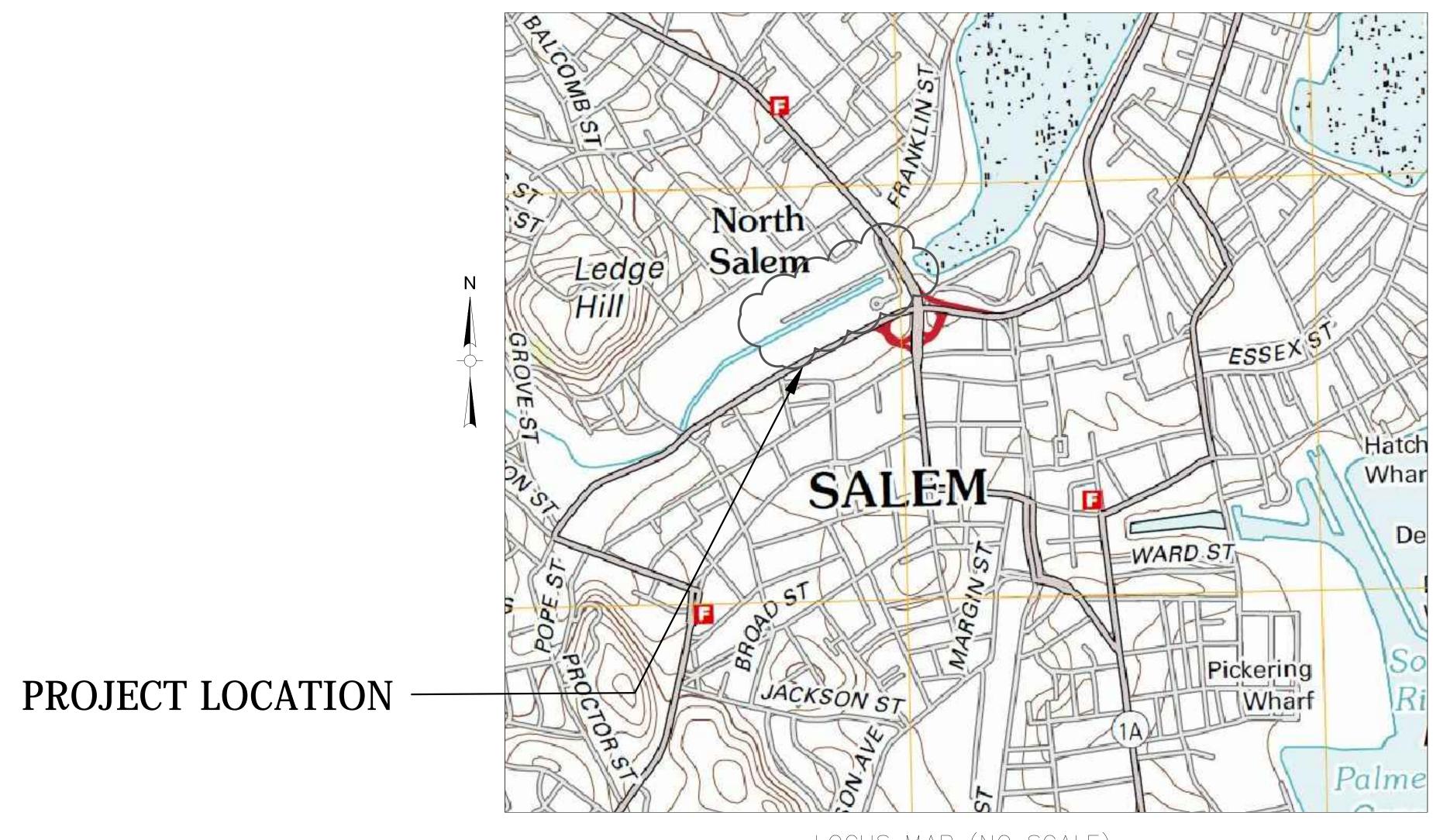
CITY OF SALEM, MASSACHUSETTS

COMMERCIAL STREET RETROFIT PROJECT MARCH 2016



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LOCUS MAP (NO SCALE)

NEW ENGLAND CIVIL ENGINEERING CORP.



120 Washington Street Suite #202E Salem, MA 01970

(978) 741-7401 (978) 741-7402 (fax)

