

# 2Life Opus Communities

#677 Winchester Street & 333 Nahanton Street

Special Permit Submission

May 7, 2021

Owner

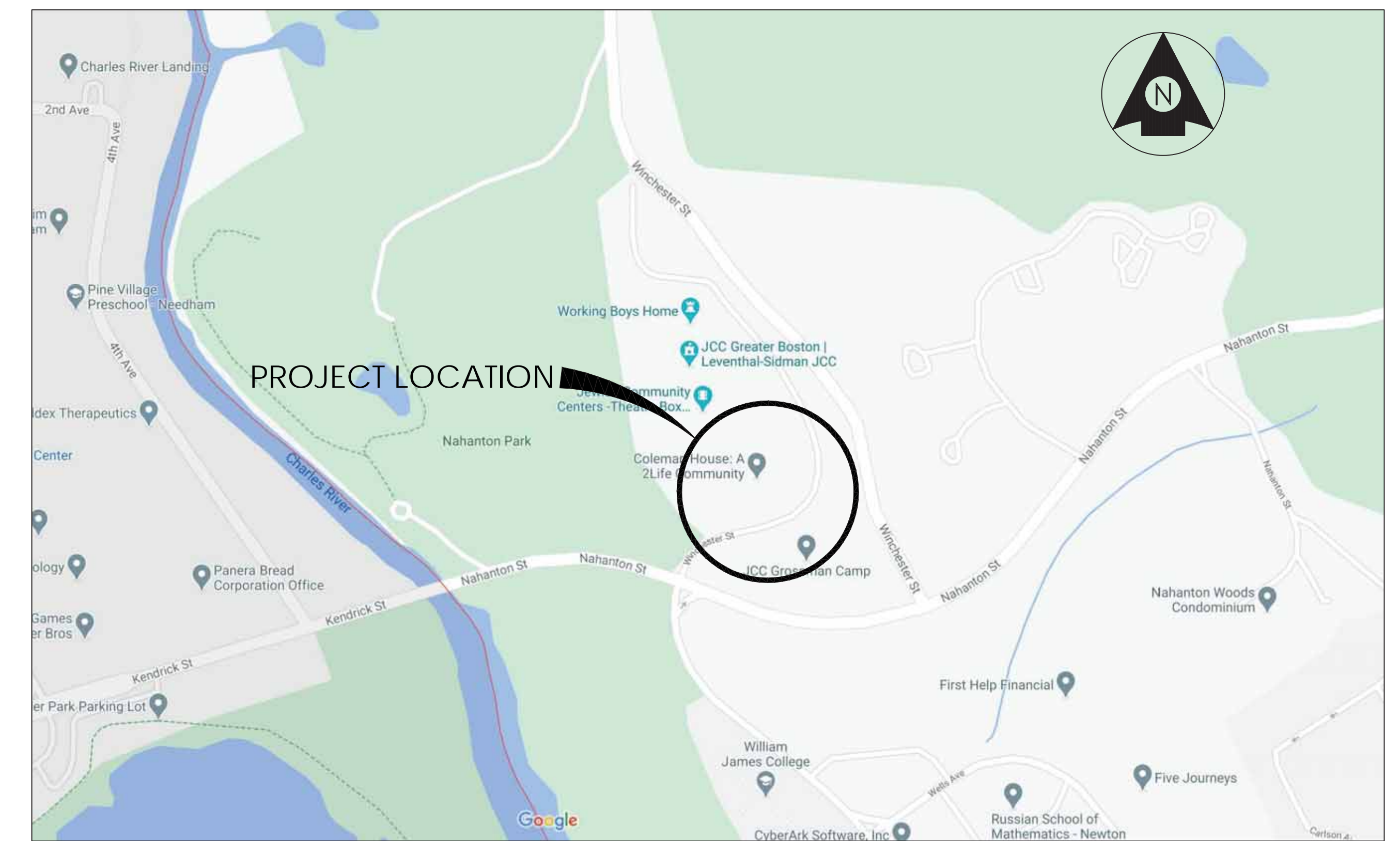
2Life Communities  
30 Wallingford Road  
Brighton MA 02135

Architect

Perkins Eastman  
1100 Liberty Avenue  
Pittsburgh PA 15222

Landscape Architect / Civil Engineer

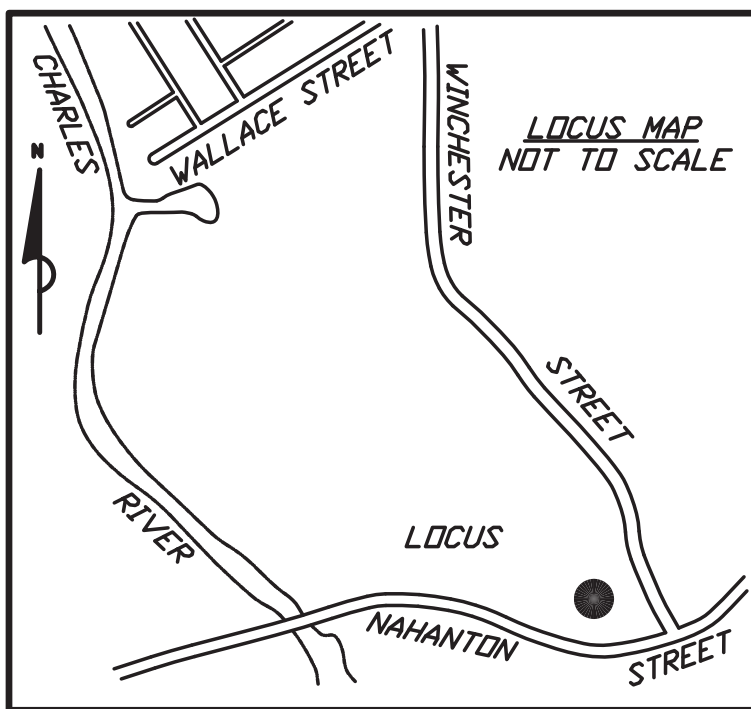
Stantec Consulting  
226 Causeway Street, 6th Floor  
Boston MA 02114



VICINITY MAP  
NOT TO SCALE

INDEX OF SHEETS

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	EXISTING CONDITIONS PLAN
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LU-106	SIXTH FLOOR PLAN
LU-201	EXTERIOR ELEVATIONS
LU-202	EXTERIOR ELEVATIONS



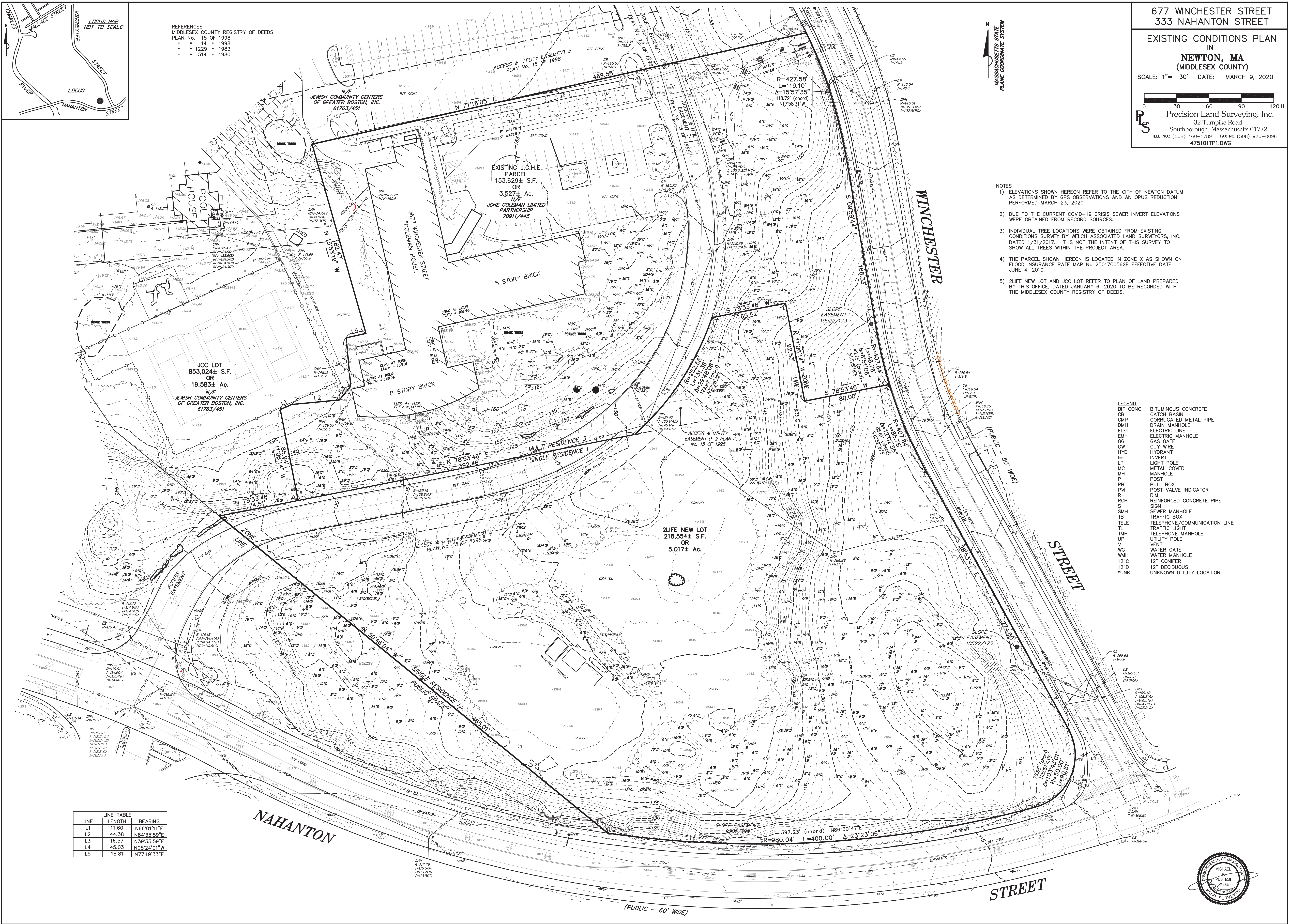
REFERENCES  
 MIDDLESEX COUNTY REGISTRY OF DEEDS  
 PLAN No. 15 OF 1998  
 • 14 - 1998  
 • 1229 - 1983  
 • 514 - 1980

677 WINCHESTER STREET  
 333 NAHANTON STREET

EXISTING CONDITIONS PLAN  
 IN  
**NEWTON, MA**  
 (MIDDLESEX COUNTY)

SCALE: 1" = 30' DATE: MARCH 9, 2020

Precision Land Surveying, Inc.  
 32 Turnpike Road  
 Southborough, Massachusetts 01772  
 TELE NO.: (508) 460-1789 FAX NO.: (508) 970-0096  
 475101TP1.DWG



- NOTES
- 1) ELEVATIONS SHOWN HEREON REFER TO THE CITY OF NEWTON DATUM AS DETERMINED BY GPS OBSERVATIONS AND AN OPUS REDUCTION PERFORMED MARCH 23, 2020.
  - 2) DUE TO THE CURRENT COVID-19 CRISIS SEWER INVERT ELEVATIONS WERE OBTAINED FROM RECORD SOURCES.
  - 3) INDIVIDUAL TREE LOCATIONS WERE OBTAINED FROM EXISTING CONDITIONS SURVEY BY WELCH ASSOCIATED LAND SURVEYORS, INC. DATED 1/31/2017. IT IS NOT THE INTENT OF THIS SURVEY TO SHOW ALL TREES WITHIN THE PROJECT AREA.
  - 4) THE PARCEL SHOWN HEREON IS LOCATED IN ZONE X AS SHOWN ON FLOOD INSURANCE RATE MAP No 25017C0562E EFFECTIVE DATE JUNE 4, 2010.
  - 5) 2LIFE NEW LOT AND JCC LOT REFER TO PLAN OF LAND PREPARED BY THIS OFFICE DATED JANUARY 6, 2020 TO BE RECORDED WITH THE MIDDLESEX COUNTY REGISTRY OF DEEDS.

- LEGEND
- BIT CONC BITUMINOUS CONCRETE
  - CB CATCH BASIN
  - CMP CORRUGATED METAL PIPE
  - DMH DRAIN MANHOLE
  - ELEC ELECTRIC LINE
  - EMH ELECTRIC MANHOLE
  - GC GAS GATE
  - GW GUY WIRE
  - HYD HYDRANT
  - I= INVERT
  - LP LIGHT POLE
  - MC METAL COVER
  - MH MANHOLE
  - P POST
  - PB PULL BOX
  - PVI POST VALVE INDICATOR
  - R= RIM
  - RCP REINFORCED CONCRETE PIPE
  - S SIGN
  - SMH SEWER MANHOLE
  - TB TRAFFIC BOX
  - TELE TELEPHONE/COMMUNICATION LINE
  - TL TRAFFIC LIGHT
  - TMH TELEPHONE MANHOLE
  - UP UTILITY POLE
  - V VENT
  - WG WATER GATE
  - WMH WATER MANHOLE
  - 12" C 12" CONIFER
  - 12" D 12" DECIDUOUS
  - UNK UNKNOWN UTILITY LOCATION

LINE	LENGTH	BEARING
L1	11.60	N66°01'11"E
L2	44.38	N84°35'59"E
L3	16.57	N39°35'59"E
L4	45.03	N05°24'01"W
L5	18.81	N77°19'33"E



(PUBLIC - 60' WIDE)



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 2021/02/05 11:23 AM  
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 2021/02/05 11:23 AM

NO.	DATE	REVISION
01	05/05/2021	SPECIAL PERMIT



**Stantec**  
 Stantec Planning and Landscape Architecture P.L.C.  
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**Owner:**  
 2 LIFE COMMUNITIES  
 30 Wallingford Road  
 Brighton, MA 02135  
**Construction Manager:**  
 DELLBROOK  
 One Adams Place  
 859 Willard Street  
 Quincy, MA 02169  
**Civil / Site:**  
 STANTEC  
 226 Causeway Street, 6th Floor  
 Boston, MA 02114

**Structural:**  
 VEITAS & VEITAS ENGINEERS, INC  
 639 Granite Street  
 Braintree, MA 02184  
**MEP consultant:**  
 PETERSEN ENGINEERING, INC  
 127 Parrott Avenue  
 Portsmouth, NH 03801

**PROJECT TITLE:**  
 2LIFE - OPUS  
**PROJECT No:** 66571  
**DRAWING TITLE:**  
 ABUTTER PARCEL  
 INFORMATION

**SCALE:**  
**LU-L000**  
 ZONING REVIEW  
 4/19/2021

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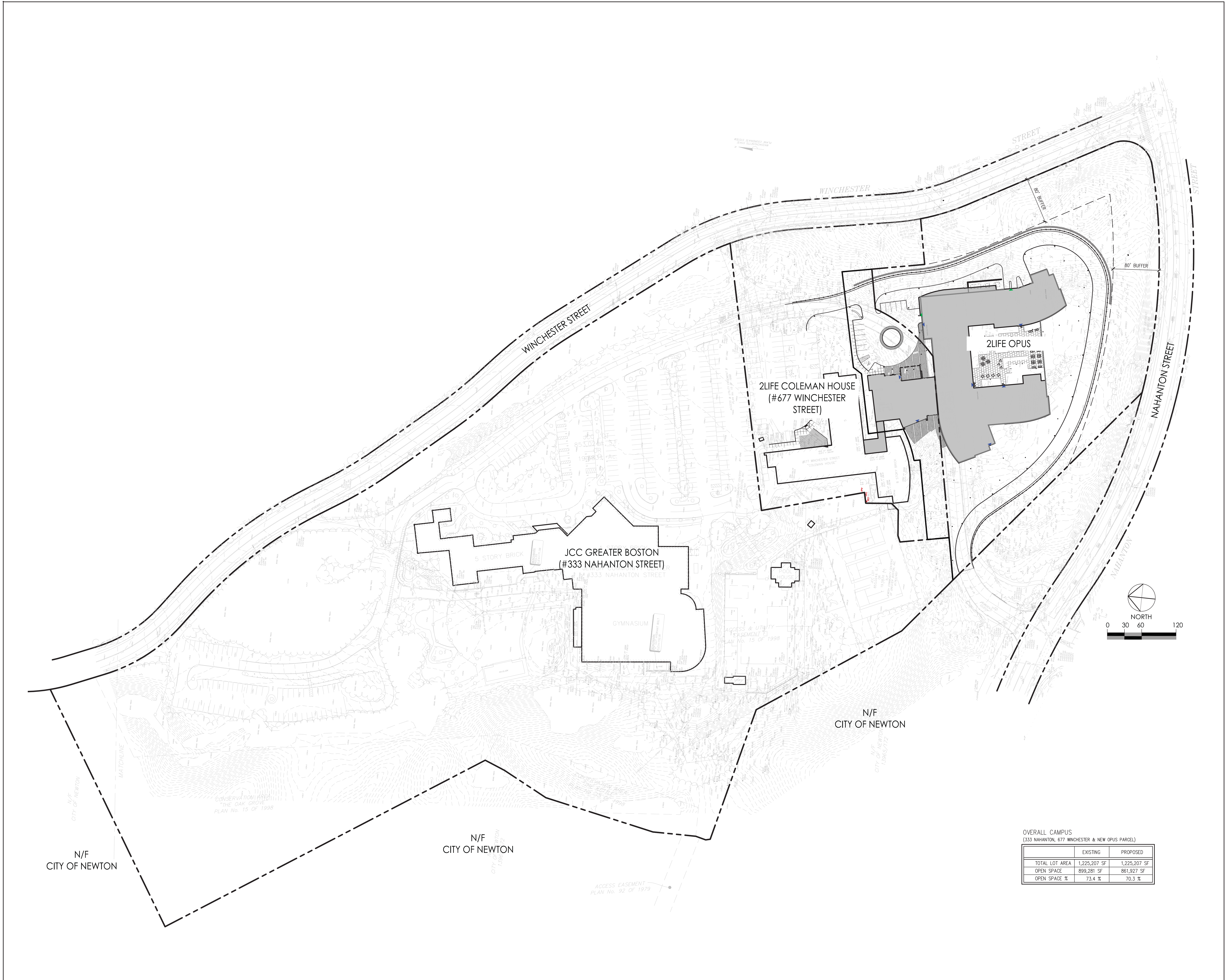
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 Portsmouth, NH 03801

PROJECT TITLE:  
**2LIFE - OPUS**

677 WINCHESTER STREET  
 NEWTON, MA 02459

PROJECT No: 66571  
 DRAWING TITLE:  
**JCC CAMPUS  
 SITE PLAN**

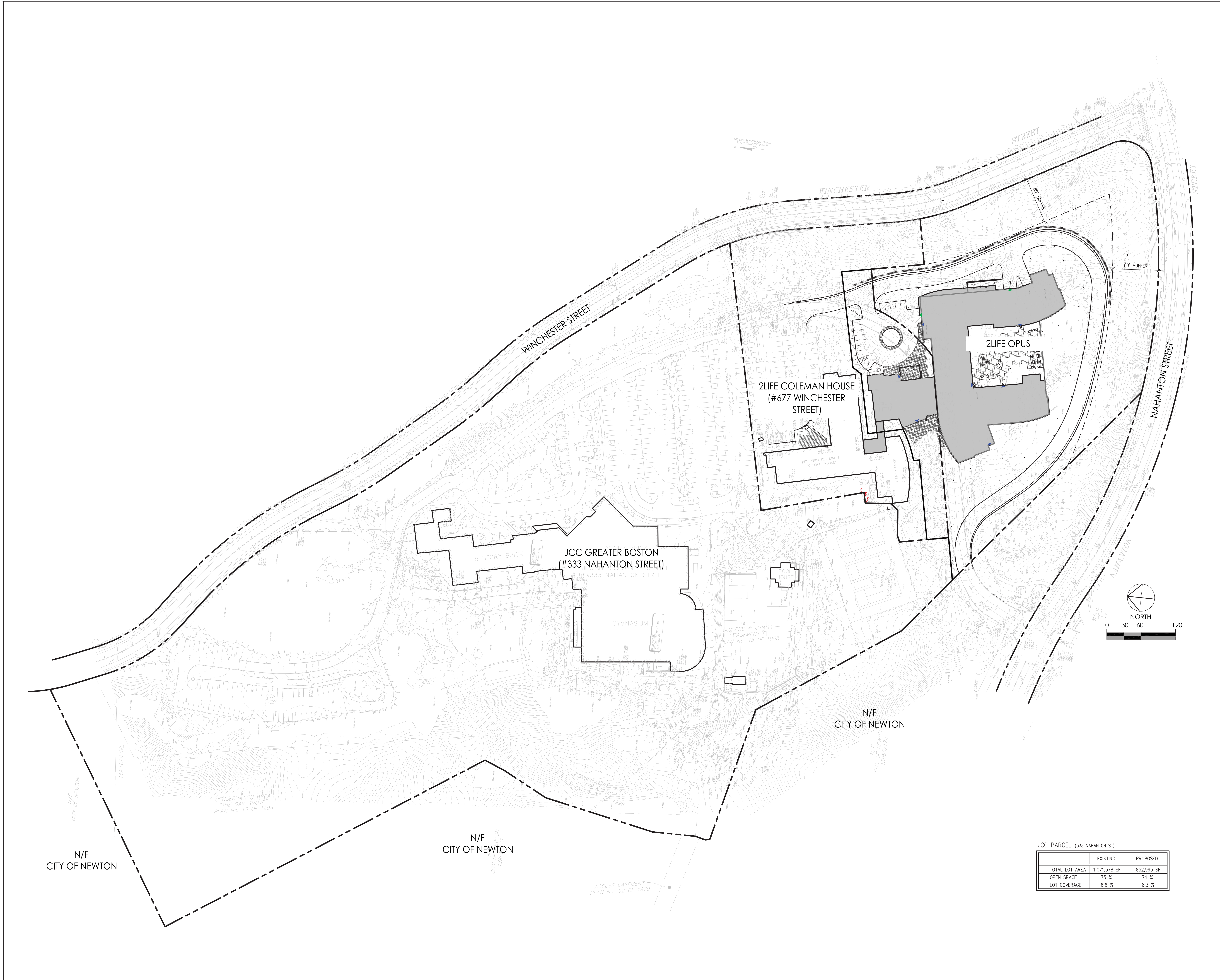
SCALE:  
**LU-L101**  
 ZONING REVIEW  
 3/03/2021



