CITY OF SOMERVILLE, MASSACHUSETTS MEDFORD STREET AT PEARL STREET SEWER REPLACEMENT

MARCH 2016

DIRECTOR OF ENGINEERING

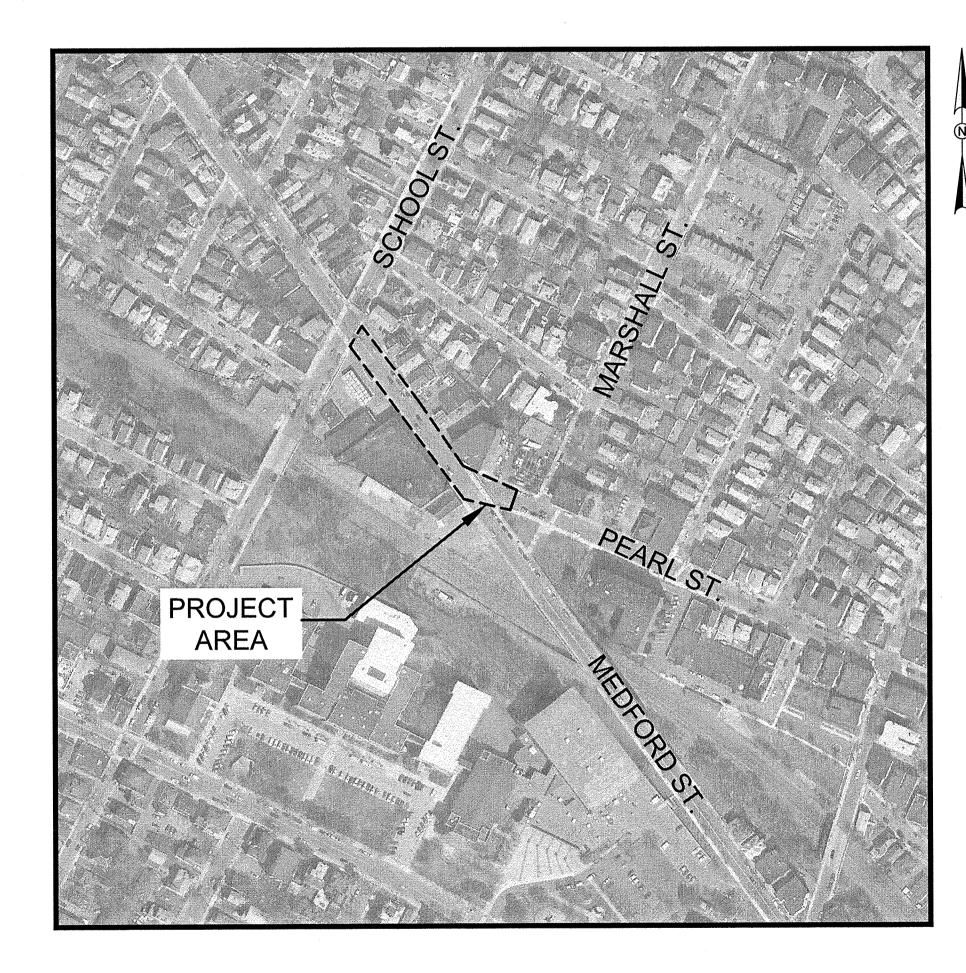
CHARLES QUIGLEY, P.E.

DEPARTMENT OF PUBLIC WORKS COMMISSIONER

STANLEY KOTY

MAYOR

JOSEPH A. CURTATONE

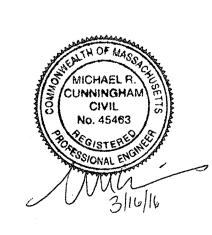


SSAMULIO LIGH

DRAWING LIST							
Sheet Number	Sheet Title						
	COVER						
G-1	GENERAL NOTES						
C-1	SITE PLAN AND PROFILE						
CG-1	DETAILS						
CG-2	GEOTECHNICAL MONITORING AND INSTRUMENTATION PLAN AND DETAILS						
TMP-1	TRAFFIC MANAGEMENT NOTES AND DETAILS						
TMP-2	TRAFFIC MANAGEMENT DETOUR PLAN						