GENERAL NOTES

- 1. THE EXISTENCE, SIZE, LOCATION, ORIENTATION AND DESCRIPTION OF UTILITIES ARE FROM THE EXISTING INFORMATION PROVIDED, BUT ARE APPROXIMATE ONLY AND THE ENGINEER DOES NOT GUARANTEE THEIR NUMBER OR LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UNDERGROUND UTILITIES BEFORE EXCAVATING.
- 2. ALL INVERT DEPTHS ARE APPROXIMATE AND RELATIVE TO RIM ELEVATION. BENCHMARKS ARE NOT PROVIDED, CONTRACTOR RESPONSIBLE TO COMPLETE LEVEL SURVEY TO SET GRATES AND CURBING.
- 3. PROPOSED INVERT ELEVATIONS AND SLOPES OF NEW OR REPLACEMENT SEWER/DRAIN PIPES AND SERVICES TO BE DETERMINED IN THE FIELD BY THE ENGINEER BASED ON CONTRACTOR'S SURVEY OF EXISTING INVERT ELEVATIONS OF CONNECTING DRAIN STRUCTURES AND EXPLORATORY EXCAVATIONS (TEST PITS).
- 4. ALL SERVICES NOT SHOWN ON PLANS. CONTRACTOR TO ASSUME ALL HOMES SERVED BY WATER, SEWER, GAS, ELECTRIC, AND TELECOMMUNICATION AND PROTECT, RELOCATE, AND REPLACE SERVICES AS REQUIRED.
- 5. LINES FOR POLICE AND FIRE ALARM BOXES, STREET LIGHTS, TRAFFIC SIGNALS AND OVERHEAD POWER, TELEPHONE AND CABLE TELEVISION LINES ARE NOT SHOWN ON THE PLANS. THE APPROPRIATE UTILITY COMPANIES OR AUTHORITIES SHALL BE CONSULTED FOR LOCATIONS OF THE ABOVE.
- 6. ALL BURIED UTILITIES (WATER, GAS, SEWER, DRAIN, ELECTRIC, TELECOM) ARE SHOWN SCHEMATICALLY AND NOT TO SCALE AND CANNOT BE USED TO SCALE OFF OUTSIDE PIPE DIAMETERS, CONTRACTOR TO ASSUME ALL BURIED ELECTRIC AND TELECOM CONDUITS ARE INSTALLED IN MULTIPLE CONDUIT DUCT BANKS AND MAY BE CONCRETE ENCASED WHICH INCREASES THE DIMENSIONS OF THE DUCT BANKS, IN ADDITION, FLOWABLE FILL MAY ALSO EXIST ABOVE AND AROUND DUCT BANKS. CONTRACTOR TO COMPLETE TEST PITS AND ADJUST LAYOUT AND MEANS AND METHODS TO AVOID CONFLICTS BETWEEN NEW AND EXISTING UTILITIES.
- 7. THE CONTRACTOR SHALL BE AWARE THAT BORINGS HAVE NOT BEEN PROVIDED AND THE EXISTING SOIL CONDITIONS AND GROUNDWATER LEVEL ARE NOT KNOWN. CONTRACTOR SHALL ASSUME THAT CONSTRUCTION DEWATERING DUE TO GROUNDWATER AND REMOVAL AND DISPOSAL OF UNSUITABLE SOILS WILL BE REQUIRED DURING CONSTRUCTION THROUGHOUT THE PROJECT AREA.
- 8. THE CONTRACTOR SHALL BE AWARE THAT GROUNDWATER LEVELS ARE KNOWN TO BE HIGH AND HIGHLY VARIABLE DUE TO THE CLOSE PROXIMITY OF THE PROJECT TO THE OCEAN AND TIDAL IMPACTS. CONTRACTOR SHALL SCHEDULE CONSTRUCTION ACTIVITIES TO ACCOUNT FOR TIDAL IMPACTS ON GROUNDWATER LEVELS. CONTRACTOR SHALL ANTICIPATE GROUNDWATER DEWATERING WILL BE REQUIRED DURING CONSTRUCTION, WITH INCREASED DEWATERING REQUIRED DURING RAINFALL AND HIGH TIDE CONDITIONS.
- 9. THE CONTRACTOR'S ATTENTION IS DIRECTED TO EXISTING LABELED SEWER MANHOLE OR DRAINAGE MANHOLE COVERS SHOWN ON THE PLANS AS THEY MAY NOT ACCURATELY REPRESENT THE UNDERGROUND SERVICE. PRIOR TO ANY WORK THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR AN EXISTING COVER NOT ACCURATELY REPRESENTING THE SERVICE BELOW.
- 10. CONTRACTOR SHALL BE AWARE THAT DRAIN PIPES ARE CONNECTION TO THE RIVER, WITHOUT TIDE GATES AND ARE TIDALLY INFLUENCED. CONTRACTOR TO SCHEDULE WORK TO AVOID HIGH TIDE / WET WEATHER CONDITIONS AS REQUIRED.
- 11. EXISTING PAVEMENT THICKNESS, SIDEWALK MATERIALS, AND SUBBASE MATERIALS VARY AND MAY INCLUDE MULTIPLE, VARIED PAVEMENT MATERIALS.
- 12. BEFORE EXCAVATING, BLASTING, BACKFILLING, GRADING, PAVEMENT RESTORATION, OR REPAIRING, ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE CONTACTED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THESE PLANS. SEE CHAPTER 370, ACT OF 1963, MASSACHUSETTS GENERAL LAWS. THE OWNER AND ENGINEER ASSUME NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.
- 13. THE CONTRACTOR SHALL PREMARK THE EXCAVATION AREA IN WHITE PAINT PRIOR TO CALLING THE DIG SAFE CENTER (TEL. NO. 1-888-DIG-SAFE). THE CONTRACTOR SHALL CONTACT THE DIG SAFE CENTER AT LEAST THREE BUSINESS DAYS PRIOR TO ANY EXCAVATION. IN ADDITION, NOTIFICATION SHALL ALSO BE GIVEN TO ALL AFFECTED PRIVATE AND/OR PUBLIC UTILITIES TO PERMIT STREET MARKING OF THEIR LINES.
- 14. IF THE CONTRACTOR DAMAGES UTILITY SERVICES, HE SHALL IMMEDIATELY NOTIFY THE RESPECTIVE UTILITY COMPANY AND SHALL IMMEDIATELY REPLACE OR REPAIR.
- 15. WHERE UTILITY RELOCATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANY AT LEAST 30 DAYS IN ADVANCE OF CONSTRUCTION AND SHALL COORDINATE THE PROPOSED WORK WITH THE UTILITY RELOCATION.
- 16. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS INFORMATION AND REPORT ANY DISCREPANCIES BETWEEN THE PLANS AND THE ACTUAL CONDITIONS TO THE ENGINEER PRIOR TO BEGINNING WORK.
- 17. EXPLORATORY EXCAVATIONS (TEST PITS) SHALL BE EXCAVATED AT THOSE LOCATIONS INDICATED ON THE PLANS AND WHERE ORDERED AND APPROVED BY THE OWNER. TEST PIT EXCAVATIONS SHALL BE MADE TO DETERMINE THE LOCATIONS OF ALL EXISTING UTILITIES OR STRUCTURES IN ADVANCE OF CONSTRUCTION OPERATIONS SO THAT ANY REQUIRED CHANGES IN ALIGNMENT AND/OR GRADE OF THE PROPOSED WORK OR UTILITY LOCATIONS MAY BE DETERMINED. ALL DECISIONS RELATIVE TO UTILITY CONFLICTS AND RELOCATION REQUIREMENTS WILL BE MADE BY THE RESIDENT ENGINEER.
- 18. DAMAGE OF PROPERTY BEYOND THE WORK LIMITS CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE, SUBJECT TO THE APPROVAL OF THE ENGINEER.
- 19. WHERE WATER LINES, DRAINAGE PIPES OR STRUCTURES ARE ABANDONED IN PLACE, CONTRACTOR SHALL MAKE SURE THAT ALL CONNECTING PIPES, INLETS AND OUTLETS ARE PLUGGED.
- 20. CONTRACTOR TO PROTECT AND SUPPORT OR REMOVE AND REPLACE SIGNS, POSTS, HYDRANTS, FENCES, GATES, OR OTHER SURFACE FEATURES THAT OBSTRUCT CONSTRUCTION OPERATIONS OR ARE DAMAGED BY CONSTRUCTION.
- 21. AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- 22. ALL EXISTING MANHOLE FRAMES AND COVERS AND CATCH BASIN FRAMES AND GRATES REMOVED BUT NOT REUSED, AND SELECTED FOR SALVAGE BY THE OWNER, SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE DELIVERED BY THE CONTRACTOR TO A LOCATION DESIGNATED BY THE OWNER. CASTINGS NOT SELECTED BY THE OWNER FOR SALVAGE SHALL BE DISPOSED OF BY THE CONTRACTOR.
- 23. CONTRACTOR SHALL BACKFILL, COMPACT, AND PAVE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MASSACHUSETTS HIGHWAY DEPARTMENT (MHD) AND THE CITY OF SALEM AS DIRECTED BY ENGINEER, INCLUDING AT A MINIMUM THE REQUIREMENTS SHOWN ON DETAILS.
- 24. PERMANENT PAVEMENT SHALL BE PLACED BETWEEN APRIL 15TH AND OCTOBER 15TH OF EACH CALENDAR YEAR.
- 25. THE CONTRACTOR SHALL PROTECT TRAVELED WAYS AND PEDESTRIAN WAYS FROM CONSTRUCTION DEBRIS AT ALL TIMES.
- 26. CONTRACTOR SHALL MAINTAIN A SINGLE LANE (TWO-WAY) OF TRAFFIC AT ALL TIMES AND ACCESS FOR EMERGENCY VEHICLES AND PEDESTRIANS. CONTRACTOR SHALL COORDINATE TRAFFIC MANAGEMENT PLAN WITH LOCAL POLICE DEPARTMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR MANAGEMENT OF TRAFFIC AND PUBLIC SAFETY, INCLUDING SIGNAGE AND DETOURS. TRENCHES MUST BE MAINTAINED. CONTRACTOR SHALL PREPARE A TRAFFIC MANAGEMENT PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL POLICE DEPARTMENT IF REQUIRED. CONTRACTOR SHALL REVIEW TRAFFIC MANAGEMENT PLAN WITH THE POLICE DEPARTMENT PRIOR TO BEGINNING CONSTRUCTION LAYOUT.
- 27. CONTRACTOR SHALL NOT BE PROVIDED A STAGING AREA BY THE OWNER.
- 28. ALL EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED AND APPROVED BY THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. DEVICES SHALL INCLUDE AT A MINIMUM GEOTEXTILE (SILT SACK) IN ALL CATCH BASINS AND A BARRIER CONSISTING OF A SILT FENCE OR MULCH SOCK AROUND SOIL STOCKPILES AND ALONG PROJECT BOUNDARY AS DIRECTED.
- 29. CONTRACTOR SHALL MAINTAIN EDGE OF ROADWAY DRAINAGE PATTERNS INCLUDING REPLACEMENT OF PAVED AND UNPAVED SWALES, BERMS, AND CURBS.
- 30. THE CONTRACTOR SHALL PROVIDE METHODS DURING DEWATERING OPERATIONS AND TO CONTROL STORM WATER RUNOFF THAT WILL NOT ALLOW SILT OR DEBRIS TO ENTER EXISTING DRAINAGE FACILITIES OR CREATE NUISANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING EXISTING OR NEW FACILITIES IF SILTATION OCCURS DUE TO THE CONTRACTOR'S OPERATIONS.
- 31. THE CONTRACTOR SHALL DISPOSE OF ALL DEMOLISHED MATERIALS, RUBBISH, EXCAVATED MATERIAL AND DEBRIS, UNLESS OTHERWISE NOTED. IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL REQUIRED DISPOSAL PERMITS AND FEES.
- 32. NO TRASH, GREASE TUBES, OR DEBRIS SHALL BE THROWN INTO CONSTRUCTION TRENCHES PRIOR TO BACKFILL.
- 33. CONTRACTOR TO MAINTAIN HAZMAT SPILL KITS ON SITE AT ALL TIMES.
- 34. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING DUST DURING CONSTRUCTION OPERATIONS INCLUDING BUT NOT LIMITED TO REGULAR STREET SWEEPING AND APPLICATIONS OF CALCIUM CHLORIDE OR OTHER APPROVED DUST INHIBITOR.
- 35. CONTRACTOR IS RESPONSIBLE TO PROTECT ALL TREES TO REMAIN WITHIN PROJECT AREA FROM DAMAGE.
- 36. SIDEWALK, CURB, DRIVEWAY APRONS, AND ADA RAMP REPAIRS AND REPLACEMENTS ARE NOT SHOWN ON DRAWINGS AND SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER IN AREAS WHERE PROPOSED WORK IMPACTS EXISTING SIDEWALKS.

