Castleton Zoning Administrator

From: Shawn Cunningham <scunningham@olearyburke.com>
Sent: Tuesday, June 7, 2022 12:30 PM
To: Bryan Currier; Castleton Zoning Administrator
Cc: Zak Hale; Brad Dousevicz
Subject: RE: Plan sheet changes

Hi Jonas,

See below:

Sheet 1: No changes unique to only this sheet, but shows updated landscaping, parking islands, and EV charging station
Sheet 2: Same as Sheet 1, and also shows enlarged stormwater area to treat 15-year storm event
Sheet 3: Reconfigured catch basin network and enlarged stormwater area
Sheet 4: Reconfigured catch basin network and enlarged stormwater area, updated calculations and outlet structure inverts
Sheet 5: No changes
Sheet 7: No changes besides showing updated landscaping
Sheet 8: No changes
Sheet 9: Added dumpster enclosure detail
Sheet L1.0 Landscaping: Revised to add more trees in open area between parking lot and road, added trees in new parking lot islands, landscaped southern property line, added cleaner planting schedule as well as a PDF of the planting schedule

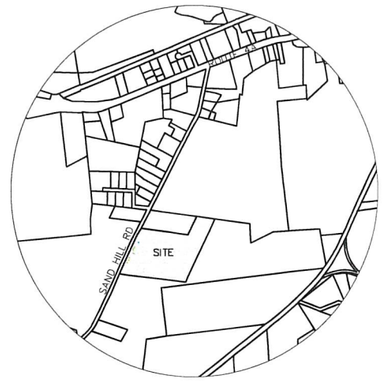
Thank you,

Shawn Cunningham, E.I.
O'Leary-Burke Civil Associates
13 Corporate Drive | Essex Jct., VT 05452
p: (802)878-9990
scunningham@olearyburke.com

From: Bryan Currier <bcurrier@olearyburke.com>
Sent: Tuesday, June 7, 2022 11:56 AM
To: Castleton Zoning Administrator <zoning@castletonvt.org>; Shawn Cunningham <scunningham@olearyburke.com>
Cc: Zak Hale <zak@haleresources.com>; Brad Dousevicz <dousevicz@gmail.com>
Subject: RE: Plan sheet changes

Planting Schedule

	Qty.	Code	Scientific Name	Common Name	Size	Spec	Notes
TREES	16	AB	ABIES balsamea	Balsam Fir	5' Ht.	B&B	
	10	ARR	ACER rubrum 'Red Sunset'	Red Sunset Red Maple	2" Cal.	B&B	
	5	AxF	ACER x freemanii 'Autumn Blaze'	Autumn Blaze Maple	8' Ht.	B&B	Clump Form
	10	BNH	BETULA nigra 'Heritage'	Heritage River Birch	10' Ht.	B&B	multi-stemmed
	5	BPS	BETULA papyrifera 'Select'	Paper Birch	8' Ht.	B&B	Clump Form
	6	CO	CELTIS occidentalis	Common Hackberry	2" Cal.	B&B	
	7	CCI	CRATAEGUS crusgalli inermis	Thornless Cockspur Hawthorn	8' Ht.	B&B	Clump Form
	8	GTH	GLEDITSIA t.i. 'Halka'	Halka Honeylocust	2" Cal.	B&B	
	6	HV	HAMAMELIS virginiana	Common Witchhazel	4' Ht.	B&B	multi-stemmed
	2	MLA	MAGNOLIA liliiflora 'ann'	Ann Magnolia	5-6' Ht.	B&B	multi-stemmed
	21	PG	PICEA glauca	White Spruce	5' Ht.	B&B	
	22	PS	PINUS strobus	White Pine	5' Ht.	B&B	
	5	PSA	PRUNUS sargentii	Sargent Cherry	2" cal.	B&B	
	9	QM	QUERCUS macrocarpa	Burr Oak	2" Cal.	B&B	
	1	SR	SYRINGA reticulata 'Ivory Silk'	Japanese Tree Lilac	1.5" Cal.	B&B	
	5	TO	THUJA occidentalis 'Nigra'	Dark American Arborvitae	5' Ht.	B&B	
	6	TC	TILIA cordata 'Greenspire'	Greenspire Linden	1.5" Cal.	B&B	
SHRUBS	11	AN	AZALEA 'Northern Hi-Lights'	Northern Hi-Lights Azalea	24" Ht.	#3 Cont.	
	13	CSF	CORNUS sericea 'Firedance'	Firedance Red-Osier Dogwood	2' Ht.	#5 Cont.	
	23	HPB	HYDRANGEA paniculata 'Bobo'	Bobo Panicle Hydrangea	18" Ht.	#2 Cont.	
	10	HPS	HYDRANGEA paniculata 'Sweet Summer'	Sweet Summer Hydrangea	30" Ht.	B&B	
	15	JCM	JUNIPERUS chinensis 'Mint Julep'	Mint Julep Juniper	24" Ht.	#3 Cont.	
	10	JCS	JUNIPERUS chinensis 'Sea Green'	Sea Green Juniper	30"	B&B	
	14	PF	POTENTILLA fruticosa 'Pink Beauty'	Pink Beauty Potentilla	18" Ht.	#3 Cont.	
	13	SA	SPIRAEA albiflora	White Spirea	18"	#3 Cont.	
	23	SJ	SPIRAEA japonica 'Little Princess'	Spirea	18"	#3 Cont.	
	2	SPJ	Syringa prestoniae 'James MacFarlane'	James MacFarlane Lilac	36" Ht.	#5 Cont.	
	18	TMD	TAXUS media 'Densiformis'	Dense Yew	18" Ht.	B&B	
PERENNIALS	18	AG	ANDROPOGON gerardii 'Red October'	Red October Big Bluestem	Clump	#2 Cont.	
	9	ACP	ASTILBE chinensis 'Pumila'	Pumila Astilbe	Clump	#1 Cont.	
	24	AF	ATHYRIUM f.f. 'Lady in Red'	Northern Lady Fern	Clump	#1 Cont.	
	18	CB	CALAMAGROSTIS brachytricha	Korean Feather Reed Grass	Clump	#1 Cont.	
	25	CK	CALAMAGROSTIS 'Karl Foerster'	Feather Reed Grass	Clump	#1 Cont.	
	20	EPR	ECHINACEA p. 'Rainbow Marcella'	Rainbow Marcella Echinacea	Clump	#2 Cont.	
	27	HHR	HEMEROCALLIS 'Rosy Returns'	Rosy Returns Daylily	Clump	#2 Cont.	30" O.C.
	14	HSO	HEMEROCALLIS 'Stella Odorata'	Rosy Returns Daylily	Clump	#2 Cont.	30" O.C.
	62	RAG	RHUS aromatica 'Gro-low'	Gro-low Fragrant Sumac	18" Ht.	#3 Cont.	
	12	RFG	RUDBECKIA fulgida var. s. 'Goldsturm'	Black Eye Susan	Clump	#2 Cont.	



Location Map

Scale 1" = 1000'

Landscaping
Parking Islands
EV
15-YR
2
391 Storm

ZONING SUMMARY

PROPERTY INFORMATION:	ADDRESS: 0 SAND HILL ROAD SPAN #: 129-040-10409 PARCEL ID #: 090100011
ZONING DISTRICT:	RURAL RESIDENTIAL 2 ACRE
FRONT/REAR SETBACK:	50 FEET
SIDE YARD SETBACK:	30 FEET

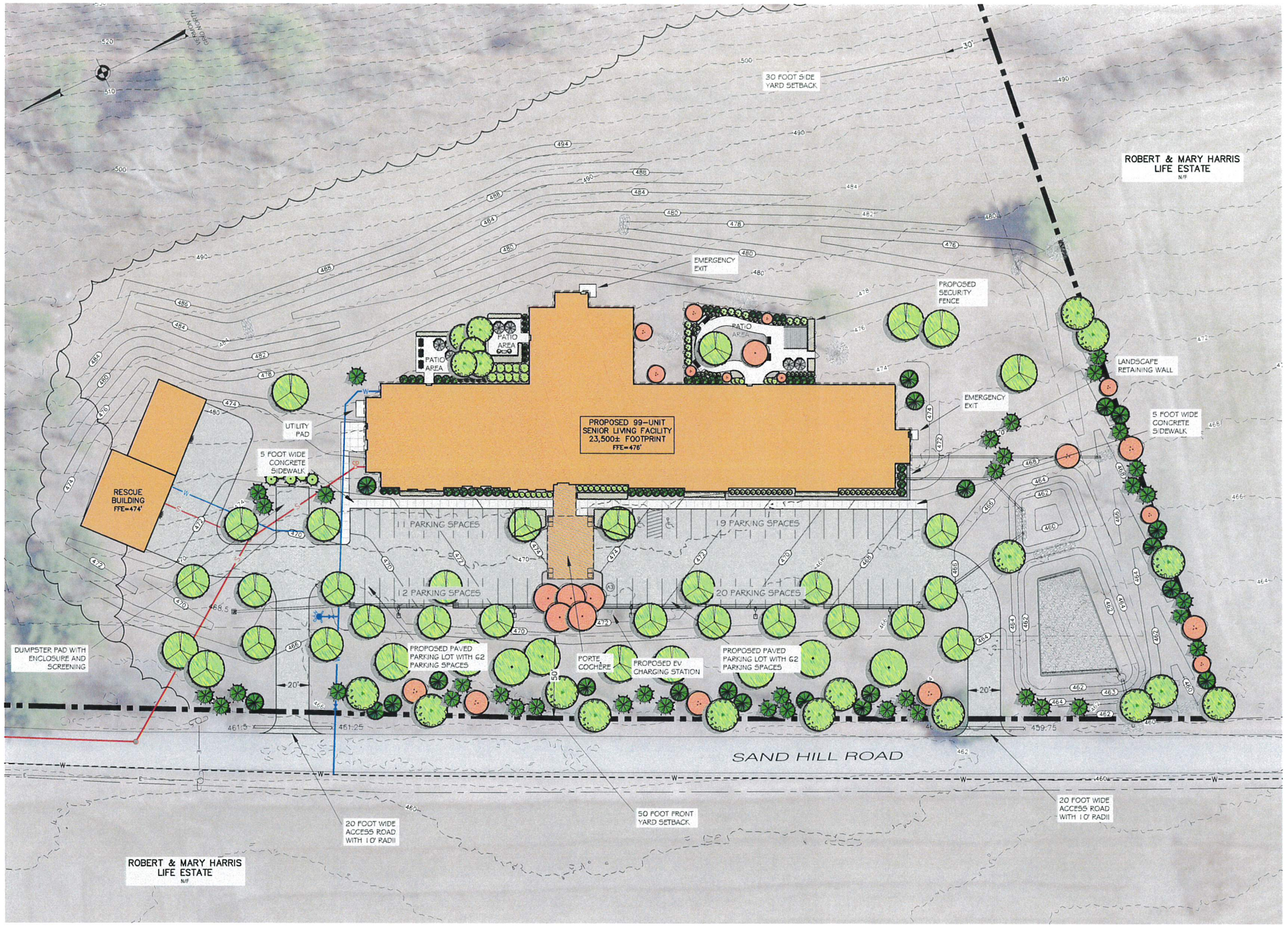
OWNER
TOWN OF CASTLETON
PO BOX 727
CASTLETON, VT

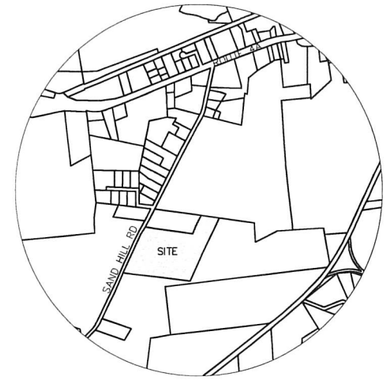
APPLICANT
DOUSEVICZ, INC.
21 CARMICHAEL STREET
ESSEX JUNCTION, VT

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft

STATE OF VERMONT
BRYAN W. CURRIER
No. 018.0114132
REGISTERED
PROFESSIONAL ENGINEER

DATE 6-1-22	REVISION REVISED PER TOWN COMMENTS		BY SEC
SURVEY OBCA	☐ RECORD DRAWING ☐ PRELIMINARY ■ FINAL ☐ SKETCH/CONCEPT	Senior Living Facility Sand Hill Road	DATE 04-08-22
DESIGN SEC/BWC	O'LEARY-BURKE CIVIL ASSOCIATES, PLC	Castleton Vermont	JOB # 2021-08
DRAWN SEC/BWC	13 CORPORATE DRIVE ESSEX JCT., VT PHONE 878-9990 FAX 878 9989 E-MAIL obca@olearyburke.com	Overall Parcel Plan	FILE 2021-08-S7
CHECKED PJO			PLAN SHEET # 1
SCALE 1" = 60			





