



7.0 APPENDICES



A APPENDIX: COST ESTIMATE

PREFERED ALTERNATIVE ROUTE PRELIMINARY COST ESTIMATE

Description	Qty.	Unit	Unit Cost	Ext. Cost
Chestnut Oaks Final Alignment	1	LS	\$ 1,321,115	\$ 1,321,115
Trunk Line Alignment (Avoiding Private & School Properties)	1	LS	\$ 3,511,200	\$ 3,511,200
Roaring Brook Shared Use Path	1	LS	\$ 959,375	\$ 959,375
Roaring Brook Trailhead and Parking Area	1	LS	\$ 470,075	\$ 470,075
Construction Subtotal				\$ 6,261,765
Basic Work Zone Traffic Control		1%		\$ 63,000
Survey Operations		2%		\$ 126,000
Mobilization		4%		\$ 251,000
Contingency		15%		\$ 940,000
Construction Total				\$ 7,641,765
Survey, Design, Engineering, and Permitting		10%		\$ 765,000
Construction Administration and Observation		10%		\$ 765,000
Legal (Incl. Metro North Fees)		3%		\$ 230,000
Inflation (2020-2023)	3	@	3%	\$ 688,000
Project Total				\$ 10,089,765
SAY				\$ 10,090,000

ALTERNATIVE 1 ROUTE PRELIMINARY COST ESTIMATE

Description	Qty.	Unit	Unit Cost	Ext. Cost
Chestnut Oaks Final Alignment	1	LS	\$ 1,321,115	\$ 1,321,115
Trunk Line Alignment (Avoiding Private & School Properties)	1	LS	\$ 3,511,200	\$ 3,511,200
Roaring Brook Shared Use Path	1	LS	\$ 959,375	\$ 959,375
Roaring Brook Trailhead and Parking Area	1	LS	\$ 470,075	\$ 470,075
Construction Subtotal				\$ 6,261,765
Basic Work Zone Traffic Control		1%		\$ 63,000
Survey Operations		2%		\$ 126,000
Mobilization		4%		\$ 251,000
Contingency		15%		\$ 940,000
Construction Total				\$ 7,641,765
Survey, Design, Engineering, and Permitting		10%		\$ 765,000
Construction Administration and Observation		10%		\$ 765,000
Legal (Incl. Metro North Fees)		3%		\$ 230,000
Inflation (2020-2023)	3	@	3%	\$ 688,000
Project Total				\$ 10,089,765
SAY				\$ 10,090,000

ALTERNATIVE 2 ROUTE PRELIMINARY COST ESTIMATE

Description	Qty.	Unit	Unit Cost	Ext. Cost
Chestnut Oaks Final Alignment	1	LS	\$ 1,605,200	\$ 1,605,200
Trunk Line Alignment (Avoiding Private Property Segment)	1	LS	\$ 2,449,300	\$ 2,449,300
Trunk Line Alignment (Avoiding School Property Segment)	1	LS	\$ 1,681,100	\$ 1,681,100
Roaring Brook Shared Use Path	1	LS	\$ 1,080,100	\$ 1,080,100
Roaring Brook Trailhead and Parking Area	1	LS	\$ 505,300	\$ 505,300
Construction Subtotal				\$ 7,321,000
Basic Work Zone Traffic Control		1%		\$ 74,000
Survey Operations		2%		\$ 147,000
Mobilization		4%		\$ 293,000
Contingency		20%		\$ 1,465,000
Construction Total				\$ 9,300,000
Survey, Design, Engineering, and Permitting		10%		\$ 930,000
Construction Administration and Observation		10%		\$ 930,000
Legal (Incl. Metro North Fees)		3%		\$ 279,000
Inflation (2020-2023)	3	@	4%	\$ 1,116,000
Project Total				\$ 12,555,000
SAY				\$ 12,560,000



B APPENDIX: TOWN DATA

B TOWN RIGHT OF WAY FOR
BIKEWAY + PEDESTRIAN WALKWAY

AGREEMENT made this 5th day of March, 1982 between Jerome Barabel & Associates, Inc. ("Owner") and the Town of New Castle, County of Westchester, State of New York ("Town").

W I T N E S S E T H:

WHEREAS, Owner is the owner of certain real property located in the Town and bounded and described as set forth in Exhibit "A" annexed hereto and made a part hereof (the "Property"); and

WHEREAS, the Owner intends to develop the Property by constructing eighty-eight (88) condominium units (the "Project") in which all condominium unit owners shall be members of a condominium association that will own, operate and maintain the common facilities to be constructed on the Property; and

WHEREAS, the Town desires to secure the right, at some future time, to construct a road, bikeway, and pedestrian walkway through the Property and to acquire the requisite rights of way therefor; and

WHEREAS, Owner is willing to grant the Town such right and in connection therewith to offer to dedicate to the Town land for such purposes on the terms and subject to the conditions herein set forth,

NOW THEREFORE, in consideration of the premises, the mutual covenants contained herein, and other good and valuable

consideration, receipt of which is hereby acknowledged, it is agreed as follows:

1. To induce the Town and each board, agency or department thereof having jurisdiction over the Property or the Project, to approve the Project, and in consideration thereof, the Owner for itself, its successors and assigns, hereby grants to the Town the irrevocable perpetual option, right and privilege of acquiring, at no cost to the Town, fee title to that portion of the Property described on Exhibit "B" annexed hereto and made a part hereof (the "Right of Way"), including the improvements which may exist thereon, as a right of way upon which a town highway, bikeway, and pedestrian walkway may be constructed or improved at the Town's cost and at no further expense or cost to the Owner or its successors or assigns. The Right of Way may be used for a Town Highway, bikeway, and pedestrian walkway only, including utility lines, hydrants, signs and other such customary appurtenances, and for no other purpose.

2. Notice of election by the Town to acquire fee title to the Right of Way shall be given to the Owner, or its successors or assigns, in writing by registered mail, return receipt requested, addressed to Owner or its successor or assigns, at any time after the expiration of one (1) year from the issuance of the first certificate of occupancy for a dwelling

unit constructed on the Property. Title shall close and the deed shall be delivered, by the Owner, or its successor or assigns, at the offices of the Town Attorney, Town Hall, Town of New Castle, on a date specified in such notice, which date shall be not earlier than thirty (30) days nor later than ninety (90) days after the date of the notice.

3. No notice of election to acquire fee title may be given by the Town unless and until resolutions providing for the acquisition of the Right of Way and the acceptance of Owner's offer of dedication, have been duly adopted by the Town Planning Board and Town Board, and the Town has fully complied with all laws, ordinances, rules and regulations governing such acquisition. Said resolutions shall provide that (i) construction shall commence as soon as practicable, (ii) that once commenced, construction shall be continuously performed and promptly completed in a safe and workman like manner so as to cause minimal disruption to the Property and the residents thereon; and (iii) for the indemnification required by paragraph 6 hereof. Any notice not timely given or given prior to the satisfaction of all the conditions herein specified shall be null and void and of no force and effect.

4. At the Closing, Owner, or its successors, or assigns, shall convey the Right of Way to the Town in fee simple, free and clear of all liens and encumbrances, by bargain and

sale deed with covenants against grantor's acts, which deed shall specifically restrict the use to which such Right of Way shall be part. Said conveyance shall be subject to all restrictions, easements, and conditions of record, if any. All costs of Closing, including but not limited to attorneys' fees (other than fees of Owner's attorneys), title insurance, surveys (if required by the Town), recording fees and revenue stamps, and all costs of construction, shall be borne by the Town. The Town shall have no other obligation to compensate Owner, or its successors, or assigns, for the Right of Way.

5. This Agreement setting forth the Right of Way and the proposed Town Highway, bikeway and pedestrian walkway thereon shall be filed in the office of the Clerk of Westchester County, Division of Land Records, and shall constitute a continuing and irrevocable option and offer of dedication. Until such offer is accepted, notice of election by the Town to acquire the Right of Way has been given as required by this Agreement and the actual closing of title, the Town shall have no right of any nature or description whatsoever to or in the Right of Way or to construct a Town Highway, bikeway or pedestrian walkway thereon, and fee title to the Right of Way shall be and remain in the Owner, its successors and assigns.

6. The Town shall, and shall cause any contractor retained by the Town to, indemnify and hold harmless the Owner,

its successors and assigns, the Condominium Association, and each condominium unit owner or other property owner or resident from any and all damages to person or property resulting from, arising out of or in any way related to the construction of the Town Highway, bikeway and pedestrian walkway, and shall promptly restore in a reasonably comparable manner and quality any and all landscaping or site improvements in any way damaged, directly or indirectly, as a result of such construction.

7. This Agreement shall remain in full force and effect until such time as the Town may accept the Right of Way by dedication or elect to terminate and abandon the continuing option and offer herein granted and made.

8. This Agreement shall be binding upon the Owner, its successors and assigns.

9. This Agreement contains the entire agreement between the parties hereto with respect to the subject matter hereof. There are no agreements, representations or warranties except as expressly set forth herein. This Agreement may not be amended, modified or terminated, and no provision or breach of any provision shall be waived except by a writing signed by the parties hereto. A waiver of any one provision shall not be deemed a waiver of any other provision of this Agreement or of any other or subsequent breach of any such provision.

10. Notices required by this Agreement shall be sent by registered mail, return receipt requested, addressed as follows:

To Town:

Town of New Castle
Town Hall
200 South Greeley Avenue
Chappaqua, New York

Attention: Town Clerk

To Owner:

Jerome Barabel & Associates, Inc.
c/o Pearlman Weinberg Tauber & Bernstein
575 Madison Avenue
New York, New York 10022

Either party may advise the other of a change of address to which notices may be sent by a written notice sent in accordance with this paragraph. Notices sent pursuant to this paragraph shall be deemed sent when mailed.

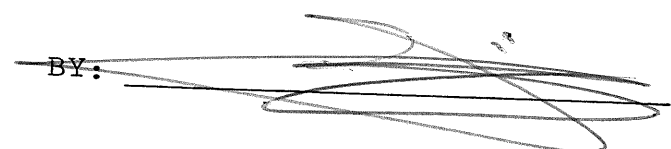
IN WITNESS WHEREOF, the parties hereto have caused these presents to be signed as of the day and year first above written.

TOWN OF NEW CASTLE

BY:


Lois L. Mitchell, Supervisor

JEROME BARABEL & ASSOCIATES, INC.

BY: 

STATE OF NEW YORK)
 NEW YORK) ss.:
 COUNTY OF WESTCHESTER)

On the 5th day of March, 1982, before me personally came JEROME WINIKOFF, to me known, who, by me duly sworn, did depose and say that he resides at 15 Stewart Place, Apartment 7C, White Plains, New York 10603; that he is the President of Jerome Barabel & Associates, Inc., the corporation description in and which executed the foregoing instrument; ~~that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by the order of the board of directors of said corporation, and that he signed his name thereto by like order.~~

Ruth L. Bright
 Notary Public

RUTH L. BRIGHT
 NOTARY PUBLIC, STATE OF NEW YORK
 NO. 31-0417701
 QUALIFIED IN NEW YORK COUNTY
 COMMISSION EXPIRES MARCH 30, 1983

STATE OF NEW YORK)
) ss.:
 COUNTY OF WESTCHESTER)

On this 16th day of March, 1982, before me personally came LOIS L. MITCHELL, to me known, who, being by me severally duly sworn, did depose and say, that she has an office at 200 South Greeley Avenue, Chappaqua, New York; that she is Supervisor of the Town of New Castle, which executed the foregoing instrument; that she knows the corporate seal of said Town; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by order of the Town Board of the Town of New Castle and that she signed her name thereto by like order and authority.

Janette D. Hunter
 Notary Public

JANETTE D. HUNTER
 Notary Public State of New York
 Westchester County - No. 60-7012450
 Term Expires March 30, 1982

SCHEDULE "A"

BEGINNING at a point formed by the intersection of the most westerly line of lands of the Albert Turner Estate as designated on a certain map entitled "Survey of Property belonging to the Albert Turner Estate, etc..." as filed February 17, 1927 in the Westchester County Clerk's Office, Division of Land Records, as file map No. 3110 and the northerly side of Bischoff Avenue the following courses and distances:

North $57^{\circ} 40' 30''$ West a distance of 61.17 feet; thence northerly on a curve to the left having a radius of 11,519.19 feet and a central angle of $2^{\circ} 22' 11''$ a distance of 476.48 feet; thence North $33^{\circ} 33' 00''$ East a distance of 1,956.43 feet; thence South $33^{\circ} 54' 50''$ a distance of .61 feet; thence South $50^{\circ} 45' 30''$ East a distance of 33.01 feet; thence South $45^{\circ} 7' 30''$ East a distance of 107.01 feet; thence South $34^{\circ} 01' 00''$ East a distance of 52.23 feet; thence South $10^{\circ} 39' 00''$ East a distance of 31.16 feet; thence South $33^{\circ} 24' 30''$ West a distance of 949.58 feet; thence South $41^{\circ} 25' 40''$ East a distance of 58.02 feet; thence southerly on a curve to the left having a radius of 1,843.69 feet and a central angle of $13^{\circ} 28' 50''$ a distance of 433.78 feet; thence South $35^{\circ} 05' 30''$ West a distance of 220.95 feet; thence South $33^{\circ} 45' 30''$ West a distance of 275.28 feet; thence North $56^{\circ} 27' 00''$ West a distance of 147.45 feet; thence South $33^{\circ} 33' 00''$ West a distance of 60 feet; thence southerly on a curve to the right having a radius of 11,569.19 feet and a central angle of $1^{\circ} 27' 41.2''$ a distance of 295.10 feet; thence South $57^{\circ} 40' 30''$ East a distance of .18 feet; thence South $31^{\circ} 59' 30''$ West a distance of 180 feet to the point or place of BEGINNING.

