

Notice of Intent

Atwood Street Utility Improvements Project

City of Revere

January 2016



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Notice of Intent Form

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WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Revere

City/Town

Important:

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

<u>Atwood Street</u>	<u>Revere</u>	<u>02151</u>
a. Street Address	b. City/Town	c. Zip Code
Latitude and Longitude:		
<u>N/A</u>	<u>42 24' 57.636"N</u>	<u>70 59' 45.852"W</u>
f. Assessors Map/Plat Number	d. Latitude	e. Longitude
	<u>N/A</u>	
	g. Parcel /Lot Number	

2. Applicant:

<u>Nicholas</u>	<u>Rystrom, P.E.</u>	
a. First Name	b. Last Name	
<u>City of Revere</u>		
c. Organization		
<u>281 Broadway</u>		
d. Street Address		
<u>Revere</u>	<u>MA</u>	<u>02151</u>
e. City/Town	f. State	g. Zip Code
<u>781-286-8152</u>	<u>nrystrom@revere.org</u>	
h. Phone Number	i. Fax Number	j. Email Address

3. Property owner (required if different from applicant): Check if more than one owner

<u></u>	<u></u>	
a. First Name	b. Last Name	
<u></u>		
c. Organization		
<u></u>		
d. Street Address		
<u></u>	<u></u>	<u></u>
e. City/Town	f. State	g. Zip Code
<u></u>	<u></u>	<u></u>
h. Phone Number	i. Fax Number	j. Email address

4. Representative (if any):

<u>Magdalena</u>	<u>Lofstedt</u>	
a. First Name	b. Last Name	
<u>CDM Smith Inc.</u>		
c. Company		
<u>75 State Street, Suite 701</u>		
d. Street Address		
<u>Boston</u>	<u>MA</u>	<u>02109</u>
e. City/Town	f. State	g. Zip Code
<u>617-452-6597</u>	<u>617-345-4298</u>	<u>lofstedtmh@cdmsmith.com</u>
h. Phone Number	i. Fax Number	j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

<u>N/A: Town Project; Fee exempt</u>	<u></u>	<u></u>
a. Total Fee Paid	b. State Fee Paid	c. City/Town Fee Paid



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A. General Information (continued)

6. General Project Description:

Rehabilitate the existing undersized stormwater system, replace existing sewer and water mains within Atwood Street, Roosevelt Street and within an approximate 150 foot long cross country section, disconnect illegal sump pumps and roof drains that currently tie into the City's sewer system, and replace and rehabilitate the existing Atwood Street and Roosevelt Street sewer pump stations.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

- 1. Single Family Home
- 2. Residential Subdivision
- 3. Commercial/Industrial
- 4. Dock/Pier
- 5. Utilities
- 6. Coastal engineering Structure
- 7. Agriculture (e.g., cranberries, forestry)
- 8. Transportation
- 9. Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. Yes No If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types) 10.24(7)(b) and 10.53(3)(d) The construction, reconstruction, operation and maintenance of underground and overhead public utilities.

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

Suffolk

a. County

N/A

c. Book

b. Certificate # (if registered land)

N/A

d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

- 1. Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
- 2. Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.



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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input type="checkbox"/> Bank	1. linear feet	2. linear feet
b. <input type="checkbox"/> Bordering Vegetated Wetland	1. square feet	2. square feet
c. <input type="checkbox"/> Land Under Waterbodies and Waterways	1. square feet	2. square feet
	3. cubic yards dredged	

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. <input checked="" type="checkbox"/> Bordering Land Subject to Flooding	App. 16,700 temporary alteration 0	restored to preconstruction conditions
e. <input type="checkbox"/> Isolated Land Subject to Flooding	3. cubic feet of flood storage lost	4. cubic feet replaced
	1. square feet	
f. <input type="checkbox"/> Riverfront Area	2. cubic feet of flood storage lost	3. cubic feet replaced
	1. Name of Waterway (if available) - specify coastal or inland	

2. Width of Riverfront Area (check one):

- 25 ft. - Designated Densely Developed Areas only
- 100 ft. - New agricultural projects only
- 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? Yes No

6. Was the lot where the activity is proposed created prior to August 1, 1996? Yes No

3. Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f.** above.



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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users:
Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. <input type="checkbox"/> Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. <input type="checkbox"/> Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. <input type="checkbox"/> Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. <input type="checkbox"/> Coastal Dunes	1. square feet	2. cubic yards dune nourishment
	Size of Proposed Alteration	Proposed Replacement (if any)
f. <input checked="" type="checkbox"/> Coastal Banks	App. 20 feet of temp. alteration to concrete seawal	
g. <input type="checkbox"/> Rocky Intertidal Shores	1. square feet	
h. <input type="checkbox"/> Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. <input type="checkbox"/> Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	1. square feet	
k. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	1. square feet	

4. Restoration/Enhancement
If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

5. Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings



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C. Other Applicable Standards and Requirements

- This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Notice of Intent – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

- a. Yes No **If yes, include proof of mailing or hand delivery of NOI to:**

**Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581**

- 1/12/16
b. Date of map

If yes, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.1.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

- c. Submit Supplemental Information for Endangered Species Review*

1. Percentage/acreage of property to be altered:

(a) within wetland Resource Area _____
percentage/acreage

(b) outside Resource Area _____
percentage/acreage

2. Assessor's Map or right-of-way plan of site

2. Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

(a) Project description (including description of impacts outside of wetland resource area & buffer zone)

(b) Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/>). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.



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C. Other Applicable Standards and Requirements (cont'd)

- (c) MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/ mesa/ mesa_fee_schedule.htm).
Make check payable to "Commonwealth of Massachusetts - NHESP" and **mail to NHESP** at above address

Projects altering 10 or more acres of land, also submit:

- (d) Vegetation cover type map of site
- (e) Project plans showing Priority & Estimated Habitat boundaries
- (f) OR Check One of the Following

1. Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/ mesa/ mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. Separate MESA review ongoing. _____ a. NHESP Tracking # _____ b. Date submitted to NHESP

3. Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?
- a. Not applicable – project is in inland resource area only b. Yes No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.



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C. Other Applicable Standards and Requirements (cont'd)

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?
- a. Yes No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.
- b. ACEC
5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?
- a. Yes No
6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?
- a. Yes No
7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?
- a. Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:
1. Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)
 2. A portion of the site constitutes redevelopment
 3. Proprietary BMPs are included in the Stormwater Management System.
- b. No. Check why the project is exempt:
1. Single-family house
 2. Emergency road repair
 3. Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

- This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
2. Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.



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D. Additional Information (cont'd)

3. Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. List the titles and dates for all plans and other materials submitted with this NOI.

See Table of Contents

a. Plan Title

Felix Contreras

A. O'Donnell

b. Prepared By

c. Signed and Stamped by

1" = 20'

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

5. If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. Attach NOI Wetland Fee Transmittal Form

9. Attach Stormwater Report, if needed.

E. Fees

1. Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

2. Municipal Check Number

3. Check date

4. State Check Number

5. Check date

6. Payor name on check: First Name

7. Payor name on check: Last Name



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F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant

2. Date

3. Signature of Property Owner (if different)

4. Date

1-18-16

5. Signature of Representative (if any)

6. Date

For Conservation Commission:

Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:

One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:

If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

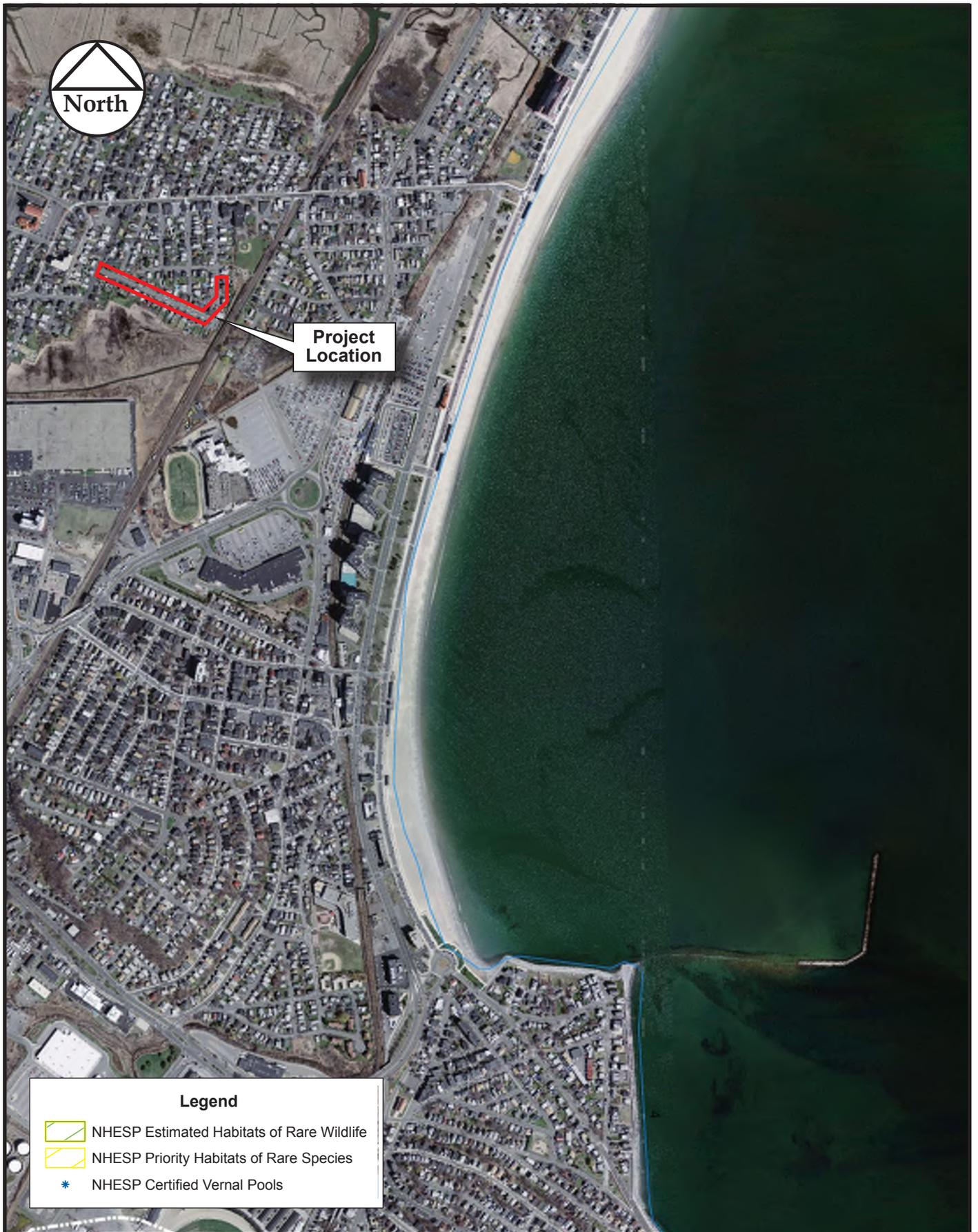
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Project Figures



City of Revere, Massachusetts
 Contract WW002 - Atwood St. Drainage,
 Outfall & Wastewater Pump Station Improvements

Figure 1
Project Location Map



Source:
MassGIS

City of Revere, Massachusetts
Contract WW002 - Atwood St. Drainage,
Outfall & Wastewater Pump Station Improvements



Source: FEMA Flood Insurance Rate
 Map Community Panels
 25025C0017J, 25025C0036J

City of Revere, Massachusetts
 Contract WW002 - Atwood St. Drainage,
 Outfall & Wastewater Pump Station Improvements



Figure 3
Flood Insurance Rate Map



Source: MassGIS

City of Revere, Massachusetts
 Contract WW002 - Atwood St. Drainage,
 Outfall & Wastewater Pump Station Improvements

Figure 4
Project Aerial Map

Attachment A
Project Narrative

Attachment A

Project Narrative

1.0 Project Description

The City of Revere (the City) is submitting this Notice of Intent (NOI) for Atwood Street Drainage Improvements Project to rehabilitate the existing undersized stormwater system, replace existing sewer and water mains within Atwood Street, Roosevelt Street and within an approximate 150-foot long cross country section, and disconnect illegal sump pumps and roof drains that currently tie into the City's sewer system (see Figure 1 – Project Location Map and Sheet C-1 – Overall Site Plan). The proposed work also includes removing and replacing the existing Roosevelt Street Sewerage Pump Station which is in disrepair, and rehabilitating the existing Atwood Street Sewerage Pumping Station. The project purposes are to replace a corroded and failing water main, reduce the amount of Sanitary Sewer Overflows (SSOs), and convey stormwater to the Central County Ditch.

Drainage Improvements

The drains on Atwood Street carry all of the stormwater flow from Flow Metered area 12 East (FM12 East) out to the Central County Ditch. This catchment area has high levels of inflow and infiltration. As part of the Sump Pump Amnesty Program the City has identified a number of houses with illegal sump pumps and roof drains that currently tie into the City sewer system and will be redirected as part of this project. The redirections will include disconnecting the illicit connections and redirecting it to the exterior of a home. The redirected pipe could be splashed onto a property, directed into a leaching basin, or connected to a drain line in the street. Once the sump pumps and roof leaders have been redirected, the water will make its way to the drain via catch basins on Atwood Street.

