CITY OF PORTSMOUTH, NEW HAMPSHIRE

ADVERTISEMENT FOR
PRE-QUALIFICATION OF CONTRACTORS

BARTLETT AREA SEWER IMPROVEMENTS

Separate sealed PREQUALIFICATION STATEMENTS for the construction of: **Bartlett Areas Sewer Improvements** will be received by **the City of Portsmouth** at the **Purchasing Department** until **3:00 P.M.** (Local Time) on **January 25, 2008**. The work includes construction of sleeves under the railroad tracks (jack and bore), sanitary sewers, storm sewers, water mains and appurtenances. The project is located in the vicinity of the Bartlett Street and Islington Street intersection. Construction is expected to start in April 2008. The anticipated construction cost is between $3 and $4 Million.

1. Project may be funded in part by the NHDES State Revolving Loan Fund and/or EPA STAG funds. State and Federal provisions apply.
2. The City will begin the bidding process following completion of the prequalification period. To be eligible to submit bid proposals, all individuals, firms, partnerships or corporations interested in bidding **MUST BE PRE-QUALIFIED.** Only pre-qualified contractors will be invited to bid.
3. The City reserves the right to reject any or all prequalification statements, to accept any prequalification statement, to waive any informality on statements received, and to take any action that it may deem to be in the best interest of the City.

Copies of the Prequalification Statements may be obtained from the City Purchasing Department, City Hall, 1 Junkins Avenue, Portsmouth, New Hampshire 03801-4012 (603-610-7227**). Please continue below for the complete document.**

There is no cost for the Prequalification Statement. All requests for mailed documents will be shipped by regular UPS ground.

The Prequalification Statement may be examined at the following locations: Office of Underwood Engineers, Inc. - 25 Vaughan Mall, Unit 1, Portsmouth, NH 03801-4012, Office of Public Works – Peverly Hill Road, Portsmouth, NH 03801, Purchasing Department – 1 Junkins Avenue, Portsmouth, NH 03801, Office of Construction Summary of NH – 734 Chestnut St., Manchester, NH 03104, Office of Associated General Contractors of NH – 48 Grandview Road, Bow, NH 03304, Office of Dodge Reports – 880 2nd Street, Manchester, NH 03102

Neither the City nor the Engineer will be responsible for full or partial sets of the statements obtained from any source. All costs associated with the preparation of the prequalification statement and bid proposals are the responsibility of the Contractor.

Note: Prequalification statements must be submitted in sealed envelopes addressed to **Purchasing Department**, City Hall, 1 Junkins Avenue, Portsmouth, NH 03801.

City Of Portsmouth, New Hampshire
Purchasing Department
1 Junkins Avenue
Portsmouth, NH 03801

PRE-QUALIFICATION STATEMENT
Bartlett Area Sewer Improvements
CONFIDENTIAL

Table of Contents:

PART 1– STATEMENT OF QUALIFICATIONS

1.1 GENERAL INFORMATION

Date: _____

Contractor Name: _____

Contact Person: _____

Street: _____City: _____

State: _____ Zip: _____ Telephone: _____ Fax: _____

No proposal will be accepted by a prospective bidder who is not pre-qualified. A Contractor shall not be considered pre-qualified until a complete Pre-Qualification Statement has been filed with the City and the City has identified the Contractor as pre-qualified.

DUTY TO UPDATE AND SUPPLEMENT: Should any changes occur which substantially alters the data contained herein, the above named Contractor shall immediately submit to the City a revised Pre-Qualification Statement detailing the changes and the Contractor's current qualifications.

RESERVATION OF RIGHTS
The City of Portsmouth reserves the right not to proceed with bidding the project. If the City bids the project, the City reserves the following additional rights:

(1) to reject any and all bids;
(2) to reject any bid where, in the opinion of the City, Contractor's circumstances have materially changed and such changes affect the qualifications or responsibility of the Bidder;
(3) to require additional Contractor qualifications in any bid documents;
(4) to waive technical or legal deficiencies; and
(5) to accept any bid that it may deem to be in the best interest of the City.
(6) The City reserves the right to waive minor irregularities in the information contained in the pre-qualification application submitted, to make all final determinations, and to determine if pre-qualification will apply to future public works project. Firms not pre-qualified for this project will not be allowed to submit bid proposals.

SUBMISSION OF PREQUALIFICATION
Pre-qualification statements must be submitted in sealed envelopes addressed to: Purchasing Department, City Hall, City of Portsmouth, 1 Junkins Avenue, Portsmouth, NH 03801. The words "PRE-QUALIFICATION – BARTLETT AREA SEWER IMPROVEMENTS" must be clearly and legibly marked on the outside of the envelope. Pre-qualified firms will be notified when the Bid/Contract Documents for the project will be available.

The City will review the qualification statement within 60 days. Qualification statements will be reviewed by the Pre-Qualification Selection Committee.

The factors that the Pre-Qualification Selection Committee will evaluate to determine if a Contractor is Pre-qualified are:

- The Contractor's ability, capacity, efficiency, integrity, skill to perform timely, and quality of work as reflected in the Contractor's Experience and References.
- Sufficiency of Contractor's financial, equipment and personnel resources as represented in Contractor's Organization History.
- Other information submitted in response to the factors outlined in the Pre-qualification Statement.

o

1.2 THRESHOLD REQUIREMENTS OF QUALIFICATIONS

A. Contractor is registered with the Secretary of the State to do business in New Hampshire.

☐ Yes ☐ No

B. Contractor has a liability insurance policy with a policy limit of at least $2,000,000 per occurrence and $2,000,000 aggregate (or can provide for project). The limits may be met with an excess policy.

☐ Yes ☐ No

C. Contractor has current workers' compensation insurance policy as required by NH Administrative Rule RSA-281.A2.VIII.a or is legally self-insured pursuant to RSA-281.A2.IX (paragraph 1).

☐ Yes ☐ No ☐ Contractor is exempt from this requirement, because it has no employees

D. During review of the pre-qualification statement, the City reserves the right to request a financial statement from the contractor (audited, preferred, if available). In the event financial statements are requested and not provided, Contractor will be considered not meeting the threshold requirements and will be disqualified.

E. Have you attached a notarized statement from an admitted surety insurer authorized to issue bonds in the State of New Hampshire, which states: (a) that your current bonding capacity is sufficient for the project; (b) your current available bonding capacity?

☐ Yes ☐ No

NOTE: Notarized statement must be from the surety company, not an agent or broker.

F. Within the last five years, has a surety firm completed a contract on your behalf, or paid for completion because your firm was in default and terminated by the project owner?

☐ Yes ☐ No

G. At any time during the last five years, has your firm, or any of its owners or officers been convicted of a crime involving the awarding of a contract for a construction project, or the bidding or performance of a construction contract?

☐ Yes ☐ No

1.3 ORGANIZATION HISTORY

1. Contractor Name _____

2. Principal/Permanent Address _____

   _____

   Local Address (if applicable) _____

   _____

3. How many years has Contractor been engaged in the contracting business under your present firm name? _____

4. Not Used.

5. Please identify your agent for service of process:

   _____

6. How many years of experience in the following areas of construction:

   Sewer

   (a) As a General Contractor: _____

   (b) As a Sub-Contractor: _____

   Water

   (a) As a General Contractor: _____

   (b) As a Sub-Contractor: _____

   Roadway Reconstruction

   (a) As a General Contractor: _____

   (b) As a Sub-Contractor: _____

   Underground Utilities (Elect.,Tel., Cable)

   (a) As a General Contractor: _____

   (b) As a Sub-Contractor: _____

7. a. **If a corporation, answer this:**

   When incorporated _____

   In what State? _____

   President's name: _____

   Vice President's name: _____

   Secretary's or Clerk's name: _____

   Treasurer's name: _____

7.b. **If a partnership, answer this:**

Date of organization: _____

Is partnership general or limited? _____

Name and address of Partners: _____

_____

_____

7.c. **If a Limited Liability Company, answer this**:

Date of Organization? _____

Where Organized? _____

Is the LLC member managed or manager managed? _____

If member managed, identify the member? If manager managed, identify the manager: _____.

Name and title of Officers if any:

_____

_____

8. Has there been any change in ownership of the firm at any time during the last three years?

NOTE: A corporation whose shares are publicly traded is not required to answer this question.

☐ Yes ☐ No

If yes please explain (next page):

_____

_____

_____

_____

9. Is the firm a subsidiary, parent, holding company or affiliate of another construction firm?

NOTE: Include information about other firms if one firm owns 50 per cent or more of another, or if an owner, partner, or officer of your firm holds a similar position in another firm.

☐ Yes ☐ No

If yes please explain:

_____

_____

_____

_____

10. Are any corporate officers, partners or owners connected to any other construction firms.

NOTE: Include information about other firms if an owner, partner, or officer of your firm holds a similar position in another firm.

☐ Yes ☐ No

If yes please explain:

_____
_____
_____
_____

11. Has your firm changed names in the past five years?

☐ Yes ☐ No

If yes please explain:

_____
_____
_____
_____

12. Has any owner, partner or (for corporations) officer of your firm operated a construction firm under any other name in the last five years?

☐ Yes ☐ No

If yes please explain:

_____
_____
_____
_____

13. Is your firm currently the debtor in a bankruptcy case?

☐ Yes ☐ No

If "yes," please attach a copy of the bankruptcy petition, showing the case number, and the date on which the petition was filed.

14. Was your firm in bankruptcy at any time during the last five years? (This question refers only to a bankruptcy action that was not described in answer to question 13, above)

☐ Yes ☐ No

If "yes," please attach a copy of the bankruptcy petition, showing the case number and the date on which the petition was filed, and a copy of the Bankruptcy Court's discharge order, or of any other document that ended the case, if no discharge order was issued.

1.4 DISPUTES AND LEGAL

15. At any time in the last five years has your firm been assessed and/or paid liquidated damages after completion of a project under a construction contract with either a public or private owner?

☐ Yes ☐ No

If yes please explain. Identify all such projects by owner, owner's address, the date of completion of the project, amount of liquidated damages assessed and all other information necessary to fully explain the assessment of liquidated damages.

_____
_____
_____
_____

16. In the last five years has your firm been denied an award of a public works contract based on a finding by a public agency that your company was not a responsible bidder?

☐ Yes ☐ No

If yes please explain. Identify the year of the event, the owner, the project and the basis for the finding by the public agency:

_____
_____
_____
_____

NOTE: The following two questions refer only to disputes between your firm and the owner of a project. You need not include information about disputes between your firm and a supplier, another contractor, or subcontractor. You need not include information about "pass-through" disputes in which the actual dispute is between a sub-contractor and a project owner. Also, you may omit reference to all disputes about amounts of less than $50,000.

17. In the past five years has any claim against your firm concerning your firm's work on a construction project been filed in court or arbitration**?**

☐ Yes ☐ No

If yes please explain. Identify the claim(s) by providing the project name, date of the claim, name of the claimant, a brief description of the nature of the claim, the court in which the case was filed and a brief description of the status of the claim (pending or, if resolved, a brief description of the resolution):

_____
_____
_____
_____
_____
_____

18. In the past five years has your firm made any claim against a project owner concerning work on a project or payment for a contract and filed that claim in court or arbitration?

☐ Yes ☐ No

If yes please explain. Identify the claim(s) by providing the project name, date of the claim, name of the claimant, a brief description of the nature of the claim, the court in which the case was filed and a brief description of the status of the claim (pending or, if resolved, a brief description of the resolution):

_____
_____
_____
_____

19. Has your firm or any of its owners, officers or partners ever been convicted of a crime involving any federal, state, or local law related to construction?

☐ Yes ☐ No

If yes please explain. Identify who was involved, the name of the public agency, the date of the conviction and the grounds for the conviction:

_____
_____
_____
_____
_____

20. Has any officer, director, member, owner, partner, or principal individual of Contractor ever been convicted of any anti-trust violation, or been debarred from performing work on any contract?

☐ Yes ☐ No

If so, please state name of individual and reason for such action:

_____
_____
_____

Date of reinstatement (if reinstated): _____

21. Has the EPA, NHDES or any other regulatory sewer, water, stormwater, or other Water Quality Body cited and assessed penalties against either your firm or the owner of a project on which your firm was the contractor, in the past five years?

NOTE: If you have filed an appeal of a citation and the Appeals Board has not yet ruled on your appeal, or if there is a court appeal pending, you need not include information about the citation.

☐ Yes ☐ No

If yes please explain.

_____
_____
_____
_____
_____

22. In the past 5 years, has the Contractor ever failed to complete any work awarded to it in the scheduled contract time, including approved time extensions?

☐ Yes ☐ No

If so, where and why?

_____
_____
_____
_____

23. Has Contractor or any officer, director, member, owner or partner of Contractor ever ceased work on a project?

☐ Yes ☐ No

If so, where and why?

_____
_____
_____
_____

1.5 BONDING, INSURANCE AND SAFETY

24. Submit bonding letter in accordance with Part 1.2 (Question #E). It shall be an unqualified letter from the bonding company to the effect that they will provide the required performance and payment bonds, each in the amount of 100 percent of the bid price (Engineers Opinion of Cost is $3 to $4 Million), should the Contractor be awarded the contract. Include limitations in bonding capacity, if any. Also provide name, contact, telephone number, and address of the following:

    a. BANK

    _____

    _____

    _____

    b. BONDING COMPANY*

    _____

    _____

    _____

    c. AGENT

    _____

    _____

    _____

    * Bonding company must be registered and licensed to do business in the State of New Hampshire

25. If your firm was required to pay a premium of more than one per cent for a performance and payment bond on any project(s) on which your firm worked at any time during the last three years, state the percentage that your firm was required to pay. You may provide an explanation for a percentage rate higher than one per cent, if you wish to do so.

    _____

26. List all other sureties (name and full address) that have written bonds for your firm during the last five years:

    _____
    _____
    _____
    _____

27. Has Contractor or any officer, director, member, owner or partner, or principal individual of Contractor ever had a performance bond collected upon?

☐ Yes ☐ No

If so, please explain:

_____
_____
_____

28. During the last five years, has your firm ever been denied bond coverage by a surety company, or has there ever been a period of time when your firm had no surety bond in place during a public construction project when one was required?

☐ Yes ☐ No

If yes, provide details indicating the date when your firm was denied coverage and the name of the company or companies which denied coverage; and the period during which you had no surety bond in place.

_____
_____
_____
_____
_____
_____

29. In the last five years has any insurance carrier, for any form of insurance, refused to renew the insurance policy for your firm?

☐ Yes ☐ No

If yes please explain. Name the insurance carrier, the form of insurance and the year of the refusal:

_____
_____
_____
_____

30. Within the last five years has there ever been a period when your firm had employees but was without workers' compensation insurance or state-approved self-insurance?

☐ Yes ☐ No

If yes please explain the reason for the absence of workers' compensation insurance. If No, please provide a statement by your current workers' compensation insurance carrier that verifies periods of workers' compensation insurance coverage for the last five years. (If your firm has been in the construction business for less than five years, provide a statement by your workers' compensation insurance carrier verifying continuous workers' compensation insurance coverage for the period that your firm has been in the construction

business.)

_____
_____
_____
_____

31. Has any State (NH, ME, MA, VT) or Federal OSHA cited and assessed penalties against your firm for any "serious," "willful" or "repeat" violations of its safety or health regulations in the past five years?

NOTE: If you have filed an appeal of a citation, and the Occupational Safety and Health Appeals Board has not yet ruled on your appeal, you need not include information about it.

☐ Yes ☐ No

If yes describe the citations, including information about the dates of the citations, the nature of the violation, the project on which the citation(s) was or were issued, the amount of penalty paid, if any. If the citation was appealed to the Occupational Safety and Health Appeals Board and a decision has been issued, state the case number and the date of the decision.

_____
_____
_____
_____
_____

32. How often do you require documented safety meetings to be held for construction employees and field supervisors during the course of a project?

_____

33. During the last five years, has there been more than one occasion in which your own firm has been penalized or required to pay back wages for failure to comply with the federal Davis-Bacon prevailing wage requirements?

☐ Yes ☐ No

If yes, describe the nature of the violation, identifying the name of the project, the date of its completion, the public agency for which it was constructed; the number of employees who were initially underpaid, the amount of back wages you were required to pay along with the amount of any penalty paid.

If yes please explain.

_____
_____
_____
_____
_____

1.6 FINANCIAL RECORDS AND INFORMATION

34. If requested by the City during review of the pre-qualification statement, the contractor shall submit their most recent audited or reviewed financial statements.

35. Identify all persons or entities that hold 25% or more of the Contractor's total notes receivable and indicate that person's or entity's relationship, if any, with the Contractor other than as debtor and the percentage for each.

NAME	RELATIONSHIP	PERCENTAGE

36. Identify all persons or entities that hold 25% or more of the Contractor's total notes payable, and indicate that person or entity's relationship, if any, with Contractor other than as a creditor and the percentage for each.

NAME	RELATIONSHIP	PERCENTAGE

PREPARED BY: _____

Name of Individual Accountant or Officer

_____

Complete Address of Accounting Firm (w/ zip code)

_____

(Area Code) Telephone Number

1.7 PERSONELL, SUPPLIERS AND RELATED EXPERIENCE

37. Employment record of principal individuals of Contractor, including those personnel responsible for preparation of bid proposals. Also include records of individuals who will be your field superintendents on proposed work in Portsmouth, New Hampshire. (Attach resumes if more space needed)

Individual's Name	Present Position	Years of Construction Experience	Magnitude and Type of Work	In What Capacity

38. Give names, contact, telephone numbers, and complete addresses of major material suppliers and/or subcontractors with whom Contractor has done business in past five (5) years:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

39. Give names and complete addresses of each material supplier and/or subcontractor of the Contractor who has given a notice of lien, filed a mechanics lien, applied for a payment against a payment bond, or brought suit for payment on any contract in the last five (5) years:

_____

_____

_____

_____

_____

_____

_____

40. What equipment does Contractor own that is available for proposed work? (Use additional pages if necessary)

Quantity	Item Description, Size, & Capacity	Condition	Age	Cost	Depreciation	Book Value

41. Current Workload: List the construction projects your organization has underway on this date (use additional paper if necessary):

Project Name: ________________________________ Type of Work: _______________

Contract Amount: ______________________% Complete: __________ % Sublet _____

Expected Completion Date: _____ Engineer name and phone: ______________________

Owners Name, Address, and Phone # _______________________________________

____

Project Name: ________________________________ Type of Work: _______________

Contract Amount: ______________________% Complete: __________ % Sublet _____

Expected Completion Date: _____ Engineer name and phone: ______________________

Owners Name, Address, and Phone # _______________________________________

____

Project Name: ________________________________ Type of Work: _______________

Contract Amount: ______________________% Complete: __________ % Sublet _____

Expected Completion Date: _____ Engineer name and phone: ______________________

Owners Name, Address, and Phone # _______________________________________

____

Project Name: ________________________________ Type of Work: _______________

Contract Amount: ______________________% Complete: __________ % Sublet _____

Expected Completion Date: _____ Engineer name and phone: ______________________

Owners Name, Address, and Phone # _______________________________________

____

42. List all municipal, State or Federal contracts your company has worked on in the past 3 years greater than $200,000: ____

____

43. The Engineer's opinion of cost for the total construction project is $3 to 4 Million (preliminary Plans are provided). Work includes a jack and bore, sewer interceptors, drain interceptors, water mains, traffic control, etc.

a) Please identify an anticipated schedule for the work assuming a start time of April 2008. Also note, any circumstances that would permit the work to be complete under an expedited schedule.

____

____

____

b) Please prepare at least 4 project data sheets for similar projects completed within the last 5 years:

Project Data Sheet #1

Project Name: _____
Project Location: _____
Date Completed: _____ Duration: _____
Value of Contract at Completion: _____ Unit Price (y/n) _____
Funding sources: _____
Owner Name: _____ Telephone: _____
Address: _____
Business Name and Address of entity which constructed and managed this project:
_____
Engineer: _____ Contact Name: _____ Phone: _____
Please note special project conditions that are similar in nature (Use additional sheets if necessary):

Sewer Interceptors (including Jack and Bores).

_____
_____
_____
_____
_____
_____

Drainage and Water Distribution Mains (including Temporary Water):

_____
_____
_____
_____
_____
_____

Traffic Control (ADT in Bartlett Area = 15,000 to 20,000 VPD):

_____
_____
_____
_____
_____

Other (night work, railroad provisions, rock removal, old mill complex):

_____
_____
_____
_____
_____
_____

Project Data Sheet #2

Project Name: _____
Project Location: _____
Date Completed: _____ Duration: _____
Value of Contract at Completion: _____ Unit Price (y/n) _____
Funding sources: _____
Owner Name: _____ Telephone: _____
Address: _____
Business Name and Address of entity which constructed and managed this project:
_____
Engineer: _____ Contact Name: _____ Phone: _____
Please note special project conditions that are similar in nature (Use additional sheets if necessary):

Sewer Interceptors (including Jack and Bores).

_____
_____
_____
_____
_____
_____

Drainage and Water Distribution Mains (including Temporary Water):

_____
_____
_____
_____
_____
_____

Traffic Control (ADT in Bartlett Area = 15,000 to 20,000 VPD):

_____
_____
_____
_____
_____

Other (night work, railroad provisions, rock removal, old mill complex):

_____
_____
_____
_____
_____
_____

Project Data Sheet #3

Project Name: _____
Project Location: _____
Date Completed: _____ Duration: _____
Value of Contract at Completion: _____ Unit Price (y/n) _____
Funding sources: _____
Owner Name: _____ Telephone: _____
Address: _____
Business Name and Address of entity which constructed and managed this project:
_____
Engineer: _____ Contact Name: _____ Phone: _____
Please note special project conditions that are similar in nature (Use additional sheets if necessary):

Sewer Interceptors (including Jack and Bores).

_____
_____
_____
_____
_____
_____

Drainage and Water Distribution Mains (including Temporary Water):

_____
_____
_____
_____
_____
_____

Traffic Control (ADT in Bartlett Area = 15,000 to 20,000 VPD):

_____
_____
_____
_____
_____

Other (night work, railroad provisions, rock removal, old mill complex):

_____
_____
_____
_____
_____
_____

Project Data Sheet #4

Project Name: _____
Project Location: _____
Date Completed: _____ Duration: _____
Value of Contract at Completion: _____ Unit Price (y/n) _____
Funding sources: _____
Owner Name: _____ Telephone: _____
Address: _____
Business Name and Address of entity which constructed and managed this project:
_____
Engineer: _____ Contact Name: _____ Phone: _____
Please note special project conditions that are similar in nature (Use additional sheets if necessary):

Sewer Interceptors (including Jack and Bores).

_____
_____
_____
_____
_____
_____

Drainage and Water Distribution Mains (including Temporary Water):

_____
_____
_____
_____
_____
_____

Traffic Control (ADT in Bartlett Area = 15,000 to 20,000 VPD):

_____
_____
_____
_____
_____

Other (night work, railroad provisions, rock removal, old mill complex):

_____
_____
_____
_____
_____
_____

1.8 REFERENCES

44. Name, contact person, telephone number, and address of three (3) **owners** not employed by Contractor involved in current contracts or contracts completed in the last five (5) years who can attest to the character, integrity, reputation, judgment, experience, and efficiency of the Contractor.

a. _____
_____
_____

b. _____
_____
_____

c. _____
_____
_____

45. Name, contact person, telephone number, and address of three (3) **engineers** not employed by Contractor involved in current contracts or contracts completed in the last five (5) years who can attest to the character, integrity, reputation, judgment, experience, and efficiency of the Contractor.

d. _____
_____
_____

e. _____
_____
_____

f. _____
_____
_____

46. Names and addresses of all governmental entities who have determined Contractor qualified for the work classification requested herein and all who have determined Contractor not qualified in the last five (5) years.

a. Qualified	b. Not Qualified

Nothing construed herein shall limit the City, or its authorized representatives, from contacting any and all former owners/clients, material suppliers and other third parties with knowledge of the Contractor's history of performance, practices and reputation. The existence of Release and Hold Harmless Statements directed to individual references as

described above shall not be presumed to void or nullify the hold harmless language set forth in this document.

It is understood and agreed that all responses from references and others obtained by the City, or its authorized representatives, shall be deemed confidential. If a Contractor receives negative references and the City has preliminarily determined the Contractor not qualified based on such references, the City, or its authorized representatives, will provide Contractor with a summary of the nature of those negative references without identifying the party providing such reference.

CONTRACTOR'S PREQUALIFICATION STATEMENT

The undersigned, on behalf of the Contractor, certifies that the Contractor has not either directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with any contract on any municipal, state, or federal project.

I swear that all the statements herein contained, including the declaration of ownership and organization, the financial information, current workload, and the record of experience have been examined by me, and to the best of my knowledge and belief are true and correct.

On behalf of Contractor, I hereby authorize the City of Portsmouth, or its authorized representatives, to make such investigation, inquiry, checks and tests as the City, in its sole discretion, deems necessary to attempt to ascertain Contractor's qualifications.

On behalf of Contractor, I hereby waive any and all claims, and release and hold harmless any person(s) who provides the City, or its authorized representatives, with information or opinions held in good faith.

.

Signed _____

Title _____

Subscribed and sworn to before me this _____ day of _____, 200_

_____

Notary Public or Justice of the Peace

PART 2 – BARTLETT AREA SEWER IMPROVEMENTS OVERVIEW MAP

CITY OF PORTSMOUTH, NEW HAMPSHIRE
BARTLETT AREA SEWER IMPROVEMENTS

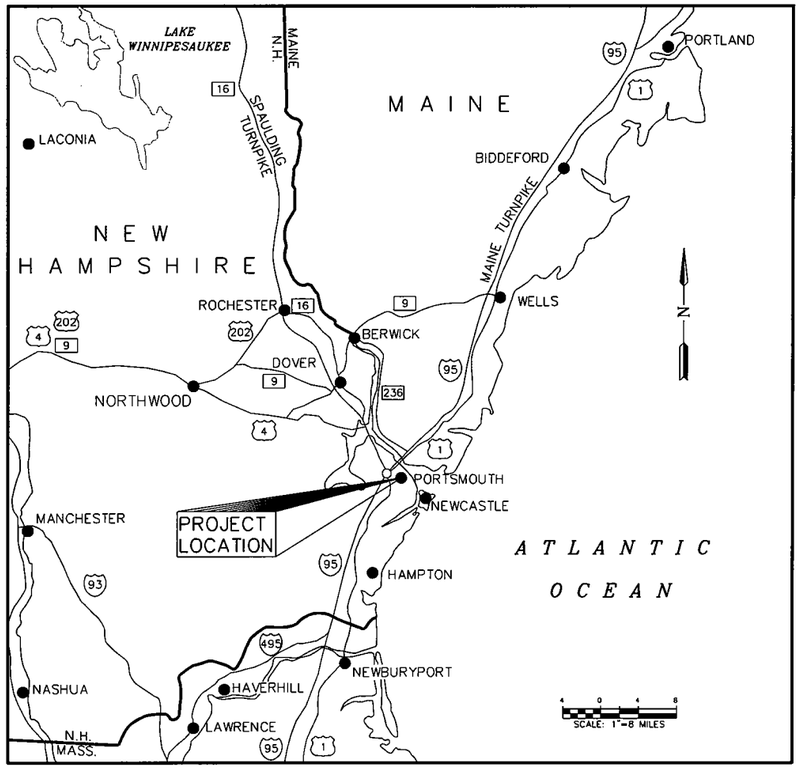
CONSTRUCTION DRAWINGS

PREPARED BY
UNDERWOOD ENGINEERS, INC.
PORTSMOUTH, NEW HAMPSHIRE

PRELIMINARY
NOT FOR CONSTRUCTION

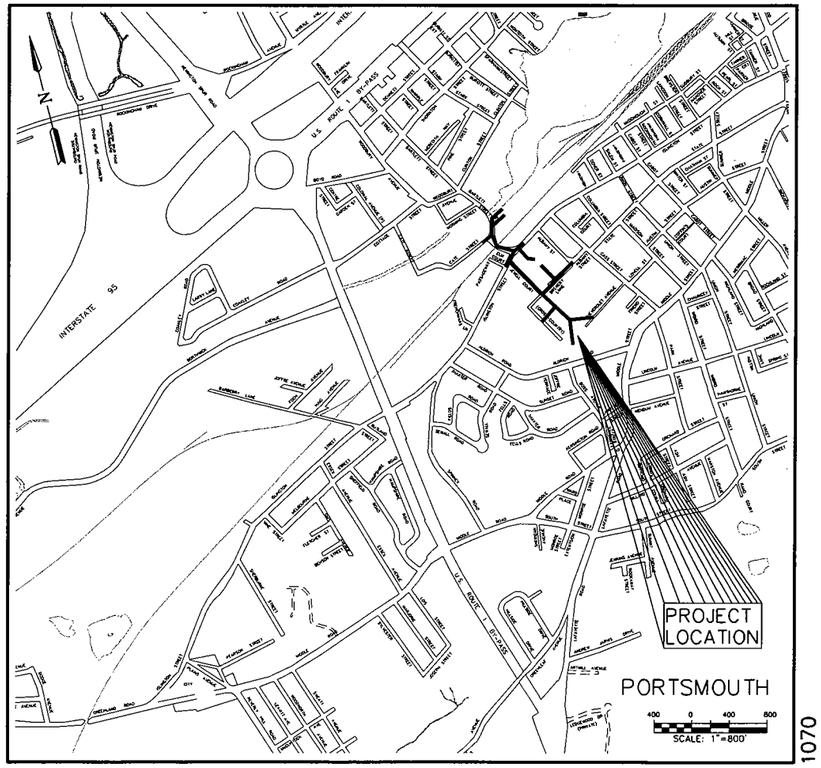
DECEMBER 2007
SRF PROJECT NO.
CS-330106-06n (Linc 2)

LOCATION PLAN



PLAN INDEX

VICINITY MAP



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1070

STORM SEWER NOTES

1. LOCATIONS OF PROPOSED CATCH BASINS ARE APPROXIMATE. IN GENERAL, NEW CB'S WILL BE SET WHERE CB'S NOW EXIST. EXISTING CB STRUCTURES ARE TO BE DEMOLISHED, (SUBSIDIARY). ALL FRAMES AND GRATES SHALL BE DELIVERED TO THE PORTSMOUTH DPW (SUBSIDIARY). ALL NEW CATCH BASIN RIMS SHALL BE SET 1" BELOW FINISH GRADE.

2. MANHOLE AND CATCH BASIN BASES, RISERS, CONE SECTIONS, AND SLAB TOPS SHALL BE DESIGNED SUCH THAT THERE EXISTS A MINIMUM 6" PERIPHERY OF MONOLITHIC SOLID WALL SEPARATION BETWEEN OPENINGS (CORINGS AND SECTIONS).

3. ALL CATCH BASINS, DRAIN MANHOLES, & DRAIN LINES SHALL BE CLEANED PRIOR TO ACCEPTANCE.

4. ALL DRAIN MANHOLES AND CATCH BASINS ARE 4' INSIDE DIAMETER UNLESS OTHERWISE NOTED.

PROSECUTION OF WORK:

THIS SET OF PLANS HAS BEEN CREATED TO BE USED IN CONJUNCTION WITH A TECHNICAL SPECIFICATION ENTITLED "PROJECT MANUAL, BARTLETT AREA SEWER IMPROVEMENTS, PORTSMOUTH, NH.".

1. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION, PROTECTION AND REPAIR (IF DAMAGED) OF ALL EXISTING UTILITY MAINS AND SERVICES. THE LOCATIONS OF KNOWN SEWER AND WATER MAINS, SHOWN ON THESE DRAWINGS, ARE APPROXIMATE. HOWEVER, GAS LINES AND WATER AND SEWER SERVICE LATERALS ARE NOT SHOWN AND THE CONTRACTOR IS TO ANTICIPATE THEIR EXISTENCE. TIE SHEETS FOR THE KNOW UTILITIES (INCLUDING GAS AND WATER) ARE PROVIDED IN THE APPENDIX OF THE PROJECT MANUAL. VIDEO LOGS AND SANITARY SURVEYS FOR SEWER LATERALS ARE ALSO PROVIDED IN THE PROJECT MANUAL. NOTIFY DIG-SAFE PRIOR TO COMMENCING CONSTRUCTION. (1-888-344-7233). CONTRACTOR SHALL GIVE ADEQUATE NOTICE TO THE ENGINEER OF CONFLICTS OF PROPOSED WORK WITH MARKED UTILITIES PRIOR TO CONSTRUCTING THE PROPOSED WORK.

2. THE CONTRACTOR SHALL MAINTAIN SINGLE LANE TRAFFIC AND ACCESS TO BUSINESSES AND RESIDENCES AT ALL TIMES. TRAFFIC CONTROL WARNING DEVICES SHALL BE IN ACCORDANCE WITH MUTCD REQUIREMENTS AND SECTION 01571 OF THE PROJECT MANUAL. A TRAFFIC CONTROL PLAN IS TO BE SUBMITTED FOR APPROVAL PRIOR TO THE WORK.

3. ALL STREET OPENINGS SHALL BE COVERED AT THE END OF EACH DAYS OPERATIONS TO ENSURE SAFE VEHICULAR AND PEDESTRIAN TRAFFIC. THE CONTRACTOR SHALL MAINTAIN SAFE PASSAGE FOR 2-LANES OF TRAFFIC AT THE END OF EACH WORK DAY. DUST CONTROL OPERATIONS ARE TO BE CONTINUOUS THROUGHOUT CONSTRUCTION.

4. A NPDES PERMIT FOR CONSTRUCTION ACTIVITIES IS REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS REQUIRED TO PREPARE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND TO SUBMIT A NOTICE OF INTENT (NOI) TO THE EPA TO FULFILL PROJECT REQUIREMENTS. THE SWPPP MUST BE PREPARED IN ACCORDANCE WITH THE EPA'S REQUIREMENTS. NO WORK IS TO PROCEED UNTIL THE SWPPP AND THE NOI IS SUBMITTED AND ACCEPTED BY THE OWNER. A COPY OF THE NOI, SWPPP REQUIREMENTS AND EXAMPLE SWPPP ARE INCLUDED IN THE PROJECT MANUAL APPENDIX.

5. A VIBRATION MONITORING PLAN WILL NEED TO BE SUBMITTED BEFORE WORK MAY BEGIN. SEE SECTION 01546 AND 01548 OF THE PROJECT MANUAL.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL SURPLUS EARTH, LEDGE, CURB PIPE AND SEWER OR DRAIN STRUCTURES EXCAVATED DURING CONSTRUCTION, UNLESS MATERIALS ARE CLAIMED BY THE OWNER OR OTHERWISE INDICATED IN THE PROJECT MANUAL OR THE DRAWINGS.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY RESTORATION BOTH PUBLIC AND PRIVATE. UTILITIES DAMAGED AS A RESULT OF THE CONTRACTORS OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

8. TEMPORARY AND OR PERMANENT PAVING REPAIRS SHALL MAINTAIN EXISTING LINE AND GRADE UNLESS INDICATED OTHERWISE OR OTHERWISE DIRECTED BY THE ENGINEER.

9. PAVEMENT REPAIRS TO DRIVEWAYS OR OTHER AREAS OUTSIDE LIMITS OF PAYMENT, AS DEFINED ON THE DRAWINGS, ARE SUBSIDIARY AND WILL NOT BE MEASURED FOR PAYMENT.