1131

EXHIBIT B

TO

OFFER OF DEDICATION AGREEMENT

DATED , 1982

CHAPPAQUA MEWS

RIGHT-OF-WAY

BEGINNING at a point formed by the intersection of the most westerly line of lands of the Albert Turner Estate as designated on a certain map entitled "Survey of Property belonging to the Albert Turner Estate, etc..." as filed February 17, 1927 in the Westchester County Clerk's Office, Division of Land Records, as file map No. 3110 and the northerly side of Bischoff Avenue the following courses and distances:

North $57^{\circ} 40' 30''$ West a distance of 61.17 feet; thence northerly on a curve to the left having a radius of 11,519.19 feet and a central angle of $2^{\circ} 22' 11''$ a distance of 476.48 feet; thence North $33^{\circ} 33' 00''$ East a distance of 1,956.43 feet; thence South $33^{\circ} 54' 50''$ a distance of 0.61 feet; thence South $50^{\circ} 45' 30''$ East a distance of 33.01 feet; thence South $45^{\circ} 7' 30''$ East a distance of 82.90 feet; thence South $33^{\circ} 43' 30''$ West a distance of 173.87 feet; thence southerly on a curve to the right having a radius of 338.76 feet and a central angle of $29^{\circ} 28' 52''$ a distance of 174.31 feet; thence southerly on a curve to the left having a radius of 151.09 feet and a central angle of $29^{\circ} 39' 22''$ a distance of 78.21 feet; thence South $33^{\circ} 33' 00''$ West a distance of 153.00 feet; thence southerly on a curve to the left having a radius of 244.05 feet and a central angle of $21^{\circ} 48' 06''$ a distance of 92.86 feet; thence South $11^{\circ} 44'$

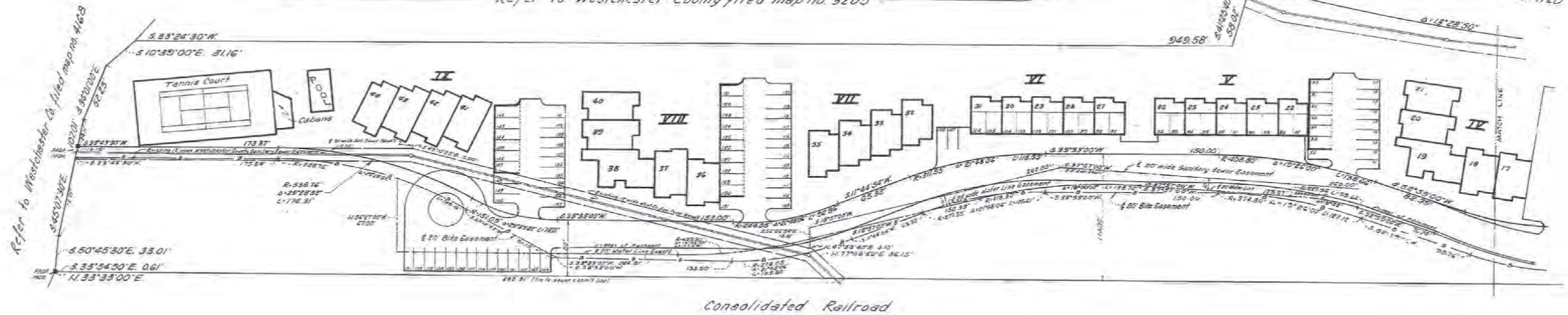
54" West a distance of 65.32 feet; thence southerly on a curve to the right having a radius of 311.55 feet and a central angle of $21^{\circ} 48' 06''$ a distance of 118.55 feet; thence South $33^{\circ} 33' 00''$ West a distance of 150.00 feet; thence southerly along a curve to the right having a radius of 408.80 feet and a central angle of $19^{\circ} 26' 00''$ a distance of 138.66 feet; thence South $52^{\circ} 59' 00''$ West a distance of 82.39 feet; thence southerly along a curve to the right having a radius of 233.60 feet and a central angle of $19^{\circ} 26' 00''$ a distance of 79.23 feet; thence South $33^{\circ} 33' 00''$ West a distance of 660.00 feet; thence southerly on a curve to the right having a radius of 11,569.19 feet and a central angle of $1^{\circ} 27' 41.2''$ a distance of 295.10 feet; thence South $57^{\circ} 40' 30''$ East a distance of .18 feet; thence South $31^{\circ} 59' 30''$ West a distance of 180.00 feet to the point or place of BEGINNING.

WESTCHESTER COUNTY DEPARTMENT OF HEALTH

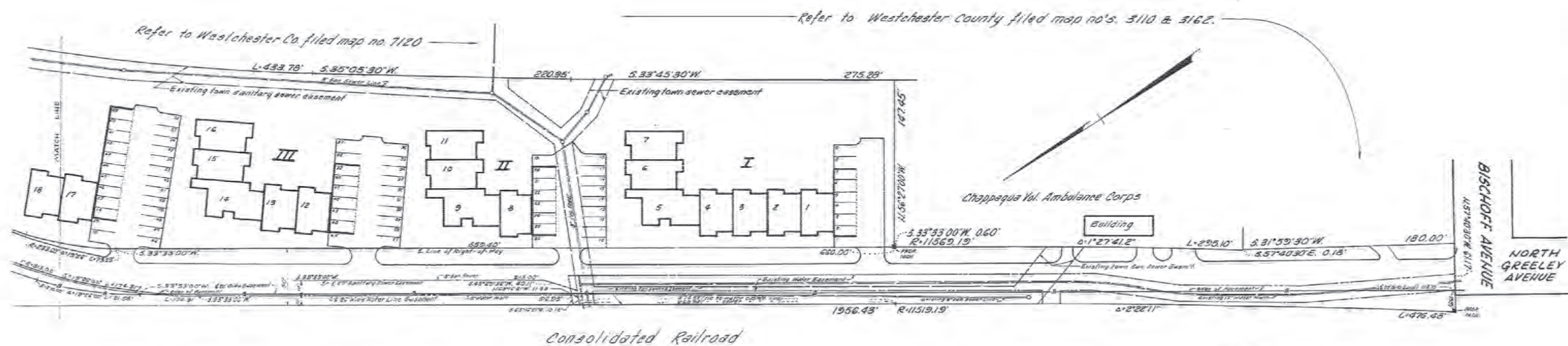
Approved subject to the provision of public water supply and public sewage disposal facilities to serve each habitable building hereafter constructed to be installed in accordance with the improvement plan on file with the department and plans and specifications duly approved and filed in this office prior to the construction of such building. Each purchaser of property shall be furnished a true copy of map showing this endorsement. Subject to Rules and Regulations for the Protection from Contamination of the City of New York, N.Y. Water Supply and its Sources. Any easements, changes, additions or alterations of any kind, except the addition of signatures of other approving authorities and the date thereof, made on this plan after the date of this approval, shall invalidate this approval. Recommended by:

John J. Sullivan, P.E. *2/1/82*
 Asst. Comm. of Health for Env. Qual. Date
John J. Sullivan, D.S. *2/1/82*
 1st Deputy Commissioner of Health Date

Refer to Westchester County filed map no. 3205



Consolidated Railroad



Consolidated Railroad

Paul H. Sullivan, P.E.
 N.Y. State Professional Engineer

Approved by the Planning Board of the Town of New Castle this 20th day of April, 1982.

Paul H. Sullivan
 Chairman

I, Harold F. Campbell, the surveyor who made this map do hereby certify that the survey on which it is based was completed Feb. 22, 1980 and that this map was completed Sept. 14, 1981.

Harold F. Campbell
 N.Y. State Lic. Surveyor

DRAWING
 SIZE
 E
 REDUCTION
 RATIO
 30:1

The spillage of roof and foundation drains and ground water drainage systems shall not be directed so as to deposit water from outlets onto streets or highway right-of-ways and plans for any drainage system shall be filed with and approved by the Town Engineer prior to the installation thereof.

The owner of this property is familiar with this map and its legends and consents to its filing.

Filed in the Office of the County Clerk of Westchester
 County Division of Land Records
 April 23, 1982
 George A. Mauer County Clerk

SITE PLAN OF
CHAPPAQUA MEWS
 IN THE
 TOWN OF NEW CASTLE
 WESTCHESTER COUNTY, NEW YORK.

Scale: 1"=40' Sept. 14, 1981.
 Sheet 144, Blocks 9251 & 9252 County Index System.

Harold F. Campbell, Civil Engineers & Surveyors, Chappaqua, N.Y.

B BIRD SANCTUARY INFORMATION

Bill SANCITY
THIS INDENTURE, made the eighth day of January, one thousand nine hundred and fifty-two, between WILLIAM V. LAWRENCE

residing at Stamford Road, (no number) Bedford Village, New York,

, part Y of the first part,
and TOWN OF NEW CASTLE, a municipal corporation in the County of Westchester, New York,

, party of the second part:
WITNESSETH, that the party of the first part, in consideration of One (\$1.00)

dollars,

lawful money of the United States,

paid

by the party of the second part, does hereby grant and release unto the party of the second part, its successors and assigns forever.

ALL that certain lot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of New Castle, County of Westchester, State of New York, shown on a certain map entitled "Map No. 1, Chappaqua section of Lawrence Farms, Town of New Castle, Westchester County, New York", dated February 2, 1929, made by William A. Smith and filed in the office of the Clerk of Westchester County, Division of Land Records (formerly Register's Office) on April 29, 1929, as Map No. 3424, and more particularly bounded and described as follows:

BEGINNING at the northeasterly end of a curve having a radius of 35 feet which curve connects the northerly side of North Way as shown on said map with the northeasterly side of Shadowbrook Parkway, as shown on said map; thence along the northerly side of North Way, the following courses and distances: North $46^{\circ} 55' 57''$ east 136 feet to a point of curve; thence in a northeasterly direction on a curve to the right having a radius of 576.28 feet, a central angle of $12^{\circ} 25' 25''$ a distance of 124.96 feet to a point of tangency; thence North $59^{\circ} 21' 22''$ east 422.46 feet to a point; thence leaving North Way and running through other lands of the party of the first part, North $50^{\circ} 59' 50''$ West 328.96 feet to other lands of the Town of New Castle, which point is 200 feet southeasterly from the easterly line of lands of the Harlem Division of the New York Central Railroad; thence along said other lands of the Town of New Castle, South $43^{\circ} 12' 10''$ West 649.52 feet to the point in the northeasterly side of Shadowbrook Parkway, which point is 200 feet southeasterly from the easterly line of lands of the Harlem Division of the New York Central Railroad; thence in a southeasterly direction on a curve to the left having a radius of 475 feet, a central angle of $5^{\circ} 27' 20''$ a distance of 45.23 feet to a point of tangency, and South $38^{\circ} 19' 00''$ east 96.78 feet to a point of curve. which curve con-

✓
The part y of the first part, in compliance with Section 13 of the Lien Law, covenants that the part y of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and that the part of the first part will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

IN WITNESS WHEREOF, the part y of the first part has hereunto set his hand and seal the day and year first above written.

IN PRESENCE OF:

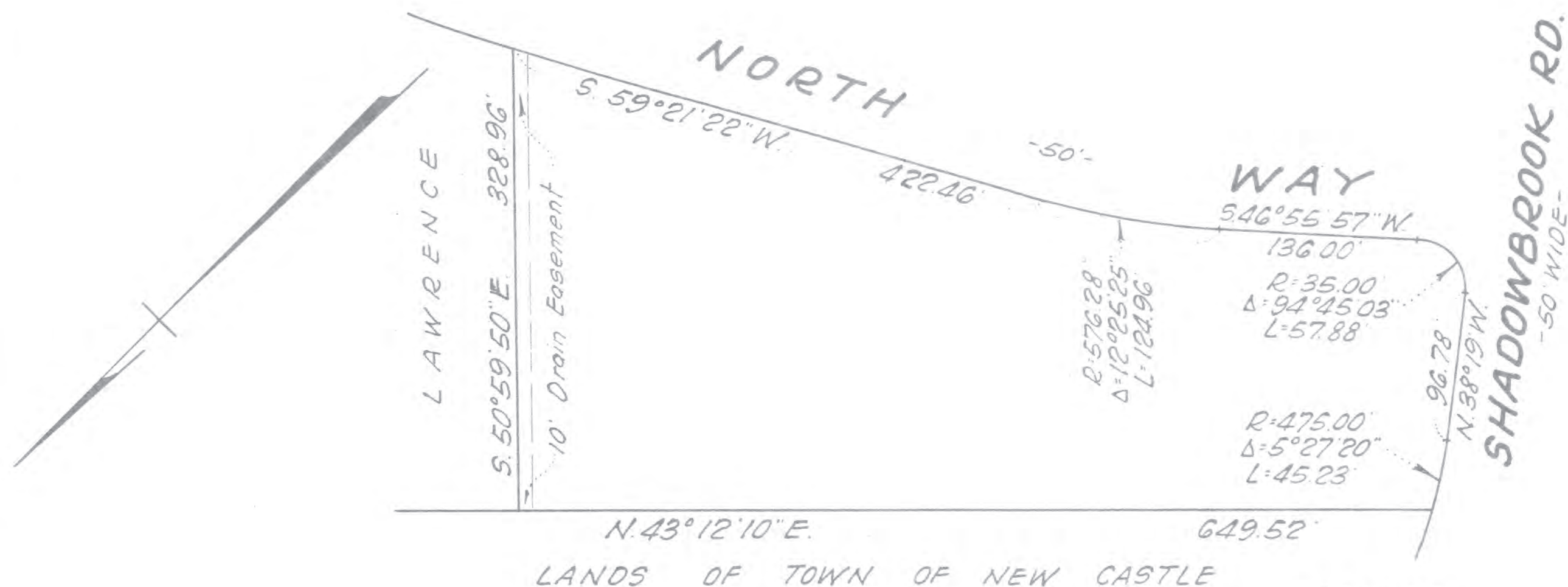
William V. Lawrence L. S.

STATE OF NEW YORK }
COUNTY OF WESTCHESTER } ss.:

On the eighth day of January, one thousand nine hundred and fifty-two, before me came WILLIAM V. LAWRENCE

to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that he executed the same.

Adele D. Meyer
ADELE D. MEYER Notary Public



NOTE: This property is shown as part of the unsubdivided portion of "Map No. 1, Chappaqua Section of Lawrence Farms, etc.," as filed in the Office of the Register of Westchester County on April 29, 1929 as Map No. 3424.

AREA = 3.642 ACRES

MAP OF
THE TOWN'S FIRST
BIRD SANCTUARY
AT
LAWRENCE FARMS
IN THE
TOWN OF NEW CASTLE

WESTCHESTER COUNTY, NEW YORK.

Scale: 1" = 80'

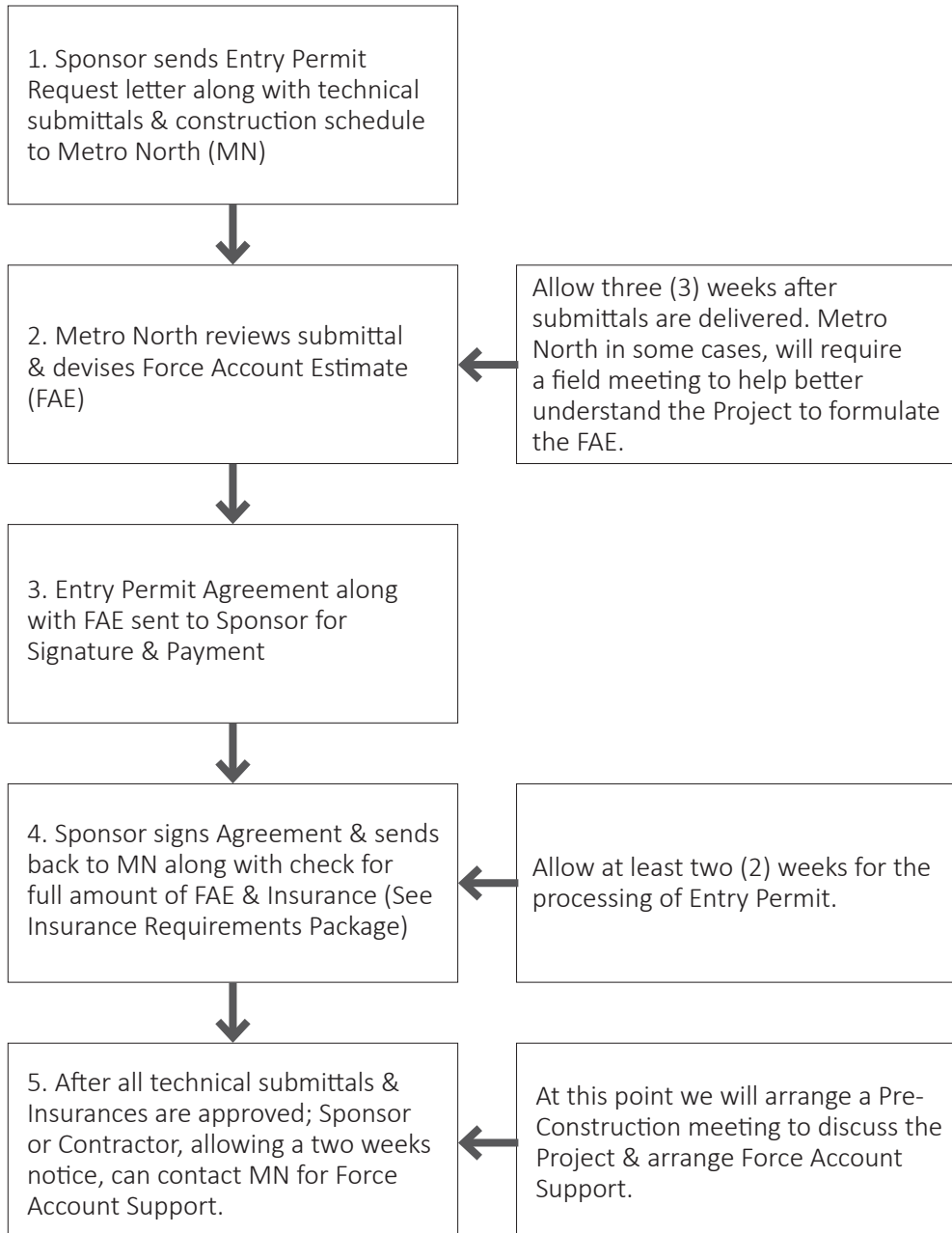
Dec. 20, 1951.