OVERALL CAMPUS  
 (333 NAHANTON, 677 WINCHESTER & NEW OPUS PARCEL)

	EXISTING	PROPOSED
TOTAL LOT AREA	1,225,207 SF	1,225,207 SF
OPEN SPACE	899,281 SF	861,927 SF
OPEN SPACE %	73.4 %	70.3 %

U:\Projects\2021\LU-101\LU-101\_SitePlan.dwg, 3/3/2021 10:00:00 AM, User: jcc, Plotting: jcc, Plot Date: 3/3/2021 10:00:00 AM, Plot Scale: 1.0000, Plot Orientation: Landscape



JCC PARCEL (333 NAHANTON ST)

	EXISTING	PROPOSED
TOTAL LOT AREA	1,071,578 SF	852,995 SF
OPEN SPACE	75 %	74 %
LOT COVERAGE	6.6 %	8.3 %

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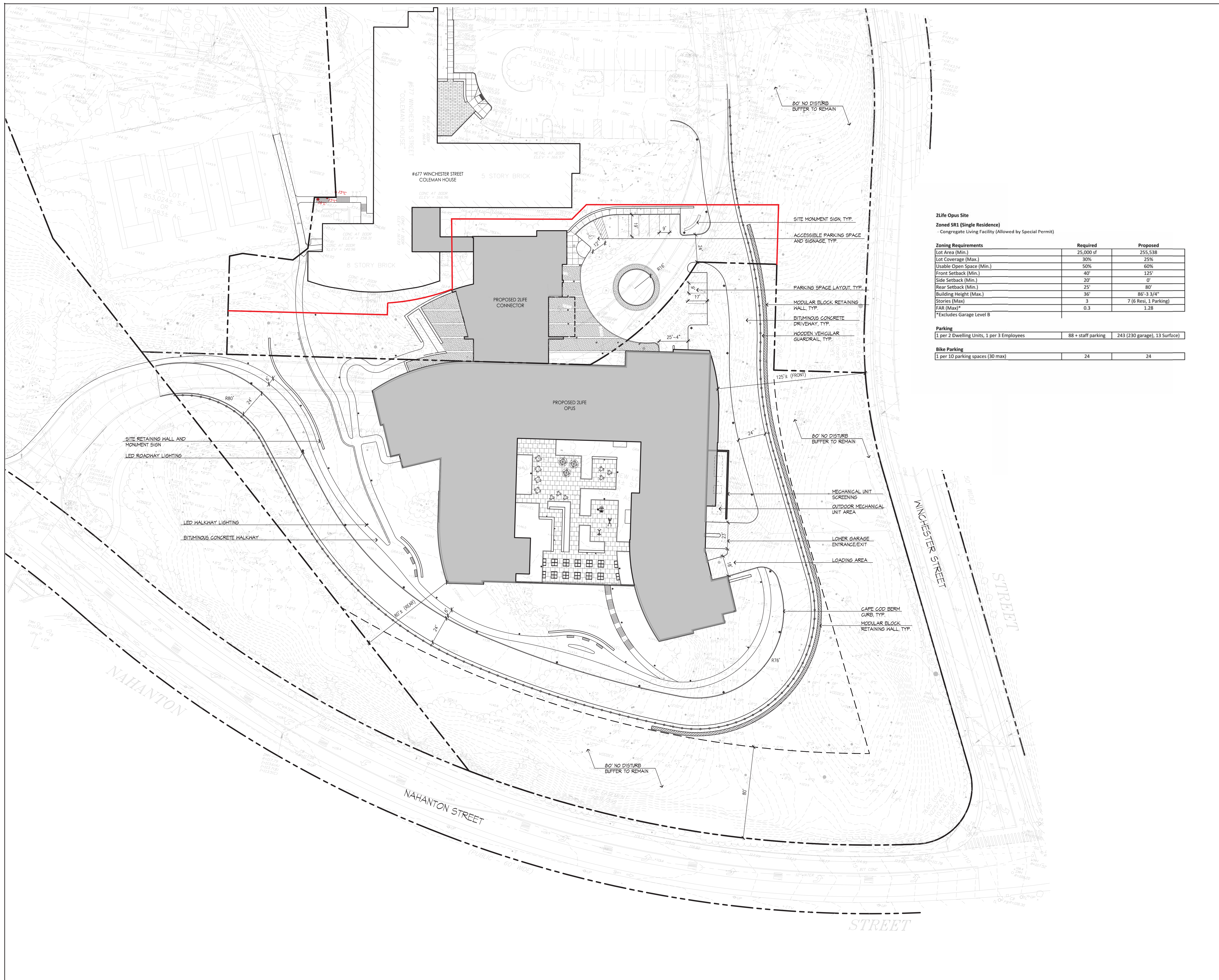
677 WINCHESTER STREET  
 NEWTON, MA 02459

PROJECT No: 66571  
 DRAWING TITLE:  
**REMAINING  
 JCC LOT  
 SITE PLAN**

SCALE:  
**LU-L102**  
 ZONING REVIEW

4/19/2021

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**ZLife Opus Site**  
**Zoned SR1 (Single Residence)**  
 - Congregate Living Facility (Allowed by Special Permit)

Zoning Requirements	Required	Proposed
Lot Area (Min.)	25,000 sf	255,538
Lot Coverage (Max.)	30%	25%
Usable Open Space (Min.)	50%	60%
Front Setback (Min.)	40'	125'
Side Setback (Min.)	20'	0'
Rear Setback (Min.)	25'	80'
Building Height (Max.)	36'	86'-3 3/4"
Stories (Max)	3	7 (6 Rest, 1 Parking)
FAR (Max)*	0.3	1.28

\*Excludes Garage Level B

Parking	Required	Proposed
1 per 2 Dwelling Units, 1 per 3 Employees	88 + staff parking	243 (230 garage), 13 Surface

Bike Parking	Required	Proposed
1 per 10 parking spaces (30 max)	24	24

NO.	DATE	REVISION
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PROJECT TITLE:  
**2LIFE - OPUS**

677 WINCHESTER STREET  
 NEWTON, MA 02459

PROJECT No: 66571  
 DRAWING TITLE:  
**OPUS  
 SITE PLAN**

SCALE:  
**LU-L201**

ZONING REVIEW  
 3/03/2021

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NO.	DATE	REVISION
01	05/05/2021	SPECIAL PERMIT



SEAL

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PROJECT No: 66571

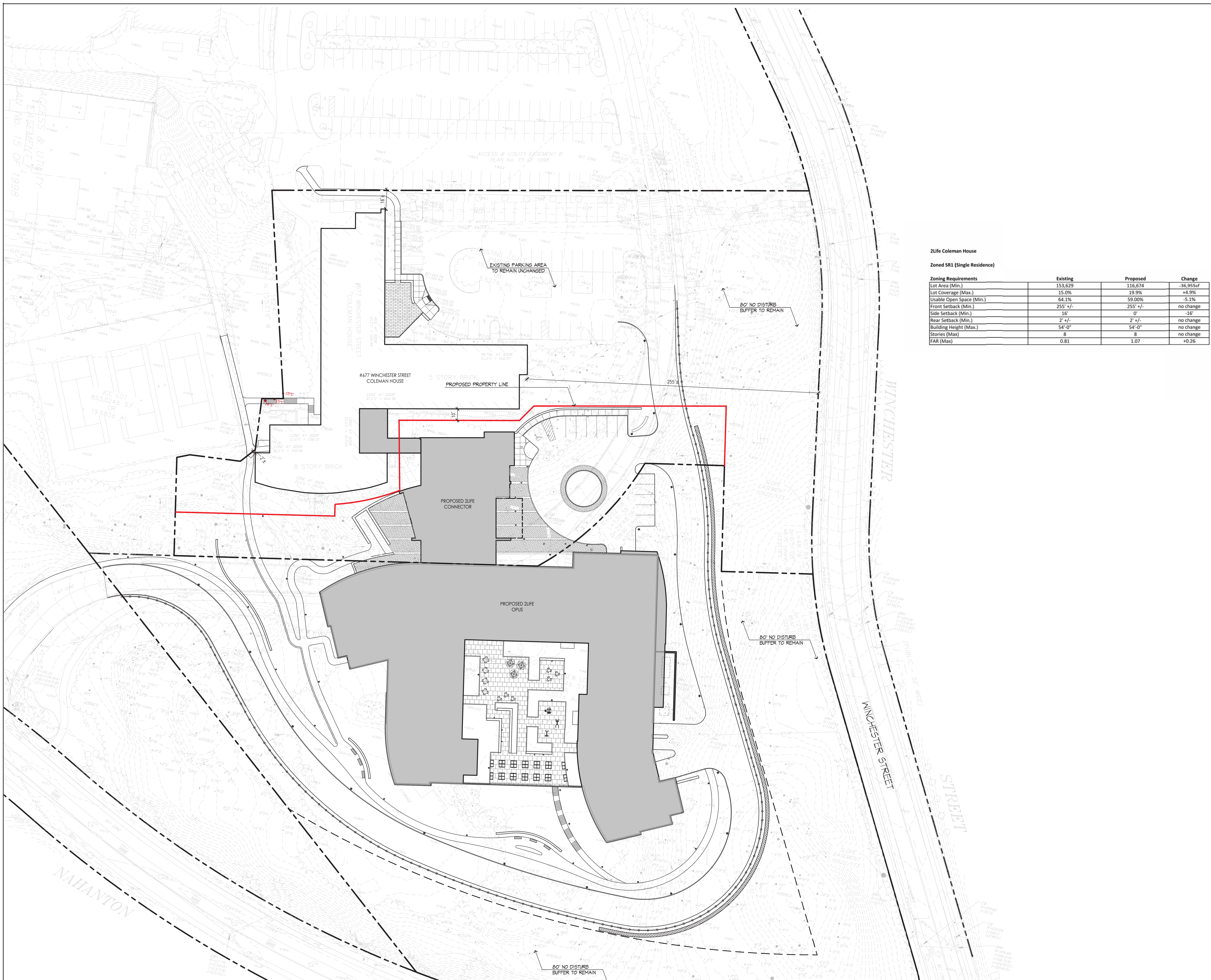
DRAWING TITLE:  
 COLEMAN HOUSE  
 SITE PLAN

SCALE:

**LU-L301**

ZONING REVIEW

3/03/2021



**2Life Coleman House**

**Zoned SR1 (Single Residence)**

Zoning Requirements	Existing	Proposed	Change
Lot Area (Min.)	153,629	116,674	-36,955sf
Lot Coverage (Max.)	15.0%	19.9%	+4.9%
Usable Open Space (Min.)	64.1%	59.00%	-5.1%
Front Setback (Min.)	255' +/-	255' +/-	no change
Side Setback (Min.)	16'	0'	-16'
Rear Setback (Min.)	2' +/-	2' +/-	no change
Building Height (Max.)	54'-0"	54'-0"	no change
Stories (Max)	8	8	no change
FAR (Max)	0.81	1.07	+0.26

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SEAL



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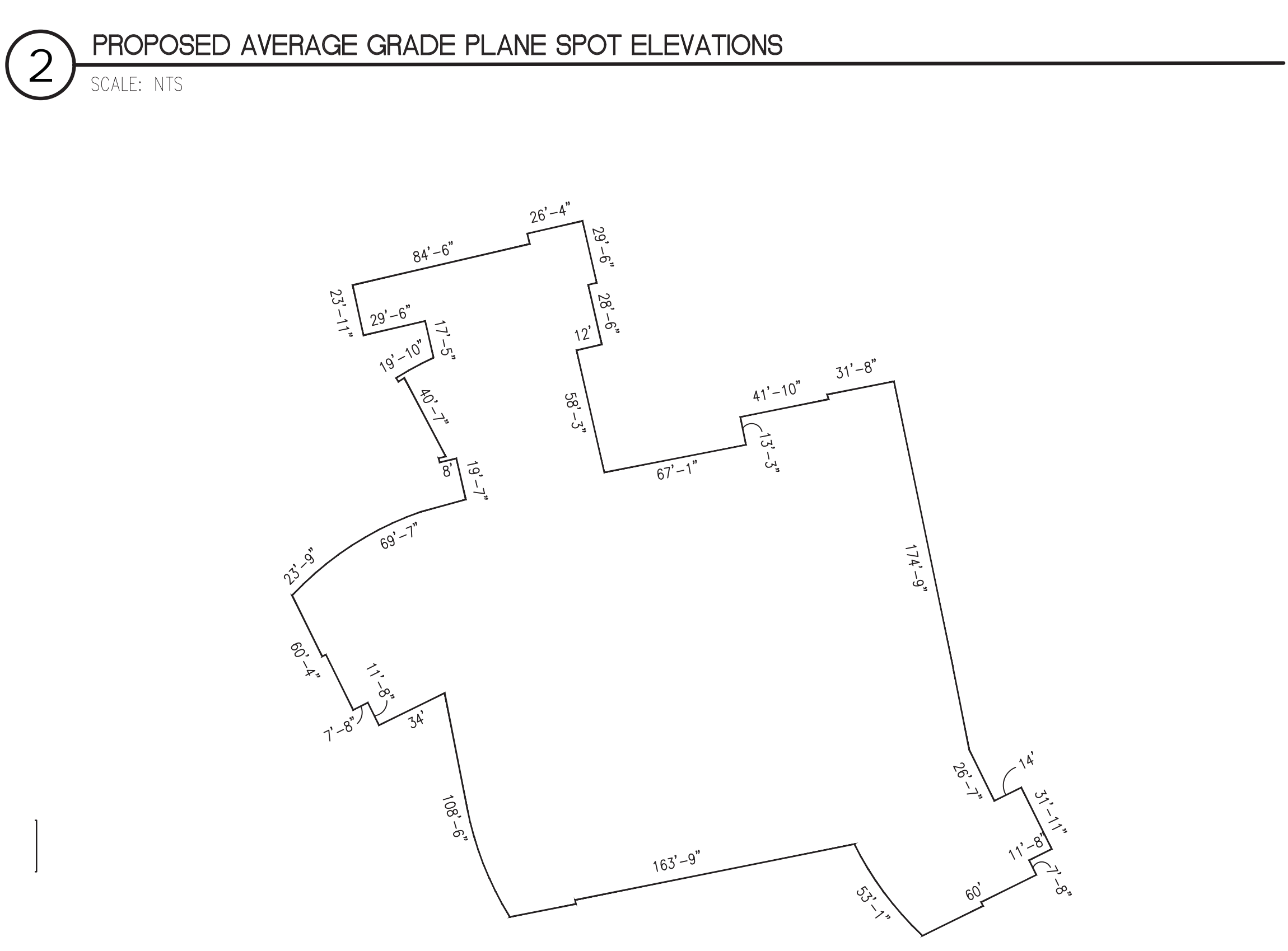
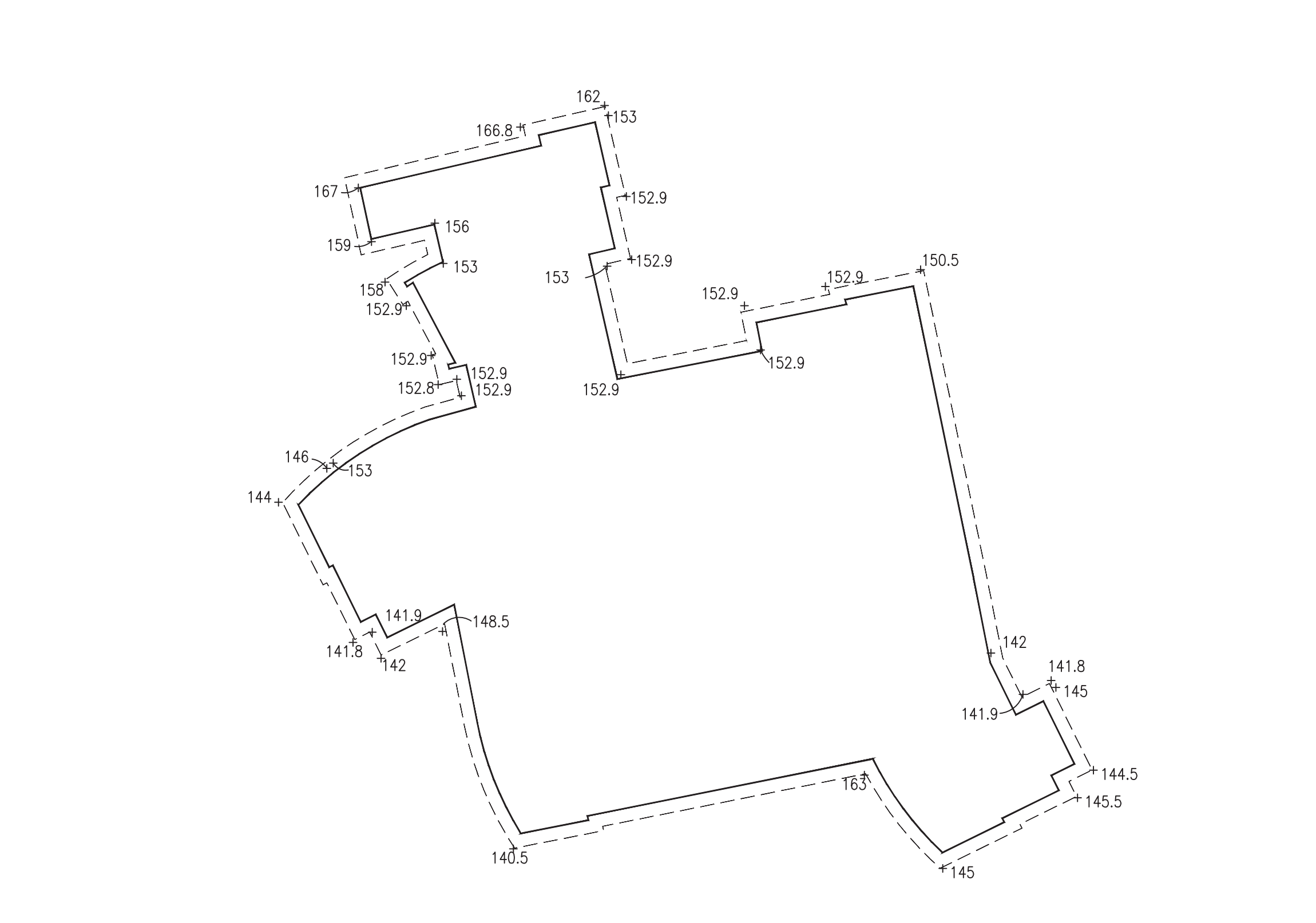
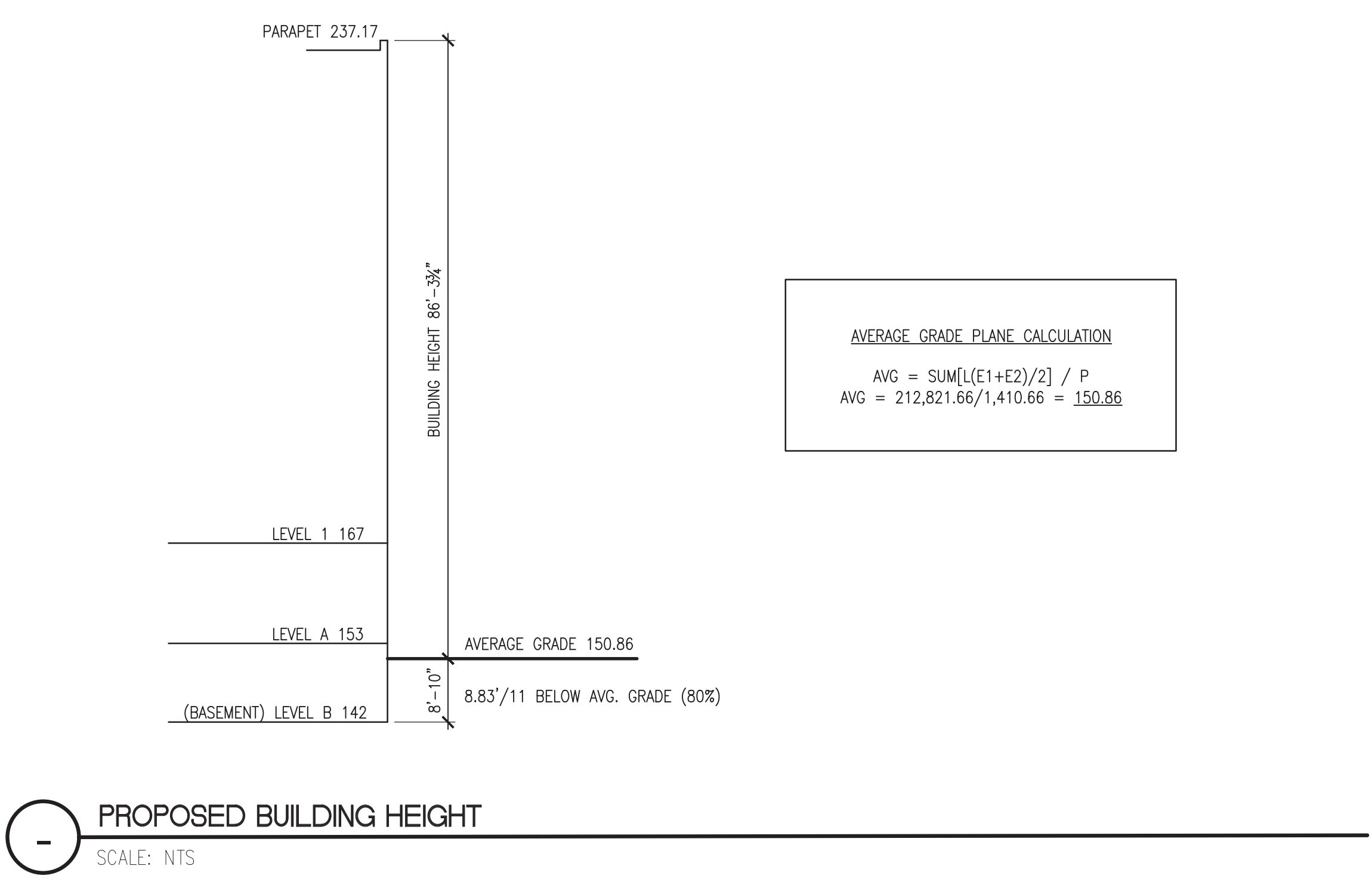
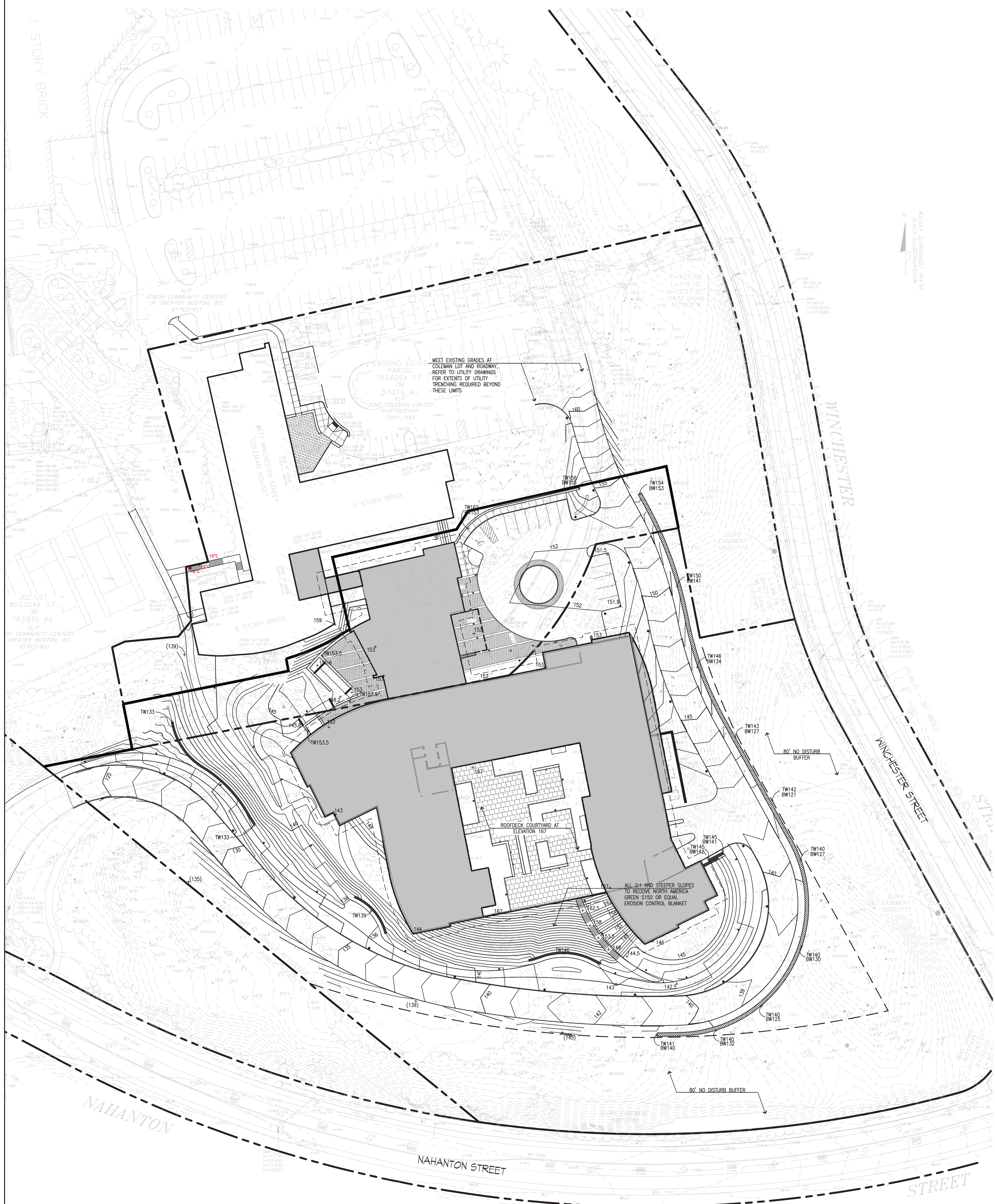
**PROJECT TITLE:**  
 2LIFE - OPUS