10. THE LINE WORK REPRESENTING THE EXISTING UNDERGROUND STRUCTURES AND PIPES IS BASED ON A FIELD SURVEY. KNOWN LOCATIONS OF GAS LINES, SEWER AND WATER SERVICES CAN BE FOUND IN THE PROJECT MANUAL APPENDIX. THE ENGINEER/SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN ON THE PLANS OR THE PROJECT MANUAL APPENDIX COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE ENGINEER/SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.

11. ALL CONFLICTS WITH GAS LINES SHALL BE COORDINATED WITH NORTHERN UTILITIES.

12. OVERHEAD WIRES AND WIRE DROPS TO BUILDINGS ARE NOT SHOWN. THE CONTRACTOR SHALL ANTICIPATE THEIR EXISTENCE IN ALL OPERATIONS.

13. ELEVATIONS ARE BASED ON MEAN SEA LEVEL(M.S.L.), NAVD 1929.

14. PROPERTY LINES SHOWN ARE APPROXIMATE ONLY AND WERE COMPILED FROM CITY OF PORTSMOUTH ASSESSOR MAPS AND ARE NOT THE RESULT OF AN ON-THE-GROUND SURVEY.

SANITARY SEWER NOTES:

1. ALL SEWER SERVICE LATERALS SHALL BE 6" DIAMETER, UNLESS DIRECTED OTHERWISE. EXCAVATE TEST PITS TO VERIFY EXACT SEWER SERVICE LOCATION SIZE AND ELEVATION, AS DIRECTED, PRIOR TO THE CONSTRUCTION OF SEWER MAIN. SEWER LATERALS SHALL BE INSTALLED TO THE PROPERTY LINE. INSTALL CLEANOUTS FOR LOW PRESSURE TESTING AS SHOWN ON DETAIL DRAWINGS. SEE AVAILABLE SEWER TIE SHEETS IN APPENDIX C OF THE PROJECT MANUAL. MIN. SLOPE SHALL BE 0.02 FT/FT.

2. THE CONTRACTOR SHALL PHASE UTILITY WORK SO AS TO MINIMIZE DISRUPTIONS TO SEWER FLOWS. BYPASS PUMPING SHALL BE USED AS NECESSARY TO MAINTAIN ACTIVE SEWER. INTERRUPTIONS TO SEWER SERVICE SHALL NOT CAUSE SURCHARGES.

3. SERVICE CONNECTIONS TO THE SEWER, DETERMINED TO BE YARD DRAINS, FOUNDATION DRAINS OR ROOF LEADERS SHALL NOT BE CONNECTED TO THE NEW SANITARY SEWER. THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY OF POTENTIAL STORM DRAINS OR SUBSURFACE DRAINS ENCOUNTERED DURING CONSTRUCTION.

4. SEWER CONSTRUCTION SHALL PROCEED FROM THE LOWEST POINT UPWARD UNLESS OTHERWISE APPROVED BY THE ENGINEER.

5. SMH RIMS SHALL BE SET 1/8" TO 1/4" BELOW GRADE WHEN PAVEMENT OR GRAVEL ROADS (I.E., PLOWED AREAS). RIMS SHALL BE SET AT GRADE IN NON-PLOWED AREAS UNLESS OTHERWISE INDICATED. ALL SEWER MANHOLES ARE 4' INSIDE DIAMETER UNLESS OTHERWISE NOTED.

6. ALL EXISTING SEWER STRUCTURES (PIPE AND MANHOLES) TO BE ABANDONED SHALL BE PREPARED AS FOLLOWS:

MANHOLES - SHALL BE REMOVED TO A DEPTH OF 4' BELOW GRADE. THE BASE OF STRUCTURES SHALL BE FILLED WITH GRAVEL AND COMPACTED IN 8" LIFTS, INCIDENTAL, EXCEPT WHEN PAID WITH BID ITEM 1.10
PIPE - ALL PIPE TO BE ABANDONED IN PLACE AND SHALL BE CUT & PLUGGED AT BOTH ENDS, SUBSIDIARY. ABANDONED PIPES GREATER THAN 10" IN DIAMETER SHALL BE FILLED WITH FLOWABLE FILL (WHERE DIRECTED BY ENGINEER) ITEM 1.11.

WATER DISTRIBUTION SYSTEM NOTES:

1. THE CONTRACTOR SHALL MAINTAIN WATER SERVICE TO RESIDENTS AT ALL TIMES. IN THE EVENT THAT SERVICE HAS TO BE TEMPORARILY INTERRUPTED THE CONTRACTOR SHALL GIVE THE AFFECTED RESIDENTS AND THE PORTSMOUTH DPW 24 HOURS VERBAL AND WRITTEN NOTICE. IF NECESSARY, CONTRACTOR SHALL PROVIDE TEMPORARY BYPASS PIPING TO MAINTAIN WATER SERVICE.

2. ALL NEW WATER MAIN SHALL BE DUCTILE IRON CLASS 52 UNLESS OTHERWISE NOTED.

3. ALL EXISTING WATER BOXES AND OTHER CASTINGS DISTURBED OR RELOCATED BY CONSTRUCTION ACTIVITIES SHALL BE ADJUSTED TO EXISTING LINE AND GRADE, UNLESS SHOWN OTHERWISE ON THESE PLANS OR AS DIRECTED BY THE ENGINEER (SUBSIDIARY).

4. ALL EXISTING WATER PIPE IDENTIFIED AS ABANDONED SHALL BE DEMOLISHED AS FOLLOWS: PIPE: CAP AT EACH END AND ABANDON IN PLACE UNLESS IT NEEDS TO BE REMOVED BECAUSE OF OTHER INTERFERENCES, SUBSIDIARY, ASBESTOS PIPE REMOVAL, IF REQUIRED, WILL BE PAID AS ITEM 5.9.

5. ALTHOUGH NOT SHOWN ON PLAN, ALL WATER SERVICES SHALL BE REPLACED WHERE NEW MAINS ARE INSTALLED. ALL SERVICES SHALL BE 3/4" UNLESS DIRECTED OTHERWISE. SERVICES SHOWN ARE APPROXIMATE LOCATION.

6. ALL GATE VALVES SHALL HAVE RESTRAINED MECHANICAL JOINTS AND OPEN RIGHT.

7. ALL TEES AND BENDS SHALL BE CONSTRUCTED USING THRUST RESTRAINT COUPLINGS, SUBSIDIARY TO WATER WORK.

8. MAINTAIN A MINIMUM 10' HORIZONTAL AND 18" VERTICAL SEPARATION BETWEEN WATER MAIN AND SEWER PIPING.

PLAN REFERENCES:

1. AERIAL SURVEY & PHOTO, INC., CITY WIDE TOPOGRAPHY MAPPING, CITY OF PORTSMOUTH, PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION, MAY, 1994.

2. AERIAL SURVEY & PHOTO, INC., CITY WIDE SEWER MAPPING, CITY OF PORTSMOUTH, PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION, MAY, 1994.

3. DURGIN, VERRA & ASSOCIATES, INC., GRADING AND DRANAGE PLAN, PLAZA 800 ISLINGTON STREET, PORTSMOUTH, NH FOR GRIFFIN FAMILY CORPORATION, APRIL 14. 1995.

4. DURGIN, VERRA & ASSOCIATES, INC., EXISTING CONDITION PLAN, PLAZA 800 ISLINGTON STREET, PORTSMOUTH, NH FOR GRIFFIN FAMILY CORPORATION, APRIL 14., 1995.

5. VERRA & ASSOCIATES, INC., PUBLIC WORKS FACILITY, 700 ISLINGTON STREET, PORTSMOUTH, NH FOR GRIFFIN FAMILY CORPORATION, JUNE 22, 1998.

6. AMBIT ENGINEERING, INC., SEWER SEPARATION & PROFILE, PORTSMOUTH DPW REDEVELOPMENT, 125 BREWERY LANE, PORTSMOUTH, NH, JUNE, 2000.

7. RICHARD P. MILLETTE AND ASSOCIATES, ALDRICH ROAD STORM DRAIN PROJECT PLAN & PROFILE, CITY OF PORTSMOUTH, SHEETS 1 THROUGH 15, NOVEMBER 17, 1981.

LEGEND:

EXISTING	PROPOSED	
		STRUCTURES/BUILDINGS
		PROPERTY LINE (BASED ON CITY TAX MAPS)
		E.O. PAVEMENT
		CURB
S		GRAVITY SEWER
W		WATER LINE
D		DRAIN LINE
T		TELEPHONE
G		GAS LINE
18		2' CONTOUR ELEVATION
20		10' CONTOUR ELEVATION
21.1		SPOT ELEVATION
		FENCE
		RETAINING WALL
		RAILROAD
		EDGE OF VEGETATION
		TREE
n/f 55-23		TAX MAP AND LOT NUMBER
		LIGHT POLE
		GUY POLE
		UTILITY POLE
		SIGN
		HYDRANT
		WATER SHUT-OFF
		GAS SHUT-OFF
		GAS/WATER VALVE
MW		MONITORING WELL
S D		SEWER/DRAIN MANHOLE
		TRENCH DRAIN
		CATCH BASIN
		BORING/PROBE
T		TELEPHONE MANHOLE
TP		TEST PIT
		LIMIT OF PAVEMENT RESTORATION
		HEADWALL
		GUARDRAIL
		LIMIT OF WETLAND
		SILT CURTAINS
		RIPRAP

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE FOR	APP'D	NO.
APPROVAL By KAP Date 12/05/07		
CONSTRUCTION By - Date -		
RECORD DRAWING By - Date -		
REVISIONS		

Drawn/Chk RMG
Designed KAP
Checked KAP
Approved KAP
Date OCTOBER 2005
Book No. -
Project No. 1070.bartlett
Dwg. ID 1070DEM
Scale AS SHOWN

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GENERAL NOTES & LEGEND

BARTLETT AREA SEWER IMPROVEMENTS

TOWN OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO -

SHEET 1 OF 15

KEYNOTES – SEWER

1. THE CONTRACTOR IS TO MAINTAIN EXISTING SEWER FLOWS THROUGHOUT CONSTRUCTION. A PLAN FOR MAINTENANCE OF FLOWS INCLUDING BY–PASS PUMPING, IS TO BE SUBMITTED FOR REVIEW. BY–PASS PUMPS SHALL BE SIZED TO ACCOMMODATE FULL CAPACITY (PIPE FLOWING FULL) OF UPSTREAM PIPES. BY–PASS PUMPING AND MAINTENANCE OF FLOWS TO BE PAID FOR UNDER ITEM 1.12.
2. CONSTRUCT 8' DIA. DOG HOUSE MANHOLE OVER EXISTING BRICK SEWER. (MAINTAIN THROUGH FLOW UNTIL UPSTREAM FLOWS AND SERVICE CONNECTIONS ARE RELOCATED,) PAY AS ITEM 1.5.8.
3. PROTECT EXISTING UTILITIES. WATER TO BE RELOCATED OVER SEWER. INSULATE AT SEWER CROSSING, SUBSIDIARY.
4. VOC'S REPORTED IN GROUNDWATER NORTH AND WEST OF ISLINGTON STREET. EXCAVATION WILL REQUIRE CONTRACTORS HEALTH AND SAFETY PLAN (REFER TO SPECIFICATION SECT. 13710), PAY AS ITEM 1.14.
5. CUT 15" PVC THROUGH PIPE AND RE–WORK BRICK MASONRY INVERT TO DIVERT FLOW TO 18" PVC PIPE PAY AS ITEM 1.9A
6. RE–ALIGN 15" PVC PIPE TO AVOID CONFLICT W/SEWER, LENGTH TO BE DETERMINED BY ENGINEER, PAY AS ITEM 1.1.15
7. CONSTRUCT 6" PVC x (LENGTH VARIES) @ S=0.01 (MIN.)
8. SEWER TO BE ABANDONED. CONTRACTOR IS TO PUMP FLOWABLE FILL OR GROUT INTO ALL ABANDONED SEWERS GREATER THAN 10" DIAMETER AFTER CONFIRMED REMOVAL OF SEWER FLOWS, ITEM 1.11.
9. THE LOCATION OF SEWER LATERALS ARE APPROXIMATE. EXCAVATE TEST PIT, ITEM 5.4, IN THE PRESENCE OF THE ENGINEER FOLLOWING CONSULTATION WITH PROPERTY OWNER AND/OR SEWER DEPARTMENT. RECORD LOCATION AND DEPTH BEFORE PROCEEDING WITH SEWER MAIN INSTALLATION.
10. FIELD CORE SEWER MANHOLES INCLUDING PIPE CONNECTION SYSTEM, PAY AS ITEMS 1.9A & 1.9B RESPECTIVE TO PIPE DIAMETER.
11. SALVAGE 30" RCP TO PORTSMOUTH DPW DESIGNATED YARD AREA. SUBSIDIARY TO ITEM 1.1.18.
12. CONSTRUCT SEWER MANHOLE OVER EXISTING SEWER, MAINTAIN FLOWS THROUGHOUT CONSTRUCTION, PAY AS (PART OF) ITEM 1.12.
13. REMOVE SEWER MANHOLE (SUBSIDIARY). NOTE, ITEM 1.10 IS PAID ONLY WHEN EXISTING STRUCTURE TO BE REMOVED IS OUTSIDE NORMAL EXCAVATION LIMITS. CONSTRUCT NEW SMH#22, PROVIDE CORE AND BOOT FOR 6–INCH MAIN FROM OFFICE BUILDING ITEM 1.5.4. NEW 6–INCH TO MATCH EXISTING LINE AND GRADE, ITEM 1.1.06.
14. CONSTRUCT 10' OF 24" PVC TO CONNECT EXISTING SMH#1331 TO PROPOSED SMH #8. MATCH EXISTING INVERT OUT FOR SMH#1331.
15. CONSTRUCT 32' OF 18" DI RELIEF PIPE BETWEEN SMH#6 AND SMH#8 @ S=0.00. INVERT=7.1
16. TEST PIT TO DETERMINE ELEVATION OF 10" VC PRIOR TO INSTALLATION OF PAPA WHEELIES SEWER. PAY AS ITEM 1.9A. REVISE SLOPES FROM SMH#17 UNDER DIRECTION OF ENGINEER (IF NECESSARY).
17. DEMO AND DISPOSE OF TOWER. ITEM 1.19
18. RELOCATE WATER. PAY AS ITEM 1.17.
19. INSTALL NEW 6" SERVICE TO BUILDING, RE–WORK INTERIOR PLUMBING (BELOW SLAB) AND CONNECT TO NEW SERVICE LATERAL, ITEM 1.16. SUBMIT REWORK PLAN TO ENGINEER FOR REVIEW. OBTAIN PLUMBING PERMIT FROM CITY.

KEYNOTES – PAVEMENT/SIDEWALK

1. PAVEMENT REPAIR – LIMIT OF PAYMENT
2. RECLAMATION LIMIT – LIMIT OF PAYMENT
3. SIDEWALK AND CURBING REPAIRS – REPLACE IN KIND (ITEMS 4.7 AND 4.8)

KEYNOTES – DRAINAGE

1. REMOVE 27" x 48" CMP AREA DRAIN AND REPLACE WITH 24" RCP x 24" RCP 45° @ S=0.005 (MIN). MATCH EXISTING 27" x 48" INVERT OUT FROM EXISTING DMH 7003. CONSTRUCT BRICK MASONRY BULKHEAD (WATER TIGHT) IN DMH PENETRATION (SUBSIDIARY).
2. NOT USED
3. NOT USED
4. INSTALL INSERTA T (ITEM 2.9C), 12" DRAIN AND CB. SEE CB STRUCTURE SCHEDULE ON PLAN VIEWS.
5. REMOVE EXISTING 24" RC PIPE (X100± FEET), TRANSPORT TO DPW, SUBSIDIARY.
6. FIELD VERIFY EXISTING 24" RCP LOCATION AND ELEVATION PRIOR TO CONSTRUCTION OF NEW 42" PIPE, PAY AS ITEM 5.4.
7. CONSTRUCT 18" CPE x 50' @ S=0.01 AND CB#15, RIM=11.8, INV OUT EL=7.80, 18" INV IN (STUB) EL=7.80, 12" INV IN EL=7.90
8. CONSTRUCT 12" CPE x 36' @ S=0.005 AND CB#16, RIM=11.1, INV OUT EL.=8.08, INV IN @ CB#15=7.90
9. TEMPORARY REMOVAL AND STOCKPILE OF LAMP POST AND TREES ON BREWERY LANE IS SUBSIDIARY TO ITEM 2.2.30. DAMAGE TO LANDSCAPE OR LIGHTING TO BE REPAIRED AT CONTRACTORS OWN EXPENSE
10. REMOVE 30 FOOT SECTION OF 3.5 x 3.5 GRANITE BOX CULVERT. GRANITE BLOCK 18" THICK (TOP AND SIDES) TO BE USED FOR HEADWALL AND EMBANKMENT STABILIZATION. BULKHEAD OPENING TO BE PAID AS ITEM 2.7. PUMP FLOWABLE FILL INTO REMAINING PIPES, (MIN 90% FULL), ITEM 1.11.
11. FIELD CORE STRUCTURE, ITEM 2.9B, CONST. DRAIN AS SHOWN.
12. REMOVE DMH'S OR CB'S INCLUDING FILL MATERIALS AND DISPOSAL OF CONE SECTION AND SALVAGE OF FRAMES AND COVER OR GRATE TO DPW. PAY AS ITEM 2.10.
13. CONSTRUCT BULKHEAD IN EXISTING PIPE ARCH (SUBSIDIARY). CONSTRUCT W/ BRICK MASONRY.
14. RELOCATE 2" GAS SERVICE. COORDINATE GAS MAIN RELOCATION W/GAS COMPANY.
15. INSTALL INSERTA T (ITEM 2.9C), 12" DRAIN AND CB.
    CB17 CONSTRUCT 12" CPE x 20', S=(TBD) INV OUT=7.5'
    CB18 CONSTRUCT 12" CPE x 12', S=VARIES INV OUT=7.5'
    CB19 CONSTRUCT 12" CPE x 18', S=VARIES INV OUT=7.5'
16. CONSTRUCT 15" CPE x 15', S=0.001, INV OUT=8.0 (CB11), INV IN DMH 3014=7.98'
17. CONSTRUCT 12" CPE x 36', S=0.001, INV OUT=8.84 (CB10)
18. REMOVE CB DMH STRUCTURE, ITEM 2.10

KEYNOTES – WATER

1. CONSTRUCT 12" GATE VALVE, ITEM 3.4.12.
2. CONSTRUCT 12"x12" TEE. PAY AS ITEM 3.1.12.
3. CONSTRUCT 12"x12" WYE AND CONNECT TO EXISTING MAIN. PAY AS ITEM 3.1.12
4. CONNECT TO EXISTING MAIN W/ MJ TYPE COUPLING, SUBSIDIARY.
5. CONSTRUCT 16"x12" TEE, PAY AS ITEM 3.1.16.
6. CONSTRUCT 16" BUTTERFLY VALVE, ITEM 3.4.16.
7. CONSTRUCT 16"x8" TEE, PAY AS ITEM 3.1.16
8. CONSTRUCT 8" GATE VALVE, ITEM 3.4.08
9. CONSTRUCT 16"x6" TEE, PAY AS ITEM 3.1.16
10. CONSTRUCT 6" GATE VALVE, ITEM 3.4.06
11. CONSTRUCT HYDRANT ASSEMBLY, ITEM 3.5
12. EXCAVATE TEST PIT ITEM 5.4, LOCATE AND RECORD WATER ELEVATION. WATER MAIN RELOCATION IF REQUIRED TO BE PAID AS ITEM 3.6
13. CONST. 8"x8" TEE, PAY AS ITEM 3.1.08.
14. CONST. 8"x6" TEE, PAY AS ITEM 3.1.08.
15. CONST. 6"X4" WYE. PAY AS ITEM 3.1.06.
16. CONST. SERVICE CONNECTION AND COPPER WATER SERVICE PIPE. MATCH EXISTING SIZES.
17. CONST. AIR RELEASE MANHOLE AT HIGH POINT. SEE DETAIL 9/14 ON SHEET 14.
18. ROUTE DI MAIN UNDER SEWER AND/OR DRAIN. SEE DETAIL SHEET 14/15 (SUBSIDIARY TO ITEM).
19. ABANDON MAIN IN PLACE, SUBSIDIARY
20. CAP AND ABANDON MAIN, SUBSIDIARY
21. CONST. 16" x 16" TEE. PAY AS ITEM 3.1.16
22. CONST. 12" x 6" WYE, PAY AS ITEM 3.1.12
23. CONST. CUT IN HYDRANT FOR BYPASS WATER, SUBSIDIARY
24. CONST. 6" x 4" REDUCER, PAY AS ITEM 3.1.06
25. CONST. 12" x 8" TEE, PAY AS ITEM 3.1.12
26. RECONNECT EXISTING HYDRANT, SUBSIDIARY
27. CONST. 12" x 6" TEE, PAY AS ITEM 3.1.12

PRELIMINARY
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NO.	REVISIONS	APP'D

ISSUE FOR APPROVAL By KAP Date 1/05/07
CONSTRUCTION By – Date –
RECORD DRAWING By – Date –

Drawn/Chk. RMG
Designed KAP
Checked KAP
Approved KAP
Date OCTOBER 2006
Book No. –
Project No. 1070 bartlett
Dwg. ID 1070DE11
Scale AS SHOWN

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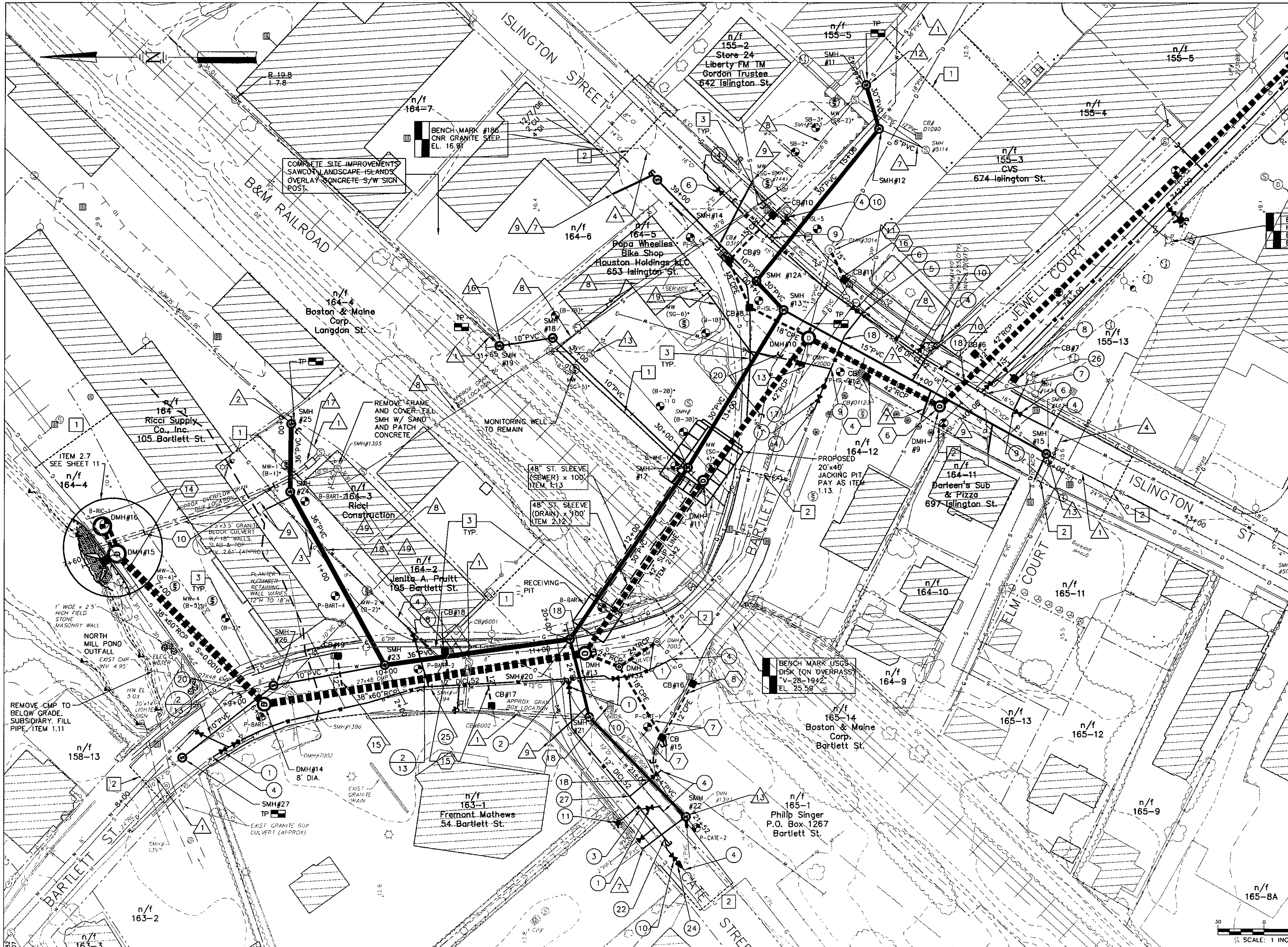
KEY NOTES

BARTLETT AREA SEWER IMPROVEMENTS

TOWN OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO –

SHEET 2 OF 15



ISLINGTON STREET
B&M RAILROAD
BARTLETT ST
JEWELL COURT
ELM COURT
CATE STREET
BENCH MARK #186 CNR GRANITE STEP EL. 16.81
COMPLETE SITE IMPROVEMENTS SAWCUT LANDSCAPE ISLANDS OVERLAY CONCRETE S/W SIGN POST
BENCH MARK- HYDRANT BONNET- BOLT EL. 21.36
BENCH MARK USGS DISK (ON OVERPASS) "V-28-1942" EL. 25.59
n/f 155-2 Store 24 Liberty FM TM Gordon Trustee 642 Islington St.
n/f 155-5
n/f 155-4
n/f 155-3 CVS 674 Islington St.
n/f 164-7
n/f 164-6
n/f 164-5 Papa Wheelies Bike Shop Houston Holdings LLC 653 Islington St.
n/f 164-4 Boston & Maine Corp. Langdon St.
n/f 164-1 Ricci Supply Co., Inc. 105 Bartlett St.
n/f 164-3 Ricci Construction
n/f 164-2 Jenita A. Pruitt 105 Bartlett St.
n/f 164-12
n/f 164-11 Darleen's Sub & Pizza 697 Islington St.
n/f 155-13
n/f 164-10
n/f 165-11
n/f 164-9
n/f 165-14 Boston & Maine Corp. Bartlett St.
n/f 165-13
n/f 165-12
n/f 165-1 Philip Singer P.O. Box 1267 Bartlett St.
n/f 165-9
n/f 165-8A
n/f 163-1 Fremont Mathews 54 Bartlett St.
n/f 158-13
n/f 163-2
n/f 163-3
REMOVE FRAME AND COVER. FILL SMH W/ SAND AND PATCH CONCRETE
MONITORING WELL TO REMAIN
48" ST. SLEEVE (SEWER) x 100' ITEM 1.13
48" ST. SLEEVE (DRAIN) x 100' ITEM 2.12
PROPOSED 20'x40' JACKING PIT PAY AS ITEM 1.13
RECEIVING PIT
ITEM 2.7 SEE SHEET 11
NORTH MILL POND OUTFALL
REMOVE CMP TO BELOW GRADE, SUBSIDIARY. FILL PIPE, ITEM 1.11
DMH#14 8' DIA.
SCALE: 1 INCH = 30 FT.

PRELIMINARY
NOT FOR CONSTRUCTION

PROPOSED CB STRUCTURE SCHEDULE		
CB#	RIM	INV OUT
10	12.9±	9.4
11	12.1±	8.6
12	14±	10.5
13	not used	not used
14	not used	not used
15	12±	8.5
16	11.8±	8.3
17	11.6±	4.5
18	11.5±	7.5
19	11.4±	4.0

NO.	REVISIONS	APP'D

ISSUE FOR
APPROVAL Date 12/05/07 By KAP
CONSTRUCTION Date - By -
RECORD DRAWING Date - By -

Drawn/Chk. RMG
Designed KAP
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Date OCTOBER 2006
Book No. -
Project No. 1020 bartlett
Dwg. ID 1070base_bartlett
Scale 1"=30'

Underwood Engineers, Inc.
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BARTLETT AREA PLAN VIEW

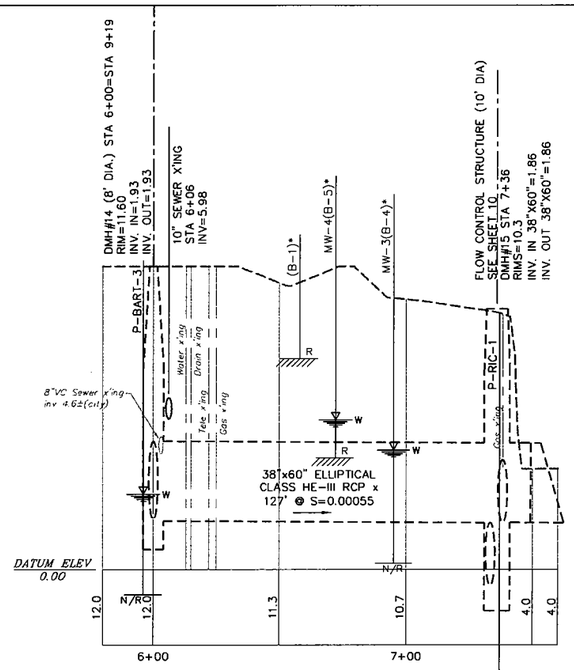
BARTLETT AREA SEWER IMPROVEMENTS

CITY OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO -

SHEET 3 OF 15

DRAIN OUTFALL PROFILE



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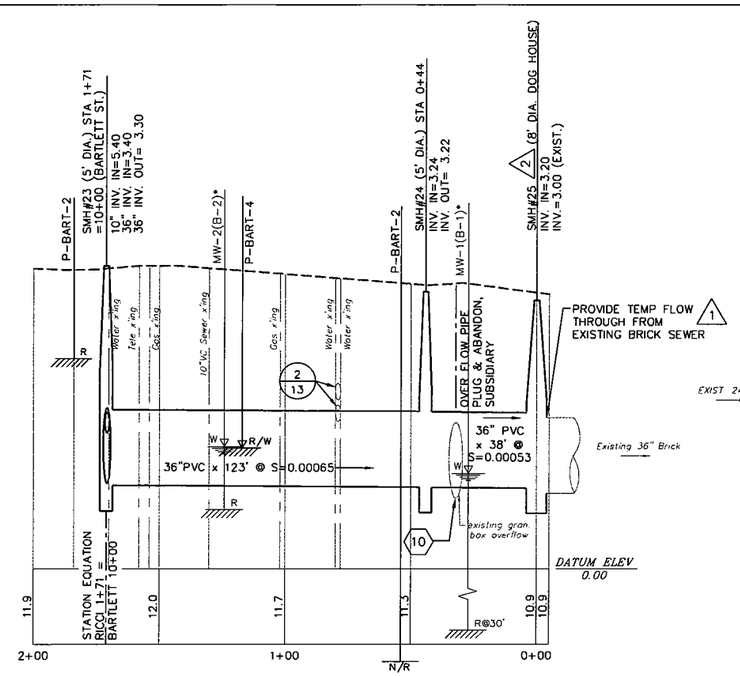
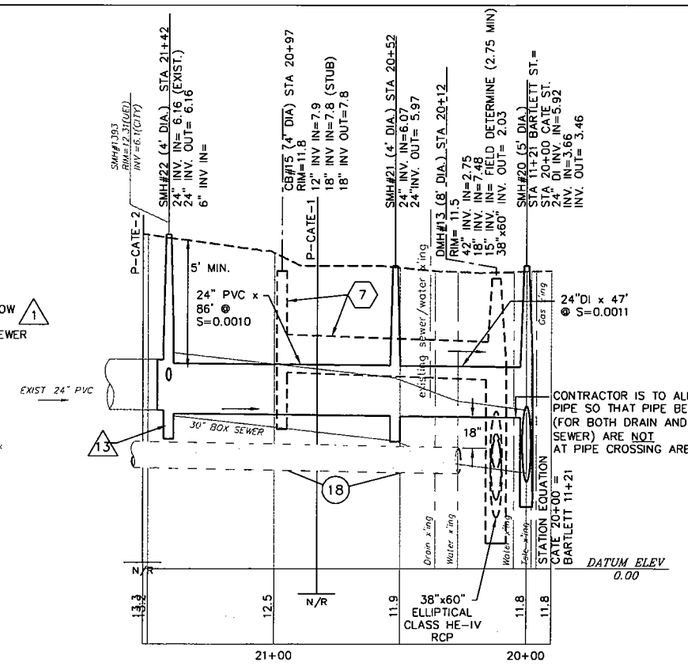
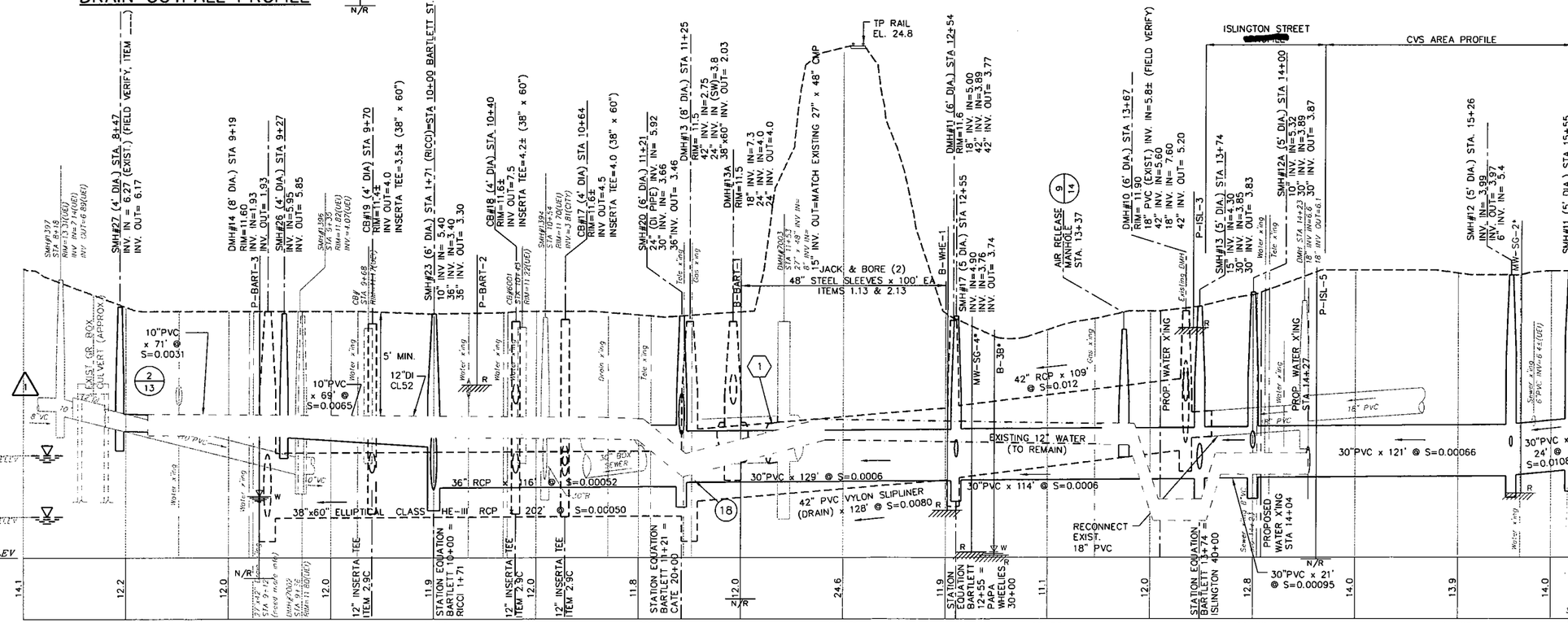


CATE STREET PROFILE



BARTLETT STREET PROFILE



HORIZ: 1 INCH = 30 FT.
VERT: 1 INCH = 3 FT.