Location Map

Scale: 1" = 1000'

Legend

- PROJECT BOUNDARY
- EXISTING OUTLOT LINE
- PROPOSED PROPERTY LINE
- SETBACK
- SIDELINE OF EASEMENT
- 476 — CONTOUR LINE (U.S.G.S. DATUM)
- 476 — PROPOSED FINISH GRADE CONTOUR
- EDGE OF WOODED AREA
- PROPOSED CLEARING LIMITS
- EXISTING SEWERLINE
- S — PROPOSED SEWER SERVICE
- FM — PROPOSED SEWER FORCE MAIN
- W — EXISTING WATERLINE
- W — PROPOSED WATER SERVICE
- PROPOSED STORMWATER
- E — EXISTING ELECTRIC
- E — PROPOSED ELECTRIC SERVICE
- EXISTING/PROPOSED HYDRANT
- PROPOSED LIGHTS
- PROPOSED RETAINING WALL
- PROPOSED FENCE

ZONING SUMMARY

PROPERTY INFORMATION:	ADDRESS: 0 SAND HILL ROAD SPAN #: 129-040-10409 PARCEL ID #: 090100011
ZONING DISTRICT:	RURAL RESIDENTIAL 2 ACRE
FRONT/REAR SETBACK:	50 FEET
SIDE YARD SETBACK:	30 FEET

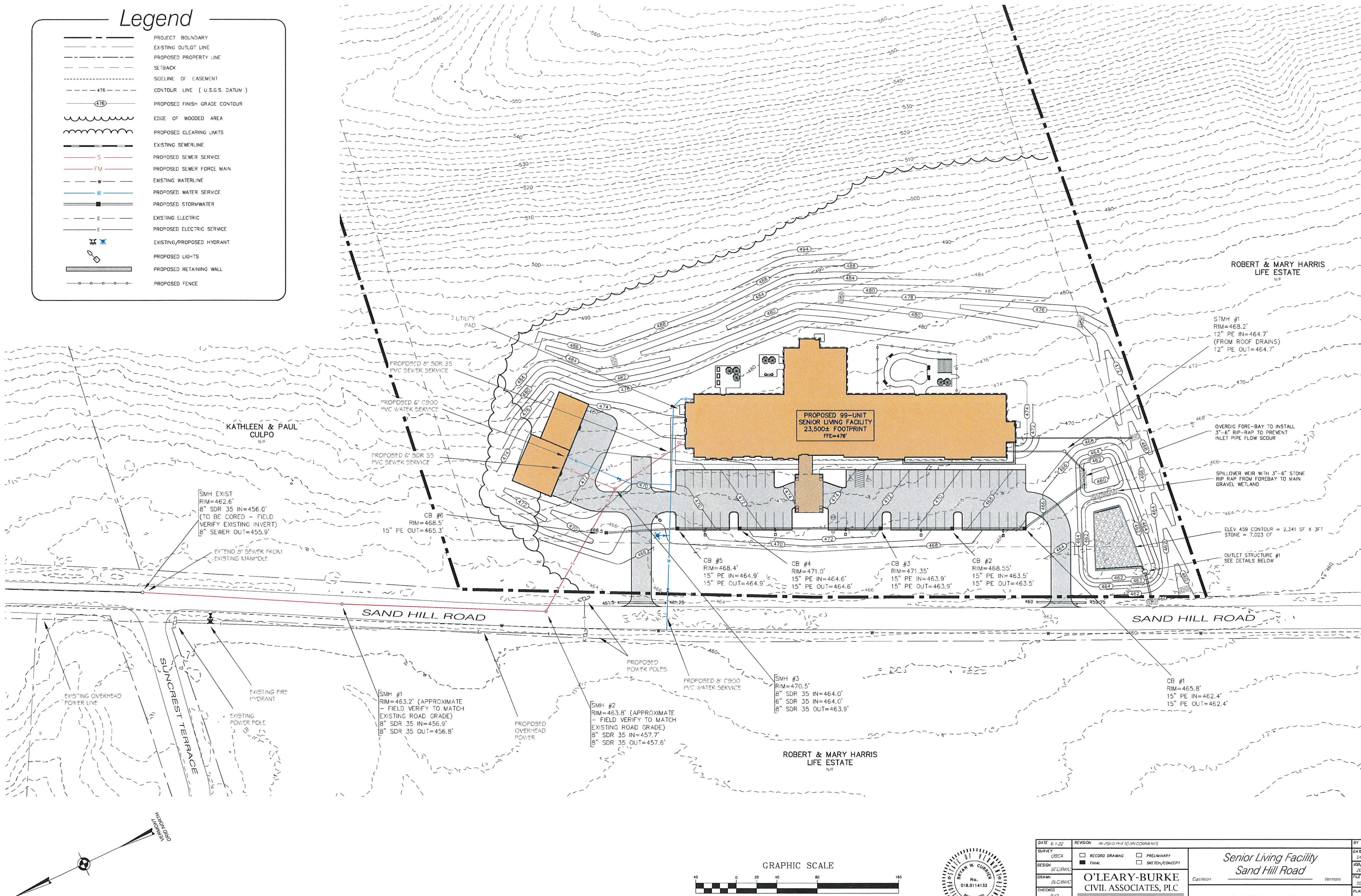
OWNER
TOWN OF CASTLETON
PO BOX 727
CASTLETON, VT

APPLICANT
DOUSEVICZ, INC.
21 CARMICHAEL STREET
ESSEX JUNCTION, VT

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft

DEAN W. CURRIER No. 018.0114132 REGISTERED PROFESSIONAL ENGINEER

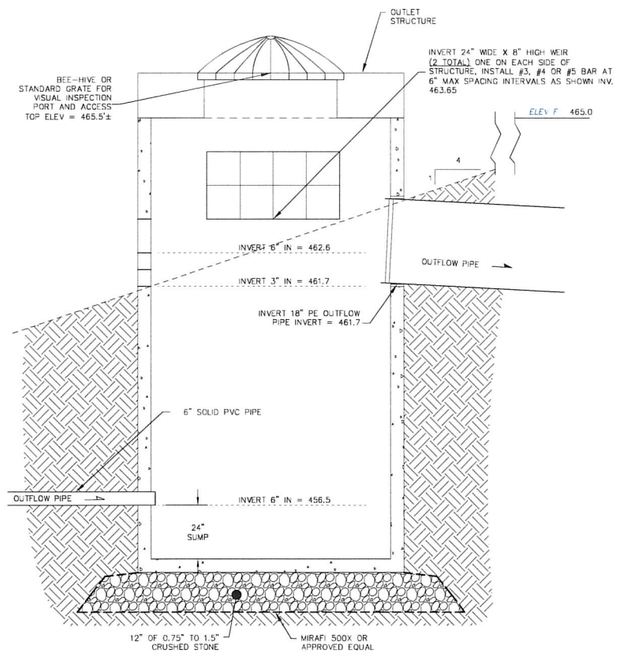
DATE 6-1-22	REVISION REVISED PER TOWN COMMENTS		BY SEC
SURVEY OBCA	☐ RECORD DRAWING ☐ PRELIMINARY ■ FINAL ☐ SKETCH/CONCEPT	Senior Living Facility Sand Hill Road	DATE 04-08-22
DESIGN SEC/BWC	O'LEARY-BURKE CIVIL ASSOCIATES, PLC	Castleton Vermont	JOB 2021-08
DRAWN SLC/BWC	13 CORPORATE DRIVE ESSEX JCT., VT PHONE 878-9990 FAX 878-9989 E-MAIL obca@olearyburke.com	Site Plan	FILE 2021-08-S7
CHECKED PJO			PLAN SHEET # 2
SCALE 1" = 30'			


Legend
PROJECT BOUNDARY
EXISTING OUTLOT LINE
PROPOSED PROPERTY LINE
SETBACK
SIDELINE OF EASEMENT
CONTOUR LINE (U.S.G.S. DATUM)
PROPOSED FINISH GRADE CONTOUR
EDGE OF WOODED AREA
PROPOSED CLEARING LIMITS
EXISTING SEWERLINE
PROPOSED SEWER SERVICE
PROPOSED SEWER FORCE MAIN
EXISTING WATERLINE
PROPOSED WATER SERVICE
PROPOSED STORMWATER
EXISTING ELECTRIC
PROPOSED ELECTRIC SERVICE
EXISTING/PROPOSED HYDRANT
PROPOSED LIGHTS
PROPOSED RETAINING WALL
PROPOSED FENCE
ROBERT & MARY HARRIS LIFE ESTATE
KATHLEEN & PAUL CULPO
UTILITY PAD
PROPOSED 8" SDR 35 PVC SEWER SERVICE
PROPOSED 6" C900 PVC WATER SERVICE
PROPOSED 6" SDR 35 PVC SEWER SERVICE
PROPOSED 99-UNIT SENIOR LIVING FACILITY 23,500± FOOTPRINT FFE=476'
STMH #1 RIM=468.2' 12" PE IN=464.7' (FROM ROOF DRAINS) 12" PE OUT=464.7'
OVERDIG FORE-BAY TO INSTALL 3"-6" RIP-RAP TO PREVENT INLET PIPE FLOW SCOUR
SPILLOVER WEIR WITH 3"-6" STONE RIP RAP FROM FOREBAY TO MAIN GRAVEL WETLAND
ELEV 459 CONTOUR = 2,341 SF X 3FT STONE = 7,023 CF
OUTLET STRUCTURE #1 SEE DETAILS BELOW
SMH EXIST RIM=462.6' 8" SDR 35 IN=456.0' (TO BE CORED - FIELD VERIFY EXISTING INVERT) 8" SEWER OUT=455.9'
EXTEND 8" SEWER FROM EXISTING MANHOLE
CB #6 RIM=468.5' 15" PE OUT=465.3'
CB #5 RIM=468.4' 15" PE IN=464.9' 15" PE OUT=464.9'
CB #4 RIM=471.0' 15" PE IN=464.6' 15" PE OUT=464.6'
CB #3 RIM=471.35' 15" PE IN=463.9' 15" PE OUT=463.9'
CB #2 RIM=468.55' 15" PE IN=463.5' 15" PE OUT=463.5'
CB #1 RIM=465.8' 15" PE IN=462.4' 15" PE OUT=462.4'
SAND HILL ROAD
SUNCREST TERRACE
EXISTING OVERHEAD POWER LINE
EXISTING FIRE HYDRANT
EXISTING POWER POLE
SMH #1 RIM=463.2' (APPROXIMATE - FIELD VERIFY TO MATCH EXISTING ROAD GRADE) 8" SDR 35 IN=456.9' 8" SDR 35 OUT=456.8'
SMH #2 RIM=463.8' (APPROXIMATE - FIELD VERIFY TO MATCH EXISTING ROAD GRADE) 8" SDR 35 IN=457.7' 8" SDR 35 OUT=457.6'
PROPOSED OVERHEAD POWER
PROPOSED POWER POLES
PROPOSED 8" C900 PVC WATER SERVICE
SMH #3 RIM=470.5' 8" SDR 35 IN=464.0' 6" SDR 35 IN=464.0' 8" SDR 35 OUT=463.9'
ROBERT & MARY HARRIS LIFE ESTATE
VERMONT GRID NORTH