677 WINCHESTER STREET  
 NEWTON, MA 02459

**PROJECT No:** 66571  
**DRAWING TITLE:**  
 GRADING /  
 AVERAGE  
 GRADE  
 PLANE  
 SCALE: AS NOTED

**LU-L401**  
 ZONING REVIEW

3/03/2021



**1** PROPOSED GRADING PLAN  
 SCALE: NTS

**3** PROPOSED AVERAGE GRADE PLANE DIMENSIONS  
 SCALE: NTS

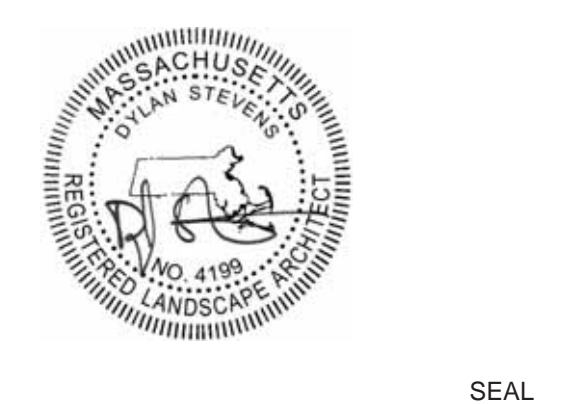
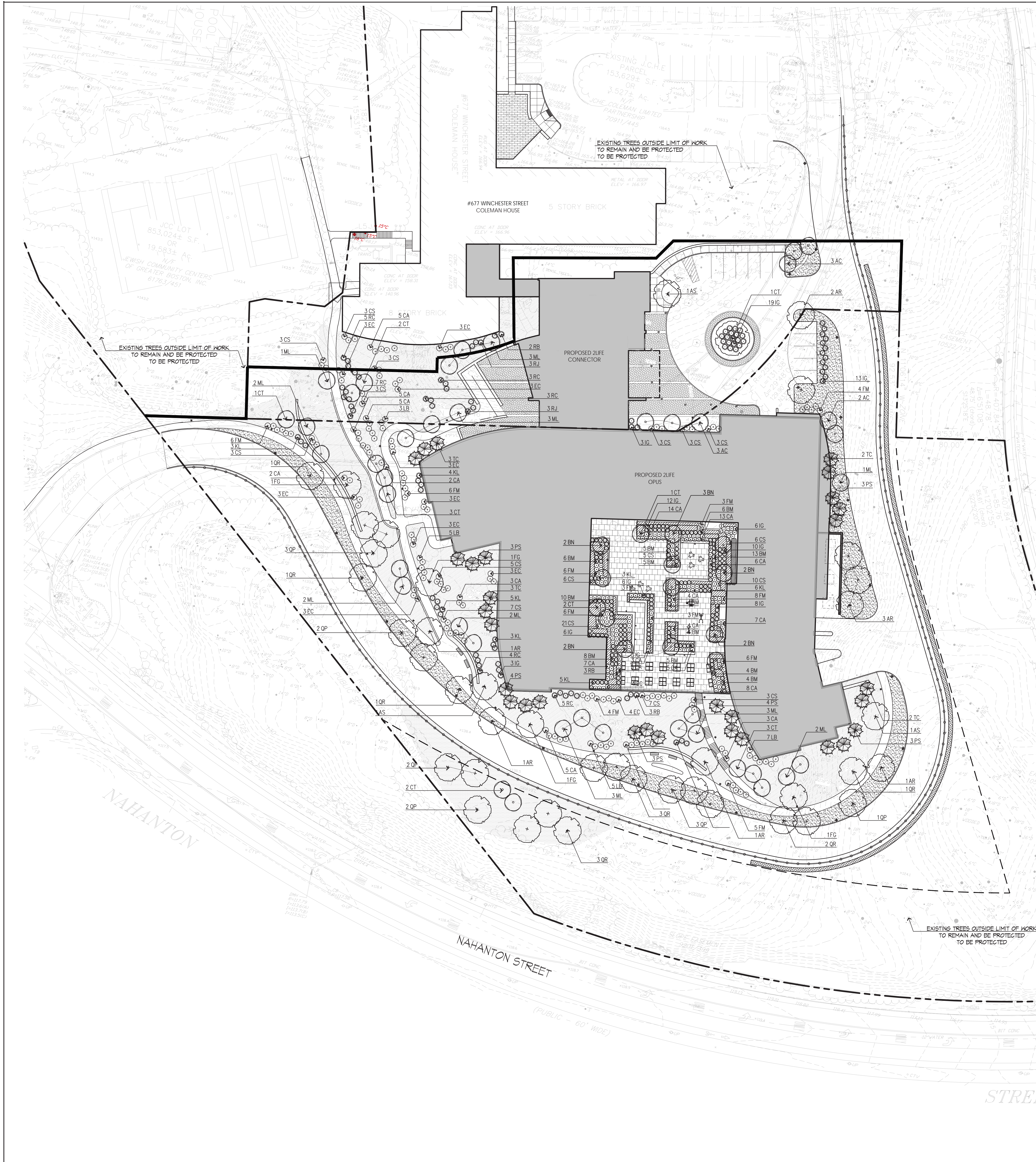


PLANT SCHEDULE

SYMBOL	BOTANICAL NAME	COMMON NAME	QTY	SIZE	COMMENT
<b>DECIDUOUS TREES</b>					
AR	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY MAPLE		3 - 3 1/2" CAL.	B&B
AS	ACER SACCHARUM 'GREEN MOUNTAIN'	'GREEN MOUNTAIN' SUGAR MAPLE		3 - 3 1/2" CAL.	B&B
FG	FAGUS GRANDIFOLIA	AMERICAN BEECH		3 - 3 1/2" CAL.	B&B
QP	QUERCUS PALUSTRIS	PIN OAK		3 - 3 1/2" CAL.	B&B
QR	QUERCUS RUBRA	RED OAK		3 - 3 1/2" CAL.	B&B
<b>ORNAMENTAL TREES</b>					
AC	AMELANCHIER CANADENSIS	SERVICEBERRY		8-10' HT	B&B
BN	BETULA NIGRA	RIVER BIRCH		8-10' HT	B&B
CT	CORNUS ALTERNIFOLIA	PAGODA DOGWOOD		8-10' HT	B&B
ML	MAGNOLIA LOEBNERI 'LEONARD MESSEL'	LEONARD MESSEL MAGNOLIA		8-10' HT	B&B
<b>EVERGREEN TREES</b>					
PS	PINUS STROBUS	WHITE PINE		6-8' HT.	
TC	TSUGA CANADENSIS 'ARMISTICE'	ARMISTICE HEMLOCK		6-8' HT.	
<b>SHRUBS</b>					
BM	BUXUS MICROPHYLLA 'WINTER GEM'	WINTER GEM BOXWOOD		2 1/2 - 3'	
CA	CLETHRA ALNIFOLIA	SUMMERSWEET		2 1/2 - 3'	
CS	CORNUS SERICEA 'ARCTIC FIRE'	RED TWIG DOGWOOD		2 1/2 - 3'	
EC	ENKIANTHUS CAMPANULATUS	REDVEIN ENKIANTHUS		2 1/2 - 3'	
FM	FOTHERGILLA MAJOR 'MOUNT AIRY'	'MOUNT AIRY' FOTHERGILLA		2 1/2 - 3'	
IG	ILEX GLABRA 'COMPACT'	COMPACT INKBERRY		2 1/2 - 3'	
KL	KALMA LATIFOLIA	MOUNTAIN LAUREL		2 1/2 - 3'	
LB	LINDERA BENZON	NORTHERN SPICEBUSH		2 1/2 - 3'	
RC	RHODODENDRON 'CATAMBIENSE ALBUM'	CATAMBA RHODODENDRON		3-4'	
RB	RHODODENDRON 'BOULE DE NEIGE'	BOULE DE NEIGE RHODODENDRON		3-4'	
RJ	RHODODENDRON 'JANET BLAIR'	JANET BLAIR RHODODENDRON		3-4'	
<b>PERENNIALS / GROUNDCOVERS / GRASSES</b>					
CP	CAREX PENNSYLVANICA	PENNSYLVANIA SEDGE		1 GAL	
CB	CAREX 'BLUE ZINGER'	BLUE ZINGER SEDGE		1 GAL	
DC	DESCAMPISIA CESPITOSA	TUFTED HAIR GRASS		1 GAL	
LM	LIRIOPE MUSCARI	LIRIOPE		1 GAL	
MS	MISCANTHUS SINENSIS	SILVER GRASS		3 GAL	
PV	PANICUM VIRGATUM 'CHEYENNE SKY'	SWITCH GRASS		3 GAL	
OR	OSMUNDA REGALIS	ROYAL FERN		1 GAL	
<b>SEED MIXES</b>					
1. GENERAL LAWN MIX					
2. NEW ENGLAND SHOWY WILDFLOWER MIX					
3. NEW ENGLAND CONSERVATION / WILDLIFE MIX					

LEGEND

- DECIDUOUS TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- GROUNDCOVER AND/OR PERENNIAL MASSING
- LAWN SEED OR SOD
- MISC. SEED



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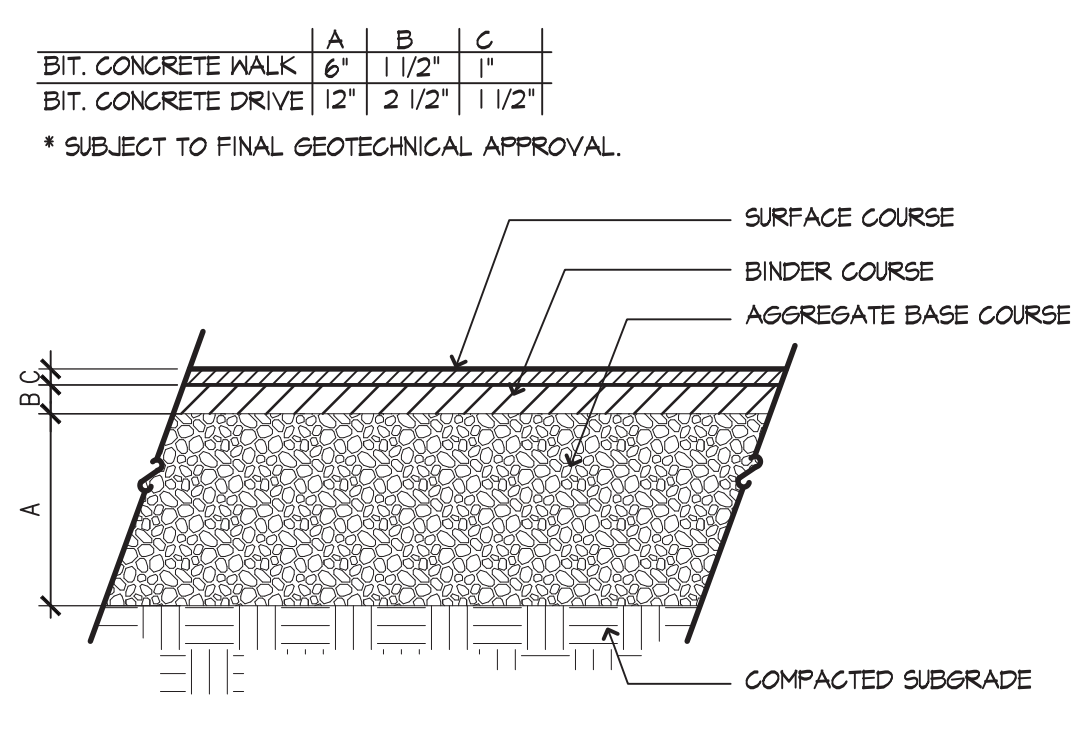
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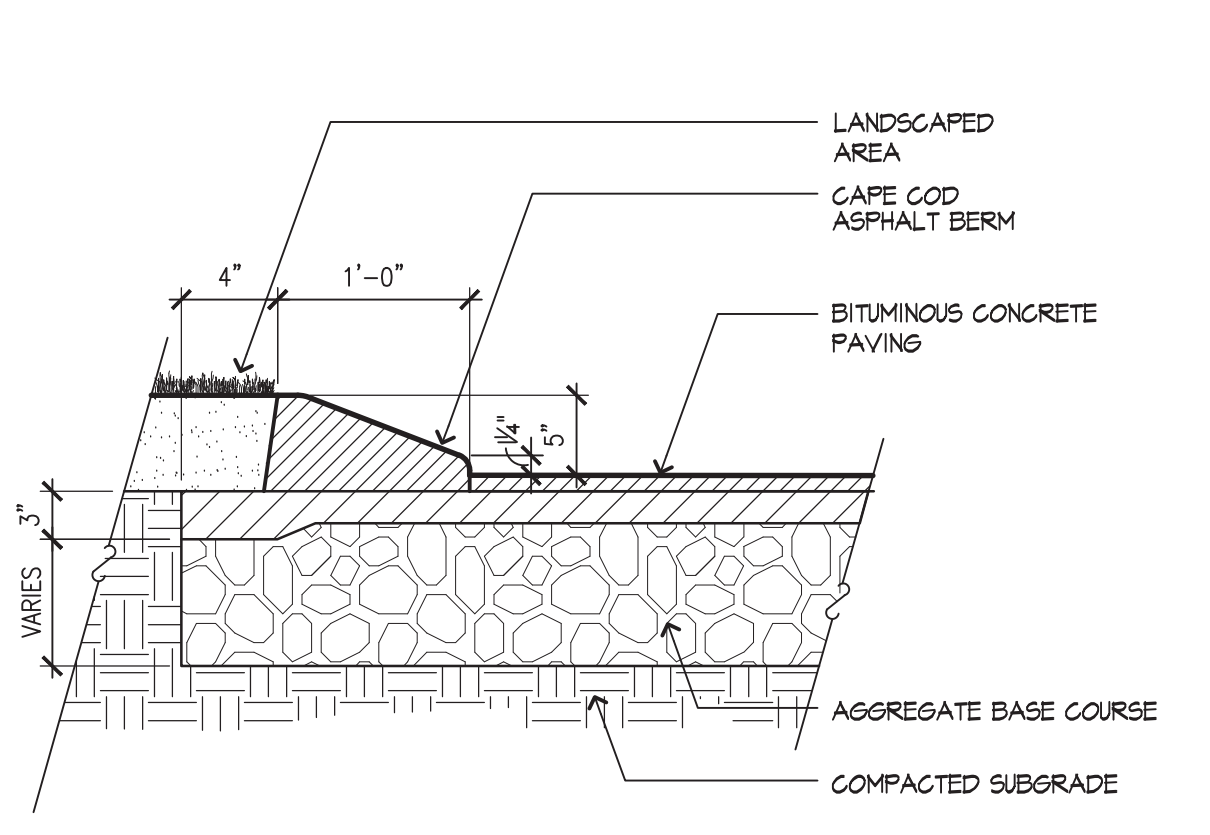
PROJECT No: 66571  
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**PLANTING PLAN**