Client	CITY OF CALEM MACCACHLICETTEC	Scale	1" = 20'		
	CITY OF SALEM, MASSACHUSETTS	Date	3/3/2016		
Project	COMMERCIAL STREET RETROFIT PROJECT GENERAL NOTES AND LEGEND	Job	Commercial Street		
		Designed by	WMR		
		Drawn by	DJW		
		Checked by	WMR	No. Description	Date
		Approved by	WMR	File: H:\Clients\Salem\CommercialSt_Grant\CAD\Commercial St Details(overNotes.dwg





120 Washington Street SALEM, MASSACHUSETTS

LEGEND

SEWER MANHOLE

DRAIN MANHOLE

UTILITY POLE

LIGHT POST

OUTFALL

TREE

GAS VALVE

SEWER LINE

DRAIN LINE

GAS LINE

HYDRANT

CURB INLET

TIMBER PILE

TIE BACK

WATER LINE

ELECTRIC LINE

TELEPHONE LINE

CATCH BASINS

WATER GATE VALVE

ELECTRIC MANHOLE

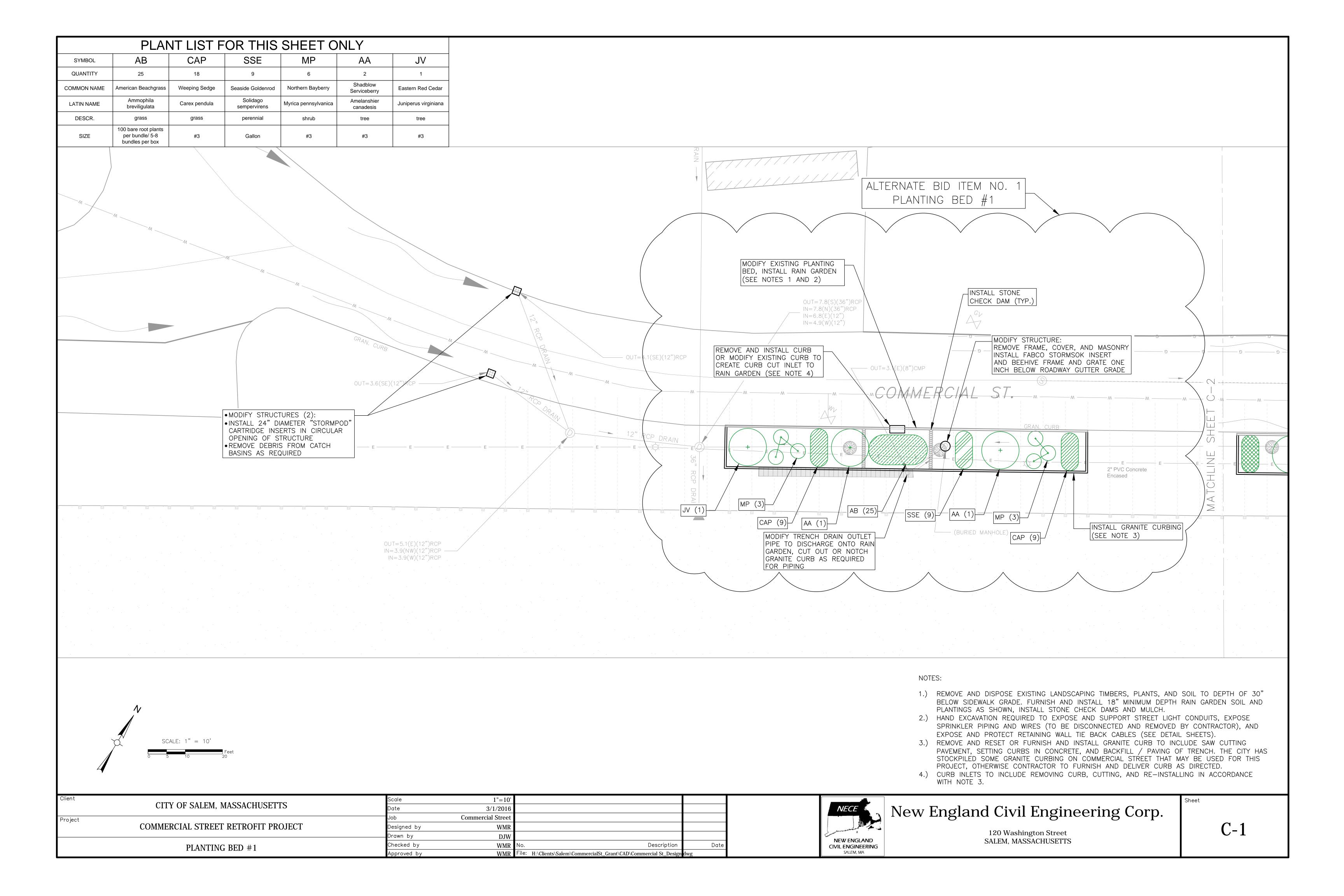
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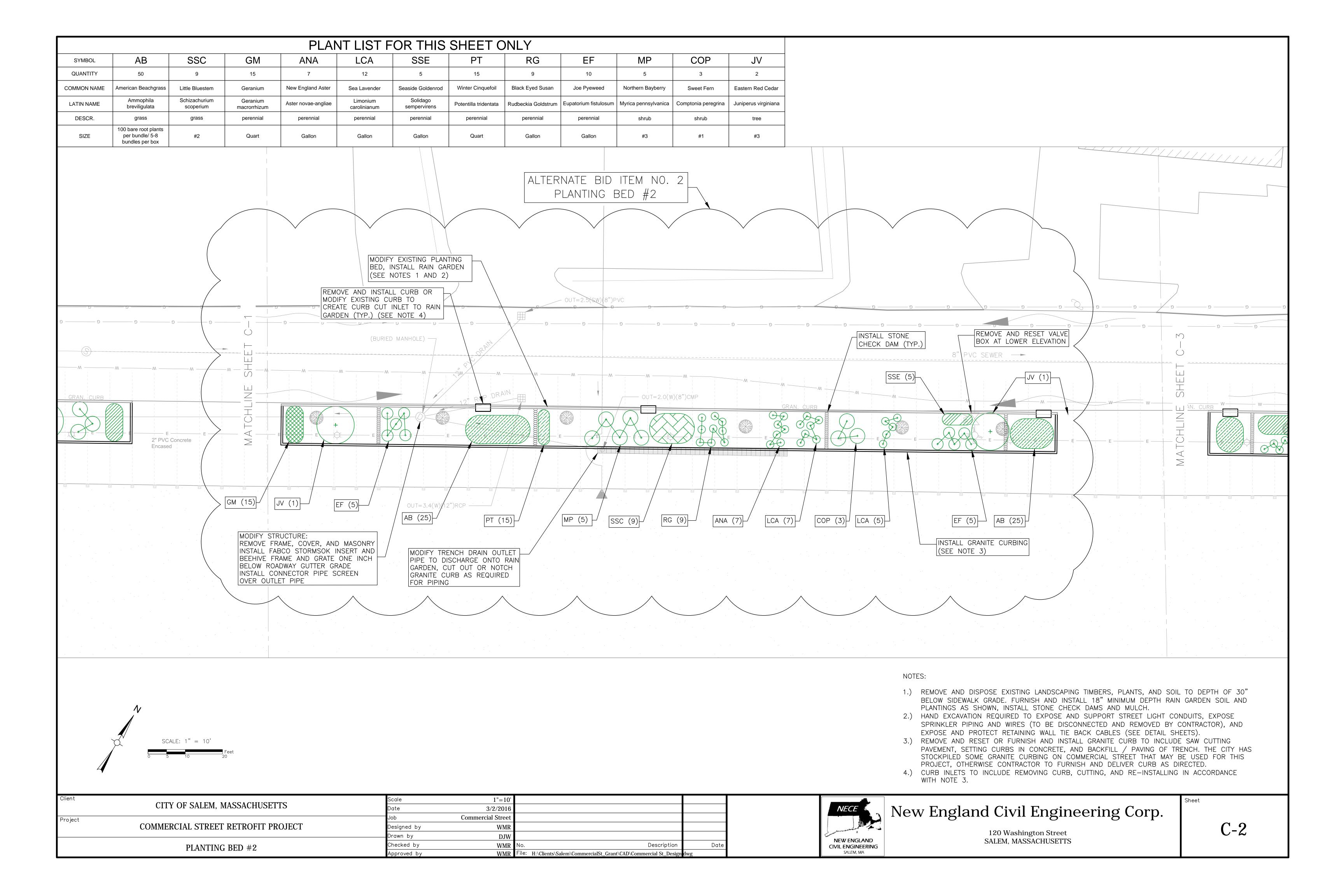
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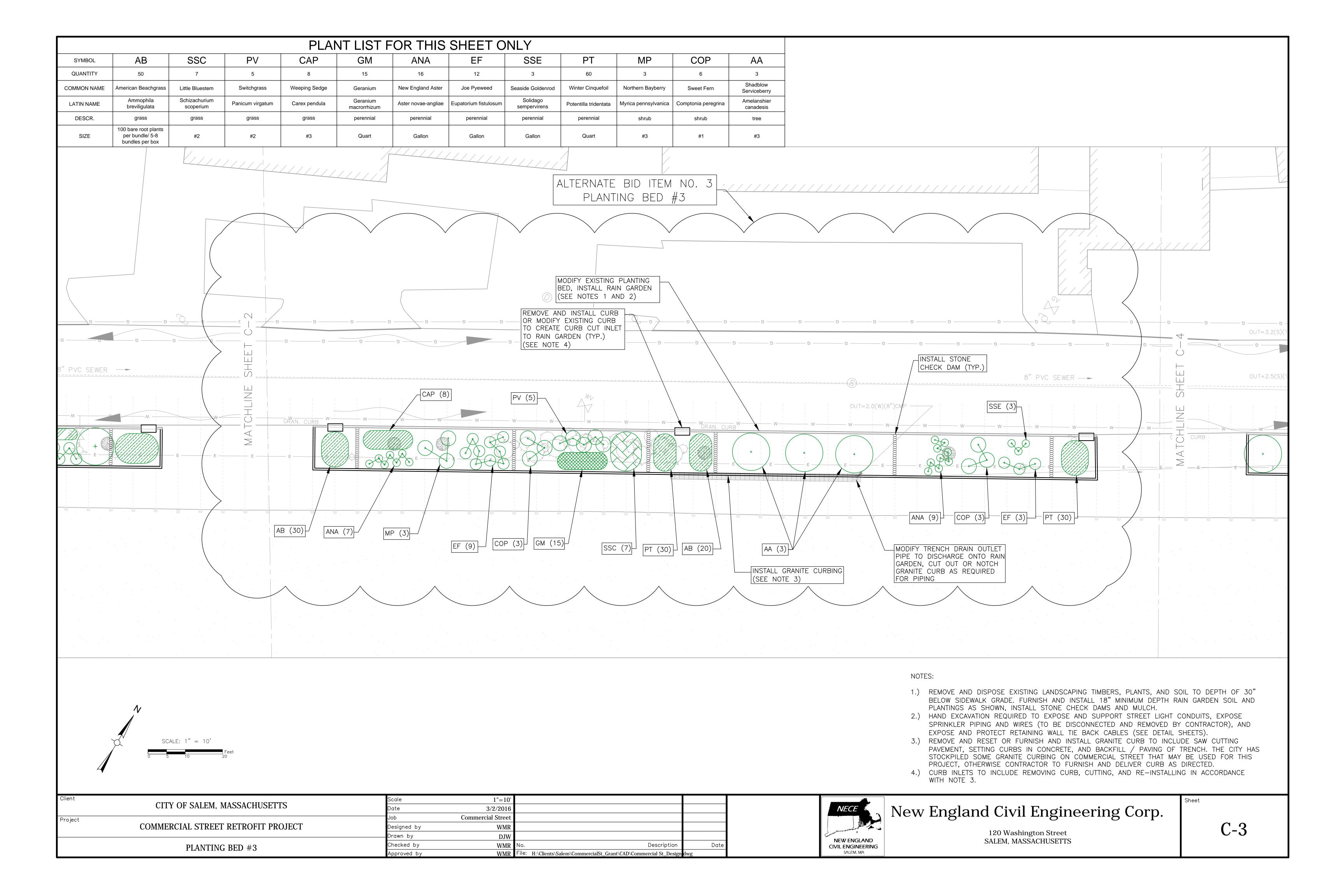
EXISTING