Currently there are two drains on Atwood Street: a 24-inch corrugated metal (CMP) drain and a 12-inch to 18-inch reinforced concrete (RC) drain. The 24-inch drain has collapsed in multiple locations and the 12-inch to 18-inch drain is undersized. The City is proposing to remove approximately 1,050 linear feet of the reinforced concrete (RC) drain pipe and approximately 160 linear feet of the 24-inch diameter CMP drain, and replace with approximately 158 feet of new 15-inch RC drain pipe, 116 feet new twin 24-inch RC drain pipe, and 700 linear feet of twin 30-inch diameter RC drain pipe. The drain piping will be installed in the same location as the existing 18-inch RC drain. The new drain will either have a special concrete admixture or epoxy coating to protect it from the corrosive soil on Atwood Street. The new drain will also have an inline check valve just before the existing outfall through the seawall into the Central County Ditch. The existing 24-inch CMP outfall will be removed.

Sewer Replacement

The existing sewer on Atwood Street experiences SSOs because the existing sewer has sags in it, likely due to poorly compacted soil. The City is proposing to replace approximately 800 linear feet of existing sewer with new 10-inch diameter polyvinyl chloride (PVC) pipe and backfill with clean backfill material with proper compaction to reduce the amount of SSO occurrences on the street.

Water Main Replacement

The water main within Atwood Street has experienced several breaks over the past few years. Pipe sections removed from the street have shown that the outside of the pipe is severely corroded, causing multiple water main breaks. The water main within Atwood Street from the intersection with Shurtleff Street to the end of the street by Central County Ditch will be removed and replaced with approximately 1,100 linear feet of new 8-inch diameter PVC water main (including new gate valves, hydrants, water service connections, and other incidentals). All fittings will be epoxy coated, and hardware (nuts and bolts) will be 316 stainless steel to help with corrosion resistance.

Sewerage Pumping Stations

Roosevelt Street Pumping Station

The existing station will be completely removed and replaced with a new wet well, valve vault, pumps, rails, and new electrical panel and instrumentation. A new 3-inch diameter force main will be installed to discharge flow to Washington Street. In addition, a new gasketed hatch will be installed to address station flooding concerns. Influent lines to the new pump station will be three or four sewer services and the new 8-inch gravity sewer main.

Finish work around the pump station site will include gravel bedding around the structure for maintenance and some plantings for aesthetics. All work for these upgrades will be within the 100-foot buffer zone of Bordering Land Subject to Flooding (BLSF). There will be no additional disturbance outside of the existing pump station site.

Atwood Street Pumping Station

The existing station consists of a buried wet well and an electrical panel mounted to the side of a condo building. The upgrades to the station will include removal and replacement of existing rails, pumps, new valve vault, and installation of new control panel/instrumentation. All work for these upgrades will be within BLSF but will not result in loss of flood storage area since all improvements are below ground surface with the exception of the control panel/instrumentation which will be on a pedestal raised a minimum of 1 foot above Base Flood Elevation (BFA) of 5 feet NAVD 88. There will be no additional disturbance outside of the existing pump station site.

Work includes excavation in private property and public ways, removal, installation, property restoration, and paving as required to restore private properties and public ways to pre-construction conditions.

The proposed work will result in temporary impacts to BLSF, Coastal Bank, and the 100-ft Buffer Zone to the Coastal Bank and BLSF. Disturbed areas will be restored to pre-construction conditions. Atwood Street will receive full depth reconstruction pavement upon completion of the work. Sedimentation and erosion control barriers will be placed at the limits of work. The improvements are being funded by the Clean Water State Revolving Fund (SRF).

The following sections address anticipated existing conditions, proposed measures to protect resource areas, and compliance with performance standards.

2.0 Existing Conditions

2.1 Coastal Bank

Coastal Bank is defined as:

“The seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action or other wetland.” [310 CMR 10.30 (2)]

Coastal Bank at the tidally influenced Central County Ditch consists of a concrete sea wall. The mean annual high water (MAHW) elevation at the Central County Ditch was determined based on recordings at the downstream LT-10 tide gate located at Necco (see Figure 1). Mean high water (MHW) at the tidal ditch is approximately elevation -0.7 feet NAVD 88. The mean low water elevation is approximately -2.3 feet NAVD 88.

2.2 Bordering Land Subject to Flooding

Proposed work is confined to within paved areas of Atwood Street and Roosevelt Street located within Bordering Land Subject to Flooding (BLSF). BLSF is defined as “an area with low, flat topography adjacent to and inundated by flood waters rising from creeks, rivers, streams, ponds or lakes. It extends from the banks of these waterways and water bodies.”

The FEMA Flood Insurance Rate Map (FIRM) identifies the 100-year floodplain in the project area as elevation (Zone AE) 12 feet NAVD 88. The project area is not located within the Rumney Marsh Area of Environmental Concern (ACEC).

2.3 Wildlife Habitat

It is not anticipated that any of the proposed work will be located within Priority Habitat of Rare Species, Estimated Habitat of Rare Wildlife, and/or Certified Vernal Pools.

3.0 Work Proposed within Coastal Bank, BLSF, and the 100-foot Buffer Zone

Water main, sewer, and stormwater pipeline construction and installation of catch basins and manholes will take place within existing paved areas of Atwood Street and Roosevelt Street, and within an approximate 150-foot long cross country segment which consists of lawn and driveway (Washington Street to #26-32 Atwood Street).

3.1 General Construction

Pipeline construction will result in temporary disturbances within Coastal Bank, BLSF, and the 100-ft Buffer Zone. These disturbances are unavoidable since these resource areas extend onto the existing streets. Alterations caused by pipeline construction will be temporary and work areas will be restored to pre-construction grades and stabilized to prevent erosion.

Trenching work will require the use of heavy equipment for excavating the trenches and moving materials. Soils will be stockpiled next to the trenches after excavation. Following completion of trench excavation, crushed stone will be placed for bedding material. The pipelines will be installed and the trenches will be backfilled with clean material and with proper compaction

which will reduce the amount of SSO occurrences on the street. The new water main will have a minimum of 4 feet of cover. The trench will be final-graded to match existing street grades and Atwood Street will receive full depth reconstruction pavement. Disturbed areas will be restored to pre-construction conditions. Construction is not anticipated to have any adverse effects on the Coastal Bank, BLSF, or the 100-foot Buffer Zones.

4.0 Mitigation Measures

All proposed work is located within paved streets and/or driveways. Atwood Street and Roosevelt Street have curbing that will direct runoff into existing catch basins.

- Storm drain inlet protection will be provided for all storm drains which will collect runoff from the work area. This protection will prevent sediment from entering the storm drain system and being conveyed to wetland resource areas;
- Periodic inspections will be made by the applicant to ensure compliance with the permit conditions;
- Maintenance and refueling of vehicles will take place outside of the 100-foot Buffer Zone to wetland resource areas;
- A supply of “speedy dry,” oil absorbent pads, or an approved equivalent will be maintained with the construction equipment at all times which will be used to contain any accidental release of oil or other petroleum products during the field work; and
- In the event that trench dewatering is necessary, discharge will be settled to remove sediment prior to final discharge.

5.0 Compliance with Performance Standards

5.1 WPA Performance Standards

Work is proposed in Coastal Bank and BLSF. Work proposed herein and shown on the attached project plans in Attachment E was designed to comply with the Wetlands Protection Act and Regulations (310 CMR 10.00 et. seq.) and the City of Revere Wetlands Ordinance (the Ordinance).

5.1.1 Coastal Bank

Work proposed in Coastal Bank is limited to removing the existing 18-inch diameter drain and replacing it with twin 30-inch diameter RC drain that will be installed in the same location as the existing RC drain. The Coastal Bank does not provide sediment to coastal beaches, coastal dunes or barrier beaches. Since the Coastal Bank is determined to be significant to storm damage prevention or flood control because it is a vertical buffer to storm waters, 310 CMR 10.30(6) through (8) shall apply:

(6) Any project on such a coastal bank or within the 100 feet landward of the top of such coastal bank shall have no adverse effects on the stability of the coastal bank.

The purpose of the project is to rehabilitate the existing undersized stormwater system. The proposed drainage improvements will not have adverse effects on the stability of the coastal bank.

(7) Bulkheads, revetments, seawalls, groins or other coastal engineering structures may be permitted on such a coastal bank except when such bank is significant to storm damage prevention or flood control because it supplies sediment to coastal beaches, coastal dunes, and barrier beaches.

The Coastal Bank is a stone headwall and up-gradient of the headwall is Atwood Street, a paved roadway. The Coastal Bank does not supply sediment to coastal beaches, coastal dunes, and barrier beaches.

(8) Notwithstanding the provisions of 310 CMR 10.30(3 through (7), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

The project is located outside of specified habitat sites of rare vertebrate or invertebrate species (see Figure 2).

5.1.2 Bordering Land Subject to Flooding

The 100-year FEMA floodplain in the project area is located at el. 12 feet NAVD 88. Work in BLSF consists of that described in the project description. The provisions 310 CMR 10.57(4) apply:

1. *Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within BLSF, when in the judgment of the issuing authority said loss will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows.*

The proposed work within BLSF will not result in any loss of flood storage volume as all grades will be restored to preconstruction contours.

2. *Work within BLSF, including that work required to provide the above specified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.*

The temporary alteration to BLSF will not result in any restriction of flows as all disturbed areas will be restored to preconstruction grades.

3. *Work in those portions of BLSF found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important wildlife habitat functions. Except for work which would adversely affect vernal pool habitat, a project or projects on a single lot, for which Notice(s) of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 square feet (whichever is less) of land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold, or altering vernal pool habitat, may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.*

Not applicable.

6.0 Summary

No long term impacts to wetland resource areas are anticipated from this project. The interests of the Act will not be impaired as a result of this project and all appropriate erosion and sedimentation control measures will be implemented throughout the course of the repair/removal activities to prevent the transport of sediment to the adjacent wetlands and waterways. All disturbances within Coastal Bank, BLSF, and the 100-foot Buffer Zone will be temporary and the work areas will be restored to pre-construction conditions and graded or repaved to existing contours.

Attachment B
Abutter Notification and Abutters List

NOTIFICATION TO ABUTTERS UNDER THE
MASSACHUSETTS WETLANDS PROTECTION ACT

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, you are hereby notified of the following:

- A. The name of the applicant is **City of Revere**.
- B. The applicant has filed a Notice of Intent with the **Revere Conservation Commission** seeking permission to remove, fill, dredge or alter an Area Subject to Protection Under the Wetlands Protection Act (MGL Ch. 131, Sec. 40)*.
- C. The address of the lot where the activity is proposed is within **Atwood Street and Roosevelt Street**.
- D. **The Notice of Intent may be examined at the Revere Conservation Commission Office at the Revere City Hall, 381 Broadway, Revere, MA, please call to schedule an appointment between the hours of 8:15 AM and 5:00 PM Monday through Thursday, and Friday 8:15 a.m. to 12:15 p.m. or leave a message for an appointment. It is our understanding that the public hearing will be scheduled for February 3, 2016, at 4.15 p.m. and will be held in the City Council Chambers of City Hall.**
- E. Information about the Notice of Intent may be obtained from **CDM Smith Inc., 75 State Street, Boston, MA 02109, Attn: Magdalena Lofstedt** or by calling **(617) 452-6597** between **9 AM** and **5 PM** Monday through Friday.

NOTE: Notice of Public Hearing, including its date, time and place will also be published at least five (5) days in advance in the **Revere Journal**. You may also contact your local Conservation Commission at **(781) 286-8185** or the nearest Department of Environmental Protection Regional Office for more information about this application or the Wetlands Protection Act. To contact the Department of Environmental Protection, call the **Northeast Regional Office at (978) 694-3200**.

* A Notice of Intent has been filed with the Revere Conservation Commission to rehabilitate the existing undersized stormwater system within Atwood Street that discharges to the Central County Ditch (a tidally influenced ditch), rehabilitate the existing Roosevelt Street sewerage pumping station, replace the existing sewer and water mains within Atwood Street, and disconnect illegal sump pumps and roof drains that currently tie into the City's sewer system. Work includes excavation in public ways, removal, installation, and paving as required to restore public ways to pre-construction conditions. As a direct abutter to this project you are being notified as required by the Massachusetts Wetlands Protection Act (310 CMR 10.00) and the City of Revere Wetlands Protection Ordinance since the proposed work although located within Atwood Street and Roosevelt Street is within the 100-year floodplain regulated as Bordering Land Subject to Flooding.

