

# TOWN OF IPSWICH

## UTILITIES DEPARTMENT



272 HIGH STREET • IPSWICH, MA 01938 • (978) 356-6635 • WWW.IPSWICHUTILITIES.ORG

June 12, 2019

Paul Stedman  
District Highway Director  
Massachusetts Department of Transportation (MassDOT), Highway Division  
Attention: April Antonelli, District Four Permit Engineer  
519 Appleton Street  
Arlington, MA 02476

Re: Responses to Comments & Revised Permit Application Submission  
Access Permit Application #4-2019-0185  
Route 1A/133 (High Street), Ipswich, MA

Dear Mr. Stedman:

The Ipswich Utilities Department is hereby responding to District Four's comments received via e-mail on May 22, 2019 for the above-referenced Application #4-2019-0185. Below are responses with additional information and clarifications on the proposed project, as well as waiver requests for (1) the use of suitable backfill material in lieu of controlled density fill (CDF) for trench backfill and (2) allowable daytime working hours. The attached engineering plans have been updated where appropriate based on the District's comments.

### **Responses to Comments**

#### **Traffic Section – General Comments:**

- **Traffic Section General Comment #1** – *Please note that any existing pavement markings impacted by construction activities shall be replaced in kind with thermoplastic materials.*

**Response to General Comment #1** – General Note #27 on Sheet G-2 (attached) includes replacement of existing pavement markings in kind with thermoplastic materials.

- **Traffic Section General Comment #2** – *Please note that MassDOT has permitted the installation of two new RRFB's (Rectangular Rapid Flash Beacon) on High St. adjacent to the high-school. There may be some electric and/or traffic conduit installed in the roadway as a result. Please show the RRFB equipment and any conduit as existing on the plan-set if necessary.*

**Response to General Comment #2** – Sheets C-17 and C-18 (attached) include a note regarding RRFB's on High Street adjacent to the high-school. The RRFB's have also been displayed on the plans.

- **Traffic Section General Comment #3** – *Add the following note on sheet D-3 regarding work hours "Any work that impacts the traveled way may not occur during peak hour traffic, peak hour for this location is defined as from 7:00-9:00 am & 3:00-6:00 pm on weekdays".*

**Response to General Comment #3** – A note regarding allowable working hours has been added to the attached Sheets D-3, D-4, and G-2 (General Note #57). The Town is requesting a waiver for flexibility in the allowable daytime working hours outside of the 9:00 AM to 3:00 PM timeframe, as described below. It is understood that any work to be completed during peak hour traffic must be pre-approved by MassDOT.

- **Traffic Section General Comment #4** – *Remove the TMP details provided on sheet D-3 and replace with MassDOT standard TMP details which can be found in the PDF linked below.*

**Response to General Comment #4** – The Manual on Uniform Traffic Control Devices (MUTCD) Traffic Management Plans have been removed and replaced with the MassDOT standard Traffic Management Plans. Please refer to the attached Sheets D-3 and D-4.

#### **Traffic Section – Sheet D-3 Traffic Management Plan (TMP) Comments:**

- **TMP Comment #1** – *Please add the necessary pedestrian TMP details found in the PDF linked below to the plan-set.*

**Response to TMP Comment #1** – The necessary pedestrian TMP details have been added. Please refer to the attached Sheets D-3 and D-4.

- **TMP Comment #2** – *Remove the general TMP notes provided on sheet D-3 and replace with the notes from figure “GEN-1” found in the PDF linked below.*

**Response to TMP Comment #2** – MassDOT standard Figure “GEN-1” has been added to the attached Sheet D-3.

#### **Project Section Comments:**

- **Project Section Comment #1** – *Please provide the culvert crossing detail as called out on Sheet C-7 and C-14 and drainage crossing detail on Sheet C-10. The description of work should include if the WM is going over or under the existing drainage structure.*

**Response to Project Section Comment #1** – Culvert crossing details for the three culvert crossings have been added to the attached Sheet D-2. The proposed water main is going over the existing crossings; final depths and separation will be determined in the field following exploratory excavations.

- **Project Section Comment #2** – *Attached is the trench detail. Please update the pertinent details.*

**Response to Project Section Comment #2** – The trench paving details on Sheet D-1 (attached) have been revised to incorporate pertinent information from the MassDOT “Utility Trench Permanent Pavement Repair” standard detail provided for reference. For permanent pavement, the Town is proposing to mill and overlay 2” from curb-to-curb within the MassDOT project area. The Town is also requesting a waiver to use suitable backfill material in lieu of CDF for trench backfill, as described below.

- **Project Section Comment #3** – *The utility separation detail spacing is illegible, please revise.*

**Response to Project Section Comment #3** – Utility separation details have been revised to improve legibility of measurements.

## **Waiver Requests**

The Town is proposing to mill and overlay 2" of surface course pavement from curb-to-curb within the MassDOT project area along Route 1A/133 (approximate station 53+00 to 113+00) following a minimum 90-day wearing period for the temporary trench pavement. Although the proposed utility trench for this project will remain in only one travel lane, the existing road surface along Route 1A/133 has been impacted by several water main breaks over the past two years. Milling and overlaying from curb-to-curb will address these areas in addition to the utility trench for this project, providing a better final product.

Taking this proposed final paving into consideration, the Town is requesting the following waivers from MassDOT's standard requirements for this project.

### **Waiver Request for Suitable Backfill Material in Lieu of CDF for Trench Backfill**

The Town would prefer to substitute suitable backfill material meeting MassDOT specifications in lieu of CDF for trench backfill. For most of the project (except for culvert crossings), the proposed water main will be installed at depths greater than 4 feet below ground surface, so CDF would not be required under Engineering Directive #E-98-004. The Town would determine and verify the proper compaction of backfill in accordance with MassDOT requirements and industry standards.

### **Waiver Request for Allowable Daytime Working Hours**

The Town would prefer allowable daytime working hours between 8:00 AM and 5:00 PM on weekdays. These hours would not only expedite the overall project, but also avoid much of the morning rush hour as well as early traffic from school buses entering the Ipswich Middle/High School on High Street. The location of the proposed water main would allow for two lanes of traffic during construction, keeping traffic delays to a minimum. Should extended working hours cause unacceptable delays on High Street, the Town would work with MassDOT to modify the work schedule as needed.

The Ipswich Utilities Department is committed to the successful completion of this proposed water main replacement project, not only by minimizing disruption during construction to the extent possible, but also by leaving a smooth and safe road surface after project completion. If you have any questions or require additional information for this application, please do not hesitate to contact me at (978) 356-6635 x2108 or [vhalmen@ipswichutilities.org](mailto:vhalmen@ipswichutilities.org).

Sincerely,



Vicki Halmen  
Water & Wastewater Director

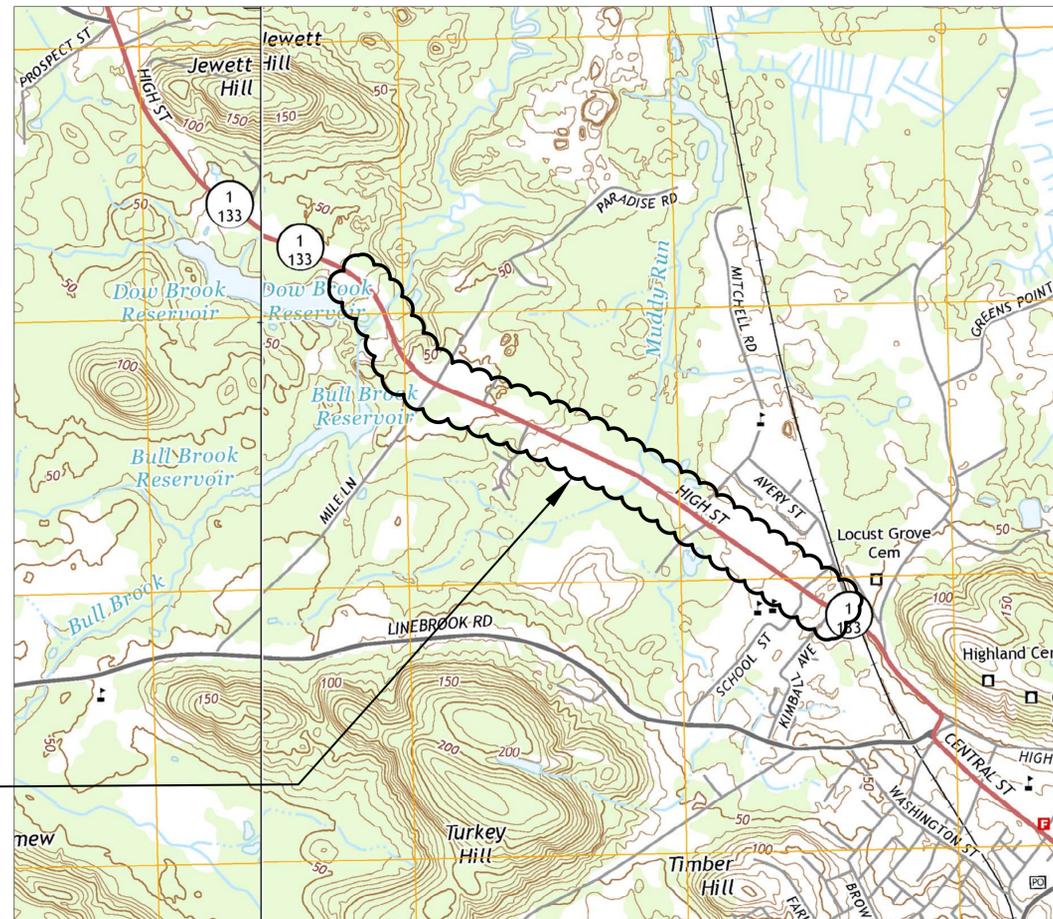
Attachment: Engineering Plans, Revised June 2019

cc: William Ross, P.E., New England Civil Engineering

# TOWN OF IPSWICH, MASSACHUSETTS

## HIGH STREET WATER MAIN REPLACEMENT PROJECT

### JUNE 2019



PROJECT LOCATION

LOCUS MAP (NO SCALE)

#### DRAWING INDEX:

- G-1: COVER
- G-2: GENERAL NOTES
- G-3: KEY PLAN AND LEGEND
- C-1 - C-6: NOT INCLUDED IN THIS CONTRACT
- C-7 - C-18: UTILITY PLANS
- D-1 - D-4: DETAILS

## NEW ENGLAND CIVIL ENGINEERING CORP.



NEW ENGLAND  
CIVIL ENGINEERING  
SALEM, MA

265 Essex Street  
Suite #102  
Salem, MA 01970

(978) 741-7401

1. VERTICAL DATUM BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). HORIZONTAL DATUM BASED ON THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM, 1983 (NAD83).
2. BASE SURVEY INFORMATION PROVIDED BY TOWN OF IPSWICH AND MASSGIS FOR SHEETS C-7 THROUGH C-19.
3. BENCHMARKS ARE NOT PROVIDED.
4. FULL PERIMETERS AND EXTERIOR DIMENSIONS OF BUILDINGS NOT ACCURATELY SHOWN ON BASE SURVEY, CONTRACTOR TO CONFIRM DIMENSIONS AND FOOTPRINTS OF BUILDINGS BEFORE BEGINNING WORK CLOSE TO BUILDINGS AND ON PRIVATE PROPERTY.
5. THE EXISTENCE, SIZE, PIPE MATERIAL, LOCATION, ORIENTATION AND DESCRIPTION OF UTILITIES ARE FROM THE EXISTING INFORMATION PROVIDED, BUT ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UNDERGROUND UTILITIES BEFORE EXCAVATING.
6. EXISTING WATER MAINS ARE DEEPER THAN TYPICAL IN MANY AREAS, UP TO 9 FEET. CONTRACTOR TO UTILIZE HORIZONTAL BENDS TO CROSS OR MAKE CONNECTIONS TO EXISTING MAINS AS REQUIRED. COMPLETE TEST PITS AT ALL CROSSINGS AND PROPOSED CONNECTIONS PRIOR TO INSTALLING MAINS WITHIN 50 FEET OR PROPOSED CROSSING OR CONNECTION.
7. ALL RIM AND INVERT ELEVATIONS ARE APPROXIMATE AND ARE SHOWN TO WITHIN 0.1 FEET. CONTRACTOR TO COMPLETE INDEPENDENT SURVEY VERIFICATION IN THE FIELD, BY PROFESSIONAL LAND SURVEYOR AS REQUIRED AND AS DIRECTED.
8. ALL BURIED ELECTRIC AND TELECOM CONDUITS ARE SHOWN SCHEMATICALLY AND NOT TO SCALE, CONTRACTOR TO ASSUME ALL BURIED UTILITIES ARE INSTALLED IN MULTIPLE CONDUIT DUCT BANKS AND MAY BE CONCRETE ENCASED, CONTRACTOR TO COMPLETE TEST PITS AND ADJUST LAYOUT AND MEANS AND METHODS TO AVOID CONFLICTS.
9. THE LOCATION OF ALL BURIED ELECTRIC AND TELECOMMUNICATIONS CONDUITS, MANHOLES, HANDHOLES, AND WIRES IS NOT KNOWN. NEW OR ADDITIONAL BURIED ELECTRIC AND TELECOMMUNICATIONS CONDUITS AND WIRES MAY HAVE BEEN INSTALLED OR MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS.
10. EXISTING PAVEMENT THICKNESS, SIDEWALK MATERIALS, AND SUBBASE MATERIALS VARY AND MAY INCLUDE MULTIPLE, VARIED PAVEMENT MATERIALS, AND CONCRETE. CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE ALL SIDEWALK, PAVEMENT, AND MATERIALS ENCOUNTERED AS PART OF THE WORK.
11. BEFORE EXCAVATING, BLASTING, BACK FILLING, 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.
12. EXISTING PIPE SIZE AND MATERIAL ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR. ASBESTOS CEMENT (AC) PIPES ARE KNOWN TO EXIST ON HIGH STREET AND SIDE STREETS, AND IF ENCOUNTERED CONTRACTOR SHALL IMPLEMENT APPROPRIATE HEALTH AND SAFETY PROVISIONS AND REMOVE AND DISPOSE AS PIPE IN LEGAL MANNER.
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. CONTRACTOR TO COORDINATE WITH GAS COMPANY AND OWNERS OF OTHER UTILITIES TO PROTECT AND SUPPORT (OR REMOVE AND REPLACE) ALL UTILITIES ENCOUNTERED DURING CONSTRUCTION.
15. IF THE CONTRACTOR DAMAGES UTILITY SERVICES, HE SHALL IMMEDIATELY NOTIFY THE RESPECTIVE UTILITY COMPANY AND SHALL IMMEDIATELY REPLACE OR REPAIR.
16. 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.
17. 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 BELOW.
18. 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.
19. 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, STRUCTURES, OR SUBSURFACE CONDITIONS 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.
20. 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.
21. WHERE WATER LINES, DRAINAGE PIPES, STRUCTURES, OR CONDUITS ARE ABANDONED IN PLACE, CONTRACTOR SHALL MAKE SURE THAT ALL CONNECTING PIPES, INLETS AND OUTLETS ARE PLUGGED.
22. CONTRACTOR TO PROTECT AND SUPPORT OR REMOVE AND REPLACE UTILITY POLES, STREET LIGHTS, SIGNS, POSTS, HYDRANTS, FENCES, GATES, OR OTHER SURFACE FEATURES THAT OBSTRUCT CONSTRUCTION OPERATIONS OR ARE DAMAGED BY CONSTRUCTION. AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE, SUBJECT TO THE APPROVAL OF THE ENGINEER.
23. 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.
24. A MINIMUM 10-FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER AND SEWER (SANITARY OR STORM) MAINS. SEPARATION IS MEASURED FROM EDGE TO EDGE. IN CASES WHERE 10-FOOT SEPARATION CANNOT BE MAINTAINED, WATER MAIN SHALL BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18-INCHES ABOVE THE TOP OF THE SEWER. AT CROSSINGS, ONE FULL LENGTH OF WATER PIPE SHALL BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE WITH 18 INCH VERTICAL SEPARATION, WITH WATER MAIN ABOVE SEWER IF AT ALL POSSIBLE.
25. CONTRACTOR SHALL BACKFILL, COMPACT, AND PAVE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MDOT) AND THE TOWN OF IPSWICH, INCLUDING AT A MINIMUM THE REQUIREMENTS SHOWN ON DETAILS AND DESCRIBED IN MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
26. THE CONTRACTOR SHALL INSTALL TEMPORARY PAVEMENT ON A DAILY BASIS AND SHALL MAINTAIN TEMPORARY PAVEMENT FOR A MINIMUM OF 90 DAYS EXCEPT IF TEMPORARY PAVEMENT IS PLACED AFTER OCTOBER 15TH, THEN IT SHALL BE MAINTAINED UNTIL APRIL 15TH OF THE FOLLOWING YEAR UNLESS AUTHORIZED BY THE TOWN. TEMPORARY CENTERLINE OR FOGLINE PAVEMENT PAINT SHALL BE PLACED ON THE TEMPORARY PAVEMENT WHEREVER EXISTING PAINT IS DISTURBED DURING CONSTRUCTION.
27. ANY PAVEMENT MARKINGS IMPACTED OR REMOVED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED IN KIND WITH THERMOPLASTIC MATERIALS.
28. PERMANENT PAVEMENT SHALL BE PLACED BETWEEN APRIL 15TH AND OCTOBER 15TH OF EACH CALENDAR YEAR UNLESS AUTHORIZED BY THE TOWN AND MASSDOT OUTSIDE THESE DATES.
29. THE CONTRACTOR SHALL PROTECT ALL TRAVELED WAYS AND PEDESTRIAN WAYS FROM CONSTRUCTION DEBRIS AT ALL TIMES.
30. CONTRACTOR SHALL MAINTAIN TWO LANE (TWO-WAY) OF TRAFFIC AT ALL TIMES AND ACCESS FOR EMERGENCY VEHICLES AND PEDESTRIANS, CONTRACTOR SHALL COORDINATE TRAFFIC MANAGEMENT PLAN WITH TOWN OF IPSWICH POLICE DEPARTMENT AND MASSDOT. CONTRACTOR SHALL BE RESPONSIBLE FOR MANAGEMENT OF TRAFFIC AND PUBLIC SAFETY, INCLUDING SIGNAGE AND DETOURS. TRENCHES MUST BE PASSABLE AND GRAVEL MUST BE MAINTAINED. CONTRACTOR SHALL PREPARE A TRAFFIC MANAGEMENT PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF IPSWICH POLICE DEPARTMENT AND MASSDOT IF REQUIRED. CONTRACTOR SHALL REVIEW TRAFFIC MANAGEMENT PLAN WITH THE POLICE DEPARTMENT AND MASSDOT PRIOR TO BEGINNING CONSTRUCTION LAYOUT.

