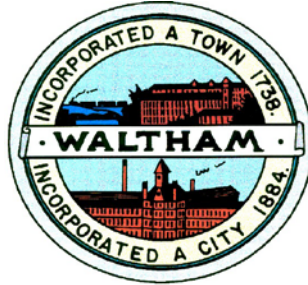


The City of Waltham



**Invites
Interested Parties
To propose the best offer and or bid
For the service or product herewith described:**

HYDRANTS REPLACEMENT, 2017

The bid opening will be held: 10 AM Wednesday February 22, 2017

Pre-bid Meeting: 10 AM Wednesday February 15, 2017

(Meet in the Auditorium of 119 School Street, Waltham)

Last day for written questions: 12 noon Thursday February 16, 2017

(Via e-mail only to jpedulla@city.waltham.ma.us)

Table of Contents:

- **Invitation to Bid**
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Invitation to Bid

The City of Waltham

Purchasing Department

REQUEST FOR QUOTATION (RFQ)

Under the rules of M.G.L. Chapter 30, 39M the Purchasing Department of the City of Waltham hereby requests sealed bids for:

HYDRANT REPLACEMENT, 2017

Price Proposals will be received at the office of the Purchasing Agent, City Hall, 610 Main Street, Waltham MA 02452, until,

Wednesday February 22, 2017 at 10 AM

At which time and place the bids will be publicly opened and read.

Pre-bid Meeting: 10 AM Wednesday February 15, 2017

(Meet in the Auditorium of 119 School Street, Waltham)

Last day for written questions: 12 noon Thursday February 16, 2017

(Via e-mail only to jpedulla@city.waltham.ma.us)

Specifications and information available at the Purchasing Agent's Office or in the Waltham Purchasing Department web site at www.city.waltham.ma.us/open-bids

BIDS MUST BE SIGNED AND ENCLOSED IN A SEALED ENVELOPE AND MARKED:

BID FOR: Hydrant Replacement, 2017

A 5% Bid Bond or Certified Check must accompany each bid submitted and made payable to, and become the property of the City of Waltham, if the successful bidder refuses or neglects to comply with the terms of the Contract.

If the Bidder is a corporation, state your correct corporate name and State of incorporation. If Bidder is a partnership, state names and addresses of partners. If Bidder is a trust or other legal entity, state correct names and addresses of trustees or names and address of those legally authorized to bid and enter into contracts.

EXCEPTION OR ALTERNATES TO SPECIFICATIONS, TERMS OF SALE, AND DISCOUNTS AVAILABLE, MUST BE INCLUDED IN THE BID PRIOR TO OPENING DATE.

Intent of Project

The Purchasing Department of the City of Waltham wishes to purchase installed Hydrants for a number of City Locations

Instructions

INSTRUCTIONS FOR BIDDERS

1. READ ALL DOCUMENTS.

Bidders should familiarize themselves with all the documents contained herein; it is mandatory that all Bids be in compliance with all the provisions contained in said documents.

2. FORMS AND ATTACHMENTS.

Bids are to be completed on the forms provided **ONLY** and enclosed in a sealed envelope marked on the outside "BID (title)" and the name and address of bidder. Attachments submitted in addition to the Waltham Purchasing Department produced forms may not be considered.

3. PRINTED OR TYPED RESPONSE.

All information must be typewritten or printed in ink, including the price the bidder offers in the space as provided on the bid form.

4. CORRECTIONS.

Bids that are submitted containing cross outs, white outs or erasures, will be rejected.

All corrections or modifications to the original bid are to be submitted in a separate envelope, properly marked on the outside, "CORRECTION/ MODIFICATION TO BID (title)" and submitted prior to the bid opening.

ALL DOCUMENTS SUBMITTED WITH YOUR RESPONSE WILL BE INCORPORATED INTO THE CONTRACT.

5. PRICE IS ALL INCLUSIVE.

Bid prices shall encompass everything necessary for furnishing all items, materials, supplies or services as specified, and in accordance with the specifications, including proper packing, cost of delivery, and in the case of services, completion of same, as per specifications.

6. PRICE DISCREPANCY.

In the event of a discrepancy between the Unit Price and the Extension, the Unit Price shall prevail.

7. EXPLANATIONS, EXCEPTIONS

Explanations, exceptions or other information pertinent to the specifications may be made in writing and included in the same envelope with the bid.

8. BID DEPOSITS.

Bid deposits are to be made payable to the City of Waltham. In the event that the successful bidder fails to execute a Contract within (10) days of the receipt of said contract, such security shall be retained by the city as liquidated damages. Unsuccessful bidders' deposits will be returned immediately following the award to said successful bidder.

9. WITHDRAW.

A Bid may be withdrawn by written request prior to the schedule for the Bid Opening. No withdrawals are permitted after the bid opening date and time. Withdrawals after the bid opening date will cause the forfeit of the bid Deposit.

10. AWARD.

Bids will be awarded not later than (90) ninety days after the scheduled bid opening date, unless otherwise stated, in the specifications. Unless otherwise specified, bids will be evaluated on the basis of, completeness of your RFP response, responsiveness, responsibility, best price and experience.

11. AWARD CRITERIA.

Qualified and responsive proposals will be evaluated based on the following rating: Price, Technical, and Compliance requirements.

12. DISCOUNTS.

Discounts for prompt payments, based on City Pay Day, will be considered when making awards.

13. TAX EXEMPT.

Purchases by the City of Waltham are exempt from any Federal, State or Massachusetts Municipal Sales and/or Excise Taxes.

14. SAMPLES.

The City of Waltham may require the submission of samples either before or after the awarding of a contract. Samples are to be submitted, at no charge to the City, so as to ascertain the product's suitability. If specifically stated in the Bid that samples are

required, said samples must be submitted with the Bid prior to the Official Bid Opening. Failure to submit said samples would be cause for rejection of Bid. All samples must be called for and picked up within (30) thirty days of award or said samples will be presumed abandoned and will be disposed of.

15. ACTIVE VENDOR LIST.

Vendors who wish to remain on the Active Bid List must either submit a Bid, No Bid, or a letter requesting same, no later than the Official Bid Opening. This is applicable to those vendors who have received the Invitation to Bid.

16. FUNDS APPROPRIATION.

The contract obligation on behalf of the City is subject to prior appropriation of monies from the governmental body and authorization by the Mayor.

17. THE City OF WALTHAM RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS, OR ANY PART OF ANY BID, WHICH IN THE OPINION OF THE AWARDING AUTHORITY, IS IN THE BEST INTERESTS OF THE CITY OF WALTHAM.

18. THE TAX ATTESTATION CLAUSE, CERTIFICATION OF NON-COLLUSION AND THE CORPORATION INFORMATION, are an integral part of the Invitation for Bid and must be completed and signed by the person submitting the Bid, or by the person/persons who are officially authorized to do so.

19. STANDARD OF QUALITY.

Where, in the specifications, one certain kind, type, catalog number, brand or manufacturer of material is named, it shall be regarded as the required standard of quality. Where two or more are named, these are presumed to be equal and the Bidder may select one or the other. If the Bidder proposes to offer a substitute as an equal, he shall so indicate on the Bid Form, the kind, type, catalog number, brand, or manufacturer of material that is offered as an equal, and describe where it differs from the specifications. Substituted items must be capable of performing all the functions and/or operational features described or indicated in the specifications. Failure to indicate the description of any substitute item on the Bid will be interpreted to mean that the Bidder will furnish the item or service as specified.

20. MODIFICATION.

No agreement, understanding, alteration or variation of the agreement, terms or provisions herein contained shall bind the parties, hereto unless made and executed in writing by the parties hereto.

21. ASSIGNMENT.

The final payment for work done under this Contract shall be made only after the Contractor has signed a statement under the penalty of perjury, certifying that he has completed the work described in the final estimate. Neither party hereto shall assign this Contract or sublet it in part or as a whole without the prior written consent of the other party hereto. The Contractor shall not assign any sum or sums due or becoming due to him hereunder without the prior written consent of the City.

22. DELIVERIES:

a) The Contractor shall pay all freight and delivery charges. The City of Waltham does not pay for shipping and packaging expenses. Items must be delivered as stipulated in the specifications. All deliveries must be made to the inside of city buildings. Sidewalk deliveries will not be accepted. City personnel are not required to assist in the deliveries and contractors are cautioned to notify their shippers that adequate assistance must be provided at the point of delivery, when necessary.

b) All items of furniture must be delivered inside the building, set up, in place and ready for use. Deliveries are to be made between the hours of 8:30 a.m. and 3:00 p.m., Monday through Friday, except on holidays.

c) All damaged items, or items which do not comply with specifications will not be accepted and title therefore will not vest to the City of Waltham until such items are accepted and signed for, in good order, by the receiving department.

d) The contractor must replace, without further cost to the City of Waltham, such damaged or non-complying items before payment will be made.

23. LABELING.

All packages cartons or other containers must be clearly marked with (a) building and room destination; (b) description of contents of item number from specifications; (c)

quantity; (d) City of Waltham Purchase Order Number and (e) Vendor's name and order number.

24. GUARANTEES.

Unless otherwise stipulated in the specifications, furniture, equipment and similar durable items shall be guaranteed by the contractor for a period of not less than one year from the date of delivery and acceptance by the receiving department. In addition, the manufacturer's guarantee shall be furnished. Any items provided under this contract which are or become defective during the guarantee period shall be replaced the contractor free of charge with the specific understanding that all replacements shall carry the same guarantee as the original equipment. The contractor shall make such replacement immediately upon receiving notice from the Purchasing Agent.

25. SINGLE VENDOR.

The City of Waltham desires to award a single contract based on the Grand Total Price. However, where applicable, the City reserves the right to make multiple awards on a unit price basis if, in the opinion of the City of Waltham, it is in the best interest of the City of Waltham.

26. BEST AND FINAL OFFER.

The City of Waltham reserves the right to request best and final offers from one or more bidders. Best and final offer will be exercised should the CPO deem it is in the best interest of the City of Waltham in order to obtain the best value.

GENERAL CONDITIONS

GENERAL CONDITIONS

1. INFORMATION

All information shall come from the Office of the City Purchasing Agent. The Contractor shall inquire at this office for any information needed. Wherever the words "or equal as approved" are used, it is to be understood that the opinion of the City Purchasing Agent shall govern.

2. SUITS

The Contractor shall assume defense of and shall indemnify and hold the City and its agents harmless from all suits and claims against them arising from the use of any invention, patent right labor or employment, or from any act of omission or neglect of the Contractor, his agents, employees or any subcontractor in performing the work, under this contract.

3. LAWS AND REGULATIONS

The Contractor shall conform to all the applicable rules, regulations, laws and ordinances of the City of Waltham, the United States of America and all agencies having jurisdiction.

4. PROTECTION OF PROPERTY

The Contractor shall take all proper precautions to protect the City's property from damage and unnecessary inconvenience. Any City property damaged by the Contractor in carrying out the provisions of this contract shall be restored to its original condition, by and at the expense of the Contractor.

5. PROTECTION OF PERSONS

The Contractor shall take all proper precautions to protect persons from injury, unnecessary inconvenience, and shall be responsible for his failure to do so. The Contractor agrees to hold the City harmless from any and all liabilities of every nature and description, which may be suffered through bodily injury, including death, to any person, by reason of negligence of the Contractor, his agents or employees, or any subcontractor.

6. CONTRACT DURATION.

This contract duration is three (3) one-year periods beginning on the date of the Mayor's signature and renewable, at the sole discretion of the City, for two additional one year periods ending no later than December 31, 2017.

7. INSURANCE

A. WORKMAN'S COMPENSATION: The Contractor shall provide by insurance for the payment of compensation and furnishing of other benefits under Chapter 152 of the General Laws of the Commonwealth of Massachusetts to all persons to be employed under this contract, the premiums for which shall be paid by the Contractor.

B. COMPREHENSIVE GENERAL LIABILITY

Bodily Injury:	\$1,000,000 Each Occurrence
	\$2,000,000 Aggregate
Property Damage:	\$1,000,000 Each Occurrence
	\$2,000,000 Aggregate

C. AUTOMOBILE (VEHICLE) LIABILITY

Bodily Injury	\$2,000,000 Each Occurrence
Property Damage	\$1,000,000 Aggregate

D. UMBRELLA POLICY

General liability	\$2,000,000
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A LETTER FROM A SURETY COMPANY CERTIFYING THAT THE CONTRACTOR IS QUALIFIED AND CAPABLE OF OBTAINING THE ABOVE BONDS MUST BE INCLUDED WITH HIS/HERS BID.

8. PERSONNEL:

The Contractor shall employ a competent supervisor and all properly licensed personnel necessary to perform the services required in this contract. The City of Waltham shall have the right to require the Contractor to remove and/or replace any of the personnel for nonperformance or for unprofessional behavior. The City of Waltham may require the Contractor to submit a weekly performance record of the

areas and of the work performed, on forms approved by the City. The Contractor or his supervisor shall be available to inspect such work as required by the City.

9. PREVAILING WAGES

The Contractor is required to pay the prevailing wages as determined under the provision of Chapter 149, Sections 26 and 27D of the Massachusetts General Laws, including the submission of weekly payrolls to the awarding authority. The prevailing Wage Schedule is too large to attach here. It can be found at www.city.waltham.ma.us/open-bids

10. MATERIALS

The City or its Agent reserves the right to approve or reject any supplies, material or equipment used by the Contractor. The Contractor agrees to replace any supplies, material or equipment used by the Contractor. The Contractor agrees to replace any rejected supplies, materials or equipment, to the satisfaction of the City or its Agents.

11. TERMINATION OF CONTRACT

This contract may be terminated by the City upon deliverance to the Contractor of a five-day written notice of said termination.

12. CONTRACT OBLIGATIONS

Contract obligations on behalf of the City are subject to an annual appropriation to cover the contract obligation.

13. BIDDER EXPERIENCE EVALUATION

Each bidder shall submit with his bid, all the information relative to their experience and qualifications in performing the work required under this contract and shall have been in business for a minimum of five (5) years, in order for their bid to be considered.

15. NOT-TO-EXCEED AMOUNT

The bid amount proposed in your company's response is a "not-to- Exceed" amount unless the City makes changes, in writing, to the scope of work to be performed. The Change Order must be signed and approved by the Purchasing Agent, The City Auditor, the Law Department and the Mayor PRIOR to the commencement of the change order work. A change order will be priced at the unit price. Failure to comply

with this procedure will result in the cancellation of the contract and the non-payment of services provided

16. FINANCIAL STATEMENTS.

The City may require, within five (5) days after the bid opening, a complete and detailed Financial Statement prepared by a Certified Public Account, to determine a bidder's financial stability.

17 BREACH OF CONTRACT/ NON PERFORMANCE

If the Contractor shall provide services in a manner, which is not to the satisfaction of the City, the City may request that the Contractor refurnish services at no additional cost to the City until approved by the City. If the Contractor shall fail to provide services, which are satisfactory to the City, the City in the alternative may make any reasonable purchase or Contract to purchase services in substitution for those due from the Contractor. The City may deduct the cost of any substitute Contract for nonperformance of services together with incidental and consequential damages from the Contract price and shall withhold such damages from sums due or to become due to the Contractor. If the damages sustained by the City exceed sums due or to become due, the Contractor shall pay the difference to the City upon demand. The Contractor shall not be liable for any damages sustained by the City due to the Contractor's failure to furnish services under the terms of this Contract if such failure is in fact caused by the occurrence of a contingency the nonoccurrence of which was a basic assumption under which this Contract was made, including a state of war, embargoes, expropriation of labor strike or any unanticipated federal, state or municipal governmental regulation of order, provided that the Contractor has notified the City in writing of such cause within seven (7) days after its occurrence.

18 RIGHT TO AUDIT

The City of Waltham has the right to review and audit documents related to this contract. This right extends to any subcontractor, supplier or other entity used by the prime contractor to fulfill the obligations under this contract.

19. CITY ORDINANCE. APPROVAL OF CONTRACTS BY MAYOR, SEC. 3-12

All contract made by any department, board or commission where the amount involved is two thousand dollars (\$2,000) or more shall be in writing, and no such contract shall be deemed to have been made or executed until the approval of the Mayor is affixed thereto. Any construction contract shall, and all other contracts may, where the contract exceed five thousand dollars (\$5,000) be required to be accompanied by a bond with sureties satisfactory to the Mayor.

NOTE

Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal

Specifications

SPECIAL PROVISIONS

2017 HYDRANT REPLACEMENT PROJECT

SCOPE OF WORK

The work to be done under this Contract consists of the removal and replacement of existing **fire hydrants at various locations in Waltham.**

The work to be performed will include excavation, hot mix asphalt patching of streets and sidewalks, removal and disposal of existing hydrants, installation of hydrants, water pipe, gate valves, related appurtenances, and other incidental work as required.

Work under this Contract shall be paid for at the contract unit bid prices, which shall constitute full compensation for all material, labor, equipment, etc., required to satisfactorily complete the work.

All work under this contract shall be done in conformance with the Massachusetts Highway Department *Standard Specifications for Highways and Bridges* dated 1988, the *Supplemental Specifications* dated July 1, 2015, and the *Interim Supplemental Specifications*; the *2015 Construction Standard Details*, the *1990 Standard Drawings for Signs and Supports*; the *2009 Manual on Uniform Traffic Control Devices (MUTCD) with Massachusetts Amendments* and the *Standard Municipal Traffic Code*; the *1968 Standard Drawings for Traffic Signals and Highway Lighting*; the latest edition of *American Standard for Nursery Stock*; the latest edition of the American Water Works Association Standards, the Plans and these Special Provisions

WORK SCHEDULE

Work on this project is restricted to a normal eight (8) hour day between the hours of 7:00am and 5:00pm, five (5) day week Monday through Friday, with the prime contractor and all subcontractors working on the same shift. No work shall be done on this contract on Saturday's, Sunday's, or holidays without the prior written approval by the City. Weekly work schedules shall be delivered to the Engineer no later than noon on the Friday before the following work week.

No work shall be performed on the entire length of any street or roadway listed below during the hours of 7:00am to 9:00am and 4:00pm to 6:00pm. Also no construction vehicles shall be parked waiting to perform work during these hours. In case of emergency, exceptions to this rule can be made by the Consolidated Public Works Director or their designee. Any non-emergency work would be reviewed on a case-by-case basis and approval may be issued by the Consolidated Public Works Director or his/her designee. Street or roadways restricted are as follows: Bacon St., Bear Hill Rd., Beaver St., High St., Lexington St., Linden St., Main St., Maple St., Moody St., Newton St., Pine St., Prospect St., River St., Second Ave., Smith St., South St., Stow St., Totten Pond Rd., Trapelo Rd., Waverley Oaks Rd., Weston St., Winter St., and Wyman St.

CHANGES IN SCOPE

The City of Waltham reserves the right to increase or reduce the amount of this contract. Any changes in scope may involve adding work on the streets listed above or on streets yet to be identified, or deleting all or some of the work on a specific street or portion of a street. Changes in scope may be ordered at any time up to project acceptance at the contract unit bid prices. Changes in the scope of work will be paid at the rate of the unit prices specified in the Bid Form, Section 300.

DEFINITIONS

Except for specific reference to Department Standards and Operations, the usage of the term Engineer shall mean the Waltham City Engineer or his duly authorized Agent.

RESPONSIBILITY FOR DAMAGE CLAIMS

The Contractor shall indemnify, defend and save harmless the Municipality and all of its or their offices, agents and employees against all suits, claims or liability of every name and nature, for or on account of any injuries to persons or damage to property arising out of or in consequence of the acts of the Contractor in the performance of the work covered by the Contract or failure to comply with the terms and conditions of said Contract, whether by himself or his employees or Subcontractors, but only in respect of such injuries or damages sustained during the performance and prior to the completion and acceptance of the work covered by the contract.

The Contractor will be held responsible for any and all claims for damage to underground structures such as, but not restricted to, water or gas mains, pipes, conduits, manholes or catch basins, due to his operation or to the operations of any of his Subcontractors.

COOPERATION BY CONTRACTOR

Attention is directed to the provisions relating to rights of public corporations and municipal departments to enter the site of the improvement and alter, replace, and/or install facilities at such times when the Contractor will be prosecuting other required work contiguous thereto.

INSPECTION OF WORK

The Contractor is advised that the Waltham City Engineer will be provided with a schedule of operations and will at various times during the construction of the project be on-site to inspect procedures and give directions. For the purpose of observing work that affects their respective properties, inspectors for public agencies and utility companies shall be permitted access to the work, but all official orders and directives to the Contractor will be issued by the Waltham City Engineer or his duly authorized agent.

NOTICE TO OWNERS OF UTILITIES AND PUBLIC SERVICE DEPARTMENTS:

Written notice shall be given by the Contractor to all public service corporations or officials owning or having charge of Public or Private Utilities and Departments of his intentions to commence operations affecting such utilities and Departments at least one (1) week in advance of the start of such operations and the Contractor shall at the same time file a copy of said notice with the Engineer.

The names of the principal City Departments and Utilities which may be affected will be provided to the Contractor at the pre-construction meeting.

**The Contractor shall notify “Massachusetts DIG SAFE” and procure a DIG SAFE number 72 hours prior to disturbing existing ground in any way.
DIG SAFE Call Center – PHONE - 811.**

Before the Contractor begins any work on operations which might result in damage to utility pipes or structures the Contractor shall verify the locations of existing overhead and subsurface utilities in the vicinity of the work with the listed Departments and Utility Companies and conduct his operations so as to avoid any damage to them.

PROTECTION OF EXISTING UTILITIES AND STRUCTURES

Excavation and backfill operations shall be carried out in a manner that will prevent cave-in of excavations or the undermining, damage or disturbing of existing utilities and structures or of new work.

Any excavations improperly backfilled, or where settlement occurs, shall be reopened to the depth required, then refilled with new materials and compacted, and the surface restored to the required grade and condition at no additional expense to the Owner.

Any damage due to excavation, backfilling or settlement of the backfill, or injury to persons or damage to property occurring as a result of such damage, shall be the responsibility of the Contractor. All costs to repair such damage, in a manner satisfactory to the Owner, shall be borne by the Contractor at no additional expense to the Owner.

Where existing subsurface utilities or other facilities adjacent to or crossing through the excavation require temporary support or protection, such temporary support or protection shall be satisfactorily provided by the Contractor at no additional expense to the Owner. All necessary measures shall be taken by the Contractor to prevent lateral movement or settlement of existing facilities or of work in progress.

The plans indicate the approximate location of existing overhead and subsurface utilities in the vicinity of the work and the bidders are advised to verify this information, as its accuracy and completeness are not guaranteed by the Owner or Engineer.

PROTECTION OF UTILITIES AND PROPERTIES

The Contractor's attention is directed to the location of underground utilities in the existing and proposed roadways.

The Contract Drawings indicate the approximate location in plan of existing overhead and subsurface utilities in the vicinity of the work. Whatever measures are necessary to protect these lines during the work shall be included in the contract unit price for the various items involved.

In case of damage to utilities, the Contractor shall promptly notify the Owner and shall, if requested, furnish manpower under the Owner's direction in getting access to the utility. Pipes or other structures damaged by the operation of the Contractor may be repaired by the Owner, the municipality, or the utility company. The cost of such repairs shall be borne by the Contractor without compensation therefore.

The work to be done under this contract may necessitate changes in the properties of utility companies or the municipality hereinbefore listed. Immediately after executing the contract, the Contractor shall confer with the owners of all utilities in order that relocations of mains or services may be made at times consistent with operations of the Contract.

PROVISIONS FOR TRAVEL AND PROSECUTION OF THE WORK

Prior to commencement of work, the Contractor shall be responsible for obtaining all necessary construction permits. Permits will include, but are not necessarily limited to, a NPDES Notice of Intent from the Environmental Protection Agency (including the preparation of a Storm Water Pollution Prevention Plan) and a Street Opening / Trench Permit from the Consolidated Public Works. All permits issued by the City will require no fee payment.

Access shall be maintained for all abutters so that they may use the driveways and approaches adjacent to their properties. Pedestrian access to abutting property and access for emergency vehicles shall be provided at all times.

All construction equipment, material and debris shall be removed from the traveled way at the end of each working day and shall be stored in such manner as not to interfere with the flow of driveway traffic or pedestrians.

The Contractor shall coordinate his work with the work to be done by other Contractors on the site, public utilities or other agencies, and he shall so schedule his operations as to cause the least interruption to the normal flow of all traffic types. Reasonable facilities shall be provided by the Contractor for the safe and convenient passage of pedestrians and vehicles through and within the project area.

Particular care shall be taken to establish and maintain methods and procedures which will not create unnecessary or unusual hazards to public safety. The placement of necessary devices will be for daily work periods and shall be removed after the completion of work operations. Signs having messages that are irrelevant to normal traffic conditions shall be removed or properly covered at the end of each work period. Signs are to be kept clean at all times and

legends shall be distinctive and unmarred.

TRAFFIC MANAGEMENT PLAN

The Contractor shall prepare and submit a traffic management plan to the Engineer for review and approval by the Engineer and the Waltham Police Department Traffic Safety Officer. The Traffic Management Plan shall be prepared for all streets in the contract, unless specifically directed otherwise by the Engineer. The Traffic Management Plan shall contain information on proposed detour routes if requested, location and type of detour and warning signs, barricades and other safety and traffic control means and devices to ensure a safe, orderly flow of vehicular and pedestrian traffic.

All temporary and permanent signs, traffic control devices, and pavement markings shall conform to the latest relevant sections of the Manual on Uniform Traffic Control Devices (MUTCD), and the Massachusetts Standard Specifications for Highways and Bridges.

The Traffic Management plan shall be submitted for review at least fourteen (14) days prior to any work being performed on the project roadways. No work would be allowed until the Traffic Management Plan is approved by the City and implemented by the Contractor.

Temporary pavement markings and other traffic control devices shall be provided in accordance with the Contractor's Traffic Management Plan and as directed by the Engineer.

Temporary traffic control devices shall include the provision of variable message sign boards to supplement other traffic control measures as directed by the Engineer. The cost of preparing the traffic management plan and providing and maintaining temporary traffic control devices shall be borne by the Contractor.

TRAFFIC POLICE DETAILS

Payment shall be made at the stated allowance in the Bid Form Section 300. The police department will bill the Contractor directly and the Contractor shall pay the police department bills within a ten day working period for uniform police officers provided on the job site. The billing shall include a weekly statement outlining the days worked, hours worked, location of the work, and rate for all officers providing service during that billing period.

The Contractor will be paid by the Owner for bills paid to the police department. The Contractor shall submit paid bills from the police department, stamped and signed as paid, to the Engineer, with the Contractor's Application for Payment.

Uniformed officers required for purposes other than public safety and / or control of traffic shall not be eligible for payment. Details billed to the Contractor due to cancellation of work will not be eligible for payment.

RAILROAD FLAGGING SERVICE

If any of the work required to be done by the Contractor may obstruct the tracks of a railroad or in any way endanger the operation of its trains, and the services of a flagger or flaggers or other railroad employees are required by the Chief Engineer of the railroad company and personnel are assigned by that Chief Engineer for the protection of the property and traffic of the Railroad against hazards, the cost of all such flagging services will be paid by the Contractor to their employers, subject to the rules and regulations of the railroad company. The contractor shall provide to the City proof of payment to the Railroad for the cost of the flaggers required. **The City shall reimburse the Contractor for the flaggers under item 999.2 Railroad Flagging.** The City shall not pay any administrative charges associated with the costs of flaggers charged by the railroad nor shall the Department pay charges for debit accounts if such accounts are required by the railroad.

METHOD OR SEQUENCE OF CONSTRUCTION

The Contractor shall obtain approval for his proposed method and sequence of construction, including procedures for maintaining traffic, from the City Engineer or his duly authorized agent, prior to performing the work. The Contractor is responsible for filling out and submitting to the Engineer the one page checklist included at the end of this section prior to commencing a new segment or phase of work. The checklist describes the type of work to be done and identifies a series of notifications and preliminary steps that are to be addressed prior to commencing a new segment or phase of work.

OSHA REQUIREMENTS

The work to be performed under this Contract by the General Contractor and any and all subcontractors is to be performed in compliance with the Occupational Safety and Health Act of 1970, including any and all amendments thereto.

PRECAUTIONS UNDER ELECTRIC LINES

The bidders attention is directed to the AASHTO Guide on Occupational Safety on Highway Construction Projects, Subpart N, 1926.550, relating to construction equipment clearances at overhead electric lines, which states in part "... the minimum clearance between the lines and any part of the crane or load must be at least 10 feet from lines rated 50 KV or below, and greater distances for high voltage ...".

For the protection of personnel and equipment, the Contractor should be aware of this regulation especially during paving operations using large semi-trailer vehicles.

OVERLOADED TRUCKS

Materials delivered to the project in motor vehicles or semi-trailer units that exceed the legal maximum gross weight allowed for the particular class as specified in section 19a of chapter 90 of the general laws of Massachusetts will not be accepted.

PUBLIC SAFETY AND CONVENIENCE

Trenches shall not be excavated in traveled ways until all materials and equipment required for such work are at the site and available for immediate use. When work is not in progress, trenches in areas subject to public travel shall be covered with steel plates capable of safely sustaining a 36.5-ton truckload with impact without additional compensation. The work in each trench shall be practically continuous, with the placing of pipe, backfilling, and paving of the roadway surfaces closely following each preceding operation. Payment for steel plates will be included under the unit bid price per linear foot for the respective pipe or conduit item, regardless of width of trench.

The Contractor shall take every measure necessary for the protection of personnel and property.

The Contractor shall at all times, until written acceptance of the physical work by the Owner, be responsible for the protection of the work and shall take all precautions for preventing injuries to persons or damage to property on or about the project.

BARRICADES AND WARNING SIGNS

All automotive equipment not protected by traffic cones or flares that is working on the project in areas open to traffic shall have one amber flashing or strobe warning light mounted on the cab roof or on the highest practical point of the machinery. These lights shall be in operation whenever the equipment is working or traveling in the project work area at a speed less than 25 M.P.H. Flashers must be visible to both oncoming and overtaking vehicular traffic and shall have a light source of 32 minimum candlepower and a flashing frequency of 50-60 times per minute.

All personnel who are working in areas open to traffic shall wear MHD approved safety vests.

All vehicles except passenger cars which are assigned to the project which operate at speeds of 25 MPH or less shall have an official SLOW MOVING VEHICLE emblem displayed in accordance with the provisions of Section 7 of Chapter 90 of the General Laws as amended by Chapter 684 of the Acts of 1970.

STEEL PLATES IN CONSTRUCTION ZONES

At the end of each working day where trenches in areas of public travel are covered with steel plates, each edge of such plates shall be either beveled or protected by a slope of 2-feet horizontally to 1-inch vertically. Temporary bituminous concrete patching material shall be used to construct the ramps. The cost of necessary patching materials and their maintenance and removal will be considered incidental to the item involved with no separate payment.

