE II - SITE PLAN (SEE DP 16-05.2)
4	GRADING PLAN (1 OF 3)
4A	GRADING PLAN (2 OF 3) (SEE DP 16-05.2)
5	GRADING PLAN (3 OF 3)
6	COTTONWOOD DRIVE PLAN & PROFILE
7	CONNOR WAY PLAN & PROFILE
8	OVERALL UTILITY PLAN
9	TRAFFIC SIGNAGE AND CIRCULATION PLAN
10	SITE MAINTENANCE PLAN
11	PHOTOMETRIC PLAN
12	STORMWATER MANAGEMENT PLAN
13	EROSION CONTROL PLAN
14	STORM & EROSION CONTROL DETAILS & SPECIFICATIONS
15	ROAD DETAILS & SPECIFICATIONS (1 OF 2)
16	ROAD DETAILS & SPECIFICATIONS (2 OF 2)
17	WATER DETAILS & SPECIFICATIONS
18	SANITARY SEWER DETAILS & SPECIFICATIONS
19	PUMP STATION DETAILS & SPECIFICATIONS
A1-1.0	BUILDING A1 PARKING LEVEL PLAN
A1-1.1	BUILDING A1 FIRST FLOOR PLAN
A1-1.2	BUILDING A1 SECOND FLOOR PLAN
A1-2.1	BUILDING A1 COLORED NORTH & WEST ELEVATIONS
A1-2.2	BUILDING A1 COLORED SOUTH & EAST ELEVATIONS
A1-3.1	BUILDING A1 APPROVED IMAGES
B1-1.0	BUILDING B1 BASEMENT PLAN
B1-1.1	BUILDING B1 FIRST FLOOR PLAN
B1-1.2	BUILDING B1 SECOND AND THIRD FLOOR PLANS
B1-2.1	BUILDING B1 COLORED NORTH AND SOUTH ELEVATIONS
B1-2.2	BUILDING B1 COLORED EAST & WEST ELEVATIONS
B1-3.0	BUILDING B1 APPROVED IMAGES
B1-3.1	BUILDING B1 PERSPECTIVE VIEW
A2-1.0	BUILDING A-2 FIRST FLOOR (SEE DP 16-05.2)
A2-1.1	BUILDING A-2 SECOND FLOOR (SEE DP 16-05.2)
A2-1.2	BUILDING A-2 ELEVATIONS (SEE DP 16-05.2)
A2-1.3	BUILDING A-2 ELEVATIONS (SEE DP 16-05.2)
A2-1.4	BUILDING A-2 3D IMAGES (SEE DP 16-05.2)
A2-1.5	BUILDING A-2 3D IMAGES (SEE DP 16-05.2)
B2-1.0	BUILDING B2 GARAGE PLAN (SEE DP 16-05.2)
B2-1.1	BUILDING B2 FIRST FLOOR PLAN (SEE DP 16-05.2)
B2-1.2	BUILDING B2 SECOND AND THIRD FLOOR PLANS (SEE DP 16-05.2)
B2-2.1	BUILDING B2 SOUTH AND EAST ELEVATIONS (SEE DP 16-05.2)
B2-2.2	BUILDING B2 NORTH AND WEST ELEVATIONS (SEE DP 16-05.2)
B2-3.1	BUILDING B2 PERSPECTIVE 1 (SEE DP 16-05.2)
B2-3.2	BUILDING B2 PERSPECTIVE 2 (SEE DP 16-05.2)
MSP 1	MASTER SIGN PLAN - OVERALL (SEE DP 20-12)
MSP 2	MASTER SIGN PLAN - BUILDING 'A1' (SEE DP 20-12)
MSP 3	MASTER SIGN PLAN - BUILDING 'B1' (SEE DP 20-12)
MSP 4	MASTER SIGN PLAN - BUILDING 'B2' (SEE DP 20-12)
MSP 5	MASTER SIGN PLAN - BUILDING 'A2' (SEE DP 20-12)
PL	PROPERTY PLAT

Owner & Applicant

ALLEN BROOK DEVELOPMENT INC.
C/O AL SENECAL
31 COMMERCE AVE.,
SOUTH BURLINGTON, VT 05403

Civil

O'LEARY-BURKE CIVIL ASSOCIATES, PLC
13 CORPORATE DRIVE
ESSEX JCT., VT 05452

Architects

GARDNER KILCOYNE ARCHITECTS
147 ALLEN BROOK LN
SUITE 103
WILLISTON, VT 05495

TRUEXCULLINS ARCHITECTURE
209 BATTERY STREET
BURLINGTON, VT 05401

Landscape Architect

MICHAEL LAWRENCE ASSOCIATES
ESSEX JCT., VT 05452

GRAPHIC SCALE

(IN FEET)
1 inch = 60 ft.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING, on the 22 day of October 20 19

Presiding member or Administrator's signature

STATE OF VERMONT
PAUL R. BURKE
10041
CIVIL
PROFESSIONAL ENGINEER

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1

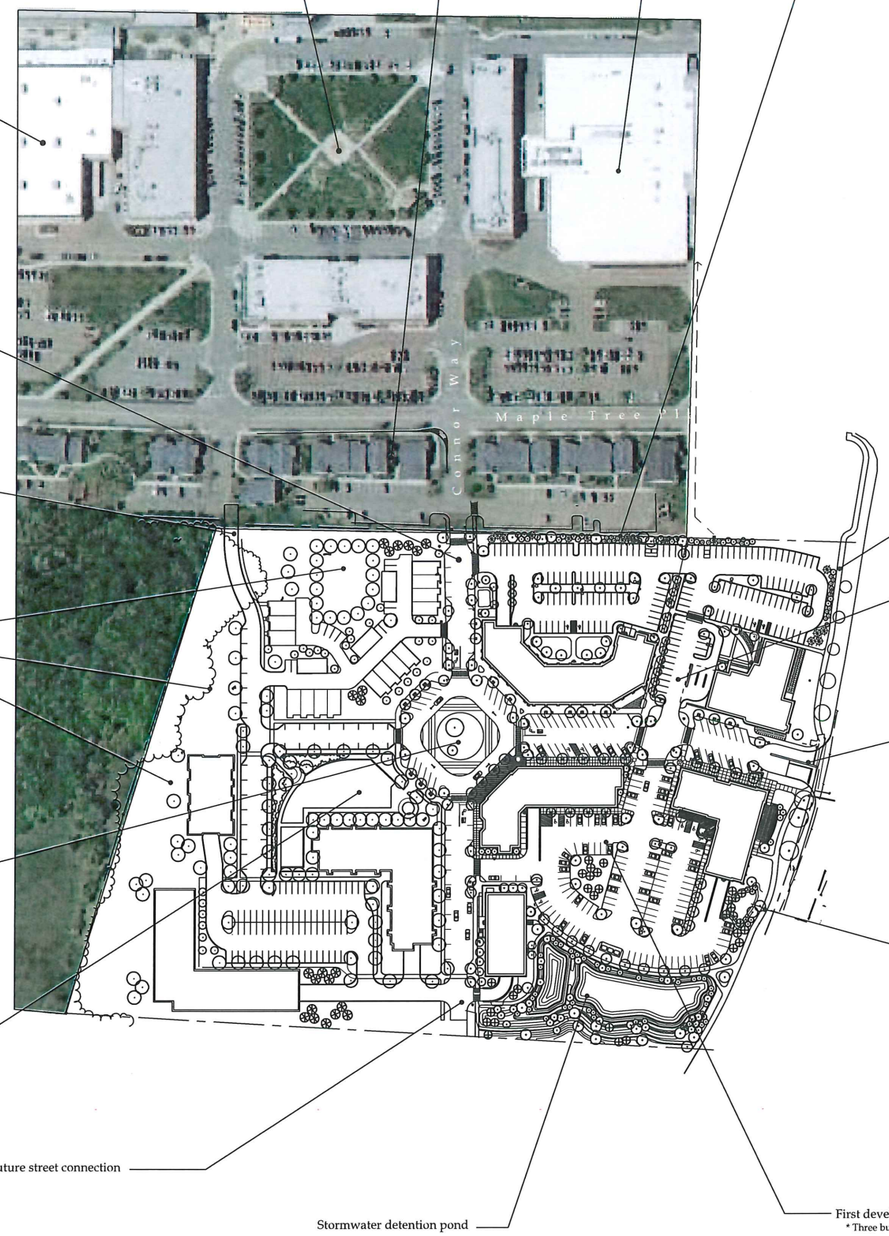
Central greenspace square Maple Street Place

Existing residential units
along east side of Maple Tree Place

Type III landscape screen along west & south sides of property
* Included in phase I of Project
* For details and quantities - see this sheet

Shaw's

Best Buy



Through access on Connor Way Extension
* Included in Phase I
* Pedestrian and vehicle connection to north end of Maple Tree Place's Central Square

Future Access
* Pedestrian and vehicle connection to south end of Maple Tree Place's Central Square

Passive park system along perimeter
* Open lawns
* Widen type III screening at points to create interesting edges
* Connected path system linking to street sidewalk intersections
* Optimize residential units facing parkland

Green Traffic Island
* 60 degree parking / three sides of outer perimeter
* Traffic calmed by stops at all four entry points

Urban Park
* Children's creative play structure
* Lawn
* Framed with ornamental plantings
* Entrance gates at street Intersections
* Welcome residents and visitors

Future street connection

Stormwater detention pond

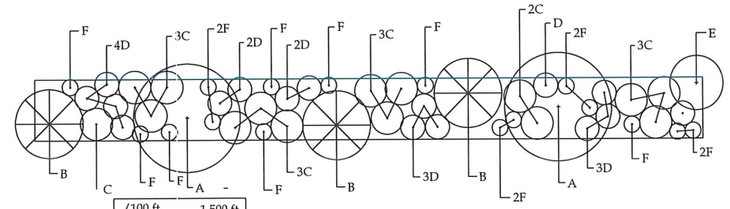
New Rec. Path to Maple Tree Place

Second Development Phase
* Two buildings - one with underground parking

Main entrance from Rt. 2

New recreation path along Rt. 2
* Tie into Cottonwood recreation path system

First development phase
* Three buildings with underground parking



/100 ft.		1,500 ft.	
2	A	30	A
3	B	45	B
15	C	225	C
15	D	225	D
1	E	15	E
16	F	240	F

Type III Landscape Screen
Plan of typical 100 ft. length

0 10'
Graphic Scale

Type III Landscape Screen Plant List

A — Large Trees

Acfr	Acer x freemanii 'Celzam'	Celebration Maple
Aehi	Aesculus hippocastanum 'Baumanii'	Bauman Horsechestnut
GibA	Ginkgo biloba 'Autumn Gold'	Autumn Gold Ginkgo
GibM	Ginkgo biloba 'Magyar'	Magyar Ginkgo
GibP	Ginkgo biloba 'Princeton Sentry'	Princeton Sentry Ginkgo
Gltr	Gleditsia triacanthos inermis	Honeylocust
Plac	Platanus x acerifolia 'Columbia'	Columbia London Plane Tree
Qubi	Quercus bicolor	Swamp White Oak
Quim	Quercus imbricaria	Shingle Oak
Quma	Quercus macrocarpa	Bur Oak
Qumu	Quercus muehlenbergii	Chinkapin Oak
Quru	Quercus rubra	Red Oak
TicGr	Tilia cordata 'Greenspire'	Greenspire Littleleaf Linden
TicGl	Tilia cordata 'Glenlevin'	Glenlevin Littleleaf Linden
Tieu	Tilia euchlora	Crimean Linden
Tito	Tilia tomentosa 'Green Mountain'	Green Mountain Silver Linden
Ulam	Ulmus americana 'Valley Forge'	Valley Forge American Elm

B — Evergreens

Abco	Abies concolor	White Fir
Piab	Picea abies	Norway Spruce
Pigl	Picea glauca	White Spruce
Pist	Pinus strobus	Eastern White Pine

C — Shrubs (6 ft.)

Arar	6 ft	Aronia arbutifolia 'Brilliantissima'	Red Brilliant Chokeberry
ArmA	6 ft.	Aronia melanocarpa 'Autumn Magic'	Red Magic Chokeberry
ArmV	6 ft.	Aronia melanocarpa 'Viking'	Viking Purple Chokeberry
Coal	6 ft.	Cornus alba 'Ivory Halo'	Ivory Halo Red Stem Dogwood
Coal'	6 ft.	Cornus alba 'Prairie Fire'	Prairie Fire Red Stem Dogwood
CoaS	6 ft.	Cornus alba 'Siberica'	Siberian Red Stem Dogwood
CosF	6 ft.	Cornus sericea 'Flaviramea'	Yellow Stem Dogwood
Foma	6 ft.	Fothergilla major 'Mt Airy'	Mt. Airy Fothergilla
IlvA	6 ft.	Ilex verticillata 'Afterglow'	Afterglow Winterberry
IlvBH	6 ft.	Ilex verticillata 'Berry Heavy'	Berry Heavy Winterberry
IlvJ	6 ft.	Ilex verticillata 'Jim Dandy'	Jim Dandy Winterberry
RhPJ	6 ft.	Rhododendron PJM 'Elite'	Elite PJM Rhododendron
SanB	6 ft.	Sambucus nigra 'Black Lace'	Black Lace Elderberry
Sypa	6 ft.	Syringa patula 'Miss Kim'	Miss Kim Lilac
Vica	6 ft.	Viburnum carlesii	Koreanspice Viburnum
Vics	6 ft.	Viburnum cassinoides	Witherod Viburnum
Vide	6 ft.	Viburnum dentatum	'Blue Muffin' Blue Muffin Viburnum

D — Shrubs (8 ft. & up)

CorG	8 ft.	Cornus racemosa	Gray Dogwood
CosB	8 ft.	Cornus sericea 'Baileyi'	Bailey Red Twig Dogwood
HypF	8 ft.	Hydrangea paniculata 'Fire & Ice'	Fire and Ice Hydrangea
HypG	8 ft.	Hydrangea paniculata 'Grandiflora'	Pee Gee Hydrangea
IlvBN	8 ft.	Ilex verticillata 'Berry Nice'	Berry Nice Winterberry
IlvW	8 ft.	Ilex verticillata 'Winter Red'	Winter Red Winterberry
PhoC	8 ft.	Physocarpus opulifolius 'Centerglow'	Centerglow Ninebark
Rhty	8 ft.	Rhus typhina 'Tiger Eyes'	Tiger Eyes Staghorn Sumac
SanM	8 ft.	Sambucus nigra 'Madonna'	Madonna Elderberry
SarS	8 ft.	Sam. racemosa 'Sutherland Gold'	Sutherland Gold Elderberry
Sadi	10 ft.	Salix discolor	Pussy Willow

E — Small Trees

Maam	Maackia amurensis	Amur Maackia
Mahy	Malus hybrids	Crabapples
Syre	Syringa reticulata	Japanese Tree Lilac
Vile	Viburnum lentago	Nannyberry

F — Ground Cover Plants

Rhar	GC	Rhus aromatica 'Gro-Low'	Gro-Low Sumac
Mide	GC	Microbiota decussata	Russian Cypress

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING. on the ___ day of _____, 20___.

_____
Presiding member or Administrator's signature

Cottonwood Crossing

Williston, Vermont

Site Development Master Plan & Type III Landscape Screen

Allen Brook Development Inc. - South Burlington, Vermont

Landscape Architect - Michael Lawrence Assoc. - Essex Junction, Vermont * Engineer - O'Leary Burke Civil Associates - Essex Junction, Vermont

N

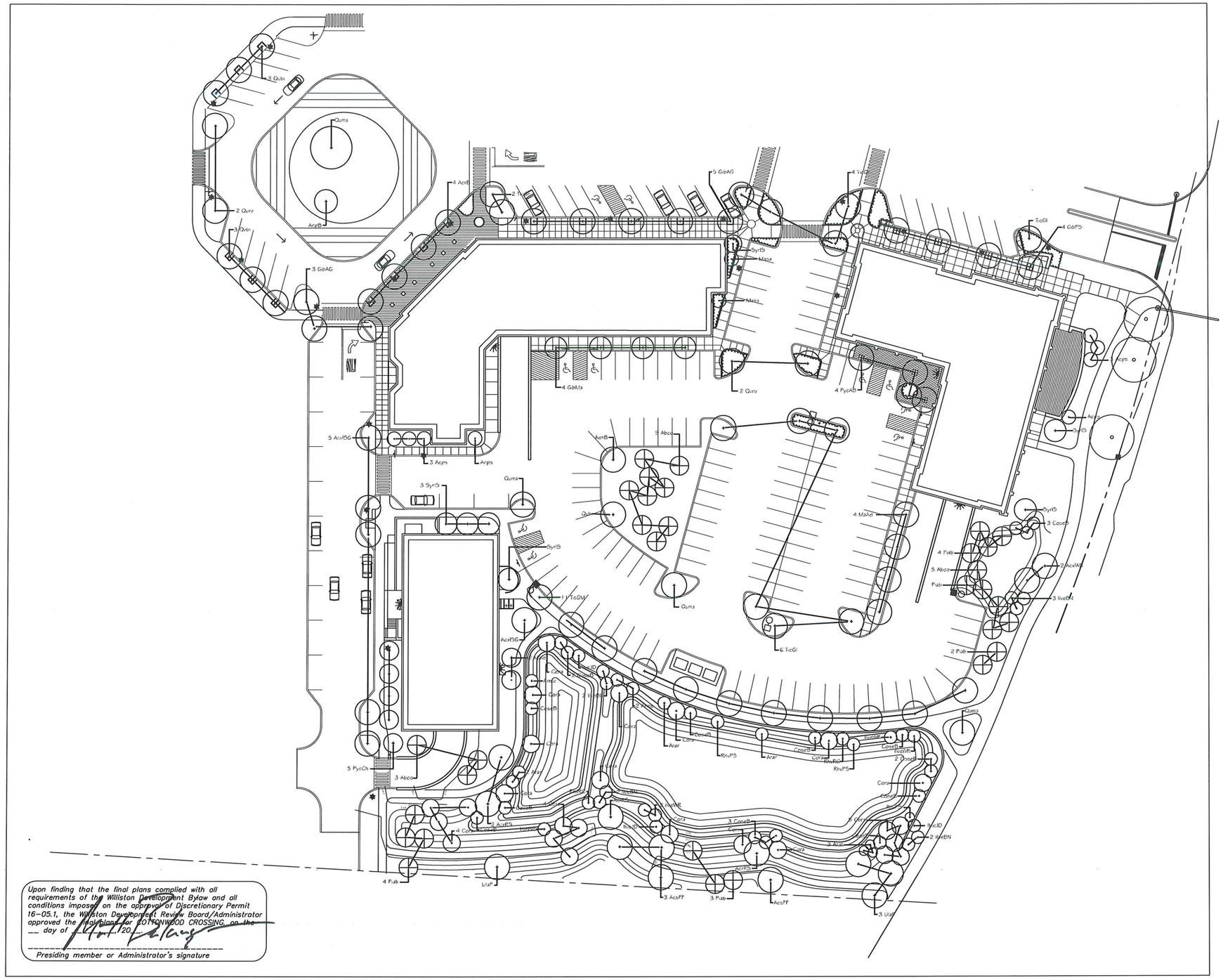
0 100' 200'
Graphic Scale

Tax ID# 08-104-011-00
Application # DP16-05

October 24, 2019

VERMONT LICENSED LANDSCAPE ARCHITECT CHARLES LAWRENCE LA.003701

L-1



PLANT LIST

Large Deciduous Trees

Key	Quan	Scientific Name	Common Name	Size & Spec.
AcpB	1	Acer palmatum 'Bloodgood'	Bloodgood Japanese Redleaf Maple	2.5-3 in.
AcrB	4	Acer rubrum 'Bowhall'	Armstrong Freeman Maple	3-3.5 in.
AcxIAB	2	Acer x freemani 'Autumn Blaze'	Autumn Blaze Freeman Maple	3-3.5 in.
AcxISG	6	Acer x freemani 'Siena Glen'	Siena Glen Freeman Maple	3-3.5 in.
AcrRS	12	Acer rubrum 'Red Sunset'	Red Sunset Red Maple	3-3.5 in.
AcsFF	4	Acer saccharum 'Fall Fiesta'	Red Sunset Red Maple	3-3.5 in.
AchB	1	Aesculus hippocastanum 'Baumann'	Bauman Horsechestnut	2-2.5 in.
GlbAG	8	Ginkgo biloba 'Autumn Gold'	Autumn Gold Ginkgo	3-3.5 in.
GlbMa	4	Ginkgo biloba 'Magyar'	Magyar Ginkgo	3-3.5 in.
GlbPS	4	Ginkgo biloba 'Princeton Sentry'	Princeton Sentry Ginkgo	3-3.5 in.
MaAd	4	Malus 'Adams'	Adams Crabapple	2.5-3 in.
MaLo	4	Malus 'Louisa'	Louisa Crabapple	2.5-3 in.
Masa	2	Malus 'Sargentii'	Sargent Crabapple	2.5-3 in.
PycCh	5	Pyrus calleryana 'Chanticleer'	Cleveland Selet Pear	2.5-3 in.
PycAB	4	Pyrus calleryana 'Autumn Blaze'	Autumn Blaze Pear	2.5-3 in.
Quba	7	Quercus bicolor	Swamp White Oak	3-3.5 in.
Quma	4	Quercus macrocarpa	Bur Oak	transplant consideration
Quru	4	Quercus rubra	Red Oak	3-3.5 in.
SyrIS	7	Syringa reticulata 'Ivory Silk'	Ivory Silk Tree Lilac	2.5-3 in.
TicGl	13	Tilia cordata 'Glenleven'	Glenleven Littleleaf Linden	3-3.5 in.
TicGr	6	Tilia cordata 'Greenspire'	Greenspire Littleleaf Linden	3-3.5 in.
TtGM	11	Tilia tomentosa 'Green Mountain'	Green Mountain Silver Linden	3-3.5 in.
UlaP	1	Ulmus americana 'Princeton'	Princeton Elm	3-3.5 in.

Evergreen Trees

Key	Quan	Scientific Name	Common Name	Size & Spec.
Abco	17	Abies concolor	Concolor Fir	7-8 ft.
Pab	14	Picea abies	White Spruce	6-7 ft.

Deciduous Shrubs at Pond

Key	Quan	Scientific Name	Common Name	Size & Spec.
Arar	7	Aronia arbutifolia 'Brilliantissima'	Red Brilliant Chokeberry	3 gal.
Arme	3	Aronia melanocarpa 'Autumn Magic'	Autumn Magic Chokeberry	3 gal.
Cora	20	Cornus racemosa	Gray Dogwood	3 gal.
CoseB	23	Cornus sericea 'Baileyi'	Red Twig Dogwood	3 gal.
IlveBN	10	Ilex verticillata 'Berry Nice'	Berry Nice Winterberry	3 gal.
IlveJD	3	Ilex verticillata 'Jim Dandy'	Jim Dandy Winterberry	3 gal.
IlveWR	4	Ilex verticillata 'Winter Red'	Winter Red Winterberry	3 gal.
RhvPS	3	Rhododendron viscosum 'Pink and Sweet'	Pink and Sweet Swamp Azalea	3 gal.
RhvRC	2	Rhododendron viscosum 'Ribbon Candy'	Ribbon Candy Swamp Azalea	3 gal.

Cottonwood Crossing

Williston, Vermont

Site Development Plan - Phase I

Allen Brook Development Inc. - South Burlington, Vermont

Landscape Architect - Michael Lawrence Assoc. - Essex Junction, Vermont * Engineer - O'Leary Burke Civil Associates - Essex Junction, Vermont

N

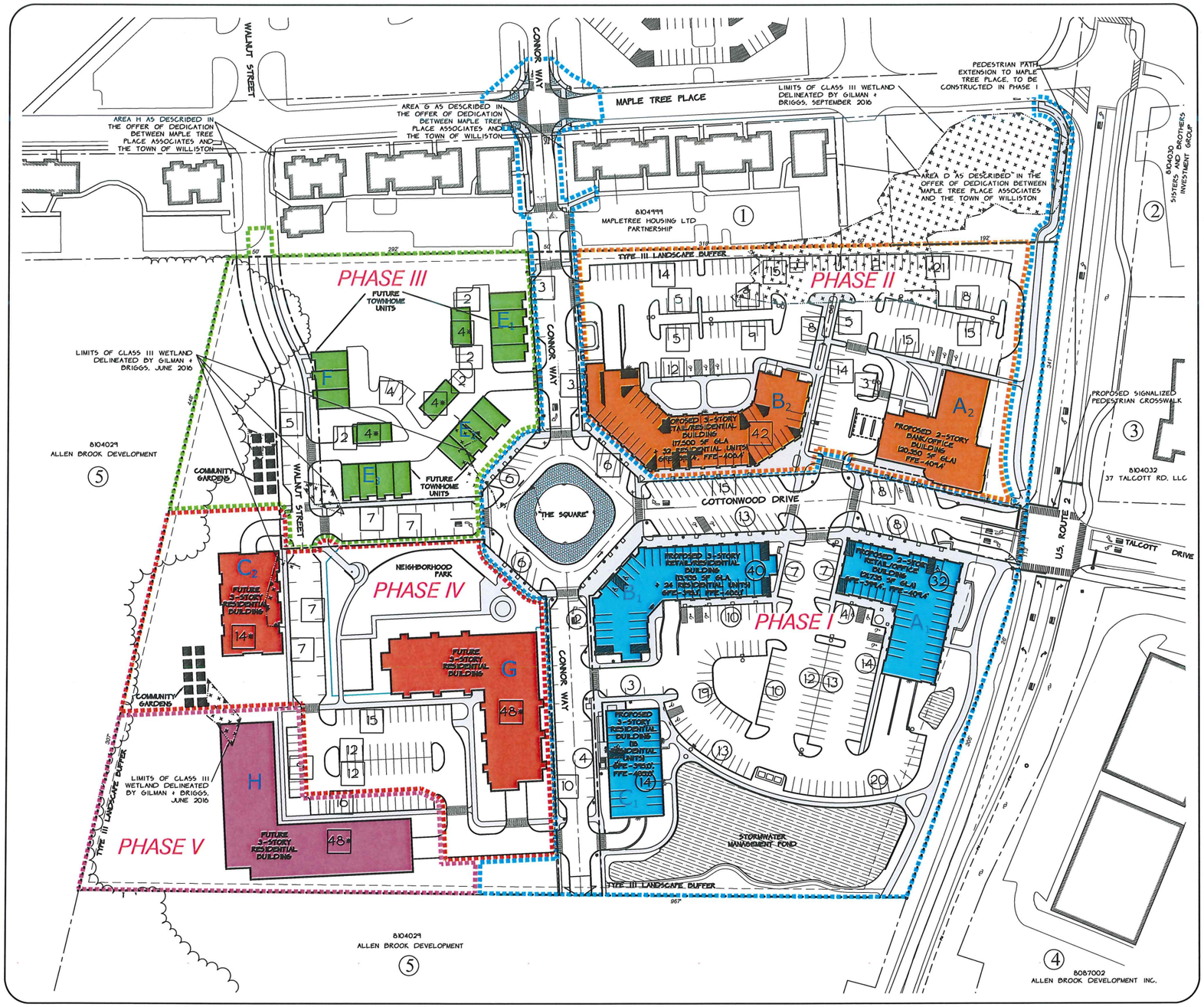
0 30' 60'
Graphic Scale

Tax ID# 08-104-011-00
Application # DP 16-05

October 24, 2019

VERMONT CHARLES S. SPARGO MICHAEL LAWRENCE ASSOC. LANDSCAPE ARCHITECTS

L-1A



Legend

- PROJECT BOUNDARY
- OTHER PROPERTY LINE
- SIDELINE OF EASEMENT
- 400 CONTOUR LINE (U.S.G.S. DATUM)
- EXISTING TREELINE
- STORMWATER MANAGEMENT AREA
- WETLAND BOUNDARY
- PHASE I LIMITS
- PHASE II LIMITS
- PHASE III LIMITS
- PHASE IV LIMITS
- PHASE V LIMITS
- 32 PARKING COUNT
- 32* ASSUMED PARKING COUNT (TO BE FINALIZED WITH FUTURE APPLICATION)

Dwelling Units (D.U.)

COTTON WOOD CROSSING - PHASE I

BUILDING TYPE A1	1st FLOOR RETAIL - 6,400 SF 1st FLOOR RESTAURANT - 5,225 SF 2nd FLOOR OFFICE - 10,110 SF
BUILDING TYPE B1	1st FLOOR RETAIL - 12,935 SF 1st FLOOR RESTAURANT - 1,000 SF 2nd FLOOR - 12 RES. UNITS - (4 - 1BR), (8 - 2BR) 3rd FLOOR - 12 RES. UNITS - (4 - 1BR), (8 - 2BR)
BUILDING TYPE C1	APARTMENTS - 18 RES. UNITS (1 - 1BR) & (17 - 2BR)

COTTON WOOD CROSSING - PHASE II

BUILDING TYPE A2	1st FLOOR BANK - 2,500 SF 1st & 2nd FLOOR OFFICE - 17,850 SF
BUILDING TYPE B2	1st FLOOR RETAIL - 12,500 SF 1st FLOOR RESTAURANT - 5,000 SF 2nd FLOOR - 16 RES. UNITS - (6 - 1BR) & (10 - 2BR) 3rd FLOOR - 16 RES. UNITS - (6 - 1BR) & (10 - 2BR)

COTTON WOOD CROSSING - PHASE III

BUILDING TYPE E1	TOWNHOMES - 4 RES. UNITS (4 - 2BR)
BUILDING TYPE E2	TOWNHOMES - 4 RES. UNITS (4 - 2BR)
BUILDING TYPE E3	TOWNHOMES - 4 RES. UNITS (4 - 2BR)
BUILDING TYPE F	TOWNHOMES - 4 RES. UNITS (4 - 2BR)

COTTON WOOD CROSSING - PHASE IV

BUILDING TYPE C2	APARTMENTS - 18 RES. UNITS (1 - 1BR) & (17 - 2BR)
BUILDING TYPE G	APARTMENTS - 47 RES. UNITS (18 - 1BR) & (29 - 2BR)

COTTON WOOD CROSSING - PHASE V

BUILDING TYPE H	APARTMENTS - 47 RES. UNITS (18 - 1-BR) & (29 - 2BR)

Project Statistics

ZONING INFORMATION

PARCEL ADDRESS - 6180 WILLISTON ROAD
WILLISTON, VERMONT 05495
TAX MAP 8, PARCELS 104-11 & 104-19

ZONED - MURZD - MIXED USE RESIDENTIAL ZONING DISTRICT
FRONT YARD SETBACK - 50'
SIDE YARD SETBACK - 9' - TYPE III LANDSCAPE BUFFER
REAR YARD SETBACK - 9' - TYPE III LANDSCAPE BUFFER
MAX. BUILDING HEIGHT - 36'

EXISTING PARCEL AREA = APX. 17.0 ACRES (740,625 SF)
PROPOSED LOT A2 = APX. 1.69 ACRES (73,687 SF)
PROPOSED REMAINDER OF PARCEL = APX. 15.31 ACRES (666,938 SF)

COTTON WOOD CROSSING - TOTALS

COTTONWOOD TOTALS
31,835 SF RETAIL SPACE
11,225 SF RESTAURANT SPACE
27,960 SF OFFICE SPACE
2,500 SF BANK CUSTOMER SERVE AREA
173 DWELLING UNITS (144 - 2BR, 58 -1BR
202 RESIDENTIAL UNITS TOTAL)

COVERAGE CALCULATIONS

COMBINED PARCEL AREA - 740,625 SF (17.0 ACRES) =	100%
EXISTING COVERAGE (BUILDING/PARKING) - 273,771 SF =	37.0%
PROPOSED COVERAGE	
BUILDING - 131,120 SF =	17.7%
SIDEWALK/ROADS/PARKING - 304,044 SF =	41.1%
TOTAL PROPOSED COVERAGE - 435,164 SF =	58.8%
OPEN SPACE - 305,461 SF =	41.2%

PARKING CALCULATIONS

MIN. / MAX. VEHICULAR PARKING REQUIRED PER TABLE 14.A OF THE WDB	ENTIRE DEVELOPMENT: 817 SPACES REQUIRED
MIN. VEHICULAR PARKING REQUIRED PER SHARED PARKING CALCULATIONS	ENTIRE DEVELOPMENT: 672 SPACES REQUIRED * PARKING REQUIREMENT COMPUTED USING SHARED PARKING CALCULATIONS PROVIDED BY THE URBAN LAND INSTITUTE. SEE SHEETS 3 & 3A FOR COMPUTATIONS.
VEHICULAR PARKING PROPOSED	ENTIRE DEVELOPMENT: 733 TOTAL SPACES PROPOSED (INCLUDING 33 HANDICAPPED SPACES)

Table 23.A - Landscaped Buffer Matrix

use providing buffer	adjoining use	Minimum Buffer Width Type I(1)	Type II(2)	Type III(3)	Type IV(3)
mixed use including residential	agriculture/conserved lands	50 feet	not permitted	36 feet	not permitted
	open space residential	50 feet	not permitted	23 feet	not permitted
	other residential w/dwl/units	50 feet	13 feet	23 feet	27 feet
	higher density residential	50 feet	13 feet	9 feet	23 feet
	mixed use, including residential	50 feet	13 feet	9 feet	23 feet

NUMBER	ABUTTER	USE	ZONING DISTRICT	MAILING ADDRESS
1	MAPLE TREE HOUSING LTD. PARTNERSHIP	RESIDENTIAL	MIXED USE RESIDENTIAL (MURZD)	C/O CHAMPLAIN HOUSING TRUST, 88 KING STREET, BURLINGTON, VT 05401
2	SISTERS AND BROTHERS INVESTMENT GROUP	COMMERCIAL	MIXED USE RESIDENTIAL (MURZD)	C/O HANDY'S TEXACO, 75 SOUTH WINOOSKI AVE., BURLINGTON, 05401
3	37 TALCOTT RD. LLC	COMMERCIAL	MIXED USE RESIDENTIAL (MURZD)	37 TALCOTT ROAD, SUITE 112, WILLISTON, VT 05495
4	ALLEN BROOK DEVELOPMENT	COMMERCIAL	MIXED USE RESIDENTIAL (MURZD)	31 COMMERCE AVE., SOUTH BURLINGTON, VT 05403
5	ALLEN BROOK DEVELOPMENT	UNDEVELOPED	MIXED USE RESIDENTIAL (MURZD)	31 COMMERCE AVE., SOUTH BURLINGTON, VT 05403

GRAPHIC SCALE

(IN FEET)
1 inch = 60 ft.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING, on the __ day of _____, 20__.

_____
Presiding member or Administrator's signature

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1

8/30/2019	REVISED PHASE I AND PHASE II LAYOUT, OVERALL PARKING REQUIREMENTS	DJH
DATE 4/3/2017	REVISION ISSUED FOR CONSTRUCTION	BY DJH

SURVEY CBCA
DESIGN CBCA
DRAWN DJH
CHECKED FJO
SCALE 1"=60

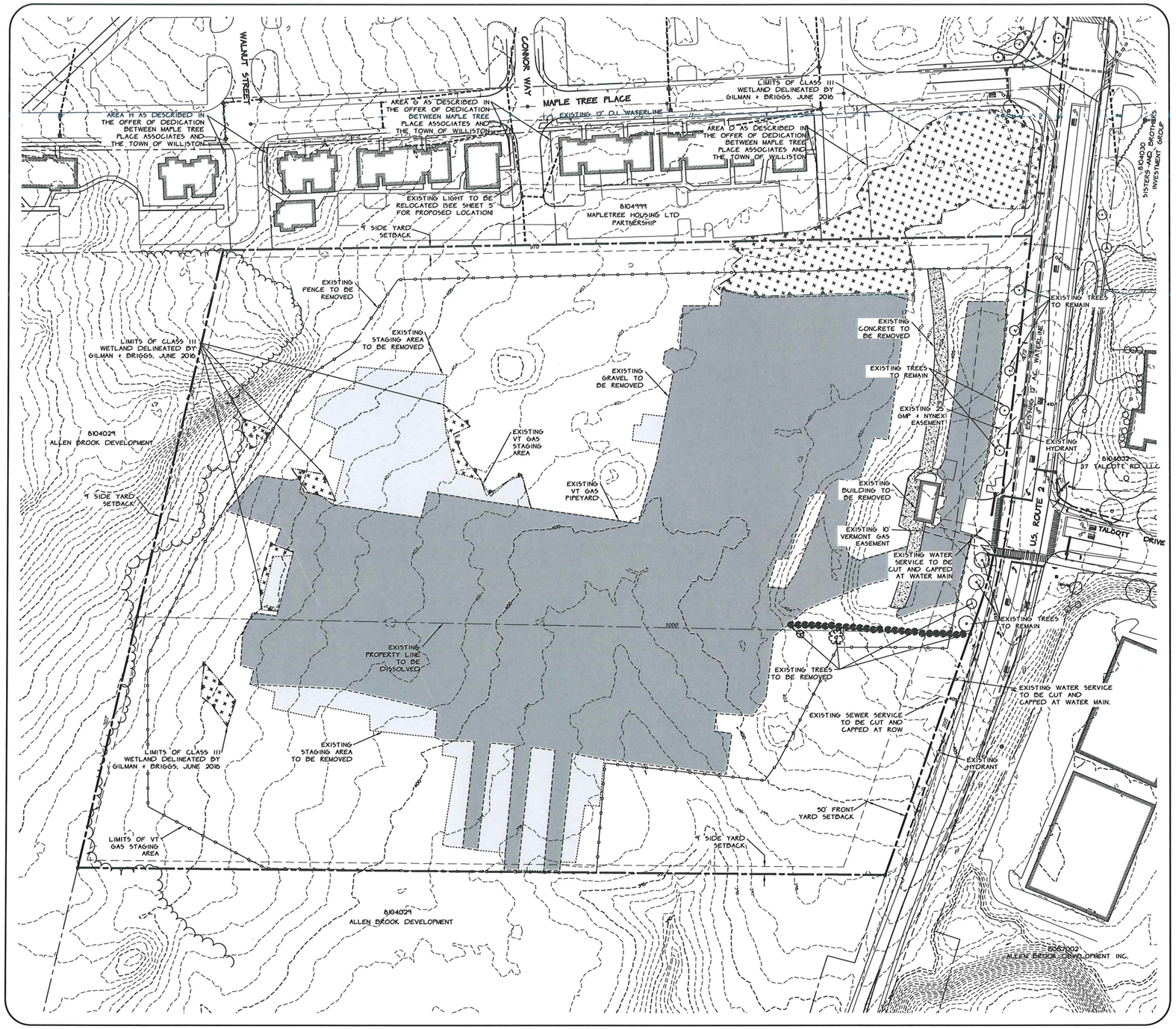
☐ RECORD DRAWING ■ PRELIMINARY
☐ FINAL ☐ SKETCH/CONCEPT

O'LEARY-BURKE
CIVIL ASSOCIATES, PLC
13 CORPORATE DRIVE,
ESSEX JCT., VT
PHONE: 878-0000
FAX: 878-9909
E-MAIL: obca@oleary-burke.com

COTTONWOOD CROSSING
U.S. ROUTE 2 WILLISTON, VT

MASTER PLAN

DATE 11/04/2016
JOB # 5087
FILE 5087-S19
PLAN SHEET # 1



Legend

- PROJECT BOUNDARY
- OTHER PROPERTY LINE
- SIDELINE OF EASEMENT
- 400 CONTOUR LINE (U.S.G.S. DATUM)
- EXISTING TREELINE
- EXISTING IRON PIPE
- EXISTING CONCRETE MONUMENT
- IRON PIPE (TO BE SET)
- T EXISTING ELECTRIC/TV/TELEPHONE LINE
- EXISTING STORMLINE
- W EXISTING WATERLINE
- S EXISTING STORMLINE
- FM EXISTING FORCEMAIN
- EXISTING HYDRANT
- EXISTING UTILITY POLE
- FENCE (LIMITS OF VT GAS PIPE YARD)
- EDGE OF GRAVEL
- EDGE OF STAGING AREA
- WETLAND BOUNDARY

AREA PROPOSED FOR DEVELOPMENT (FORMER CHASE PARCEL)

AREA PROPOSED FOR DEVELOPMENT (FORMER TOMKO PARCEL)

AREA PROPOSED FOR DEVELOPMENT (FORMER TOMKO PARCEL)

EXISTING BUILDING #2 (FORMER WILLISTON DRIVING RANGE)

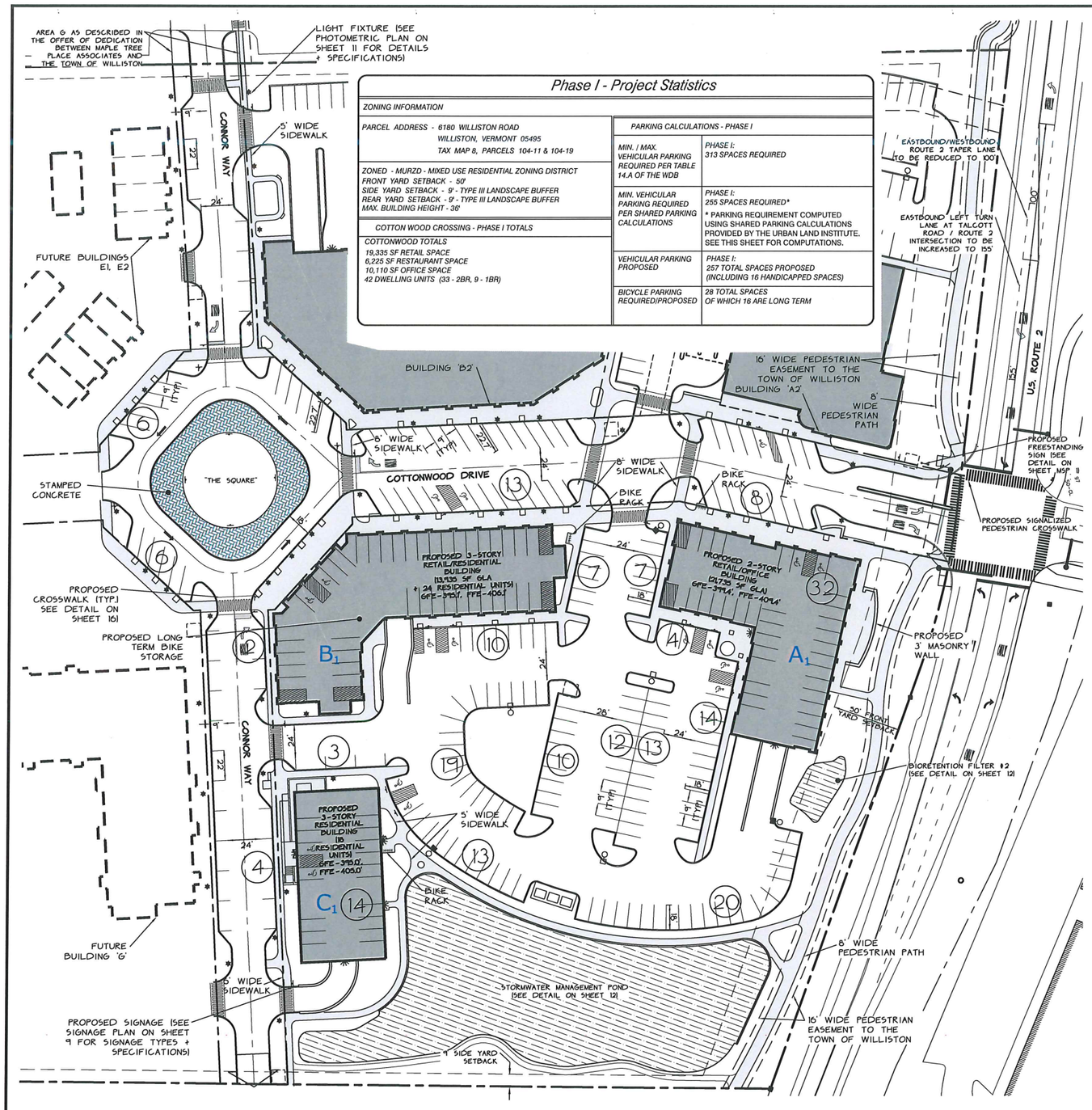
COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1

GRAPHIC SCALE
(IN FEET)
1 inch = 60 ft.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING, on the __ day of _____, 20__.

