

SHEET LIST TABLE		
SHEET NUMBER	DRAWING	SHEET TITLE
1	C1.1	LOCATION PLAN
2	C2.1	EXISTING CONDITION PLAN
3	C3.1	GRADING & DRAINAGE PLAN
4	C4.1	UTILITY PLAN
5	C5.1	SURVEY & LAYOUT PLAN
6	C6.1	PHOTOMETRIC PLAN
7	C7.1	CONSTRUCTION DETAILS PLAN
8	C7.2	CONSTRUCTION DETAILS PLAN
9	C7.3	CONSTRUCTION DETAILS PLAN
10	C7.4	CONSTRUCTION DETAILS PLAN

ZONING TABLE SINGLE RESIDENCE (SR)

DIMENSIONAL CONTROL	REQUIRED/ALLOWED	PROPOSED
MINIMUM LOT AREA	12,000 ft²	220,547 ft²
MAXIMUM DENSITY	---	---
FRONTAGE & WIDTH	100 ft.	323.00 ft.
FLOOR AREA RATIO	---	---
MINIMUM FRONT SETBACK	20 ft.	0 ft.
MINIMUM SIDE SETBACK	15 ft.	70.5 ft.
MINIMUM REAR SETBACK	25 ft.	353.1 ft.
MAXIMUM NUMBER OF STORIES	3	3
MAXIMUM HEIGHT	35 ft.	< 37 ft.
MAXIMUM BUILDING COVERAGE	30%	5.3%
MINIMUM OPEN AREA	40%	87%
DISTANCE BETWEEN BUILDINGS	1	NA

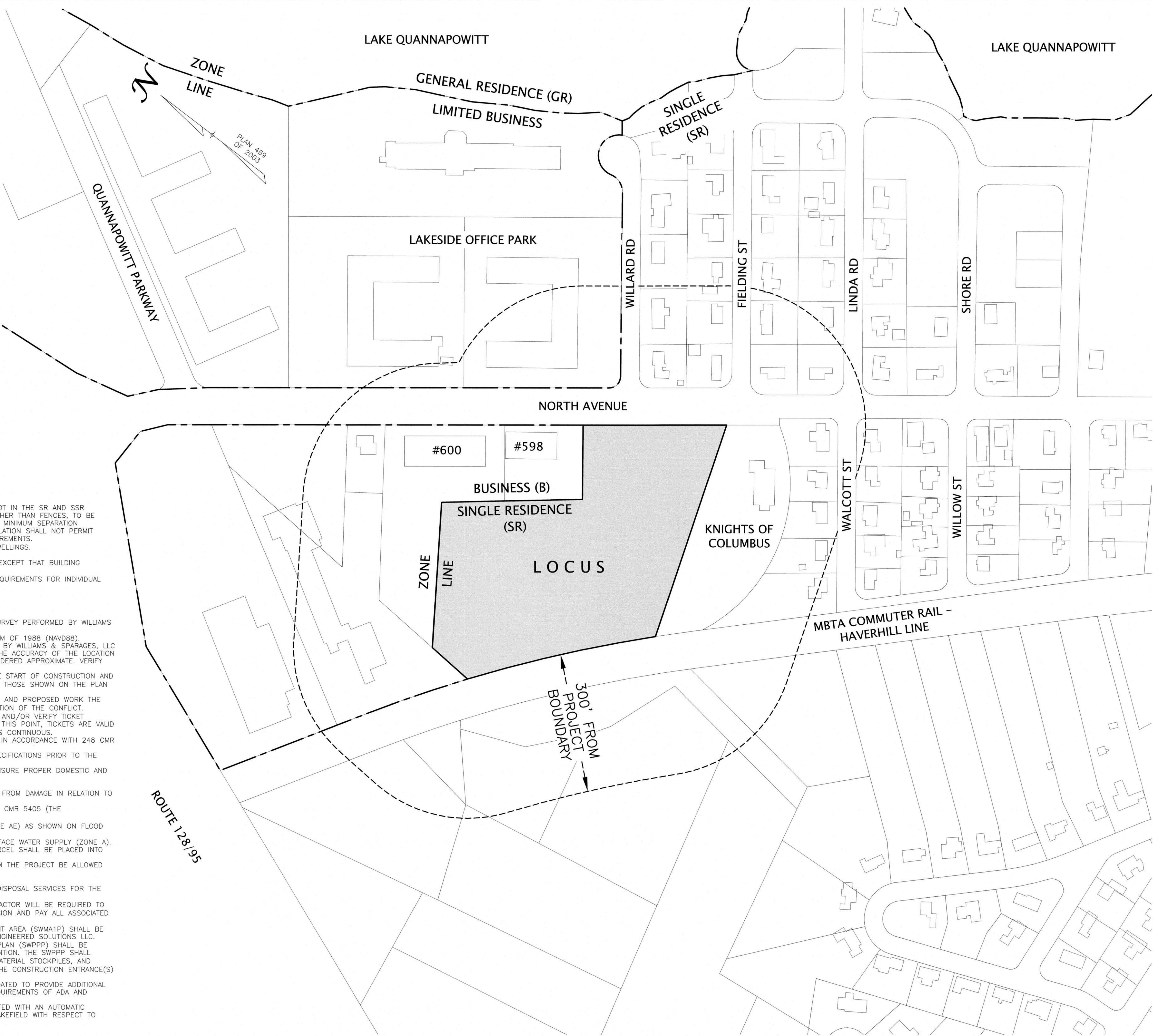
ZONING TABLE MULTIPLE RESIDENCE MR-2

DIMENSIONAL CONTROL	REQUIRED/ALLOWED	PROPOSED
MINIMUM LOT AREA	60,000 ft²	220,547 ft²
MAXIMUM DENSITY	2	---
FRONTAGE & WIDTH	180 ft.	323.00 ft.
FLOOR AREA RATIO	---	---
MINIMUM FRONT SETBACK	30 ft. <sup>3</sup>	9.1 ft.
MINIMUM SIDE SETBACK	30 ft. <sup>3</sup>	68.4 ft.
MINIMUM REAR SETBACK	30 ft. <sup>3</sup>	353.1 ft.
MAXIMUM NUMBER OF STORIES	5	3
MAXIMUM HEIGHT	50 ft.	< 37 ft.
MAXIMUM BUILDING COVERAGE	35% <sup>4</sup>	5.3%
MINIMUM OPEN AREA	30%	87%
DISTANCE BETWEEN BUILDINGS	50 <sup>5</sup>	NA

- ZONING TABLE NOTES:
- THERE IS NO MINIMUM BUILDING SEPARATION BETWEEN BUILDINGS ON THE SAME LOT IN THE SR AND SSR ZONING DISTRICTS. ADDITIONALLY, ALL DWELLINGS AND ACCESSORY STRUCTURES, OTHER THAN FENCES, TO BE CONSTRUCTED ON A LOT IN THE SR AND SSR ZONING DISTRICTS MUST MAINTAIN A MINIMUM SEPARATION DISTANCE OF 20 FEET FROM ANY DWELLING ON ANY ADJUTING PARCEL. THIS REGULATION SHALL NOT PERMIT THE REDUCTION OF ANY SETBACK REQUIREMENTS BUT MAY INCREASE THOSE REQUIREMENTS.
  - SEE § 190-31 FOR COMPLETE REQUIREMENTS FOR MULTIFAMILY AND ATTACHED DWELLINGS.
  - OR HEIGHT OF BUILDING, WHICHEVER IS GREATER.
  - COVERED PARKING GARAGES SHALL NOT COUNT AS PART OF BUILDING COVERAGE, EXCEPT THAT BUILDING COVERAGE INCLUDING PARKING GARAGES SHALL NOT EXCEED 70%.
  - OR HEIGHT OF TALLER BUILDING, WHICHEVER IS GREATER. (SEE § 190-31 FOR REQUIREMENTS FOR INDIVIDUAL ATTACHED DWELLINGS.)