DISPOSAL OF SURPLUS EXCAVATED MATERIALS

All surplus excavated material not required or suitable for reuse on the project, or otherwise not wanted by the City, shall become the property of the Contractor and removed and disposed

of outside and away from the limits of the project at no additional cost to the City in accordance with all local rules and the approval of local governmental authorities having jurisdiction over the disposal of such materials. Any excess material that the City decides to keep shall be transported to and stored at a location within City to be identified by the Engineer. Loading, transporting, and unloading shall be done by the Contractor without additional compensation.

Payment for this work shall be included in the unit price under the applicable item from which the material was obtained.

PROMPT PAYMENT AND RELEASE OF RETAINAGE TO SUBCONTRACTORS

The Contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of subcontract work not later than 10 business days from the receipt of each payment the prime contractor receives from the City. Failure to comply with this requirement may result in the withholding of payment to the prime contractor until such time as all payment due under this provision has been received by the subcontractor(s) and/or referral to the City's Chief Procurement Officer for action which may affect the contractor's contract.

ARCHITECTURAL ACCESS BOARD TOLERANCES

The Contractor is hereby notified that they are ultimately responsible for constructing all project elements in strict compliance with the current AAB/ADA/PROWAG rules, regulations, standards and guidelines (Rules and Regulations).

All construction elements in this project associated with sidewalks, walkways, wheelchair ramps and curb cuts are controlled by 521CMR - Rules and Regulations of the Architectural Access Board (AAB) and the Accessibility Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG)

The Rules and Regulations specify maximum slopes and minimum dimensions required for construction acceptance. There is no tolerance allowed for slopes greater than the maximum slope nor for dimensions less than the minimum dimensions.

Contractors shall establish grade elevations at all wheel chair ramp locations, and shall set transition lengths according to the appropriate table in the Construction Standards (or to the details shown on the plans).

All wheelchair ramp joints and transition sections which define grade changes shall be formed, staked and checked prior to placing cement concrete. All grade changes are to be made at joints.

DEBRIS IN DRAINAGE AND SEWER STRUCTURES

The Contractor shall exercise care when conducting his operations so that the debris does not enter any structures. All structures and pipes shall be kept clean and operable. All costs of debris removals, damages due to back-ups, and cleaning by others due to operations of the Contractor shall be borne by the Contractor.

PROCEDURES FOR SHOP DRAWING SUBMITTALS

The following procedure shall be followed when making shop drawing submittals for this project:

1. The Prime Contractor shall submit four (4) sets of drawings directly to the Design Engineer for preliminary review.
2. The Design Engineer will send a written reply, returning two (2) sets to the Prime Contractor within seven (7) working days of receipt of the drawings.
3. If the Design Engineer's reply indicates rejection or advises corrections or additions to the drawings, steps 1 and 2 are repeated until the Design Engineer indicates that approval will be given.
4. The Contractor shall then submit four (4) sets of drawings to the Design Engineer for approval and distribution by the Design Engineer per the standard operating procedures of the Department.
5. The Contractor shall take care that every separate document in each set of every submittal shall carry the following identifying information:

Information Required

- a. Project No.
- b. Identifying Item Number from proposal, if applicable
- c. Locations where material is proposed to be used, if applicable
- d. Name of submitting contractor
- e. Personal signature and title of an official of the Prime Contractor authorized to make shop drawings submittals
- f. Date of signature or submittal

The Contractor shall not receive payment for nor will he be allowed to install any item or materials which require shop drawing approval unless and until he receives shop drawing approval for that item.

Within 15 days after receipt of an approved shop drawing for any item, the Contractor shall provide the Engineer written proof that he has ordered such approved materials required on the subject contract and a written confirmation on such order and delivery schedule from the manufacturer of the item. This delivery schedule shall be appropriate for timely completion of this project.

SAWCUTS

Sawcuts shall be made in existing pavements to provide a neat, square edge at limits of excavation and to provide a clean joint where new pavement and sidewalks are to match existing. Sawcuts shall also be made where shown on the Contract Drawings, or otherwise directed by the Engineer. Sawcuts shall be made to the depth directed and shall be clean and even. All cuts shall be made using an approved power driven saw. All sawcuts shall be considered incidental and compensation will be included in the contract bid prices for the related work items.

CONCRETE COLLARS

Concrete collars, as per the standard construction details, shall be placed around drainage and sewer and telephone structures, water service boxes, and utility boxes that are located in pavement areas as directed by the Engineer. High early strength concrete shall be used if required by the Engineer. Concrete used for collars shall not be measured for payment. Compensation shall be included in the contract bid price for the respective items.

ASPHALT JOINTS

Tack coat and sand shall be applied to all joints composed of hot mix asphalt immediately after paving, or as required by the Engineer. Tack coat and sand, when applied to joints as described, shall be considered incidental and compensation shall be included in the contract bid price for the respective hot mix asphalt items.

DEWATERING

Where excavations become inundated with water, whether from groundwater or surface runoff, the Contractor shall be responsible for dewatering the excavation prior to installing structures and/or pipes and backfill. Dewatering activities shall be performed in accordance with the details shown on the plans. Locations of materials and methods used for dewatering shall be approved by the Engineer prior to use. Costs associated with dewatering activities shall be considered incidental to the overall project, and no additional compensation shall be made.

PROTECTION OF EXISTING TREES

Trees and shrubs that are not designated on the plans, or by the Engineer, to be cut, removed, destroyed or trimmed shall be saved from harm and injury. The Contractor shall provide measures to prevent any harm and injury caused during construction operations.

DISTURBANCE OF EXISTING BOUNDS

Where existing bounds are disturbed by the Contractor's activities, they shall be reset by a Registered Land Surveyor at the Contractor's expense. Where the existing bounds conflict with the proposed construction, removal and resetting of the bounds shall be paid for under Item 711 - Bound Removed and Reset.

A certification by the Registered Land Surveyor performing the work shall be made and submitted to the Engineer for all bounds reset.

MATERIALS TESTING

All materials used in the construction of the project shall be subject to inspection, examination, or testing, by a certified materials testing laboratory as determined necessary by the Engineer.

RECORD DRAWINGS (AS-BUILT) DOCUMENTS

At the conclusion of construction and prior to final payment the Contractor shall submit ties to all curb stops, bends, valves and other water appurtenances installed as well as invert elevations for all drainage or sewer structures installed or altered as part of the Work under this Contract. Copies of legible and detailed field notes or marked up design plans shall be provided to the Engineer.

ITEM 120.1

UNCLASSIFIED EXCAVATION

CUBIC YARD

The work to be done hereunder consists of removing and disposing of materials in accordance with the relevant provisions of Section 120 as amended and supplemented by the following: all materials obstructing the execution of other required work as shown on the plans and/or as directed except those materials for which payment is made as part of other items of this contract.

The Contractor's attention is directed to the fact that materials shall be disposed of in accordance with the provisions written hereinbefore under the heading "Disposal of Surplus Excavated Materials".

Materials encountered in the excavation may include earth, bituminous or cement concrete pavements and curb, Class A Rock, ledge, masonry, pipe, timber, cobblestones, stone pavers, cinders, trees and stumps, and other materials from previous constructions.

Where, in the opinion of the Engineer, the present roadway foundation is of suitable material, it shall only be excavated to a depth determined by the Engineer. Should unsatisfactory subgrade material be encountered, the Engineer may direct that excavation be carried to satisfactory material and the area be backfilled with gravel borrow, or other material, as directed by the Engineer. Payment for gravel borrow, if used, will be made under Item 151, Gravel Borrow.

Any work done or materials used for backfilling in excess of the depth authorized shall be at the Contractor's expense and will not be paid for under the contract items involved.

The accepted quantity of Unclassified Excavation will be paid for at the contract unit price per cubic yard under Item 120.1, Unclassified Excavation.

ITEM 153.

CONTROLLED DENSITY FILL

CUBIC YARD

The work to be performed under this Item shall conform to the relevant provisions of Section 150 and the following:

Excavatable Controlled Density Fill (CDF) shall be used as backfill material in trenches, abandoned structures or other locations if required by the Engineer. Materials shall meet the

requirements specified in the following subsection of Division III, Materials: Controlled Density Fill, Type 2E M4.08.0.

Controlled Density Fill shall be placed in a manner such that no damage will occur to utility lines, pipes or structures. The material shall be placed so that no voids are left upon completion of the backfilling process.

Controlled Density Fill shall be measured in place by the cubic yard. Payment for Controlled Density Fill will be paid for at the contract unit price per cubic yard. No additional compensation shall be made for material placed beyond the limits of excavation as shown in the plans or as determined by the Engineer.

<u>ITEM 302.06</u>	<u>6 INCH DUCTILE IRON WATER PIPE (RUBBER GASKET)</u>	<u>FOOT</u>
<u>ITEM 302.08</u>	<u>8 INCH DUCTILE IRON WATER PIPE (RUBBER GASKET)</u>	<u>FOOT</u>
<u>ITEM 309</u>	<u>DUCTILE IRON FITTINGS FOR WATER PIPE</u>	<u>POUND</u>

Under these items, the Contractor shall furnish, lay, joint, test and disinfect all water pipe and fittings, as indicated on the Contract Drawings and in accordance with the relevant provisions of Section 140 and Section 300 of the Standard Specifications, the American Water Works Association Standards, and in accordance with the current practice and standards of the Waltham Water & Sewer Division.

The Contractor shall be responsible for notifying the Waltham Water & Sewer Division and the Engineer of service shutdown 48 hours prior to the actual shutdown. The shutdown of the water services will be performed only by personnel of the Waltham Water & Sewer Division. Valves, hydrants, corporations and curb stops will be operated by the Waltham Water & Sewer Division personnel only.

No water main or service supplying any home, place of business or fire hydrant shall be shut down for more than four hours unless an approved temporary means of supply is provided. Such temporary provisions will be considered as being for the convenience of the Contractor and as much will not be measured for direct payment.

The Contractor will be responsible to flyer affected areas prior to planned water service interruption 24 hours in advance. In the event of an emergency shutdown during and after normal hours of operation the contractor shall contact Waltham Water & Sewer Division 781-314-3855 immediately to affect shutdown. During normal hours of operation contractor will make every attempt to notify the abutters affected by the emergency water service interruption with sensitive receptors such as schools, day care providers, restaurants and businesses receiving priority status in notification.

Data relative to existing water mains, services, etc. shown on the plans has been compiled from plans and field information but such data is not guaranteed as to exact location or elevation.

Lines and Grades

Piping shall be installed at the locations indicated on the Contract Drawings and as designated in these Specifications. Unless otherwise shown or stated, the minimum total finished cover over the top of the barrel of all installed pipe shall be 5 feet. Where pipe is installed at less than the required cover, the Contractor shall furnish and install insulation as directed by the Engineer.

All excavation necessary for the pipe installation shall be included in the cost of the pipe. The location of the pipe is to be marked with an identification tape buried 2 feet below finished grade. The tape shall be 6 inches in width by 0.004 inches in thickness and shall read "Caution - Water Line Buried Below".

Pipe Foundations and Backfilling

All pipes, fittings and appurtenances to be laid in open trench excavations shall be bedded in and uniformly supported over its full length as shown on the Contract Drawings.

Backfill to an elevation 12 inches over the top of the pipe shall be a sand blanket placed in layers not to exceed 6 inches. The sand shall conform to Section M1.04.0 Type A for sand borrow. The sand blanket may be omitted, and suitable excess excavated material used for backfilling over the pipe, provided that no stone larger than 2 inches is in contact with the water pipe. The sand blanket shall be considered incidental to the water pipe items.

Unsuitable trench backfill material shall be replaced with suitable excess excavated material. Gravel borrow or another material approved by the engineer shall be used for backfill if suitable excess material is not available.

Inspection of Pipe Before Installation

All pipe, fittings and appurtenances shall be carefully inspected in the field by the Engineer before lowering into the trench. All pieces found to be defective as determined by the Engineer, shall be pulled out and not installed. Such rejected pipe shall be clearly tagged in such a manner as not to deface or damage it, and the pipe shall be removed from the job site.

Installation of Pipe and Fittings

The Contractor shall maintain at least 10 feet horizontally from any existing or proposed sewer pipe. If this separation is not attainable, then the elevation of the crown of the sewer shall be at least 18 inches below the invert of the water line.

All pipe and fittings shall be carefully handled by equipment of sufficient capacity and proper design to avoid damage to the pipe and fittings. No defective pipe or fittings shall be laid or placed in the trench. Any piece discovered to be defective after having been laid shall be removed and replaced by a sound and satisfactory piece at the expense of the Contractor.

Each pipe and fitting shall be cleared of all debris, dirt, etc., before being laid and shall be kept clean until accepted in the complete work.

Pipe and fittings shall be laid accurately to the lines and grade indicated on the drawings or as required. Care shall be taken to ensure alignment both horizontally and vertically, and to give buried pipe a firm bearing along its entire length. Pipes shall not be laid in water, nor shall water be allowed to flow through them. The Contractor shall take all necessary precautions to prevent flotation of the pipe in the trench.

Backfilling of the pipe trench shall be done as specified under Section 300 of the Standard Specifications.

Connection to Other Facilities

The water pipe shall be connected to existing or new structures and/or piping by the Contractor as shown on the Contract Drawings. Test pits shall be dug as directed by the Engineer to verify the size and the type of existing pipe where connections are to be made. The Contractor shall furnish and install all such fittings and appurtenances as are necessary to make the connections shown whether all such fittings are detailed or not. Couplings, where required, shall be of a type equal to HYMAX® by Krausz; Smith Blair, Style 441; Dresser, Style 253 or equal approved by the Water Superintendent. Couplings shall be provided with plain, Grade 27 rubber gaskets and with black, steel, track-head bolts and nuts.

All fittings relative to the water pipe shall be paid for under Item 309. All concrete for thrust blocks shall be considered incidental to the pipe and fitting items. The other means of restraint (method of restraining may either be of an interlocking type or mechanical joint with retainer and as specified by the Waltham Water & Sewer Division) shall be installed in addition to or in lieu of thrust blocks as directed by the Water Superintendent. Pipe anchors shall be used when and as directed.

Laying Pipe and Fittings

Gasket type joints shall be made up by first inserting the gasket into the groove of the bell and applying a thin film of special non-toxic gasket lubricant uniformly over the inner surface of the gasket which will be in contact with the spigot end of the pipe. The end of the plain pipe shall be chamfered to facilitate assembly. The end shall be inserted into the gasket and then forced passed it until it seats against the bottom of the socket. A metal feeler shall then be used to make certain the gasket is properly located.

A minimum of two brass wedges shall be installed per pipe joint and fitting to maintain conductivity and facilitate locating pipe in the future. Restrained type joints shall be used where straight pipe joints are deflected to bend pipe line on a curve. The method of restraining may either be of an interlocking type or mechanical joint with retainer gland as specified by the Waltham Water & Sewer Division.

Reaction or thrust blocks of concrete shall be constructed at all tees, plugs and bends, as directed or as detailed on the drawings. The blocks shall be poured against undisturbed original ground and shall be so placed that pipe joints will be accessible for any possible future repairs. Joints must be protected by felt roofing paper prior to placing concrete. Method of restraint may be either locking joint or mechanical restraint as approved by the Water Superintendent.

Hydrant connections are to be restrained for the full length of the pipe from the main to the hydrant.

Ductile Iron Pipe and Fittings

All material shall be new, conform to the current standards of the Waltham Water & Sewer Division and be approved by them.

All ductile iron pipe shall be designed in accordance with AWWA C150 and shall be manufactured in accordance with AWWA C151.

The ductile iron pipe shall be Thickness Class 56 cement lined seal coated and conform to the ANSI A21.50, A21.51 Specification for Ductile Iron Pipe. Pipe joints and gaskets shall be of the push-on joint type in accordance with ANSI A21.11 and shall conform to AWWA C111.

Ductile iron fittings shall be Thickness Class 56, Pressure Class 350, cement lined, and shall meet the requirements of AWWA C153, ANSI A21.4 and A21.10. All fittings are required to be equipped with mechanical joints and retainer glands. Mechanical joint fittings in sizes 6 inches through 24 inches shall be ductile iron compact fittings.

Gaskets, glands, nuts, bolts and accessories shall conform to AWWA C111 or C153 as appropriate. Gaskets shall be of plain tipped rubber, suitable for exposure to the liquid within the pipe. Glands shall be ductile or cast iron. Bolts and nuts shall be high strength alloy.

Hydrant tees shall be anchor type and have line bells conforming to the requirements of the main pipe. The branch shall have a plain end with an integral gland and rotating mechanical joint gland to provide a restrained connection.

Pipe and fittings shall be furnished with approved joint restraining appurtenances as specified herein, or as indicated on the drawings, to keep the piping from pulling apart under pressure.

Flexible Couplings:

The Contractor shall use solid sleeve coupling fittings for joining pipe. With the approval of the Engineer, sleeve-type flexible couplings may be substituted.

All sleeve-type couplings and accessories shall be of a pressure rating at least equal to that of the pipeline in which they are to be installed.

Couplings shall be cast or ductile iron and shall be provided with gaskets of a composition suitable for exposure to the liquid within the pipe.

Joint Restraints:

Where indicated or necessary to prevent joints or sleeve couplings from pulling apart under pressure, anchoring and joint restraint methods shall be utilized. Methods shall be restrained joint systems. The number of joints to be restrained shall be as shown on the construction plans or provided by the Engineer.

Restrained joint system for standard mechanical joint or push on joint pipe shall be Megalug™ by EBAA Iron Sales Inc.; 1400 Series by Ford; StarGrip 3000 Series by Star Pipe Products; or approved equal. Methods that rely on the use of friction clamps and/or retainer glands with set screws alone are not acceptable.

Concrete thrust blocks may only be used for 6-inch, 8-inch, 10-inch, or 12-inch pipe where use of a joint restraint system is not feasible. Use of concrete thrust blocks shall be installed with the minimum bearing area (in square feet) against undisturbed material in accordance with the following:

Size of Main	90° Bends, Tees, Caps and Plugs	45° Bends and Wyes	22½° Bends	11¼° Bends
6 & 8 in	5	4	2	2
10 & 12 in	12	9	5	2

Tie rods may only be used for 6-inch, 8-inch, 10-inch, or 12-inch pipe where use of a joint restraint system is not feasible. Bolts shall have adequate length to allow nuts on both sides of the gland. Tie bolts shall have the same diameter as the tie rods and be in accordance with the following:

Pipe Size	Tie Rod	
	Number	Diameter
6	2	½"
8	2	¾"
10	2	¾"
12	4	¾"

Lining Coating

The inside of ductile iron pipe and fittings shall be given a cement lining and bituminous seal coat in accordance with AWWA C104/ANSI A21.4. Cement lining shall be double the thickness that is specified in AWWA C104.

The outside of ductile iron pipe and fittings shall be coated with bituminous varnish as required by AWWA C104/ANSI A21.4.

Machined surfaces shall be cleaned and coated with a suitable rust preventive coating at the shop immediately after being machined.

Handling and Cutting Pipe

The Contractor's attention is directed to the fact that the cement lining is comparatively brittle. Every care shall be taken in handling and laying pipe and fittings to avoid damaging the pipe or lining, scratching or marring machined surfaces, and abrasion of the pipe coating or lining.

Any fitting showing a crack and any fitting or pipe which has received a severe blow that may have caused an incipient fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work.

If any pipe showing a distinct crack and in which it is believed there is no incipient fracture beyond the limits of the visible crack, the cracked portion, if so approved by the Engineer, may be cut off before the pipe is laid so that the pipe used is perfectly sound. The cut shall be made in the sound barrel at a point at least 12 inches from the visible limits of the crack. The cracked portion shall not be included as part of the measurement for payment under this section.

Temporary Plugs:

At all times when pipe laying is not actually in progress, the open ends of pipe shall be closed by temporary watertight plugs or by other approved means. If water is in the trench when work is resumed, the plug shall not be removed until all danger of water entering the pipe has passed.

Deflection of Pipe

In laying ductile iron pipe, the following deflections, based upon a 20 foot length of pipe, shall not be exceeded.

<u>Nominal Size of Pipe (inch)</u>	<u>Gasket Type Jacket Deflection (inch)</u>
6 to 12	12
16 to 24	10

Field Testing

The testing shall conform to AWWA Standard C600, and all equipment shall be approved by the Waltham Water & Sewer Division. The water pipe shall be given pressure and leakage tests in sections of approved length. For these tests, the Contractor shall furnish a water measuring device and a pressure gage. The Contractor shall also furnish and install suitable temporary testing plugs or caps for the pipeline; all necessary pressure pumping equipment, pipe connections, and other similar equipment; and all labor required; all without additional compensation. Compensation for testing shall be included in the unit price for pipe and fittings. The meter and gage shall be installed by the Contractor in such a manner that all water entering the section under test will be measured and the pressure in the section indicated, and equipment shall be kept in use during both tests.

The scheduling of pressure and leakage tests shall be as approved by the Engineer.

Unless it has already been done, the section of pipe to be tested shall be filled with water of approved quality, and all air shall be expelled from the pipe. If air release assemblies are not available at high points for releasing air, the Contractor shall make the necessary excavations and do the necessary backfilling and shall make the necessary taps at such points and install corporation stops. Corporation stops shall be capped with brass or bronze caps upon completion of the test and left in place.

The pressure and leakage tests shall be as specified in Section 301.60 L of the 1988 Standard Specifications for Highways and Bridges and the American Water Works Association Standard C600, Section 4.1. The test pressure shall be 200psi, the test duration shall be 2 hours.

The lengths of joint to be used in determining the allowable leakage shall be based on the nominal diameter of the pipe.

If the section shall fail to pass the pressure test, the leakage test, or both, the Contractor shall do everything necessary to locate, uncover, even to the extent of uncovering the entire section, and repair or replace the defective pipe, fitting, or joint, all at no additional cost to the owner and without extension of time for completion of the work.

A report containing calculations and documentation pertaining to the pressure and leakage testing shall be submitted to the Waltham Water & Sewer Division

If, in the judgment of the Engineer, it is impracticable to follow the foregoing procedure exactly for any reason, modification in the procedures shall be made as required or approved, but in any event the Contractor shall be responsible for the ultimate tightness of the line within the above leakage requirements.

The Owner, at its own expense, may test the water pipe independent of or in place of the Contractor's test. The Owner, or its agent, shall schedule such test so as to minimize any delay to the Contractor. The Contractor is notified that this test may cause delay in his work and he shall not receive reimbursement for costs incurred during a reasonable delay. Should any section of pipe fail, the Contractor shall have no claim for any expenses incurred during the delay required to schedule and complete a new test.

Insulation: Direct Buried Pipe

Insulation shall be cellular glass type. The insulation shall be a cellular glass product that is made specifically for thermal insulation of piping and is compatible with the piping material. Insulation shall be a minimum of 2 inches thick, unless otherwise shown on the drawings.

Insulation shall be composed of all glass sealed cells having no binders or fillers. The completed product shall be rigid and impermeable, with an ultimate compressive strength of at least 90 psi. The thermal conductivity of the cellular glass shall be no higher than 0.29 BTU-in.1hr e ft2 CII OF @ 75°F and 0.28 BTU-in.1hr iii ft2 CII OF @ 50°F.

The cellular glass insulation shall comply with all requirements of ASTM C552. The cellular glass shall be fabricated in half sections whenever possible.

Bands for securing the insulation to the pipe shall be 0.5 inches wide by 0.020 inches thick made of stainless steel.

The jacketing for the insulation shall be one of the following methods:

1. A 125 mil (3mm) thick, heat sealed high polymer asphaltic membrane with an integral glass scrim and integral 1 mil (.02mm) aluminum foil and a thin Mylar film on the surface, equal to Pittwrap Jacketing as manufactured by Pittsburgh Coming or equal.
2. Mastic - asphalt cutback mastic, equal to Pittcote 300 Finish, as manufactured by Pittsburgh Coming or equal.
3. Reinforcing fabric - an open mesh polyester fabric with a 6 x 5.5 mesh/inch configuration, equal to PC Fabric 79, as manufactured by Pittsburgh Coming or equal.

The insulation shall be "Foamglass" with jacketing as manufactured by Pittsburgh Coming Corporation, Pittsburgh, P A, or an approved equal. A minimum of 6" layer of fine sand shall surround the insulated pipe before rock free backfill is used in the trench.

The Foamglass and jacketing shall be installed per the manufacturer instructions included in the approved shop drawings.

Tees, valves, and bends shall be covered with form fitting factory made sections.

Cellular glass shall not be applied to the piping until the piping has been wiped clean and supported so that there is adequate space to apply the full thickness of insulation and the covering completely around the pipe. The Contractor must obtain the Engineer's approval before the installation begins.

Cellular glass insulation and jacketing shall be applied in accordance with the manufacturers installation procedures included in the approved shop drawings.

There shall be at least three 0.50-inch wide stainless steel bands secured around each joint and these bands shall be placed not over 9 inches on center on straight sections of pipe. Tees, valves, and bends shall be covered with form fitting factory made sections.

All testing of the piping system, such as hydrostatic, x-ray or other such testing, shall be accomplished prior to application of insulation.

Disinfection and Flushing

After a section of the main has been tested and found acceptable, it shall be flushed free of all heavily treated water by the Contractor. After completion of the flushing operation, the Contractor shall disinfect the water mains with a solution consisting of 50 ppm of chlorine in accordance with the AWWA C651 Specifications for Disinfecting Water Mains. The preferable point of chlorine application shall be at the source of the water for the section being sterilized. The chlorine solution shall be fed into the pipe through a corporation stop, using a hypochlorinator. This work shall be done with the attendance of a representative of the Waltham Water & Sewer Division.

The water shall be tested bacteriologically for coliform group bacteria. A minimum of one (1) sample shall be taken per 3,000 linear feet. Testing must be done by a Massachusetts State Certified Laboratory and the results of all tests must be submitted to the Waltham Water & Sewer Division. The Contractor shall be solely responsible for all costs associated by the aforesaid test.

The contact period for the disinfection shall be at least 24 hours and a longer period will be required if tests of residual chlorine show it to be necessary for proper disinfection. All valves and hydrants shall be operated during treatment to insure their thorough contact with the disinfecting solution.

Following chlorination, the mains shall be flushed again to remove any evidence of contamination, as determined by the bacteriological analysis. The quality of water shall remain acceptable for at least two days after the flushing.

A report containing amounts of water flushed, amounts of chlorine used and chlorine residuals after the test period must be submitted to the Waltham Water & Sewer Division. If the initial treatment fails to produce the desired result, the chlorination procedure must be repeated.

For this work, the Contractor shall furnish all equipment, materials, and labor required. Water pipe shall be measured in feet, in place, along the axis of the pipe, excluding, however, the length occupied by new iron fittings and gate valves. Where two pipes join, measurement will be made to the intersection of the axis, excluding the length occupied by new ductile iron fittings.

New ductile iron fittings including socket clamps and tie rods shall be measured by the pound and the quantity to be paid for shall be the weight stated on the invoice of the supplier, or the manufacturer's rated weight as listed in the catalog, whichever is the least weight.

Payment for ductile iron pipe shall be made at the contract unit price per foot for water main of the size shown, which price shall be full compensation for the removal and disposal of existing water pipe (excluding Asbestos Cement) and appurtenances encountered during construction, cutting and plugging the existing water pipe, and furnishing all materials, preparation and installation, including all excavation, backfilling and compaction, pipe bedding, testing and disinfecting, brass caps and wedges, buried pipe identification tape, cement lining, and for all labor, equipment, tools and incidentals necessary to complete the item. Crushed stone used to replace unsuitable bottom material for water main bedding shall be paid for under Item 156.

Payment for new ductile iron fittings shall be made at the contract unit price per pound of fitting installed and accepted, which price shall be full compensation for furnishing all materials, and for all labor, equipment, tools and incidentals necessary to complete the item, including all excavation, backfilling and compaction, pipe bedding and sand blanket, testing and disinfecting.

Rock excavation when encountered in the trenching operation shall be paid for under Item 144.

The cost of the sand blanket over the water main shall be considered incidental to the cost of the ductile iron water pipe.

Gravel borrow required to replace unsuitable backfill material shall be paid for under Item 151.

The cost of furnishing and installing concrete for thrust blocks shall be incidental to the pipe and fitting items

<u>ITEM 350.6</u>	<u>6 INCH GATE AND BOX</u>	<u>EACH</u>
<u>ITEM 350.8</u>	<u>8 INCH GATE AND BOX</u>	<u>EACH</u>

Under these Items, the Contractor shall furnish and install new valves, valve boxes and appurtenant materials and equipment, all as indicated on the drawings and as herein specified. Valves shall be applicable for a design working pressure of 250 psi.

Valves shall be equipped with mechanical joint ends and mechanical joint restraints as specified for Items 309 unless otherwise specified by the Water Superintendent. All internal and external surfaces must be epoxy coated, and the seal between the stem and bonnet must be composed of a cartridge.

Valves shall be Resilient seat, wedge type gate valves shall be manufactured to meet all applicable requirements of AWWA C509 or AWWA C515. All valves shall be bubble-tight at 200 psi water working pressure, tested in both directions.

Valve bodies shall be of cast or ductile iron and shall have non-rising threaded bronze stems acting through a bronze stem nut. Opening nuts shall be 2 inches square and shall open right, clockwise. All buried valves shall have mechanical joint ends.

Valve wedges shall be of ductile iron with resilient seating surfaces permanently bonded to the wedges in strict accordance with ASTM D429 or attached to the face of the wedges with stainless steel screws. Each valve shall have a smooth, unobstructed water way free from sediment pockets.

Valves shall have low friction, torque-reduction thrust bearings. All O-rings and gaskets shall be removable without taking the valves out of service.

An NSF 61-approved epoxy coating, which is safe for potable water, shall be applied to exterior and interior valve surfaces.

Valves for horizontal applications shall have Delrin wedge covers, and be specifically designed for horizontal installation.

Resilient seat gate valves shall be as manufactured by Mueller Co., Decatur, IL; or approved equal.

Post indicating valve assemblies shall have a post and indicator as an integral part of the resilient seated gate valve assembly. The unit shall be provided with a detachable crank which OPENS the valve in a clockwise (RIGHT) direction. Shafts shall be Type 304 stainless steel. Post indicators and valves shall be UL listed, FM approved. Post indicators and valves shall be as manufactured by Mueller Co.; or approved equal."