31. CONTRACTOR SHALL NOT BE PROVIDED A STAGING AREA BY THE OWNER, CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY, SECURITY, AND CLEANUP.
32. CONTRACTOR IS RESPONSIBLE TO PREVENT STEEL PLATES FROM MOVING, INCLUDING CUTTING PAVEMENT TO RECESS PLATES, UTILIZATION OF STEEL SPIKES AND WEDGES, AND COLD PATCH SHIMS AND RAMPS.
33. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AND APPROVED BY THE IPSWICH CONSERVATION AGENT AND 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 SILT FENCE OR MULCH SOCK AROUND SOIL STOCKPILES AND ALONG PROJECT BOUNDARY AS DIRECTED. ALL CONSTRUCTION DEWATERING WATER MUST BE TREATED WITH A SEDIMENTATION TANK OR DIRT BAG (IF APPROVED) PRIOR TO DISCHARGE. ALL CONSTRUCTION DEWATERING WATER MUST DISCHARGE UPGRADIENT OF OTHER EROSION AND SEDIMENTATION DEVICES AND CONTROLS; AND MUST DISCHARGE TO A NON-RESOURCE AREA. ALL DEWATERING METHODS SHALL BE REVIEWED AND APPROVED BY THE IPSWICH CONSERVATION AGENT AND ENGINEER PRIOR TO IMPLEMENTATION.
34. CONTRACTOR SHALL MAINTAIN EDGE OF ROADWAY DRAINAGE PATTERNS INCLUDING REPLACEMENT OF PAVED AND UNPAVED SWALES, BERMS, AND CURBS.
35. DIVERSION AND CONTROL OF EXISTING SANITARY, STORM SEWER AND DRAINAGE CULVERTS AND DEWATERING ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR'S INTENDED METHODS FOR DIVERSION AND CONTROL AND DEWATERING SHALL BE SUBMITTED TO THE ENGINEER AND IPSWICH CONSERVATION AGENT FOR REVIEW AND APPROVAL. BYPASS HOSES SHALL NOT BE ALLOWED TO LEAK AND SURFACE WATER RELATING TO CONSTRUCTION OPERATIONS SHALL BE PREVENTED FROM FREEZING.
36. THE CONTRACTOR SHALL PROVIDE METHODS DURING DEWATERING OPERATIONS AND FOR STORM WATER RUNOFF NOT TO 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. CONTRACTOR RESPONSIBLE FOR ALL PERMITTING REQUIREMENTS RELATED TO DEWATERING IF DISCHARGE TO DRAINAGE OR SURFACE WATER WILL BE REQUIRED.
37. 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.
38. NO TRASH, GREASE TUBES, OR DEBRIS SHALL BE THROWN INTO CONSTRUCTION TRENCHES PRIOR TO BACKFILL.
39. CONTRACTOR TO MAINTAIN HAZMAT SPILL KITS ON SITE AT ALL TIMES.
40. 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. DUST CONTROL METHOD SHALL BE REVIEWED AND APPROVED BY IPSWICH CONSERVATION AGENT AND ENGINEER PRIOR TO IMPLEMENTATION.
41. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE UTILITY COMPANIES DOING WORK IN THE SAME AREA. THE CONTRACTOR SHALL ALLOW THE UTILITY COMPANIES AND THEIR REPRESENTATIVES TO INSTALL OR MAINTAIN THEIR SYSTEMS WITHIN TOWN OWNED STREETS AND EASEMENTS.
42. CONTRACTOR IS RESPONSIBLE TO ASSIST THE TOWN WITH IDENTIFYING VALVES TO BE EXERCISED OR OPERATED TO ACHIEVE SERVICE INTERRUPTION, ASSIST TOWN WITH OPERATING ALL VALVES REQUIRED FOR SERVICE SHUTDOWN, AND DISTRIBUTING SERVICE INTERRUPTION NOTIFICATION FLYERS TO ALL BUSINESSES AND RESIDENCES PRIOR TO EACH SERVICE INTERRUPTION. CONTRACTORS SHALL BE AWARE THAT COMPLETE (WATERTIGHT) SHUTDOWN AND/OR ISOLATION OF ANY EXISTING WATER VALVE TO REMAIN IN SERVICE WILL NOT BE POSSIBLE DUE TO THE CONDITION OF THE EXISTING VALVES TO REMAIN IN SERVICE. CONTRACTOR SHALL ASSUME ALL EXISTING VALVES WILL LEAK AND SHALL PREPARE FOR DEALING WITH THE LEAKAGE DURING CONSTRUCTION AND WHEN MAKING ALL CONNECTIONS BETWEEN NEW AND EXISTING WATER MAINS AND SERVICES.
43. NO WATER SERVICE INTERRUPTIONS SHALL BE PERMITTED UNLESS THE CONTRACTOR PROVIDES THE IPSWICH WATER DEPARTMENT 72 HOUR (3 DAY) NOTICE EXCLUDING WEEKEND DAYS.
44. ALL SERVICES TO BE RECONNECTED, NUMBER AND LOCATION OF PROPOSED SERVICE LINES (1"-6") SHOWN ARE APPROXIMATE, CONTRACTOR TO LAY OUT PROPOSED SERVICE LINES IN FIELD.
45. BACKFLOW PREVENTION DEVICE TO BE PROVIDED BY THE CONTRACTOR AND USED FOR ALL CONSTRUCTION WATER.
46. ANY LABORATORY USED FOR WATER ANALYTICAL TESTING SHALL BE STATE OF MASSACHUSETTS CERTIFIED LABORATORY.
47. THE CONTRACTOR SHALL BE AWARE THAT BORINGS HAVE NOT BEEN PROVIDED AND THE EXISTING SOIL CONDITIONS AND GROUNDWATER LEVEL ARE NOT KNOWN. BUT GROUNDWATER LEVELS ARE ASSUMED TO BE HIGH AND HIGHLY VARIABLE DUE TO THE CLOSE PROXIMITY OF THE PROJECT TO THE STREAMS, WETLAND AREAS, AND RESOURCE AREAS. UNSUITABLE SOILS ARE KNOWN TO EXIST DUE TO THE PROXIMITY OF THE PROJECT TO WATER AND RESOURCE AREAS. CONTRACTOR SHALL ANTICIPATE THAT REMOVAL AND DISPOSAL OF UNSUITABLE SOILS AND CONSTRUCTION DEWATERING DUE TO GROUNDWATER WILL BE REQUIRED THROUGHOUT THE PROJECT AREA WITH INCREASED DEWATERING REQUIRED DURING RAINFALL AND HIGH GROUNDWATER CONDITIONS. ROCK EXCAVATION MAY BE REQUIRED IN VARIOUS LOCATIONS. CONTRACTOR TO COMPLETE EXPLORATORY EXCAVATIONS IN ADVANCE OF CONSTRUCTION TO LOCATE AND OBSERVE EXISTING WATER MAIN AND LEDGE LOCATION AND DEPTH.
48. CONTRACTOR SHALL SEGREGATE ALL SUITABLE BACKFILL MATERIAL FROM UNSUITABLE MATERIAL AND DISPOSE OF ALL UNSUITABLE MATERIALS AS DIRECTED.
49. CONTRACTOR TO SCHEDULE NEW DRAIN INSTALLATIONS AND ADJUST LAYOUT OF NEW DRAINS IN THE FIELD TO AVOID CONFLICTS WITH EXISTING AND PROPOSED SEWERS, WATER MAINS, DRAINS, GAS, ELECTRIC, AND OTHER EXISTING UTILITIES.
50. CONTRACTOR TO PREPARE A VALVE OPERATION AND WATER SERVICE INTERRUPTION SEQUENCING PLAN AND SUBMIT FOR REVIEW BY THE OWNER PRIOR TO BEGINNING CONSTRUCTION. THE TOWN WILL REVIEW THE PLAN AND PROVIDE FEEDBACK ON THE EXTENT OF THE SERVICE INTERRUPTION NOTIFICATION FLYERS TO BE DISTRIBUTED BY THE CONTRACTOR TO AFFECTED RESIDENTS. CONTRACTOR SHALL BE AWARE THAT COMPLETE (WATERTIGHT) SHUTDOWN AND/OR ISOLATION OF ANY EXISTING WATER VALVE TO REMAIN IN SERVICE WILL NOT BE POSSIBLE DUE TO THE CONDITION OF THE EXISTING VALVES TO REMAIN IN SERVICE. CONTRACTOR SHALL ASSUME ALL EXISTING VALVES WILL LEAK AND SHALL PREPARE FOR DEALING WITH THE LEAKAGE DURING CONSTRUCTION AND WHEN MAKING ALL CONNECTIONS BETWEEN NEW AND EXISTING WATER MAINS AND SERVICES.
51. WITH THE EXCEPTION OF A BRIEF INITIAL WATER SERVICE INTERRUPTION OF THE EXISTING WATER MAINS TO INSTALL/REPLACE VALVES AND/OR HYDRANTS TO FACILITATE WATER WORK AS INDICATED; NO WATER SERVICE INTERRUPTIONS WILL BE PERMITTED WITHIN THE PROJECT AREA UNTIL THE NEW WATER MAIN HAS BEEN INSTALLED PAST THE POINT OF EACH PROPOSED SERVICE INTERRUPTION, DISINFECTED, AND HAS PASSED BACTERIA AND PRESSURE TESTING; ALLOWING FOR A SINGLE, BRIEF SERVICE INTERRUPTION FOR EACH NEW AND EXISTING SERVICE CONNECTION AND FIRE HYDRANT. NO ADDITIONAL SERVICE INTERRUPTIONS WILL BE PERMITTED UNTIL ALL SERVICE CONNECTIONS AND FIRE HYDRANTS ARE BROUGHT BACK IN SERVICE.
52. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND CONNECTING EVERY WATER SERVICE (INCLUDING FIRE SERVICES) AFFECTED BY ABANDONING THE EXISTING WATER MAIN ON EACH STREET (AND SIDE STREETS) INCLUDING BUT NOT LIMITED TO THOSE SERVICES IDENTIFIED ON PLANS. NUMBER AND LOCATION OF PROPOSED SERVICE LINES (1"-6") SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD DURING CONSTRUCTION BY CONTRACTOR AND APPROVED BY THE ENGINEER BEFORE INSTALLATION. ALL NEW SERVICES TO BE 1" COPPER UNLESS OTHERWISE INDICATED. ALL SERVICE TAPS FOR NEW 1", 1-1/2" AND 2" SERVICES SHALL BE "WET TAPS" INSTALLED AFTER THE NEW WATER MAIN HAS BEEN BROUGHT BACK INTO SERVICE.
53. TEMPORARY WATER BYPASS, IF REQUIRED, SHALL INCLUDE MINIMUM 4" DIAMETER PIPE BETWEEN ALL HYDRANTS AND MINIMUM 2" DIAMETER PIPE TO ALL SERVICE CONNECTIONS; AND SHALL BE BURIED, INSULATED, AND HEATED AS REQUIRED TO PREVENT FREEZING AND AVOID PEDESTRIAN AND TRAFFIC IMPACTS. TEMPORARY PIPING AND HOSES MUST BE IDENTIFIED FOR POTABLE WATER USE BY NSF OR AWWA AND DISINFECTED IN ACCORDANCE WITH AWWA STANDARDS. TEMPORARY BYPASS TO INCLUDE AIR BLOW BACK PIPING TO ALL FIRE AND DOMESTIC SERVICES FOR USE DURING WATER MAIN INFRASTRUCTURE WORK.
54. 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.
55. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING TRAFFIC AND NOISE CONTROLS AND SCHEDULING ACTIVITIES TO MINIMIZE DISRUPTION OF BUSINESSES, AND SHALL BE AWARE THAT THE IPSWICH HIGH SCHOOL AT 130 HIGH STREET IS OPEN FROM 7:00 A.M. TO 3:00 P.M.; FROM SEPTEMBER THROUGH JUNE AND HAS NUMEROUS ACTIVITIES IN THE SUMMER AND BEFORE AND AFTER SCHOOL HOURS INCLUDING AFTERNOON OR EVENING MEETINGS AND EVENTS. NO EXCAVATION WORK SHALL BE PERMITTED IN THE SCHOOL PROPERTY OR ON HIGH STREET IN VICINITY OF SCHOOL ENTRANCE ON SHEET C-17 AND C-18 WHEN SCHOOL IS OPEN OR SCHOOL ACTIVITIES ARE IN SESSION (SEPTEMBER THROUGH JUNE). CONTRACTOR SHALL WORK WITH THE SCHOOL AND SCHEDULE ACTIVITIES IN THIS AREA TO MINIMIZE DISRUPTION, INCLUDING BUT NOT LIMITED TO WORK ON NIGHTS AND/OR WEEKENDS AS ALLOWED BY THE TOWN.
56. BID ITEM NO. 25 (FURNISH AND INSTALL 1-INCH COPPER SERVICE PIPE) TO INCLUDE WATER SERVICE PIPE REPLACEMENT SHOWN ON PLANS PLUS ADDITIONAL SERVICE PIPE REPLACEMENT WITHIN THE WATER BYPASS AREAS TO REPLACE LEAD, IRON, STEEL, OR LEAKING COPPER SERVICE PIPE AT LOCATIONS NOT INDICATED ON THE PLANS; AS DIRECTED BY THE ENGINEER.
57. ANY WORK THAT IMPACTS THE TRAVELED WAY MAY NOT OCCUR DURING PEAK HOUR TRAFFIC, PEAK HOUR FOR THIS LOCATION IS DEFINED AS FROM 7:00-9:00AM AND 3:00-6:00PM ON WEEKDAYS, UNLESS EXTENDED HOURS AND SCHEDULE ARE APPROVED BY MASSDOT AND THE TOWN.