Harold F. Campbell, N. Y. State Lic. Surveyor, Chappaqua, N. Y.



C APPENDIX: METRO-NORTH INFORMATION

**METRO NORTH RAILROAD
ENTRY PERMIT PROCESS SUMMARIZED**



GENERAL PROCEDURE FOR ACCESS TO RAILROAD PROPERTY

All outside parties who need to perform construction or maintenance on or adjacent to Metro-North Railroad property must comply with the following:

1. **Permit Application:**

Parties requiring an entry permit shall submit a written request to the Chief Maintenance of Way Officer defining the location, scope of work and duration of activities on or adjacent to Railroad facilities.

Address the letter to:

Chief Maintenance of Way Officer
Attention: James Hom
Specifications Engineer
MTA Metro-North Railroad
420 Lexington Avenue, 12th Floor
New York, NY 10017
Tel: (212) 499-4504

Execute and return the Entry Permit provided by Metro-North to the Chief Maintenance of Way Officer. Applicant shall obtain confirmation of receipt from the Chief Maintenance of Way Officer.

2. **Insurance:**

Furnish proof of insurance in a form acceptable to and approved by the Director of MTA Risk and Insurance Management no less than 20 working days prior to the intended start of work (see Insurance Specifications, attached separately) to:

Chief Maintenance of Way Officer
Attention: James Hom
Specifications Engineer
MTA Metro-North Railroad
420 Lexington Avenue, 12th Floor
New York, NY 10017
Tel: (212) 499-4504

Applicant shall obtain confirmation of receipt and approval of the insurance certificate from the Director of MTA Risk and Insurance Management.

3. **Payment:**

Upon review of the scope of work provided with the permit application, Metro-North will prepare an estimate of the cost of providing Railroad Protective Personnel and all other expenses related to the project. Supply payment, in full, of Metro-North's estimated cost of Railroad Force Account Services no less than 20 working days prior to the intended start of work. Obtain confirmation of receipt by James Hom. Since the payment is based on an estimated cost, unexpended funds if any, will be subject to reimbursement. On the contrary, should the actual work exceed the estimated cost, an additional payment shall be submitted to continue Railroad Force Account Services. Make Check Payable to MTA Metro-North Railroad

4. **Technical Submittals:**

Supply construction shop drawings, calculations and supporting documentation in accordance with the attached "Construction Management I & C Specifications". Address them to and receive confirmation of receipt by:

Chief Maintenance of Way Officer
Attention: James Hom
Specifications Engineer
MTA Metro-North Railroad
420 Lexington Avenue, 12th Floor
New York, NY 10017
Tel: (212) 499-4504

Once Metro-North has received all submittals plus all supporting documents allow 15 working days from date of receipt for Metro-North's review of the submittals prior to requesting a conference to schedule that activity.

When the above requirements have been satisfied, contact the Assistant Director of Construction Management no less than 15 working days prior to the start of work to schedule a pre-construction conference at (212) 499-4462. When all is in order, the Construction Management Department will schedule Railroad coordination and support services. (See Sections A and B of "Construction Management I & C Specifications"). No work will commence until the applicant receives permission from the designated Railroad Representative at the site to proceed with the work.

(Rev 6/10/09)

SECTION A: SPONSOR REQUIREMENTS FOR WORK AFFECTING THE RAILROAD

Introduction:

Metro-North is a commuter Railroad serving New York and Connecticut areas North of Manhattan. Construction and Maintenance activities shall not interfere with the safe and scheduled movement or operation of the trains. No construction activities will occur during Operating hours unless allowed by the Field Inspector. There are conditions unique to this operating railroad environment which Metro-North must consider when planning construction activities. Among these are: high voltage third rail and power transmission systems, high speed and silent trains that require long braking distances, buried signal control and communication systems and many more. Metro-North must have absolute cooperation of any sponsor planning construction activities that could interfere with train operations.

The sponsor is the agency or party who has a formal agreement with Metro-North to perform construction or maintenance around the railroad. The sponsor of the project is ultimately responsible for assuring that its agents, consultants, contractors and sub-contractors fully comply with the specifications contained herein. The term "sponsor" used throughout these specifications shall mean the sponsor, its employees, its agents, consultants, contractors, sub-contractors, etc.

The sponsor shall safeguard the tracks, rolling stock and other equipment and plant of the Railroad from being damaged in any manner and will be held financially responsible for it. He shall not perform any activities around the Railroad until he has executed a formal agreement and complied with Metro-North requirements.

Fouling:

An operating track will be considered fouled when, in the sole opinion of Metro-North, demolition, blasting or construction activity on or adjacent to a main track or controlled siding may interfere with the safe movement of trains at normal speed. A crane, derrick or a similar piece of equipment located on Metro-North right-of-way or on adjacent property shall be considered as fouling the track when the position in which it is working is such that without regard to the manner in which it is intended to carry out the operation, failure or malfunction could cause damage or obstruction within the operating area. Similarly, Metro-North utilities (power, communications and signal lines) will be considered fouled when, in the sole opinion of Metro-North, the sponsor's operation could damage or interfere with these utility lines.

Track Use:

Metro-North will, at its sole discretion, remove tracks from service and de-activate high voltage traction power facilities to permit certain construction activities that can only be performed at times when Metro-North can schedule this track use. **In general, Metro-North can de-activate single tracks at night between the hours of 2:30AM and 5:00AM.** Construction activities that require de-activating all tracks of a main line system must be performed on weekend nights at times specified by Metro-North. Requests for additional "track use" will be evaluated subject to operating and maintenance priorities. Requests to de-activate track(s) and/or high voltage power systems must be received in writing, faxed to 212 340 2573 and acknowledged by phone to the assigned Metro-North Inspector no less than 14 days prior to the scheduled

Protective Personnel:

Metro-North will furnish flagmen, inspectors, maintenance personnel and similar labor (protective personnel) as required by Metro-North to protect the operation of train traffic during the sponsor's construction activities. The sponsor must obey the instructions from Metro-North flagmen or other representatives on the job site promptly. Failure to follow instructions from Metro-North personnel on the site will lead to withdrawal of Metro-North's entry permit, thus closing the job site to the sponsor and its employees. Metro-North will, at its sole discretion, determine the need for and the availability of protective support personnel. The sponsor must notify in writing, faxed to 212 340 2573 and acknowledged by phone to the assigned Metro-North inspector no less than 14 calendar days in advance of undertaking an approved construction activity that may require protective personnel. If the sponsor notifies Metro-North less than 14 days in advance, Metro-North may be unable to supply protective personnel and/or Metro-North may incur additional costs in accordance with existing collective bargaining agreements in order to fulfill a request. The cost of protective personnel and any additional penalty costs incurred by Metro-North due to late notification shall be borne by the sponsor. Requests to cancel construction activities and protective personnel must be received and acknowledged by the assigned Metro-North inspector no less than 96 hours (4 days) prior to the start of the scheduled construction activity. Any costs incurred by Metro-North due to late cancellation notice shall be borne by the sponsor.

Metro-North will provide protective forces to the extent possible considering operational and maintenance priorities. Metro-North makes no guarantee that protective personnel will be available to meet the sponsor's preferred schedule. Further, no such work may actually commence until the assigned Metro-North representative affirmatively advises the sponsor that the necessary protective forces are stationed and that he may proceed.

MNR Representation:

All matters requiring Metro-North approval or coordination of construction activities shall be directed to the following:

Assistant Director – Construction Management – I&C Department
Metro-North Commuter Railroad Company
420 Lexington Avenue, 11th Floor
New York, NY 10017.
212 499 4462 or 212 499 4460

Lafond@mnr.org or Ramkeesoon@mnr.org

Preparation:

The sponsor shall obtain written approval of design and construction methods from Metro-North. The sponsor shall submit detailed plans, appurtenant data and calculations prepared by a Professional Engineer licensed in the state where the work will be performed for any operation on or adjacent to Metro-North property prior to the start of work. Metro-North will evaluate the effect of this work on the operating Railroad. The plan shall locate and identify all utilities above and below ground at the work site. The sponsor shall make necessary plan revisions, schedule changes, additions, deletions, etc., at his/her own expense. The sponsor shall remove at his/her own expense any pipe, wire or structural facility installed without Metro-North approval or which deviates from the plan approved by Metro-North.

Under the direction of a Metro-North representative (engineer, inspector) the sponsor shall – at no cost to Metro-North – perform pre and post construction surveys of tracks and structures to establish existing horizontal and vertical clearances. Vertical clearance shall be measured from "top of rail". Horizontal clearance shall be measured from the "centerline of track". The elevations shall reference an established

survey benchmark that will remain undisturbed throughout the construction. It may be necessary for the sponsor to monitor movements of tracks and structures on a more frequent basis – monthly, weekly or daily as determined by the Metro-North representative. Copies of the field notes must be delivered to Metro-North on the date the survey was performed.

The sponsor shall obtain appropriate soils/foundation data prepared by a licensed Professional Engineer. The licensed Professional must perform an analysis and supply recommendations wherever the project requires excavations, shoring, pipe jacking, borings, dewatering and temporary foundation supports, or any other subsurface construction activities.

Under the direction of a Metro-North representative (engineer, inspector) the sponsor shall – at no cost to Metro-North – take pre and post construction photographs of the entire work site and track area, two sets of which will be delivered to Metro-North. The photographs shall be gloss prints 8 ins. by 10 ins. in size or submitted on disc with photos in jpg format. They shall also be labeled on their reverse sides. The label shall include project title, Project Identification Number (PIN), Bridge Identification Number (BIN) or contract number, name of sponsor, date and direction photograph was taken. Each photograph shall also be numbered for identification.

Submittals:

All submittals requiring review and approval by Metro-North shall first be reviewed by the sponsor's designated Consulting Engineer and then submitted to Metro-North to complete the review and approval process. Submittals shall be stamped or written as "Approved", "Approved As Noted", "Revise and Resubmit", or "Rejected" by the sponsor's designated consulting engineer at the conclusion of the review prior to its submission to Metro-North.

Environmental Controls:

The sponsor shall comply with any and all Federal, State and Local laws, regulations and rules governing environmentally controlled substances and construction practices. He shall submit a plan and procedure prepared by a Professional Engineer licensed in the state where the work will be performed for handling and disposal of regulated materials. De-watering operations shall comply with applicable regulatory controls and shall be subject to Metro-North review and approval. The sponsor shall comply with Federal and State regulations for containment, storage and disposal of hazardous/industrial wastes. He shall comply with Metro-North Procedure 50-601, Item "O", Environmental Controls. The sponsor shall indemnify and hold harmless Metro-North from any loss, liability or expense on account of claims which result from the handling, transportation, disposal or abatement of asbestos, asbestos-containing material or asbestos-contaminated materials, lead paint materials, polychlorinatedbiphenols (PCB's) and other environmentally regulated substances and materials in the possession of sponsor or his subcontractors.

Drainage/Wetlands/Storm Water Protection:

Metro-North is a non-traditional Municipal Separate Storm Sewer System (MS4). The sponsor must submit a Storm Water Pollution Prevention Plan (SWP3) for their project if it will result in the disturbance of surface areas and/or the creation of new impervious surfaces. The SWP3 must include temporary sedimentation and erosion control measures (both a narrative description of the measures and a site diagram), as well as appropriate post-construction storm water protection measures (narrative description and design drawing) if the project will result in any new impervious area. The sponsor will be responsible for inspection and maintenance of sedimentation and erosion control measures during construction, and responsible for payment to Metro-North for any ongoing maintenance required for post-construction storm water protection measures.

The sponsor will be responsible for identifying and delineating any and all wetlands in the area covered by the Entry Permit and/or in any area which could be impacted by the sponsor's project. The sponsor will be

responsible for obtaining any permits required solely in their name as permittee. The sponsor shall promptly provide Metro-North with copies of all identification/delineation documents and reports as well as permit applications and permits in both draft and final form.

The sponsor shall indemnify and hold harmless Metro-North from any loss, liability or expense on account of claims that result from a failure to implement or maintain adequate storm water protection measures or a failure to obtain or comply with necessary regulatory permits.

Contractor must protect ballast and keep free from soil, concrete, slurry and other contaminants. Contractor must supply a method for the protection of the ballast. The Contractor/Sponsor is financially responsible for the replacement of contaminated ballast. The replacement of the ballast is performed by Metro-North's Track & Structures Department.

Security:

The sponsor shall adhere to Metro-North security practices. He shall identify all sponsor/subcontractor personnel who have reason to enter a designated security area of Metro-North property. He shall supply a listing of the names of all personnel who have reason to enter Metro-North property. The list shall be updated on a daily basis.

When working in Grand Central Terminal (GCT) the Sponsor shall submit a list of all the personnel working at the site to the Stations Master's Office (SMO) at the beginning of the shift. The list must include work location, date and work period. At the end of every work shift the competent person on site must notify the SMO that work has ended and everyone has left the work site.

Safety:

Metro-North conducts a mandatory safety orientation class for all sponsor personnel who enter upon or works adjacent to Metro-North's property. Seven (7) working days advance notice is necessary for class scheduling. Sponsor personnel must present proof of completion of this orientation before entering the property. Sponsor personnel who fail to carry proof of training shall be removed from the property. The sponsor shall comply with the requirements of all applicable Federal, State, Local and Metro-North jurisdictions to provide a suitable work environment for workmen and for the general public. Sponsor shall prepare and submit a comprehensive Safety Plan which will: Designate a company Representative(s) who will prepare and implement a program of compliance. The Sponsor must supply personal protective equipment for all workmen employed by the sponsor or his contractors and enforce use of this equipment by contract personnel.

The sponsor shall supply Material Safety Data sheets for construction or maintenance materials that poses a safety, fire, health or other hazard to Metro-North.

Protective Enclosures:

The sponsor will not store materials or equipment upon the Railroad right-of-way without first obtaining written permission and approval of Metro-North. The sponsor shall secure construction materials and equipment that could be used by vandals to obstruct Railroad operations in a vandal-proof enclosure. The sponsor shall be responsible to protect the work site with fences, barricades, barriers, watchmen or other means necessary to bar access to operating areas via the work site. Fences at a minimum shall be 12-gauge chain link, eight (8) feet in height. Vehicular barriers shall comply with "AASHTO" Standard for design and fastening to structures.

English Language:

The sponsor must furnish an English-speaking supervisor at each job location who is capable of communicating (including translating if necessary) instructions from the flagman or other Metro-North

representative to the sponsor's personnel on the job. Such supervisor must remain on the site at all times while work is being performed or any sponsor employees are on or about the Metro-North right-of-way.

Blasting:

Is prohibited on Metro-North's property. Metro-North shall determine if any blasting in the vicinity of the railroad will affect its operations. The sponsor shall submit to Metro-North for approval, plans and specifications of any proposed controlled blasting activities that could affect railroad operations.

Hi-Rail Equipment:

Highway-rail mounted equipment and "work trains" are generally prohibited from use by non-Railroad agencies on Metro-North mainline tracks.

