

# PERMIT PLAN

# 35 NATURAL HISTORY DRIVE

# SINGLE FAMILY

## WORCESTER, MASSACHUSETTES

## MBL NO. 46-011-00108-3



DATE:

No.	Date	Description
3		
2		
1		

Prepared for:  
**LEONE ROCCO**  
 35 NATURAL HISTORY DRIVE  
 WORCESTER, MA 01605

Property of:  
**LEONE ROCCO**  
 35 NATURAL HISTORY DRIVE  
 WORCESTER, MA 01605

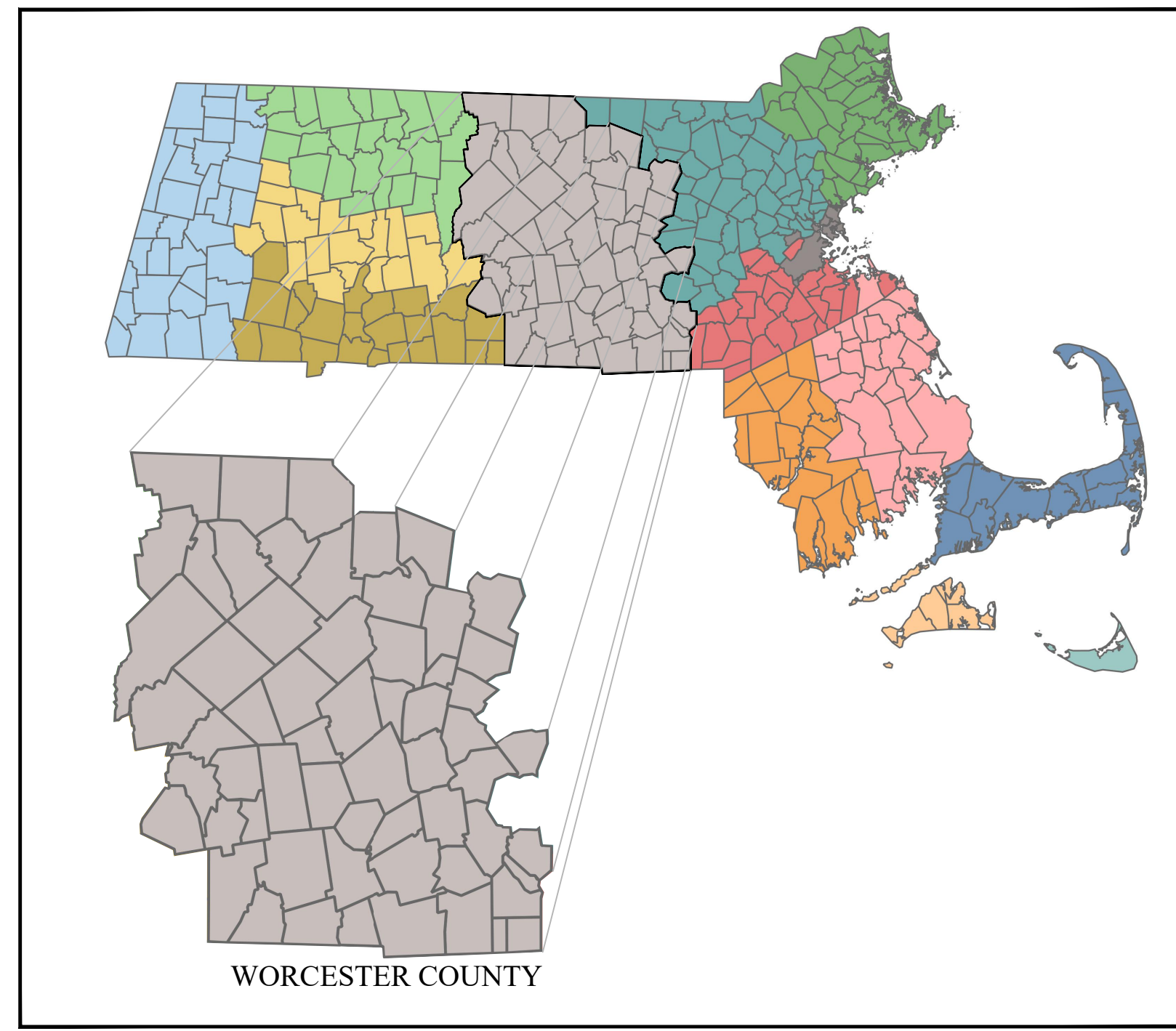
Prepared By:

Structural Engineering / Building Design  
 Civil Engineering / Management Services  
**ISRAA ISMAIL, PROFESSIONAL ENGINEER**  
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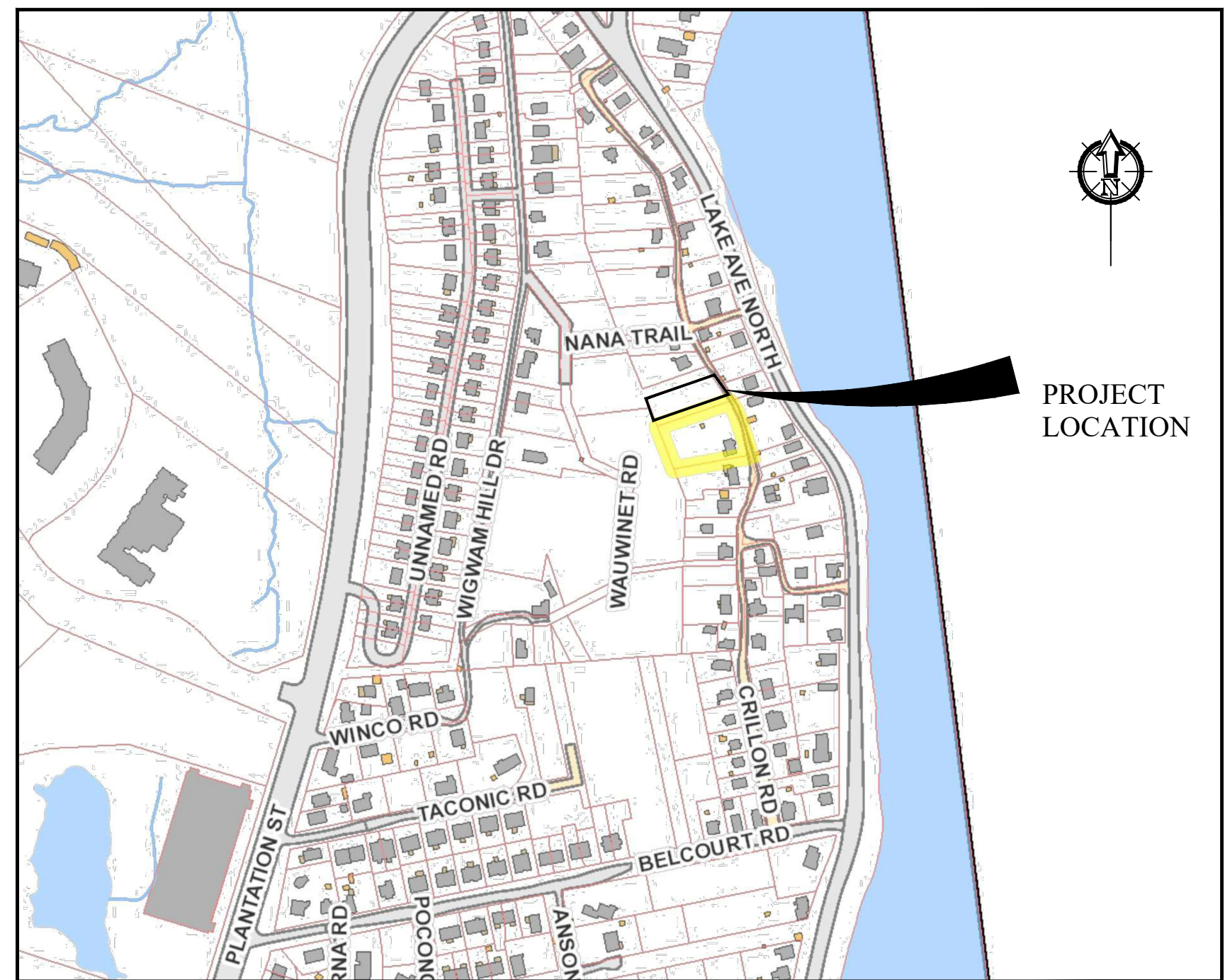
Project Title  
**NATURAL HISTORY DR.**  
 WORCESTER, MA

Sheet Title  
 COVER SHEET

SCALE	NOT TO SCALE
DRAWN	GCR
CHECKED	GA
FILE NAME	FILE.DWG
PROJECT	NATURAL HISTORY DRIVE
ISSUE DATE	DECEMBER 19, 2023
JOB NO.	JOB NUMBER