ParcelID	StreetNo	StreetName	Condition	Owner1	Owner2	BillingAddress	City	State	Zip
18-304-5	41	WASHINGTON ST		HAFIZOVIC MUSTAFA	HAFIZOVIC EVELIN	41 WASHINGTON ST	REVERE	MA	2151
18-303-5	17	WASHINGTON ST		BELMONTE GENEVIEVE		17 WASHINGTON ST	REVERE	MA	2151
18-304-6	43	WASHINGTON ST		DIORIO JASON	DIORIO JASON	43 WASHINGTON ST	REVERE	MA	2151
18-304-7B	57	ROOSEVELT ST		PITRONE FAMILY REALTY TRUST	PITRONE PETER	57 ROOSEVELT ST	REVERE	MA	2151
18-300-19	20	ATWOOD ST		KING MARIE	JOHN KING	20 ATWOOD ST	REVERE	MA	2151
18-307B-7	54	ROOSEVELT ST		VESCE PAULA		54 ROOSEVELT ST	REVERE	MA	2151
18-299-23A	57	ATWOOD ST		LAZO KAREN V	HUEZO FRANCISCA	57 ATWOOD ST	REVERE	MA	2151
18-299-21	53	ATWOOD ST		LUMAJ ARDJAN	LUMAJ ALBINA	53 ATWOOD RD	Revere	MA	2151
18-300-10A	60	ATWOOD ST		NUPEL REALTY TRUST	FERRAGAMO DOLORES TRUSTEE	7B PHILOMENA AVE	REVERE	MA	2151
18-299-16		ATWOOD ST		PETER J CECERE TESTAMENTARY TR	CECERE DIANNE, TRUSTEE	112 FOSTER ST	LITTLETON	MA	1460
18-299-10		HAWES ST		DEMASO JOHN	JAMES DEMASO & ETAL	58 HAWES ST	REVERE	MA	2151
18-304-9	69	ROOSEVELT ST		ANJEBO MULUGETA D	KASSA ZUGAN B	69 ROOSEVELT ST	REVERE	MA	2151
18-300-6A-1	82	ATWOOD ST	1	LI ANNIE	LI SUI C	5 NECTAR PL	NAHANT	MA	1908
18-307A-1A	70	ROOSEVELT ST		MAGLIONE JOSEPH		70 ROOSEVELT ST	REVERE	MA	2151
18-300-7A	61	MCKINLEY ST		DIOGUARDI GEORGE		61 MCKINLEY ST	REVERE	MA	2151
18-299-18	43	ATWOOD ST		DEMASO II EDWARD	MARIE D DEMASO	43 ATWOOD ST	REVERE	MA	2151
18-304-10	75	ROOSEVELT ST		DORAIRAJ SUBASRI	RAVIKUMAR RAMANJANAPPA	75 ROOSEVELT ST	REVERE	MA	2151
18-299-17	31	ATWOOD ST		ERRICO JOSEPH		37 ATWOOD ST	REVERE	MA	2151
18-304-1	72	MCKINLEY ST		RESENDE ANDERSON	KARINA C COSTA	72 MCKINLEY ST	REVERE	MA	2151
18-299-15	44	ATWOOD ST		PETER J CECERE TESTAMENTARY TR	CECERE DIANNE, TRUSTEE	112 FOSTER ST	LITTLETON	MA	1460
18-299-14		ATWOOD ST		PETER J CECERE TESTAMENTARY TR	CECERE DIANNE, TRUSTEE	112 FOSTER ST	LITTLETON	MA	1460
18-307B-3A-1	60	ROOSEVELT ST	1	DADRASS SHOGOFA	DADRASS MOHAMMAD H	60 ROOSEVELT ST, UNIT 1	REVERE	MA	2151
18-300-12	56	ATWOOD ST		VINCIARELLI ANTHONY	ANITA S VINCIARELLI	56 ATWOOD ST	REVERE	MA	2151
18-299-13		ATWOOD ST		DEMASO JOHN	DEMASO JAMES & ETAL	58 HAWES ST	REVERE	MA	2151
18-300-17	30	ATWOOD ST		SANTOSUOSSO CHRISTOPHER	NINA SANTOSUOSSO	85 SEVEN STAR ROAD	GROVELAND	MA	1834
18-303-9	65	MCKINLEY ST		FERRAGAMO IRREVOCABLE TRUST	FERRAGAMO STANLEY A TRUSTEE	65 MCKINLEY ST	REVERE	MA	2151
18-300-13		ATWOOD ST		SACCO ANTHONY	JOAN S SACCO	9 WASHINGTON ST	REVERE	MA	2151
18-300-14		ATWOOD ST		SACCO ANTHONY P	SACCO JOAN S	9 WASHINGTON ST	REVERE	MA	2151
18-300-15		ATWOOD ST		SACCO ANTHONY P	SACCO JOAN S	9 WASHINGTON ST	REVERE	MA	2151
18-299-6	5	ATWOOD ST		UNG DUNG L	UNG THAO U	5 ATWOOD ST	REVERE	MA	2151
18-299-12	58	HAWES ST		DEMASO EDWARD		58 HAWES ST	REVERE	MA	2151
17-299-1	70	SHURTLEFF ST		SOLARES DANIEL A		70 SHURTLEFF ST	REVERE	MA	2151
18-300-16	40	ATWOOD ST		BENCIC JR RICHARD D	BENCIC MARYBETH	40 ATWOOD ST	REVERE	MA	2151
18-299-7A	11	ATWOOD ST		SANTORO DIANE		11 ATWOOD ST	REVERE	MA	2151
18-301-1	50	HAWES ST		RUIZ JESSICA	VARGAS DANIEL	50 HAWES ST	Revere	MA	2151
18-292-28	59	SHURTLEFF ST		FLOWERS BARBARA H		59 SHURTLEFF ST	Revere	MA	2151
18-303-1	1	WASHINGTON ST		OBRIEN ISABEL		1 WASHINGTON ST	REVERE	MA	2151
18-303-2	7	WASHINGTON ST		SACCO ANTHONY P	SACCO JOAN S	9 WASHINGTON ST	REVERE	MA	2151
18-303-3	9	WASHINGTON ST		SACCO ANTHONY	JOAN S SACCO	9 WASHINGTON ST	REVERE	MA	2151
18-303-4		WASHINGTON ST		BELMONTE GENEVIEVE		17 WASHINGTON ST	REVERE	MA	2151
18-300-18	26	ATWOOD ST		GRECH JOSEPH	MARGARET GRECH	26 ATWOOD ST	REVERE	MA	2151
18-292-27	55	SHURTLEFF ST		AUFIERO JAMES	DONNA LEE AUFIERO	55 SHURTLEFF ST	REVERE	MA	2151
18-301-18	2	WASHINGTON ST		SULLIVAN LYNNE A		2 WASHINGTON ST	REVERE	MA	2151
18-292-6	50	WAITE ST		HUSEJINOVIC TARIK		50 WAITE ST	REVERE	MA	2151
18-292-7	40	WAITE ST		ALTRI MICHAEL	ALTRI ANITA L	40 WAITE ST	REVERE	MA	2151
18-292-26	51	SHURTLEFF ST		LANGONE ANGELA		51 SHURTLEFF ST	REVERE	MA	2151

18-293-1	8 ATWOOD ST	FLORES FRANCISCO J	BUENROSTRO BERTHA A	8 ATWOOD ST	REVERE	MA	2151
18-292-8	WAITE ST	ALTRI MICHAEL	ALTRI ANITA L	40 WAITE ST	REVERE	MA	2151
18-292-24	41 SHURTLEFF ST	MINGOLLA ANGELO	MINGOLLA JANICE	34 SHURTLEFF ST	REVERE	MA	2151
18-292-25	47 SHURTLEFF ST	DEMILD CHERYL A		47 SHURTLEFF ST	REVERE	MA	2151
18-292-9A	36 WAITE ST	MCGRIFF CHARLES E & MARIE	MCGRIFF ANGELA	36 WAITE ST	REVERE	MA	2151
<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>	<Null>
18-299-11	HAWES REAR ST	DEMASO EDWARD M II	DEMASO MARIE D	58 HAWES ST	REVERE	MA	2151
18-304-7C	57A ROOSEVELT ST	PITRONE FAMILY REALTY TRUST	PITRONE PETER	57 ROOSEVELT ST	REVERE	MA	2151
18-299-31A	99-101 ATWOOD ST	ATWOOD ST REALTY TRUST	CIAMBELLI STEVEN & PAGLIUCA L	81 ATWOOD ST	REVERE	MA	2151
18-299-25	63 ATWOOD ST	NETO JOAO	FARIA GUSTAVO	63 ATWOOD ST	REVERE	MA	2151
18-299-26-14	69 ATWOOD ST	14 FERREIRA MARCELO R	MATSUNAGA THAYS E	69 ATWOOD ST, UNIT 14	Revere	MA	2151
18-299-27-16	75 ATWOOD ST	16 THRASHER LYDIA K	OLEARY JOHN M	75 ATWOOD ST, UNIT 16	REVERE	MA	2151
18-299-28	81 ATWOOD ST	ROMANELLO JOSEPH M	ROMANELLO ELISA A	83 ATWOOD ST	REVERE	MA	2151
18-299-29-18	87 ATWOOD ST	18 COLANGELO LYNETTE		87 ATWOOD ST	REVERE	MA	2151
18-299-30-20	93 ATWOOD ST	20 GEBREMICHAEL YOSEPH		93 ATWOOD ST, UNIT 20	REVERE	MA	2151

Attachment C
Stormwater Redevelopment Checklist

Project: Contract 3958-WW02 Atwood Street Utility Improvements Project

Redevelopment Checklist

Existing Conditions

- On-site: For all redevelopment projects, proponents should document existing conditions, including a description of extent of impervious surfaces, soil types, existing land uses with higher potential pollutant loads, and current onsite stormwater management practices.

RESPONSE: See Attached Project Plans and Notice of Intent for the description and depiction of existing conditions.

- Watershed: Proponents should determine whether the project is located in a watershed or subwatershed, where flooding, low streamflow or poor water quality is an issue.

The Project

Is the project a redevelopment project?

- Maintenance and improvement of existing roadways
- Development of rehabilitation, expansion or phased project on redeveloped site, or
- Remedial stormwater project

For non-roadway projects, is any portion of the project outside the definition of redevelopment?

RESPONSE: The project consists of rehabilitating the existing undersized stormwater management system within Atwood Street. The City of Revere (the City) is proposing to remove approximately 1,050 linear feet of the reinforced concrete (RC) drain pipe and approximately 160 linear feet of the 24-inch diameter CMP drain, and replace with approximately 158 feet of new 15-inch RC drain pipe, 116 feet new twin 24-inch RC drain pipe, and 700 linear feet of twin 30-inch diameter RC drain pipe. The City is also proposing to redirect roof leaders, property drains and/or sump pump connections from the sanitary sewer system to the new drain, to reduce extraneous inflow to the sewer system. Proposed work also includes repaving the existing streets within the limits of the existing street. All work will take place within previously developed areas and will not result in an increase in impervious area and therefore the project qualifies as a redevelopment project under the Stormwater Managements Standards.

- Development of previously undeveloped area
- Increase in impervious surface

If a component of the project is not a redevelopment project, the proponent shall use the checklist set forth below to document that at a minimum the proposed stormwater management system fully meets each Standard for that component. The proponent shall also document that the proposed stormwater management system meets the requirements of Standard 7 for the remainder of the project.

The Stormwater Management Standards

The redevelopment checklist reviews compliance with each of the Stormwater Management Standards in order.

Standard 1: (Untreated discharges)

No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

Same rule applies for new developments and redevelopments.

Full compliance with Standard 1 is required for new outfalls.

- What BMPs are proposed to ensure that all new discharges associated with the discharge are adequately treated?
- What BMPs are proposed to ensure that no new discharges cause erosion in wetlands or waters of the Commonwealth?
- Will the proposed discharge comply with all applicable requirements of the Massachusetts Clean Waters Act and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00?

Existing outfalls shall be brought into compliance with Standard 1 to the maximum extent practicable.

- Are there any existing discharges associated with the redevelopment project for which new treatment could be provided?
- If so, the proponent shall specify the stormwater BMP retrofit measures that have been considered to ensure that the discharges are adequately treated and indicate the reasons for adopting or rejecting those measures. (See Section entitled “Retrofit of Existing BMPs”.)
- What BMPs have been considered to prevent erosion from existing stormwater discharges?

RESPONSE: The proposed project consists of replacing the existing 18-inch RC outfall at Central County Ditch with new twin 30-inch RC outfall. All existing catch basins will be replaced with new catch basins equipped with deep sumps and hoods to provide additional water quality treatment.

Standard 2: (Peak rate control and flood prevention)

Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for land subject to coastal storm flowage.

Full compliance for any component that is not a redevelopment

Compliance to the Maximum Extent Practicable:

- Does the redevelopment design meet Standard 2, comparing post-development to pre-development conditions?

RESPONSE: Stormwater management systems must be designed so that post-construction peak discharge rates do not exceed pre-developed peak discharge rates, unless they discharge to

tidal waters. Since both of the project areas discharge to tidal waters or wetlands, the peak rate control and flood prevention standard (Standard 2) is waived.

- If not, the applicant shall document an analysis of alternative approaches for meeting the Standard. (See Menu of Strategies to Reduce Runoff and Peak Flows and/or Increase Recharge Menu included at the end of this chapter.)

Improvement of existing conditions:

- Does the project reduce the volume and/or rate of runoff to less than current estimated conditions? Has the applicant considered all the alternatives for reducing the volume and/or rate of runoff from the site? (See Menu.)
- Is the project located within a watershed subject to damage by flooding during the 2-year or 10-year 24-hour storm event? If so, does the project design provide for attenuation of the 2-year and 10-year 24-hour storm event to less than current estimated conditions? Have measures been implemented to reduce the volume of runoff from the site resulting from the 2 year or 10 year 24 hour storm event? (See Menu.)
- Is the project located adjacent to a water body or watercourse subject to adverse impacts from flooding during the 100-year 24-hour storm event? If so, are portions of the site available to increase flood storage adjacent to existing Bordering Land Subject to Flooding (BLSF)?
- Have measures been implemented to attenuate peak rates of discharge during the 100-year 24-hour storm event to less than the peak rates under current estimated conditions? Have measures been implemented to reduce the volume of runoff from the site resulting from the 100-year 24-hour storm event? (See Menu.)

RESPONSE: Not Applicable

Standard 3: (Recharge to Ground water)

Loss of annual recharge to ground water shall be eliminated or minimized through the use of infiltration measures, including environmentally sensitive site design, low impact development techniques, best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from the pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

Full compliance for any component that is not a redevelopment

RESPONSE: Since no new impervious area is proposed, the annual recharge from the post-development site conditions will be equal to the annual recharge from the pre-development conditions.

Compliance to the Maximum Extent Practicable:

- Does the redevelopment design meet Standard 3, comparing post-development to pre-development conditions?
- If not, the applicant shall document an analysis of alternative approaches for meeting the Standard?