_____
Presiding member or Administrator's signature

DATE 4/3/2017	REVISION ISSUED FOR CONSTRUCTION		BY DJH
SURVEY OBCA	☐ RECORD DRAWING ☐ FINAL	■ PRELIMINARY ☐ SKETCH/CONCEPT	DATE 11/04/2016
DESIGN OBCA	O'LEARY-BURKE CIVIL ASSOCIATES, PLC	COTTONWOOD CROSSING U.S. ROUTE 2 WILLISTON, VT	JOB # 5087
DRAWN DJH			FILE 5087-S19
CHECKED PJO	13 CORPORATE DRIVE, ESSEX JCT., VT PHONE: 878-0990 FAX: 878-9989 E-MAIL: obca@olearyburke.com	EXISTING CONDITIONS	PLAN SHEET # 2
SCALE 1"=60'			



Phase I - Project Statistics

ZONING INFORMATION

PARCEL ADDRESS - 6180 WILLISTON ROAD
WILLISTON, VERMONT 05495
TAX MAP 8, PARCELS 104-11 & 104-19

ZONED - MURZD - MIXED USE RESIDENTIAL ZONING DISTRICT
FRONT YARD SETBACK - 50'
SIDE YARD SETBACK - 9' - TYPE III LANDSCAPE BUFFER
REAR YARD SETBACK - 9' - TYPE III LANDSCAPE BUFFER
MAX. BUILDING HEIGHT - 36'

COTTON WOOD CROSSING - PHASE I TOTALS

COTTONWOOD TOTALS
19,335 SF RETAIL SPACE
6,225 SF RESTAURANT SPACE
10,110 SF OFFICE SPACE
42 DWELLING UNITS (33 - 2BR, 9 - 1BR)

PARKING CALCULATIONS - PHASE I

MIN. / MAX. VEHICULAR PARKING REQUIRED PER TABLE 14.A OF THE WDB	PHASE I: 313 SPACES REQUIRED
MIN. VEHICULAR PARKING REQUIRED PER SHARED PARKING CALCULATIONS	PHASE I: 255 SPACES REQUIRED* * PARKING REQUIREMENT COMPUTED USING SHARED PARKING CALCULATIONS PROVIDED BY THE URBAN LAND INSTITUTE. SEE THIS SHEET FOR COMPUTATIONS.
VEHICULAR PARKING PROPOSED	PHASE I: 257 TOTAL SPACES PROPOSED (INCLUDING 16 HANDICAPPED SPACES)
BICYCLE PARKING REQUIRED/PROPOSED	28 TOTAL SPACES OF WHICH 16 ARE LONG TERM

Legend

- PROJECT BOUNDARY
- OTHER PROPERTY LINE
- SIDELINE OF EASEMENT
- EXISTING IRON PIPE
- EXISTING CONCRETE MONUMENT
- IRON PIPE (TO BE SET)
- (32) PHASE I PARKING COUNT
- PROPOSED LIGHT FIXTURE

Dwelling Units (D.U.)

COTTON WOOD CROSSING - PHASE I

BUILDING TYPE (A1): 1st FLOOR RETAIL - 6,400 SF; 1st FLOOR RESTAURANT - 5,225 SF; 2nd FLOOR OFFICE - 10,110 SF

BUILDING TYPE (B1): 1st FLOOR RETAIL - 12,935 SF; 1st FLOOR RESTAURANT - 1,000 SF; 2nd FLOOR - 12 RES. UNITS - (4 - 1BR), (8 - 2BR); 3rd FLOOR - 12 RES. UNITS - (4 - 1BR), (8 - 2BR)

BUILDING TYPE (C1): APARTMENTS - 18 RES. UNITS (1 - 1BR) & (17 - 2BR)

Phase I - Shared Parking Calculations

Use of Bldg Floor Area	Bldg Floor Area (s.f.)	Peak Parking Spaces Required	Bike Parking Spaces	Long Term Bike Parking Spaces
Residential (Apts.)	42	74	11	11
Retail	19335	78	5	1
Drive-In Bank	0	0	0	0
Movie Theatre	0	0	0	0
General Office	10110	36	3	2
Medical Office	0	0	0	0
Restaurant	6225	125	9	2
	Total	313	28	16

* Required spaces based on 1.75 spaces/unit
* Required spaces based on 4 spaces/1,000 SF
* Required spaces based on 4.75 spaces/1,000 SF
* Required spaces based on 3.5 spaces/1,000 SF
* Required spaces based on 20 spaces/1,000 SF
*** Required spaces based on Town of Williston Zoning Regulations

Business Hours	Spaces Required (Apts.)	Adjusted Spaces Required (Apts.)	Spaces Required (Retail)	Adjusted Spaces Required (Retail)	Spaces Required (Movie Theatre)	Adjusted Spaces Required (Movie Theatre)	Spaces Required (Office)	Adjusted Spaces Required (Office)	Spaces Required (Restaurant)	Adjusted Spaces Required (Restaurant)	Total Adjusted Spaces Required
6:00 a.m.	74	74	0	0	0	0	1	1	0	0	75
7:00 a.m.	70	70	6	6	0	0	7	7	3	3	86
8:00 a.m.	67	67	14	14	0	0	23	23	6	5	109
9:00 a.m.	64	64	33	33	0	0	33	33	13	12	142
10:00 a.m.	63	63	53	53	0	0	36	36	25	23	175
11:00 a.m.	63	63	68	68	0	0	36	36	38	34	201
12:00 noon	63	63	76	76	0	0	32	32	63	57	228
1:00 p.m.	63	63	78	78	0	0	32	32	88	79	252
2:00 p.m.	63	63	76	76	0	0	35	35	75	68	242
3:00 p.m.	63	63	74	74	0	0	33	33	75	68	238
4:00 p.m.	64	64	68	68	0	0	28	28	63	57	217
5:00 p.m.	67	67	62	62	0	0	17	17	88	79	225
6:00 p.m.	68	68	64	64	0	0	8	8	113	102	242
7:00 p.m.	70	70	69	69	0	0	3	3	125	113	255
8:00 p.m.	71	71	68	68	0	0	3	3	125	113	255
9:00 p.m.	73	73	48	48	0	0	1	1	125	113	235
10:00 p.m	73	73	25	25	0	0	1	1	113	102	201
11:00 p.m.	74	74	10	10	0	0	0	0	88	79	163
12:00 mid.	74	74	0	0	0	0	0	0	63	57	131

Overall - Shared Parking Calculations

Use of Bldg Floor Area	Bldg Floor Area (s.f.)	Peak Parking Spaces Required
Residential (Apts.)	202	354
Retail	31835	128
Drive-In Bank	2500	12
Movie Theatre	0	0
General Office	27960	98
Medical Office	0	0
Restaurant	11225	225
	Total	817

* Required spaces based on 1.75 spaces/unit
* Required spaces based on 4 spaces/1,000 SF
* Required spaces based on 4.75 spaces/1,000 SF
* Required spaces based on 3.5 spaces/1,000 SF
* Required spaces based on 20 spaces/1,000 SF
*** Required spaces based on Town of Williston Zoning Regulations

Business Hours	Spaces Required (Apts.)	Adjusted Spaces Required (Apts.)	Spaces Required (Retail)	Adjusted Spaces Required (Retail)	Spaces Required (Movie Theatre)	Adjusted Spaces Required (Movie Theatre)	Spaces Required (Office)	Adjusted Spaces Required (Office)	Spaces Required (Restaurant)	Adjusted Spaces Required (Restaurant)	Total Adjusted Spaces Required
6:00 a.m.	354	354	0	0	0	0	3	3	0	0	357
7:00 a.m.	336	336	11	11	0	0	20	20	5	5	372
8:00 a.m.	319	319	25	25	0	0	62	62	11	10	416
9:00 a.m.	308	308	59	59	0	0	91	91	23	21	479
10:00 a.m.	301	301	95	95	0	0	98	98	45	41	535
11:00 a.m.	301	301	122	122	0	0	98	98	68	61	582
12:00 noon	301	301	136	136	0	0	88	88	113	102	627
1:00 p.m.	301	301	140	140	0	0	88	88	158	142	671
2:00 p.m.	301	301	136	136	0	0	95	95	135	122	654
3:00 p.m.	301	301	133	133	0	0	91	91	135	122	647
4:00 p.m.	308	308	122	122	0	0	75	75	113	102	607
5:00 p.m.	319	319	111	111	0	0	46	46	158	142	618
6:00 p.m.	326	326	115	115	0	0	23	23	203	183	647
7:00 p.m.	333	333	125	125	0	0	7	7	225	203	668
8:00 p.m.	340	340	122	122	0	0	7	7	225	203	672
9:00 p.m.	347	347	85	85	0	0	3	3	225	203	638
10:00 p.m.	350	350	45	45	0	0	3	3	203	183	581
11:00 p.m.	354	354	18	18	0	0	0	0	158	142	514
12:00 mid.	354	354	0	0	0	0	0	0	113	102	456

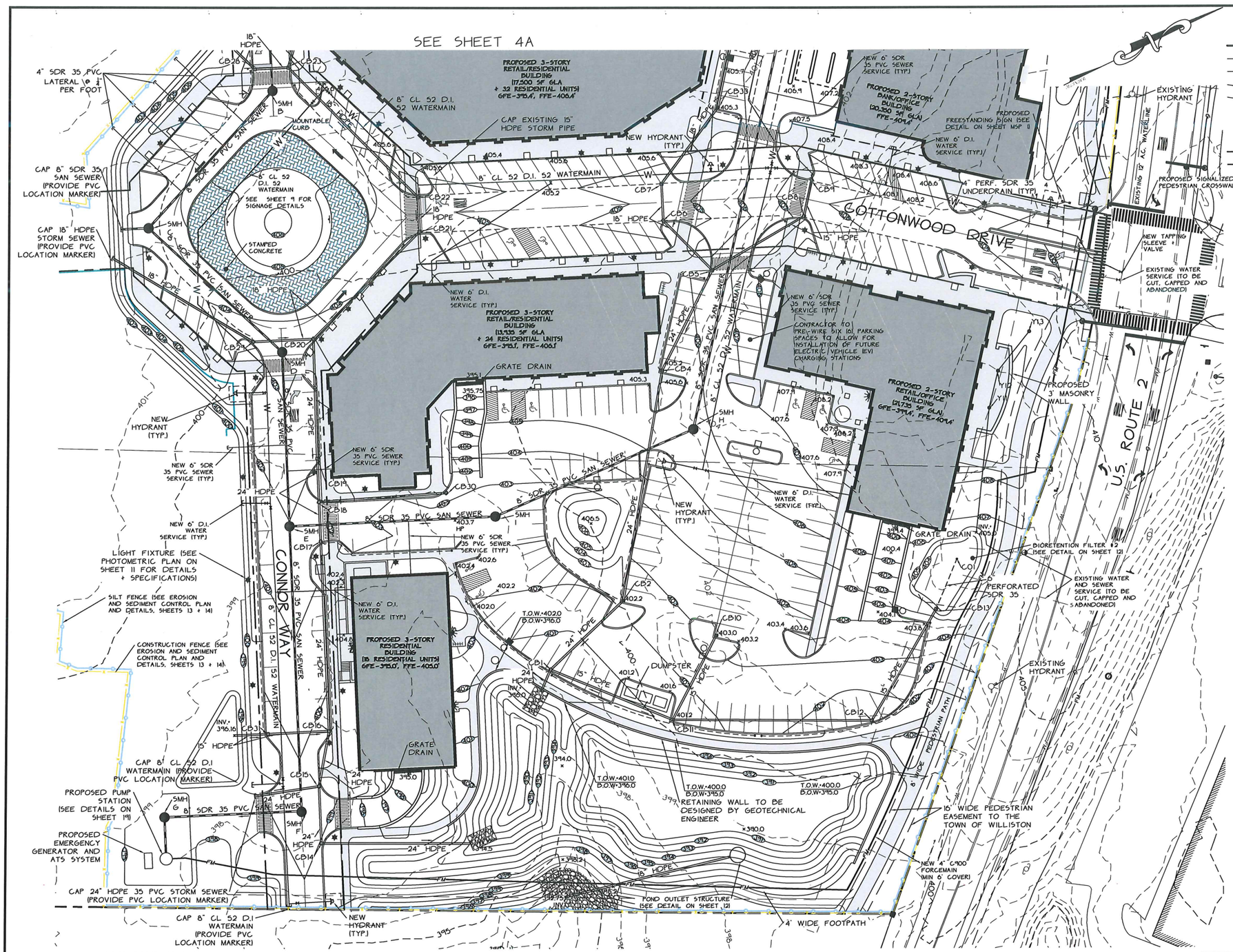
GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING, on the ___ day of ___, 20__.

Presiding member or Administrator's signature

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1

DATE 8/30/2019	REVISION REVISED PHASE I LAYOUT, OVERALL PARKING REQUIREMENTS — BY DJH
SURVEY OBCA	☐ RECORD DRAWING ■ PRELIMINARY ☐ FINAL ☐ SKETCH/CONCEPT
DESIGN OBCA	O'LEARY-BURKE CIVIL ASSOCIATES, PLC
DRAWN DJH	13 CORPORATE DRIVE, ESSEX JCT., VT PHONE: 878-9990 FAX: 878-9989 E-MAIL: obca@olearyburke.com
CHECKED PJO	
SCALE 1"=40'	COTTONWOOD CROSSING — U.S. ROUTE 2 — WILLISTON, VT
	PHASE I - SITE PLAN
	DATE 7/5/2019 · JOB# 5087 · FILE 5087-S19 · PLAN SHEET # 3



NOTE: REFER TO SHEET 5 FOR STORM AND SANITARY SEWER COMPUTATIONS, INCLUDING ALL STRUCTURE INVERT AND RIM INFORMATION.

GRADING PLAN

1"=30'

GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

Legend

PROJECT BOUNDARY	EXISTING WATERLINE
OTHER PROPERTY LINE	EXISTING SANITARY SEWER
SIDELINE OF EASEMENT	EXISTING FORCEMAIN
EXISTING CONTOUR LINE	EXISTING HYDRANT
PROPOSED CONTOUR LINE	EXISTING UTILITY POLE
EXISTING IRON PIPE	PROPOSED STORM SEWER
EXISTING CONC. MONUMENT	PROPOSED UNDERDRAIN
IRON PIPE (TO BE SET)	PROPOSED SANITARY SEWER
EXISTING TELE LINE	PROPOSED SEWER FORCEMAIN
EXISTING STORM SEWER	PROPOSED WATERLINE

GENERAL CONSTRUCTION SPECIFICATIONS

1. 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 TOWN OF WILLISTON SPECIFICATIONS AND REQUIREMENTS AND THESE PLANS.
2. THE CONTRACTOR SHALL CONTACT ALL UTILITIES BEFORE EXCAVATION TO VERIFY THE LOCATION OF ANY UNDERGROUND LINES. THE CONTRACTOR SHALL NOTIFY "DIGSAFE" AT 1-888-344-7233 AND THE TOWN OF WILLISTON PUBLIC WORKS DEPARTMENT PRIOR TO ANY EXCAVATION.
3. UTILITIES INFORMATION SHOWN HEREON WERE OBTAINED FROM BEST AVAILABLE SOURCE AND MAY OR MAY NOT BE EITHER ACCURATE OR COMPLETE. CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY UTILITY, PUBLIC OR PRIVATE, SHOWN OR NOT SHOWN HEREON. CONTRACTOR SHALL CONNECT OR RECONNECT ALL UTILITIES TO THE NEAREST SOURCE THROUGH COORDINATION WITH UTILITY OWNER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND REMOVAL OF ALL EXISTING VEGETATION, PAVEMENT AND STRUCTURES NECESSARY TO CONSTRUCT THIS PROJECT UNLESS OTHERWISE NOTED ON THESE PLANS. THE CONTRACTOR SHALL REMOVE ALL EXCESS MATERIAL, EXCAVATED SOIL, DEBRIS AND TRASH FROM THE SITE UPON COMPLETION OF CONSTRUCTION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. EXCESS SOIL GENERATED DURING CONSTRUCTION IS NOT SUITABLE FOR REUSE WITHIN PAVEMENT SECTIONS OR BENEATH OR ADJACENT TO THE PROPOSED BUILDING FOUNDATIONS AND FLOOR SLAB.
5. THE CONTRACTOR SHALL BE RESPONSIBLE AT HIS OWN EXPENSE FOR ENSURING THAT THE DUST CREATED AS A RESULT OF CONSTRUCTION DOES NOT CREATE A NUISANCE OR A SAFETY HAZARD. WHERE AND WHEN DEEMED NECESSARY BY THE 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.
6. ANY SURFACES, LINES, OR STRUCTURES WHICH HAVE BEEN DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO THE CONDITION AT LEAST EQUAL TO THAT IN WHICH THEY WERE FOUND IMMEDIATELY PRIOR TO THE BEGINNING OF OPERATIONS.
7. THE DESIGN ON THESE PLANS SHALL BE INSPECTED BY O'LEARY-BURKE CIVIL ASSOCIATES, ESSEX JUNCTION, VERMONT, TO ENSURE COMPLIANCE WITH THE PLANS AND REQUIREMENTS. O'LEARY- BURKE WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS THAT MAY ARISE FROM THE FAILURE OF THE CONTRACTOR TO FOLLOW THESE PLANS, SPECIFICATIONS AND THE DESIGN INTENT THAT THE PLANS CONVEY, AND FROM FAILURE TO HAVE BEEN NOTIFIED TO INSPECT THE WORKS AND TESTS IN PROGRESS.
8. TO ENSURE COMPLIANCE WITH THE PLAN(S), THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE TOWN OF WILLISTON PUBLIC WORKS DEPARMENT 24 HOURS IN ADVANCE OF STARTING ANY WORK, CUTTING THE PAVEMENT, BEGINNING THE INSTALLATION OF ANY UTILITIES, BRINGING IN ANY NEW GRAVEL FOR THE NEW BASE, PAVING, AND FINAL INSPECTION.
9. THE HORIZONTAL AND VERTICAL SEPARATION FOR SEWER AND WATER LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE "TEN STATE STANDARDS – RECOMMENDED STANDARDS FOR WATER."
10. TOPSOIL SHALL BE STOCKPILED, SEEDED, AND MULCHED UNTIL REUSED. SILT FENCES SHALL BE PLACED AND STAKED CONTINUOUSLY AROUND THE BOTTOM OF THE TOPSOIL PILES.
11. HEALTHY EXISTING TREES ON AND ADJACENT TO THE SITE SHALL BE SAVED AND PROTECTED AS ORDERED BY THE ENGINEER.
12. OPEN CUT AREAS SHALL BE MULCHED OUTSIDE OF ACTUAL WORK AREAS, AND BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED TO CONFINE SHEET WASH AND RUNOFF TO THE IMMEDIATE OPEN AREA AND DIRECTED AWAY FROM EXCAVATION AS ORDERED BY THE ENGINEER. THE CONTRACTOR SHALL REFERENCE ALL STORMWATER BMP'S PROVIDED BY THE STATE OF VERMONT.
13. AT COMPLETION OF GRADING, SLOPES, DITCHES, AND ALL DISTURBED AREAS SHALL BE SMOOTH AND FREE OF POCKETS WITH SUFFICIENT SLOPE TO ENSURE DRAINAGE.
14. FINISH SLOPES, DITCHES AND DISTURBED AREAS SHALL RECEIVE AN AVERAGE DEPTH OF 4 INCHES, WITH A MINIMUM DEPTH OF 2 INCHES, OF TOPSOIL AND BE FERTILIZED, SEEDED, LIMED, AND MULCHED. TURF ESTABLISHMENT SHALL BE PERFORMED IN ACCORDANCE WITH VERMONT SOIL CONSERVATION SERVICE RECOMMENDATIONS AND THE TOWN OF WILLISTON PUBLIC WORKS SPECIFICATIONS.
15. ALL FILL SHALL BE PLACED IN MAXIMUM 6 INCH THICK LIFTS AND THOROUGHLY COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698 STANDARD PROCTOR, UNLESS OTHERWISE SPECIFIED.
16. DRAINAGE COURSES AND STREAMS SHALL BE CONTROLLED IN DISTURBED CONSTRUCTION AREAS BY THE FOLLOWING METHODS:
    A) PRESERVING NATURAL VEGETATION WHENEVER POSSIBLE;
    B) AVOIDING UNNECESSARY DISTURBANCE OF SOILS;
    C) EARLY INSTALLATION OF STORM PIPES AND DITCHES;
    D) SEEDING AND MULCHING DIRECTLY UPON COMPLETION OF CONSTRUCTION;
    E) CONSTRUCTION OF EROSION CONTROL DEVICES AS DIRECTED BY THE ENGINEER.
17. 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 UNTIL ALL DISTURBED AREAS HAVE BEEN GRASSED AND APPROVED BY THE ENGINEER. THE MAINTENANCE OF THE EROSION CONTROL DEVICES WILL INCLUDE REMOVAL OF ANY ACCUMULATED SEDIMENTATION.
18. PRIOR TO CONSTRUCTION, ALL MATERIALS SHALL BE APPROVED BY THE ENGINEER. LABORATORY GRAIN SIZE ANALYSES, CONFIRMING THAT PROPOSED FILL MATERIALS MEET THE GRADATION REQUIREMENTS, SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW A MINIMUM OF TEN WORKINGS DAYS BEFORE THE START OF WORK. ALL MATERIALS TO BE TAKEN OVER BY THE TOWN OF WILLISTON SHALL BE APPROVED BY THE PUBLIC WORKS DEPARTMENT.
19. ALL CROSSWALK STRIPING SHALL BE IN COMPLAINCE WITH MUTCD STANDARDS.
20. PLACEMENT OF COMPACTED FILLS SHALL NOT BE CONDUCTED WHEN AIR TEMPERATURES ARE LOW ENOUGH TO CAUSE FREEZING OF THE MOISTURE IN THE FILL DURING OR AFTER PLACEMENT. FILL MATERIALS SHALL NOT BE PLACED ON SNOW, ICE OR UNCOMPACTED FROZEN SOIL. COMPACTED FILL SHALL NOT BE PLACED ON FROZEN SOIL. NO FILL SHALL BE ALLOWED TO FREEZE PRIOR TO COMPACTION.
21. THE CONTRACTOR SHALL CONDUCT TEMPORARY CONSTRUCTION DEWATERING AS NEEDED TO MAINTAIN THE UNDISTURBED NATURE OF FOOTING, SLAB AND PAVEMENT SECTION BEARING/SUBGRADE SOILS, AND TO ENABLE THE EXCAVATION, FOUNDATION CONSTRUCTION AND BACKFILLING OPERATIONS TO PROCEED IN-THE-DRY.
22. THE CONTRACTOR SHALL USE A SMOOTH-EDGED EXCAVATOR BUCKET TO MAKE FINAL EXCAVATIONS TO BEARING/SUBGRADE LEVELS TO MINIMIZE DISTURBANCE TO BEARING/SUBGRADE SOILS. EXCESSIVELY DISTURBED SOILS SHALL BE REMOVED AND REPLACED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
23. GRANULAR SOIL SUBGRADE SHALL BE PROOFROLLED BY THE CONTRACTOR UNTIL FIRM AS DETERMINED BY THE GEOTECHNICAL ENGINEER. FINE GRAINED SOILS PRESENT AT SUBGRADE LEVEL SHALL NOT BE PROOFROLLED.
24. ALL PROPOSED SIDEWALKS AND TRAILS SHALL HAVE DETECTABLE WARNING PLATES AT TRAVELWAY INTERSECTIONS.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING on the ___ day of ___, ___.

Presiding member or Administrator's signature

DATE	REVISION	BY
8/30/2019	REVISED PHASE I AND PHASE II LAYOUT	DJH
9/7/2017	RELOCATED WATERMAIN WITHIN "THE SQUARE" TO AVOID GAS	DJH
7/6/2017	REVISED STORM SEWER CB1-POND OUTFALL, CB5-CB4 AND CB15-POND OUTFALL	DJH

SURVEY: OBCA
DESIGN: OBCA
DRAWN: DJH
CHECKED: PJO
SCALE: AS SHOWN

☐ RECORD DRAWING ■ PRELIMINARY
☐ FINAL ☐ SKETCH/CONCEPT

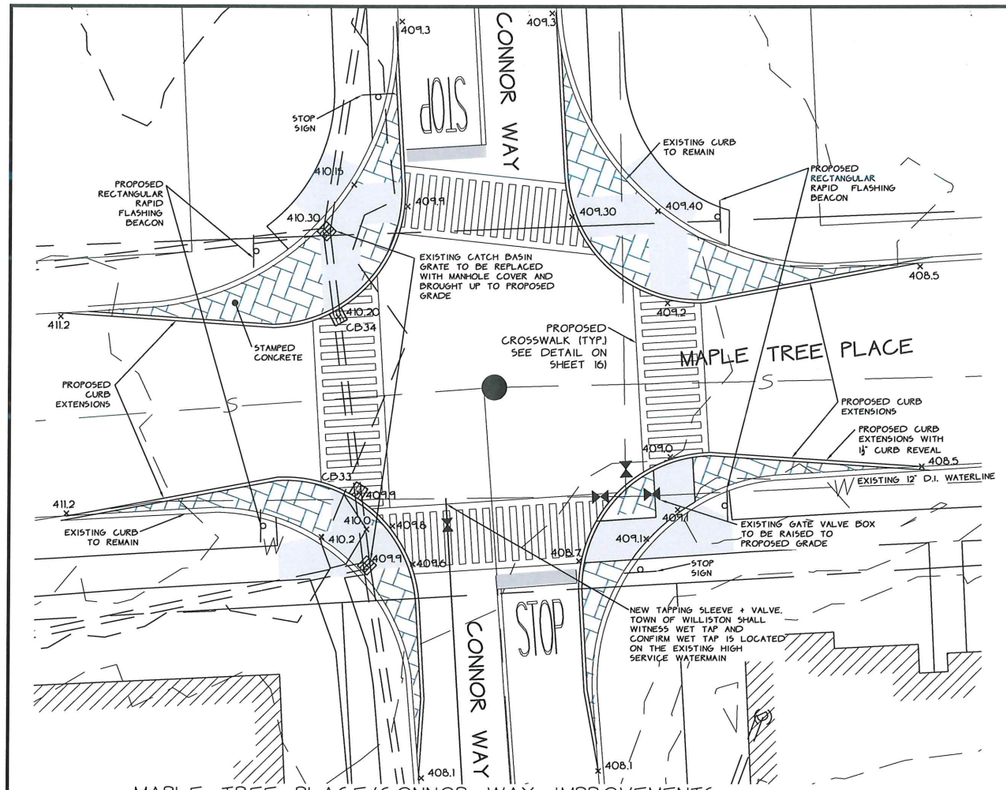
O'LEARY-BURKE CIVIL ASSOCIATES, PLC
13 CORPORATE DRIVE, ESSEX JCT., VT
PHONE: 878-9900
FAX: 878-9889
E-MAIL: obca@olearyburke.com

COTTONWOOD CROSSING
U.S. ROUTE 2 WILLISTON, VT

GRADING PLAN
(1 OF 3)

DATE: 11/04/2016
JOB#: 5087
FILE: 5087-S19
PLAN SHEET #: 4

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1



MAPLE TREE PLACE/CONNOR WAY IMPROVEMENTS

1"=10'

STORM SEWER COMPUTATIONS

STRUCTURE		INVERT ELEVATIONS		LENGTH	SLOPE	DIAMETER	TOP OF UPSTREAM
From	To	Upstream Invert	Downstream Invert	Feet	Feet/Feet	Inches	
CB7	CB6	397.90	397.78	23.79	0.005	18	404.50
CB6	CB5	397.78	397.56	44.18	0.005	18	404.50
CB5	CB4	397.56	397.15	72.28	0.006	24	406.30
CB4	CB2	397.15	396.40	150.60	0.005	24	405.20
CB2	CB1	396.40	396.07	64.63	0.005	24	402.20
CB1	OUTFALL	396.07	396.00	14.89	0.005	24	400.20
CB9	CB8	402.91	402.44	23.58	0.020	15	407.35
CB8	CB5	402.44	397.56	69.65	0.070	15	407.35
CB10	CB11	399.85	396.50	61.07	0.055	15	403.00
CB13	CB12	399.62	397.14	82.84	0.030	15	404.50
CB12	CB11	397.14	396.50	129.27	0.005	15	401.20
CB11	CB1	396.50	396.07	85.70	0.005	15	401.20
CB26	CB25	399.49	399.38	23.00	0.005	15	404.39
CB25	CB24	399.38	399.18	39.77	0.005	15	404.39
CB24	CB23C	399.18	399.02	33.86	0.005	15	404.44
CB23C	CB23B	399.02	398.76	50.66	0.005	15	404.85
CB23B	CB23A	398.76	398.44	64.00	0.005	15	405.40
CB23A	CB23	398.44	398.31	26.45	0.005	15	405.40
CB23	CB22	398.31	397.72	118.76	0.005	18	405.31
CB22	CB21	397.72	397.61	22.17	0.005	18	404.50
CB21	CB20	397.61	397.12	97.38	0.005	18	404.50
CB20	CB19	397.12	396.74	77.04	0.005	24	403.30
CB19	CB18	396.74	396.57	28.18	0.006	24	401.95
CB18	CB17	396.57	396.47	25.38	0.004	24	401.80
CB17	CB16	396.47	395.86	122.44	0.005	24	401.70
CB16	CB15	395.86	395.67	36.12	0.005	24	399.67
CB15	CB14	395.67	395.00	36.74	0.018	24	399.42
CB14	OUTFALL	395.00	394.50	98.20	0.005	24	398.96
CB27	CB24	399.38	399.18	40.00	0.005	15	404.44
STUB	CB28	398.61	398.42	37.08	0.005	18	N/A
CB28	CB23	398.42	398.31	22.00	0.005	18	405.31
DAYLIGHT	CB22	398.01	397.72	58.49	0.005	15	N/A
STUB	CB29	397.85	397.32	106.36	0.005	18	N/A
CB29	CB20	397.32	397.12	39.52	0.005	18	403.30
CB30	CB18	396.97	396.57	76.54	0.005	15	402.70
DAYLIGHT	CB31	396.16	396.05	21.73	0.005	15	N/A
CB31	CB16	396.05	395.86	39.92	0.005	15	399.67
STUB	CB15	395.89	395.67	42.52	0.005	24	N/A
CB32	EX1	400.57	400.30	54.69	0.005	15	403.80
YI3	YI1	406.48	406.15	32.40	0.010	6	409.10
YI2	YI1	406.15	405.91	24.50	0.010	6	409.10
YI1	DAYLIGHT	405.91	405.00	90.76	0.010	6	409.10
CO1	CB13	400.50	400.32	36.33	0.005	6	404.50
CB39	CB38	400.51	400.19	65.58	0.005	15	407.40
CB38	CB37	400.19	399.35	167.59	0.005	15	408.50
CB37	CB36	399.35	399.08	53.30	0.005	15	405.30
CB36	CB35	399.08	398.82	51.50	0.005	18	404.20
CB35	CB34	398.82	398.56	53.00	0.005	18	405.30
CB34	CB33	398.56	398.20	71.00	0.005	18	405.00
CB33	CB7	398.20	397.90	61.00	0.005	18	405.30
CB42	CB41	399.93	399.63	59.38	0.005	15	403.70
CB41	CB40	399.63	399.35	57.00	0.005	18	404.50
CB40	CB36	399.35	399.08	52.56	0.005	18	403.50
CB44	CB43	399.79	399.39	81.01	0.005	15	403.70
CB43	CB40	399.39	399.35	8.49	0.005	15	403.60
CB46	CB45	399.24	399.15	18.05	0.005	15	404.00
CB45	CB35	399.15	398.82	65.45	0.005	15	403.80
CB49	CB48	399.86	399.78	17.95	0.005	15	404.10
CB48	CB47	399.78	399.32	90.18	0.005	15	403.10
CB47	CB24	399.32	399.18	28.96	0.005	15	403.50
CB50	CB47	399.70	399.32	74.37	0.005	15	403.70

Legend

- PROJECT BOUNDARY
- OTHER PROPERTY LINE
- SIDELINE OF EASEMENT
- 400 — EXISTING CONTOUR LINE (U.S.G.S. DATUM)
- 400 — PROPOSED CONTOUR LINE
- EXISTING IRON PIPE
- EXISTING CONCRETE MONUMENT
- IRON PIPE (TO BE SET)
- T — EXISTING ELECTRIC/TV/TELEPHONE LINE
- EXISTING STORM SEWER
- W — EXISTING WATERLINE
- S — EXISTING SANITARY SEWER
- FM — EXISTING FORCEMAIN
- EXISTING HYDRANT
- EXISTING UTILITY POLE
- PROPOSED STORM SEWER
- PROPOSED UNDERDRAIN
- PROPOSED SANITARY SEWER
- FM — PROPOSED SEWER FORCEMAIN
- W — PROPOSED WATERLINE

Sanitary Computations

STRUCTURE		INVERT ELEVATIONS		LENGTH	SLOPE	DIAMETER	STRUCTURE TOP
From	To	Downstream Invert	Downstream Invert	Feet	Feet/Feet	Inches	
SMH A	SMH B	396.00	395.10	180.69	0.0050	8	405.09
SMH B	SMH C	395.00	394.40	119.34	0.0050	8	405.47
SMH C	SMH D	394.30	393.71	117.93	0.0050	8	404.71
SMH D	SMH E	393.61	393.05	112.46	0.0050	8	403.42
SMH E	SMH F	392.95	392.03	184.21	0.0050	8	401.96
SMH F	SMH G	391.93	391.48	89.11	0.0050	8	399.56
SMHG	PUMP STATION	391.38	391.25	26.76	0.0050	8	400.00
SMH J	SMH H	395.93	394.63	260.89	0.0050	8	406.40
SMH H	SMH I	394.53	393.82	140.36	0.0050	8	405.80
SMH I	SMH E	393.72	393.05	133.96	0.0050	8	403.40

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING. on the -- day of ---- 20--

Presiding member or Administrator's signature

8/30/2019	REVISED SANITARY AND STORM COMPUTATIONS	DJH
DATE	REVISION	BY

SURVEY OBCA
DESIGN OBCA
DRAWN DJH
CHECKED PJO
SCALE 1"=10'

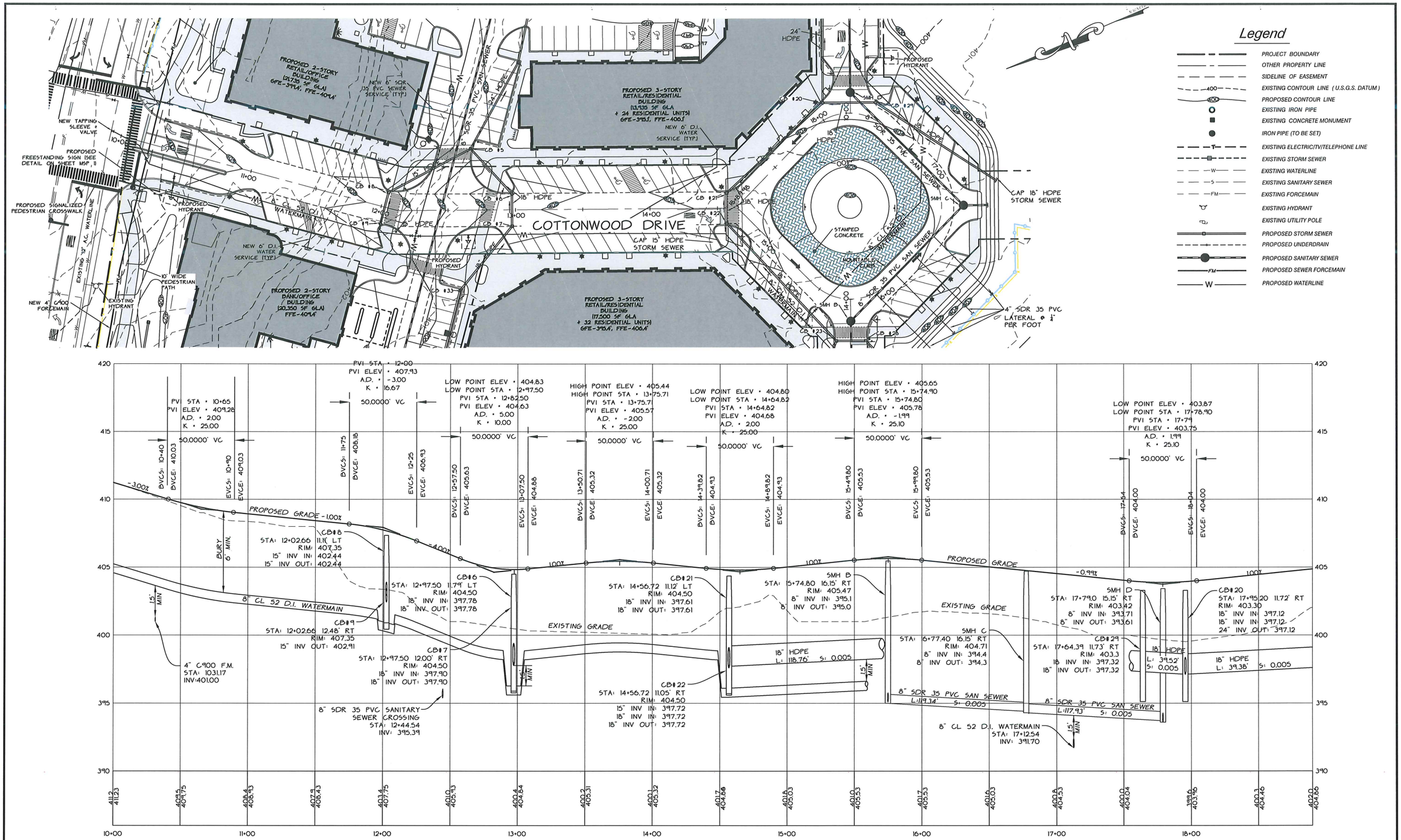
☐ RECORD DRAWING ■ PRELIMINARY
☐ FINAL ☐ SKETCH/CONCEPT

O'LEARY-BURKE
CIVIL ASSOCIATES, PLC
13 CORPORATE DRIVE, ESSEX JCT., VT
PHONE: 878-0990
FAX: 878-0989
E-MAIL: obca@oleary-burke.com

COTTONWOOD CROSSING
U.S. ROUTE 2 WILLISTON, VT

GRADING PLAN
(3 OF 3)

DATE 11/04/2016
JOB # 5087
FILE 5087-S19
PLAN SHEET # 5



COTTONWOOD DRIVE
10+00 - 18+90
PROFILE

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING. on the ___ day of _____, 20__

_____
Presiding member or Administrator's signature

8/30/2019	REVISED PHASE I AND PHASE II LAYOUT	DJH
DATE 9/7/2017	REVISION RELOCATED WATERMAIN WITHIN "THE SQUARE" TO AVOID GAS	BY DJH