LOCATION  
MAP



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MAP

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**CONSTRUCTION NOTES:**

1. SILT SOCKS/SILTATION FENCING WILL BE INSTALLED ALONG THE PERIMETER OF THE SITE AND TO REMAIN IN PLACE UNTIL ALL SLOPES ARE STABILIZED.
2. SILT SACKS AND EROSION CONTROL FENCING WILL BE MAINTAINED THROUGHOUT THE CONSTRUCTION.
3. TIRE SCRUBBER SHALL BE INSTALLED AT THE SITE ENTRANCE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
4. NO ROCK CRUSHING OR GRINDING OPERATIONS SHALL BE PERMITTED ONSITE AND THE CONTRACTOR SHALL TAKE STEPS TO LIMIT UNNECESSARY NOISE AND COMPLY WITH THE CITY OF WORCESTER'S GENERAL REVISED ORDINANCE RELATIVE TO NOISE CONTROL.
5. PRIOR TO AND CONTINUING DURING ALL CONSTRUCTION ACTIVITIES, APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES INCLUDING SILT SOCKS AND SILT FENCES, SHALL BE INSTALLED AND MAINTAINED SUBJECT TO THE OVERSIGHT AND DIRECTION OF THE COMMISSIONER OF INSPECTIONAL SERVICES.
6. ALL WORK SHALL CONFORM TO THE CITY OF WORCESTER'S SUBDIVISION RULES AND REGULATIONS, ZONING ORDINANCE, PLANNING BOARD DECISION AND CONDITIONS OF APPROVAL, AND TO THE STANDARDS CONTAINED IN THE CITY OF WORCESTER, DEPARTMENT OF PUBLIC WORKS & PARKS, ENGINEERING DIVISION, CONSTRUCTION MANAGEMENT SECTION, STANDARD SPECIFICATIONS & DETAILS, MOST RECENT EDITION.
7. SUBJECT TO THE ZONING ENFORCEMENT OFFICER'S DETERMINATION THAT THE PARCEL COMPLY WITH ALL THE RELEVANT PROVISIONS OF THE ZONING ORDINANCE.
8. THE APPLICANT SHALL COORDINATE WITH THE DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION TO OBTAIN A MUNICIPAL ADDRESS FOR THE PROPOSED LOT.
9. THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO CONTROL DUST DURING CONSTRUCTION BY UTILIZING A WATERING SYSTEM AND EMPLOYING THE USAGE OF OTHER DUST SUPPRESSANT METHODS SUCH AS CHLORIDE SALTS (CALCIUM OF MAGNESIUM CHLORIDE).
10. ALL CONSTRUCTION EQUIPMENT SHALL BE WELL MAINTAINED AND HAVE FUNCTIONING MUFFLERS AND SHALL COMPLY WITH THE DEPARTMENT OF ENVIRONMENTAL PROTECTIONS ANTI-IDLING REGULATIONS TO PREVENT UNNECESSARY NOISE AND AIR POLLUTION WHILE NOT IN PRODUCTIVE USE.
11. TO MITIGATE DUST ON THE WORK SITE, THE CONTRACTOR SHALL HAVE ONSITE WATER TRUCKS, MISTERS AND CHEMICAL TREATMENT, SUCH AS CALCIUM CHLORIDE DURING EARTHMOVING ACTIVITIES. ADDITIONALLY, EXCAVATED SOILS SHALL BE DIRECTLY TRANSFERRED TO COVERED TRUCKS AND NOT STOCKPILED.

**GENERAL NOTES:**

1. THE PURPOSE OF THIS PLAN IS TO SHOW PROPOSED ATTACHED ONE-SINGLE FAMILY ON THE PROPERTY.
2. ALL CONSTRUCTION MATERIALS & STANDARDS SHALL CONFORM TO THE CITY OF WORCESTER STANDARD SPECIFICATIONS. FOR ADDITIONAL DESIGN DETAILS CONSULT THE CITY OF WORCESTER'S "CONSTRUCTION DETAIL MANUAL" AS PREPARED BY THE DEPARTMENT OF PUBLIC WORKS.
3. ANY OR ALL PROPOSED UTILITY CONNECTIONS (i.e. SEWER & WATER) TO BE INSTALLED PER CITY OF WORCESTER STANDARDS.
4. SEVENTY TWO HOURS PRIOR TO COMMENCING ANY EXCAVATION, THE CONTRACTOR SHALL NOTIFY DIGSAFE AT (888) 344-7233. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF NEW UTILITIES WITHIN IN THE VICINITY OF EXISTING UTILITIES. (UNDERGROUND AND OVERHEAD) WITH THE APPROPRIATE UTILITY PROVIDER.
5. THE CONTRACTOR SHALL:
  - 5.1. BE RESPONSIBLE TO COORDINATE HIS WORK WITH THE MUNICIPALITY TO LIMIT THE POTENTIAL DISRUPTIONS TO THE GENERAL PUBLIC.
  - 5.2. EMPLOY DUE CARE AND CAUTION TO PROTECT THE PUBLIC FROM DANGERS ASSOCIATED WITH THE OPERATION.
6. THE CONTRACTOR SHALL RECORD AND PROVIDE THE OWNER WITH AS-BUILT LOCATIONS OF ALL UTILITIES INSTALLED AS PART OF HIS/HER WORK, INCLUDING UTILITIES NOT INDICATED ON THE PLAN (I.E. GAS, CABLE, TV TELEPHONE, ELECTRIC, ETC.) IF APPLICABLE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE TO LAY OUT THE CONSTRUCTION AS SHOWN ON PLAN.
8. EXISTING UTILITIES WERE LOCATED AS PART OF THIS PLAN USING CITY GIS SYSTEM AND ARE TO BE FIELD VERIFIED. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE EXISTING UTILITY LOCATIONS AND ENSURING THAT THE PROPOSED WORK DOES NOT CONFLICT WITH THE EXISTING UTILITY NOT SHOWN. ALL REQUIRED PERMITS SHALL BE SECURED PRIOR TO COMMENCING WORK. PRIOR TO COMMENCING ANY WORK ONSITE THE CONTRACTOR SHALL NOTIFY THE CITY OF WORCESTER DEPARTMENT OF PUBLIC WORKS.
9. SUITABLE FILL SHALL CONSIST OF MATERIAL FREE OF ORGANIC MATERIALS, LOAM, AND ANY DELETERIOUS MATERIAL. FILL SHALL NOT CONTAIN STONES LARGER THAN 10" IN ANY DIMENSION, AND SHALL HAVE LESS THAN 75% PASSING THE NO. 4 SIEVE AND A MAXIMUM OF 20% PASSING THE NO. 200 SIEVE. SUITABLE FILL SHALL NOT CONTAIN ANY BUILDING RUBBLE, GRANITE OR CONCRETE BLOCK, ROOFING MATERIALS, OR OTHER CONSTRUCTION REFUSE. AT THE TIME OF PLACEMENT SUITABLE FILL SHALL NOT CONTAIN FROST, SNOW, OR ICE AND SHALL NOT CONTAIN WATER GREATER THAN THE OPTIMAL MOISTURE CONTENT.

**DIGSAFE:**

ALL UNDERGROUND UTILITIES SHOWN WERE COMPLIED ACCORDING TO AVAILABLE RECORD PLANS FOR THE VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES AND ARE APPROXIMATE ONLY. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD BEFORE DESIGNING, EXCAVATING, BLASTING, OR INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORATION, OR REPAIRING. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE CONTACTED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN. NOT RESPONSIBLE FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. THE CONTRACTOR IS TO CONTACT "DIGSAFE" @ 1-888-344-7233 PRIOR TO ANY CONSTRUCTION.