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NO.	REVISIONS	APP'D	Date

ISSUE FOR
APPROVAL Date 12/05/07 By KAP
CONSTRUCTION Date - By -
RECORD DRAWING Date - By -

Drawn/Chk. RMG
Designed KAP
Checked KAP
Approved KAP
Date OCTOBER 2006
Book No. -
Project No. 1070.bartlett
Dwg. ID 1070base_bartlett
Scale 1"=30'

Underwood Engineers, Inc.
25 Vaughan Mall, Portsmouth, N.H. 03801
Tel. 603-436-6192 Fax. 603-431-4733

BARTLETT AREA PROFILES
BARTLETT AREA SEWER IMPROVEMENTS
CITY OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO -
SHEET 4 OF 15

ISLINGTON STREET PROFILE

PAPA WHEELIES PROFILE

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Project No. 1020 bartlett
Dwg. ID 1020base_bartlett
Scale 1"=30'

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BARTLETT AREA PROFILES

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CITY OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO -

SHEET 5 OF 15

CB STRUCTURE SCHEDULE		
CB#	RIM	INV
5	19.2±	15.2
6	13.9±	10.4
7	15.0±	11.5

JEWELL COURT PLAN

SCALE: 1 INCH = 30 FT.

JEWELL COURT PROFILE

HORIZ: 1 INCH = 30 FT.
VERT: 1 INCH = 3 FT.

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Date OCTOBER 2008
Book No. -
Project No. 1970.bartlett
Dwg. ID 1970one_bartlett
Scale 1"=30'

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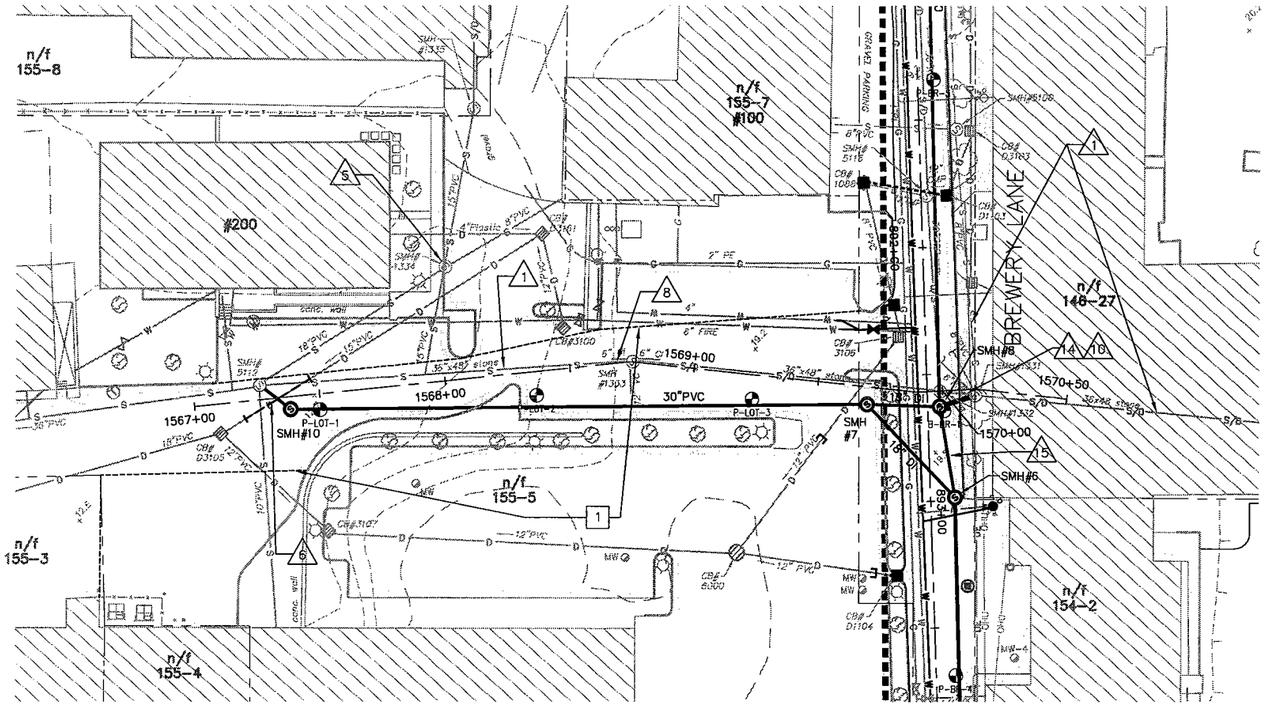
BARTLETT AREA SEWER IMPROVEMENTS
CITY OF PORTSMOUTH
PORTSMOUTH, NH

JEWELL COURT
PLAN & PROFILE

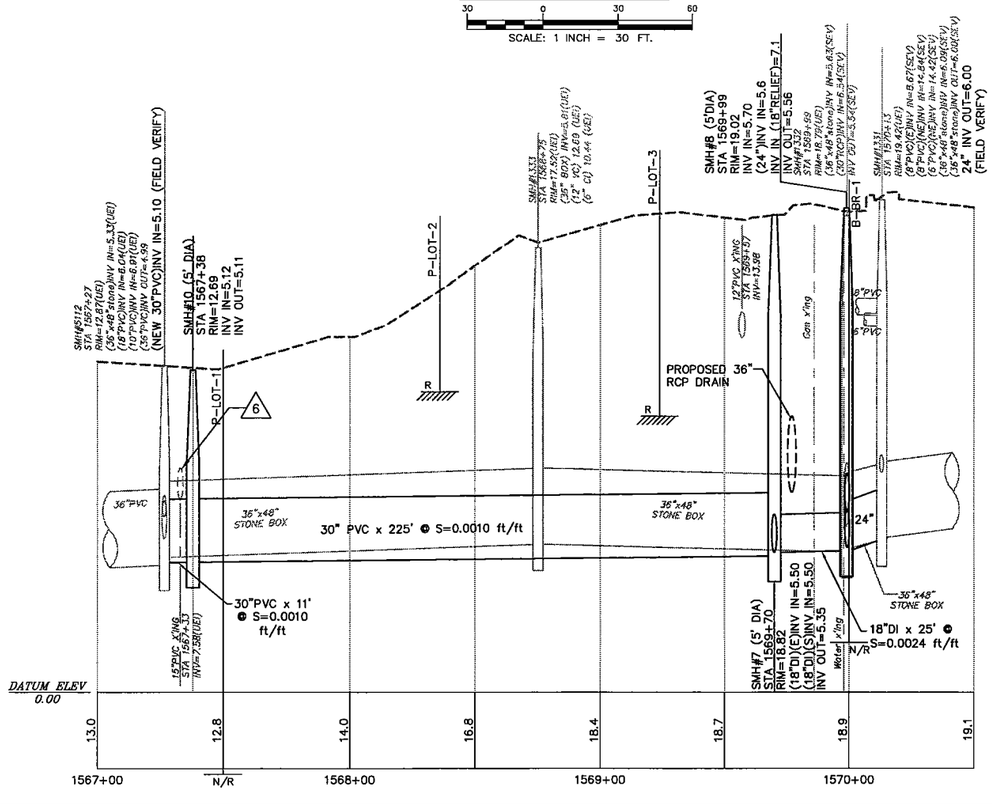
DWG NO -
SHEET 6 OF 15



X-COUNTRY PLAN

30 0 30 60

SCALE: 1 INCH = 30 FT.



PRELIMINARY
NOT FOR CONSTRUCTION

30 0 30 60

3 0 3 6

HORIZ: 1 INCH = 30 FT.
VERT: 1 INCH = 3 FT.

X-COUNTRY PROFILE

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Project No. 1070 Exhibit
Dwg. ID 1070base_exhibit
Scale 1"=30'

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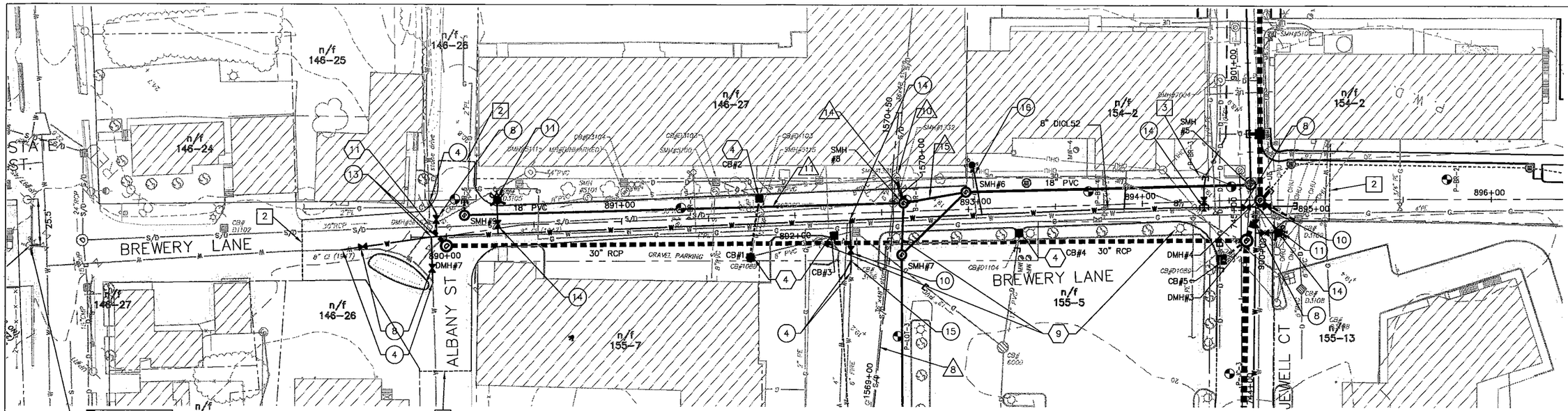
SCHULTZE'S BREWER YARD AREA
PLAN & PROFILE

BARTLETT AREA SEWER IMPROVEMENTS

CITY OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO -

SHEET 7 OF 15

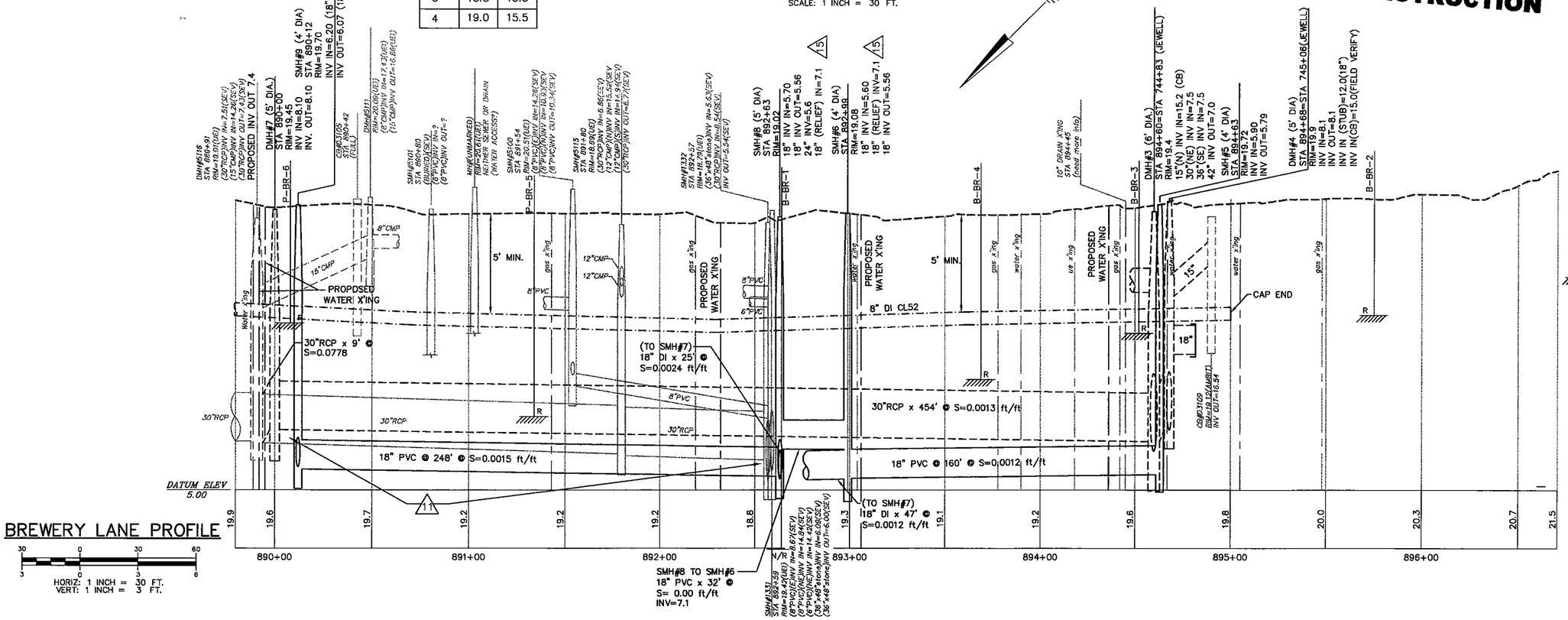


PROPOSED CB STRUCTURE SCHEDULE		
CB#	RIM	INV OUT
1	19.0	15.5
2	19.0	15.5
3	18.8	15.5
4	19.0	15.5

BREWERY LANE PLAN

30 0 30 60

SCALE: 1 INCH = 30 FT.



BREWERY LANE PROFILE

30 0 30 60

3 0 3 6

HORIZ: 1 INCH = 30 FT.
VERT: 1 INCH = 3 FT.

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APPROVAL By KAP Date 12/05/07
CONSTRUCTION By _ Date _
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Date OCTOBER 2006
Book No. _
Project No. 1070 bartlett
Dwg. ID 1070cse_bartlett
Scale 1"=30'

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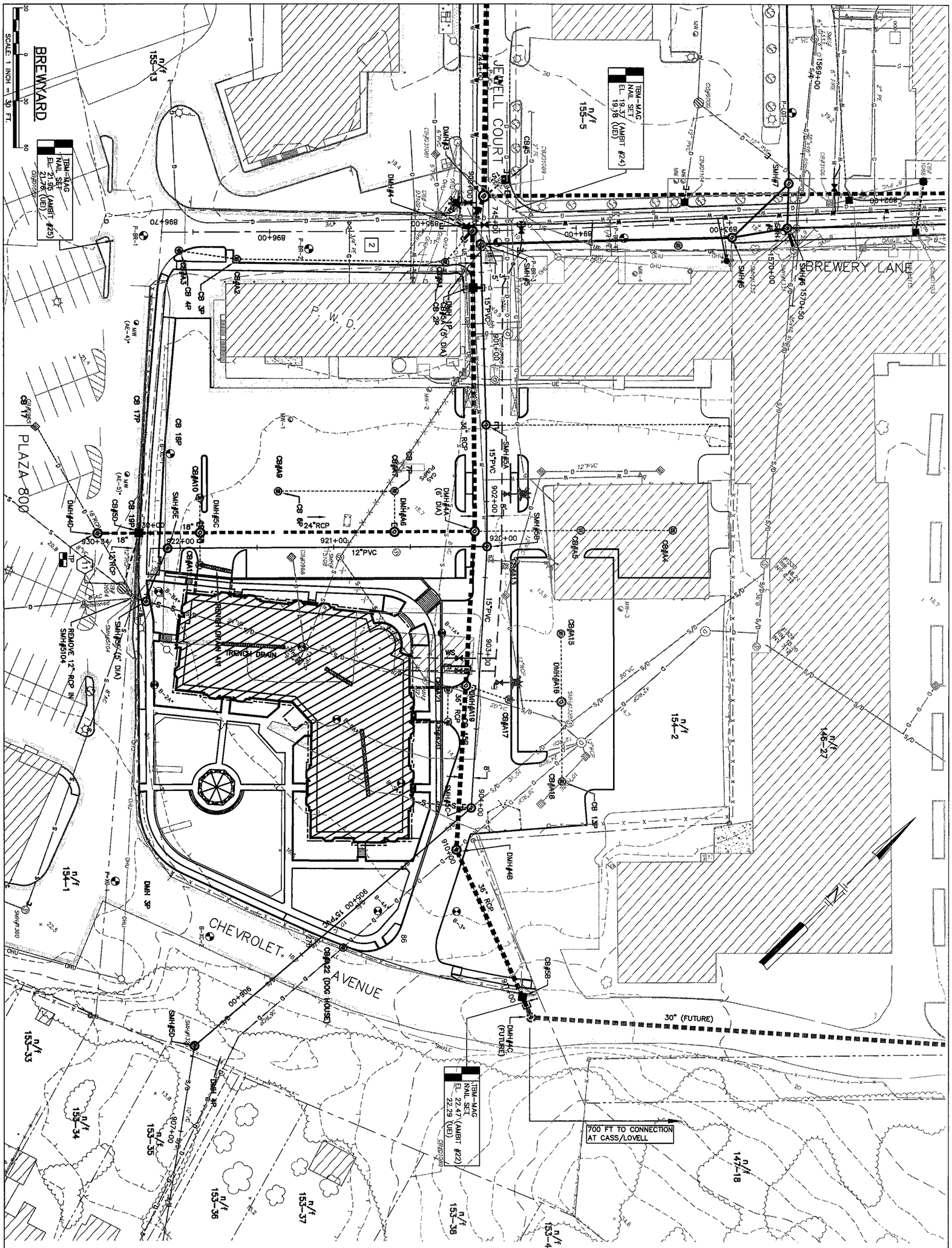
BREWERY LANE
PLAN & PROFILE

BARTLETT AREA SEWER IMPROVEMENTS

CITY OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO 1

SHEET 8 OF 15



PRELIMINARY

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SHEET 9 OF 15

THE BREWYARD TERRACES

BARTLETT AREA SEWER IMPROVEMENTS

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Approved KAP
Date OCTOBER 2006
Book No. –
Project No. 1070 bartlett
Dwg. ID 1070base_bartlett
Scale 1"=30'

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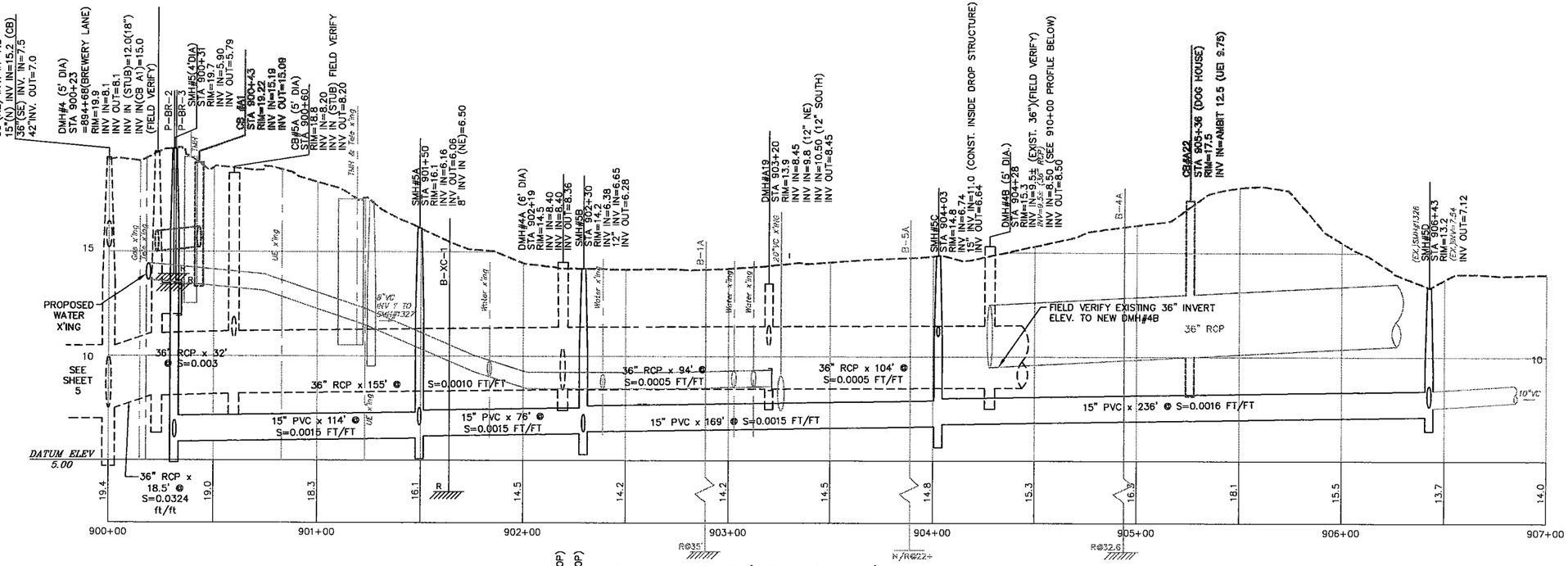
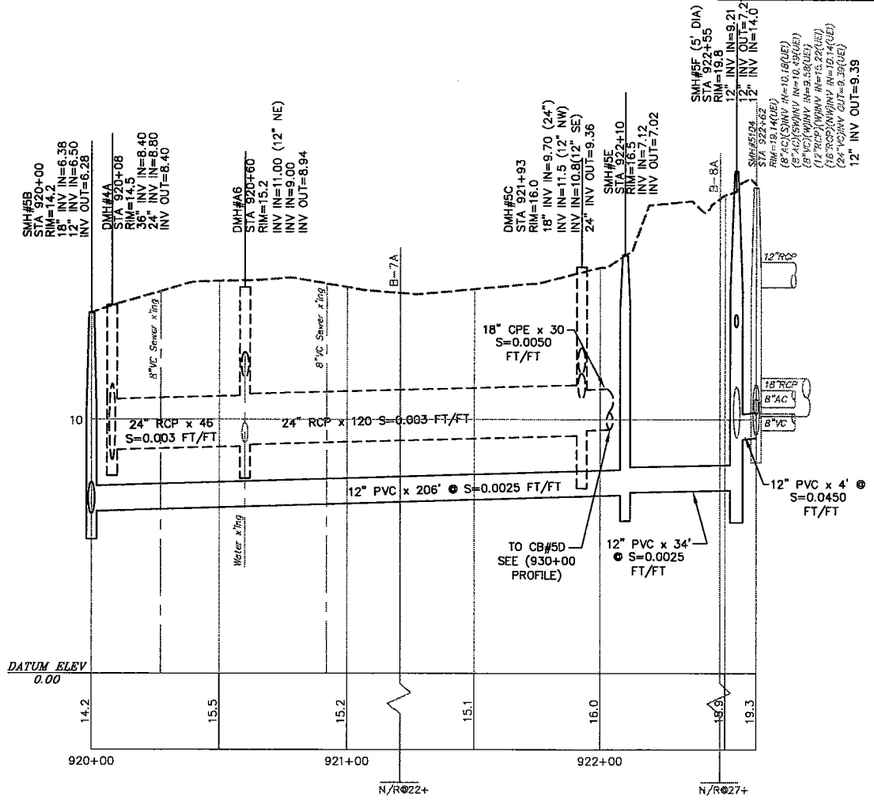


BREWYARD PROFILE (STA 900+00)



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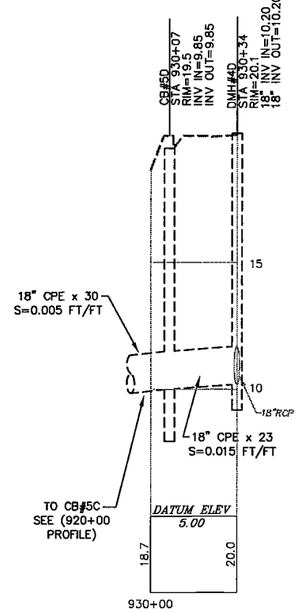

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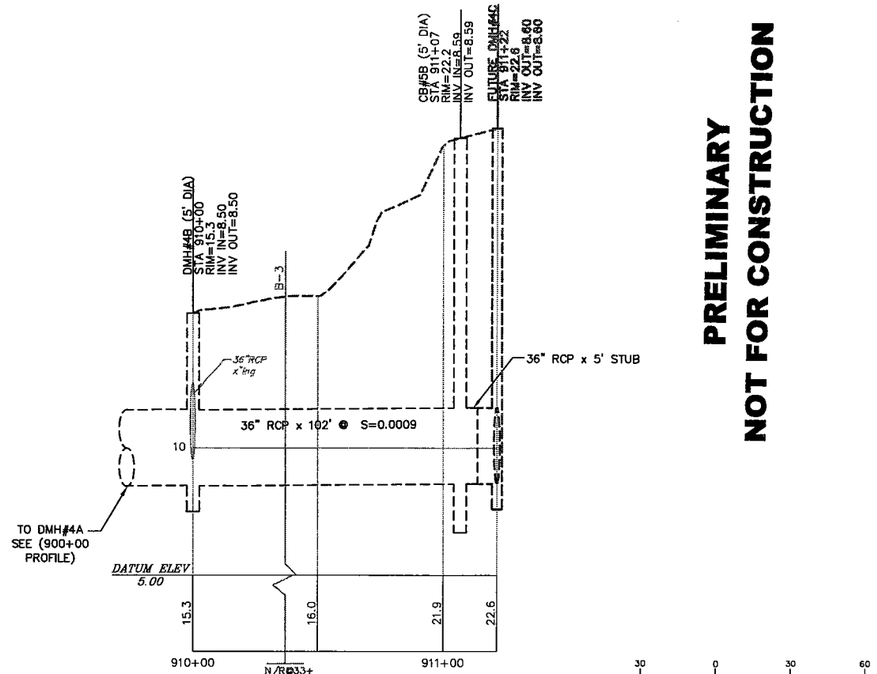

BREWYARD PROFILE (STA 910+00)

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HORIZ: 1 INCH = 30 FT.
VERT: 1 INCH = 3 FT.

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CONSTRUCTION
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Date OCTOBER 2006
Book No. -
Project No. 1070 bartlett
Dwg. ID 1070base_bartlett
Scale 1"=30'

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BREWYARD PROFILE
BARTLETT AREA SEWER IMPROVEMENTS
CITY OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO -
SHEET 10 OF 15

PRELIMINARY
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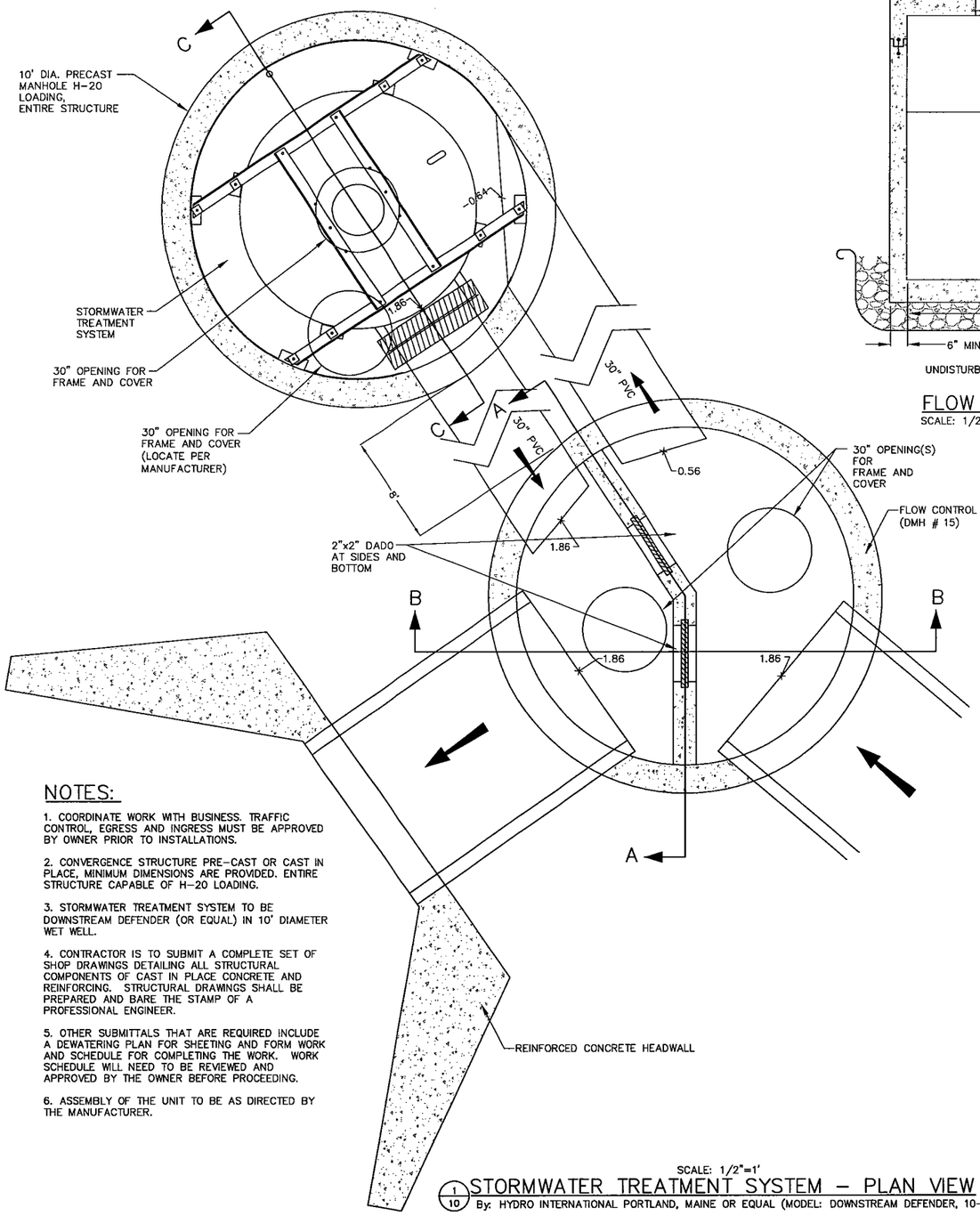


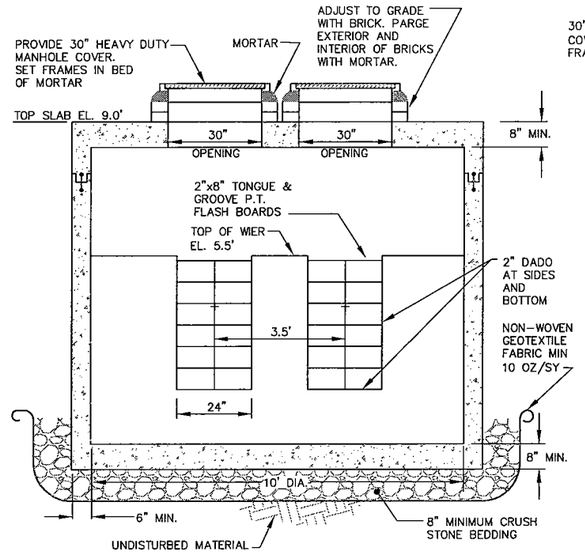
SCALE: 1/2"=1'

1/10 STORMWATER TREATMENT SYSTEM – PLAN VIEW

By: HYDRO INTERNATIONAL PORTLAND, MAINE OR EQUAL (MODEL: DOWNSTREAM DEFENDER, 10-FT DIA.)

NOTES:

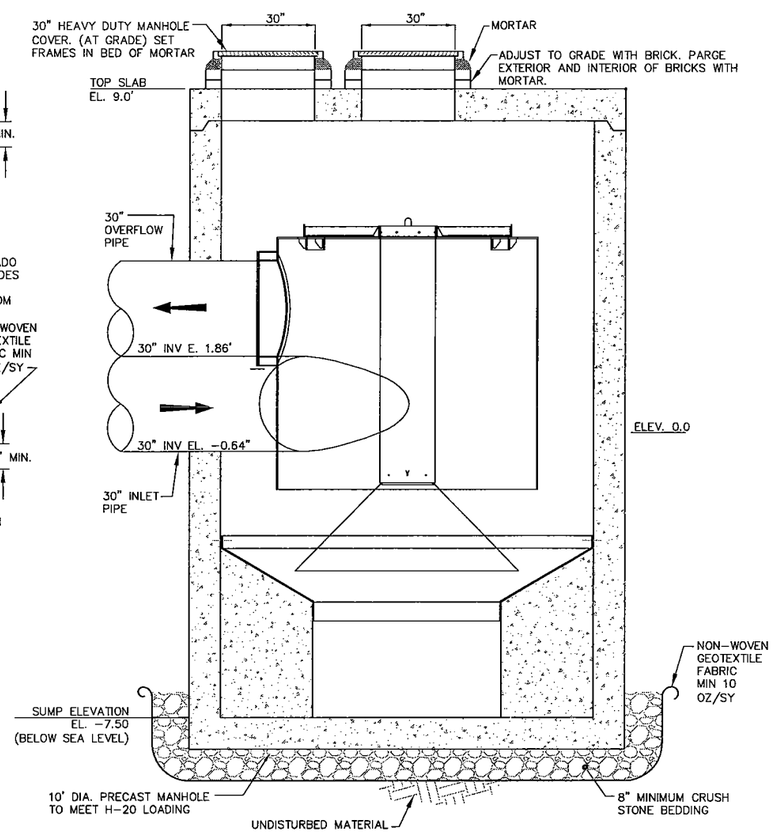
1. COORDINATE WORK WITH BUSINESS. TRAFFIC CONTROL, EGRESS AND INGRESS MUST BE APPROVED BY OWNER PRIOR TO INSTALLATIONS.
2. CONVERGENCE STRUCTURE PRE-CAST OR CAST IN PLACE, MINIMUM DIMENSIONS ARE PROVIDED. ENTIRE STRUCTURE CAPABLE OF H-20 LOADING.
3. STORMWATER TREATMENT SYSTEM TO BE DOWNSTREAM DEFENDER (OR EQUAL) IN 10' DIAMETER WET WELL.
4. CONTRACTOR IS TO SUBMIT A COMPLETE SET OF SHOP DRAWINGS DETAILING ALL STRUCTURAL COMPONENTS OF CAST IN PLACE CONCRETE AND REINFORCING. STRUCTURAL DRAWINGS SHALL BE PREPARED AND BARE THE STAMP OF A PROFESSIONAL ENGINEER.
5. OTHER SUBMITTALS THAT ARE REQUIRED INCLUDE A DEWATERING PLAN FOR SHEETING AND FORM WORK AND SCHEDULE FOR COMPLETING THE WORK. WORK SCHEDULE WILL NEED TO BE REVIEWED AND APPROVED BY THE OWNER BEFORE PROCEEDING.
6. ASSEMBLY OF THE UNIT TO BE AS DIRECTED BY THE MANUFACTURER.