SURVEY: OBCA
DESIGN: OBCA
DRAWN: DJH
CHECKED: PJO
SCALE: H: 1"=30' V: 1"=3'

☐ RECORD DRAWING ■ PRELIMINARY
☐ FINAL ☐ SKETCH/CONCEPT

O'LEARY-BURKE
CIVIL ASSOCIATES, PLC

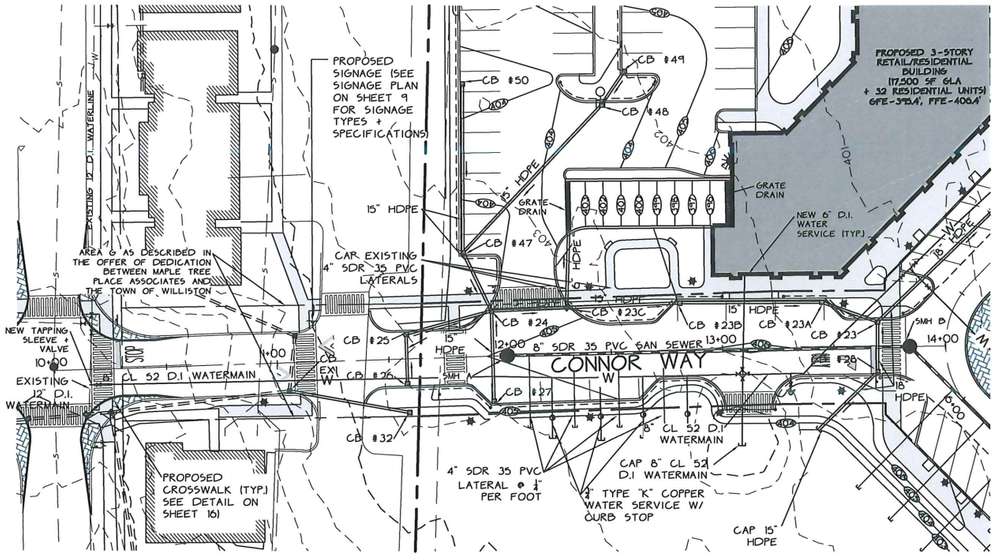
13 CORPORATE DRIVE, ESSEX JCT., VT
PHONE: 878-9990
FAX: 878-9969
E-MAIL: obca@olearyburke.com

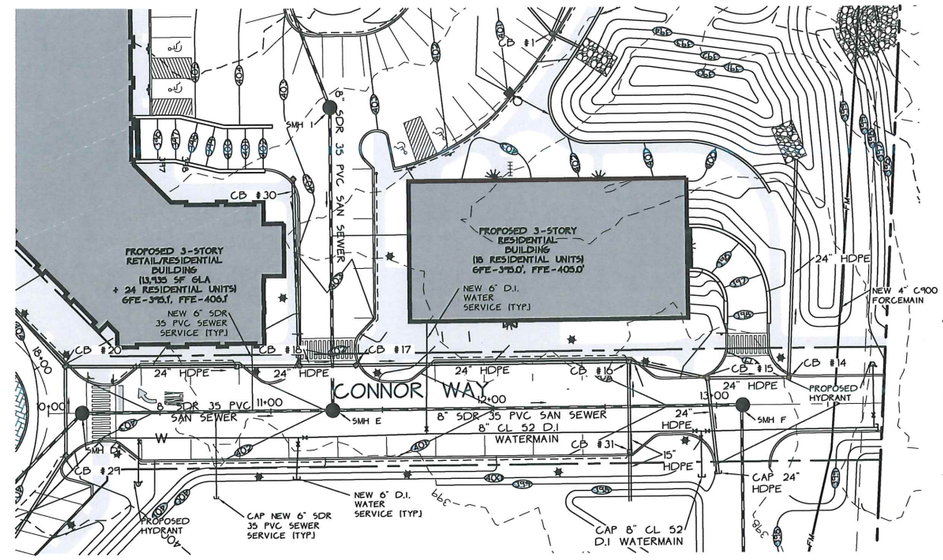
COTTONWOOD CROSSING
U.S. ROUTE 2 WILLISTON, VT

COTTONWOOD DRIVE
PLAN & PROFILE

DATE 11/04/2016
JOB # 5087
FILE 5087-S19
PLAN SHEET # 6

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1





Legend

- PROJECT BOUNDARY
- OTHER PROPERTY LINE
- SIDELINE OF EASEMENT
- 400 — EXISTING CONTOUR LINE (U.S.G.S. DATUM)
- 400 — PROPOSED CONTOUR LINE
- EXISTING IRON PIPE
- EXISTING CONCRETE MONUMENT
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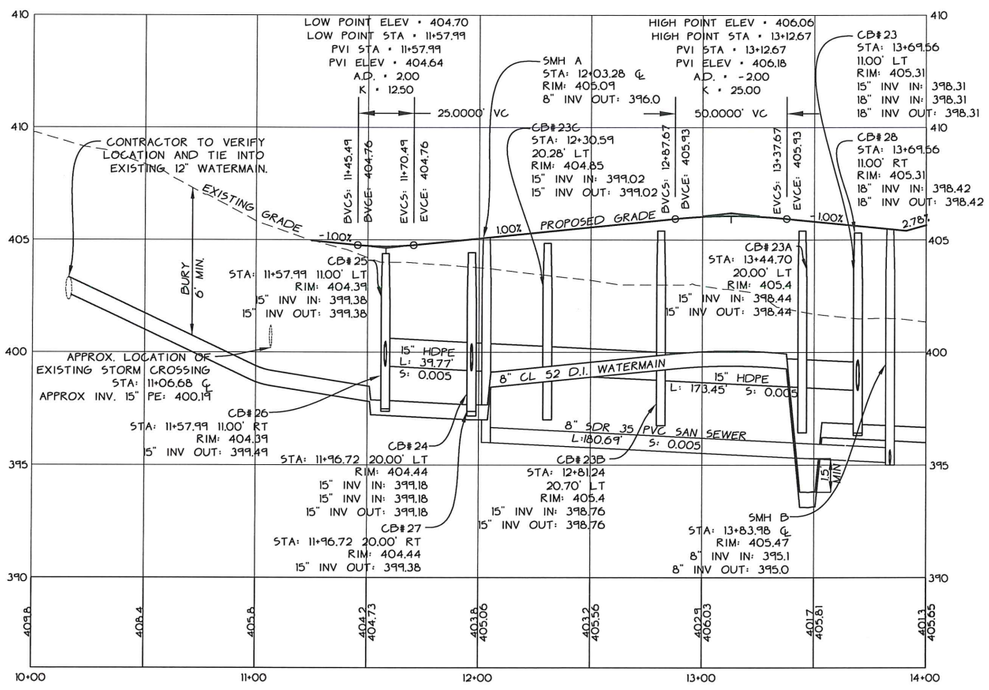
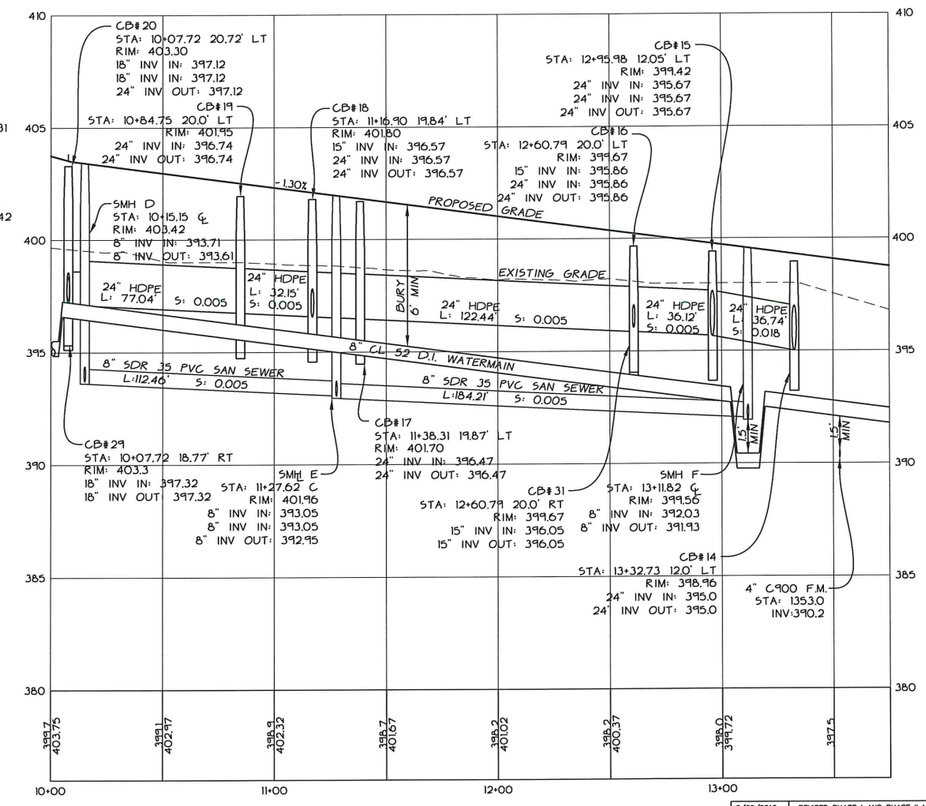
- EXISTING UTILITY POLE
- PROPOSED STORM SEWER
- PROPOSED UNDERDRAIN
- PROPOSED SANITARY SEWER
- FM — PROPOSED SEWER FORCEMAIN
- W — PROPOSED WATERLINE



CONNOR WAY
PROFILE 'A'
10+00 - 14+00.13
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



CONNOR WAY
PROFILE 'B'
10+00 - 13+75.25
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING on the __ day of _____, 20__.

_____
Presiding member or Administrator's signature

GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.

DATE	REVISION	BY
8/30/2019	REVISED PHASE I AND PHASE II LAYOUT	DJH
9/7/2017	RELOCATED WATERMAIN WITHIN "THE SQUARE" TO AVOID GAS	DJH
7/6/2017	REVISED STORM SEWER CB1-POND OUTFALL AND CB15-POND OUTFALL	DJH

SURVEY: OBCA
DESIGN: OBCA
DRAWN: DJH
CHECKED: PJG
SCALE: H: 1"=30' V: 1"=3'

☐ RECORD DRAWING ■ PRELIMINARY
☐ FINAL ☐ SKETCH/CONCEPT

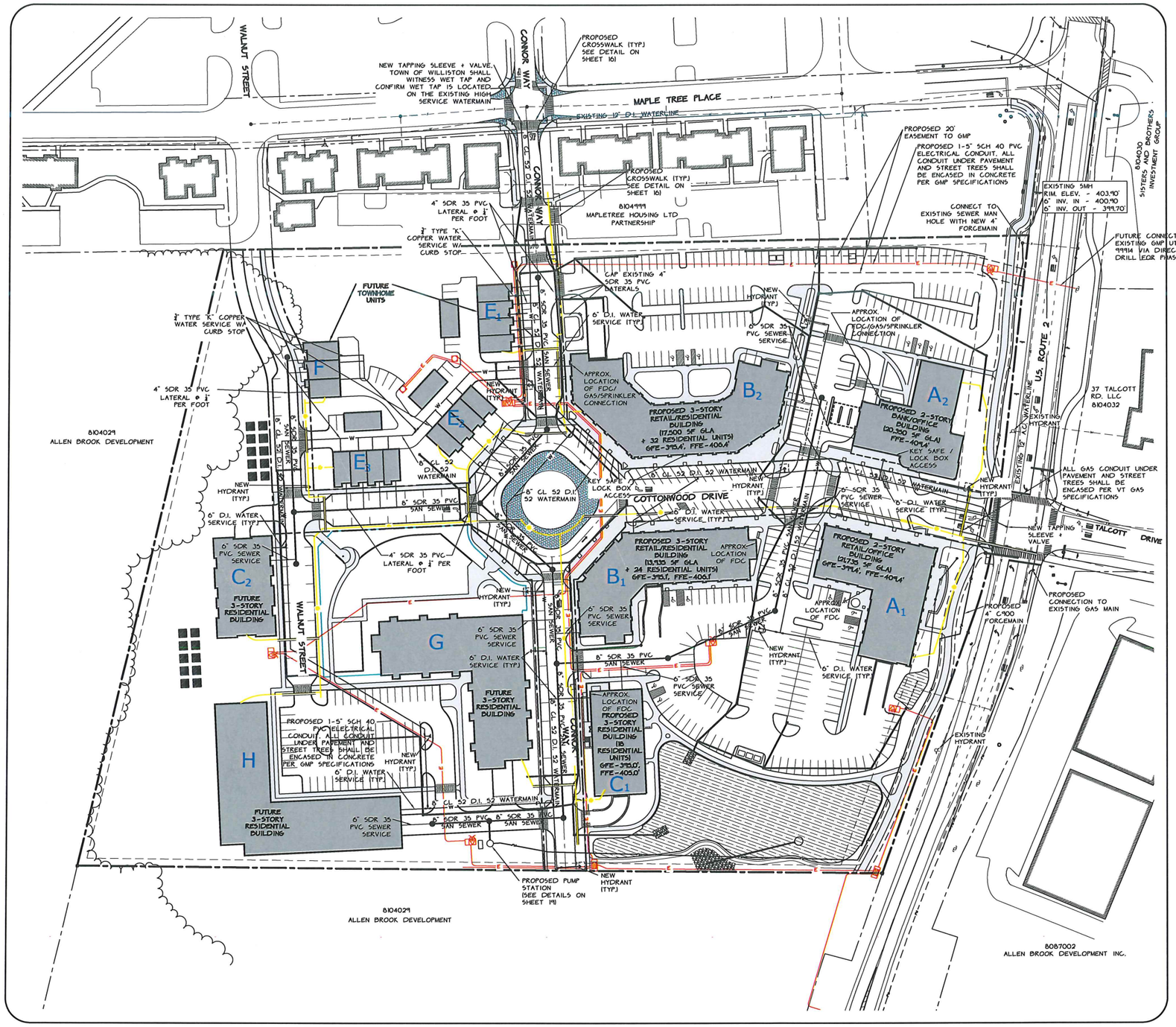
O'LEARY-BURKE
CIVIL ASSOCIATES, PLC
13 CORPORATE DRIVE, ESSEX JCT, VT
PHONE: 878-9990
FAX: 878-9969
E-MAIL: obca@olearyburke.com

COTTONWOOD CROSSING
U.S. ROUTE 2 WILLISTON, VT

CONNOR WAY
PLAN & PROFILE

DATE: 11/04/2016
JOB #: 5087
FILE: 5087-S19
PLAN SHEET #: 7

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1



Legend

- PROJECT BOUNDARY
- OTHER PROPERTY LINE
- SIDELINE OF EASEMENT
- EXISTING CONTOUR LINE (U.S.G.S. DATUM)
- PROPOSED CONTOUR LINE
- EXISTING IRON PIPE
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- EXISTING HYDRANT
- EXISTING UTILITY POLE
- PROPOSED STORM SEWER
- PROPOSED UNDERDRAIN
- PROPOSED SANITARY SEWER
- PROPOSED SEWER FORCEMAIN
- PROPOSED WATERLINE
- PROPOSED ECLECTIC LINE
- PROPOSED GAS LINE

NOTE: PROPOSED GAS AND ELECTRIC UTILITY LOCATIONS ARE FOR INFORMATIONAL PURPOSES ONLY. GAS AND ELECTRIC INSTALLATION SHALL BE COORDINATED DIRECTLY WITH VT GAS AND GMP.

GRAPHIC SCALE

(IN FEET)
1 inch = 60 ft.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING. on the -- day of ---, 20--.

Presiding member or Administrator's signature

DATE	REVISION	BY
8/30/2019	REVISED PHASE I AND PHASE II LAYOUT	DJH
9/7/2017	RELOCATED WATERMAIN WITHIN "THE SQUARE" TO AVOID GAS	DJH
8/21/2017	ADDED GMP AND VT GAS UTILITY LINES	DJH
4/3/2017	ISSUED FOR CONSTRUCTION	DJH

SURVEY: OBCA
DESIGN: OBCA
DRAWN: DJH
CHECKED: PJO
SCALE: 1"=60

☐ RECORD DRAWING ■ PRELIMINARY
☐ FINAL ☐ SKETCH/CONCEPT

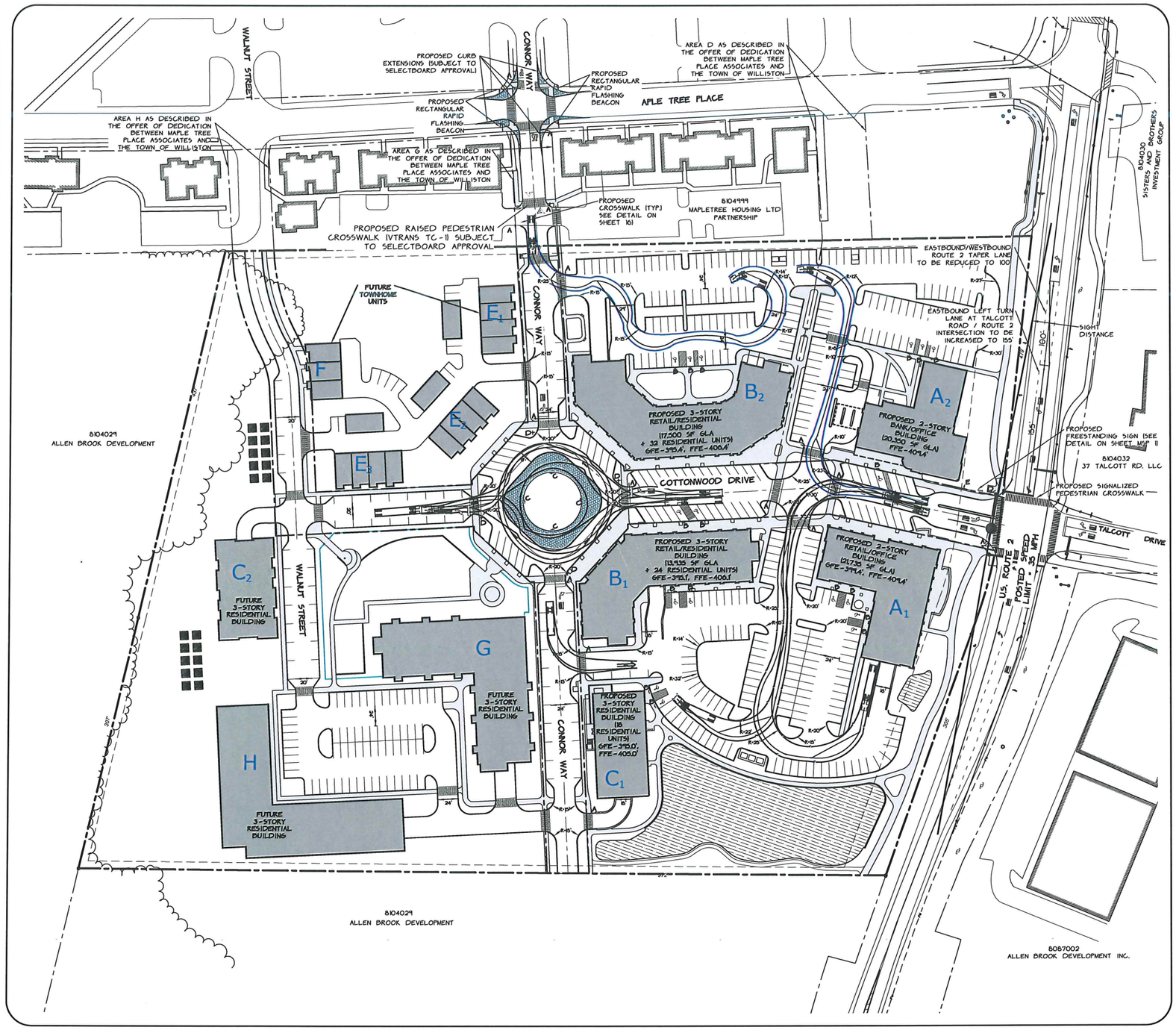
O'LEARY-BURKE
CIVIL ASSOCIATES, PLC
13 CORPORATE DRIVE, ESSEX JCT., VT
PHONE: 878-9990
FAX: 878-9989
E-MAIL: obca@olearyburke.com

COTTONWOOD CROSSING
U.S. ROUTE 2 WILLISTON, VT

OVERALL UTILITY PLAN

DATE: 11/04/2016
JOB #: 5087
FILE: 5087-S19
PLAN SHEET #: 8

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1



Legend

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- PROPOSED UNDERDRAIN
- PROPOSED SANITARY SEWER
- FM — PROPOSED SEWER FORCEMAIN
- W — PROPOSED WATERLINE

D3-1

STREET SIGN DETAIL

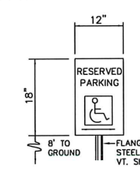
NTS

SIGNAGE SCHEDULE	
SYMB.	TYPE
A	STOP SIGN
B	HANDICAPPED SIGN
C	ONE WAY SIGN
D	STREET SIGN
E	25 MPH SPEED LIMIT SIGN

36" X 18"
R6-1

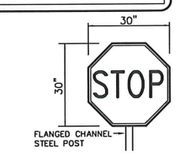
ONE WAY SIGN

NTS



HANDICAP SIGN

NTS



VT. STANDARDS E-143 AND E-121 DISTANCE FROM TOP OF CURB TO BOTTOM OF SIGN TO BE 7 FEET.

STOP SIGN

NTS

GRAPHIC SCALE

(IN FEET)
1 inch = 60 ft

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING. on the __ day of _____, 20__.

_____
Presiding member or Administrator's signature

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1

DATE	REVISION	BY
10/7/2019	ADDED SPEED LIMIT SIGNAGE PER DPW COMMENTS	DJH
8/30/2019	REVISED PHASE I AND PHASE II LAYOUT	DJH
4/3/2017	ISSUED FOR CONSTRUCTION	DJH

SURVEY: OBCA
DESIGN: OBCA
DRAWN: DJH
CHECKED: PJO
SCALE: 1"=60'

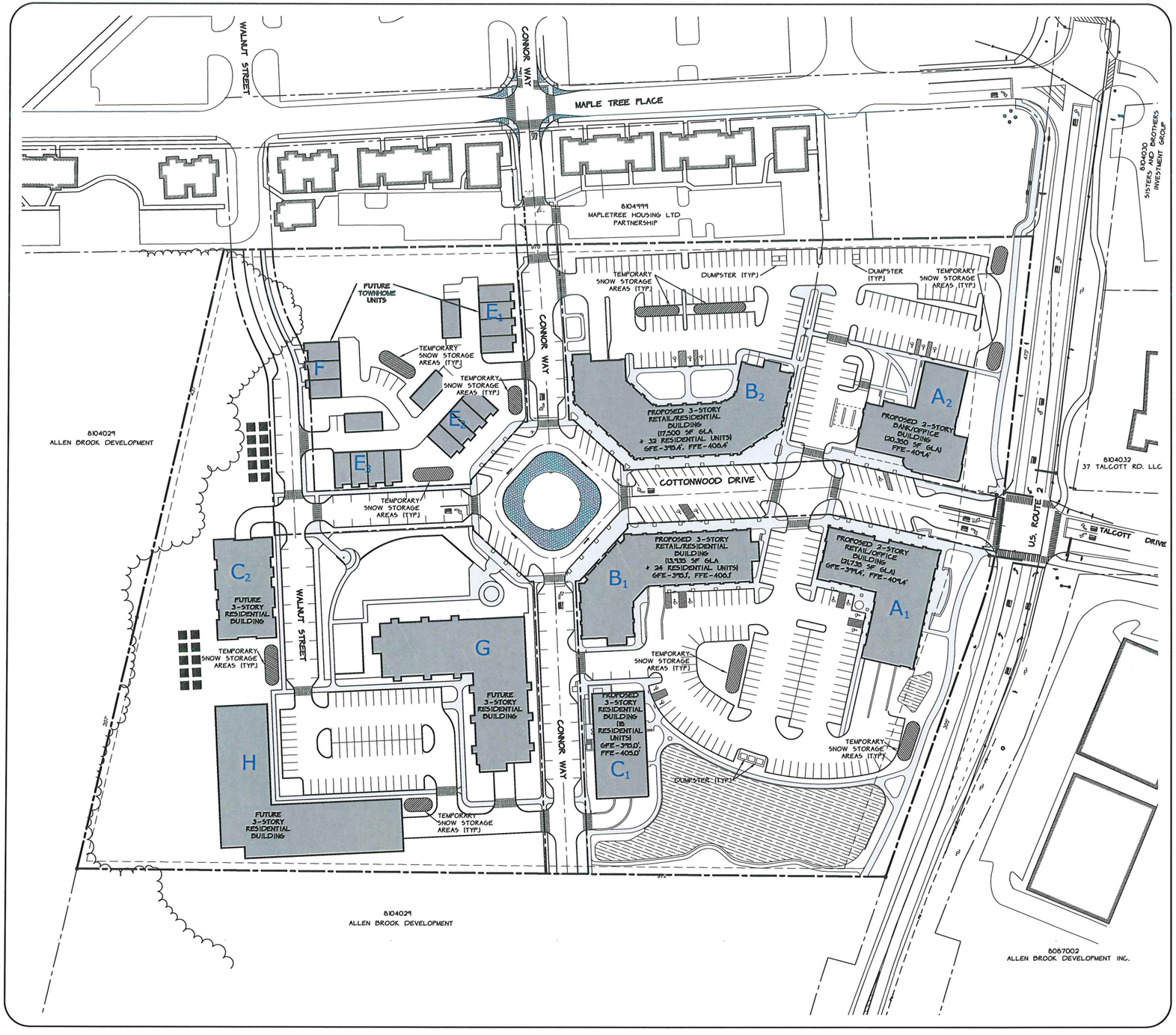
☐ RECORD DRAWING ■ PRELIMINARY
☐ FINAL ☐ SKETCH/CONCEPT

O'LEARY-BURKE CIVIL ASSOCIATES, PLC
13 CORPORATE DRIVE, ESSEX JCT., VT
PHONE: 878-9990
FAX: 878-9909
E-MAIL: obca@olearyburke.com

COTTONWOOD CROSSING
U.S. ROUTE 2 WILLISTON, VT

TRAFFIC, SIGNAGE & CIRCULATION PLAN

DATE: 11/04/2016
JOB#: 5087
FILE: 5087-S19
PLAN SHEET #: 9



Legend

- PROJECT BOUNDARY
- OTHER PROPERTY LINE
- SIDELINE OF EASEMENT
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- 400 — PROPOSED CONTOUR LINE
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- PROPOSED STORM SEWER
- PROPOSED UNDERDRAIN
- PROPOSED SANITARY SEWER
- FM — PROPOSED SEWER FORCEMAIN
- W — PROPOSED WATERLINE

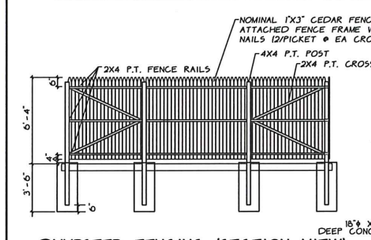
SITE MAINTENANCE NARRATIVE

NARRATIVE:

A CONDOMINIUM ASSOCIATION WILL BE ESTABLISHED FOR COTTONWOOD CROSSING AND WILL BE RESPONSIBLE FOR ALL COMMON AMENITIES INCLUDING SITE MAINTENANCE AND WASTE DISPOSAL.

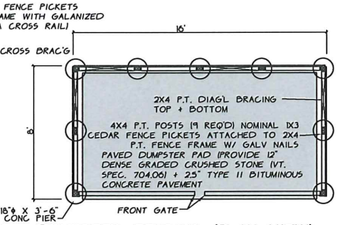
WASTE DISPOSAL FOR THE MIXED USE AND COMMERCIAL BUILDINGS WILL BE PROVIDED VIA BUILDING DUMPSTERS LOCATED NEAR EACH BUILDINGS' LOADING AREA. FENCING WILL BE USED TO ENSURE THESE AREAS ARE NOT VISIBLE FROM PASSING TRAFFIC. WASTE DISPOSAL FOR INDIVIDUAL RESIDENTIAL UNITS WILL BE VIA ROLL OUT CONTAINERS WHICH WILL BE PICKED UP CURB SIDE ONCE A WEEK.

SITE MAINTENANCE INCLUDING LANDSCAPING, ANNUAL INSPECTIONS/MAINTENANCE OF THE STORM WATER SYSTEM, AND SNOW REMOVAL WILL ALL BE PROVIDED BY THE CONDOMINIUM ASSOCIATION. DURING ACCUMULATING SNOW EVENTS THE SNOW WILL BE PILED IN DESIGNATED TEMPORARY STORAGE AREAS BEFORE BEING HAULED OFF-SITE. NO SNOW WILL BE STORED IS THE SITE'S STORMWATER DETENTION POND.



DUMPSTER FENCING (SECTION VIEW)

NTS



DUMPSTER FENCING (PLAN VIEW)

NTS

GRAPHIC SCALE

(IN FEET)
1 inch = 60 ft.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING on the 29 day of

Presiding member or Administrator's signature

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1

8/30/2019	REVISED PHASE I AND PHASE II LAYOUT	DJH
DATE 4/3/2017	REVISION ISSUED FOR CONSTRUCTION	BY DJH

SURVEY OBCA
DESIGN OBCA
DRAWN DJH
CHECKED PJO
SCALE 1"=60'

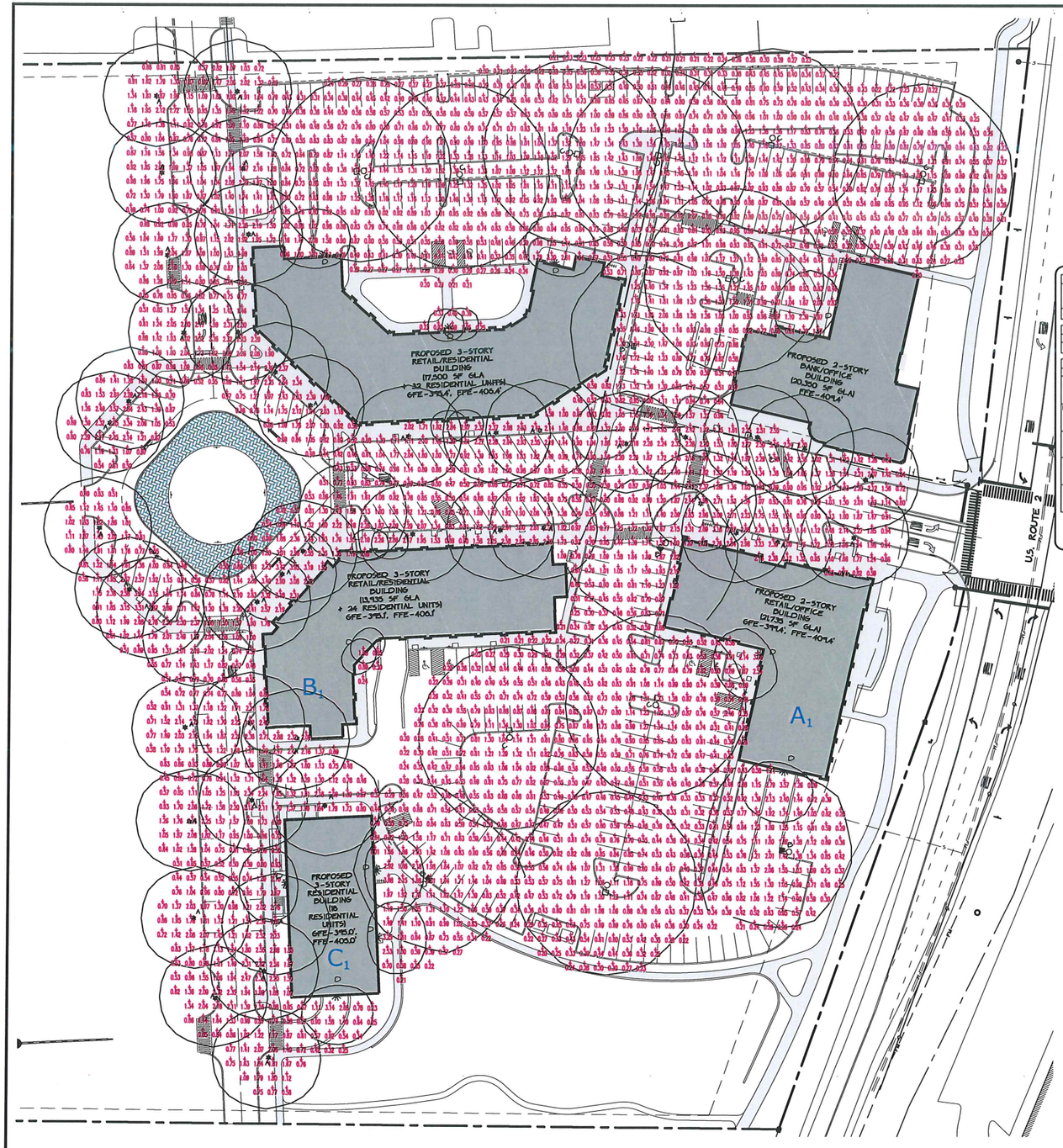
☐ RECORD DRAWING ■ PRELIMINARY
☐ FINAL ☐ SKETCH/CONCEPT

O'LEARY-BURKE
CIVIL ASSOCIATES, PLC
13 CORPORATE DRIVE,
ESSEX JCT, VT
PHONE: 878-9990
FAX: 878-9969
E-MAIL: obca@obleyburke.com

COTTONWOOD CROSSING
U.S. ROUTE 2 WILLISTON, VT

SITE MAINTENANCE PLAN

DATE 11/04/2016
JOB # 5087
FILE 5087-S19
PLAN SHEET # 10



Legend

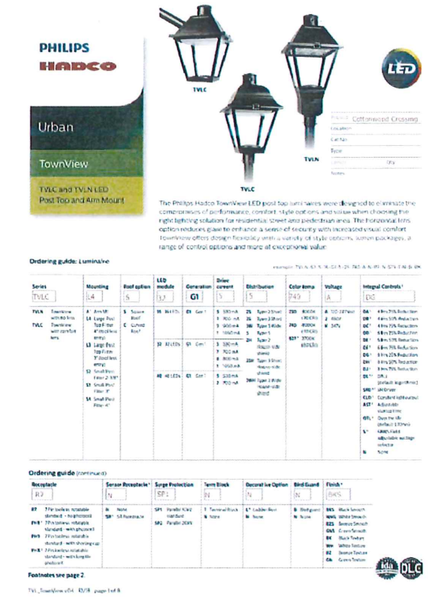
- PROJECT BOUNDARY
- OTHER PROPERTY LINE
- SIDELINE OF EASEMENT
- EXISTING IRON PIPE
- EXISTING CONCRETE MONUMENT
- IRON PIPE (TO BE SET)
- PROPOSED LIGHT FIXTURE

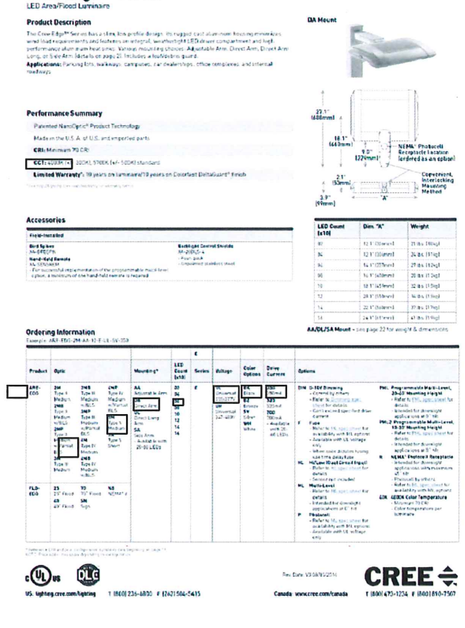
TOWN OF WILLISTON LIGHT REQUIREMENTS PER WDD TABLE 24.P			
LIGHTING ZONE	AVERAGE ILLUMINATION SHALL NOT EXCEED	UNIFORMITY RATIO SHALL NOT EXCEED	MAXIMUM ILLUMINATION OF ANY POINT SHALL NOT EXCEED
ALL OTHER	1.2 FOOTCANDLES	20:1	5.0 FOOTCANDLES

PROPOSED LIGHTING SUMMARY				
AVE.	MAX	MIN.	AVG	UNIFORMITY RATIO (MAX/MIN)
0.68	3.45	0.20	1.06	14.91

LUMINAIRE SCHEDULE

LABEL	SYMB.	DESCRIPTION	LAMP	LUMENS	MOUNTING	L.L.F.	QTY
A		PHILIPS HADCO URBAN TOWNVIEW TVLC-L4-5-32-G1-5-5-740-A-DG	LED (4000K)	9,378	15' POLE MOUNT	1.0	47
B		CREE EDGE SERIES ARE-EDG-4M-DA-06-E-UL-BK-350 (TYPE 4)	LED (4000K)	11,408	25' POLE MOUNT	1.0	4
C		CREE EDGE SERIES ARE-EDG-5M-DA-06-E-UL-BK-350 (TYPE 5)	LED (4000K)	12,020	25' POLE MOUNT	1.0	10
D		RAB WPLED26N	LED (4000K)	2,412	15' WALL MOUNT	1.0	11
E		RAB SLIMFC37N	LED (4000K)	3,536	10' WALL MOUNT	1.0	8





GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING, on the ___ day of _____, 20__.