SCALE: AS NOTED  
**LU-L501**  
 ZONING REVIEW  
 3/03/2021

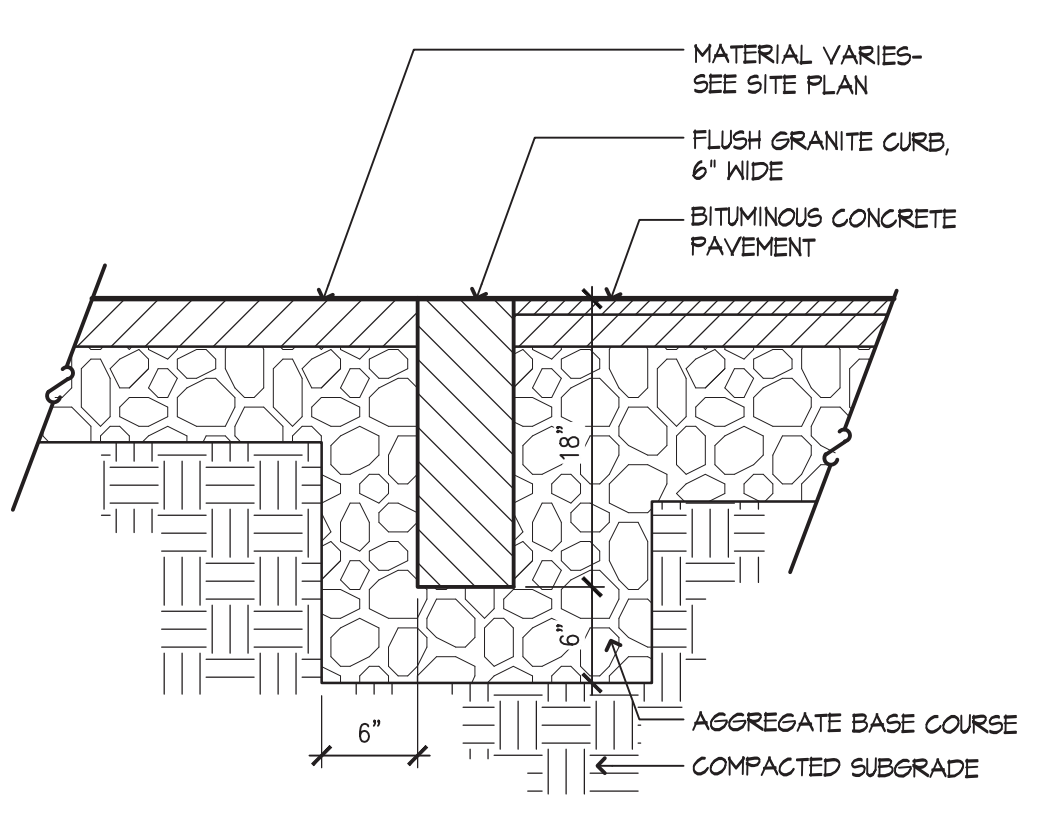
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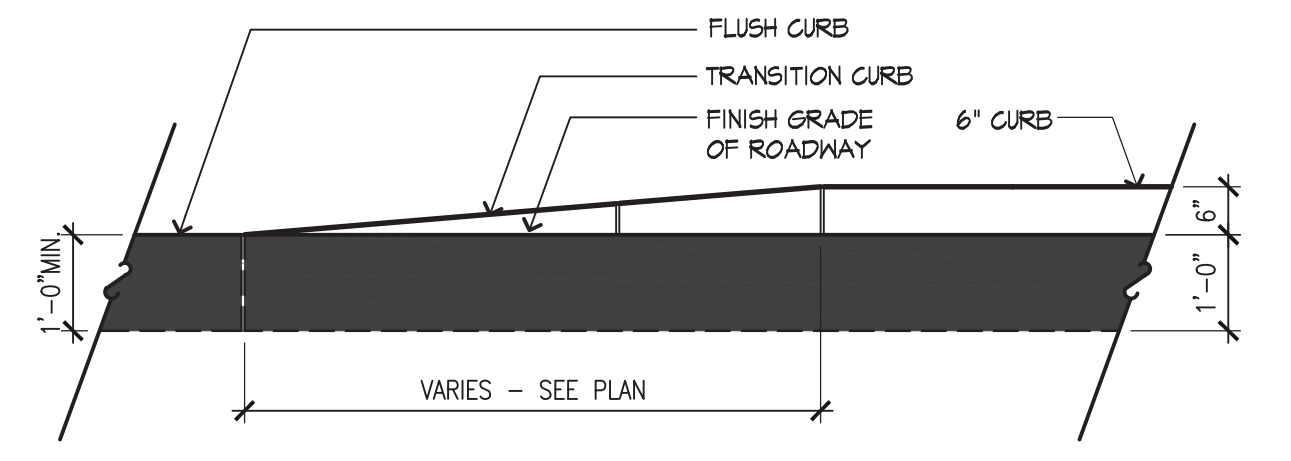
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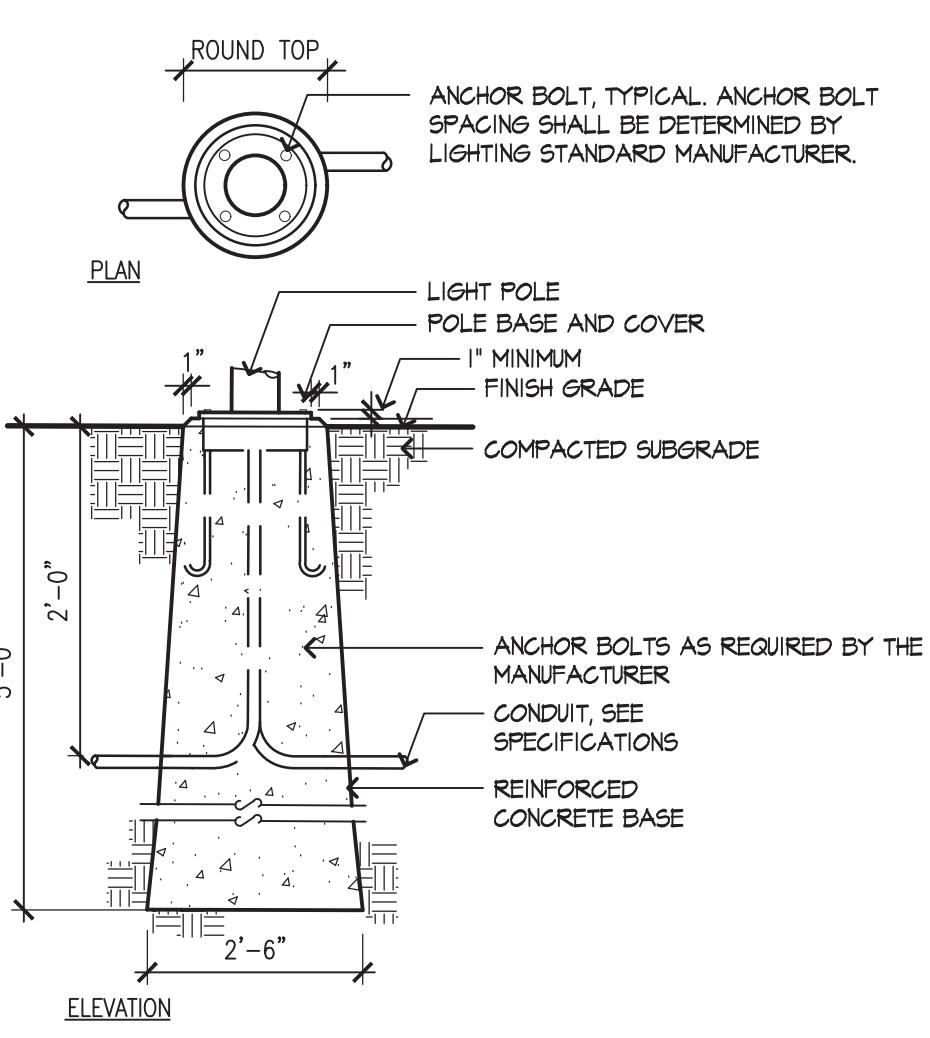
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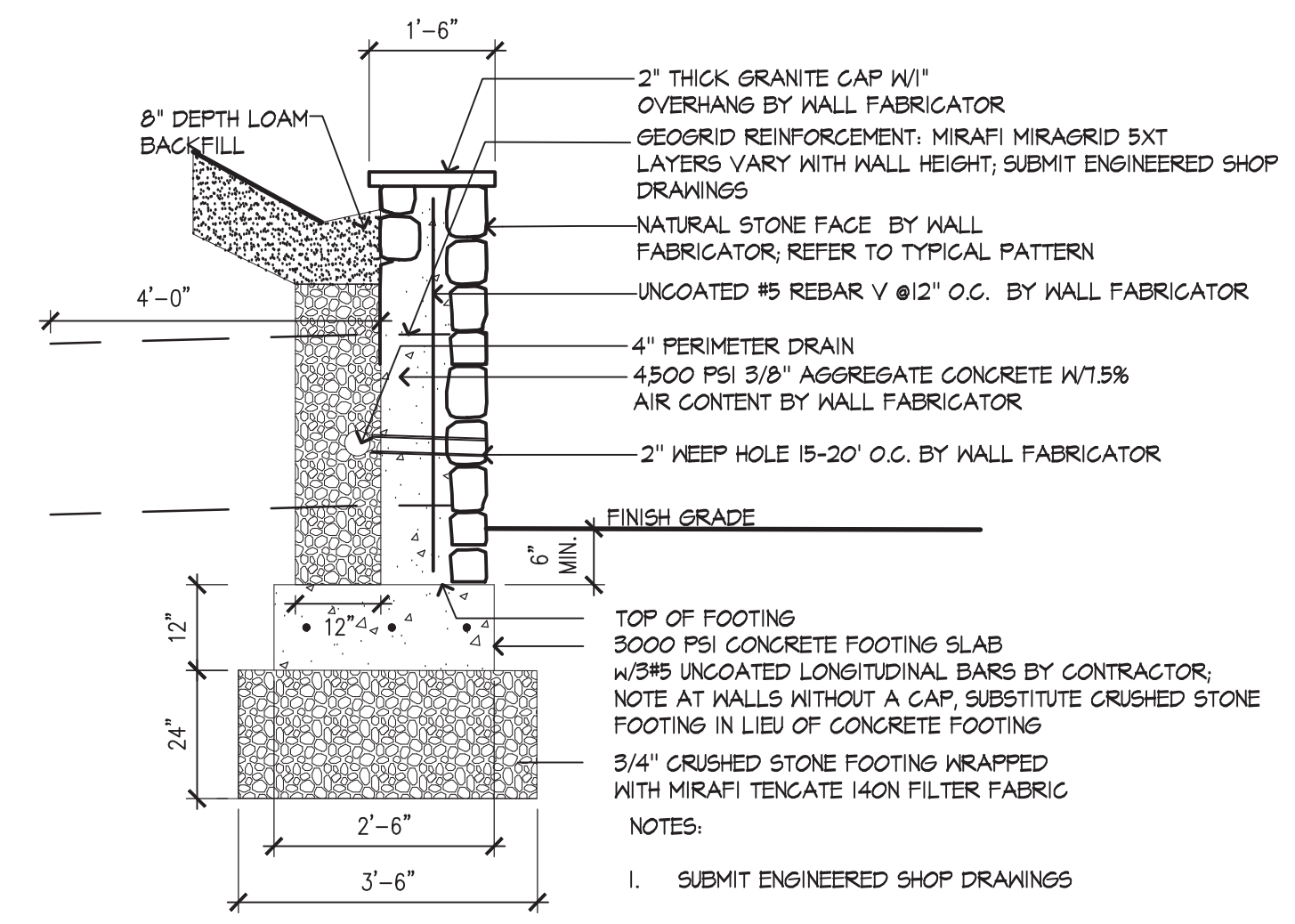
3 FLUSH GRANITE CURB  
 SCALE: 1" = 1'-0"



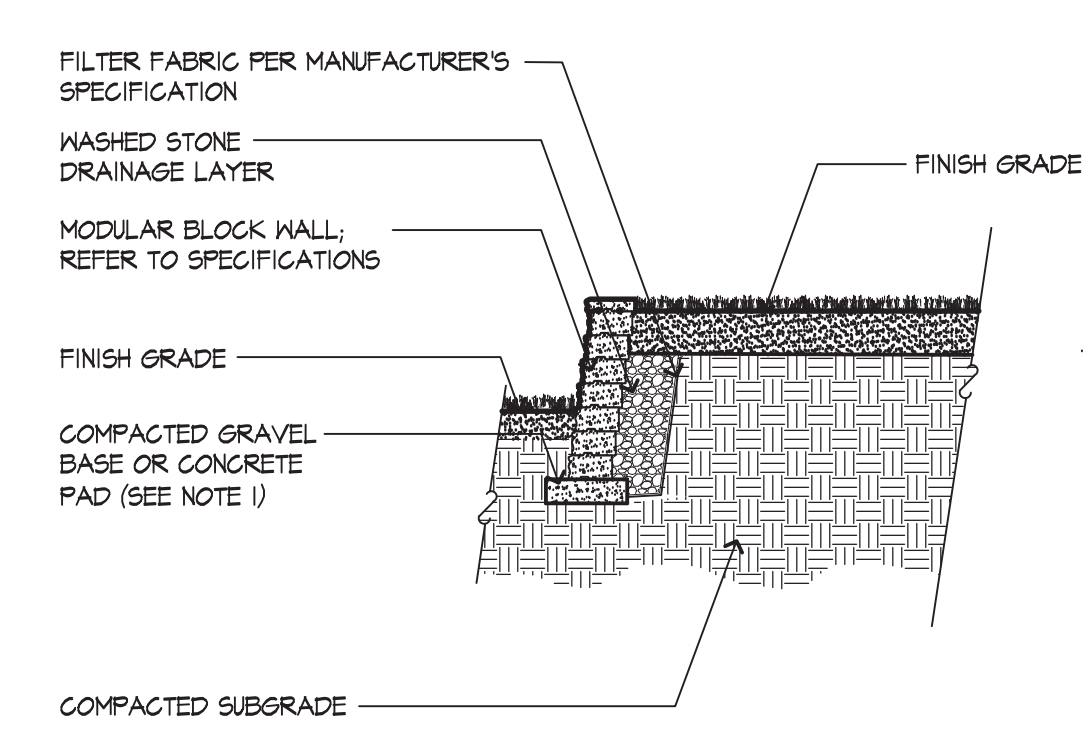
4 GRANITE TRANSITION CURB  
 SCALE: 1/2" = 1'-0"