GRAPHIC SCALE

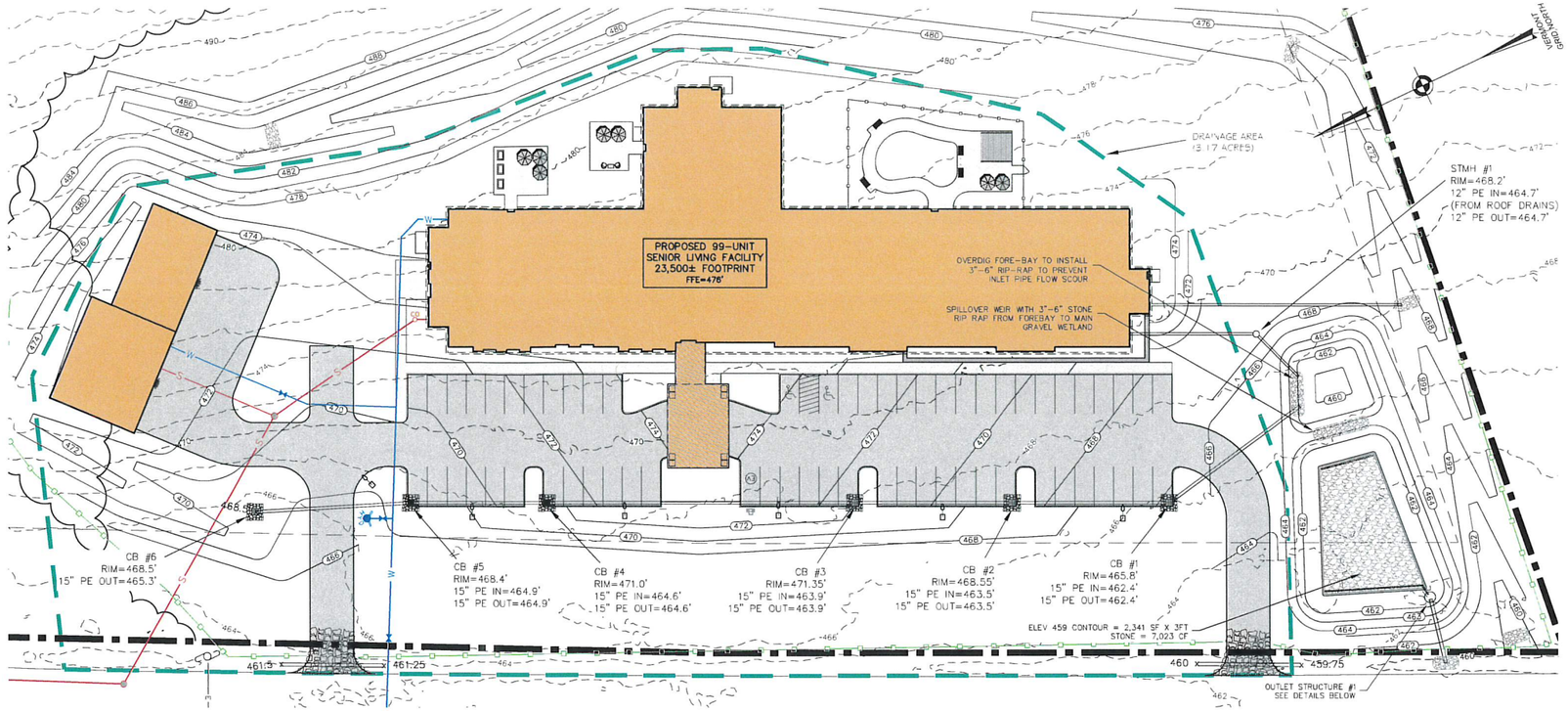
(IN FEET)
1 inch = 40 ft

DATE 6-1-22	REVISION REVISED PER TOWN COMMENTS		BY SEC
SURVEY OBCA	☐ RECORD DRAWING ☐ PRELIMINARY ■ FINAL ☐ SKETCH/CONCEPT	Senior Living Facility Sand Hill Road Castleton Vermont	DATE 04-08-22
DESIGN SEC/BW/C	O'LEARY-BURKE CIVIL ASSOCIATES, PLC		JOB # 2021-08
DRAWN SEC/BW/C			FILE 2021-08-S7
CHECKED PJO	13 CORPORATE DRIVE ESSEX JCT., VT PHONE 878-9990 FAX 878-9989 E-MAIL obca@olearyburke.com	Utilities Plan	PLAN SHEET # 3
SCALE 1"=40'			



OUTLET CONTROL STRUCTURE

NTS

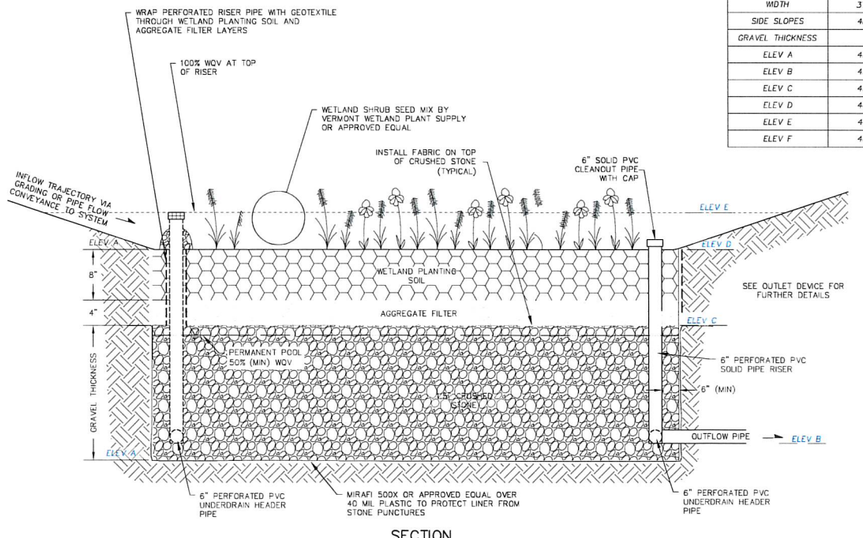


GRAVEL WETLAND SCHEDULE

ITEM	GRAVEL WETLAND SYSTEM #2	DESCRIPTION
NO. CELLS	1	NUMBER OF CELLS
LENGTH	62.5'±	LENGTH OF EACH CELL AT BOTTOM
WIDTH	37.5'±	WIDTH OF EACH CELL AT BOTTOM
SIDE SLOPES	4H:1V	SIDE SLOPES OF CELLS
GRAVEL THICKNESS	3'	THICKNESS OF GRAVEL
ELEV A	456.0	BOTTOM OF SYSTEM
ELEV B	456.5	6" ABOVE BOTTOM TO OS (OUTLET STRUCTURE)
ELEV C	459.0	TOP OF STONE CONTAINING WATER QUALITY
ELEV D	460.0	BOTTOM OF OPEN BAYS
ELEV E	461.7	100% WQV OR MORE – 1ST OUTLET HOLE
ELEV F	465.0	TOP OF SYSTEM

STORMWATER DESIGN

- DRAINAGE AREA: 3.17 AC.
- IMPERVIOUS: 1.42 AC.
- STATE TREATMENT WETLAND SPREADSHEET
  WQV TO PRACTICE = 0.1197 AF = 5,214 CF REQUIRED
  STONE PROVIDED = 7,023 CF PROVIDED (SEE ABOVE)
- 10% OF WATER QUALITY VOLUME IN FOREBAY 5,214 CF X 0.10 = 522 CF
  FOREBAY PROVIDED (SEE ABOVE)= 2,265 CF
- SYSTEM SIZED TO PROVIDE FULL WATER QUALITY VOLUME BELOW THE FIRST ORIFICE THROUGH HYDROCAD MODELING
- SYSTEM DESIGNED TO MEET GIVEN BELOW RAINFALL EVENTS FROM NOAA ATLAS 14
  –1 YEAR (2.20 IN)
  –10 YEAR (3.75 IN)
  –15 YEAR (4.05 IN)

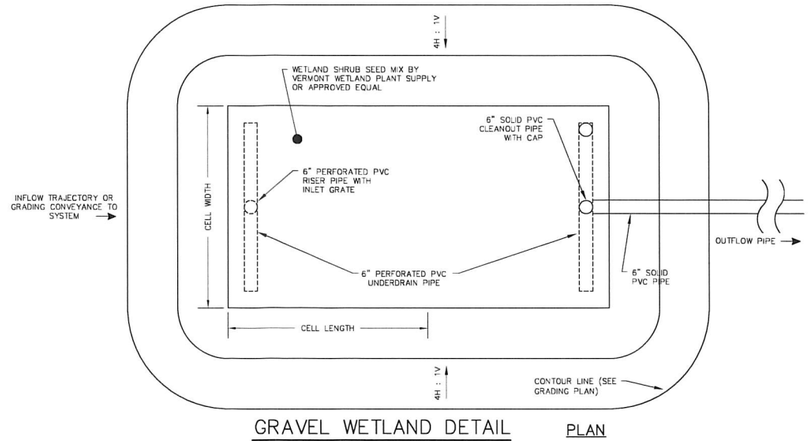


SECTION

GRAVEL WETLAND DETAIL

NTS

NOTE:
CONTRACTOR MUST CALL O'LEARY-BURKE FOR INSPECTION OF TREATMENT WETLANDS AND COORDINATE MILESTONES OF INSTALLATION TO ENSURE COMPLIANCE WITH THE PLANS AT 878-9990



GRAVEL WETLAND DETAIL PLAN

NTS

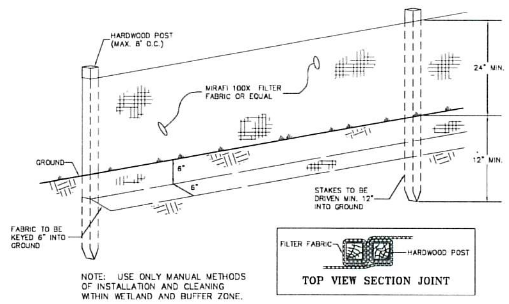
GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft

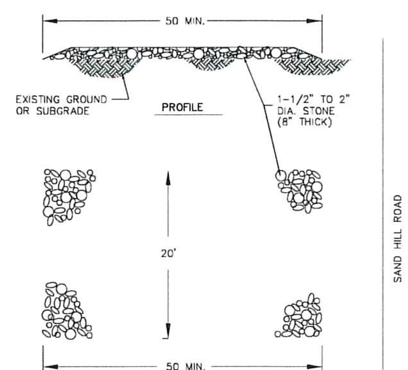
BRIAN W. CURRIER — No. 018.0114132 — REGISTERED PROFESSIONAL ENGINEER — STATE OF VERMONT

DATE 6-1-22	REVISION REVISED PER TOWN COMMENTS		BY SEC
SURVEY ORCA	☐ RECORD DRAWING ☐ PRELIMINARY ■ FINAL ☐ SKETCH/CONCEPT	Senior Living Facility Sand Hill Road	DATE 04-28-22
DESIGN SEC/BWC			JOB # 2021-08
DRAWN SEC/BWC	O'LEARY-BURKE CIVIL ASSOCIATES, PLC	Castleton Vermont	FILE 2021-08-S7
CHECKED PJO	12 CORPORATE DRIVE, ESSEX JCT. VT, PHONE: 878-9990, FAX: 878-9993, E-MAIL: oboc@olearyburke.com	Stormwater Management Plan	PLAN SHEET # 4
SCALE 1" = 30'			