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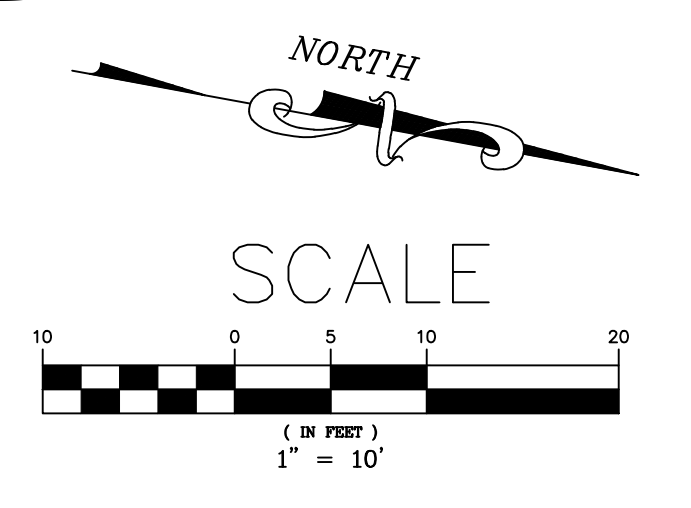
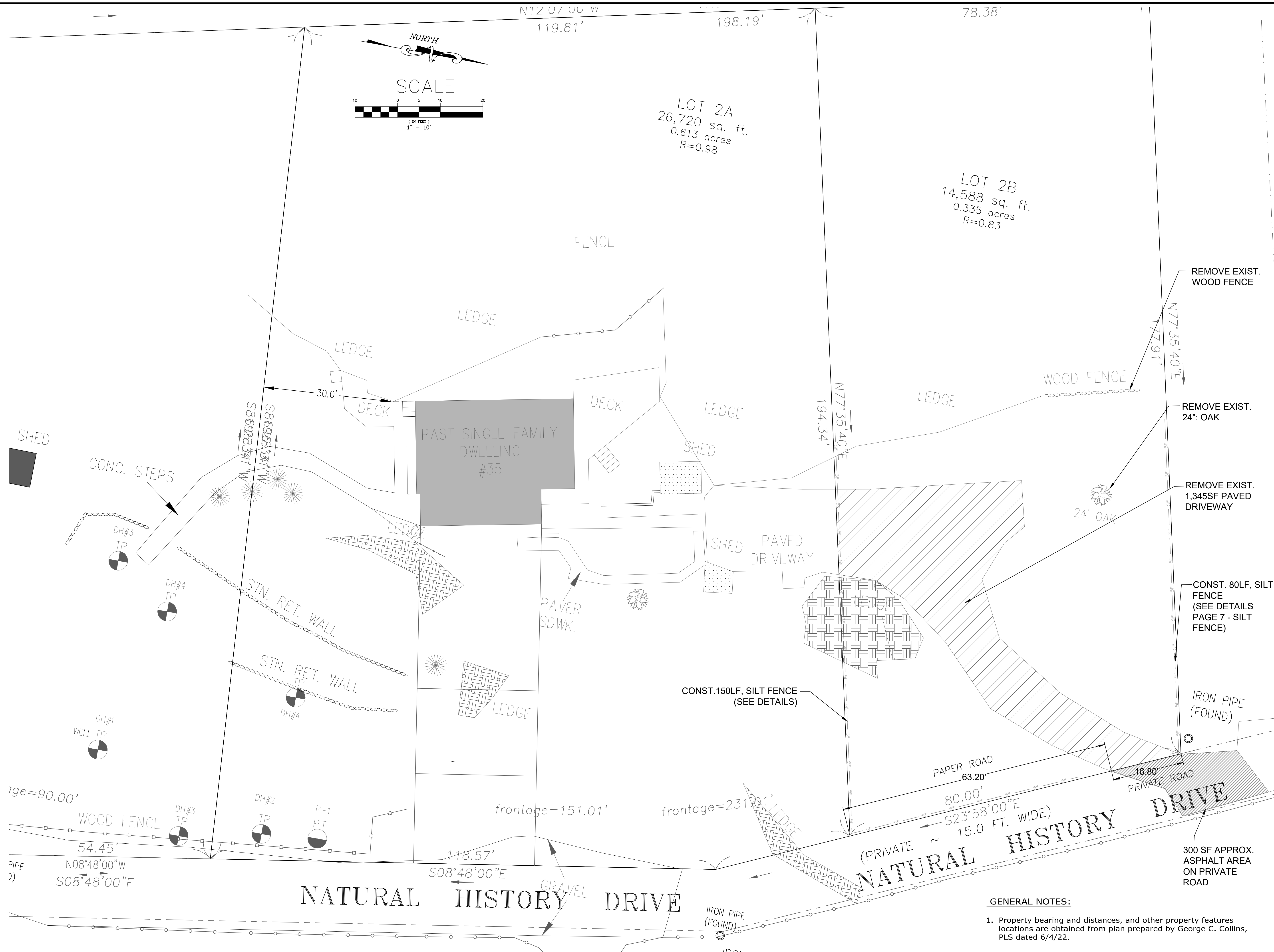
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Project Title  
NATURAL HISTORY DR.  
WORCESTER, MA

Sheet Title  
GENERALNOTES

SCALE	NOT TO SCALE
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LOT 2A  
26,720 sq. ft.  
0.613 acres  
R=0.98

LOT 2B  
14,588 sq. ft.  
0.335 acres  
R=0.83



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NATURAL HISTORY DR.  
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Sheet Title  
DEMOLITION &  
EROSION CONTROL  
PLAN

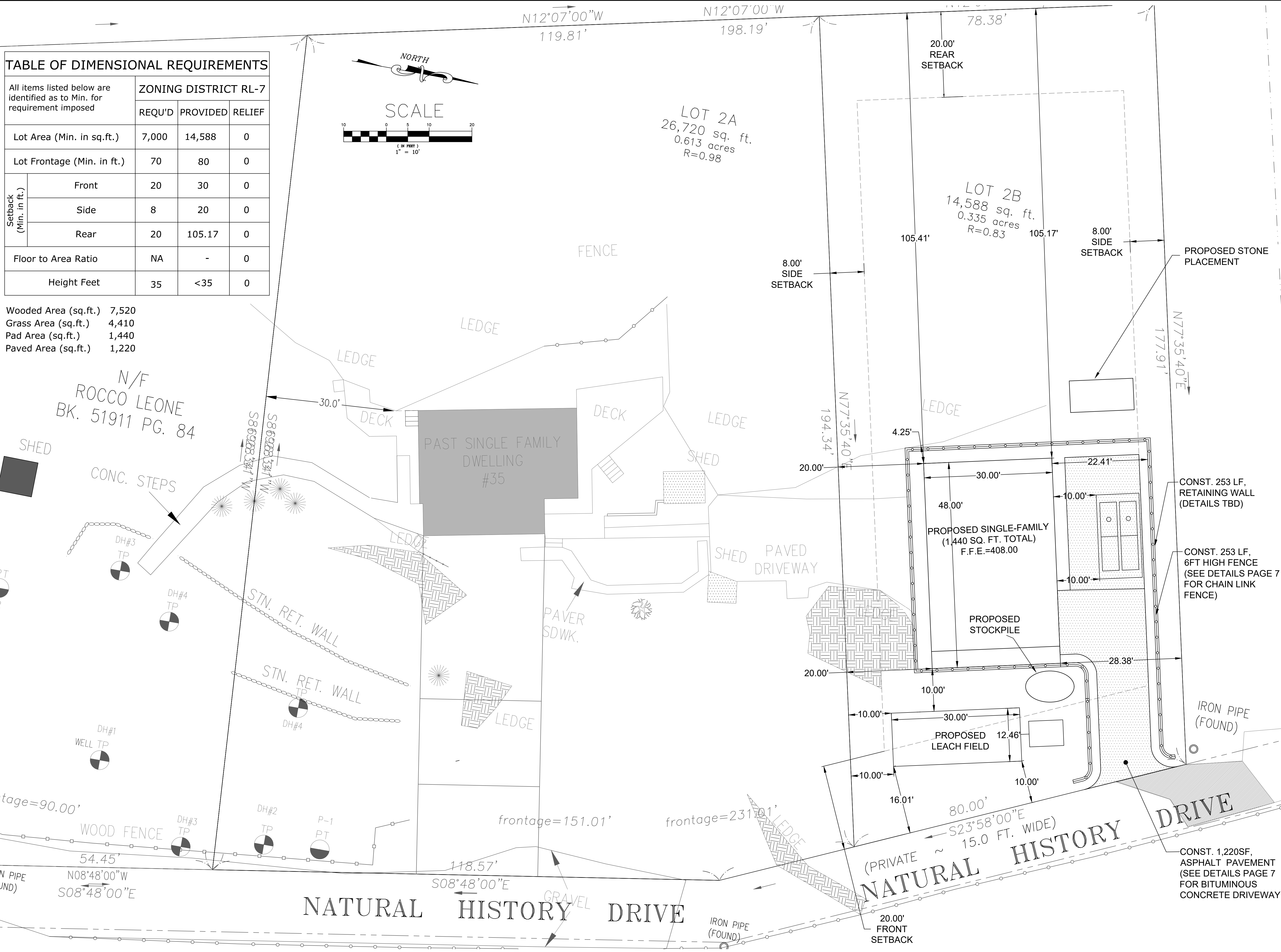
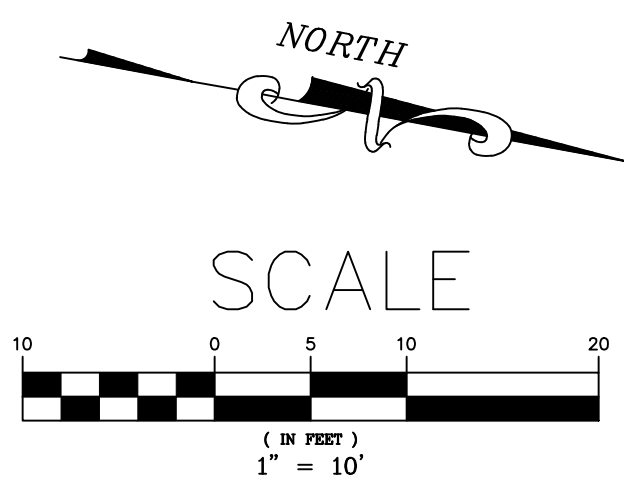
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- GENERAL NOTES:**
- Property bearing and distances, and other property features locations are obtained from plan prepared by George C. Collins, PLS dated 6/4/22.