- What soil types are present on the site? Is the site comprised solely of C and D soils and bedrock at the land surface?
- Does the project include sites where recharge is proposed at or adjacent to an area classified as contaminated, sites where contamination has been capped in place, sites that have an Activity and Use Limitation (AUL) that precludes inducing runoff to the groundwater, pursuant to MGL Chapter 21E and the Massachusetts Contingency Plan 310 CMR 40.0000; sites that are the location of a solid waste landfill as defined in 310 CMR 19.000; or sites where groundwater from the recharge location flows directly toward a solid waste landfill or 21E site?¹
- Is the stormwater runoff from a land use with a higher potential pollutant load?
- Is the discharge to the ground located within the Zone II or Interim Wellhead Protection Area of a public water supply?
- Does the site have an infiltration rate greater than 2.4 inches per hour?

Improvements to Existing Conditions:

- Does the project increase the required recharge volume over existing (developed) conditions? If so, can the project be redesigned to reduce the required recharge volume by decreasing impervious surfaces (make building higher, put parking under the building, narrower roads, sidewalks on only one side of street, etc.) or using low impact development techniques such as porous pavement?
- Is the project located within a basin or sub-basin that has been categorized as under high or medium stress by the Massachusetts Water Resources Commission, or where there is other evidence that there are rivers and streams experiencing low flow problems? If so, have measures been considered to replace the natural recharge lost as a result of the prior development? (See Menu.)
- Has the applicant evaluated measures for reducing site runoff? (See Menu.)

Standard 4: (80% TSS Removal)

Stormwater management systems must be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This standard is met when:

- Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan and thereafter are implemented and maintained;***
- Stormwater BMPs are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and***
- Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.***

Full compliance for any component that is not a redevelopment

Full compliance with the long-term pollution plan requirement for new developments and redevelopments.

- Has the proponent developed a long-term pollution plan that fully meets the requirements of Standard 4?
- Does the pollution prevention plan include the following source control measures?
 - Street sweeping
 - Proper management of snow, salt, sand and other deicing chemicals
 - Proper management of fertilizers, herbicides and pesticides
 - Stabilization of existing eroding surfaces

Compliance to the Maximum Extent Practicable for the other requirements:

¹ A mounding analysis is needed if a site falls within this category. See Volume 3.

- Does the redevelopment design provide for treatment of all runoff from existing (as well as new) impervious areas to achieve 80% TSS removal? If 80% TSS removal is not achieved, has the stormwater management system been designed to remove TSS to the maximum extent practicable?
- Have the proposed stormwater BMPs been properly sized to capture the prescribed runoff volume?
 - One inch rule applies for discharge
 - within a Zone II or Interim Wellhead Protection Area,
 - near or to another critical area,
 - from a land use with a higher potential pollutant load
 - to the ground where the infiltration rate is greater than 2.4 inches per hour
- Has adequate pretreatment been proposed?
 - 44% TSS Removal Pretreatment Requirement applies if:
 - Stormwater runoff is from a land use with a higher potential pollutant load
 - Stormwater is discharged
 - To the ground within the Zone II or Interim Wellhead Protection Area of a Public Water Supply
 - To the ground with an infiltration rate greater than 2.4 inches per hour
 - Near or to an Outstanding Resource Water, Special Resource Water, Cold-Water Fishery, Shellfish Growing Area, or Bathing Beach.
- If the stormwater BMPs do not meet all the requirements set forth above, the applicant shall document an analysis of alternative approaches for meeting these requirements. (See Section on Retrofitting Existing BMPs (the “Retrofit Section”).

Improvements to Existing Conditions:

- Have measures been provided to achieve at least partial compliance with the TSS removal standard?
- Have any of the best management practices in the Retrofit Section been considered?
- Have any of the following pollution prevention measures been considered?
 - Reduction or elimination of winter sanding, where safe and prudent to do so
 - Tighter controls over the application of fertilizers, herbicides, and pesticides
 - Landscaping that reduces the need for fertilizer, herbicides and pesticides
 - High frequency sweeping of paved surfaces using vacuum sweepers
 - Improved catch basin cleaning
 - Waterfowl control programs
- Are there any discharges (new or existing) to impaired waters? If so, see TMDL section.

RESPONSE: Since the proposed project consists of redirecting roof leaders, property drains and/or sump pump connections from the sanitary sewer system to the new drain, the level of TSS in the runoff is relatively low. The new catch basins that will be installed as part of this project will be equipped with deep sumps and hoods, see Detail Sheet in Attachment E.

Standard 5 (Higher Potential Pollutant Loads (HPPL))

For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through

source control and/or pollution prevention, all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt and stormwater runoff, the proponent shall use the specific stormwater BMPs determined by the Department to be suitable for such use as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

Full compliance for any component that is not a redevelopment.

Full compliance with pollution prevention requirements for new developments and redevelopments.

RESPONSE: Not applicable

Standard 6 (Critical Areas)

Stormwater discharges to a Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or any other critical area require the use of the specific source control and pollution prevention measures and the specific stormwater best management practices determined by the Department to be suitable for managing discharges to such area, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters or Special Resource Waters shall be set back from the receiving water and receive the highest and best practical method of treatment. A “stormwater discharge,” as defined in 314 CMR 3.04(2)(a)1. or (b), to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of the public water supply.

Full compliance for component of project that is not a redevelopment

Full compliance with pollution prevention requirements for new developments and redevelopments.

RESPONSE: Not applicable.

Standard 8: (Erosion, Sediment Control)

A plan to control construction-related impacts, including erosion sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan), must be developed and implemented.

All redevelopment projects shall fully comply with Standard 8.

- Has the proponent submitted a construction period erosion, sedimentation and pollution prevention plan that meets the requirements of Standard 8?

RESPONSE: Sedimentation and erosion control will consist of catch basin filters since all proposed work is in existing streets and driveways in a residential area.

Standard 9: (Operation and Maintenance)

A long-term operation and maintenance plan must be developed and implemented to ensure that stormwater management systems function as designed.

All redevelopment projects shall fully comply with Standard 9.

- Has the proponent submitted a long-term Operation and Maintenance plan that meets the requirements of Standard 9?

RESPONSE: The extension of the existing storm water management system will be maintained in accordance with the City's existing Operation and Maintenance Plan.

Standard 10 (Illicit Discharges)

All illicit discharges to the stormwater management system are prohibited.

All redevelopment projects shall fully comply with Standard 10.

- Are there any known or suspected illicit discharges to the stormwater management system at the redevelopment project site?
- Has an illicit connection detection program been implemented using visual screening, dye or smoke testing?

RESPONSE: The project purpose is to rehabilitate an existing undersized stormwater drainage system and to remove extraneous inflow to the sewer system. An illicit detection program to the stormwater management system has not been implemented.

- Have an Illicit Discharge Compliance Statement and associated site map been submitted verifying that there are no illicit discharges to the stormwater management system at the site?

RESPONSE: No, an Illicit Discharge Compliance Statement has not been submitted.

Improvements to Existing Conditions:

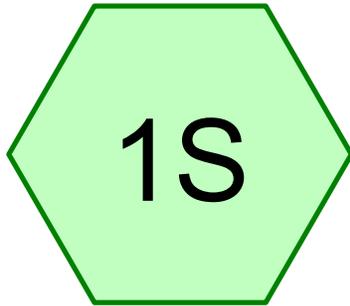
- Once all illicit discharges are removed, has the proponent implemented any measures to prevent additional illicit discharges?

Attachment D

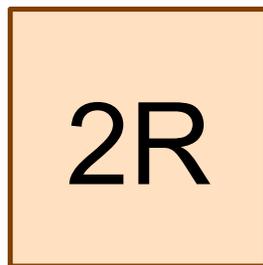
Pipe Sizing Calculations

**Draft Drainage Calcs
Atwood Street
Revere, MA**

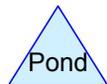
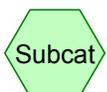
Summary of Effect of Roughness on Pipe Sizing and Storm Intensity Using Proposed Pipe Slopes							
Storm Intensity	Pipe Material	Manning Coeff.	Slope (ft/ft)	Q-Design (cfs)	Pipe Size	Q-Full Flow (cfs)	Q-Design/Q-Full Flow
5-Year Storm	RC Pipe	0.011	0.00466	50.5	Twin 24	45.75	1.10
	PVC Pipe	0.009	0.00466	50.5	Twin 24	55.92	0.90
10-Year Storm	RC Pipe	0.011	0.00466	60.1	Twin 24	45.75	1.31
	PVC Pipe	0.009	0.00466	60.1	Twin 24	55.92	1.08
5-Year Storm	RC Pipe	0.011	0.00466	50.5	Twin 30	82.95	0.61
	PVC Pipe	0.009	0.00466	50.5	Twin 30	101.38	0.50
10-Year Storm	RC Pipe	0.011	0.00466	60.1	Twin 30	82.95	0.72
	PVC Pipe	0.009	0.00466	60.1	Twin 30	101.38	0.59



Atwood Street
Catchment Area



Outfall



Atwood Street Outfall Drainage Calcs

Prepared by CDM

HydroCAD® 10.00-13 s/n M13184 © 2014 HydroCAD Software Solutions LLC

Type III 24-hr 5-Yr Rainfall=4.12"

Printed 10/9/2015

Page 2

Summary for Subcatchment 1S: Atwood Street Catchment Area

Runoff = 50.82 cfs @ 12.20 hrs, Volume= 4.543 af, Depth> 2.67"

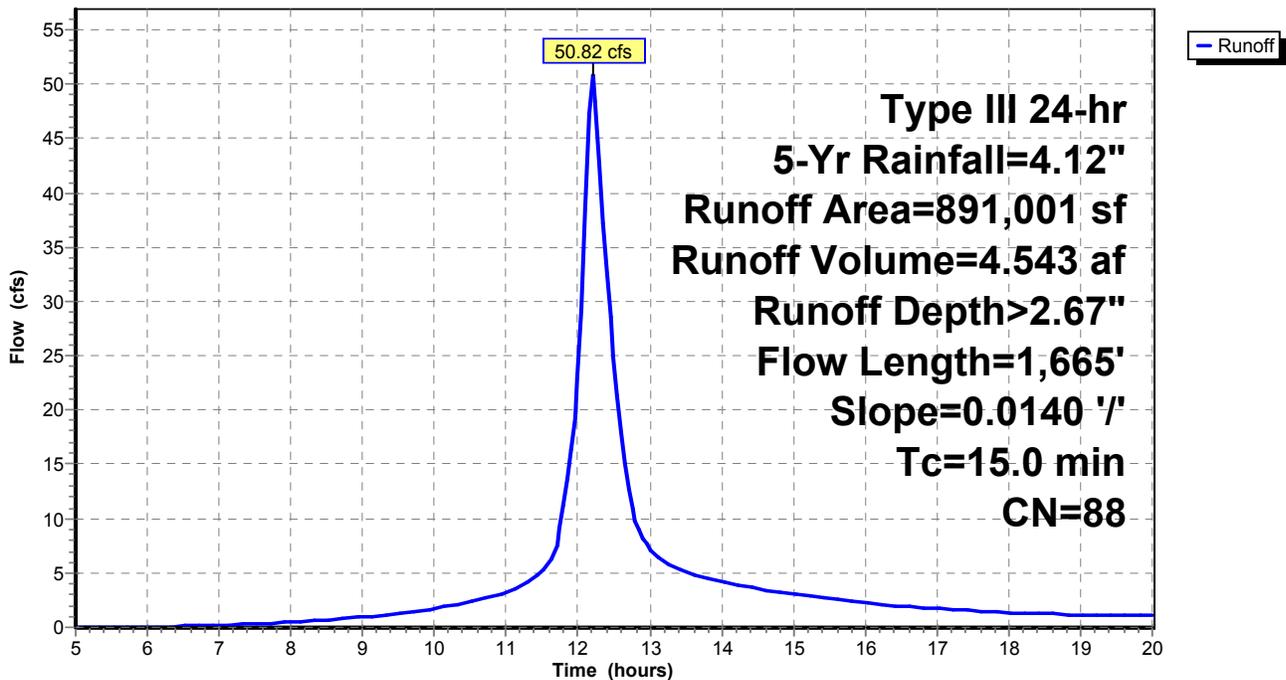
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-Yr Rainfall=4.12"

Area (sf)	CN	Description
355,460	85	1/8 acre lots, 65% imp, HSG B
535,541	90	1/8 acre lots, 65% imp, HSG C
891,001	88	Weighted Average
311,850		35.00% Pervious Area
579,151		65.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0140	1.05		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.27"
11.2	1,615	0.0140	2.40		Shallow Concentrated Flow, Paved Kv= 20.3 fps
3.0					Direct Entry,
15.0	1,665	Total			

Subcatchment 1S: Atwood Street Catchment Area

Hydrograph



Atwood Street Outfall Drainage Calcs

Prepared by CDM

HydroCAD® 10.00-13 s/n M13184 © 2014 HydroCAD Software Solutions LLC

Type III 24-hr 5-Yr Rainfall=4.12"