_____
Presiding member or Administrator's signature

DATE	REVISION	BY
10/25/2019	ADDRESSED DRB APPROVAL CONDITIONS	DJH
8/30/2019	REVISED PHASE I AND PHASE II PHOTOMETRIC PLAN	DJH
4/3/2017	ISSUED FOR CONSTRUCTION	DJH

SURVEY: OBCA
DESIGN: OBCA
DRAWN: DJH
CHECKED: PJO
SCALE: H: 1"=40'

☐ RECORD DRAWING ■ PRELIMINARY
☐ FINAL ☐ SKETCH/CONCEPT

O'LEARY-BURKE
CIVIL ASSOCIATES, PLC
13 CORPORATE DRIVE,
ESSEX JCT., VT
PHONE: 878-9990
FAX: 878-9989
E-MAIL: obca@olearyburke.com

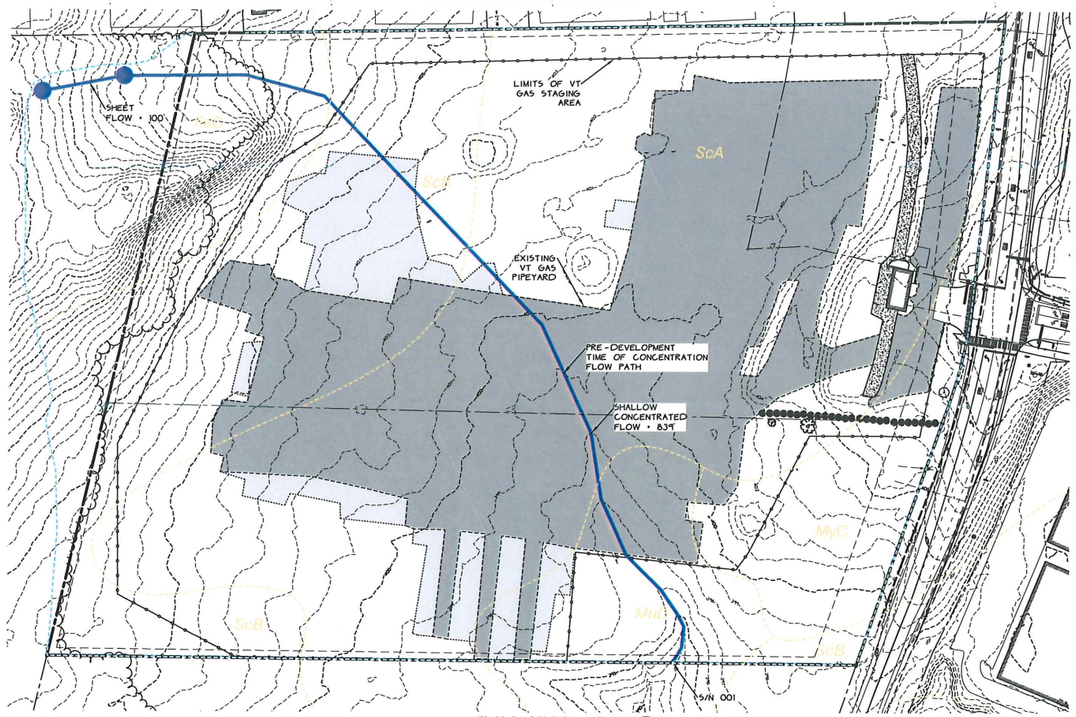
COTTONWOOD CROSSING

U.S. ROUTE 2 WILLISTON, VT

PHOTOMETRIC PLAN

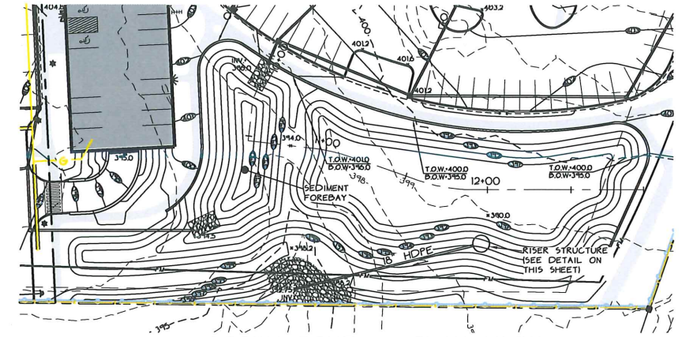
DATE: 1/04/2016
JOB #: 5087
FILE: 5087-S19
PLAN SHEET #: 11

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1



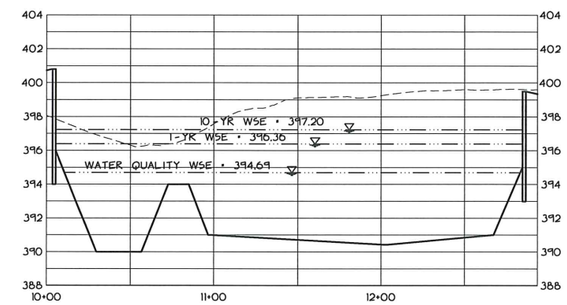
EXISTING CONDITIONS

1"=80'



STORM POND - PLAN VIEW

1"=40'

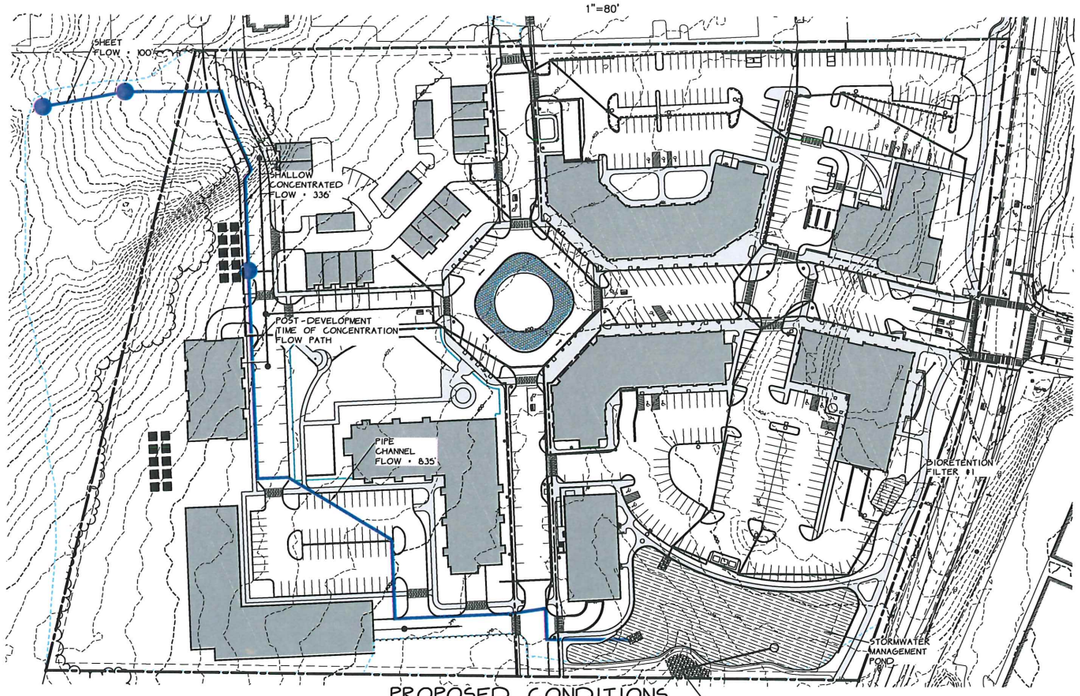


SECTION A-A

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

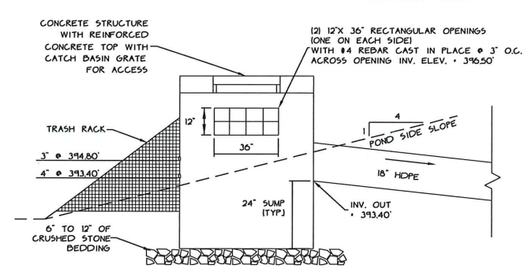
Legend

- PROJECT BOUNDARY
- OTHER PROPERTY LINE
- SIDELINE OF EASEMENT
- EXISTING CONTOUR LINE (U.S.G.S. DATUM)
- PROPOSED CONTOUR LINE
- EXISTING IRON PIPE
- EXISTING CONCRETE MONUMENT
- IRON PIPE (TO BE SET)
- EXISTING ELECTRIC/TV/TELEPHONE LINE
- EXISTING STORM SEWER
- EXISTING WATERLINE
- EXISTING SANITARY SEWER
- EXISTING FORCEMAIN
- EXISTING HYDRANT
- EXISTING UTILITY POLE
- PROPOSED STORM SEWER
- PROPOSED UNDERDRAIN
- PROPOSED SANITARY SEWER
- PROPOSED SEWER FORCEMAIN
- PROPOSED WATERLINE



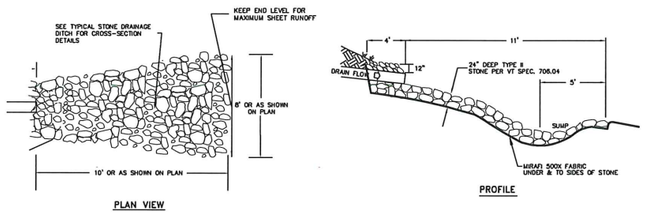
PROPOSED CONDITIONS

1"=80'



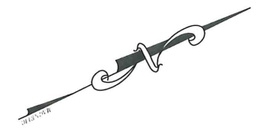
POND OUTLET STRUCTURE

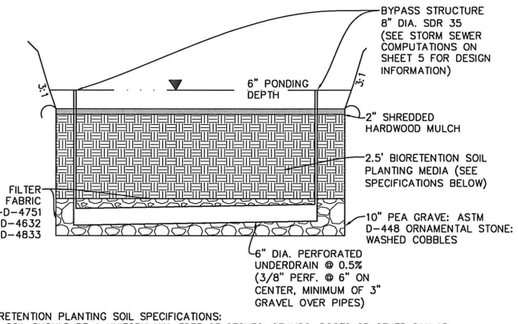
NTS



STORM OUTFALL DETAIL

NTS





BIORETENTION PLANTING SOIL SPECIFICATIONS:
THE SOIL SHOULD BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHOULD BE MIXED OR DUMPED WITHIN THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHOULD BE FREE OF NOXIOUS WEEDS.

THE PLANTING SOIL SHOULD BE TESTED AND SHOULD MEET THE FOLLOWING CRITERIA:
SAND: 35% - 60%
SILT: 30% - 55%
CLAY: 10% - 25%
PH RANGE 5.2 - 7.0
ORGANIC MATTER 1.5 - 4%
MAGNESIUM 35 LB./AC
PHOSPHORUS P2O5 75 LB./AC
POTASSIUM K2O 85 LB./AC
SOLUBLE SALTS NOT TO EXCEED 500 PPM

BIORETENTION DETAIL

NTS

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING on the -- day of ____, 20__.

Presiding member or Administrator's signature

DATE	REVISION	BY
8/30/2019	REVISED PHASE I AND PHASE II LAYOUT	DJH
7/6/2017	REVISED STORM SEWER CB1-POND OUTFALL AND CB15-POND OUTFALL	DJH
4/13/2017	ISSUED FOR CONSTRUCTION	DJH

SURVEY: OBCA
DESIGN: OBCA
DRAWN: DJH
CHECKED: PJO
SCALE: AS SHOWN

☐ RECORD DRAWING ■ PRELIMINARY
☐ FINAL ☐ SKETCH/CONCEPT

O'LEARY-BURKE CIVIL ASSOCIATES, PLC
13 CORPORATE DRIVE, ESSEX JCT. VT
PHONE: 878-0990
FAX: 878-9469
E-MAIL: obca@olearyburke.com

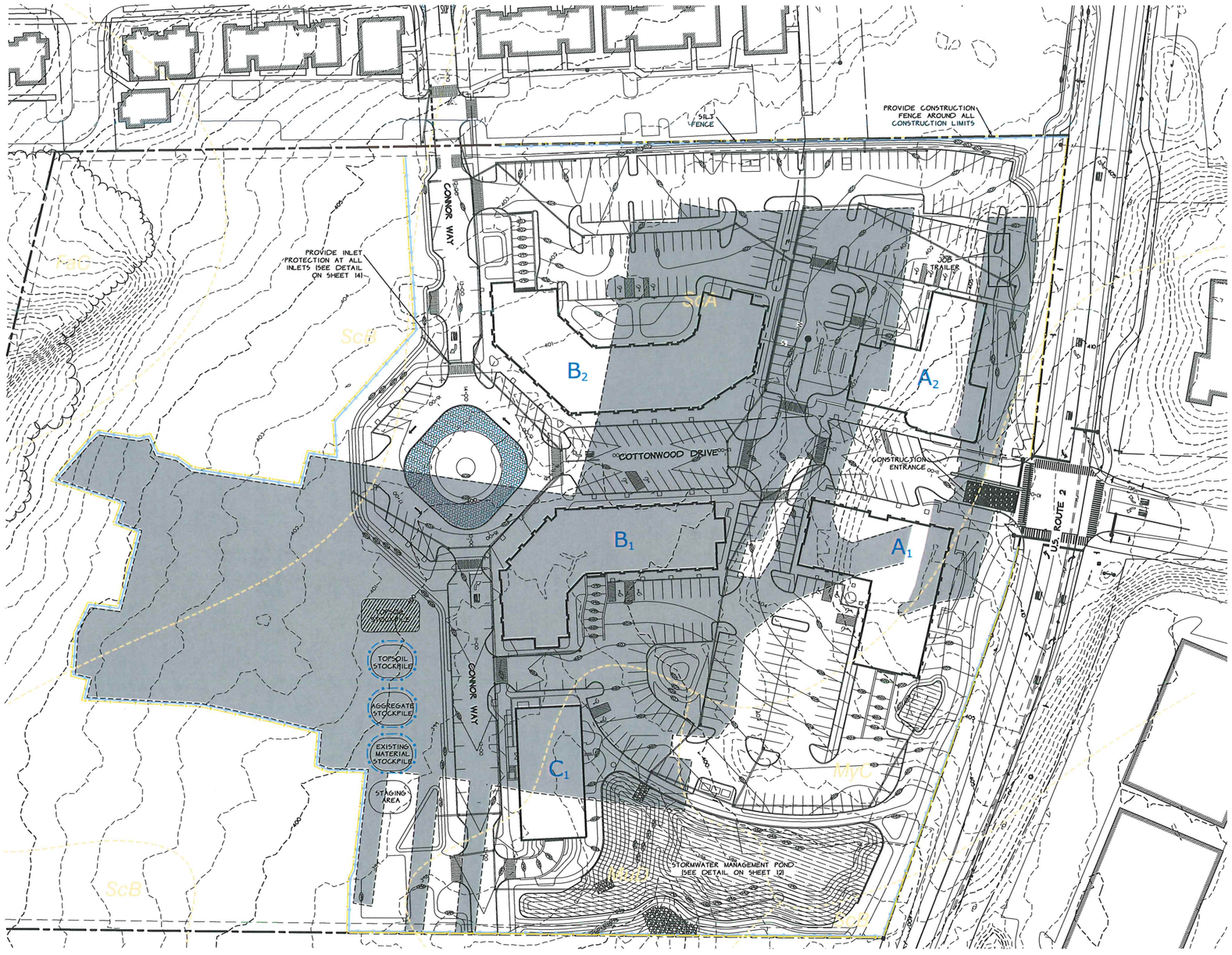
COTTONWOOD CROSSING

U.S. ROUTE 2 WILLISTON, VT

STORMWATER MANAGEMENT PLAN

DATE: 11/04/2016
JOB#: 5087
FILE: 5087-S19
PLAN SHEET #: 12

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1



Legend

- PROJECT BOUNDARY
- OTHER PROPERTY LINE
- SIDELINE OF EASEMENT
- EXISTING CONTOUR LINE (U.S.G.S. DATUM)
- PROPOSED CONTOUR LINE
- SOIL BOUNDARY
- SILT FENCE
- CONSTRUCTION ENTRANCE
- EXISTING GRAVEL STAGING AREA
- STOCKPILE AREA
- STAGING AREA

SITE SOIL CONDITIONS

	SOIL TYPE	KW VALUE	AREA (ACRES)	IMPACTED AREA (ACRES)
FAC	FARMINGTON EXTREMELY ROCKY LOAM, 5 TO 20 PERCENT SLOPES	0.32 - MODERATE	0.97	
SCB	SCANTIC SILT LOAM, 2 TO 6 PERCENT SLOPES	0.32 - MODERATE	3.74	1.18
SCA	SCANTIC SILT LOAM, 0 TO 2 PERCENT SLOPES	0.32 - MODERATE	9.70	7.23
MUD	MUNSON AND BELGRADE SILT LOAMS, 12 TO 25 PERCENT SLOPES	0.49 - HIGH	1.20	1.20
MYC	MUNSON AND RAYNHAM SILT LOAMS, 6 TO 12 PERCENT SLOPES	0.49 - HIGH	1.39	1.39
TOTAL			17.0 - AC.	11.0 - AC.

GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the revisions for COTTONWOOD CROSSING on the __ day of _____, 20__.

_____
Presiding member or Administrator's signature

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1

DATE	REVISION	BY
8/30/2019	REVISED PHASE I AND PHASE II LAYOUT	DJH
4/3/2017	ISSUED FOR CONSTRUCTION	DJH

SURVEY: OBCA
DESIGN: OBCA
DRAWN: DJH
CHECKED: PJO
SCALE: H: 1"=40'

☐ RECORD DRAWING ■ PRELIMINARY
☐ FINAL ☐ SKETCH/CONCEPT

O'LEARY-BURKE
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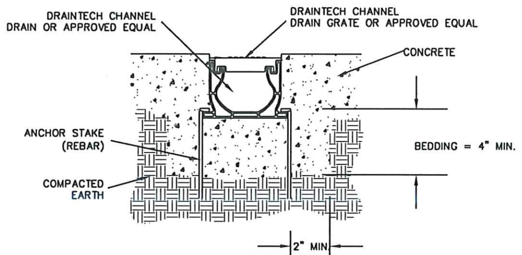
COTTONWOOD CROSSING
U.S. ROUTE 2 WILLISTON, VT

EROSION CONTROL PLAN

DATE: 11/04/2016
JOB #: 5087
FILE: 5087-S18
PLAN SHEET #: 13



NOTES:

1. IN ASPHALT OR HOT MASTIC APPLICATIONS, THE CHANNEL MUST BE ENCASED IN CONCRETE FOR ADDED STRENGTH AND TO PREVENT DISTORTION DURING INSTALLATION.

2. FOR CONCRETE INSTALLATIONS, THE GRATE SHOULD BE INSTALLED AND TAPED OVER PRIOR TO POURING CONCRETE OR BACKFILL TO PREVENT DEBRIS FROM ENTERING DRAIN AND TO PREVENT DEFORMATION OF THE UNIT DURING INSTALLATION.

3. THE GRATE SHOULD BE RECESSED BELOW GRADE A MINIMUM OF A 1/4" FOR TRAFFIC APPLICATIONS.

4. EXPANSION JOINTS MUST BE USED PARALLEL TO, BUT NOT IMMEDIATELY ADJACENT TO, EACH SIDE OF THE DRAIN RUN AND CRACK CONTROL JOINTS UTILIZED AT RIGHT ANGLES TO THE CHANNEL.

5. SHALL HAVE 12" MINIMUM WIDTH AND DEPTH

6. 1% SLOPE MINIMUM

GRATE DRAIN

NTS

TANK SPECIFICATIONS:

A) THE STRUCTURE PROVIDED FOR EMERGENCY STORAGE FOR THE PUMPING STATION SHALL BE (2) 2,500 GALLON, STEEL REINFORCED, PRECAST CONCRETE HOLDING TANK STRUCTURE. THE STRUCTURE SHALL BE DESIGNED BY AN ENGINEER LICENSED IN THE STATE OF VERMONT TO WITHSTAND AASHTO H-20 WHEEL LOADINGS AT THE DEPTH SHOWN ON THIS PLAN

B) INSIDE TANK DIMENSIONS SHALL BE 8' X 14' X 5.7' HIGH.

C) EXTERNALLY COAT ALL CONCRETE STRUCTURES WITH TWO COATS OF BITUMINOUS WATERPROOFING AND TEST FOR WATER-TIGHTNESS. SEE SHEET #29 FOR STRUCTURES TESTING SPECIFICATIONS.

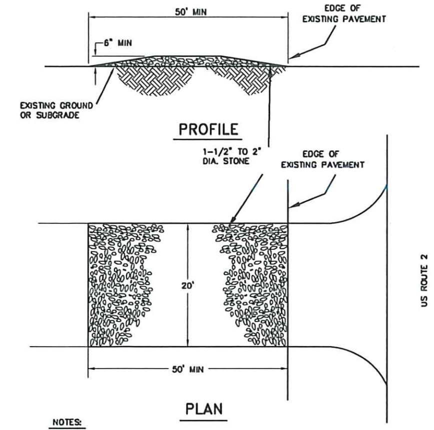
D) ALL BACKFILL MATERIAL AROUND THE TANK SHALL BE GRANULAR MATERIAL THOROUGHLY COMPACTED TO NOT LESS THAN 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY THE AASHTO T-99 STANDARD PROCTOR.

E) BACKFILL SIDES AND TOP OF TANK WITH SAND AND/OR GRAVEL.

F) PRIOR TO CONSTRUCTION, ALL MATERIALS SHALL BE APPROVED BY THE ENGINEER.

G) THE CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH "AS-BUILT" INFORMATION AND CERTIFICATION THAT THE SYSTEM WAS INSTALLED IN ACCORDANCE WITH PLANS AND ALL PERTINENT APPROVALS AND PERMITS ISSUED FOR THE PROJECT.

H) THE CONTRACTOR SHALL ERECT AND MAINTAIN A CONTINUOUS SNOW FENCE BARRIER AND LIGHTED BARRICADES AROUND ALL EXCAVATION LEFT OVER NIGHT OR ON WEEKENDS.



NOTES:

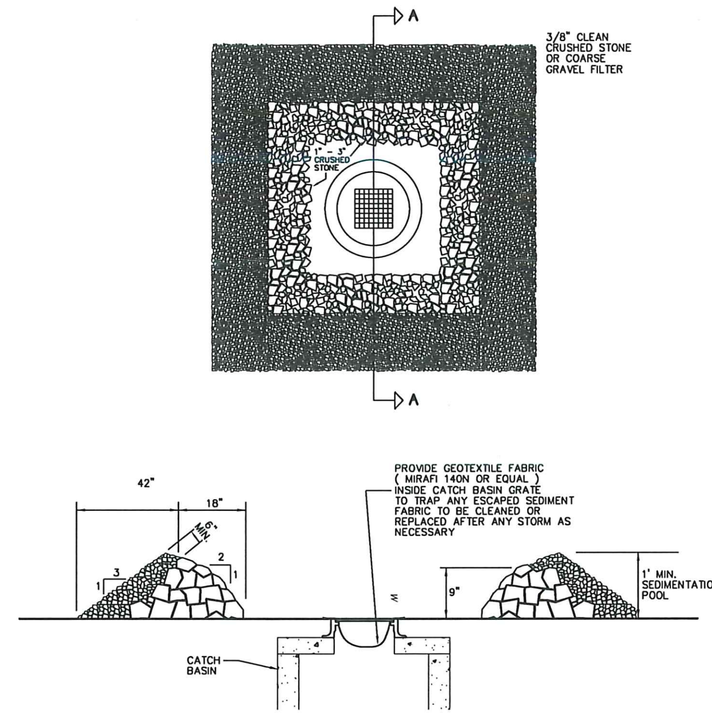
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF -WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT TRACKED, SPILLED, OR WASHED ONTO PUBLIC RIGHTS-OF-WAY SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.

2. THE USE OF CALCIUM CHLORIDE OR WATER MAY BE NECESSARY TO CONTROL DUST DURING DRY PERIODS.

3. PROVIDE APPROPRIATE TRANSITION BETWEEN CONSTRUCTION ENTRANCE AND EDGE OF RIGHT-OF-WAY.

STABILIZED CONSTRUCTION ENTRANCE

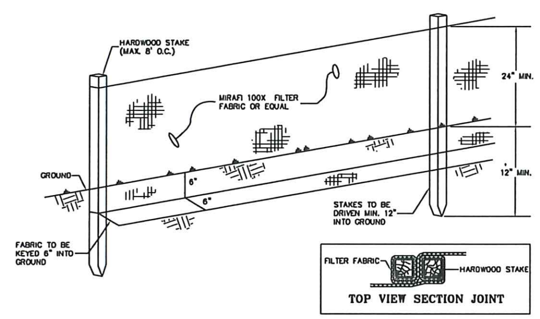
NTS



SECTION A - A

INLET PROTECTION DETAIL

NTS

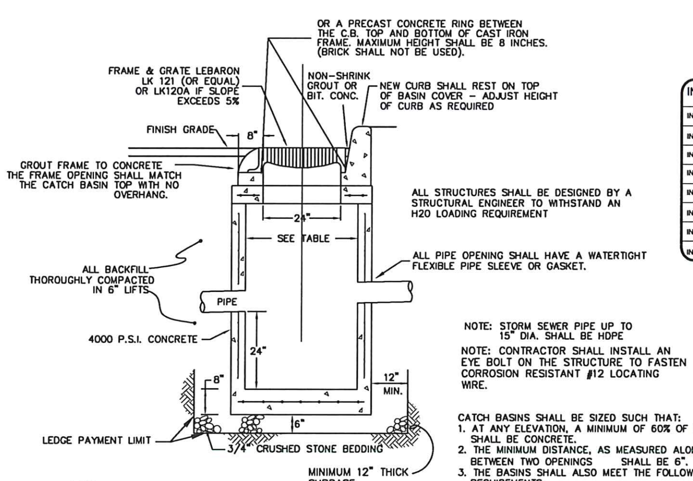


TEMPORARY SILT FENCE

NTS

INSPECTION SCHEDULE	WEEKLY	AFTER EACH RAINFALL THAT GENERATES STORMWATER FROM SITE
INSPECT SILT FENCING	X	X
INSPECT CONSTRUCTION FENCE	X	X
INSPECT CATCH BASIN INLET PROTECTION	X	X
INSPECT AREAS TEMPORARILY MULCHED	X	X
INSPECT TEMPORARY STOCKPILES	X	X
INSPECT STABILIZED CONSTRUCTION ENTRANCES	X	X
INSPECT AREAS THAT HAVE BEEN TOPSOILED + MULCHED	X	X
INSPECT STORMWATER PONDS AND SEDIMENT TRAPS	X	X

ON-SITE COORDINATOR:
BEN WATERMAN
PHONE - 862-0517 X216



NOTE: STORM SEWER PIPE UP TO 15" DIA. SHALL BE HDPE

NOTE: CONTRACTOR SHALL INSTALL AN EYE BOLT ON THE STRUCTURE TO FASTEN CORROSION RESISTANT #12 LOCATING WIRE.

CATCH BASINS SHALL BE SIZED SUCH THAT:
1. AT ANY ELEVATION, A MINIMUM OF 60% OF THE CIRCUMFERENCE SHALL BE CONCRETE.
2. THE MINIMUM DISTANCE, AS MEASURED ALONG THE CIRCUMFERENCE, BETWEEN TWO OPENINGS SHALL BE 6".
3. THE BASINS SHALL ALSO MEET THE FOLLOWING MINIMUM REQUIREMENTS:

NOTE:
ALL STRUCTURES TO BE PAVED AROUND FOR EASE OF PLOWING IF PAVING TO BE DONE OVER TWO SEASONS. PAVING AROUND STRUCTURES TO BE DONE PRIOR TO OCTOBER 31.

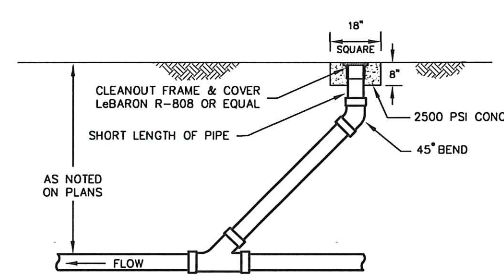
CATCH BASIN DIAMETER	LARGEST PIPE DIA. ALLOWED	SIDEWALL THICKNESS	CONCRETE COVER THICKNESS
36"	18"	4"	6"
48"	30"	5"	10"
60"	36"	6"	12"
72"	48"	7"	18"

PRECAST CATCH BASIN

NTS

GENERAL NOTES :

1. THE PURPOSE OF THESE PLANS IS TO :
   A. MINIMIZE THE AREA OF DISTURBED SOILS AND TO MINIMIZE THE DURATION THAT ANY AREAS ARE LEFT OPEN.
   B. ISOLATE THE AREAS OF DISTURBANCE TO PREVENT AND CONTROL EROSION CAUSED BY RUN-OFF.
   C. CONTROL THE AMOUNTS OF SEDIMENT THAT MAY RESULT FROM ANY SITE EROSION.
2. A COPY OF THE CONSTRUCTION GENERAL PERMIT AND A SET OF THE PLANS WILL BE AVAILABLE ON-SITE.
3. BEN WATERMAN WILL BE THE ON-SITE COORDINATOR. PHONE # 862-0517.
4. THE ON SITE COORDINATOR WILL BE RESPONSIBLE FOR SCHEDULING A PRE-CONSTRUCTION MEETING WHERE THE CONTRACTOR, TOWN, ENGINEER, AND ONSITE COORDINATOR MUST ALL BE PRESENT.
5. THE ON-SITE COORDINATOR SHALL INSPECT AND KEEP A WRITTEN RECORD OF THE EROSION AND SEDIMENT CONTROL STRUCTURES AND MEASURES AT A MINIMUM OF ONCE A WEEK AND ALSO WITHIN 24 HOURS OF ANY STORM EVENT THAT DISCHARGES RUN-OFF FROM THE SITE. THESE RECORDS SHALL BE SUBMITTED EVERY TWO WEEKS TO THE TOWN OF WILLISTON.
6. THE ON-SITE COORDINATOR SHALL KEEP A WRITTEN RECORD OF EROSION CONTROL INSPECTIONS AND ANY MONITORING DATA FOR A MINIMUM OF THREE (3) YEARS FOLLOWING COMPLETION OF CONSTRUCTION.



CLEANOUT DETAIL

NTS

PRE-CONSTRUCTION SEQUENCING FOR EROSION PREVENTION + SEDIMENT CONTROL

PRE-CONSTRUCTION PHASE
INSTALLATION OF THE EROSION CONTROL DEVICES BEFORE CONSTRUCTION COMMENCES

MAJOR CONSTRUCTION ITEM	EROSION CONTROL	MAINTENANCE
1. MARK LIMITS OF AREA TO BE DISTURBED.	INSTALL CONSTRUCTION FENCING AT LOCATIONS SHOW ON PLAN.	MAINTAIN UNTIL CONSTRUCTION WITHIN PHASE I IS COMPLETED OR STABILIZED.
2. INSTALL SILT FENCING AND STABILIZED CONSTRUCTION ENTRANCE	INSTALL SILT FENCING AND STABILIZED CONSTRUCTION ENTRANCE AT LOCATIONS SHOWN ON PLAN.	MAINTAIN SILT FENCE AND REMOVE DEPOSITS OF SILT. REMOVE AND REPLACE STONE AT ENTRANCE AS ORDERED BY THE ON-SITE COORDINATOR.
THE BUILDING CONSTRUCTION IS SET UP TO OCCUR IN CONJUNCTION WITH THE ROAD + PARKING CONSTRUCTION PHASES. THE INTENT IS TO ALLOW CONSTRUCTION OF THE ROADS AND BUILDINGS IN PHASE I BE CONSTRUCTED IN ANY SEQUENCE LONG AS THE STORM SYSTEM IS FIRST IS CONSTRUCTED AND THE AMOUNT OF DISTURBANCE FOR THE ENTIRE PROJECT NEVER EXCEEDS 5 ACRES.	INSTALL LIMITS OF CONSTRUCTION AROUND BUILDING SITE AND SILT FENCE ON THE DOWNHILL SIDE. ANY EXCAVATION STOCKPILES OR AGGREGATE TO BE USED FOR THE FOUNDATION MUST HAVE A SILT FENCE AROUND IT AND SOIL PILES ARE TO BE SEEDED AND MULCHED IF THEY ARE TO REMAIN FOR MORE THAN 7 DAYS.	THE SILT FENCE IS TO BE MAINTAINED UNTIL THE STOCKPILE HAS BEEN REMOVED. IN-USE AREAS OF THE STOCKPILE AREA TO BE RESEEDED AND REMULCHED IF OPEN AND UNUSED FOR MORE THAN 7 DAYS.

CONSTRUCTION SEQUENCING FOR EROSION PREVENTION + SEDIMENT CONTROL

EROSION PREVENTION + SEDIMENT CONTROL

THE ON-SITE COORDINATOR SHALL INSPECT THE SITE AND THE SEDIMENT CONTROL MEASURES A MINIMUM OF ONCE EVERY SEVEN DAYS, PRIOR TO PREDICTED STORM EVENTS AND WITHIN 24 HOURS FOLLOWING ANY PRECIPITATION WITH A VOLUME LARGE ENOUGH TO DISCHARGE RUN-OFF FROM THE SITE. THE WEEKLY REPORT AND EROSION CONTROL PLAN WILL BE KEPT ON-SITE.

CONSTRUCTION FOR PHASE 2 SHALL NOT COMMENCE UNTIL SUFFICIENT PORTIONS OF PHASE I HAVE BEEN COMPLETED AND STABILIZED TO ENSURE THAT DISTURBANCE IS LIMITED TO 5 ACRES OR LESS AT ANY ONE TIME.

*NOTE: FOR CONSTRUCTION OCCURRING BETWEEN OCTOBER 15 AND APRIL 15 REFER TO THE WINTER EROSION CONTROL GUIDELINES FOR ADDITIONAL EROSION AND SEDIMENT CONTROL REQUIREMENTS.

PHASE 1 CONSTRUCTION OF ROAD + UTILITIES (ESTIMATED DURATION - 24 WEEKS)

MAJOR CONSTRUCTION ITEM	EROSION CONTROL	MAINTENANCE
1. MARK LIMITS OF AREA TO BE DISTURBED.	INSTALL CONSTRUCTION FENCING / SILT FENCE AT LOCATIONS SHOW ON PLAN.	MAINTAIN UNTIL CONSTRUCTION WITHIN PHASE 1 IS COMPLETED AND STABILIZED.
2. CLEAR AND GRUB WITHIN THE MARKED AREA TO INSTALL PERMANENT EXTENDED DETENTION POND.	INSTALL INFILTRATION BASIN SYSTEM WITH PRE-TREATMENT AREAS AND STONE DIAPHRAGM AS SHOWN ON PLAN. SHAPE, SEED AND INSTALL MATTING OR HYDROSEED.	AFTER INITIAL INSTALLATION, THE STORMWATER SYSTEM AND EXTENDED DETENTION POND SHALL BE CHECKED AFTER EVERY RAINFALL GENERATING RUNOFF AND MAINTAINED.
3. WORK ON CUTS/FILLS, ROADWAY, UTILITIES, ETC.	KEEP OPEN CONSTRUCTION AREA TO 5 ACRES OR LESS. TREES MAY BE CUT BUT NOT STUMPED BEYOND 5 ACRES AT ANY ONE TIME. CHECK ENTRANCE, SILT/CONSTRUCTION FENCES, PERMANENT SWALE, GET GRASS ESTABLISHED AS SOON AS POSSIBLE.	AFTER INITIAL INSTALLATION, THE STORMWATER SYSTEM AND EXTENDED DETENTION POND SHALL BE CHECKED AFTER EVERY RAINFALL GENERATING RUNOFF AND MAINTAINED. ANY SILT ACCUMULATION SHALL BE ADDRESSED IMMEDIATELY AND PROVISIONS MADE TO CORRECT PROBLEMS AS DIRECTED BY THE ENGINEER.

POST-CONSTRUCTION SEQUENCING FOR EROSION PREVENTION + SEDIMENT CONTROL

POST-CONSTRUCTION PHASE
FINAL INSPECTION OF THE EROSION CONTROL DEVICES TO BE REMOVED AFTER AREAS ARE STABILIZED

MAJOR CONSTRUCTION ITEM	EROSION CONTROL	MAINTENANCE
1. CHECK PERIMETER WHERE DELINEATED CONSTRUCTION LIMITS WERE PLACED.	IF PERIMETER IS STABILIZED AND GRASS IS ESTABLISHED, REMOVE FENCES	
2. DURING CONSTRUCTION, AN EXTENDED DETENTION POND WAS STABILIZED WITH MATTING OR HYDROSEEDED.	CHECK STORM SYSTEM AND EXTENDED DETENTION BASIN TO MAKE SURE EVERYTHING IS STABILIZED. CHECK OVERALL SITE FOR ANY PROBLEM AREAS.	SEED AND MULCH, INSTALL MATTING OR HYDROSEED ANY DISTURBED AREAS.
3. THE BUILDING CONSTRUCTION PHASES WILL CONTINUE TO OCCUR AFTER THE ROAD CONSTRUCTION IS COMPLETE. SITE CONTRACTOR SHALL CHECK ENTIRE SITE WORKED FOR STABILITY BEFORE DE-MOBILIZING FROM THE SITE.	INSTALL LIMITS OF CONSTRUCTION AROUND BUILDING SITE AND SILT FENCE ON THE DOWNHILL SIDE. ANY EXCAVATION STOCKPILES OR AGGREGATE TO BE USED FOR THE FOUNDATION MUST HAVE A SILT FENCE AROUND IT AND SOIL PILES ARE TO BE SEEDED AND MULCHED IF THEY ARE TO REMAIN FOR MORE THAN 7 DAYS.	THE SILT FENCE IS TO BE MAINTAINED UNTIL THE STOCKPILE HAS BEEN REMOVED. IN-USE AREAS OF THE STOCKPILE AREA TO BE RESEEDED AND REMULCHED IF OPEN AND UNUSED FOR MORE THAN 7 DAYS AS NECESSARY TO KEEP THEM STABILIZED.

WINTER GUIDELINES FOR EROSION PREVENTION + SEDIMENT CONTROL

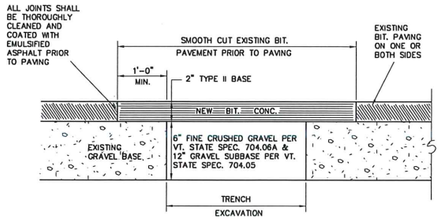
1. ALL DRAINAGE STRUCTURES MUST BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS.
2. ALL SILT FENCE OR OTHER PRACTICES REQUIRING EARTH DISTURBANCE SHALL BE IN PLACE PRIOR TO GROUND FREEZING.
3. WHEN MULCH IS REQUIRED FOR STABILIZATION DOUBLE THE STANDARD RATE SHALL BE APPLIED.
4. TO ENSURE COVER OF DISTURBED 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.
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 EROSION, MULCH SHALL BE APPLIED AT DOUBLE THE RATE OR NETTING OR OTHER APPROACH SHALL BE USED TO PREVENT REMOVAL BY WIND.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING. on the __ day of ________, 20__.

Presiding member or Administrator's signature

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1

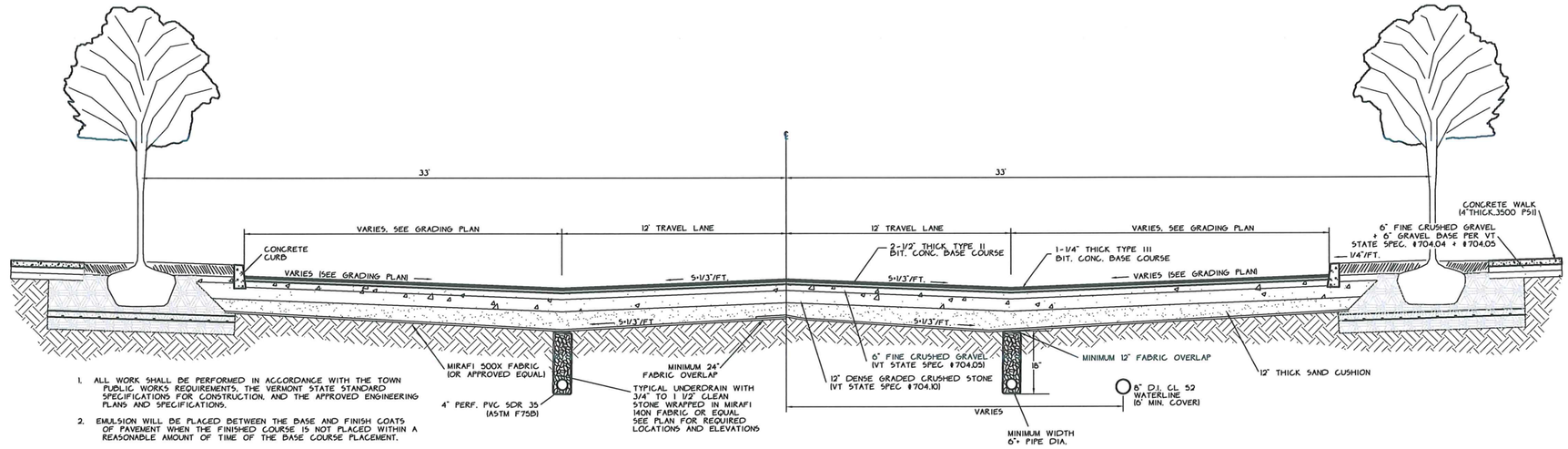
DATE 4/3/2017	REVISION ISSUED FOR CONSTRUCTION		BY DJH
SURVEY OBCA	☐ RECORD DRAWING ■ PRELIMINARY ☐ FINAL ☐ SKETCH/CONCEPT	COTTONWOOD CROSSING	DATE 11/04/2016
DESIGN OBCA	O'LEARY-BURKE CIVIL ASSOCIATES, PLC	U.S. ROUTE 2 WILLISTON, VT	JOB # 5087
DRAWN DJH	13 CORPORATE DRIVE, ESSEX JCT., VT PHONE: 878-9990 FAX: 878-9989 E-MAIL: obca@olearyburke.com	STORM & EROSION CONTROL DETAILS & SPECIFICATIONS	FILE 5087-S19
CHECKED PJO			PLAN SHEET # 14
SCALE N.T.S.			



1. SETUP AND MAINTAIN SIGNS AND OTHER SAFETY CONTROL DEVICES.
2. RESHAPE HOLE AND PATCH AREA BY CUTTING WITH CONCRETE SAW INTO A SQUARE OR RECTANGULAR SHAPE. CUT SIDE FACES VERTICALLY. RESHAPE DOWNWARD TO SOLID MATERIAL AND AROUND HOLE TO SOLID PAVEMENT.
3. BACKFILL TRENCH IN 6" LIFTS AND COMPACT EACH LIFT TO 95% OF MAXIMUM DENSITY OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698 STANDARD PROCTOR.
4. REMOVE ALL LOOSE MATERIAL AND THOROUGHLY SWEEP THE HOLE AREA CLEAN OF MUD AND STANDING WATER.
5. APPLY LIQUID EMULSION (RS-1) TO VERTICAL FACES IN A UNIFORM MANNER. DO NOT PUDDLE EMULSION ON BOTTOM OF THE HOLE.
6. PLACE TYPE II BASE COURSE OF PAVEMENT A MINIMUM OF 2 1/2" THICK.
7. FILL TOP OF HOLE WITH TYPE III BITUMINOUS CONCRETE AND COMPACT IN LIFTS OF NO MORE THAN 2". FINAL LIFT SHOULD BE 1/2" TO 1" ABOVE ADJOINING PAVEMENT BEFORE COMPACTION SO THAT AFTER COMPACTION THE PATCH IS LEVEL WITH THE EXISTING PAVEMENT. EACH LIFT SHOULD BE THOROUGHLY COMPACTED WITH A VIBRATORY PLATE COMPACTOR OR A VIBRATORY PORTABLE ROLLER. EXPERIENCE HAS SHOWN THAT 15 TO 20 PASSES ARE REQUIRED WITH A VIBRATORY ROLLER AND A MIX TEMPERATURE ABOVE 250 DEGREES F ARE NECESSARY TO ENSURE GOOD COMPACTION. HAND TAMP SHOULD ONLY BE USES FOR SMALL AREAS (LESS THAN 1 S.F.).
8. CLEANUP AREA. DO NOT LEAVE EXCESS FILL OR EXCAVATED MATERIAL ON THE PAVEMENT. REMOVE SAFETY SIGNS AND DEVICES.