**TABLE OF DIMENSIONAL REQUIREMENTS**

All items listed below are identified as to Min. for requirement imposed		ZONING DISTRICT RL-7		
		REQU'D	PROVIDED	RELIEF
Lot Area (Min. in sq.ft.)		7,000	14,588	0
Lot Frontage (Min. in ft.)		70	80	0
Setback (Min. in ft.)	Front	20	30	0
	Side	8	20	0
	Rear	20	105.17	0
Floor to Area Ratio		NA	-	0
Height Feet		35	<35	0

Wooded Area (sq.ft.) 7,520  
 Grass Area (sq.ft.) 4,410  
 Pad Area (sq.ft.) 1,440  
 Paved Area (sq.ft.) 1,220



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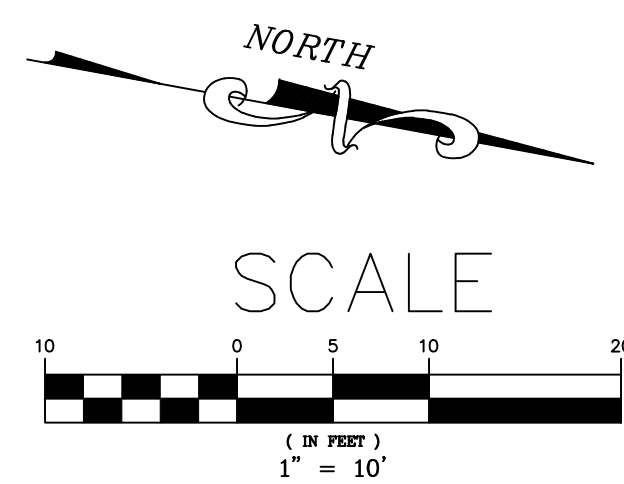
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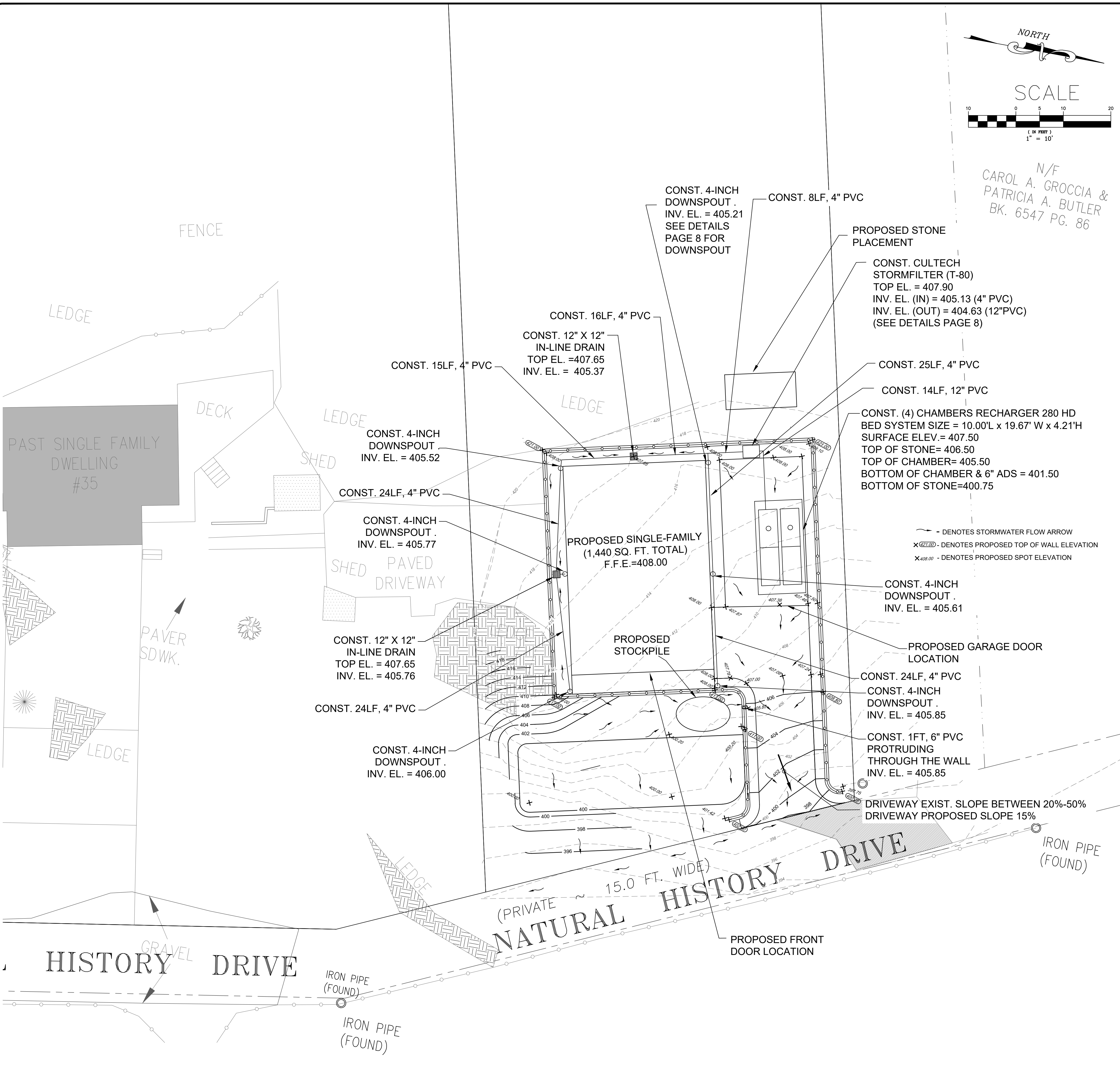
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Sheet Title  
 SITE PLAN

SCALE 1"=10'  
 DRAWN GCR  
 CHECKED GA  
 FILE NAME FILE.DWG  
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N/F  
CAROL A. GROCCIA &  
PATRICIA A. BUTLER  
BK. 6547 PG. 86



**DRAINAGE PLAN NOTES:**

1. The Stormwater management system is designed to catch entire roof run-off sized for 1-inch rainfall event.
2. The post-construction impervious roof area is 2,252 S.F. Minimum storage required = 1 inch/(12 inch/foot) x 2,252 sq. ft. = 187.67 cu. ft. = 1,404 gal.
3. Estimated depth to high groundwater to be determined during the soil test.
4. Proposed infiltration system: CULTEC RECHARGER 280HD. Number of Chambers: 2; Bed system size: 10.00'L x 19.67'W x 4.21'H Available storage: Within Chambers= 1,481 gal; Within Stone = 1,393 gal; Available storage = 2,874 gal. > Required storage = 1,404 gal.
5. Runoff from property should not be directed across property lines towards abutting properties or streets.
6. Connecting sump pump systems and foundation drains to the CULTEC system is prohibited.
7. Contractor to coordinate with the Worcester Engineering Division to perform inspections of i) bottom of excavation and ii) CULTEC system after installation but before backfill. The Engineering Division should be notified 24 hours prior to inspection.
8. If subsurface conditions do not match the test pit conditions, then the Contractor shall contact the Design Engineer and the Worcester Engineering Division for review immediately.
9. The retaining wall will be reinforced concrete to be designed in the future.

**Earthwork Quantity:**

1. Based on the proposed grading presented on this plan, earthwork quantities are:  
Estimated Cut : 775 CY  
Estimated Fill : 35 CY
2. Cut/fill quantities provided are preliminary for estimating purpose only and subject to change throughout engineering design iterations.
3. Excess cut can be used and stabilized in stockpile areas and any additional unused materials shall be transported off the site.
4. Large stones coming out of the site to be reused for erosion and sediment control.



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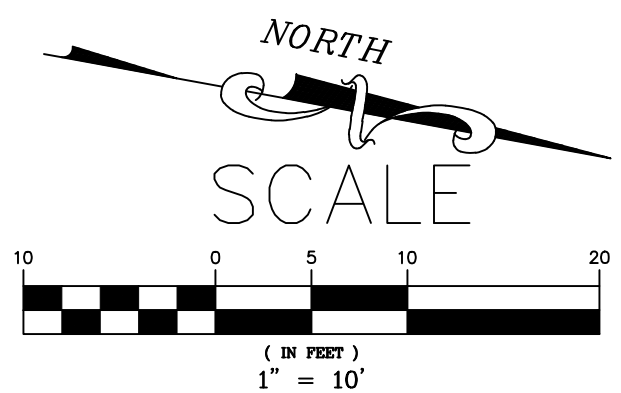
Sheet Title  
GRADING &  
DRAINAGE  
PLAN

SCALE	1"=10'
DRAWN	GCR
CHECKED	GA
FILE NAME	FILE.DWG
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LOT 2A  
26,720 sq. ft.  
0.613 acres  
R=0.98