FLOW CONTROL STRUCTURE

SCALE: 1/2"=1'

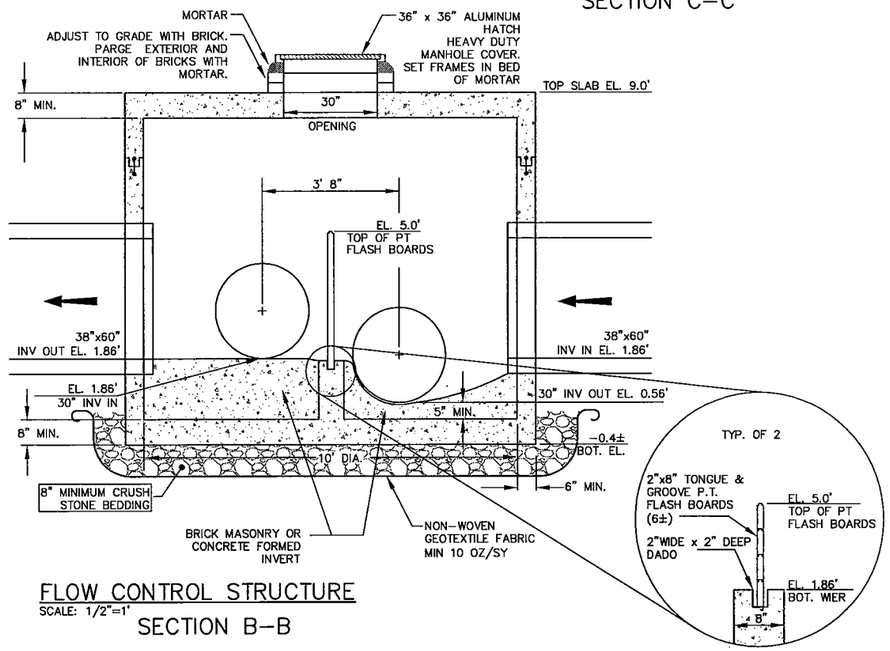
SECTION A-A



STORMWATER TREATMENT SYSTEM – SECTION VIEW

SCALE: 1/2"=1'

SECTION C-C



FLOW CONTROL STRUCTURE

SCALE: 1/2"=1'

SECTION B-B

ISSUE FOR				
APPROVAL	Date 11/30/07	By KAP		
CONSTRUCTION	Date –	By –		
RECORD DRAWING	Date –	By –		
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Designed KAP
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Approved KAP
Date OCTOBER 2006
Book No. –
Project No. 1070bartlett
Dwg. ID 1070bartlett24
Scale AS SHOWN

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Tel. 603-436-6192 Fax. 603-431-4733

STORM WATER TREATMENT SYSTEM
BARTLETT AREA SEWER IMPROVEMENTS
TOWN OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO –

SHEET 11 OF 15

STANDARD MANHOLE NOTES:

1. IT IS THE INTENTION: THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH, AND LEAKPROOF QUALITIES CONSIDERED NECESSARY BY THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES) FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT, IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20LOADING) WITHOUT FAILURE, AND TO PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.

2. BARRELS AND CONE SECTIONS: SHALL BE PRECAST REINFORCED CONCRETE.

3. PRECAST CONCRETE: BARREL SECTIONS, CONES, AND BASES SHALL CONFORM TO ASTM C478.

4. LEAKAGE TEST: SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS. INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST.

5. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO AN ELEVATION OF 1" ABOVE THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.

6. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN, MANUFACTURED IN USA, AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) LETTER "S" FOR SEWERS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.

7. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33. STONE SIZE NO. 67.

100% PASSING 1 INCH SCREEN 0-10% PASSING #4 SIEVE

90-100% PASSING 3/4 INCH SCREEN 0- 5% PASSING #8 SIEVE

20- 55% PASSING 3/8 INCH SCREEN

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1-1/2 INCH TO 1/2 INCH SHALL BE USED.

8. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER HAVING AN ECCENTRIC ENTRANCE AND CAPABLE OF SUPPORTING H-20 LOADS MAY BE USED.

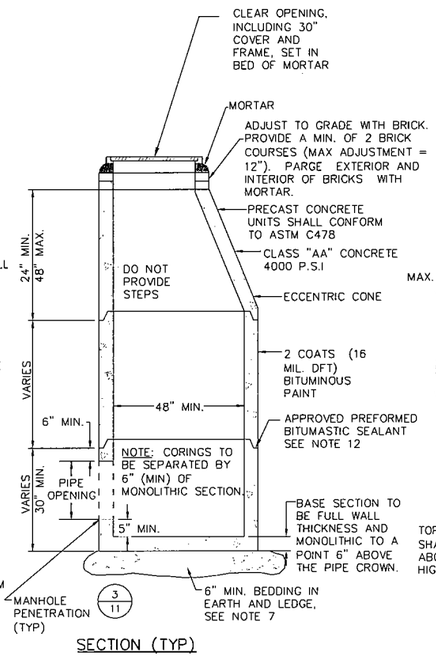
9. FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:
RCP AND CI PIPE - ALL SIZES - 48"
AC AND VC PIPE - UP THROUGH 12" DIA. - 18"
AC AND VC PIPE - LARGER THAN 12" DIA. - 36"
DI PIPE - NONE REQUIRED
PVC (ASTM 3034) - UP THROUGH 15" DIA. - NONE REQUIRED
PVC (ASTM F679) - LARGER THAN 15" DIA. - 48"/60"
PVC (ASTM F789) - ALL SIZES - 48"/60"
ABS (ASTM D2680) - ALL SIZES - SAME AS VC ABOVE.

10. SPECIFICATIONS: ADDITIONAL CONSTRUCTION SPECIFICATIONS ARE INCLUDED IN THE CONTRACT DOCUMENTS. THESE STANDARD MANHOLE DRAWINGS ARE NOT COMPLETE WITHOUT THESE SPECIFICATIONS.

11. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL, WILL DEPEND UPON AN ELASTOMERIC SEALANT FOR WATERTIGHTNESS.

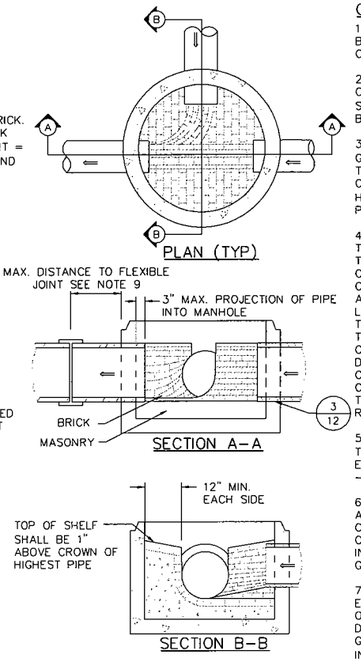
12. FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY. APPROVED BITUMASTIC SEALANTS: RAM-NEK E Z KENT SEAL NO.2

13. ALL GASKETS, SEALANTS, MORTAR, ETC., SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.



SECTION (TYP)

1/12 SEWER MANHOLE
NOT TO SCALE



GRAVITY SEWER TRENCH NOTES:

1. ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE: BACKFILL AS STATED IN THE TECHNICAL SPECIFICATIONS OR AS SHOWN ON THE DRAWINGS.

2. BEDDING: SEE NOTE 7 OF STANDARD MANHOLE NOTES. WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, GRADED SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1-1/2 INCH SHALL BE USED.

3. SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER, SO GRADED THAT 90-100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAN 15% WILL PASS A #200 SIEVE. BLANKET MAY BE OMITTED FOR CAST-IRON, DUCTILE IRON, AND REINFORCED CONCRETE PIPE PROVIDED HOWEVER, THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE.

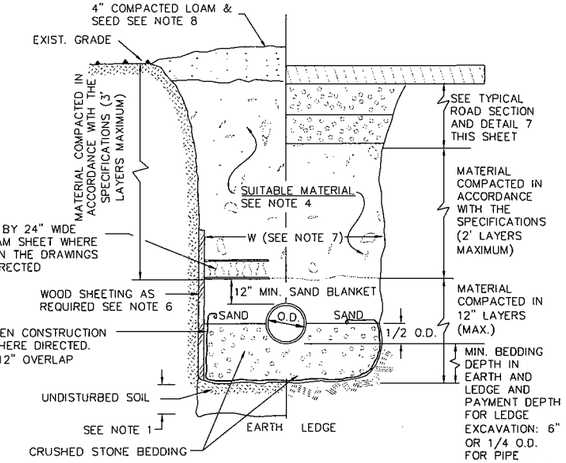
4. SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS; PIECES OF PAVEMENT; ORGANIC MATTER; TOP SOIL; ALL WET OR SOFT MUCK, PEAT, OR CLAY; ALL EXCAVATED LEDGE MATERIAL; ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION; AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. IN CROSS-COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK, OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER, FOR MAINTENANCE AND POSSIBLY RECONSTRUCTION, WILL BE PRESERVED.

5. BASE COURSE AND PAVEMENT SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES - DIVISIONS 300 AND 400 RESPECTIVELY.

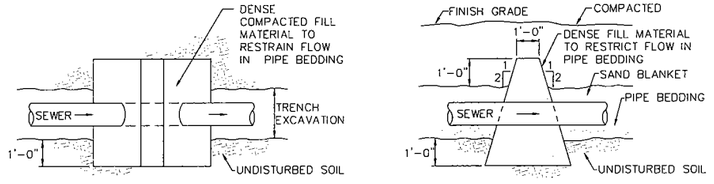
6. WOOD SHEETING, IF REQUIRED: WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION 1 FOOT ABOVE THE TOP OF PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.

7. W = MAXIMUM ALLOWABLE TRENCH PAYMENT WIDTH FOR ROCK EXCAVATION, FOR ORDERED EXCAVATION BELOW GRADE AND HANDLING OF EXCAVATED COMTAMINATED SOILS. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES IN NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE OUTSIDE DIAMETER (O.D.)

8. FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.



TRENCH SECTION (TYP)

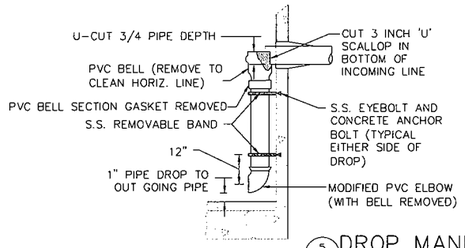


NOTES:

1. TRENCH DRAINS TO BE AT LOCATIONS SHOWN ON THE PLAN OR AS DIRECTED TO CONTROL BACK WATER IN STONE BEDDING.

4/12 TRENCH DAM
NOT TO SCALE

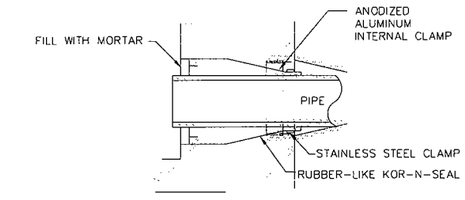
2/12 TRENCH - GRAVITY SEWER
NOT TO SCALE



SIZE GUIDE:

1-8" OR 10" DROP: 4'-0" DIA. M.H.
2-8" OR 10" DROP: 5'-0" DIA. M.H.
1-12" DROP: 5'-0" DIA. M.H.
1-15" DROP: 5'-0" DIA. M.H.

5/12 DROP MANHOLE
NOT TO SCALE



KOR-N-SEAL JOINT SLEEVE (OR EQUAL)

3/12 MANHOLE PENETRATIONS
NOT TO SCALE

SERVICE CONNECTION NOTES:

1. SEE DETAILS FOR SERVICE CONNECTION REQUIREMENTS.

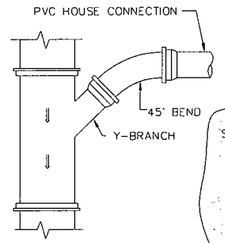
2. SERVICE CONNECTION SHALL BE INSTALLED BELOW WATER MAIN WHERE POSSIBLE.

3. CLEANOUTS SHALL BE INSTALLED AT EACH SERVICE CONNECTION.

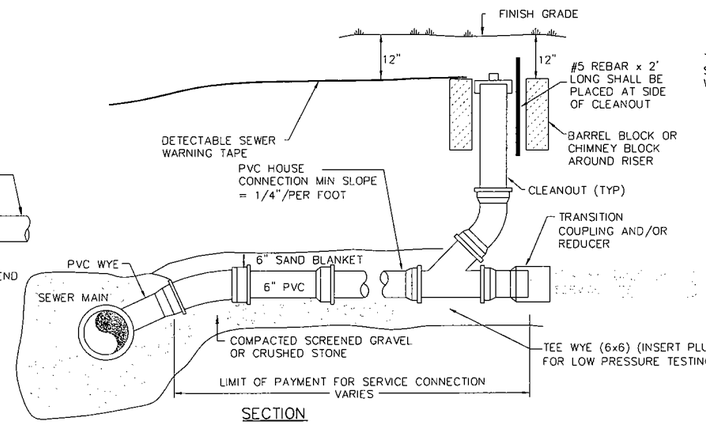
4. REBAR SHALL BE PLACED AT SIDE OF CLEANOUT.

5. CLEANOUT SHALL BE USED TO PLUG AND TEST ALL NEW LATERALS WITH MINIMAL INTERUPTION TO OPERATION OF HOMEOWNER SANITARY SYSTEM.

6. CLEANOUT RISER PIPE AND FITTINGS SHALL BE INCIDENTAL AND SHALL NOT BE CONSIDERED FOR PAYMENT.

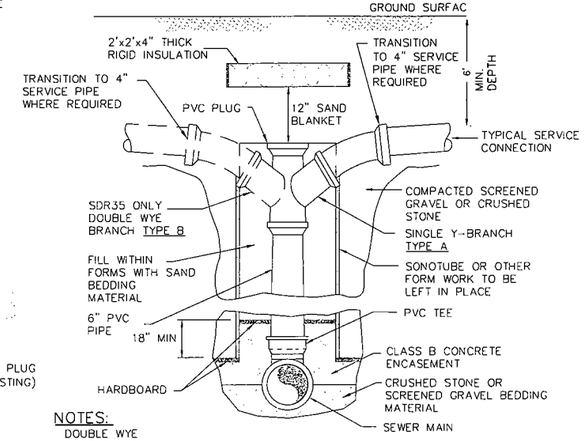


PLAN



SECTION

6/12 SERVICE CONNECTION
NOT TO SCALE



NOTES:
DOUBLE WYE BRANCH ONLY TO BE USED WHERE APPROVED BY ENGINEER.

7/12 CHIMNEY
NOT TO SCALE

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE FOR			
APPROVAL	By	KAP	
Date	11/30/07		
CONSTRUCTION	By	-	
Date	-		
RECORD DRAWING	By	-	
Date	-		

NO.	REVISIONS	APP'D

Drawn/Chk. RMG
Designed KAP
Checked KAP
Approved KAP
Date OCTOBER 2005
Book No. -
Project No. 1020.bartlett
Dwg. ID 07064d42
Scale AS SHOWN

Underwood Engineers, Inc.
25 Vaughan Mall, Portsmouth, N.H. 03801
Tel. 603-436-6192 Fax. 603-431-4733

STANDARD SEWER DETAILS

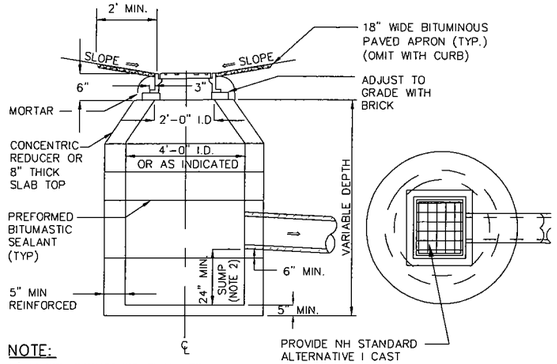
BARTLETT AREA SEWER IMPROVEMENTS

TOWN OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO -

SHEET 12 OF 15

PRELIMINARY
NOT FOR CONSTRUCTION

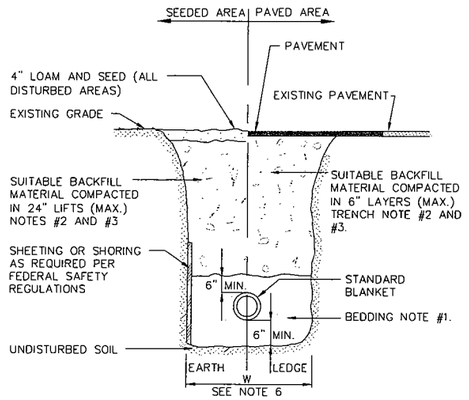


NOTE:

1.) ENTIRE STRUCTURE SHALL BE CAPABLE OF WITHSTANDING AN H – 20 LOAD DETAILS OF REINFORCEMENT TO BE FURNISHED BY MANUFACTURER.

2.) WHERE SUMP IS OMITTED PROVIDE MASONRY INVERT PER (CB#5_____) (6/12)

(2/13) CATCH BASIN DETAIL
NOT TO SCALE



(4/13) TRENCH DETAIL – STORM DRAIN
NOT TO SCALE

TRENCH NOTES – STORM DRAIN

1. BEDDING: BEDDING FOR PIPES SHALL CONSIST OF PREPARING THE BOTTOM OF THE TRENCH TO SUPPORT THE ENTIRE LENGTH OF THE PIPE AT A UNIFORM SLOPE AND ALIGNMENT. CRUSHED GRAVEL (NHDOT ITEM 304.3) OR CRUSHED STONE SHALL BE USED TO BED THE PIPE TO THE ELEVATION SHOWN ON THE DRAWINGS.

2. COMPACTION: ALL BACKFILL SHALL BE COMPACTED AT OR NEAR OPTIMUM MOISTURE CONTENT BY PNEUMATIC TAMPERS, VIBRATORY COMPACTORS OR OTHER APPROVED MEANS. BACKFILL BENEATH PAVED SURFACES SHALL BE COMPACTED TO NOT LESS THAN 95 PERCENT OF AASHTO T99, METHOD C.

3. SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS; PIECES OF PAVEMENT; ORGANIC MATTER; TOP SOIL; ALL WET OR SOFT MUCK, PEAT, OR CLAY; ALL EXCAVATED LEDGE MATERIAL; ROCKS OVER 6 INCHES IN LARGEST DIMENSION; FROZEN EARTH AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. IN SEEDED AREAS, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, ROCKS UNDER 12", FROZEN EARTH OR CLAY, IF HE/SHE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE PIPE WILL BE PRESERVED.

4. BASE COURSE AND PAVEMENT: SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES – DIVISIONS 300 AND 400 RESPECTIVELY.

5. DRAINAGE PIPE: PIPE MATERIALS SHALL BE EITHER POLYVINYL CHLORIDE (PVC) OR CORRAGATED POLYETHYLENE (CPE). THE OWNER RESERVES THE RIGHT TO DETERMINE WHICH PIPE MATERIALS ARE USED FOR THE PROJECT.

6. W=MAXIMUM ALLOWABLE TRENCH WIDTH: FOR ROCK EXCAVATION, FOR ORDERED EXCAVATION BELOW GRADE AND HANDLING OF EXCAVATED COMTAMINATED SOILS. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES IN NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE OUTSIDE DIAMETER (O.D.)

STANDARD MANHOLE NOTES:

1. BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE.

2. PRECAST CONCRETE BARREL SECTIONS, CONES, AND BASES SHALL CONFORM TO ASTM C478.

3. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE INVERT. INVERT BRICKS SHALL BE LAID ON EDGE. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST POSSIBLE TANGENT TO THE CENTER LINE OF THE PIPES. SHELVES SHALL BE CONSTRUCTED TO AN ELEVATION OF 1/2 THE PIPE DIA. AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL.

4. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN MANUFACTURED IN USA, AND PROVIDE A 30-INCH CLEAR OPENING. WORD "DRAIN", IN 3-INCH LETTERS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.

5. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33. STONE SIZE NO. 67.

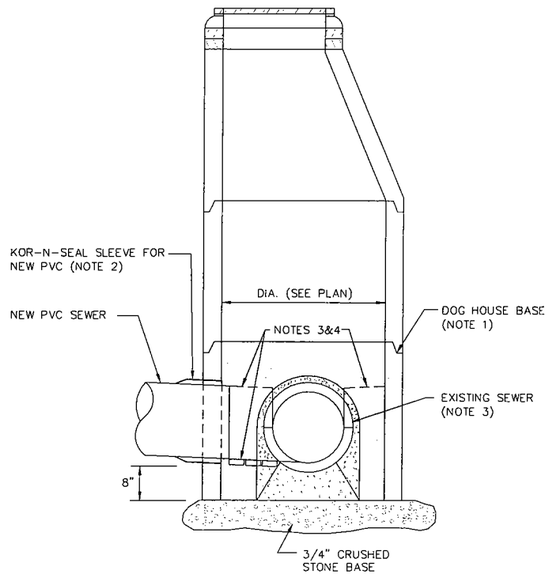
100% PASSING 1 INCH SCREEN
0–10% PASSING #4 SIEVE

90–100% PASSING 3/4 INCH SCREEN
0– 5% PASSING #8 SIEVE

20– 55% PASSING 3/8 INCH SCREEN

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1–1/2 INCH TO 1/2 INCH SHALL BE USED.

6. SLAB TOP COVERS: MAY BE APPROVED IN LIEU OF A CONE SECTION, WHEN MANHOLE IS LESS THAN 5 FEET AND FOR LARGE DIAMETER MANHOLES. SLAB TOP COVERS SHALL BE REINFORCED CONCRETE HAVING AN ECCENTRIC ENTRANCE AND CAPABLE OF SUPPORTING H–20 LOADS.



NOTES:

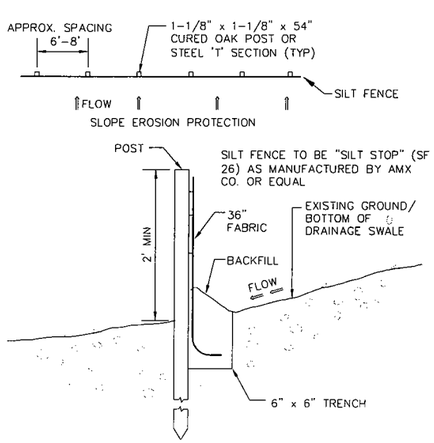
1. INSTALL DOG HOUSE MANHOLE ONE STONE BASE WITHOUT IMPACT TO EXISTING FLOW, OR BY PASS PUMP, SUBSIDIARY.

2. CONNECT NEW PVC PIPE TO DOG HOUSE BASE. INSTALL AND TEST NEW SEWER.

3. CUT & REMOVE TOP SECTION OF EXISTING BRICK OR PVC PIPE FOLLOWING INSTALLATION OF NEW SEWER, RETAIN BOTTOM SECTION OF EXISTING PIPE FOR INVERT. APPROACH CHANNEL & SHELF TO BE CONSTRUCTED WITH BRICK MASONRY. TEMPORARY BY–PASS PUMPING OPERATIONS NECESSARY FOR SEWER MODIFICATIONS OR CONSTRUCTION OF NEW FACILITIES ARE SUBSIDIARY.

4. SHAPE INVERT AND CONSTRUCT BRICK MASONRY INVERT AND SHELF FOR NEW PVC SEWER INLET.

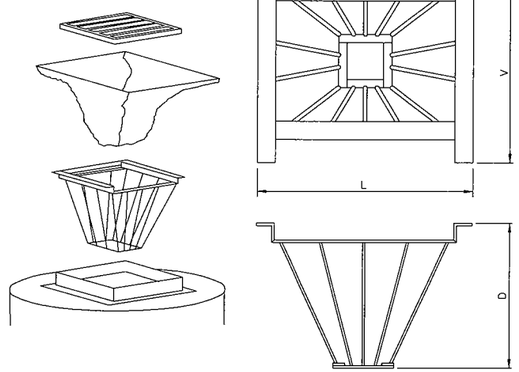
(1/13) DOG HOUSE SEWER MANHOLE
NOT TO SCALE



SILT FENCE CONSTRUCTION NOTE:

SILT FENCE TO BE CONSTRUCTED AT LOCATIONS SHOWN ON THE PLANS BEFORE CONSTRUCTION PROCEEDS. FENCE SHALL BE MAINTAINED THROUGHOUT ENTIRE DURATION OF CONSTRUCTION UNTIL GROUND COVER IS ESTABLISHED.

(3/13) SILT FENCE DETAIL
NOT TO SCALE



NOTES:

1. METAL–ERA INLET BASKET AVAILABLE FROM METAL–ERA, INC.
N4 W22450 BLUEMOUND ROAD
WAUKESHA, WI 53186
1–800–558–2162

2. INSTALL APPROPRIATE METAL BASKET.

3. A. GEOTEXTILE FABRIC SHALL BE POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE, OR POLYENYLIDENE CHLORIDE MEETING THE FOLLOWING:
a. GRAB STRENGTH: 45# MIN. IN ANY PRINCIPAL DIRECTION (ASTM D1682)
b. MULEN BURST STRENGTH: 60 PSI MIN. (ASTM D771)
B. FABRIC SHALL HAVE AN OPENING NO GREATER THAN A #20 SIEVE AND A MIN. PERMIABILITY OF 120 GPM/SQ. FT.

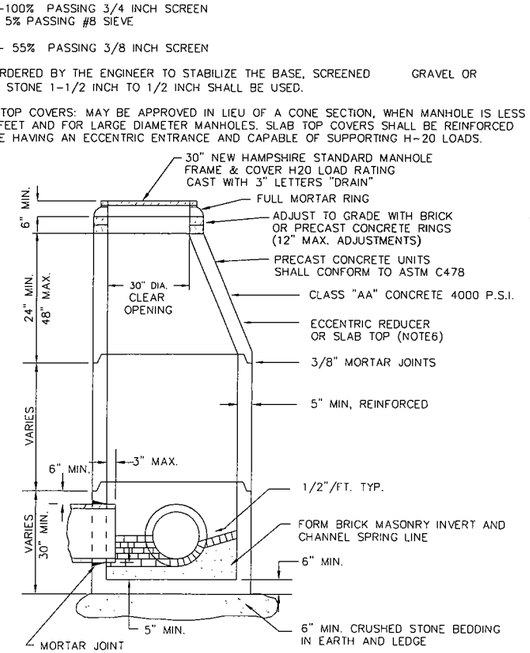
4. FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND EXTEND AT LEAST 6 INCHES PAST THE FRAME. GRATE INLET SHALL BE PLACED OVER THE BASKET/FRAME AND WILL ANCHOR THE FABRIC.

5. INSPECT BASKET DAILY OR MORE FREQUENTLY DURING STORM EVENTS.

6. SEDIMENT SHALL BE REMOVED AFTER EACH STORM EVENT OR MORE FREQUENTLY TO PREVENT CLOGGING.

7. USE OF METAL–ERA INLET BASKET DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF MAINTAINING OTHER EROSION CONTROL MEASURES AS MAY BE REQUIRED OR FROM STABILIZING DISTURBED AREAS AS SOON AS PRACTICAL.

(5/13) CATCH BASIN INLET FILTER
NOT TO SCALE



(6/13) TYPICAL DRAINAGE MANHOLE
NOT TO SCALE

NO.	REVISIONS	APP'D
	ISSUE FOR APPROVAL Date 11/30/07	By KAP
	CONSTRUCTION Date –	By –
	RECORD DRAWING Date –	By –

Drawn/Chk. RMG
Designed KAP
Checked KAP
Approved KAP
Date OCTOBER 2005
Book No. –
Project No. 1070.bettett
Dwg. ID 1070etet4x2
Scale AS SHOWN

Underwood Engineers, Inc.
25 Vaughan Mall, Portsmouth, N.H. 03801
Tel. 603-436-6192 Fax. 603-431-4733

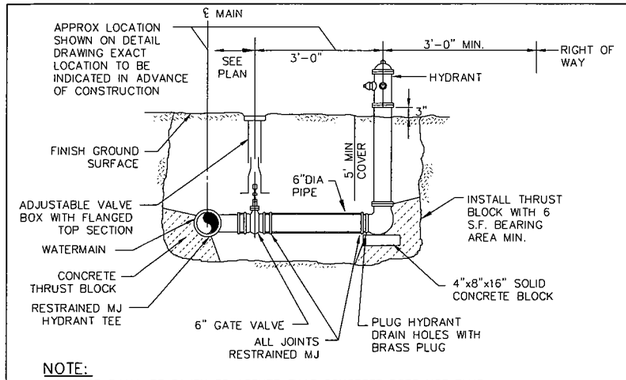
DRAINAGE & EROSION CONTROL DETAILS

BARTLETT AREA SEWER IMPROVEMENTS

TOWN OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO –

SHEET 13 OF 15

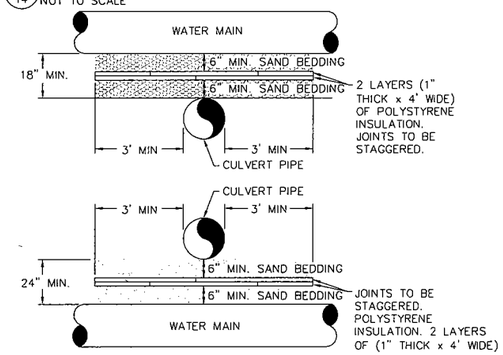


NOTE:

1. CARE SHALL BE TAKEN TO ASSURE THAT CONCRETE DOES NOT PLUG DRAIN PORTS.
2. HYDRANT ASSEMBLY INCLUDES MJ HYDRANT TEE.
3. HYDRANT SHALL BE KENNEDY K-814 GUARDIAN, PER CITY STANDARDS.

(1/14) TYPICAL HYDRANT ASSEMBLY SECTION

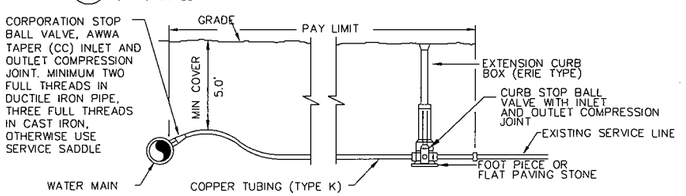
NOT TO SCALE



INSULATION TO BE USED WHERE PIPE SEPARATION IS 24" OR LESS.

(3/13) CULVERT CROSSING DETAIL

NOT TO SCALE



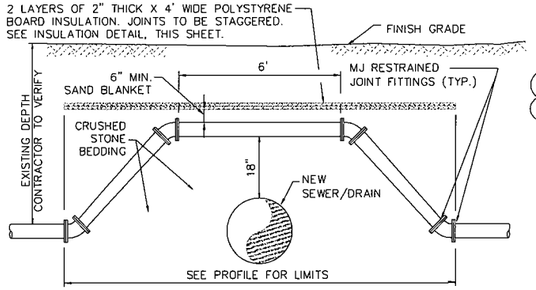
NOTES:

1. PROVIDE NEW LINE USING CONTINUOUS LENGTHS OF COPPER. NO COUPLING ALLOWED IN ROADWAY WITHOUT APPROVAL OF ENGINEER.
2. TAPS TO BE MADE AT APPROX. 2:00 AND 10:00.
3. PROVIDE FOR SERVICE LINE CONTRACTION AND EXPANSION BY INSTALLING "S" IN SERVICE LINE NEAR MAIN.
4. FOR HOMES WITH SILL PRESSURE GREATER THAN 80 PSI ±, COORDINATE SERVICE INSTALLATION W/ INSTALLATION OF POINT OF ENTRY PRV ASSEMBLY.
5. IF SERVICE IS INSTALLED WITH LESS THAN 5' COVER, INSULATE OVER LINE.
6. REMOVE EXISTING CURB STOP (SALVAGE AS IDENTIFIED IN SECT. 01611).
7. CONNECT CURB STOP TO EXISTING SERVICE LINE AT PROPERTY LINE OR AT LOCATION APPROVED BY THE ENGINEER (NO COUPLING WITHOUT APPROVAL OF ENGINEER) AFTER PRESSURE TESTING AND DISINFECTION.
8. SHUT OFF EXISTING CORPORATION AND REMOVE OR ABANDON EXISTING SERVICE LINE.
9. CURB BOX SHALL BE SET APPROXIMATELY 1'-0" FROM PROPERTY LINE.
10. 2" SERVICE CONNECTIONS SHALL USE A STAINLESS STEEL SERVICE SADDLE.

(4/14) TYPICAL SERVICE CONNECTION

NOT TO SCALE

PRELIMINARY
NOT FOR CONSTRUCTION

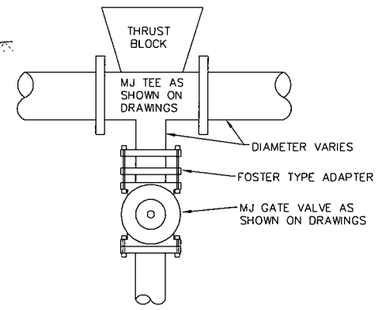


NOTE:

1. INSTALL (4) FOUR 45° MJ BENDS WITH RESTRAINED JOINT FITTINGS.
2. ALL SEWER CROSSINGS SHALL USE THIS DETAIL.

(2/14) WATER MAIN ~~RELOCATION~~

NOT TO SCALE

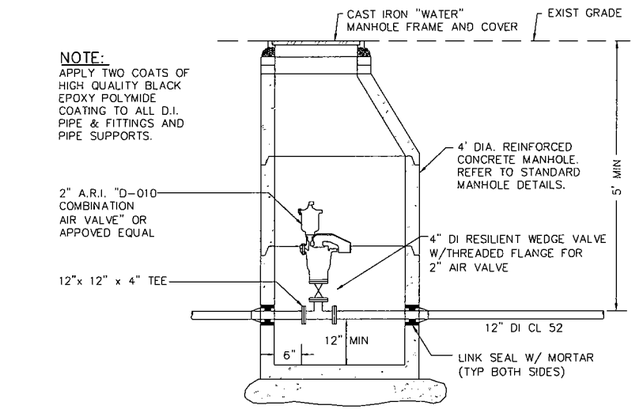


NOTE:

1. GATE VALVES SHALL OPEN RIGHT, PER CITY STANDARDS.

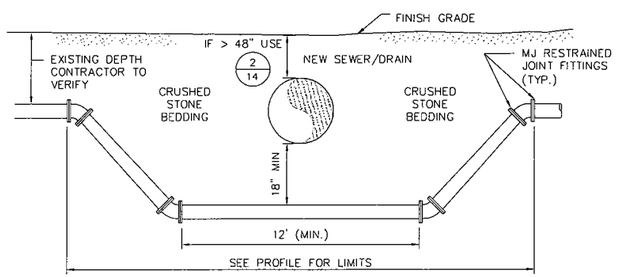
(5/14) TEE & GATE VALVE ASSEMBLY DETAIL (TYP.)

NOT TO SCALE



(9/14) AIR RELEASE /VACUUM RELEASE MANHOLE

NOT TO SCALE



NOTE:

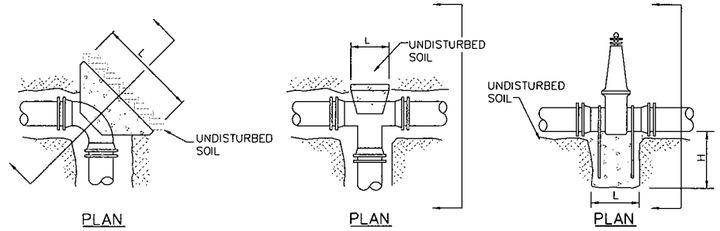
1. INSTALL (4) FOUR 45° MJ BENDS WITH RESTRAINED JOINT FITTINGS.
2. RELOCATED WATER MAIN SHALL BE 8" DIA MIN. CONNECT TO EXISTING MAIN WITH REDUCERS/ COUPLINGS AS REQUIRED.
3. WHERE MIN. 48" COVER CANNOT BE ACHIEVED DUE TO UTILITY CONFLICTS WATER MAY PASS UNDER SEWER WITH MIN. 18" VERTICAL SEPARATION.