REPLACEMENT OF EXISTING PAVEMENT

NTS



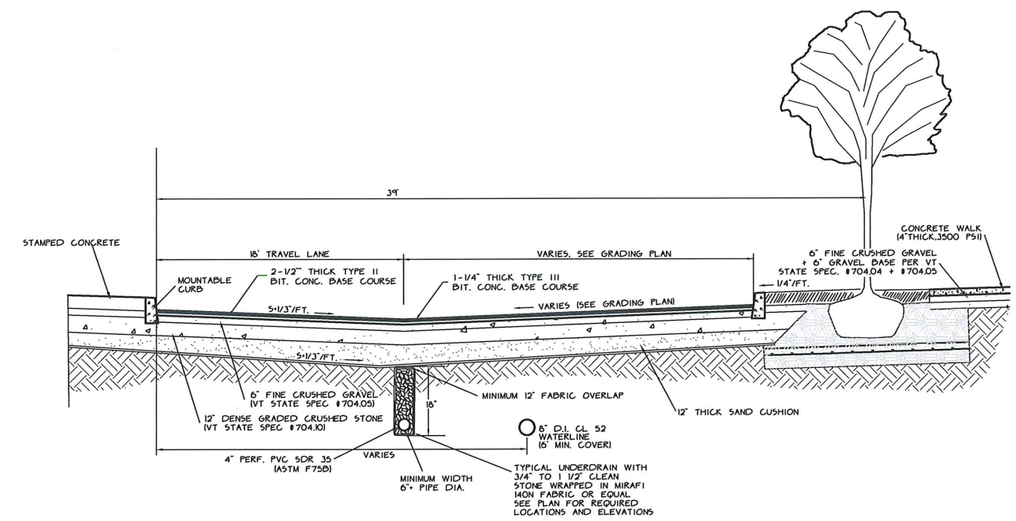
1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN PUBLIC WORKS REQUIREMENTS, THE VERMONT STATE STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND THE APPROVED ENGINEERING PLANS AND SPECIFICATIONS.
2. EMULSION WILL BE PLACED BETWEEN THE BASE AND FINISH COATS OF PAVEMENT WHEN THE FINISHED COURSE IS NOT PLACED WITHIN A REASONABLE AMOUNT OF TIME OF THE BASE COURSE PLACEMENT.
3. YELLOW OR ORANGE WARNING TAPE SHALL BE BURIED 15" ABOVE ALL GAS, ELECTRIC, TELEPHONE AND T.V. LINES

COTTONWOOD DRIVE CROSS-SECTION (STA 10+00 - 14+64.82)

NTS

GENERAL CONSTRUCTION SPECIFICATIONS

1) PRIOR TO START OF CONSTRUCTION CONTRACTOR MUST COORDINATE WITH DIGSAFE TO VERIFY THE EXACT LOCATION OF EXISTING UTILITIES AND ARRANGE A PRE CONSTRUCTION MEETING WITH PUBLIC WORKS, THE DESIGN ENGINEER, AND OWNER.
2) UTILITY INFORMATION SHOWN HEREON WAS OBTAINED FROM BEST AVAILABLE SOURCE AND MAY OR MAY NOT BE EITHER ACCURATE OR COMPLETE. CONTRACTOR SHALL COORDINATE WITH DIGSAFE TO VERIFY EXACT LOCATION OF EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY UTILITY, PUBLIC OR PRIVATE, SHOWN OR NOT SHOWN HEREON. CONTRACTOR SHALL VERIFY NEW TAP LOCATIONS AND SHALL CONNECT ALL UTILITIES TO NEAREST SOURCE THROUGH COORDINATION WITH UTILITY OWNER.
3) THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND REMOVAL OF ALL EXISTING VEGETATION, PAVEMENT, AND STRUCTURES NECESSARY TO COMPLETE THE WORK UNLESS NOTED ON THESE PLANS. CONTRACTOR SHALL REMOVE ALL TRASH FORM SITE UPON COMPLETION OF CONSTRUCTION. ANY SURFACES, LINES OR STRUCTURES WHICH HAVE BEEN DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO A CONDITION AT LEAST EQUAL TO THAT IN WHICH THEY WERE FOUND IMMEDIATELY PRIOR TO BEGINNING OF CONSTRUCTION.
4) SEE OTHER DETAIL SHEETS OF THESE PLANS FOR ADDITIONAL DETAILS, REQUIREMENTS AND SPECIFICATIONS.
5) ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE TOWN PUBLIC WORKS SPECIFICATIONS, AND THESE PLANS.
6) NEW PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH NOTE #4 ABOVE. ALL EXISTING PAVEMENT MARKINGS CONFLICTING WITH THE NEW IMPROVEMENTS SHALL BE REMOVED BY GRINDING OR BURNING.
7) A MINIMUM OF ONE-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. CONTINUOUS TWO-WAY TRAFFIC WILL BE REQUIRED AT NIGHT, PEAK-HOURS, AND WHENEVER POSSIBLE DURING ACTUAL CONSTRUCTION ACTIVITIES. IF DEEMED NECESSARY BY THE OWNER, MUNICIPALITY OR ENGINEER, A UNIFORMED TRAFFIC CONTROL OFFICER SHALL DIRECT TRAFFIC DURING PEAK HOURS. TEMPORARY CONSTRUCTION SIGNS AND TRAFFIC CONTROL SIGNS SHALL BE ERECTED BY THE CONTRACTOR IN ACCORDANCE WITH STATE AND TOWN STANDARDS AND SHALL BE COORDINATED WITH THE TOWN OF WILLISTON PUBLIC WORKS DEPARTMENT AND THE TOWN OF WILLISTON POLICE DEPARTMENT.
8) THE CONTRACTOR SHALL BE RESPONSIBLE AT HIS OWN EXPENSE FOR ENSURING THAT THE DUST CREATED AS A RESULT OF CONSTRUCTION DOES NOT CREATE A NUISANCE OR SAFETY HAZARD. WHERE AND WHEN DEEMED NECESSARY, THE CONTRACTOR WILL BE REQUIRED TO WET SECTIONS OF THE CONSTRUCTION AREA WITH WATER, APPLY CALCIUM CHLORIDE, OR SWEEP THE ROADWAY WITH A POWER BROOM FOR DUST CONTROL.
9) THE CONTRACTOR SHALL NOTIFY THE TOWN OF WILLISTON PUBLIC WORKS DEPT. 24 HOURS IN ADVANCE OF STARTING ANY WORK, CUTTING PAVEMENT, INSTALLATION OF ANY UTILITIES, BRINGING IN ANY NEW GRAVEL OR STONE FOR THE NEW BASE, PAVING, ALL TESTING, AND FINAL INSPECTION, IN ORDER TO ASSURE COMPLIANCE WITH THE PLANS.
10) PRIOR TO BEGINNING CONSTRUCTION, ALL MATERIALS SHALL BE APPROVED BY THE ENGINEER.
11) ALL FILL SHALL BE PLACED IN 6 INCH LIFTS AND THOROUGHLY COMPACTED TO 95% OF MAXIMUM DENSITY OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698 STANDARD PROCTOR, AND SHALL BE TESTED AT 500' INTERVALS, UNLESS OTHERWISE SPECIFIED.
12) BACKFILL UNDER PIPES IN FILL AREAS SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY OF OPTIMUM MOISTURE CONTENT. A MINIMUM OF TWO (2) COMPACTION TESTS SHALL BE TAKEN AT THE CONTRACTOR'S EXPENSE, UNDER EACH RUN OF PIPE PRIOR TO INSTALLING THE PIPES. THE PIPES SHALL ONLY BE INSTALLED OVER ADEQUATELY COMPACTED SOILS.
13) THE HAYBALE DAMS, SILT FENCES, AND DITCHES SHALL BE MAINTAINED AND REPAIRED BY THE CONTRACTOR AFTER EVERY RAINFALL OR AS ORDERED BY THE ENGINEER UNTIL ALL DISTURBED AREAS HAVE BEEN PAVED OR GRASSED AND APPROVED BY THE ENGINEER. THE MAINTENANCE OF THE EROSION CONTROL DEVICES WILL INCLUDE THE REMOVAL OF ANY ACCUMULATED SEDIMENTATION.
14) THIS DESIGN MUST BE INSPECTED BY O'LEARY-BURKE CIVIL ASSOCIATES TO ENSURE COMPLIANCE WITH THESE PLANS. O'LEARY-BURKE WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS THAT ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS AND THE DESIGN INTENT THAT THE PLANS CONVEY, AND FROM FAILURE TO HAVE BEEN NOTIFIED BY THE CONTRACTOR TO INSPECT THE WORKS AND TESTS IN PROGRESS.
15) THE CONTRACTOR SHALL COORDINATE THE LOCATION AND INSTALLATION OF THE INDIVIDUAL LOT SERVICES WITH THE OWNER AT THE TIME OF CONSTRUCTION.
16) ALL SLOPES, DITCHES AND DISTURBED AREAS SHALL BE GRADED SMOOTH, CLEAN AND FREE OF POCKETS WITH SUFFICIENT SLOPE TO ENSURE DRAINAGE.



COTTONWOOD DRIVE CROSS-SECTION (STA 14+64.82 - 18+89.98)

NTS

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the Approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING, on the __ day of _____, 20__

Presiding member or Administrator's signature

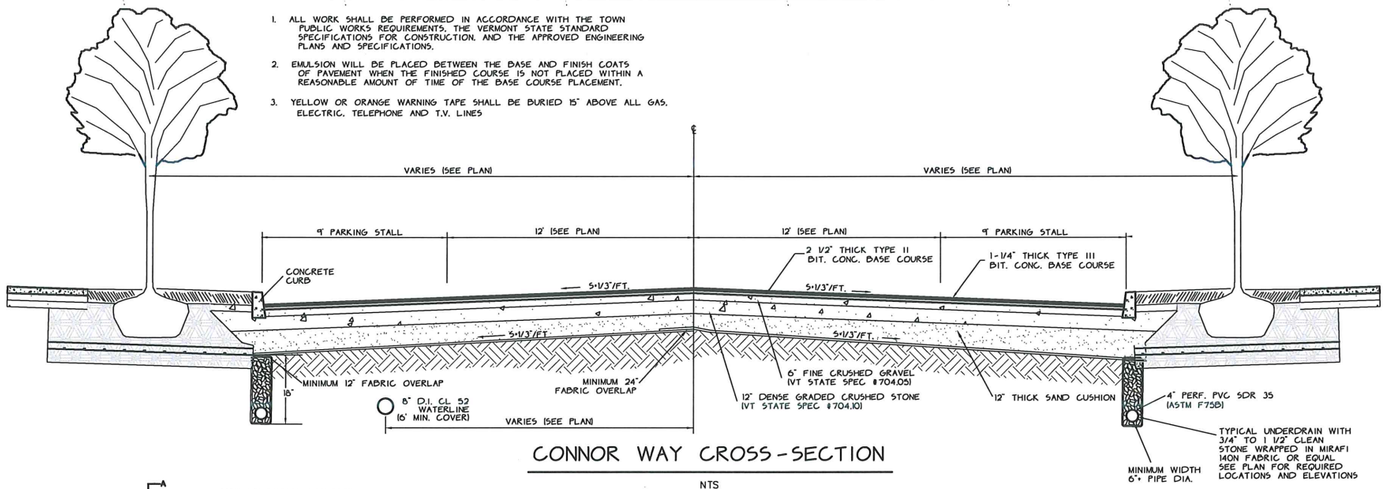
STATE OF VERMONT DAVID J. HEALY 10615 CIVIL

DATE 4/3/2017	REVISION ISSUED FOR CONSTRUCTION		BY DJH
SURVEY OBCA	☐ RECORD DRAWING ☐ FINAL	■ PRELIMINARY ☐ SKETCH/CONCEPT	DATE 11/04/2016
DESIGN OBCA	O'LEARY-BURKE CIVIL ASSOCIATES, PLC	COTTONWOOD CROSSING	JOB# 5087
DRAWN DJH		U.S. ROUTE 2 WILLISTON, VT	FILE 5087-S19
CHECKED PJD	13 CORPORATE DRIVE, ESSEX JCT., VT PHONE: 878-9990 FAX: 878-9989 E-MAIL: obca@olearyburke.com	ROAD DETAILS & SPECIFICATIONS (1 OF 2)	PLAN SHEET # 15
SCALE NTS			

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN PUBLIC WORKS REQUIREMENTS, THE VERMONT STATE STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND THE APPROVED ENGINEERING PLANS AND SPECIFICATIONS.

2. EMULSION WILL BE PLACED BETWEEN THE BASE AND FINISH COATS OF PAVEMENT WHEN THE FINISHED COURSE IS NOT PLACED WITHIN A REASONABLE AMOUNT OF TIME OF THE BASE COURSE PLACEMENT.

3. YELLOW OR ORANGE WARNING TAPE SHALL BE BURIED 15" ABOVE ALL GAS, ELECTRIC, TELEPHONE AND T.V. LINES



CONNOR WAY CROSS-SECTION

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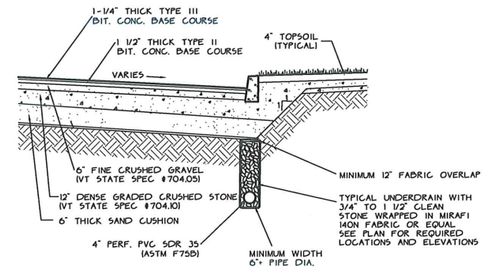

PARKING LOT CROSS SECTION

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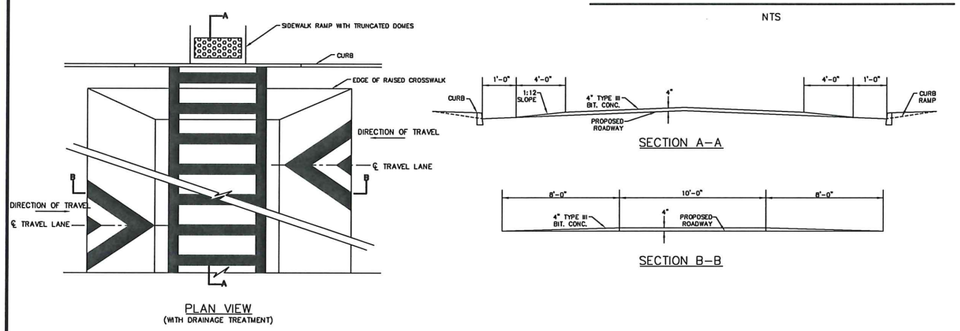

RAISED CROSSWALK DETAIL

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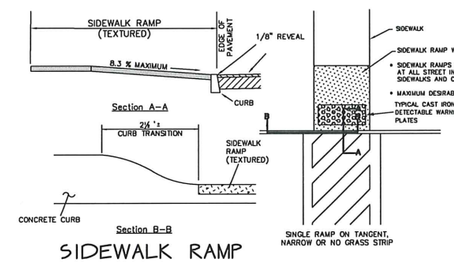

SIDEWALK RAMP

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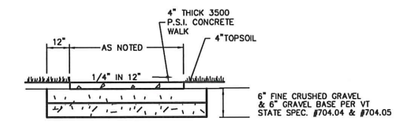


1) SIDEWALK SHALL BE SCORED TO A DEPTH OF ONE INCH (1") EVERY FIVE FEET (5').

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

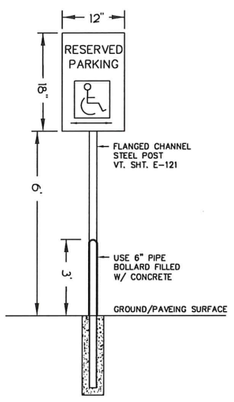
3) ALL EXPOSED SURFACES TO RECEIVE 2 COATS OF AN ANTI-SPALLING COMPOUND.

4) CONCRETE SHALL BE 6" THICK AT DRIVEWAY CROSSINGS

5) SIDEWALK SHALL SLOPE 1/4" PER 1' TOWARD POSITIVE DRAINAGE

TYPICAL SIDEWALK SECTION

NTS



HANDICAP PARKING SIGN

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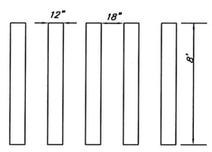

CROSSWALK MARKING

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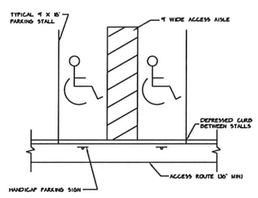

ACCESSIBLE PARKING DETAIL

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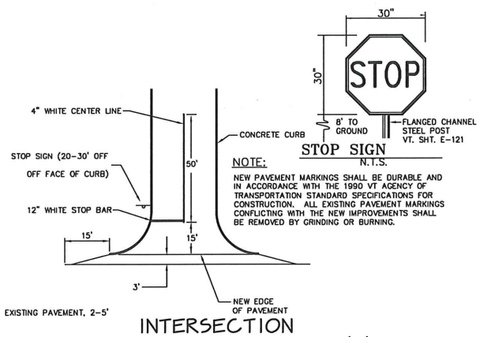

NOTE:

NEW PAVEMENT MARKINGS SHALL BE DURABLE AND IN ACCORDANCE WITH THE 1990 VT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION. ALL EXISTING PAVEMENT MARKINGS CONFLICTING WITH THE NEW IMPROVEMENTS SHALL BE REMOVED BY GRINDING OR BURNING.

INTERSECTION CONSTRUCTION DETAIL 'A'

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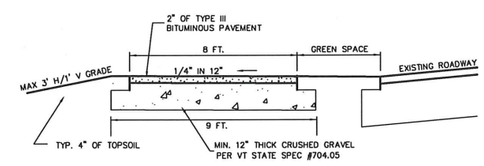
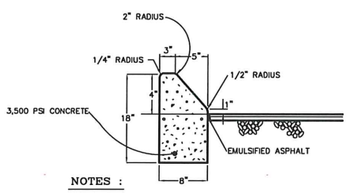


SEE PLAN FOR LOCATION OF ABOVE DETAILS

NOTE: TYPICAL CAST IRON DETECTABLE WARNING PLATES SHALL BE PROVIDED AT ALL INTERSECTIONS

BITUMINOUS PATH DETAIL

N.T.S.



NOTES :

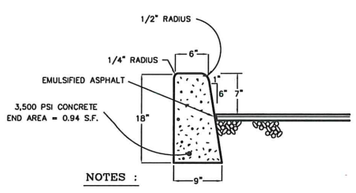
1) CURBING SHALL BE CONSTRUCTED IN 10' SECTIONS WITH 1/8" JOINT BETWEEN SECTIONS.

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

3) ALL EXPOSED SURFACES TO RECEIVE 2 COATS OF AN ANTI-SPALLING COMPOUND.

MOUNTABLE CURB

NTS



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CONCRETE CURB

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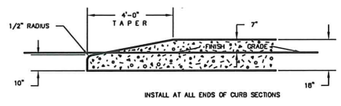

TYPICAL TAPERED CURB

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Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING. on the __ day of ____, 20__

Presiding member or Administrator's signature

DATE 4/3/2017	REVISION ISSUED FOR CONSTRUCTION		BY DJH
SURVEY OBCA	☐ RECORD DRAWING ☐ FINAL	■ PRELIMINARY ☐ SKETCH/CONCEPT	DATE 11/04/2016
DESIGN OBCA	O'LEARY-BURKE CIVIL ASSOCIATES, PLC	COTTONWOOD CROSSING	JOB # 5087
DRAWN DJH	13 CORPORATE DRIVE, ESSEX JCT., VT PHONE: 878-9990 FAX: 878-9929 E-MAIL: obca@oleary-burke.com	U.S. ROUTE 2 WILLISTON, VT	FILE 5087-S19
CHECKED PJO		ROAD DETAILS & SPECIFICATIONS (2 OF 2)	PLAN SHEET # 16
SCALE NTS			

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1

WATER DISTRIBUTION NOTES

1.1 GENERAL:

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

1.2 WATER PIPE MATERIALS:

DUCTILE IRON PIPE
Pipe shall be a minimum diameter of eight inches (8") and conform to current AWWA C151 or ANSI Specification A21.51. Push-on joint pipe shall be minimum thickness Class 50. Push-on joint accessories shall conform to applicable requirements of AWWA C111 or ANSI Specification A21.11.

Pipe shall be cement mortar-lined on the inside in accordance with AWWA C104 or ANSI Specification A21.4 except that the cement-lining thickness shall not be less than three-sixteenths inch (3/16"). A plus tolerance of one-eighths inch (1/8") will be permitted.

1.2 FITTINGS:

Ductile iron fittings shall be cement-lined, have 350 pounds working pressure, and be in accordance with AWWA C-104 for compact fittings.
Mechanical joint nuts and bolts shall be high strength, low alloy steel per ANSI A-21.4. Ductile iron fittings larger than twelve inches (12") shall have a standard body length equal to Class 250 cast iron fittings. Cast iron Class 250 fittings will be allowed in lieu of ductile iron fittings in sizes larger than twelve inches (12").

1.4 GATE VALVE RESILIENT SEAT:

Gate valves shall be AWWA C 509 Standard Gate Valves with mechanical joints of sizes as required on the plans. All valves shall be of cast or ductile iron body, parallel brass seats, non-rising stem, inside screw, double disk construction with "O" Ring Stem Seals. All valves to be equipped with a valve box for a minimum of 5.5' of cover material. The gate valves shall open left and be designed for a working pressure of 200 psi.

Each valve shall have maker's name, pressure rating, and year in which manufactured cast on the body. Prior to shipment from the factory, each valve shall be tested by hydrostatic pressure equal to twice the specified working pressure. Buried valves shall be installed with a valve box.

1.5 VALVE BOXES:

Cast iron three-piece slide-type; five and one-fourths inch (5 1/4") shaft; six foot (6') trench depth.

Cast iron cover marked "WATER" and indicating direction of opening.

1.6 FIRE HYDRANTS:

All hydrants are to be 3-way, 5" minimum diameter and limited to the following makes:
Mueller Centurion 200 or Kennedy Guardian K-81D. All hydrants must have Nation Standard threads and be plugged. All hydrants shall conform with AWWA C-502 standards.

Main Valve Opening:	5 1/4 inches
Nozzle Arrangement:	Two 2 1/2 inch I.D. hose nozzles with (6) threads per inch, double start. One 4 1/2 inch I.D. pumper nozzle with (4) threads per inch. Hydrant must have National Standard Threads.
Inlet Connection:	6 inch mechanical joint
Operating Nut:	Standard 1 inch pentagon
Direction of Opening:	Counterclockwise
Color:	Enameled hydrant red body, top color as determined by Village.
Depth of Bury:	Hydrant shall be installed to the manufacturer's instructions with nozzles about 18" above finish grade.

1.7 HYDRANT BRANCHES:

Hydrant assemblies shall consist of a six inch (6") mechanical joint gate valve conforming to AWWA C-509; a four foot (4') length of six inch (6") Class 52 ductile iron pipe with a cement-lining; and the fire hydrant.

The hydrant shall have at least 12 inches (12") between the bottom of the steamer cap and the ground. For single-family house subdivisions, there will be at least one hydrant at each intersection and a maximum of 350 feet (350') between hydrants with a minimum water flow of 1000 gallons per minute with a 20 psi residual pressure from each hydrant.

1.8 WATER SERVICE CONNECTION:

A. GENERAL REQUIREMENTS

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

B. CORPORATIONS

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

Corporations shall be directly tapped into ductile iron pipe larger than two inches (2") in diameter. In no other instance, except when a tapping sleeve and valve is used, shall a tap be made and a corporation installed without the use of a tapping saddle. Corporations shall be Mueller H-150008.

C. CURBSTOPS

Curbstops shall be a quarter-turn, plug-type valve with an "O" ring-type seal and shall be manufactured of Waterworks Brass in accordance with AWWA C800. The curbstop shall open left and have a positive stop. No curbstop shall have the ability to drain the service line. Both inlet and outlet of the curbstop shall have compression-type fittings. The tee head of the curb- stop shall have provision for the connection of a service rod. Curbstops shall be Mueller H-15209 with stainless steel rods and hardware.

D. COPPER

Copper tubing shall by type "K", soft-temper, conforming to ASTM B88-62. The name or trademark of the manufacturer and type shall be stamped at regular intervals along the pipe.

E. CURB BOXES AND RODS

Curb boxes shall be of the sliding extension-type capable of adjusting from five feet to six feet (5' - 6'). The base of the box shall be arch-type so as to prevent the box from resting directly on the curbstop. The adjustable upper section shall be one inch (1") in diameter for use with three-fourths and one inch (3/4" and 1") curbstops. Curb boxes and rods shall not be located under drives or sidewalks.

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

F. HOUSE SERVICES CONSTRUCTION METHODS

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

The Contractor shall also connect the type "K" copper service pipe to the flanged joint, which shall be connected to the brass type curbstop with inlet and outlet for the appropriate type "K" copper service pipe. Such curbstop shall be located not less than Five feet six inches (5'6") below the ground surface and shall be accessible from the surface through an approved valve box.

1.9 CONSTRUCTION METHODS

A. INSPECTION AND TESTING

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

B. INSTALLATION

Pipes, fittings, and accessories shall be carefully handled to avoid damage. Prior to the date of acceptance of the project work by the Owner, the Contractor shall replace any new pipe or accessory found to be defective at any time, including after installation, at no expense to the Owner. All installation and testing shall be done in accordance with AWWA Standard C-600 and ANSI Specification A21.11.

All pipes showing cracks shall be rejected. If cracks occur in the pipe, the Contractor may, at his own expense and with the approval of the Engineer, cut off the cracked portions at a point at least twelve inches (12") from the visible limits of the crack and use the sound portion of the pipe. All pipes and fittings shall be cleared of all foreign matter and debris prior to installation and shall be kept clean until the time of acceptance by the Owner.

At all times, when the pipe laying is not actually in progress, the open ends of the pipe shall be closed by temporary watertight plugs or by other approved means. If water is in the trench when work is resumed, the plug shall not be removed until all danger of water entering the pipe has passed. The pipe shall be installed in trenches and at the line and grade shown on the Contract Drawings.

Any deflection joints shall be within the limits specified by the manufacturer. All piping and appurtenances connected to the equipment shall be supported so that no strain will be imposed on the equipment. If the equipment manufacturer's specifications include that piping loads are not to be transferred, the Contractor shall submit certification of compliance.

Concrete thrust blocks shall be installed on all plugs, tees, and bends deflecting 11 1/4 degrees or more. Care shall be taken to ensure that concrete will not come in contact with flanges, joints, or bolts. The required area of thrust blocks are indicated on the plans or shall be as approved by the Engineer.

Whenever sewers cross under watermains, the watermain shall be laid at such an elevation that the bottom of the watermain is at least 18 inches above the top of the sewer. This vertical separation shall be maintained for that portion of the watermain located within ten feet (10') horizontally of any sewer it crosses.

There shall be no physical connection between the distribution system and any pipes, pumps, hydrants, or tanks which are supplied or may be supplied with a water that is, or may be, contaminated. In instances where the use of different types of pipe require joining, the Contractor shall furnish and install all necessary adapters.

All trenching safety standards shall be in conformance with all applicable State and Federal Guidelines and as specified on the Plans.

The Contractor shall, at all times, keep the trenches entirely free of water until all work is finished and ready for backfilling. After the various pipelines have been installed, the trenches and other areas to be filled shall be backfilled to subgrade with, wherever possible, material excavated from the trench. No backfilling will be allowed until any concrete masonry has set sufficiently, as determined by the Engineer.

All material for backfilling shall be free of roots, stumps, and frost. Materials used for backfilling trenches shall be free of stones weighing over 30 pounds. No stones measuring over one and one-half inches (1 1/2") in the longest dimension shall be placed within one foot (1') of the pipeline being backfilled.

Backfill for all pipelines shall be placed in six inch (6") layers, each layer being thoroughly compacted to not less than 95 percent of maximum dry density as determined by the AASHTO-T-99 Standard Proctor. Particular precautions shall be taken in the placement and compaction of the backfill material in order not to damage the pipe or structure. The backfill shall be brought up evenly. All watermains shall be installed with a minimum cover depth of six (6'), unless insulated.

Surplus excavated materials not used for backfill shall be disposed of in a manner satisfactory to the Engineer. All surplus material or spoil shall be removed promptly and disposed of so as not to be objectionable to abutters or to the general public.

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

The contractor shall provide a stable, temporary PVC marker approved by the Engineer at all gate valves, curb stops, and at the end of waterlines to a point six inches (6") above finish grade. The marker shall be seated securely into the ground.

C. FIELD TESTING

Except as otherwise directed, all pipelines shall be tested. Pipelines laid in excavation or bedded in concrete shall be tested prior to backfilling or the placing of concrete, and any exposed piping shall be tested prior to field painting. The Contractor shall furnish all gauges, testing plugs, caps, and all other necessary equipment and labor to perform leakage and pressure test in sections of an approved length. Each valved section or a maximum of one thousand feet (1,000') of the pipe shall be tested. All water required for testing shall be potable. All testing shall be conducted in the presence of the Engineer.

For the pressure test, the Contractor shall develop and maintain 200 pounds per square inch for two hours. Failure to hold the designated pressure for the two-hour period constitutes a failure of the section tested. The leakage test shall be performed concurrently with the pressure test. During the test, the Contractor shall measure the quantity of water required to maintain the test pressure. Leakage shall not exceed the quantity given by:

L = SD (Square root of P) / 148,000

where:
L = Leakage in gallons/hour
S = Length of pipeline tested
D = Diameter of pipe in inches
P = Average test pressure in psi

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

D. DISINFECTION:

Chlorination of the watermain shall be conducted only after the main has been flushed and a clear stream is obtained as determined by the Engineer.

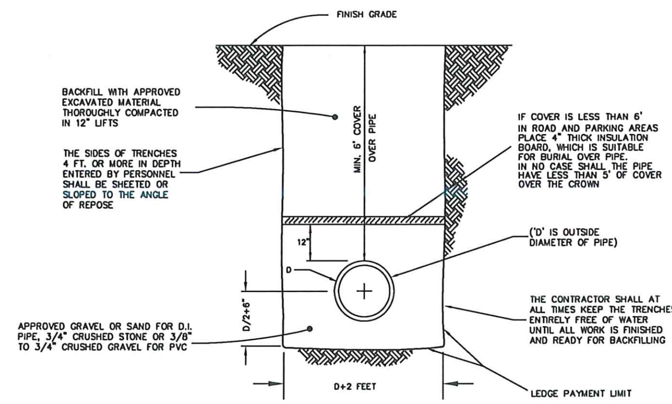
The Contractor shall furnish all labor, equipment, materials, and tools necessary to disinfect the pipe and appurtenances in accordance with the AWWA Standard for Disinfecting Watermains, C-651, with the exception of the tablet method.

The method of disinfection shall be by the continuous feed method unless otherwise approved by the Engineer. After filling, flushing, and the addition of chlorine solution, the free chlorine concentration within the pipe shall be at least 25 mg/l. The chlorinated water shall remain in the main for a period of at least 24 hours. At the end of this period, the treated water in all portions of the main shall not have a residual of less than 10 mg/l of free chlorine. All disinfection shall be performed under the supervision of the Engineer. The disinfection process shall be deemed acceptable only after (2) samples of water taken from separate locations from the flushed, disinfected main taken by the Engineer and tested at an approved laboratory show no evidence of bacteriological contamination. Disinfection shall conform to the latest AWWA C-651 revision.

The pipeline and appurtenances shall be maintained in an uncontaminated condition until final acceptance. Disinfection shall be repeated when and where required at no expense to the Owner until final acceptance by the Owner.

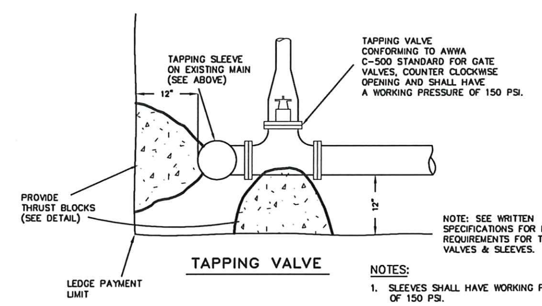
E. FROST PROTECTION OF SHALLOW WATERLINES

In no case shall the waterlines have less than six feet (6') of cover over the top of the pipe.



TYPICAL WATER TRENCH

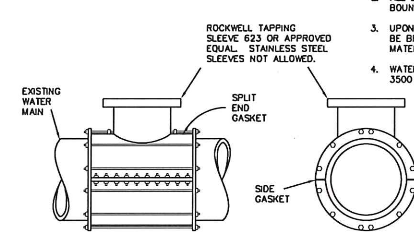
NTS



TAPPING VALVE

NOTES:

1. SLEEVES SHALL HAVE WORKING PRESSURE OF 150 PSI.
2. ALL EXTERIOR EXPOSED SURFACES SHALL BE FUSION BOUNDED, EPOXY-COATED TO A MIN. 10 MIL. THICKNESS.
3. UPON FINAL TIGHTENING AND TESTING ALL BOLTS SHALL BE BRUSH COATED WITH BITUMASTIC COLD APPLIED MATERIAL TO ALL EXPOSED NUTS & BOLTS.
4. WATER MAIN AND VALVE SHALL BE ENCASED IN 3500 PSI CONCRETE.



TAPPING SLEEVE

TAPPING VALVE AND SLEEVE DETAIL

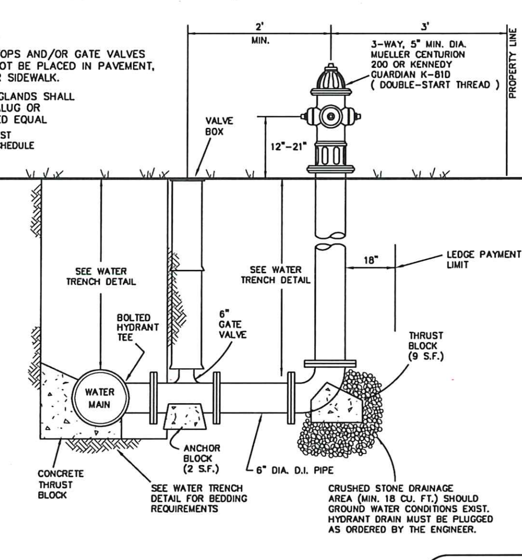
NTS

NOTES :

CURB STOPS AND/OR GATE VALVES SHALL NOT BE PLACED IN PAVEMENT, CURB OR SIDEWALK.

ALL MJ GLANDS SHALL BE MEGALUG OR APPROVED EQUAL

SEE THRUST BLOCK SCHEDULE



HYDRANT DETAIL

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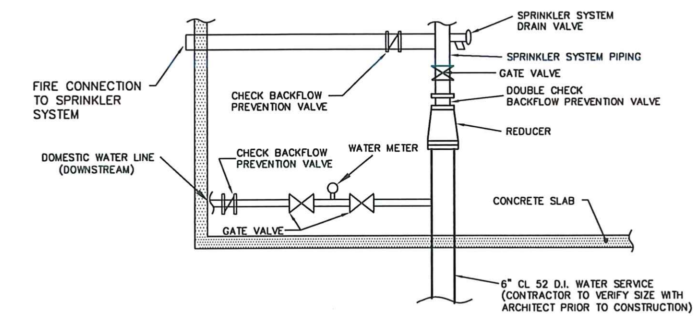
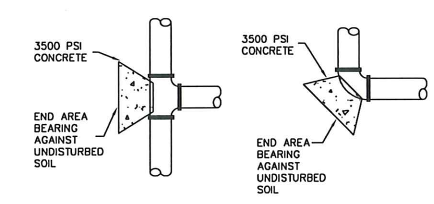


WATER / SPRINKLER CONNECTION

NTS



TYPICAL TEES-DEADENDS-CAPS   TYPICAL BENDS

NOTE: PLACE 4 mil POLYETHYLENE BETWEEN FITTING AND THRUST BLOCK

SOIL TYPE - SAND

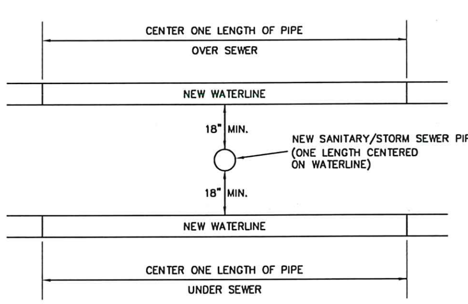
FITTING \ SIZE	6"	8"	12"
11¼ & 22½	2	2	5
45°	2	4	9
90°	4	8	17
TEES OR END CAPS	3	6	12
VALVES	2	2	2

SQ FT BEARING AREA

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

THRUST BLOCK END AREA

NTS



NOTES:

1) SEWERS SHALL BE LAID AT LEAST 10' HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN AS MEASURED EDGE TO EDGE.

WHERE IMPOSSIBLE OR IMPRACTICABLE TO MAINTAIN THE 10' SEPARATION, THE WATER LINE MAY BE INSTALLED IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF IN THE SEWER TRENCH PROVIDED THAT THE BOTTOM OF THE WATER LINE IS AT LEAST 18" ABOVE THE TOP OF THE SEWER LINE.

WHENEVER IMPOSSIBLE TO MAINTAIN THE 18" VERTICAL SEPARATION, THE SEWER LINE SHALL BE CONSTRUCTED TO NORMAL WATER LINE STANDARDS AND PRESSURE TESTED TO AWWA WATER LINE STANDARDS AT A MINIMUM OR THE SEWER LINE WILL BE SLEEVED.

2) SEWERS CROSSING WATER MAINS SHALL BE LAID BENEATH THE WATER MAIN WITH AT LEAST 18" OF VERTICAL CLEARANCE BETWEEN THE OUTSIDE OF THE WATER LINE AND THE OUTSIDE OF THE SEWER. WHEN IT IS IMPOSSIBLE TO MAINTAIN THE 18" VERTICAL SEPARATION;
   A) THE CROSSING SHALL BE ARRANGED SO THAT ONE FULL LENGTH OF SEWER IS CENTERED ABOVE OR BELOW THE WATER LINE WITH THE SEWER JOINTS AS FAR AS POSSIBLE FROM THE WATER JOINTS;
   B) THE SEWER PIPE MUST BE CONSTRUCTED TO WATER LINE STANDARDS FOR A MINIMUM DISTANCE OF 20 FEET EITHER SIDE OF THE CROSSING OR A TOTAL OF THREE PIPE LENGTHS, WHICHEVER IS GREATER;
   C) THE SECTION CONSTRUCTED TO WATER MAIN STANDARDS MUST BE PRESSURE TESTED TO MAINTAIN 50 PSI FOR 15 MINUTES WITH NO LEAKAGE PRIOR TO BACKFILLING BEYOND ONE FOOT ABOVE THE PIPE TO ASSURE WATER TIGHTNESS;
   D) WHERE A WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE WATER MAIN.

SEWER / WATER SEPARATION DETAIL FOR CROSSINGS

NTS

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1

THE CONTRACTOR SHALL NOTIFY "DIGSAFE" AT 1-888-344-7233 PRIOR TO ANY EXCAVATION.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING. on the __ day of ______ 20__.

Presiding member or Administrator's signature

DATE 4/3/2017	REVISION ISSUED FOR CONSTRUCTION		BY DJH
SURVEY OBCA	☐ RECORD DRAWING ■ PRELIMINARY ☐ FINAL ☐ SKETCH/CONCEPT	COTTONWOOD CROSSING U.S. ROUTE 2 WILLISTON, VT	DATE 11/04/2016
DESIGN OBCA	O'LEARY-BURKE CIVIL ASSOCIATES, PLC		JOB # 5087
DRAWN DJH	13 CORPORATE DRIVE, ESSEX JCT., VT PHONE: 878-9990 FAX: 878-9989 E-MAIL: obca@olearyburke.com	WATER DETAILS & SPECIFICATIONS	FILE 5087-S19
CHECKED PJO			PLAN SHEET # 17
SCALE NTS			

GENERAL SEWER SPECIFICATIONS

GENERAL:

THIS ITEM SHALL CONSIST OF THE EXCAVATION AND BACKFILLING REQUIRED FOR THE COMPLETE CONSTRUCTION OF GRAVITY SANITARY SEWERS, FORCE MAINS, AND ALL APPURTENANT CONSTRUCTION RELATED THERETO, INCLUDING CHIMNEYS, SERVICE CONNECTIONS, THRUST BLOCKS, AND OTHER ITEMS NECESSARY FOR A COMPLETE SANITARY SEWER SYSTEM AS INDICATED ON THE DRAWINGS.

MATERIALS:

A. TYPES OF PIPE

TYPES OF PIPE WHICH SHALL BE USED FOR THE VARIOUS PARTS OF WORK ARE AS FOLLOWS: GRAVITY SEWERS SHALL BE PVC SDR 35 SOLID WALL PIPE MEETING ASTM D-3034, ASTM D-3212 AND ASTM F-477.

B. PVC SEWER PIPE

PVC SEWER PIPE SHALL CONFORM IN ALL RESPECTS TO THE LATEST REVISION OF ASTM SPECIFICATIONS D-3034 OR F679, TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, SDR35. WALL THICKNESS OF ALL PVC SHALL MEET ASTM SPECIFICATIONS FOR SDR35 PIPE. ALL PIPE AND FITTINGS SHALL BE CLEARLY MARKED AS FOLLOWS:

MANUFACTURER'S NAME AND TRADEMARK
NOMINAL PIPE SIZE
MATERIAL DESIGNATION 12454C PVC
LEGEND "TYPE PSM SDR35 PVC SEWER PIPE" OR
"PS 46 PVC SEWER PIPE"
DESIGNATION ASTM D-3034 OR F679

JOINTS SHALL BE PUSH-ON TYPE USING ELASTOMERIC GASKETS AND SHALL CONFORM TO ASTM D-3212. THE GASKETS SHALL BE FACTORY INSTALLED.

THE PIPE SHALL BE FURNISHED IN NOMINAL 13 FOOT LENGTHS. SUFFICIENT NUMBERS OF SHORT LENGTHS AND FULL MACHINE FITTINGS SHALL BE PROVIDED FOR USE AT MANHOLES, CHIMNEYS, AND CONNECTIONS. ALL CONNECTIONS WILL REQUIRE THE USE OF MANUFACTURED FITTINGS. FIELD FABRICATED, SADDLE-TYPE CONNECTIONS WILL NOT BE CONSIDERED ACCEPTABLE.

ANY PIPE OR FITTING HAVING A CRACK OR OTHER DEFECT OR WHICH HAS RECEIVED A SEVERE BLOW SHALL BE MARKED REJECTED AND REMOVED AT ONCE FROM THE WORK SITE. ALL FIELD CUTS ARE TO BE MADE WITH SAW AND 90 DEGREE MITRE BOX. BEVEL THE CUT END TO THE SAME AS THE FACTORY BEVEL AND REMOVE ALL INTERIOR BURRS. MEASURE AND PLACE A HOMING MARK ON THE PIPE BEFORE ASSEMBLING.