LOT 2  
41,308 sq. ft.  
0.948 acres  
R=1.02

LOT 2B  
14,588 sq. ft.  
0.335 acres  
R=0.83



N/F  
CAROL A. GROCCIA &  
PATRICIA A. BUTLER  
BK. 6547 PG. 86

**UTILITY PLAN NOTES:**

1. ALL WORK PERFORMED AS PART OF THIS PROJECT SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF THE WORCESTER COUNTY WATER AND SEWER DEPARTMENT OF PUBLIC WORKS OR ANY OTHER AGENCY WITH AUTHORITY IN THIS AREA.
2. NEW WATER LINES SHALL BE A MINIMUM OF TEN FEET AWAY FROM ALL SEWER LINES, EXISTING OR PROPOSED.
3. WATER SERVICE SHALL BE INSTALLED WITH A MINIMUM COVER OF FIVE FEET THROUGHOUT.
4. SEWER SERVICE AND WATER SERVICE SHALL BE INSTALLED WITH A MINIMUM OF 18 INCHES OF VERTICAL SEPARATION.
5. IT IS RECOMMENDED THAT DIGGING WITHIN ONE FOOT OF THE MAIN BE DONE WITH HAND TOOLS ONLY.
6. THE CONTRACTOR SHALL SUPPLY THE COPPER SERVICE AND SHALL PERFORM THE TAP AS PART OF HIS CONTRACT. IF A PERIMETER DRAIN IS INSTALLED IT MUST BE CONNECTED TO A LEACHING AREA. SUBSURFACE TESTING AND FINAL LOCATION OF LEACHING AREA IS THE OWNERS RESPONSIBILITY.
7. EXISTING UTILITIES SHOWN ON THIS PLAN ARE COMPILED FROM RECORD INFORMATION AND APPROXIMATE FIELD LOCATION AND THEREFORE, ARE NOT CERTIFIED FOR CONSTRUCTION. PRIOR TO ANY EXCAVATION OR CONSTRUCTION, THE CONTRACTOR MUST NOTIFY 'DIG SAFE' SEVENTY TWO HOURS BEFORE COMMENCING WORK. CALL 1-888-344-7233
8. THE WORCESTER COUNTY WATER AND SEWER IS NOT PART OF DIG SAFE. THEREFORE, FIELD LOCATIONS OF WATER AND SEWER LINES MUST BE MARKED BY WORCESTER COUNTY. CALL 330-9400, FORTY EIGHT HOURS IN ADVANCE OF ANY EXCAVATION. IF ANY ADDITIONAL SEWER OR WATER SERVICES ARE FOUND DURING CONSTRUCTION THAT ARE NOT SHOWN ON THIS PLAN, THE CONTRACTOR MUST CUT & CAP THE SERVICE AT THE MAIN. IF ANY BATHROOM FIXTURES ARE PLANNED FOR THE BASEMENT A BACKWATER VALVE MUST BE USED. THE CONTRACTOR SHALL CONDUCT ALL OPERATIONS IN ACCORDANCE WITH THE MOST RECENT O.S.H.A. GUIDELINES FOR EXCAVATION.
9. A PREREQUISITE FOR FILING A GENERAL SERVICE APPLICATION WITH THE WOR WATER AND SEWER COMMISSION FOR NEW CONSTRUCTION IS THE ROUGH CONSTRUCTION SIGN-OFF DOCUMENT FROM THE WORCESTER COUNTY INSPECTIONAL SERVICES DEPARTMENT.
10. ALL WORK IN WORCESTER COUNTY MUST BE PERFORMED BY A LICENSED DRAIN LAYER APPROVED BY THE WORCESTER COUNTY WATER AND SEWER DEPARTMENT AND MUST MAINTAIN A BOND WITH WORCESTER COUTY. THE CONTRACTOR BEARS THE RESPONSIBILITY FOR CONFIRMING THE EXACT LOCATION OF UTILITIES SHOWN ON THIS PLAN AND OTHERS THAT MAY EXIST BUT ARE NOT SHOWN HERE. THIS PLAN HAS BEEN PREPARED FOR APPROVAL OF THE WATER, SEWER AND DRAIN CONNECTIONS TO WORCESTER COUNTY FACILITIES.
11. IT IS UNDERSTOOD THAT THE RESPONSIBILITY OF OWNERSHIP AND MAINTENANCE OF THE SEWER AND DRAIN CONNECTIONS ON PRIVATE PROPERTY AND/OR PRIVATE AND PUBLIC WAYS SHALL BE THE RESPONSIBILITY OF THE OWNER. IT IS ALSO UNDERSTOOD THAT THE WATER CONNECTION ON PRIVATE PROPERTY INCLUDING PRIVATE WAYS IS ALSO THE RESPONSIBILITY OF THE OWNER. IF CONNECTIONS CROSS OR CLOSELY ABUT PROPERTY LINES, PROVISIONS MUST BE MADE TO ALLOW FOR FUTURE MAINTENANCE OR RECONSTRUCTION. THESE PROVISIONS MUST BE INCORPORATED INTO THE DEED AND PURCHASE AND SALE AGREEMENT FOR THE CONVEYANCE OF THIS AND THE ABUTTING PROPERTY.
12. THIS PLAN IS NOT INTENDED TO DEPICT EXACT PROPERTY LINE LOCATIONS OR THE EXACT LOCATIONS OF BUILDINGS, EXISTING OR PROPOSED. IF, AS A RESULT OF FIELD CONDITIONS, CHANGES TO THIS DESIGN ARE REQUIRED, THE ENGINEER OR PROJECT MANAGER MUST BE NOTIFIED IMMEDIATELY. THE COST OF MODIFICATIONS TO THIS PLAN AS A RESULT OF FAILED INSPECTIONS OR UNAUTHORIZED CHANGES ARE TO BE BORNE BY THE CONTRACTOR.



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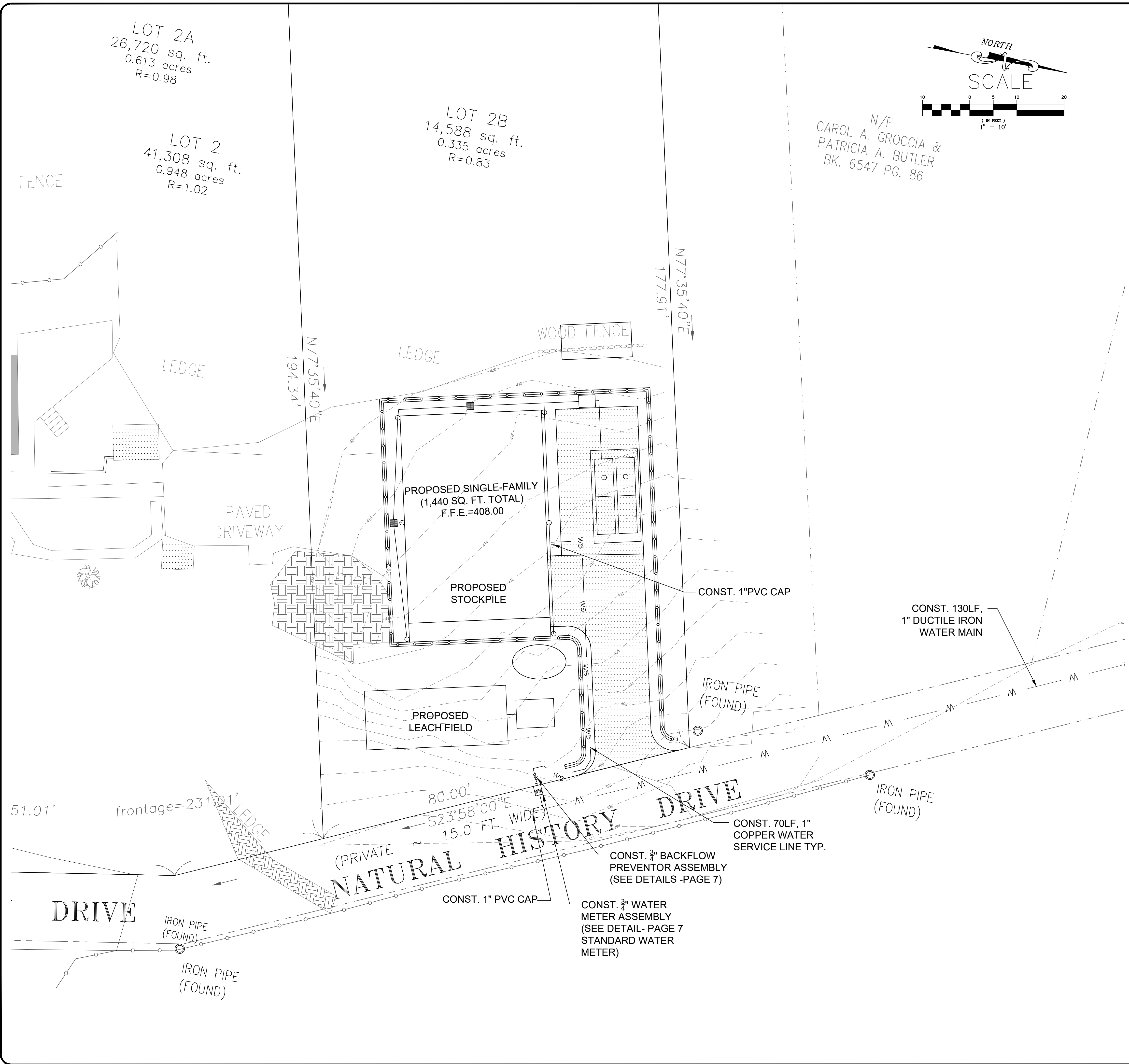
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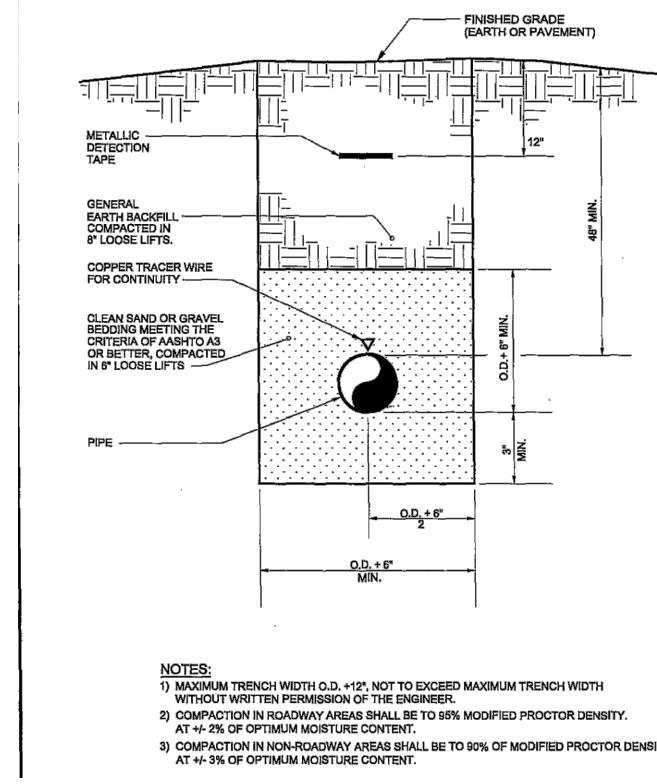
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The solution for your next project  
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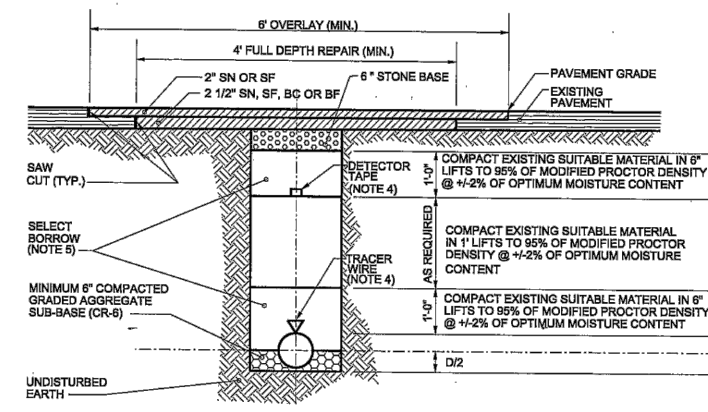
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**PIPE TRENCH/BEDDING (G-1)**