SILT FENCE DETAIL

NTS

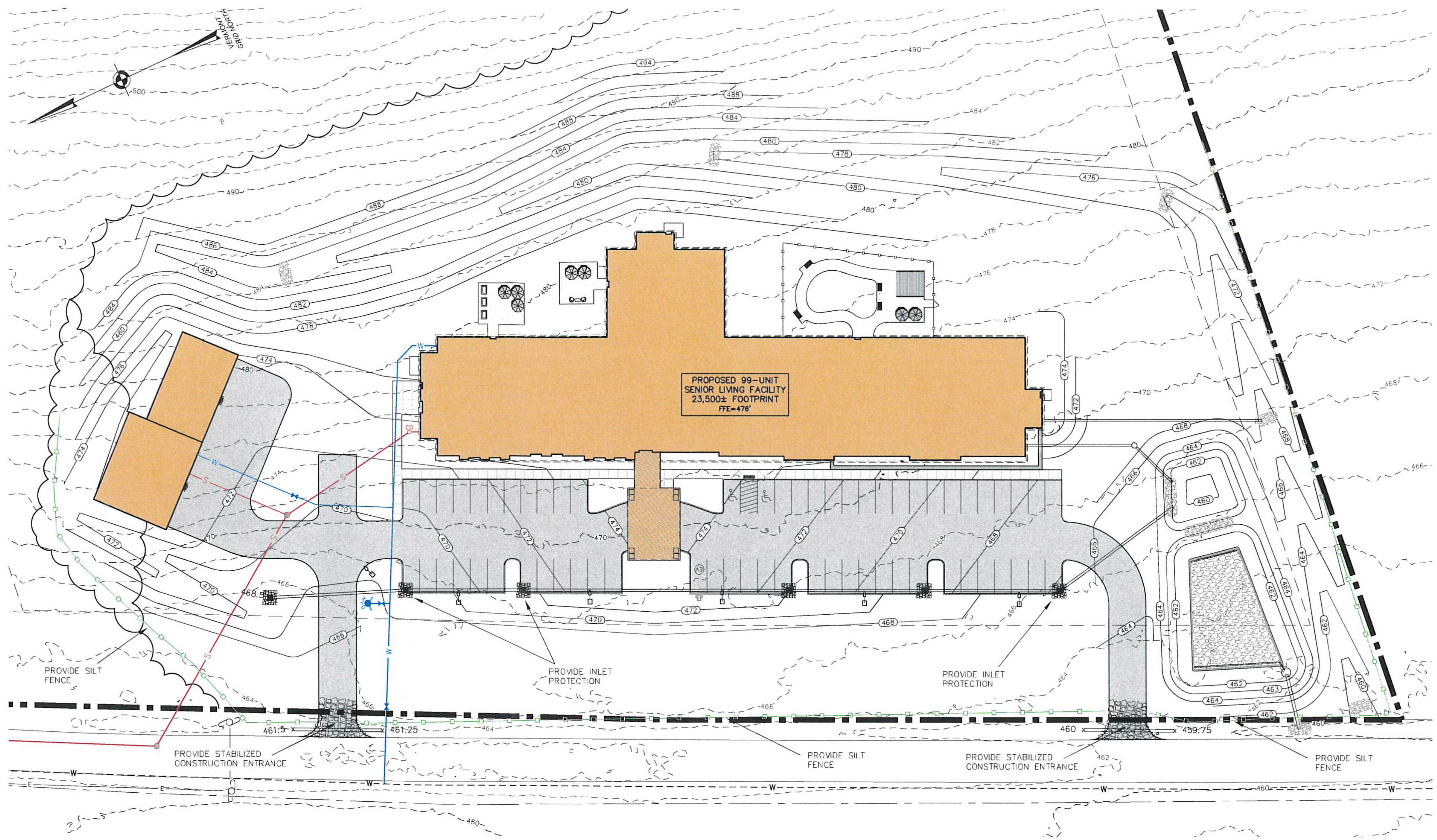


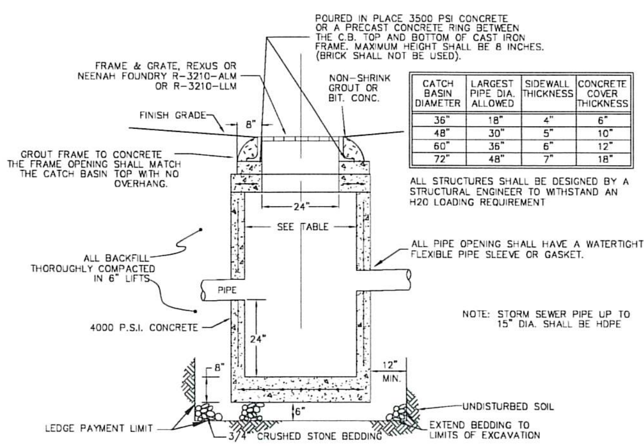
NOTES:

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 CONTRACTOR.
2. THE USE OF CALCIUM CHLORIDE OR WATER MAY BE NECSSARY TO CONTROL DUST DURING THE SUMMER.
3. PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND PUBLIC RIGHT-OF-WAY.

STABILIZED CONSTRUCTION ENTRANCE

NTS





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"

ALL STRUCTURES SHALL BE DESIGNED BY A STRUCTURAL ENGINEER TO WITHSTAND AN H20 LOADING REQUIREMENT

ALL PIPE OPENING SHALL HAVE A WATERTIGHT FLEXIBLE PIPE SLEEVE OR GASKET.

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

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 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:

PRECAST CATCH BASIN

NTS

EROSION CONTROL SPECIFICATIONS

1. SEE OTHER DRAWINGS OF THESE PLANS FOR ADDITIONAL STORMWATER AND EROSION CONTROL SPECIFICATIONS AND DETAILS.
2. THE ROADWAY AND YARD FINISH GRADE SLOPES SHALL NOT BE STEEPER THAN 3 ON 1. THE FINISHED GRADE SLOPES SHALL BE IMMEDIATELY GRADED AND MULCHED.
3. ALL DISTURBED AREAS SHALL BE STABILIZED WITH SEEDING AND MULCHING PRIOR TO OCTOBER 1 OF EACH YEAR. ANY DISTURBED AREAS OUTSIDE OF THE ROADWAY SHALL BE IMMEDIATELY SEEDED AND MULCHED WITHIN 15 DAYS.
4. THE EROSION CONTROL METHODS USED DURING CONSTRUCTION OF THE DEVELOPMENT SHALL PROCEED IN THE FOLLOWING SEQUENCE:

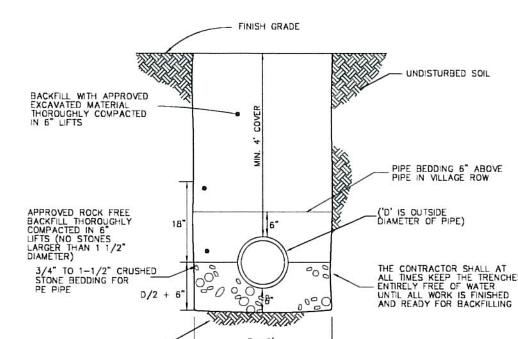
   A) THE CONTRACTOR SHALL INSTALL AND MAINTAIN SILT FENCES, INLET PROTECTION, AND OTHER EROSION CONTROL MEASURES, IF REQUIRED, AS ORDERED BY THE ENGINEER. THE EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REPAIRED AFTER EVERY RAINFALL UNTIL THE NEW IMPROVEMENTS ARE PAVED AND ALL DISTURBED AREAS HAVE BEEN GRASSED. THE REPAIR OF THE EROSION CONTROL MEASURES WILL INCLUDE REMOVING ANY SEDIMENTATION. THE SEDIMENT MAY BE PLACED AS FILL IN THE LOW AREAS, IF APPROVED BY THE

   B) THE TOPSOIL SHALL BE REMOVED FROM THE AREAS TO BE GRADED AND STOCKPILED. A SILT FENCE SHALL BE PLACED CONTINUOUSLY AROUND THE BOTTOM OF THE PILE.

   C) IN AREAS NEAR THE NEW CONSTRUCTION, THE CONTRACTOR SHALL PROTECT THE TRUNKS OF TREES TO BE SAVED WITH WOODEN SNOW FENCING ALONG THE DRIPLINE TO PROTECT THEM FROM INJURY. IN THESE PROTECTED AREAS NO CONSTRUCTION ACTIVITIES SHALL OCCUR. NO STORAGE OF MATERIALS, RUNNING OF MACHINERY, PORTO-LETS ETC. PLACE STAY OUT SIGNS. THESE INSTRUCTIONS MUST BE CONVEYED TO THE CONSTRUCTION CREW.

   D) THE SITE GRADING WILL THEN BE DONE, AND THE PIPELINES WILL BE INSTALLED IMMEDIATELY FOLLOWING GRADING. THE CONTRACTOR WILL INSTALL AND MAINTAIN INLET PROTECTION AROUND THE CATCH BASINS UNTIL THE ROADWAY HAS BEEN PAVED AND GRASS HAS BEEN ESTABLISHED ON THE SLOPES.

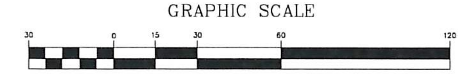
   E) THE CONTRACTOR WILL TOPSOIL, SEED, AND MULCH THE DISTURBED AREAS AS SOON AS POSSIBLE FOLLOWING COMPLETION OF ADJACENT CONSTRUCTION.



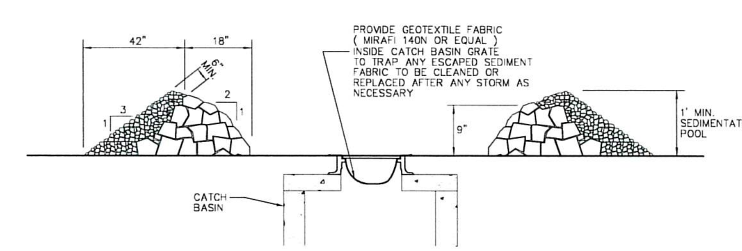
STORM DRAIN TRENCH

NTS

GRAPHIC SCALE



(IN FEET)
1 inch = 30 ft



INLET PROTECTION

NTS

STATE OF VERMONT — BRIAN W. CURRIER — No. 018.0114132 — REGISTERED PROFESSIONAL ENGINEER

DATE 6-1-22	REVISION REVISED PER TOWN COMMENTS		BY SEC
SURVEY OBCA	☐ RECORD DRAWING ☐ PRELIMINARY ■ FINAL ☐ SKETCH/CONCEPT	Senior Living Facility Sand Hill Road Castleton Vermont	DATE 04-08-22
DESIGN SEC/BWC			JOB# 2021-08
DRAWN SEC/BWC	O'LEARY-BURKE CIVIL ASSOCIATES, PLC 13 CORPORATE DRIVE ESSEX JCT., VT PHONE 878-9990 FAX 878-9989 E-MAIL obca@olearyburke.com		FILE 2021-08-S7
CHECKED PJO		Erosion Prevention & Sediment Control Plan	PLAN SHEET # 5
SCALE 1"=30			

Legend

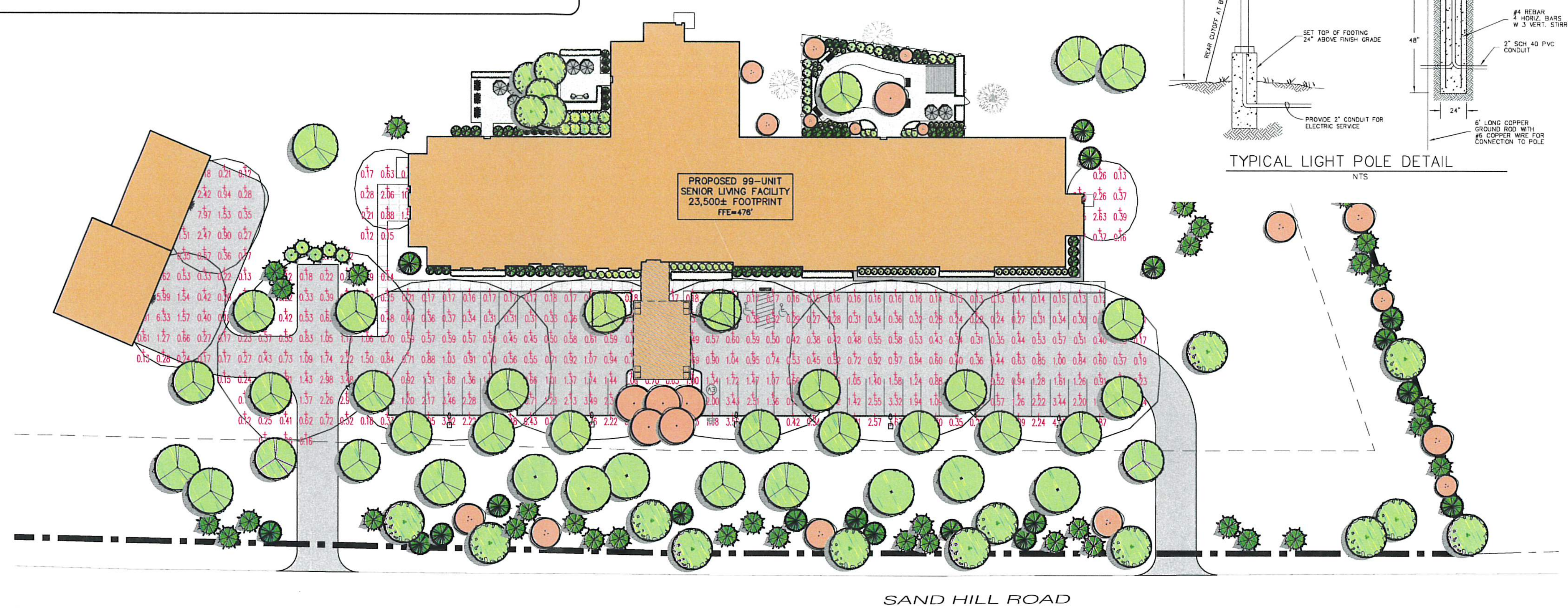
	PROJECT BOUNDARY
	EXISTING OUTLOT LINE
	PROPOSED PROPERTY LINE
	SETBACK
	SIDELINE OF EASEMENT
— — 476 — —	CONTOUR LINE (U.S.G.S. DATUM)
(476)	PROPOSED FINISH GRADE CONTOUR
	EDGE OF WOODED AREA
	PROPOSED CLEARING LIMITS
	EXISTING SEWERLINE
— S —	PROPOSED SEWER SERVICE
— FM —	PROPOSED SEWER FORCE MAIN
— W —	EXISTING WATERLINE
— W —	PROPOSED WATER SERVICE
	PROPOSED STORMWATER
— E —	PROPOSED ELECTRIC SERVICE
	EXISTING/PROPOSED HYDRANT
	PROPOSED LIGHTS
	PROPOSED RETAINING WALL
	PROPOSED FENCE