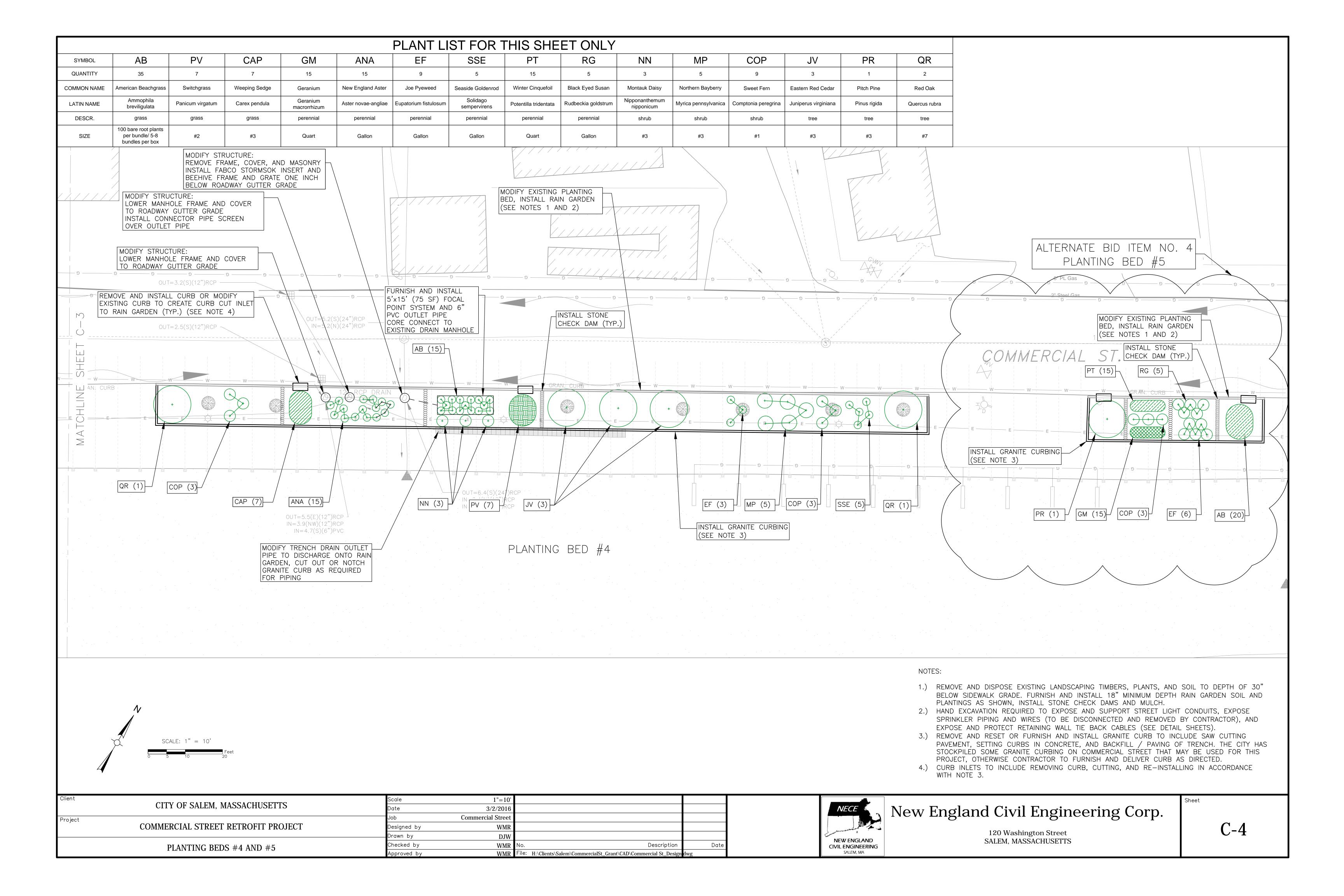
8" PVC SEWER ─►

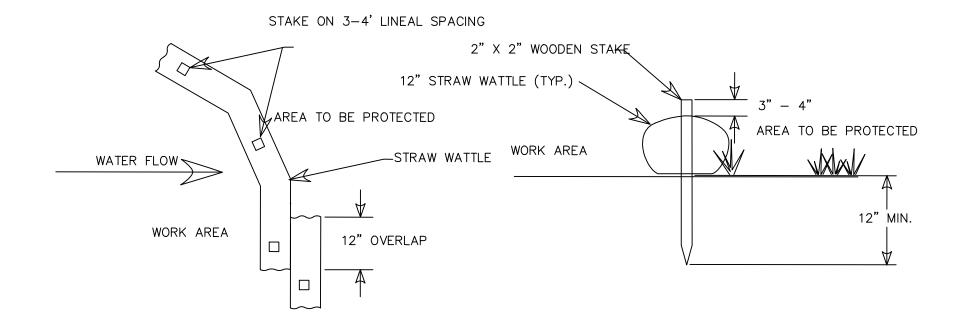
8" PVC DRAIN —►

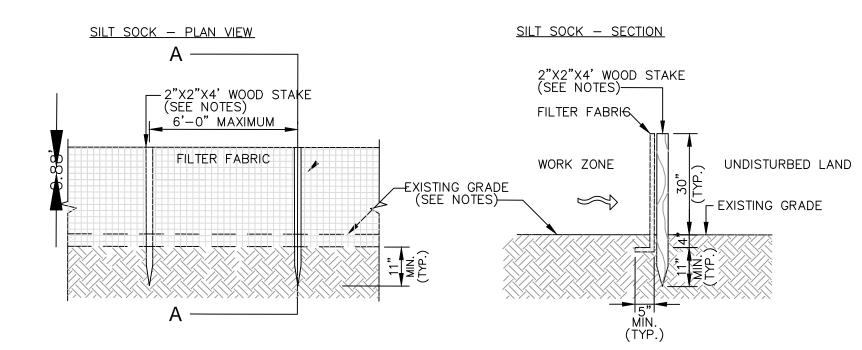












NOTES:

1. CONTRACTOR TO INSTALL 12-INCH STRAW WATTLES OR SILT FENCE AS DIRECTED AND APPROVED BY LOCAL CONSERVATION COMMISSION

2. FABRIC FOR FENCES TO BE UV RESISTANT POLYPROPYLENE WITH A MINIMUM WEIGHT OF 2.5 OZ/S.Y. TUBULAR BLACK POLYPROPYLENE FOR STRAW WATTLES SHALL BE PHOTO DEGRADABLE.