Temporary Structures:

Shall be necessary at the sole discretion of Metro-North to protect the Railroad or the general public from possible falling debris, paint or other materials, to protect personnel working above the right-of-way, to provide a platform for personnel, materials, and/or equipment and to provide a walkway for the general public. Temporary structures intended as walkways for the general public shall comply with the "New York State Building Code" Specifications and the Americans with Disabilities Act of 1991.

Temporary Stairways or pedestrian walkways must be fully enclosed to protect from precipitation.

A protective scaffold intended to contain finely broken concrete decking shall be designed for a live load of 200 lbs. per square foot applied uniformly over the entire structure, and a 2 kip concentrated load placed anywhere on the structure. The two loads are not to be applied simultaneously for design purposes. Design of the scaffold intended for any other purpose shall be submitted to Metro-North for approval. The design shall contain details of any construction activities supported or protected by the scaffold. Impact loads or rigging that exceed the capacity of the scaffold shall be subject to the conditions of Section B "Rigging".

Wood for protective scaffolding must be fire-retardant. The sponsor must supply Metro-North with certification from the manufacturer or supplier that lumber meets or exceeds the ASTM E-84 fire-retardant specification for exterior application 30-minute duration. Plans and calculations for temporary structures must be submitted to Metro-North for review and approval prior to construction. Further, plans and calculations must be prepared and stamped by a Professional Engineer licensed in the state in which the project is located.

Shoring:

All drawings for temporary sheeting and shoring shall be prepared and stamped by a Registered Professional Engineer (licensed in the state in which the project is located) and shall be accompanied by complete design computations with supporting soils and groundwater information when submitted for approval.

Sheeting shall be required on all excavations where the side of the excavation is intercepted by the Railroad live load influence line. The live load influence line is defined as a line originating at the top of tie and extending out in this plane a distance of 10 feet, then downward at a slope of 1 (vertical) on 1½ (horizontal). Such excavations must be designed to withstand, in addition to all static loads such as structural dead load, soil pressure and hydrostatic pressure, a Railroad live load of Cooper E-80 as defined in the "AREMA Manual Section 1-3" or other loading magnitude as may be directed by Metro-North. (See drawing "SK - 1", APPENDIX A).

Interlocking steel sheet piling, driven prior to excavation, must be used to protect track stability. The use of trench boxes or similar devices is not acceptable in this area. Soldier piling and lagging will be considered for supporting adjacent track(s) only when its use is approved by Metro-North. Consideration for use of

soldier piling and lagging will be made if the required penetration of steel sheet piling cannot be obtained and when dry, non-running, stable material will be encountered.

Lateral forces acting on the sheeting shall be computed as follows:

The active earth pressure due to the weight of the soil shall be computed by the Rankine Theory.

The Boussinesq analysis shall be used to determine the lateral pressure caused by the railroad loading. The load on the track shall be taken as a strip load with a width equal to the length of the ties (8' - 6"). The vertical surcharge, q (psf), caused by each axle weight divided by the tie length and the axle spacing (5' - 0"). For an E-80 loading:

$$q = 80,000 \text{ lbs.} / (8.5' \times 5') = 1882 \text{ psf.}$$

The horizontal pressure due to the live load surcharge at any point on the sheet piling wall is P_h and can be calculated by the following:

$$P_h = (2q / \pi) (\beta - \sin \beta \cos 2\alpha)$$

(See drawing "SK - 2", APPENDIX B).

The allowable stresses for the sheet piling and other steel members (wales, struts, etc.) shall be in accordance with AREMA Chapter 15, Parts 1 and 2. These allowable stresses may be increased ten percent (10%) due to the temporary nature of the installations.

Where soil or rock anchors are used, all anchors must be tested. Testing shall be in accordance with industry standards with ten percent (10%) of the anchors "Performance Tested" and all others "Proof tested".

Cavities adjacent to the sheet piling, created by the driving of the sheet piling, shall be filled with 1½-inch stone ballast. Any disturbed ballast must be restored and tamped immediately. This task is performed by Metro-North's Track & Structures department the cost of which is borne by the sponsor.

Sheet piling shall be cut off at the top of tie during construction. After construction and backfilling has been completed, piling shall be cut off eighteen (18) inches below the existing ground line and left in place.

Moreover, sheeting alongside active track systems shall maintain lateral support. Lateral support shall maintain a compacted stone ballast shoulder level with the top of tie for at least two (2) feet from the end of tie supported by a slope no steeper than one (1) vertical to two (2) horizontal. Any excavation adjacent to track shall be covered and ramped and provided with barricades as required by Metro-North. A lighted walkway with a handrail must be provided adjacent to the track for any excavation within twenty (20) feet of the centerline.

Under the direction of a Metro-North representative (Engineer or Inspector) the sponsor shall – at no cost to the railroad- perform pre and post construction surveys of tracks and structures to establish existing horizontal and vertical clearances. Vertical clearances shall be measured from Top of Rail. Horizontal clearances shall be measured from the Center Line of Track. The elevations shall reference an established benchmark that will remain undisturbed throughout the construction. It may be necessary for the sponsor to monitor movements of tracks and structures on a more frequent basis – daily or weekly, monthly or as determined by the Metro-North Representative. Copies of the filed notes must be delivered to Metro-north on the date the survey was performed.

Final backfilling of the excavation shall be as required by Metro-North

**SECTION B:
REQUIREMENT FOR ERECTION, DEMOLITION, & OTHER RIGGING OPERATIONS OVER OR ADJACENT
TO METRO-NORTH RIGHT-OF-WAY**

The sponsor must furnish scaled plans with supporting calculations in order to obtain written approval prior to the start of any rigging operation over or adjacent to the Metro-North right-of-way. Submittals for bridge erection, demolition, or other hoisting operations shall be prepared and stamped by a Registered Professional Engineer and must include the following:

1. Plan view showing locations of crane or cranes, operating radii, with delivery and disposal locations.
2. Crane rating sheets showing cranes to be adequate for 150% of the lift. Indicate Crane and boom nomenclature.
3. Plans and computations showing weight of picks. Include catalog with weight of equipment to be lifted and manufacturer's shipping weights.
4. Show in a table format on the plan a "Crane Lifting Schedule" of each crane pick as shown below:

CRANE LIFTING SCHEDULE								
Piece No.	Piece Weight kips	Rigging Weight kips	Block Weight kips	Maximum Weight kips	Maximum Radius feet	Boom Length feet	Crane Capacity kips	Safety Factor 150 %
1	X	X	X	X	Y	Y	X	Z

5. Computations and plans demonstrating that MNR's train shed structure can bear load of crane with equipment load.
6. Computations and plans demonstrating that soils or foundations for equipment and temporary structures are adequate and able to protect subsurface utilities and structures.

7. Check condition of steel in trainshed (Grand Central Terminal) to ascertain whether steel needs to be blocked or posted.
8. Plans and calculations showing locations and structural adequacy of mats, barges, embankments, supporting structures, planking, or special decking as required by Metro-North.
9. Location profiles indicating the proposed swing in relation to obstructions such as overhead wires and structures.
10. Data sheet listing type and size of slings or other connecting equipment. Include copies of catalog cuts or information sheets of specialized equipment. The method of attachment must be detailed on the erection plan. All lifting components must be adequate for 150% of the lift.
11. A complete procedure indicating the order of lifts and any repositioning or re-hitching of the crane or cranes.
12. Plans detailing temporary support of any components or intermediate stages.
13. A time schedule (by hour and day) of the various stages, as well as a schedule for the entire lifting procedure.
14. Written statement from crane owner of last crane safety inspection with a copy of current inspection certificate.
15. Mark the exact crane location in the field at least two working days prior to the intended operation. Also, certify the stability of the foundation for crane outriggers and supports.
16. Conduct survey/mark out of streets or yards (North of 97th street) to determine whether manholes or duct banks can bear outrigger loads.

In general, unless otherwise directed by Metro-North, operations directly over or adjacent to the operating right-of-way which foul the operating area, or which in the event of a failure could fall across the operating area will be performed between approximately 2:30 AM and 5:00 AM.

Operations involving a track and power outage across all tracks may be performed at times specified by Metro-North.

Any deviation from this plan must be reviewed and approved by the sponsor's engineer prior to resubmission to the Metro-North Engineer for review and approval prior to the date that the work will be scheduled.



D APPENDIX: BOARDWALK INFORMATION

Boardwalk Project Example

PROJECT PROFILE

Glastonbury Multi-Use Path



Location: **Glastonbury, CT**

Owner and Designer: **Town of Glastonbury, CT**

Contractor: **Connecticut Carpentry Corporation**

Challenge

A safe and durable boardwalk section was needed to extend a new multi-use path through a protected wetland area in Glastonbury, CT. The boardwalk required a live load design to account for a 10,000 lb. vehicle (H5 truck). Construction efforts on the boardwalk system needed to minimize disturbance to this environmentally sensitive area. Furthermore, the original boardwalk trail design included challenging horizontal and vertical alignment changes. The Town of Glastonbury needed a product with engineered design flexibility to fit the multi-use path's original layout.

Solution

Glastonbury's engineers selected a skid-resistant Sandblast finish to help prevent bike tires from losing their grip on a winding trail design - even in shady, wet areas. Cast-in-place concrete piles were selected from a variety of PermaTrak foundation options.

Connecticut Carpentry capitalized on the boardwalk's load carrying capacity as they installed the treads using top-down construction, minimizing the impact on the wetlands. Not only was the PermaTrak system engineered to meet the live load requirement, but its design flexibility allowed for the multi-use path alignment to be essentially unchanged from concept to construction. "We are pleased with the overall appearance of the finished product," said Glastonbury engineer Stephen Braun. "It fits very well with the path."

TECHNICAL DESCRIPTION

Boardwalk Length: 150 ft.

Tread Width: 11 ft. 3 in.

Color: Adelaide Gray

Texture: Sandblast

Installation Date: October 2011



877-332-7862 • permatrak.com

This product is covered by Patent #5906084 and other Patents Pending.

Town of New Castle Multi-Use Trail

GENERAL NOTES

1. This structure has been designed in accordance with the project architects plan layout and guidelines. Suitability for access and intended usage shall be the responsibility of the architect.
2. Vehicular access larger than the design live load shall be limited by permanent physical means.
3. Prior to construction the contractor shall verify all elevations through the project architect
4. Only PermaTrak North America may provide the precast structure shown on these plans.

DESIGN DATA

1. Boardwalk shall be designed in accordance with the AASHTO LRFD bridge design specifications and the LRFD guide specification for the design of pedestrian bridges.

Design Live Load:
Pedestrian Loading - 90 psf Uniform
Vehicular Loading - H-10 Design Truck (20,000 Lb. Vehicle)

2. Abutments and piers shall be designed for lateral earth pressure, live load surcharge and structure loads. Geotechnical recommendations shall be provided to PermaTrak for analysis and design of foundations prior to shop drawing creation.

3. At the time these drawings were created, geotechnical information was unavailable for analysis of the substructure.

4. A hydraulic analysis, including scour evaluation, has not been performed by Permatrak. This scope is the responsibility of the design consultant.

MATERIAL

1. All bolts, nuts, washers, and hardware shall be hot dipped galvanized after fabrication in accordance with ASTM A153.
2. Railing shall be designed and provided by others. Railing post spacing and base plate geometry / placement shall be coordinated with PermaTrak prior to shop drawing creation.
3. Cast-in-place concrete shall have a 28-day concrete compressive strength of 4000 psi.
4. All foundation reinforcing shall be Grade 60 conforming to ASTM A615.

QUALITY ASSURANCE SPECIFICATIONS

1. Acceptability Criteria for Treads and Curbs (if applicable): The finished visible (in the final installed position) surface shall have no obvious imperfections other than minimal color or texture variations from the approved samples or evidence of repairs when viewed in good typical daylight illumination with the unaided naked eye at a 20 ft. viewing distance. Appearance of the surface shall not be evaluated when light is illuminating the surface from an extreme angle as it tends to accentuate the minor surface irregularities. The following is a list of finish defects that shall be properly repaired, if obvious when viewed at a 20 ft. distance. Patching (by a trained skilled concrete repair person) is an acceptable repair method.
 - a. Ragged or irregular surfaces.
 - b. Excessive air voids (commonly called bug holes) larger than ¼ in. evident on the top surface of the tread or curbs (if applicable).
 - c. Adjacent flat and return surfaces with greater texture and/or color differences than the approved samples or mockups.
 - d. Casting and/or aggregate segregation lines evident from different concrete placement lifts and consolidation.
 - e. Visible mold joints or irregular surfaces.
 - f. Rust stains on exposed surfaces.
 - g. Units with excessive variation in texture and/or color from the approved samples, within the unit or compared with adjacent units.
 - h. Blocking stains evident on exposed surfaces.
 - i. Areas of backup concrete bleeding through the facing concrete.
 - j. Foreign material embedded in the surface.
 - k. Visible repairs at a 20 ft. viewing distance.
 - l. Reinforcement shadow lines.
 - m. Cracks visible at a 20 ft. viewings distance.

PROJECT COMPONENTS

SUPPLIED BY PERMATRAK
PRECAST CONCRETE TREADS
PRECAST CONCRETE BEAMS
RUBBER LEVELING PADS
4X4 TIMBER POST BRACKET AND CONNECTION HARDWARE
COMPOSITE CLIP ANGLES WITH 3/4" DIAMETER RODS, WASHERS AND NUTS(6x6x3/8x0'-4")
3/4" DIAMETER THREADED BARS WITH NUTS AND WASHERS (BEAM TO PIER CONNECTION)

SUPPLIED BY CONTRACTOR

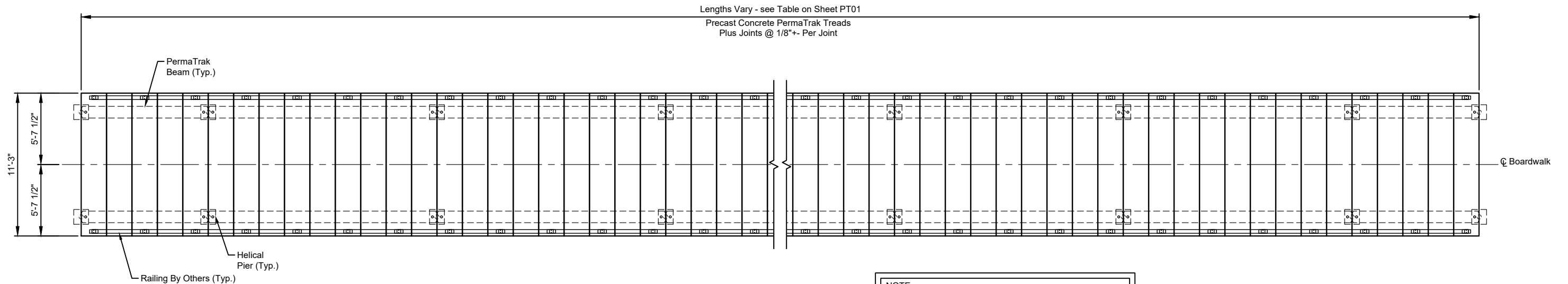
SUPPLIED BY CONTRACTOR
HILTI HY-200 EPOXY ADHESIVE (ANCHORING SYSTEM CONNECTION)
SHIMS AND NON-SHRINK GROUT (LEVELING FOR PRECAST COMPONENTS)
RAILING AND CONNECTION HARDWARE
HELICAL PIERS AND CONNECTION HARDWARE

STRUCTURE INFORMATION

STRUCTURE	TOTAL STRUCTURE LENGTH
STRUCTURE #1	146'-2"
STRUCTURE #2	304'-10"
STRUCTURE #3	330'-8"

Patented Product: U.S. Patent #5,906,084 #8,302,362 #8,522,505 #8,839,588 #9,096,975