PROJECT NOTES:

- EXISTING TOPOGRAPHIC INFORMATION IS THE RESULT OF AN ACTUAL INSTRUMENT SURVEY PERFORMED BY WILLIAMS & SPARAGES, LLC CONDUCTED IN OCTOBER 2020.
- ALL ELEVATIONS SHOWN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- UTILITIES SHOWN ARE THE RESULT OF AN ACTUAL INSTRUMENT SURVEY PERFORMED BY WILLIAMS & SPARAGES, LLC AND FROM VARIOUS PLANS. NO REPRESENTATION OR WARRANTY IS MADE AS TO THE ACCURACY OF THE LOCATION OF THE SUBSURFACE UTILITIES DEPICTED OR NOT DEPICTED AND SHOULD BE CONSIDERED APPROXIMATE. VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.
- ALL UTILITIES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION AND SHALL NOTIFY THE OWNER'S REPRESENTATIVE IF EXISTING CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLAN THAT WILL PREVENT THE PROPOSED WORK FROM BEING COMPLETED AS INTENDED.
- IF DURING CONSTRUCTION A CONFLICT SHOULD ARISE BETWEEN AN EXISTING UTILITY AND PROPOSED WORK THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING FOR RESOLUTION OF THE CONFLICT.
- CONTRACTOR TO CALL DIGSAFE PRIOR TO CONSTRUCTION (811), TO UPDATE TICKET AND/OR VERIFY TICKET VALIDATION. DIGSAFE TICKET IS VALID 30 DAYS FROM THE DATE OF ISSUE. BEYOND THIS POINT, TICKETS ARE VALID INDEFINITELY. PROVIDED THAT 1) THE MARKS ARE MAINTAINED, AND 2) THE WORK IS CONTINUOUS.
- THE PROPOSED WATER CONNECTION SIZE, TYPE & LOCATION ARE TO BE DESIGNED IN ACCORDANCE WITH 248 CMR 10.00: UNIFORM STATE PLUMBING CODE.
- THE CONTRACTOR SHALL VERIFY ALL BUILDING DIMENSIONS AND ARCHITECTURAL SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION.
- THE APPLICANT SHALL COORDINATE WITH THE WAKEFIELD WATER DEPARTMENT TO ENSURE PROPER DOMESTIC AND FIRE FLOWS PRIOR TO BUILDING PERMIT.
- VERIFY ROOF DRAIN LOCATIONS WITH ARCHITECTURAL PLANS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ADJUTING PROPERTIES FROM DAMAGE IN RELATION TO ALL PROPOSED IS SITE WORK.
- THE FOUNDATION PERIMETER DRAIN SHALL BE INSTALLED IN ACCORDANCE WITH 780 CMR 5405 (THE MASSACHUSETTS STATE BUILDING CODE).
- PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA (ZONE A OR ZONE AE) AS SHOWN ON FLOOD INSURANCE RATE MAP NUMBER 25017C0314E, EFFECTIVE DATE: JUNE 4, 2010.
- PORTION OF PROPERTY LIES WITHIN 200- FEET OF A TRIBUTARY TO A PUBLIC SURFACE WATER SUPPLY (ZONE A).
- CONSISTENT WITH TOWN BYLAW 175, ARTICLE III, NO SNOW FROM THE SUBJECT PARCEL SHALL BE PLACED INTO THE PUBLIC WAY.
- IN NO CASE SHALL STORMWATER, GROUNDWATER OR SUMP PUMPS DISCHARGE FROM THE PROJECT BE ALLOWED TO DISCHARGE TO TOWN'S SEWER COLLECTION SYSTEM.
- NO SNOW FROM THE SUBJECT PARCEL SHALL BE PLACED INTO THE PUBLIC WAY.
- THE TOWN OF WAKEFIELD WILL NOT PROVIDE REFUSE OR RECYCLING PICKUP AND DISPOSAL SERVICES FOR THE SUBJECT PARCEL.
- PRIOR TO COMMENCING CONSTRUCTION FOR THE PROJECT, THE APPLICANT'S CONTRACTOR WILL BE REQUIRED TO FILE ALL NECESSARY RIGHT-OF-WAY/ UTILITY PERMITS WITH THE ENGINEERING DIVISION AND PAY ALL ASSOCIATED FEES.
- THE MATERIAL OF CONSTRUCTION FOR THE UNDERGROUND STORMWATER MANAGEMENT AREA (SWM1P) SHALL BE CORRUGATED STEEL PIPE-ALUMINIZED TYPE 2 STEEL, AS SUPPLIED BY CONTECH ENGINEERED SOLUTIONS LLC.
- PRIOR TO ISSUANCE OF BUILDING PERMIT, A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE PREPARED AS PART OF AN EPA NOI FOR CONSTRUCTION PERIOD POLLUTION PREVENTION. THE SWPPP SHALL CONTAIN A SITE PLAN SHOWING THE LOCATIONS OF CONSTRUCTION ENTRANCE(S), MATERIAL STOCKPILES, AND EROSION & SEDIMENT CONTROLS. THE SWPPP SHALL ALSO CONTAIN DETAILS FOR THE CONSTRUCTION ENTRANCE(S) AND STOCKPILES.
- PRIOR TO THE ISSUANCE OF A BUILDING PERMIT, THIS SITE PLAN SET WILL BE UPDATED TO PROVIDE ADDITIONAL SPOT GRADES FOR THE WHEELCHAIR AND SIDEWALKS IN COMPLIANCE WITH THE REQUIREMENTS OF ADA AND PROWAG.
- ALL PROPOSED LANDSCAPED AREAS SHOWN ON THIS PLAN SHALL BE FULLY IRRIGATED WITH AN AUTOMATIC WATERING SYSTEM, SUBJECT TO A MAINTENANCE AGREEMENT WITH THE TOWN OF WAKEFIELD WITH RESPECT TO LANDSCAPED AREAS WITHIN THE PUBLIC RIGHT OF WAY.



**WILLIAMS & SPARAGES**  
SUITE 101  
189 NORTH MAIN STREET  
REVERE, MA 01949  
PHONE (978) 539-8088  
FAX (978) 539-8200  
WSENGINEERS.COM

Owner:  
Raymond Nickerson  
And Dana Lopez  
26 Verditt Road  
Revere, MA 02151

Applicant:  
Raymond Nickerson  
And Dana Lopez  
26 Verditt Road  
Revere, MA 02151

Designed By: MEM  
Drawn By: MEM  
Reviewed By: CPS  
Project Manager: CPS  
Job File Number: WAKE-0070  
Drawing File Folder: WAKE70

☒ Drawing Issued for Review  
☐ Drawing Issued for Permit  
☐ Drawing Issued for Construction

SEAL

**LOCATION PLAN**  
**NORTH APARTMENTS**  
572-596 NORTH AVENUE, WAKEFIELD, MA

12	11	10	9	8	7
6	5	4	3	2	1
WCR Grading/ Project notes					
Town Comments					
Layout/Grading/Utilities					

0' 50' 100' 200'  
SCALE: 1"=100'  
DECEMBER 2, 2020

DRAWING: C1.1

SHEET 1 OF 10



NORTH AVENUE  
(PUBLIC-75' WIDTH)

WILLARD ST.  
(40' WIDE)

FIELDING ST.  
(40' WIDE)

EXISTING GAS APPROXIMATE  
LOCATION, 12-PL-60#-2013

CONCRETE  
HEADWALL  
W/36" CMP  
PARTIALLY FILLED  
E=81.07

N/F  
598 NORTH LLC  
598 NORTH AVE.  
ASSESSORS MAP 2A  
BLOCK 14 LOT 47A

LIMIT OF  
TRIBUTARY TO  
SURFACE  
WATER SUPPLY

LIMIT OF BORDERING  
VEGETATED WETLAND  
(BVW)

LIMIT OF BORDERING  
VEGETATED WETLAND  
(BVW)

LIMIT OF 200'  
BUFFER FROM  
TRIBUTARY

N/F  
KNIGHTS OF COLUMBUS  
570 NORTH AVE.  
ASSESSORS MAP 2A  
BLOCK 14 LOT 47A

#### LEGEND OF SYMBOLS

EXISTING 1' CONTOUR	85
EXISTING SPOT ELEVATION	x 85.32
EXISTING DRAIN	D D
EXISTING DRAIN MANHOLE	(D)
EXISTING SEWER	S S
EXISTING SEWER MANHOLE	(S)
EXISTING CATCH BASIN	■
EXISTING WATER	W W
EXISTING WATER GATE	W
EXISTING HYDRANT	⊕
EXISTING UTILITY POLE	⊙
EXISTING GAS	G G
EXISTING GAS GATE	G
EXISTING TELEPHONE MANHOLE	(T)
EXISTING OVERHEAD WIRES	OHW
EXISTING VERTICAL GRANITE CURB	VGC
EXISTING CAPE COD BERM	CCB
EXISTING EDGE OF PAVEMENT	EP
EXISTING EDGE OF BORDERING VEGETATED WETLANDS (BVW)	---
LIMIT OF TRIBUTARY TO SURFACE WATER SUPPLY	---
100' BUFFER FROM BVW	---
200' BUFFER FROM TRIBUTARY	---