LOCUS PLAN





GENERAL NOTES

- . INFORMATION AS SHOWN ON THE DRAWINGS RELATING TO MATERIALS, CONDITIONS AND/OR LOCATIONS OF EXISTING PIPES, CABLES, CONDUITS, AND STRUCTURES EXPECTED OVER/UNDER CROSSING INFORMATION HAS BEEN COMPILED FROM THE BEST AVAILABLE INFORMATION INCLUDING FIELD SURVEY, RECORD MAPS AND DRAWINGS, AND UTILITY RECORD DRAWINGS. THE OWNER TOGETHER WITH ITS AGENTS DOES NOT IMPLY OR GUARANTEE THE DATA AND INFORMATION IN CONNECTION WITH THE UNDERGROUND PIPES, CABLES, CONDUITS, STRUCTURES AND SUCH OTHER PARTS AS TO THEIR COMPLETENESS NOR THEIR LOCATIONS AS INDICATED. THE CONTRACTOR SHALL CONTACT UTILITY OWNERS AND REQUEST MARKING LOCATION OF ALL THEIR LINES IN THE WORK AREAS. PRIOR TO EXCAVATION THE CONTRACTOR SHALL ASSUME THAT THERE ARE EXISTING WATER, GAS AND OTHER UTILITY CONNECTIONS TO EACH AND EVERY BUILDING EN ROUTE WHETHER THEY APPEAR ON THE PLANS OR NOT. ANY EXPENSE AND/OR DELAY OCCASIONED BY THESE UTILITIES AND STRUCTURES OR DAMAGE THERETO, INCLUDING THOSE NOT SHOWN, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND AT NO ADDITIONAL EXPENSE TO THE OWNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
- 2. BASE MAP INFORMATION WAS PREPARED BY SURVEYING AND MAPPING CONSULTANTS, BRAINTREE, MA BASED ON A COMPOSITE OF FIELD EVIDENCE AND AVAILABLE RECORD INFORMATION AND THEIR LOCATIONS ARE ONLY APPROXIMATE. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD. COORDINATES, IN U.S. SURVEY FEET, ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983, (2011), EPOCH 2010.00, BASED ON THE KEYNET GPS VIRTUAL REFERENCE SYSTEM (VRS). ELEVATIONS, IN U.S. SURVEY FEET, ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) BASED ON THE KEYNET GPS VIRTUAL REFERENCE SYSTEM (VRS) NETWORK.
- 3. THE LOCATION OF ALL SUBSURFACE STRUCTURES AND UTILITIES SHALL BE VERIFIED THROUGH THE APPROPRIATE AGENCY, AND THE DIG-SAFE CALL CENTER AT 1-800-DIGSAFE (1-888-344-7233) SHALL BE CONTACTED AT LEAST 72 HOURS BEFORE ANY EXCAVATION.
- 4. UNLESS OTHERWISE INDICATED, PROPERTY LINES AND LAYOUT LINES SHOWN WERE TAKEN FROM CITY ASSESSOR MAPS AND GIS AND ARE APPROXIMATE.
- 5. PRIOR TO BEGINNING WORK THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS INFORMATION AND REPORT ANY DISCREPANCIES BETWEEN THE PLANS AND THE ACTUAL CONDITIONS TO THE ENGINEER.
- 6. PRE-CONSTRUCTION SURVEYS SHALL BE COMPLETED FOR EXTERIOR AREAS OF THE ADJACENT STRUCTURES, BUILDINGS, AND AREAS AFFECTED BY THE WORK PER THE SPECIFICATION SECTION 01390. SURVEY SHALL BE PERFORMED BY AN INDEPENDENT CONSULTANT NOT LESS THAN TWO WEEKS PRIOR TO CONSTRUCTION ACTIVITIES. REFER TO PERFORMANCE REQUIREMENTS UNDER SPECIFICATION 01390 FOR SUGGESTED LIMITS OF SURVEY. COSTS SHALL BE INCIDENTAL TO CONTRACTOR'S OVERALL BID.
- 7. ELEVATIONS SHOWN ON CIVIL DRAWING PROFILE ARE EXISTING ROADWAY CENTERLINE ELEVATION ONLY. ALL STATIONING IS TO CENTER OF STRUCTURE. DISTANCES OF "LEFT" (L) "RIGHT" (R) ON THE PLAN REFER TO THE ORIENTATION RELATIVE TO THE STATION LINE WHEN FACING THE POSITIVE DIRECTION. THE STATIONS AS SHOWN FOR SEWERS AND DRAINS ARE APPROXIMATE. THE EXACT STATIONS SHALL BE DETERMINED BY THE CONTRACTOR AND RECORDED ON THE RECORD DRAWINGS.
- 8. THE CONTRACTOR SHALL TEMPORARILY MATCH EXISTING GRADES AND CONDITIONS WITH THE CONSTRUCTION AREA UNTIL FINAL RESTORATION IS COMPLETE.
- 9. ALL MATERIAL THICKNESSES NOTED ON THE DRAWING REFER TO DEPTH AFTER COMPACTION, UNLESS OTHERWISE NOTED. CONTRACTOR TO REUSE EXISTING EXCAVATED MATERIAL AS BACKFILL TO THE MAXIMUM EXTENT FEASIBLE IN ACCORDANCE WITH SECTION 02210 OF THE SPECIFICATIONS.
- 10. EACH LAYER OF MATERIAL USED FOR BACKFILL, EMBANKMENT, ROADBED OR FOUNDATIONS FOR STRUCTURES SHALL BE COMPACTED UNTIL THE DRY DENSITY OF EACH LAYER IS AT LEAST THE DRY DENSITY ACHIEVED BY THE ASTM D 1557 TEST FOR THAT SOIL REQUIRED BY SPECIFICATION SECTION 02210 EARTH EXCAVATION, BACKFILL, FILL AND GRADING. REFER TO UTILITY TRENCH DETAIL ON SHEET CG-1 FOR ADDITIONAL REQUIREMENTS.
- 11. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL DEMOLISHED MATERIALS, RUBBISH, EXCAVATED MATERIAL AND DEBRIS, UNLESS OTHERWISE NOTED, AND IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL DISPOSAL PERMITS AT NO ADDITIONAL COST TO THE OWNER.