THE PIPE INSTALLED UNDER THIS SPECIFICATION SHALL BE INSTALLED SO THAT THE INITIAL DEFLECTION, MEASURED AS DESCRIBED BELOW, SHALL BE LESS THAN FIVE PERCENT (5%).

DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE PIPE AFTER THE FINAL BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS. THE DEFLECTION TEST SHALL BE RUN USING A RIGID BALL OR MANDREL HAVING A DIAMETER EQUAL TO 95 PERCENT OF THE INSIDE DIAMETER OF THE PIPE. NO MECHANICAL PULLING DEVICES SHALL BE USED DURING THE DEFLECTION TESTS. ALL PIPE NOT MEETING THE DEFLECTION TEST SHALL BE REEXCAVATED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

THE MANHOLE WATER STOP GASKET AND STAINLESS STEEL CLAMP ASSEMBLY MUST BE APPROVED BY THE ENGINEER PRIOR TO THE INSTALLATION OF ANY PIPE.

THE CONTRACTOR WILL SUBMIT CERTIFICATION THAT THE MATERIALS OF CONSTRUCTION HAVE BEEN SAMPLED, TESTED, AND INSPECTED, AND THAT THEY MEET ALL THE REQUIREMENTS--INCLUDING WALL THICKNESS--IN ACCORDANCE WITH ASTM C-3034 OR ASTM F679 FOR ALL PIPE AND FITTINGS TO BE INCLUDED IN THE PROJECT WORK.

PVC PIPE SHALL NOT BE INSTALLED WHEN THE TEMPERATURE DROPS BELOW 32 DEGREES FAHRENHEIT OR GOES ABOVE 100 DEGREES FAHRENHEIT. DURING COLD WEATHER, THE FLEXIBILITY AND IMPACT RESISTANCE OF PVC PIPE IS REDUCED.

EXTRA CARE IS REQUIRED WHEN HANDLING PVC PIPE DURING COLD WEATHER. PVC PIPE SHALL NOT BE STORED OUTSIDE AND EXPOSED TO PROLONGED PERIODS OF SUNLIGHT AS PIPE DISCOLORATION AND REDUCTION IN PIPE IMPACT STRENGTH WILL OCCUR. CANVAS OR OTHER OPAQUE MATERIAL SHALL BE USED TO COVER PVC PIPE STORED ONSITE.

E. MANHOLES

THE CONTRACTOR SHALL CONSTRUCT REINFORCED CONCRETE MANHOLES AND DROP MANHOLES TO THE DIMENSIONS AT THE LOCATIONS SHOWN ON THE CONTRACT DRAWINGS. ALL PRECAST REINFORCED CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST VERSION OF THE ASTM SPECIFICATIONS C478. THE EXTERIOR OF THE MANHOLE SHALL BE COATED WITH A WATERPROOF SEALANT.

THE FOOTING SHALL BE CLASS B PRECAST CONCRETE AND SHALL CONFORM TO THE DIMENSIONS INDICATED ON THE PLANS.

SHELVES SHALL BE CONSTRUCTED WITH HARDENED RED SEWER BRICK. ALL BRICK SHALL BE TYPE SS MEETING THE STANDARDS IN ASTM C32. INVERTS FOR SEWER MANHOLES SHALL BE AS SHOWN ON THE PLANS AND DETAILS.

INVERTS SHALL HAVE THE EXACT SHAPE OF THE SEWER TO WHICH THEY ARE CONNECTED, AND ANY CHANGE IN SIZE OR DIRECTION SHALL BE GRADUAL AND EVEN.

ALL CONSTRUCTION OF SEWER MANHOLES MUST BE CARRIED OUT TO ENSURE WATERTIGHT WORK. ANY LEAKS IN MANHOLES SHALL BE CAULKED AND COMPLETELY REPAIRED TO THE SATISFACTION OF THE ENGINEER OR THE ENTIRE STRUCTURE SHALL BE REMOVED AND REBUILT. REPAIRS SHALL ONLY BE ALLOWED TO THE EXTERIOR OF THE MANHOLE.

ALL MANHOLES ARE TO BE PROVIDED WITH COPOLYMER POLYPROPYLENE PLASTIC RUNGS WITH STEEL REINFORCEMENT TWELVE INCHES (12") ON CENTER. ALL MANHOLES SHALL BE PROVIDED WITH TOUGH, GRAY, CAST IRON MANHOLE FRAMES AND COVERS. ALL IRON CASTINGS SHALL BE THOROUGHLY CLEANED AND THEN COATED WITH HOT TAR BEFORE BEING DELIVERED. FRAMES AND COVERS SHALL BE LEBARON LC 266 TYPE C, OR AN APPROVED EQUAL, AND HAVE A MINIMUM WEIGHT OF 400 POUNDS. MANHOLE COVERS SHALL HAVE THE WORD SEWER PRINTED ON THEM.

PRECAST RISERS AND BASES FOR MANHOLES SHALL CONFORM TO ASTM SPECIFICATIONS C-361. THE PIPE OPENING IN THE PRECAST MANHOLE RISER SHALL HAVE A CAST-IN-PLACE FLEXIBLE GASKET OR AN EQUIVALENT SYSTEM FOR PIPE INSTALLATION AS APPROVED BY THE ENGINEER. JOINTS BETWEEN MANHOLE RISERS SHALL BE RUBBER "O" RING SEALS OR SOFT BUTYL JOINT SEALER (ROPE FORM).

THE MANHOLE COVER FRAMES SHALL BE SET TO FINAL GRADE ONLY AFTER THE BASE COURSE PAVING HAS BEEN COMPLETED. MANHOLES SHALL BE CONSTRUCTED TO GRADE WITH AT LEAST TWO, AND NOT MORE THAN FIVE, COURSES OF BRICK. WITH THE EXCEPTION OF INVERTS, ALL SURFACES OF MANHOLE BRICKWORK SHALL BE PLASTERED WITH CEMENT MORTAR, THE PLASTER BEING CARRIED UP AS THE BRICKWORK PROGRESSES, AND ALL MANHOLE LIFT HOLES SHALL BE GROUTED INSIDE AND OUT WITH EXPANDABLE GROUT.

MANHOLES SHALL BE PLACED AT ALL CHANGES IN SLOPE, SIZE, ALIGNMENT OF PIPE, AT THE ENDS OF EACH LINE, AND AT LEAST EVERY 300 FEET.

F. MASONRY

EACH BRICK SHALL BE WETTED AND COMPLETELY BEDDED IN MORTAR AT ITS BOTTOM, SIDES, AND ENDS IN ONE OPERATION WITH CARE BEING TAKEN TO FILL EVERY JOINT. BRICKWORK SHALL BE WELL-BONDED, AND JOINTS SHALL BE AS CLOSE AS PRACTICABLE. NO BRICK MASONRY SHALL BE LAID IN WATER NOR SHALL ANY WATER BE ALLOWED TO RISE ON OR AROUND ANY BRICK MASONRY UNTIL IT HAS SET AT LEAST 24 HOURS. NO MASONRY SHALL BE LAID IN FREEZING WEATHER.

THE BRICK FOR ORDINARY BRICKWORK SHALL BE COMMON HARD-BURNED CLAY BRICK. ALL BRICK SHALL BE REGULAR AND UNIFORM IN SHAPE AND SIZE WITH PLANE, PARALLEL BEDS, AND FACES. ORDINARY BRICK SHALL CONFORM TO ASTM SPECIFICATION C-32, LATEST VERSION, AND SHALL BE GRADE SS.

BRICK MASONRY SHALL BE LAID IN PORTLAND CEMENT MORTAR COMPOSED OF ONE PART PORTLAND CEMENT AND TWO PARTS OF SAND, MEASURED BY VOLUME, TO WHICH NOT MORE THAN 10 POUNDS OF LIME SHALL BE ADDED FOR EACH BAG OF CEMENT. WATER FOR MORTAR SHALL BE CLEAN AND ONLY AN AMOUNT SUFFICIENT TO PRODUCE A WORKABLE MORTAR SHALL BE USED. MORTAR SHALL BE USED WITHIN ONE HOUR FROM THE TIME THE CEMENT WAS ADDED TO THE MIX.

THE SAND FOR MORTAR FOR BRICK MASONRY SHALL BE UNIFORMLY GRADED, CLEAN, SHARP, AND CONTAIN NO GRADES LARGER THAN WILL PASS A ONE-EIGHTH INCH (1/8") MESH SCREEN.

CONSTRUCTION METHODS:

A. EXCAVATION:

EXCAVATIONS SHALL BE MADE TO A POINT AT LEAST SIX INCHES (6") BELOW THE PIPE INVERT TO ACCOMMODATE THE BEDDING MATERIAL. ALL EXCAVATIONS ARE TO BE KEPT DRY WHILE PIPE IS BEING LAID AND UNTIL EACH JOINT AND PIPE HAS BEEN INSPECTED BY THE ENGINEER AND APPROVAL GIVEN TO COMMENCE BACKFILLING OPERATIONS.

B. LAYING SEWER PIPE:

THE BELL END OF THE PIPE SHALL FACE UPGRADE AT ALL TIMES AND BE PLACED IN SUCH A POSITION AS TO MAKE THE INVERT EVEN WHEN THE SUCCEEDING SECTION IS INSERTED. WHERE REQUIRED BY ADVERSE GRADING CONDITIONS, THE CONTRACTOR SHALL FILL ANY GULLY TO MAKE A SUITABLE BEDDING FOR THE SEWER PIPE. THE FILL SHALL BE PNEUMATICALLY COMPACTED TO A 95 PERCENT DRY DENSITY BY THE AASHTO-T-99, METHOD A (STANDARD PROCTOR) TEST, UPON WHICH THE SIX INCHES (6") OF BEDDING MATERIAL SHALL BE PLACED.

ANY PIPE WHICH IS NOT LAID TO GRADE AND ALIGNMENT SHALL BE RELAID TO THE SATISFACTION OF THE ENGINEER. THE BEDDING MATERIAL SHALL BE PLACED AND COMPACTED ON EACH SIDE OF THE PIPE TO A HEIGHT EQUAL TO ONE-HALF THE PIPE DIAMETER AND FOR THE FULL WIDTH OF THE EXCAVATED TRENCH AND AS SHOWN ON THE ACCEPTED PLANS.

C. BACKFILL:

BACKFILL SHALL CONSIST OF APPROVED MATERIAL PLACED IN SIX INCH (6") LAYERS WITH EACH LAYER BEING THOROUGHLY COMPACTED TO NOT LESS THAN 95 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY THE AASHTO-T-99 STANDARD PROCTOR BY MEANS APPROVED BY THE ENGINEER.

THE BACKFILL SHALL BE BROUGHT UP EVENLY ON BOTH SIDES OF THE PIPE FOR ITS FULL LENGTH. WALKING OR WORKING ON THE COMPLETED PIPELINE, EXCEPT AS MAY BE NECESSARY IN TAMPING OR BACKFILLING, SHALL NOT BE PERMITTED UNTIL THE TRENCH HAS BEEN BACKFILLED TO A HEIGHT OF AT LEAST TWO FEET (2') ON THE TOP OF THE PIPES. DURING CONSTRUCTION, ALL OPENINGS TO THE PIPELINES SHALL BE PROTECTED FROM THE ENTERING OF EARTH OR OTHER MATERIALS.

D. CONCRETE CRADLE AND ENCASEMENT FOR PIPE:

WHERE REQUIRED ON THE PLANS OR AS DIRECTED BY THE ENGINEER, A CONCRETE CRADLE SHALL BE USED TO BOLSTER AND STRENGTHEN PIPE. WHERE REQUIRED ON THE PLANS OR AS DIRECTED BY THE ENGINEER, CONCRETE ENCASEMENT OR SEWER WILL BE MADE TO PROTECT NEARBY WELLS OR WATERLINES FOR STREAM CROSSINGS OR FOR SIMILAR PURPOSES. ALL CONCRETE WILL BE CLASS B AS DEFINED IN THE VERMONT STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 501, AND WILL MEET THE REQUIREMENTS OF THAT SECTION.

E. FROST PROTECTION FOR SHALLOW SEWERS:

SEWERS WITH LESS THAN FIVE AND ONE-HALF FEET (5 1/2') OF COVER OVER THE CROWN OR WHERE INDICATED ON THE PLANS SHALL BE PROTECTED AGAINST FREEZING BY INSTALLATION OF TWO, 2" THICK (4" TOTAL) STYROFOAM SM INSULATING SHEETS WITH A TOTAL WIDTH OF FOUR FEET (4') OR TWICE THE PIPE DIAMETER, WHICHEVER IS GREATER. THE SHEETS SHALL BE PLACED SIX INCHES (6") ABOVE THE CROWN OF THE SEWER AFTER COMPACTION OF THE SIX INCH LIFT IMMEDIATELY ABOVE THE CROWN. CARE SHALL BE EXERCISED BY THE CONTRACTOR DURING BACKFILL AND COMPACTION OVER THE STYROFOAM SM SHEETS SHALL MEET THE COMPRESSIVE STRENGTH REQUIREMENTS OF ASTM D1621-73 AND SHALL BE AS MANUFACTURED BY DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN, OR EQUAL. IN NO CASE SHALL THE SEWER LINES HAVE LESS THAN FOUR (4') FEET OF COVER OVER THE TOP OF THE PIPE.

F. LEAKAGE TESTS AND ALLOWANCES FOR GRAVITY SEWERS:

THE LOW PRESSURE AIR TEST WILL BE USED TO SIMULATE INFILTRATION OR EXFILTRATION RATES INTO OR OUT OF ALL GRAVITY SEWERS. THE CONTRACTOR WILL FURNISH ALL FACILITIES AND PERSONNEL FOR CONDUCTING THE TEST.

FINAL ACCEPTANCE OF THE SEWER SHALL DEPEND UPON THE SATISFACTORY PERFORMANCE OF THE SEWER UNDER TEST CONDITIONS. THE TEST SHALL BE PERFORMED ON PIPE BETWEEN ADJACENT MANHOLES AFTER BACKFILLING HAS BEEN COMPLETED AND COMPACTED.

ALL WYES, TEES, LATERALS, OR END-OF-SIDE SEWER STUBS SHALL BE PLUGGED WITH FLEXIBLE-JOINT CAPS, OR AN ACCEPTABLE ALTERNATE, SECURELY FASTENED TO WITHSTAND THE INTERNAL TEST PRESSURE. SUCH PLUGS OR CAPS SHALL BE READILY REMOVABLE, AND THEIR REMOVAL SHALL PROVIDE A SOCKET SUITABLE FOR MAKING A FLEXIBLE-JOINTED LATERAL CONNECTION OR EXTENSION.

PRIOR TO TESTING FOR ACCEPTANCE, THE PIPE SHOULD BE CLEANED BY PASSING THROUGH THE PIPE A FULL GAUGE SQUEEGEE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE THE PIPE CLEANED. IMMEDIATELY FOLLOWING THE PIPE CLEANING, THE PIPE INSTALLATION SHALL BE TESTED WITH LOW-PRESSURE AIR.

AIR SHALL BE SLOWLY SUPPLIED TO THE PLUGGED AIR INSTALLATION UNTIL THE INTERNAL AIR PRESSURE REACHES FOUR POUNDS PER SQUARE INCH (4.0 PSI) GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUNDWATER THAT MAY SUBMERGE THE PIPE. AT LEAST TWO MINUTES SHALL BE ALLOWED FOR TEMPERATURE STABILIZATION BEFORE PROCEEDING FURTHER.

THE PIPELINE SHALL BE CONSIDERED ACCEPTABLE WHEN TESTED AT AN AVERAGE PRESSURE OF THREE POUNDS PER SQUARE INCH (3.0 PSI) GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUNDWATER THAT MAY SUBMERGE THE PIPE IF:

1. THE TOTAL RATE OF AIR LOSS FROM ANY SECTION TESTED IN ITS ENTIRETY BETWEEN MANHOLE AND CLEANOUT STRUCTURES DOES NOT EXCEED 2.0 CUBIC FEET PER MINUTE; OR

2. THE SECTION UNDER TEST DOES NOT LOSE AIR AT A RATE GREATER THAN 0.0030 CUBIC FEET PER MINUTE PER SQUARE FOOT OF INTERNAL PIPE SURFACE.

THE REQUIREMENTS OF THIS SPECIFICATION SHALL BE CONSIDERED SATISFIED IF THE TIME REQUIRED IN SECONDS FOR THE PRESSURE TO DECREASE FROM 3.5 OR 2.5 PSI GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUNDWATER THAT MAY SUBMERGE THE PIPE IS NOT LESS THAN THAT COMPUTED ACCORDING TO THE FOLLOWING TABLE:

MINIMUM TEST TIME FOR VARIOUS PIPE SIZES

DIAMETER (INCHES)	TIME (SEC./100 FT.)
3	10
4	18
6	40
8	70
10	110
12	158
15	248
18	356
21	485
24	634
27	765
30	851
33	935
36	1,020
39	1,105
42	1,190

THE TABLE GIVES THE REQUIRED TEST TIME IN SECONDS PER 100 FOOT LENGTHS OF PIPE FOR A GIVEN DIAMETER. IF THERE IS MORE THAN ONE PIPE SIZE IN THE SECTION OF LINE BEING TESTED, COMPUTE THE TIME FOR EACH DIAMETER; AND SUM THE TIMES TO FIND THE TOTAL REQUIRED TEST TIME.

IF THE PIPE INSTALLATION FAILS TO MEET THESE REQUIREMENTS, THE CONTRACTOR SHALL DETERMINE AT HIS OR HER OWN EXPENSE THE SOURCE OR SOURCES OF LEAKAGE AND SHALL REPAIR (IF THE EXTENT AND TYPE OF REPAIRS PROPOSED BY THE CONTRACTOR APPEAR REASONABLE TO THE ENGINEER) OR REPLACE ALL DEFECTIVE MATERIALS OR WORKMANSHIP. THE COMPLETED PIPE INSTALLATION SHALL MEET THE REQUIREMENTS OF THIS TEST BEFORE BEING CONSIDERED ACCEPTABLE.

SINCE THIS TEST DOES NOT DETERMINE THE TIGHTNESS OF MANHOLES, THEY SHALL BE TESTED SEPARATELY. THE EXFILTRATION LEAKAGE ALLOWANCE OUT OF MANHOLES SHALL BE NO GREATER THAN ONE GALLON PER DAY PER VERTICAL FOOT TO DEPTH. THE MANHOLE SHALL BE FILLED WITH WATER TO A POINT ONE FOOT (1') ABOVE THE HIGHEST POINT BETWEEN MANHOLE SECTIONS. IN AREAS OF HIGH GROUNDWATER, THERE SHALL BE NO VISIBLE LEAKAGE DUE TO INFILTRATION. IF A VACUUM TEST IS DESIRED, THE FOLLOWING PROCEDURE SHALL BE FOLLOWED: (THIS PREFERRED METHOD OF TESTING MANHOLES FOR LEAKAGE INVOLVES THE USE OF A DEVICE FOR SEALING THE TOP OF THE MANHOLE CONE SECTION AND PUMPING AIR OUT OF THE MANHOLE, CREATING A VACUUM AND HOLDING THIS VACUUM FOR A PRESCRIBED PERIOD OF TIME.)

1. ALL LIFTING HOLES AND EXTERIOR JOINTS SHALL BE FILLED AND POINTED WITH AN APPROVED NON-SHRINKING MORTAR. THE COMPLETED MANHOLE SHALL NOT BE BACKFILLED PRIOR TO TESTING. MANHOLES WHICH HAVE BEEN BACKFILLED SHALL BE EXCAVATED TO EXPOSE THE ENTIRE EXTERIOR PRIOR TO VACUUM TESTING OR THE MANHOLE SHALL BE TESTED FOR LEAKAGE BY MEANS OF A HYDROSTATIC TEST. REPAIRS SHALL ONLY BE MADE TO THE EXTERIOR OF THE MANHOLE.

2. ALL PIPE AND OTHER OPENINGS INTO THE MANHOLE SHALL BE SUITABLY PLUGGED IN A MANNER TO PREVENT DISPLACEMENT.

3. A PLATE WITH AN INFLATABLE RUBBER RING THE SIZE OF THE TOP OF THE MANHOLE SHALL BE INSTALLED BY INFLATING THE RING WITH AIR TO PRESSURE ADEQUATE TO PREVENT LEAKAGE OF AIR BETWEEN THE RUBBER RING AND MANHOLE WALL.

4. AIR SHALL THEN BE PUMPED OUT OF THE MANHOLE THROUGH AN OPENING IN THE PLATE UNTIL A VACUUM IS CREATED INSIDE OF THE MANHOLE EQUAL TO TEN INCHES (10") OF MERCURY ON AN APPROVED VACUUM GAUGE. THE REMOVAL OF AIR SHALL THEN BE STOPPED AND THE TEST TIME BEGUN.

5. THE VACUUM MUST NOT DROP TO BELOW NINE INCHES (9") OF MERCURY WITH A TWO MINUTE TEST PERIOD. IF MORE THAN A ONE INCH (1") DROP IN VACUUM OCCURS WITHIN THE TWO MINUTE TEST PERIOD, THE MANHOLE HAS FAILED AND SHALL BE REPAIRED OR RECONSTRUCTED AND THEN RETESTED.

6. FOLLOWING SATISFACTORY TEST RESULTS, THE MANHOLE MAY BE BACKFILLED.

IT IS NOTED THAT ALL EXISTING SANITARY SEWERS SHALL BE KEPT OPERATIONAL UNTIL NEW WORK HAS BEEN TESTED AND APPROVED BY THE ENGINEER. AT SUCH TIME, EXISTING SEWERS AND SEWER SERVICES SHALL BE CONNECTED TO THE NEW SEWERS.

G. LEAKAGE AND PRESSURE TESTING FOR FORCE MAIN

ALL PIPELINES SHALL BE TESTED IN ACCORDANCE WITH THE VERMONT DEPARTMENT OF WATER RESOURCES ENVIRONMENTAL PROTECTION RULES, LATEST EDITION. A LEAKAGE AND PRESSURE TEST SHALL BE PERFORMED CONCURRENTLY.

THE HYDROSTATIC TEST PRESSURE SHALL BE A MINIMUM OF 50 PSI AT THE HIGHEST POINT ALONG THE TEST SECTION AND SHALL NOT VARY BY MORE THAN FIVE PSI DURING THE ENTIRE TWO HOUR TEST. IF AND WHEN DURING THE TEST THE PRESSURE DROPS BY FIVE PSI, THE QUANTITY OF WATER REQUIRED TO RESTORE THE TEST PRESSURE SHALL BE MEASURED.

AT THE END OF THE TWO HOUR TEST, THE PRESSURE SHALL BE RETURNED TO THE TEST PRESSURE AND THE ADDITIONAL VOLUME OF WATER MEASURED. THE TOTAL AMOUNT OF WATER USED DURING AND AT THE END OF THE TEST SHALL CONSTITUTE THE ACTUAL LEAKAGE. THE MAXIMUM ALLOWABLE LEAKAGE SHALL BE DETERMINED BY THE FOLLOWING FORMULA:

$$L = SD(P)^{.5} / 133{,}200$$

WHERE:
L = LEAKAGE IN GALLONS PER HOUR
D = DIAMETER OF PIPE IN INCHES
P = AVERAGE TEST PRESSURE IN PSI
S = LENGTH OF PIPE BEING TESTED

H. CLEANING PIPELINES AND APPURTENANCES:

UPON COMPLETION OF CONSTRUCTION, ALL DIRT AND OTHER FOREIGN MATERIAL SHALL BE REMOVED FROM PIPELINES AND THEIR APPURTENANT CONSTRUCTIONS. NO MATERIALS SHALL BE LEFT IN THE PIPELINES TO IMPEDE NORMAL FLOW THROUGH THEM.

I. SEWER SERVICE CONNECTIONS:

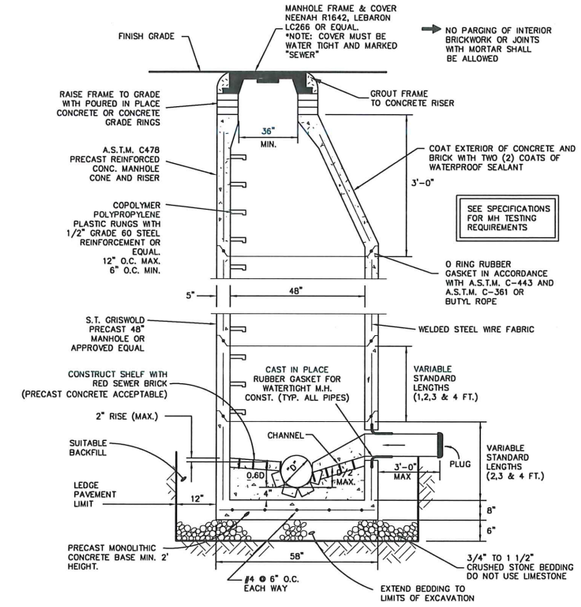
WHERE REQUIRED ON THE PLANS, SEWER SERVICE CONNECTIONS FOR ONE HOUSE SHALL BE CONSTRUCTED OF SIX INCH (6") PIPE UNLESS OTHERWISE NOTED ON THE PLANS OF THE TYPE MATERIAL SPECIFIED UNDER THIS SECTION. THE PIPE SHALL BE LAID AND ITS JOINTS MADE AS REQUIRED FOR SEWER CONSTRUCTION IN THIS SPECIFICATION.

OPEN ENDS OF PIPES SHALL BE PROPERLY SEALED TO PREVENT DAMAGE AND INTRUSION OF FOREIGN MATTER WHERE HOOKUP TO THE BUILDING SEWER IS NOT CONCIDENT WITH SEWER MAIN CONSTRUCTION. ADDITIONALLY, THE CONTRACTOR WILL PROVIDE A PVC PIPE TEMPORARY MARKER APPROVED BY THE ENGINEER FROM THE SEWER SERVICE INVERT UP TO TWENTY-FOUR INCHES (24") ABOVE THE FINISHED GRADE. THE MARKER SHALL BE SEATED SECURELY INTO THE GROUND FOR EASE IN RELOCATING THE END OF SEWER SERVICE CONNECTION FOR HOOKING UP THE BUILDING SEWER.

IN THE CASE OF RECONNECTION OF EXISTING SERVICES, SUCH RECONNECTIONS WILL BE MADE ONLY AFTER THE NEW SEWER MAIN HAS BEEN COMPLETED, TESTED, AND ACCEPTED. THE EXCAVATION, BEDDING MATERIAL, INSTALLATION, AND BACKFILL FOR SERVICE CONNECTIONS SHALL BE THE SAME AS FOR SEWER MAINS.

J. CLEANOUTS FOR SEWERS:

CLEANOUTS FOR GRAVITY SEWERS AND FORCE MAINS SHALL BE PROVIDED EVERY 100 FT OR WHERE THE SUM OF BENDS = 45 DEGREES. CLEANOUT FRAMES AND COVERS SHALL BE OF TOUGH GRAY CAST IRON. CASTINGS SHALL BE TRUE TO PATTERN AND FREE FROM FLAWS. THE BEARING SURFACE OF CLEANOUT FRAMES AND COVERS AGAINST EACH OTHER SHALL BE MACHINED TO GIVE CONTINUOUS CONTACT THROUGHOUT THEIR CIRCUMFERENCE. ALL IRON CASTINGS SHALL BE THOROUGHLY CLEANED AND THEN COATED WITH HOT COAL TAR BEFORE BEING DELIVERED.



TYPICAL PRECAST SANITARY MANHOLE

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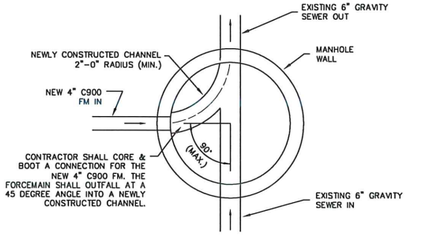

MANHOLE CHANNEL

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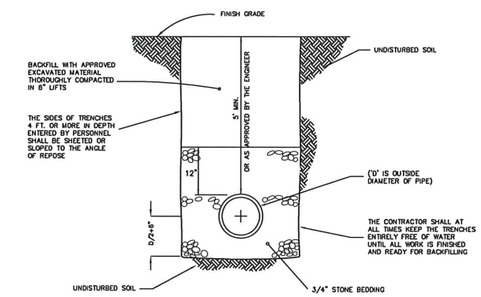
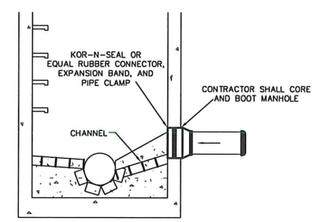


TYPICAL SANITARY + STORM TRENCH



EXISTING SANITARY MANHOLE CORE + BOOT DETAIL

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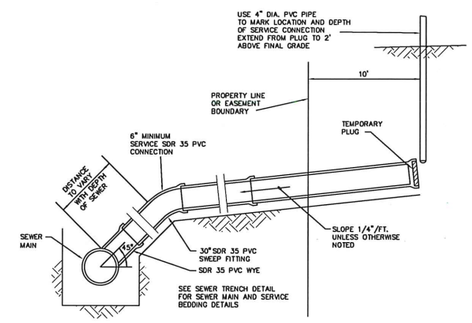

SANITARY SEWER SERVICE CONNECTION

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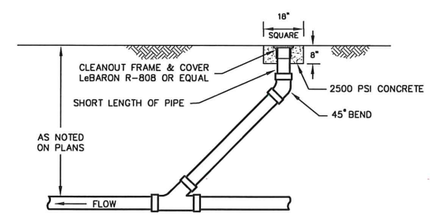


CLEANOUT DETAIL

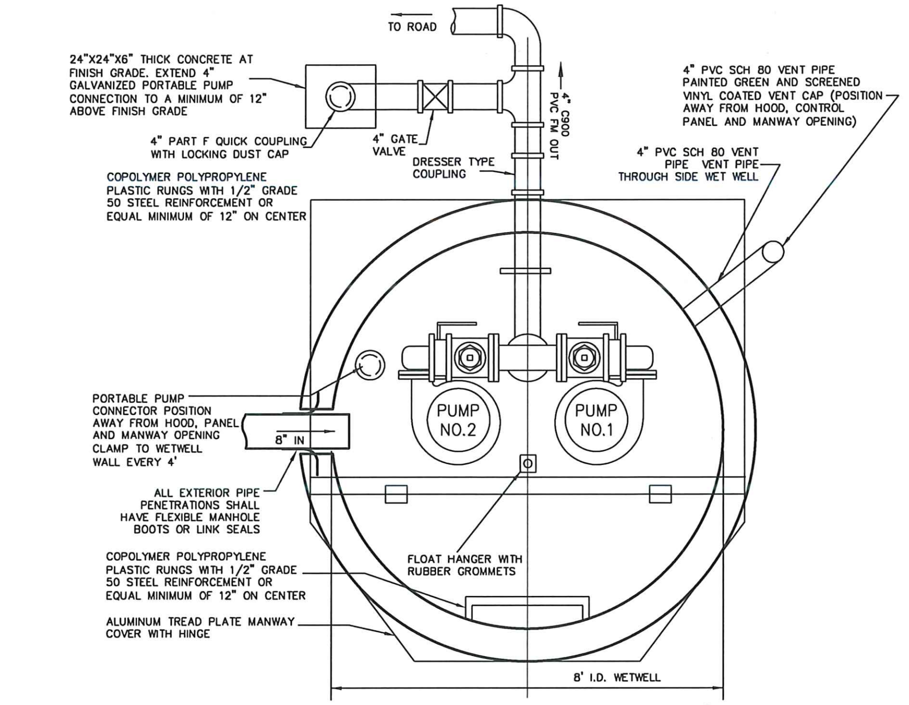
NTS

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING, on the -- day of ____, 20__

Presiding member or Administrator's signature

DATE 4/3/2017	REVISION ISSUED FOR CONSTRUCTION		BY DJH
SURVEY OBCA	☐ RECORD DRAWING ■ PRELIMINARY ☐ FINAL ☐ SKETCH/CONCEPT	COTTONWOOD CROSSING	DATE 11/04/2016
DESIGN OBCA	O'LEARY-BURKE CIVIL ASSOCIATES, PLC	U.S. ROUTE 2 WILLISTON, VT	JOB# 5087
DRAWN DJH	13 CORPORATE DRIVE, ESSEX JCT, VT PHONE: 878-9990 FAX: 878-9989 E-MAIL: obca@olearyburke.com	SANITARY SEWER DETAILS & SPECIFICATIONS	FILE 5087-S19
CHECKED PJO			PLAN SHEET # 18
SCALE NTS			

COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1



PUMP STATION PLAN VIEW DETAIL

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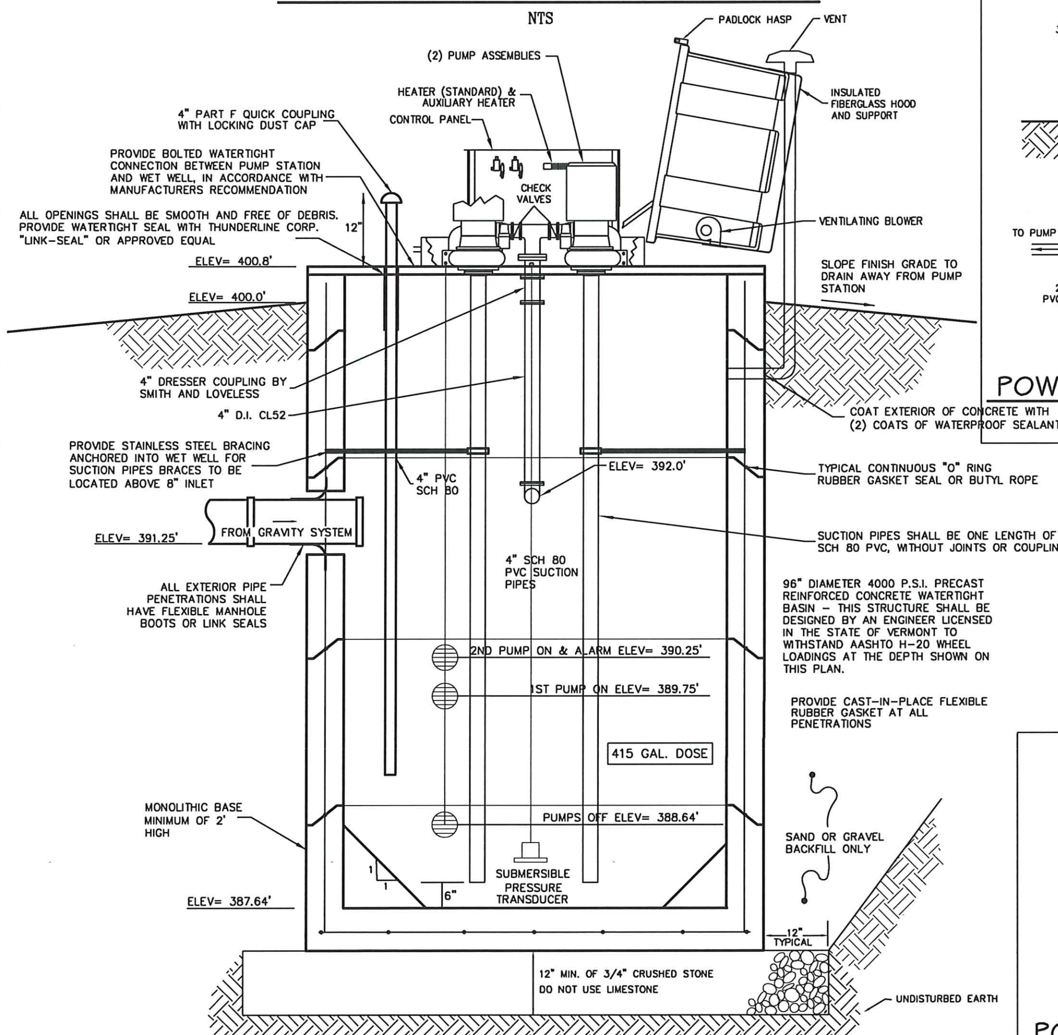

PUMP STATION SIDE VIEW DETAIL

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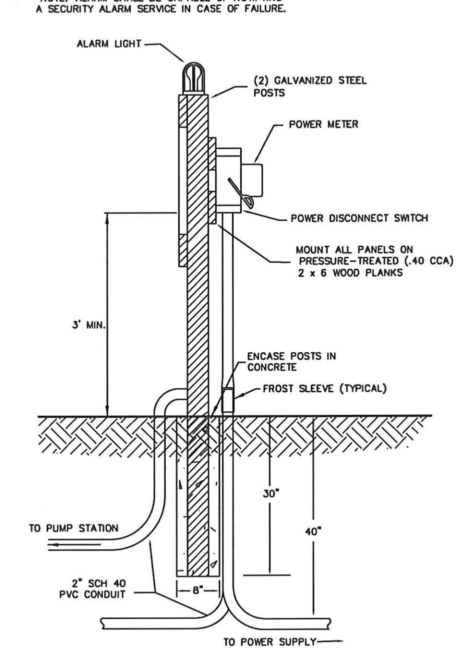
*NOTE: ALARM SHALL BE CAPABLE OF NOTIFYING A SECURITY ALARM SERVICE IN CASE OF FAILURE.



POWER PANEL - SIDE VIEW

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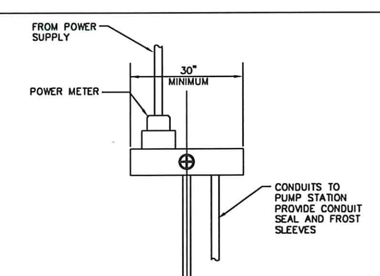

POWER PANEL - TOP VIEW

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COTTONWOOD CROSSING - PHASE I / WILLISTON, VT / OCTOBER 25, 2019
PARCEL ID: 8104011 & 8104019 / APPLICATION # DP 16-05.1

GENERAL SPECIFICATIONS:

1. CONSTRUCTION

THE STATION SHALL BE CONSTRUCTED IN ONE COMPLETE FACTORY-BUILT ASSEMBLY. IT SHALL BE SIZED TO REST ON TOP OF THE WET WELL AS DETAILED IN THE CONSTRUCTION DRAWINGS. THE SUPPORTING FLOOR PLATE SHALL BE A MINIMUM 3/8" THICK STEEL WITH REINFORCING, AS REQUIRED, TO PREVENT DEFLECTION AND INSURE AN ABSOLUTELY RIGID SUPPORT.

THE PUMP STATION SHALL BE ENCLOSED BY A HINGED FIBERGLASS COVER. THE COVER SHALL HAVE A SUITABLE DRIP-LIP AROUND THE EDGE AND SHALL BE PROVIDED WITH A HASP AND STAPLE CONNECTION TO THE FLOOR PLATE TO ALLOW THE PUMP CHAMBER TO BE LOCKED WITH A PADLOCK. THE FIBERGLASS COVER SHALL BE INSULATED WITH A MINIMUM OF 2" RIGID INSULATION.

THE COVER SHALL HAVE A LATCH MECHANISM TO KEEP THE COVER OPEN UNDER LOAD. ADJUSTABLE VENTILATING LOUVERS SHALL BE PROVIDED ON EACH END OF THE FIBERGLASS COVER WHICH ARE CAPABLE OF BEING CLOSED DURING COLD WEATHER OPERATION.

A 1/4" THICK SLIDING ALUMINUM MANWAY COVER LOCATED EXTERIOR TO THE FIBERGLASS PUMP CHAMBER SHALL BE PROVIDED, COMPLETE WITH PADLOCK PROVISIONS. THE MANWAY SHALL BE AN INTEGRAL PART OF THE STATION FLOOR PLATE AND PROVIDE ACCESS TO THE WET WELL.

2. PROTECTION AGAINST CORROSION

AFTER WELDING, ALL INSIDE AND OUTSIDE SURFACES OF THE STRUCTURE SHALL BE BLASTED WITH STEEL GRIT TO REMOVE RUST, MILL SCALE, WELD SLAG, ETC. ALL WELD SPLATTER AND SURFACE ROUGHNESS SHALL BE REMOVED BY GRINDING. IMMEDIATELY FOLLOWING THE CLEANING, AN EPOXY COATING SHALL BE FACTORY-APPLIED TO ALL INSIDE AND OUTSIDE SURFACES PRIOR TO SHIPMENT.

3. MAIN PUMPS

THE PUMPS SHALL BE 4" VERTICAL, SELF-PRIMING TYPE WITH IMPELLER MOUNTED COMPLETELY OUT OF THE FLOW PATH BETWEEN THE PUMP INLET AND DISCHARGE CONNECTION SO THAT SOLIDS PUMPED ARE NOT REQUIRED TO FLOW THROUGH THE IMPELLER. ALL INTERNAL CLEARANCES SHALL BE EQUAL TO THE DISCHARGE DIAMETER SO THAT ALL MATERIAL WHICH WILL PASS THROUGH THE DISCHARGE WILL PASS THROUGH THE PUMP.

THE PUMPS SHALL BE OF HEAVY CAST IRON CONSTRUCTION. ESPECIALLY DESIGNED FOR THE USE OF MECHANICAL SEALS AND VACUUM PRIMING.

THE SHAFT SHALL BE SOLID STAINLESS STEEL THROUGH THE PUMP AND BOTTOM BEARING TO ELIMINATE CORROSION WITHIN THE PUMP OR THE MECHANICAL SEAL. REMOVABLE SHAFT SLEEVES WILL NOT BE ACCEPTABLE.