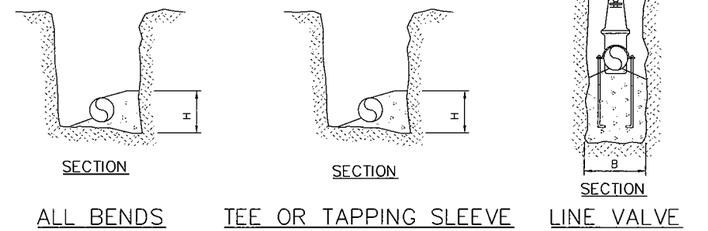
(7/14) WATER MAIN RELOCATION

NOT TO SCALE

MINIMUM CONCRETE ANCHOR DIMENSIONS								
BENDS, TEES AND LINE VALVES AT 250 PSI								
PIPE SIZE INCHES	TEE OR PLUG FT.		ALL BENDS FT.		ALL LINE VALVES FT.			PIPE SIZE INCHES
	H	L	H	L	H	L	B	
6	1.5	3.0	2.0	3.5	1.5	3.0	2.5	6
8	2.0	4.0	2.5	5.0	2.0	4.0	3.0	8
10	2.5	5.0	3.0	6.0	3.0	4.0	3.0	10
12	3.0	6.0	3.0	8.0	3.0	5.0	4.0	12
16	3.0	6.5	3.0	10.0	3.0	4.5	4.0	16

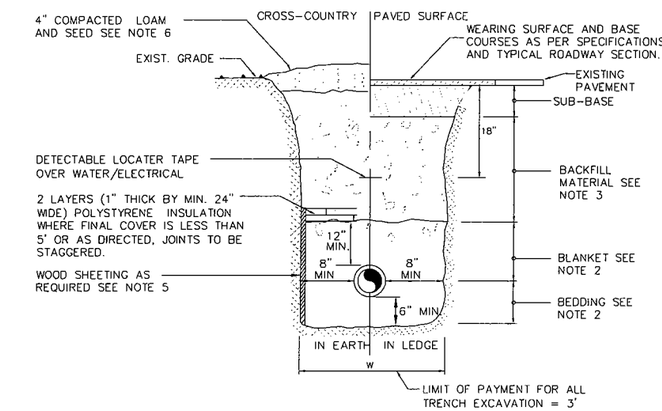
BASIS: SOIL BEARING CAPACITY OF 2000 PSF AND 5 FEET COVER IN GRANULAR SOIL. HEIGHT OF BLOCK MUST BE LESS THAN 1/2 DEPTH OF TRENCH. 6 MIL THICK POLYETHYLENE SHALL BE PLACED AROUND FITTINGS PRIOR TO CONCRETE PLACEMENT. USE FOR HORIZONTAL OR DOWNWARD THRUST ONLY.





(6/14) CONCRETE ANCHORS

NOT TO SCALE



(8/14) TYPICAL TRENCH DETAIL

NOT TO SCALE

STANDARD TRENCH NOTES

1. ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE: BACKFILL AS STATED IN THE TECHANICAL SPECIFICATIONS OR AS SHOWN ON THE DRAWINGS.
2. BEDDING AND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER (SECTION 02200). BLANKET MAY BE OMITTED FOR CAST-IRON, DUCTILE IRON, AND REINFORCED CONCRETE PIPE PROVIDED, HOWEVER, THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE.
3. BACKFILL MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS; PIECES OF PAVEMENT; ORGANIC MATTER; TOP SOIL; ALL WET OR SOFT MUCK, PEAT, OR CLAY; ALL EXCAVATED LEDGE MATERIAL; ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION; AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.

IN CROSS-COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK, OR PEAT, IF ENGINEER IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE PIPE LINE, FOR MAINTENANCE AND POSSIBLY RECONSTRUCTION, WILL BE PRESERVED.

4. MINIMUM COVER: NOT LESS THAN 5 FEET, 7 MAX, EXCEPT TO AVOID SUBSURFACE STRUCTURES.
5. WOOD SHEETING, IF REQUIRED: WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION 1 FOOT ABOVE THE TOP OF PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.
6. FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
7. DRIVEWAYS: CRUSHED GRAVEL IN DRIVEWAYS SHALL MATCH EXISTING WITH A MINIMUM OF 6". EXISTING GRAVEL SHALL BE REMOVED AND REPLACED AND SHALL NOT BE MEASURED FOR PAYMENT.

NO.	REVISIONS	APP'D

ISSUE FOR: APPROVAL — By KAP — Date 11/30/07
CONSTRUCTION — By – — Date –
RECORD DRAWING — By – — Date –

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Designed KAP
Checked KAP
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Date OCTOBER 2005
Book No. –
Project No. 1029.bartlett
Dwg. ID 1029detail2
Scale AS SHOWN

Underwood Engineers, Inc.
25 Vaughan Mall, Portsmouth, N.H. 03801
Tel. 603-436-6192 Fax. 603-431-4733

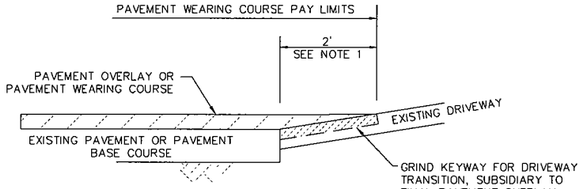
WATER DETAILS

BARTLETT AREA SEWER IMPROVEMENTS

TOWN OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO –

SHEET 14 OF 15

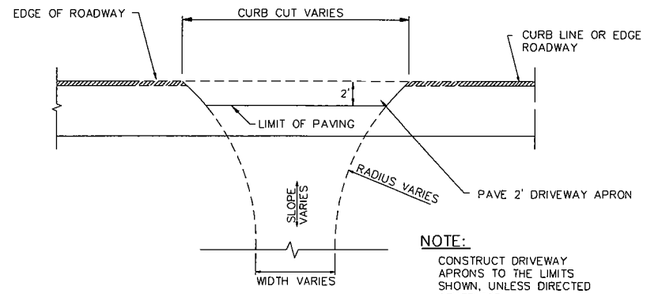


NOTES:

1. PAY LIMITS FOR WEARING COURSE/PAVEMENT OVERLAY EXTEND 2' BEYOND THIS EDGE OF PAVEMENT OR CURB LINE AT DRIVEWAYS.

2. CONTRACTOR MAY SAWCUT DRIVEWAY TRANSITION AT HIS OPTION. PAVEMENT SHALL BE REMOVED AND REPLACED TO MATCH EXISTING.

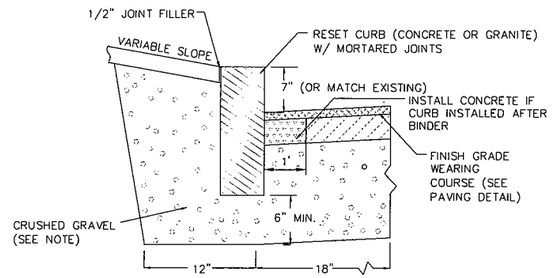
1/15 DRIVEWAY APRON DETAIL
NOT TO SCALE BID ITEM NO.: A15D & B15D



NOTE:

CONSTRUCT DRIVEWAY APRONS TO THE LIMITS SHOWN, UNLESS DIRECTED OTHERWISE.

2/15 DRIVE APRON
NOT TO SCALE



NOTE:

1.) DAMAGED OR IMPACTED CURB (WHETHER GRANITE OR CONCRETE) IS TO BE REPLACED AT THE CONTRACTORS OWN EXPENSIVE, UNLESS OTHERWISE NOTED ON PLAN.

2.) GRAVEL AT CURB SHALL BE COMPACTED PRIOR TO PAVING OR CLASS AA CONCRETE SHALL BE PLACED IN VOIDS AT BOTTOM & SIDES, PRIOR TO FINISH GRADE WEARING COURSE PAVEMENT.

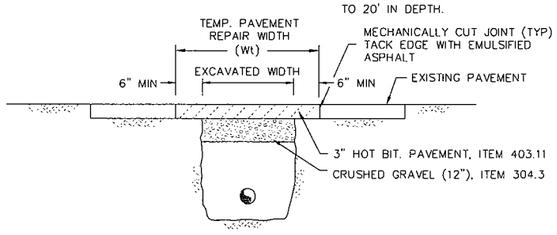
3/15 VERTICAL CURB – RESET (GRANITE OR CONCRETE)
NOT TO SCALE

MINIMUM TRENCH PAVEMENT WIDTHS

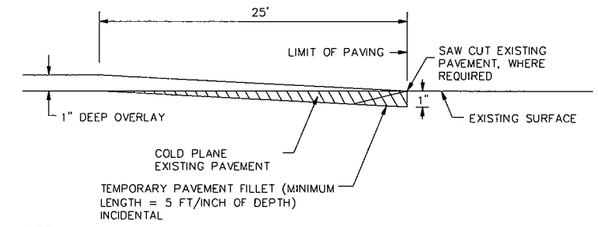
PIPE I.D.	Wt (INCHES)	Wp (INCHES)
1-21 INCHES	72	108
24-30 INCHES	84	120
> 30 INCHES	96	132

NOTE:

THE DIMENSIONS SHOWN SHALL BE CONSIDERED MAXIMUM PAVEMENT PAYMENT WIDTHS FOR 0-10' DEEP CONSTRUCTION. Wt AND Wp SHALL BE INCREASED BY 4'-0" FOR TRENCHES 10' TO 15' AND BY 8'-0" FOR TRENCHES 15' TO 20' IN DEPTH.



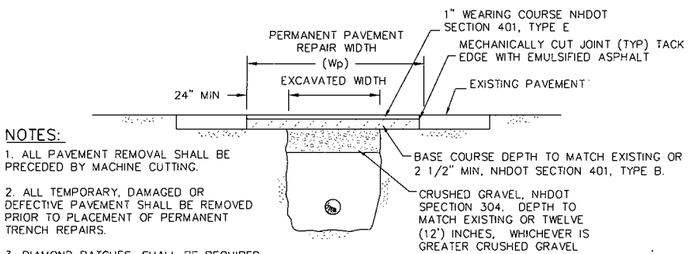
4/15 TEMPORARY TRENCH PAVEMENT REPAIR
NOT TO SCALE



NOTE:

THE LENGTH OF THE TAPER MAY BE ADJUSTED AS ORDERED TO PROVIDE FOR VARYING FIELD CONDITIONS OR CHANGES IN SINGLE COURSE DEPTH.

5/15 OVERLAY PAVEMENT MATCH
NOT TO SCALE



NOTES:

1. ALL PAVEMENT REMOVAL SHALL BE PRECEDED BY MACHINE CUTTING.

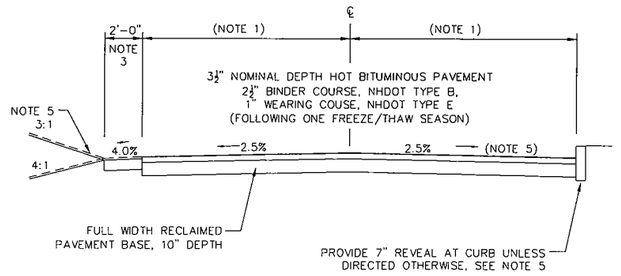
2. ALL TEMPORARY, DAMAGED OR DEFECTIVE PAVEMENT SHALL BE REMOVED PRIOR TO PLACEMENT OF PERMANENT TRENCH REPAIRS.

3. DIAMOND PATCHES, SHALL BE REQUIRED FOR ALL TRENCHES CROSSING ROADWAY. DIAMOND PATCHES SHALL MEET NHDOT REQUIREMENTS.

4. SEE TABLE IN "TEMPORARY TRENCH PAVEMENT REPAIRS" FOR MINIMUM TRENCH WIDTHS.

6/15 PERMANENT TRENCH PAVEMENT REPAIRS
NOT TO SCALE

PRELIMINARY
NOT FOR CONSTRUCTION



NOTES:

1. RECONSTRUCT ROADWAY AT PRESENT WIDTH UNLESS DIRECTED OTHERWISE.

2. EXISTING DRIVEWAYS ARE TO BE SAWCUT PRIOR TO PAVING. MATCH EXISTING DRIVEWAY ELEVATIONS UNLESS OTHERWISE DIRECTED, SUBSIDIARY.

3. PROVIDE 2 FOOT WIDE GRAVELED SHOULDER WHERE CURBING IS NOT PRESENT, SUBSIDIARY.

4. LOAM, SEED & MULCH ROADSIDE SLOPES, SUBSIDIARY.

5. UNIFORMLY GRADE ROADWAY PRIOR AND PROVIDE A POSITIVE GRADIENT TO THE EXISTING DRAINAGE STRUCTURES, MIN. CROSS SLOPE=2%, MIN. GUTTER SLOPE=0.5%.

7/15 PAVEMENT RECLAMATON & FULL WIDTH PAVING DETAIL
NOT TO SCALE

NO.	REVISIONS	APP'D

ISSUE FOR APPROVAL Date 11/30/07 By KAP
CONSTRUCTION Date - By -
RECORD DRAWING Date - By -

Drawn/Chk. RMG
Designed KAP
Checked KAP
Approved KAP
Date OCTOBER 2006
Book No. -
Project No. 1070.bartlett
Dwg. ID 1070det6rs2
Scale AS SHOWN

Underwood Engineers, Inc.
25 Vaughan Mall, Portsmouth, N.H. 03801
Tel. 603-436-6192 Fax. 603-431-4733

PAVEMENT RESTORATION DETAILS
BARTLETT AREA SEWER IMPROVEMENTS
TOWN OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO -
SHEET 15 OF 15

CITY OF PORTSMOUTH, NEW HAMPSHIRE
BARTLETT AREA SEWER IMPROVEMENTS

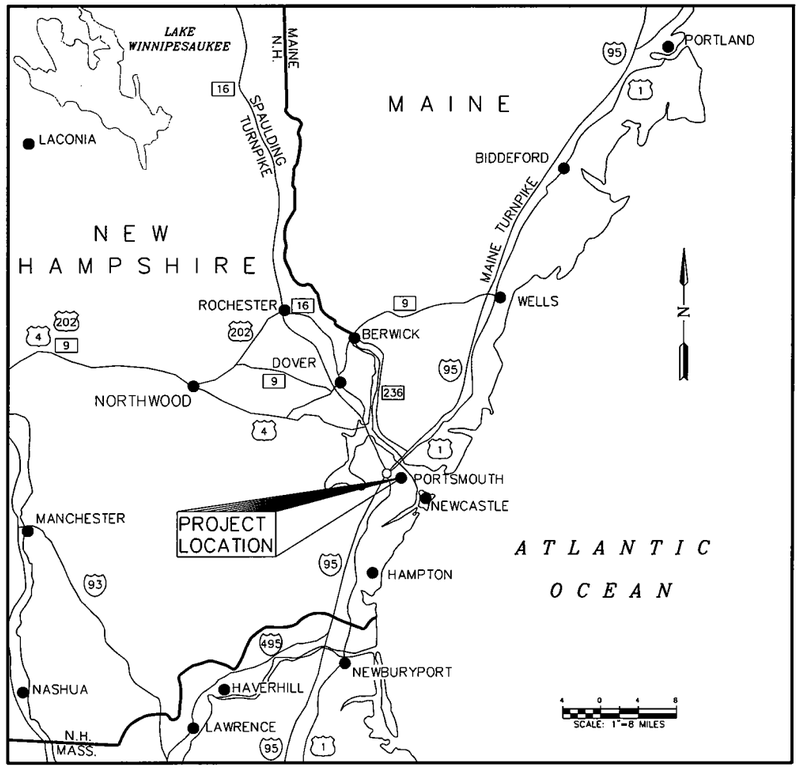
CONSTRUCTION DRAWINGS

PREPARED BY
UNDERWOOD ENGINEERS, INC.
PORTSMOUTH, NEW HAMPSHIRE

PRELIMINARY
NOT FOR CONSTRUCTION

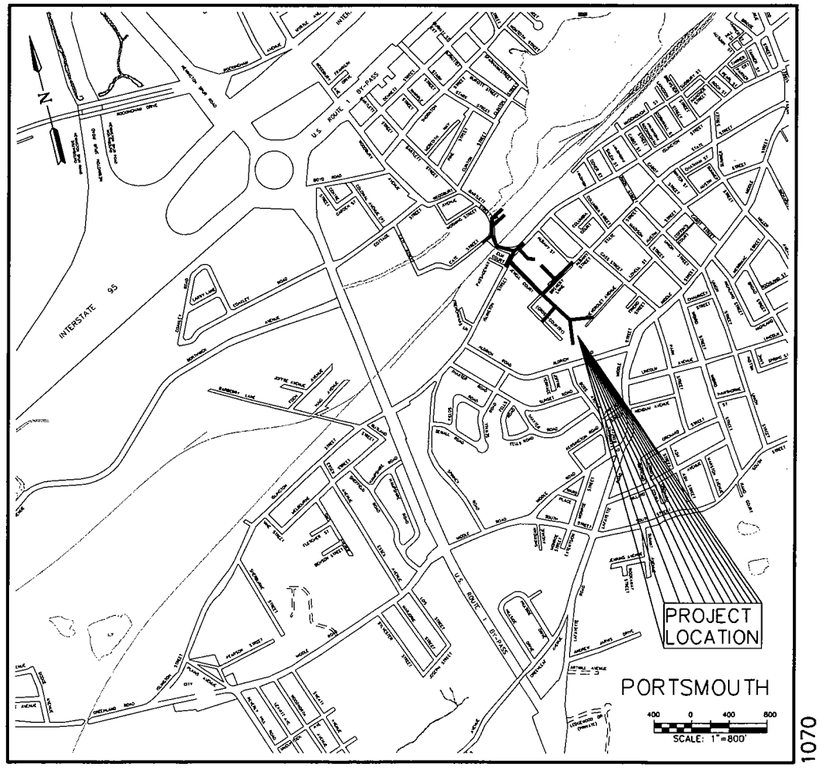
DECEMBER 2007
SRF PROJECT NO.
CS-330106-06n (Linc 2)

LOCATION PLAN



PLAN INDEX

VICINITY MAP



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1070

STORM SEWER NOTES

1. LOCATIONS OF PROPOSED CATCH BASINS ARE APPROXIMATE. IN GENERAL, NEW CB'S WILL BE SET WHERE CB'S NOW EXIST. EXISTING CB STRUCTURES ARE TO BE DEMOLISHED, (SUBSIDIARY). ALL FRAMES AND GRATES SHALL BE DELIVERED TO THE PORTSMOUTH DPW (SUBSIDIARY). ALL NEW CATCH BASIN RIMS SHALL BE SET 1" BELOW FINISH GRADE.

2. MANHOLE AND CATCH BASIN BASES, RISERS, CONE SECTIONS, AND SLAB TOPS SHALL BE DESIGNED SUCH THAT THERE EXISTS A MINIMUM 6" PERIPHERY OF MONOLITHIC SOLID WALL SEPARATION BETWEEN OPENINGS (CORINGS AND SECTIONS).

3. ALL CATCH BASINS, DRAIN MANHOLES, & DRAIN LINES SHALL BE CLEANED PRIOR TO ACCEPTANCE.

4. ALL DRAIN MANHOLES AND CATCH BASINS ARE 4' INSIDE DIAMETER UNLESS OTHERWISE NOTED.

PROSECUTION OF WORK:

THIS SET OF PLANS HAS BEEN CREATED TO BE USED IN CONJUNCTION WITH A TECHNICAL SPECIFICATION ENTITLED "PROJECT MANUAL, BARTLETT AREA SEWER IMPROVEMENTS, PORTSMOUTH, NH.".

1. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION, PROTECTION AND REPAIR (IF DAMAGED) OF ALL EXISTING UTILITY MAINS AND SERVICES. THE LOCATIONS OF KNOWN SEWER AND WATER MAINS, SHOWN ON THESE DRAWINGS, ARE APPROXIMATE. HOWEVER, GAS LINES AND WATER AND SEWER SERVICE LATERALS ARE NOT SHOWN AND THE CONTRACTOR IS TO ANTICIPATE THEIR EXISTENCE. TIE SHEETS FOR THE KNOW UTILITIES (INCLUDING GAS AND WATER) ARE PROVIDED IN THE APPENDIX OF THE PROJECT MANUAL. VIDEO LOGS AND SANITARY SURVEYS FOR SEWER LATERALS ARE ALSO PROVIDED IN THE PROJECT MANUAL. NOTIFY DIG-SAFE PRIOR TO COMMENCING CONSTRUCTION. (1-888-344-7233). CONTRACTOR SHALL GIVE ADEQUATE NOTICE TO THE ENGINEER OF CONFLICTS OF PROPOSED WORK WITH MARKED UTILITIES PRIOR TO CONSTRUCTING THE PROPOSED WORK.

2. THE CONTRACTOR SHALL MAINTAIN SINGLE LANE TRAFFIC AND ACCESS TO BUSINESSES AND RESIDENCES AT ALL TIMES. TRAFFIC CONTROL WARNING DEVICES SHALL BE IN ACCORDANCE WITH MUTCD REQUIREMENTS AND SECTION 01571 OF THE PROJECT MANUAL. A TRAFFIC CONTROL PLAN IS TO BE SUBMITTED FOR APPROVAL PRIOR TO THE WORK.

3. ALL STREET OPENINGS SHALL BE COVERED AT THE END OF EACH DAYS OPERATIONS TO ENSURE SAFE VEHICULAR AND PEDESTRIAN TRAFFIC. THE CONTRACTOR SHALL MAINTAIN SAFE PASSAGE FOR 2-LANES OF TRAFFIC AT THE END OF EACH WORK DAY. DUST CONTROL OPERATIONS ARE TO BE CONTINUOUS THROUGHOUT CONSTRUCTION.

4. A NPDES PERMIT FOR CONSTRUCTION ACTIVITIES IS REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS REQUIRED TO PREPARE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND TO SUBMIT A NOTICE OF INTENT (NOI) TO THE EPA TO FULFILL PROJECT REQUIREMENTS. THE SWPPP MUST BE PREPARED IN ACCORDANCE WITH THE EPA'S REQUIREMENTS. NO WORK IS TO PROCEED UNTIL THE SWPPP AND THE NOI IS SUBMITTED AND ACCEPTED BY THE OWNER. A COPY OF THE NOI, SWPPP REQUIREMENTS AND EXAMPLE SWPPP ARE INCLUDED IN THE PROJECT MANUAL APPENDIX.

5. A VIBRATION MONITORING PLAN WILL NEED TO BE SUBMITTED BEFORE WORK MAY BEGIN. SEE SECTION 01546 AND 01548 OF THE PROJECT MANUAL.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL SURPLUS EARTH, LEDGE, CURB PIPE AND SEWER OR DRAIN STRUCTURES EXCAVATED DURING CONSTRUCTION, UNLESS MATERIALS ARE CLAIMED BY THE OWNER OR OTHERWISE INDICATED IN THE PROJECT MANUAL OR THE DRAWINGS.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY RESTORATION BOTH PUBLIC AND PRIVATE. UTILITIES DAMAGED AS A RESULT OF THE CONTRACTORS OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

8. TEMPORARY AND OR PERMANENT PAVING REPAIRS SHALL MAINTAIN EXISTING LINE AND GRADE UNLESS INDICATED OTHERWISE OR OTHERWISE DIRECTED BY THE ENGINEER.

9. PAVEMENT REPAIRS TO DRIVEWAYS OR OTHER AREAS OUTSIDE LIMITS OF PAYMENT, AS DEFINED ON THE DRAWINGS, ARE SUBSIDIARY AND WILL NOT BE MEASURED FOR PAYMENT.

10. THE LINE WORK REPRESENTING THE EXISTING UNDERGROUND STRUCTURES AND PIPES IS BASED ON A FIELD SURVEY. KNOWN LOCATIONS OF GAS LINES, SEWER AND WATER SERVICES CAN BE FOUND IN THE PROJECT MANUAL APPENDIX. THE ENGINEER/SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN ON THE PLANS OR THE PROJECT MANUAL APPENDIX COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE ENGINEER/SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.

11. ALL CONFLICTS WITH GAS LINES SHALL BE COORDINATED WITH NORTHERN UTILITIES.

12. OVERHEAD WIRES AND WIRE DROPS TO BUILDINGS ARE NOT SHOWN. THE CONTRACTOR SHALL ANTICIPATE THEIR EXISTENCE IN ALL OPERATIONS.

13. ELEVATIONS ARE BASED ON MEAN SEA LEVEL(M.S.L.), NAVD 1929.

14. PROPERTY LINES SHOWN ARE APPROXIMATE ONLY AND WERE COMPILED FROM CITY OF PORTSMOUTH ASSESSOR MAPS AND ARE NOT THE RESULT OF AN ON-THE-GROUND SURVEY.

SANITARY SEWER NOTES:

1. ALL SEWER SERVICE LATERALS SHALL BE 6" DIAMETER, UNLESS DIRECTED OTHERWISE. EXCAVATE TEST PITS TO VERIFY EXACT SEWER SERVICE LOCATION SIZE AND ELEVATION, AS DIRECTED, PRIOR TO THE CONSTRUCTION OF SEWER MAIN. SEWER LATERALS SHALL BE INSTALLED TO THE PROPERTY LINE. INSTALL CLEANOUTS FOR LOW PRESSURE TESTING AS SHOWN ON DETAIL DRAWINGS. SEE AVAILABLE SEWER TIE SHEETS IN APPENDIX C OF THE PROJECT MANUAL. MIN. SLOPE SHALL BE 0.02 FT/FT.

2. THE CONTRACTOR SHALL PHASE UTILITY WORK SO AS TO MINIMIZE DISRUPTIONS TO SEWER FLOWS. BYPASS PUMPING SHALL BE USED AS NECESSARY TO MAINTAIN ACTIVE SEWER. INTERRUPTIONS TO SEWER SERVICE SHALL NOT CAUSE SURCHARGES.

3. SERVICE CONNECTIONS TO THE SEWER, DETERMINED TO BE YARD DRAINS, FOUNDATION DRAINS OR ROOF LEADERS SHALL NOT BE CONNECTED TO THE NEW SANITARY SEWER. THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY OF POTENTIAL STORM DRAINS OR SUBSURFACE DRAINS ENCOUNTERED DURING CONSTRUCTION.

4. SEWER CONSTRUCTION SHALL PROCEED FROM THE LOWEST POINT UPWARD UNLESS OTHERWISE APPROVED BY THE ENGINEER.

5. SMH RIMS SHALL BE SET 1/8" TO 1/4" BELOW GRADE WHEN PAVEMENT OR GRAVEL ROADS (I.E., PLOWED AREAS). RIMS SHALL BE SET AT GRADE IN NON-PLOWED AREAS UNLESS OTHERWISE INDICATED. ALL SEWER MANHOLES ARE 4' INSIDE DIAMETER UNLESS OTHERWISE NOTED.

6. ALL EXISTING SEWER STRUCTURES (PIPE AND MANHOLES) TO BE ABANDONED SHALL BE PREPARED AS FOLLOWS:

MANHOLES - SHALL BE REMOVED TO A DEPTH OF 4' BELOW GRADE. THE BASE OF STRUCTURES SHALL BE FILLED WITH GRAVEL AND COMPACTED IN 8" LIFTS, INCIDENTAL, EXCEPT WHEN PAID WITH BID ITEM 1.10
PIPE - ALL PIPE TO BE ABANDONED IN PLACE AND SHALL BE CUT & PLUGGED AT BOTH ENDS, SUBSIDIARY. ABANDONED PIPES GREATER THAN 10" IN DIAMETER SHALL BE FILLED WITH FLOWABLE FILL (WHERE DIRECTED BY ENGINEER) ITEM 1.11.

WATER DISTRIBUTION SYSTEM NOTES:

1. THE CONTRACTOR SHALL MAINTAIN WATER SERVICE TO RESIDENTS AT ALL TIMES. IN THE EVENT THAT SERVICE HAS TO BE TEMPORARILY INTERRUPTED THE CONTRACTOR SHALL GIVE THE AFFECTED RESIDENTS AND THE PORTSMOUTH DPW 24 HOURS VERBAL AND WRITTEN NOTICE. IF NECESSARY, CONTRACTOR SHALL PROVIDE TEMPORARY BYPASS PIPING TO MAINTAIN WATER SERVICE.

2. ALL NEW WATER MAIN SHALL BE DUCTILE IRON CLASS 52 UNLESS OTHERWISE NOTED.

3. ALL EXISTING WATER BOXES AND OTHER CASTINGS DISTURBED OR RELOCATED BY CONSTRUCTION ACTIVITIES SHALL BE ADJUSTED TO EXISTING LINE AND GRADE, UNLESS SHOWN OTHERWISE ON THESE PLANS OR AS DIRECTED BY THE ENGINEER (SUBSIDIARY).

4. ALL EXISTING WATER PIPE IDENTIFIED AS ABANDONED SHALL BE DEMOLISHED AS FOLLOWS: PIPE: CAP AT EACH END AND ABANDON IN PLACE UNLESS IT NEEDS TO BE REMOVED BECAUSE OF OTHER INTERFERENCES, SUBSIDIARY, ASBESTOS PIPE REMOVAL, IF REQUIRED, WILL BE PAID AS ITEM 5.9.

5. ALTHOUGH NOT SHOWN ON PLAN, ALL WATER SERVICES SHALL BE REPLACED WHERE NEW MAINS ARE INSTALLED. ALL SERVICES SHALL BE 3/4" UNLESS DIRECTED OTHERWISE. SERVICES SHOWN ARE APPROXIMATE LOCATION.

6. ALL GATE VALVES SHALL HAVE RESTRAINED MECHANICAL JOINTS AND OPEN RIGHT.

7. ALL TEES AND BENDS SHALL BE CONSTRUCTED USING THRUST RESTRAINT COUPLINGS, SUBSIDIARY TO WATER WORK.

8. MAINTAIN A MINIMUM 10' HORIZONTAL AND 18" VERTICAL SEPARATION BETWEEN WATER MAIN AND SEWER PIPING.

PLAN REFERENCES:

1. AERIAL SURVEY & PHOTO, INC., CITY WIDE TOPOGRAPHY MAPPING, CITY OF PORTSMOUTH, PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION, MAY, 1994.

2. AERIAL SURVEY & PHOTO, INC., CITY WIDE SEWER MAPPING, CITY OF PORTSMOUTH, PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION, MAY, 1994.

3. DURGIN, VERRA & ASSOCIATES, INC., GRADING AND DRANAGE PLAN, PLAZA 800 ISLINGTON STREET, PORTSMOUTH, NH FOR GRIFFIN FAMILY CORPORATION, APRIL 14. 1995.

4. DURGIN, VERRA & ASSOCIATES, INC., EXISTING CONDITION PLAN, PLAZA 800 ISLINGTON STREET, PORTSMOUTH, NH FOR GRIFFIN FAMILY CORPORATION, APRIL 14., 1995.

5. VERRA & ASSOCIATES, INC., PUBLIC WORKS FACILITY, 700 ISLINGTON STREET, PORTSMOUTH, NH FOR GRIFFIN FAMILY CORPORATION, JUNE 22, 1998.

6. AMBIT ENGINEERING, INC., SEWER SEPARATION & PROFILE, PORTSMOUTH DPW REDEVELOPMENT, 125 BREWERY LANE, PORTSMOUTH, NH, JUNE, 2000.

7. RICHARD P. MILLETTE AND ASSOCIATES, ALDRICH ROAD STORM DRAIN PROJECT PLAN & PROFILE, CITY OF PORTSMOUTH, SHEETS 1 THROUGH 15, NOVEMBER 17, 1981.

LEGEND:

EXISTING	PROPOSED	
		STRUCTURES/BUILDINGS
		PROPERTY LINE (BASED ON CITY TAX MAPS)
		E.O. PAVEMENT
		CURB
S		GRAVITY SEWER
W		WATER LINE
D		DRAIN LINE
T		TELEPHONE
G		GAS LINE
18		2' CONTOUR ELEVATION
20		10' CONTOUR ELEVATION
21.1		SPOT ELEVATION
		FENCE
		RETAINING WALL
		RAILROAD
		EDGE OF VEGETATION
		TREE
n/f 55-23		TAX MAP AND LOT NUMBER
		LIGHT POLE
		GUY POLE
		UTILITY POLE
		SIGN
		HYDRANT
		WATER SHUT-OFF
		GAS SHUT-OFF
		GAS/WATER VALVE
MW		MONITORING WELL
S D		SEWER/DRAIN MANHOLE
		TRENCH DRAIN
		CATCH BASIN
		BORING/PROBE
T		TELEPHONE MANHOLE
TP		TEST PIT
		LIMIT OF PAVEMENT RESTORATION
		HEADWALL
		GUARDRAIL
		LIMIT OF WETLAND
		SILT CURTAINS
		RIPRAP

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE FOR	APP'D	NO.
APPROVAL By KAP Date 12/05/07		
CONSTRUCTION By - Date -		
RECORD DRAWING By - Date -		
REVISIONS		

Drawn/Chk RMG
Designed KAP
Checked KAP
Approved KAP
Date OCTOBER 2005
Book No. -
Project No. 1070.bartlett
Dwg. ID 1070DEM
Scale AS SHOWN

Underwood Engineers, Inc.
25 Vaughan Mall, Portsmouth, N.H. 03801
Tel. 603-436-6192 Fax. 603-431-4733

GENERAL NOTES & LEGEND

BARTLETT AREA SEWER IMPROVEMENTS

TOWN OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO -

SHEET 1 OF 15

KEYNOTES – SEWER

1. THE CONTRACTOR IS TO MAINTAIN EXISTING SEWER FLOWS THROUGHOUT CONSTRUCTION. A PLAN FOR MAINTENANCE OF FLOWS INCLUDING BY–PASS PUMPING, IS TO BE SUBMITTED FOR REVIEW. BY–PASS PUMPS SHALL BE SIZED TO ACCOMMODATE FULL CAPACITY (PIPE FLOWING FULL) OF UPSTREAM PIPES. BY–PASS PUMPING AND MAINTENANCE OF FLOWS TO BE PAID FOR UNDER ITEM 1.12.
2. CONSTRUCT 8' DIA. DOG HOUSE MANHOLE OVER EXISTING BRICK SEWER. (MAINTAIN THROUGH FLOW UNTIL UPSTREAM FLOWS AND SERVICE CONNECTIONS ARE RELOCATED,) PAY AS ITEM 1.5.8.
3. PROTECT EXISTING UTILITIES. WATER TO BE RELOCATED OVER SEWER. INSULATE AT SEWER CROSSING, SUBSIDIARY.
4. VOC'S REPORTED IN GROUNDWATER NORTH AND WEST OF ISLINGTON STREET. EXCAVATION WILL REQUIRE CONTRACTORS HEALTH AND SAFETY PLAN (REFER TO SPECIFICATION SECT. 13710), PAY AS ITEM 1.14.
5. CUT 15" PVC THROUGH PIPE AND RE–WORK BRICK MASONRY INVERT TO DIVERT FLOW TO 18" PVC PIPE PAY AS ITEM 1.9A
6. RE–ALIGN 15" PVC PIPE TO AVOID CONFLICT W/SEWER, LENGTH TO BE DETERMINED BY ENGINEER, PAY AS ITEM 1.1.15
7. CONSTRUCT 6" PVC x (LENGTH VARIES) @ S=0.01 (MIN.)
8. SEWER TO BE ABANDONED. CONTRACTOR IS TO PUMP FLOWABLE FILL OR GROUT INTO ALL ABANDONED SEWERS GREATER THAN 10" DIAMETER AFTER CONFIRMED REMOVAL OF SEWER FLOWS, ITEM 1.11.
9. THE LOCATION OF SEWER LATERALS ARE APPROXIMATE. EXCAVATE TEST PIT, ITEM 5.4, IN THE PRESENCE OF THE ENGINEER FOLLOWING CONSULTATION WITH PROPERTY OWNER AND/OR SEWER DEPARTMENT. RECORD LOCATION AND DEPTH BEFORE PROCEEDING WITH SEWER MAIN INSTALLATION.
10. FIELD CORE SEWER MANHOLES INCLUDING PIPE CONNECTION SYSTEM, PAY AS ITEMS 1.9A & 1.9B RESPECTIVE TO PIPE DIAMETER.
11. SALVAGE 30" RCP TO PORTSMOUTH DPW DESIGNATED YARD AREA. SUBSIDIARY TO ITEM 1.1.18.
12. CONSTRUCT SEWER MANHOLE OVER EXISTING SEWER, MAINTAIN FLOWS THROUGHOUT CONSTRUCTION, PAY AS (PART OF) ITEM 1.12.
13. REMOVE SEWER MANHOLE (SUBSIDIARY). NOTE, ITEM 1.10 IS PAID ONLY WHEN EXISTING STRUCTURE TO BE REMOVED IS OUTSIDE NORMAL EXCAVATION LIMITS. CONSTRUCT NEW SMH#22, PROVIDE CORE AND BOOT FOR 6–INCH MAIN FROM OFFICE BUILDING ITEM 1.5.4. NEW 6–INCH TO MATCH EXISTING LINE AND GRADE, ITEM 1.1.06.
14. CONSTRUCT 10' OF 24" PVC TO CONNECT EXISTING SMH#1331 TO PROPOSED SMH #8. MATCH EXISTING INVERT OUT FOR SMH#1331.
15. CONSTRUCT 32' OF 18" DI RELIEF PIPE BETWEEN SMH#6 AND SMH#8 @ S=0.00. INVERT=7.1
16. TEST PIT TO DETERMINE ELEVATION OF 10" VC PRIOR TO INSTALLATION OF PAPA WHEELIES SEWER. PAY AS ITEM 1.9A. REVISE SLOPES FROM SMH#17 UNDER DIRECTION OF ENGINEER (IF NECESSARY).
17. DEMO AND DISPOSE OF TOWER. ITEM 1.19
18. RELOCATE WATER. PAY AS ITEM 1.17.
19. INSTALL NEW 6" SERVICE TO BUILDING, RE–WORK INTERIOR PLUMBING (BELOW SLAB) AND CONNECT TO NEW SERVICE LATERAL, ITEM 1.16. SUBMIT REWORK PLAN TO ENGINEER FOR REVIEW. OBTAIN PLUMBING PERMIT FROM CITY.