NOT TO SCALE



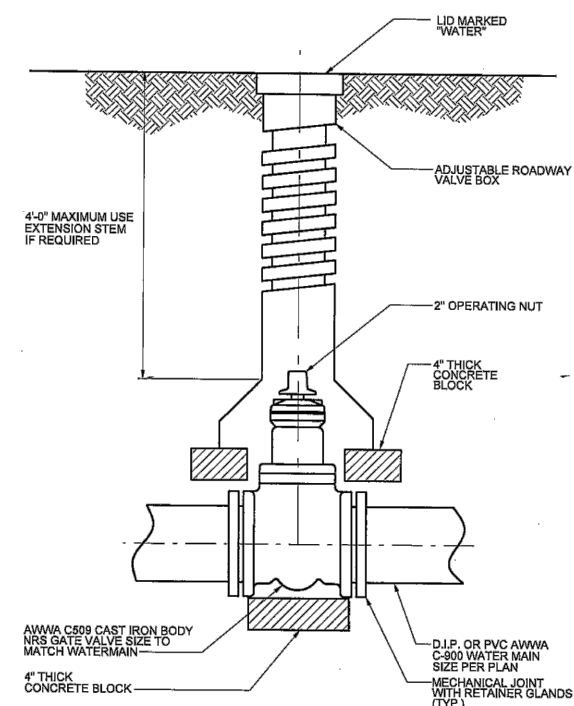
**TRENCH PAVEMENT REPAIR DETAIL (G-2)**

NOT TO SCALE

DIAMETER (D) OF PIPE	8\"/>		
HOR. ANGLE: FROM 45° TO 90°	0.75 FT	1.0 FT	1.5 FT
HOR. ANGLE: FROM 45° TO 90°	1.0 FT	1.5 FT	2.0 FT
TEE CONNECTION	1.5 FT	1.75 FT	2.5 FT
VERTICAL BEND 45°	2.0 FT	3.0 FT	4.0 FT
VERTICAL BEND 90°	1.5 FT	2.0 FT	3.0 FT
FLUG OR CAP	1.25 FT	1.5 FT	2.5 FT

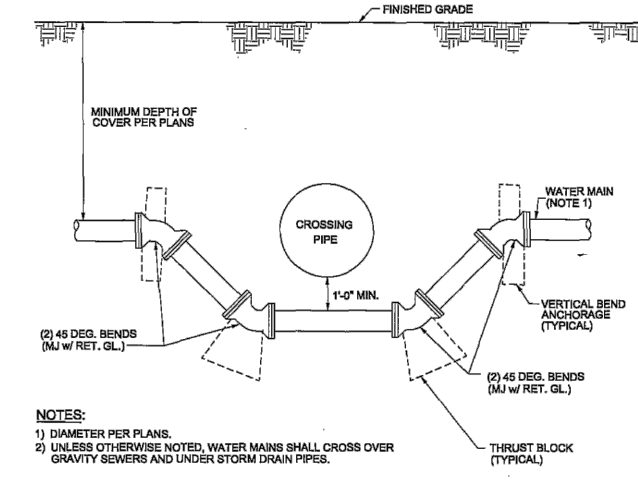
**THRUST BLOCKS AND VERTICAL BEND ANCHORAGE (W-4)**

NOT TO SCALE



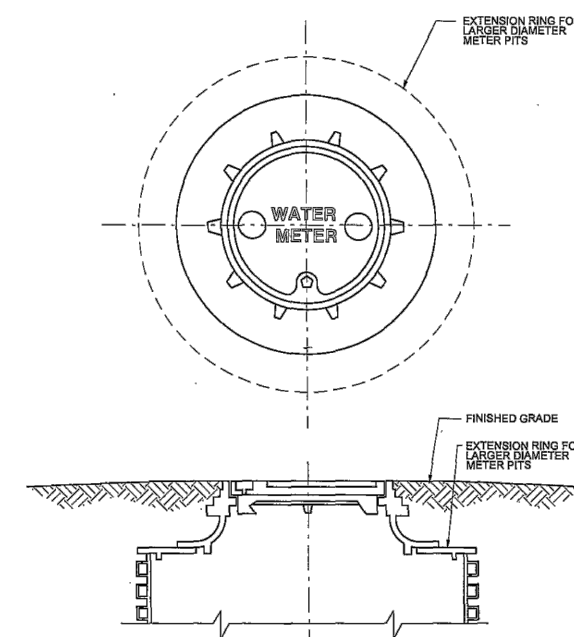
**GATE VALVE AND VALVE BOX DETAIL (W-5)**

NOT TO SCALE



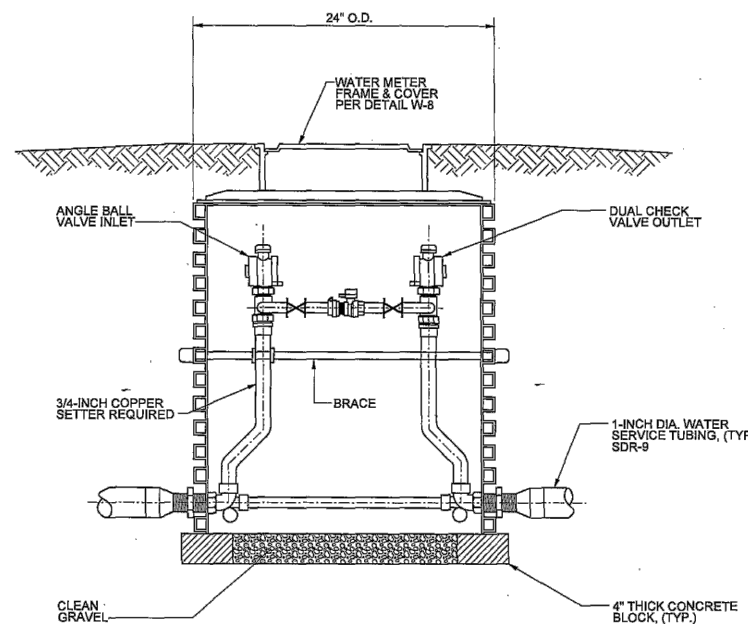
**PIPE CROSSING DETAIL (W-6)**

NOT TO SCALE



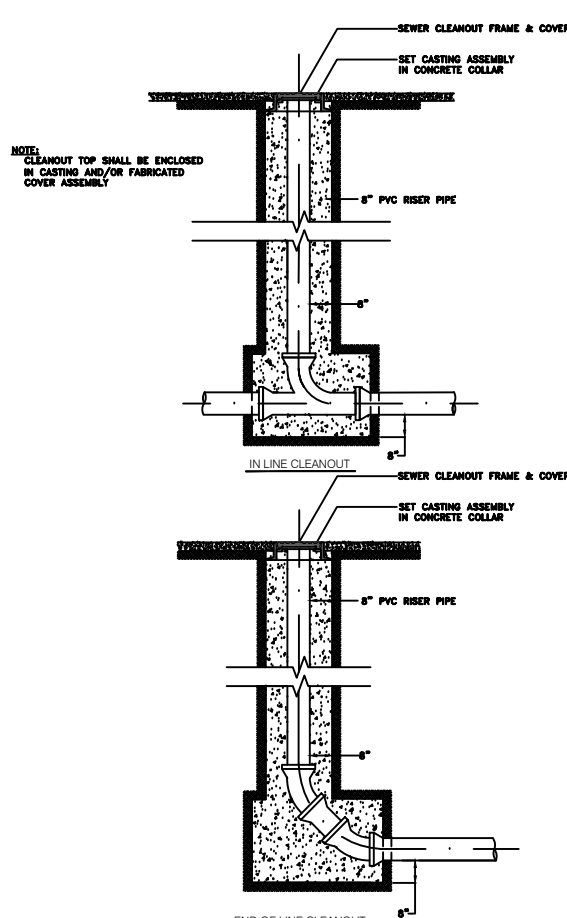
**STANDARD WATER METER FRAME AND COVER (W-8)**