THE IMPELLER SHALL NOT BE SCREWED OR PINNED TO THE MOTOR PUMP SHAFT AND SHALL BE READILY REMOVABLE WITHOUT THE USE OF SPECIAL TOOLS.

THE PUMP SHALL BE ARRANGED SO THAT THE COMPLETE ROTATING ELEMENT CAN EASILY BE REMOVED FROM THE CASING WITHOUT DISCONNECTING THE ELECTRICAL WIRING OR DISASSEMBLING THE MOTOR, IMPELLER, BLACKHEAD OR SEAL, SO THAT ANY FOREIGN OBJECT MAY BE REMOVED FROM THE PUMP OR SUCTION LINE.

THE PUMP SHAFT SHALL BE SEALED AGAINST LEAKAGE BY A SINGLE MECHANICAL SEAL CONSTRUCTED SO AS TO BE AUTOMATICALLY DRAINED AND PRIMED EACH TIME THE PUMP IS DRAINED AND PRIMED. WATER WHICH LUBRICATES THE MECHANICAL SEAL SHALL BE AUTOMATICALLY DRAINED FROM AROUND THE SEAL IF THE PUMP LOSES PRIME, IN ORDER TO ALLOW BOTH THE PUMP AND THE SEAL TO BE DRAINED, THEREBY PREVENTING FREEZING AND BREAKAGE OF THE SEAL DURING POWER OUTAGES IN SUB-FREEZING TEMPERATURES.

THE PUMP CASING SHALL BE FURNISHED WITH MOUNTING LUGS AND BE BOLTED TO THE STATION FLOOR PLATE, FORMING A GAS-TIGHT SEAL.

4. MOTOR

THE PUMP MOTORS SHALL BE VERTICAL, SOLID SHAFT, NEMA P-BASE, WITH VARIABLE FREQUENCY CONTROLLER SUITABLE TO ALLOW OPERATION WITH A 3 PHASE POWER SOURCE. THEY SHALL HAVE CLASS F INSULATION, SUITABLE FOR TEMPERATURES UP TO 105 ° C. INSULATION TEMPERATURE SHALL, HOWEVER, BE MAINTAINED BELOW 80° C. THE MOTORS SHALL HAVE NORMAL STARTING TORQUE AND LOW STARTING CURRENT AS SPECIFIED BY NEMA DESIGN B CHARACTERISTICS. THEY SHALL BE OPEN DRIP-PROOF DESIGN WITH FORCED AIR CIRCULATION BY INTEGRAL FAN. OPENINGS FOR VENTILATION SHALL BE UNIFORMLY SPACED AROUND THE MOTOR FRAME. LEADS SHALL BE TERMINATED IN A CAST CONNECTION BOX AND SHALL BE CLEARLY IDENTIFIED.

THE MOTORS SHALL HAVE 1.15 SERVICE FACTOR. THE MOTORS SHALL NOT BE OVERLOADED BEYOND THEIR NAMEPLATE RATING, AT THE DESIGN CONDITION, NOR AT ANY HEAD IN THE OPERATING RANGE AS SPECIFIED UNDER OPERATING CONDITIONS.

THE MOTOR SHALL BE FITTED WITH HEAVY LIFTING EYES EACH CAPABLE OF SUPPORTING THE ENTIRE WEIGHT OF THE PUMP AND MOTOR.

PRIOR TO CONSTRUCTION, SIZING AND SPECIFICATIONS FOR THE MOTOR SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

5. CONTROLS

THE CONTROL PANEL SHALL BE CONSOLIDATED ELECTRIC POWERPACK ELECTRICAL PANEL. THE PANEL SHALL BE SIZED AND DESIGNED TO BE MOUNTED COMPLETELY INSIDE THE FIBERGLASS HOOD OVER THE PUMP STATION. THE CONTROL PANEL ASSEMBLY SHALL INCLUDE A BULLETIN D152 BASIC DUPLEX POWERPACK CONTROL PANEL FOR OPERATION ON 120 VOLTS, 1 PHASE, 60 HZ INCOMING SERVICE. THE EQUIPMENT SHALL PROVIDE CONTROL FOR TWO (2) PUMPS IN A PUMP-DOWN MODE OF OPERATION, AS SENSED BY THE SUBMERSIBLE LEVEL TRANSDUCER OR REDUNDANT FLOAT CONTROL LOGIC. THE PANEL ENCLOSURE SHALL BE A NEMA 4X (FIBERGLASS), SHINGLE DOOR, WALL MOUNTED TYPE, APPROX. 118" HIGH, 16" WIDE, 9" DDEP WITH ALUMINUM DEAD FRONT INNER DOOR FOR OPERATOR RELATED COMPONENTS AND OUTER DOOR PADLOCKING PROVISIONS. THE PANEL SHALL INCLUDE THE FOLLOWING COMPONENTS:

A) DISTRIBUTION BLOCK
B) INCOMING POWER LIGHTING ARRESTER
C) CONDENSATION PROTECTIVE HEATER (25 WATT) AND HIGH TEMPERATURE CUTOUT THERMOSTAT
D) BULLETIN B300, MODEL CB1T REDUNDANT FLOAT CONTROLLER WITH INTEGRAL HIGH LEVEL ALARM CONTROL INDICATING LED'S AND ADJUSTABLE PUMP OFF TIME DELAY
E) MODEL IS6 SIX (6) CIRCUIT INTRINSICALLY SAFE FLOAT CONTROL MODULE
F) INNER DOOR MOUNTED, MODEL D152 DUPLEX CONTROLLER/ALTERNATOR (0-10' RANGE) WITH INTEGRAL ABNORMAL LEVEL ALARM, ON/OFF STAGE PROGRAMMING RECEPTACLES, STAGE INDICATING LED'S, 40 SEGMENT LEVEL INDICATING BAR GRAPH, MANUAL SIMULATION SWITCH, AND ALTERNATOR OVERRIDE SELECTOR SWITCH (1-2, AUTO, 2-1)
G) MODEL ISI-3 INTRINSICALLY SAFE TRANSDUCER CONTROL MODULE
H) MODEL CMX19/24, 4-20 MA CURRENT LOOP TRANSMITTER TO PROVIDE A LOOP POWERED, ISOLATED 4-20 MA OUTPUT SIGNAL (IN DIRECT PROPORTION TO THE WET WELL LEVEL) FOR CUSTOMER'S USE
I) UNPOWERED TRANSDUCER ABNORMAL LEVEL AND REDUNDANT FLOAT SWITCH HIGH LEVEL ALARM CONTACTS WIRED TO TERMINALS FOR CUSTOMER'S USE
J) ENCLOSED UL-913 SERIALIZED LABEL
K) 115 VAC DUPLEX OUTLET

INCLUDED WITH THE CONTROL PANEL SHALL BE:

L) A BULLETIN A1000, MODEL 157GSCL-1.0-5.0-10-30 SUBMERSIBLE LEVEL TRANSDUCER WITH 30' OF ELECTRONICS/BREATHER CABLE FOR DIRECT CONNECTION TO THE ITEM D JUNCTION BOX, TO INCLUDE A TRANSDUCER SUB-ASSEMBLY (5 PSI), P/N 601295-02, AND A CABLE SUB-ASSEMBLY (30'), P/N 601264-03.
M) A BULLETIN A1000, MODEL 157GSCL LOWER UNIT CABLE SUSPENSION MOUNTING KIT WITH 20' OF STAINLESS STEEL CABLE, TO INLCUDE A SUSPENSION KIT, P/N 601414-01, AND A CABLE KIT, P/N 601440-20.
N) A BULLETIN A1000 MODEL, MODEL TCB TERMINAL CONNECTION BOX WITH TERMINAL BLOCK, SEALED BREATHER AND CABLE STRAIN RELIEF CONNECTOR. THE TCB IS VENTED AND MADE FROM A NEMA TYPE 4X, FIBERGLASS, SINGLE DOOR, WALL MOUNTED ENCLOSURE. THE INSTALLING ELECTRICIAN SHALL MAKE THE CONNECTION FROM THE TCB BOX TO THE MODEL D152/ISI-3 (PROVIDED IN ITEM A CONTROL PANEL) WITH 3-WIRE, SHIELDED CABLE, P/N 601291-02.
O) A BULLETIN B100, MODEL LS (POLYETHYLENE) FLOAT SWITCH (NORMALLY OPEN) WITH 40' OF CABLE, P/N 601136-40.
P) BULLETIN B100, MODEL LSW1 WEIGHT KIT, P/N 601141-01.
Q) 5 SETS OF "AS BUILT" DRAWINGS WITH SHIPMENT.

THE ENTIRE CONTROL PANEL ASSEMBLY SHALL MEET ALL APPLICABLE ELECTRICAL CODES AND SHALL BE UL RATED. APPROVED SUBSTITUTE CONTROL PANELS WILL BE CONSIDERED.

6. ENVIRONMENTAL EQUIPMENT

A VENTILATING BLOWER SHALL BE PROVIDED, CAPABLE OF DELIVERING 250 CFM AT 0.1" STATIC WATER PRESSURE, IN ORDER TO REMOVE THE HEAT GENERATED BY CONTINUOUS MOTOR OPERATION. THE VENTILATING BLOWER SHALL BE TURNED ON AND OFF AUTOMATICALLY BY A PRE-SET THERMOSTAT. THE VENTILATING BLOWER SHALL BE RIGIDLY MOUNTED FROM THE STATION FLOOR.

AN ELECTRIC HEATER CONTROLLED BY A PRESET THERMOSTAT SHALL BE FURNISHED. THE HEATER SHALL BE RIGIDLY MOUNTED IN THE STATION TO PREVENT REMOVAL. THE HEATER SHALL BE SIZED FOR OPERATION IN COLD WEATHER TO -30°F.

7. SEWAGE PIPING

THE DISCHARGE LINE FROM EACH PUMP SHALL BE FITTED WITH A CLAPPER-TYPE CHECK VALVE AND ELECTRIC PLUG VALVE. THE CHECK VALVE SHALL BE OF THE SPRING-LOADED TYPE WITH EXTERNAL LEVER ARM AND AN EASILY REPLACED RESILIENT SEAT FOR ADDED ASSURANCE AGAINST VACUUM LEAKS. CHECK VALVES SHALL HAVE STAINLESS STEEL SHAFT WITH REPLACEABLE BRONZE SHAFT BUSHINGS AND SHALL BE SEALED THROUGH THE BEARINGS WITH O-RINGS. AN OPERATING WRENCH SHALL BE PROVIDED FOR THE PLUG VALVES.

PROTRUSIONS THROUGH THE FLOOR PLATE SHALL BE GAS-TIGHT WHERE NECESSARY TO EFFECT SEALING BETWEEN THE EQUIPMENT CHAMBER AND THE WET WELL. BOLTED AND SEALED JOINTS SHALL BE PROVIDED AT THE CASINGS OF SUCTION PIPES IN ORDER TO PREVENT CORROSIVE, NOXIOUS FUMES FROM ENTERING THE STATION. THE LIFT STATION MANUFACTURER SHALL EXTEND THE SUCTION AND DISCHARGE CONNECTION BELOW THE FLOOR PLATE AT THE FACTORY, SO THAT FIELD CONNECTIONS CAN BE MADE WITHOUT DISTURBING THE GAS-TIGHT SEALS. ALL EXTERIOR PIPE PENETRATIONS SHALL HAVE FLEXIBLE MANHOLE BOOTS OR LINK SEALS. SUCTION PIPES SHALL BE ONE LENGTH OF PIPE, DUCTILE IRON WITH NO JOINTS OR COUPLINGS.

8. FACTORY TESTS

ALL COMPONENTS OF THE PUMP STATION SHALL BE GIVEN AN OPERATIONAL TEST OF ALL EQUIPMENT AT THE FACTORY TO CHECK FOR EXCESSIVE VIBRATION, FOR LEAKS IN ALL PIPING SEALS, FOR CORRECT OPERATION OF THE VACUUM PRIMING AND CONTROL SYSTEMS AND ALL AUXILIARY EQUIPMENT. PUMPS SHALL TAKE SUCTION FROM A DEEP WELL, SIMULATING ACTUAL SERVICE CONDITIONS.

9. SPARE PARTS

A COMPLETE REPLACEMENT PUMP SHAFT SEAL ASSEMBLY SHALL BE FURNISHED WITH EACH LIFT STATION. THE SPARE SEAL SHALL BE PACKED IN A SUITABLE CONTAINER AND SHALL INCLUDE COMPLETE INSTALLATION INSTRUCTIONS. A SPARE CASING AND STEEL GASKET SHALL BE PROVIDED.

10. INSTALLATION AND OPERATING INSTRUCTIONS

INSTALLATION OF THE PUMP CHAMBER SHALL BE DONE IN ACCORDANCE WITH THE WRITTEN INSTRUCTIONS PROVIDED BY THE MANUFACTURER.

OPERATION AND MAINTENANCE MANUALS SHALL BE FURNISHED WHICH WILL INCLUDE PARTS LISTS OF COMPONENTS AND COMPLETE SERVICE PROCEDURES AND TROUBLESHOOTING GUIDE.

11. GUARANTEE

THE MANUFACTURER OF THE LIFT STATION SHALL HAVE A MINIMUM OF FIVE YEARS' EXPERIENCE IN THE DESIGN AND MANUFACTURE OF VACUUM-PRIMING TYPE FACTORY-BUILT AUTOMATIC PUMPING STATIONS AND SHALL GUARANTEE THE STRUCTURE AND ALL EQUIPMENT TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF UP TO ONE YEAR FROM THE DATE OF START-UP, NOT TO EXCEED 18 MONTHS FROM THE THE DATE OF SHIPMENT.

WARRANTIES AND GUARANTEES BY THE SUPPLIERS OF VARIOUS COMPONENTS IN LIEU OF A SINGLE-SOURCE RESPONSIBILITY BY THE MANUFACTURER WILL NOT BE ACCEPTED. THE MANUFACTURER SHALL BE SOLELY RESPONSIBLE FOR THE GUARANTEE OF THE STATION AND ALL COMPONENTS.

IN THE EVENT A COMPONENT FAILS TO PERFORM AS SPECIFIED OR IS PROVEN DEFECTIVE IN SERVICE DURING THE GUARANTEE PERIOD, THE MANUFACTURER SHALL PROVIDE A REPLACEMENT PART WITHOUT COST TO THE OWNER. HE OR SHE SHALL PROVIDE, WITHOUT COST, SUCH LABOR AS MAY BE REQUIRED TO REPLACE, REPAIR OR MODIFY MAJOR COMPONENTS SUCH AS THE PUMPS, PUMP MOTORS AND SEWAGE PIPING MANIFOLD.

12. NOTES

A. CONSTRUCTION OF THIS PUMP STATION MAY REQUIRE TEMPORARY SHEETING AND OR DEWATERING. NECESSARY DEWATERING TECHNIQUES SHALL BE UTILIZED THROUGHOUT CONSTRUCTION TO INSURE DRY SITE CONDITIONS.

B. THE COMPLETE OPERATION OF THE PUMP STATION AND FORCEMAIN SHALL BE TESTED IN THE PRESENCE OF THE ENGINEER IN ACCORDANCE WITH THE TESTING SPECIFICATIONS. THE SYSTEM SHALL MEET THE REQUIREMENTS OF ENGINEER, VILLAGE, MANUFACTURERS, AND THE STATE ENVIRONMENTAL PROTECTION RULES.

C. ALL ELECTRICAL WORK SHALL MEET THE NATIONAL ELECTRICAL CODE AND UNDERWRITERS LABORATORIES. CONDUIT SHALL BE PROVIDED AS NECESSARY TO INSURE COMPLIANCE.

D. ALL CONCRETE SHALL BE 4000 P.S.I. UNLESS OTHERWISE SPECIFIED. ALL CONCRETE STRUCTURES SHALL RECEIVE (2) COATS OF A WATERPROOF SEALANT. TESTING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS ON SHEET 27.

E. ALL BACKFILL SHALL BE IN ACCORDANCE WITH VERMONT STATE SPECIFICATION 703.04 FOR GRANULAR BACKFILL.

F. ALL OPENINGS FOR PIPES AND CONDUIT IN THE PUMP STATION AND WET WELL SHALL BE COMPLETELY SEALED AND WATERTIGHT.

G. ALL MATERIALS LOCATED WITHIN THE WETWELL SHALL BE CORROSION RESISTANT.

H. THE ENTIRE PUMP STATION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STATE ENVIRONMENTAL PROTECTION RULES – CHAPTER 1.

13. ALARMS

A. THE POWER FAIL ALARM SHALL BE BATTERY OPERATED AND CONTROLLED BY A POWER FAIL RELAY OR EQUIVALENT. THE BATTERY SHALL BE EQUIPPED WITH A TRICKLE CHARGE.

B. THE HIGH LEVEL ALARM SHALL HAVE A LOCAL SILENCE SWITCH.

C. CONTRACTOR SHALL PROVIDE AUTOMATIC TRANSFER SWITCH (ATS) AND EMERGENCY GENERATOR CAPABLE OF SUPPLYING POWER TO THE PUMP STATION IN THE EVENT OF POWER LOSS. THE EMERGENCY GENERATOR SHALL RUN ON NATURAL GAS, BE WEATHER TIGHT AND CAPABLE OF OPERATING BOTH PUMPS AND AUXILIARY EQUIPMENT. PRIOR TO CONSTRUCTION, SIZING AND SPECIFICATIONS FOR THE ATS AND EMERGENCY GENERATOR SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

PUMP STATION DATA

A. TOTAL DESIGN FLOW (USING EPR RULES):

RESIDENTIAL	
60 UNITS @ 140 GPD (1 BEDROOM)	= 8,400 GPD
143 UNITS @ 210 GPD (2 BEDROOM)	= 30,030 GPD
OFFICE	
101 EMP. @ 15 GPD/EMP	= 1,515 GPD
RETAIL	
32 EMP. @ 15 GPD/EMP	= 480 GPD
RESTAURANT	
250 SEAT RESTAURANT @ 27 GPD/SEAT	= 6,750 GPD
INFILTRATION – (0.34 MILES – 8" PIPE)	= 865 GPD
TOTAL DESIGN FLOW FOR SIZING PUMP STATION	= 48,040 GPD

B. PEAK FLOW :

$$\frac{48{,}040 \text{ GPD}}{24 \text{ HR/DAY} \times 60 \text{ MIN/HR}} \times 4 = 133 \text{ GPM}$$

C. HEAD LOSSES:

STATIC LIFT (400' – 388')	12.0 FT	
FRICTION LOSSES	12.0 FT	(FORCE MAIN)
MINOR LOSSES	5.0 FT	(PUMP STATION)
TOTAL HEAD LOSS	29.0 FT	

PROVIDE A PUMP CAPABLE OF 133 GPM @ 29' TDH. VELOCITY > 2.0 FT/SEC

D. CYCLE TIME

16 HR DELIVERY RATE

$$\frac{48{,}040 \text{ GPD}}{(16 \text{ HR/DAY})(60 \text{ MIN/HR})} = 50 \text{ GPM}$$

8.3 MIN FILL TIME @ 50 GPM INFLOW = 415 GALLONS

PUMP TIME = 415 GALLONS/(133GPM-50GPM) = 5 MINUTES

TOTAL CYCLE TIME = 13.3 MINUTES

TESTING DATA

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

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

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

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

C. PUMP STATION: AN AUTHORIZED REPRESENTATIVE OF THE PUMP MANUFACTURER OR AN ELECTRICIAN FAMILIAR WITH THE OPERATION AND SETTING OF THE PUMP STATION SHALL BE PRESENT DURING STARTUP. AMPERAGE READINGS ON EACH MOTOR LEAD SHALL BE MEASURED AND RECORDED. THE CONTRACTOR SHALL PROVIDE A WATER SOURCE TO PERFORM A FULL OPERATIONAL CHECK OF THE STATION INCLUDING ALL FLOAT FUNCTIONS, ALARM TESTING, INDICATOR LIGHTS, H-O-A SWITCHES, PUMP ALTERNATOR, AND PHASE MONITOR IF 3 PHASE PUMPS ARE USED. THE CONTROL SYSTEM SHALL BE CYCLED THROUGH MORE THAN ONCE TO INSURE PROPER SEQUENCING AND OPERATION OF THE PUMPS. EACH PUMP SHALL BE FIELD TESTED TO INSURE THE PUMPING CAPACITY MEETS THE PROJECT REQUIREMENTS.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING. on the __ day of ________ 20__.

Presiding member or Administrator's signature

STATE OF VERMONT · DANIEL J. HEIL · No. 106... · CIVIL · PROFESSIONAL ENGINEER

8/30/2019	REVISED TOTAL DESIGN FLOW BASED ON UPDATED USES AND CURRENT WW RULES	DJH
DATE 4/3/2017	REVISION ISSUED FOR CONSTRUCTION	BY DJH

SURVEY OBCA · DESIGN OBCA · DRAWN DJH · CHECKED PJO · SCALE NTS

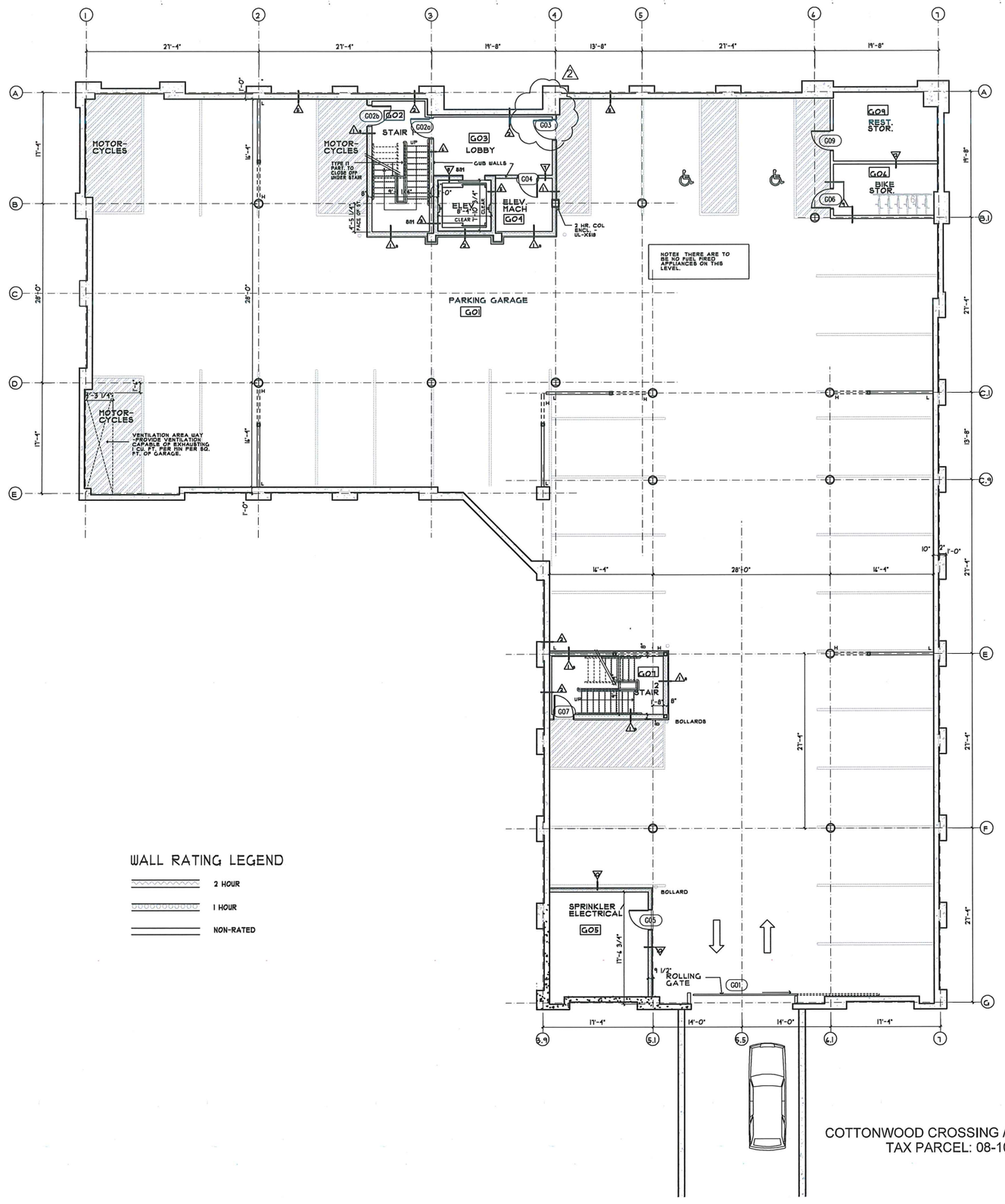
☐ RECORD DRAWING ■ PRELIMINARY ☐ FINAL ☐ SKETCH/CONCEPT

O'LEARY-BURKE CIVIL ASSOCIATES, PLC
13 CORPORATE DRIVE, ESSEX JCT., VT
PHONE: 878-9990
FAX: 878-9989
E-MAIL: obca@olearyburke.com

COTTONWOOD CROSSING
U.S. ROUTE 2 WILLISTON, VT

PUMP STATION
DETAILS & SPECIFICATIONS

DATE 11/04/2016 · JOB # 5087 · FILE 5087-S19 · PLAN SHEET # 19



WALL RATING LEGEND

- 2 HOUR
- 1 HOUR
- NON-RATED

Upon finding that the final plans complied with all requirements of the Williston Development Regs and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING, on the __ day of _____, 20__.

_____
Presiding member or Administrator signature

COTTONWOOD CROSSING / 6180 WILLISTON RD / WILLISTON, VT / AUGUST 30, 2019
TAX PARCEL: 08-104-011-000 & 080-104-016-000 / APPLICATION #DP 16-05.1

PROJECT NORTH

GK architects
GARDNER KILCOYNE architects
147 Allen Brook Lane,
Suite 103
Williston, Vermont 05495
Phone 802 655 0145
www.gk-architects.com

Vt. Registration

Project:
ALLEN BROOK Development Inc.

Cottonwood Crossing

Building
A1

Proj. No.:
17-02

Drawing Title:
PARKING LEVEL PLAN

Scale:
1/8"=1'-0"

Date:
04/28/17

Rev:
4 07/29/19 STRUCT. BRACES LOCATED
5 08/30/19 rev. permit set

Drawn by:
BG

SHEET No.
A1 1.0

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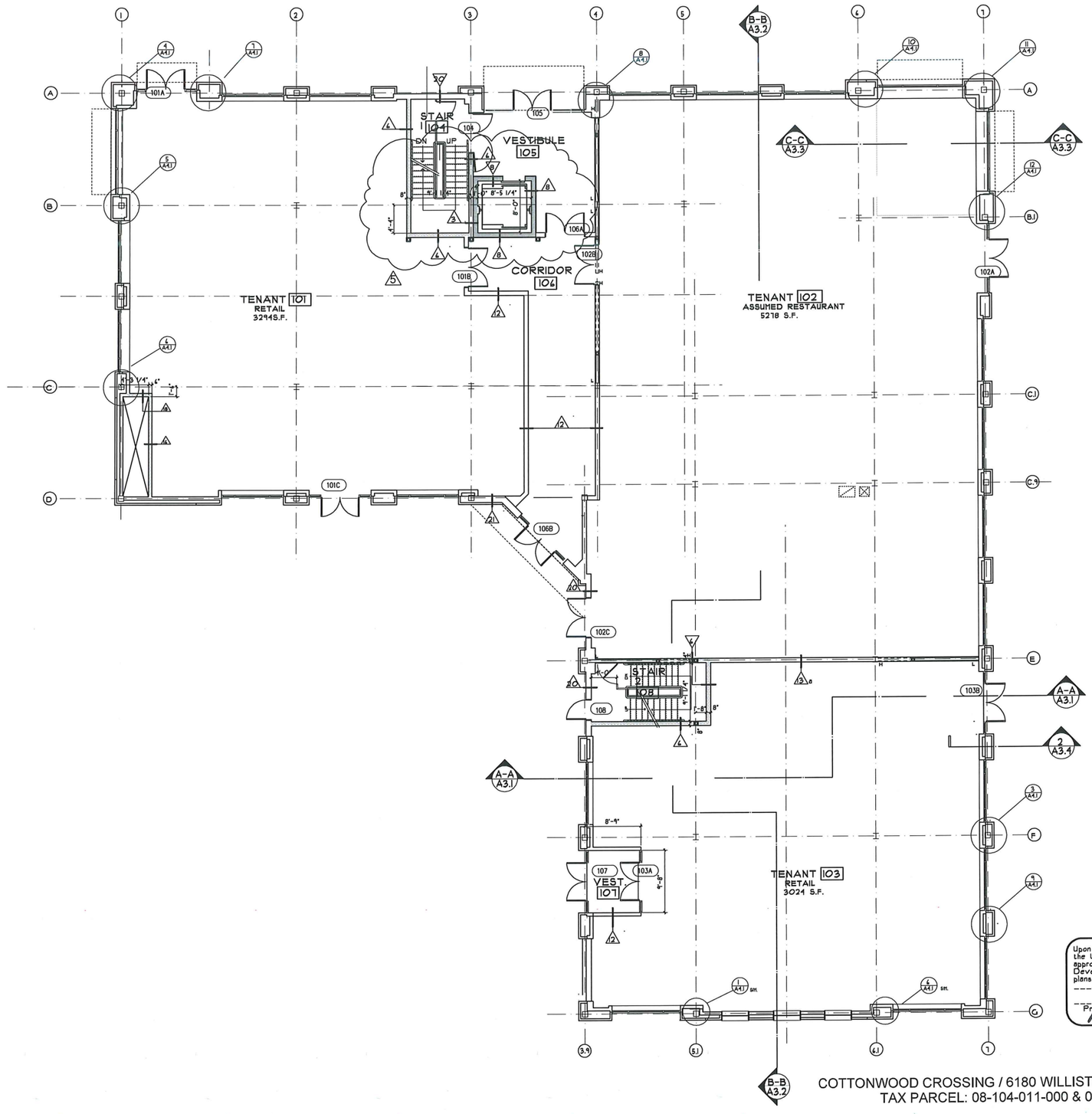

PROJECT NORTH

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board Administrator approved the final plans for COTTONWOOD CROSSING, on the __ day of _____, 20__.

_____
Presiding member or Administrator's signature

COTTONWOOD CROSSING / 6180 WILLISTON RD / WILLISTON, VT / AUGUST 30, 2019
TAX PARCEL: 08-104-011-000 & 080-104-016-000 / APPLICATION #DP 16-05.1

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GARDNER KILCOYNE architects
147 Allen Brook Lane,
Suite 103
Williston, Vermont 05495
Phone 802 655 0145
www.gk-architects.com

Vt. Registration

Project:
ALLEN BROOK Development Inc.

Cottonwood Crossing

Building
A1

Proj. No.:
17-02

Drawing Title:
FIRST FLOOR PLAN

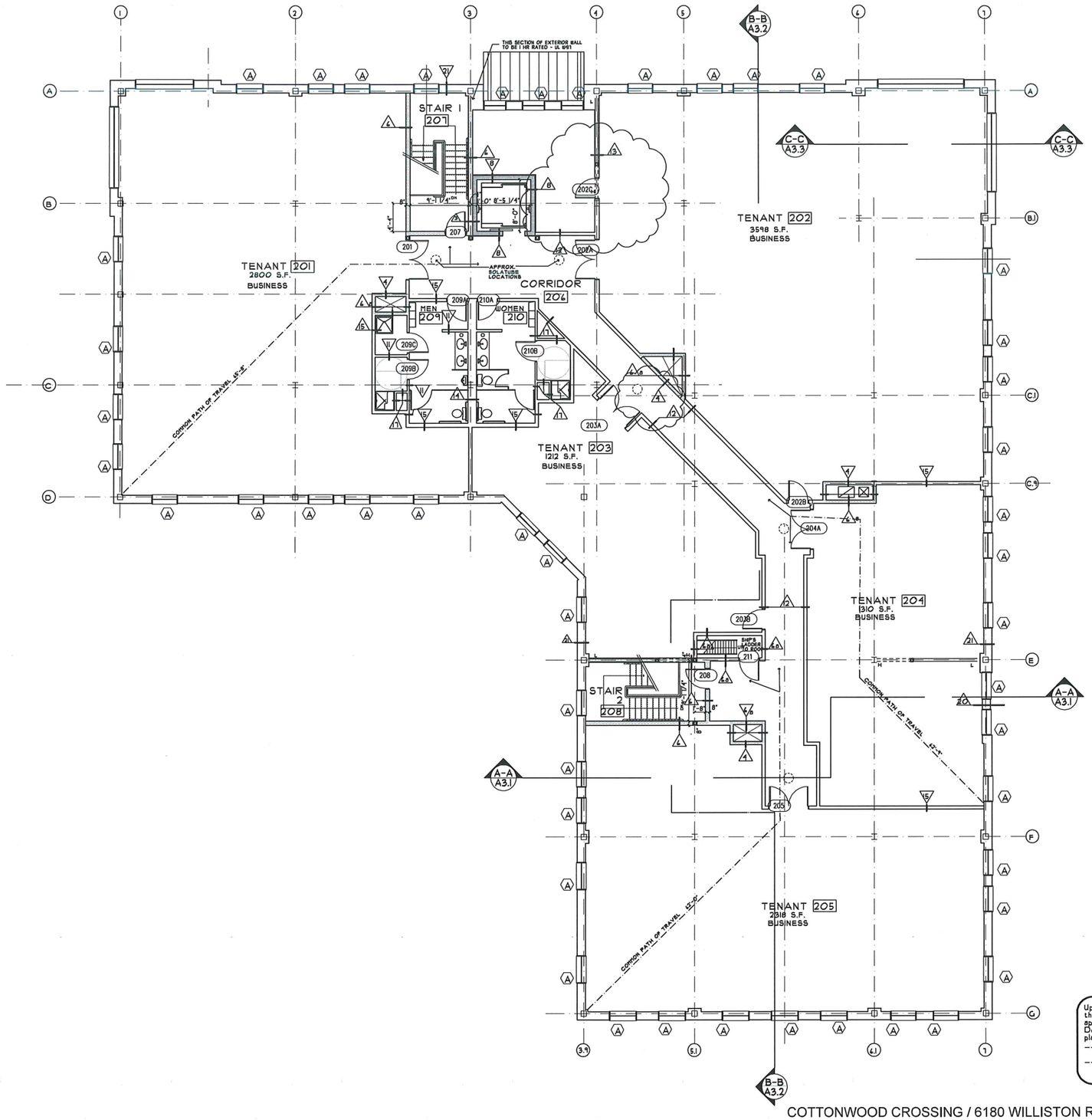
Scale:
1/8"=1'-0"

Date:
04/28/17

Rev:
5 7/29/19
REV TO MATCH STRUCTURAL
6 8/30/19
rev Z Permit Set

Drawn by:
BG

SHEET No.
A1
1.1



PROJECT NORTH

REVISED TO MATCH STRUCT.

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING, on the __ day of _____, 20__.

_____
Presiding officer or Administrator signature

COTTONWOOD CROSSING / 6180 WILLISTON RD / WILLISTON, VT / AUGUST 30, 2019
TAX PARCEL: 08-104-011-000 & 080-104-016-000 / APPLICATION #DP 16-05.1

GK architects
GARDNER KILCOYNE architects
147 Allen Brook Lane,
Suite 103
Williston, Vermont 05495
Phone 802 655 0145
www.gk-architects.com

Vt. Registration

Project:
ALLEN BROOK Development Inc.

Cottonwood Crossing

Building
A1

Proj. No.:
17-02

Drawing Title:
SECOND FLOOR PLAN

Scale:
1/8"=1'-0"

Date:
04/28/17

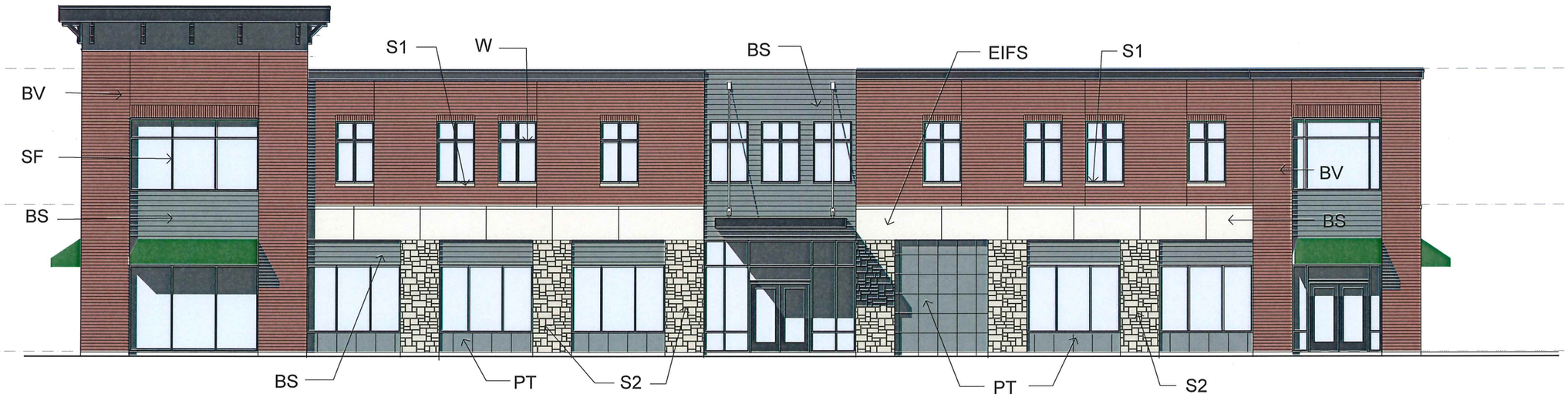
Rev:
2 03/22/19
3 07/29/19
4 08/30/19
rev Z permit set

Drawn by:
BG

SHEET No.
A1
1.2

S:\GK\CURRENT\OMEGA DEVELOPMENT\COTTONWOOD CROSSING 17-02\BUILDING A1\DRAWINGS\PLOT SHEETS\REV PERMIT SET\A1 1.2.DWG 8/23/2019

NORTH ELEVATION



WEST ELEVATION

S1 STONE 1 - BERKSHIRE INDIANA CUT LIMESTONE WINDOW SILLS
S2 STONE 2 - BERKSHIRE INDIANA LIMESTONE - ASHLAR
PT PORCELAIN TILE - 24 X 24 BELGARD - LUMNEZIA
BS BEVEL SIDING - BORAL 6" EXPOSURE - PAINT COLOR TO MATCH LUMNEZIA
EIFS EIFS SIGN BAND - COLOR - ANTIQUE WHITE

BV BRICK VENEER WITH ROWLOCK AND SOLDIER COURSES - GLEN-GERY 4HB
SF STOREFRONT - DARK BRONZE THERMALLY BROKEN ALUM.
W WINDOWS - DARK BRONZE - ALUM. CLAD WD. WINDOWS

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING, on the __ day of _____

_____
Presiding member or Administrator's signature

COTTONWOOD CROSSING / 6180 WILLISTON RD / WILLISTON, VT / AUGUST 30, 2019
TAX PARCEL: 08-104-011-000 & 080-104-016-000 / APPLICATION #DP 16-05.1

S:\GK\CURRENT\OMEGA DEVELOPMENT\COTTONWOOD CROSSING 17-02\BUILDING A1\DRAWINGS\PLOT SHEETS\REV PERMIT SET\A1 2.1.AEC 7/23/2019

GK architects
GARDNER KILCOYNE architects
147 Allen Brook Lane,
Suite 103
Williston, Vermont 05495
Phone 802 655 0145
www.gk-architects.com

Vt. Registration

Project:
ALLEN BROOK Development Inc.

Cottonwood Crossing

Building
A1

Proj. No.:
17-02

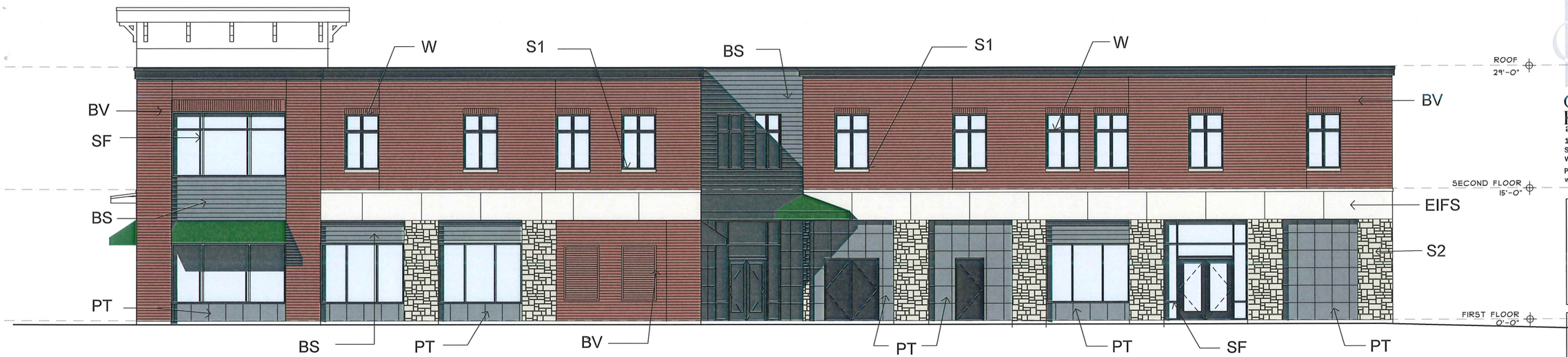
Drawing Title:

COLORED ELEVATIONS

Scale:
3/16"=1'-0"
Date:
8/3019
Rev:

Drawn by:
BG

SHEET No.
A1
2.1



SOUTH ELEVATION

EAST ELEVATION

S1 STONE 1 - BERKSHIRE INDIANA CUT LIMESTONE WINDOW SILLS
S2 STONE 2 - BERKSHIRE INDIANA LIMESTONE - ASHLAR
PT PORCELAIN TILE - 24 X 24 BELGARD - LUMNEZIA
BS BEVEL SIDING - BORAL 6" EXPOSURE - PAINT COLOR TO MATCH LUMNEZIA
EIFS EIFS SIGN BAND - COLOR - ANTIQUE WHITE

BV BRICK VENEER WITH ROWLOCK AND SOLDIER COURSES - GLEN-GERY 4HB
SF STOREFRONT - DARK BRONZE THERMALLY BROKEN ALUM.
W WINDOWS - DARK BRONZE - ALUM. CLAD WD. WINDOWS

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 4-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING. on the __ day of _____, 20__.