Valve Boxes And Extensions:

Valve boxes shall be manufactured in North America. The minimum outside diameter of the boxes shall be 5¼ -inches and the lengths shall be as necessary to suit the ground elevation and the depth of each valve operator, regardless of the depth of cover.

excavated to the depth of the existing gate valve and removed. The replacement box shall be set plumb at the same location. Gravel borrow backfill will be used and shall be thoroughly compacted with a power tamper. Adjustment to final grade shall be done just prior to placing the final pavement course or sidewalk material. Any castings determined by the Engineer to be of no further value to the Owner shall become the property of the Contractor and be disposed of off the project site by the Contractor without additional compensation.

Payment for the adjustment of gate boxes shall be at the contract unit price per each, complete in place, which price shall be full compensation for all necessary labor, materials, and equipment required to satisfactorily complete the work, including adjustments to temporary grades and adjustments to the final grade.

Work under this item will only be accepted if the water crew is able to operate the valve after the box has been replaced and/or reset.

ITEM 371.08

8 INCH COUPLING

EACH

Couplings shall only be allowed when connecting standard outside diameter pipe to oversize or pit cast pipe. The coupling shall be of a type equal to HYMAX® by Krausz; Smith Blair, Style 441; or an equal approved by the Water Superintendent. Couplings shall be provided with plain, Grade 27, rubber gaskets and with black, steel, track-head bolts with nuts. There shall be zero gaps between proposed water mains and existing water mains within proposed couplings.

Payment for couplings shall be made at the Contract unit price for the size unit installed which price shall be full compensation for furnishing all material, including excavation and backfilling, and for preparation and installation, labor, equipment, tools, and incidentals necessary to complete this item.

ITEM 376

HYDRANT

EACH

The Contractor shall furnish, install, and test fire hydrants and appurtenant materials and equipment all as indicated on the drawings and as herein specified.

Hydrants shall conform to the requirements of AWWAC502. The hydrant shall be of the anti-freeze and compression type. They shall be equipped with a 5-1/4-inch main valve and 6-inch mechanical joint inlet. Hydrants shall open right (clockwise). Valves shall open right (clockwise).

Hydrants shall have one 4-1/2-inch pumper and two 2-1/2-inch hose connections. Threads shall be NST. Hydrant operating and nozzle cap nuts shall be of pentagonal shape and measure one and one half inches from flat to point. The height of the nut shall not be less than one inch.

All internal operating parts including main valve, main valve seat, drain valve mechanism, operating rod, etc., shall be removable without excavating.

Main valve seats shall be made of brass or bronze, and shall screw into a seat ring or sub-seat, which shall also be made of brass or bronze. Hydrants shall be traffic models with frangible bolts or breakaway couplings. Details of hydrant design shall meet the requirements of the Owner.

For purposes of standardization, hydrants shall be dry barrel American-Darling model B-62.

Depth of earth cover over the main line shall be normally 5 feet. All hydrants shall meet the requirements of the Waltham Water & Sewer Division.

Pressure ratings must not be less than 350 psi. Hydrant connections are to be restrained for the full length of the pipe from the main to the hydrant. All hydrants shall be painted to conform to the Waltham Water & Sewer Division Standards.

Hydrants shall be set plumb. The hydrant connecting pipe shall have at least the same depth of cover as the distribution main. The hydrants shall be bedded on a firm foundation set upon a slab of stone or concrete not less than 4 inches thick and 15 inches square. The side of the hydrant opposite the pipe connection shall be firmly wedged against the vertical face of the trench with a concrete thrust block, which is considered incidental to the item, as indicated on the drawings. Not less than 4 cubic feet of crushed stone shall be placed around the base of each hydrant to 6 inches above the drain holes.

Broken stone shall be placed around the base of the hydrant at the location of the drain hole, and backfill around the hydrant shall be thoroughly compacted to the grade line in a satisfactory manner.

Hydrants shall have the interiors cleaned of all foreign matter before installation, and shall be inspected in both the open and closed positions.

The body of the hydrant shall be of sufficient length to allow the hydrant to be set at the proper elevation, as shown on the drawings or as directed by the Engineer. Extensions shall be furnished and installed at the Contractor's expense, when required for greater depths.

The length of the hydrant barrel shall be such that when installed with the proper depth of cover on the branch pipeline, the hydrant will be set with the normal ground line of the barrel within 3 inches of the actual finished ground surface.

Payment for this item will be at the Contract unit price per each, which price shall include full compensation for furnishing all labor, materials, tools, and equipment necessary and for furnishing, installing and/or setting hydrants as specified including testing, excavation, crushed stone, backfilling, disposal of surplus material, connection to existing, tie rods, connection couplings, restraining glands, megalugs and extension sections and all other work necessary for a complete hydrant.

ITEM 376.3**HYDRANT - REMOVED AND STACKED****EACH**

The work to be done under this Item shall conform to the relevant provisions of Section 300 of the Standard Specifications amended and supplemented as follows:

In the work of removing hydrants which are to be replaced with new hydrants, the castings shall be exposed, care being taken that they are not damaged by excavating or other machinery. The joints shall then be opened and the casting carefully removed. Any materials damaged during this work due to the Contractor's negligence shall be replaced by the Contractor at no additional cost to the owner. The removed hydrant shall be delivered by the Contractor to the Waltham Water & Sewer Division.

The removal and stacking of hydrants shall be paid for at the unit contract bid price which price shall be full compensation for each hydrant assembly removed and stacked and delivered to the Waltham Water & Sewer Division. If the Owner decides not to pick up the hydrants the removal and disposal of the units will become the responsibility of the Contractor at no additional cost to the Owner.

ITEM 472.1 HOT MIX ASPHALT FOR TEMPORARY PATCH (3")**SQUARE YARD****ITEM 472.2 HOT MIX ASPHALT FOR PERMANENT PATCH (5")****SQUARE YARD**

The work to be done under this Item shall conform to all the relevant provisions of Section 472 and the following:

Work under Item 472.1 - Hot Mix Asphalt For Temporary Patch (3") and Item 472.2 - 2 Hot Mix Asphalt For Permanent Patch (5") shall consist of making roadway pavement repair patches on City roads. The areas for patching shall be identified by the Engineer. Areas to be patched shall be sawcut and the pavement removed, a gravel base of 12" compacted depth shall be installed and compacted hot mix asphalt shall be installed to be flush with the top of the adjacent roadway surface.

For item 472.1, the bituminous concrete surface shall be laid in two courses to a depth after rolling of 3 inches. The binder course shall be 1.5 inches thick and parallel to the proposed grade of the finished surface. The top course shall be 1.5 inches in thickness after rolling and flush with the adjacent pavement surface.

For item 472.2, the bituminous concrete surface shall be laid in two courses to a depth after rolling of 5 inches. The binder course shall be 2.5 inches thick and parallel to the proposed grade of the finished surface. The top course shall be 2.5 inches in thickness after rolling and flush with the adjacent pavement surface.

In place of the 12" gravel base, excess reclaimed pavement borrow material may be used at no additional cost.

All areas that are to be patched as described above shall be marked out in the field and approved by the Engineer prior to excavation.

Payment for Item 472.1 and 472.2 shall be at the contract unit price per square yard, complete in place, which price shall be full compensation for saw cutting, excavating, installation of the gravel base, compacting, grading, paving and all labor, equipment and materials necessary to complete the work.

ITEM 570.2

HOT MIX ASPHALT CURB TYPE 1, 2 OR 3

FOOT

The work to be done under these Items shall conform to the relevant provisions of Sections 501, 580, and the following:

Hot mix asphalt curb shall be constructed in accordance with the details shown in the plans, where required by the Engineer, and shall be measured per linear foot. Where noted on the plans, and at the Engineer's direction, hot mix asphalt berm shall be used in place of curb at no additional cost.

The work under this item shall include saw cutting the existing pavements, excavation, installation of gravel and binder course HMA berm foundation, and the installation of top course pavement patch. Removal and disposal of existing bituminous shall be considered incidental to the installation of new curbing, and no separate payment will be made.

Payment for Item 570.2 will be made at the contract unit bid price per foot of HMA curb and/or HMA curb, complete in place, which price shall be full compensation for all labor, equipment and materials necessary to satisfactorily complete the work.

ITEM 580

CURB REMOVED AND RESET

FOOT

The work to be done under these Items shall conform to the relevant provisions of Sections 501, 580, and the following:

The work under these items shall include saw cutting existing pavements, excavation, gravel foundation and backfilling, curbing, and cement concrete, as shown on the details. Removal and disposal of existing bituminous or concrete curbing shall be considered incidental to the installation of new curbing, and no separate payment will be made.

All work requiring chamfering or cutting of curb or edging shall be considered incidental and shall be included in the unit bid price of the respective item. All existing curb or edging determined suitable for reuse on the project which is not reset at its present location shall be removed and stacked by the Contractor at a designated location within the City for further reuse on the project at such location or locations as directed by the Engineer. Costs of transporting and stacking all such curb or edging to be re-used on the project shall be included in the contract bid price for Item 580 – Curb Removed and Reset as applicable.

All existing curb or edging that is not to be re-used on the project shall be transported to a

location within City to be identified by the engineer. All such curb or edging shall be included in the contract unit price for Curb Removed and Stacked. Any curb determined by the Engineer to be unsuitable for further reuse shall become the property of the Contractor and be disposed of off the project site by the Contractor without additional compensation.

If required, curb inlets removed and stacked shall be paid for under item 590 at no additional cost.

Payment for the above items shall be at the contract unit price per linear foot, complete in place, which price shall be full compensation for curbing, cutting and chamfering of curb as required, excavation, gravel for foundation and backfill, installation, concrete, and all labor, equipment and materials necessary to complete the work.

ITEM 697.1

SILT SACK

EA

The work to be done under this Item shall conform to the relevant provisions of Sections 670, 767, and the following:

During construction and until disturbed soils are stabilized, sediment control silt sacks shall be installed in catch basins located in areas subject to storm water runoff from disturbed areas, and where required by the Engineer. Silt sacks shall be installed in accordance with the details shown on the plans and this special provision.

Silt sacks shall be manufactured from a specially designed woven polypropylene geotextile and sewn by a double needle machine, using a high strength nylon thread. Silt sacks shall be manufactured to fit the opening of the catch basin and shall have integral straps or handles to facilitate lifting and emptying the sack. Silt sacks shall also have a marking or other visual means of indicating when the sack should be emptied.

Where the catch basin to be protected has an adjacent curb inlet, the silt sack shall also have an integral foam block insert that will fit into the curb inlet opening to prevent runoff from bypassing the silt sack. The cost of these foam blocks is to be included in the unit cost of the silt sack, no separate payment will be made.

Silt Sack will be measured per each catch basin that has a silt sack installed. Payment for silt sacks will be made at the contract unit bid price per each, complete and in place, which price shall be full compensation for all labor, equipment and materials necessary to install, inspect, maintain, clean, reinstall, and remove the silt sack until disturbed areas have been stabilized, or until otherwise determined by the Engineer.

ITEM 701

CEMENT CONCRETE SIDEWALK

SQUARE YARD

ITEM 702

HOT MIX ASPHALT WALK SURFACE

SQUARE YARD

ITEM 703

HOT MIX ASPHALT DRIVEWAY

SQUARE YARD

The work to be done under this Item shall conform to the relevant provisions of Section 701

and the following:

In meeting existing sidewalks and driveways in the above areas, the Contractor shall saw cut by mechanical means using an approved power driven saw a neat straight line to permit the new work to blend satisfactorily with contiguous existing surfaces.

The work under these items shall include sawcutting existing pavements, excavation, fine grading and compacting, placing an 8" gravel foundation, and installing the cement concrete, or hot mix asphalt. Wire mesh reinforcement shall be used in construction of cement concrete sidewalks and wheelchair ramps as detailed in the plans

Where the existing subbase material is deemed suitable by the Engineer, it may be left in place and re-used. Reclaimed pavement borrow material may be substituted for gravel borrow for sidewalk foundations, where directed by the engineer, however no additional payment will be made for this substitution.

All wheelchair ramps shall be constructed with detectable warning panels as shown on the MHD Construction Details. Payment for the detectable warning panels shall be included under Items 701

Payment for work under these items shall be made at the unit contract price per square yard of cement concrete sidewalk, HMA walk surface, and HMA driveways, and shall be full compensation for all necessary labor, equipment, and materials required to satisfactorily complete the work including saw cutting, excavation, gravel borrow, and fine grading.

ITEM 707.8

STEEL BOLLARD

SQUARE YARD

The work to be done under this Item shall conform to the relevant provisions of Sections 700, and the following:

The work of this Section consists of providing and installing steel bollards as indicated on the Drawings and/or as specified herein and includes, but is not limited to, the following:

Galvanized and concrete filled steel bollards with footings, completely installed.

Excavation for bollards and footings and concrete in conformance with Section 476 of the Standard Specifications.

Steel bollards shall be fabricated from hot-dipped galvanized 3/8" or thicker steel pipe fabricated to dimensions shown on the Drawings and indicated herein. Bollards shall be 8" nominal diameter, concrete filled steel pipe with a rounded concrete top. The bollards shall have an exposed height of 60" and shall have a 42" buried section.

Hot-dipped galvanize, priming, and galvanized paint materials for bollards shall be compatible

and specified for use and application under controlled shop conditions and according to Section M7 Paints and Protective Coatings of the Standard Specifications.

Bollards shall be hot-dipped galvanized, primed, and painted with zinc-rich primer and two coats of polyurethane enamel color – SAFETY BLACK.

All welds and burrs shall be ground smooth and all steel hot-dipped galvanized and prepared according to manufacturer's instructions for priming and painting.

Bollards will be measured per each installed. Payment for silt sacks will be made at the contract unit bid price per each, complete and in place, which price shall be full compensation for all labor, equipment, and materials to satisfactorily complete the work labor, equipment and materials necessary to complete the work including saw cutting, excavation, gravel borrow, concrete, and fine grading.

ITEM 751.2

LOAM BORROW AND SEEDING

SQUARE YARD

The work to be done under this Item shall conform to the relevant provisions of Sections 751, 765, and the following:

The work under this item shall include placing a minimum of 6" of loam borrow and seeding disturbed areas beyond the edge of pavement and behind curbs and sidewalks, as directed by the engineer.

Payment will be made at the contract unit price per square yard of loam placed and seeded, and will include all necessary labor, equipment, and materials to satisfactorily complete the work including loam borrow, limestone, grass seed, and fertilizer.

Compliance

(Required Documents.)

Compliance

The compliance documents in this section must be completed, signed and returned with your bid package.

Purchasing Department

City of Waltham
610 Main Street
Waltham, MA 02452

Failure to submit the completed documents will cause the disqualification of the proposal.

Section Index

Check when Complete

- Non-collusion form and tax compliance form..... _____
- Corporation Identification Form..... _____
- Certificate of Vote Authorization..... _____
- Three (3) References..... _____
- 5% Bid Bond or Certified Check..... _____
- Workman’s and General Liability Insurance..... _____
- Debarment Certificate _____
- Prevailing Wage Certificate..... _____
- Right-to-know Law..... _____
- OSHA 10 Certificate for all Assigned Employees (MGL ch30, §39M and Ch 149) _____

Before the commencement of the Job, the contractor must provide to the above office:

- Performance and Payment Bonds each for 50% of the contract value
-

Your Company’s Name: _____

Service or Product Bid _____

NOTE: Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

NON-COLLUSION FORM AND TAX COMPLIANCE FORM

CERTIFICATE OF NON-COLLUSION

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word “person” shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity or group of individuals. The undersigned certifies that no representations made by any City officials, employees, entity, or group of individuals other than the Purchasing Agent of the City of Waltham was relied upon in the making of this bid

(Signature of person signing bid or proposal)

(Name of business)

TAX COMPLIANCE CERTIFICATION

Pursuant to M.G.L. c. 62C, & 49A, I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

Signature of person submitting bid or proposal

Name of business

NOTE

Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

CERTIFICATE OF VOTE OF AUTHORIZATION

Date:

I _____, Clerk of _____ hereby certify that at a meeting of the Board of Directors of said Corporation duly held on the _____ day of _____ at which time a quorum was present and voting throughout, the following vote was duly passed and is now in full force and effect:

VOTED: That _____ (*name*) is hereby authorized, directed and empowered for the name and on behalf of this Corporation to sign, seal with the corporate seal, execute, acknowledge and deliver all contracts and other obligations of this Corporation; the execution of any such contract to be valid and binding upon this Corporation for all purposes, and that this vote shall remain in full force and effect unless and until the same has been altered, amended or revoked by a subsequent vote of such directors and a certificate of such later vote attested by the Clerk of this Corporation.

I further certify that _____ is duly elected/appointed _____ of said corporation

SIGNED:

(Corporate Seal)

Clerk of the Corporation:

Print Name: _____

COMMONWEALTH OF MASSACHUSETTS

County of _____

Date:

Then personally appeared the above named and acknowledged the foregoing instrument to be their free act and deed before me, _____

Notary Public;

My Commission expires: _____

CORPORATION IDENTIFICATION

The bidder for the information of the Awarding Authority furnishes the following information.

If a Corporation:

Incorporated in what state _____

President _____

Treasurer _____

Secretary _____

Federal ID Number _____

If a foreign (out of State) Corporation – Are you registered to do business in Massachusetts?

Yes _____, No _____

If you are selected for this work you are required under M.G.L.ch. 30S, 39L to obtain from the Secretary of State, Foreign Corp. Section, State House, Boston, a certificate stating that you Corporation is registered, and furnish said certificate to the Awarding Authority prior to the award.

If a Partnership: (Name all partners)

Name of partner _____

Residence _____

Name of partner _____

Residence _____

If an Individual:

Name _____

Residence _____

If an Individual doing business under a firm's name:

Name of Firm _____

Name of Individual _____

Business Address _____

Residence _____

Date _____

Name of Bidder _____

By _____

Signature

Title

Business Address

(POST OFFICE BOX NUMBER NOT ACCEPTABLE)

City

State

Telephone Number

PROVIDE THREE (3) SERVICE APPROPRIATE REFERENCES

1. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

2. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

3. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

NOTE

Failure to submit any of the required documents, in this or in other sections, with your bid response package will be cause for the disqualification of your company.

**WEEKLY PAYROLL RECORDS REPORT &
STATEMENT OF COMPLIANCE**

In accordance with Massachusetts General Law c. 149, §27B, a true and accurate record must be kept of all persons employed on the public works project for which the enclosed rates have been provided, A Payroll Form has been printed on the reverse of this page and includes all the information required to be kept by law. Every contractor or subcontractor is required to keep these records and preserve them for a period of three years from the date of completion of the contract.

In addition, every contractor and subcontractor is required to submit, on a weekly basis, a copy of his or her weekly payroll records to the awarding authority. For every week in which an apprentice is employed, a photocopy of the apprentice's identification card must be attached to the payroll report. Once collected, the awarding authority is also required to preserve those reports for three years.

In addition, each such contractor, subcontractor, or public body shall furnish to the awarding authority directly, within fifteen days after completion of its portion of the work, a statement, executed by the contractor, subcontractor or public body who supervises the payment of wages, in the following form:

STATEMENT OF COMPLIANCE

_____, 200_____

I _____, _____
(Name of signatory party) (Title)

I do hereby state that I pay or supervise the payment of the persons employed by

_____ on the _____
(Contractor, subcontractor or public body) (Building or project)

and that all mechanics and apprentices, teamsters, chauffeurs and laborers employed on said project have been paid in accordance with wages determined under the provisions of sections twenty-six and twenty-seven of chapter one hundred and forty nine of the General Laws.

Signature _____, Title _____

Print _____

RIGHT TO KNOW LAW

Any vendor who receives an order or orders resulting from this invitation agrees to submit a Material Safety Data Sheet (MSDS) for each toxic or hazardous substance or mixture containing such substance, pursuant to M.G.L. c. 111F, §§8,9 and 10 and the regulations contained in 441 CMR 21.06 when deliveries are made. The vendor agrees to deliver all containers properly labeled pursuant to M.G.L. c. 111F §7 and regulations contained in 441 CMR 21.05. Failure to furnish MSDS and/or labels on each container may result in civil or criminal penalties, including bid debarment and action to prevent the vendor from selling said substances, or mixtures containing said substances within the Commonwealth. All vendors furnishing substances or mixtures subject to Chapter 111F or M.G.L. are cautioned to obtain and read the laws, rules and regulations referenced above. Copies may be obtained from the State House Bookstore, Secretary of State, State House, Room 117, Boston, MA (617) 727-2834.

Authorized Signature Indicating Compliance with the Right-to-know laws:

Signature

Date

Print Name

NOTE

Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

DEBARMENT CERTIFICATION

In connection with this bid and all procurement transactions, by signature thereon, the respondent certifies that neither the company nor its principals are suspended, debarred, proposed for debarment, declared ineligible, or voluntarily excluded from the award of contracts, procurement or non procurement programs from the Commonwealth of Massachusetts, the US Federal Government and /or the City of Waltham. "Principals" means officers, directors, owners, partners and persons having primary interest, management or supervisory responsibilities with the business entity. Vendors shall provide immediate written notification to the Chief Procurement Officer of the City of Waltham at any time during the period of the contract of prior to the contract award if the vendor learns of any changed condition with regards to the debarment of the company or its officers. This certification is a material representation of fact upon which reliance will be placed when making the business award. If at any time it is determined that the vendor knowingly misrepresented this certification, in addition to other legal remedies available to the city of Waltham, the contract will be cancelled and the award revoked.

Company Name _____

Address _____

City _____, State _____, Zip Code _____

Phone Number (____) _____

E-Mail Address _____

Signed by Authorized Company Representative:

Print name _____,

Date _____

10 HOURS OSHA TRAINING CONFIRMATION

Chapter 306 of the Acts of 2004

CONSTRUCTION PROJECTS

AN ACT RELATIVE TO THE HEALTH AND SAFETY ON PUBLIC

The undersigned hereby certifies that all employees to be employed at a worksite for construction, reconstruction, alteration, remodeling, repair, installation, demolition, maintenance or repair of any public work or any public building estimated to cost more than \$10,000.00 have successfully completed a course in construction safety and health approved by the **United States Occupational Safety and Health Administration** that is at least **10 hours** in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first payroll report for each employee and will comply with all laws and regulations applicable to awards of subcontracts subject to section 44F.

Company Name: _____

Address: _____

Signature: _____

Title: _____

Print Name _____

See following Chapter 306 of the Acts of 2004

NOTE

Failure to submit any of the required documents, in this or in other sections, with your bid response package will be cause for the disqualification of your company.

Price Sheet

SECTION 300

BID FORM

To: Joseph Pedulla, CPO
City of Waltham, Massachusetts:

2017 Hydrant Replacement Project, January 2017

The Owner reserves the right to reject any or all bids if it deems it to be in its best interest to do so. The Owner reserves the right to award the Contract based on sufficiency of appropriated funds to complete the work.

The undersigned states that no officer, agent, or employees of the Owner directly or indirectly have a financial interest in this Bid.

The undersigned, as Contractor, declares as follows:

- The only parties interested in this Bid as Principals are named herein
- This Bid is made without collusion with any other person, firm, or corporation
- No officer, agent, or employee of the owner is directly or indirectly interested in this Bid
- The Contractor has carefully examined the proposed Work and fully informed and satisfied himself as to the conditions there existing, the character and requirements of the proposed Work, the difficulties attendant upon its execution and the accuracy of all estimated quantities stated in this Bid, and has carefully read and examined the annexed proposed AGREEMENT and the Specifications and other Contract Documents therein referred to and knows and understands the terms and provisions thereof
- Understands that information relative to subsurface and other conditions, natural phenomena, existing pipes, and other structures (surface and/or subsurface) has been furnished only for his information and convenience without any warranty or guarantee, expressed or implied, that the subsurface and/or other conditions, natural phenomena, existing pipes, and other structures (surface and/or subsurface) actually encountered will be the same as those shown within the Contract Documents and agrees that the Contractor shall not use or be entitled to use any such information made available to him through Contract Documents or otherwise or obtained by him in his own examination of the site, as a basis of or ground for any claim against the Owner of the Engineer arising from or by reason of any variance which may exist between the aforesaid information made available to or acquired by him and the subsurface and/or other conditions, natural phenomena, existing pipes, and other structures (surface and/or subsurface) actually encountered during the construction work, and has made due allowance therefore in this BID

- The Contractor understands that the quantities of work tabulated in this Bid or indicated in the Specifications of other Contract Documents are only approximate and are subject to increase or decrease as deemed necessary by the Engineer.
- The Contractor agrees that, if this BID is accepted will contract with the Owner, as provided in the copy of the Contract Documents deposited in the office of the Engineer, this BID from being part of said Contract Documents, and that the Contractor will perform all the work and furnish all the materials and equipment, and provide all labor, services, plant, machinery, apparatus, appliances, tools, supplies, and all other things required by the Contract Documents in the manner and within the time therein prescribes and according to the requirements of the Engineer as therein set forth, and that the Contractor will take in full payment therefore the lump sum or unit price applicable to each item of the Work as states in the schedule below

Contractors must bid on each Item.

Refer to Section Special Provisions for Measurement and Payment for Item Descriptions.

Contractor acknowledges receipt of Addenda #: _____, _____, _____, _____, _____, _____.

BASE SCOPE OF WORK BID FORM

The Base Bid include all the work of the Contractor, being all work covered by Items 120.1 through 999, inclusive.

2017 Hydrant Replacement Project

ITEM	QUANTITY	UNIT	ITEM DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
120.1	50	CY	UNCLASSIFIED EXCAVATION AT per cubic yard		
153	50	CY	CONTROLLED DENSITY FILL AT per cubic yard		
302.06	80	FT	6 INCH DUCTILE IRON WATER PIPE AT per foot		
302.08	50	FT	8 INCH DUCTILE IRON WATER PIPE AT per foot		
309	500	LB	DUCTILE IRON FITTINGS FOR WATER AT per pound		
350.06	5	EA	6 INCH GATE AND GATE BOX AT per each		
350.08	2	EA	8 INCH GATE AND GATE BOX AT per each		
358	40	EA	GATE BOX ADJUSTED AT per each		
371.08	4	EA	8 INCH COUPLING AT per each		
376	40	EA	HYDRANT AT per each		
376.3	40	EA	HYDRANT REMOVED AND STACKED AT per each		
472.1	275	SY	HOT MIX ASPHALT FOR TEMPORARY AT per square yard		
472.2	345	SY	HOT MIX ASPHALT FOR PERMANENT AT per square yard		

ITEM	QUANTITY	UNIT	ITEM DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
570.2	170	FT	HOT MIX ASPHALT CURB TYPE 1, 2 OR 3 AT per foot		
580	255	FT	CURB REMOVED AND RESET AT per foot		
697.1	11	EA	SILT SACK AT per each		
701	50	SY	CEMENT CONCRETE SIDEWALK AT per square yard		
702	160	SY	HOT MIX ASPHALT WALK SURFACE AT per square yard		
703	80	SY	HOT MIX ASPHALT DRIVEWAY AT per square yard		
707.8	2	EA	STEEL BOLLARD AT per each		
751.2	250	SY	LOAM BORROW AND SEEDING AT per square yard		
999	544	HR	POLICE DETAILS AT <u>FORTY FIVE DOLLARS</u> per hour	\$45.00	\$24,480.00
TOTAL BASE BID:					

In Words (Dollars and Cents) _____

Basis of Award: The basis of award shall be at the Owner's sole discretion.

The Contractor hereby agrees that he will not withdraw this BID within sixty (60) consecutive calendar days after the actual date of the opening of Bids and that, if the Owner shall accept this BID, the Contractor will duly execute and acknowledge the AGREEMENT and furnish, duly executed and acknowledge, the required CONTRACT BONDS within ten (10) calendar days after notification that the AGREEMENT and other Contract Documents are Ready for signature.

If this BID is accepted by the Owner, the undersigned agrees to complete the entire work provided to be done under the Contract within **21 calendar days**, as stipulated in the AGREEMENT.

A **performance bond** in an amount equal to **50 percent of the total amount** of the bid with a surety company qualified to do business in the Commonwealth of Massachusetts will be required for the faithful performance of the contract, as well as a **labor and materials bond** in an amount equal to **50 percent of the total bid amount**.

This Proposal must bear the written signature of the Contractor or that of his duly authorized agent. If the Contractor is a corporation or a partnership, the Bid must be signed by a duly authorized officer of such corporation or by a Partner and the title of such officer must be stated. Satisfactory completion of the following data is an essential part of submission of this Proposal and is required. Bid must be embossed with corporate seal.

(CORPORATION SEAL)

Signature, Authorized Corporate Officer: _____

Print Name: _____

Title: _____

Email Address: _____

Phone Number: _____

Date: _____

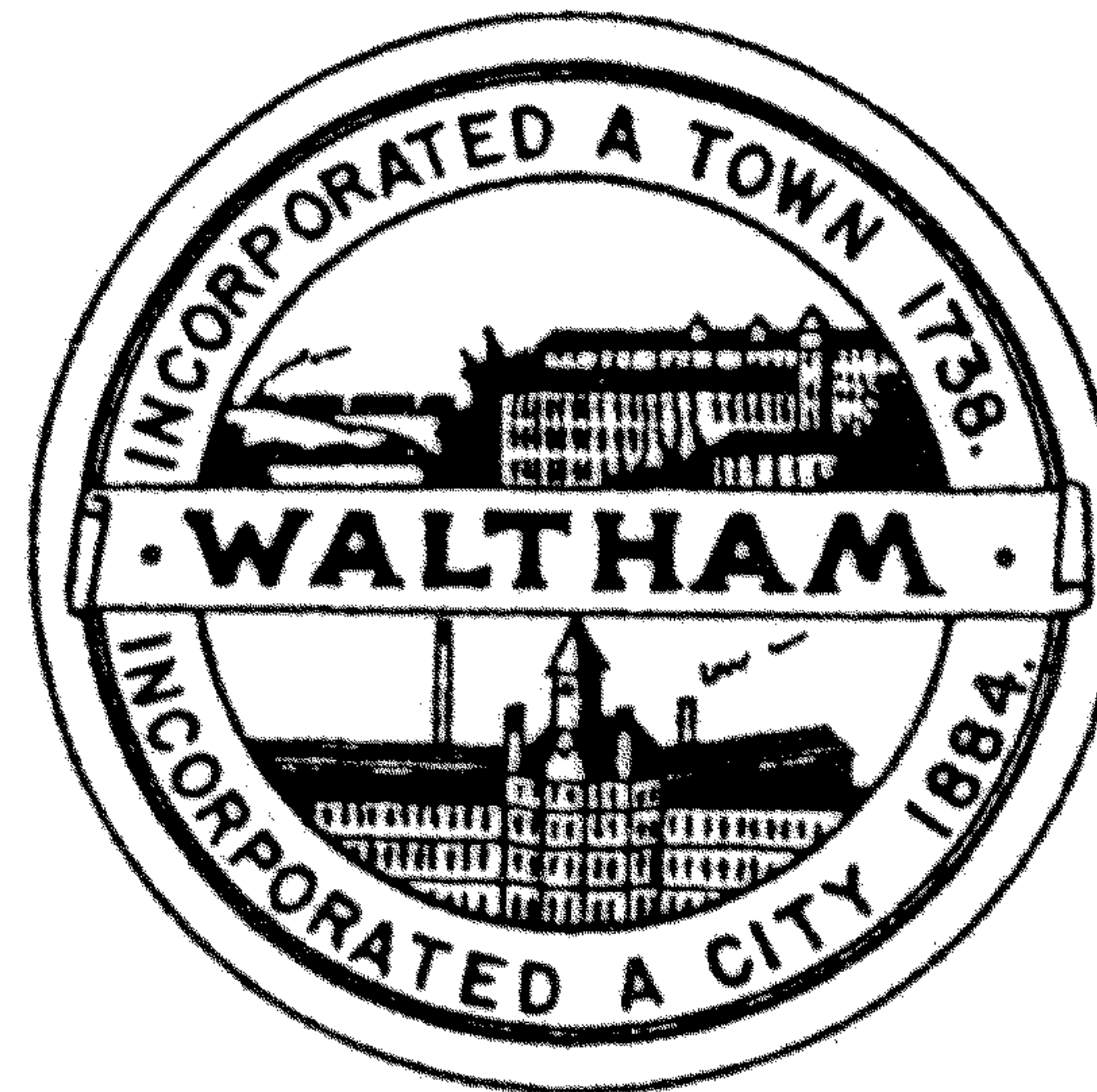
END OF SECTION 00300

DRAWINGS

PLANS SHOWING
**2017 HYDRANT
REPLACEMENT PROJECT**
IN
CITY OF WALTHAM, MASSACHUSETTS
JANUARY 2017

CITY ENGINEER
STEPHEN A. CASAZZA, PE.