Client	TOWN OF IPSWICH, MASSACHUSETTS
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT
	GENERAL NOTES AND LEGEND

Scale	N.T.S.	
Date	6/11/2019	
Job	IP-HIGH ST.	
Designed by	WMR	
Drawn by	DJW	
Checked by	WMR	
Approved by	WMR	
No.	Description	Date
File:	W:\Ipswich\High Street Water Main\CAD\Ipswich_Design\ConCom	recover.dwg



## New England Civil Engineering Corp.

265 Essex Street  
SALEM, MASSACHUSETTS

Sheet	G-2
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**LEGEND**

- FIRE HYDRANT
- WATER MAIN WITH PIPE SIZE, MAIN LINE VALVE, AND WATER SERVICE WITH CURB STOP
- SEWER MANHOLE AND SEWER MAIN WITH PIPE SIZE
- STORMWATER MANHOLE AND STORMWATER MAIN WITH PIPE SIZE
- CATCH BASIN (CB)
- GAS MAIN WITH PIPE SIZE & MATERIAL AND GAS VALVE
- UTILITY PIPE WITH CONTINUATION SYMBOL
- TELEPHONE / COMMUNICATION CONDUIT
- ELECTRIC CONDUIT
- ELECTRIC MANHOLE

**EXISTING FEATURES**

- ROADWAY SIGN
- UTILITY POLE/OVERHEAD WIRE
- LIGHT POST/POLE
- TREE
- VEGETATION BOUNDARY
- PARCEL / PROPERTY LINE
- FENCE
- BUILDING / HOUSE / STRUCTURE

ELEVATION CONTOUR WITH SPOT GRADE ELEVATION (FEET) SHEETS C-1 TO C-6



ELEVATION CONTOUR WITH ELEVATION LABEL (FEET) FOR SHEETS C-7 AND C-8

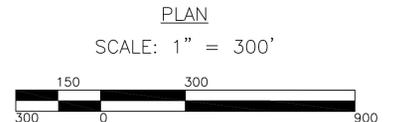
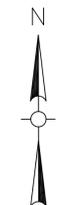


- BIT.
- CONC.
- GRAN.
- PL.
- BS
- VC
- AC
- DI
- RET.
- ABD.
- INV.
- DHM
- SMH
- MIN.
- STA

- BITUMINOUS
- CONCRETE
- GRANITE
- PLASTIC
- BARE STEEL
- VITRIFIED CLAY
- ASBESTOS CEMENT
- DUCTILE IRON
- RETAINING
- ABANDONED
- INVERT
- TYPICAL
- DRAIN MANHOLE
- SEWER MANHOLE
- MINIMUM
- STATION

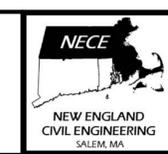
**PROPOSED FEATURES**

- FIRE HYDRANT
- WATER MAIN, MAIN LINE VALVE, AND WATER SERVICE WITH CURB STOP
- WATER MAIN COUPLING CONNECTING EXISTING MAN TO NEW WATER MAIN
- TEE CONNECTION
- PIPE BEND
- TAPPING SLEEVE AND VALVE ON EXISTING WATER MAIN
- REDUCER
- LINSTOP ON EXISTING WATER MAIN
- EXPLORATORY EXCAVATION (TEST PIT)
- EROSION AND SEDIMENTATION BARRIER
- CAPPED / PLUGGED PIPE



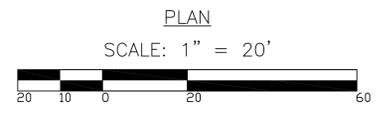
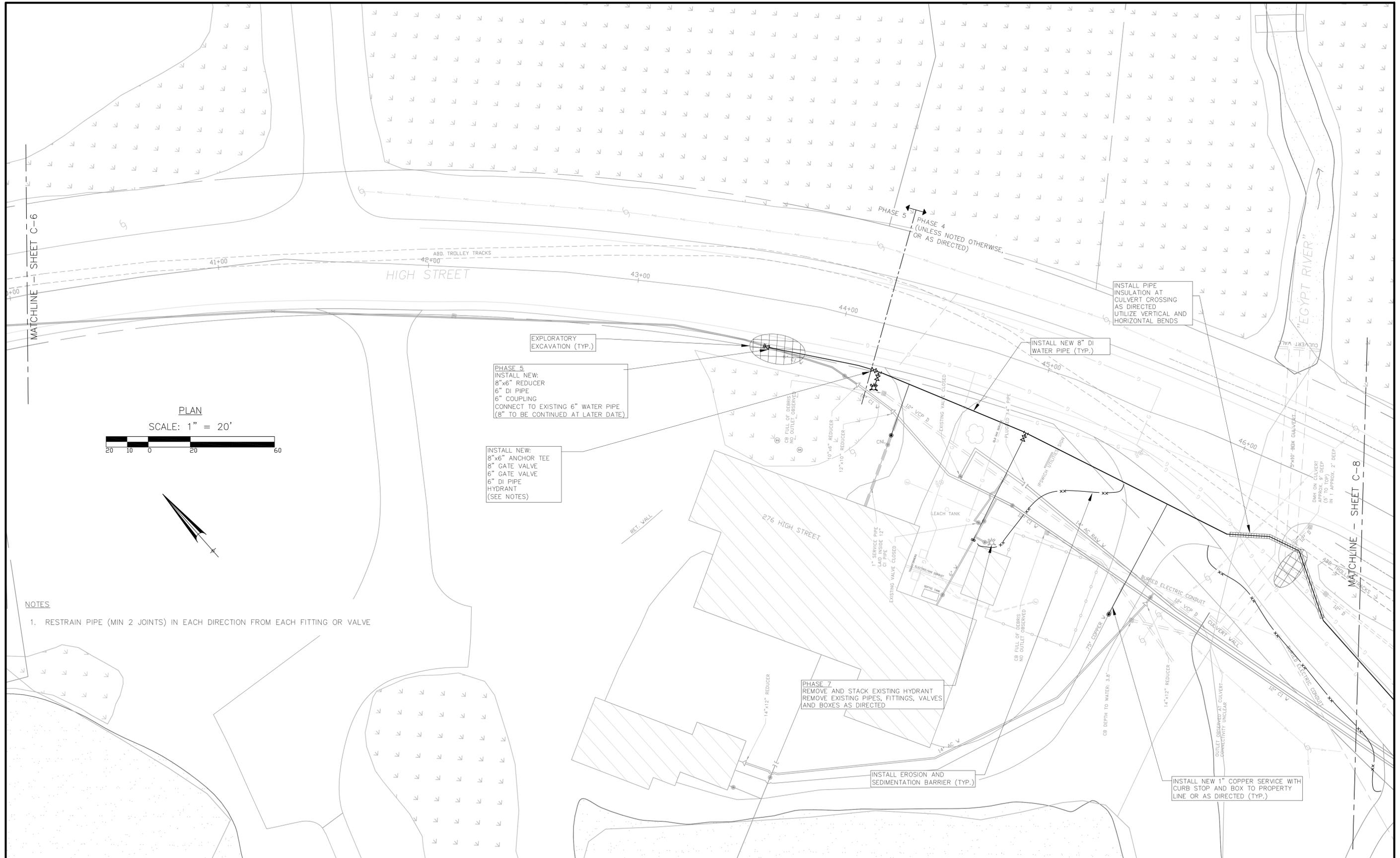
Client	TOWN OF IPSWICH, MASSACHUSETTS
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT
KEY PLAN AND LEGEND	

Scale	1"=20'
Date	3/22/2019
Job	IP-HIGH ST.
Designed by	WMR
Drawn by	DJW
Checked by	WMR
Approved by	WMR
No.	
Description	
Date	
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SALEM, MASSACHUSETTS

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- NOTES
1. RESTRAIN PIPE (MIN 2 JOINTS) IN EACH DIRECTION FROM EACH FITTING OR VALVE

Client	TOWN OF IPSWICH, MASSACHUSETTS
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT
	STATION 39+08 TO STATION 45+61

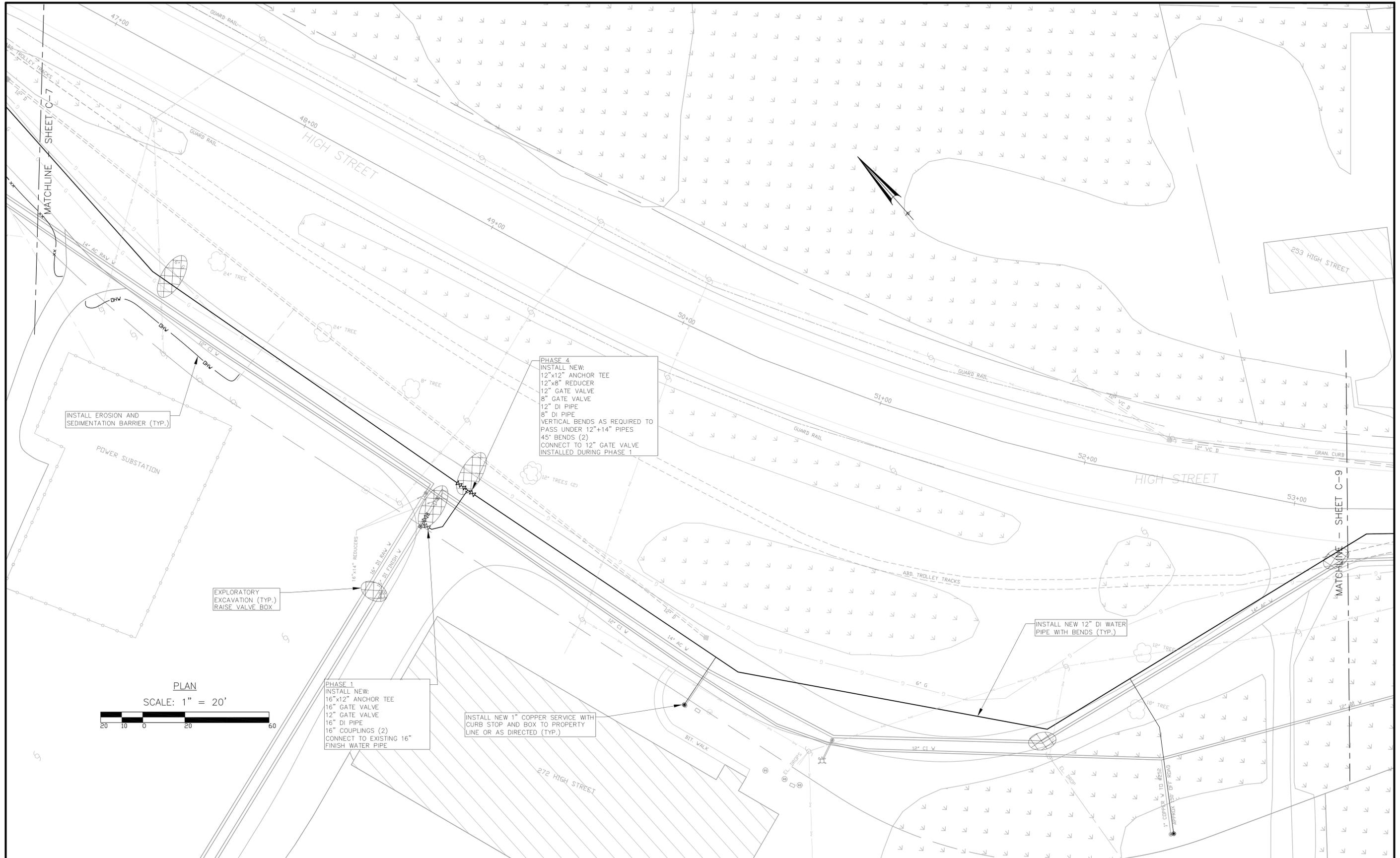
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Date	3/22/2019
Job	IP-HIGH ST.
Designed by	WMR
Drawn by	DJW
Checked by	WMR
Approved by	WMR
No.	
Description	
Date	
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SALEM, MASSACHUSETTS

Sheet	C-7
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INSTALL EROSION AND SEDIMENTATION BARRIER (TYP.)

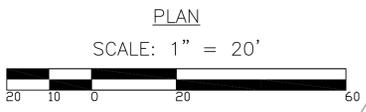
EXPLORATORY EXCAVATION (TYP.) RAISE VALVE BOX

PHASE 4:  
 INSTALL NEW:  
 12"x12" ANCHOR TEE  
 12"x8" REDUCER  
 12" GATE VALVE  
 8" GATE VALVE  
 12" DI PIPE  
 8" DI PIPE  
 VERTICAL BENDS AS REQUIRED TO PASS UNDER 12"+14" PIPES  
 45' BENDS (2)  
 CONNECT TO 12" GATE VALVE  
 INSTALLED DURING PHASE 1

PHASE 1:  
 INSTALL NEW:  
 16"x12" ANCHOR TEE  
 16" GATE VALVE  
 12" GATE VALVE  
 16" DI PIPE  
 16" COUPLINGS (2)  
 CONNECT TO EXISTING 16" FINISH WATER PIPE

INSTALL NEW 1" COPPER SERVICE WITH CURB STOP AND BOX TO PROPERTY LINE OR AS DIRECTED (TYP.)

INSTALL NEW 12" DI WATER PIPE WITH BENDS (TYP.)



Client	TOWN OF IPSWICH, MASSACHUSETTS
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT
	STATION 45+61 TO STATION 52+33

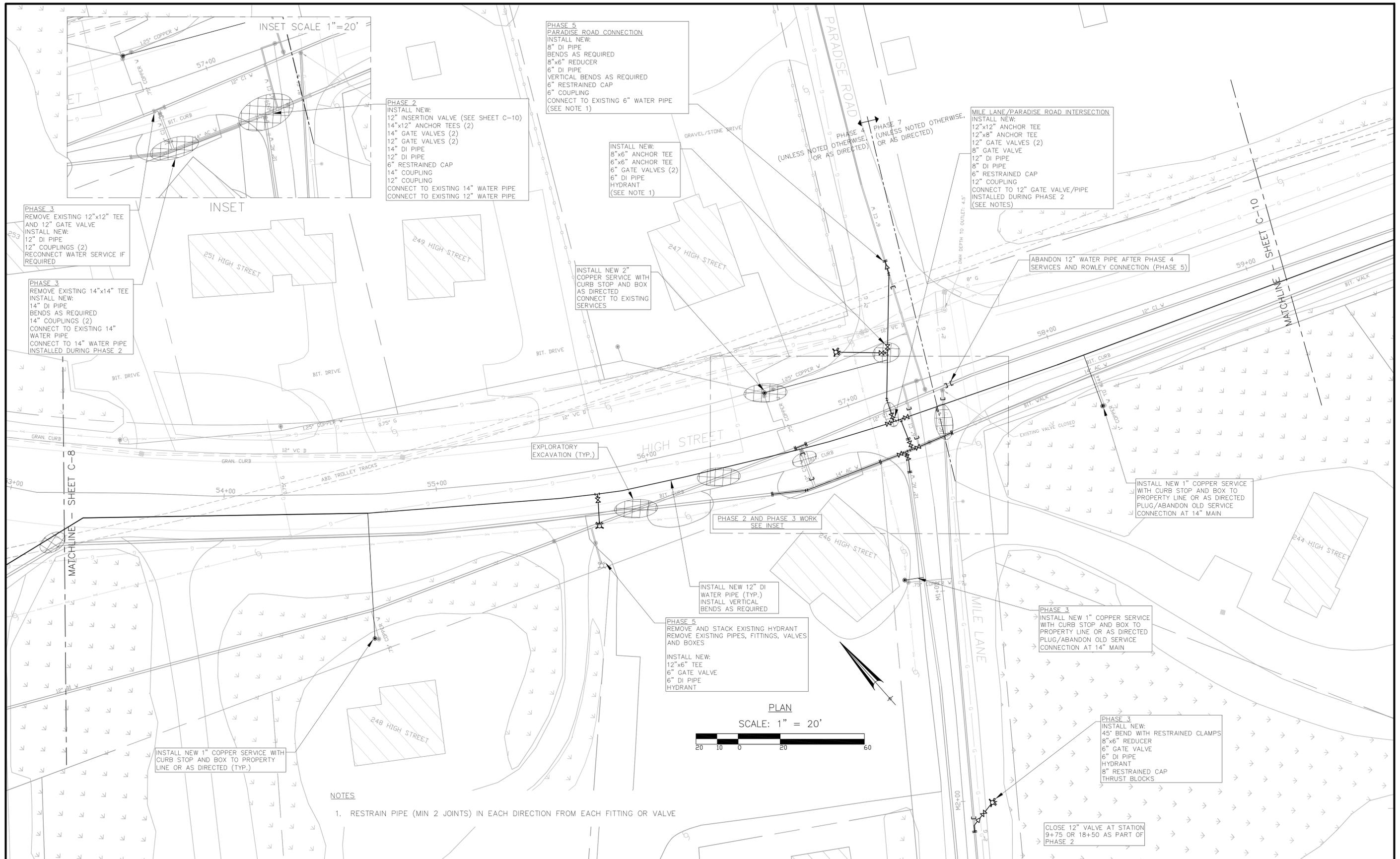
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Job	IP-HIGH ST.
Designed by	WMR
Drawn by	DJW
Checked by	WMR
Approved by	WMR
No.	
Description	
Date	
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 SALEM, MASSACHUSETTS

Sheet	C-8
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INSTALL NEW 1" COPPER SERVICE WITH CURB STOP AND BOX TO PROPERTY LINE OR AS DIRECTED (TYP.)