Owner:  
Raymond Nickerson  
And Dana Lopez  
26 Venditto Road  
Revere, MA 02151

Applicant:  
Raymond Nickerson  
And Dana Lopez  
26 Venditto Road  
Revere, MA 02151

Designed By: MEM  
Drawn By: MEM  
Reviewed By: CPS  
Project Manager: CPS  
Job File Number: WAKE-0070  
Drawing File Folder: WAKE70

☒ Drawing Issued for Review  
☐ Drawing Issued for Permit  
☐ Drawing Issued for Construction



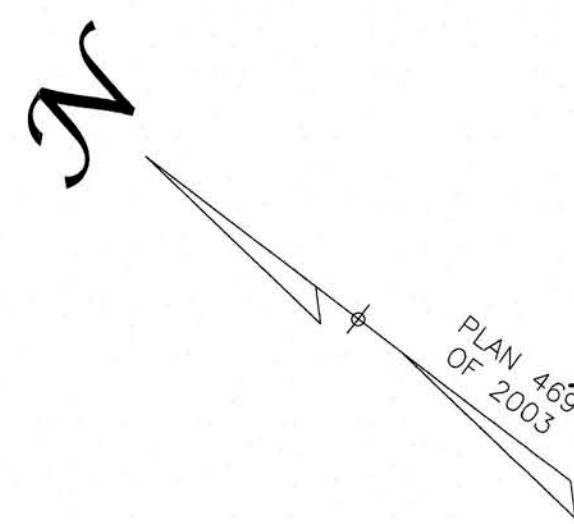
#### EXISTING CONDITION PLAN NORTH APARTMENTS 572-596 NORTH AVENUE, WAKEFIELD, MA

6	5	4	3	2	1
WCR Grading / Project notes	Town Comments	Town Comments	Town Comments	Layout/Grading/Utilities	
12/14/2022	12/9/2022	10/20/2022	9/8/2022		
10	9	8	7		

DRAWING: C2.1  
SHEET 2 OF 10  
SCALE: 1"=20'  
DECEMBER 2, 2020

PLAN 469  
OF 2003





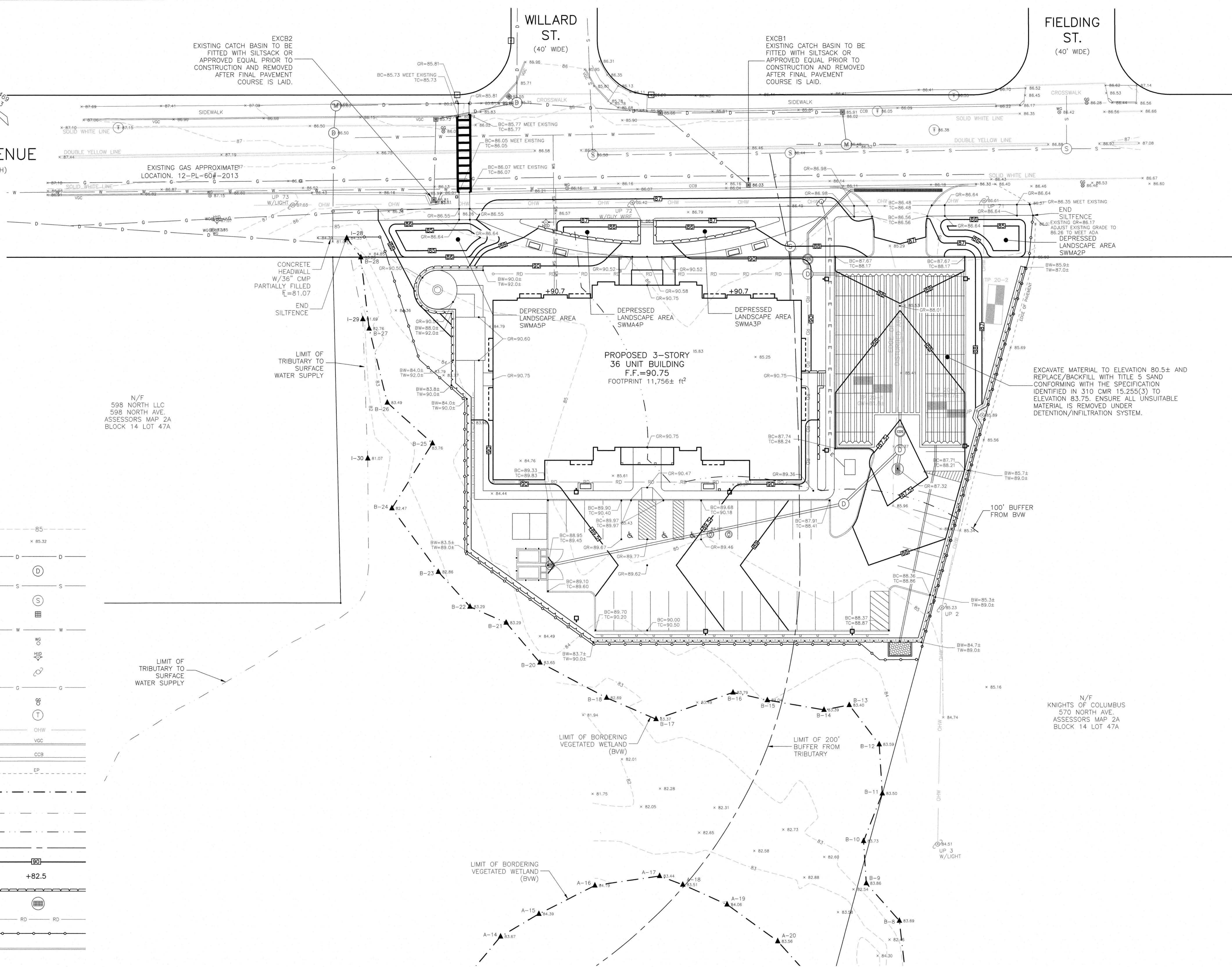
NORTH AVENUE  
(PUBLIC-75' WIDTH)

EXCB2  
EXISTING CATCH BASIN TO BE  
FITTED WITH SILTSACK OR  
APPROVED EQUAL PRIOR TO  
CONSTRUCTION AND REMOVED  
AFTER FINAL PAVEMENT  
COURSE IS LAID.

WILLARD ST.  
(40' WIDE)

EXCB1  
EXISTING CATCH BASIN TO BE  
FITTED WITH SILTSACK OR  
APPROVED EQUAL PRIOR TO  
CONSTRUCTION AND REMOVED  
AFTER FINAL PAVEMENT  
COURSE IS LAID.

FIELDING ST.  
(40' WIDE)



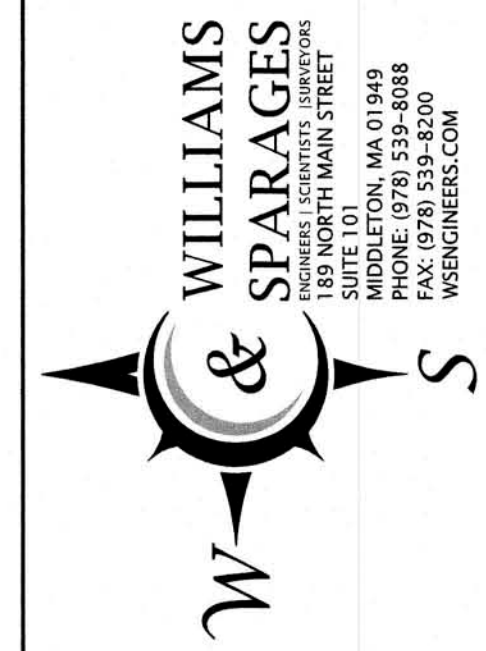
N/F  
598 NORTH LLC  
598 NORTH AVE.  
ASSESSORS MAP 2A  
BLOCK 14 LOT 47A

EXCAVATE MATERIAL TO ELEVATION 80.5± AND  
REPLACE/BACKFILL WITH TITLE 5 SAND  
CONFORMING WITH THE SPECIFICATION  
IDENTIFIED IN 310 CMR 15.255(3) TO  
ELEVATION 83.75. ENSURE ALL UNSUITABLE  
MATERIAL IS REMOVED UNDER  
DETENTION/INFILTRATION SYSTEM.