5 LIGHT POLE BASE - FLUSH  
 SCALE: 1/2" = 1'-0"

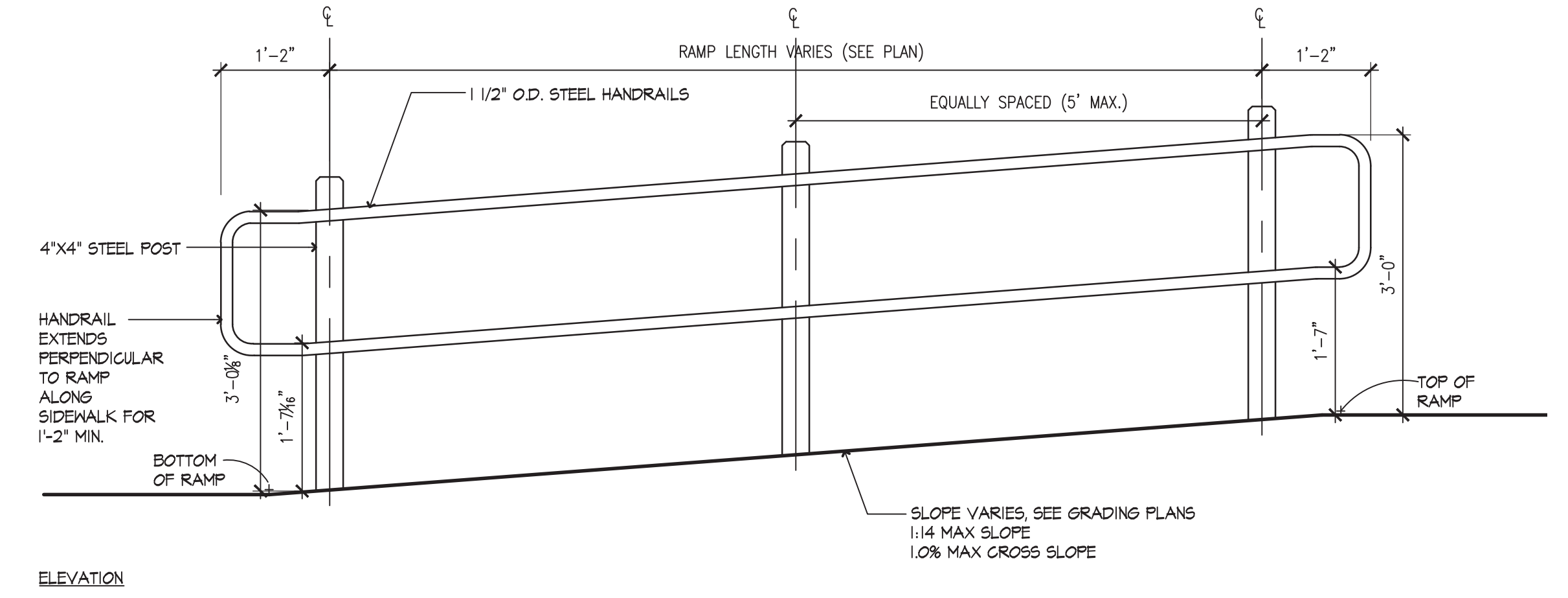


6 STONE SITE WALL  
 SCALE: 1/2" = 1'-0"

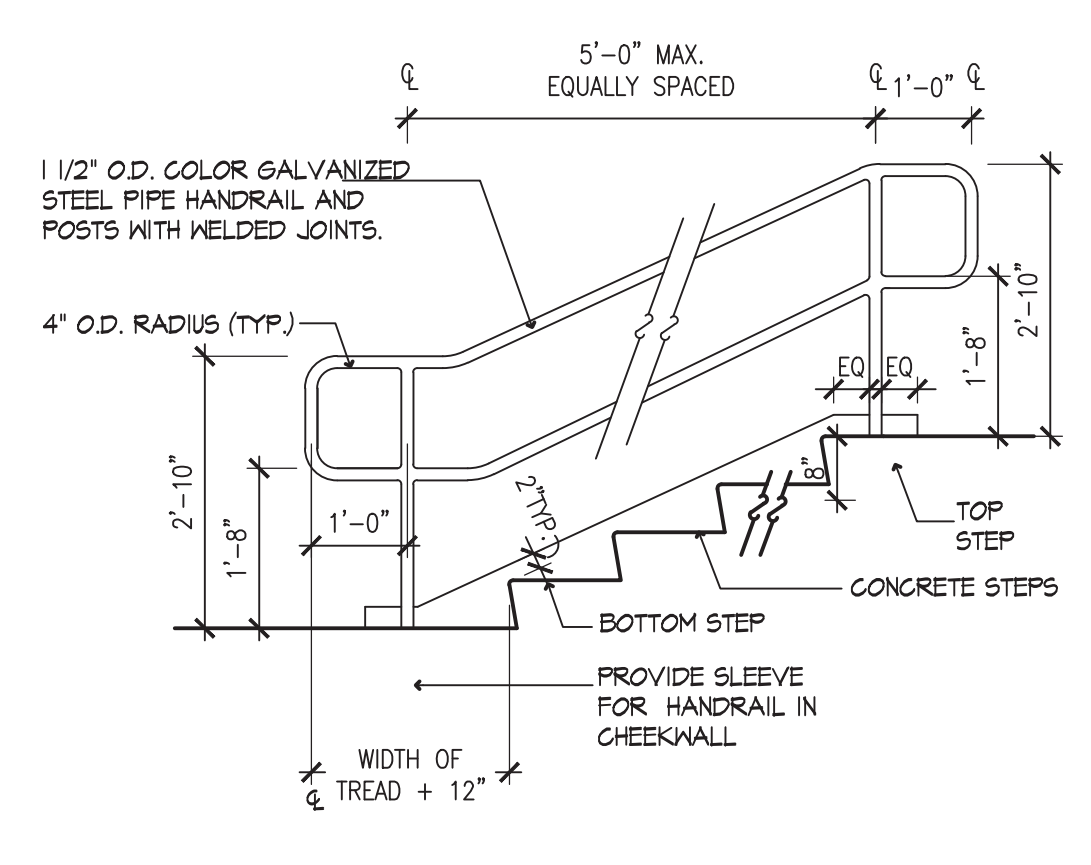


7 MODULAR BLOCK RETAINING WALL  
 SCALE: 1/4" = 1'-0"

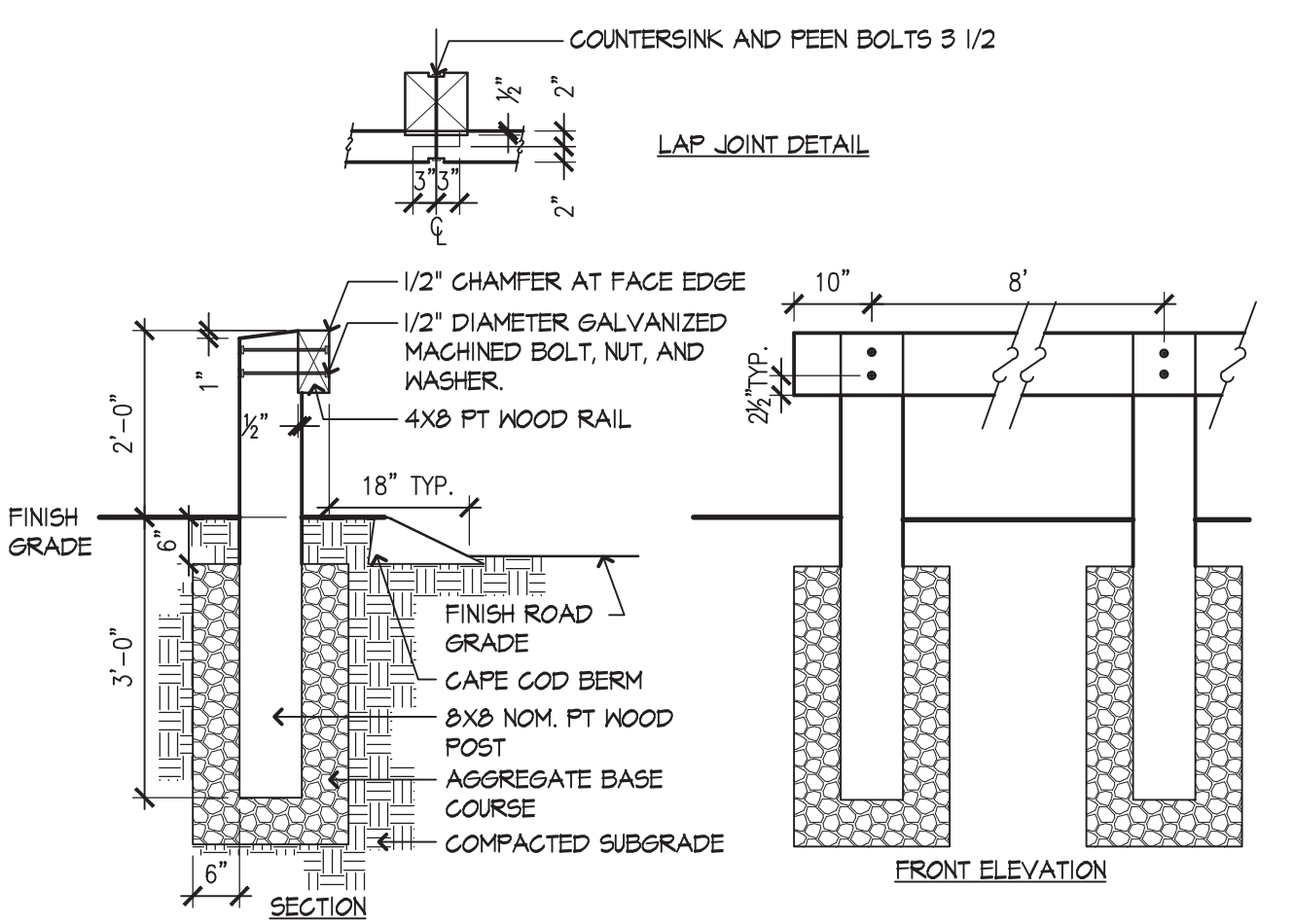
- NOTES:
- THIS ILLUSTRATION IS PROVIDED TO ILLUSTRATE THE GENERAL ARRANGEMENT OF A SEGMENTAL BLOCK RETAINING WALL STRUCTURE. THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE RELATED DETAIL DRAWINGS AND SPECIFICATIONS FOR PROPER DESIGN AND CONSTRUCTION AS PREPARED BY A MASSACHUSETTS REGISTERED STRUCTURAL ENGINEER AS SUBMITTED BY THE CONTRACTOR.
  - STRUCTURES SUCH AS HANDRAILS, GUARDRAILS, FENCES, TERRACES, AND SITE CONDITIONS SUCH AS WATER APPLICATIONS, DRAINAGE, AND SOIL CONDITIONS, ADDITIONAL LIVE AND DEAD LOADS, ETC., HAVE SIGNIFICANT EFFECTS ON THE WALL DESIGN. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR SUCH SPECIFIC CONDITIONS AS PER NOTE 1.
  - THICKNESS OF WASHED STONE, DRAINAGE LAYER, SIZE OF COMPACTED GRAVEL BASE SHALL BE DETERMINED BY FINAL DESIGN OF WALLS AS PER NOTE 1.



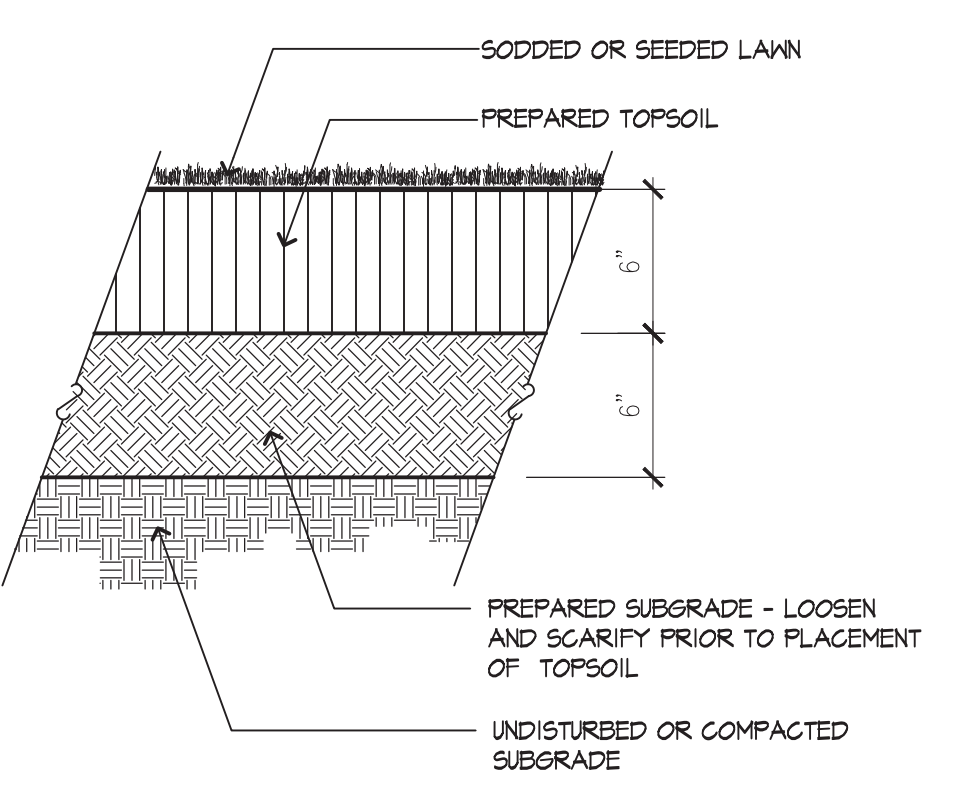
8 RAMP AND HANDRAILS  
 SCALE: 1/2" = 1'-0"



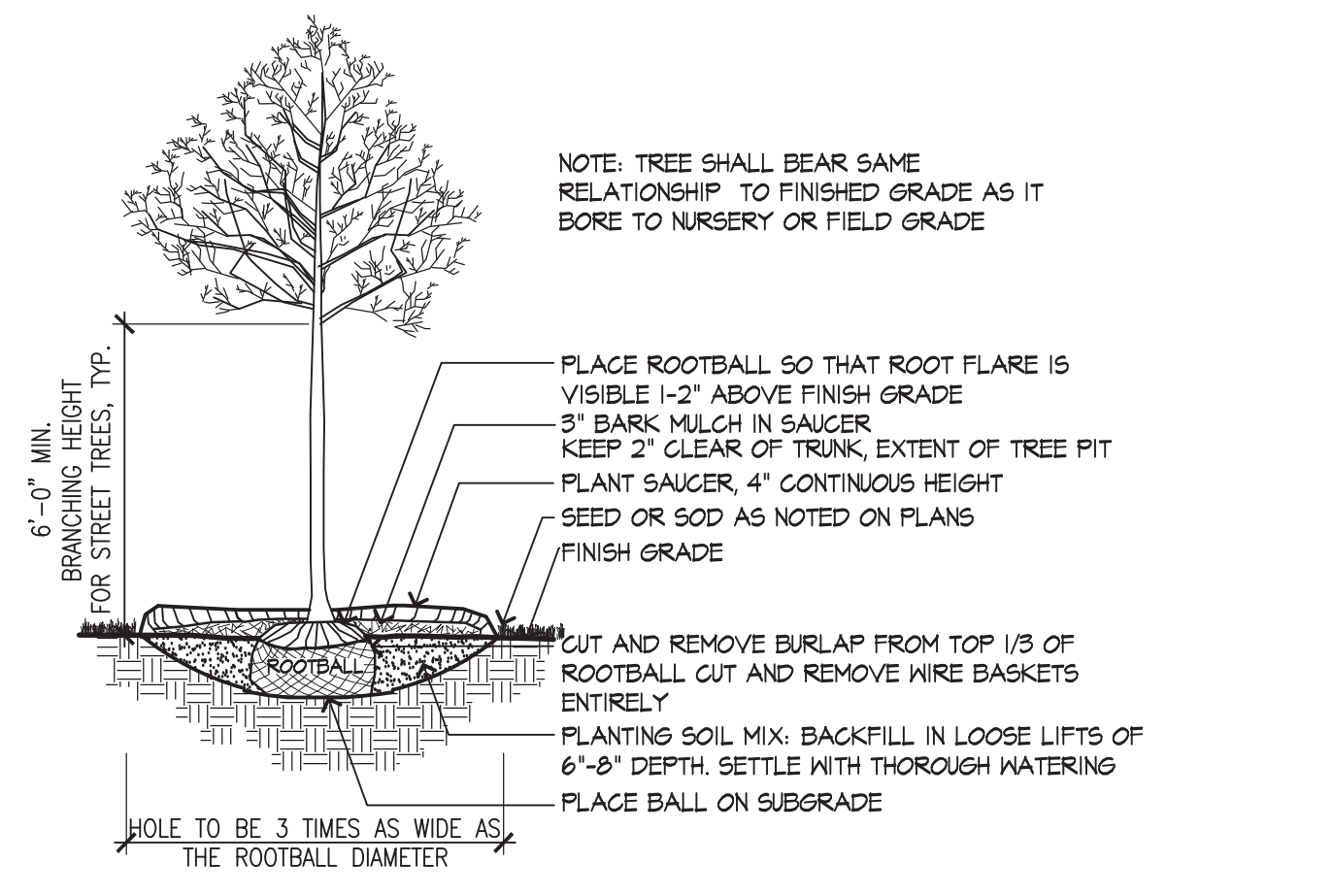
9 CONCRETE STAIRS AND HANDRAILS  
 SCALE: 1/2" = 1'-0"



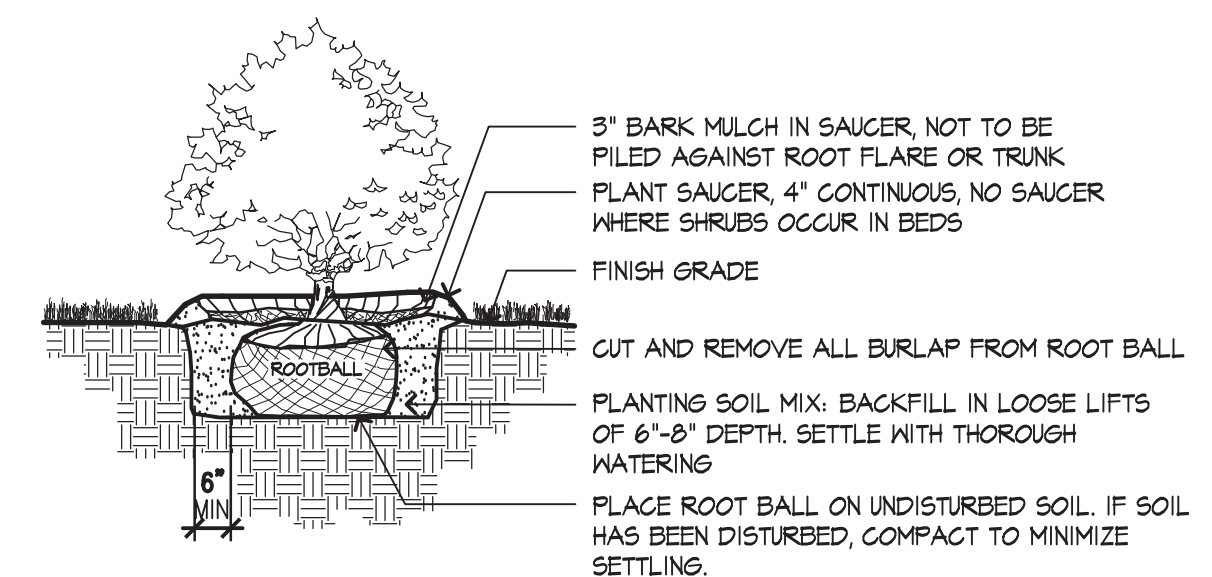
10 WOOD VEHICULAR GUARDRAIL  
 SCALE: 1-1/2" = 1'-0"



11 LOAM AND SEED  
 SCALE: 1/2" = 1'-0"



13 DECIDUOUS TREE PLANTING  
 SCALE: 1/2" = 1'-0"



13 SHRUB PLANTING  
 SCALE: 1/2" = 1'-0"



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 DELLBROOK  
 One Adams Place  
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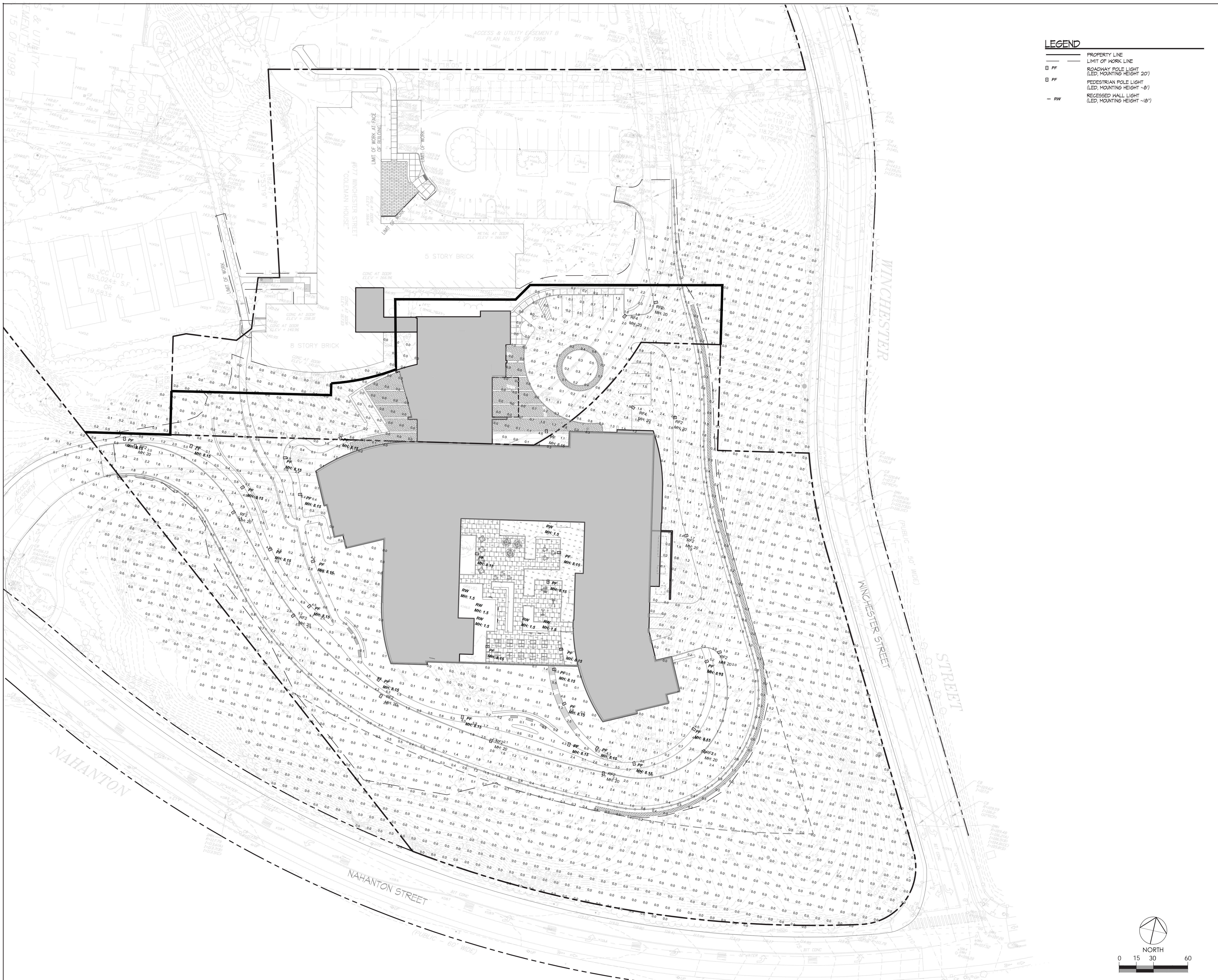
Structural:  
 VEITAS & VEITAS ENGINEERS, INC  
 639 Granite Street  
 Braintree, MA 02184  
 MEP consultant:  
 PETERSEN ENGINEERING, INC  
 127 Parrott Avenue  
 Portsmouth, NH 03801

PROJECT TITLE:  
**2LIFE - OPUS**

677 WINCHESTER STREET  
 NEWTON, MA 02459

PROJECT NO: 66571  
 DRAWING TITLE:  
**SITE DETAILS**

SCALE:  
**LU-L601**  
 ZONING REVIEW



**LEGEND**

—	PROPERTY LINE
—	LIMIT OF WORK LINE
□ PF	ROADWAY POLE LIGHT (LED, MOUNTING HEIGHT 20')
○ PF	PEDESTRIAN POLE LIGHT (LED, MOUNTING HEIGHT ~8')
— RW	RECESSED WALL LIGHT (LED, MOUNTING HEIGHT ~18')

NO.	DATE	REVISION
01	05/05/2021	SPECIAL PERMIT

SEAL



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PROJECT No: 66571

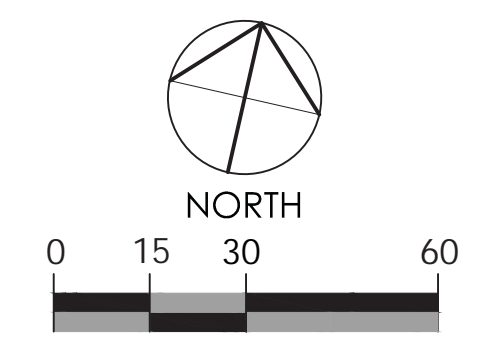
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**PHOTOMETRIC PLAN**

SCALE:

**LU-L701**

ZONING REVIEW

3/03/2021



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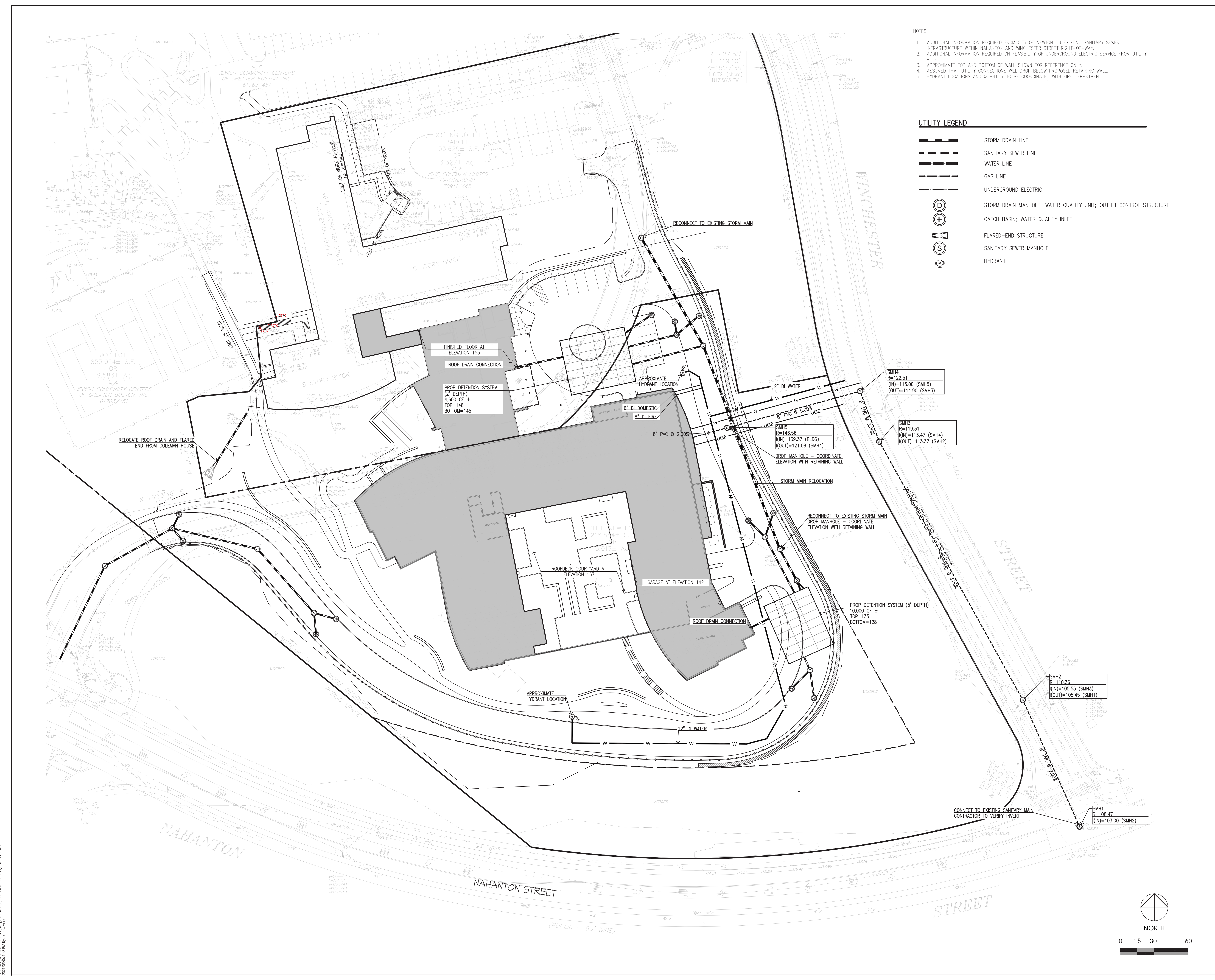
Owner:  
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 MEP consultant:  
 PETERSEN ENGINEERING, INC  
 127 Farroll Avenue  
 Portsmouth, NH 03801