**NOTES**

1. RESTRAIN PIPE (MIN 2 JOINTS) IN EACH DIRECTION FROM EACH FITTING OR VALVE

Client	TOWN OF IPSWICH, MASSACHUSETTS
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT
	STATION 52+33 TO STATION 58+27

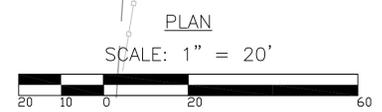
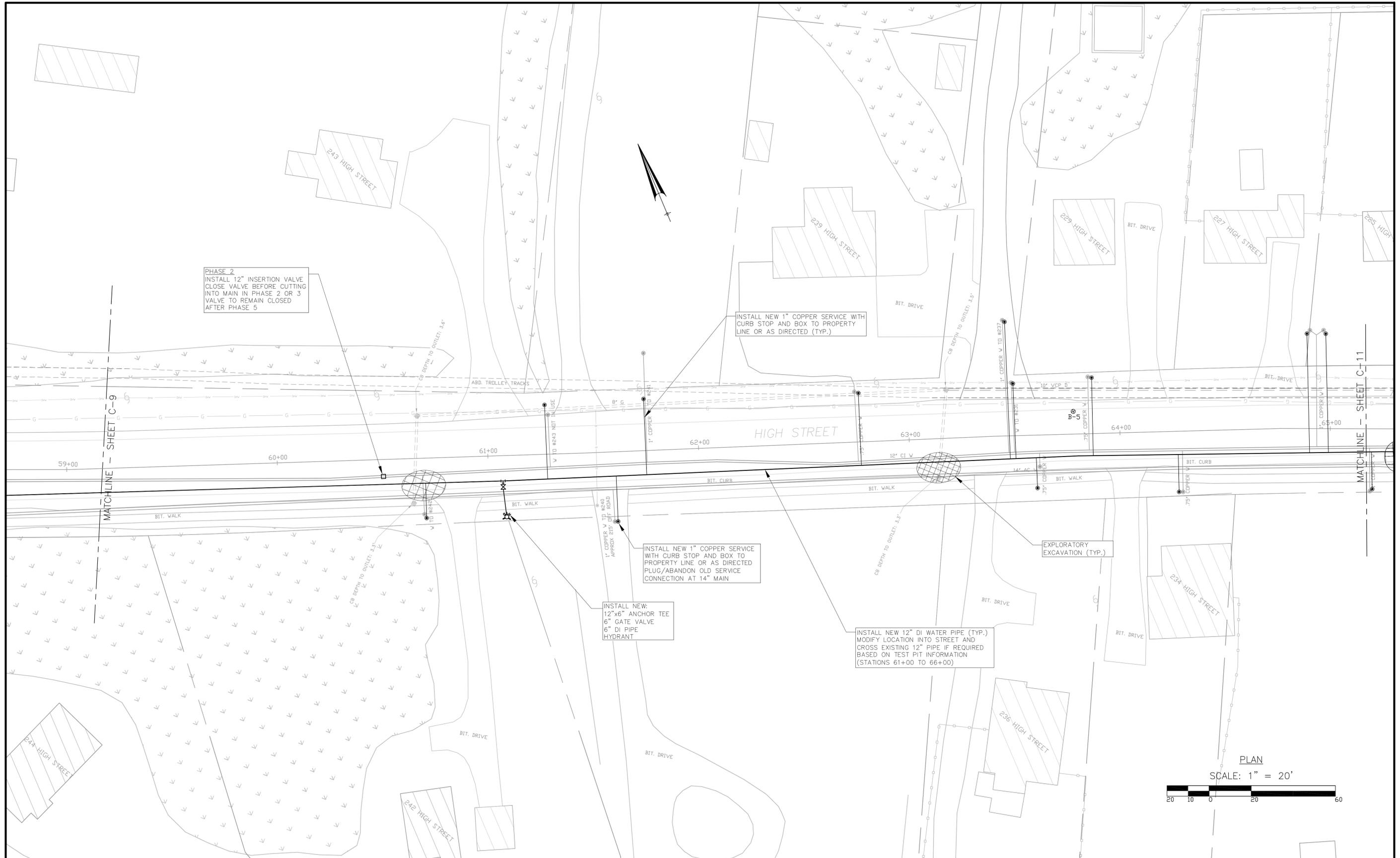
Scale	1"=20'
Date	3/22/2019
Job	IP-HIGH ST.
Designed by	WMR
Drawn by	DJW
Checked by	WMR
Approved by	WMR

No.	Description	Date



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 265 Essex Street, Suite 102  
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Sheet  
**C-9**



Client	TOWN OF IPSWICH, MASSACHUSETTS
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT
	STATION 58+27 TO STATION 64+28

Scale	1"=20'
Date	3/22/2019
Job	IP-HIGH ST.
Designed by	WMR
Drawn by	DJW
Checked by	WMR
Approved by	WMR
No.	
Description	
Date	
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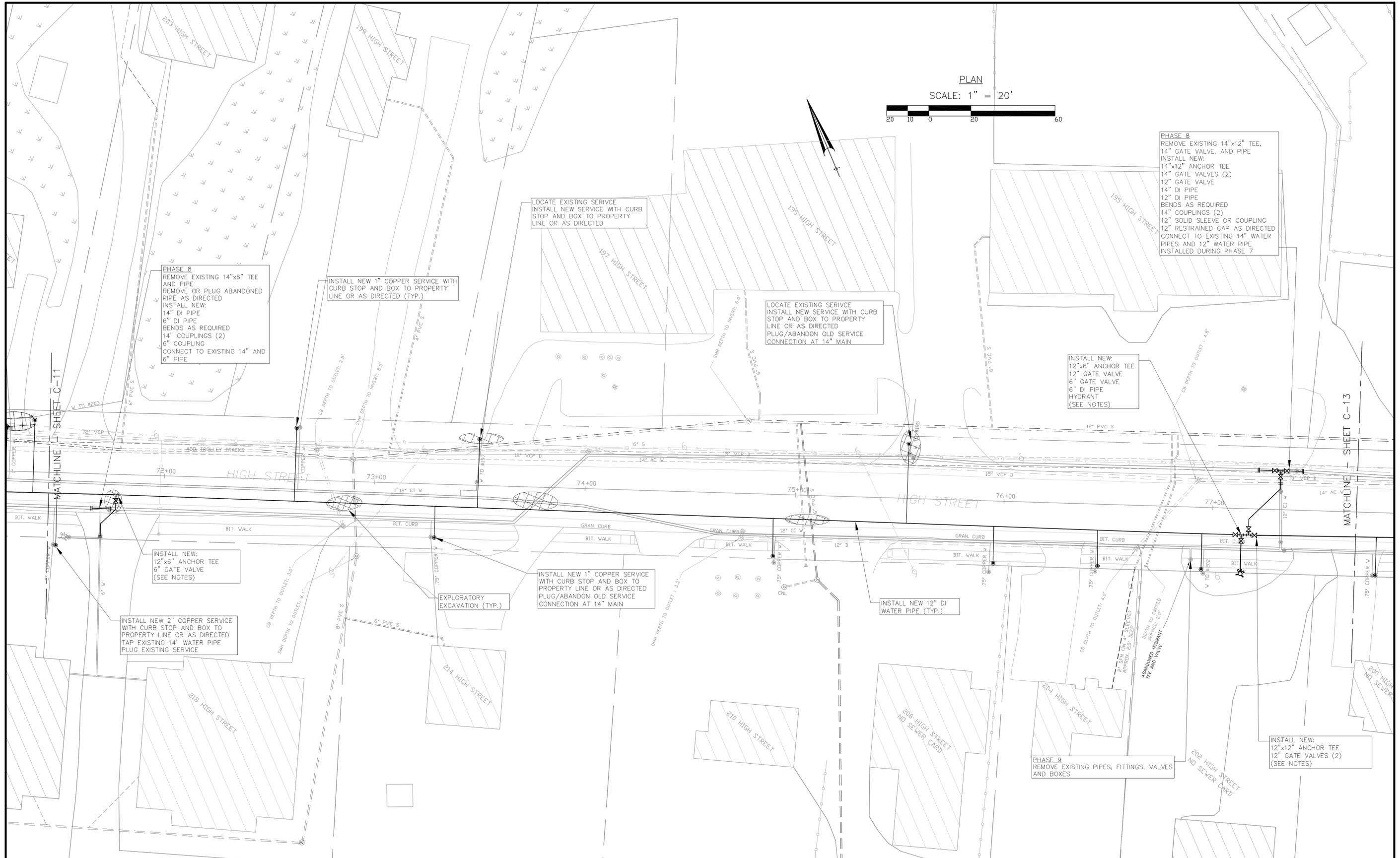


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PLAN  
SCALE: 1" = 20'

Client	TOWN OF IPSWICH, MASSACHUSETTS
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT
	STATION 70+56 TO STATION 76+78

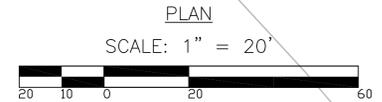
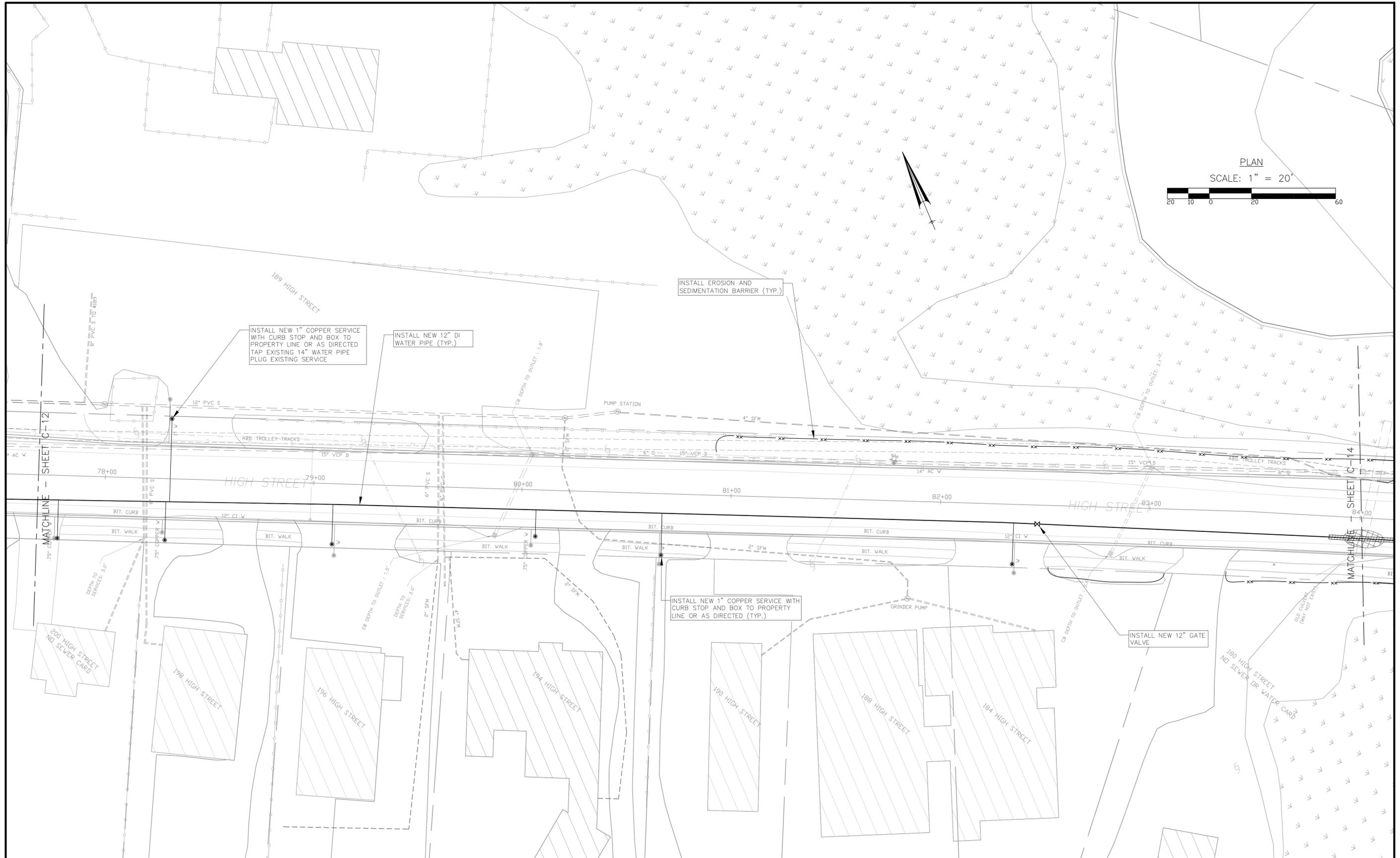
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Date	3/22/2019
Job	IP-HIGH ST.
Designed by	WMR
Drawn by	DJW
Checked by	WMR
Approved by	WMR
No.	
Description	
Date	
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SALEM, MASSACHUSETTS

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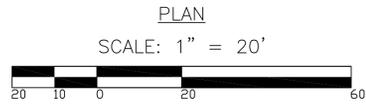
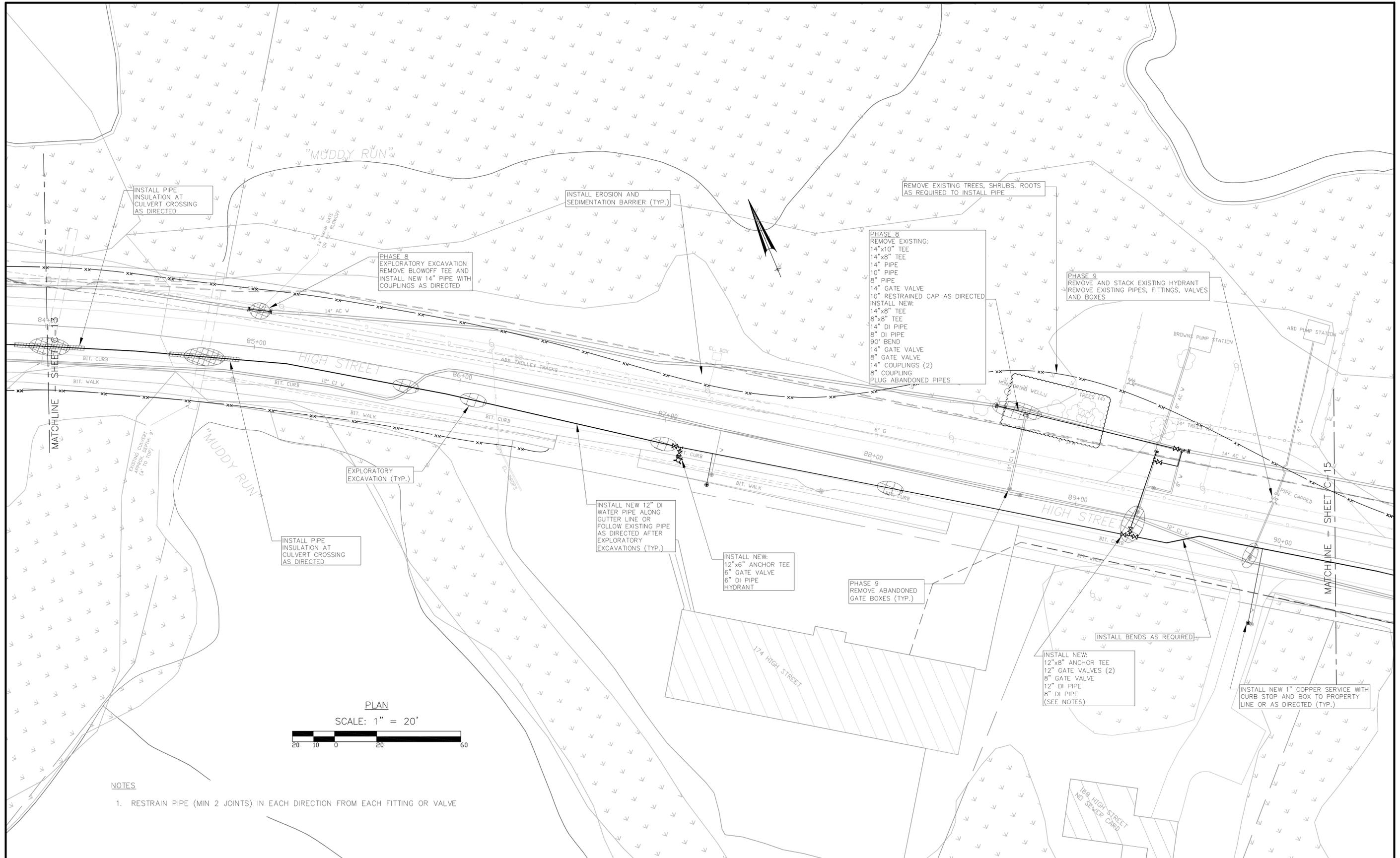
Client	TOWN OF IPSWICH, MASSACHUSETTS
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT
	STATION 76+78 TO STATION 83+07