- 12. CONSTRUCTION TRAILER(S), STOCKPILING LOCATIONS, AND EQUIPMENT STORAGE AREAS ARE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE COORDINATED WITH THE OWNER.
- 13. THE CONTRACTOR SHALL PROVIDE ALL EROSION AND SEDIMENT CONTROL DEVICES AND SHALL NOT COMMENCE CONSTRUCTION UNTIL THESE MEASURES HAVE BEEN INSTALLED AND APPROVED BY THE ENGINEER.
- 14. THE CONTRACTOR SHALL PROTECT ALL TRAVELED WAYS FROM DUST AND CONSTRUCTION DEBRIS AT ALL TIMES.
- 15. CONTRACTOR TO BE AWARE THAT TROLLEY TRACKS MAY EXIST WITHIN THE PROJECT LIMITS, CONTRACTOR SHALL REMOVE TRACKS WHERE ENCOUNTERED IF THEY INTERFERE WITH THE WORK.
- 16. ALL EXISTING SEWER PIPE REPLACED BY PROPOSED SEWER PIPE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL COST, UNLESS OTHERWISE INDICATED ON THE DRAWINGS TO BE ABANDONED.
- 17. CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF ANY SEWER, WATER OR DRAIN PIPING, OR STRUCTURE HE OR SHE DAMAGES. ALL COSTS OF REPLACEMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. INTERMEDIATE COUPLINGS SHALL BE ALLOWED ON A TEMPORARY BASIS ONLY.
- 18. CONTROLLED DENSITY FILL (CDF) SHALL BE REQUIRED FOR ALL UTILITY CROSSINGS WITH CLEARANCE LESS THAN 12 INCHES.
- 19. WHERE EXISTING GAS, ELECTRIC AND TELECOM UTILITIES CROSS THE PROPOSED TRENCH LIMITS, CONTRACTOR SHALL COORDINATE WITH THE UTILITY OWNER TO SUPPORT AND BE RESPONSIBLE FOR COSTS AND FEES. CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING THE WORK IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS.
- 20. EXISTING UTILITY POLES THAT FALL WITHIN 5 FEET OF THE PROPOSED EDGE OF TRENCH SHALL BE SUPPORTED BY THE UTILITY OWNER DURING EXCAVATION OF THE TRENCH. CONTRACTOR SHALL COORDINATE WITH THE UTILITY OWNER TO SUPPORT AND BE RESPONSIBLE FOR COSTS AND FEES. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING THE EXISTING UTILITY IN ACCORDANCE WITH THE OWNER'S REQUIREMENTS.
- 21. ONLY MWRA PERSONNEL ARE ALLOWED TO OPERATE MWRA VALVES AND APPURTENANCES. ONLY OWNER'S WATER DEPARTMENT PERSONNEL ARE ALLOWED TO OPERATE CITY
- 22. THERE SHALL BE NO PHYSICAL CONNECTION BETWEEN PUBLIC OR PRIVATE POTABLE WATER SUPPLY SYSTEM AND A SEWER, OR APPURTENANCE THERETO WHICH WOULD PERMIT THE PASSAGE OF ANY WASTEWATER OR POLLUTED WATER SUPPLY.
- 23. ALL STREET EXCAVATIONS SHALL BE COMPLETELY CLOSED AT THE END OF EACH WORKING DAY BY BACKFILLING AND TEMPORARY PAVING OR BY COVERING WITH STEEL PLATES WHEN APPROVED BY THE OWNER. REFER TO PAVING DETAIL ON SHEET CG-1 FOR PAVING REQUIREMENTS.
- 24. ALL DISTURBED TRAFFIC MARKINGS ARE TO BE REPLACED BY THE CONTRACTOR AND MATCH EXISTING.
- 25. REFER TO SECTION 01040 FOR COMMUNITY NOTIFICATION AND COORDINATION REQUIREMENTS.
- 26. THE CONTRACTOR SHALL PROVIDE FOR THE SAFE AND ORDERLY PASSAGE OF PEDESTRIANS AND EMERGENCY VEHICLES AT ALL TIMES IN AREAS UNDER CONSTRUCTION.
- 27. CONTRACTOR IS REQUIRED TO COORDINATE WITH THE POLICE AND FIRE DEPARTMENTS IN ORDER TO MAINTAIN EMERGENCY VEHICLE ACCESS THROUGHOUT PROJECT DURATION.
- 28. THE CONTRACTOR SHALL NOT BLOCK ACCESS TO STREET AND PRIVATE PARKING IN THE VICINITY OF THE LIMITS OF CONSTRUCTION AFTER WORK HOURS AND ON WEEKENDS.
- 29. THE CONTRACTOR SHALL NOT BE PERMITTED TO STARTUP OR OPERATE EQUIPMENT BEFORE OR AFTER ESTABLISHED WORKING HOURS OF 7:00 AM TO 8:00 PM, MONDAY THROUGH FRIDAY WITHOUT WRITTEN APPROVAL OF THE OWNER, UNLESS NOTED OTHERWISE.
- 30. UNLESS OTHERWISE INDICATED ON THE DRAWINGS ALL AREAS ADJACENT TO THE LIMITS OF CONSTRUCTION WHICH ARE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
- 31. UPON COMPLETION OF THE WORK, ALL DISTURBED AREAS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION.
 TRENCH RESTORATION IN SOMERVILLE SHALL MEET THE REQUIREMENTS OF THE SOMERVILLE DEPARTMENT OF PUBLIC WORKS.
- 32. THE OWNER RESERVES THE RIGHT TO ELIMINATE ANY PORTION OF THE CONTRACT AT ANY TIME. FINAL PAYMENT WILL BE MADE BASED UPON ACTUAL QUANTITIES AT THE BID UNIT PRICE. NO CLAIM WILL BE ALLOWED FOR ADDITIONAL COMPENSATION OR ANTICIPATED PROFIT ON ITEMS THAT HAVE BEEN DECREASED OR ELIMINATED.
- 33. REFER TO SHEET TMP-1 FOR TRAFFIC MANAGEMENT NOTES AND REQUIREMENTS.