_____
Presiding member or Administrator's signature

COTTONWOOD CROSSING / 6180 WILLISTON RD / WILLISTON, VT / AUGUST 30, 2019
TAX PARCEL: 08-104-011-000 & 080-104-016-000 / APPLICATION #DP 16-05.1

GK architects
GARDNER KILCOYNE architects
147 Allen Brook Lane,
Suite 103
Williston, Vermont 05495
Phone 802 655 0145
www.gk-architects.com

Vt. Registration

Project:
ALLEN BROOK Development Inc.

Cottonwood Crossing

Building
A1

Proj. No.:
17-02

Drawing Title:
COLORED ELEVATIONS

Scale:
3/16"=1'-0"
Date:
8/30/19
Rev:

Drawn by:
BG

SHEET No.
A1
2.2

S:\GKACURRENT\OMEGA DEVELOPMENT\COTTONWOOD CROSSING 17-02\BUILDING A\DRAWINGS\PLOT SHEETS\REV PERMIT SET\A1 2.2.AB\23/2019

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SIDING KEY

Siding A
-option 1: Honed Granite
-option 2: Ceramic Tile

Siding B
-option 1: Ceramic Tile
-option 2: Reconstituted Stone

Siding C
-option 1: Ceramic Tile
-option 2: Reconstituted Stone

Siding D
-option 1: Brick

Siding E, F
-option 1: Ceramic Tile
-option 2: Thin veneer stone

BUILDING A-1 WEST

BUILDING A-1 NORTH

RECEIVED
NOV 04 2016
PLANNING/ZONING

FINAL PLANS

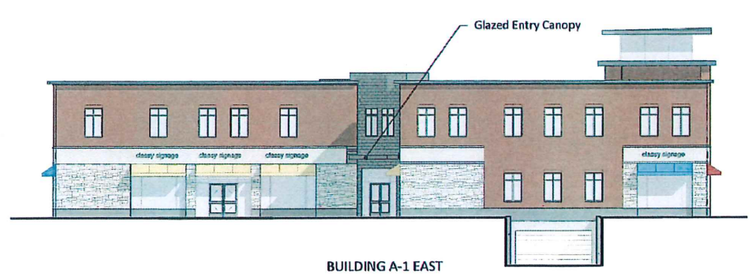
A-A3 **BUILDING A-1 ELEVATIONS**
Cottonwood Crossing | Williston, VT | November 11, 2016
Tax ID# 08-104-011-00 | Application # DP 16-05

8 0 8 16 32
Scale: 1/8" = 1'-0"

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING on the 23 day of Dec 2016
K. Bell
Presiding member or Administrator's signature

BLACK RIVER DESIGN ARCHITECTS

BUILDING A-1 SOUTH



BUILDING A-1 EAST

RECEIVED
NOV 04 2016
PLANNING/ZONING

FINAL PLANS

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING, on the __ day of _____ 20__
Presiding member or Administrator's signature

A-A4 **BUILDING A-1 ELEVATIONS**
Cottonwood Crossing | Williston, VT | November 11, 2016
Tax ID# 08-104-011-00 | Application # DP 16-05

8 0 8 16 32
Scale: 1/8" = 1'-0"

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K. Bell
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BLACK RIVER DESIGN ARCHITECTS

COTTONWOOD CROSSING / 6180 WILLISTON RD / WILLISTON, VT / AUGUST 30, 2019
TAX PARCEL: 08-104-011-000 & 080-104-016-000 / APPLICATION #DP 16-05.1

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GK architects
GARDNER KILCOYNE architects
147 Allen Brook Lane,
Suite 103
Williston, Vermont 05495
Phone 802 655 0145
www.gk-architects.com

Vt. Registration

Project:
ALLEN BROOK Development Inc.

Cottonwood Crossing

Building
A1

Proj. No.:
17-02

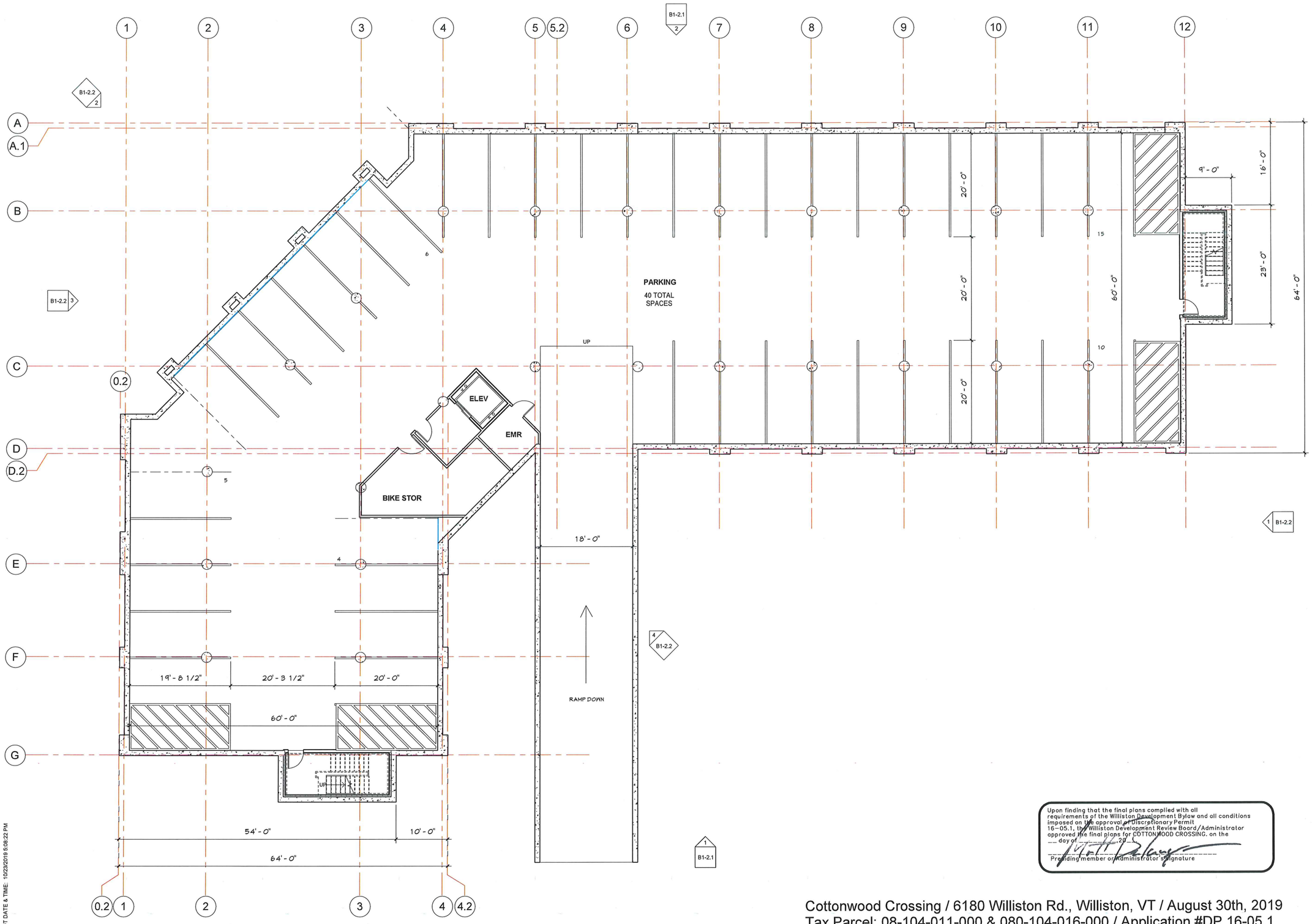
Drawing Title:

APPROVED IMAGES

Scale:
NTS
Date:
8/30/19
Rev:

Drawn by:
BG

SHEET No.
A1
3.1



GARDNER KILCOYNE architects
147 Allen Brook Lane,
Suite 103
Williston, Vermont 05495
Phone 802 655 0145
www.gk-architects.com

Civil

Structural

Mechanical & Electrical

VT Registration:

Project:

COTTONWOOD CROSSING:
BUILDING B1

Williston, VT

Proj. No.:
19-05

Drawing Title:

BASEMENT PLAN

Scale: As indicated

NO.	DATE	NOTE

REVISIONS

SHEET No.
B1-1.0

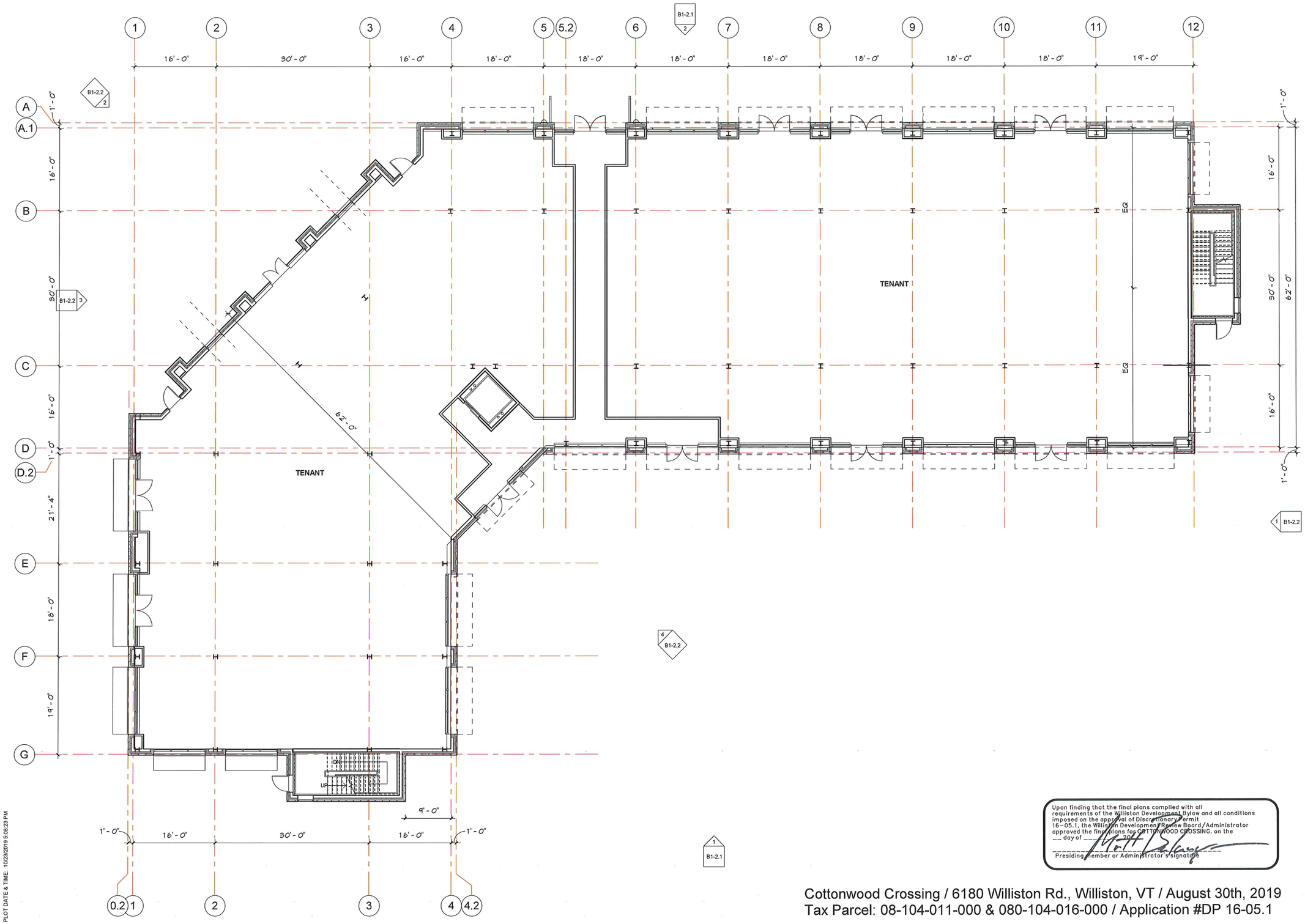
Drawn by: BG/DW
Date: 08/30/19

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING. on the ___ day of _____, 20__.

_____
Presiding member or Administrator signature

Cottonwood Crossing / 6180 Williston Rd., Williston, VT / August 30th, 2019
Tax Parcel: 08-104-011-000 & 080-104-016-000 / Application #DP 16-05.1

PLOT DATE & TIME: 10/23/2019 5:08:22 PM



Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING, on the __ day of _____ 20__

Presiding member or Administrator's signature

Cottonwood Crossing / 6180 Williston Rd., Williston, VT / August 30th, 2019
Tax Parcel: 08-104-011-000 & 080-104-016-000 / Application #DP 16-05.1

PLOT DATE & TIME: 10/23/2019 5:08:23 PM

GK architects
GARDNER KILCOYNE architects
147 Allen Brook Lane,
Suite 103
Williston, Vermont 05495
Phone 802 655 0145
www.gk-architects.com

Civil

Structural

Mechanical & Electrical

VT Registration:

Project:

COTTONWOOD CROSSING:
BUILDING B1

Williston, VT

Proj. No.:
19-05

Drawing Title:

FIRST FLOOR PLAN

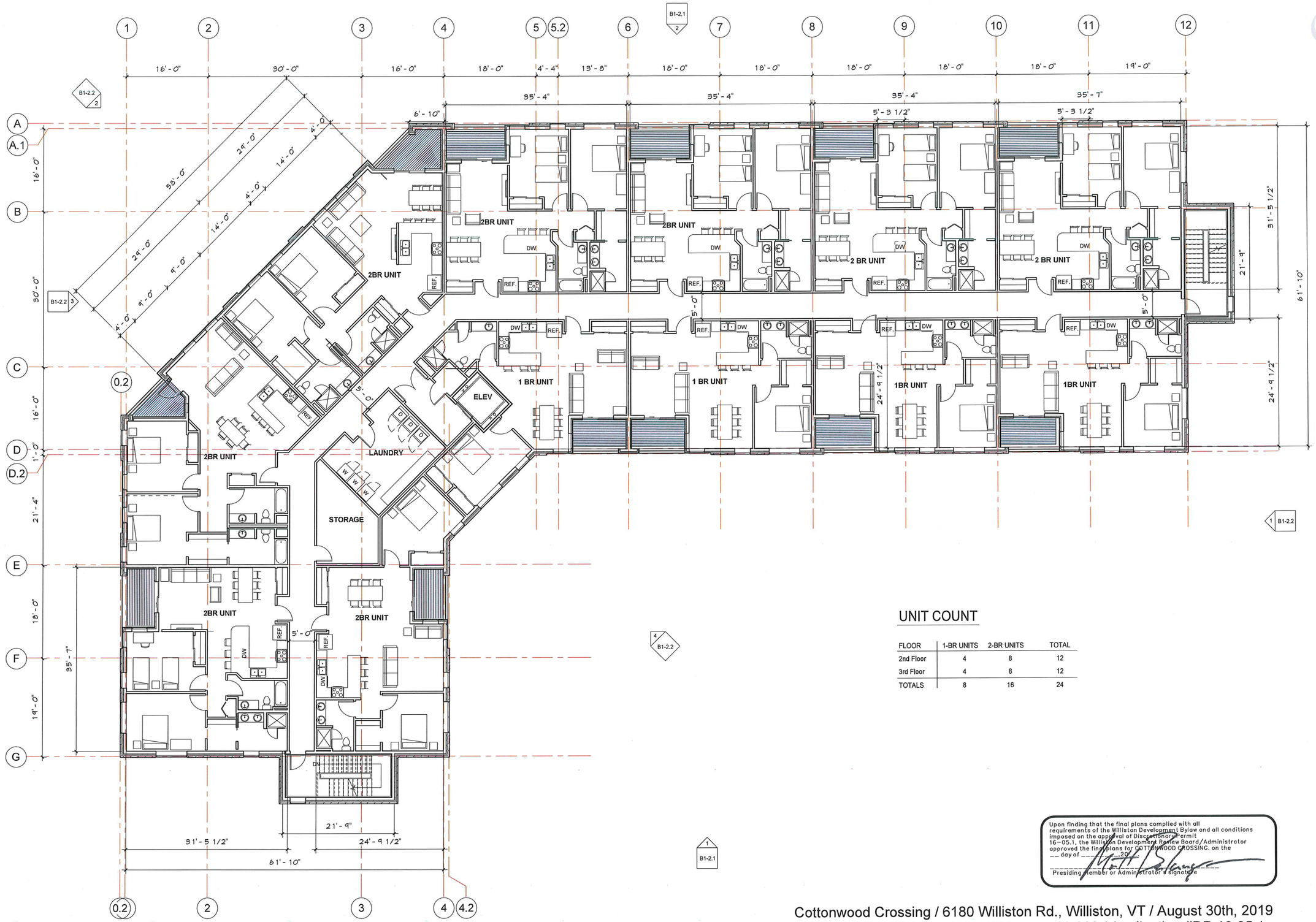
Scale: As indicated

NO.	DATE	NOTE

REVISIONS

SHEET No.
B1-1.1

Drawn by: BG/DW
Date: 08/30/19



UNIT COUNT

FLOOR	1-BR UNITS	2-BR UNITS	TOTAL
2nd Floor	4	8	12
3rd Floor	4	8	12
TOTALS	8	16	24

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING, on the __ day of _____, 20__

_____
Presiding Member or Administrator's signature

Cottonwood Crossing / 6180 Williston Rd., Williston, VT / August 30th, 2019
Tax Parcel: 08-104-011-000 & 080-104-016-000 / Application #DP 16-05.1

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GARDNER KILCOYNE architects
147 Allen Brook Lane,
Suite 103
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Phone 802 655 0145
www.gk-architects.com

Civil

Structural

Mechanical & Electrical

VT Registration:

Project:
COTTONWOOD CROSSING:
BUILDING B1

Williston, VT

Proj. No.: 19-05

Drawing Title:
SECOND & THIRD FLOOR PLANS

Scale: As indicated

NO.	DATE	NOTE

REVISIONS

SHEET No.
B1-1.2

Drawn by: BG/DW
Date: 08/30/19

PLOT DATE & TIME: 10/23/2019 5:08:24 PM

2 NORTH ELEVATION
1/8" = 1'-0"

1 SOUTH ELEVATION
1/8" = 1'-0"

MATERIAL LEGEND

Key	Description
BS1	BEVEL SIDING - LP SMARTSIDE OR SIMILAR; COLOR 1
BS2	BEVEL SIDING - LP SMARTSIDE OR SIMILAR; COLOR 2
BV	BRICK VENEER WITH ROWLOCK & SOLDIER COURSES - GLEN-GERY 4HB
CC	CORNICE - COMPOSITE WOOD - COLOR 1
EIFS	EIFS SIGN BAND - COLOR ANTIQUE WHITE
FA	FABRIC AWNING
GC	GLASS CANOPY
PT	PORCELAIN TILE - 24 x 24 BELGARD - LUMNEZIA
S1	STONE 1 - BERKSHIRE INDIANA CUT LIMESTONE TRIM COURSE & HEADER
S2	STONE 2 - BERKSHIRE INDIANA LIMESTONE - ASHLAR
SF	STOREFRONT - DARK BRONZE THERMALLY BROKEN ALUM
W	WINDOWS - DARK BRONZE ALUM-CLAD WOOD WINDOWS

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING. on the __ day of _____

_____
Presiding member or Administrator's signature

Cottonwood Crossing / 6180 Williston Rd., Williston, VT / August 30th, 2019
Tax Parcel: 08-104-011-000 & 080-104-016-000 / Application #DP 16-05.1

PLOT DATE & TIME: 10/23/2019 5:09:45 PM

GK architects
GARDNER KILCOYNE architects
147 Allen Brook Lane,
Suite 103
Williston, Vermont 05495
Phone 802 655 0145
www.gk-architects.com

Civil

Structural

Mechanical & Electrical

VT Registration:

Project:
COTTONWOOD CROSSING:
BUILDING B1

Williston, VT

Proj. No.:
19-05

Drawing Title:
B1 COLORED NORTH & SOUTH ELEVATIONS

Scale: As indicated

NO.	DATE	NOTE

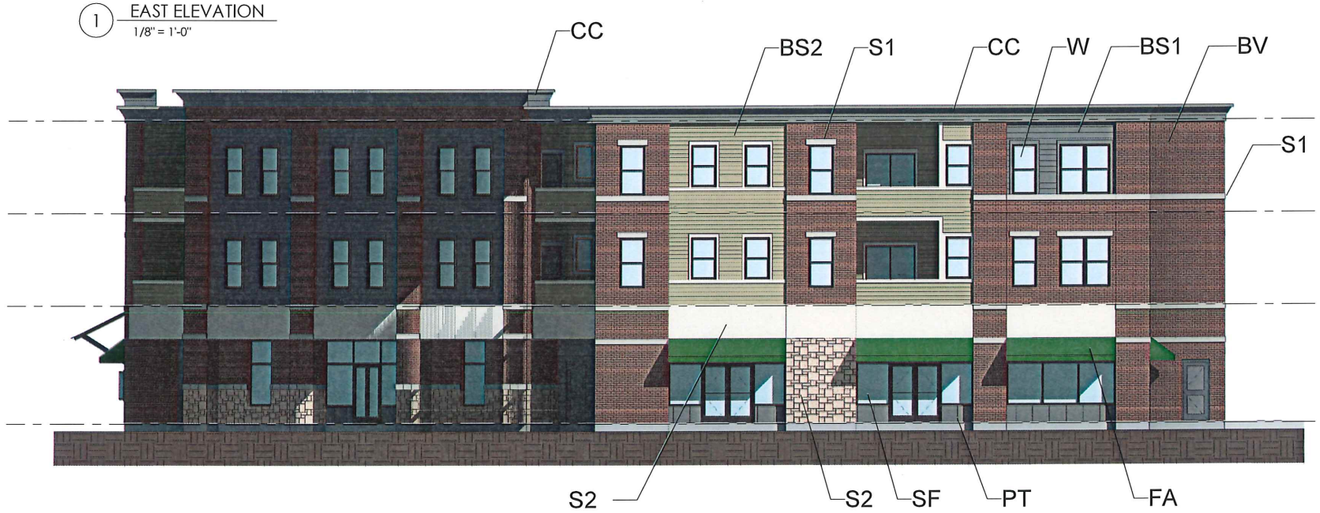
REVISIONS

SHEET No.
B1-2.1

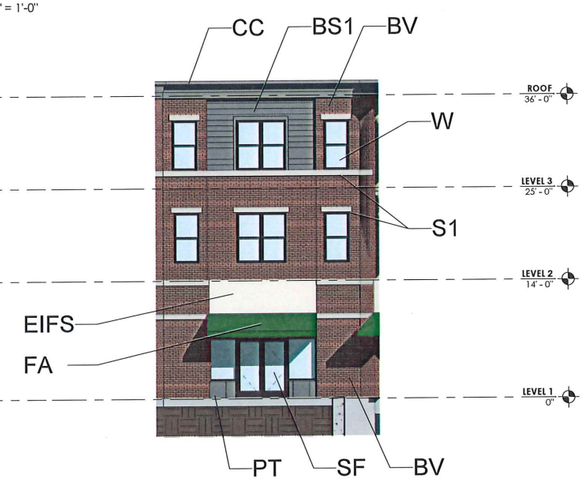
Drawn by: BG/DW
Date: 08/30/19

1 EAST ELEVATION
1/8" = 1'-0"

2 NORTHWEST ELEVATION
1/8" = 1'-0"



3 WEST ELEVATION
1/8" = 1'-0"



4 SOUTHEAST ELEVATION
1/8" = 1'-0"

MATERIAL LEGEND

Key	Description
BS1	BEVEL SIDING - LP SMARTSIDE OR SIMILAR; COLOR 1
BS2	BEVEL SIDING - LP SMARTSIDE OR SIMILAR; COLOR 2
BV	BRICK VENEER WITH ROWLOCK & SOLDIER COURSES - GLEN-GERY 4HB
CC	CORNICE - COMPOSITE WOOD - COLOR 1
EIFS	EIFS SIGN BAND - COLOR ANTIQUE WHITE
FA	FABRIC AWNING
GC	GLASS CANOPY
PT	PORCELAIN TILE - 24 x 24 BELGARD - LUMNEZIA
S1	STONE 1 - BERKSHIRE INDIANA CUT LIMESTONE TRIM COURSE & HEADER
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W	WINDOWS - DARK BRONZE ALUM-CLAD WOOD WINDOWS

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING. on the __ day of _____,20__.

Presiding member or Administrator's signature

Cottonwood Crossing / 6180 Williston Rd., Williston, VT / August 30th, 2019
Tax Parcel: 08-104-011-000 & 080-104-016-000 / Application #DP 16-05.1

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Phone 802 655 0145
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Civil

Structural

Mechanical & Electrical

VT Registration:

Project:
COTTONWOOD CROSSING:
BUILDING B1

Williston, VT

Proj. No.:
19-05

Drawing Title:
B1 COLORED EAST & WEST ELEVATIONS

Scale: As indicated

NO.	DATE	NOTE

REVISIONS

SHEET No.
B1-2.2

Drawn by: BG/DW
Date: 08/30/19

PLOT DATE & TIME: 10/23/2019 5:10:13 PM

RECEIVED
NOV 04 2016
PLANNING/ZONING

FINAL PLANS

A-B2 **BUILDING B-1 STREET FRONT WEST VIEW**
Cottonwood Crossing | Williston, VT | November 11, 2016
Tax ID# 08-104-011-00 | Application # DP 16-05

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING on the 13 day of Oct 2016

Building Inspector/Administrator's signature

BLACK RIVER DESIGN ARCHITECTS

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BUILDING B-1 WEST

SIDING KEY

Siding A
-option 1: Honed Granite
-option 2: Ceramic Tile

Siding B
-option 1: Brick

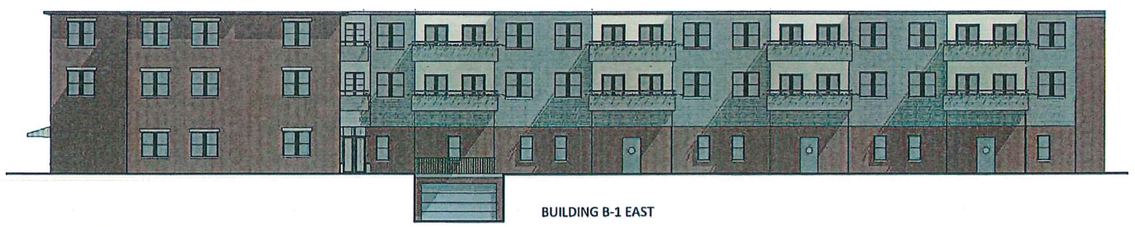
Siding C
-option 1: Painted Metal Shingle

Siding D
-option 1: Painted composite bevelled siding

BUILDING B-1 SOUTH

RECEIVED
NOV 04 2016
PLANNING/ZONING

FINAL PLANS



BUILDING B-1 EAST

A-B4 **BUILDING B-1 ELEVATIONS**
Cottonwood Crossing | Williston, VT | November 11, 2016
Tax ID# 08-104-011-00 | Application # DP 16-05

8 0 8 16 32
Scale: 1/8" = 1'-0"

BLACK RIVER DESIGN ARCHITECTS

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING. on the __ day of _____, 20____.

Presiding member or Administrator's signature

Cottonwood Crossing / 6180 Williston Rd., Williston, VT / August 30th, 2019
Tax Parcel: 08-104-011-000 & 080-104-016-000 / Application #DP 16-05.1

PLOT DATE & TIME: 8/29/2019 2:32:01 PM

GK architects
GARDNER KILCOYNE architects
147 Allen Brook Lane,
Suite 103
Williston, Vermont 05495
Phone 802 655 0145
www.gk-architects.com

Civil

Structural

Mechanical & Electrical

VT Registration:

Project:
COTTONWOOD CROSSING:
BUILDING B1

Williston, VT

Proj. No.:
19-05

Drawing Title:
APPROVED IMAGES

Scale:

NO.	DATE	NOTE

REVISIONS

SHEET No.
B1-3.0

Drawn by: Author | Date: 08/29/19

1 3D View - NORTHWEST

2 3D View - SOUTHEAST

Upon finding that the final plans complied with all requirements of the Williston Development Bylaw and all conditions imposed on the approval of Discretionary Permit 16-05.1, the Williston Development Review Board/Administrator approved the final plans for COTTONWOOD CROSSING. on the ___ day of _____, 20__.

_____
Presiding officer or Administrator's signature

Cottonwood Crossing / 6180 Williston Rd., Williston, VT / August 30th, 2019
Tax Parcel: 08-104-011-000 & 080-104-016-000 / Application #DP 16-05.1

PLOT DATE & TIME: 10/29/2019 5:10:29 PM

GK architects
GARDNER KILCOYNE architects
147 Allen Brook Lane,
Suite 103
Williston, Vermont 05495
Phone 802 655 0145
www.gk-architects.com

Civil

Structural

Mechanical & Electrical

VT Registration:

Project:
COTTONWOOD CROSSING:
BUILDING B1

Williston, VT

Proj. No.:
19-05

Drawing Title:
PERSPECTIVE VIEW

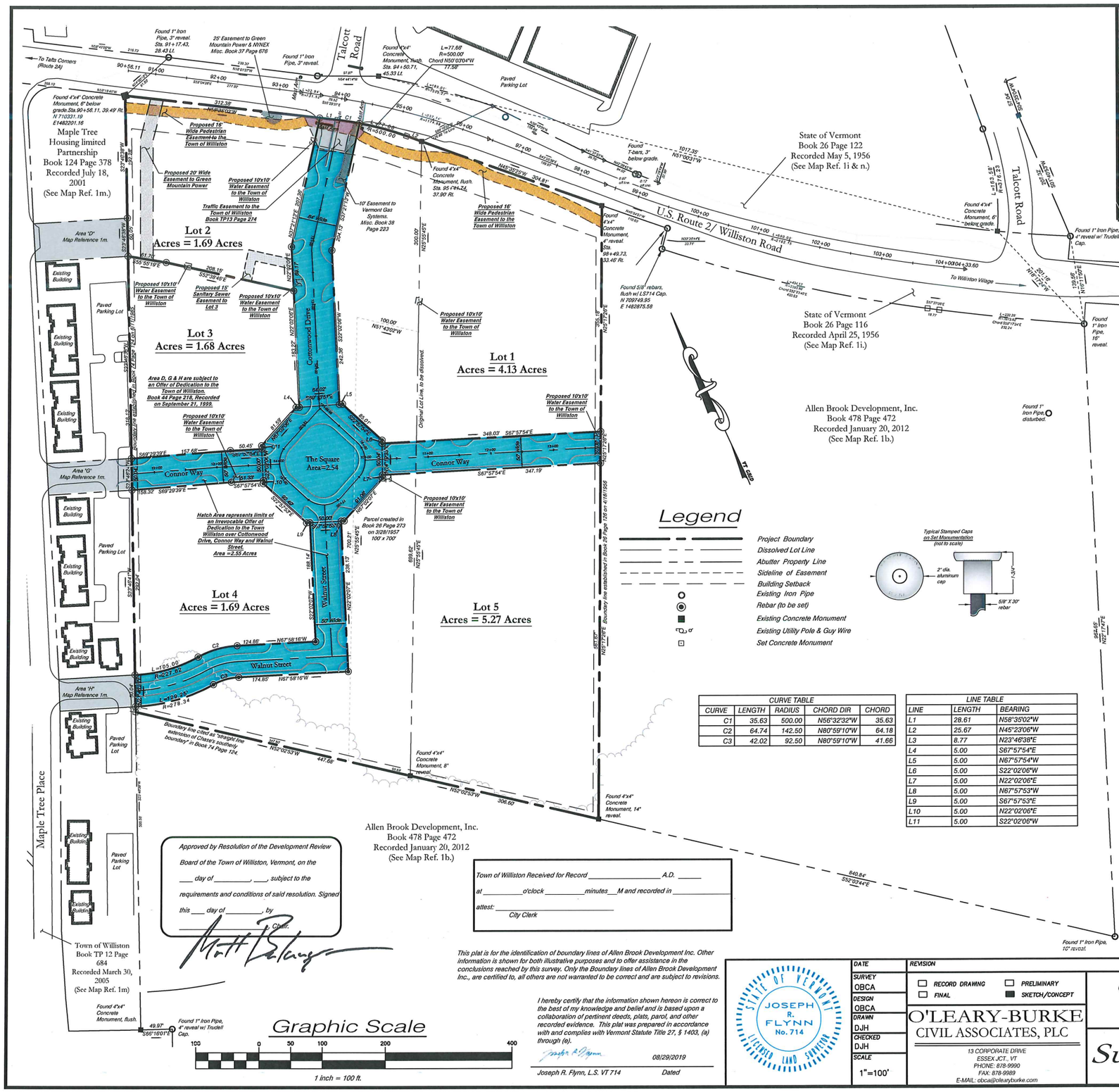
Scale: 12" = 1'-0"

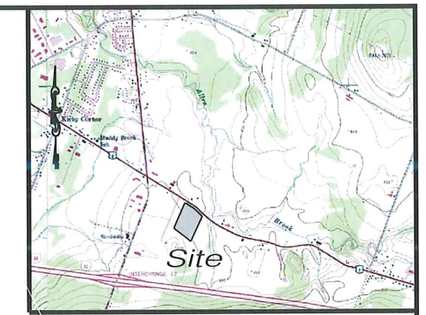
NO.	DATE	NOTE

REVISIONS

SHEET No.
B1-3.1

Drawn by: BG/DW
Date: 08/30/19





Location Plan-n.t.s.

Legend

- Project Boundary
- Dissolved Lot Line
- Abutter Property Line
- Sideline of Easement
- Building Setback
- Existing Iron Pipe
- Rebar (to be set)
- Existing Concrete Monument
- Existing Utility Pole & Guy Wire
- Set Concrete Monument

Typical Stamped Caps on Set Monumentation (not to scale)

CURVE TABLE				
CURVE	LENGTH	RADIUS	CHORD DIR	CHORD
C1	35.63	500.00	N56°32'32"W	35.63
C2	64.74	142.50	N80°59'10"W	64.18
C3	42.02	92.50	N80°59'10"W	41.66

LINE TABLE		
LINE	LENGTH	BEARING
L1	28.61	N58°35'02"W
L2	25.67	N45°23'06"W
L3	8.77	N23°46'38"E
L4	5.00	S67°57'54"E
L5	5.00	N67°57'54"W
L6	5.00	S22°02'06"W
L7	5.00	N22°02'06"E
L8	5.00	N67°57'53"W
L9	5.00	S67°57'53"E
L10	5.00	N22°02'06"E
L11	5.00	S22°02'06"W

Survey Notes:

1. This property has been compiled from field surveys and record evidence including the following plats:
a. "Property Survey of John Deschenes to be Acquired by Pyramid Company of Burlington", dated March 25, 1980, prepared by Engineers Inc. of Vermont and filed in slide 96A of the Williston Town Clerks Office.
b. "LM & AM Chase Parcel", dated July 1966, prepared by Campbell Construction and filed in slide 1 of the Williston Town Clerks Office.
c. "Plat Showing Taft Farms" dated November 14, 1986, last revised on March 30, 1989, prepared by Trudell Consulting Engineers, Inc. and filed in slide 241B of the Williston Town Clerks Office.
d. "Final Plat Major Subdivision Property of Allen Brook Development" dated November 1997, last revised on April 24, 1998 and filed in slide 527A of the Williston Town Clerks Office.
e. "Maple Tree Place US Route 2 Proposed Improvements by Donald Hamlin Consulting Engineer, Inc., last revised on April 9, 2001 and filed in the Williston Town Clerks Office.
f. State of Vermont Highway Project ST 60 B, dated 1956 and filed in Book 26 page 116 of the Williston Town Clerks Office.
g. "Boundary Line Adjustment", prepared by O'Leary-Burke Civil Associates, PLC., dated December 23, 2003 and filed in slide 667A of the Williston Town Clerks Office.
h. "Final Plat, Major Subdivision, Property of Allen Brook Development", prepared by Civil Engineering Associates, Inc., last revised April 24, 1998 and filed in slide 527 of the Williston Town Clerks Office.
i. Vermont Agency of Transportation, Project #Williston ST 60B, on file at District 5 Office in Colchester Vermont.
j. "Rights of Way for Electric Lines Across Lands of Pierre & Jeanne Morin", prepared by Central Vermont Public Service Corporation, dated May 25, 1954 and filed in Book 25 Page 202 of the Williston Town Clerks Office.
k. "Signal Layout Plan, US Route 2 / Talcott Rd. West", prepared by Lamoureux & Dickinson Consulting Engineers, Inc., last revised June 7, 2007 and filed in slide 729 of the Williston Clerks Office.
l. "Pavement Widening Plan", prepared by Lamoureux, Stone & O'Leary Consulting Engineers, Inc., dated February 13, 1996 and on file at District 5 Office in Colchester Vermont.
m. Multiple plats entitled "Maple Tree Place Boundary Plat", prepared by Donald Hamlin Consulting Engineer, Inc., and filed in slides 505,652,664,665,684 & 685 of the Williston Town Clerks Office.
n. Statutory Survey, State of Vermont, US Route 2, prepared by DuBois & King Inc., dated March 8, 2016, to be filed in the Town of Williston Land Records.
2. Bearings are based on Vermont Grid Zone 4400, computed from RTK GPS observations made on November 17, 2018 from a Trimble R6 Unit with differential corrections from CORS Station St Albans. Datum utilized is NAD 83(2011) epoch 2010.0, NAVD 88 (geoid12a).
3. Survey methods employed and the resulting error of closure/precision ratio, meets or exceeds minimum precision requirements for Suburban Surveys as outlined in, "Standards for the Practice of Land Surveying" adopted by the Vermont Board of Land Surveyors.
4. This property may be subject to additional easements, restrictions, rights-of-way, and/or reservations not shown hereon that may or may not be recorded in the Town of Williston Land Records.
5. This plat is for the depiction of boundaries based upon V.S.A. Title 26 Chapter 45 § 2502 (3) a-c and (4) a-e. Any information identified graphically or noted on this plat which is outside the scope and expertise of a Vermont Licensed Land Surveyor as outlined in the statues herein referenced to, is not warranted to be correct and is not covered by the certification contained hereon.
6. Where conflicts between physical evidence and written evidence are substantial, deed and/or documents should be executed to eliminate any color of title or conflict.
7. This plat is valid for recording only if stamped in the left margin with "This is an Original Mylar", signed, dated and stamped with blue ink containing the Licensed Land Surveyors Seal.
8. This property is shown as Parcel 104-19, Map 8 on the Town of Williston Tax Maps.
9. Field Surveys were completed on November 1, 2000, October 24, 2003 and updated November 2018 using a Leica total station, Trimble S6 and R6 GPS Receiver.
10. This survey depicts the property lines of Allen Brook Development based upon land records of the Town of Williston as of November 16, 2018.

Subject Parcel

Allen Brook Development Inc.
Book 120 Page 278
Recorded April 7, 2000
(See Map Ref. 1b.)
Area = 6.64 Acres
Allen Brook Development Inc.
Book 347 Page 795
Recorded March 3, 2003
Area = 10.36 Acres

This plat is for the identification of boundary lines of Allen Brook Development Inc. Other information is shown for both illustrative purposes and to offer assistance in the conclusions reached by this survey. Only the Boundary lines of Allen Brook Development Inc., are certified to, all others are not warranted to be correct and are subject to revisions.

I hereby certify that the information shown hereon is correct to the best of my knowledge and belief and is based upon a collaboration of pertinent deeds, plats, parol, and other recorded evidence. This plat was prepared in accordance with and complies with Vermont Statute Title 27, § 1403, (a) through (e).

08/29/2019
Joseph R. Flynn, L.S. VT 714 — Dated

STATE OF VERMONT — JOSEPH R. FLYNN No. 714 — LICENSED LAND SURVEYOR

DATE	
SURVEY	OBCA
DESIGN	OBCA
DRAWN	DJH
CHECKED	DJH
SCALE	1"=100'

REVISION: ☐ RECORD DRAWING ☐ FINAL ☐ PRELIMINARY ■ SKETCH/CONCEPT

O'LEARY-BURKE CIVIL ASSOCIATES, PLC
13 CORPORATE DRIVE
ESSEX JCT., VT
PHONE: 878-9990
FAX: 878-9989
E-MAIL: obca@olearyburke.com

Cottonwood Crossing

U.S. Route 2 - Williston, Vermont

Subdivision Plat

BY	
DATE	7/5/2019
JOB#	5087
FILE	5087-PLAT-1ROW
PLAN SHEET #	PL