Scale	1"=20'
Date	3/22/2019
Job	IP-HIGH ST.
Designed by	WMR
Drawn by	DJW
Checked by	WMR
Approved by	WMR
No.	
Description	
Date	
File: W:\Ipswich\High Street Water Main\CAD\Ipswich_Design32219.dwg	



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265 Essex Street, Suite 102  
SALEM, MASSACHUSETTS

Sheet  
**C-13**



- NOTES
1. RESTRAIN PIPE (MIN 2 JOINTS) IN EACH DIRECTION FROM EACH FITTING OR VALVE

Client	TOWN OF IPSWICH, MASSACHUSETTS
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT
	STATION 83+07 TO STATION 89+30

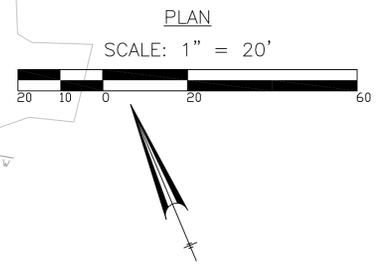
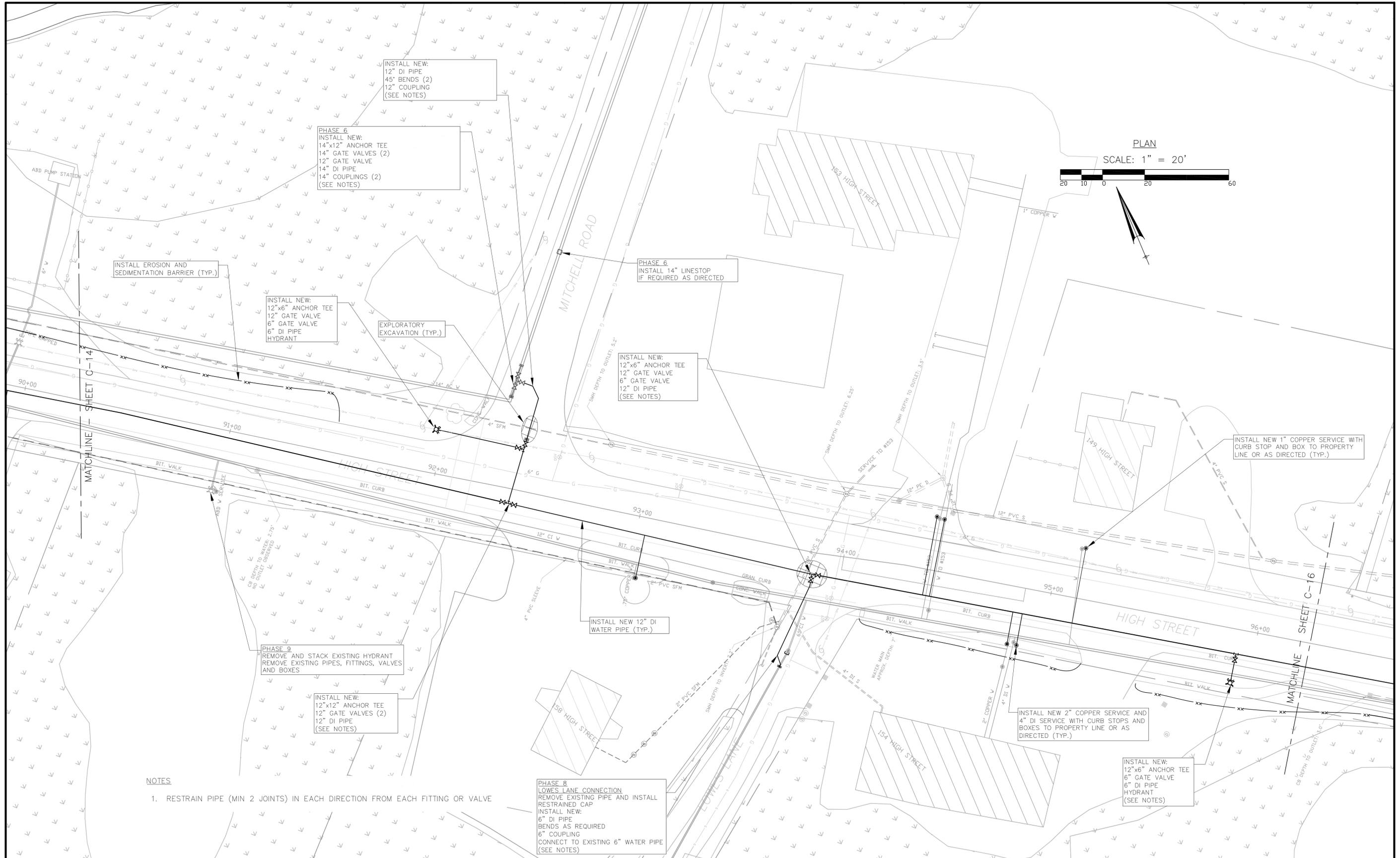
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Date	3/22/2019
Job	IP-HIGH ST.
Designed by	WMR
Drawn by	DJW
Checked by	WMR
Approved by	WMR
No.	
Description	
Date	
File:	W:\Ipswich\High Street Water Main\CAD\Ipswich_Design32219.dwg



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SALEM, MASSACHUSETTS

Sheet  
**C-14**



**NOTES**

1. RESTRAIN PIPE (MIN 2 JOINTS) IN EACH DIRECTION FROM EACH FITTING OR VALVE

INSTALL NEW:  
12" DI PIPE  
45' BENDS (2)  
12" COUPLING  
(SEE NOTES)

PHASE 6  
INSTALL NEW:  
14"x12" ANCHOR TEE  
14" GATE VALVES (2)  
12" GATE VALVE  
14" DI PIPE  
14" COUPLINGS (2)  
(SEE NOTES)

INSTALL EROSION AND  
SEDIMENTATION BARRIER (TYP.)

INSTALL NEW:  
12"x6" ANCHOR TEE  
12" GATE VALVE  
6" GATE VALVE  
6" DI PIPE  
HYDRANT

EXPLORATORY  
EXCAVATION (TYP.)

PHASE 6  
INSTALL 14" LINESSTOP  
IF REQUIRED AS DIRECTED

INSTALL NEW:  
12"x6" ANCHOR TEE  
12" GATE VALVE  
6" GATE VALVE  
12" DI PIPE  
(SEE NOTES)

INSTALL NEW 1" COPPER SERVICE WITH  
CURB STOP AND BOX TO PROPERTY  
LINE OR AS DIRECTED (TYP.)

PHASE 9  
REMOVE AND STACK EXISTING HYDRANT  
REMOVE EXISTING PIPES, FITTINGS, VALVES  
AND BOXES

INSTALL NEW:  
12"x12" ANCHOR TEE  
12" GATE VALVES (2)  
12" DI PIPE  
(SEE NOTES)

INSTALL NEW 12" DI  
WATER PIPE (TYP.)

PHASE 8  
LOWES LANE CONNECTION  
REMOVE EXISTING PIPE AND INSTALL  
RESTRAINED CAP  
INSTALL NEW:  
6" DI PIPE  
BENDS AS REQUIRED  
6" COUPLING  
CONNECT TO EXISTING 6" WATER PIPE  
(SEE NOTES)

INSTALL NEW 2" COPPER SERVICE AND  
4" DI SERVICE WITH CURB STOPS AND  
BOXES TO PROPERTY LINE OR AS  
DIRECTED (TYP.)

INSTALL NEW:  
12"x6" ANCHOR TEE  
6" GATE VALVE  
6" DI PIPE  
HYDRANT  
(SEE NOTES)

Client	TOWN OF IPSWICH, MASSACHUSETTS
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT
	STATION 89+30 TO STATION 95+25

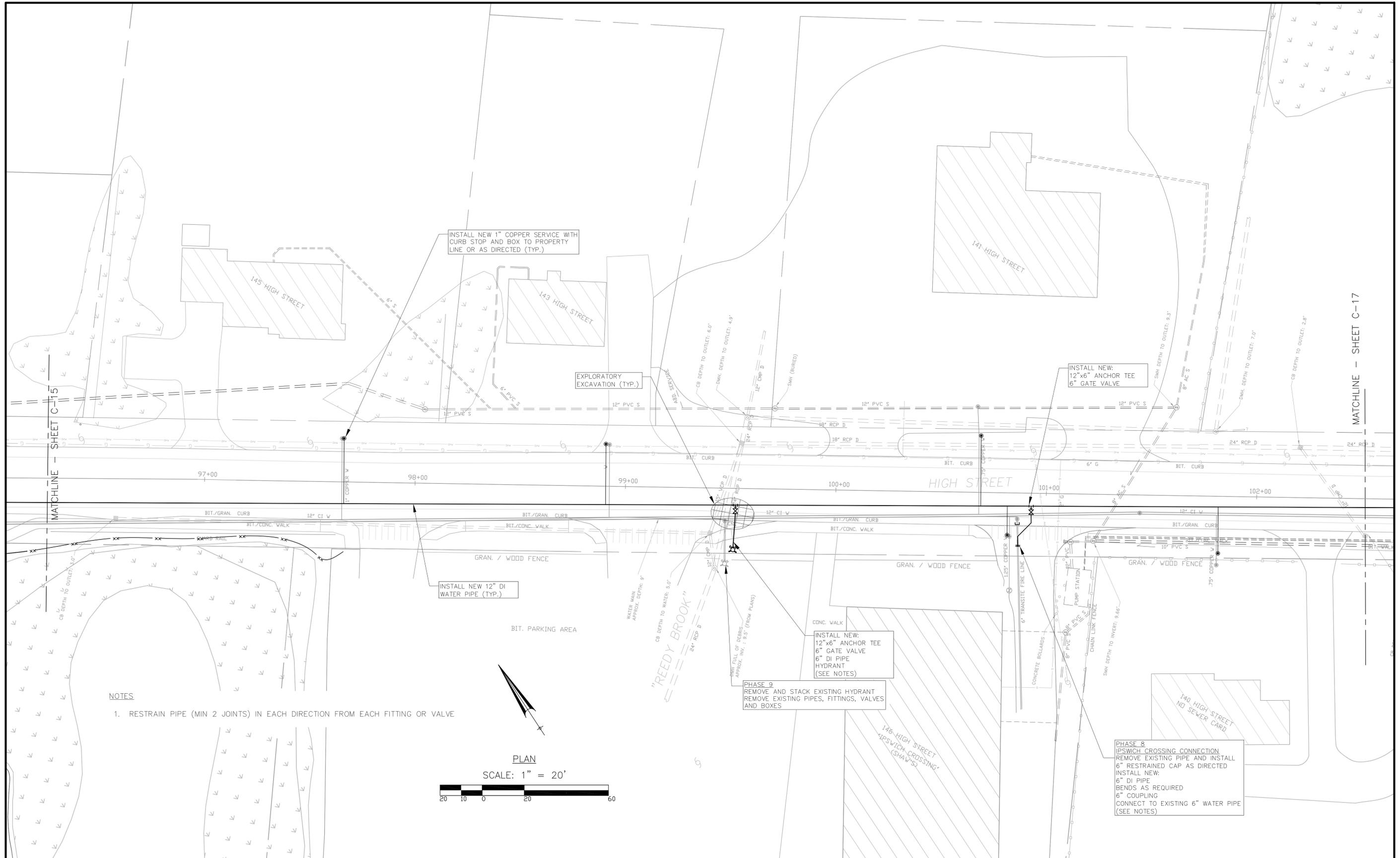
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Date	3/22/2019
Job	IP-HIGH ST.
Designed by	WMR
Drawn by	DJW
Checked by	WMR
Approved by	WMR
No.	
Description	
Date	
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SALEM, MASSACHUSETTS

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**NOTES**

1. RESTRAIN PIPE (MIN 2 JOINTS) IN EACH DIRECTION FROM EACH FITTING OR VALVE

**PLAN**

SCALE: 1" = 20'



Client	TOWN OF IPSWICH, MASSACHUSETTS
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT
	STATION 95+25 TO STATION 101+52

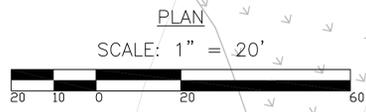
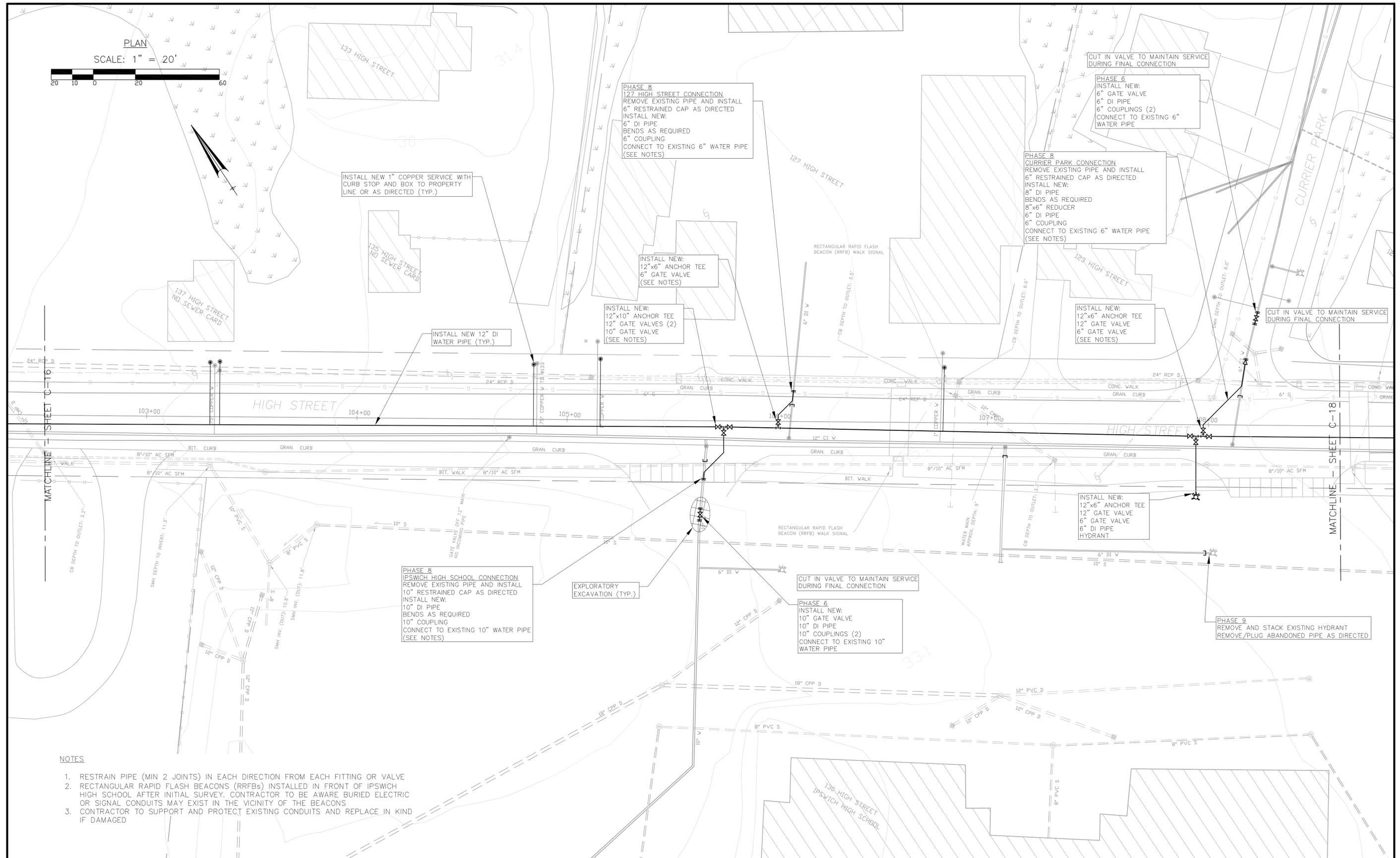
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Job	IP-HIGH ST.
Designed by	WMR
Drawn by	DJW
Checked by	WMR
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	No. _____ Description _____ Date _____
File:	W:\Ipswich\High Street Water Main\CAD\Ipswich_Design32219.dwg