Printed 10/9/2015

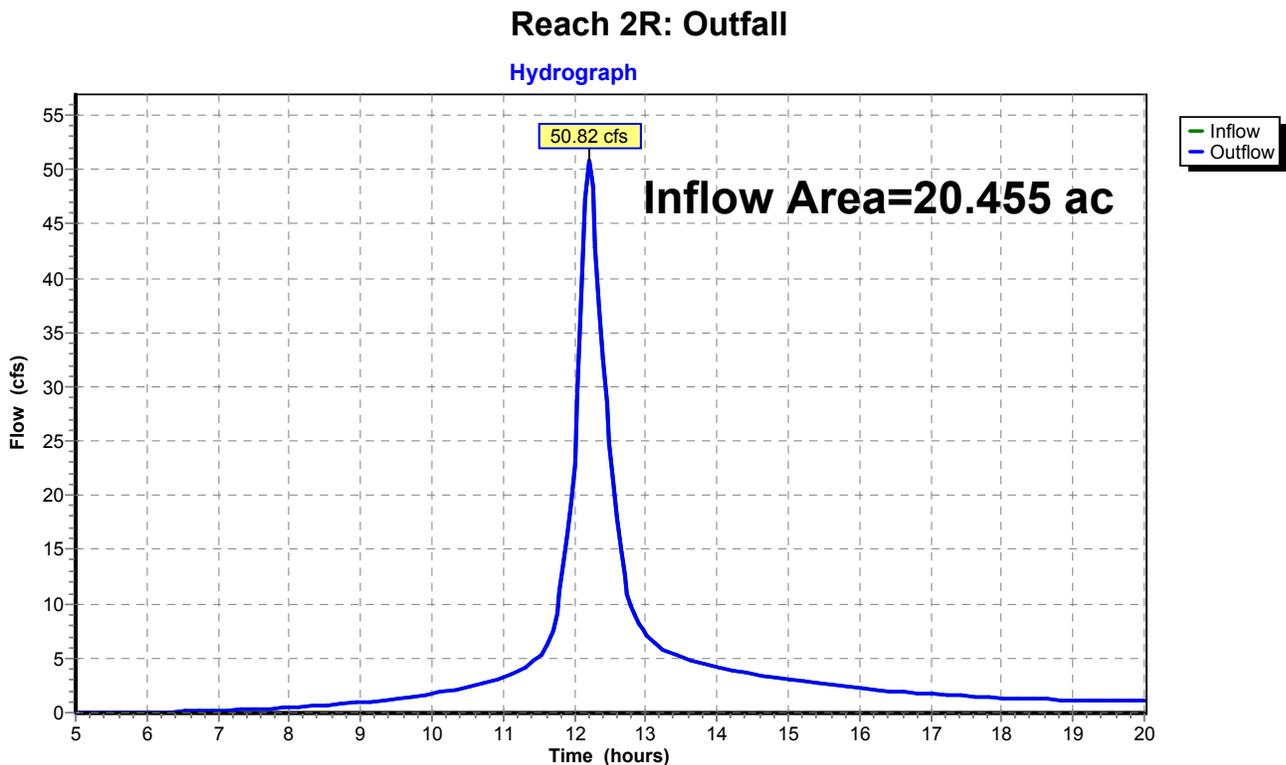
Page 3

Summary for Reach 2R: Outfall

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 20.455 ac, 65.00% Impervious, Inflow Depth > 2.67" for 5-Yr event
Inflow = 50.82 cfs @ 12.20 hrs, Volume= 4.543 af
Outflow = 50.82 cfs @ 12.20 hrs, Volume= 4.543 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Atwood Street Outfall Drainage Calcs

Prepared by CDM

HydroCAD® 10.00-13 s/n M13184 © 2014 HydroCAD Software Solutions LLC

Type III 24-hr 10-Yr Rainfall=4.91"

Printed 10/9/2015

Page 4

Summary for Subcatchment 1S: Atwood Street Catchment Area

Runoff = 63.59 cfs @ 12.20 hrs, Volume= 5.746 af, Depth> 3.37"

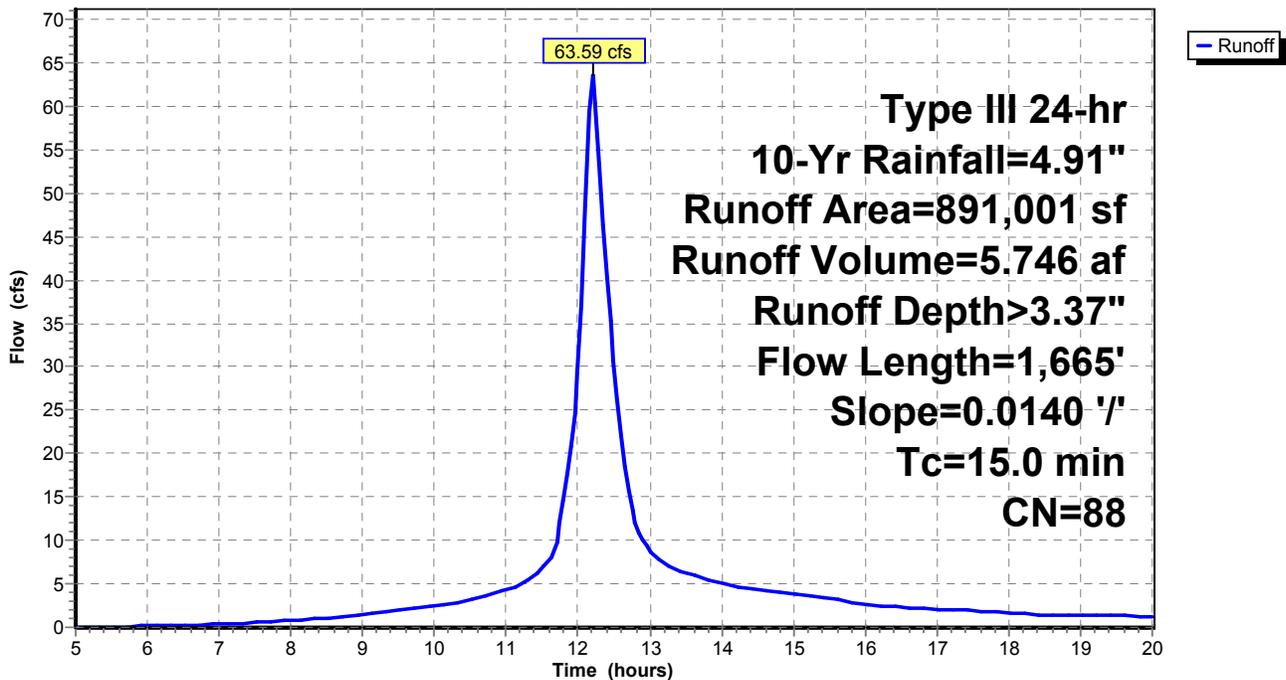
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=4.91"

Area (sf)	CN	Description
355,460	85	1/8 acre lots, 65% imp, HSG B
535,541	90	1/8 acre lots, 65% imp, HSG C
891,001	88	Weighted Average
311,850		35.00% Pervious Area
579,151		65.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0140	1.05		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.27"
11.2	1,615	0.0140	2.40		Shallow Concentrated Flow, Paved Kv= 20.3 fps
3.0					Direct Entry,
15.0	1,665	Total			

Subcatchment 1S: Atwood Street Catchment Area

Hydrograph



Atwood Street Outfall Drainage Calcs

Prepared by CDM

HydroCAD® 10.00-13 s/n M13184 © 2014 HydroCAD Software Solutions LLC

Type III 24-hr 10-Yr Rainfall=4.91"

Printed 10/9/2015

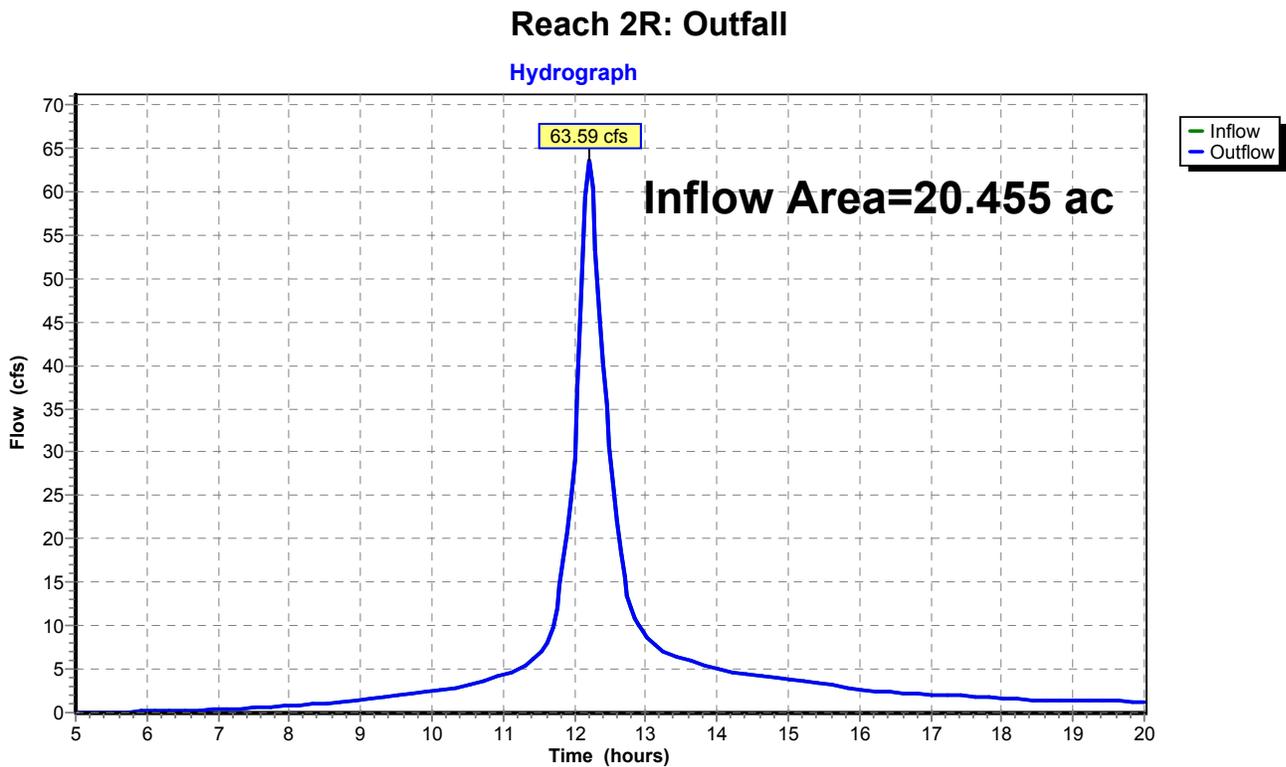
Page 5

Summary for Reach 2R: Outfall

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 20.455 ac, 65.00% Impervious, Inflow Depth > 3.37" for 10-Yr event
Inflow = 63.59 cfs @ 12.20 hrs, Volume= 5.746 af
Outflow = 63.59 cfs @ 12.20 hrs, Volume= 5.746 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Attachment E
Project Plans (bound separately)

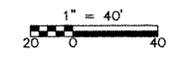
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NOTE:
 ALL PROPOSED WORK IS WITHIN
 BORDERING LAND SUBJECT TO FLOODING
 EL 12 FEET - NAVD 88.



FOR PERMITTING PURPOSES ONLY



REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. O'DONNELL
 DRAWN BY: F. CONTRERAS
 SHEET CHK'D BY: A. O'DONNELL
 CROSS CHK'D BY:
 APPROVED BY:
 DATE: DECEMBER 2015