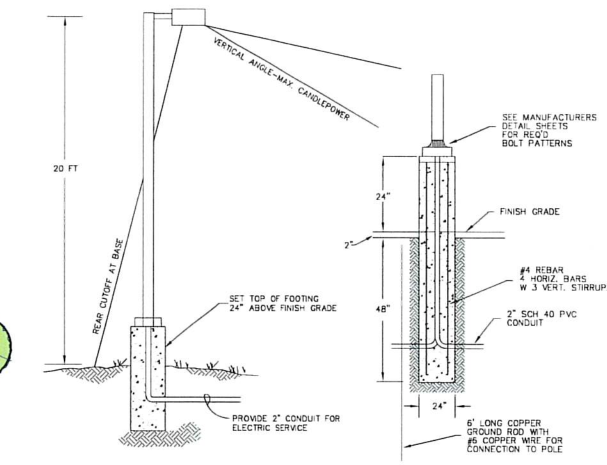
CALCULATION SUMMARY

AREA NAME	DIMENSIONS	GRID NAME	AVE	MAX	MIN	MAX/MIN	AVE/MIN
SITE PLAN	549'X262'	NEW GRID	<+> 0.88	10.85	0.11	96.77	7.83

LUMINAIRE SCHEDULE

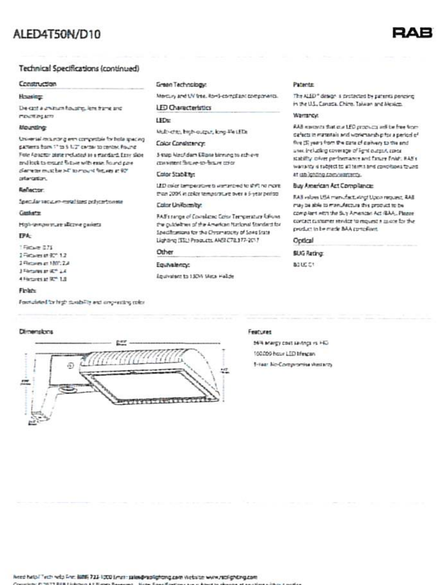
TYP	SYMB.	DESCRIPTION	LAMP	LUMENS	MOUNTING	LLF	QTY
BLDG		WPLED26 WALLPACK	26W	2660	10' BUILDING MOUNT	1.00	2
BLDG		WPLED13N WALLPACK	15W	1602	8' BUILDING MOUNT	1.00	2
AREA		ALED4T50N AREA LIGHT	50W	4559	20' POLE MOUNT	1.00	6

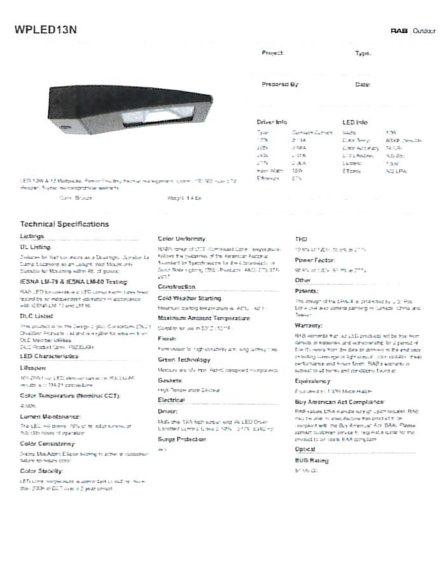


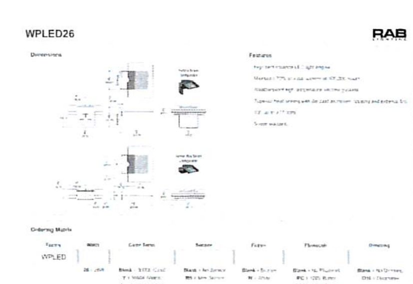


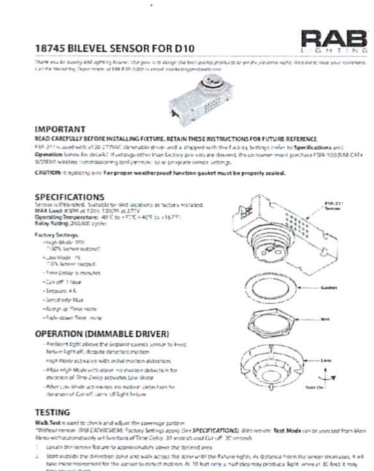
TYPICAL LIGHT POLE DETAIL

NTS





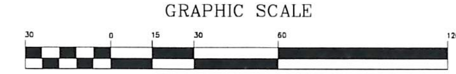




Note:

ALL LIGHTING FIXTURES SHALL HAVE THE RAB 18745 BILEVEL SENSOR INSTALLED. THE SENSOR SHALL BE PROGRAMMED TO DIM LIGHTING FIXTURES TO 10% OUTPUT AT NIGHT. WHEN THE SENSOR DETECTS MOTION, ALL LIGHTING FIXTURES WILL TURN TO 100% OUTPUT.

GRAPHIC SCALE



(IN FEET)
1 inch = 30 ft

DATE 6-1-22	REVISION REVISED PER TOWN COMMENTS		BY SEC
SURVEY OBCA	☐ RECORD DRAWING ■ FINAL ☐ PRELIMINARY ☐ SKETCH/CONCEPT	Senior Living Facility Sand Hill Road Castleton Vermont	DATE 04-08-22
DESIGN SEC/BV/C	O'LEARY-BURKE CIVIL ASSOCIATES, PLC		JOB# 2021-08
DRAWN SEC/BV/C	13 CORPORATE DRIVE ESSEX JCT., VT PHONE 878-9990 FAX 878-9989 E-MAIL obca@olearyburke.com	Lighting Plan	FILE 2021-08-S7
CHECKED PJO			PLAN SHEET #
SCALE 1"=30'			7

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 SOLID WALL PIPE MEETING ASTM SPECIFICATIONS D-3034 OR F679.

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:

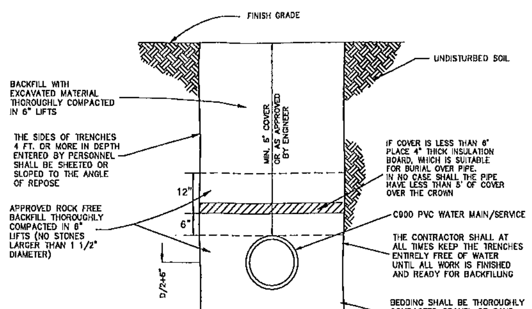
WHERE REQUIRED ON THE PLANS, SEWER SERVICE CONNECTIONS FOR ONE HOUSE SHALL BE CONSTRUCTED OF SIX INCH (6") PIPE UNLESS OTHERWISE NOTED ON THE PLANS OF THE TYPE MATERIAL SPECIFIED UNDER THIS SECTION. THE PIPE SHALL BE LAID AND ITS JOINTS MADE AS REQUIRED FOR SEWER CONSTRUCTION IN THIS SPECIFICATION.

OPEN ENDS OF PIPES SHALL BE PROPERLY SEALED TO PREVENT DAMAGE AND INTRUSION OF FOREIGN MATTER WHERE HOOKUP TO THE BUILDING SEWER IS NOT COINCIDENT 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.

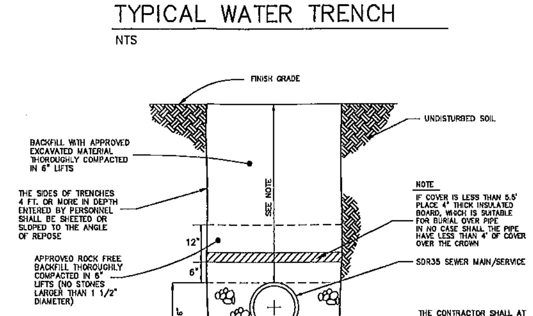
J. CLEANOUTS FOR SEWERS:

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 WATER TRENCH

NTS



TYPICAL SEWER TRENCH

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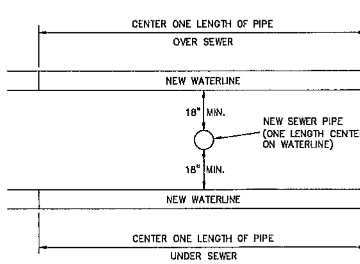


WHERE SEWER MUST BE LAID ABOVE WATER MAIN:

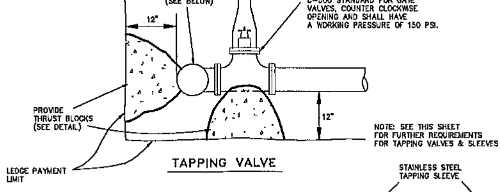
A) SEWER PIPE MUST BE CONSTRUCTED TO WATER MAIN STANDARDS FOR A MIN. DISTANCE OF 20 FEET EITHER SIDE OF CROSSING.

B) SEWER PIPE SECTION CONSTRUCTED TO WATER MAIN STANDARDS MUST BE PRESSURE TESTED TO MAINTAIN 50 PSI FOR 15 MINUTES WITHOUT LEAKAGE.

C) ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE WATER MAIN.

SEWER / WATER SEPARATION DETAIL FOR CROSSINGS

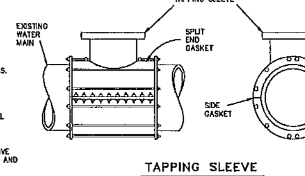
NTS



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. BOLTS AND NUTS SHALL BE TYPE 302 OR 304 STAINLESS STEEL.
4. UPON FINAL TIGHTENING AND TESTING ALL BOLTS SHALL BE BRUSH COATED WITH BITUMASTIC COLD APPLIED MATERIAL TO ALL EXPOSED NUTS & BOLTS.
5. ALL WET TAPS WILL BE WITNESSED BY A REPRESENTATIVE FROM BOTH THE TOWN OF ESSEX PUBLIC WORKS DEPT. AND THE CHAMPLAIN WATER DISTRICT.



TAPPING SLEEVE

TAPPING VALVE & SLEEVE DETAIL

NTS

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

GENERAL WATER SPECIFICATIONS

1.1 GENERAL:

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

1.2 WATER PIPE MATERIALS:

PVC PIPE
Pipe shall be a minimum diameter of six inches (6") and conform to current AWWA C110 or ANSI Specification A21.10. Push-on joint pipe shall be minimum thickness Class 52. 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.

TRACER WIRE
Tracer wire (12 AWG) shall be installed adjacent to (on top of or beside) all water pipe that is installed. Wire to be covered by soil when the water trench is backfilled.

1.2 FITTINGS:

Ductile iron fittings shall be cement-lined, have 350 pounds working pressure, and be in accordance with AWWA C-104, C-111, and C-110 or C-153 for compact fittings. Mechanical joint nuts and bolts shall be high strength, low alloy steel per ANSI A-21.11. Ductile iron fittings larger than twelve inches (12") shall have a standard body length equal to Class 250 cast iron fittings. Cast iron Class 250 fittings will be allowed in lieu of ductile iron fittings in sizes larger than twelve inches (12").

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

1.4 GATE VALVE RESILIENT SEAT:

VALVES SHALL BE KENNEDY KS-RW MJ 7571.
VALVES SHALL BE MANUFACTURED IN NORTH AMERICA TO MEET ALL REQUIREMENTS OF AWWA SPECIFICATIONS C-515. VALVES TWELVE INCHES (12") AND SMALLER SHALL BE BUBBLE-TIGHT, ZERO LEAKAGE AT 250 PSI WORKING PRESSURE. VALVES SHALL HAVE NON-RISING STEMS, OPEN COUNTERCLOCKWISE, ADN BE PROVIDED WITH A TWO INCH (2") SQUARE OPERATING NUT WITH ARROW CAST IN METAL TO INDICATE DIRECTION OF OPENING.