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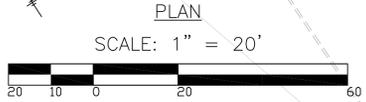
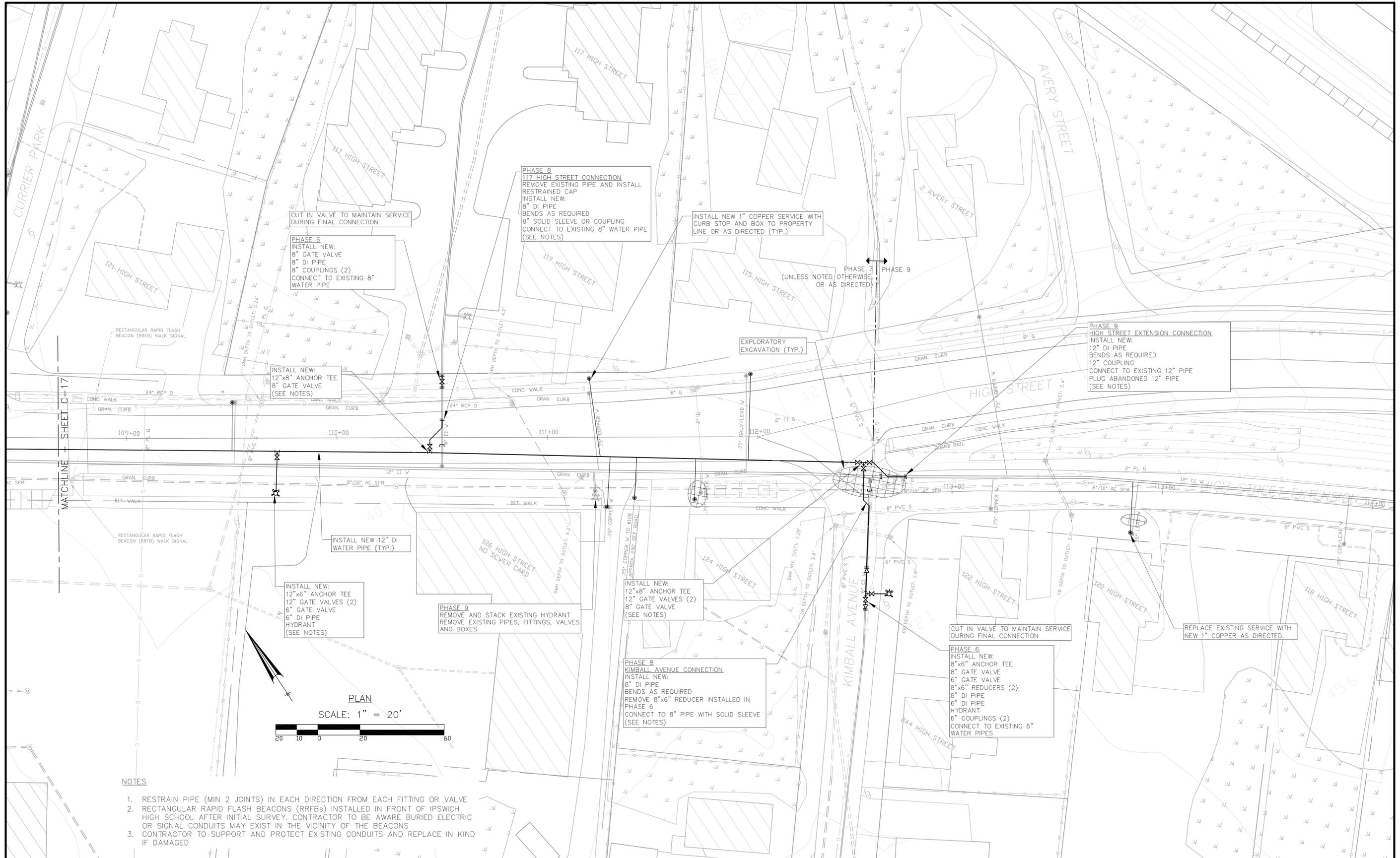
265 Essex Street, Suite 102  
SALEM, MASSACHUSETTS

Sheet	C-16
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- NOTES
1. RESTRAIN PIPE (MIN 2 JOINTS) IN EACH DIRECTION FROM EACH FITTING OR VALVE
  2. RECTANGULAR RAPID FLASH BEACONS (RRFBs) INSTALLED IN FRONT OF IPSWICH HIGH SCHOOL AFTER INITIAL SURVEY. CONTRACTOR TO BE AWARE BURIED ELECTRIC OR SIGNAL CONDUITS MAY EXIST IN THE VICINITY OF THE BEACONS
  3. CONTRACTOR TO SUPPORT AND PROTECT EXISTING CONDUITS AND REPLACE IN KIND IF DAMAGED

Client	TOWN OF IPSWICH, MASSACHUSETTS	Scale	1"=20'		<b>New England Civil Engineering Corp.</b> 265 Essex Street, Suite 102 SALEM, MASSACHUSETTS	Sheet	C-17
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT	Date	6/10/2019				
	STATION 102+51 TO STATION 108+61	Job	IP-HIGH ST.	Designed by	WMR		
		Drawn by	DJW	Checked by	WMR	No.	
		Approved by	WMR	Description		Date	
				File:	W:\Ipswich\High Street Water Main\CAD\Ipswich_Design\ConCom	recover.dwg	



- NOTES
1. RESTRAIN PIPE (MIN 2 JOINTS) IN EACH DIRECTION FROM EACH FITTING OR VALVE
  2. RECTANGULAR RAPID FLASH BEACONS (RRFBs) INSTALLED IN FRONT OF IPSWICH HIGH SCHOOL AFTER INITIAL SURVEY. CONTRACTOR TO BE AWARE BURIED ELECTRIC OR SIGNAL CONDUITS MAY EXIST IN THE VICINITY OF THE BEACONS
  3. CONTRACTOR TO SUPPORT AND PROTECT EXISTING CONDUITS AND REPLACE IN KIND IF DAMAGED

Client	TOWN OF IPSWICH, MASSACHUSETTS
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT
	STATION 108+61 TO STATION 114+00

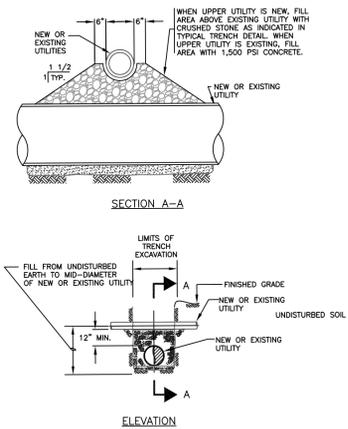
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No.	Description	Date

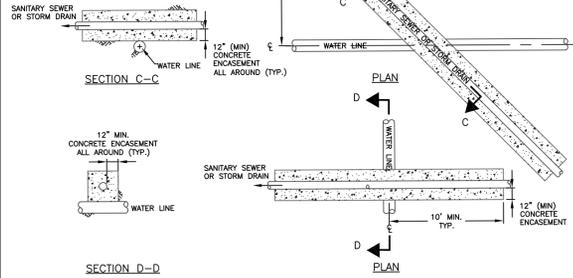


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SALEM, MASSACHUSETTS

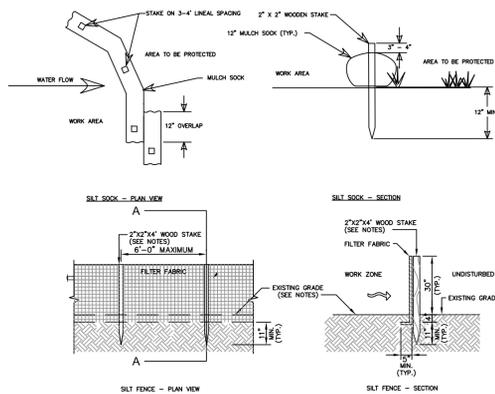
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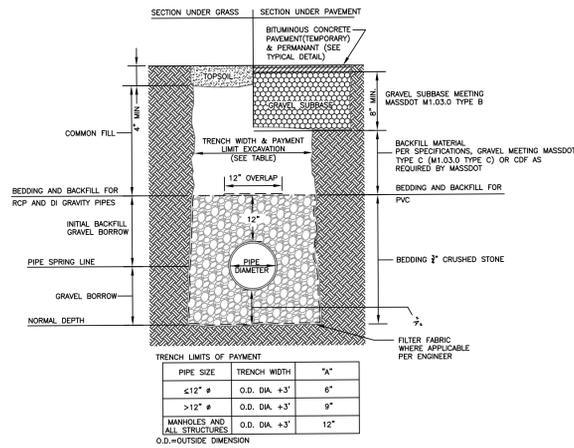
UTILITY CROSSING DETAIL  
NOT TO SCALE



CONCRETE ENCASEMENT DETAIL  
NOT TO SCALE

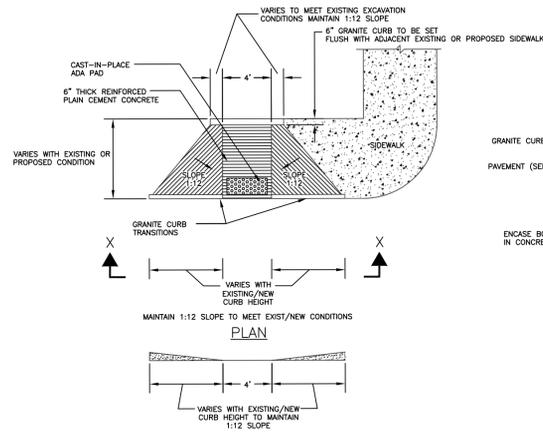


EROSION & SEDIMENTATION BARRIER  
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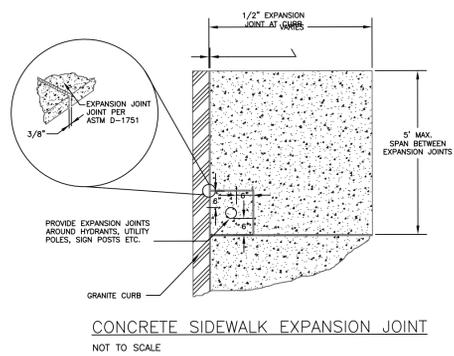


TRENCH DETAIL  
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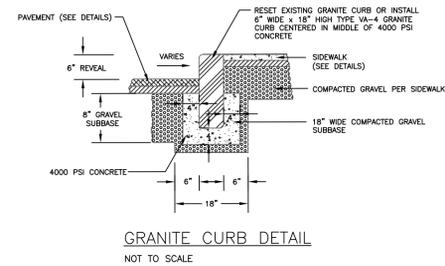
- NOTES:
- REFER TO SPEC. SECTION 02500-PAVING AND SURFACING, MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, AND PAVEMENT DETAILS FOR PAVEMENT AND BASE COURSE REQUIREMENTS.
  - REFER TO SPEC. SECTION 02200-EARTH EXCAVATION, BACKFILL, FILL, GRADING AND FOR BEDDING AND BACKFILL MATERIAL REQUIREMENTS.
  - FOR USE IN PAYMENT OF ALL ITEMS IN WHICH PAY TRENCH WIDTH IS A VARIABLE FOR THE CALCULATION OF QUANTITIES.
  - BEDDING SHALL BE PER TABLE UNLESS OTHERWISE INDICATED.
  - METAL FOIL MARKING TAPE TO BE PLACED ABOVE WATER PIPE AND SERVICES (MIN. 18" SEPARATION)



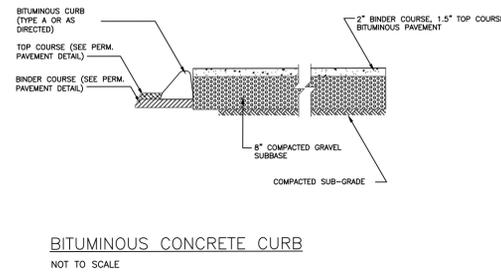
GRANITE CURB DETAIL AND CONCRETE SIDEWALK  
NOT TO SCALE



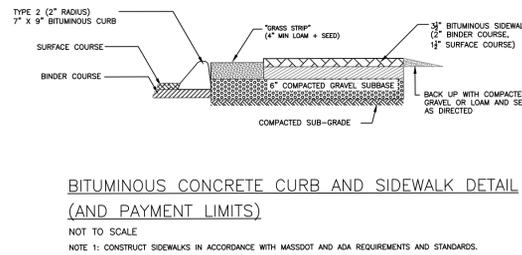
CONCRETE SIDEWALK EXPANSION JOINT  
NOT TO SCALE



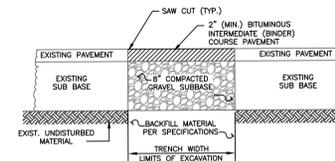
GRANITE CURB DETAIL  
NOT TO SCALE



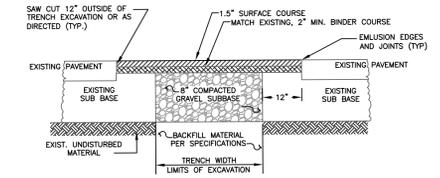
BITUMINOUS CONCRETE CURB  
NOT TO SCALE



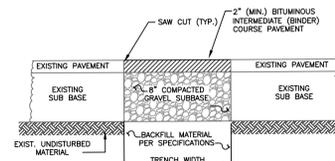
BITUMINOUS CONCRETE CURB AND SIDEWALK DETAIL (AND PAYMENT LIMITS)  
NOT TO SCALE



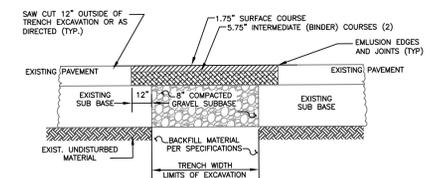
TEMPORARY TRENCH PAVEMENT DETAIL (TOWN ROADS)  
NOT TO SCALE, INSTALL AS DIRECTED



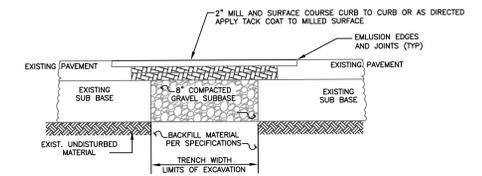
PERMANENT PAVEMENT DETAIL (TOWN ROADS)  
NOT TO SCALE



TEMPORARY TRENCH PAVEMENT DETAIL (MASSDOT)  
NOT TO SCALE, INSTALL AS DIRECTED



PERMANENT TRENCH PAVEMENT DETAIL (MASSDOT)  
NOT TO SCALE



PERMANENT OVERLAY PAVEMENT DETAIL (MASSDOT)  
NOT TO SCALE

- GENERAL PAVING NOTES:
- 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.
  - PERMANENT PAVEMENT SHALL BE PLACED BETWEEN APRIL 15 AND OCTOBER 15 OF EACH CALENDAR YEAR UNLESS APPROVED AND DIRECTED BY ENGINEER.
  - THE CONTRACTOR SHALL SAW CUT 12" OUTSIDE OF TRENCH EXCAVATION OR AS DIRECTED. TEMPORARY PAVEMENT SHALL BE REMOVED AND DISPOSED OF. THE GRAVEL SHALL BE FINE GRADES. EMISSIONS PLACED ON ALL JOINTS, AND PERMANENT PAVEMENT PLACED IN TWO COURSES ON TOWN ROADS AND THREE COURSES ON MASSDOT ROADS.
  - CONTRACTOR SHALL MATCH EXISTING ROADWAY GRADES AND EXISTING THICKNESS UNLESS OTHERWISE DIRECTED.
  - REFER TO SPECIFICATION SECTION 02500 PAVING AND SURFACING FOR ADDITIONAL REQUIREMENTS.
  - HOT MIX ASPHALT IN MASSDOT ROADWAY TO BE SUPERPAVE MIX IN ACCORDANCE WITH MASSDOT SPECIFICATIONS.