PROJECT TITLE:  
**2LIFE - COLEMAN HOUSE**  
 677 WINCHESTER STREET  
 NEWTON, MA 02459

PROJECT No: 66571  
 DRAWING TITLE:  
**UTILITY PLAN**

SCALE:  
**LU-C100**  
 ZONING REVIEW

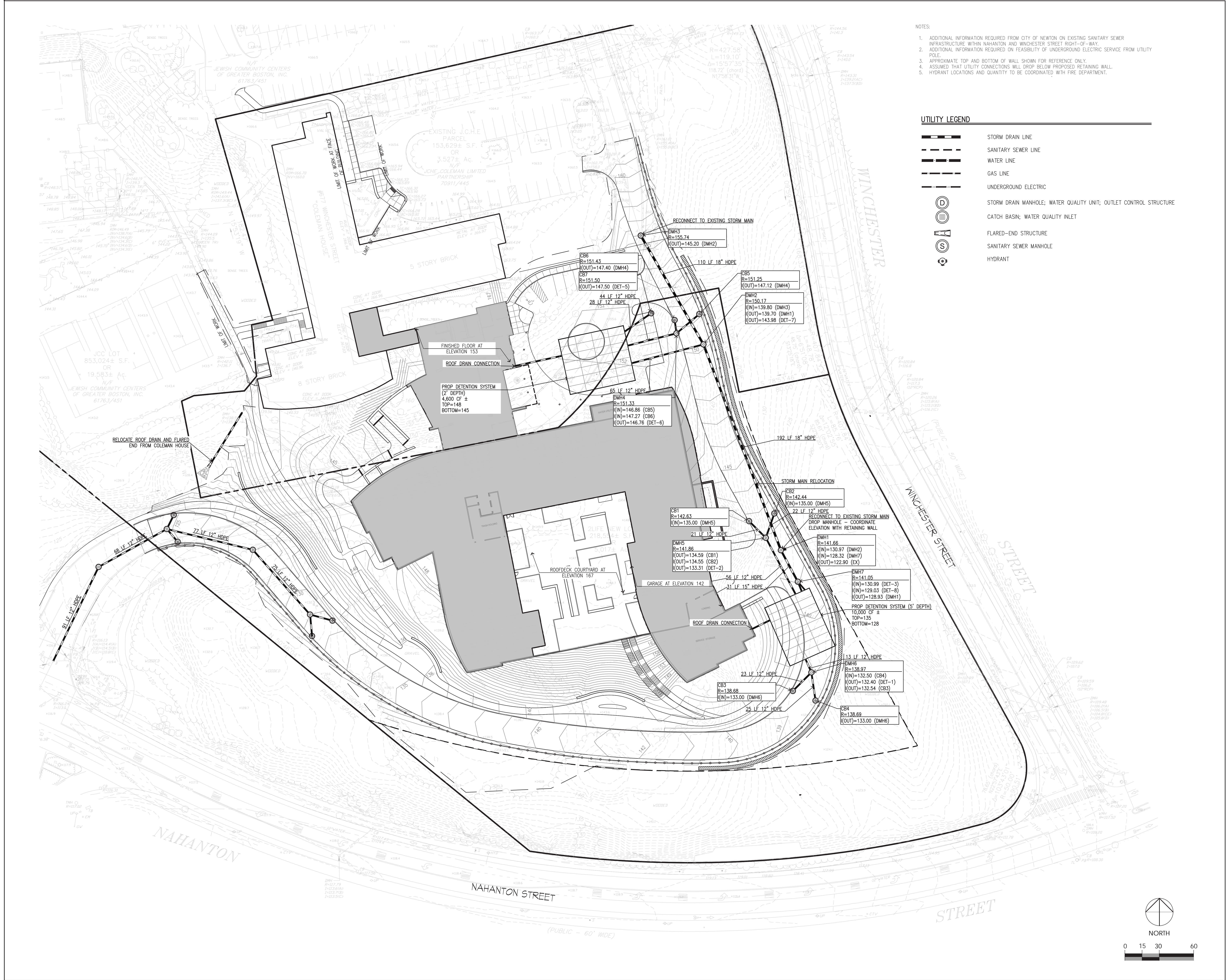


- NOTES:
- ADDITIONAL INFORMATION REQUIRED FROM CITY OF NEWTON ON EXISTING SANITARY SEWER INFRASTRUCTURE WITHIN NAHANTON AND WINCHESTER STREET RIGHT-OF-WAY.
  - ADDITIONAL INFORMATION REQUIRED ON FEASIBILITY OF UNDERGROUND ELECTRIC SERVICE FROM UTILITY POLE.
  - APPROXIMATE TOP AND BOTTOM OF WALL SHOWN FOR REFERENCE ONLY.
  - ASSUMED THAT UTILITY CONNECTIONS WILL DROP BELOW PROPOSED RETAINING WALL.
  - HYDRANT LOCATIONS AND QUANTITY TO BE COORDINATED WITH FIRE DEPARTMENT.

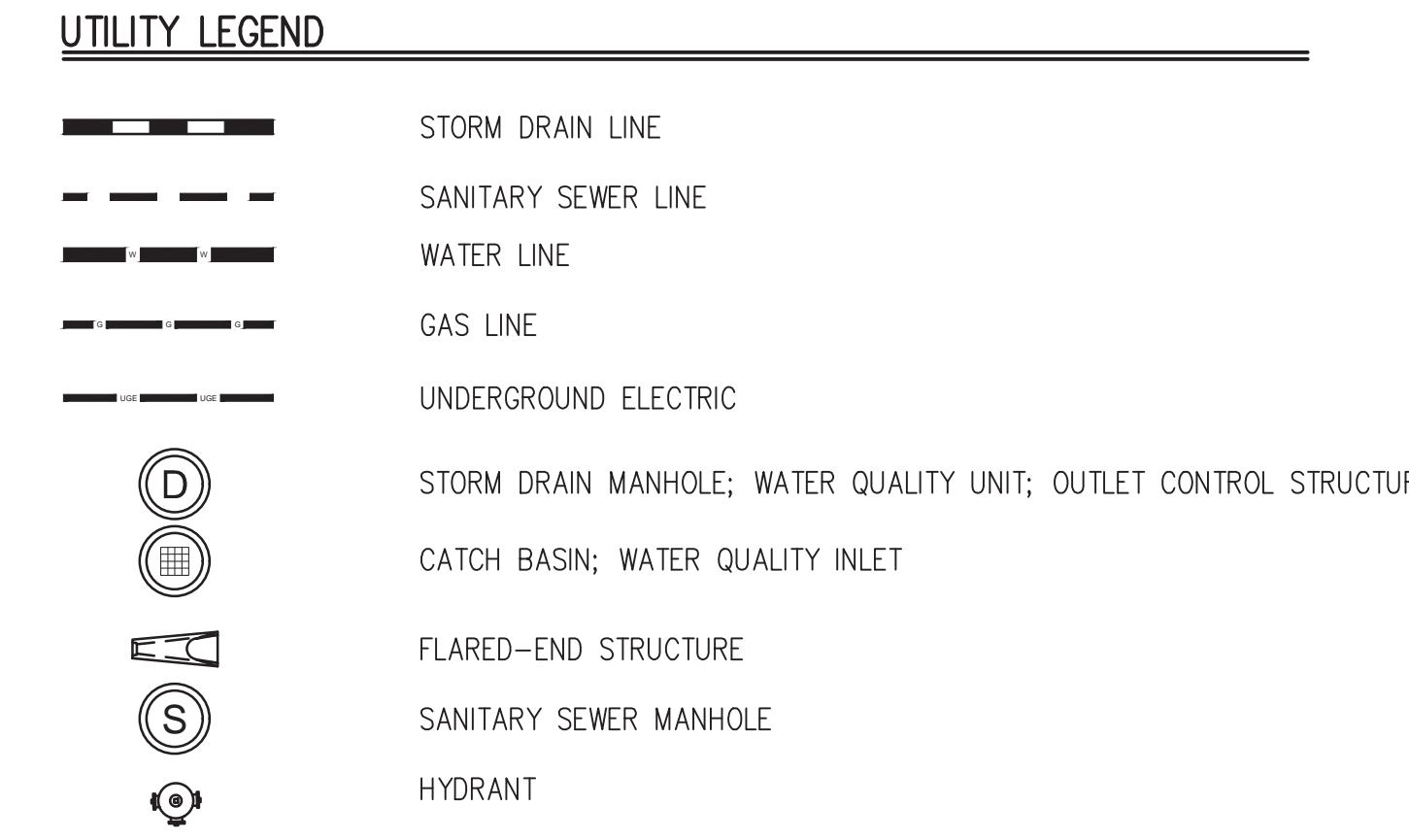
**UTILITY LEGEND**

	STORM DRAIN LINE
	SANITARY SEWER LINE
	WATER LINE
	GAS LINE
	UNDERGROUND ELECTRIC
	STORM DRAIN MANHOLE; WATER QUALITY UNIT; OUTLET CONTROL STRUCTURE
	CATCH BASIN; WATER QUALITY INLET
	FLARED-END STRUCTURE
	SANITARY SEWER MANHOLE
	HYDRANT

2023 02 28 10:30 AM 66571 01 250 UtilityViewing (current) 13 00001 250 UtilityViewing  
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- NOTES:
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  - ADDITIONAL INFORMATION REQUIRED ON FEASIBILITY OF UNDERGROUND ELECTRIC SERVICE FROM UTILITY POLE.
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 Portsmouth, NH 03801

PROJECT TITLE:  
**2LIFE - COLEMAN HOUSE**

677 WINCHESTER STREET  
 NEWTON, MA 02459

---

PROJECT No: 66571

DRAWING TITLE:  
**DRAINAGE PLAN**

SCALE:

**LU-C101**

ZONING REVIEW

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**1 WATER QUALITY UNIT (CONTECH CDS 2015-4)**  
SCALE: NTS



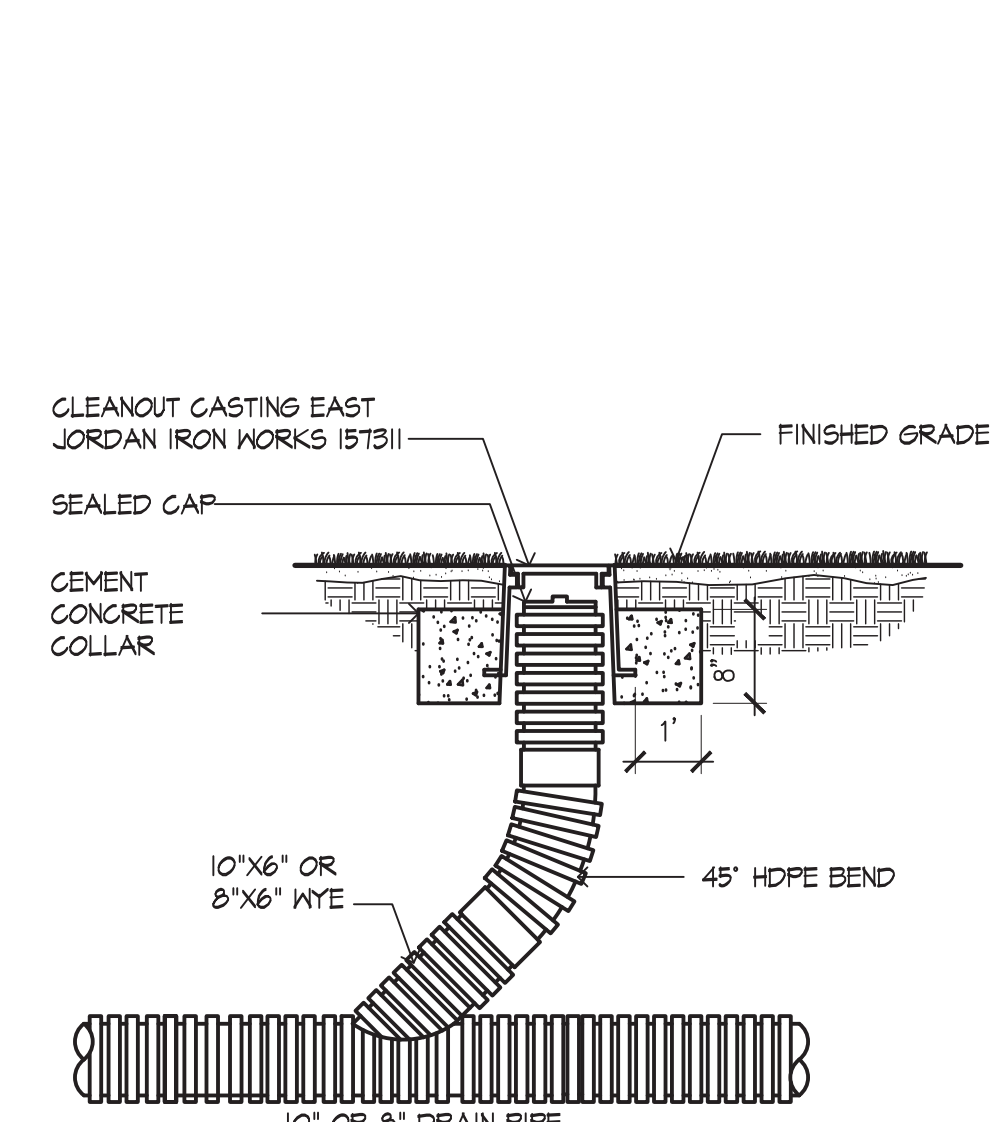
- GENERAL NOTES**
- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
  - DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
  - FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. [www.contechES.com](http://www.contechES.com)
  - CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
  - STRUCTURE SHALL MEET ASHTO HS20 AND CASTINGS SHALL MEET HS20 (ASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
  - PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

**WATER QUALITY UNIT SUMMARY**

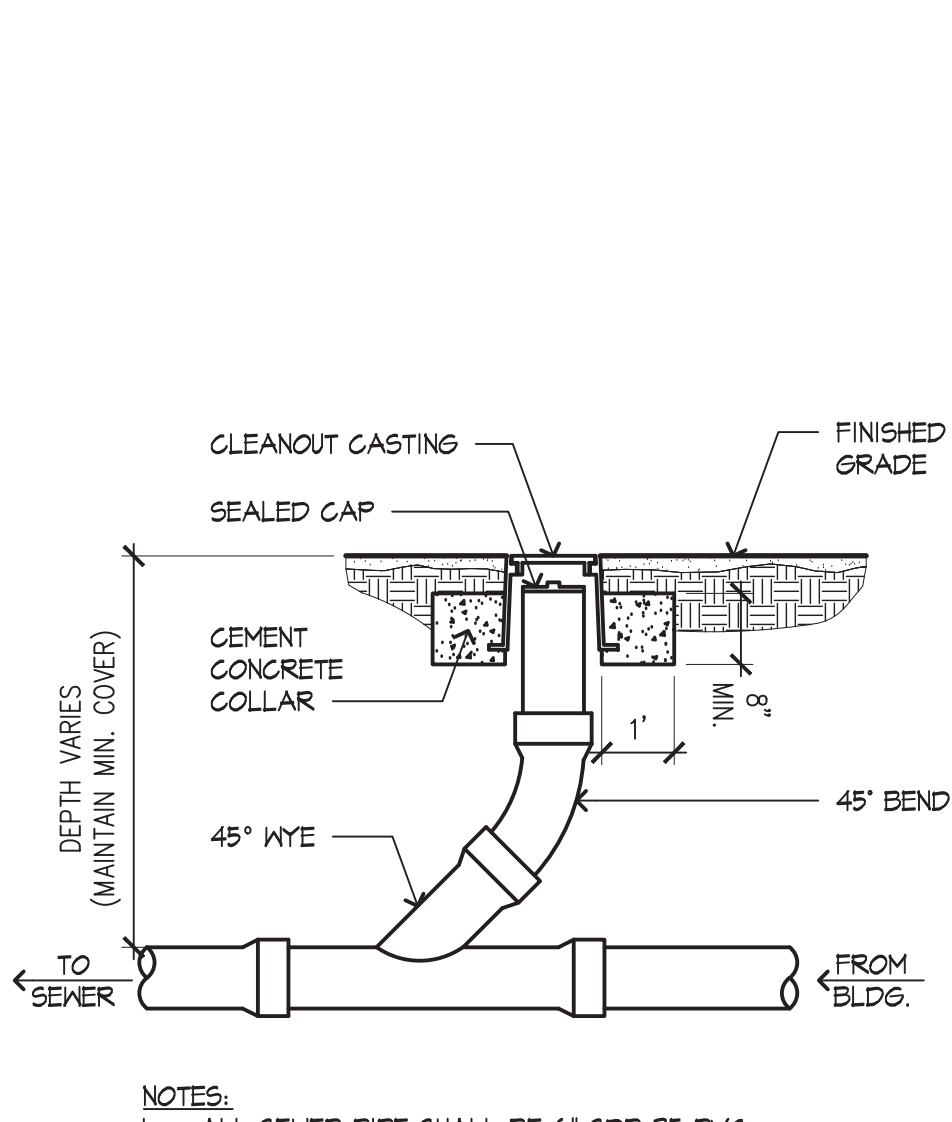
NAME	LOCATION	SIZE
WQU-1	PR-LCS-11 WEST	-
WQU-2	PR-LCS-11 EAST	-

- INSTALLATION NOTES**
- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
  - CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
  - CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
  - CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
  - CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