Each valve shall have maker's name, pressure rating, and year in which manufactured cast on the body. Prior to shipment from the factory, each valve shall be tested by hydrostatic pressure equal to twice the specified working pressure. 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 make:
Mueller Super Centurion 250 A423

Main Valve Opening:	5 1/4 inches
Nozzle Arrangement:	Two 2 1/2 inch hose nozzles with (6) threads per inch. One 4 1/2 inch pumper nozzle with (4) threads per inch. 5" Storz connection
Inlet Connection:	6 inch mechanical joint
Operating Nut:	Standard 1 inch pentagon
Direction of Opening:	Counterclockwise
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 (18"-21") clearance between the center 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 500 feet (500') between hydrants with a minimum water flow of 500 gallons per minute with a 20 psi residual pressure from each hydrant.

1.8 WATER SERVICE CONNECTION:

A. GENERAL REQUIREMENTS

The Contractor shall install an eight inch (8") C900 PVC (DR18) water service as indicated on the contract drawings or as directed by the Engineer. The service shall include an 8 inch (8") gate valve.

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').

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 potabe. All testing shall be conducted in the presence of the Engineer.

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

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

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

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

D. DISINFECTION:

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

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

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

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

E. FROST PROTECTION OF SHALLOW WATERLINES

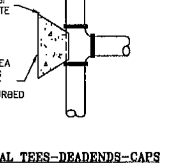
Waterlines with less than six feet six inches (6'6") of cover over the crown, or where indicated on the plans, shall be protected against freezing by installation of four inch (4") thick Styrofoam SM insulating sheets with a total width of four feet (4') or twice the pipe diameter, whichever is greater. The sheets shall be placed six inches (6") above the crown of the main after compaction of the six inch (6") lift immediately above the crown. Care shall be exercised by the Contractor during backfill and compaction over the styrofoam sheets to prevent damage to the sheets. Styrofoam SM sheets shall meet the compressive strength requirements of ASTM D1621-73 and shall be as manufactured by Dow Chemical Company, Midland, Michigan, or equivalent. In no case shall the waterlines have less than five feet (5') of cover over the top of the pipe, as approved by the Town of Castleton.

SOIL TYPE – SAND

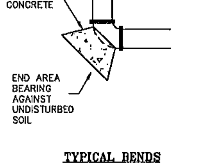
FITTING \ SIZE	6"	8"	12"
11¼ & 22½	2	2	5
45°	2	4	9
90°	4	8	17
TEES OR END CAPS	3	6	12
VALVES	2	2	2

SQ FT BEARING AREA

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



TYPICAL TEES-DEADENDS-CAPS



TYPICAL BENDS

NOTE: PLACE 4 mil POLYETHYLENE BETWEEN FITTING AND THRUST BLOCK

THRUST BLOCK DETAIL

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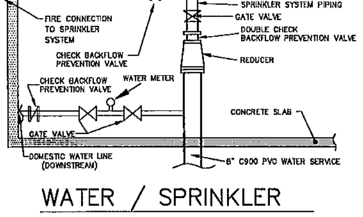

WATER / SPRINKLER CONNECTION

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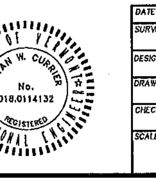
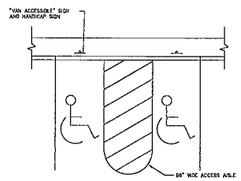


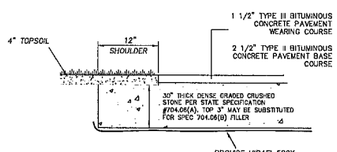
DATE	REVISION		BY
SURVEY OBCA	☐ RECORD DRAWING ☐ PRELIMINARY ■ FINAL ☐ SKETCH/CONCEPT	Senior Living Facility Sand Hill Road — Castleton, Vermont	DATE 04-08-22
DESIGN SEC/BWC	O'LEARY-BURKE CIVIL ASSOCIATES, PLC		JOB# 2021-08
DRAWN SEC/BWC	13 CORPORATE DRIVE ESSEX JCT. VT PHONE: 878-9990 FAX: 878-9989 E-MAIL: obca@olearyburke.com		FILE 2021-08-S7
CHECKED PJO		Water & Sewer Details	PLAN SHEET # 8
SCALE 1"=30'			

GENERAL CONSTRUCTION NOTES

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 CASTLETON REQUIREMENTS, THE WRITTEN TECHNICAL SPECIFICATIONS, AND THESE PLANS.
2. THE CONTRACTOR SHALL CONTACT ALL UTILITIES BEFORE EXCAVATION TO VERIFY THE LOCATION OF ANY UNDERGROUND LINES. THE CONTRACTOR SHALL NOTIFY "DIGSAFE" AT 1-800-225-4977 PRIOR TO ANY EXCAVATION.
3. UTILITIES INFORMATION SHOWN HEREON WERE OBTAINED FROM BEST AVAILABLE SOURCES AND MAY OR MAY NOT BE EITHER ACCURATE OR COMPLETE. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY UTILITY, PUBLIC OR PRIVATE, SHOWN OR NOT SHOWN HEREON. THE CONTRACTOR SHALL CONNECT OR RECONNECT ALL UTILITIES TO THE NEAREST SOURCE THROUGH COORDINATION WITH UTILITY OWNER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND REMOVAL OF ALL EXISTING VEGETATION, PAVEMENT AND STRUCTURES NECESSARY TO CONSTRUCT THIS PROJECT UNLESS OTHERWISE NOTED ON THESE PLANS. THE CONTRACTOR SHALL REMOVE ALL EXCESS MATERIAL, DEBRIS AND TRASH FROM THE SITE UPON COMPLETION OF CONSTRUCTION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
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, PLC. OF ESSEX JUNCTION, VERMONT, TO ENSURE COMPLIANCE WITH THE APPROVED 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. FOR ANY WORK WITHIN THE HIGHWAY RIGHT-OF-WAY A MINIMUM OF ONE-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. CONTINUOUS TWO-WAY TRAFFIC WILL BE REQUIRED AT NIGHT, DURING PEAK-HOURS, AND WHENEVER POSSIBLE DURING ACTUAL CONSTRUCTION ACTIVITIES. UNIFORMED TRAFFIC CONTROL OFFICERS SHALL DIRECT TRAFFIC DURING PEAK HOURS WHEN THERE IS ONE-WAY TRAFFIC OR WHEN DEEMED NECESSARY BY THE TOWN OR STATE. TEMPORARY CONSTRUCTION SIGNS AND TRAFFIC CONTROL SIGNS SHALL BE ERECTED BY THE CONTRACTOR IN ACCORDANCE WITH STATE AND TOWN STANDARDS.
9. TO ASSURE COMPLIANCE WITH THE PLAN(S), THE CONTRACTOR SHALL NOTIFY THE town ENGINEER and the consulting engineer 48 HOURS IN ADVANCE OF STARTING ANY WORK, CUTTING THE PAVEMENT, beginning THE INSTALLATION OF ANY UTILITIES, BRINGING IN ANY NEW GRAVEL FOR THE NEW BASE, paving and FINAL INSPECTION.
10. 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."
11. TOPSOIL SHALL BE STOCKPILED, SEEDED, AND MULCHED UNTIL REUSED. HAY BALES SHALL BE PLACED AND STAKED CONTINUOUSLY AROUND THE BOTTOM OF THE TOPSOIL PILES.
12. HEALTHY EXISTING TREES AS SHOWN ON THE SITE PLAN TO BE SAVED SHALL BE PROTECTED BY THE CONTRACTOR.
13. OPEN CUT AREAS SHALL BE MULCHED OUTSIDE OF ACTUAL WORK AREAS, AND HAY BALES SHALL BE EMPLOYED TO CONFINE SHEET WASH AND RUNOFF TO THE IMMEDIATE OPEN AREA AS ORDERED BY THE ENGINEER.
14. AT COMPLETION OF GRADING, SLOPES, DITCHES, AND ALL DISTURBED AREAS SHALL BE SMOOTH AND FREE OF POCKETS WITH SUFFICIENT SLOPE TO ENSURE DRAINAGE.
15. ALL FILL SHALL BE PLACED IN 6 INCH LIFTS AND THOROUGHLY COMPACTED TO 85% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698 STANDARD PROCTOR, UNLESS OTHERWISE SPECIFIED.
16. THE CONTRACTOR SHALL INSTALL EROSION CONTROL DEVICES AS NEEDED TO PREVENT SEDIMENTATION. THE HAYBALE DAMS, SILT FENCES, DITCHES, AND OTHER EROSION CONTROL DEVICES, SHALL BE MAINTAINED AND REPAIRED BY THE CONTRACTOR AFTER EVERY RAINFALL OF 1/2 INCH OR MORE 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.



VAN-ACCESSIBLE PARKING
NTS



PARKING AREA CROSS-SECTION
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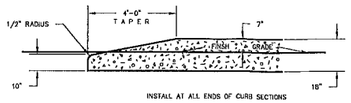
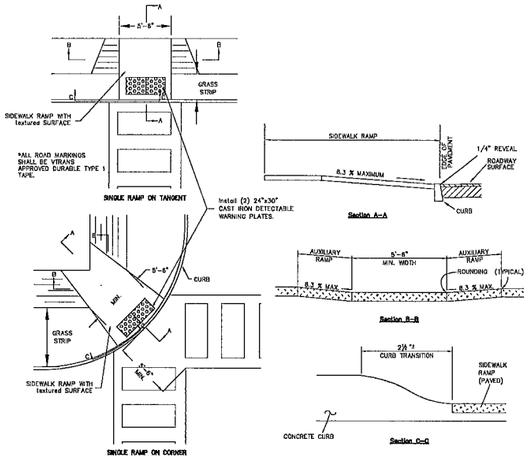


INSTALL AT ALL ENDS OF CURB SECTIONS

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 CONCRETE CURB SHALL RECEIVE TWO COATS OF ANTI-SPALLING COMPOUND AFTER THE INITIAL CURING PERIOD (APPROXIMATELY 28 DAYS).

TYPICAL TAPERED CURB
NTS



SIDEWALK RAMP DETAIL
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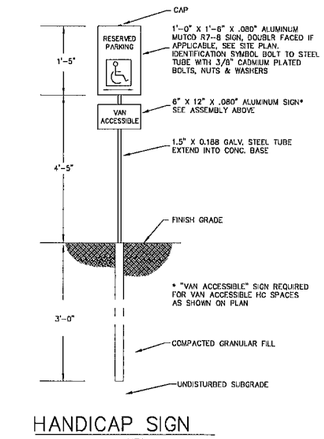

HANDICAP SIGN
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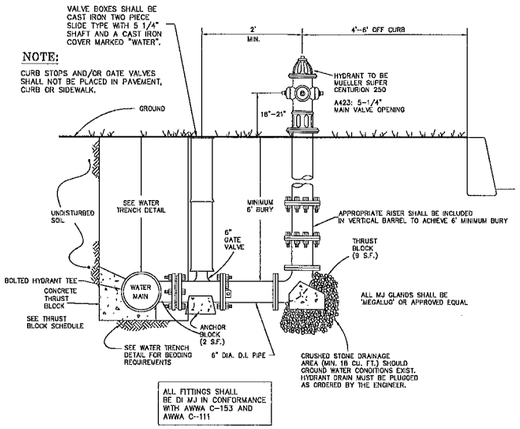
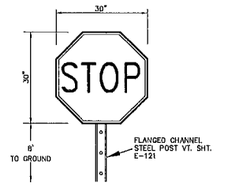


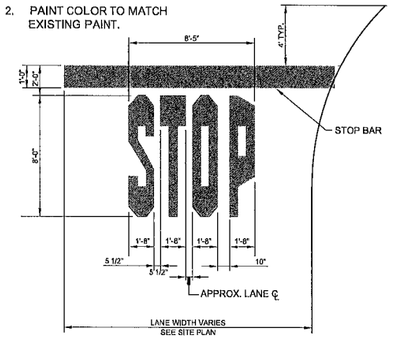
HYDRANT DETAIL
NTS



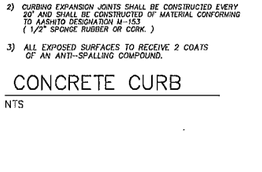
* SIGN SHALL CONFORM TO E9-1-1 REQUIREMENTS TO BE PROVIDED AT ALL INTERSECTIONS

STOP SIGN DETAIL
N.T.S. VT. SHT. E-143

NOTES:
1. ALL TRAFFIC MARKINGS TO BE SOLID PAINT AS PER DIMENSIONS SHOWN.
2. PAINT COLOR TO MATCH EXISTING PAINT.



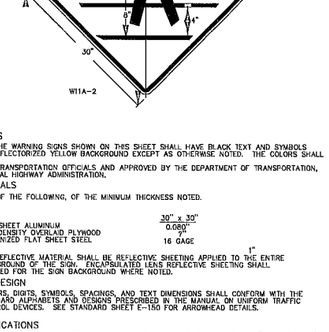
TYPICAL PAVEMENT MARKINGS
N.T.S.