Client	TOWN OF IPSWICH, MASSACHUSETTS
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT
	DETAILS

Scale	N.T.S.
Date	6/10/2019
Job	IP-HIGH ST.
Designed by	WMR
Drawn by	DJW
Checked by	WMR No.
Approved by	WMR

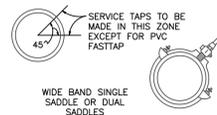
	Description	Date



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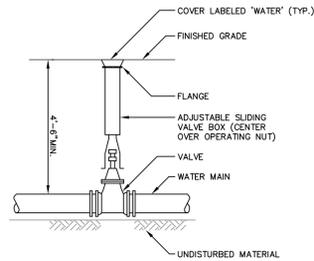
**SERVICE CONNECTION**

NOT TO SCALE

NOTES:  
1. BLOW-OFF & CHLORINATION TAPS ARE MADE IN VERTICAL POSITION

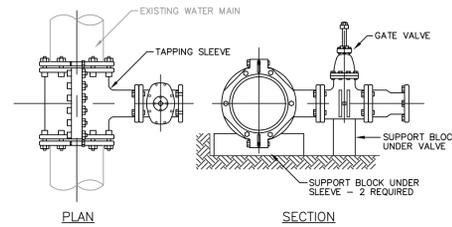
PIPE TAPPING SCHEDULE	
WATER MAIN TYPE AND DIAMETER	SERVICE TAP TYPE
12" OR LESS CAST IRON OR DUCTILE IRON	DSS, WBSS
16" AND UP CAST IRON OR DUCTILE IRON	DWSS

DSS - DUAL STRAP SADDLES  
WBSS - WIDE BAND STRAP SADDLES  
DWSS - DUAL WIDE BAND STRAP SADDLES



**TYPICAL VALVE BOX DETAIL**

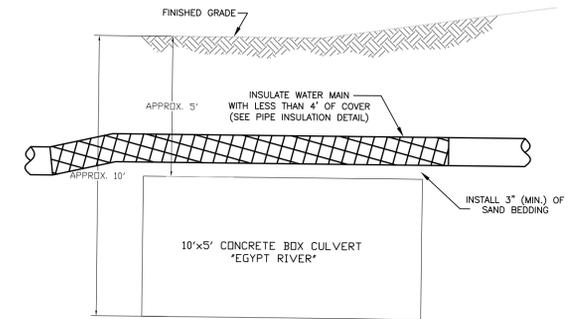
NOT TO SCALE



NOTE:  
SUPPORT BLOCKS TO BE PRESSURE TREATED WOOD OR CONCRETE MASONRY BLOCK.

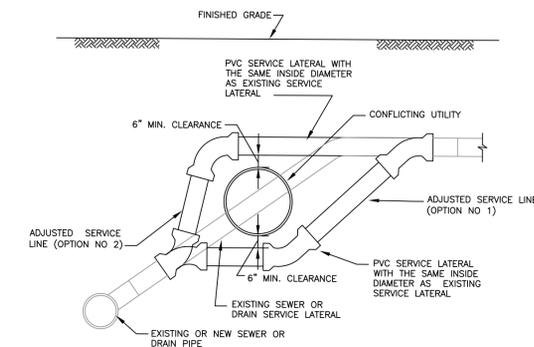
**TAPPING SLEEVE WITH GATE VALVE**

NOT TO SCALE



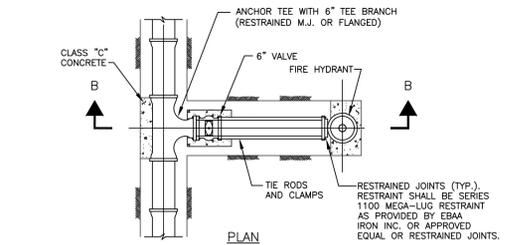
**EGYPT RIVER DRAIN CULVERT CROSSING**

NOT TO SCALE  
\*DEPTHS TO BE CONFIRMED BY EXPLORATORY EXCAVATION



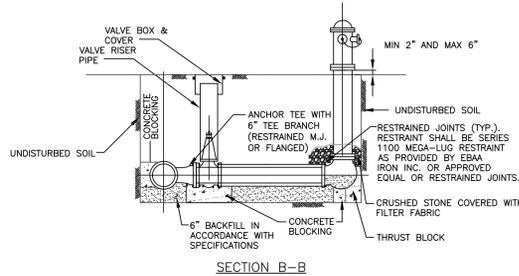
**SANITARY SEWER OR DRAIN SERVICE LATERAL RECONNECTION FOR CONFLICTS WITH OTHER UTILITY**

NOT TO SCALE



**FIRE HYDRANT DETAIL**

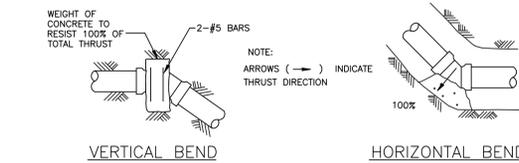
NOT TO SCALE



**FIRE HYDRANT DETAIL**

NOT TO SCALE

NOTES:  
1. LOCATE FIRE HYDRANTS AS SHOWN ON DRAWINGS, APPROXIMATELY 3 FEET BEHIND CURB OR PROJECTED FUTURE CURB.  
2. THE FIRE HYDRANT STEAMER NOZZLE SHALL FACE THE STREET.  
3. REFER TO SPECIFICATION SECTION 03300 FOR CONCRETE (3,000 PSI) THRUST BLOCKS.  
4. PROVIDE HYDRANT, VALVE AND TEE JOINTS WITH RESTRAINED MECHANICAL JOINTS.

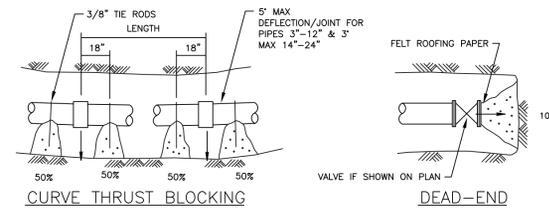


**VERTICAL BEND**

**HORIZONTAL BEND**

NOTE:  
CONC. FOR THRUST BLOCKS TO BE 3000 P.S.I.

NOTE:  
FIGURE (100%) AT THRUST BLOCK INDICATES PERCENT OF TOTAL THRUST TO BE APPLIED FOR BEARING AREA.



**CONCRETE THRUST BLOCKS FOR DUCTILE IRON PIPE**

NOT TO SCALE

PIPE SIZE	THRUST PER PSI OF WATER PRESSURE AT VARIOUS FITTINGS			
	DEAD END	90° ELBOW	45° ELBOW	22 1/2° ELBOW
6	39	55	30	15
8	67	94	51	26
10	109	154	84	43
12	155	218	119	61
16	275	383	209	106
18	351	494	269	137

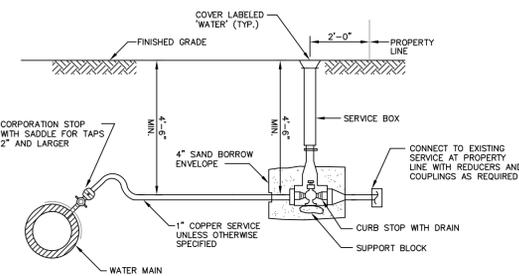
EXAMPLE:  
8-INCH 90° ELBOW, PRESSURE=200lb./SQ.IN.  
FROM TABLE: THRUST=94 x 200=18,800 lb.  
ASSUME BEARING STRENGTH OF SOIL=2000 lb./SQ.FT.

18,800 / 2000 = 9.4 SQ.FT. = AREA OF BEARING REQUIRED FOR THRUST BLOCK

PIPE SIZE - in.	SIDE THRUST PER 100 lb./sq.in. PRESSURE PER DEGREE OF DEFLECTION	
	15°	30°
6	72	12
8	122	16
10	197	18

MULTIPLY THRUST BY DEGREE OF DEFLECTION TO OBTAIN TOTAL THRUST

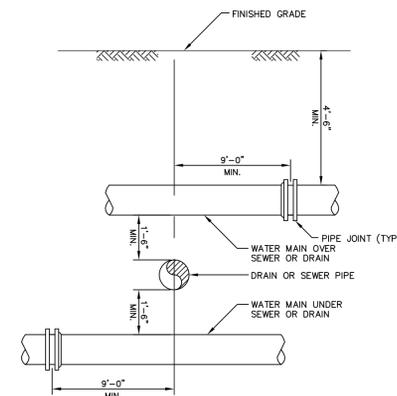
NOTES:  
1. IN USING THE ABOVE TABLES, USE THE MAXIMUM INTERNAL PRESSURE ANTICIPATED (i.e. HYDROSTATIC TEST PRESSURE, POSSIBLE SURGE PRESSURE DUE TO PUMP SHUT-OFF, ETC.).  
2. ASSUME A SOIL BEARING STRENGTH OF 2000 LB. PER SQ. FOOT.  
3. JOINTS SHALL BE PROTECTED BY FELT ROOFING PAPER PRIOR TO PLACING CONCRETE.  
4. REFER TO SPECIFICATION SECTION 03300 - CONCRETE FOR CONCRETE REQUIREMENTS



**COPPER SERVICE CONNECTION DETAIL**

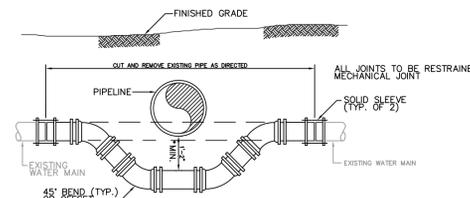
NOT TO SCALE

NOTES:  
1. FLUSH ALL NEW SERVICE LINES PRIOR TO CONNECTING TO EXISTING.  
2. AFTER CONNECTION, CONTRACTOR SHALL ASSIST WATER DEPT. PERSONNEL IN FLUSHING SERVICE LINES UP TO THE METER.  
3. COPPER SERVICE TO BE INSTALLED IN 6-INCH SAND ENVELOPE.  
4. CONNECT TO EXISTING SERVICE WHERE EXISTING SERVICES DO NOT EXIST, PLUG END OF CURB STOP.  
5. ALL NEW COPPER SERVICES TO BE CONTINUOUS WITHOUT UNIONS OR COUPLINGS BETWEEN CORPORATION AND CURB STOP.



**WATER MAIN CROSSING WITH SEWER OR DRAIN**

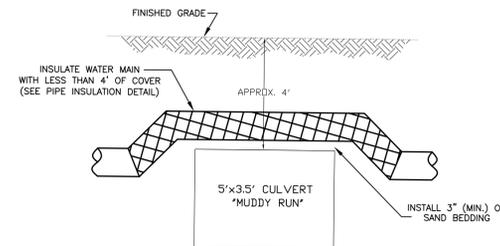
NOT TO SCALE



**RELOCATION OF EXISTING WATER MAIN DETAIL**

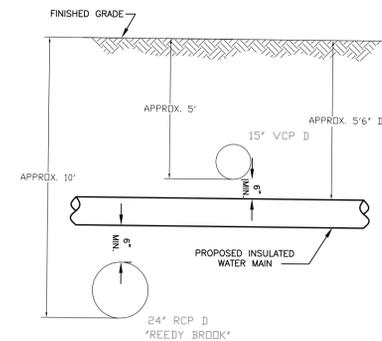
NOT TO SCALE

\*FOR SEWER CROSSINGS, RELOCATE MAIN ABOVE SEWER (WHERE POSSIBLE) AND PROVIDE 18" MINIMUM CLEARANCE.



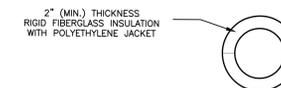
**MUDDY RUN DRAIN CULVERT CROSSING**

NOT TO SCALE  
\*DEPTHS TO BE CONFIRMED BY EXPLORATORY EXCAVATION



**REEDY BROOK DRAIN CROSSING**

NOT TO SCALE  
\*DEPTHS TO BE CONFIRMED BY EXPLORATORY EXCAVATION



**PIPE INSULATION DETAIL**

NOT TO SCALE

Client	TOWN OF IPSWICH, MASSACHUSETTS
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT
	DETAILS

Scale	1"=20'
Date	6/10/2019
Job	IP-HIGH ST.
Designed by	WMR
Drawn by	DJW
Checked by	WMR No.
Approved by	WMR

Description	Date
File: W:\Ipswich\High Street Water Main\CAD\Ipswich_Details.dwg	



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**NOTES:**

- ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
- ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
- TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
- TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
- SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
- CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS.
- THE FIRST FIVE PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.
- THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
- DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
- MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
- MINIMUM LANE WIDTH IS TO BE 11 FEET (3.3m) UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
- ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.

**LEGEND:**

- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- ▨ WORK ZONE
- ☐ WORK VEHICLE
- P/F POLICE/FLAGGER DETAIL
- ➔ DIRECTION OF TRAFFIC
- ☒ TRUCK MOUNTED ATTENUATOR
- ▤ TYPE III BARRICADE
- ☒ IMPACT ATTENUATOR
- ☒ TRAFFIC OR PEDESTRIAN SIGNAL
- ☐ CHANGEABLE MESSAGE SIGN
- ☒ MEDIAN BARRIER
- ☒ SIGN
- ☒ ARROW BOARD
- ☒ MEDIAN BARRIER WITH WARNING LIGHTS

THE IDEAL CAPACITY OF A MAJOR HIGHWAY IS GENERALLY CONSIDERED TO BE 1900 PASSENGER CARS PER HOUR PER LANE (PCPHPL). IN WORK ZONES ON A MULTI-LANE DIVIDED HIGHWAY, THE FOLLOWING VOLUME GUIDELINES HAVE BEEN SUGGESTED:

**MEASURED AVERAGE WORK ZONE CAPACITIES**

NUMBER OF LANES		NUMBER OF STUDIES	AVERAGE CAPACITY	
NORMAL (EXISTING)	OPEN (TO TRAFFIC)		VPH	VPHPL
3	1	7	1,170	1,170
3	1	8	1,340	1,340
5	2	8	2,740	1,370
4	2	4	2,960	1,480
3	2	9	2,980	1,490
4	3	4	4,560	1,520

Source: Dudek, C., *Notes on Work Zone Capacity and Level of Service*, Texas Transportation Institute, Texas A&M University, College Station, Texas (1984)

BY OBTAINING HOURLY TRAFFIC COUNTS FOR A PARTICULAR ROADWAY (WITH A MINIMUM OF A 48-HOUR AUTOMATIC TRAFFIC RECORDER (ATR) COUNT), THIS WILL HELP TO DETERMINE AT WHAT TIMES OF THE DAY OR NIGHT A CERTAIN NUMBER OF LANES MAY BE CLOSED.



Notes for Traffic Management

FIGURE GEN-1  
GENERAL GUIDELINES

**SUGGESTED WORK ZONE WARNING SIGN SPACING**

ROAD TYPE	DISTANCE BETWEEN SIGNS **		
	A	B	C
LOCAL OR LOW VOLUME ROADWAYS*	350 (100)	350 (100)	350 (100)
MOST OTHER ROADWAYS*	500 (150)	500 (150)	500 (150)
FREEWAYS AND EXPRESSWAYS*	1,000 (300)	1,500 (450)	2,640 (800)

\* ROAD TYPE TO BE DETERMINED BY MASSDOT OFFICE OF TRANSPORTATION PLANNING.

\*\* DISTANCES ARE SHOWN IN FEET (METERS). THE COLUMN HEADINGS A, B, AND C ARE THE DIMENSIONS SHOWN IN THE DETAIL/ TYPICAL SETUP FIGURES. THE A DIMENSION IS THE DISTANCE FROM THE TRANSITION OR POINT OF RESTRICTION TO THE FIRST SIGN. THE B DIMENSION IS THE DISTANCE BETWEEN THE FIRST AND SECOND SIGNS. THE C DIMENSION IS THE DISTANCE BETWEEN THE SECOND AND THIRD SIGNS. (THE "THIRD" SIGN IS THE FIRST ONE TYPICALLY ENCOUNTERED BY A DRIVER APPROACHING A TEMPORARY TRAFFIC CONTROL (TTC) ZONE.)

THE "THIRD" SIGN ABOVE IS TYPICALLY REFERRED TO AS AN "ADVANCE WARNING" SIGN ON THE TTC SETUPS. THESE ADVANCE WARNING SIGNS ARE LOCATED PRIOR TO THE PROJECT LIMITS ON ALL APPROACHES (i.e. THE W20-1 SERIES (ROAD WORK XX FT) SIGNS), AND USUALLY REMAIN FOR THE DURATION OF THE PROJECT. ADDITIONAL SIGNS (i.e. "RIGHT LANE CLOSED 1 MILE" AND "LEFT LANE CLOSED 1 MILE") HAVE BEEN SHOWN IN SOME FIGURES AS EXAMPLES OF REINFORCEMENT SIGN PLACEMENT BUT ARE USED IN RARE OCCASIONS.