N/F  
KNIGHTS OF COLUMBUS  
570 NORTH AVE.  
ASSESSORS MAP 2A  
BLOCK 14 LOT 47A

LEGEND OF SYMBOLS

EXISTING 1' CONTOUR	85
EXISTING SPOT ELEVATION	85.32
EXISTING DRAIN	D
EXISTING DRAIN MANHOLE	D
EXISTING SEWER	S
EXISTING SEWER MANHOLE	S
EXISTING CATCH BASIN	CB
EXISTING WATER	W
EXISTING WATER GATE	WG
EXISTING HYDRANT	H
EXISTING UTILITY POLE	U
EXISTING GAS	G
EXISTING GAS GATE	GG
EXISTING TELEPHONE MANHOLE	T
EXISTING OVERHEAD WIRES	OHW
EXISTING VERTICAL GRANITE CURB	VGC
EXISTING CAPE COD BERM	CCB
EXISTING EDGE OF PAVEMENT	EP
EXISTING EDGE OF BORDERING VEGETATED WETLANDS (BVW)	BVW
LIMIT OF TRIBUTARY TO SURFACE WATER SUPPLY	LTWS
100' BUFFER FROM BVW	100' BUFFER
200' BUFFER FROM TRIBUTARY	200' BUFFER
PROPOSED CONTOUR	90
PROPOSED SPOT ELEVATION	+82.5
PROPOSED RET WALL	RD
PROPOSED CATCH BASIN	CB
PROPOSED ROOF DRAIN	RD
PROPOSED SILTATION CONTROL	SC
PROPOSED CURB	C



Owner:  
Raymond Nickerson  
And Dana Lopez  
26 Venditto Road  
Revere, MA 02151

Applicant:  
Raymond Nickerson  
And Dana Lopez  
26 Venditto Road  
Revere, MA 02151

Designed By: MEM  
Drawn By: MEM  
Reviewed By: CPS  
Project Manager: CPS  
Job File Number: WAKE-0070  
Drawing File Folder: WAKE70

☒ Drawing Issued for Review  
☒ Drawing Issued for Permit  
☐ Drawing Issued for Construction



GRADING & DRAINAGE PLAN		NORTH APARTMENTS		572-596 NORTH AVENUE, WAKEFIELD, MA	
DRAWING: C3.1		6		12	
SHEET 3 OF 10		5		11	
		4		10	
		3		9	
		2		8	
		1		7	

SCALE: 1"=20'

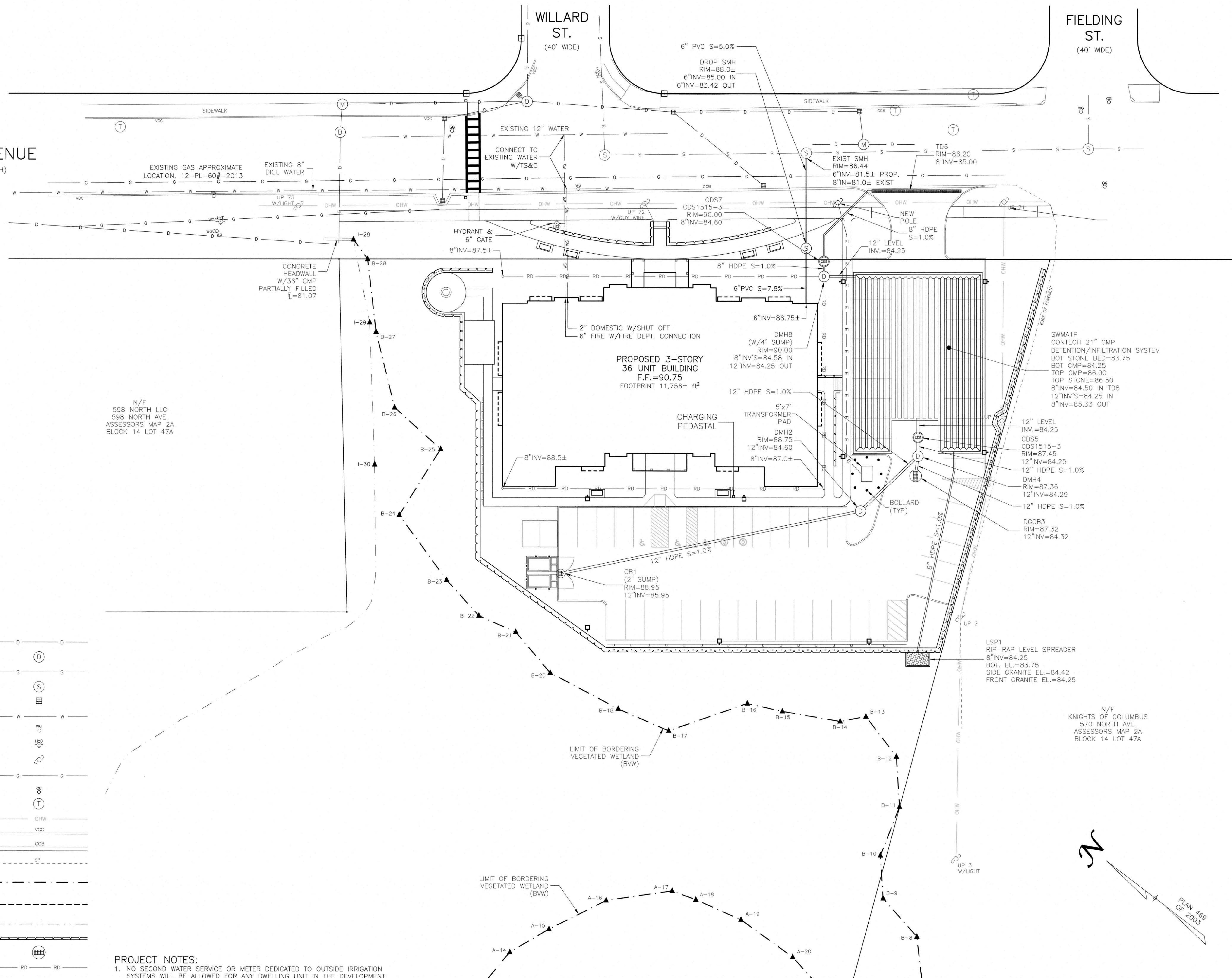
DECEMBER 2, 2020



NORTH AVENUE  
(PUBLIC-75' WIDTH)

WILLARD ST.  
(40' WIDE)

FIELDING ST.  
(40' WIDE)

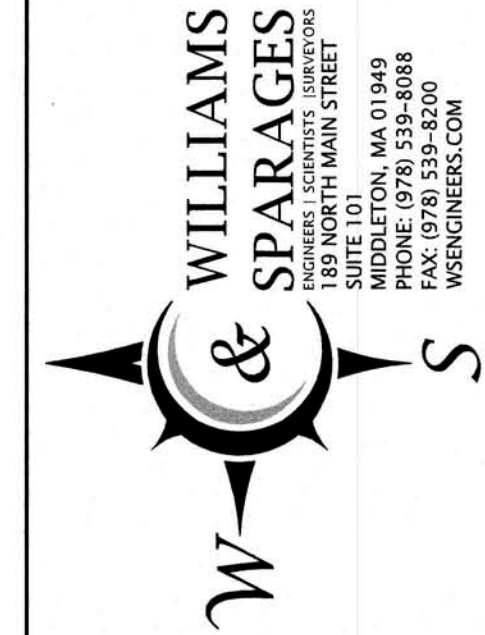


LEGEND OF SYMBOLS

EXISTING DRAIN	D
EXISTING DRAIN MANHOLE	(D)
EXISTING SEWER	S
EXISTING SEWER MANHOLE	(S)
EXISTING CATCH BASIN	CB
EXISTING WATER	W
EXISTING WATER GATE	WG
EXISTING HYDRANT	H
EXISTING UTILITY POLE	UP
EXISTING GAS	G
EXISTING GAS GATE	GG
EXISTING TELEPHONE MANHOLE	(T)
EXISTING OVERHEAD WIRES	OHW
EXISTING VERTICAL GRANITE CURB	VGC
EXISTING CAPE COD BERM	CCB
EXISTING EDGE OF PAVEMENT	EP
EXISTING EDGE OF BORDERING VEGETATED WETLANDS (BVW)	BVW
LIMIT OF 25' BUFFER FROM EXISTING BVW	25' BUFFER
EXISTING BANK	BK
PROPOSED RET WALL	PRW
PROPOSED CATCH BASIN	PCB
PROPOSED ROOF DRAIN	ROD

PROJECT NOTES:

1. NO SECOND WATER SERVICE OR METER DEDICATED TO OUTSIDE IRRIGATION SYSTEMS WILL BE ALLOWED FOR ANY DWELLING UNIT IN THE DEVELOPMENT.