KEYNOTES – PAVEMENT/SIDEWALK

1. PAVEMENT REPAIR – LIMIT OF PAYMENT
2. RECLAMATION LIMIT – LIMIT OF PAYMENT
3. SIDEWALK AND CURBING REPAIRS – REPLACE IN KIND (ITEMS 4.7 AND 4.8)

KEYNOTES – DRAINAGE

1. REMOVE 27" x 48" CMP AREA DRAIN AND REPLACE WITH 24" RCP x 24" RCP 45° @ S=0.005 (MIN). MATCH EXISTING 27" x 48" INVERT OUT FROM EXISTING DMH 7003. CONSTRUCT BRICK MASONRY BULKHEAD (WATER TIGHT) IN DMH PENETRATION (SUBSIDIARY).
2. NOT USED
3. NOT USED
4. INSTALL INSERTA T (ITEM 2.9C), 12" DRAIN AND CB. SEE CB STRUCTURE SCHEDULE ON PLAN VIEWS.
5. REMOVE EXISTING 24" RC PIPE (X100± FEET), TRANSPORT TO DPW, SUBSIDIARY.
6. FIELD VERIFY EXISTING 24" RCP LOCATION AND ELEVATION PRIOR TO CONSTRUCTION OF NEW 42" PIPE, PAY AS ITEM 5.4.
7. CONSTRUCT 18" CPE x 50' @ S=0.01 AND CB#15, RIM=11.8, INV OUT EL=7.80, 18" INV IN (STUB) EL=7.80, 12" INV IN EL=7.90
8. CONSTRUCT 12" CPE x 36' @ S=0.005 AND CB#16, RIM=11.1, INV OUT EL.=8.08, INV IN @ CB#15=7.90
9. TEMPORARY REMOVAL AND STOCKPILE OF LAMP POST AND TREES ON BREWERY LANE IS SUBSIDIARY TO ITEM 2.2.30. DAMAGE TO LANDSCAPE OR LIGHTING TO BE REPAIRED AT CONTRACTORS OWN EXPENSE
10. REMOVE 30 FOOT SECTION OF 3.5 x 3.5 GRANITE BOX CULVERT. GRANITE BLOCK 18" THICK (TOP AND SIDES) TO BE USED FOR HEADWALL AND EMBANKMENT STABILIZATION. BULKHEAD OPENING TO BE PAID AS ITEM 2.7. PUMP FLOWABLE FILL INTO REMAINING PIPES, (MIN 90% FULL), ITEM 1.11.
11. FIELD CORE STRUCTURE, ITEM 2.9B, CONST. DRAIN AS SHOWN.
12. REMOVE DMH'S OR CB'S INCLUDING FILL MATERIALS AND DISPOSAL OF CONE SECTION AND SALVAGE OF FRAMES AND COVER OR GRATE TO DPW. PAY AS ITEM 2.10.
13. CONSTRUCT BULKHEAD IN EXISTING PIPE ARCH (SUBSIDIARY). CONSTRUCT W/ BRICK MASONRY.
14. RELOCATE 2" GAS SERVICE. COORDINATE GAS MAIN RELOCATION W/GAS COMPANY.
15. INSTALL INSERTA T (ITEM 2.9C), 12" DRAIN AND CB.
    CB17 CONSTRUCT 12" CPE x 20', S=(TBD) INV OUT=7.5'
    CB18 CONSTRUCT 12" CPE x 12', S=VARIES INV OUT=7.5'
    CB19 CONSTRUCT 12" CPE x 18', S=VARIES INV OUT=7.5'
16. CONSTRUCT 15" CPE x 15', S=0.001, INV OUT=8.0 (CB11), INV IN DMH 3014=7.98'
17. CONSTRUCT 12" CPE x 36', S=0.001, INV OUT=8.84 (CB10)
18. REMOVE CB DMH STRUCTURE, ITEM 2.10

KEYNOTES – WATER

1. CONSTRUCT 12" GATE VALVE, ITEM 3.4.12.
2. CONSTRUCT 12"x12" TEE. PAY AS ITEM 3.1.12.
3. CONSTRUCT 12"x12" WYE AND CONNECT TO EXISTING MAIN. PAY AS ITEM 3.1.12
4. CONNECT TO EXISTING MAIN W/ MJ TYPE COUPLING, SUBSIDIARY.
5. CONSTRUCT 16"x12" TEE, PAY AS ITEM 3.1.16.
6. CONSTRUCT 16" BUTTERFLY VALVE, ITEM 3.4.16.
7. CONSTRUCT 16"x8" TEE, PAY AS ITEM 3.1.16
8. CONSTRUCT 8" GATE VALVE, ITEM 3.4.08
9. CONSTRUCT 16"x6" TEE, PAY AS ITEM 3.1.16
10. CONSTRUCT 6" GATE VALVE, ITEM 3.4.06
11. CONSTRUCT HYDRANT ASSEMBLY, ITEM 3.5
12. EXCAVATE TEST PIT ITEM 5.4, LOCATE AND RECORD WATER ELEVATION. WATER MAIN RELOCATION IF REQUIRED TO BE PAID AS ITEM 3.6
13. CONST. 8"x8" TEE, PAY AS ITEM 3.1.08.
14. CONST. 8"x6" TEE, PAY AS ITEM 3.1.08.
15. CONST. 6"X4" WYE. PAY AS ITEM 3.1.06.
16. CONST. SERVICE CONNECTION AND COPPER WATER SERVICE PIPE. MATCH EXISTING SIZES.
17. CONST. AIR RELEASE MANHOLE AT HIGH POINT. SEE DETAIL 9/14 ON SHEET 14.
18. ROUTE DI MAIN UNDER SEWER AND/OR DRAIN. SEE DETAIL SHEET 14/15 (SUBSIDIARY TO ITEM).
19. ABANDON MAIN IN PLACE, SUBSIDIARY
20. CAP AND ABANDON MAIN, SUBSIDIARY
21. CONST. 16" x 16" TEE. PAY AS ITEM 3.1.16
22. CONST. 12" x 6" WYE, PAY AS ITEM 3.1.12
23. CONST. CUT IN HYDRANT FOR BYPASS WATER, SUBSIDIARY
24. CONST. 6" x 4" REDUCER, PAY AS ITEM 3.1.06
25. CONST. 12" x 8" TEE, PAY AS ITEM 3.1.12
26. RECONNECT EXISTING HYDRANT, SUBSIDIARY
27. CONST. 12" x 6" TEE, PAY AS ITEM 3.1.12

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ISSUE FOR APPROVAL By KAP Date 1/05/07
CONSTRUCTION By – Date –
RECORD DRAWING By – Date –

Drawn/Chk. RMG
Designed KAP
Checked KAP
Approved KAP
Date OCTOBER 2006
Book No. –
Project No. 1070 bartlett
Dwg. ID 1070DE11
Scale AS SHOWN

Underwood Engineers, Inc.
25 Vaughan Mall, Portsmouth, N.H. 03801
Tel. 603-436-6192 Fax. 603-431-4733

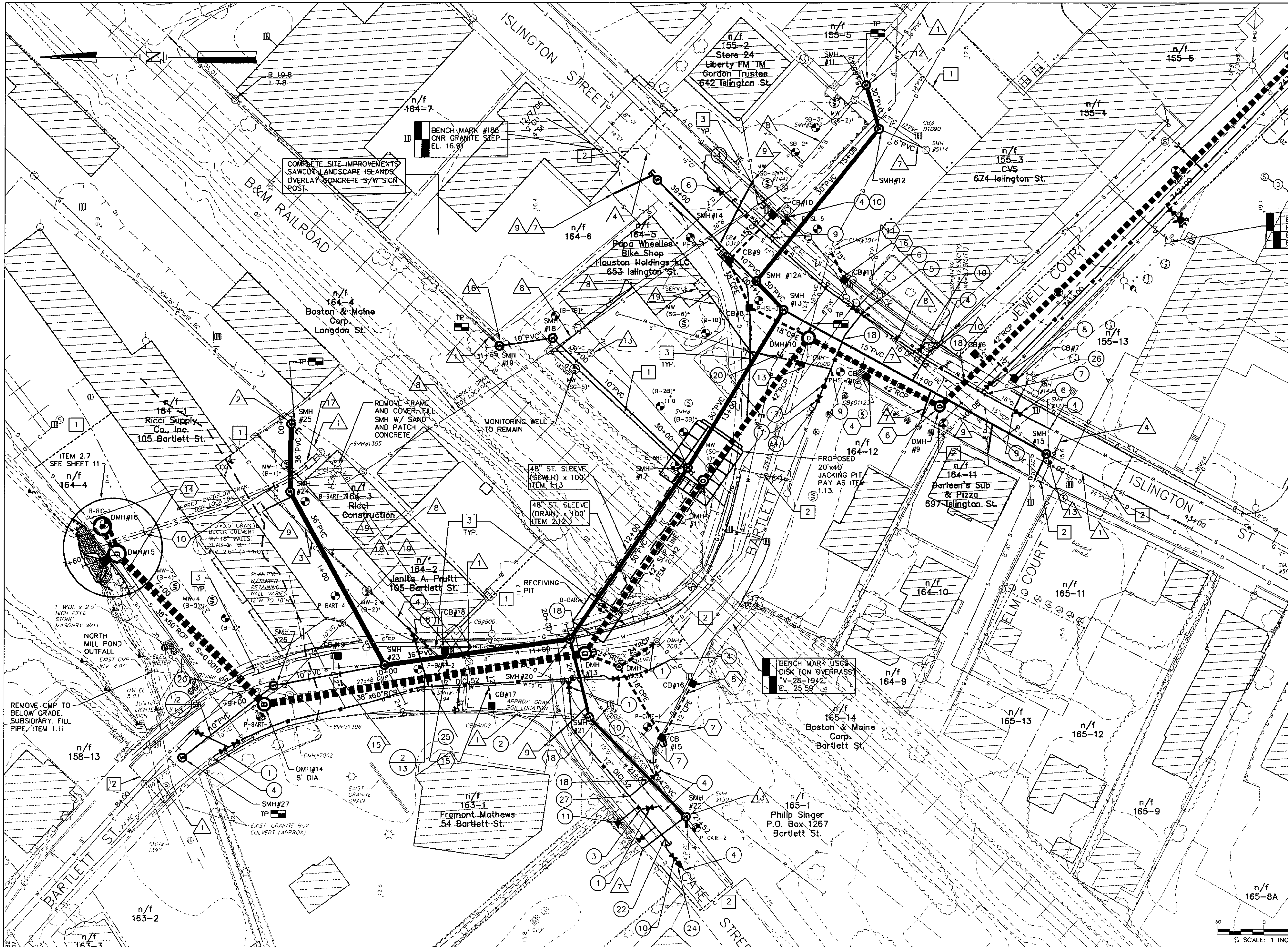
KEY NOTES

BARTLETT AREA SEWER IMPROVEMENTS

TOWN OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO –

SHEET 2 OF 15



ISLINGTON STREET
B&M RAILROAD
BARTLETT ST.
JEWELL COURT
ELM COURT
CATE STREET
n/f 155-2 Store 24 Liberty FM TM Gordon Trustee 642 Islington St.
n/f 155-3 CVS 674 Islington St.
n/f 164-5 Papa Wheelies Bike Shop Houston Holdings LLC 653 Islington St.
n/f 164-4 Boston & Maine Corp. Langdon St.
n/f 164-1 Ricci Supply Co., Inc. 105 Bartlett St.
n/f 164-3 Ricci Construction
n/f 164-2 Jenita A. Pruitt 105 Bartlett St.
n/f 164-11 Darleen's Sub & Pizza 697 Islington St.
n/f 165-14 Boston & Maine Corp. Bartlett St.
n/f 165-1 Philip Singer P.O. Box 1267 Bartlett St.
n/f 163-1 Fremont Mathews 54 Bartlett St.
BENCH MARK #186 CNR GRANITE STEP EL. 16.91
BENCH MARK-HYDRANT BONNET-BOLT EL. 21.36
BENCH MARK USGS DISK (ON OVERPASS) "V-28-1942" EL. 25.59
COMPLETE SITE IMPROVEMENTS SAWCUT LANDSCAPE ISLANDS OVERLAY CONCRETE S/W SIGN POST
REMOVE FRAME AND COVER. FILL SMH W/ SAND AND PATCH CONCRETE
MONITORING WELL TO REMAIN
48" ST. SLEEVE (SEWER) x 100' ITEM 1.13
48" ST. SLEEVE (DRAIN) x 100' ITEM 2.12
PROPOSED 20'x40' JACKING PIT PAY AS ITEM 1.13
RECEIVING PIT
REMOVE CMP TO BELOW GRADE, SUBSIDIARY. FILL PIPE, ITEM 1.11
NORTH MILL POND OUTFALL
ITEM 2.7 SEE SHEET 11
SCALE: 1 INCH = 30 FT.

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PROPOSED CB STRUCTURE SCHEDULE

CB#	RIM	INV OUT
10	12.9±	9.4
11	12.1±	8.6
12	14±	10.5
13	not used	not used
14	not used	not used
15	12±	8.5
16	11.8±	8.3
17	11.6±	4.5
18	11.5±	7.5
19	11.4±	4.0

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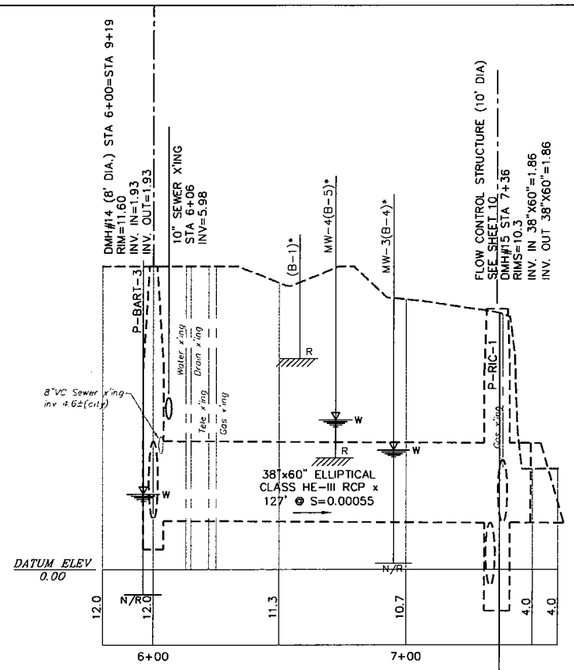
Date OCTOBER 2006
Book No. -
Project No. 1020 bartlett
Dwg. ID 1070base_bartlett
Scale 1"=30'

Underwood Engineers, Inc.
25 Vaughan Mall, Portsmouth, N.H. 03801
Tel. 603-436-6192 Fax. 603-431-4733

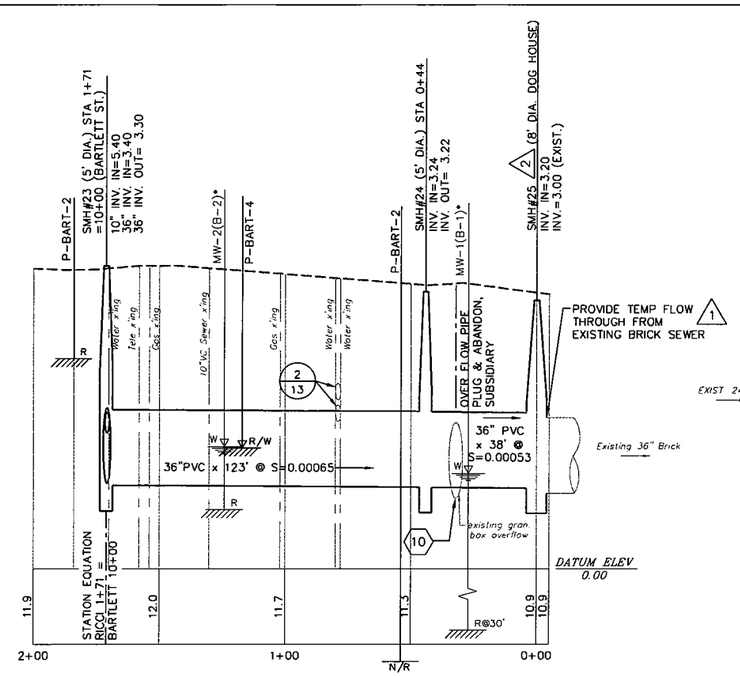
BARTLETT AREA PLAN VIEW
BARTLETT AREA SEWER IMPROVEMENTS
CITY OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO -
SHEET 3 OF 15

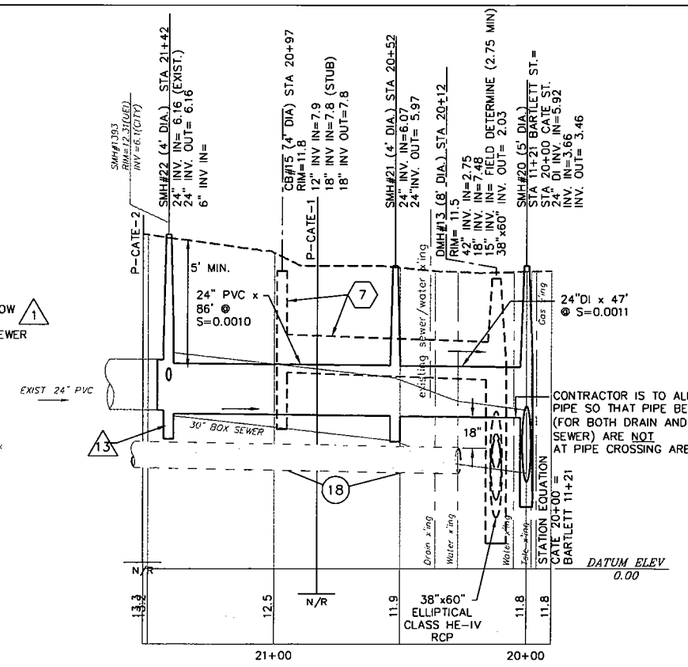
DRAIN OUTFALL PROFILE



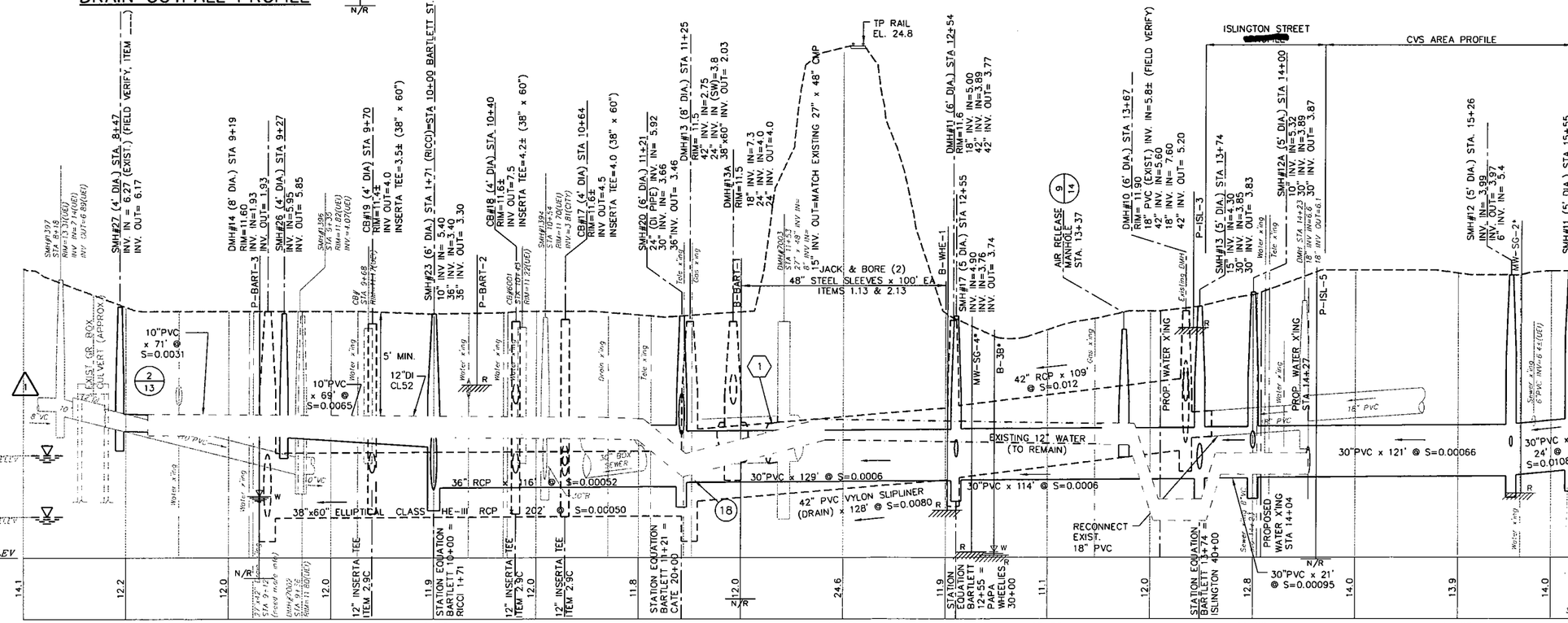
RICCI SUPPLY PROFILE



CATE STREET PROFILE



BARTLETT STREET PROFILE



HORIZ: 1 INCH = 30 FT.
VERT: 1 INCH = 3 FT.

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Date OCTOBER 2006
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Project No. 1070.bartlett
Dwg. ID 1070base_bartlett
Scale 1"=30'

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BARTLETT AREA PROFILES
BARTLETT AREA SEWER IMPROVEMENTS
CITY OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO -
SHEET 4 OF 15

ISLINGTON STREET PROFILE

PAPA WHEELIES PROFILE

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Project No. 1020 bartlett
Dwg. ID 1020base_bartlett
Scale 1"=30'

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BARTLETT AREA PROFILES

BARTLETT AREA SEWER IMPROVEMENTS

CITY OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO -

SHEET 5 OF 15

CB STRUCTURE SCHEDULE		
CB#	RIM	INV
5	19.2±	15.2
6	13.9±	10.4
7	15.0±	11.5

JEWELL COURT PLAN

SCALE: 1 INCH = 30 FT.

JEWELL COURT PROFILE

HORIZ: 1 INCH = 30 FT.
VERT: 1 INCH = 3 FT.

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Approved KAP
Date OCTOBER 2008
Book No. -
Project No. 1970.bartlett
Dwg. ID 1970one_bartlett
Scale 1"=30'

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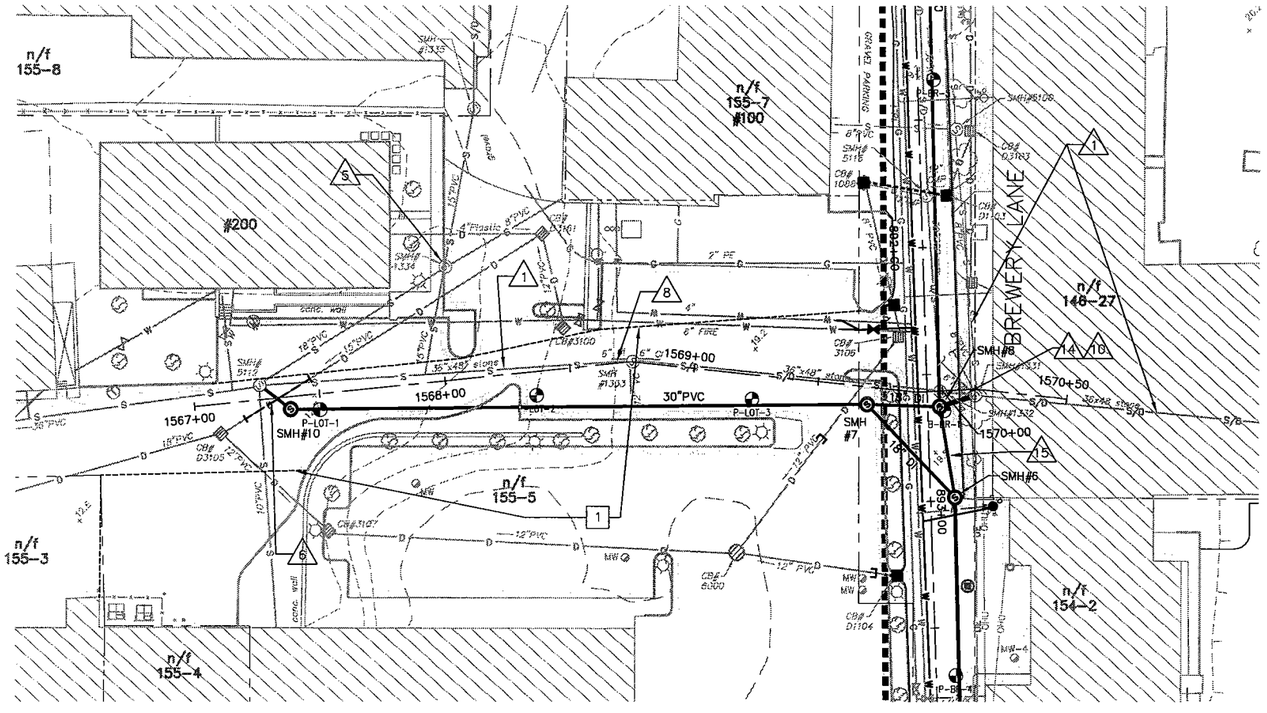
BARTLETT AREA SEWER IMPROVEMENTS
CITY OF PORTSMOUTH
PORTSMOUTH, NH

JEWELL COURT
PLAN & PROFILE

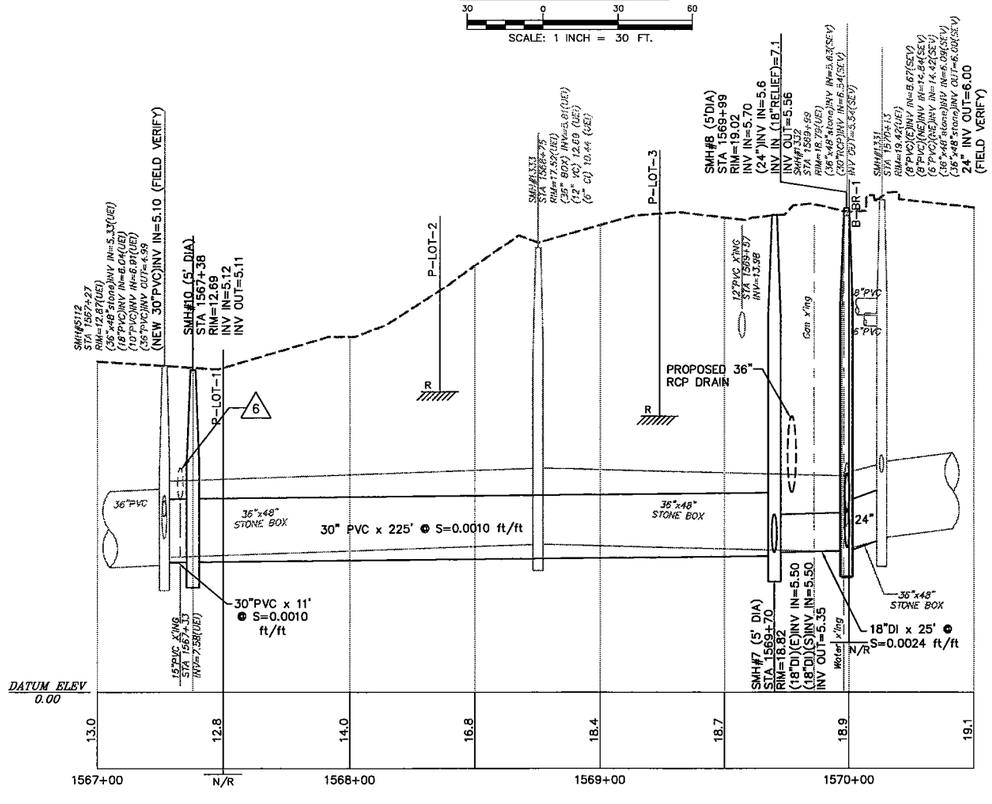
DWG NO -
SHEET 6 OF 15



X-COUNTRY PLAN

30 0 30 60

SCALE: 1 INCH = 30 FT.



PRELIMINARY
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30 0 30 60

3 0 3 6

HORIZ: 1 INCH = 30 FT.
VERT: 1 INCH = 3 FT.

X-COUNTRY PROFILE

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Project No. 1070 Exhibit
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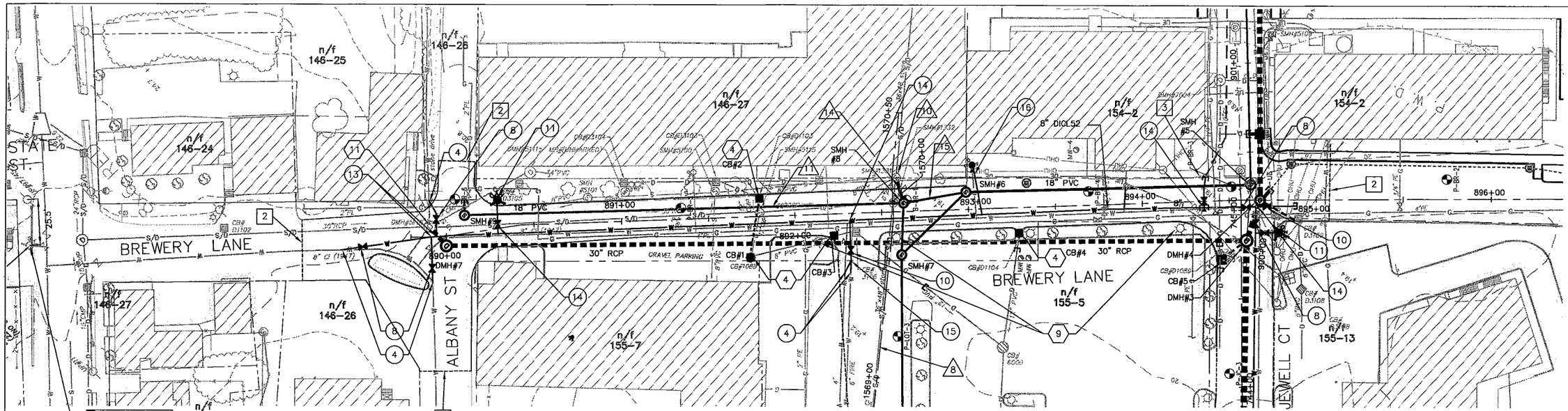
SCHULTZE'S BREWER YARD AREA
PLAN & PROFILE

BARTLETT AREA SEWER IMPROVEMENTS

CITY OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO -

SHEET 7 OF 15

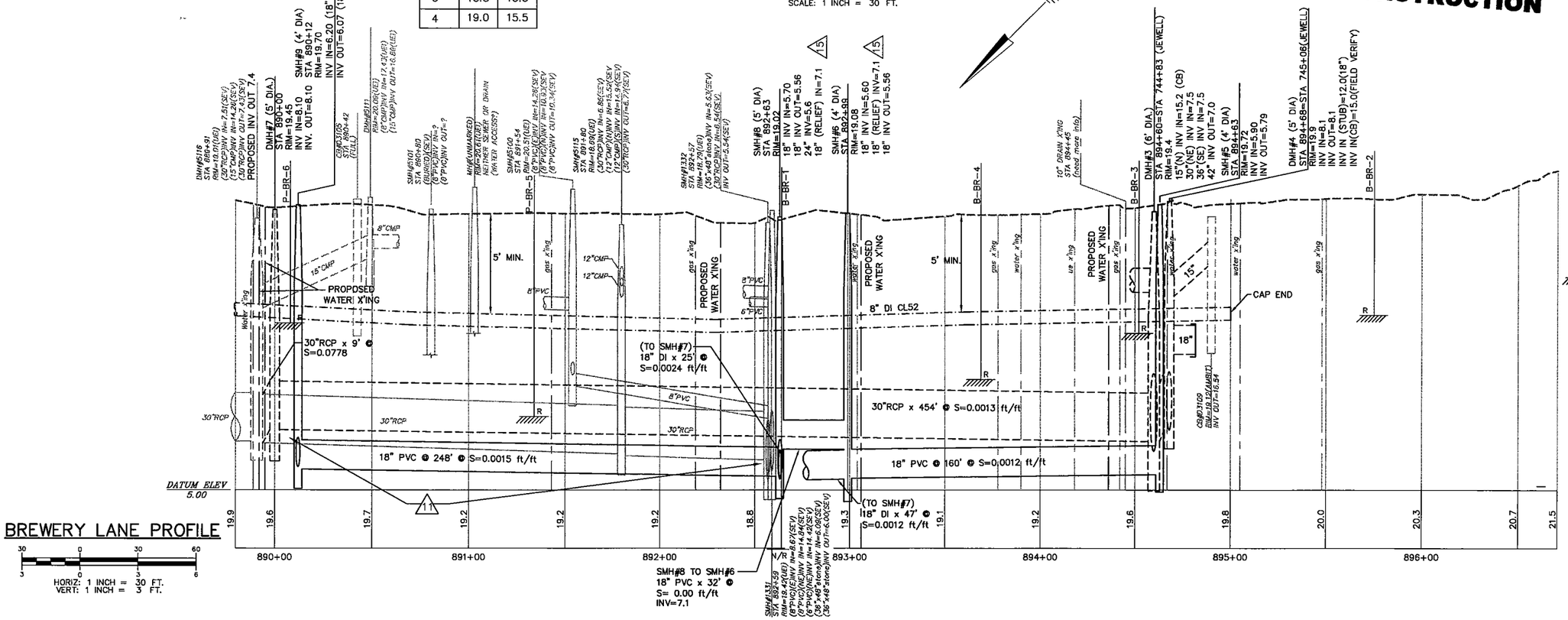


PROPOSED CB STRUCTURE SCHEDULE		
CB#	RIM	INV OUT
1	19.0	15.5
2	19.0	15.5
3	18.8	15.5
4	19.0	15.5

BREWERY LANE PLAN

30 0 30 60

SCALE: 1 INCH = 30 FT.