WATER & SEWER SUPERINTENDENT
GERARD T. SHAUGHNESSEY



DRAWING INDEX

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	COVER SHEET
2	CONSTRUCTION NOTES
3	HYDRANT LOCATION LOCUS MAP
4	HYDRANT REPLACEMENT LOCATIONS I
5	HYDRANT REPLACEMENT LOCATIONS II
6	HYDRANT REPLACEMENT LOCATIONS III
7	HYDRANT REPLACEMENT LOCATIONS IV
8	HYDRANT REPLACEMENT LOCATIONS V
9	HYDRANT REPLACEMENT LOCATIONS VI
10	HYDRANT REPLACEMENT LOCATIONS VII
11	CONSTRUCTION DETAILS

PREPARED BY
THE CITY OF WALTHAM
ENGINEERING DEPARTMENT

119 SCHOOL STREET
WALTHAM, MA 02451

ABBREVIATIONS:

AC _____ ASBESTOS CONCRETE
 APPROX _____ APPROXIMATE
 BIT _____ BITUMINOUS CONCRETE
 BM _____ BENCHMARK
 BLDG _____ BUILDING
 BOL _____ BOLLARD
 BND _____ BOUND
 BRK _____ BRICK
 CL _____ CENTERLINE
 CB _____ CATCH BASIN
 CI _____ CAST IRON
 CLDI _____ CEMENT LINED DUCTILE IRON
 CLF _____ CHAIN LINK FENCE
 CMP _____ CORRUGATED METAL PIPE
 CONC _____ CONCRETE
 DH _____ DRILL HOLE
 DI _____ DUCTILE IRON
 DMH _____ DRAIN MANHOLE
 DRV _____ DRIVEWAY
 EMH _____ ELECTRIC MANHOLE
 EX _____ EXISTING
 FNC _____ FENCE
 FND _____ FOUND
 EOP _____ EDGE OF PAVEMENT
 GG _____ GAS GATE
 GIP _____ GALVANIZED IRON PIPE
 GRAV _____ GRAVEL
 GS _____ GAS SERVICE
 HOR _____ HORIZONTAL
 HSE _____ HOUSE
 HYD _____ HYDRANT
 HW _____ HEADWALL
 INV _____ INVERT
 LP _____ LIGHT POLE
 MB _____ MAIL BOX
 MH _____ MANHOLE
 MIN _____ MINIMUM
 N/F _____ NOW OR FORMERLY
 NTS _____ NOT TO SCALE
 OHW _____ OVERHEAD WIRE
 PC _____ POINT OF CURVATURE
 PROP _____ PROPOSED OR PROPERTY
 PT _____ POINT OF TANGENCY
 PVC _____ POLYVINYL CHLORIDE
 R _____ RIM OR RADIUS
 RCP _____ REINFORCED CONCRETE PIPE
 REC _____ RECORD
 RET WALL _____ RETAINING WALL
 ROW _____ RIGHT OF WAY
 SB _____ STONE BOUND
 SMH _____ SEWER MANHOLE
 SN _____ SIGN
 STA _____ STATION
 SW _____ SIDEWALK
 TBM _____ TEMPORARY BENCHMARK
 TMH _____ TELEPHONE MANHOLE
 TOC _____ TOP OF CURB
 TP _____ TEST PIT
 TYP _____ TYPICAL
 UNK _____ UNKOWN
 UP _____ UTILITY POLE
 VC _____ VITRIFIED CLAY
 VERT _____ VERTICAL
 W/ _____ WITH
 WG _____ WATER GATE
 WMH _____ WATER MANHOLE
 WSO _____ WATER SHUTOFF

GENERAL NOTES:

- PLAN INFORMATION IS BASED UPON INFORMATION OBTAINED FROM THE CITY OF WALTHAM'S GIS DATA AND IS APPROXIMATE ONLY.
- BUILDING LOCATIONS, AS SHOWN, ARE APPROXIMATE AND FOR REFERENCE PURPOSES ONLY.
- PRIOR TO THE PROPOSED CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE THE ENGINEER AND CITY WITH A CONSTRUCTION SCHEDULE DELINEATING THE SEQUENCE OF WORK AND ESTIMATED TIME OF COMPLETION FOR EACH SEGMENT OF WORK.
- THE CONTRACTOR SHALL SUBMIT A TRAFFIC MANAGEMENT PLAN TO THE CITY FOR REVIEW AND APPROVAL. THE PLAN SHALL BE IN COMPLIANCE WITH MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MASSDOT) AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- THE CONTRACTOR SHALL MAINTAIN CONTINUOUS TRAFFIC FLOW DURING CONSTRUCTION SATISFACTORILY TO THE THE ENGINEER AND THE CITY OF WALTHAM.
- ALL CONSTRUCTION SIGNING SHALL CONFORM TO THE REQUIREMENTS OF MASSDOT AND MUTCD.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES, AND FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH ALL WORK INCLUDED UNDER THIS CONTRACT. THE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL SAFETY BARRIERS, WARNING FLASHERS, ETC., AS REQUIRED BY THE CONDUCT OF THE WORK FOR THE PROTECTION OF WORKERS AND NON-WORKERS ALIKE. THE CONTRACTORS ATTENTION IS DIRECTED TO OSHA REQUIREMENTS.
- ALL CONSTRUCTION MATERIAL, DEBRIS, ASPHALT, SOIL, ETC. REMOVED FROM THE SITE SHALL BECOME PROPERTY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR TRANSPORTING AND DISPOSING ALL EXCESS MATERIALS IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SITE RESTORATION AND CLEAN UP UPON COMPLETION OF THE PROJECT. DURING THE COURSE OF CONSTRUCTION, ANY DAMAGE BY THE CONTRACTOR TO FENCES, GUARDRAILS, PATHS, STAIRS, PAVEMENT, LANDSCAPING OR VEGETATION SHALL BE REPAIRED OR REPLACED AND RESTORED TO ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE CONTRACT. ANY REPLACEMENT FENCE AND/OR HANDRAILS MUST MATCH EXISTING.
- ALL CASTINGS, GATE BOXES, HYDRANTS, LIGHT POLES, ETC. DAMAGED DURING CONSTRUCTION SHALL BE SUPPLIED AND REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESETTING ALL EXISTING PROPERTY MONUMENTATION THAT IS DISTURBED BY CONSTRUCTION OPERATIONS AT NO EXPENSE TO THE OWNER. THIS WORK IS TO BE DONE BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE COMMONWEALTH OF MASSACHUSETTS. PROPERTY BOUNDS FOUND ARE SHOWN ON LAYOUT PLANS, THIS MAY NOT BE INCLUSIVE OF ALL BOUNDS THAT EXIST IN THE PROJECT AREA. IF ANY ADDITIONAL BOUNDS ARE FOUND, THE CONTRACTOR SHALL DOCUMENT THE LOCATION AND CONTACT THE ENGINEER.
- THE CONTRACTOR SHALL TAKE SPECIAL CARE NOT TO DAMAGE TREES WITHIN THE CONSTRUCTION AREA UNLESS THEY ARE NOTED TO BE REMOVED.
- POLICE DETAILS SHALL BE COORDINATED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING ANY DEBRIS, SEDIMENT, OR SILTY WATER FROM ENTERING ANY DRAINAGE SYSTEM DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL INSTALL TEMPORARY CATCH BASIN SILT SACKS AS REQUIRED BY THE ENGINEER.
- CONSTRUCTION HOURS SHALL OCCUR BETWEEN THE HOURS OF 7:00 AM AND 5:00 PM, MONDAY THROUGH FRIDAY. WEEKEND WORK MUST BE APPROVED AT LEAST 48 HOURS IN ADVANCE BY THE CITY.
- A PORTION OF THE PROJECT IS LOCATED ON STREETS WITH RESTRICTED WORKING HOURS. NO WORK IS ALLOWED ON RESTRICTED STREETS BETWEEN THE HOURS OF 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM. THE FOLLOWING STREETS ARE INCLUDED WITHIN THE RESTRICTION; BEAVER STREET, SOUTH STREET, STOW STREET, TRAPELO ROAD, AND WINTER STREET.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR THE COMPLETION OF THE WORK.

EXISTING WATER SYSTEM NOTES:

- ALL EXISTING HYDRANTS AND VALVES REMOVED FROM THE WORK SITE SHALL BE DELIVERED TO THE WALTHAM DPW YARD BY THE CONTRACTOR OR DISPOSED OF BY THE CONTRACTOR, AT NO ADDITIONAL EXPENSE TO THE CITY, AS DETERMINED BY THE ENGINEER IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
- ALL EXISTING VALVE BOXES AND FRAMES AND COVERS REMOVED FROM THE WORK SITE SHALL BE DELIVERED TO THE WALTHAM DPW YARD BY THE CONTRACTOR OR DISPOSED OF BY THE CONTRACTOR, AT NO ADDITIONAL EXPENSE TO THE CITY, AS DETERMINED BY THE ENGINEER IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
- ALL EXISTING WATER PIPE REMOVED SHALL BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY HYDRANTS, VALVES, CURB STOPS, OR CORPORATIONS NOR SHALL THEY DRAW WATER FROM THE SYSTEM, WITHOUT SPECIFIC APPROVAL OF THE OWNER.
- PRIOR TO STARTING ANY WORK THAT WILL AFFECT SERVICE TO CUSTOMERS, THE CONTRACTOR SHALL NOTIFY THE CITY, THE ENGINEER, AND THE CUSTOMERS 72 HOURS PRIOR TO THE SHUTDOWN AND NOTE THAT A TEMPORARY RUSTY WATER CONDITION MAY EXIST.

PROPOSED WATER SYSTEM NOTES:

- WATER MAINS SHALL BE CLDI CLASS 56 – DOUBLE CEMENT LINED.
- ALL WATER MAIN FITTINGS AND VALVES SHALL BE DUCTILE IRON MECHANICAL JOINT AND RESTRAINED WITH MJ RESTRAINTS (MEGALUG OR EQUAL).
- ALL HYDRANTS SHALL BE "AMERICAN DARLING B-62", YELLOW BODY WITH BLACK CAPS "WALTHAM COLORS."
- REPLACED HYDRANTS SHALL BE LOCATED AT THE EXISTING LOCATION OR AS DIRECTED BY THE ENGINEER.
- HYDRANT MARKERS SHALL BE INSTALLED AT EACH HYDRANT LOCATION AND ARE INCLUDED UNDER THE HYDRANT ITEM.
- LOCATION OF PROPOSED WATER SYSTEM MAY BE ALTERED IN THE FIELD BY THE ENGINEER TO SUIT FIELD CONDITIONS.

TRENCH PAVING NOTES:

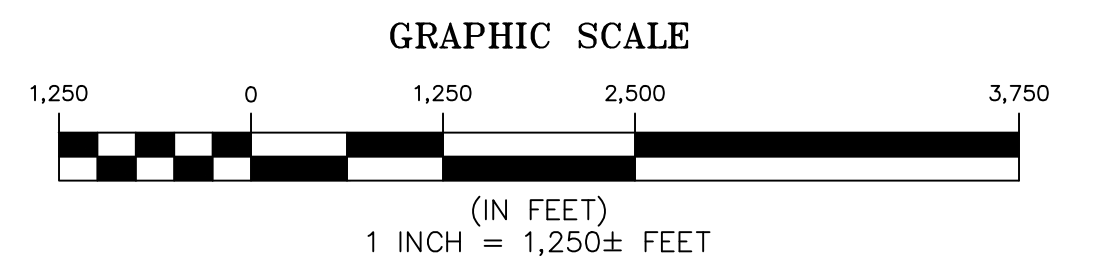
- ALL TRENCHES SHALL BE PAVED WITH 3" TEMPORARY PAVEMENT AT THE END OF EACH WORK DAY. TRENCHES MAY NOT BE COVERED WITH STEEL PLATES OVERNIGHT.
- THE CONTRACTOR SHALL INSTALL A MINIMUM 5" PERMANENT BITUMINOUS CONCRETE TRENCH PAVEMENT AS DIRECTED, SEE DETAILS.
- ALL TEMPORARY AND PERMANENT TRENCHES IN EXISTING PAVEMENT ARE TO BE SAW CUT WHERE THE PROPOSED PAVEMENT SHALL MEET TO ALLOW A SMOOTH TRANSITION AFTER PAVING. NO OTHER METHOD OF CUTTING IS ACCEPTABLE. JOINTS SHALL BE SANDED AND SEALED.
- ALL TRENCHES SHALL BE PUDDLED OR JETTED WITH WATER TO ALLOW FOR PROPER SETTLEMENT. TRENCHES THAT CANNOT BE JETTED WILL BE MECHANICALLY COMPACTED AS DETERMINED BY THE ENGINEER. ALL TRENCHES SHALL BE COMPACTED TO 95% COMPACTION.
- AFTER COMPACTION IS COMPLETED, THE CONTRACTOR SHALL PLACE TRENCH PAVEMENT AS SHOWN ON THE DETAILS.
- THE CONTRACTOR SHALL REMOVE AND REPLACE ALL PAVEMENT DAMAGED DURING THE INSTALLATION OF THE PROPOSED UTILITY.
- THE CONTRACTOR SHALL TEMPORARILY AND PERMANENTLY RESTRIPE EXISTING PAVEMENT MARKINGS AS NECESSARY.

UTILITY NOTES:

- PRIOR TO CONSTRUCTION, ALL UTILITIES, PUBLIC AND PRIVATE MUST BE NOTIFIED (SEE MASSACHUSETTS GENERAL LAWS, CHAPTER 82 SECTION 40.) ALL "DIG SAFE" – 811, OR CUSTOMER SERVICE – 1 (888) 344-7233.
- THE CITY OF WALTHAM IS NOT A PART OF "DIG SAFE". THE CONTRACTOR MUST SEPARATELY CONTACT THE WATER AND SEWER DEPARTMENT FOR APPROPRIATE MARK OUTS.
- SUBSURFACE UTILITY LINES, AS SHOWN HERON, WERE COMPLIED ACCORDING TO CITY OF WALTHAM GIS INFORMATION. THE LOCATIONS ARE APPROXIMATE ONLY. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD. THE CITY OF WALTHAM ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. THE CONTRACTOR SHALL EXCAVATE TEST PITS TO VERIFY UTILITY LINE LOCATIONS AS NECESSARY.
- WATER MAINS ARE ASSUMED TO BE 5 FEET BELOW THE EXISTING GROUND SURFACE. GAS LINES ARE ASSUMED TO BE TO BE 3 FEET BELOW THE EXISTING GROUND SURFACE. TELEPHONE AND ELECTRIC CONDUIT ARE ASSUMED TO BE 2 FEET BELOW THE EXISTING GROUND SURFACE.
- DAMAGE TO ANY UTILITY WILL BE REPAIRED BY THE CONTRACTOR, AT THE CONTRACTOR'S EXPENSE, IN A TIMELY MANNER SO THAT DISRUPTION OF SERVICE TO ANY UTILITY WILL NOT BE LONGER THAN PRACTICALLY NECESSARY TO REPAIR THE DAMAGE.
- UTILITY CONTACTS:
THE CITY OF WALTHAM – WATER/SEWER/DRAIN
 WATER & SEWER FOREMAN (7AM–3PM): 781–314–3826
 DAYTIME OFFICE: 781–314–3820
 AFTER HOURS EMERGENCY: 781–893–3700
THE CITY OF WALTHAM – WIRES DEPARTMENT
 TIM KELLY, INSPECTOR OF WIRES: 781–389–6044
VERIZON – TELEPHONE
 FREDERICK WAGNER, AREA PROJECT COORDINATOR: 781–376–5067
COMCAST – CABLE
 MANUEL FURTADO, AREA PROJECT COORDINATOR: 774–644–9104
NATIONAL GRID – GAS
 KEITH WALTERS, AREA PROJECT COORDINATOR: 516–924–4602
EVERSOURCE – ELECTRIC
 N.E. SERVICE NUMBER: 800–592–2000

PLANS SHOWING
 2016 HYDRANT
 REPLACEMENT PROJECT
 IN
 WALTHAM, MASSACHUSETTS
 STEPHEN CASAZZA, P.E., CITY ENGINEER

DESIGNED BY: J.P.M. JANUARY, 2017
 DRAWN BY: L.P.S. SCALE: N.T.S.
 CHECKED BY: S.A.C. SHEET 2 OF 11

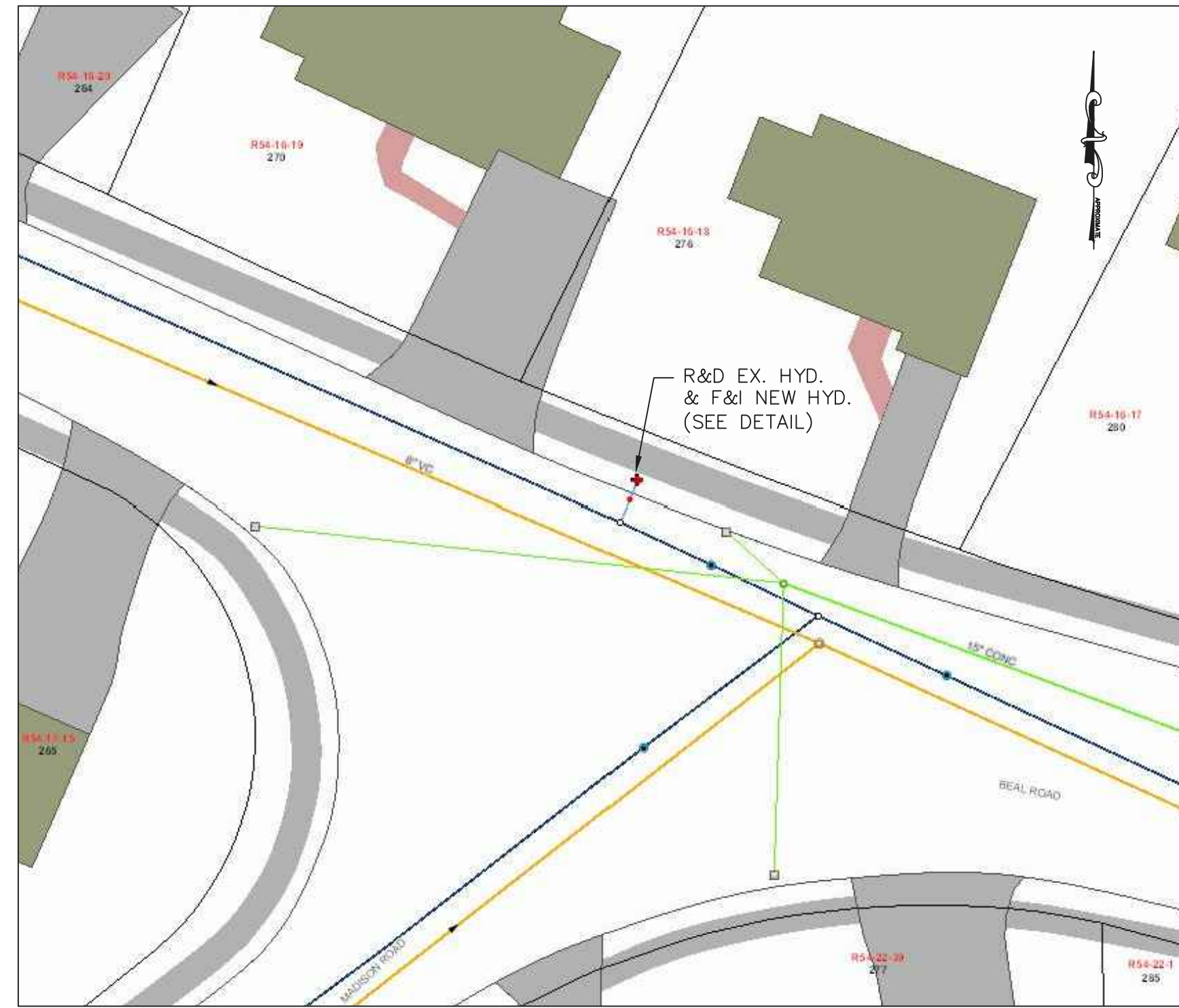


LOCUS PLAN
SCALE: 1" = 1,250'±

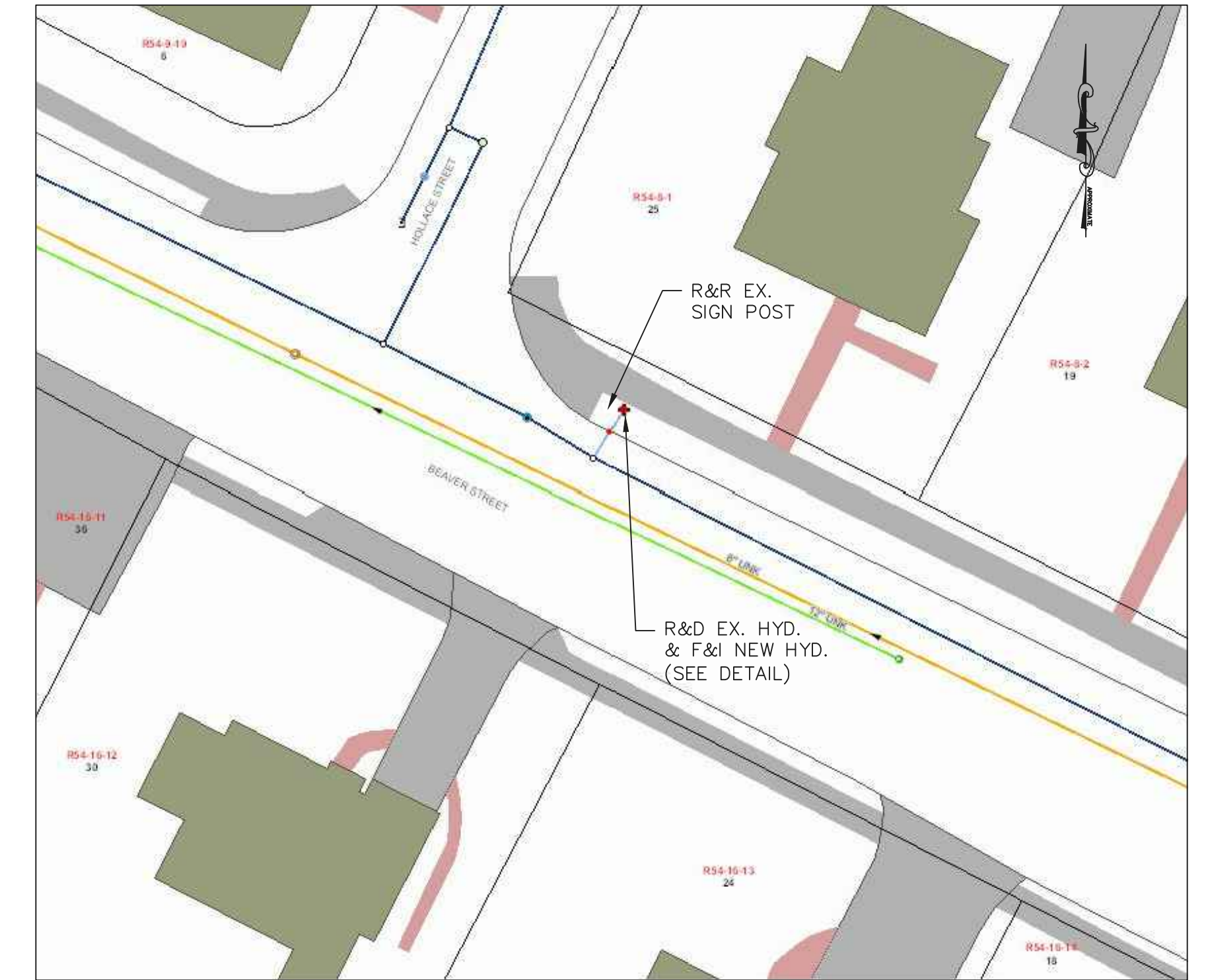
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DRAWN BY: L.P.S. SCALE: 1" = 1,250'±
CHECKED BY: S.A.C. SHEET 3 OF 11