EXISTING LEGEND

***************************************	SURVEY CONTROL STATION	Ò UP	UTILITY POLE
OH	DRILL HOLE	Q UP/LP	UTILITY POLE/LIGHT POLE
MAG	MAGNETIC	Ø	TRAFFIC SIGNAL
FND	FOUND	8	PEDESTRIAN SIGNAL
(R)	RECORD		MANHOLE
(M)	MARKED	FA	FIRE ALARM
\	TREE LINE/HEDGE	Ö	WATER GATE
		K.	HYDRANT
£	DECIDUOUS TREE	×	GAS GATE
70	TREE WELL	DMH	DRAIN MANHOLE
UNK	UNKNOWN		CATCH BASIN
	CHAIN LINK FENCE	R	RIM INVERT
CLF	CHAIN LINK FENCE	, ТОВ	TOP OF BELL
DWS	DUCTILE WARNING STRIP	TOP	TOP OF PIPE
	CURBING(TYPE)	TOS	TOP OF SILT
CONC	CONCRETE	TOW	TOP OF WATER
BIT CONC	BITUMINOUS GONCRETE	CU	CONNECTION UNKNOWN
8CC	BITUMINOUS CONCRETE CURB	VCP	VITREOUS CLAY PIPE
GRAN	GRANITE	RCP	REINFORCED CONCRETE PIPE
GC	GRANITE CURB	CPP	CORRUGATED PLASTIC PIPE
CC	CONCRETE CURB	CIP	CAST IRON PIPE
BCD	BITUMINOUS CONCRETE DRIVE	NPV	NO PIPE VISIBLE
CCD	CONCRETE DRIVE	EMH	ELECTRIC MANHOLE
BCW	BITUMINOUS CONCRETE WALK	SMH	SEWER MANHOLE
CW	CONCRETE WALK	TMH	TELEPHONE MANHOLE
BR	BRICK	75CC	TRAFFIC SIGNAL CONTROL CABINET
157	LANDSCAPE TIMBER	and a state of the	ELECTRIC LINE
TRW	TIMBER RETAINING WALL	PIPE DIA. AND MATERIAL	DRAIN LINE
CRW	CONCRETE RETAINING WALL	***************************************	755 18II
SRW	STONE RETAINING WALL		GAS LINE WATER LINE
PL A NO	PLANTED MARKER POST	• •	
	SIGN	PIPE DIA. AND MATERIAL	SEWER LINE
- 	HANDHOLE		COMBINED SEWER LINE
DPW	DEPARTMENT OF PUBLIC WORKS		TELEPHONE LINE
The last	TELEPHONE	CATV	CABLE TELEVISION LINE
	TRASH CAN	× 31.95	SPOT ELEVATION
	MONITORING WELL	**************************************	INDEX CONTOUR
· 	LIGHT POLE	where your source since since the source source	INTERMEDIATE CONTOUR
		tente.	FINISHED FLOOR
		TH	THRESHOLD