BREWERY LANE PROFILE

30 0 30 60

3 0 3 6

HORIZ: 1 INCH = 30 FT.
VERT: 1 INCH = 3 FT.

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Dwg. ID 1070cse_bartlett
Scale 1"=30'

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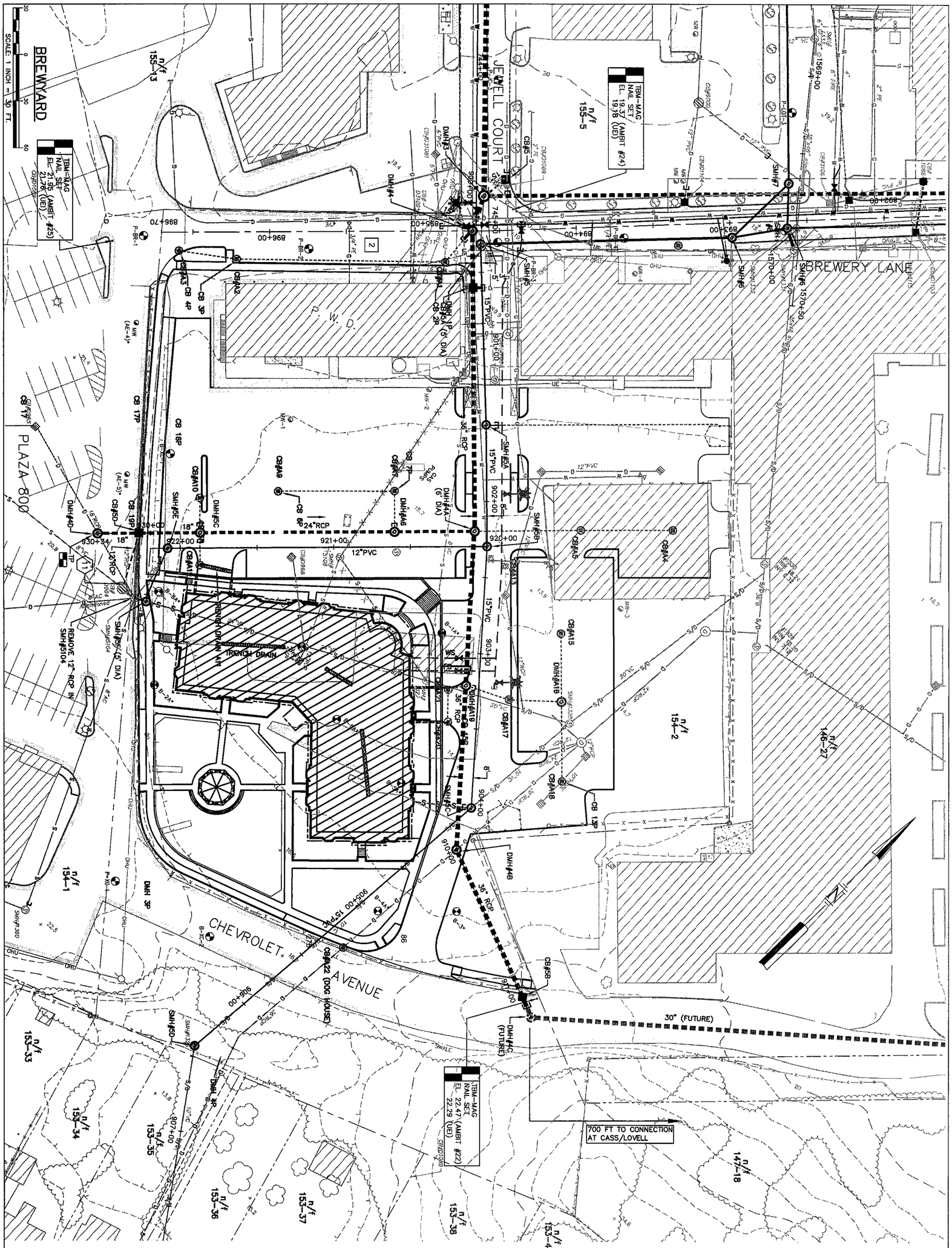
BREWERY LANE
PLAN & PROFILE

BARTLETT AREA SEWER IMPROVEMENTS

CITY OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO 1

SHEET 8 OF 15



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DWG NO -

SHEET 9 OF 15

THE BREWYARD TERRACES

BARTLETT AREA SEWER IMPROVEMENTS

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Book No. –
Project No. 1070 bartlett
Dwg. ID 1070base_bartlett
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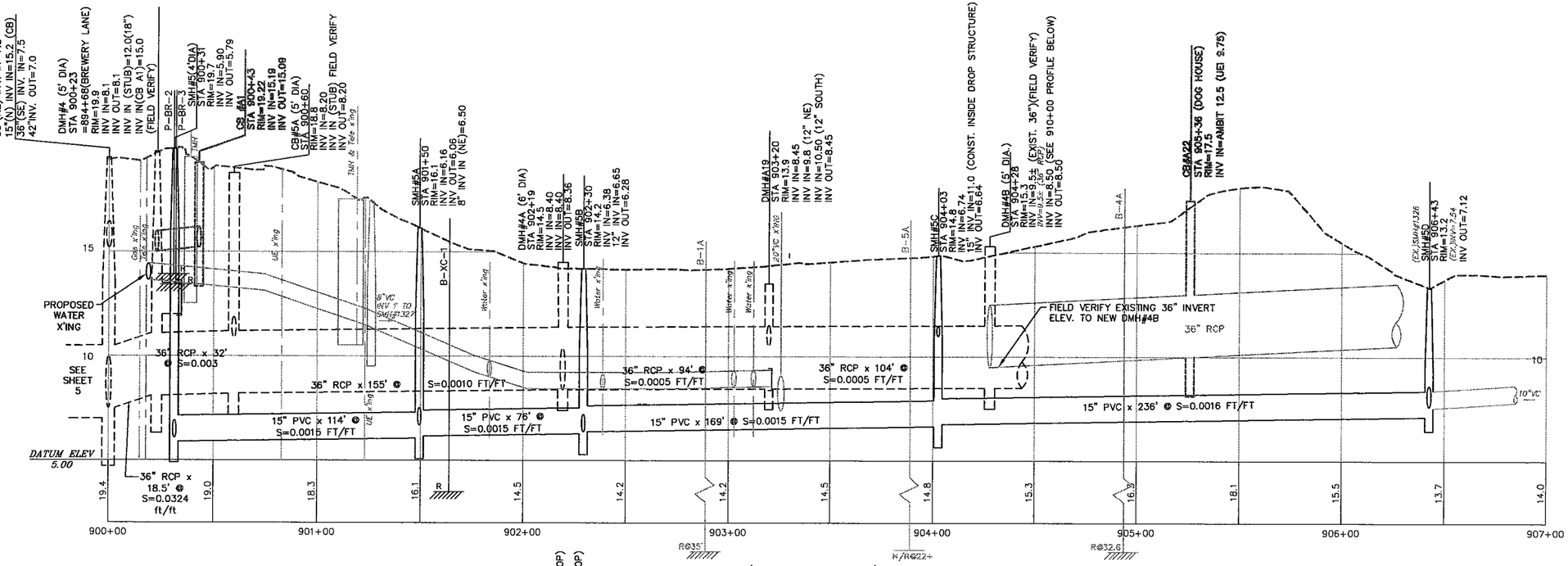
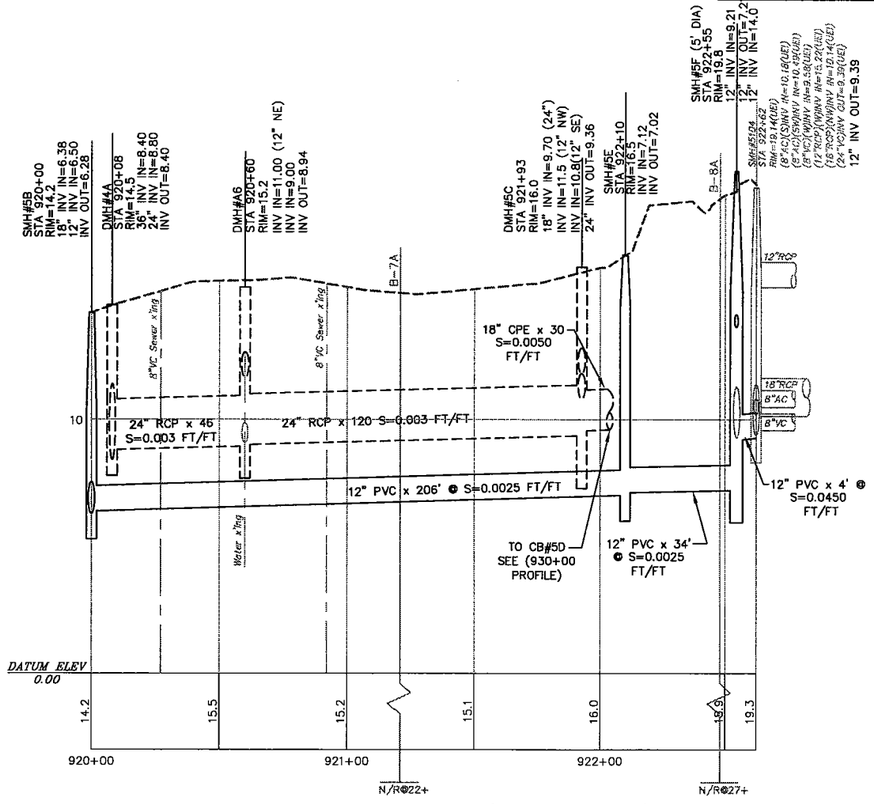


BREWYARD PROFILE (STA 900+00)



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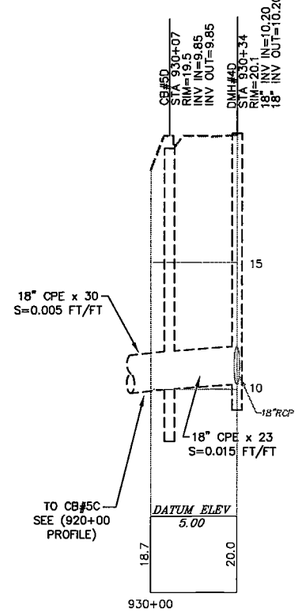

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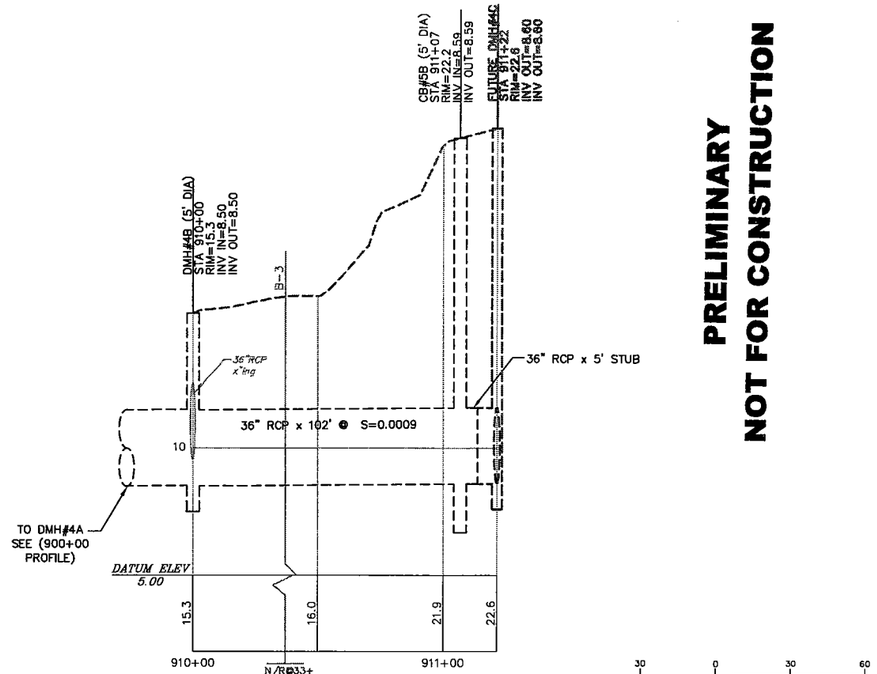

BREWYARD PROFILE (STA 910+00)

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BREWYARD PROFILE
BARTLETT AREA SEWER IMPROVEMENTS
CITY OF PORTSMOUTH
PORTSMOUTH, NH

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SHEET 10 OF 15

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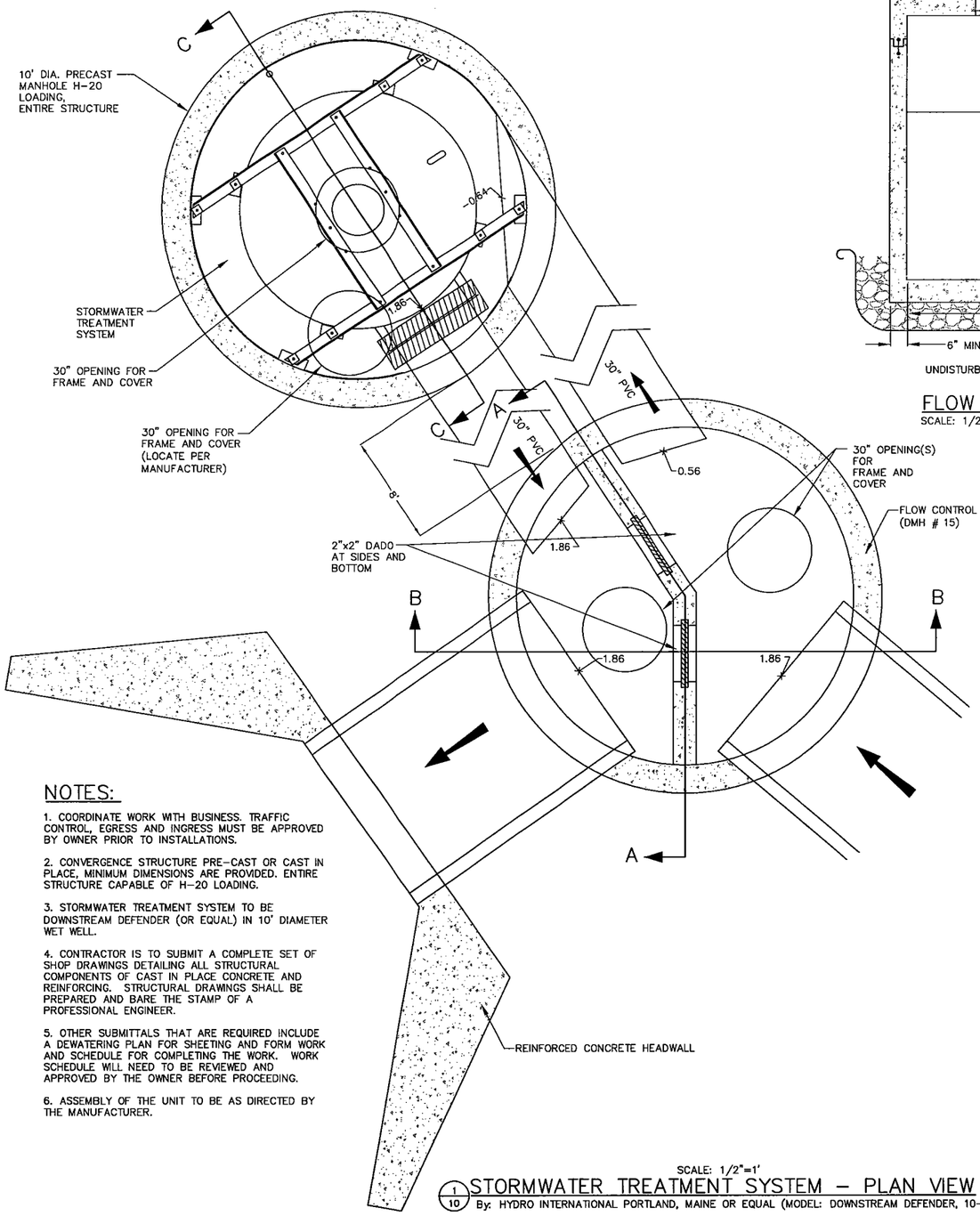


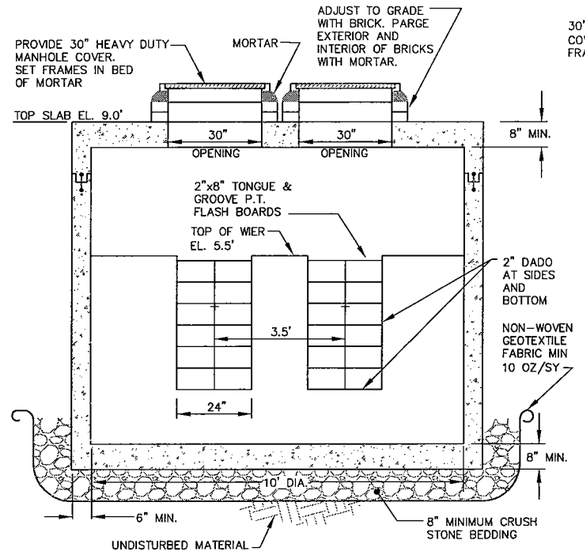
SCALE: 1/2"=1'

1/10 STORMWATER TREATMENT SYSTEM – PLAN VIEW

By: HYDRO INTERNATIONAL PORTLAND, MAINE OR EQUAL (MODEL: DOWNSTREAM DEFENDER, 10-FT DIA.)

NOTES:

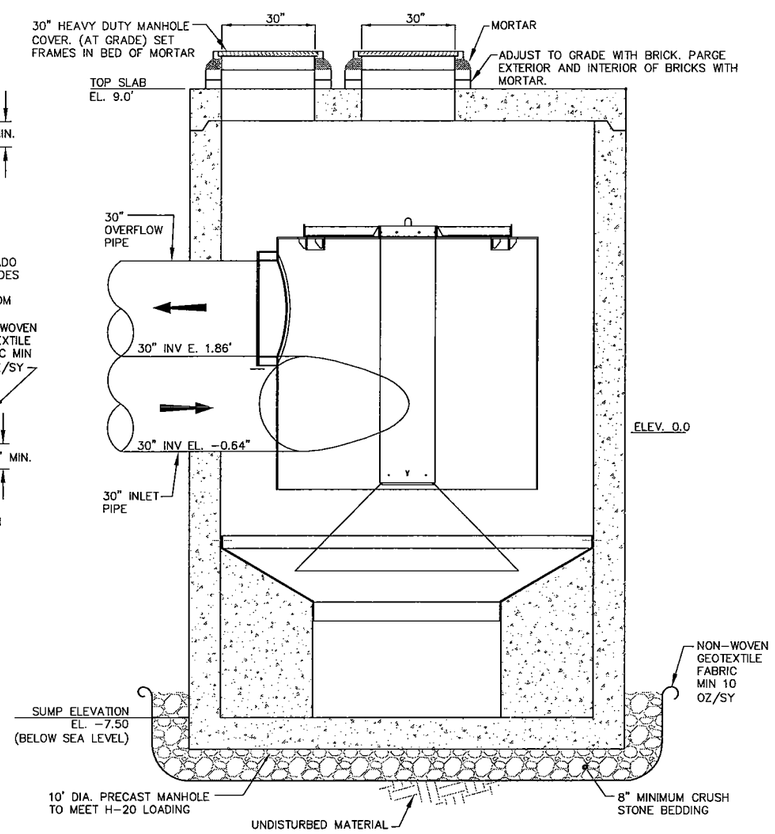
1. COORDINATE WORK WITH BUSINESS. TRAFFIC CONTROL, EGRESS AND INGRESS MUST BE APPROVED BY OWNER PRIOR TO INSTALLATIONS.
2. CONVERGENCE STRUCTURE PRE-CAST OR CAST IN PLACE, MINIMUM DIMENSIONS ARE PROVIDED. ENTIRE STRUCTURE CAPABLE OF H-20 LOADING.
3. STORMWATER TREATMENT SYSTEM TO BE DOWNSTREAM DEFENDER (OR EQUAL) IN 10' DIAMETER WET WELL.
4. CONTRACTOR IS TO SUBMIT A COMPLETE SET OF SHOP DRAWINGS DETAILING ALL STRUCTURAL COMPONENTS OF CAST IN PLACE CONCRETE AND REINFORCING. STRUCTURAL DRAWINGS SHALL BE PREPARED AND BARE THE STAMP OF A PROFESSIONAL ENGINEER.
5. OTHER SUBMITTALS THAT ARE REQUIRED INCLUDE A DEWATERING PLAN FOR SHEETING AND FORM WORK AND SCHEDULE FOR COMPLETING THE WORK. WORK SCHEDULE WILL NEED TO BE REVIEWED AND APPROVED BY THE OWNER BEFORE PROCEEDING.
6. ASSEMBLY OF THE UNIT TO BE AS DIRECTED BY THE MANUFACTURER.



FLOW CONTROL STRUCTURE

SCALE: 1/2"=1'

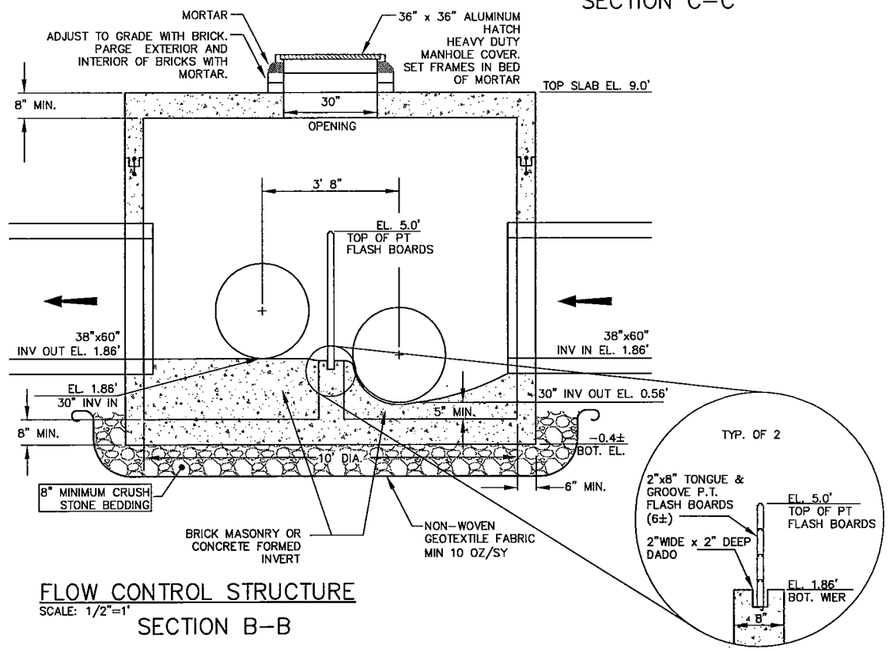
SECTION A-A



STORMWATER TREATMENT SYSTEM – SECTION VIEW

SCALE: 1/2"=1'

SECTION C-C



FLOW CONTROL STRUCTURE

SCALE: 1/2"=1'

SECTION B-B

ISSUE FOR				
APPROVAL	Date 11/30/07	By KAP		
CONSTRUCTION	Date –	By –		
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Dwg. ID 1070bartlett24
Scale AS SHOWN

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STORM WATER TREATMENT SYSTEM
BARTLETT AREA SEWER IMPROVEMENTS
TOWN OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO –

SHEET 11 OF 15

STANDARD MANHOLE NOTES:

1. IT IS THE INTENTION: THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH, AND LEAKPROOF QUALITIES CONSIDERED NECESSARY BY THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES) FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT, IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20LOADING) WITHOUT FAILURE, AND TO PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.

2. BARRELS AND CONE SECTIONS: SHALL BE PRECAST REINFORCED CONCRETE.

3. PRECAST CONCRETE: BARREL SECTIONS, CONES, AND BASES SHALL CONFORM TO ASTM C478.

4. LEAKAGE TEST: SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS. INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST.

5. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO AN ELEVATION OF 1" ABOVE THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.

6. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN, MANUFACTURED IN USA, AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) LETTER "S" FOR SEWERS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.

7. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33. STONE SIZE NO. 67.

100% PASSING 1 INCH SCREEN 0-10% PASSING #4 SIEVE

90-100% PASSING 3/4 INCH SCREEN 0- 5% PASSING #8 SIEVE

20- 55% PASSING 3/8 INCH SCREEN

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1-1/2 INCH TO 1/2 INCH SHALL BE USED.

8. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER HAVING AN ECCENTRIC ENTRANCE AND CAPABLE OF SUPPORTING H-20 LOADS MAY BE USED.

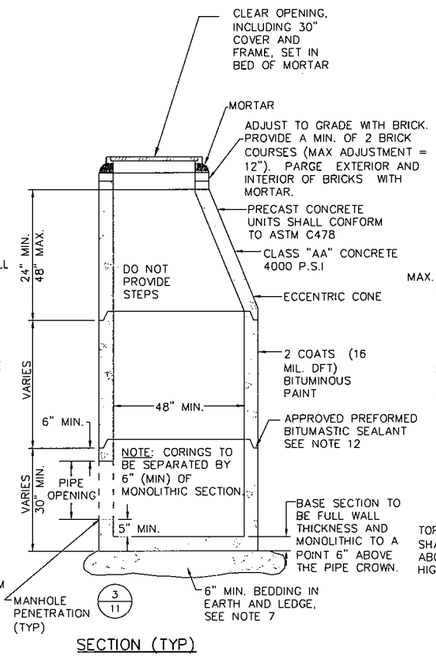
9. FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:
RCP AND CI PIPE - ALL SIZES - 48"
AC AND VC PIPE - UP THROUGH 12" DIA. - 18"
AC AND VC PIPE - LARGER THAN 12" DIA. - 36"
DI PIPE - NONE REQUIRED
PVC (ASTM 3034) - UP THROUGH 15" DIA. - NONE REQUIRED
PVC (ASTM F679) - LARGER THAN 15" DIA. - 48"/60"
PVC (ASTM F789) - ALL SIZES - 48"/60"
ABS (ASTM D2680) - ALL SIZES - SAME AS VC ABOVE.

10. SPECIFICATIONS: ADDITIONAL CONSTRUCTION SPECIFICATIONS ARE INCLUDED IN THE CONTRACT DOCUMENTS. THESE STANDARD MANHOLE DRAWINGS ARE NOT COMPLETE WITHOUT THESE SPECIFICATIONS.

11. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL, WILL DEPEND UPON AN ELASTOMERIC SEALANT FOR WATERTIGHTNESS.

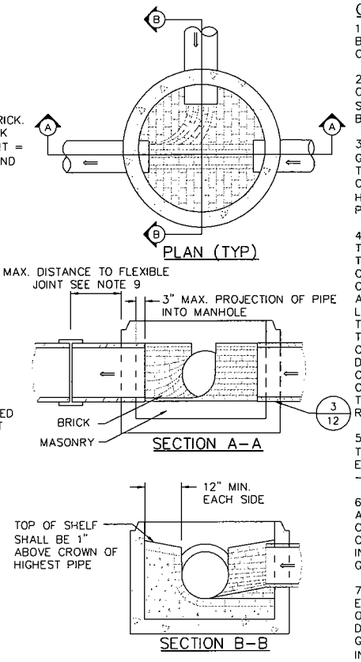
12. FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY. APPROVED BITUMASTIC SEALANTS: RAM-NEK E Z KENT SEAL NO.2

13. ALL GASKETS, SEALANTS, MORTAR, ETC., SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.



SECTION (TYP)

1/12 SEWER MANHOLE
NOT TO SCALE



GRAVITY SEWER TRENCH NOTES:

1. ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE: BACKFILL AS STATED IN THE TECHNICAL SPECIFICATIONS OR AS SHOWN ON THE DRAWINGS.

2. BEDDING: SEE NOTE 7 OF STANDARD MANHOLE NOTES. WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, GRADED SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1-1/2 INCH SHALL BE USED.

3. SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER, SO GRADED THAT 90-100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAN 15% WILL PASS A #200 SIEVE. BLANKET MAY BE OMITTED FOR CAST-IRON, DUCTILE IRON, AND REINFORCED CONCRETE PIPE PROVIDED HOWEVER, THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE.

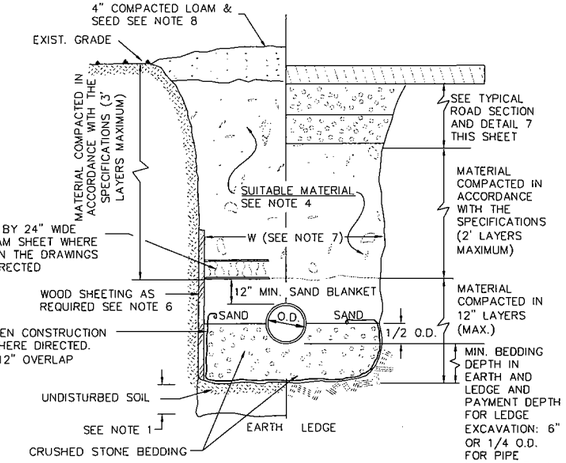
4. SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS; PIECES OF PAVEMENT; ORGANIC MATTER; TOP SOIL; ALL WET OR SOFT MUCK, PEAT, OR CLAY; ALL EXCAVATED LEDGE MATERIAL; ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION; AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. IN CROSS-COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK, OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER, FOR MAINTENANCE AND POSSIBLY RECONSTRUCTION, WILL BE PRESERVED.

5. BASE COURSE AND PAVEMENT SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES - DIVISIONS 300 AND 400 RESPECTIVELY.

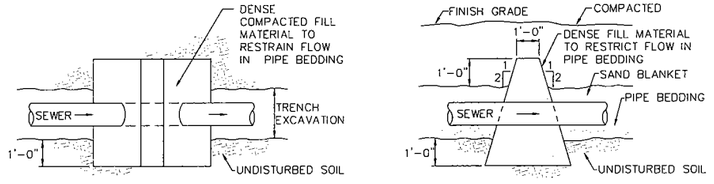
6. WOOD SHEETING, IF REQUIRED: WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION 1 FOOT ABOVE THE TOP OF PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.

7. W = MAXIMUM ALLOWABLE TRENCH PAYMENT WIDTH FOR ROCK EXCAVATION, FOR ORDERED EXCAVATION BELOW GRADE AND HANDLING OF EXCAVATED COMTAMINATED SOILS. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES IN NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE OUTSIDE DIAMETER (O.D.)

8. FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.



TRENCH SECTION (TYP)

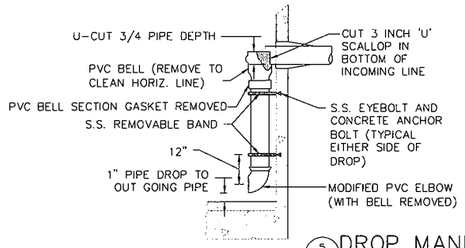


NOTES:

1. TRENCH DRAINS TO BE AT LOCATIONS SHOWN ON THE PLAN OR AS DIRECTED TO CONTROL BACK WATER IN STONE BEDDING.

4/12 TRENCH DAM
NOT TO SCALE

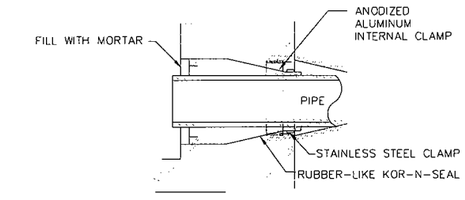
2/12 TRENCH - GRAVITY SEWER
NOT TO SCALE



SIZE GUIDE:

1-8" OR 10" DROP: 4'-0" DIA. M.H.
2-8" OR 10" DROP: 5'-0" DIA. M.H.
1-12" DROP: 5'-0" DIA. M.H.
1-15" DROP: 5'-0" DIA. M.H.

5/12 DROP MANHOLE
NOT TO SCALE



KOR-N-SEAL JOINT SLEEVE (OR EQUAL)

3/12 MANHOLE PENETRATIONS
NOT TO SCALE

SERVICE CONNECTION NOTES:

1. SEE DETAILS FOR SERVICE CONNECTION REQUIREMENTS.

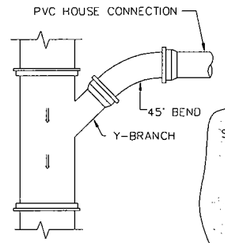
2. SERVICE CONNECTION SHALL BE INSTALLED BELOW WATER MAIN WHERE POSSIBLE.

3. CLEANOUTS SHALL BE INSTALLED AT EACH SERVICE CONNECTION.

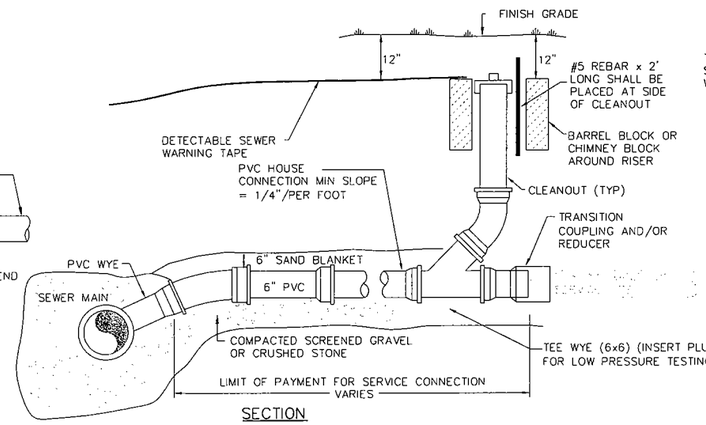
4. REBAR SHALL BE PLACED AT SIDE OF CLEANOUT.

5. CLEANOUT SHALL BE USED TO PLUG AND TEST ALL NEW LATERALS WITH MINIMAL INTERUPTION TO OPERATION OF HOMEOWNER SANITARY SYSTEM.