3. FABRIC TO BE ATTACHED TO STAKES WITH STAPLES.

4. HAY BALES, WHERE USED, SHALL BE SALT MARCH HAY AS APPROVED BY LOCAL CONSERVATION COMMISSION.

5. WHERE HAY BALES ARE USED, TRENCH A MINIMUM OF 4" INTO EXISTING GRADE.

6. A MINIMUM OF (2) WOODEN OR METAL STAKES PER HAY BALE. DRIVE STAKES A MINIMUM OF 12" INTO

7. STRAW MATERIAL TO BE DISPERSED ON SITE OR HAULED OFFSITE AND DISPOSED AS DETERMINED BY THE ENGINEER.

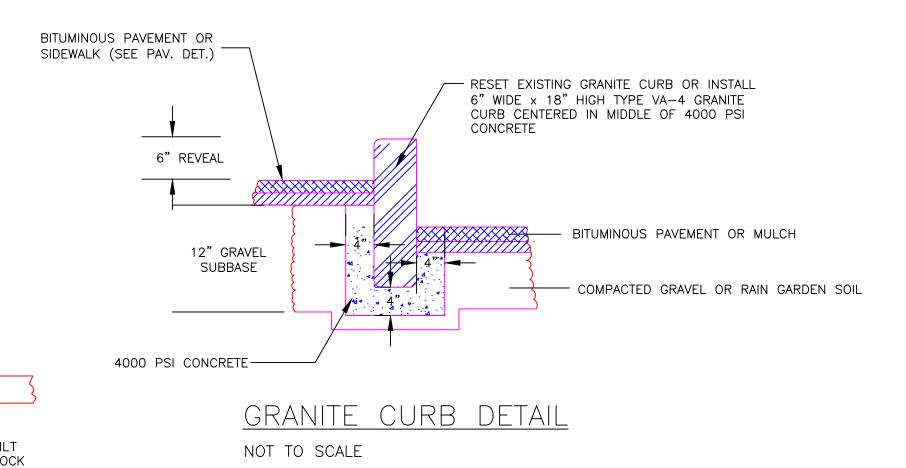
8. CONTRACTOR TO INSTALL GEOTEXTILE (SILT SACK) IN ALL CATCH BASINS PRIOR TO EXCAVATION.

9. ALL CONSTRUCTION DEWATERING MUST BE TREATED WITH A FILTRATION DEVICE (DIRTBAG) AND/OR SEDIMENTATION TANK OR APPROVED TREATMENT DEVICE PRIOR TO DISCHARGE UPGRADIENT OF OTHER EROSION AND SEDIMENTATION DEVICES AND CONTROLS.

10. SEDIMENTATION AND FLOATABLE DEBRIS BARRIER TO BE SIZED AND MAINTAINED TO ACCOMMODATE VARIED WATER LEVELS IN ADJACENT WATER BODIES.

EROSION & SEDIMENTATION BARRIER

NOT TO SCALE



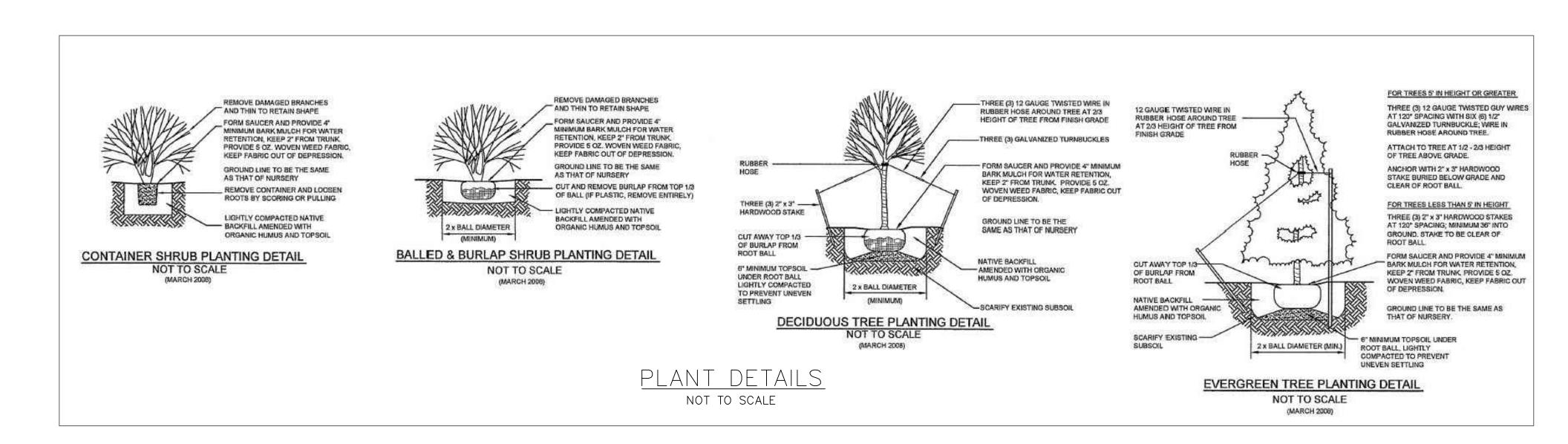
CATCH BASIN SEDIMENTATION BARRIER

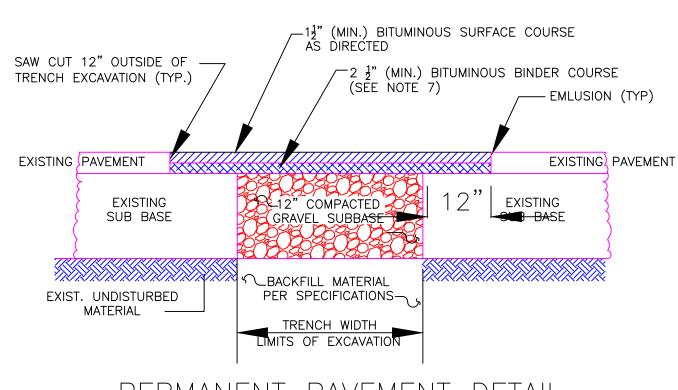
INSTALL SEDIMENTATION BARRIER IN EACH CATCH BASIN ALONG THE WATERMAIN ROUTE. UPON PAVING OF TRENCH, REMOVE SILT AND DEBRIS

THEN REMOVE FILTER FABRIC.

NOT TO SCALE

CATCH BASIN COVER-





PERMANENT PAVEMENT DETAIL

NOT TO SCALE

GENERAL PAVING NOTES:

1. THE CONTRACTOR SHALL MAINTAIN TEMPORARY PAVEMENT FOR A MINIMUM OF 90 DAYS EXCEPT IF TEMPORARY PAVEMENT IS PLACED AFTER OCTOBER 15, THEN IT SHALL BE MAINTAINED UNTIL APRIL 15 OF THE FOLLOWING YEAR.

2. PERMANENT PAVEMENT SHALL BE PLACED BETWEEN APRIL 15 AND OCTOBER 15 OF EACH CALENDAR YEAR.

3. THE CONTRACTOR SHALL SAW CUT 12" OUTSIDE OF TRENCH EXCAVATION. TEMPORARY PAVEMENT SHALL BE REMOVED AND DISPOSED OF. THE GRAVEL SHALL BE FINE GRADED, EMULSION PLACED ON ALL JOINTS, AND PERMANENT PAVEMENT PLACED IN TWO COURSES.