Owner:  
Raymond Nickerson  
And Dana Lopez  
26 Verdito Road  
Revere, MA 02151

Applicant:  
Raymond Nickerson  
And Dana Lopez  
26 Verdito Road  
Revere, MA 02151

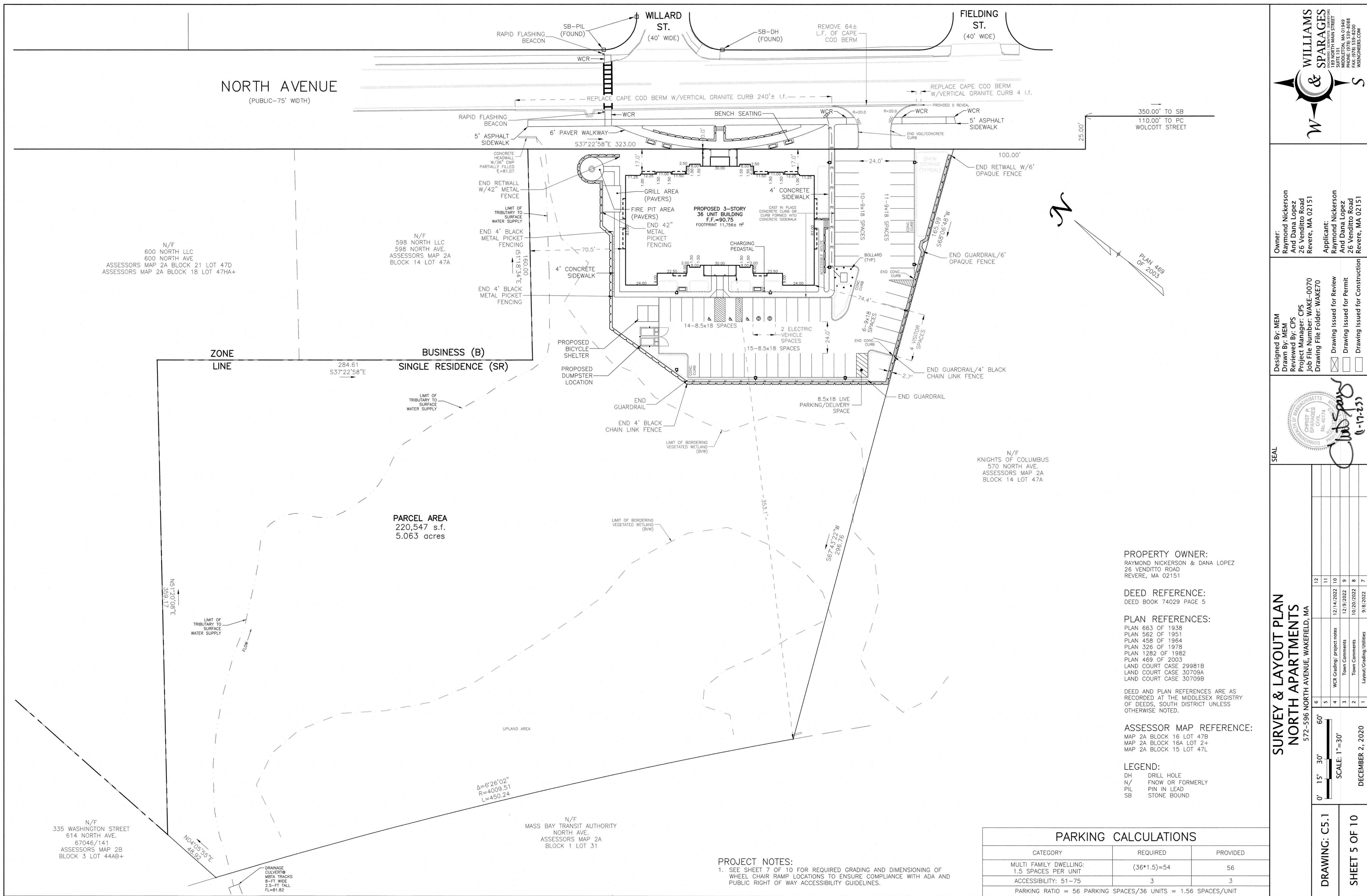
Designed By: MEM  
Drawn By: MEM  
Reviewed By: CPS  
Project Manager: CPS  
Job File Number: WAKE-0070  
Drawing File Folder: WAKE70

☒ Drawing Issued for Review  
☐ Drawing Issued for Permit  
☐ Drawing Issued for Construction



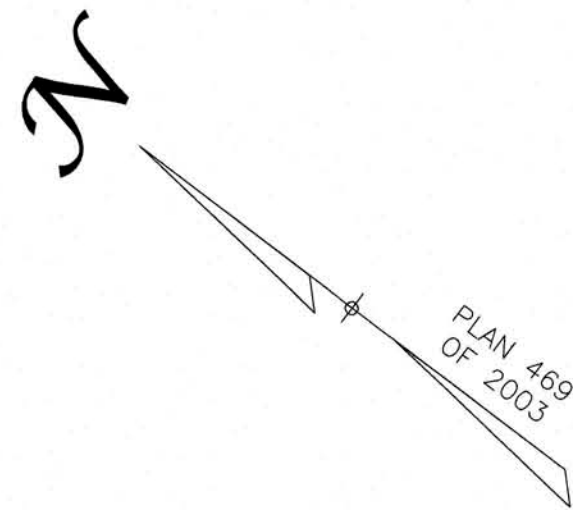
UTILITY PLAN		NORTH APARTMENTS		572-596 NORTH AVENUE, WAKEFIELD, MA	
DRAWING: C4.1		SHEET 4 OF 10		DECEMBER 2, 2020	
0' 10' 20' 40'		SCALE: 1"=20'		PLAN 459 OF 2003	
6		5		4	
WCR Grading / Project notes		12/14/2022		10	
Town Comments		12/9/2022		9	
Town Comments		10/20/2022		8	
Layout / Grading / Utilities		9/8/2022		7	







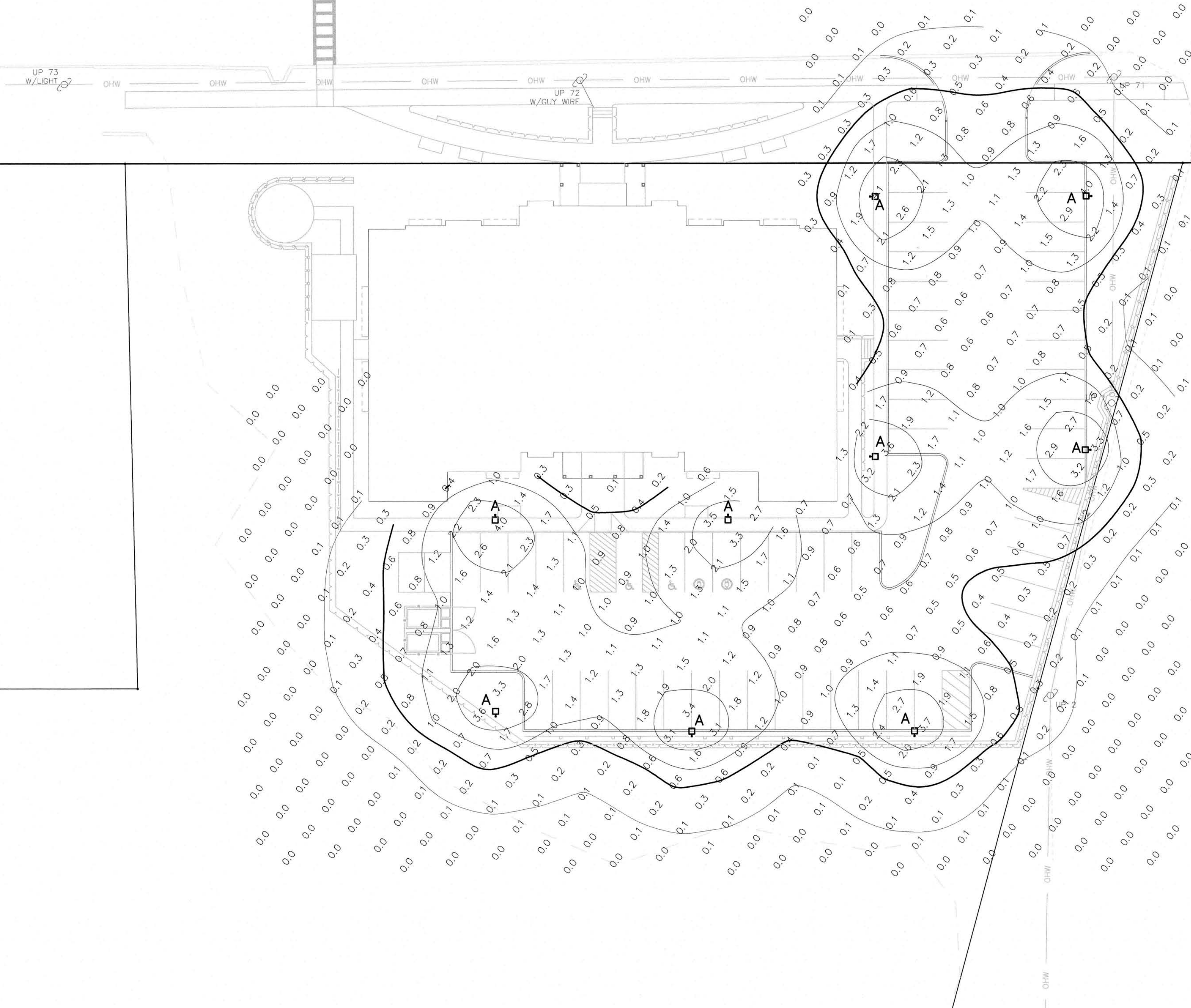
P:\WAKE-50700 North Avenue\Drawings\Proposed.dwg, 1/1/2023 10:20:17 AM, CHRS