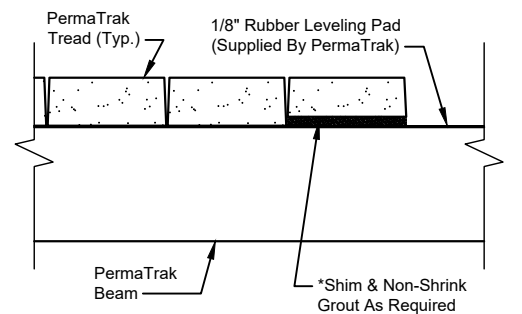
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BOARDWALK PLAN

Scale: Not To Scale

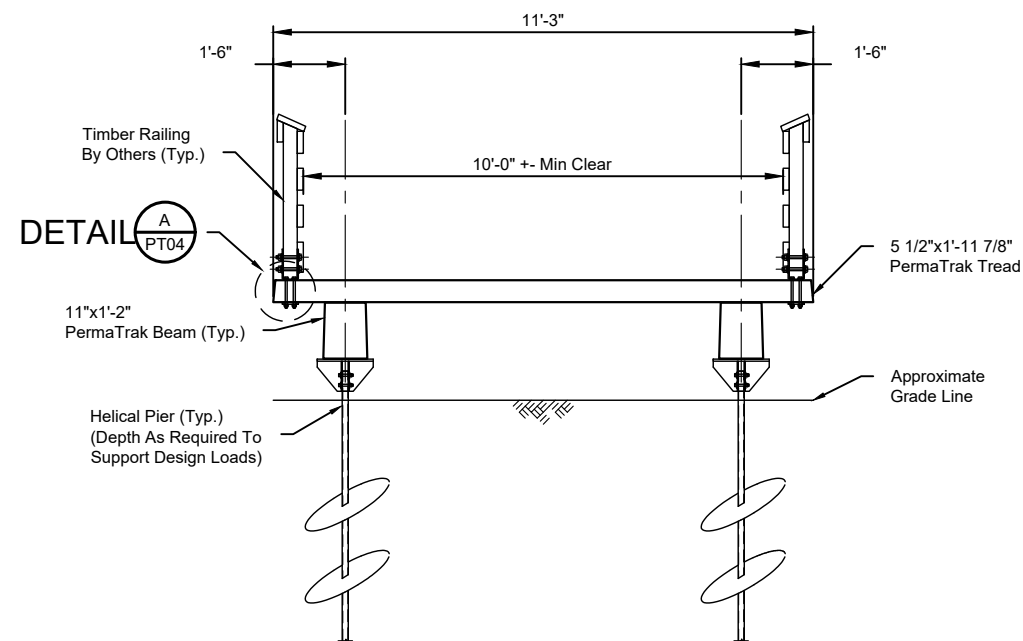
NOTE:
1. Pier spacing shown for preliminary discussions only. Pier Spacing and beam length may be adjusted during final design.
2. The above Boardwalk shows a typical straight boardwalk. for radial alignments, see PermaTrak's standard skew detail.



*Note:
Due to tolerances and variance in precast production and installation accuracy, shimming and grouting may be required. Where required the entire bearing area and void shall be shim and grouted with non-shrink grout.

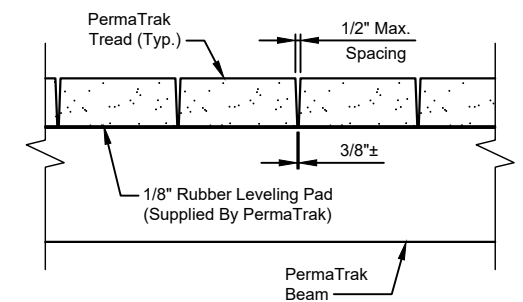
TYPICAL SHIM/GROUT DETAIL

Scale: Not To Scale (UNDER TREAD)



TYPICAL SECTION

Scale: Not To Scale



TYPICAL TREAD SPACING DETAIL

Scale: Not To Scale

Patented Product: U.S. Patent #5,906,084 #8,302,362 #8,522,505 #8,839,588 #9,096,975

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PREPARED FOR:

Barton and Loguidice

PRELIMINARY
FOR DISCUSSION ONLY

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www.permatrak.com TEL: 877-332-7862

OFFICE LOCATIONS

FLORIDA

TEXAS

LOUISIANA

NORTH CAROLINA

OHIO

PROJECT TITLE:

Town of New Castle Multi-Use Trail

Town Of New Castle, NY

JOB NUMBER: 2020-1528

DATE: 12/22/2020

DESIGNED BY: CAP

DRAWN BY: DHC

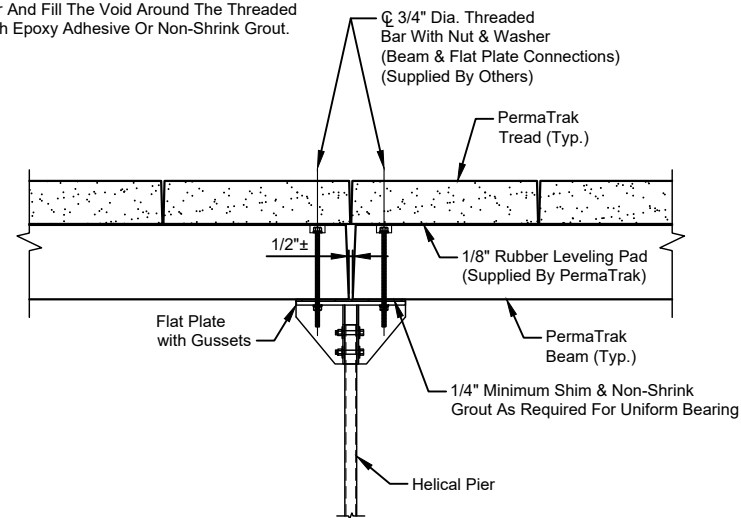
CHECKED BY: XXX

SHEET NO.

PT02

1. Threaded Bar Shall Be Set In Epoxy Adhesive Anchoring System.
2. Threaded Bar Shall Be Embedded A Minimum of 3" Deep.
3. Drilled Hole Shall Be 3/4" In Diameter.
4. Completely Cover The Threaded Bar, Nut and Washer And Fill The Void Around The Threaded Bar With Epoxy Adhesive Or Non-Shrink Grout.

Note: Curb And/Or Railing Not Shown For Clarity.

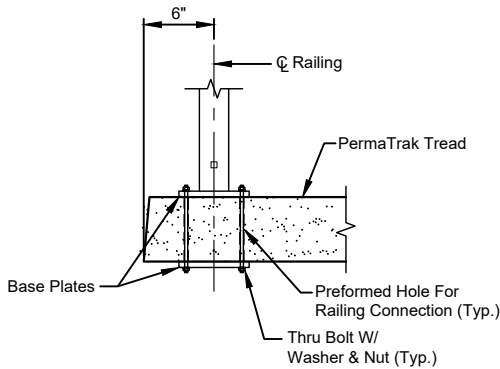


TYPICAL PIER CONNECTION DETAIL

Scale: Not To Scale

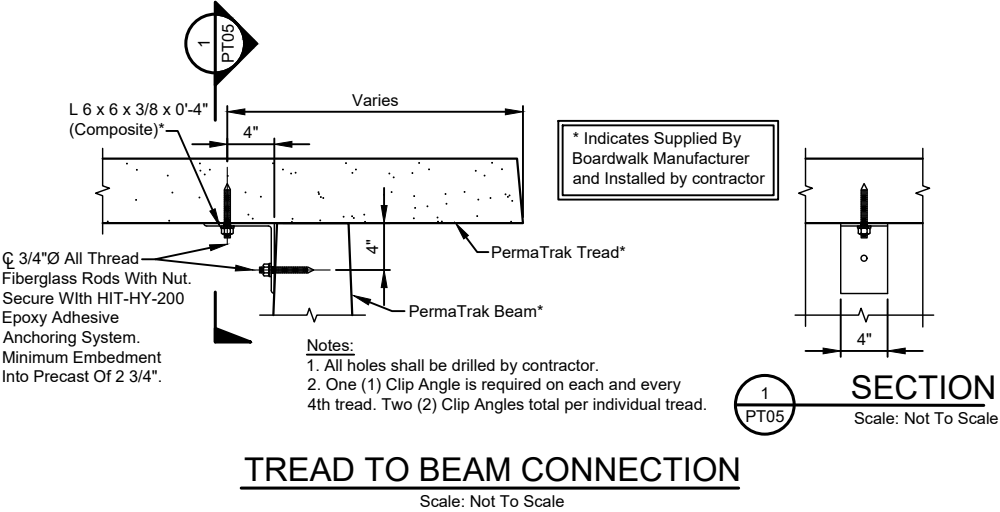
Patented Product: U.S. Patent #5,906,084 #8,302,362 #8,522,505 #8,839,588 #9,096,975

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	NO.	DATE	DESCRIPTION	BY:				



Patented Product: U.S. Patent #5,906,084 #8,302,362 #8,522,505 #8,839,588 #9,096,975

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	4				PRELIMINARY FOR DISCUSSION ONLY								
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	NO.	DATE	DESCRIPTION	BY:									



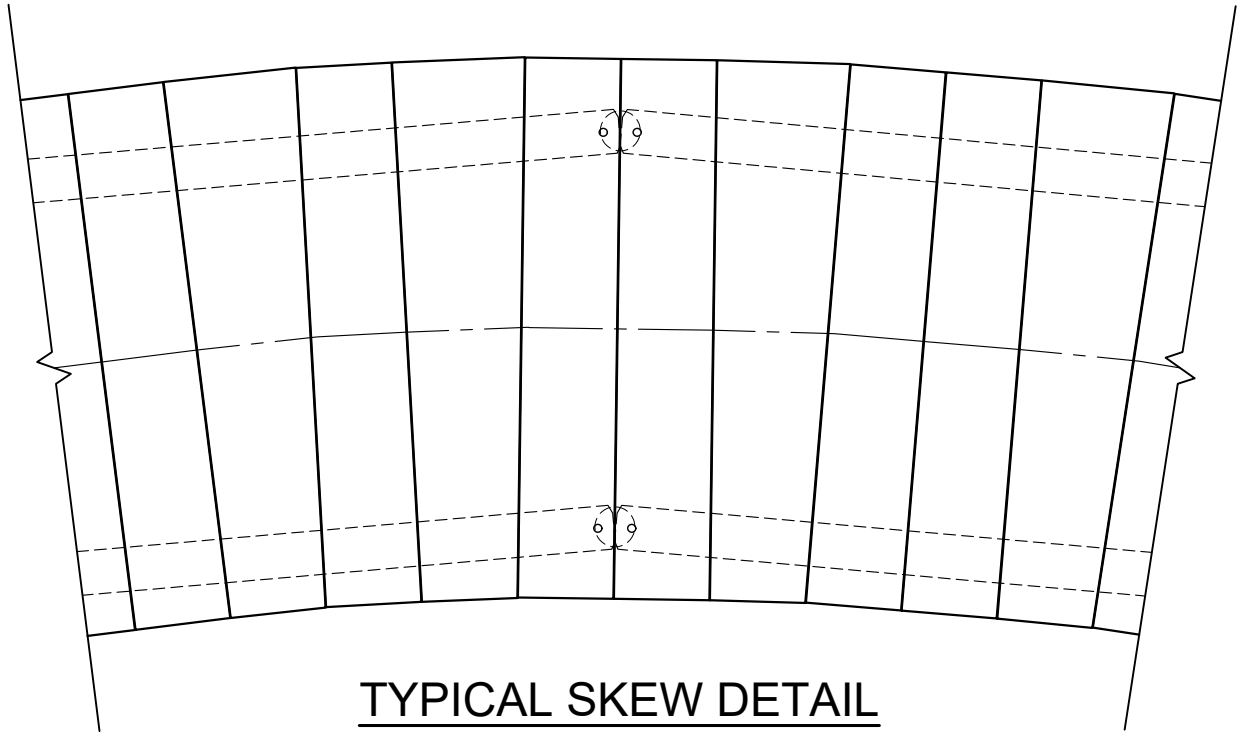
Patented Product: U.S. Patent #5,906,084 #8,302,362 #8,522,505 #8,839,588 #9,096,975

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	5								DATE: 12/22/2020
	4				DESIGNED BY: CAP				
	3				DRAWN BY: DHC				
	2				CHECKED BY: XXX				
	1				SHEET NO.				
	NO.	DATE	DESCRIPTION	BY:	FOR DISCUSSION ONLY				PT05

Notes:

1. Curb And/Or Railing Not Shown For Clarity.

2. PermaTrak Treads Are Formed As Angular Pieces Creating A Chorded Alignment.
The PermaTrak Center Line May Vary Slightly From A Smooth, Radial Alignment.



TYPICAL SKEW DETAIL

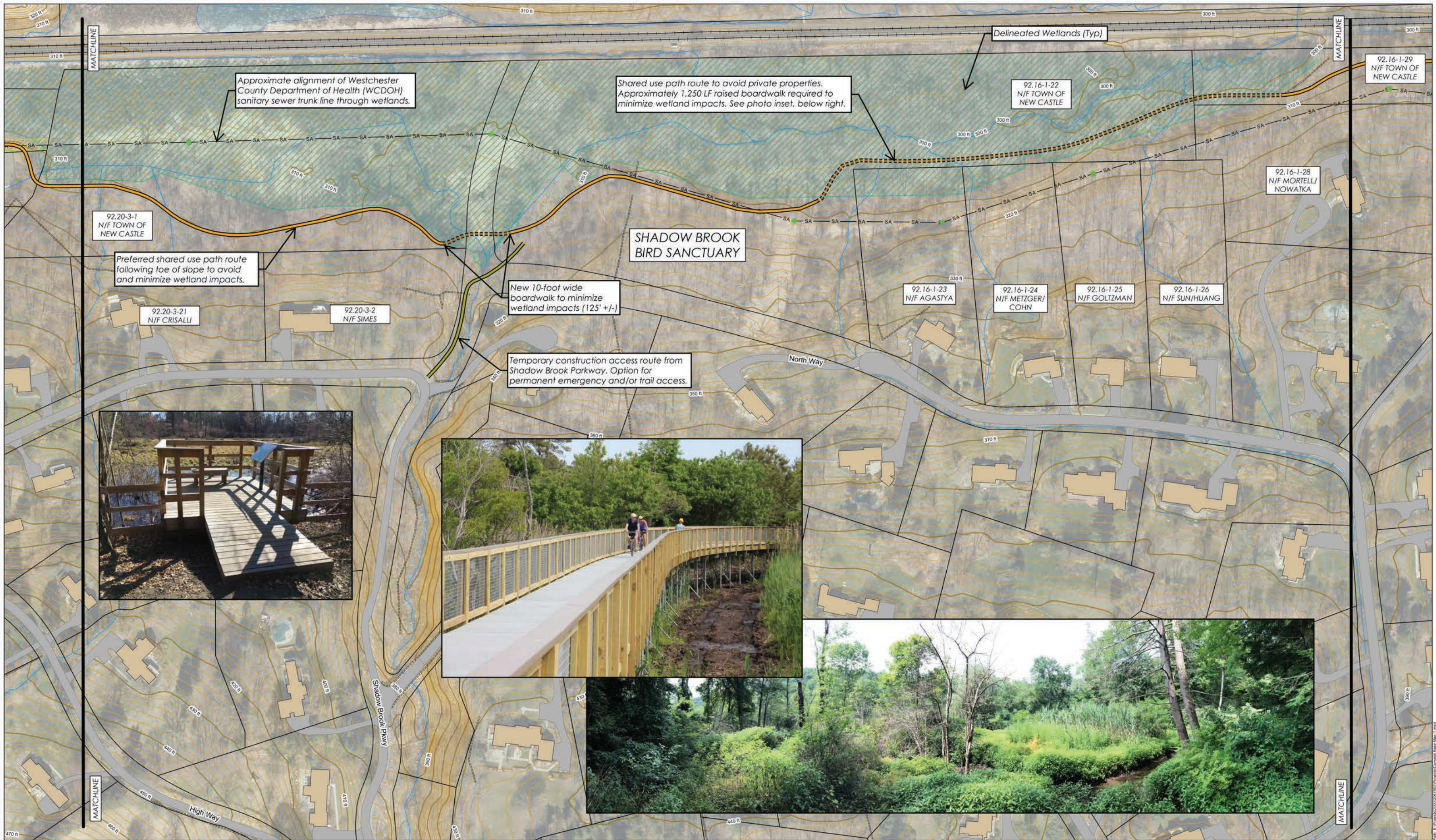
Patented Product: U.S. Patent #5,906,084 #8,302,362 #8,522,505 #8,839,588 #9,096,975