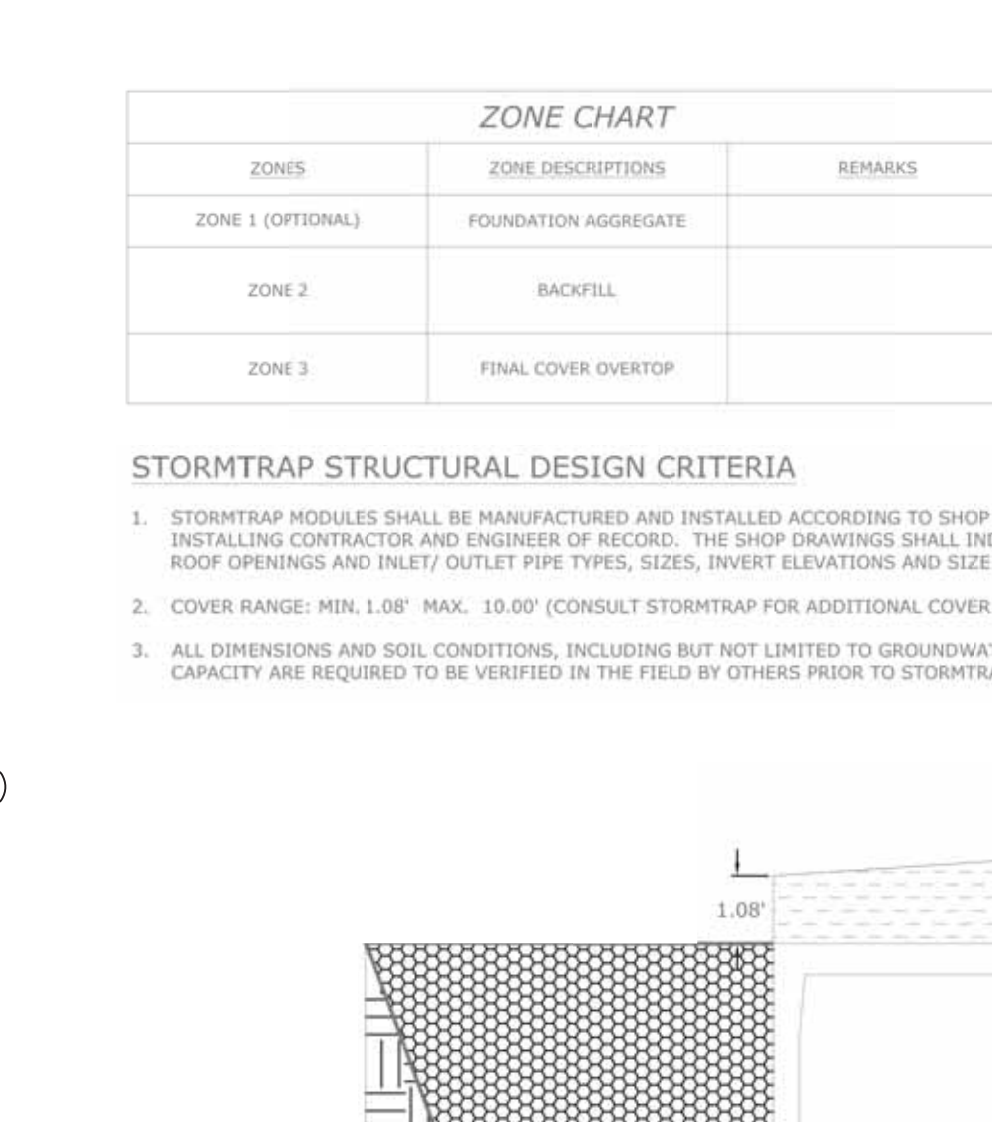
**2 UTILITY TRENCH**  
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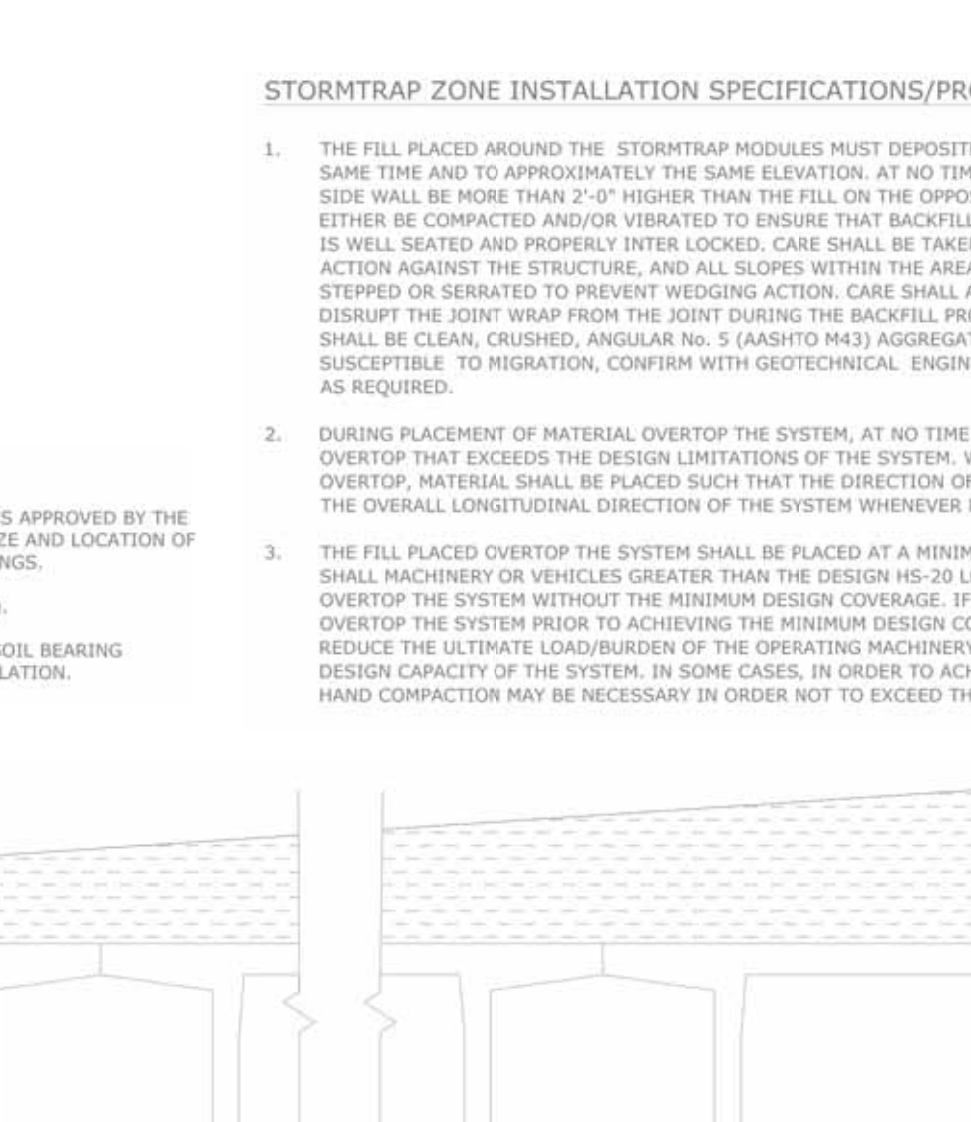
**3 FLARED END SECTION**  
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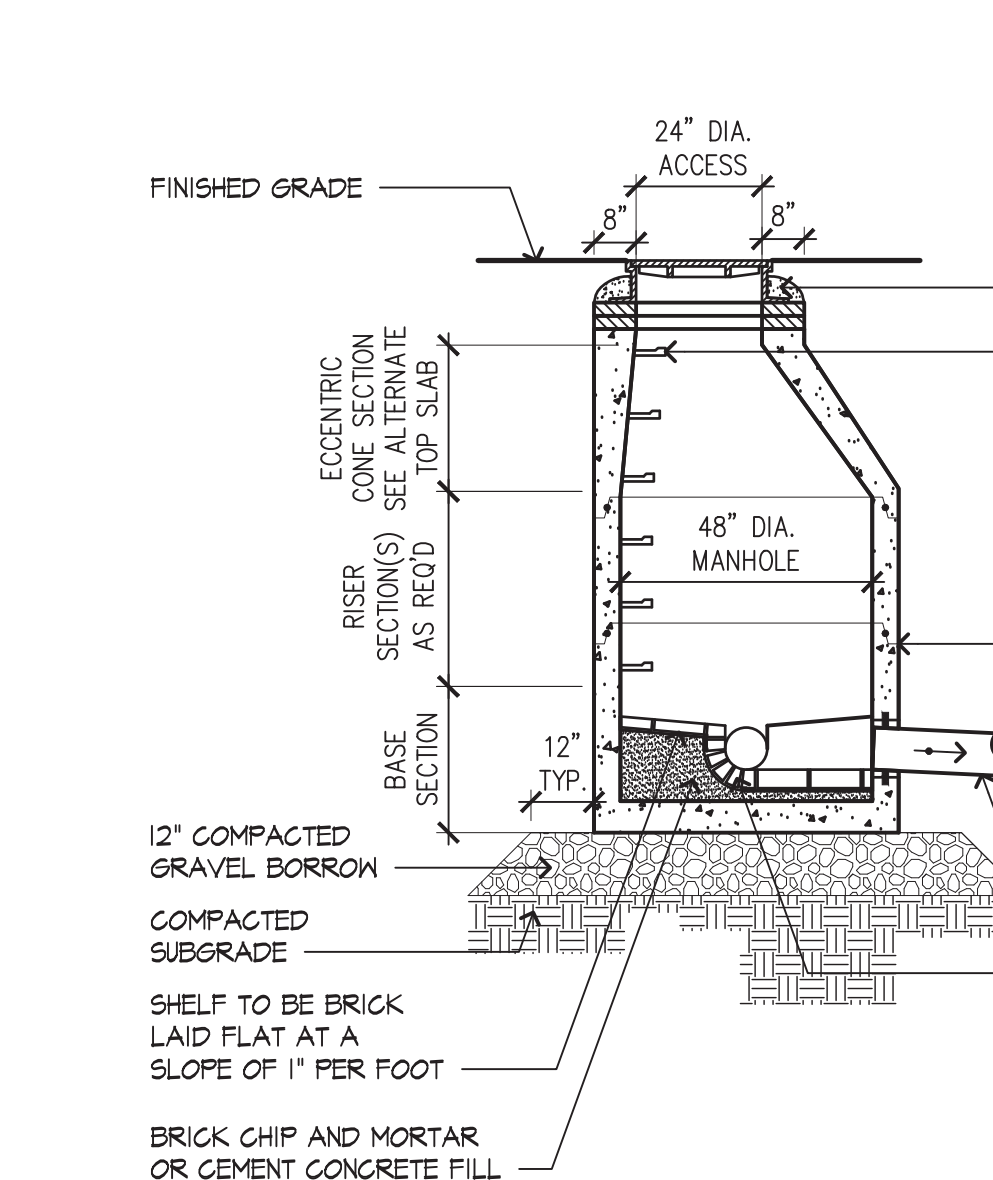
**4 CATCH BASIN**  
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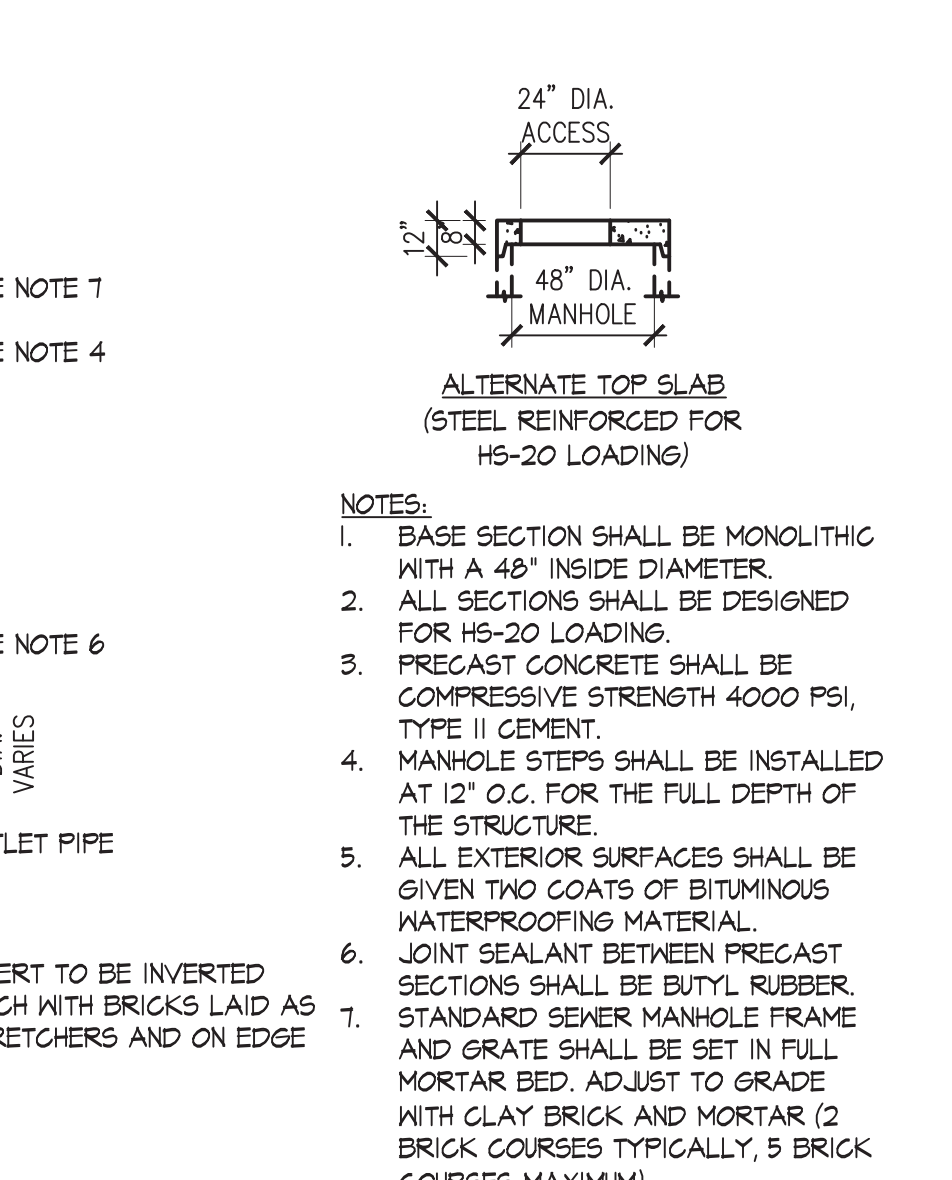
**5 DRAIN MANHOLE**  
SCALE: NTS



**6 DRAINAGE SERVICE CLEANOUT**  
SCALE: NTS



**7 SEWER SERVICE CLEANOUT**  
SCALE: NTS



**8 SEWER PIPE TRENCH**  
SCALE: NTS



**9 SANITARY SEWER MANHOLE**  
SCALE: NTS



**10 STORMTRAP SINGLE TRAP SUBSURFACE DETENTION BASIN**  
SCALE: NTS



- NOTES**
- ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADINGS.
  - PROVIDE 1/2" KNOCKOUTS FOR PIPES WITH 1" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
  - JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
  - CATCH BASIN FRAME SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES 6" MIN. 5 BRICK COURSES MAX.).

- NOTES**
- ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADINGS.
  - PROVIDE 1/2" KNOCKOUTS FOR PIPES WITH 1" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
  - COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
  - JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
  - DRAIN MANHOLE FRAME SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES MINIMUM 5 BRICK COURSES MAXIMUM).

**ZONE CHART**

ZONE	ZONE DESCRIPTIONS	REMARKS
ZONE 1 (OPTIONAL)	FOUNDATION AGGREGATE	
ZONE 2	BACKFILL	
ZONE 3	FINAL COVER OVERTOP	

- STORMTRAP STRUCTURAL DESIGN CRITERIA**
- STORMTRAP MODULES SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
  - COVER RANGE: MIN. 1.00' MAX. 10.00' (CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS).
  - ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.

- STORMTRAP ZONE INSTALLATION SPECIFICATIONS/PROCEDURES**
- THE FILL PLACED AROUND THE STORMTRAP MODULES MUST BE DEPOSITED ON BOTH SIDES AT THE SAME TIME AND TO APPROXIMATELY THE SAME ELEVATION. AT NO TIME SHALL THE FILL BEHIND ONE SIDE BE MORE THAN 2'-0" HIGHER THAN THE FILL ON THE OPPOSITE SIDE. BACKFILL SHALL EITHER BE COMPACTED AND/OR VIBRATED TO ENSURE THAT BACKFILL AGGREGATE/STONE MATERIAL IS WELL SEATED AND PROPERLY INTER LOCKED. CARE SHALL BE TAKEN TO PREVENT ANY WEDGING ACTION AGAINST THE STRUCTURE, AND ALL SLOPES WITHIN THE AREA TO BE BACKFILLED MUST BE STEPPED OR SERRATED TO PREVENT WEDGING ACTION. CARE SHALL ALSO BE TAKEN AS NOT TO DISRUPT THE JOINT WRAP FROM THE JOINT DURING THE BACKFILL PROCESS. BACKFILL MATERIAL SHALL BE CLEAN, CRUSHED, ANGULAR NO. 5 (ASHTO M43) AGGREGATE. IF NATIVE EARTH IS SUSCEPTIBLE TO MIGRATION, CONFIRM WITH GEOTECHNICAL ENGINEER AND PROVIDE PROTECTION AS REQUIRED.
  - DURING PLACEMENT OF MATERIAL OVERTOP THE SYSTEM, AT NO TIME SHALL MACHINERY BE USED OVERTOP THAT EXCEEDS THE DESIGN LIMITATIONS OF THE SYSTEM. WHEN PLACEMENT OF MATERIAL OVERTOP MATERIAL SHALL BE PLACED SUCH THAT THE DIRECTION OF PLACEMENT IS PARALLEL WITH THE OVERALL LONGITUDINAL DIRECTION OF THE SYSTEM WHENEVER POSSIBLE.
  - THE FILL PLACED OVERTOP THE SYSTEM SHALL BE PLACED AT A MINIMUM OF 6" LIFTS. AT NO TIME SHALL MACHINERY OR VEHICLES GREATER THAN THE DESIGN HS-20 LOADING CRITERIA TRAVEL OVERTOP THE SYSTEM WITHOUT THE MINIMUM DESIGN COVERAGE. IF TRAVEL IS NECESSARY OVERTOP THE SYSTEM PRIOR TO ACHIEVING THE MINIMUM DESIGN COVER, IT MAY BE NECESSARY TO REDUCE THE ULTIMATE LOAD/BURDEN OF THE OPERATING MACHINERY SO AS NOT TO EXCEED THE DESIGN CAPACITY OF THE SYSTEM. IN SOME CASES, IN ORDER TO ACHIEVE REQUIRED COMPACTION, HAND COMPACTION MAY BE NECESSARY IN ORDER NOT TO EXCEED THE ALLOTTED DESIGN LOADING.



NO. DATE REVISION

01	05/05/2021	SPECIAL PERMIT
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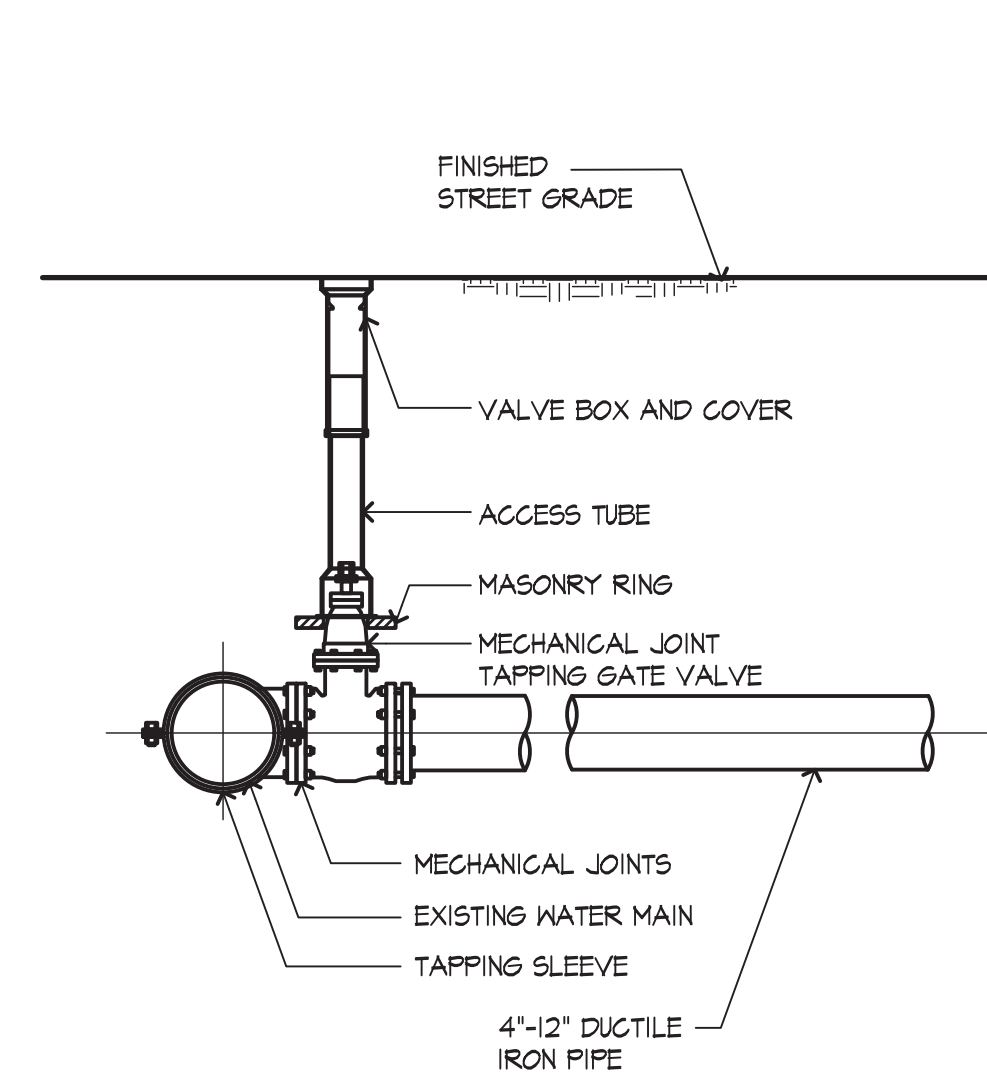
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**2LIFE - OPUS**