THE FIRST AND SECOND WARNING SIGNS ABOVE ARE REFERRED TO AS THE OPERATIONAL (DAY-TO-DAY) WORK ZONE SIGNS AND MAY BE MOVED DEPENDING ON WHERE THE SPECIFIC ROADWAY WORK FOR THAT DAY IS LOCATED.

R2-10a SIGNS SHALL BE PLACED BETWEEN THE SECOND AND THIRD SIGNS AS DESCRIBED ABOVE.

R2-10a, R2-10e, AND W20-1 SERIES SIGNS ARE TO BE INCLUDED ON ALL DETAILS/TYPICAL SETUPS.

Based on: Table 6C-1 MUTCD LATEST EDITION

**STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED**

SPEED* (km/h)	DISTANCE (m)	SPEED* (mph)	DISTANCE (ft)
30	35	20	115
40	50	25	155
50	65	30	200
60	85	35	250
70	105	40	305
80	130	45	360
90	160	50	425
100	185	55	495
110	220	60	570
120	250	65	645
		70	730
		75	820

\*POSTED SPEED, OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED.

THESE VALUES MAY BE USED TO DETERMINE THE LENGTH OF LONGITUDINAL BUFFER SPACES.

THE DISTANCES IN THE ABOVE CHART REPRESENT THE MINIMAL VALUES FOR BUFFER SPACING.

Source: Table 6C-2 MUTCD LATEST EDITION



Notes for Traffic Management

FIGURE GEN-2  
NOTES ON WORK ZONE DISTANCES

**CONVENTIONAL ROADWAY**— A STREET OR HIGHWAY OTHER THAN A LOW-VOLUME ROAD, EXPRESSWAY, OR FREEWAY.

**EXPRESSWAY**— A DIVIDED HIGHWAY WITH PARTIAL CONTROL OF ACCESS.

**FREEWAY**— A DIVIDED HIGHWAY WITH FULL CONTROL OF ACCESS.

**LOW-VOLUME ROAD**— A FACILITY LYING OUTSIDE OF BUILT-UP AREAS OF CITIES, TOWNS, AND COMMUNITIES, AND IT SHALL HAVE A TRAFFIC VOLUME OF LESS THAN 400 ADT. IT SHALL NOT BE A FREEWAY, EXPRESSWAY, INTERCHANGE RAMP, FREEWAY SERVICE ROAD OR A ROAD ON A DESIGNATED STATE HIGHWAY SYSTEM.

Source: MUTCD LATEST EDITION

**TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES**

TYPE OF TAPER	TAPER LENGTH (L)*
MERGING TAPER	AT LEAST L
SHIFTING TAPER	AT LEAST 0.5L
SHOULDER TAPER	AT LEAST 0.33L
ONE-LANE, TWO-WAY TRAFFIC TAPER	50 FT MIN.(15 m) 100 FT(30 m) MAX.
DOWNSTREAM TAPER	50 FT MIN.(15 m) 100 FT MAX.(30 m) PER LANE

Source: Table 6C-3 MUTCD LATEST EDITION

**FORMULAS FOR DETERMINING TAPER LENGTHS**

SPEED LIMIT (S)	TAPER LENGTH (L) FEET	SPEED LIMIT (S)	TAPER LENGTH (L) Meters
40 MPH OR LESS	$L = \frac{WS^2}{60}$	60 KM/H OR LESS	$L = \frac{WS^2}{155}$
45 MPH OR MORE	$L = WS$	70 KM/H OR MORE	$L = \frac{WS}{1.6}$

WHERE: L = TAPER LENGTH IN FEET (METERS)

W = WIDTH OF OFFSET IN FEET (METERS)

S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH (KM/H)

Source: Table 6C-4 MUTCD LATEST EDITION



Notes for Traffic Management

FIGURE GEN-3  
NOTES ON WORK ZONE DISTANCES

**NOTES:**

- TRAFFIC CONTROL MEASURES SHALL INCLUDE USE OF POLICE DETAILS AS REQUIRED.
- TRAFFIC CONTROL SIGNAGE SHALL UTILIZE POLICE OFFICER AHEAD IN LIEU OF FLAGGER AHEAD.
- DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER OR POLICE DETAIL.
- ALL TEMPORARY WALKWAYS SHALL MEET ADA/AAB GUIDELINES.
- ADA COMPLIANT PEDESTRIAN ACCESS SHALL BE MAINTAINED AT ALL TIMES AND SHALL INCLUDE ADDITIONAL SIGNAGE WHERE NEEDED TO DIRECT PEDESTRIAN TRAFFIC AROUND WORK ZONE.
- ANY WORK THAT IMPACTS THE TRAVELED WAY MAY NOT OCCUR DURING PEAK HOUR TRAFFIC, PEAK HOUR FOR THIS LOCATION IS DEFINED AS FROM 7:00-9:00AM AND 3:00-6:00PM ON WEEKDAYS, UNLESS EXTENDED HOURS AND SCHEDULE ARE APPROVED BY MASSDOT AND THE TOWN.

Client	TOWN OF IPSWICH, MASSACHUSETTS
Project	HIGH STREET WATER MAIN REPLACEMENT PROJECT
	TEMPORARY TRAFFIC CONTROL DETAILS

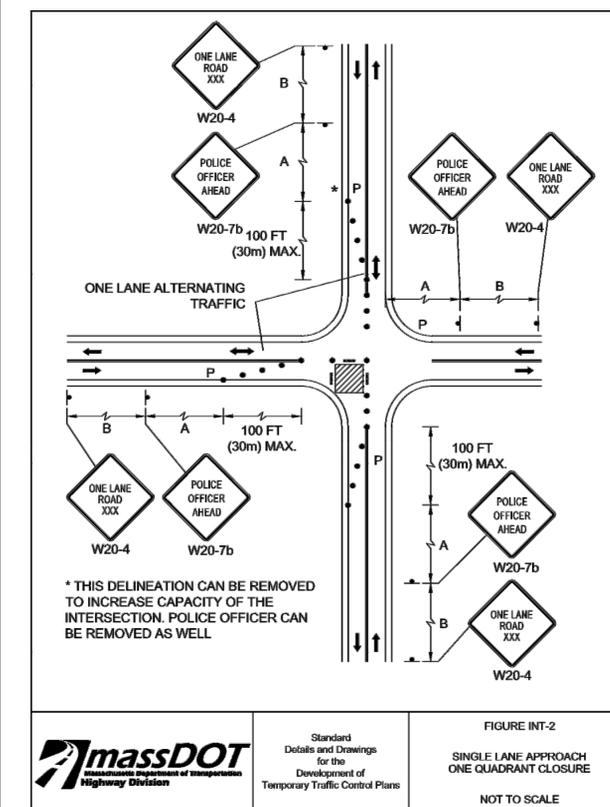
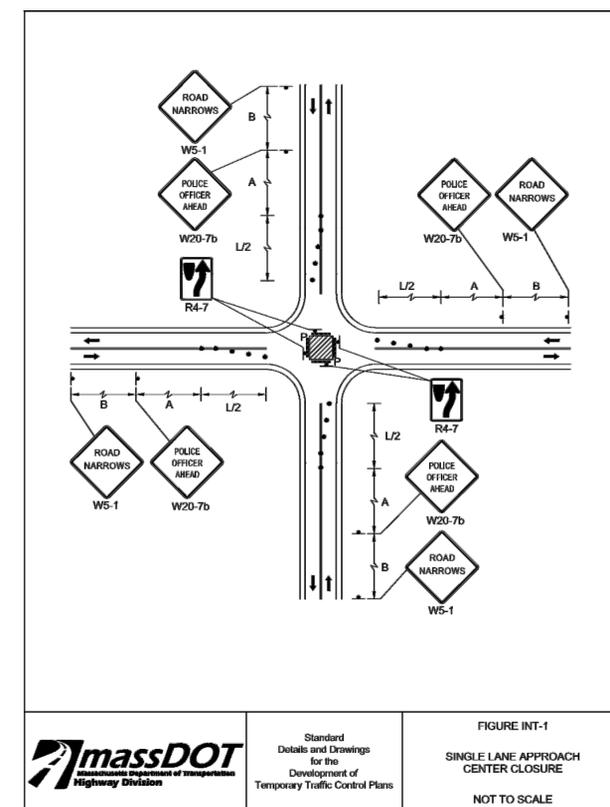
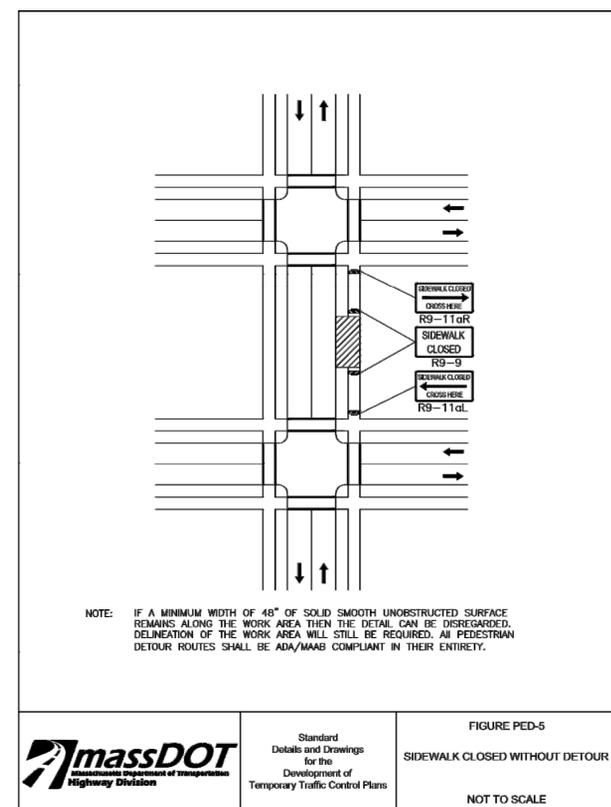
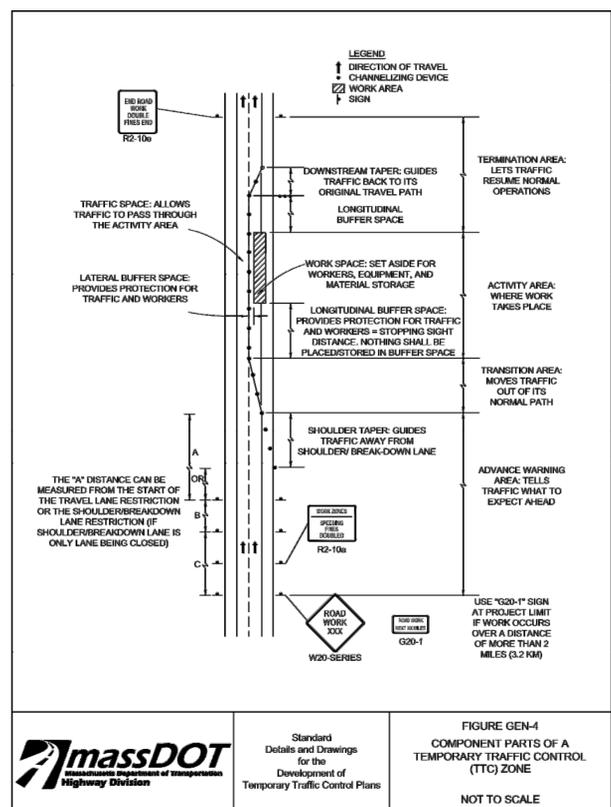
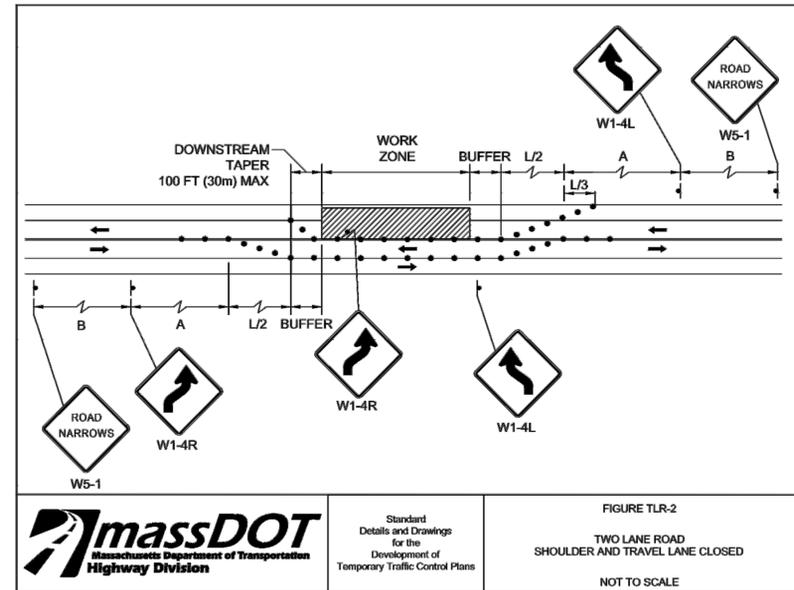
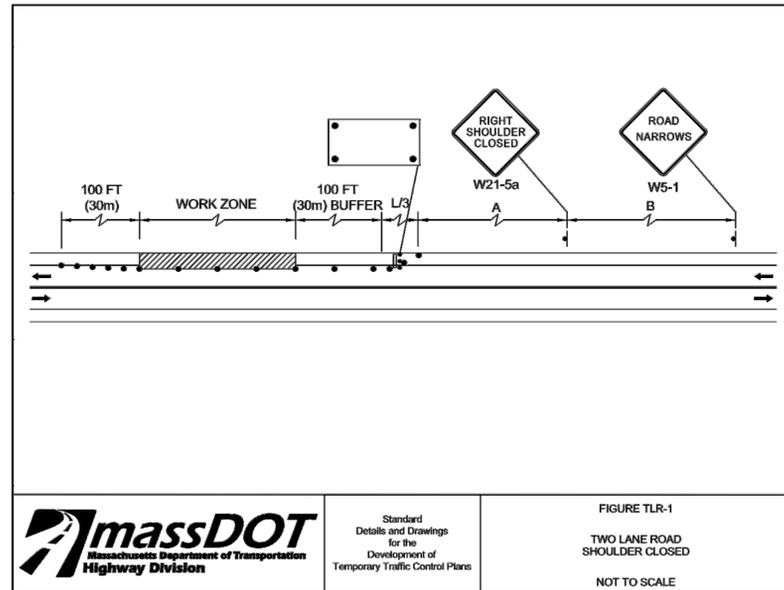
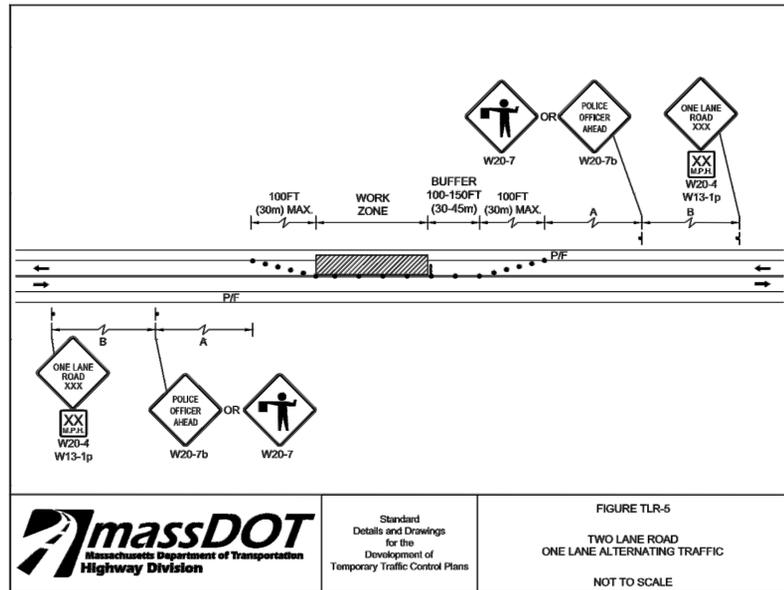
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Approved by	WMR File: W:\Ipswich\High Street Water Main\CAD\Ipswich_Details.dwg



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NOTES

1. TRAFFIC CONTROL MEASURES SHALL INCLUDE USE OF POLICE DETAILS AS REQUIRED.
2. TRAFFIC CONTROL SIGNAGE SHALL UTILIZE POLICE OFFICER AHEAD IN LIEU OF FLAGGER AHEAD.
3. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER OR POLICE DETAIL.
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