4. CONTRACTOR SHALL MATCH EXISTING ROADWAY GRADES AND EXISTING THICKNESS UNLESS OTHERWISE DIRECTED.

5. REFER TO SPECIFICATION SECTION 02500 PAVING AND SURFACING FOR ADDITIONAL REQUIREMENTS.

6. PERMANENT PAVEMENT DETAIL TO APPLY TO TRENCH PAVEMENT AND FULL WIDTH ROADWAY RECONSTRUCTION AND/OR PAVEMENT.

7. BITUMINOUS BINDER COURSE FOR ROADWAY RECONSTRUCTION (CURB TO CURB) TO BE 2-INCH MIN. THICKNESS.

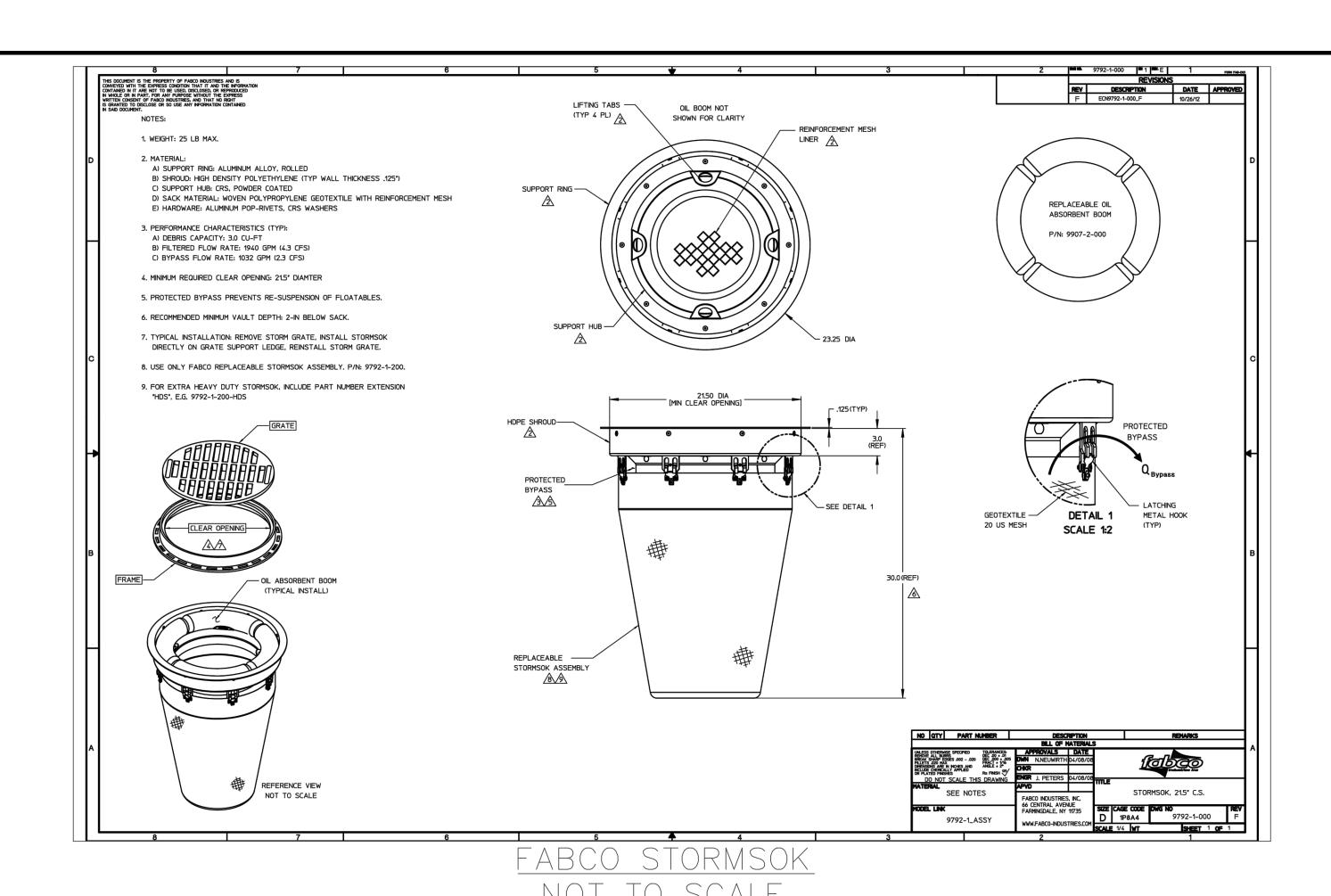
Client	CITY OF SALEM, MASSACHUSETTS	Scale	N.T.S.		
		Date	3/3/2016		
Project COMMERCIAL STREET RETROFIT PROJECT		Job	Commercial Street		
	Designed by	WMR			
		Drawn by	DJW		
	DETAILS	Checked by	WMR	No. Description	Date
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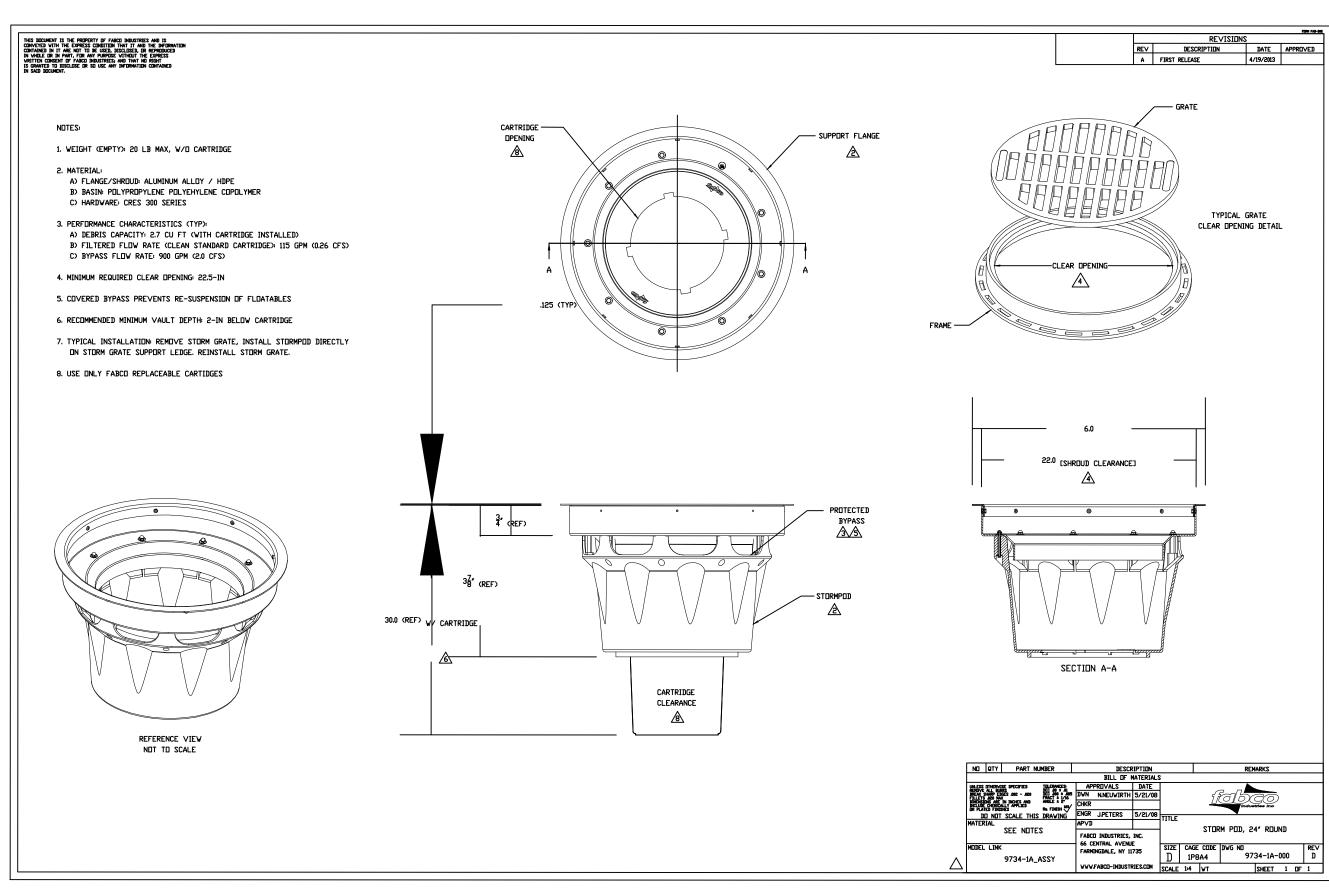


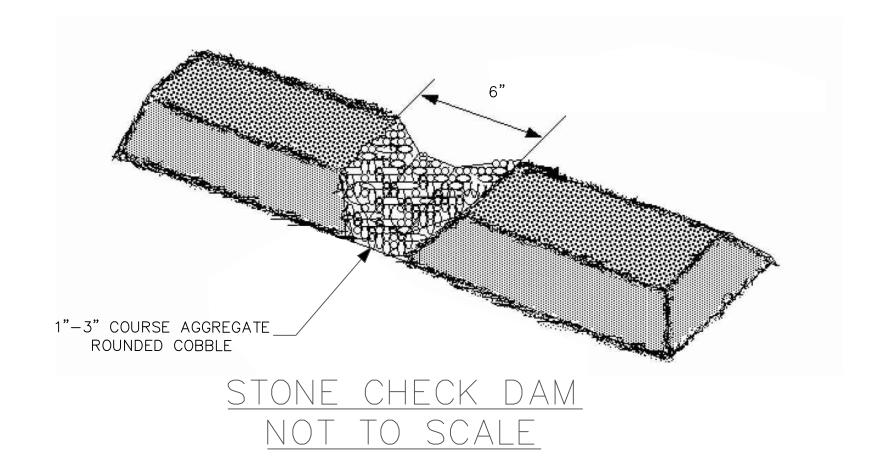


120 Washington Street SALEM, MASSACHUSETTS

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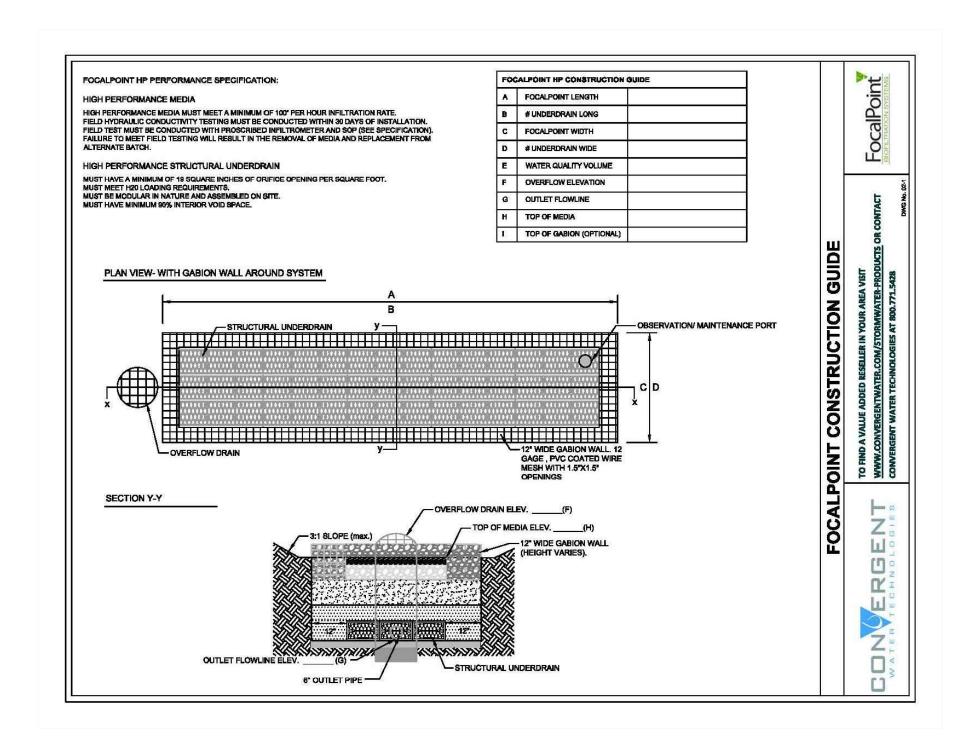