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.

CONCRETE CURB
NTS



COLORS
ALL THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT AND SYMBOLS ON REFLECTORIZED YELLOW BACKGROUND EXCEPT AS OTHERWISE NOTED. THE COLORS SHALL AND TRANSPORTATION OFFICIALS AND APPROVED BY THE DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

MATERIALS
ANY OF THE FOLLOWING, OF THE MINIMUM THICKNESS NOTED.

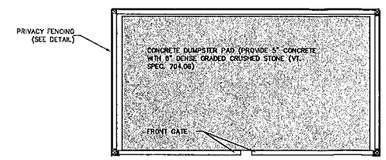
	30" x 30"
FLAT SHEET ALUMINUM	0.080"
HIGH DENSITY OVERLAID PLYWOOD	3/4"
GALVANIZED FLAT SHEET STEEL	16 GAGE

THE REFLECTIVE MATERIAL SHALL BE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR THE SIGN BACKGROUND WHERE NOTED.

TEXT DESIGN
LETTERS, DIGITS, SYMBOLS, SPACINGS, AND TEXT DIMENSIONS SHALL CONFORM WITH THE STANDARD ALPHABETS AND DESIGNS PRESCRIBED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. SEE STANDARD SHEET E-116D FOR ARROWHEAD DETAILS.

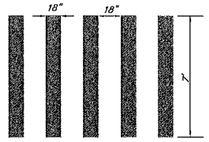
SPECIFICATIONS
WARNING SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR "TRAFFIC SIGNS".

CROSS WALK SIGN DETAIL
N.T.S. VT. SHT. E-152

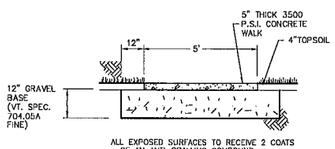


PLAN VIEW

DUMPSTER FENCING
NTS

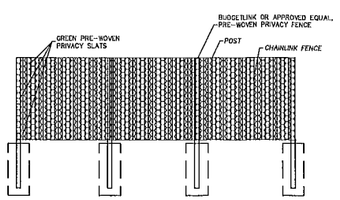


CROSSWALK MARKINGS
N.T.S.

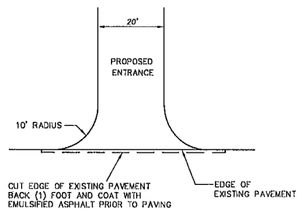


ALL EXPOSED SURFACES TO RECEIVE 2 COATS OF AN ANTI-SPALLING COMPOUND.

TYPICAL SIDEWALK SECTION
NTS



SCREENED / PRIVACY FENCING
NTS



INTERSECTION DETAIL
NTS

GRADATION REQUIREMENTS

DENSE GRADED CRUSHED STONE VT SPEC 704.06	3 1/2"	100 %
	3"	90-100%
	2"	75-100%
	1"	50-80%
	1/2"	30-60%
	#4	15-40%
	#200	0-8 %

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

BRYAN W. CURRIER No. 018.0114132 REGISTERED PROFESSIONAL ENGINEER

DATE 6-1-22	REVISION REVISED PER TOAN COMMENTS		BY SEC
SURVEY OBCA	☐ RECORD DRAWING ☐ PRELIMINARY ■ FINAL ☐ SKETCH/CONCEPT	Senior Living Facility Sand Hill Road	DATE 04-28-22
DESIGN SEC/BWC	O'LEARY-BURKE CIVIL ASSOCIATES, PLC	Castleton Vermont	JOB# 2021-08
DRAWN SEC/BWC	13 CORPORATE DRIVE ESSEX JCT., VT PHONE: 878-9880 FAX: 878-9389 E-MAIL: obca@olearyburke.com	Roadway & General Construction Details	FILE 2021-08-S7
CHECKED PJD			PLAN SHEET # 9
SCALE 1"=30'			

Planting Schedule

	Qty.	Code	Scientific Name	Common Name	Size	Spec	Notes
TREES	18	AB	ABIES balsamea	Balsam Fir	5' Ht.	B&B	
	10	ARR	ACER rubrum 'Red Sunset'	Red Sunset Red Maple	2" Cal.	B&B	
	5	AxF	ACER x freemanii 'Autumn Blaze'	Autumn Blaze Maple	8" Ht.	B&B	Clump Form
	10	BNH	BETULA nigra 'Heritage'	Heritage River Birch	10" Ht.	B&B	multi-stemmed
	5	BPS	BETULA papyrifera 'Select'	Paper Birch	6' Ht.	B&B	Clump Form
	6	CO	CELTIS occidentalis	Common Hackberry	2" Cal.	B&B	
	7	CCI	CRATAEGUS crusgalli inermis	Thornless Cockspur Hawthorn	8' Ht.	B&B	Clump Form
	8	GTH	GLEDITSIA t. 'Halka'	Halka Honeylocust	2" Cal.	B&B	
	6	HV	HAMAMELIS virginiana	Common Witchhazel	4' Ht.	B&B	multi-stemmed
	2	MLA	MAGNOLIA liliiflora 'ann'	Ann Magnolia	5-6' Ht.	B&B	multi-stemmed
	21	PG	PICEA glauca	White Spruce	5' Ht.	B&B	
	22	PS	PINUS strobus	White Pine	5' Ht.	B&B	
	5	PSA	PRUNUS sargentii	Sargent Cherry	2" cal.	B&B	
	9	QM	QUERCUS macrocarpa	Burr Oak	2" Cal.	B&B	
	1	SR	SYRINGA reticulata 'Ivory Silk'	Japanese Tree Lilac	1.5" Cal	B&B	
	5	TO	THUJA occidentalis 'Nigra'	Dark American Arborvitae	5' Ht.	B&B	
	8	TC	TILIA cordata 'Greenspire'	Greenspire Linden	1.5" Cal	B&B	
SHRUBS	11	AN	AZALEA Northern Hi-Lights	Northern Hi-Lights Azalea	24" Ht.	#3 Cont.	
	13	CSF	CORNUS sericea 'Firedance'	Firedance Red-Osier Dogwood	2' Ht.	#3 Cont.	
	23	HPB	HYDRANGEA paniculata 'Bobo'	Bobo Panicle Hydrangea	18" Ht	#2 Cont.	
	10	HPS	HYDRANGEA paniculata 'Sweet Summer'	Sweet Summer Hydrangea	30" Ht	B&B	
	15	JCM	JUNIPERUS chinensis 'Mint Julep'	Mint Julep Juniper	24" Ht.	#3 Cont.	
	10	JCS	JUNIPERUS chinensis 'Sea Green'	Sea Green Juniper	30"	B&B	
	14	PF	POTENTILLA fruticosa 'Pink Beauty'	Pink Beauty Potentilla	18" Ht.	#3 Cont.	
	13	SA	SPIRAEA albiflora	White Spirea	18"	#3 Cont.	
	23	SJ	SPIRAEA japonica 'Little Princess'	Spirea	18"	#3 Cont.	
	2	SPJ	Syringa prestoniae 'James MacFarlane'	James MacFarlane Lilac	36" Ht.	#5 Cont.	
	18	TMD	TAXUS media 'Densiformis'	Dense Yew	18" Ht.	B&B	
PERENNIALS	18	AG	ANDROPOGON gerardii 'Red October'	Red October Big Bluestem	Clump	#2 Cont.	
	9	ACP	ASTILBE chinensis 'Pumila'	Pumila Astilbe	Clump	#1 Cont.	
	24	AF	ATHYRIUM f. 'Lady In Red'	Northern Lady Fern	Clump	#1 Cont.	
	18	CB	CALAMAGROSTIS brachytricha	Korean Feather Reed Grass	Clump	#1 Cont.	
	25	CK	CALAMAGROSTIS 'Karl Foerster'	Feather Reed Grass	Clump	#1 Cont.	
	20	EPR	ECHINACEA p. 'Rainbow Marcella'	Rainbow Marcella Echinacea	Clump	#2 Cont.	
	27	HHR	HEMEROCALLIS 'Rosy Returns'	Rosy Returns Daylily	Clump	#2 Cont.	30" O.C.
	14	HSO	HEMEROCALLIS 'Stella Odorata'	Rosy Returns Daylily	Clump	#2 Cont.	30" O.C.
	62	RAG	RHUS aromatica 'Gro-low'	Gro-low Fragrant Sumac	18" Ht.	#3 Cont.	
	12	RFG	RUDBECKIA fulgida var. s. 'Goldsturm'	Black Eye Susan	Clump	#2 Cont.	

LEGEND

- DECIDUOUS SHADE TREE
- DECIDUOUS SMALL TREE
- CONIFER LARGE TREE
- CONIFER SMALL TREE
- DECIDUOUS SHRUB
- CONIFER SHRUB
- PERENNIAL, GROUNDCOVER
- EXISTING TREE TO REMAIN

EXISTING WOODS

PROPOSED EMERGENCY RESCUE BLDG.

DUMPSTER PAD WITH SCREENING

PORTABLE ALUMINUM PLANTERS

PROPOSED SENIOR LIVING FACILITY

SECURITY FENCE

14'x14' PERGOLA STRUCTURE

LAWN

STORM WATER POND

SCREENING PLANTINGS

SAND HILL ROAD

EXISTING WOODS

PLAN REVISED FOR REVIEW 06/01/2022

T.J. BOYLE ASSOCIATES
LANDSCAPE ARCHITECTURE & PLANNING

SCALE: 1" = 20'
0 10' 20' 40'

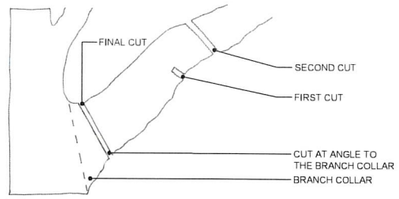
DATE: APRIL 7, 2022

SENIOR LIVING FACILITY

LANDSCAPE PLAN SHEET NO. L1.0

TREE PRUNING NOTES:

- REFER TO ANSI A300 (Part 1, MOST UPDATED VERSION) PRUNING SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- WORK SHOULD BE PREFORMED BY A CERTIFIED ARBORIST OR PROFESSIONAL TREE COMPANY.
- AVOID DAMAGING BARK AND OTHER LIVING TISSUE THROUGHOUT THE PRUNING PROCESS.
- MAKE SURE PRUNING TOOLS ARE SHARP.
- MAKE CLEAN CUT AS CLOSE TO THE BRANCH COLLAR AS POSSIBLE. DO NOT LEAVE A STUB.
- REDUCE THE SIZE OF THE BRANCH FOR A BETTER CUT.
- THE FIRST AND SECOND CUTS SHOULD BISECT THE ANGLE BETWEEN ITS BRANCH BARK RIDGE AND AN IMAGINARY LINE PERPENDICULAR TO THE BRANCH OR STEM.
- NOT MORE THAN 25% OF GROWTH SHOULD BE REMOVED FROM A CANOPY DURING A GROWING SEASON.



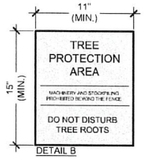
10 L2.0 TREE PRUNING ILLUSTRATION
NTS

TREE PROTECTION NOTES:

- PRIOR TO ANY CONSTRUCTION ACTIVITY, ALL TREE PRESERVATION MEASURES MUST BE IMPLEMENTED.
- CONTRACTOR CHOSEN FOR THIS WORK WILL BE AN EXPERIENCED TREE SERVICE FIRM THAT HAS SUCCESSFULLY COMPLETED TREE PROTECTION, ROOT PRUNING, AND TRIMMING WORK, SIMILAR TO THAT REQUIRED FOR THIS PROJECT.
- PRIOR TO CONSTRUCTION SHALL LOCATE AND VERIFY THE EXISTENCE OF ALL UTILITIES PRIOR TO STARTING WORK. CONTACT DIG SAFE TWO FULL BUSINESS DAYS BEFORE PLANTING. (48 HOUR MIN.)
- PRIOR TO THE SITE VISIT ALL TREE PRESERVATION AREAS SHALL BE STAKED OUT ON SITE BY SURVEY.
- TREE PROTECTION FENCING SHALL REMAIN INTACT THROUGHOUT ALL CONSTRUCTION ACTIVITY.
- THERE WILL BE NO EXCAVATION FOR PROPOSED SITE WORK WITHIN FENCED AREA.
- NO MATERIALS OR EQUIPMENT SHALL BE STORED, STOCKPILED OR OPERATED WITHIN TREE PROTECTION AREAS.
- TREE PROTECTED AREAS WILL BE LEFT AS NATURAL AS POSSIBLE.
- IN AREAS OF EXCAVATION NEAR TREE, IDENTIFY AND CUT ROOTS IN CONSULTATION WITH OWNER.
- REMOVE POORLY ATTACHED AND RUBBING LIMBS. CLEAN THE CROWN OF DEAD, DISEASED AND WEAK LIMBS. THINNING OF HEALTHY LIMBS IS NOT RECOMMENDED AT THIS TIME.
- ANY NECESSARY TRENCHING SHALL BE IMMEDIATELY BACKFILLED WITH REMOVED SOIL OR OTHER SOIL MIX AS DESCRIBED IN CONTRACT SPECIFICATIONS.
- AN AIR SPADE/AIR KNIFE IS TO BE USED TO EXCAVATE DOWN TO MINIMUM OF 2'. SEE DETAILS.