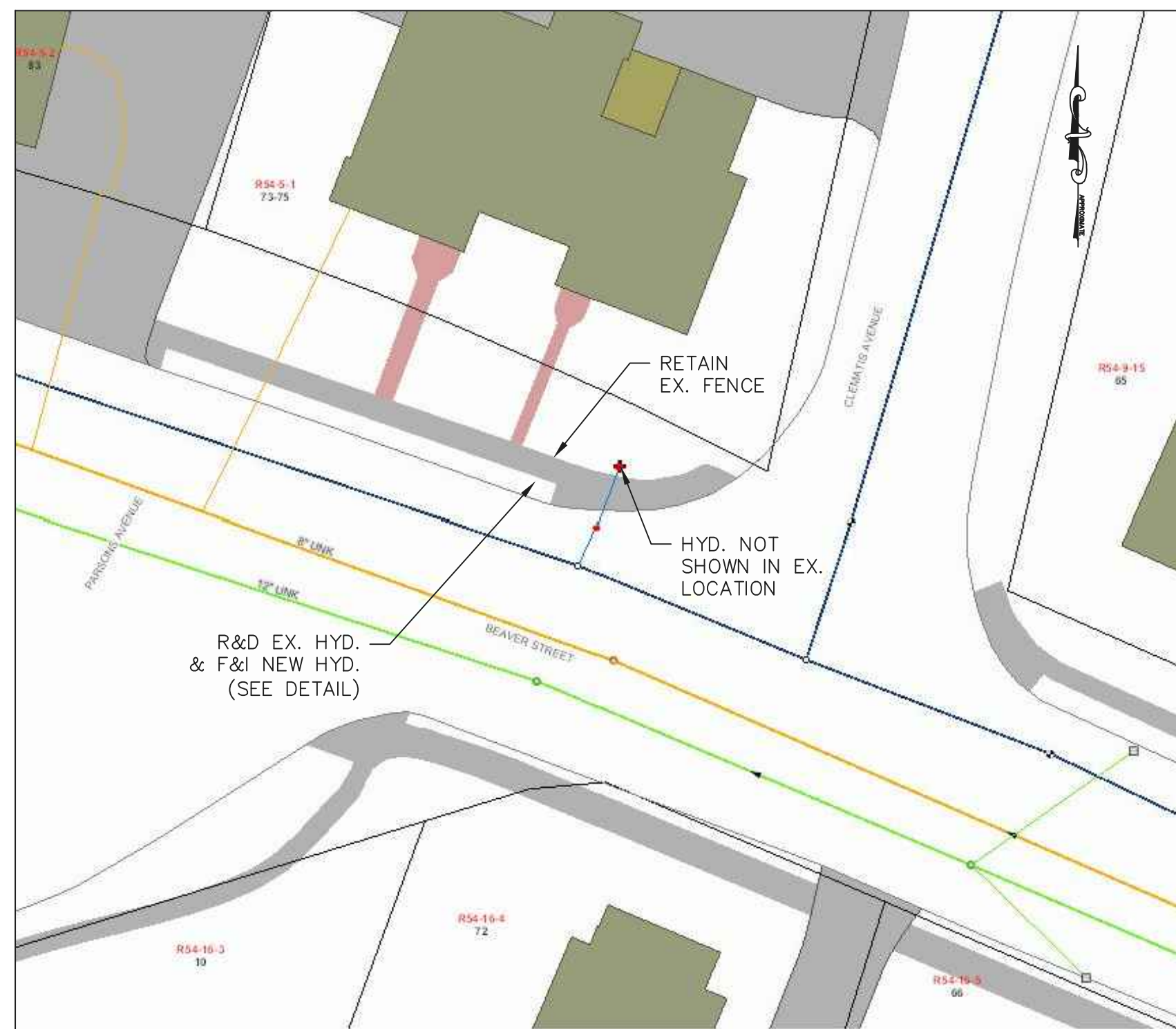
#31 AUGUSTUS ROAD



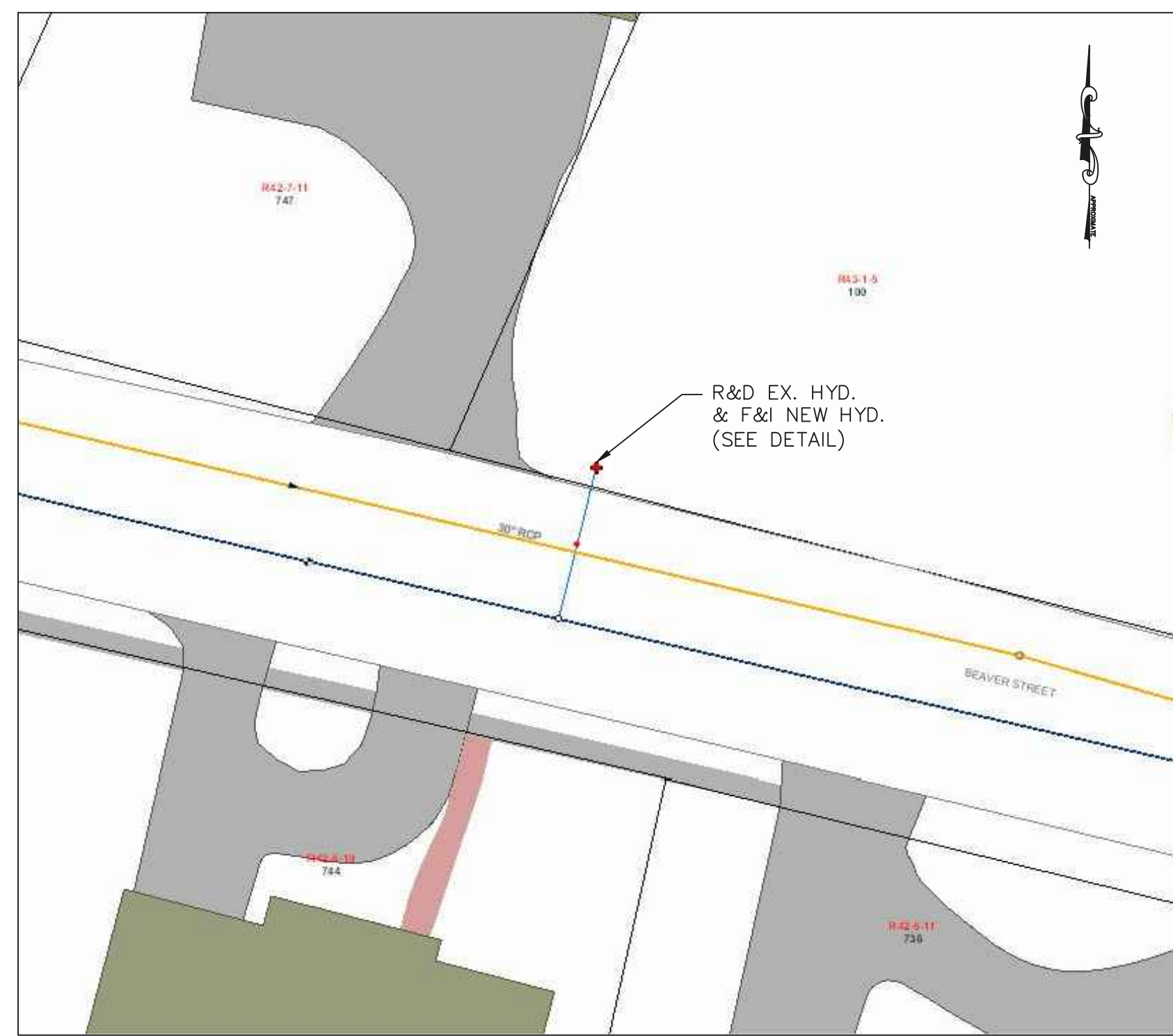
#276 BEAL ROAD



#25 BEAVER STREET



#73 BEAVER STREET



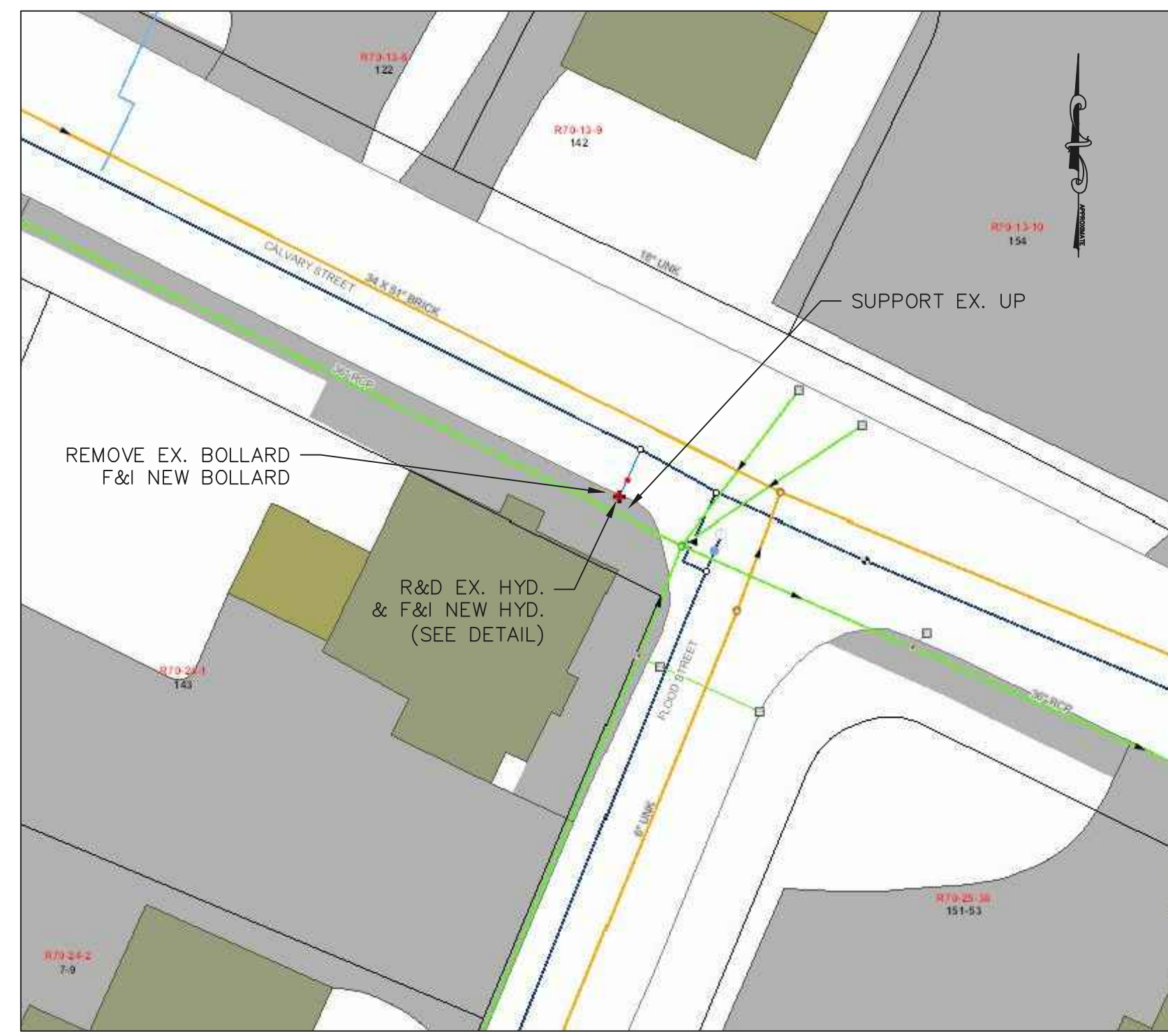
#744 BEAVER STREET

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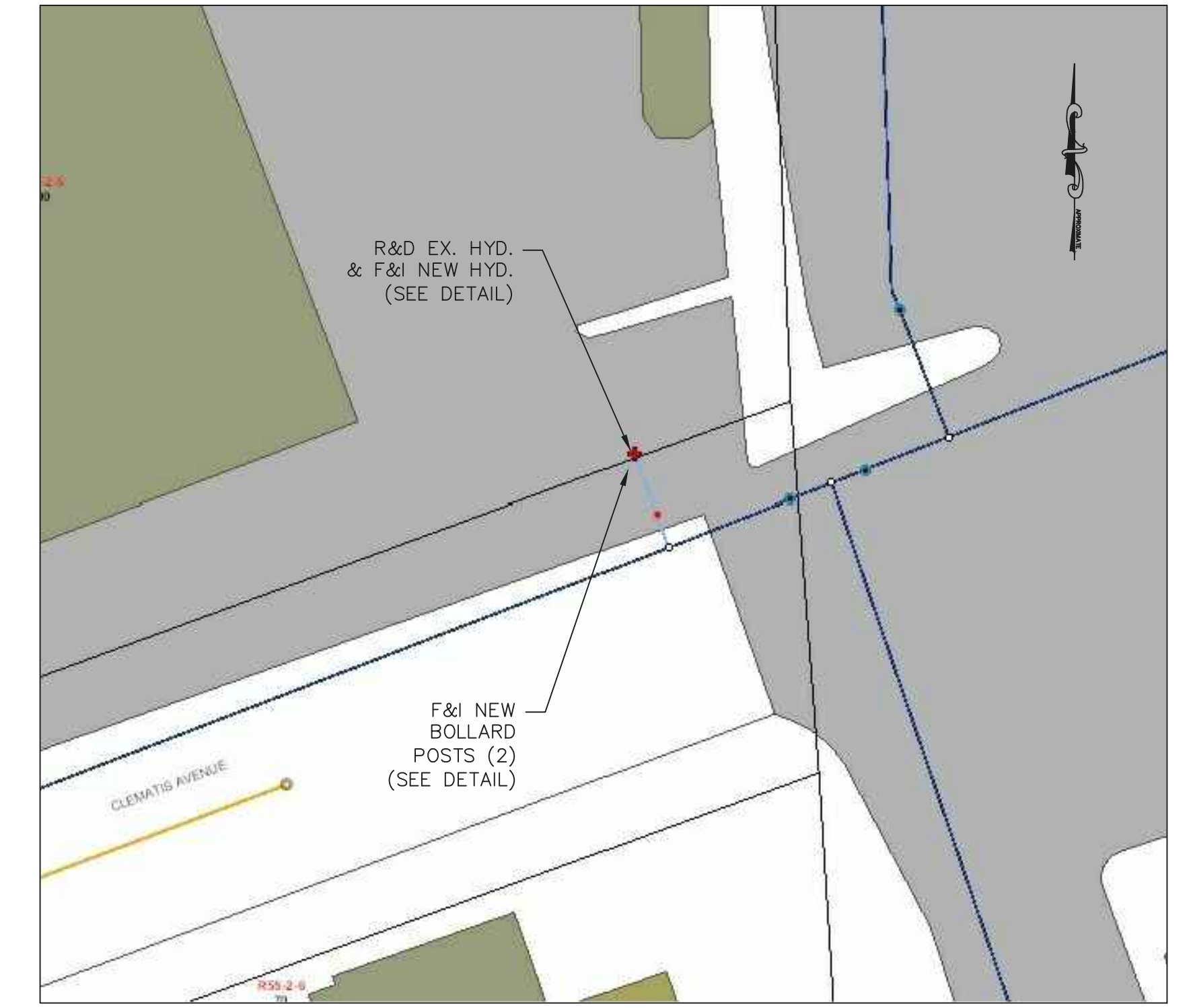
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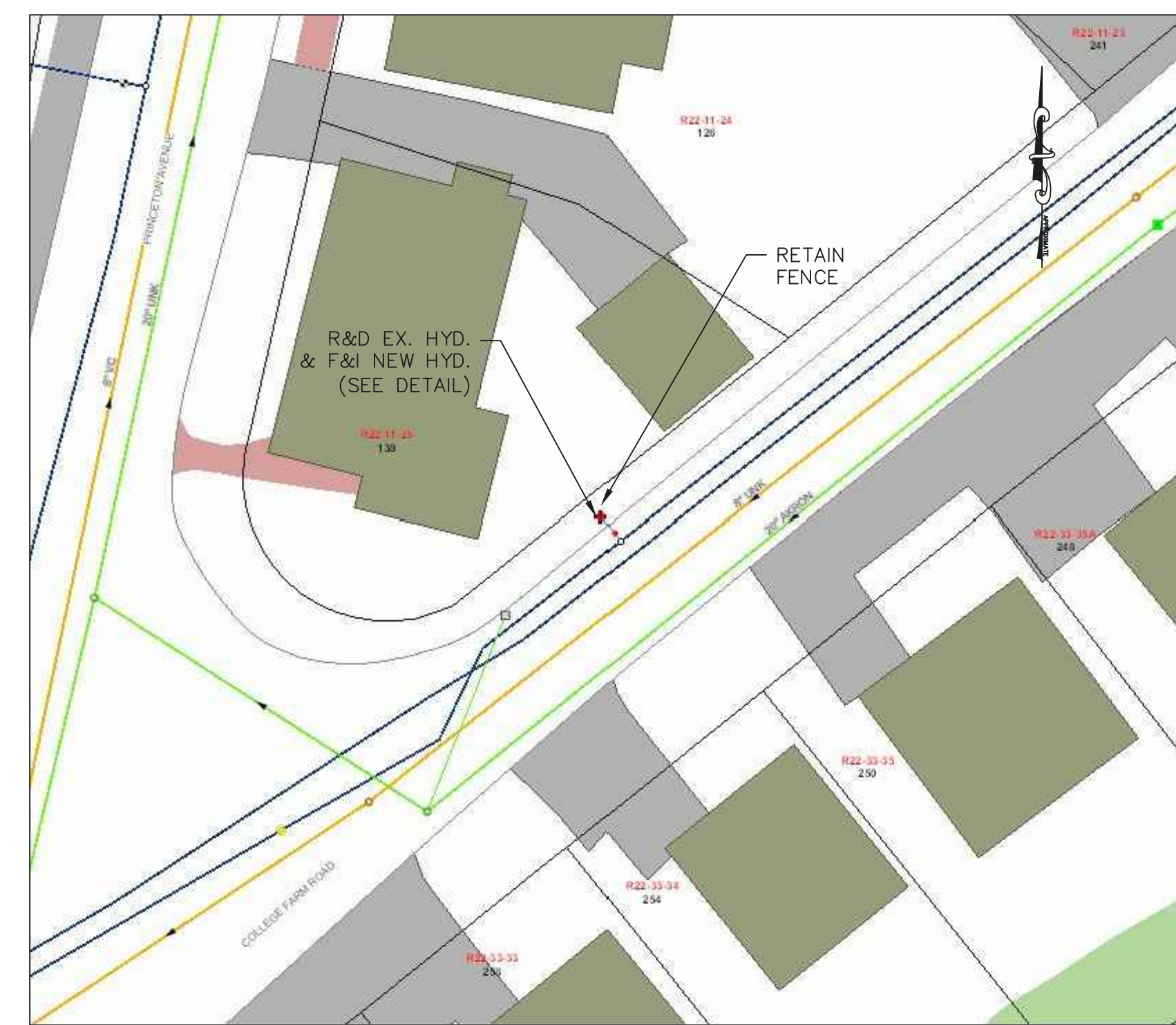
#52 BRIARWOOD ROAD



#143 CALVARY STREET



#101 CLEMATIS AVENUE



#254 COLLEGE FARM ROAD



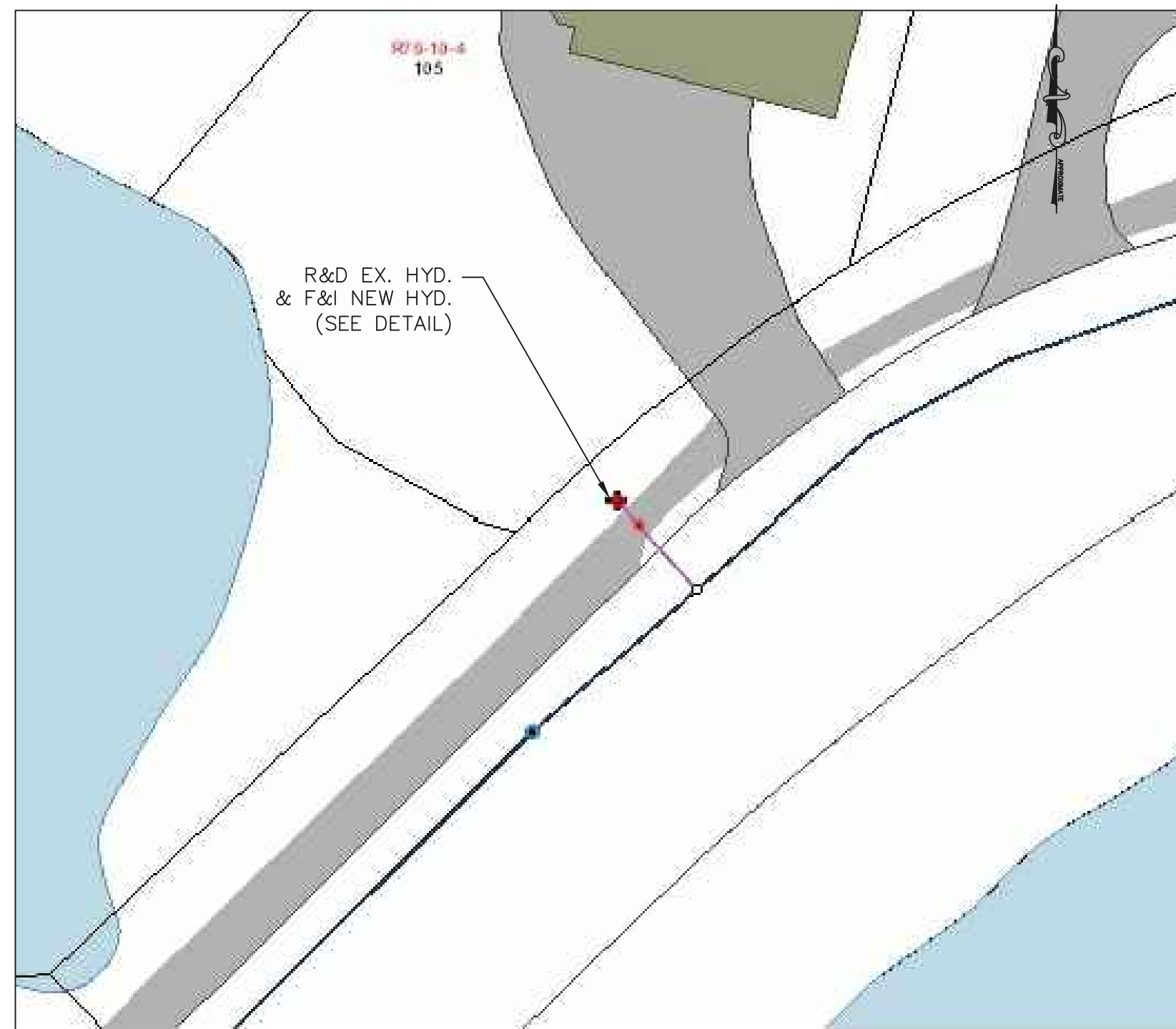
#297 COLLEGE FARM ROAD

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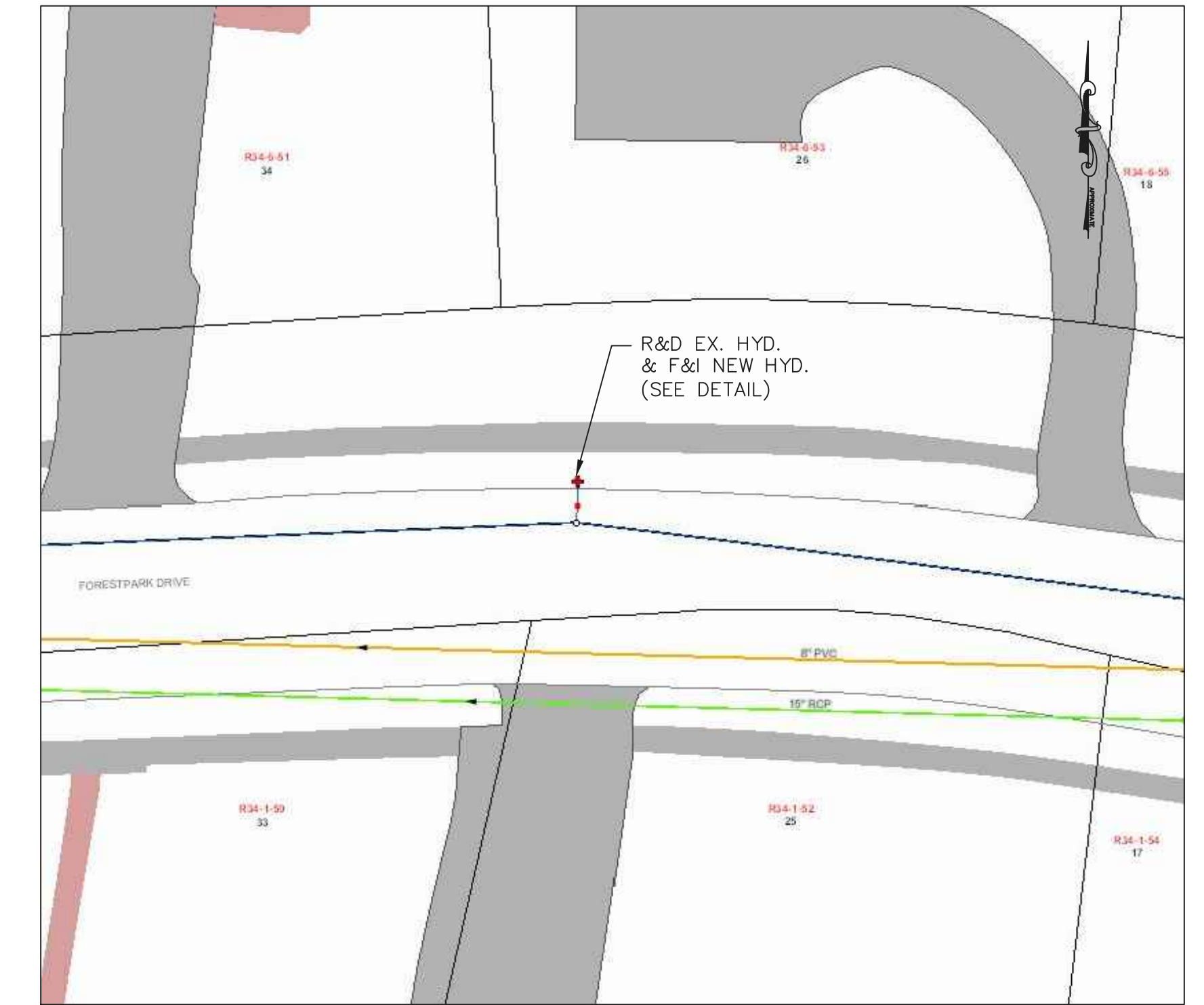
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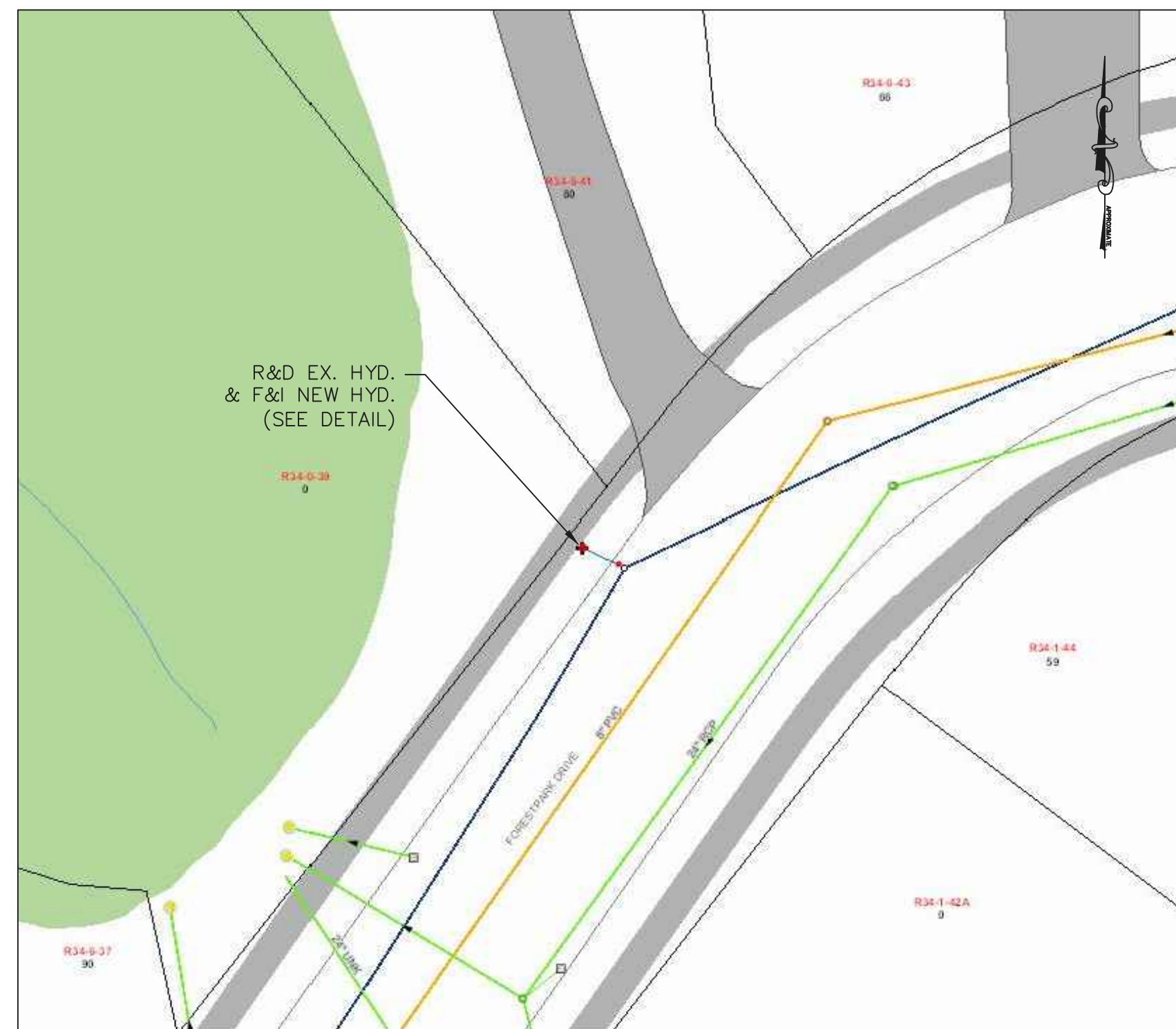
#57 DALE STREET