677 WINCHESTER STREET  
NEWTON, MA 02459

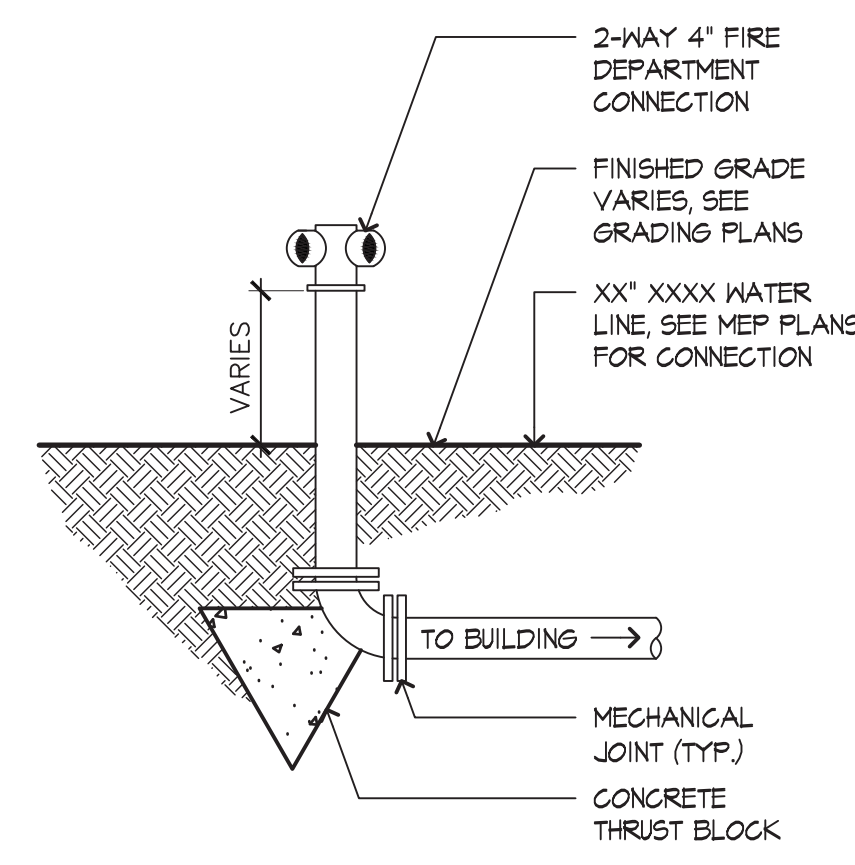
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DRAWING TITLE:  
**UTILITY DETAILS**

SCALE:  
**LU-C200**  
ZONING REVIEW

3/03/2021

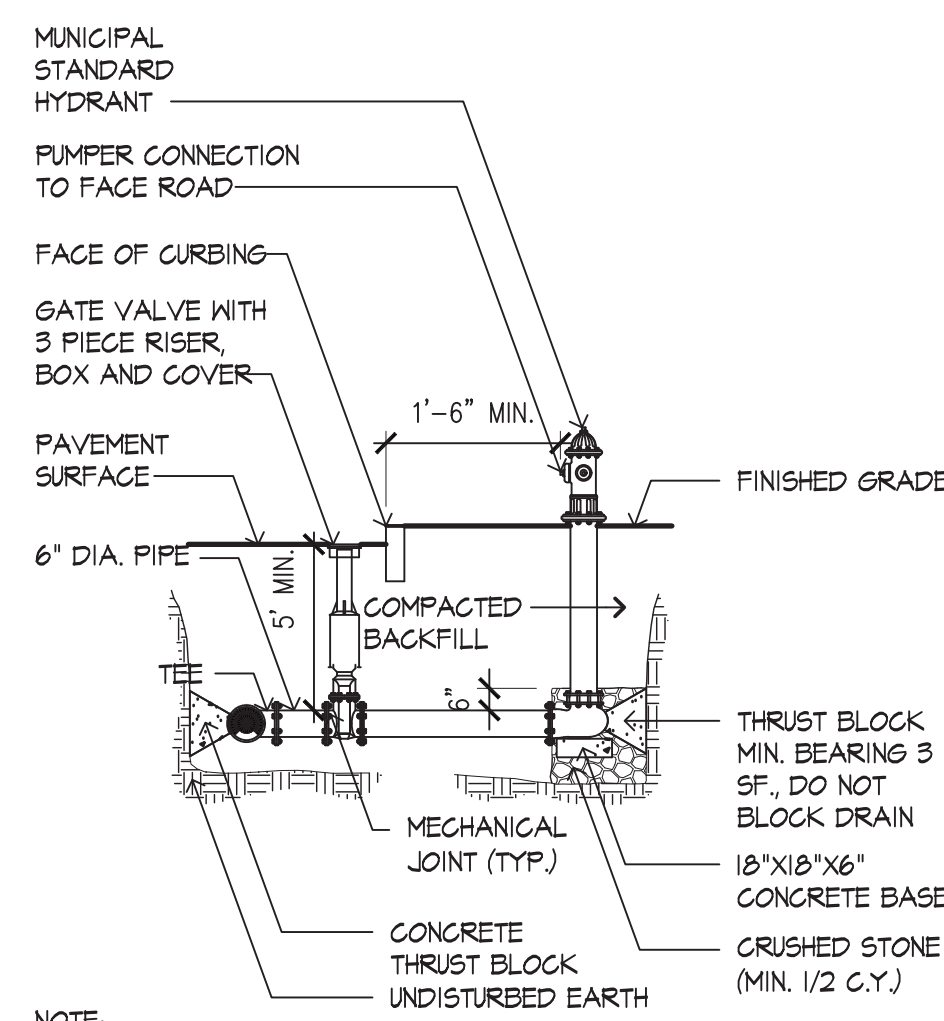


**1 TAPPING SLEEVE AND VALVE**  
 SCALE: NTS



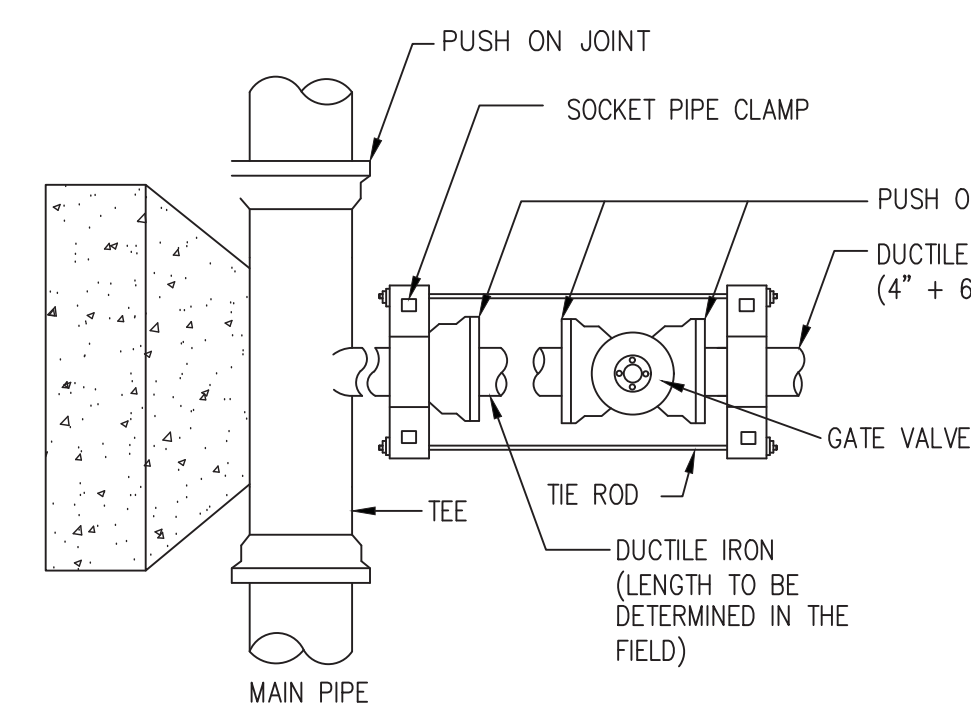
NOTE:  
 1. CONCRETE THRUST BLOCKS TO BE USED ONLY WHERE THEY CAN BEAR ON UNDISTURBED EARTH. USE CLAMPS AND TIE RODS OR OTHER ACCEPTABLE METHOD OF JOINT RESTRAINT WHERE SOIL CONDITIONS PROHIBIT THE USE OF THRUST BLOCKS.

**2 FIRE DEPARTMENT CONNECTION**  
 SCALE: NTS

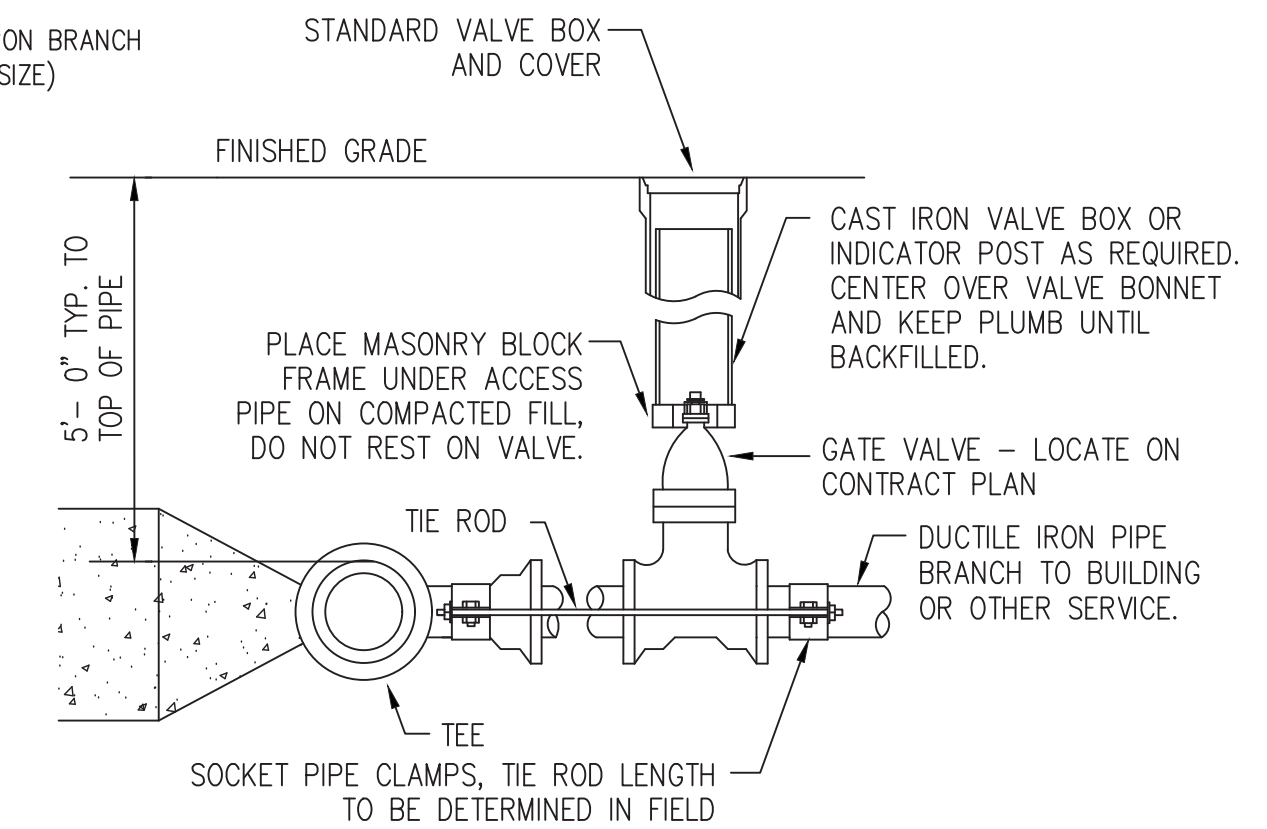


NOTE:  
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**3 HYDRANT CONNECTION**  
 SCALE: NTS



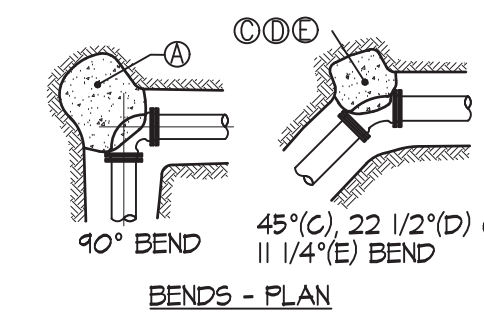
PLAN



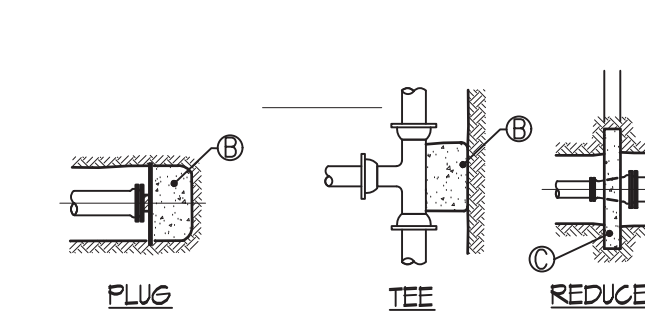
ELEVATION

**4 BRANCH SERVICE CONNECTION**  
 SCALE: NTS

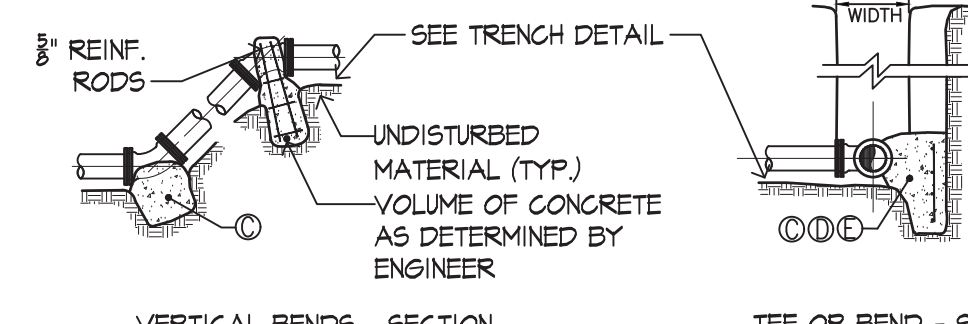
- NOTES:  
 1. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL WHERE TRENCH WALL HAS BEEN DISTURBED. EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE ON BENDS AND TEES. EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.  
 2. PLACE SOLID CONCRETE BLOCKS IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCK.  
 3. REQUIREMENTS OF THE ABOVE TABLE PRESUME MINIMUM SOIL BEARING OF 1 TON PER SQUARE FOOT, AND MAY BE VARIED BY THE ENGINEER TO MEET OTHER CONDITIONS ENCOUNTERED.  
 4. MEGA-LUG RETAINER GLANDS ARE REQUIRED FOR ALL MECHANICAL JOINTS. THESE GLANDS DO NOT REDUCE THE REQUIREMENTS FOR THRUST RESTRAINT.  
 5. ALL FITTINGS SHALL BE WRAPPED IN POLYETHYLENE OR BUILDING PAPER PRIOR TO INSTALLATION OF CONCRETE RESTRAINT.  
 6. THREADED ROD SHALL BE ANSI A242 F150 PIPE RESTRAINT NUTS TO MATCH ANKA CIII. THREADED RODS AND NUTS TO BE FIELD COATED WITH BITUMINOUS PAINT.  
 7. THRUST RESTRAINT IS REQUIRED FOR ALL TEES, BENDS, REDUCERS, CAPS, PLUGS, OR CROSSIES.  
 8. INSTALL LIFT HOOKS INTO THRUST BLOCKS AT END CAPS AND PLUGS.



BENDS - PLAN



TEE REDUCER

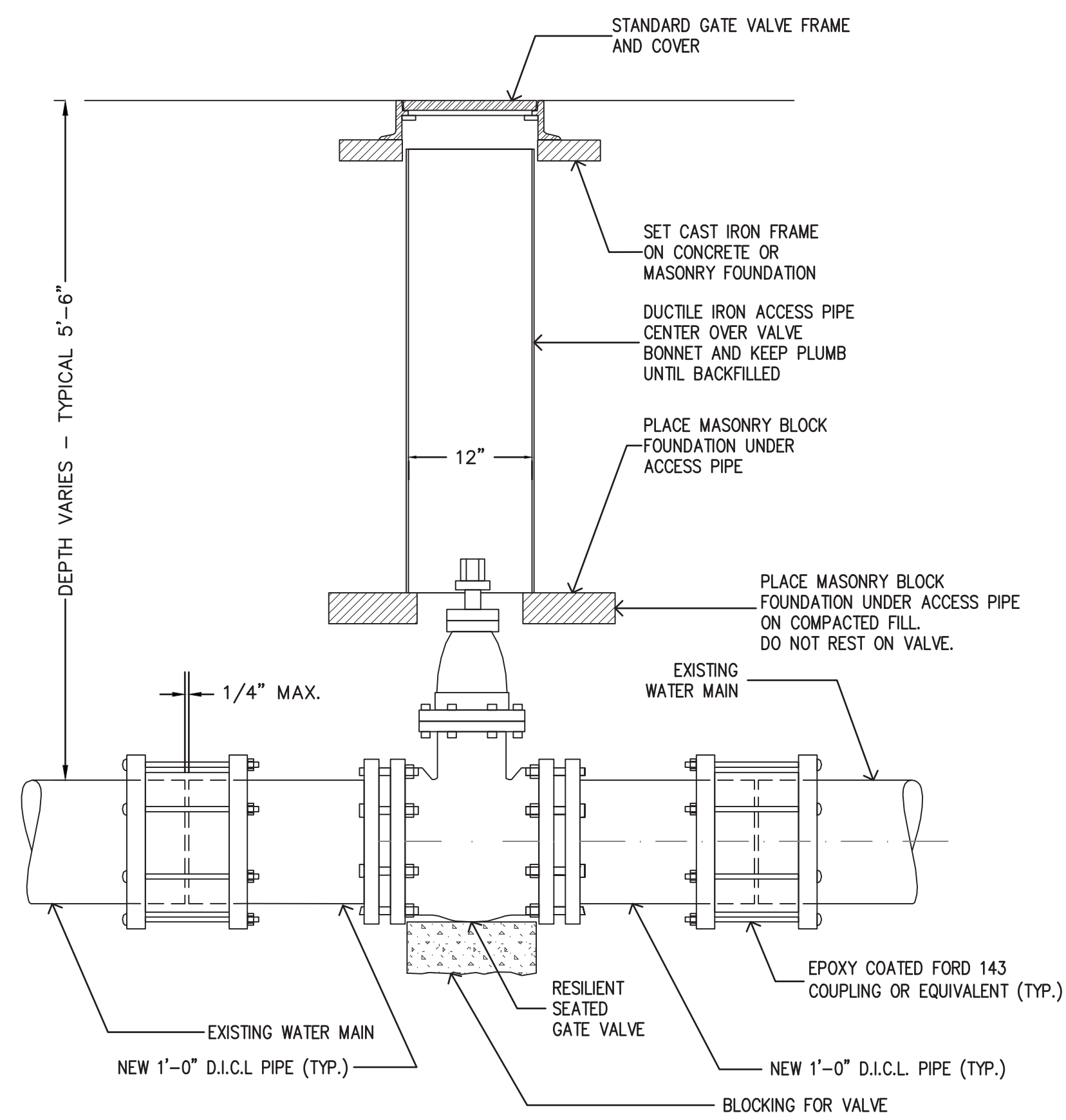


VERTICAL BENDS - SECTION TEE OR BEND - SECTION

TYPE REACTION	THRUST BLOCK SCHEDULE											
	SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL											
	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"
(A)	1.78	4.38	7.84	11.14	16.52	21.82	30.82	36.04	48.12	69.28	107.66	154.78
(B)	1.30	3.10	5.52	8.38	12.18	16.74	21.78	27.74	34.02	48.98	76.12	109.44
(C)	0.96	2.38	4.24	6.02	9.32	11.82	16.68	19.42	26.04	37.50	58.26	83.76
(D)	0.50	1.2	2.16	3.08	4.74	6.02	8.50	9.94	13.28	19.12	29.70	42.70
(E)	0.26	0.60	1.08	1.54	2.38	3.04	4.24	5.02	6.66	9.58	14.90	21.42

OTHER TEST PRESSURES FOR THE ABOVE REACTIONS: ABOVE DIMENSIONS ARE MINIMUM THRUST BLOCK SIZES. THEY HAVE BEEN CALCULATED USING A PRESSURE OF 200 PSI. TEST PRESSURE TO BE 150 PSI MIN. OR AS REQUIRED BY BH&C. SQUARE FEET OF CONCRETE THRUST BLOCKING FOR OTHER TEST PRESSURES IS DIRECTLY PROPORTIONAL TO THE ABOVE TABLE. FOR INSTANCE, AT 225 PSI TEST PRESSURE ABOVE NUMBERS SHOULD BE MULTIPLIED BY 1.125 (225 PSI/200 PSI)=1.125.

**5 THRUST BLOCK**  
 SCALE: NTS



NOTE:  
 ALL EXCAVATION AND BACKFILLING AND PAVING SHALL BE IN ACCORDANCE WITH THE CITY OF WOBURN REQUIREMENTS

**6 TYPICAL GATE VALVE INSTALLATION**  
 SCALE: NTS



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PROJECT No: 66571  
 DRAWING TITLE:  
**UTILITY DETAILS**

SCALE:  
**LU-C201**

ZONING REVIEW

3/03/2021