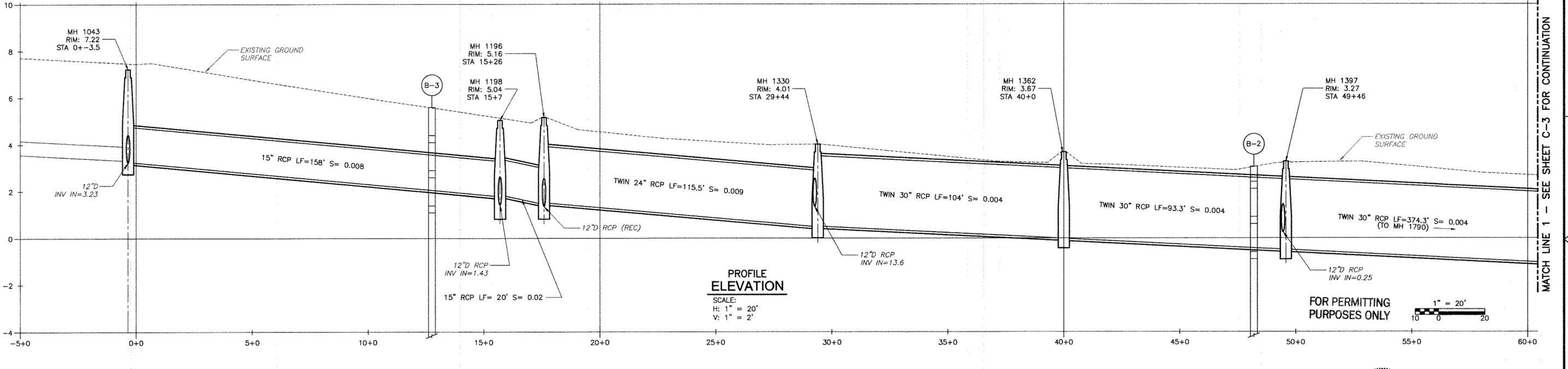
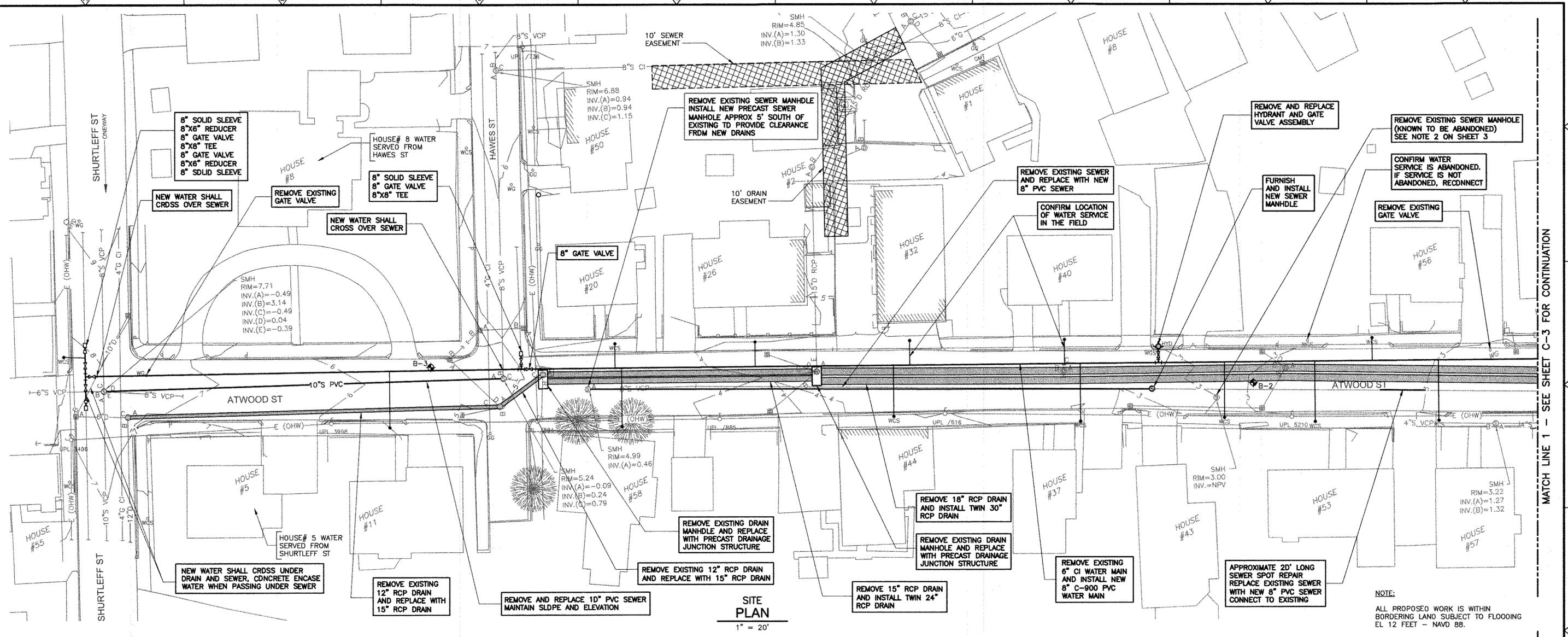
CDM Smith
 75 State Street, Suite 701
 Boston, MA 02109
 Tel: (617) 452-6000

CITY OF REVERE, MASSACHUSETTS
 DEPARTMENT OF PUBLIC WORKS
**ATWOOD STREET
 DRAINAGE IMPROVEMENTS**

ATWOOD ST OVERALL SITE PLAN

PROJECT NO. 2948-111510
 FILE NAME: COD1STPL.DWG
 SHEET NO.
C-1

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. O'DONNELL
 DRAWN BY: F. CONTRERAS
 SHEET CHK'D BY: A. O'DONNELL
 CROSS CHK'D BY: X
 APPROVED BY: X
 DATE: DECEMBER 2015

CDM Smith
 75 State Street, Suite 701
 Boston, MA 02109
 Tel: (617) 452-6000

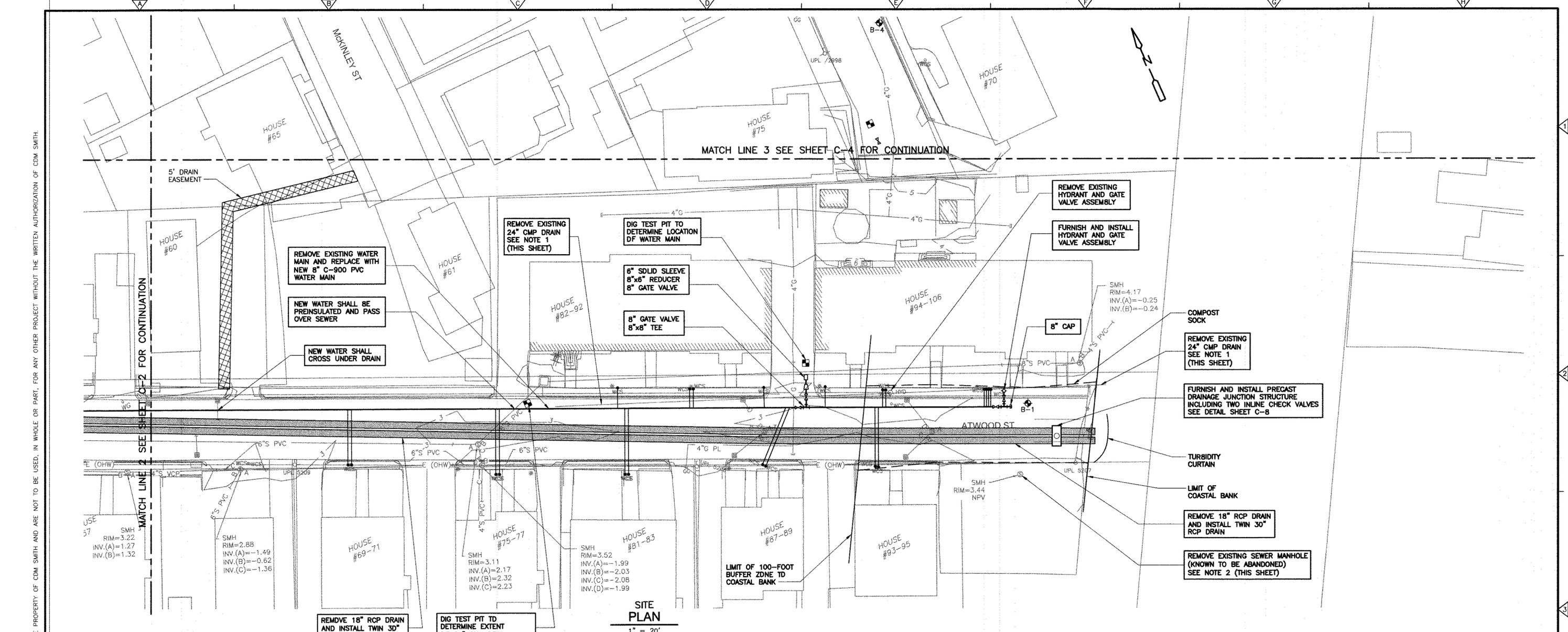
CITY OF REVERE, MASSACHUSETTS
 DEPARTMENT OF PUBLIC WORKS
**ATWOOD STREET
 DRAINAGE IMPROVEMENTS**

**ATWOOD ST
 SITE PLAN I**

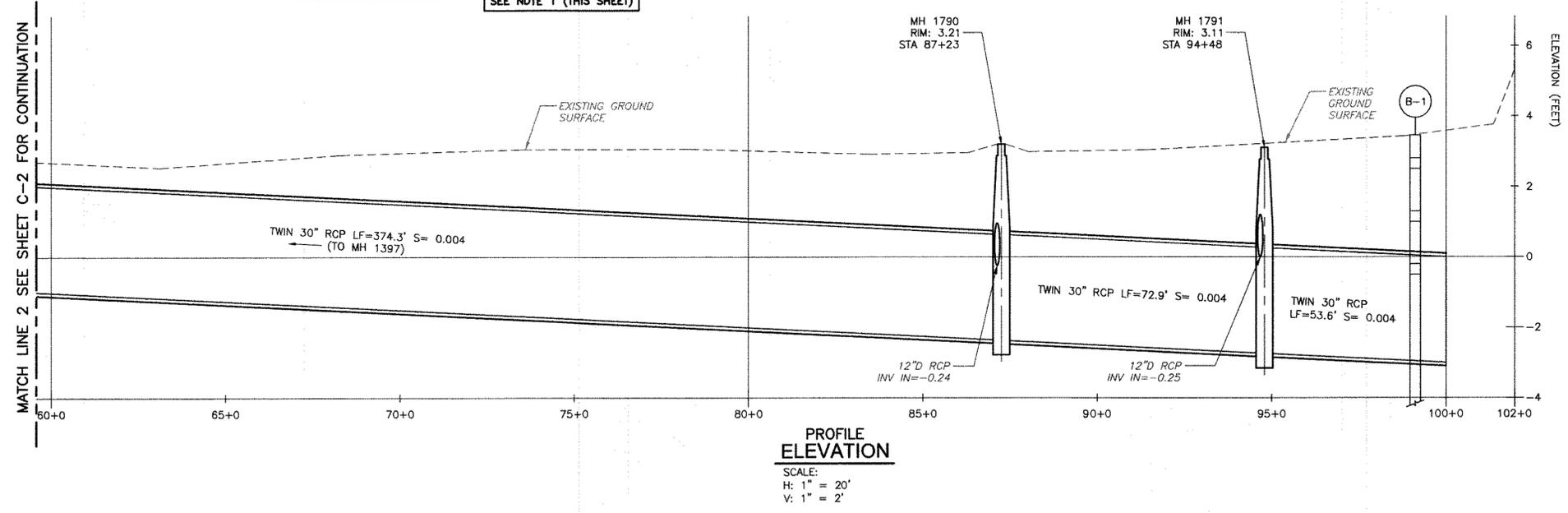
PROJECT NO. 2948-111510
 FILE NAME: C002STPL.dwg
 SHEET NO. **C-2**

30% SUBMITTAL - NOT FOR CONSTRUCTION

MATCH LINE 1 - SEE SHEET C-3 FOR CONTINUATION



SITE PLAN
1" = 20'

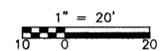


PROFILE ELEVATION
SCALE:
H: 1" = 20'
V: 1" = 2'

- NOTES:**
1. THE 24" CMP DRAIN HAS COLLAPSED IN MULTIPLE LOCATIONS. CONTRACTOR SHALL DIG TEST PITS DETERMINE EXTENT OF 24" DRAIN.
 2. OEWATER SEWER MANHOLE. CONFIRM THE MANHOLE IS NOT CONNECTED TO ANY ACTIVE SEWERS. DRILL HOLES THROUGH FLOOR OF MANHOLE AND FILL WITH SUITABLE SOIL. REMOVE MANHOLE FRAME AND COVER.
 3. ALL PROPOSED WORK IS WITHIN BORROWING LAND SUBJECT TO FLOODING EL 12 FEET - NAVD 88.



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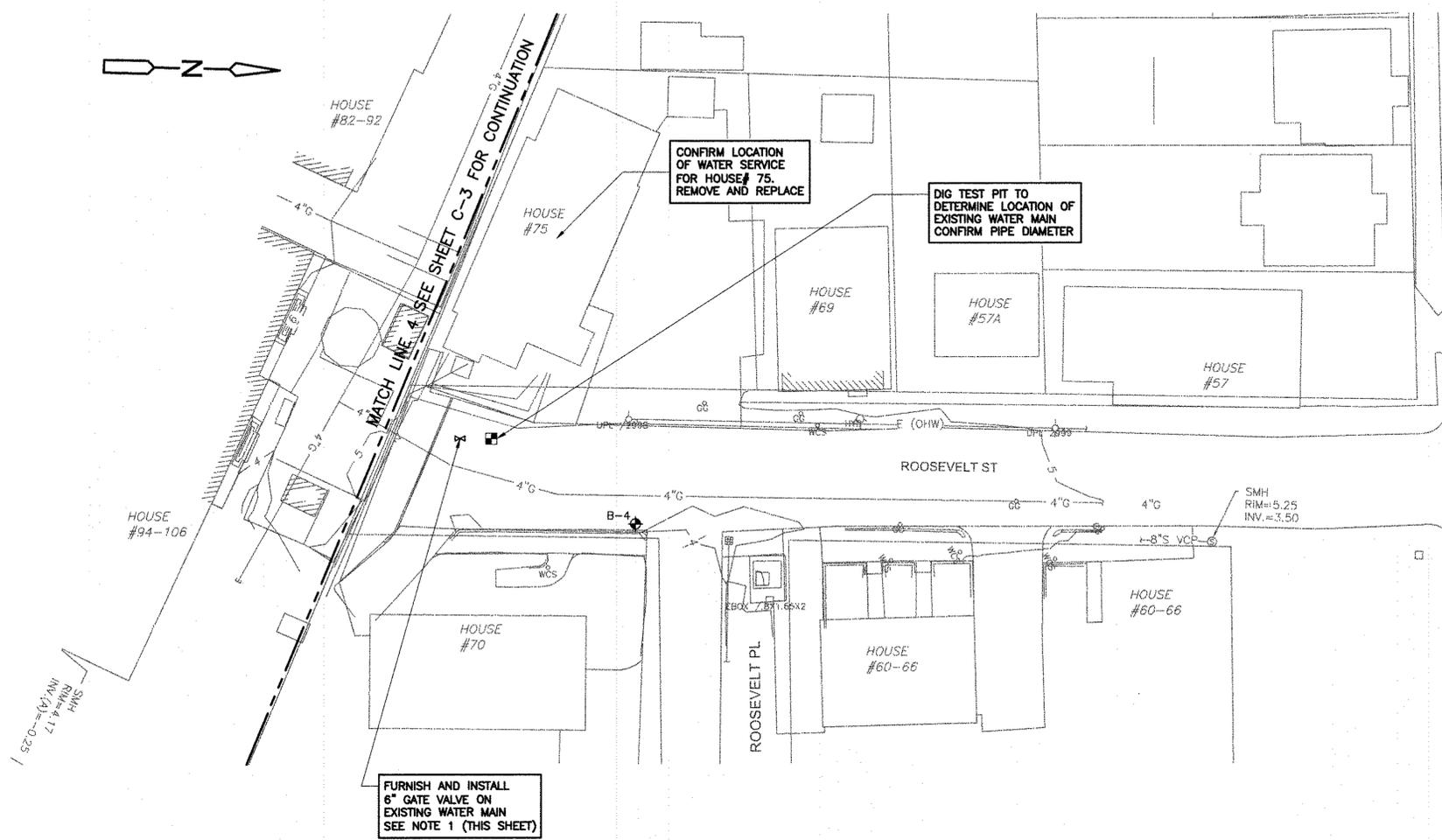
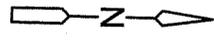
DESIGNED BY: A. O'DONNELL
DRAWN BY: F. CONTRERAS
SHEET CHK'D BY: A. O'DONNELL
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2015



CITY OF REVERE, MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
**ATWOOD STREET
DRAINAGE IMPROVEMENTS**

**ATWOOD STREET
SITE PLAN II**

PROJECT NO. 2948-11151D
FILE NAME: C003STPL.DWG
SHEET NO.
C-3



SITE PLAN
1" = 20'

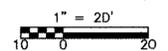
WASHINGTON ST

NOTE:
ALL PROPOSED WORK IS WITHIN BORDERING LAND SUBJECT TO FLOODING EL 12 FEET - NAVD 88.