SIGN DETAIL

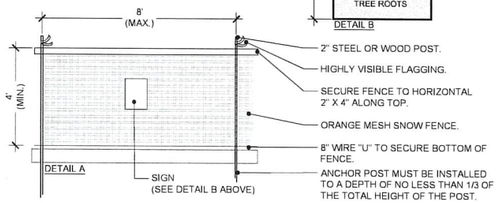
- ATTACHMENTS OF SIGNS TO TREES IS PROHIBITED.
- SIGNS SHOULD BE MADE OF VINYL OR PLASTIC.
- SIGNS SHOULD BE PROPERLY MAINTAINED, PENALTIES WILL BE ENFORCED FOR REMOVAL OF SIGNS.
- AVOID INJURY TO ROOTS WHEN PLACING POSTS FOR THE SIGNS.
- SIGNS SHOULD BE POSTED 50' O.C. AND WITHIN 20' OF THE BEGINNING AND END OF EACH FENCE TO BE VISIBLE TO ALL CONSTRUCTION PERSONNEL.
- SIGNS TO BE SECURELY FASTENED TO THE FENCE OR FENCE POSTS.
- SIGNS TO HAVE A WHITE BACKGROUND AND ORANGE OR RED TEXT.



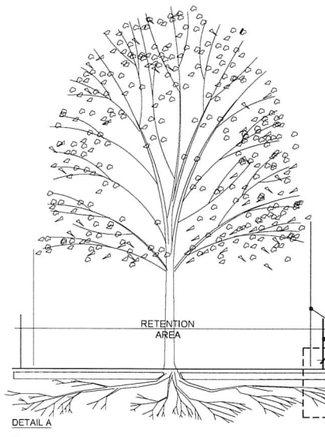
DETAIL B

FENCE DETAIL:

- THIS FENCE SERVES AS A TREE PROTECTION DEVICE ONLY.
- ROOT DAMAGE SHALL BE AVOIDED WITHIN FENCED AREA.
- FENCE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

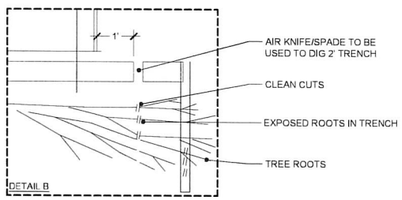


9 L2.0 TREE PROTECTION FENCE
NTS



ROOT PRUNING TRENCH NOTES:

- USE AN AIR SPADE/AIR KNIFE TO DIG THE 2' TRENCH AND EXPOSE THE ROOTS.
- EXPOSED ROOTS SHOULD BE CUT WITH A SAW OR LOPPERS TO MAKE A CLEAN SMOOTH CUT, NOT TORN OR RIPPED.
- MULCH EXPOSED ROOTS DURING THE CUTTING PROCESS TO KEEP FROM DRYING OUT.
- BACKFILL TRENCH WITH MIXTURE OF TOPSOIL AND COMPOST AS PER CONTRACT SPECIFICATIONS.



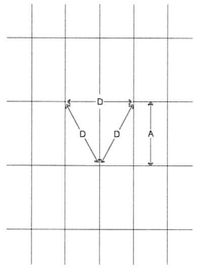
8 L2.0 TREE PROTECTION
NTS

GENERAL PLANTING NOTES:

1. THE LANDSCAPE CONTRACTOR SHALL LOCATE AND VERIFY THE EXISTENCE OF ALL UTILITIES PRIOR TO STARTING WORK. CONTACT DIG SAFE TWO FULL BUSINESS DAYS BEFORE PLANTING. (48 HOUR MIN.)
2. THE LANDSCAPE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING SHOWN ON ALL DRAWINGS. THE PLAN QUANTITIES SHALL ALWAYS SUPERCEDE THE PLANT LIST.
3.
4. ALL PLANT MATERIAL SHALL CONFORM AND BE INSTALLED TO THE GUIDELINES ESTABLISHED BY THE CURRENT ANSI Z60.1.
5. NO PLANT SHALL BE PUT INTO THE GROUND BEFORE ROUGH GRADING HAS BEEN FINISHED AND APPROVED BY THE PROJECT LANDSCAPE ARCHITECT OR EQUAL.
6. THE LANDSCAPE CONTRACTOR SHALL PROVIDE AMENDED PLANTING SOIL AS PER THE CONTRACT SPECIFICATIONS.
7. SOIL DEPTH SHOULD BE AS LISTED BELOW. EXISTING SOIL ON SITE WHICH MEETS THE CONTRACT SPECIFICATIONS MAY BE USED. REMOVE SUB GRADE AND OTHER GRAVEL FILL IN PLANTING AREAS ON SITE.
   - 7.1. GROUND COVER BEDS 12" DEPTH.
   - 7.2. LAWN AREAS 6" DEPTH
   - 7.3. SHRUB/PLANT BEDS 18" DEPTH
8. PLANTS SHALL BE INSTALLED SUCH THAT THE ROOT FLARE IS AT OR SLIGHTLY ABOVE FINAL GRADE (DUE TO NURSERY PRACTICES THIS MAY REQUIRE REMOVING SOIL FROM THE TOP OF THE ROOT BALL TO LOCATE THE ROOT FLARE).
9. ALL PLANTS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN AS SPECIFIED. NO CONTAINER GROWN STOCK WILL BE ACCEPTED IF IT IS ROOT BOUND. ALL ROOT WRAPPING MATERIAL MADE OF SYNTHETICS OR PLASTICS SHALL BE REMOVED AT THE TIME OF PLANTING.
10. WITH CONTAINER GROWN STOCK, THE CONTAINER SHALL BE REMOVED AND THE CONTAINER BALL SHALL BE CUT THROUGH THE SURFACE IN TWO VERTICAL LOCATIONS.
11. THE DAY PRIOR TO PLANTING, THE LOCATION OF ALL TREES AND SHRUBS SHALL BE FLAGGED FOR APPROVAL BY THE PROJECT LANDSCAPE ARCHITECT OR EQUAL.
9. LANDSCAPE ARCHITECT MAY REQUIRE ALL PLANTS BE SPRAYED WITH AN ANTIDESSICANT WITHIN 24 HOURS AFTER PLANTING. IN TEMPERATE ZONES, ALL PLANTS SHALL BE SPRAYED WITH AN ANTIDESSICANT AT THE BEGINNING OF THEIR FIRST WINTER.
10. STAKING PLANTS IS AT THE DISCRETION OF THE LANDSCAPE CONTRACTOR. ONLY STAKE PLANTS IN THE MANNER SPECIFIED IN THE PLANTING DETAILS.
11. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24 HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL THEN BE WATERED WEEKLY, IF NECESSARY, DURING THE FIRST GROWING SEASON.
12. THE LANDSCAPE CONTRACTOR SHALL REFER TO THE CONTRACT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
13. THE LANDSCAPE CONTRACTOR SHALL REFER TO THE PLANT LIST FOR SEASONAL REQUIREMENTS RELATED TO THE TIME OF PLANTING.

PLANT SPACING CHART

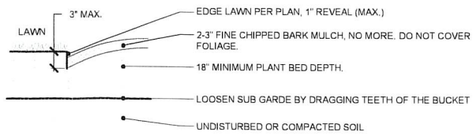
Spacing 'D'	Row 'A'	Number of Plants	Area Unit
6" O.C.	5.2"	4.61	1 SQ. FT.
8" O.C.	6.93"	2.6	
10" O.C.	8.66"	1.66	
12" O.C.	10.4"	1.15	
15" O.C.	13.0"	7.38	10 SQ. FT.
18" O.C.	15.6"	5.12	
24" O.C.	20.8"	2.91	
30" O.C.	26.0"	1.55	
36" O.C.	30.0"	1.25	
4' O.C.	3.46'	7.25	100 SQ. FT.
5' O.C.	4.38'	4.61	
6' O.C.	5.2'	3.2	
8' O.C.	6.93'	1.8	
10' O.C.	8.66'	1.16	
12' O.C.	10.4'	8	1000 SQ. FT.
15' O.C.	13.0'	5	
20' O.C.	17.3'	2.88	
25' O.C.	21.65'	1.85	
30' O.C.	26.0'	1.29	
40' O.C.	34.6'	7.22	10,000 SQ. FT.



O.C. = ON CENTER
FOR USE WHEN PLANTS ARE SHOWN EQUIDISTANT FROM EACH OTHER (AS SHOWN)
PLANT SPACING CHART

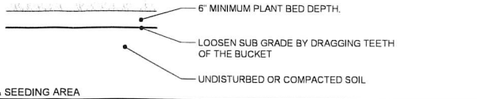
7 L2.0 PLANT SPACING CHART DETAIL
NTS

- SOIL COMPACTION AFTER INSTALLATION SHALL BE 75-250 PSI AT SOIL MOISTURE BETWEEN FIELD CAPACITY AND WILTING POINT

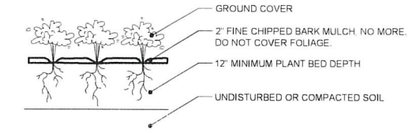


6 L2.0 PLANT BED
NTS

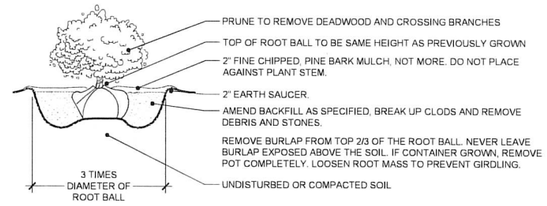
- SOIL COMPACTION AFTER INSTALLATION SHALL BE 75-250 PSI AT SOIL MOISTURE BETWEEN FIELD CAPACITY AND WILTING POINT



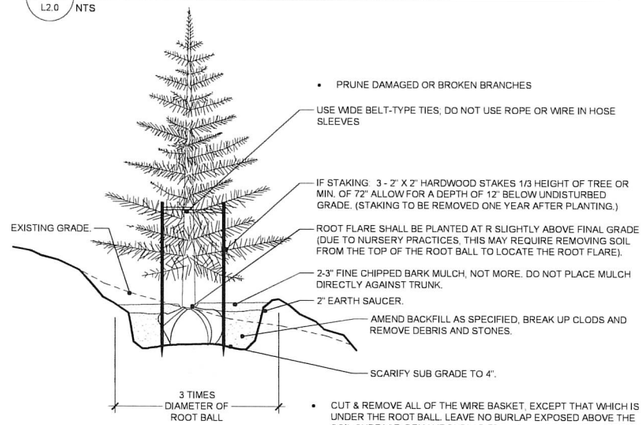
5 L2.0 LAWN & SEEDING AREA
NTS



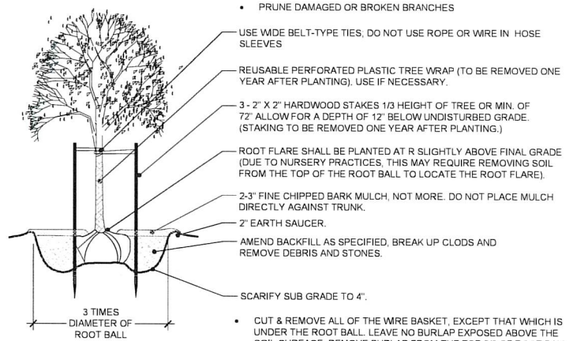
4 L2.0 GROUNDCOVER PLANTING
NTS



3 L2.0 SHRUB PLANTING
NTS



2 L2.0 TREE PLANTING ON SLOPE DETAIL
NTS



1 L2.0 TREE PLANTING DETAIL
NTS