NORTH AVENUE  
(PUBLIC-75' WIDTH)

WILLARD ST.  
(40' WIDE)

FIELDING ST.  
(40' WIDE)



NOTES:

1. SECURITY LIGHTING TO BE DETERMINED.
2. ILLUMINANCE VALUES CREATED FROM MANUFACTURERS PHOTOMETRIC DATA.
3. ILLUMINANCE VALUES SHOWN REPRESENT MAINTAINED HORIZONTAL FOOTCANDLES AT GROUND LEVEL.
4. FOOT CANDLE VALUES SHOWN DO NOT ACCOUNT FOR LIGHT REFLECTION, EXISTING LIGHT SOURCES, SLOPING GRADE OR EXISTING OR PROPOSED THREE DIMENSIONAL OBJECTS.

LUMINAIRE SCHEDULE								
SYMBOL	LABEL	QUANTITY	CATALOG NUMBER HADCO/BREX	DESCRIPTION	LAMP	TILT	LLF	CANDELA FILE
□	A	9	HADCO PIMA SERIES LED CXFxx48-G2-4W3-16 (FINISH & ELECTRICAL TO BE SPECIFIED BY OTHERS)	TYPE IV OPTICS 15' MOUNTING HEIGHT	3000K 4964 LUMENS PER LAMP	0°	0.85	CXFxx48-G2-4W3-16.ies

PHOTOMETRIC PLAN  
NORTH APARTMENTS  
572-596 NORTH AVENUE, WAKEFIELD, MA

6	12
5	11
4	10
3	9
2	8
1	7

SCALE: 1"=20'  
DECEMBER 2, 2020

DRAWING: C6.1  
SHEET 6 OF 10



Designed By: MEM  
Drawn By: MEM  
Reviewed By: CPS  
Project Manager: CPS  
Job File Number: WAKE-0070  
Drawing File Folder: WAKE70  
☒ Drawing Issued for Review  
☐ Drawing Issued for Permit  
☐ Drawing Issued for Construction

Owner:  
Raymond Nickerson  
And Dana Lopez  
26 Venditto Road  
Revere, MA 02151  
Applicant:  
Raymond Nickerson  
And Dana Lopez  
26 Venditto Road  
Revere, MA 02151



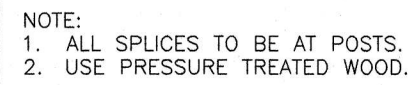




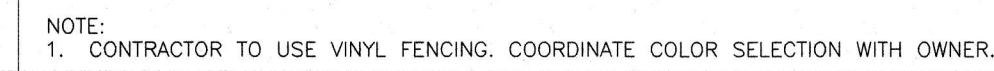




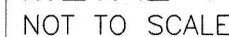




NOT TO SCALE



NOT TO SCALE



SHEET 9 OF 10

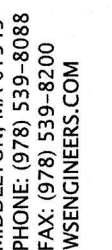


☐ Drawing Issued for Permit

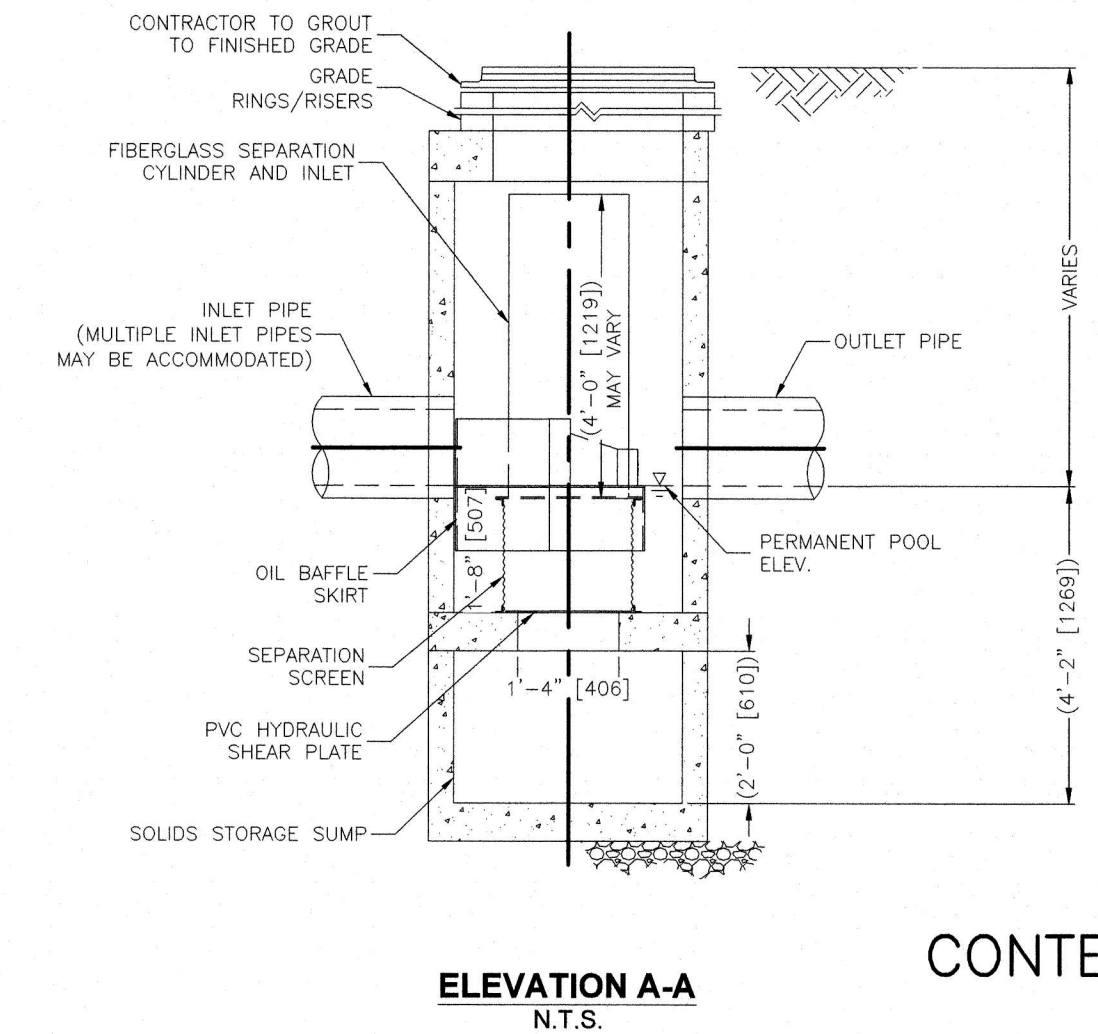
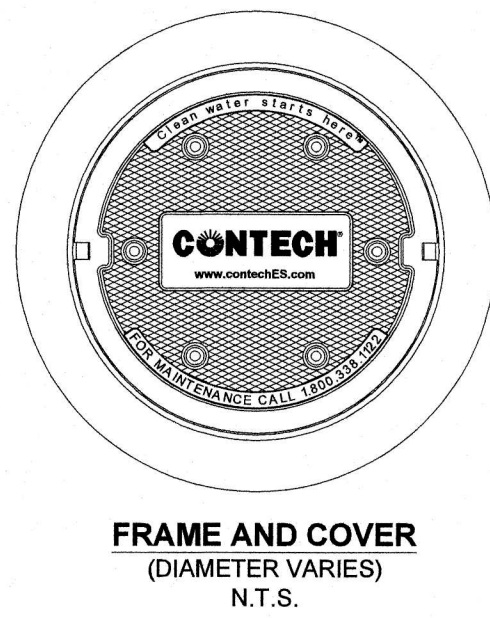
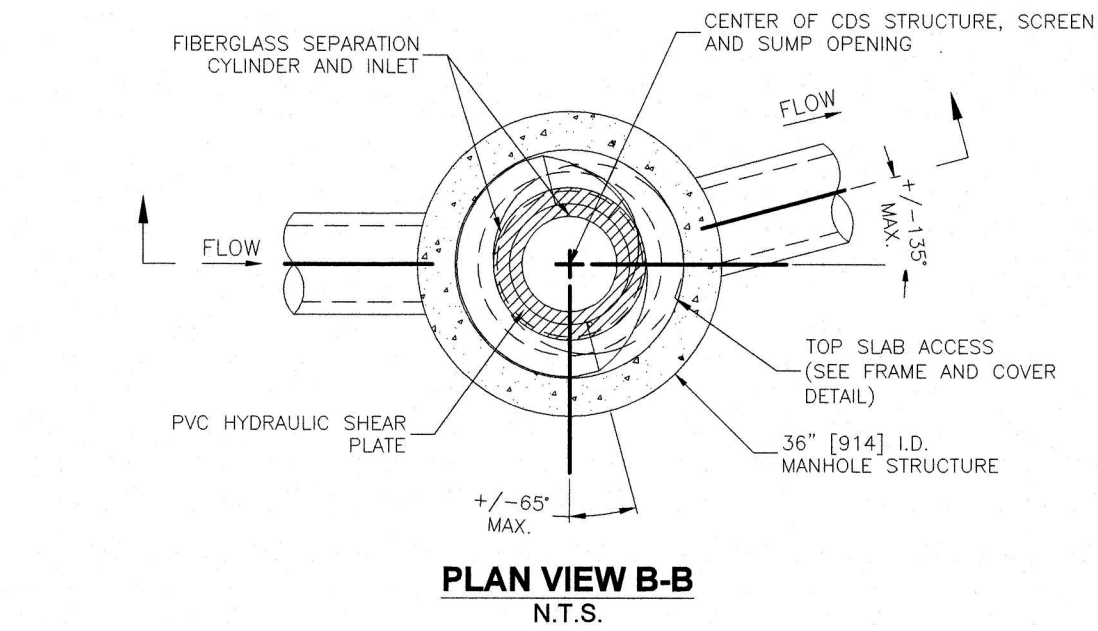
☐ Drawing Issued for Construction