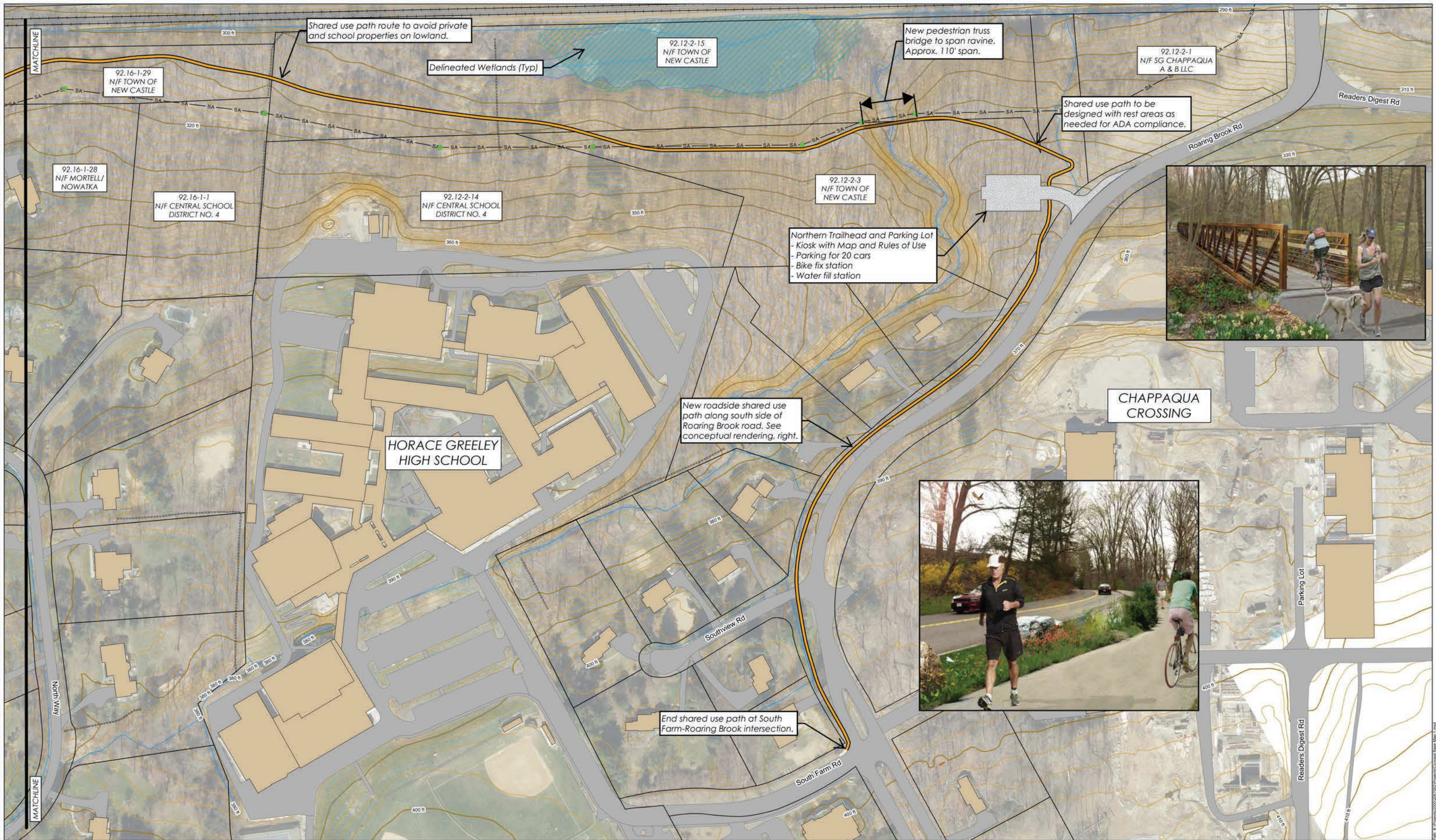
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	5								
	4				DESIGNED BY: CAP				
	3				DRAWN BY: DHC				
	2				CHECKED BY: XXX				
	1				SHEET NO.				
	NO.	DATE	DESCRIPTION	BY:	PT06				



E APPENDIX: ROUTE ALTERNATIVE ANALYSIS









F APPENDIX: CHESTNUT OAKS ALTERNATIVES

FIGURE 6
CHESTNUT OAKS ALTERNATIVE PLAN 1

Barton & Loguidice

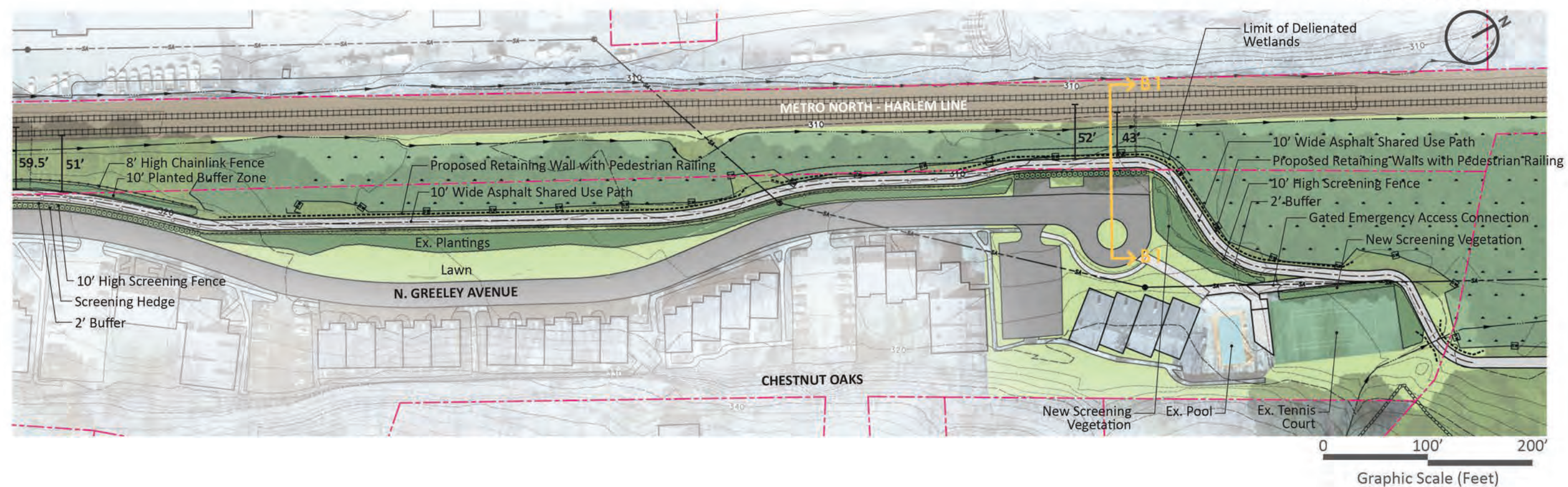
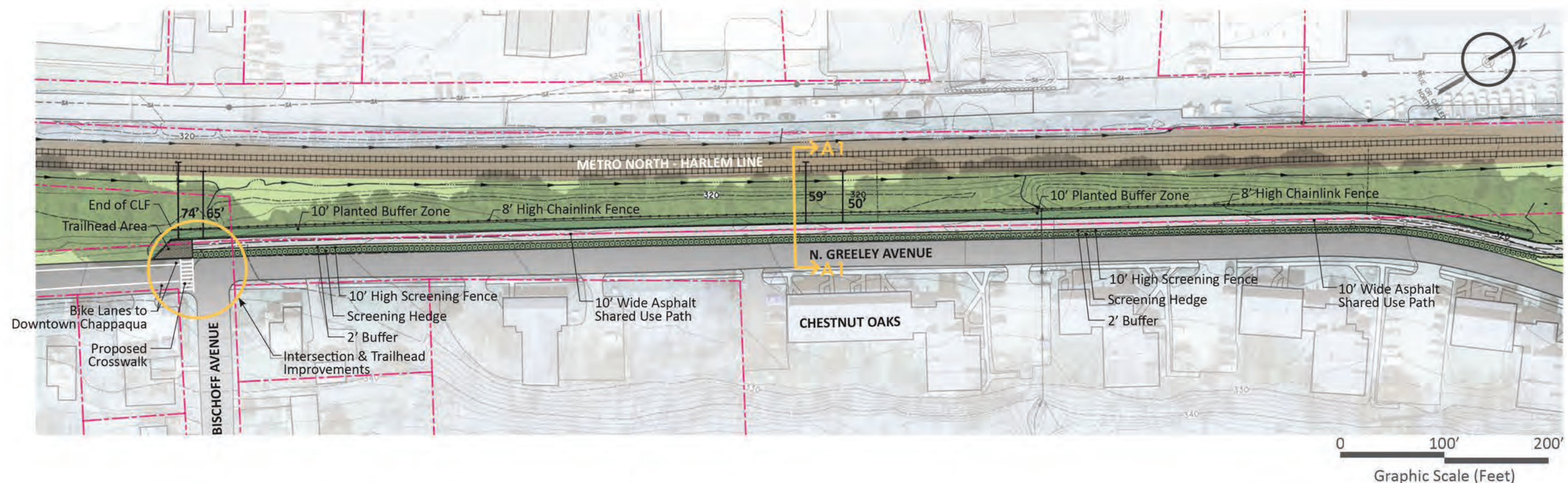
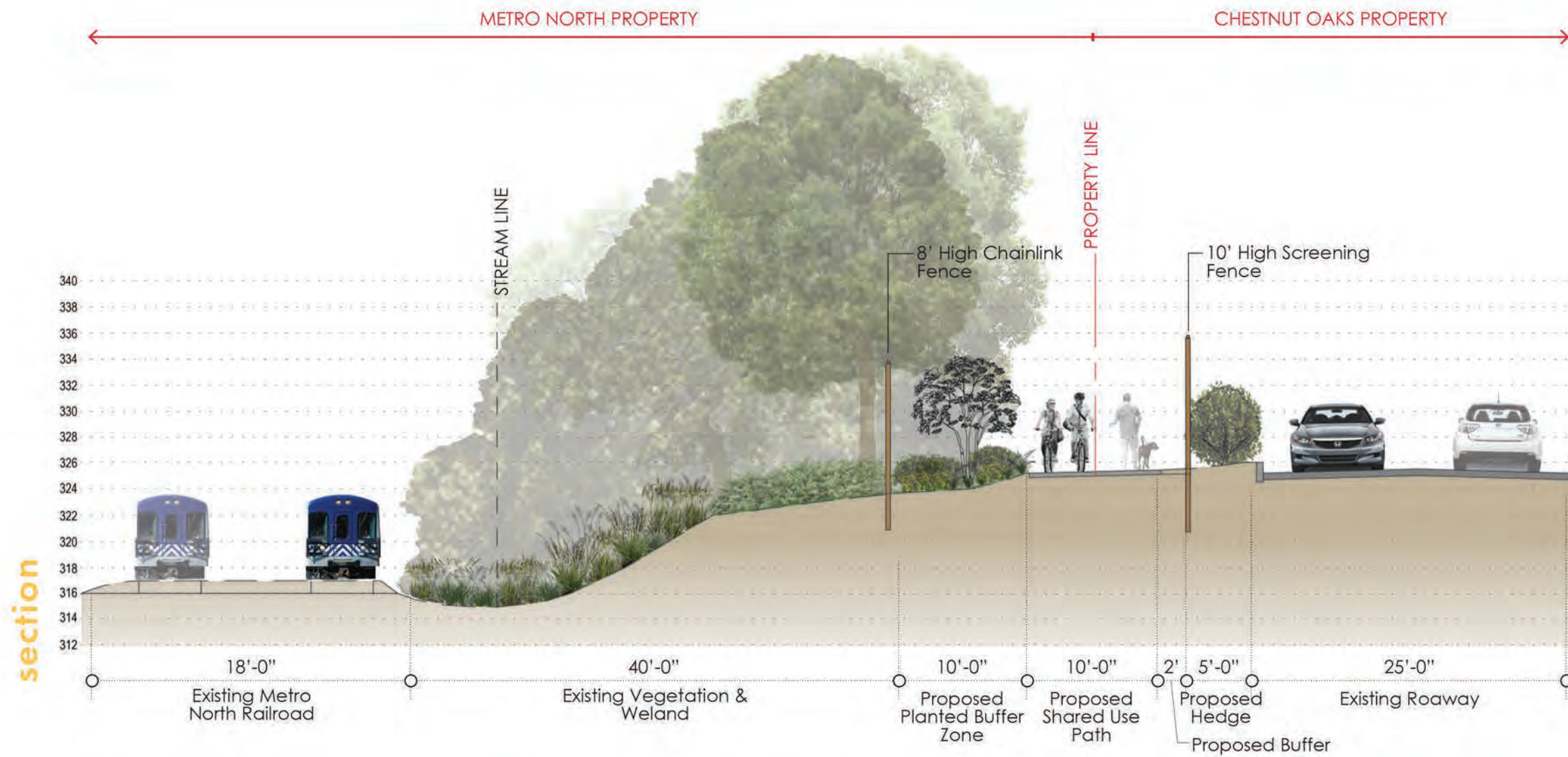