6. CLEANOUT RISER PIPE AND FITTINGS SHALL BE INCIDENTAL AND SHALL NOT BE CONSIDERED FOR PAYMENT.

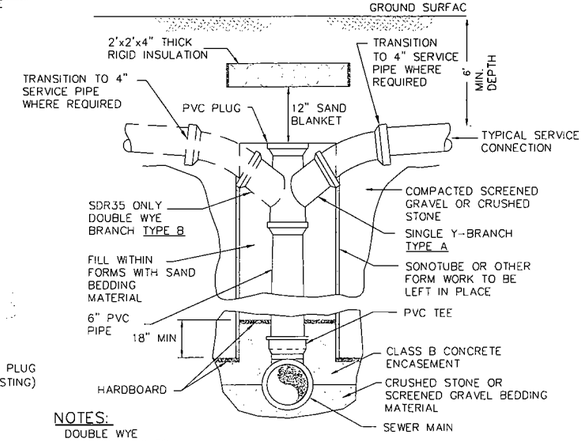


PLAN



SECTION

6/12 SERVICE CONNECTION
NOT TO SCALE



NOTES:
DOUBLE WYE BRANCH ONLY TO BE USED WHERE APPROVED BY ENGINEER.

7/12 CHIMNEY
NOT TO SCALE

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE FOR			
APPROVAL	By	KAP	
Date	11/30/07		
CONSTRUCTION	By	-	
Date	-		
RECORD DRAWING	By	-	
Date	-		

NO.	REVISIONS	APP'D

Drawn/Chk. RMG
Designed KAP
Checked KAP
Approved KAP
Date OCTOBER 2005
Book No. -
Project No. 1020.bartlett
Dwg. ID 07064d42
Scale AS SHOWN

Underwood Engineers, Inc.
25 Vaughan Mall, Portsmouth, N.H. 03801
Tel. 603-436-6192 Fax. 603-431-4733

STANDARD SEWER DETAILS

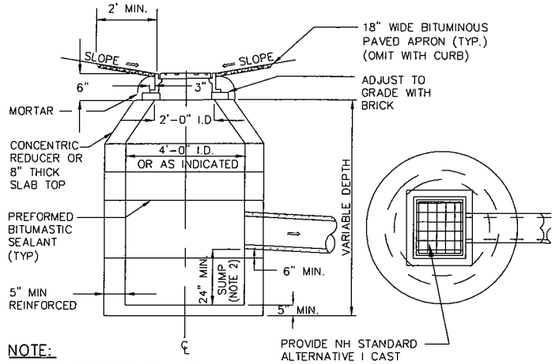
BARTLETT AREA SEWER IMPROVEMENTS

TOWN OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO -

SHEET 12 OF 15

PRELIMINARY
NOT FOR CONSTRUCTION

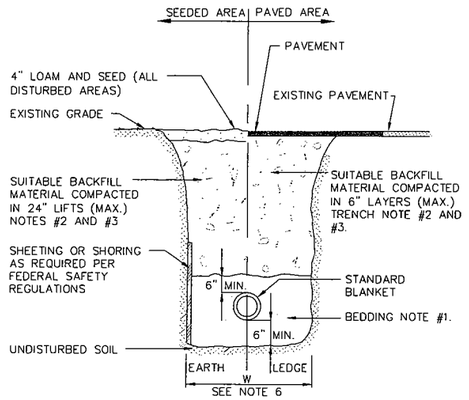


NOTE:

1.) ENTIRE STRUCTURE SHALL BE CAPABLE OF WITHSTANDING AN H – 20 LOAD DETAILS OF REINFORCEMENT TO BE FURNISHED BY MANUFACTURER.

2.) WHERE SUMP IS OMITTED PROVIDE MASONRY INVERT PER (CB#5_____) (6/12)

(2/13) CATCH BASIN DETAIL
NOT TO SCALE



(4/13) TRENCH DETAIL – STORM DRAIN
NOT TO SCALE

TRENCH NOTES – STORM DRAIN

1. BEDDING: BEDDING FOR PIPES SHALL CONSIST OF PREPARING THE BOTTOM OF THE TRENCH TO SUPPORT THE ENTIRE LENGTH OF THE PIPE AT A UNIFORM SLOPE AND ALIGNMENT. CRUSHED GRAVEL (NHDOT ITEM 304.3) OR CRUSHED STONE SHALL BE USED TO BED THE PIPE TO THE ELEVATION SHOWN ON THE DRAWINGS.

2. COMPACTION: ALL BACKFILL SHALL BE COMPACTED AT OR NEAR OPTIMUM MOISTURE CONTENT BY PNEUMATIC TAMPERS, VIBRATORY COMPACTORS OR OTHER APPROVED MEANS. BACKFILL BENEATH PAVED SURFACES SHALL BE COMPACTED TO NOT LESS THAN 95 PERCENT OF AASHTO T99, METHOD C.

3. SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS; PIECES OF PAVEMENT; ORGANIC MATTER; TOP SOIL; ALL WET OR SOFT MUCK, PEAT, OR CLAY; ALL EXCAVATED LEDGE MATERIAL; ROCKS OVER 6 INCHES IN LARGEST DIMENSION; FROZEN EARTH AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. IN SEEDED AREAS, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, ROCKS UNDER 12", FROZEN EARTH OR CLAY, IF HE/SHE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE PIPE WILL BE PRESERVED.

4. BASE COURSE AND PAVEMENT: SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES – DIVISIONS 300 AND 400 RESPECTIVELY.

5. DRAINAGE PIPE: PIPE MATERIALS SHALL BE EITHER POLYVINYL CHLORIDE (PVC) OR CORRAGATED POLYETHYLENE (CPE). THE OWNER RESERVES THE RIGHT TO DETERMINE WHICH PIPE MATERIALS ARE USED FOR THE PROJECT.

6. W=MAXIMUM ALLOWABLE TRENCH WIDTH: FOR ROCK EXCAVATION, FOR ORDERED EXCAVATION BELOW GRADE AND HANDLING OF EXCAVATED COMTAMINATED SOILS. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES IN NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE OUTSIDE DIAMETER (O.D.)

STANDARD MANHOLE NOTES:

1. BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE.

2. PRECAST CONCRETE BARREL SECTIONS, CONES, AND BASES SHALL CONFORM TO ASTM C478.

3. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE INVERT. INVERT BRICKS SHALL BE LAID ON EDGE. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST POSSIBLE TANGENT TO THE CENTER LINE OF THE PIPES. SHELVES SHALL BE CONSTRUCTED TO AN ELEVATION OF 1/2 THE PIPE DIA. AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL.

4. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN MANUFACTURED IN USA, AND PROVIDE A 30-INCH CLEAR OPENING. WORD "DRAIN", IN 3-INCH LETTERS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.

5. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33. STONE SIZE NO. 67.

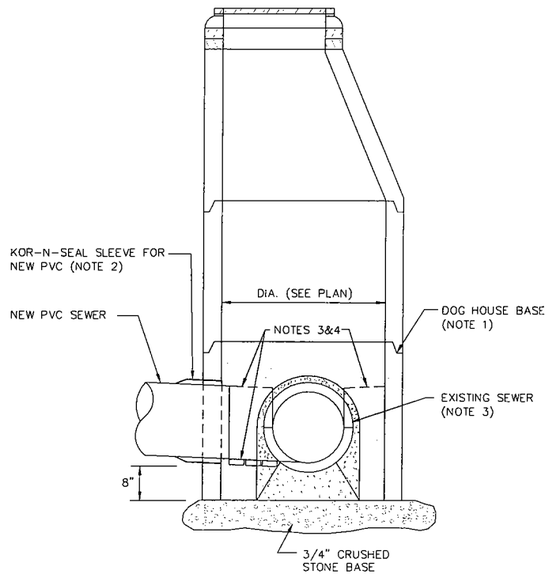
100% PASSING 1 INCH SCREEN
0–10% PASSING #4 SIEVE

90–100% PASSING 3/4 INCH SCREEN
0– 5% PASSING #8 SIEVE

20– 55% PASSING 3/8 INCH SCREEN

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1–1/2 INCH TO 1/2 INCH SHALL BE USED.

6. SLAB TOP COVERS: MAY BE APPROVED IN LIEU OF A CONE SECTION, WHEN MANHOLE IS LESS THAN 5 FEET AND FOR LARGE DIAMETER MANHOLES. SLAB TOP COVERS SHALL BE REINFORCED CONCRETE HAVING AN ECCENTRIC ENTRANCE AND CAPABLE OF SUPPORTING H–20 LOADS.



NOTES:

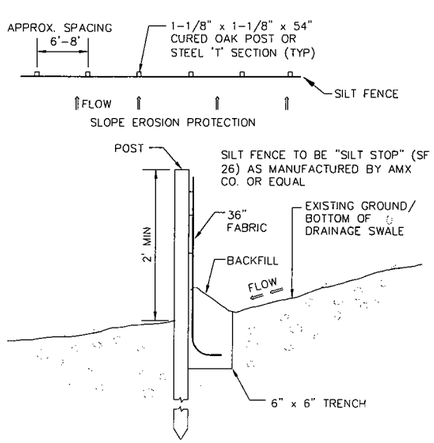
1. INSTALL DOG HOUSE MANHOLE ONE STONE BASE WITHOUT IMPACT TO EXISTING FLOW, OR BY PASS PUMP, SUBSIDIARY.

2. CONNECT NEW PVC PIPE TO DOG HOUSE BASE. INSTALL AND TEST NEW SEWER.

3. CUT & REMOVE TOP SECTION OF EXISTING BRICK OR PVC PIPE FOLLOWING INSTALLATION OF NEW SEWER, RETAIN BOTTOM SECTION OF EXISTING PIPE FOR INVERT. APPROACH CHANNEL & SHELF TO BE CONSTRUCTED WITH BRICK MASONRY. TEMPORARY BY–PASS PUMPING OPERATIONS NECESSARY FOR SEWER MODIFICATIONS OR CONSTRUCTION OF NEW FACILITIES ARE SUBSIDIARY.

4. SHAPE INVERT AND CONSTRUCT BRICK MASONRY INVERT AND SHELF FOR NEW PVC SEWER INLET.

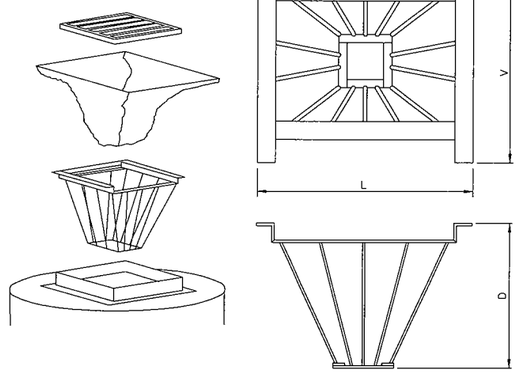
(1/13) DOG HOUSE SEWER MANHOLE
NOT TO SCALE



SILT FENCE CONSTRUCTION NOTE:

SILT FENCE TO BE CONSTRUCTED AT LOCATIONS SHOWN ON THE PLANS BEFORE CONSTRUCTION PROCEEDS. FENCE SHALL BE MAINTAINED THROUGHOUT ENTIRE DURATION OF CONSTRUCTION UNTIL GROUND COVER IS ESTABLISHED.

(3/13) SILT FENCE DETAIL
NOT TO SCALE



NOTES:

1. METAL–ERA INLET BASKET AVAILABLE FROM METAL–ERA, INC.
N4 W22450 BLUEMOUND ROAD
WAUKESHA, WI 53186
1–800–558–2162

2. INSTALL APPROPRIATE METAL BASKET.

3. A. GEOTEXTILE FABRIC SHALL BE POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE, OR POLYENYLIDENE CHLORIDE MEETING THE FOLLOWING:
a. GRAB STRENGTH: 45# MIN. IN ANY PRINCIPAL DIRECTION (ASTM D1682)
b. MULEN BURST STRENGTH: 60 PSI MIN. (ASTM D771)
B. FABRIC SHALL HAVE AN OPENING NO GREATER THAN A #20 SIEVE AND A MIN. PERMIABILITY OF 120 GPM/SQ. FT.

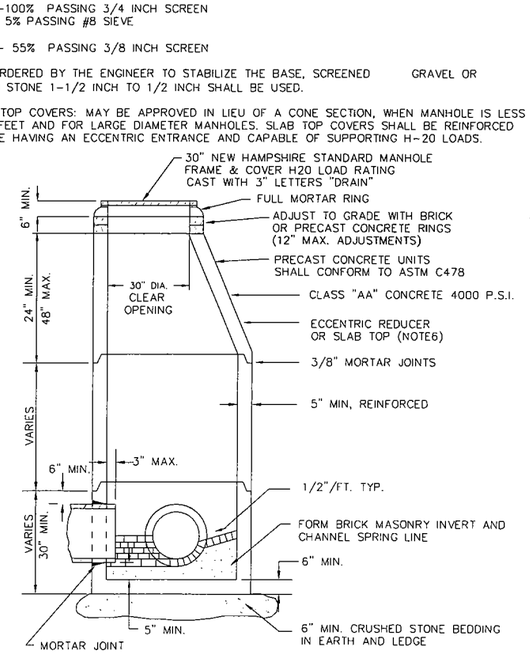
4. FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND EXTEND AT LEAST 6 INCHES PAST THE FRAME. GRATE INLET SHALL BE PLACED OVER THE BASKET/FRAME AND WILL ANCHOR THE FABRIC.

5. INSPECT BASKET DAILY OR MORE FREQUENTLY DURING STORM EVENTS.

6. SEDIMENT SHALL BE REMOVED AFTER EACH STORM EVENT OR MORE FREQUENTLY TO PREVENT CLOGGING.

7. USE OF METAL–ERA INLET BASKET DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF MAINTAINING OTHER EROSION CONTROL MEASURES AS MAY BE REQUIRED OR FROM STABILIZING DISTURBED AREAS AS SOON AS PRACTICAL.

(5/13) CATCH BASIN INLET FILTER
NOT TO SCALE



(6/13) TYPICAL DRAINAGE MANHOLE
NOT TO SCALE

NO.	REVISIONS	APP'D
	ISSUE FOR APPROVAL Date 11/30/07	By KAP
	CONSTRUCTION Date –	By –
	RECORD DRAWING Date –	By –

Drawn/Chk. RMG
Designed KAP
Checked KAP
Approved KAP
Date OCTOBER 2005
Book No. –
Project No. 1070.bettett
Dwg. ID 1070etet4x2
Scale AS SHOWN

Underwood Engineers, Inc.
25 Vaughan Mall, Portsmouth, N.H. 03801
Tel. 603-436-6192 Fax. 603-431-4733

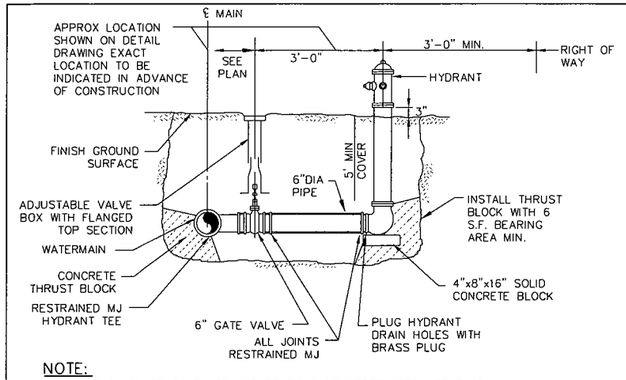
DRAINAGE & EROSION CONTROL DETAILS

BARTLETT AREA SEWER IMPROVEMENTS

TOWN OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO –

SHEET 13 OF 15

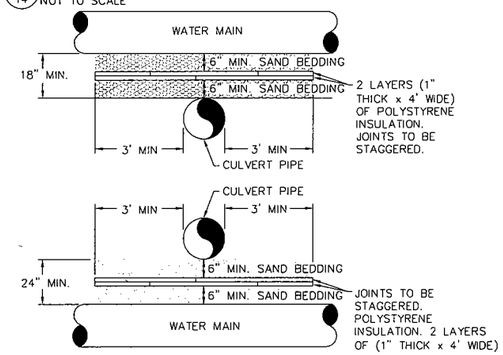


NOTE:

1. CARE SHALL BE TAKEN TO ASSURE THAT CONCRETE DOES NOT PLUG DRAIN PORTS.
2. HYDRANT ASSEMBLY INCLUDES MJ HYDRANT TEE.
3. HYDRANT SHALL BE KENNEDY K-814 GUARDIAN, PER CITY STANDARDS.

(1/14) TYPICAL HYDRANT ASSEMBLY SECTION

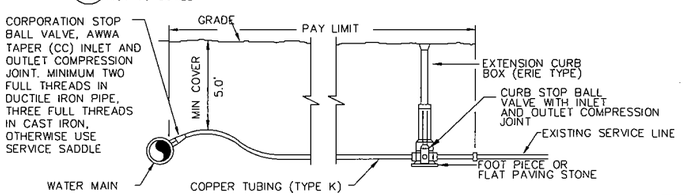
NOT TO SCALE



INSULATION TO BE USED WHERE PIPE SEPARATION IS 24" OR LESS.

(3/13) CULVERT CROSSING DETAIL

NOT TO SCALE



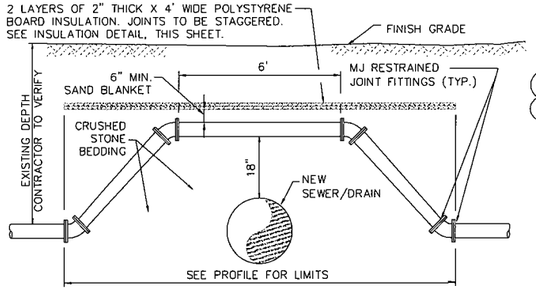
NOTES:

1. PROVIDE NEW LINE USING CONTINUOUS LENGTHS OF COPPER. NO COUPLING ALLOWED IN ROADWAY WITHOUT APPROVAL OF ENGINEER.
2. TAPS TO BE MADE AT APPROX. 2:00 AND 10:00.
3. PROVIDE FOR SERVICE LINE CONTRACTION AND EXPANSION BY INSTALLING "S" IN SERVICE LINE NEAR MAIN.
4. FOR HOMES WITH SILL PRESSURE GREATER THAN 80 PSI ±, COORDINATE SERVICE INSTALLATION W/ INSTALLATION OF POINT OF ENTRY PRV ASSEMBLY.
5. IF SERVICE IS INSTALLED WITH LESS THAN 5' COVER, INSULATE OVER LINE.
6. REMOVE EXISTING CURB STOP (SALVAGE AS IDENTIFIED IN SECT. 01611).
7. CONNECT CURB STOP TO EXISTING SERVICE LINE AT PROPERTY LINE OR AT LOCATION APPROVED BY THE ENGINEER (NO COUPLING WITHOUT APPROVAL OF ENGINEER) AFTER PRESSURE TESTING AND DISINFECTION.
8. SHUT OFF EXISTING CORPORATION AND REMOVE OR ABANDON EXISTING SERVICE LINE.
9. CURB BOX SHALL BE SET APPROXIMATELY 1'-0" FROM PROPERTY LINE.
10. 2" SERVICE CONNECTIONS SHALL USE A STAINLESS STEEL SERVICE SADDLE.

(4/14) TYPICAL SERVICE CONNECTION

NOT TO SCALE

PRELIMINARY
NOT FOR CONSTRUCTION

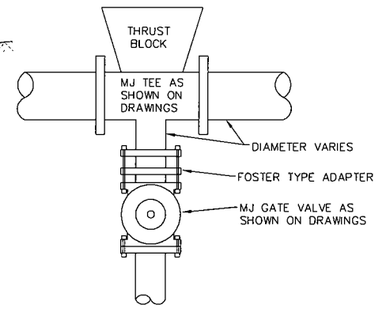


NOTE:

1. INSTALL (4) FOUR 45° MJ BENDS WITH RESTRAINED JOINT FITTINGS.
2. ALL SEWER CROSSINGS SHALL USE THIS DETAIL.

(2/14) WATER MAIN ~~RELOCATION~~

NOT TO SCALE

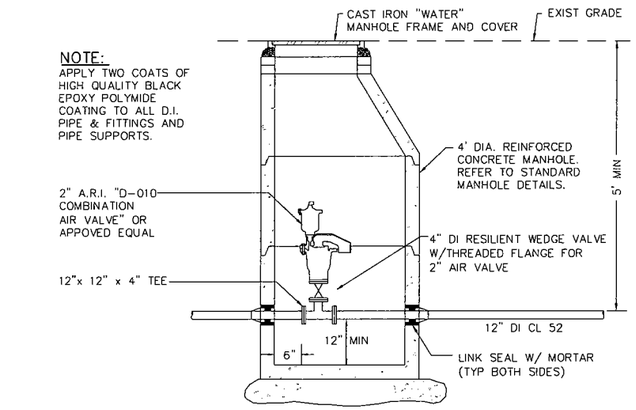


NOTE:

1. GATE VALVES SHALL OPEN RIGHT, PER CITY STANDARDS.

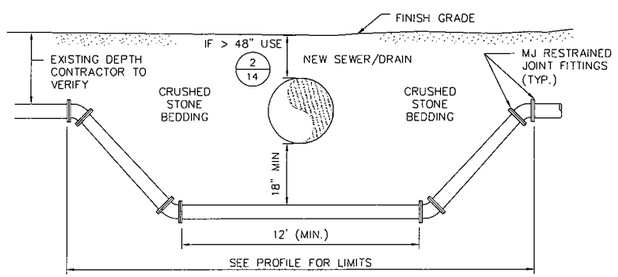
(5/14) TEE & GATE VALVE ASSEMBLY DETAIL (TYP.)

NOT TO SCALE



(9/14) AIR RELEASE /VACUUM RELEASE MANHOLE

NOT TO SCALE



NOTE:

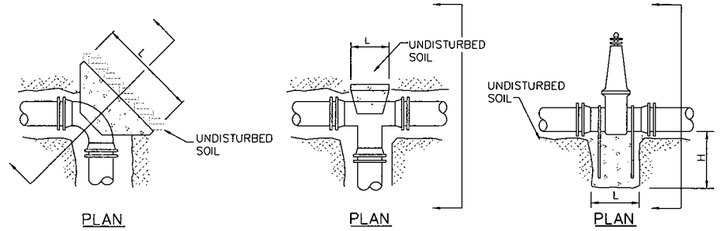
1. INSTALL (4) FOUR 45° MJ BENDS WITH RESTRAINED JOINT FITTINGS.
2. RELOCATED WATER MAIN SHALL BE 8" DIA MIN. CONNECT TO EXISTING MAIN WITH REDUCERS/ COUPLINGS AS REQUIRED.
3. WHERE MIN. 48" COVER CANNOT BE ACHIEVED DUE TO UTILITY CONFLICTS WATER MAY PASS UNDER SEWER WITH MIN. 18" VERTICAL SEPARATION.

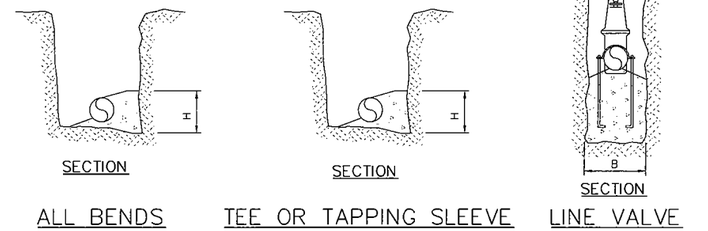
(7/14) WATER MAIN RELOCATION

NOT TO SCALE

MINIMUM CONCRETE ANCHOR DIMENSIONS								
BENDS, TEES AND LINE VALVES AT 250 PSI								
PIPE SIZE INCHES	TEE OR PLUG FT.		ALL BENDS FT.		ALL LINE VALVES FT.			PIPE SIZE INCHES
	H	L	H	L	H	L	B	
6	1.5	3.0	2.0	3.5	1.5	3.0	2.5	6
8	2.0	4.0	2.5	5.0	2.0	4.0	3.0	8
10	2.5	5.0	3.0	6.0	3.0	4.0	3.0	10
12	3.0	6.0	3.0	8.0	3.0	5.0	4.0	12
16	3.0	6.5	3.0	10.0	3.0	4.5	4.0	16

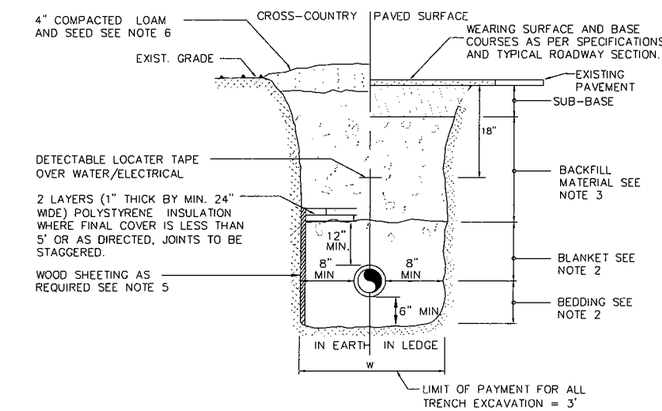
BASIS: SOIL BEARING CAPACITY OF 2000 PSF AND 5 FEET COVER IN GRANULAR SOIL. HEIGHT OF BLOCK MUST BE LESS THAN 1/2 DEPTH OF TRENCH. 6 MIL THICK POLYETHYLENE SHALL BE PLACED AROUND FITTINGS PRIOR TO CONCRETE PLACEMENT. USE FOR HORIZONTAL OR DOWNWARD THRUST ONLY.





(6/14) CONCRETE ANCHORS

NOT TO SCALE



(8/14) TYPICAL TRENCH DETAIL

NOT TO SCALE

STANDARD TRENCH NOTES

1. ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE: BACKFILL AS STATED IN THE TECHANICAL SPECIFICATIONS OR AS SHOWN ON THE DRAWINGS.
2. BEDDING AND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER (SECTION 02200). BLANKET MAY BE OMITTED FOR CAST-IRON, DUCTILE IRON, AND REINFORCED CONCRETE PIPE PROVIDED, HOWEVER, THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE.
3. BACKFILL MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS; PIECES OF PAVEMENT; ORGANIC MATTER; TOP SOIL; ALL WET OR SOFT MUCK, PEAT, OR CLAY; ALL EXCAVATED LEDGE MATERIAL; ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION; AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.

IN CROSS-COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK, OR PEAT, IF ENGINEER IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE PIPE LINE, FOR MAINTENANCE AND POSSIBLY RECONSTRUCTION, WILL BE PRESERVED.

4. MINIMUM COVER: NOT LESS THAN 5 FEET, 7 MAX, EXCEPT TO AVOID SUBSURFACE STRUCTURES.
5. WOOD SHEETING, IF REQUIRED: WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION 1 FOOT ABOVE THE TOP OF PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.
6. FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
7. DRIVEWAYS: CRUSHED GRAVEL IN DRIVEWAYS SHALL MATCH EXISTING WITH A MINIMUM OF 6". EXISTING GRAVEL SHALL BE REMOVED AND REPLACED AND SHALL NOT BE MEASURED FOR PAYMENT.

NO.	REVISIONS	APP'D

ISSUE FOR: APPROVAL — By KAP — Date 11/30/07
CONSTRUCTION — By – — Date –
RECORD DRAWING — By – — Date –

Drawn/Chk. RMG
Designed KAP
Checked KAP
Approved KAP
Date OCTOBER 2005
Book No. –
Project No. 1029.bartlett
Dwg. ID 1029detail2
Scale AS SHOWN

Underwood Engineers, Inc.
25 Vaughan Mall, Portsmouth, N.H. 03801
Tel. 603-436-6192 Fax. 603-431-4733

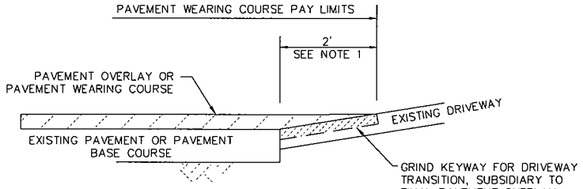
WATER DETAILS

BARTLETT AREA SEWER IMPROVEMENTS

TOWN OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO –

SHEET 14 OF 15

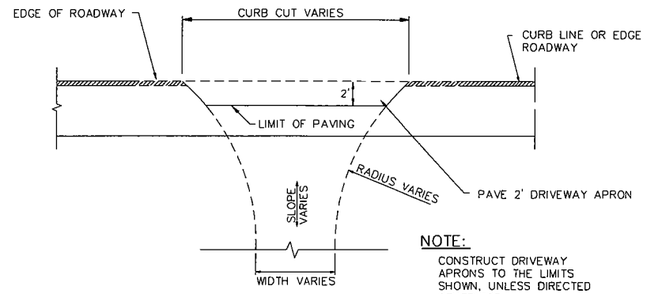


NOTES:

1. PAY LIMITS FOR WEARING COURSE/PAVEMENT OVERLAY EXTEND 2' BEYOND THIS EDGE OF PAVEMENT OR CURB LINE AT DRIVEWAYS.

2. CONTRACTOR MAY SAWCUT DRIVEWAY TRANSITION AT HIS OPTION. PAVEMENT SHALL BE REMOVED AND REPLACED TO MATCH EXISTING.

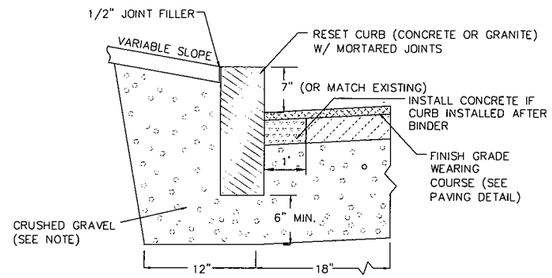
1/15 DRIVEWAY APRON DETAIL
NOT TO SCALE BID ITEM NO.: A15D & B15D



NOTE:

CONSTRUCT DRIVEWAY APRONS TO THE LIMITS SHOWN, UNLESS DIRECTED OTHERWISE.

2/15 DRIVE APRON
NOT TO SCALE



NOTE:

1.) DAMAGED OR IMPACTED CURB (WHETHER GRANITE OR CONCRETE) IS TO BE REPLACED AT THE CONTRACTORS OWN EXPENSIVE, UNLESS OTHERWISE NOTED ON PLAN.

2.) GRAVEL AT CURB SHALL BE COMPACTED PRIOR TO PAVING OR CLASS AA CONCRETE SHALL BE PLACED IN VOIDS AT BOTTOM & SIDES, PRIOR TO FINISH GRADE WEARING COURSE PAVEMENT.

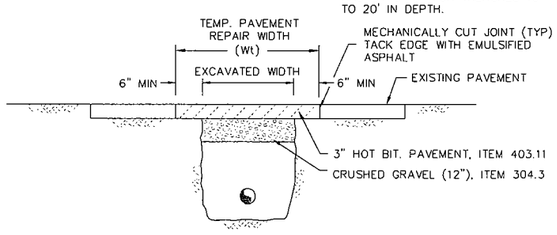
3/15 VERTICAL CURB – RESET (GRANITE OR CONCRETE)
NOT TO SCALE

MINIMUM TRENCH PAVEMENT WIDTHS

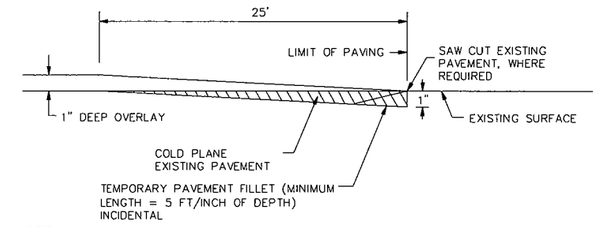
PIPE I.D.	Wt (INCHES)	Wp (INCHES)
1-21 INCHES	72	108
24-30 INCHES	84	120
> 30 INCHES	96	132

NOTE:

THE DIMENSIONS SHOWN SHALL BE CONSIDERED MAXIMUM PAVEMENT PAYMENT WIDTHS FOR 0-10' DEEP CONSTRUCTION. Wt AND Wp SHALL BE INCREASED BY 4'-0" FOR TRENCHES 10' TO 15' AND BY 8'-0" FOR TRENCHES 15' TO 20' IN DEPTH.



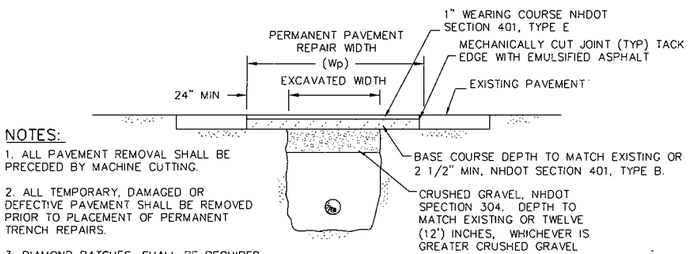
4/15 TEMPORARY TRENCH PAVEMENT REPAIR
NOT TO SCALE



NOTE:

THE LENGTH OF THE TAPER MAY BE ADJUSTED AS ORDERED TO PROVIDE FOR VARYING FIELD CONDITIONS OR CHANGES IN SINGLE COURSE DEPTH.

5/15 OVERLAY PAVEMENT MATCH
NOT TO SCALE



NOTES:

1. ALL PAVEMENT REMOVAL SHALL BE PRECEDED BY MACHINE CUTTING.

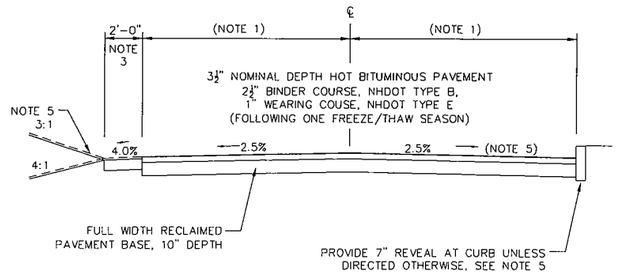
2. ALL TEMPORARY, DAMAGED OR DEFECTIVE PAVEMENT SHALL BE REMOVED PRIOR TO PLACEMENT OF PERMANENT TRENCH REPAIRS.

3. DIAMOND PATCHES, SHALL BE REQUIRED FOR ALL TRENCHES CROSSING ROADWAY. DIAMOND PATCHES SHALL MEET NHDOT REQUIREMENTS.

4. SEE TABLE IN "TEMPORARY TRENCH PAVEMENT REPAIRS" FOR MINIMUM TRENCH WIDTHS.

6/15 PERMANENT TRENCH PAVEMENT REPAIRS
NOT TO SCALE

PRELIMINARY
NOT FOR CONSTRUCTION



NOTES:

1. RECONSTRUCT ROADWAY AT PRESENT WIDTH UNLESS DIRECTED OTHERWISE.

2. EXISTING DRIVEWAYS ARE TO BE SAWCUT PRIOR TO PAVING. MATCH EXISTING DRIVEWAY ELEVATIONS UNLESS OTHERWISE DIRECTED, SUBSIDIARY.

3. PROVIDE 2 FOOT WIDE GRAVELED SHOULDER WHERE CURBING IS NOT PRESENT, SUBSIDIARY.

4. LOAM, SEED & MULCH ROADSIDE SLOPES, SUBSIDIARY.

5. UNIFORMLY GRADE ROADWAY PRIOR AND PROVIDE A POSITIVE GRADIENT TO THE EXISTING DRAINAGE STRUCTURES, MIN. CROSS SLOPE=2%, MIN. GUTTER SLOPE=0.5%.

7/15 PAVEMENT RECLAMATON & FULL WIDTH PAVING DETAIL
NOT TO SCALE

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PAVEMENT RESTORATION DETAILS
BARTLETT AREA SEWER IMPROVEMENTS
TOWN OF PORTSMOUTH
PORTSMOUTH, NH

DWG NO -
SHEET 15 OF 15