**Applicant:**  
**Raymond Nickerson**

Revere, MA 02151



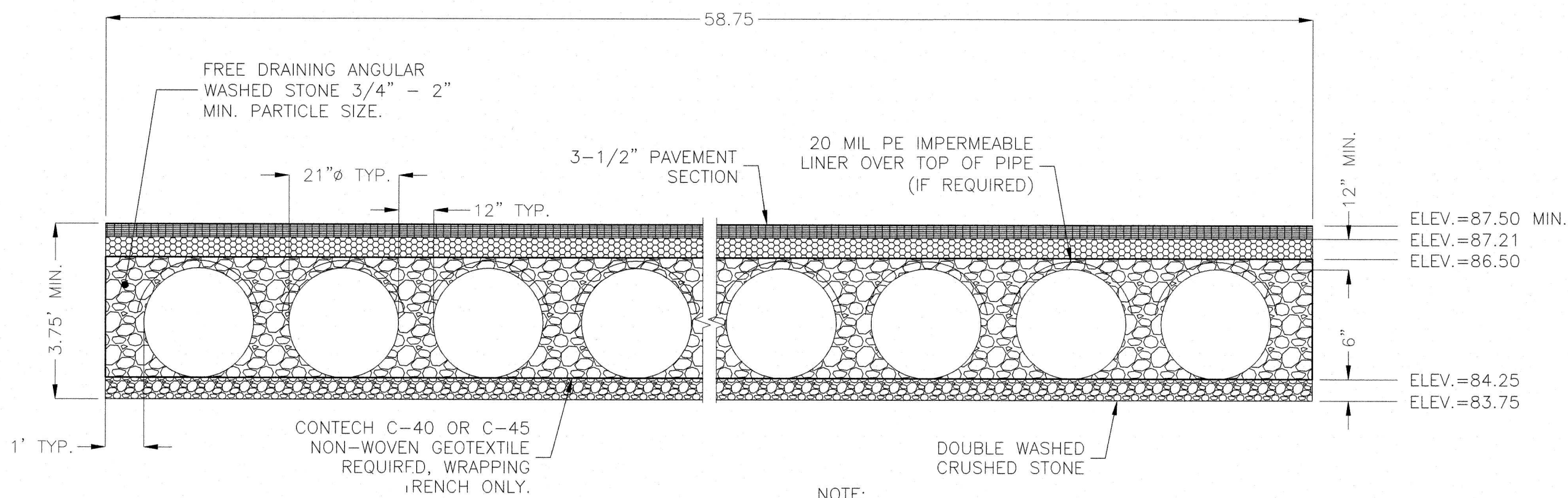




CONTECH CDS 1515-3-C  
NOT TO SCALE

- GENERAL NOTES**
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
  2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. [www.contechES.com](http://www.contechES.com)
  3. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
  4. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
  5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
  6. CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

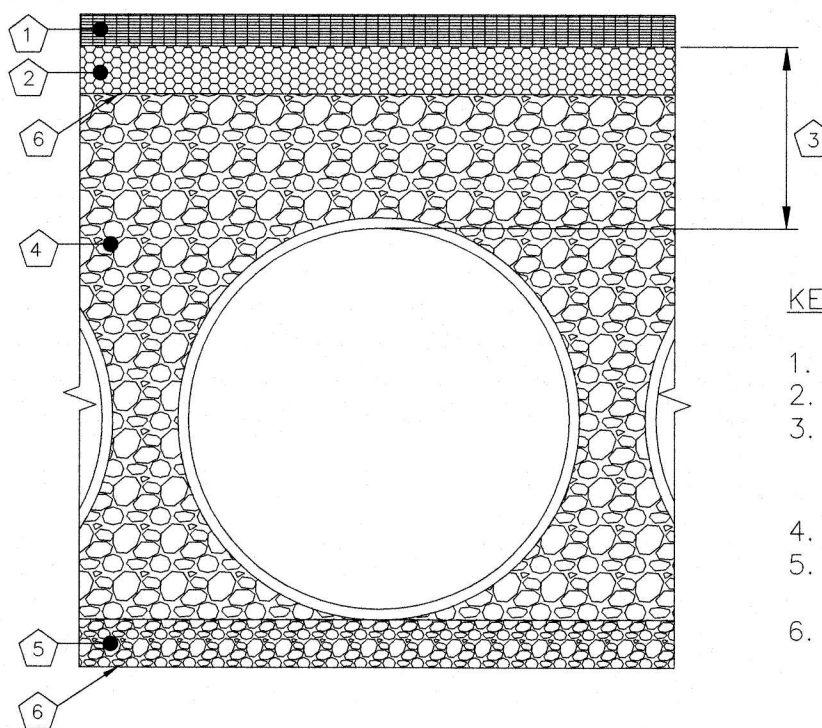
- INSTALLATION NOTES**
- A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
  - B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
  - C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
  - D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
  - E. 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.



TYPICAL CONTECH CMP  
DETENTION SYSTEM SECTION  
NOT TO SCALE

**NOTE:**

1. IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.



**FOUNDATION/BEDDING PREPARATION**

PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ENGINEER. ONCE THE FOUNDATION PREPARATION IS COMPLETE, THE 4 INCHES OF A WELL-GRADED GRANULAR MATERIAL SHALL BE PLACED AS THE BEDDING.