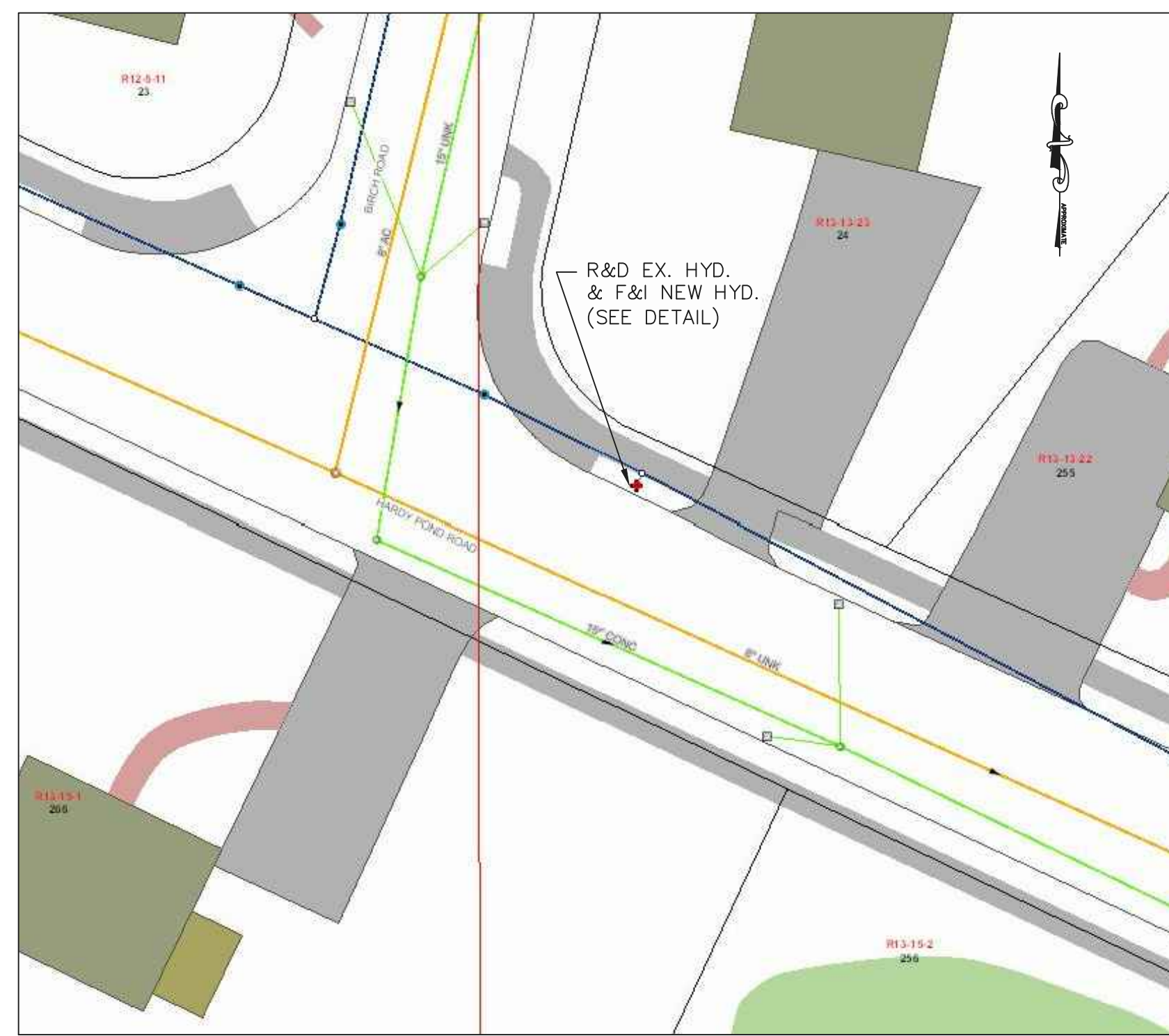
#2 FOREST GROVE ROAD



#26 FOREST PARK DRIVE



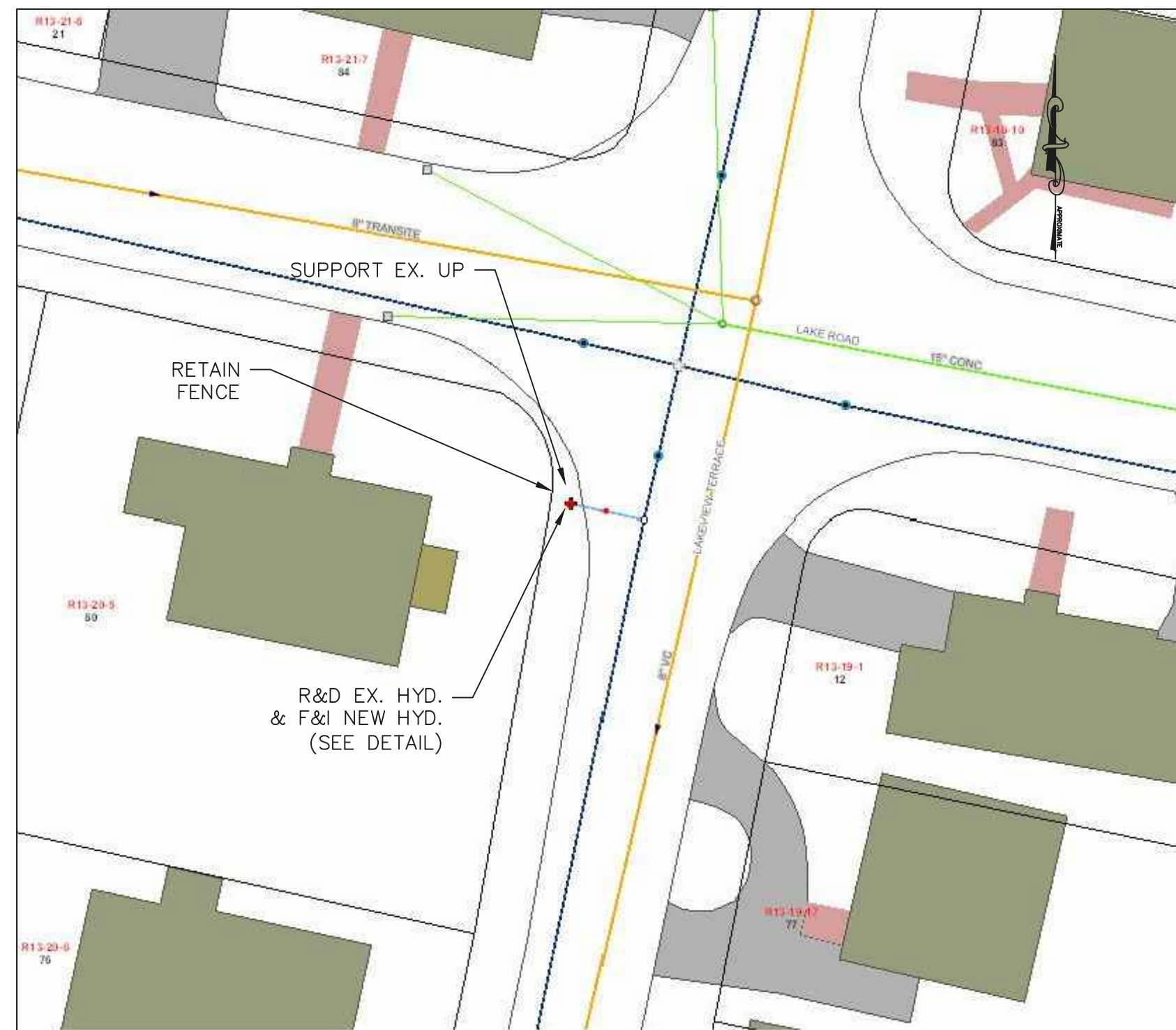
#80 FOREST PARK DRIVE



#266 HARDY POND ROAD

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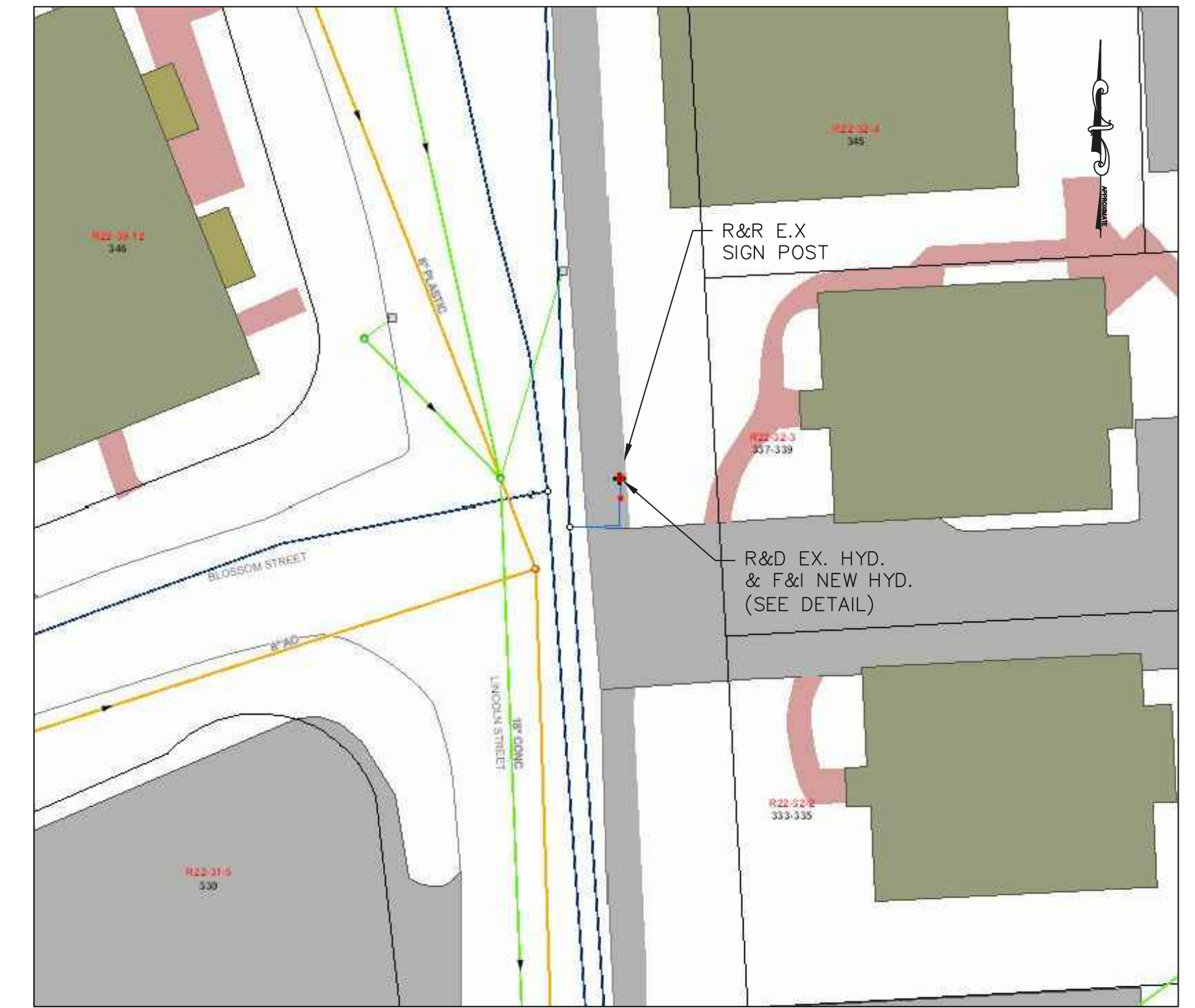
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#80 LAKEVIEW TERRACE



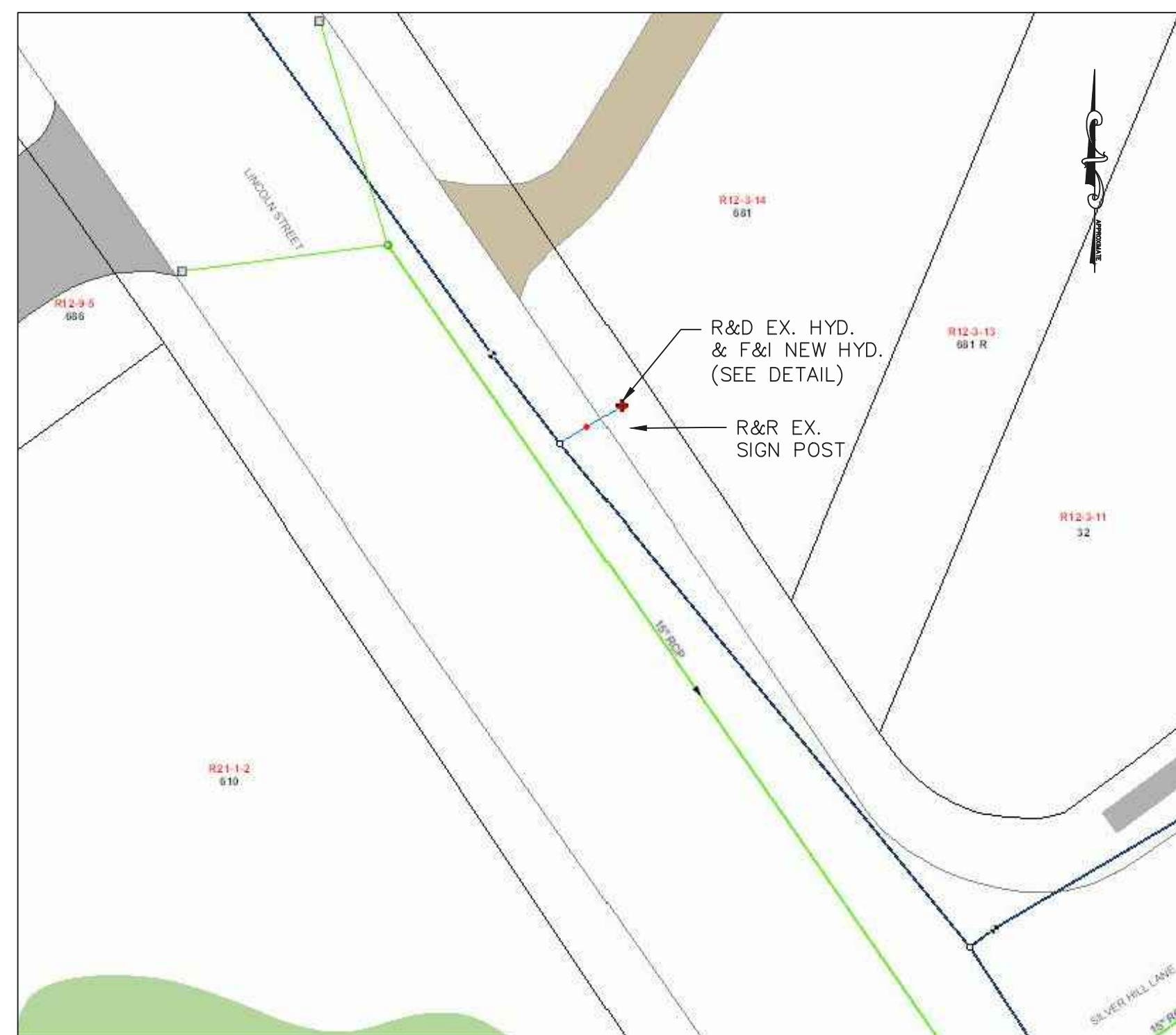
#301 LINCOLN STREET



#337 LINCOLN STREET



#645 LINCOLN STREET



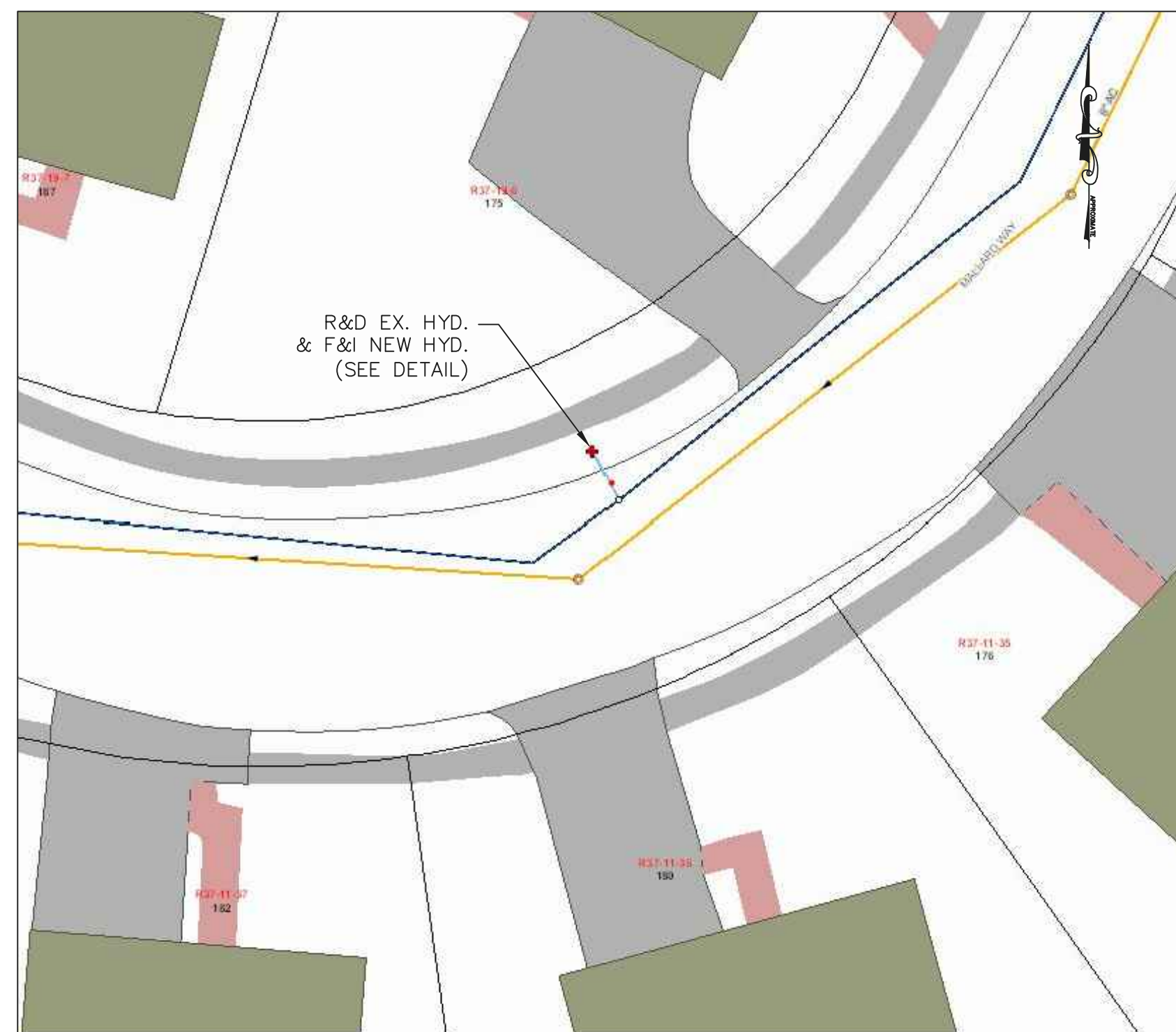
LINCOLN STREET AT
SILVER HILL LANE

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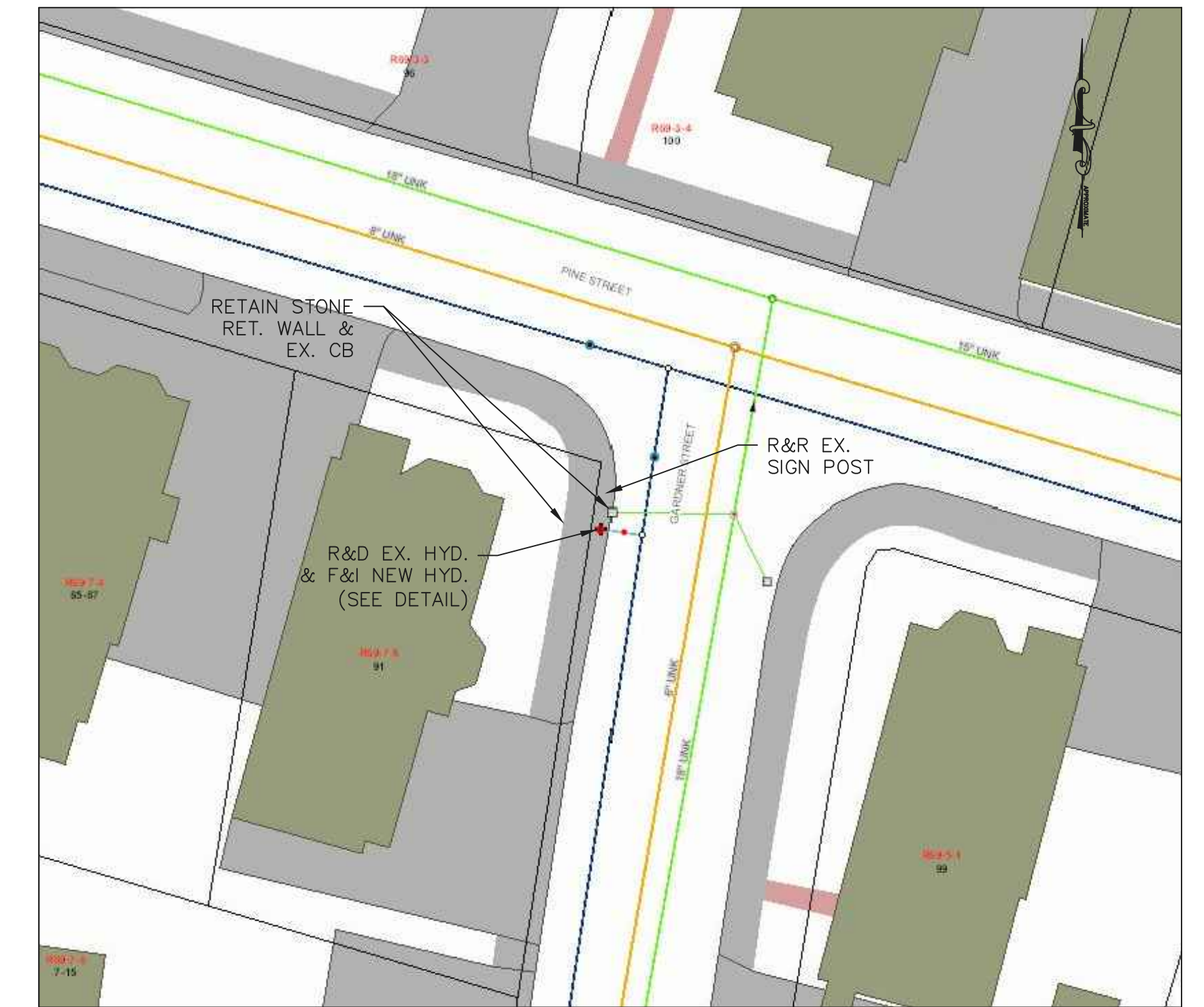
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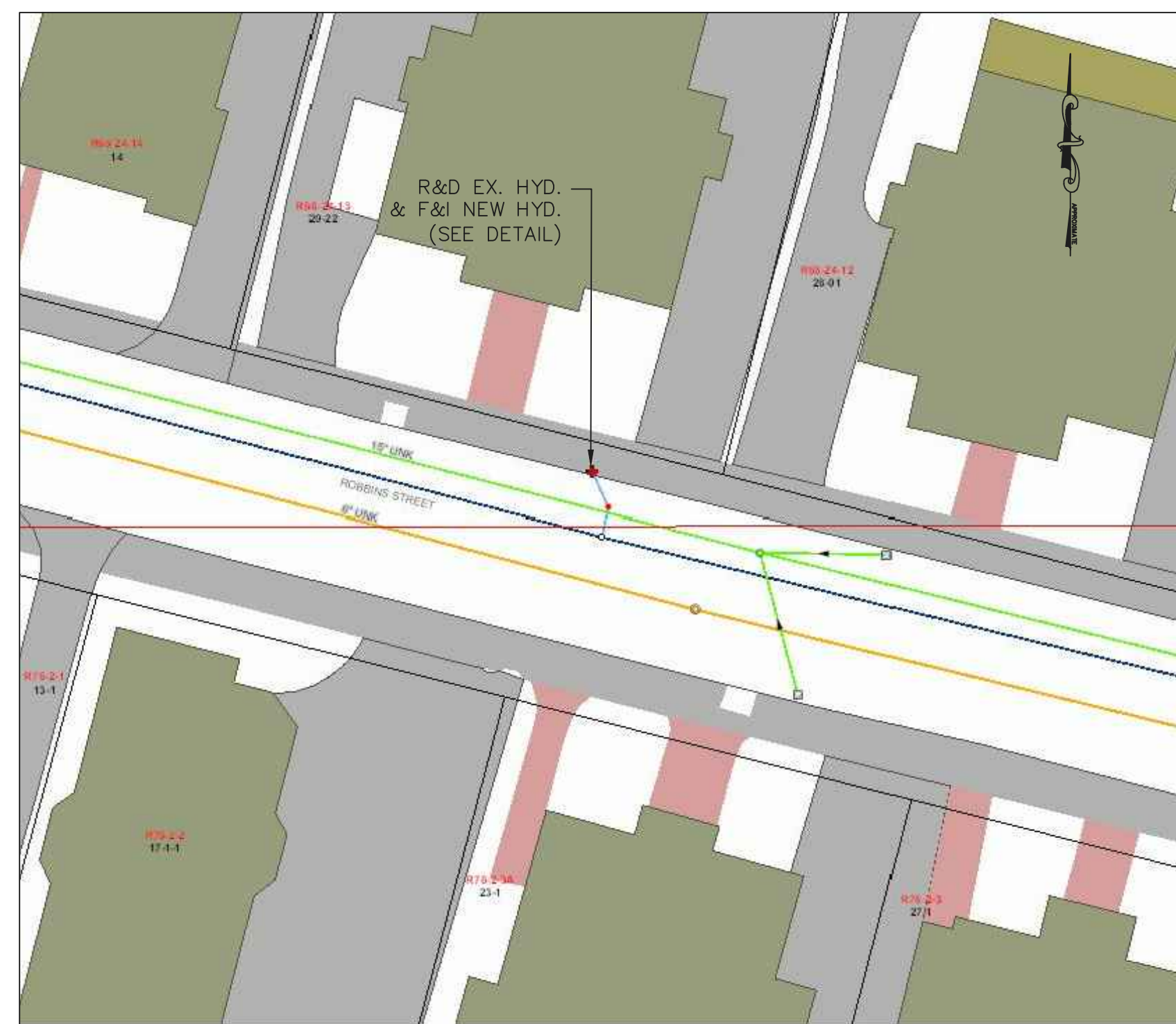
#191 LOWELL STREET