- NOTES:**
1. CONTRACTOR SHALL COORDINATE WITH REVERE DPW AND ENGINEERING DEPARTMENT TO LOCATE WATER GATE VALVES TO FACILITATE WATER SHUT DOWN.
 2. ALL PROPOSED WORK IS WITHIN BORDERING LAND SUBJECT TO FLOODING EL 12 FEET - NAVD 88.



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 DRAWN BY: F. CONTRERAS
 SHEET CHK'D BY: A. O'DONNELL
 CROSS CHK'D BY: _____
 APPROVED BY: _____
 DATE: DECEMBER 2015



CITY OF REVERE, MASSACHUSETTS
 DEPARTMENT OF PUBLIC WORKS
ATWOOD STREET DRAINAGE IMPROVEMENTS

ATWOOD STREET CROSS COUNTRY TO ROOSEVELT STREET SITE PLAN

PROJECT NO. 2948-111510
 FILE NAME: COD4STPL.DWG
 SHEET NO. **C-4**

Pipe Size	Angle of Bend (degrees)	Minimum Bearing Area (sq. ft.)
16	90	32.0
	45	17.3
	22.5	8.8
12	11.25	4.4
	90	18.0
	45	9.7
10	22.5	5.0
	11.25	2.5
	90	12.5
8	45	6.8
	22.5	3.4
	11.25	1.7
6	90	8.0
	45	4.3
	22.5	2.2
4	11.25	1.1
	90	4.5
	45	2.4
2	22.5	1.2
	11.25	0.6
	90	2.0
1	45	1.1
	22.5	0.6
	11.25	0.3

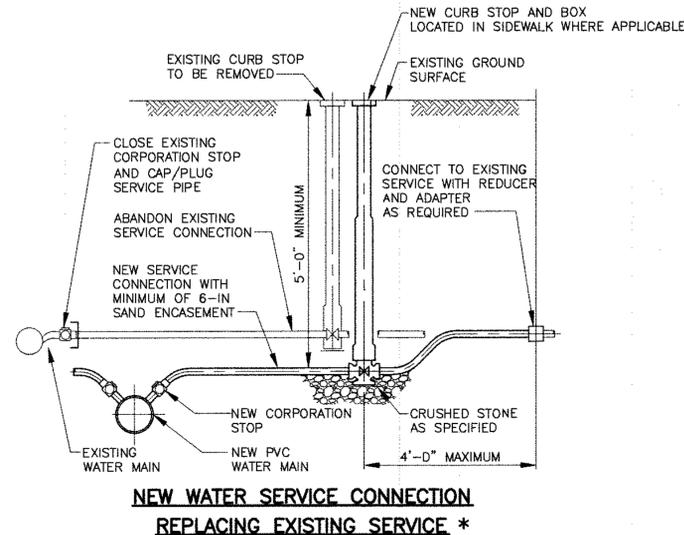
Pipe Size	Minimum Bearing Area (sq. ft.)
4	1.4
6	3.2
8	5.7
10	8.8
12	12.7
14	17.3
16	22.6

Branch	Length
4	43
6	62
8	79
10	97
12	107
14	123
16	130
18	145
20	149

Small End	Big End	Small End	Big End	Small End	Big End
4	16	14	12	10	8
4	121	111	93	79	56
6	110	98	77	59	32
8	96	81	57	34	
10	77	58	31		
12	55	32			
14	29				
16					

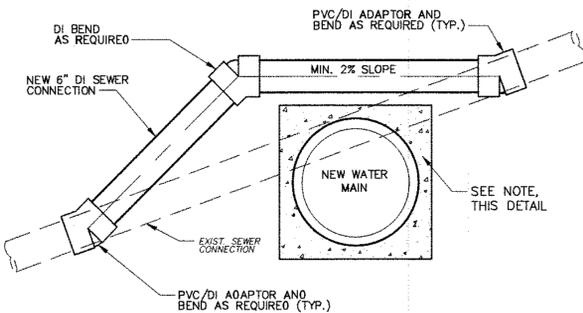
Pipe Diameter	Restrained Length Each Side of Fitting (ft)			
	90°	45°	22.5°	11.25°
4	15	6	3	2
6	22	9	4	2
8	28	12	6	3
10	34	14	7	3
12	37	16	7	4
14	43	18	9	4
16	45	19	9	4
18	50	21	10	5
20	51	21	10	5

Branch	Tee (Run) Dimension					
	16	14	12	10	8	
4	17	9	2	6	13	21
6	20	25	30	36	41	46
8	46	50	54	58	82	
10	70	73	77	80		
12	85	87	90			
14	104	106				
16	113					



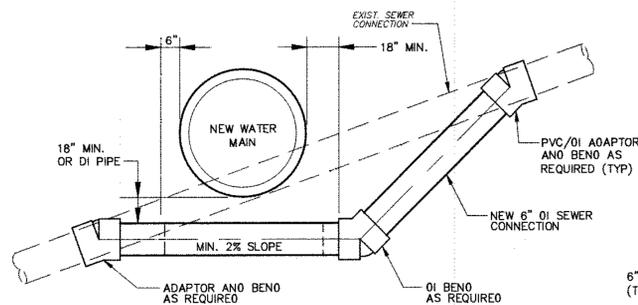
**NEW WATER SERVICE CONNECTION
REPLACING EXISTING SERVICE ***

- NTS
- * ALL SERVICES OFF OF EXISTING WATER MAINS TO BE DISCONNECTED AND REPLACED UP TO THE PROPERTY LINE OR AS SHOWN ON DRAWINGS.
 - * ALL SERVICES TO HAVE 6-INCHES OF SAND BEDDING WITH BACKFILL OF SAND TO 6-INCH ABOVE PIPE CROWN.
 - * ALL SERVICES TO BE INSTALLED WITH POLYETHYLENE ENCASUREMENT.
 - * ALL EXPOSED HARDWARE TO BE WRAPPED WITH WAX TAPE.



**RELOCATION OF EXISTING SEWER SERVICE
ABOVE NEW WATER MAIN**

NTS
NOTE: CONTRACTOR SHALL CONCRETE ENCASE WATER MAIN AND SERVICES PER NOTE ##, SHEET LGN.

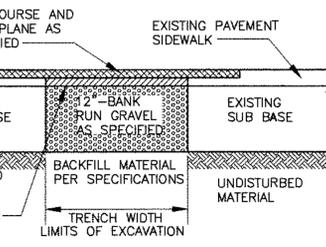


**RELOCATION OF EXISTING SEWER SERVICE
BELOW NEW WATER MAIN**

NTS

**CONCRETE PLUG
FOR ABANDONED PIPE**

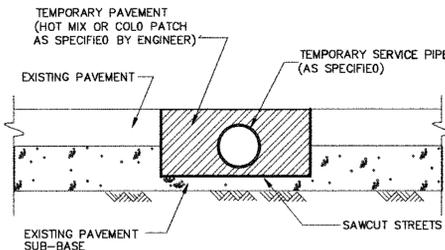
NTS



- PAVEMENT NOTES:**
1. THE CONTRACTOR SHALL MAINTAIN TEMPORARY PAVEMENT FOR 90 DAYS MINIMUM.
 2. IF INITIAL PAVEMENT IS PLACED AFTER OCTOBER 1ST, THEN IT SHALL BE MAINTAINED UNTIL PERMANENT PAVEMENT IS PLACED.
 3. PERMANENT PAVEMENT SHALL BE PLACED BETWEEN APRIL 15 AND NOVEMBER 15.
 4. CONTRACTOR SHALL MATCH EXISTING ROADWAY GRADES.
 5. IF REQUIRED BY THE ENGINEER, THE CONTRACTOR SHALL COLD PLANE AREA BETWEEN THE NEW PAVEMENT AND EXISTING PAVEMENT TO PROVIDE A SMOOTH TRANSITION FROM NEW TO EXISTING PAVEMENT.
 6. REFER TO SPECIFICATION SECTION D2576 FOR ADDITIONAL REQUIREMENTS.

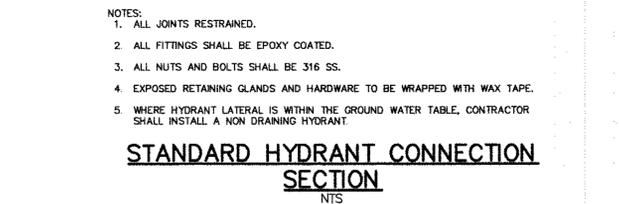
FULL WIDTH OVERLAY PAVEMENT

NTS



TYPICAL STREET CROSSING DETAIL

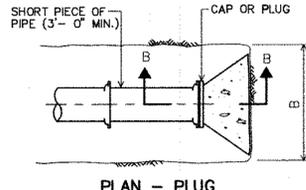
NTS



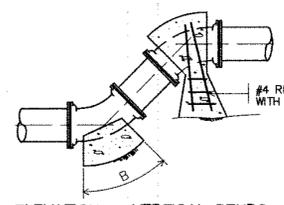
**STANDARD HYDRANT CONNECTION
SECTION**

NTS

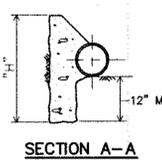
- NOTES:**
1. ALL JOINTS RESTRAINED.
 2. ALL FITTINGS SHALL BE EPOXY COATED.
 3. ALL NUTS AND BOLTS SHALL BE 316 SS.
 4. EXPOSED RETAINING GLANDS AND HARDWARE TO BE WRAPPED WITH WAX TAPE.
 5. WHERE HYDRANT LATERAL IS WITHIN THE GROUND WATER TABLE, CONTRACTOR SHALL INSTALL A NON DRAINING HYDRANT.



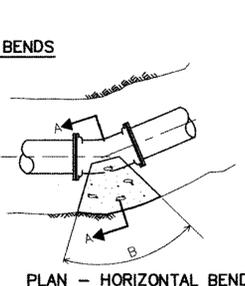
PLAN - PLUG



ELEVATION - VERTICAL BENDS



SECTION A-A



PLAN - HORIZONTAL BEND

CONCRETE ANCHORAGE DETAILS

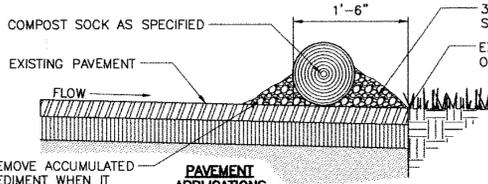
- NOTES:**
1. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH.
 2. WRAP PIPE TO PROTECT AGAINST CONCRETE.
 3. EPOXY COAT ALL FITTINGS.

TEMPORARY WATER SERVICE

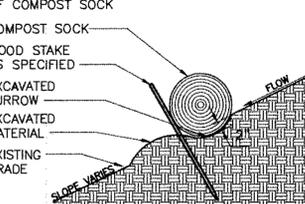
- NOTES:**
1. CONTRACTOR TO PROVIDE TEMPORARY WATER SERVICE TO ALL BUILDINGS WHICH ARE TO BE SERVED BY THE WATER MAINS TO BE TAKEN OUT OF SERVICE DURING CONSTRUCTION.
 2. ALL SERVICE CONNECTIONS REQUIRING TEMPORARY SERVICE SHALL BE CONNECTED TO A SILL COCK OUTSIDE THE BUILDING.
 3. ALL FIRE HYDRANTS TAKEN OUT OF SERVICE SHALL HAVE A TEMPORARY HYDRANT INSTALLED IN ITS PLACE, CONNECTED TO A 4" TEMPORARY WATER SERVICE.
 4. TEMPORARY WATER SERVICE PIPE TO BE CONNECTED AT 2 EXISTING WATER MAINS.