FIGURE 6
CHESTNUT OAKS ALTERNATIVE PLAN 1



ex. conditions



Existing Vegetation



Existing North Greeley Avenue
& Chestnut Oaks

materials



Proposed Chain Link Fence



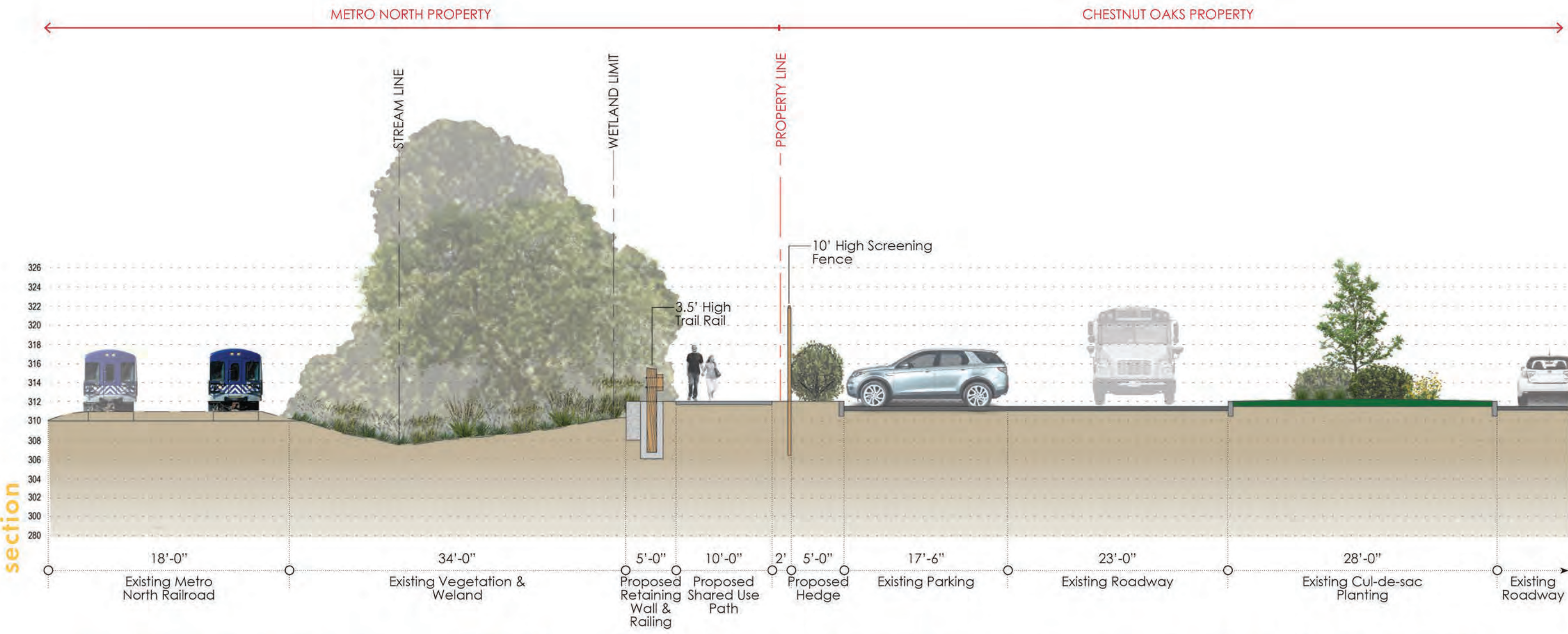
Proposed Wood Fence



Proposed Shared Use Path

FIGURE 8
CHESTNUT OAKS ALTERNATIVE 1 - SECTION B1-B1

Barton & Loguidice



ex. conditions



Existing Fence

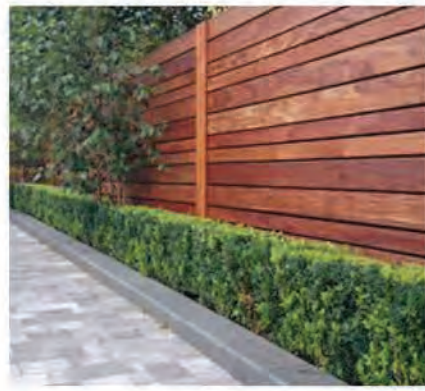


Existing Parking

materials



Proposed Screening Hedge



Proposed Wood Fence



Proposed Retaining Wall



Proposed Railing

FIGURE 9
CHESTNUT OAKS ALTERNATIVE PLAN 2

Barton & Loguidice

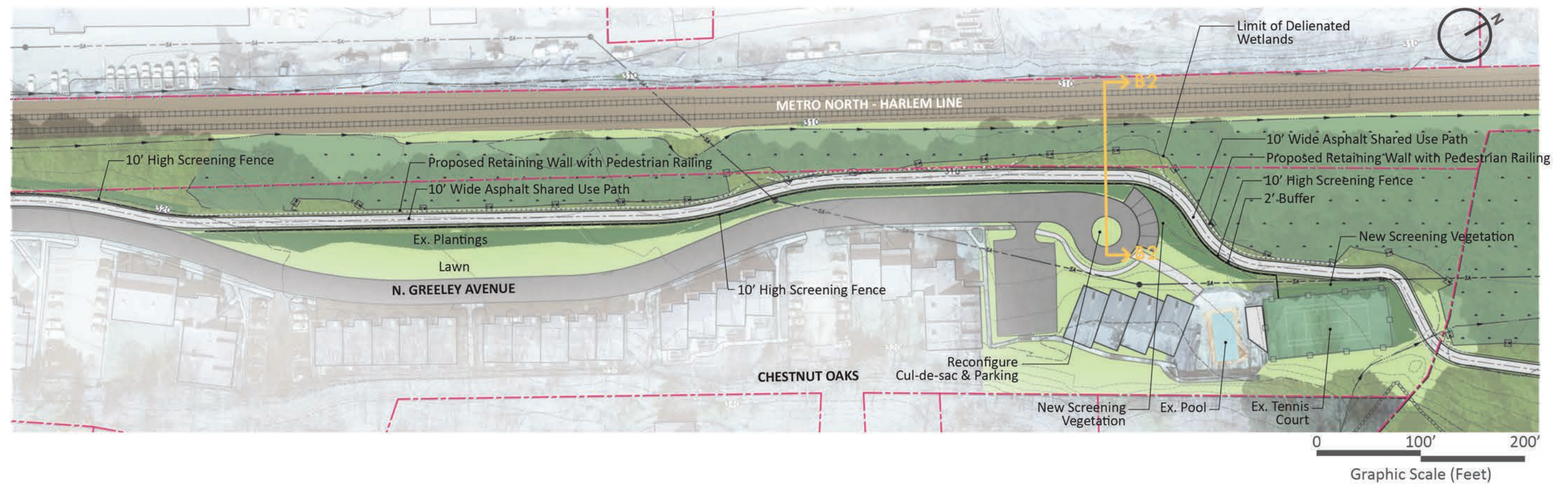
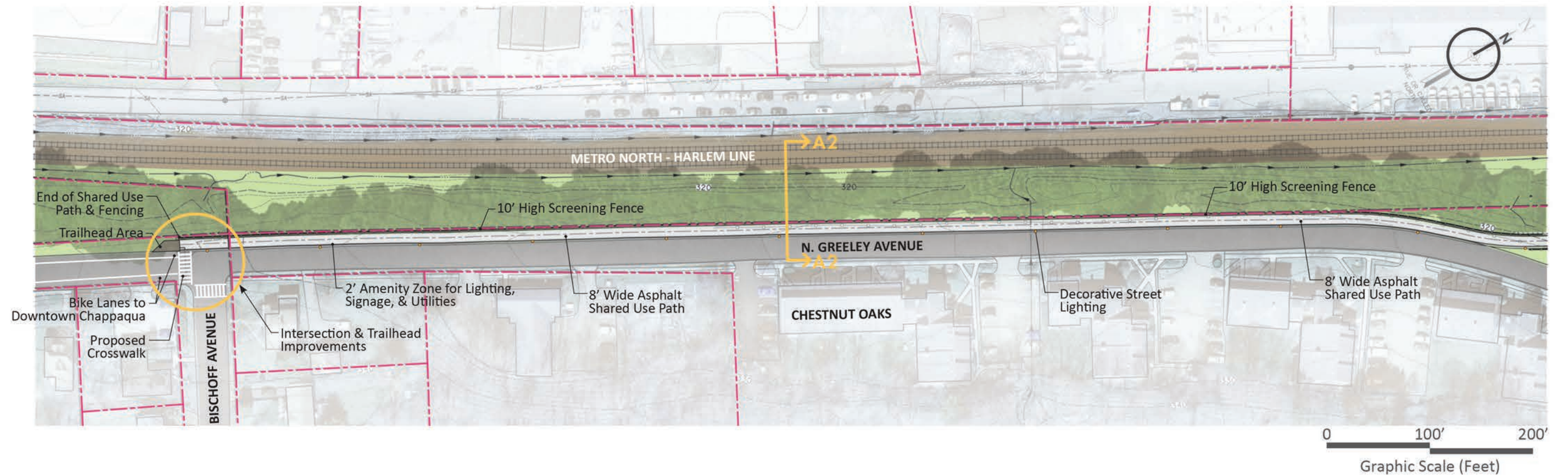
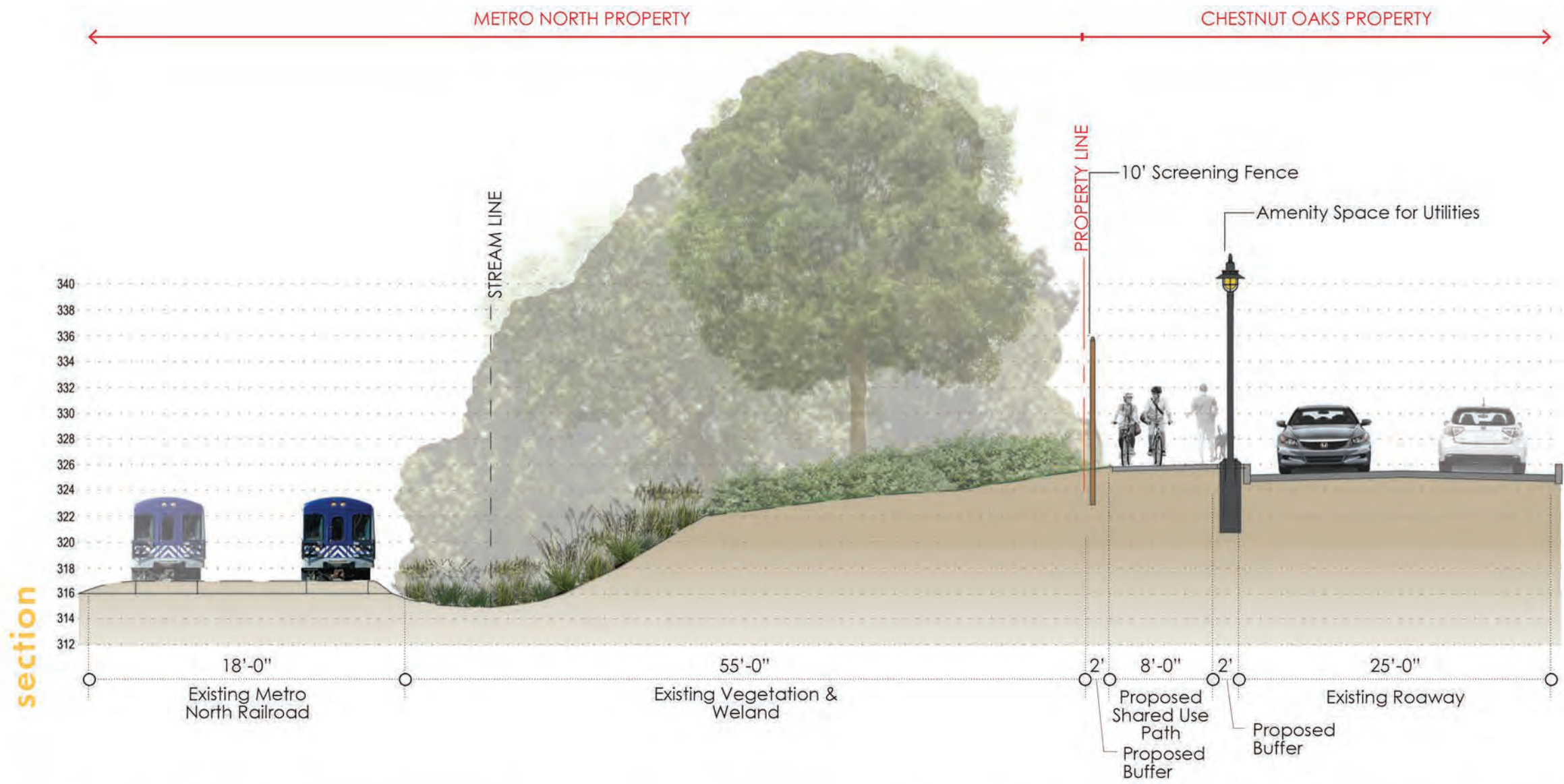