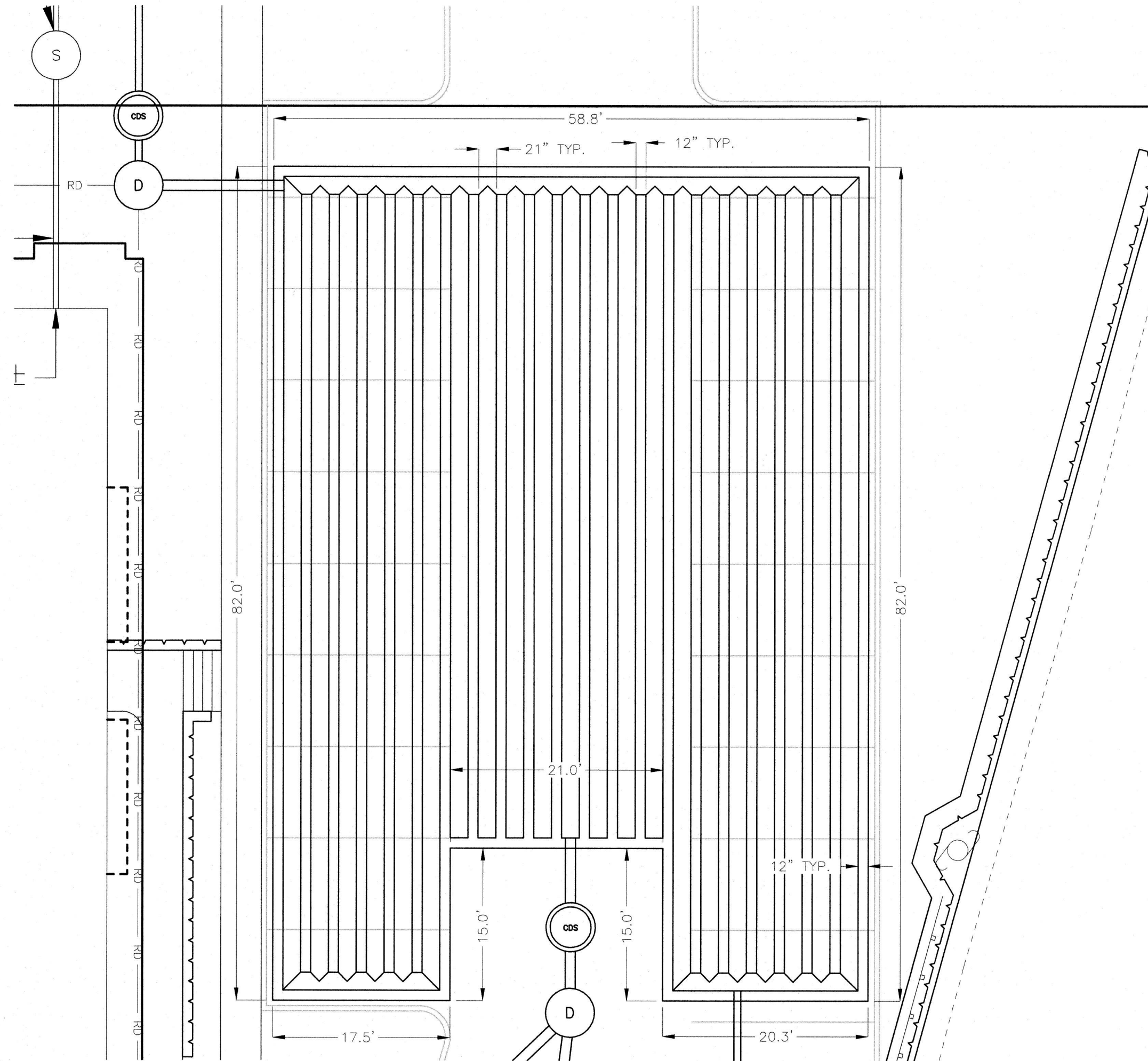
**BACKFILL**

THE BACKFILL MATERIAL SHALL BE FREE-DRAINING ANGULAR WASHED STONE 3/4" - 2" PARTICLE SIZE. MATERIAL SHALL BE PLACED IN 8"-10" MAXIMUM LIFTS. MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR-TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS. COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE PROJECT ENGINEER OR HIS REPRESENTATIVE IS SATISFIED WITH THE LEVEL OF COMPACTION. INADEQUATE COMPACTION CAN LEAD TO EXCESSIVE DEFLECTIONS WITHIN THE SYSTEM AND SETTLEMENT OF THE SOILS OVER THE SYSTEM. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO-LIFT DIFFERENTIAL BETWEEN THE SIDES OF ANY PIPE IN THE SYSTEM AT ALL TIMES DURING THE BACKFILL PROCESS. BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON ANY PIPES IN THE SYSTEM.

EQUIPMENT USED TO PLACE AND COMPACT THE BACKFILL SHALL BE OF A SIZE AND TYPE SO AS NOT TO DISTORT, DAMAGE, OR DISPLACE THE PIPE. ATTENTION MUST BE GIVEN TO PROVIDING ADEQUATE MINIMUM COVER FOR SUCH EQUIPMENT, AND MAINTAINING BALANCED LOADING ON ALL PIPES IN THE SYSTEM, DURING ALL SUCH OPERATIONS.

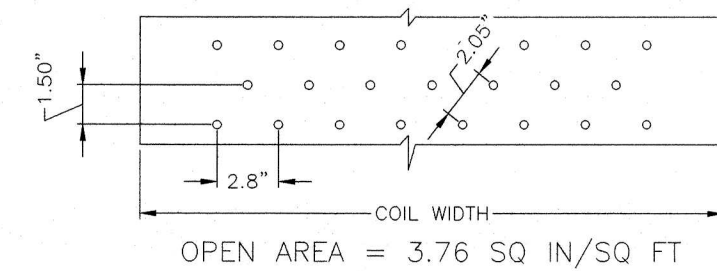
OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS. REFER TO TYPICAL BACKFILL DETAIL FOR MATERIAL REQUIRED.

BACKFILL  
NOT TO SCALE

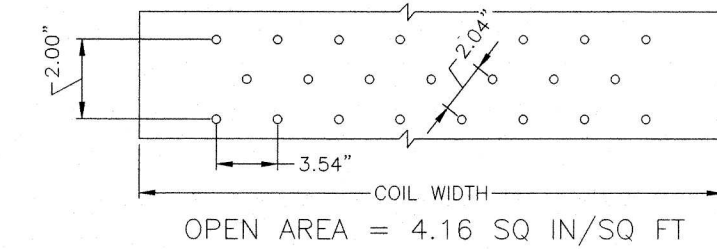


PLAN VIEW  
SCALE: 1"=10'

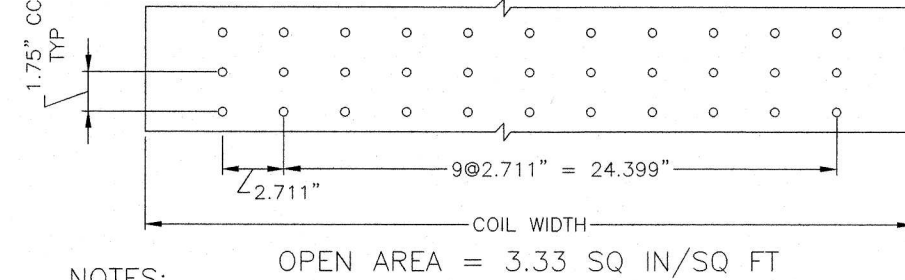
2 2/3" x 1/2" CORRUGATION - STEEL AND ALUMINUM CMP  
EDGE SPACING EQUAL ON BOTH SIDES



3" x 1" CORRUGATION - STEEL AND ALUMINUM CMP  
(COIL PROVIDED FROM CONTECH LANTANA, FL PLANT)



5" x 1" CORRUGATION - STEEL ONLY  
EDGE SPACING EQUAL ON BOTH SIDES



**NOTES:**

1. PERFORATIONS MEET AASHTO AND ASTM SPECIFICATIONS.
2. PERFORATION OPEN AREA PER SQUARE FOOT OF PIPE IS BASED ON THE NOMINAL DIAMETER AND LENGTH OF PIPE.
3. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
4. ALL HOLES Ø3/8".

PERFORATION  
NOT TO SCALE



**Owner:**  
Raymond Nickerson  
And Dana Lopez  
26 Venditto Road  
Revere, MA 02151

**Applicant:**  
Raymond Nickerson  
And Dana Lopez  
26 Venditto Road  
Revere, MA 02151

**Designed By:** MEM  
**Drawn By:** MEM  
**Reviewed By:** CPS  
**Project Manager:** CPS  
**Job File Number:** WAKE-0070  
**Drawing File Folder:** WAKE70

☒ Drawing Issued for Review  
☐ Drawing Issued for Permit  
☐ Drawing Issued for Construction



CONSTRUCTION DETAILS PLAN  
NORTH APARTMENTS  
572-596 NORTH AVE, WAKEFIELD, MA

SCALE: AS SHOWN	12	11	10	9	8	7
6						
5						
4	WCK Grading / project notes	12/14/2022	10			
3	Town Comments	12/9/2022	9			
2	Town Comments	10/20/2022	8			
1	Layout/Grading/Utilities	9/8/2022	7			

DRAWING: C7.4

SHEET 10 OF 10

DECEMBER 2, 2020