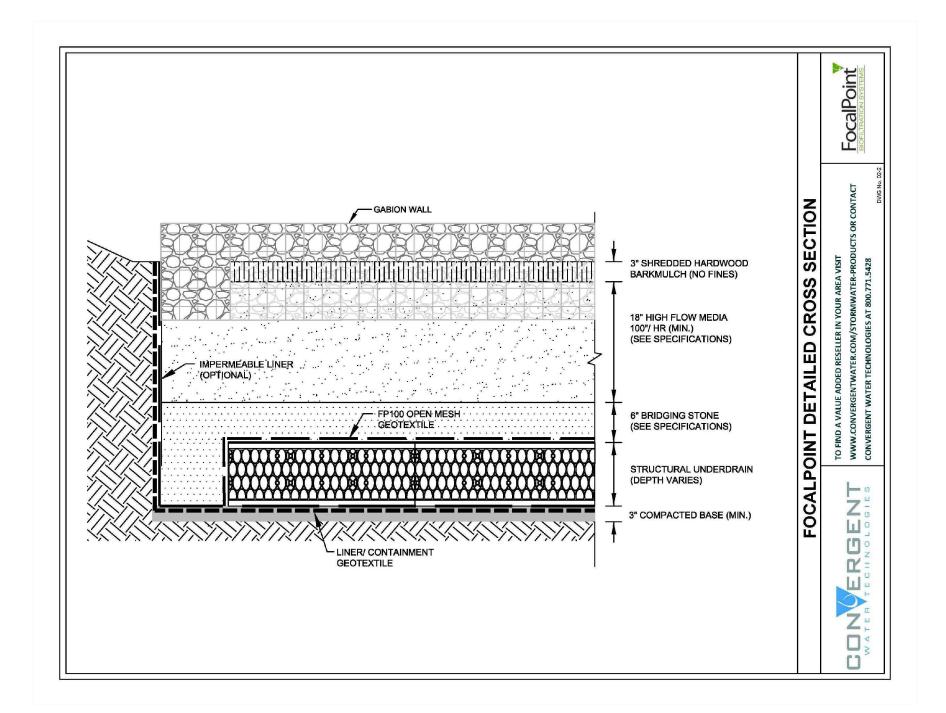


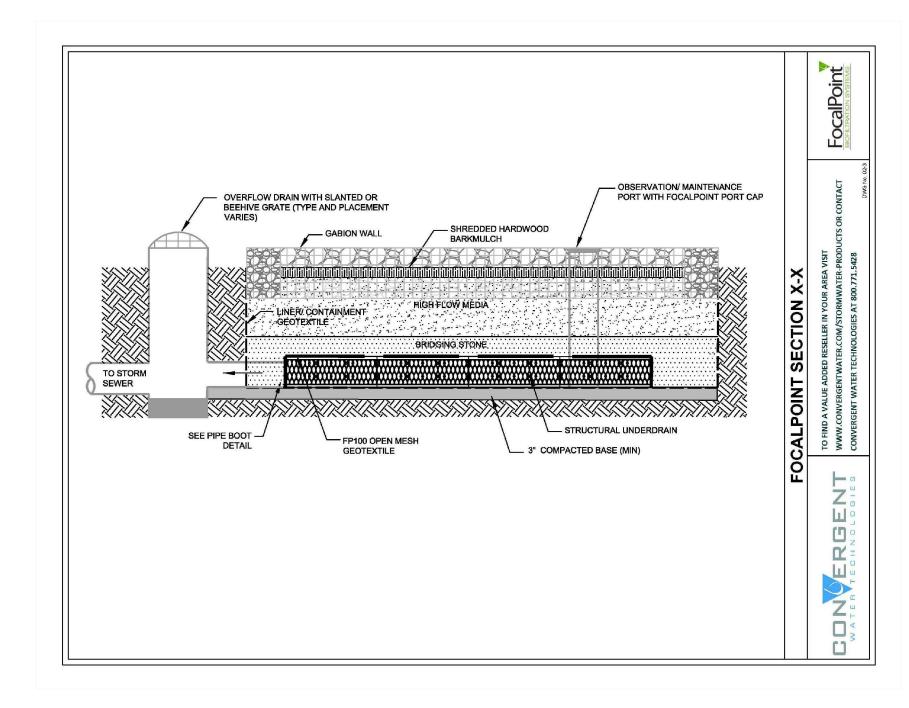
FABCO STORM POD NOT TO SCALE

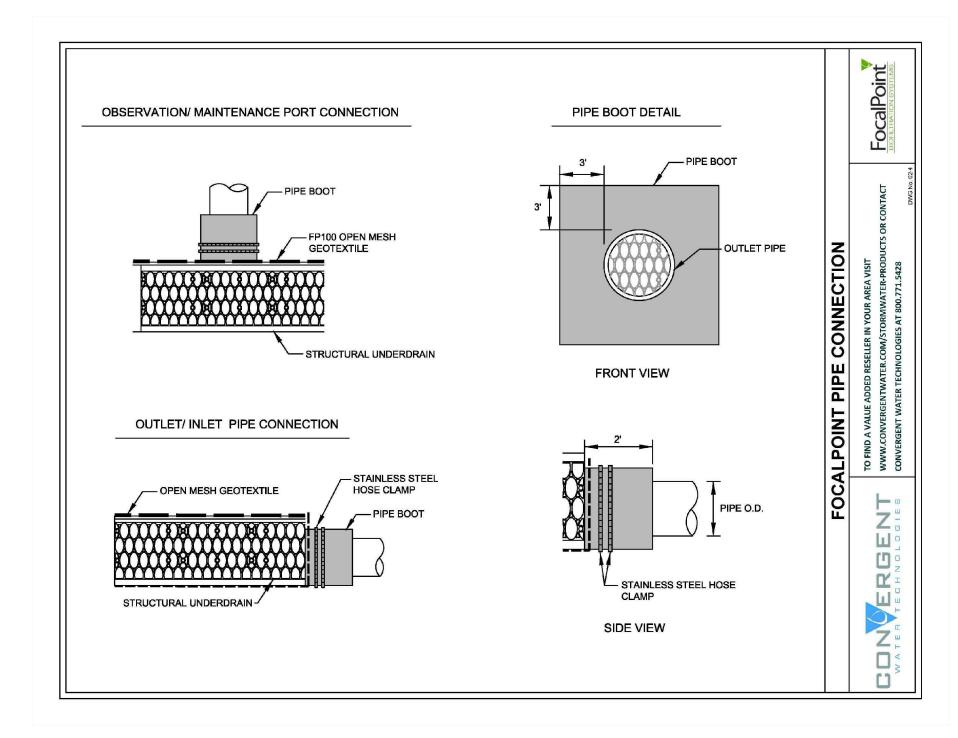
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		Date	3/2/2016		
COMMERCIAL STREET RETROFIT PROJECT DETAILS		Job	Commercial Street		
	COMMERCIAL STREET RETROFIT PROJECT	Designed by	WMR		
		Drawn by	DJW		
	Checked by	WMR	No. Description	Date	
		Approved by	WMR	File: H:\Clients\Salem\CommercialSt_Grant\CAD\Commercial St Details(overNotes.dwg