FIGURE 10
CHESTNUT OAKS ALTERNATIVE PLAN 2 - SECTION A2-A2

Barton & Loguidice



ex. conditions



Existing Vegetation

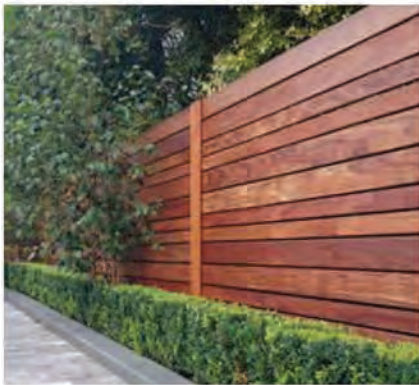


Existing North Greeley Avenue & Chestnut Oaks

materials



Proposed Wood Screening Fence



Proposed Wood Fence



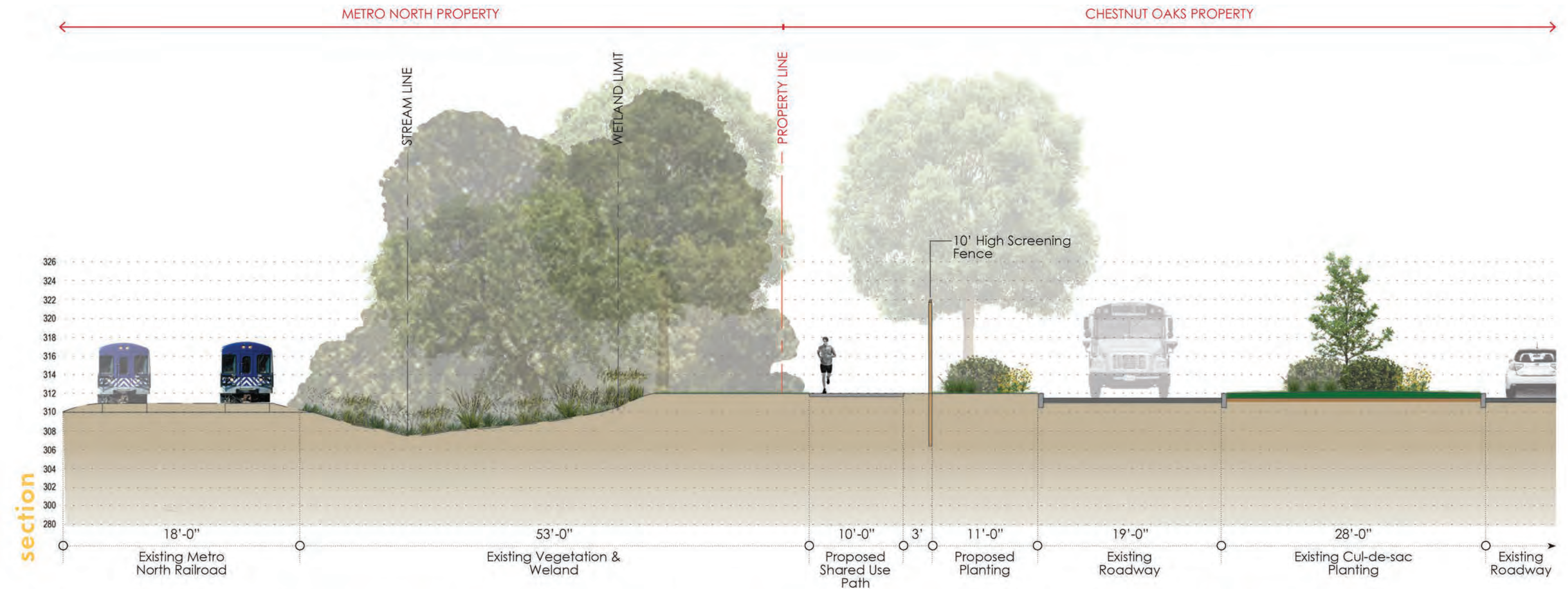
Proposed Shared Use Path



Proposed Pedestrian Lighting

FIGURE 11
CHESTNUT OAKS ALTERNATIVE PLAN 2 - SECTION B2-B2

Barton & Loguidice



ex. conditions



Existing Vegetation



Existing Cul-de-sac

materials



Proposed Wood Fence



Proposed Wood Fence



Proposed Shared Use Path



F APPENDIX: PRIVATE RESIDENCES

FIGURE 12
AGASTYA RESIDENCE - CONCEPTUAL PLAN & SECTION B1-B1

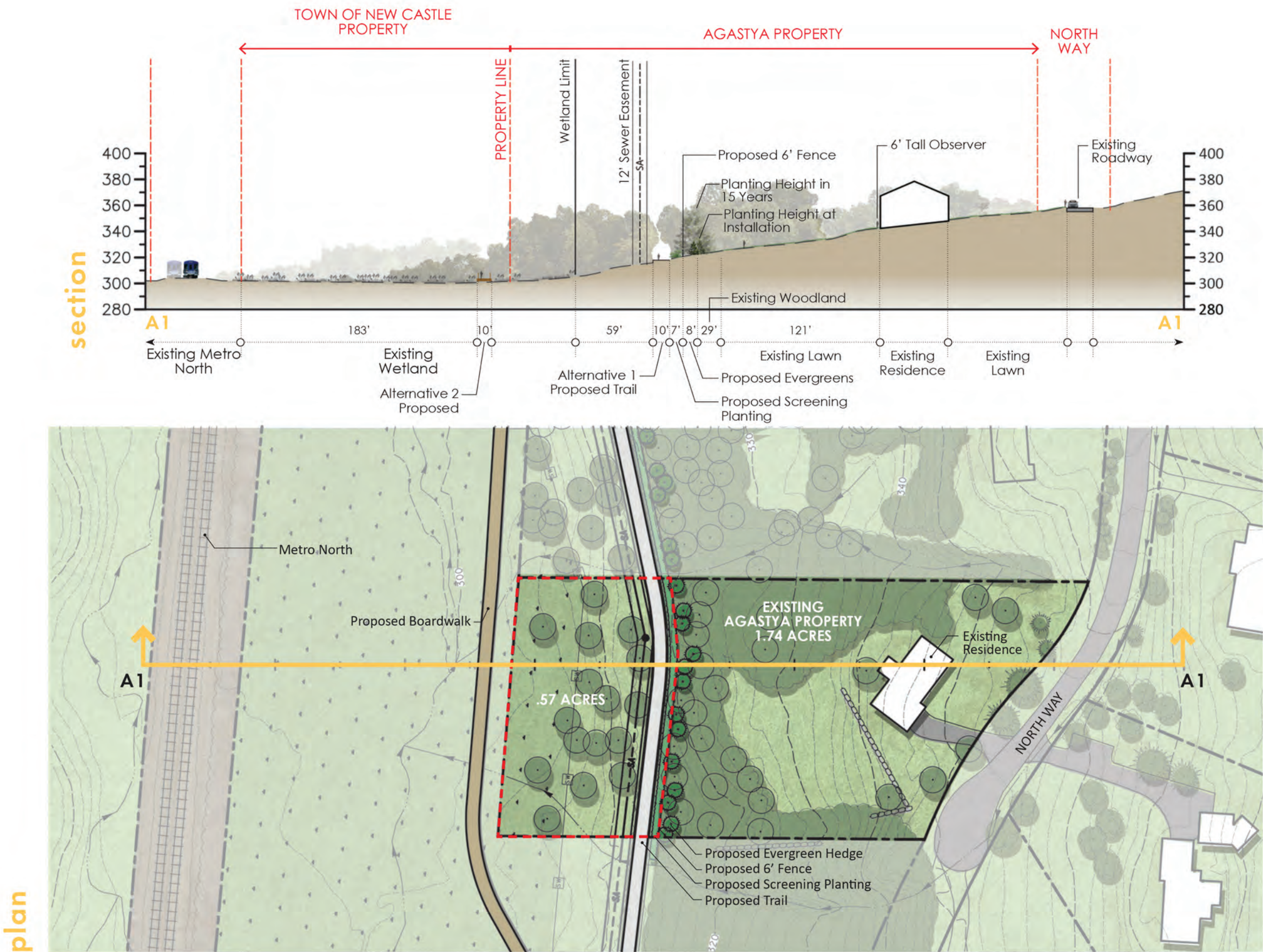


FIGURE 13

METZGER RESIDENCE - CONCEPTUAL PLAN & SECTION B1-B1

Barton & Loguidice

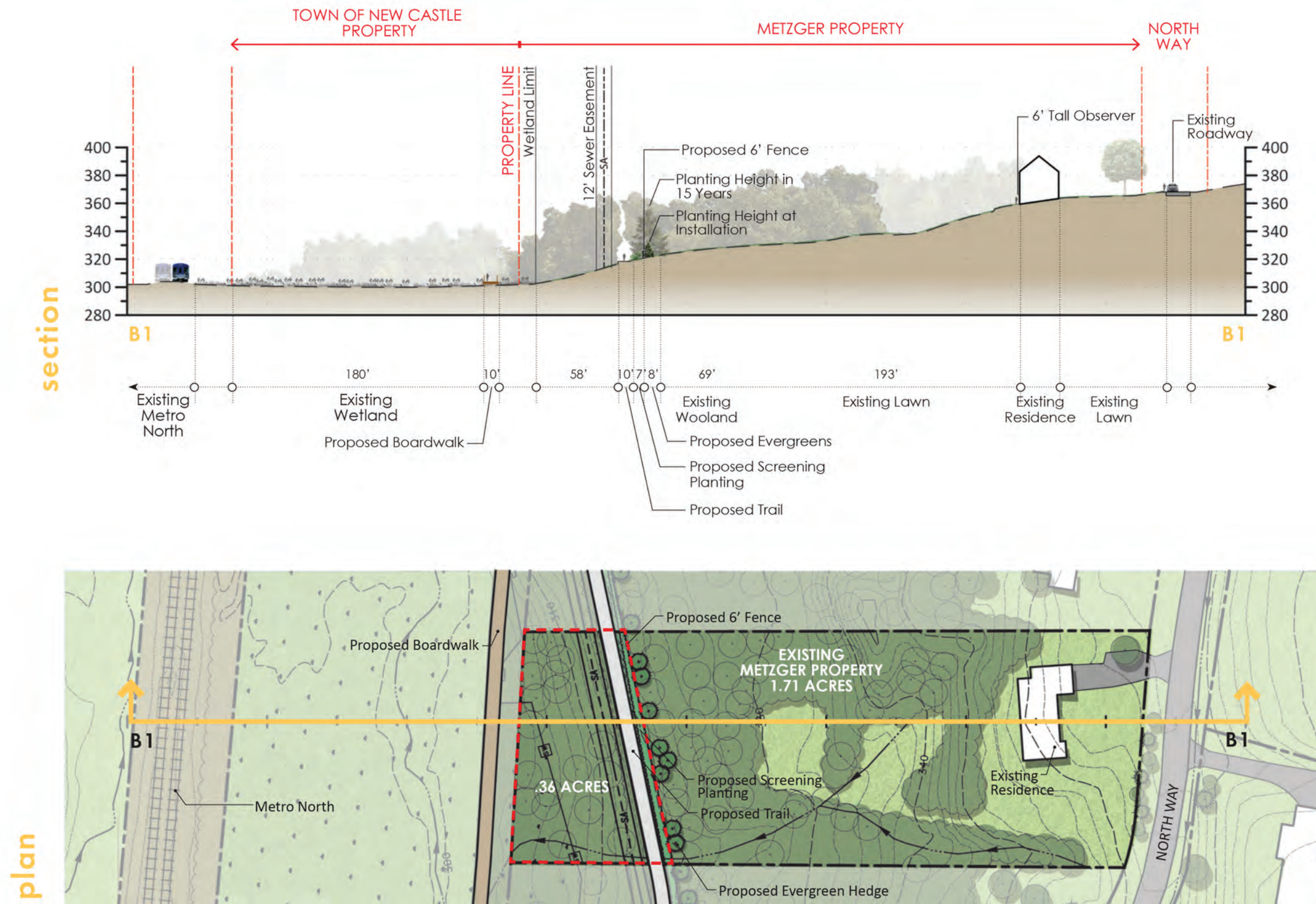


FIGURE 14
GOLTZMAN RESIDENCE - CONCEPTUAL PLAN & SECTION C1-C1

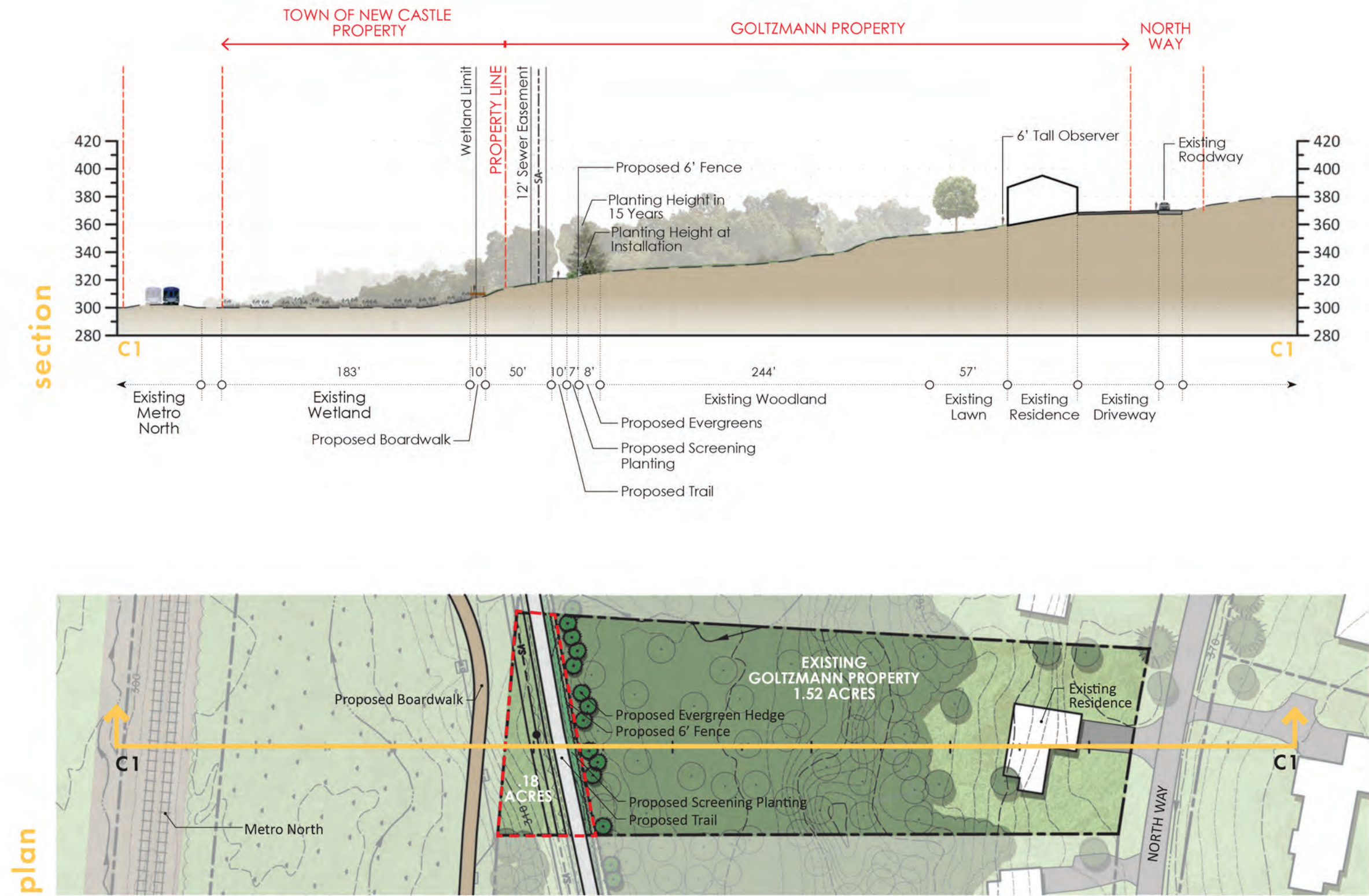


FIGURE 15

HUANG RESIDENCE - CONCEPTUAL PLAN & SECTION D1-D

Barton & Loguidice

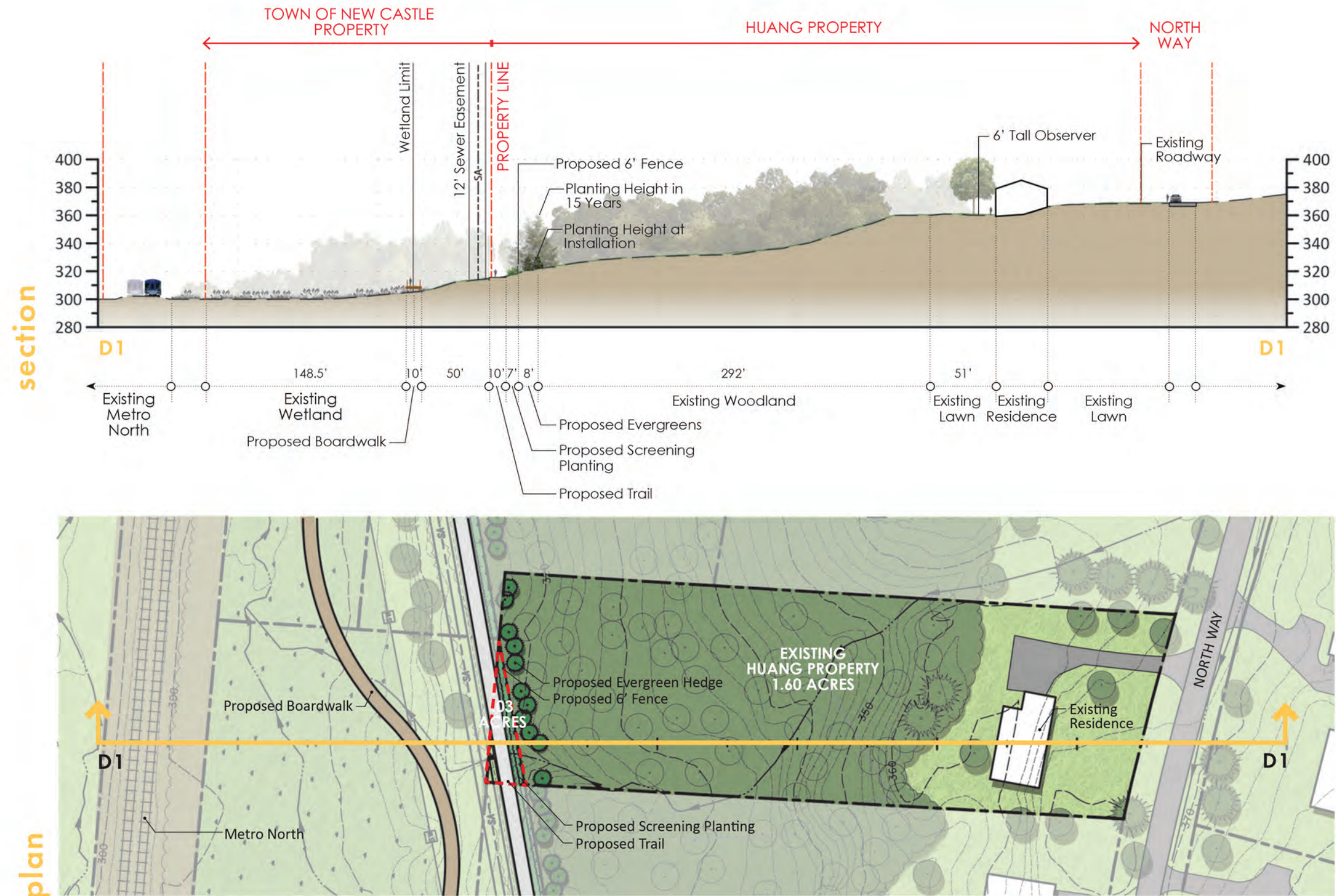


FIGURE 16
MORTELL RESIDENCE - CONCEPTUAL PLAN & SECTION E1-E1