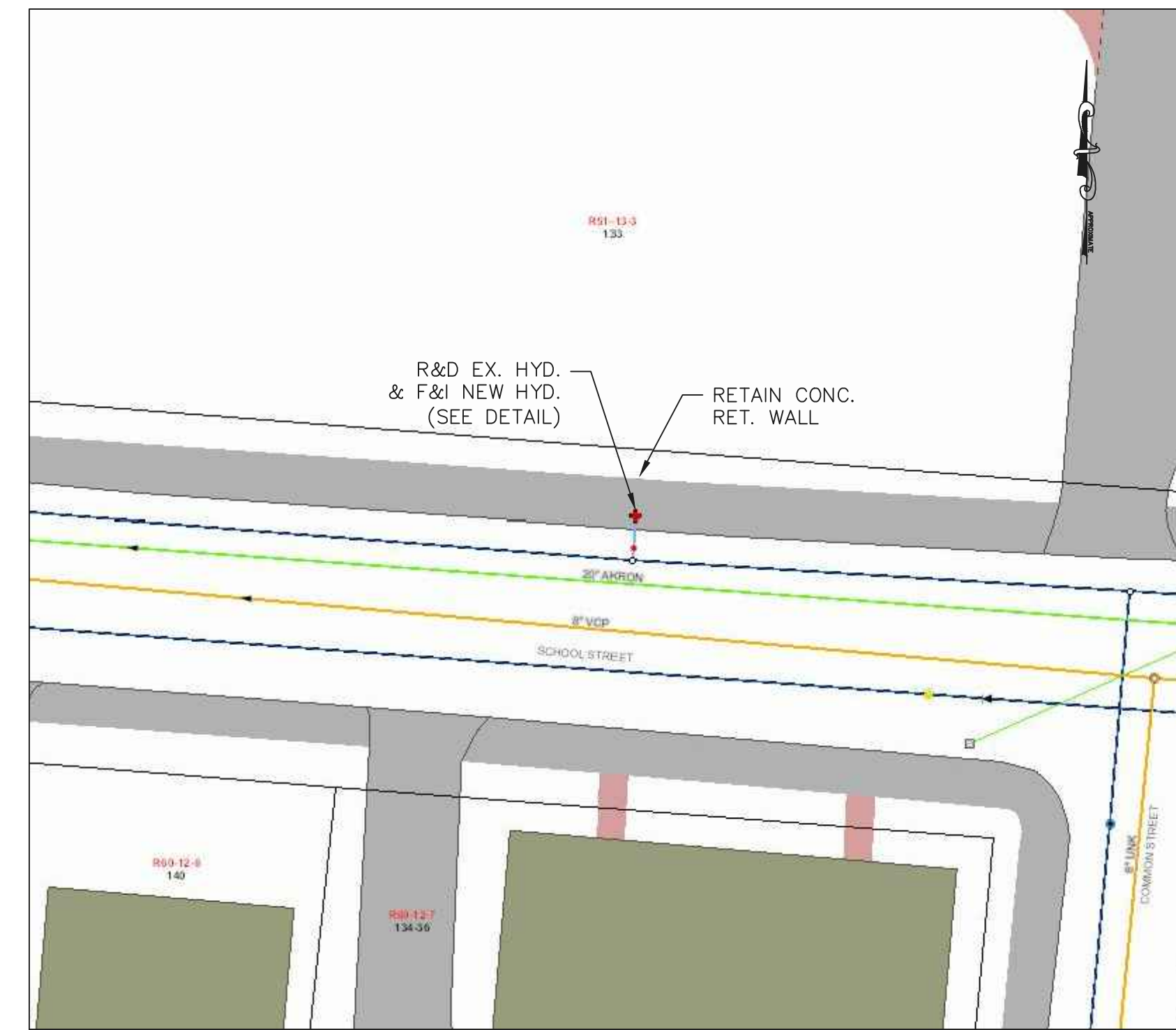
#180 MALLARD WAY



#91 PINE STREET



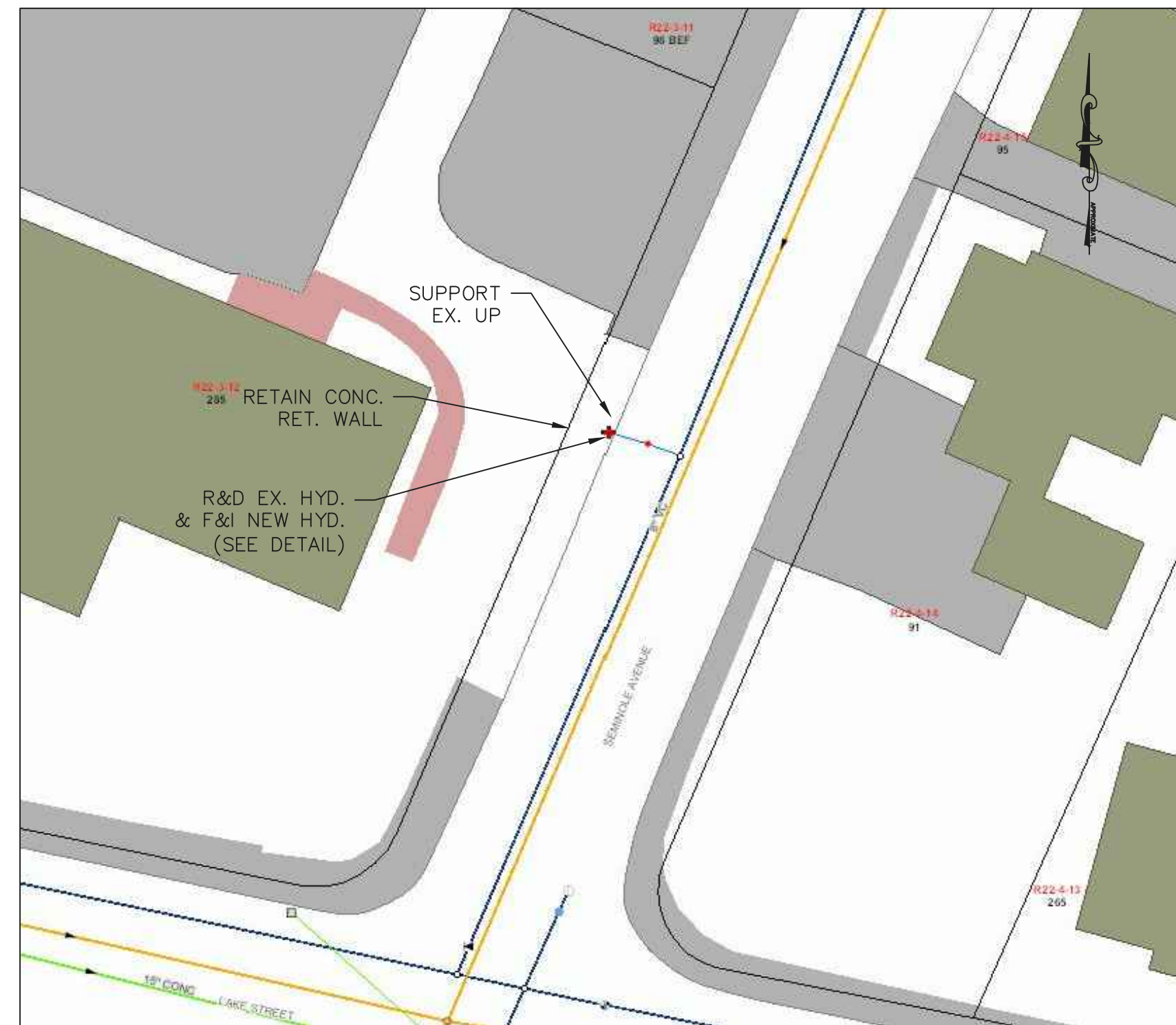
#22 ROBINS STREET



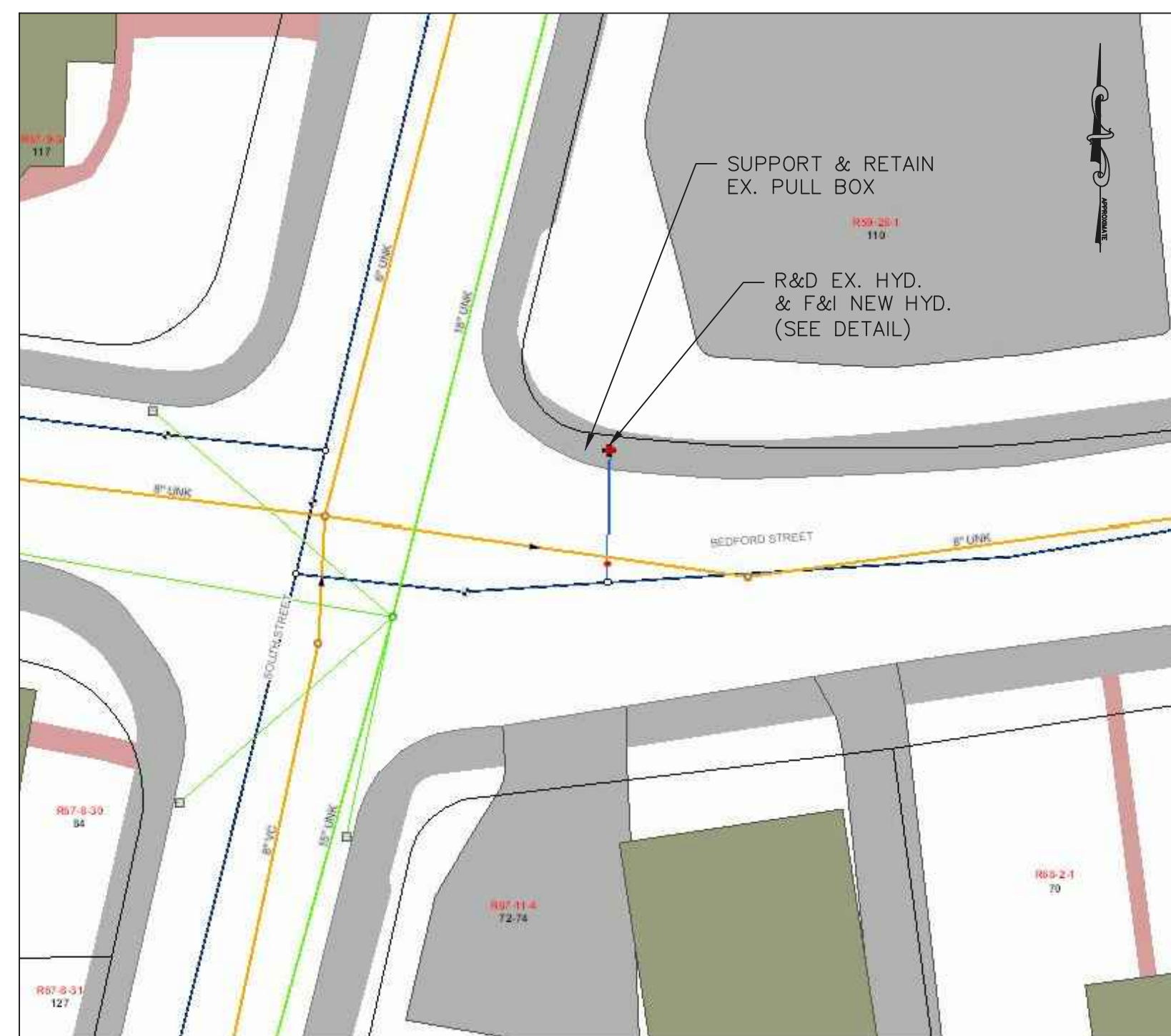
#136 SCHOOL STREET

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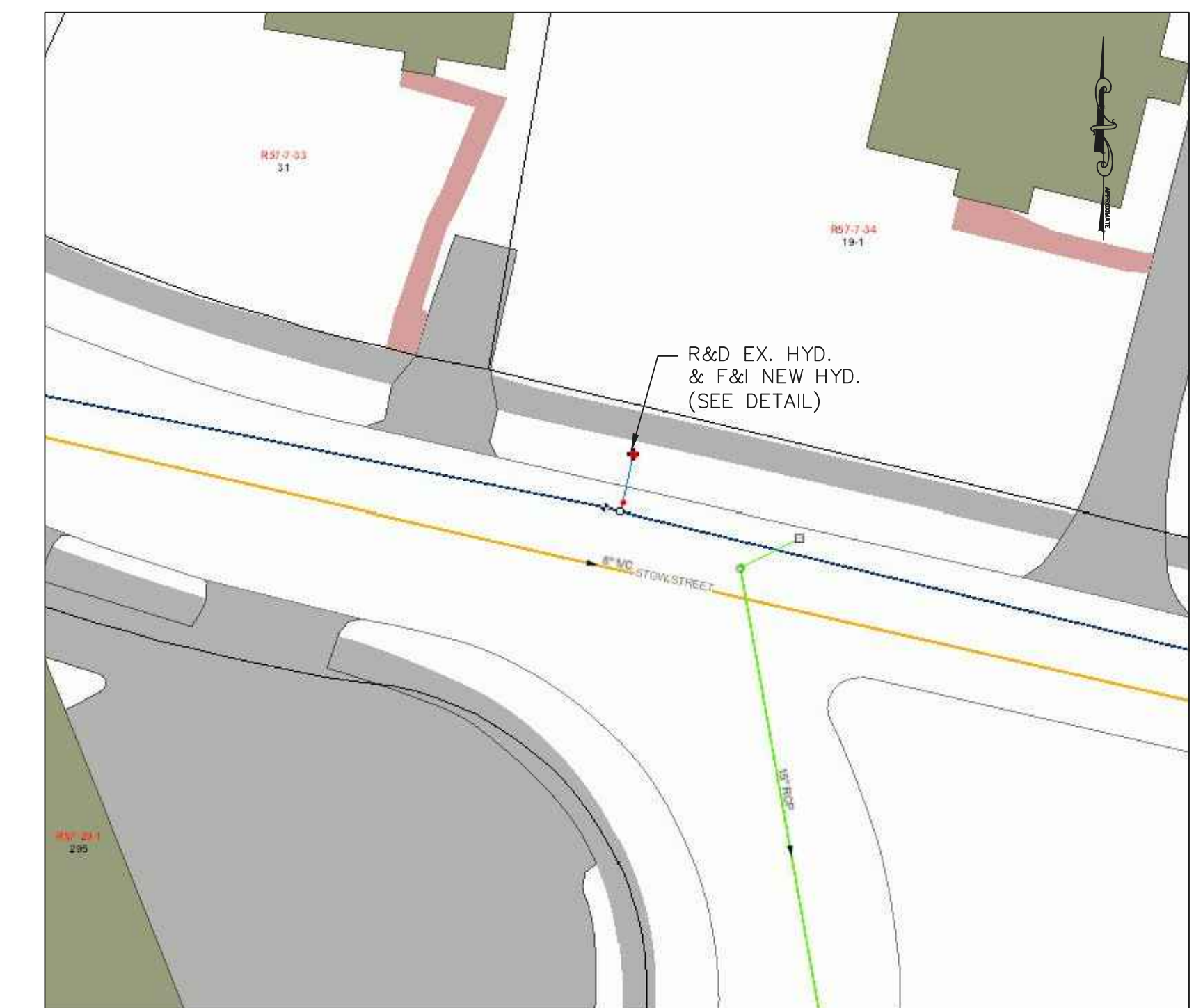
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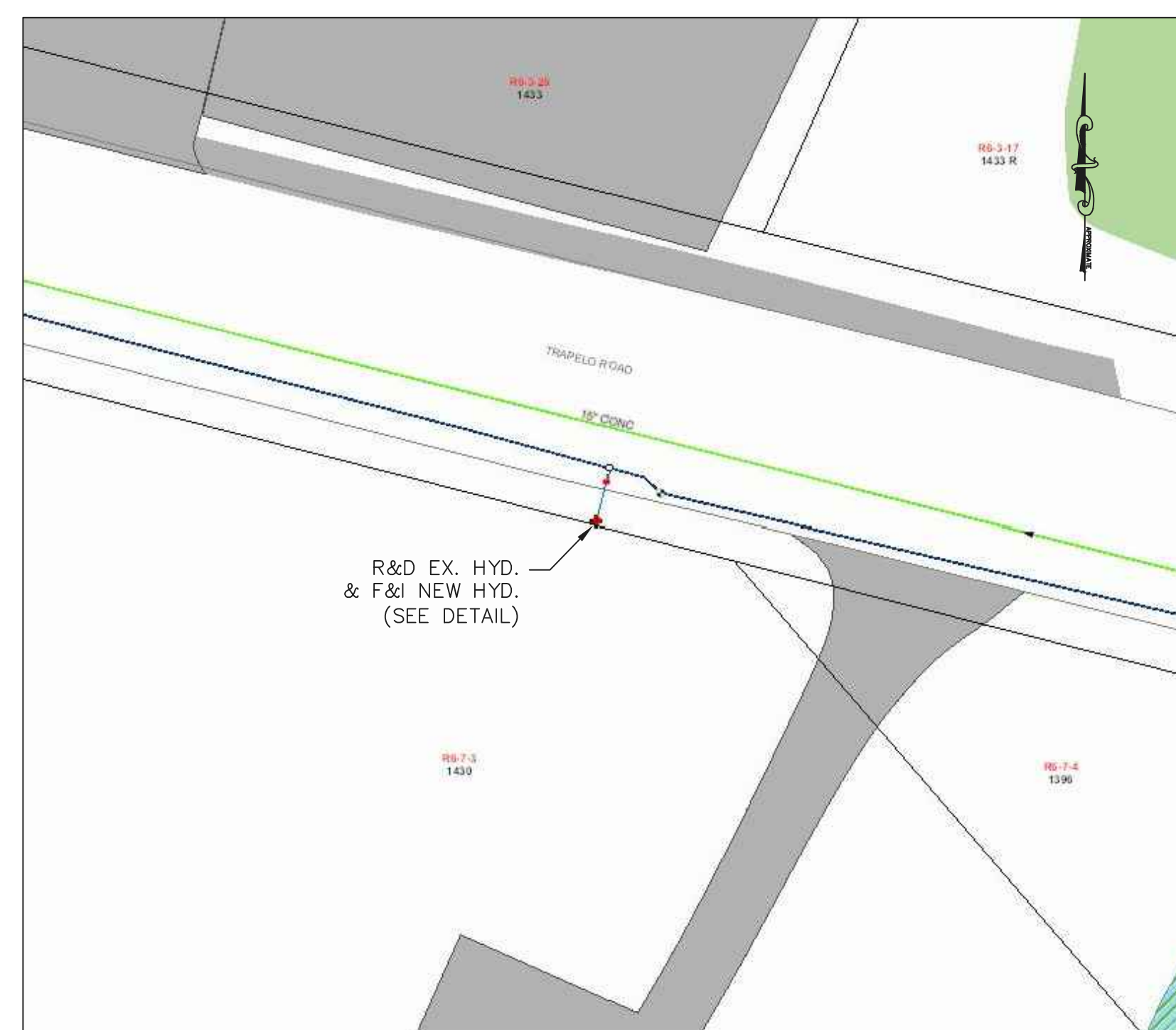
#91 SEMINOLE AVENUE



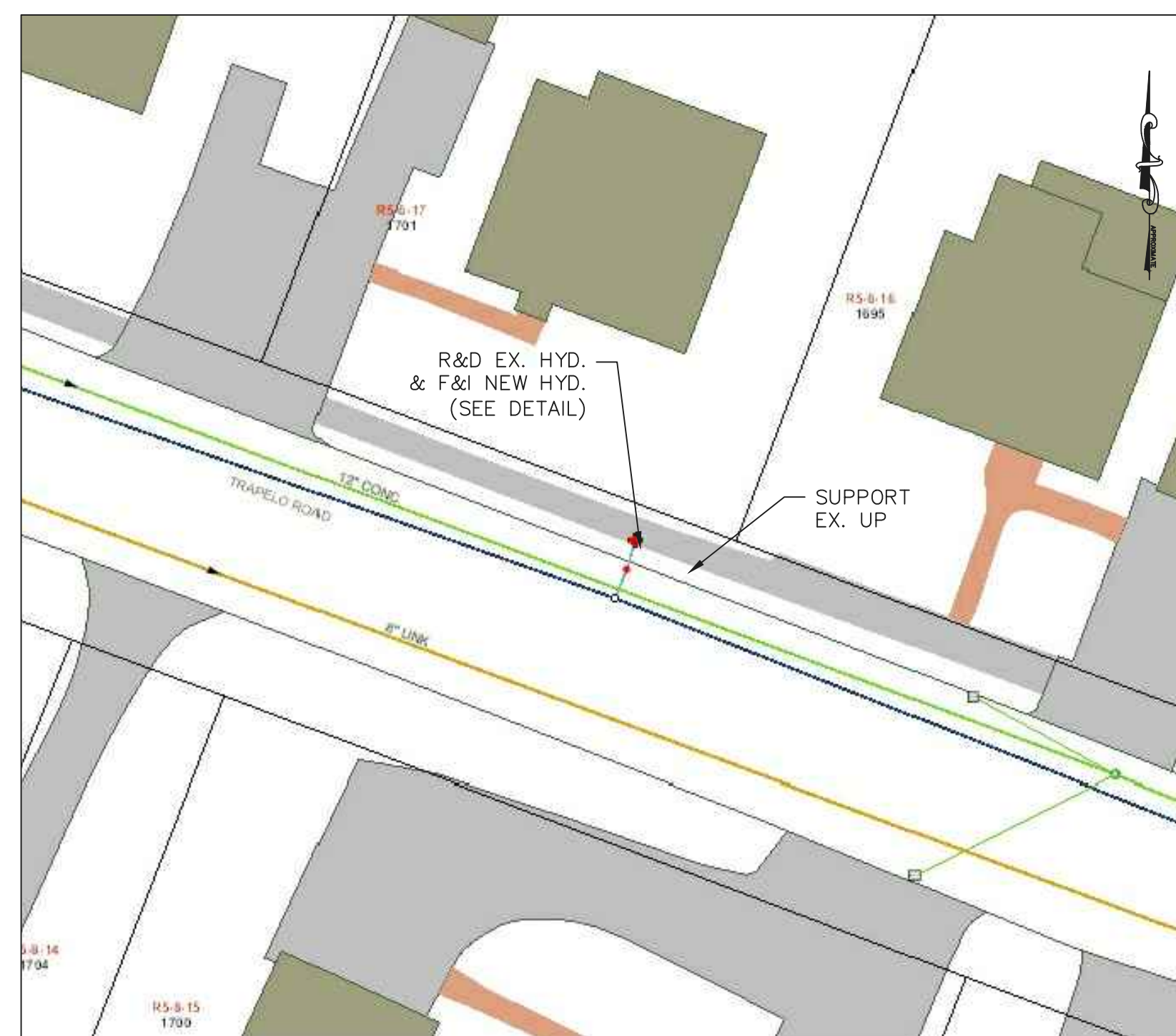
SOUTH STREET AT
BEDFORD STREET



#19 STOW STREET



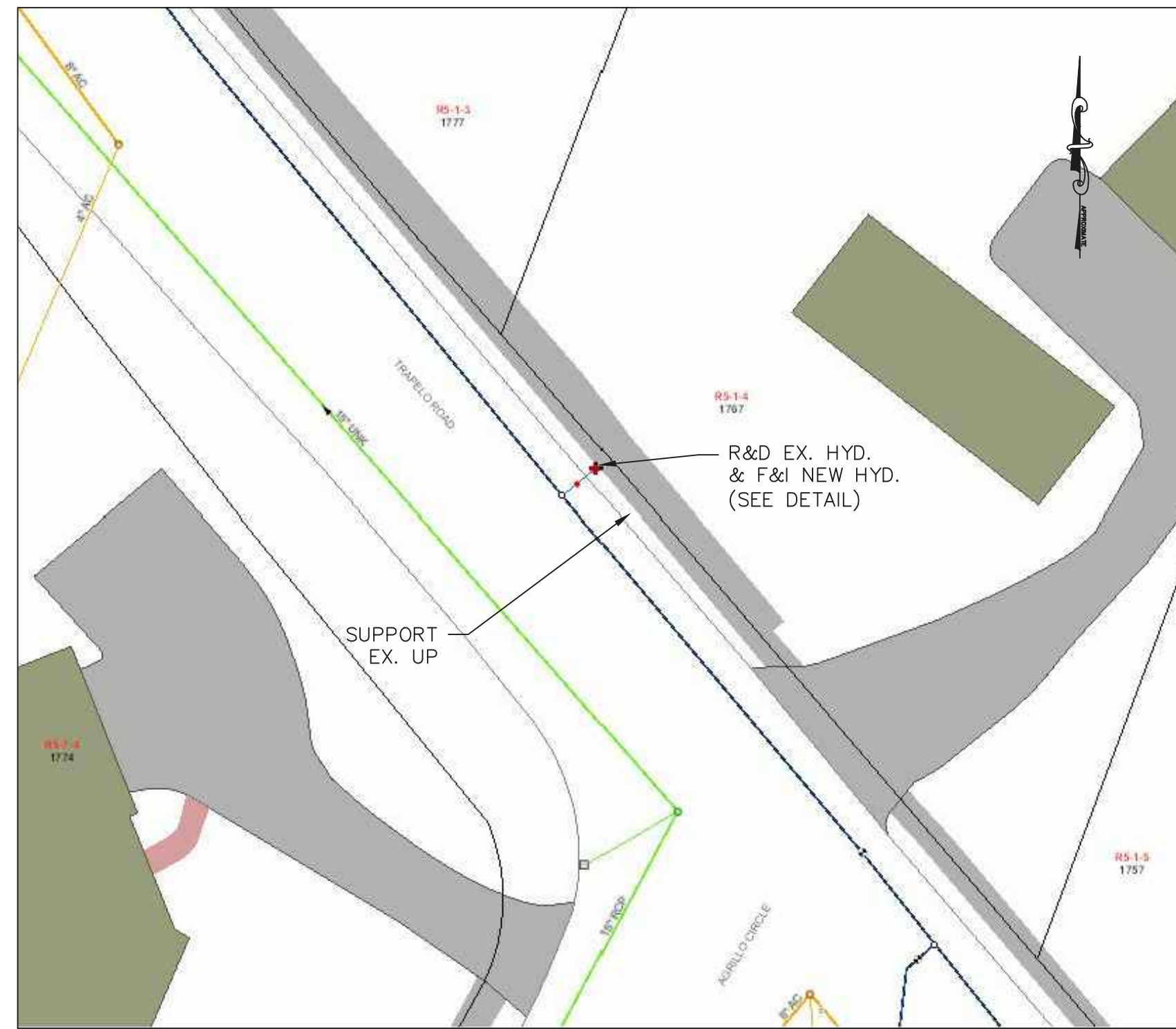
#1400 TRAPELO ROAD



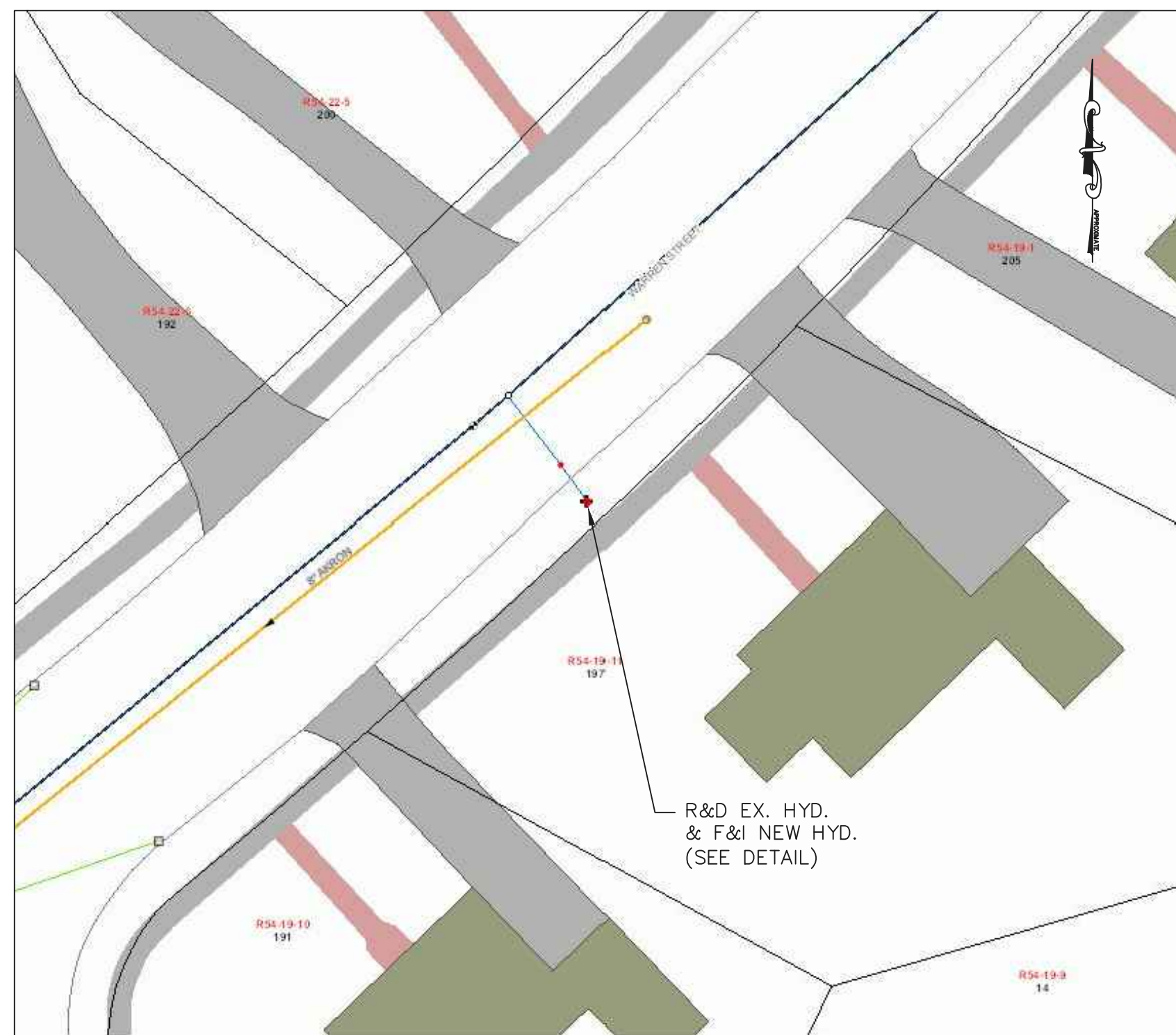
#1701 TRAPELO ROAD

SUBSURFACE UTILITY LINES, AS SHOWN HEREON, WERE COMPILED ACCORDING TO CITY OF WALTHAM GIS INFORMATION. THE LOCATIONS ARE APPROXIMATE ONLY. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD. THE CITY OF WALTHAM ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. THE CONTRACTOR SHALL EXCAVATE TEST PITS TO VERIFY UTILITY LINE LOCATIONS AS NECESSARY.

PLANS SHOWING
2016 HYDRANT
REPLACEMENT PROJECT
IN
WALTHAM, MASSACHUSETTS
STEPHEN CASAZZA, P.E., CITY ENGINEER
DESIGNED BY: J.P.M. JANUARY, 2017
DRAWN BY: L.P.S. SCALE: N.T.S.
CHECKED BY: S.A.C. SHEET 9 OF 11