FOR PERMITTING PURPOSES ONLY

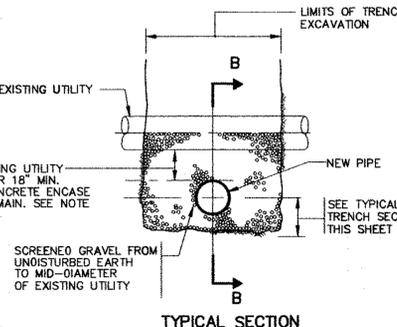


PAVEMENT APPLICATIONS

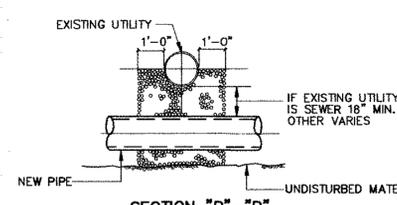


TYPICAL COMPOST SOCK DETAIL

NTS



TYPICAL SECTION



SECTION B-B

UTILITIES CROSSING DETAIL

NTS

- NOTE:** WHERE NEW WATER MAINS CROSS WITHIN 18 INCHES BELOW EXISTING SEWERS, THE NEW WATER MAIN SHALL HAVE MECHANICAL JOINTS (M.J) UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

XREFS: CDMs_2436_ATWOOD_ST_REFERENCE_Altosod_PlanReferences; Location: CONTRERASE; Title: 1/13/2016 11:02:24 AM; PWA: C:\C:\PWA\PP2\PL\12948\11510_ATWOOD ST\04 design Services_NL_Bu\02 Civil\10 CADD\CDD5STPL.dwg; REVISIONS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. O'DONNELL
 DRAWN BY: F. CONTRERAS
 SHEET CHK'D BY: A. O'DONNELL
 CROSS CHK'D BY:
 APPROVED BY:
 DATE: DECEMBER 2015

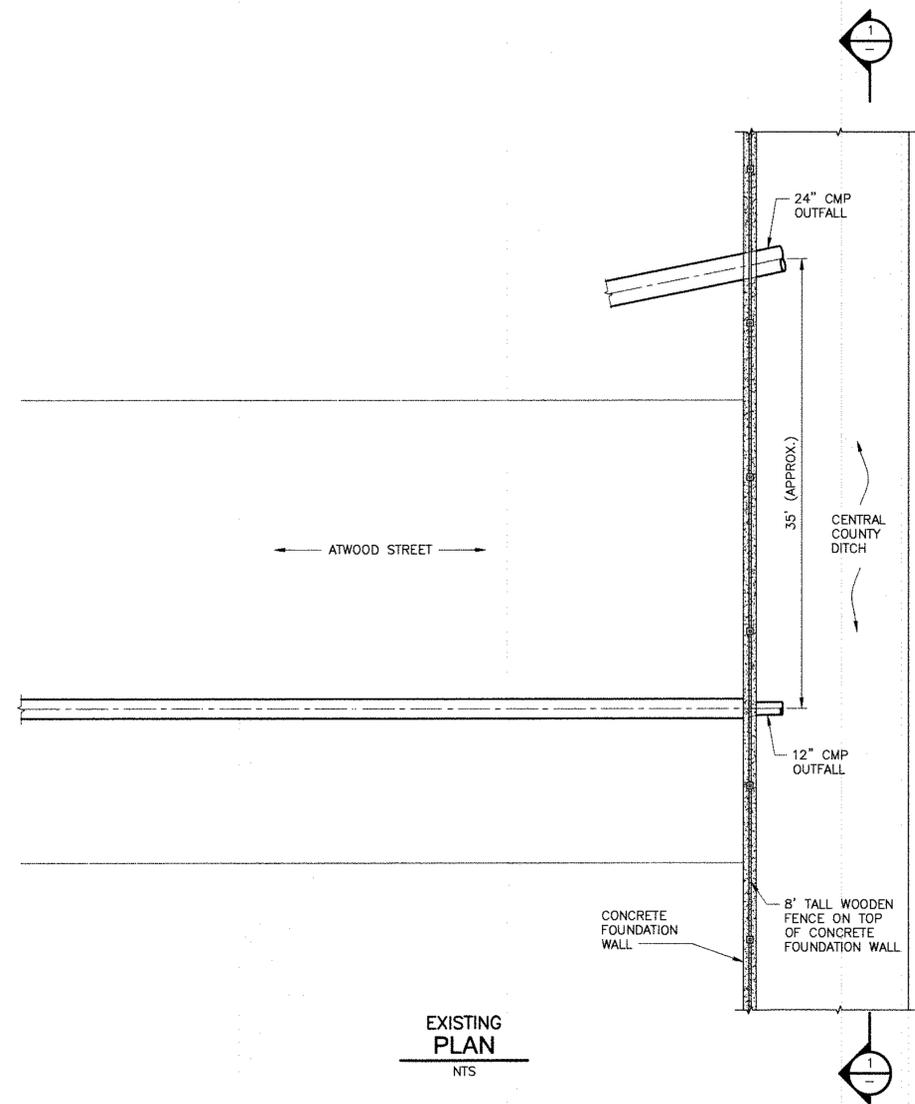


CITY OF REVERE, MASSACHUSETTS
 DEPARTMENT OF PUBLIC WORKS
**ATWOOD STREET
 DRAINAGE IMPROVEMENTS**

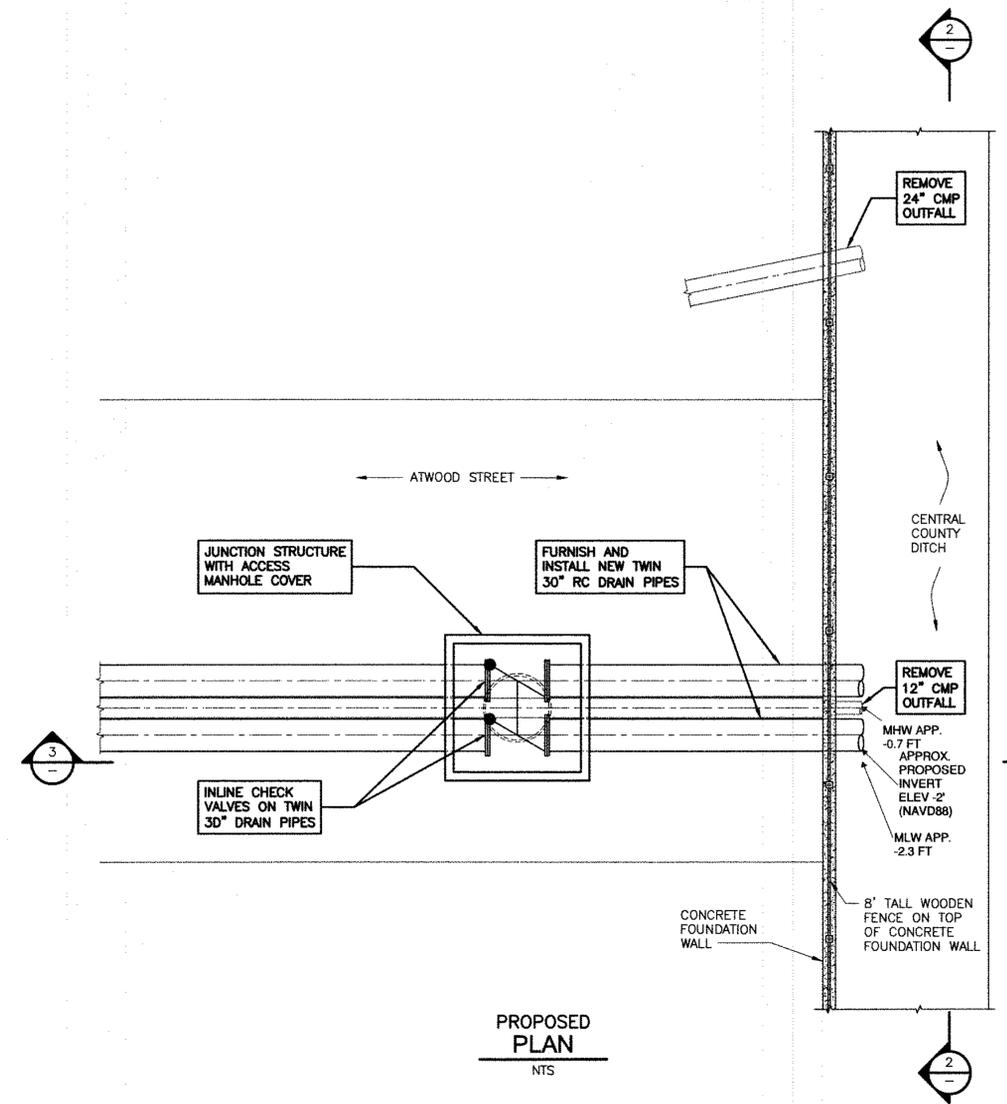
**ATWOOD STREET
 MISCELLANEOUS DETAILS**

PROJECT NO. 2948-111510
 FILE NAME: CDD5STPL.DWG
 SHEET NO. **C-5**

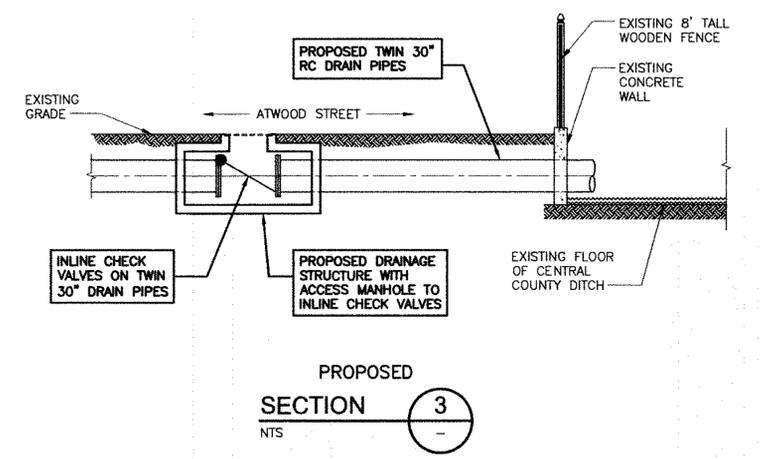
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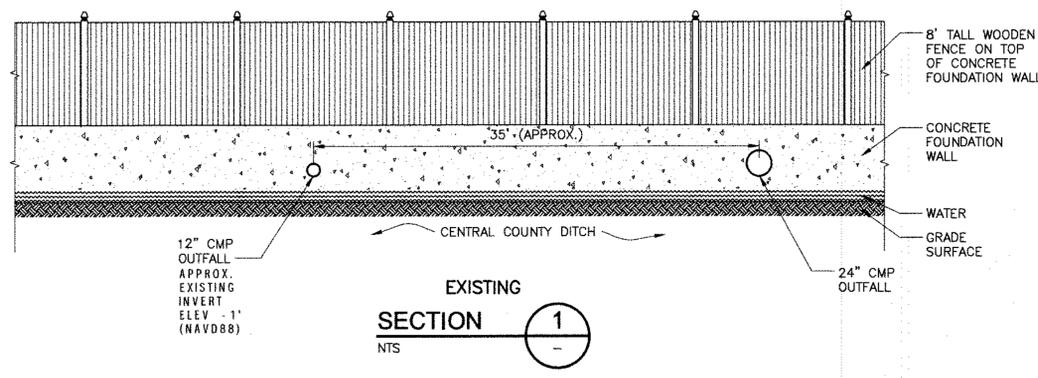
EXISTING PLAN
NTS



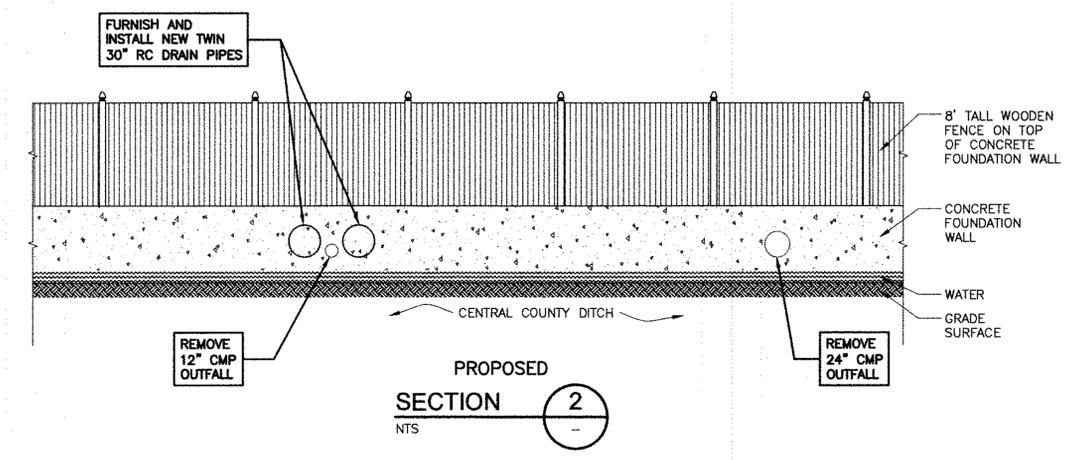
PROPOSED PLAN
NTS



PROPOSED SECTION 3
NTS



EXISTING SECTION 1
NTS



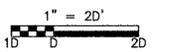
PROPOSED SECTION 2
NTS

ATWOOD ST - EXISTING OUTFALL

ATWOOD ST - PROPOSED OUTFALL



FOR PERMITTING PURPOSES ONLY



REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. O'DONNELL
 DRAWN BY: F. CONTRERAS
 SHEET CHK'D BY: A. O'DONNELL
 CROSS CHK'D BY:
 APPROVED BY:
 DATE: NOVEMBER 2015



CITY OF REVERE, MASSACHUSETTS
 DEPARTMENT OF PUBLIC WORKS
ATWOOD STREET
DRAINAGE IMPROVEMENTS

ATWOOD STREET
DETAIL PLANS AND SECTIONS
C-6

PROJECT NO. 2948-111510
 FILE NAME: CDD6STPL.DWG
 SHEET NO. C-6