NOT TO SCALE



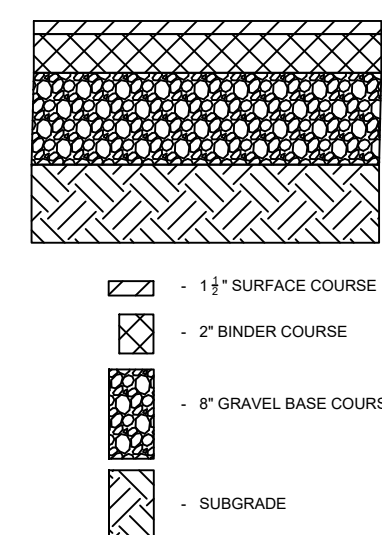
**STANDARD 1-INCH SERVICE WITH 3/4-INCH (W-9)**

NOT TO SCALE



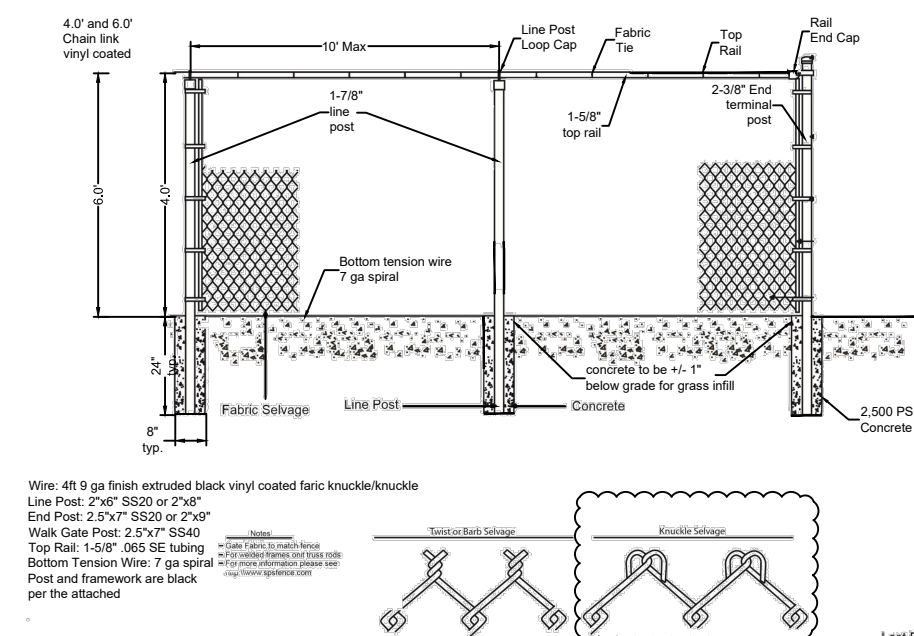
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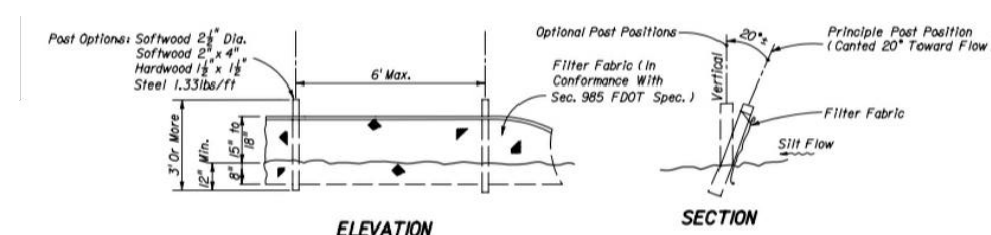
**BITUMUNOUS CONCRETE DRIVEWAY DETAIL**

NOT TO SCALE



**4'-6\"/>**

NOT TO SCALE



**SILT FENCE DETAIL**

NOT TO SCALE



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35 NATURAL HISTORY DRIVE  
WORCESTER, MA 01605

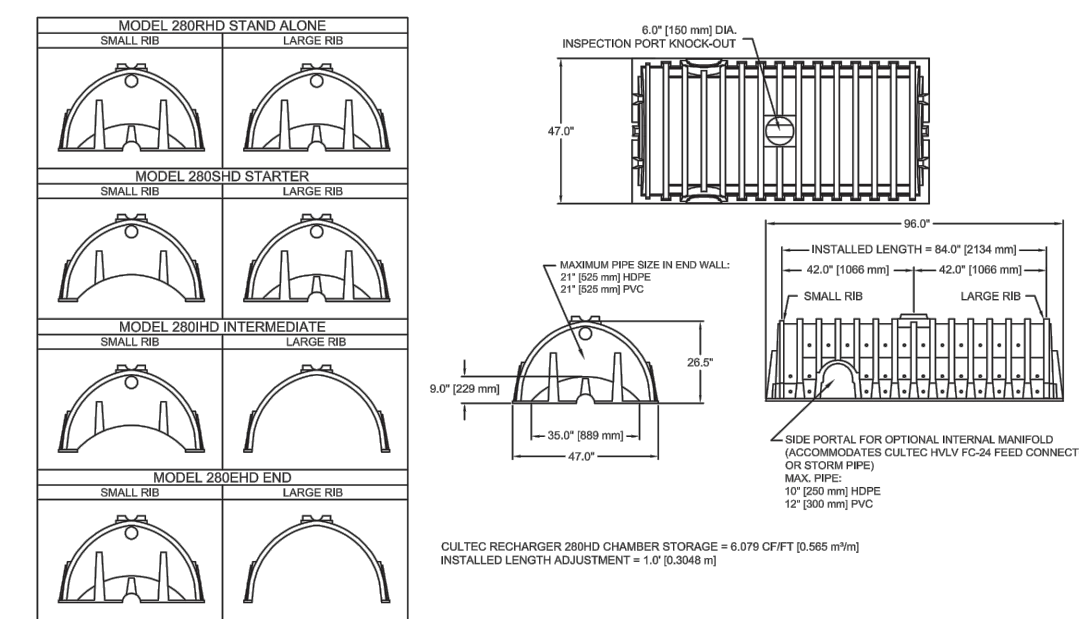
Property of:  
LEONE ROCCO  
35 NATURAL HISTORY DRIVE  
WORCESTER, MA 01605

Prepared By:  
**LEBRA**  
THE ENGINEERING & DESIGN, LLC  
Structural Engineering / Building Design  
Civil Engineering / Management Services  
ISRAA ISMAIL, PROFESSIONAL ENGINEER  
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PHONE: 781-540-0337  
SITE: WWW.LEBRAENGINEERING.COM  
EMAIL: CONTACT@LEBRAENGINEERING.COM

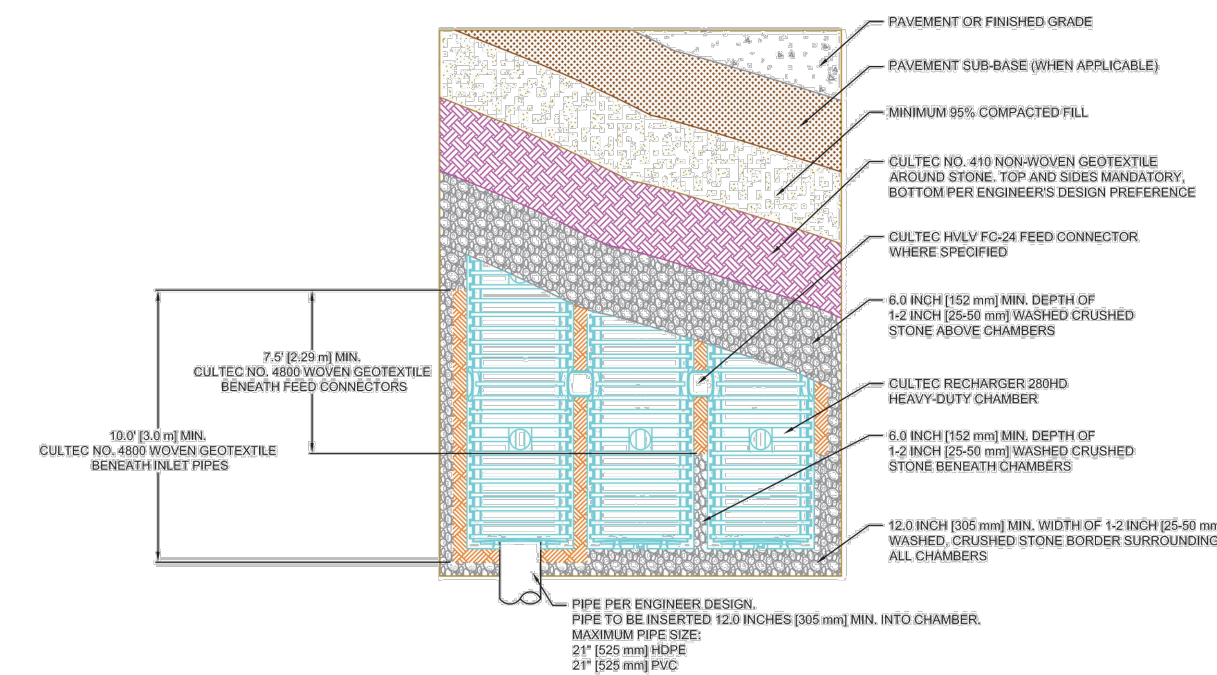
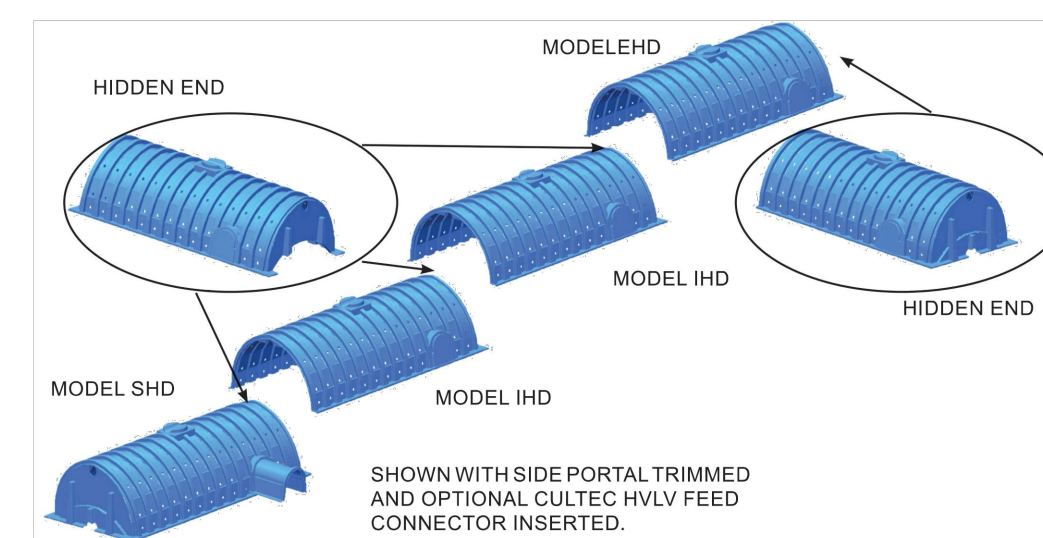
Project Title  
NATURAL HISTORY DR.  
WORCESTER, MA