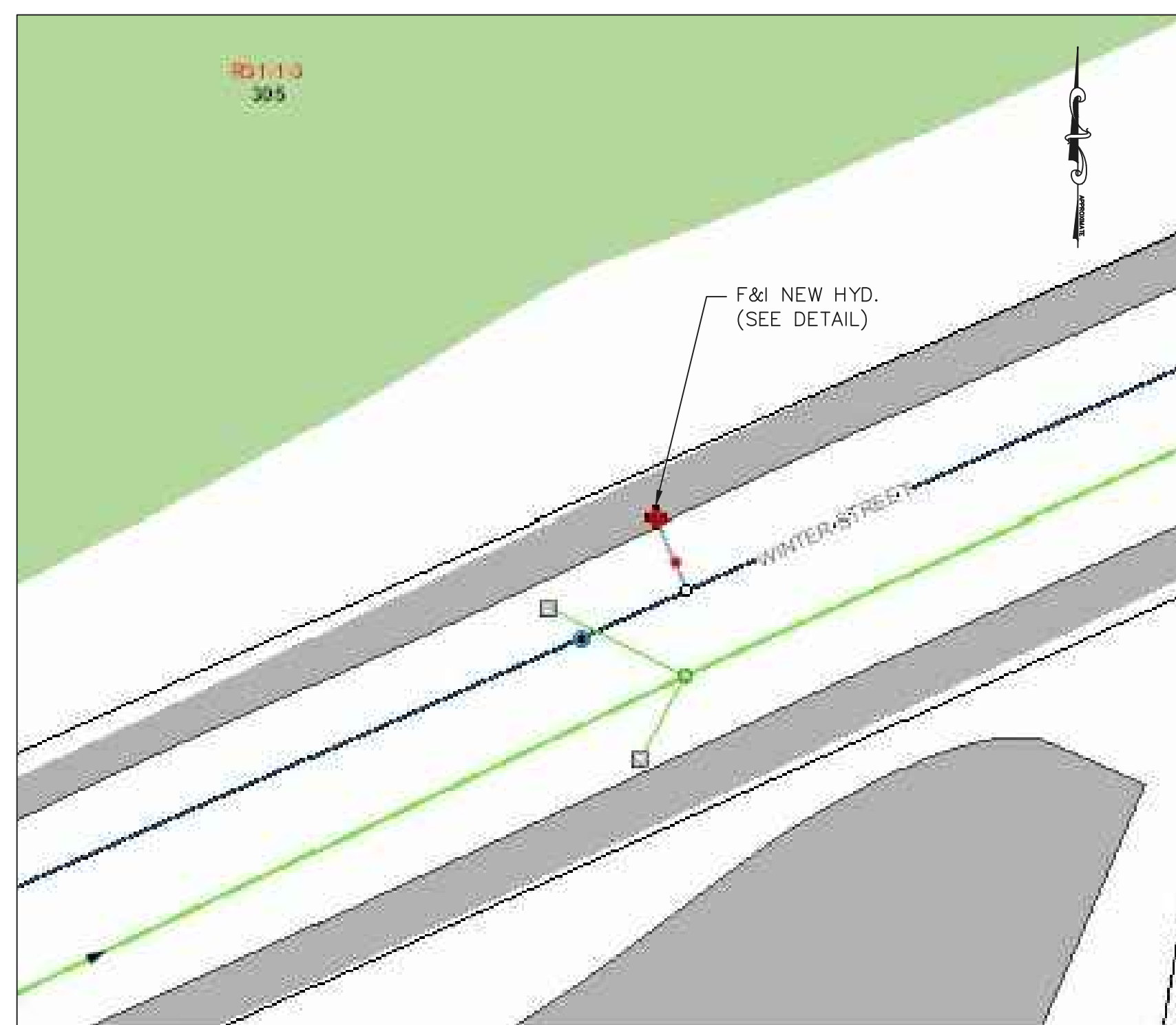
#1767 TRAPELO ROAD



#197 WARREN STREET



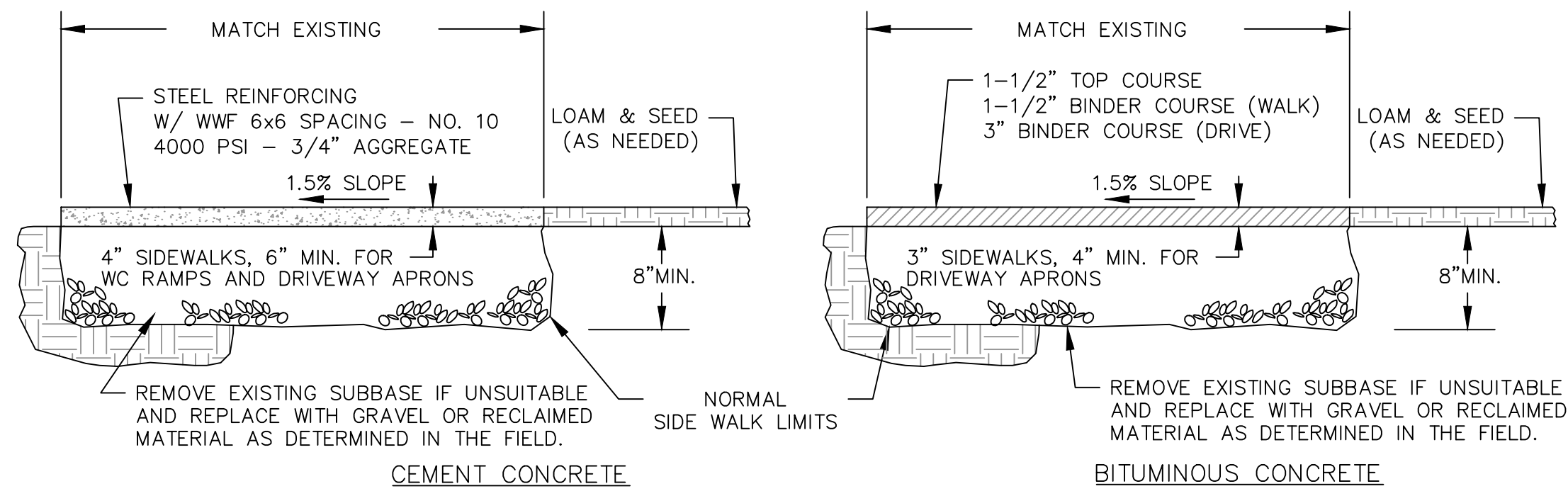
#76 WEST STREET



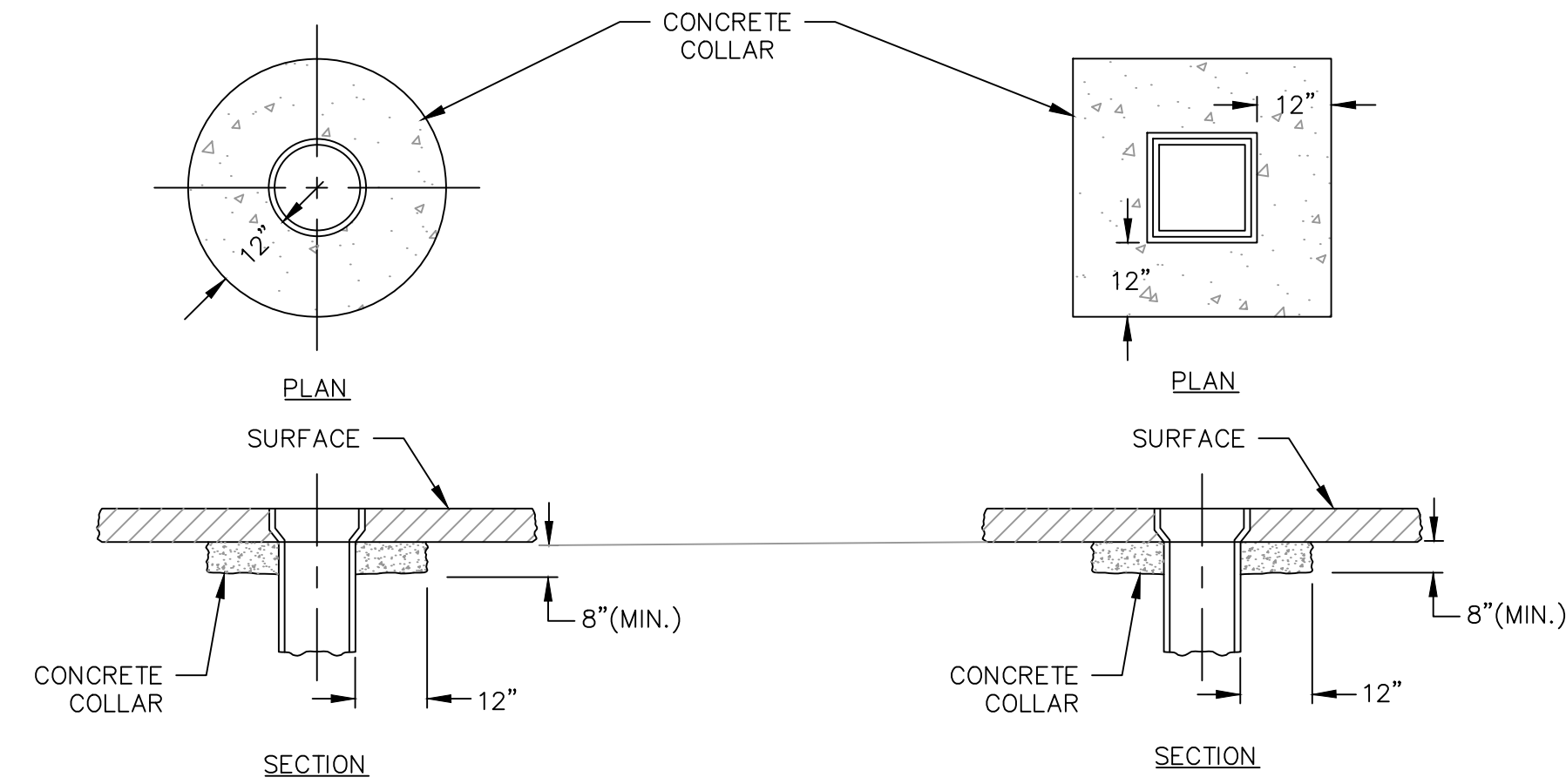
#305 WINTER STREET

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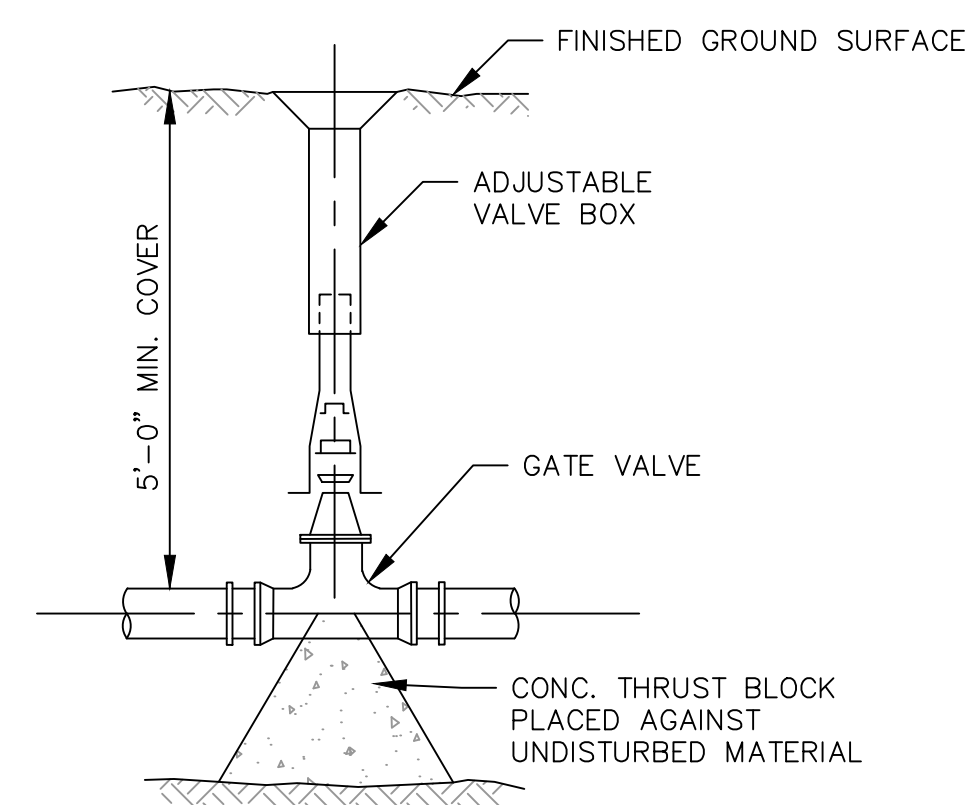
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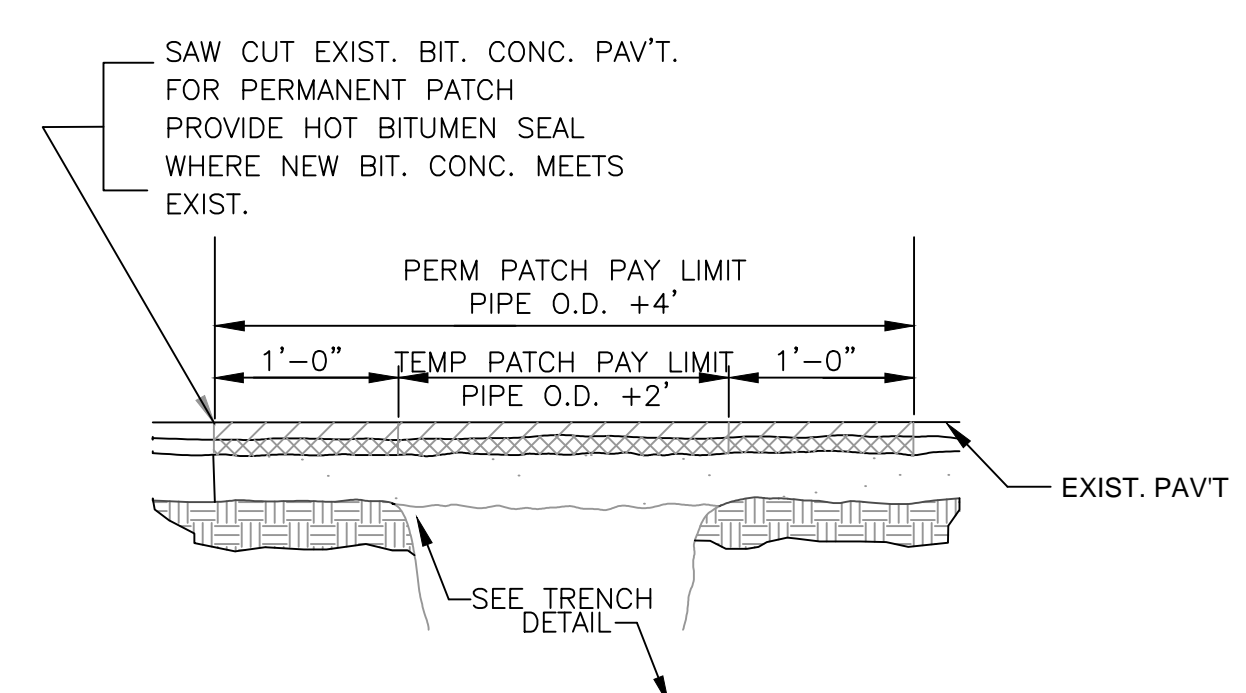
SIDEWALK DETAIL
NOT TO SCALE



UTILITY SERVICE BOXES
DETAILS FOR RAISING VALVE BOXES
NOT TO SCALE

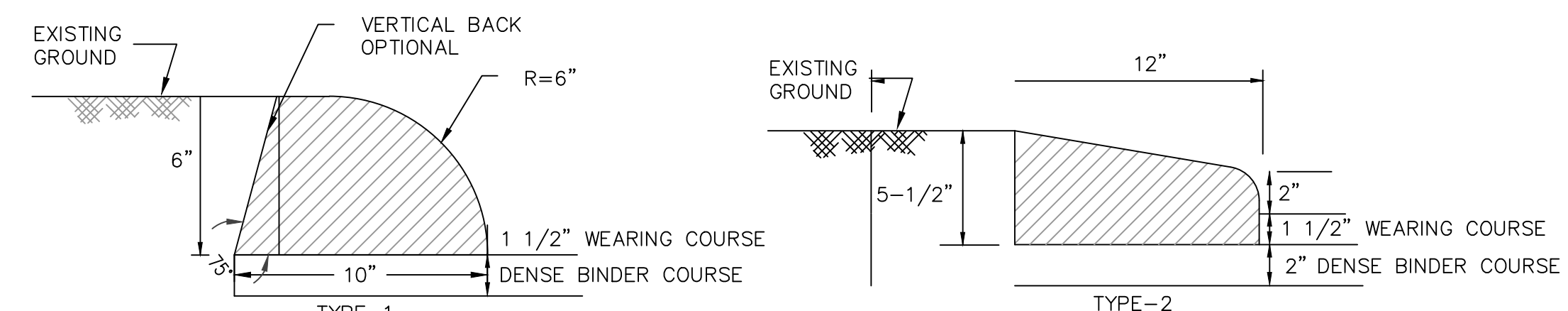


WATER VALVE DETAIL
NOT TO SCALE

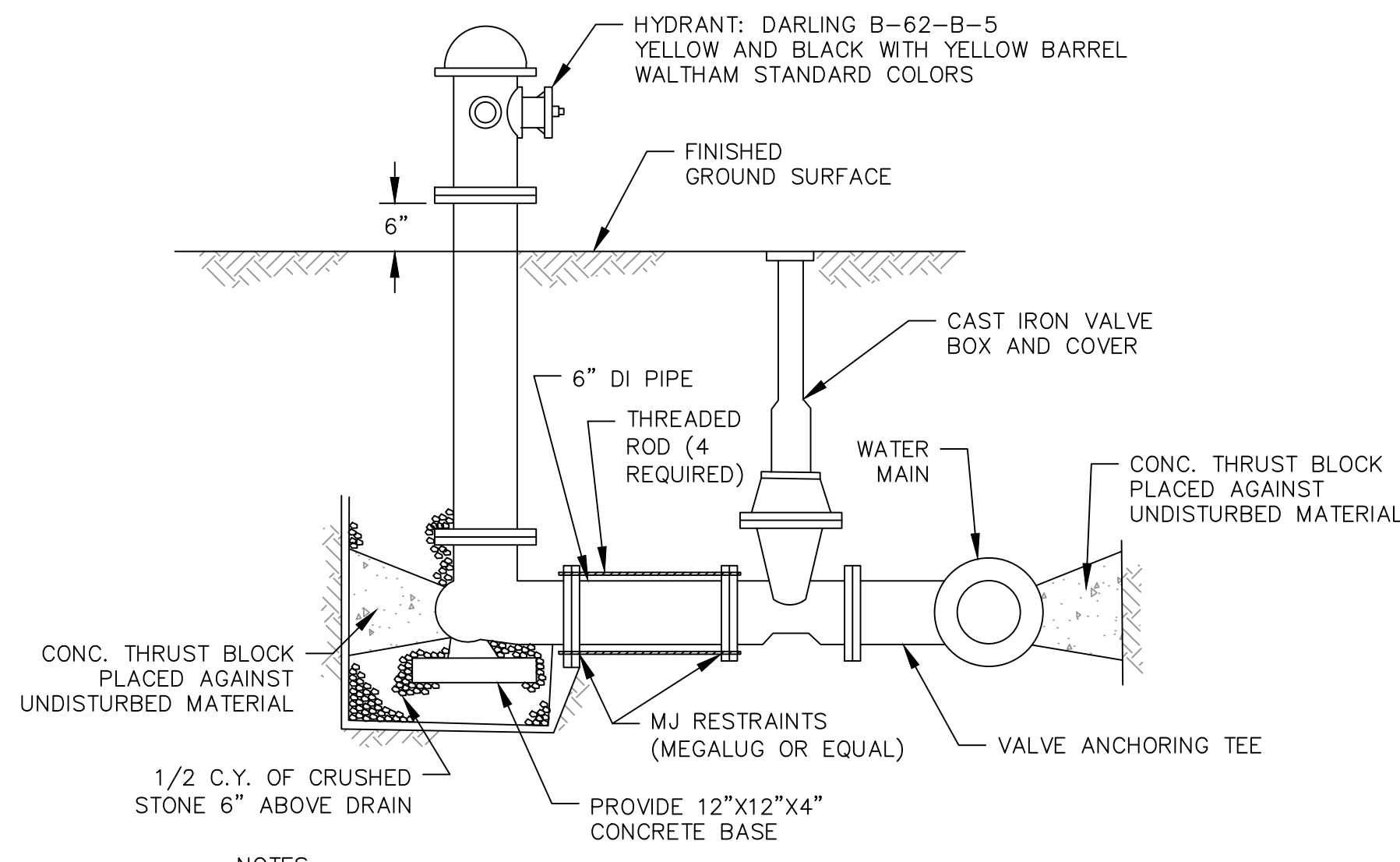


NOTE:
TEMP PATCH TO BE 3" COMPACTED HMA IN TWO LIFTS 1.5" BINDER 1.5" TOP
PERM PATCH TO BE 5" COMPACTED HMA IN TWO LIFTS 3" BINDER 2" TOP

TYPICAL PAVING TRENCH
NOT TO SCALE

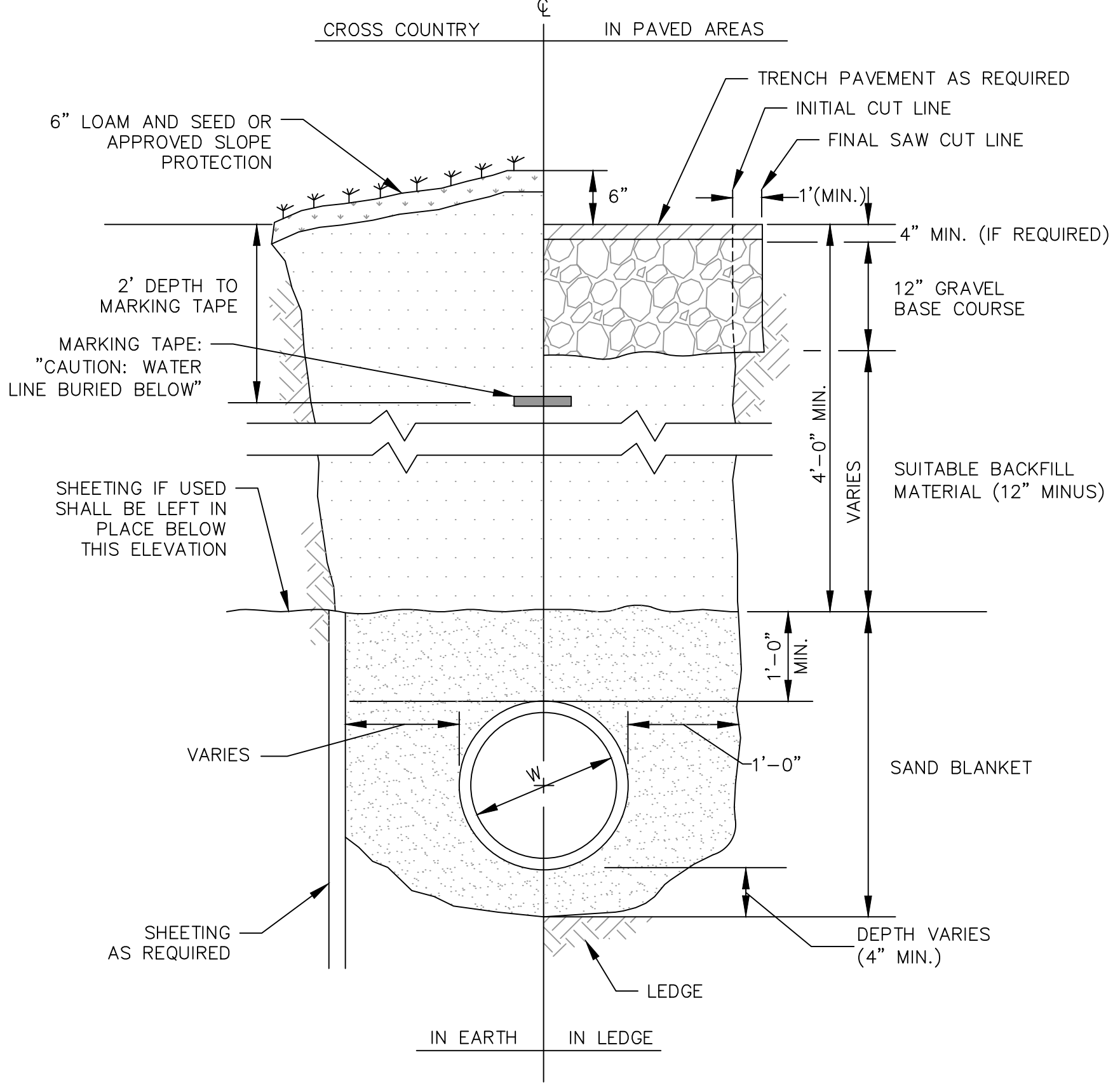


HOT MIX ASPHALT CURB & BERM DETAIL
NOT TO SCALE

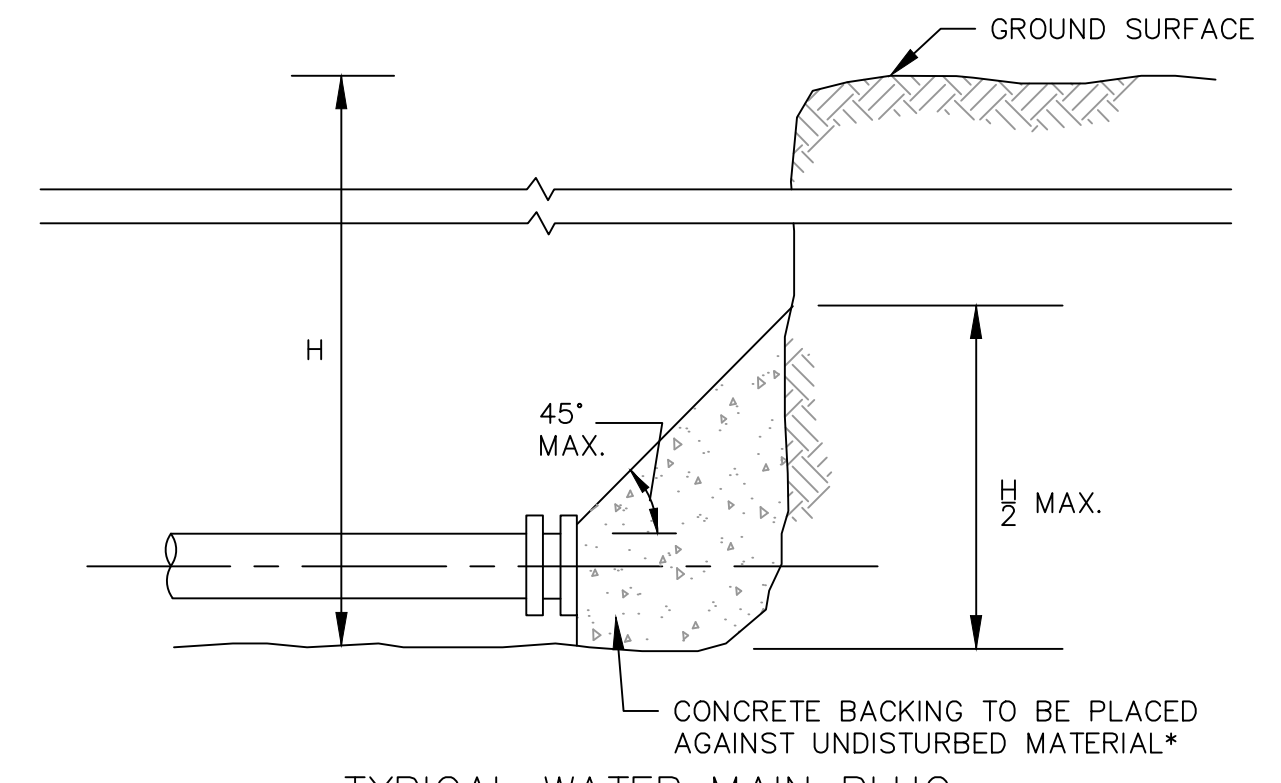


NOTES:
1. HYDRANT VALVE AND TEE SHALL BE RODDED TOGETHER.
2. ALL HYDRANTS SHALL BE PLACED AT BACK OF SIDEWALK WITH HYDRANT MARKER.

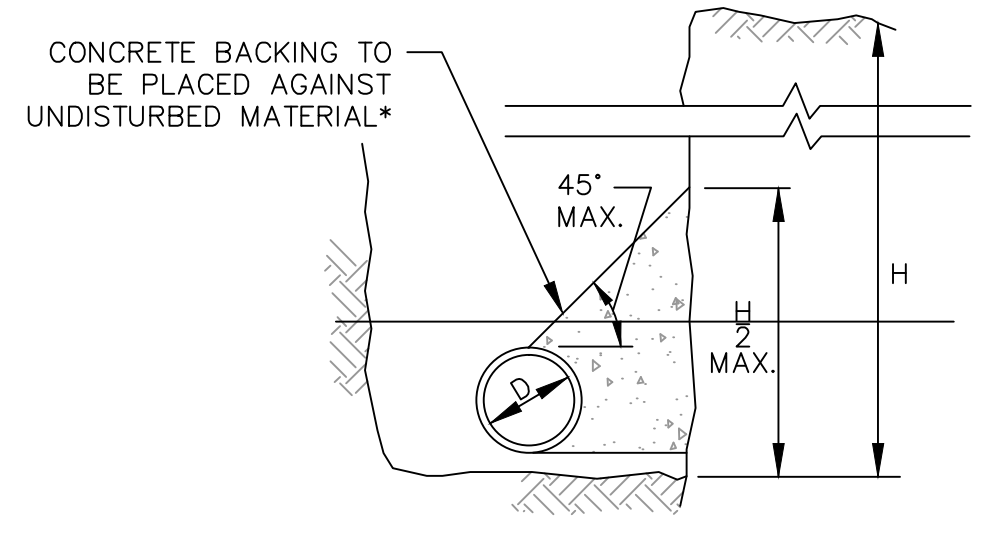
HYDRANT DETAIL
NOT TO SCALE



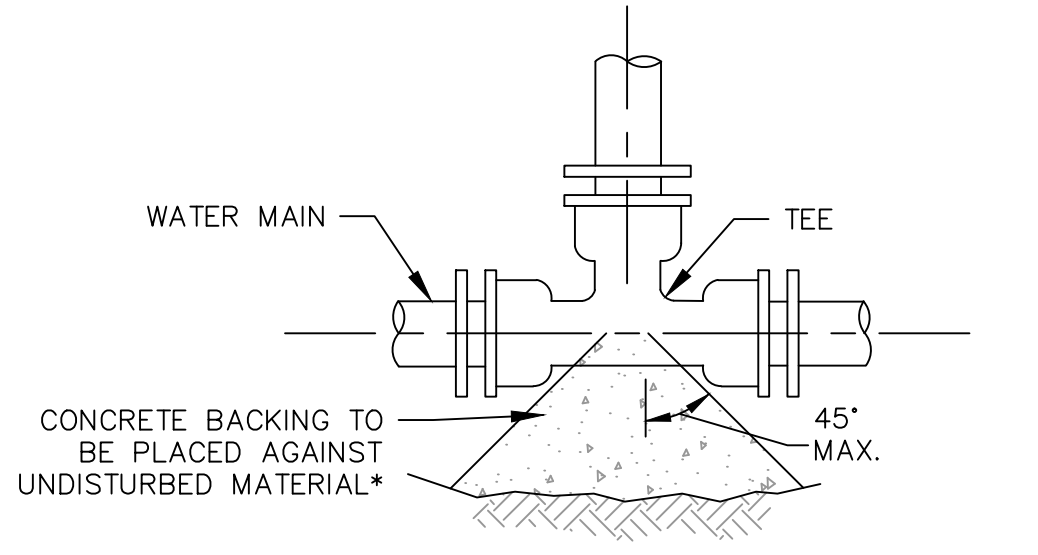
TYPICAL WATER MAIN/SERVICE TRENCH DETAIL
NOT TO SCALE



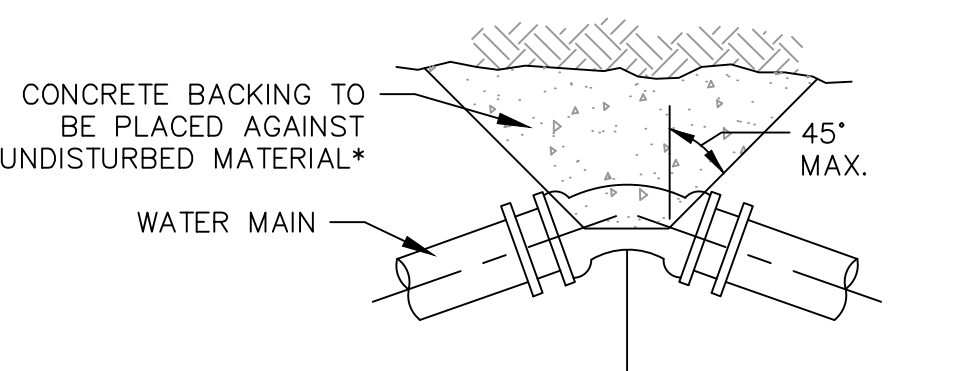
TYPICAL WATER MAIN PLUG THRUST BLOCK DETAIL
NOT TO SCALE



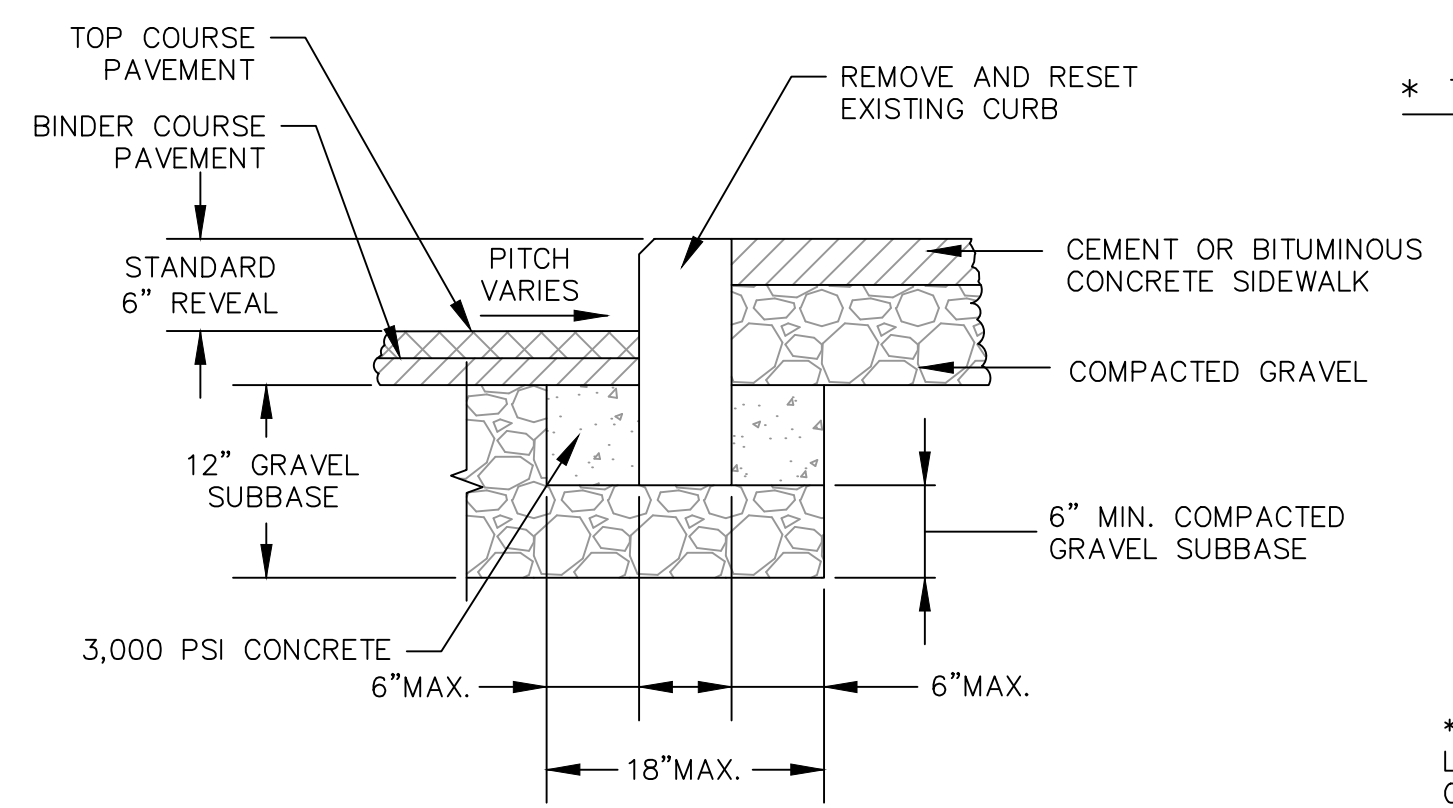
TYPICAL WATER MAIN THRUST BLOCK SECTION DETAIL
NOT TO SCALE



TYPICAL WATER MAIN TEE THRUST BLOCK DETAIL
NOT TO SCALE



TYPICAL WATER MAIN BEND THRUST BLOCK DETAIL
NOT TO SCALE



CURB DETAIL
NOT TO SCALE

* THRUST BLOCK BEARING AREAS FOR WATER PIPE

TABLE OF BEARING AREAS IN SQ. FT. AGAINST UNDISTURBED MATERIALS FOR WATER MAIN FITTINGS*			
SIZE OF MAIN (IN.)	90° BEND	TEES AND PLUGS	45° BEND
6	4	2.5	2
8	6	4	3
12	12	9	7
16	21	16	12

* TYPE OF SOIL IS MEDIUM CLAYEY, 6 OR MORE BLOWS PER FOOT, OR LOOSE GRANULAR, 9 OR MORE BLOWS PER FOOT. SOIL CONDITIONS OTHER THAN THOSE GIVEN WILL REQUIRE LARGER BEARING AREAS.

NOTES:

- FOR FITTINGS WITH LESS THAN 45° DEFLECTION, USE BEARING AREAS FOR 45° BEND.
- BEARING AREAS BASED ON HORIZONTAL PASSIVE SOIL PRESSURE OF 2,000 P.S.F. AND INTERNAL WATER PRESSURE OF 150 P.S.I.G. JOINTS SHALL NOT BE ENCASED IN CONCRETE. BEARING AREAS MAY BE DISREGARDED FOR TRENCHES IN ROCK WHERE THE TOP OF THE ROCK FACE IS AT OR ABOVE THE CROWN OF THE PIPE. HOWEVER, CONCRETE BACKING SHALL BE PLACED BETWEEN THE PIPE AND THE ROCK FACE.
- ALL FITTINGS AND VALVES SHALL BE IRON MECHANICAL JOINT AND RESTRAINED WITH MJ RESTRAINTS (MEGALUG OR EQUAL).
- WATER PIPE SHALL BE C.L.D.I. CLASS 56.

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