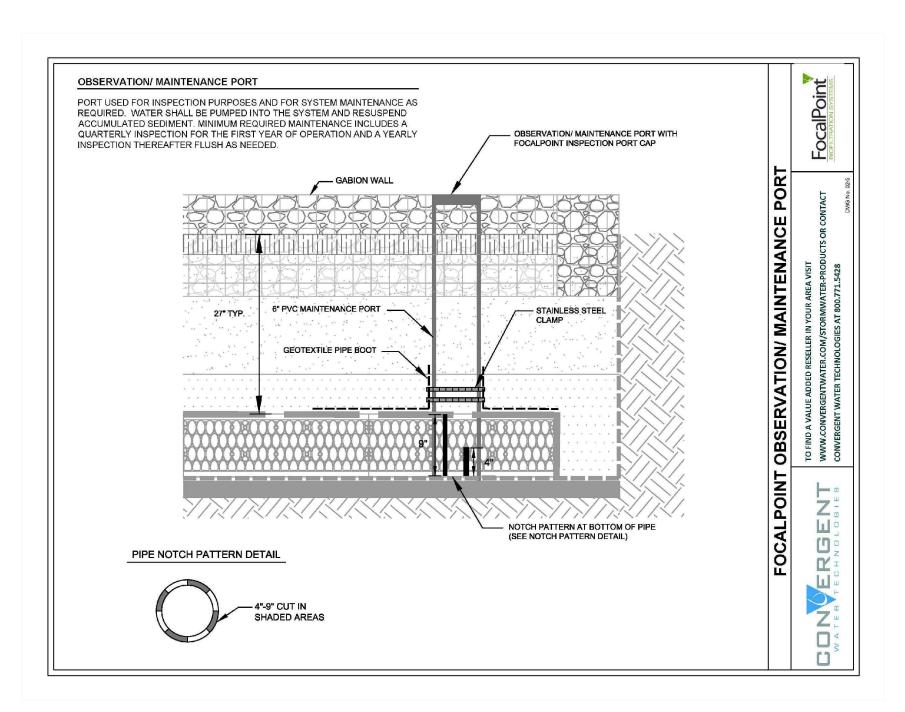








FOCAL POINT SYSTEM DETAILS NOT TO SCALE

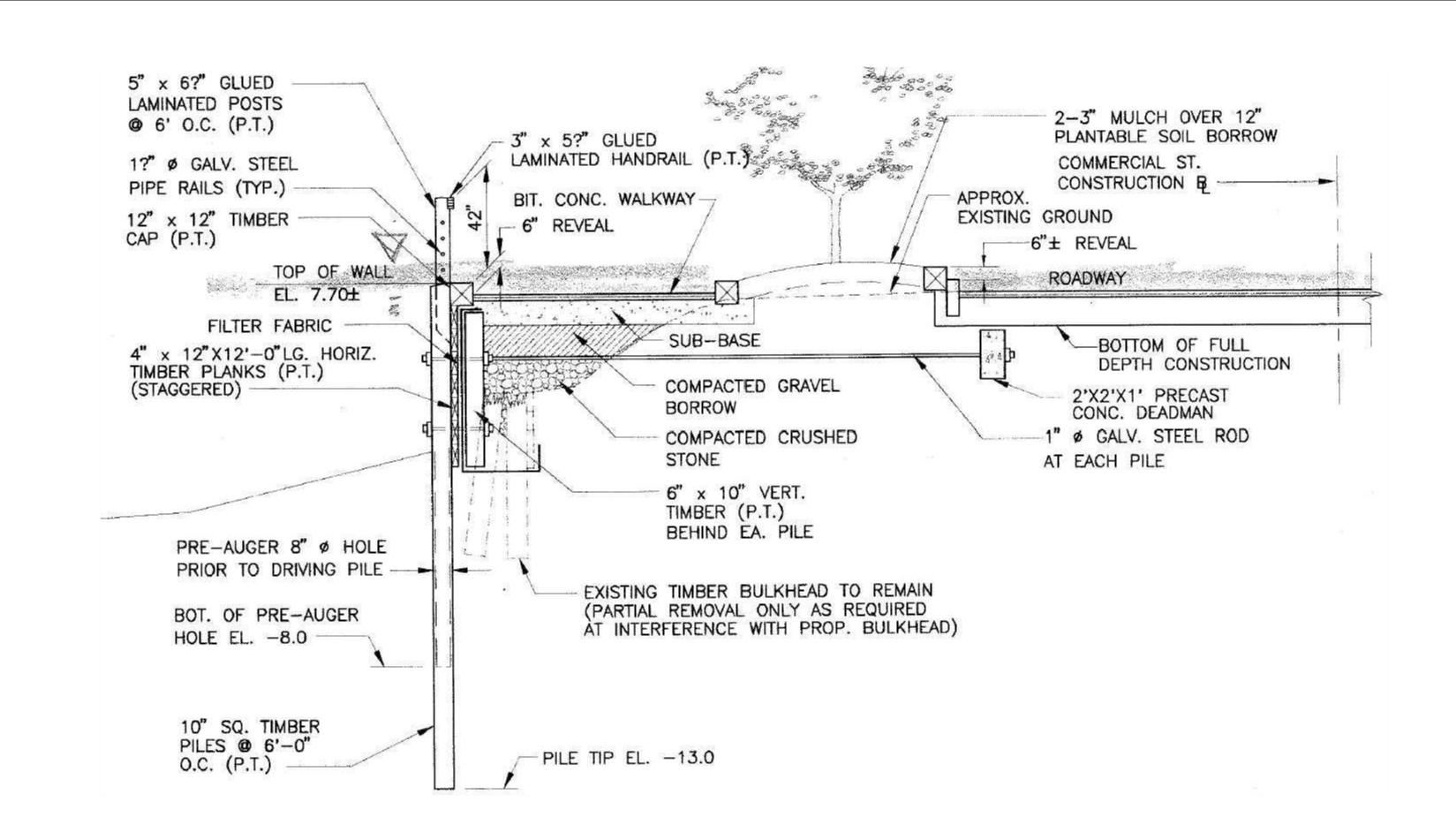


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Project	COMMERCIAL STREET RETROFIT PROJECT DETAILS	Job	Commercial Street		
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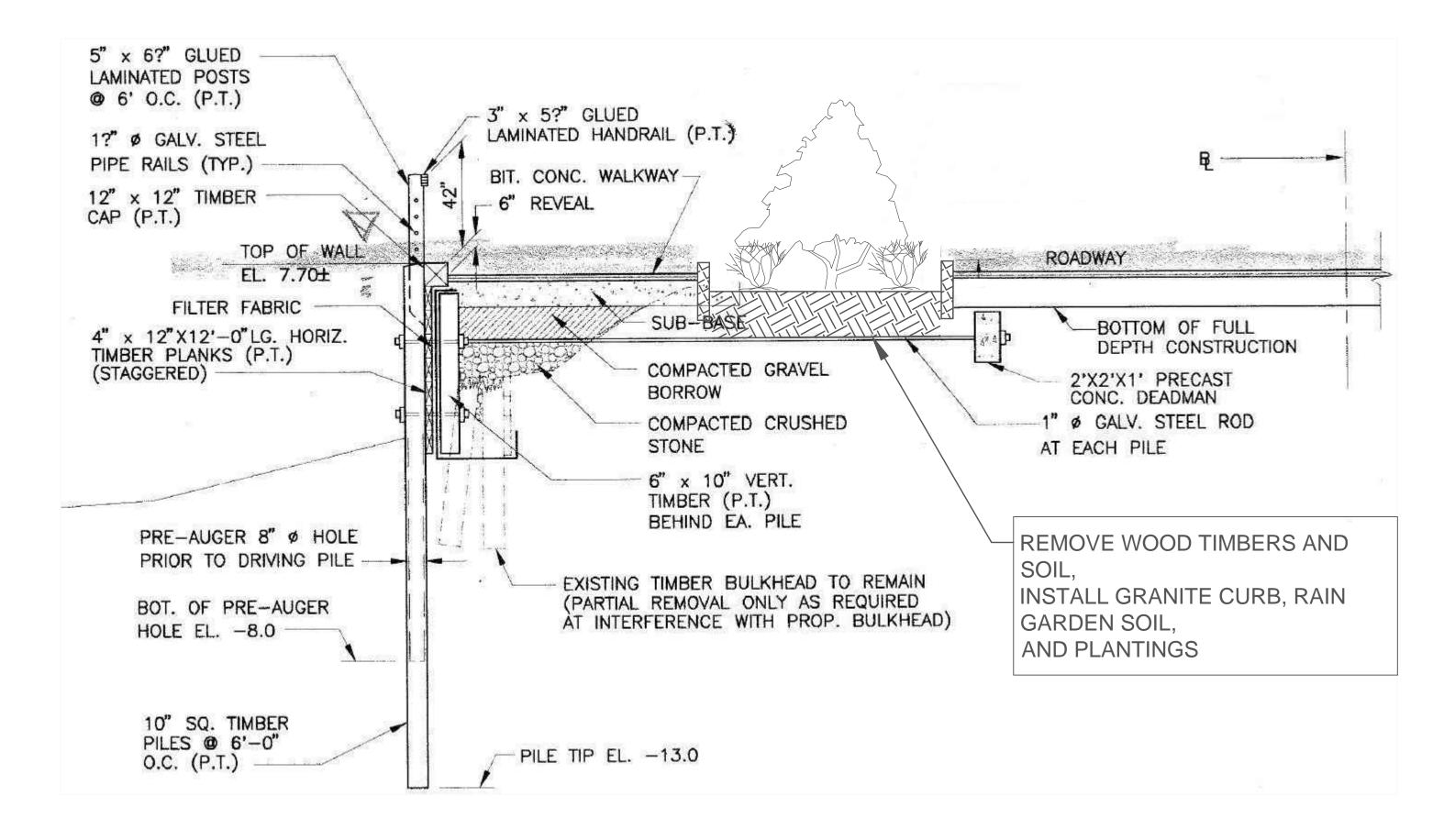


EXISTING PLANTING BED CONDITIONS

DETAIL FROM DESIGN PLANS
MASSACHUSETTS HIGHWAY
DEPARTMENT:
WETLAND MITIGATION PLANS NORTH
RIVER CANAL 1996



PROPOSED PLANTING BED MODIFICATION TO RAIN GARDEN



Client	CITY OF SALEM, MASSACHUSETTS	Scale	N.T.S.				
		Date	3/1/2016				
Project	COMMERCIAL STREET RETROFIT PROJECT DETAILS	Job	Commercial Street				
		Designed by	WMR				
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New England Civil Engineering Corp.

120 Washington Street SALEM, MASSACHUSETTS

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