Sheet Title  
MISCELLANEOUS DETAILS

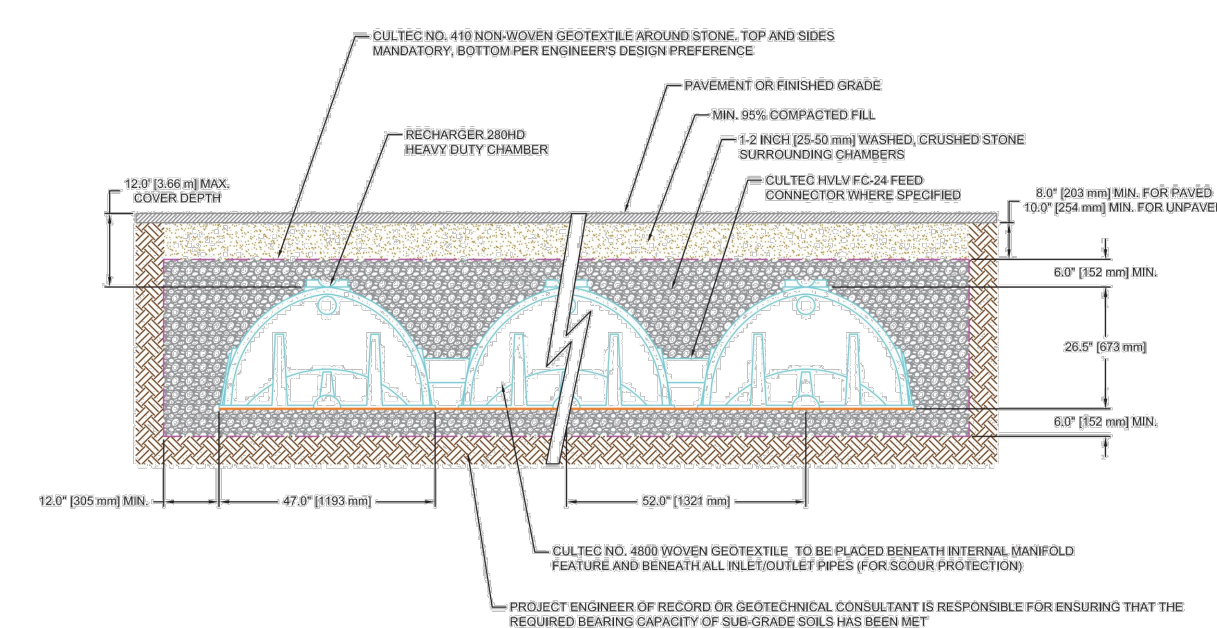
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DRAWN	GCR
CHECKED	GA
FILE NAME	FILE.DWG
PROJECT	NATURAL HISTORY DRIVE
ISSUE DATE	DECEMBER 19, 2023
JOB NO.	JOB NUMBER



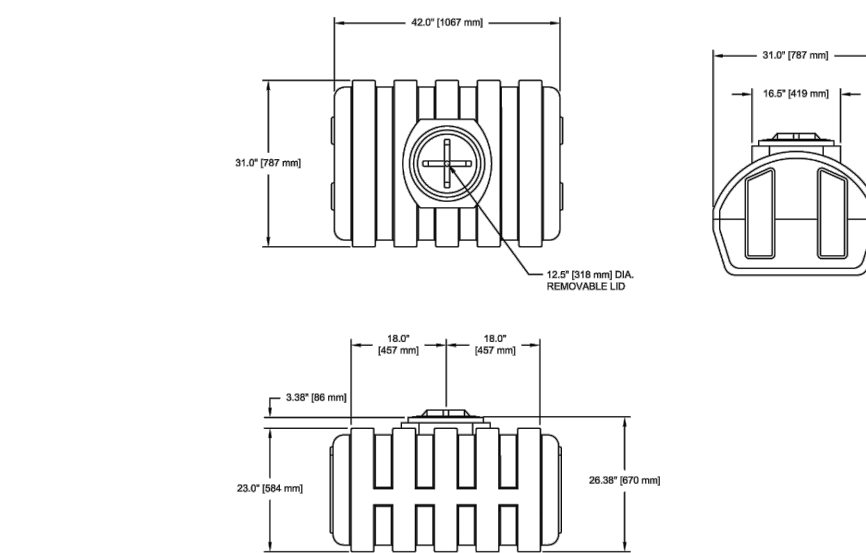
Typical Interlock Installation



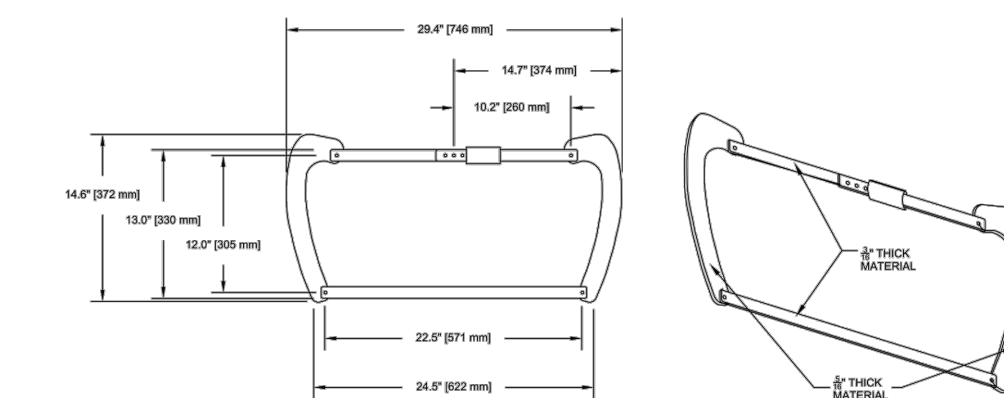
Typical Cross Section for Traffic Application



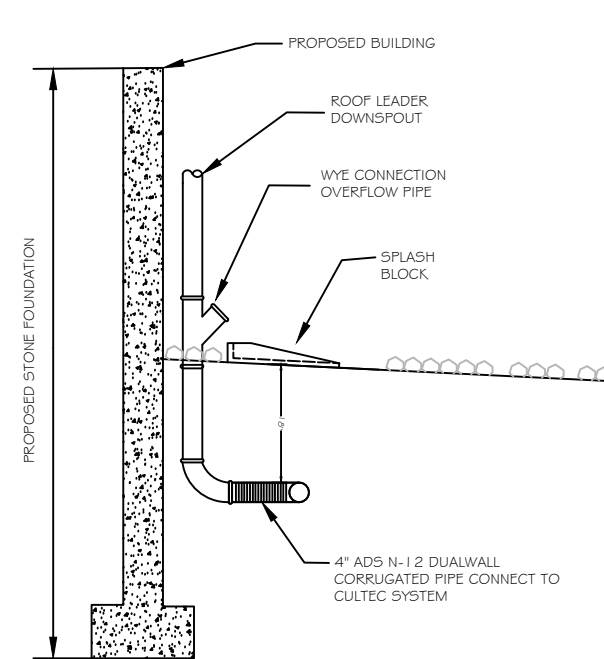
CULTEC RECHARGER 280HD DETAIL  
NOT TO SCALE



Filter Frame Detail



CULTEC STORMFILTER (T-80)  
NOT TO SCALE



ROOF LEADER DOWNSPOUT  
NOT TO SCALE

DATE:

No.	Date	Description
3		
2		
1		

Prepared for:  
LEONE ROCCO  
35 NATURAL HISTORY DRIVE  
WORCESTER, MA 01605

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LEONE ROCCO  
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