GEOTECHNICAL NOTES

- 1. BORING LOG B-1 IS PROVIDED AS AN APPENDIX TO THE SPECIFICATIONS.
- 2. TEST BORING B-1 WAS ADVANCED BY CARR-DEE CORP. ON DECEMBER 11, 2015.
- 3. BORINGS AND PROBES WERE TAKEN FOR THE PURPOSE OF DESIGN AND INDICATE CONDITIONS AT THEIR LOCATION ONLY. SUBSURFACE CONDITIONS ENCOUNTERED DURING CONSTRUCTION MAY VARY FROM THOSE SHOWN IN THE LOGS. GROUNDWATER LEVELS INDICATED ON THE LOGS WERE OBSERVED AT THE TIME THE BORINGS OR PROBES WERE TAKEN, AND DO NOT REPRESENT PERMANENT GROUNDWATER LEVELS.

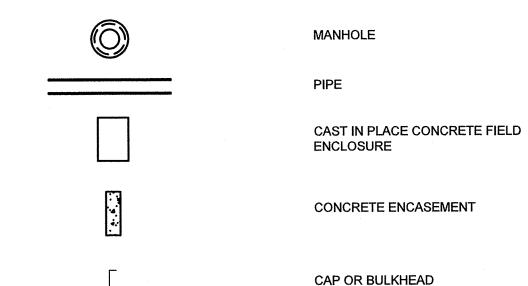
SOIL EROSION AND SEDIMENT CONTROL NOTES

- 1. STOCKPILED MATERIALS SHALL BE LOCATED AND MAINTAINED SO AS TO MINIMIZE THE POTENTIAL FOR EROSION.
- 2. SILT SACKS SHALL BE FURNISHED, INSTALLED AND MAINTAINED AT ALL CATCH BASINS WITHIN THE PROJECT AREA AND ALONG THE LIMIT OF EXCAVATION. THROUGHOUT PROJECT DURATION, DEBRIS COLLECTED IN SILT SACKS SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE ON A WEEKLY BASIS OR MORE FREQUENTLY IF NECESSARY TO MAINTAIN FLOW THROUGH THE SILK SACKS. UPON COMPLETION OF THE PROJECT AND AS DIRECTED BY THE ENGINEER, THE CONTRACTOR IS RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING OF THE SILT SACKS AND DEBRIS OFF-SITE.
- 3. CONTRACTOR SHALL STOCKPILE SUFFICIENT SOIL EROSION AND SEDIMENT CONTROL MATERIALS ON SITE TO REPAIR ANY AND ALL DAMAGE TO SOIL EROSION AND SEDIMENT CONTROL MEASURES.

SEWER INSTALLATION NOTES

- 1. WHENEVER SEWERS MUST CROSS UNDER WATER MAINS, THE SEWER SHOULD BE LAID AT SUCH AN ELEVATION THAT THE CROWN OF THE SEWER IS AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER MAIN.
- 2. ALL EXISTING SEWER SERVICES SHALL REMAIN OPERATIONAL THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL PREPARE A CONSTRUCTION SEQUENCE PLAN TO ENSURE THAT ALL SEWER CUSTOMERS HAVE CONTINUOUS SEWER SERVICE DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNERS AS NECESSARY TO SEQUENCE CONSTRUCTION DURING LOW FLOW TIMES. CONTRACTOR IS RESPONSIBLE FOR ALL BYPASS PUMPING TO MAINTAIN CONTINUOUS SERVICE. CONTRACTOR SHALL SET UP BYPASS PUMPING PIPING TO ALLOW PROPERTY OWNER ACCESS TO THEIR DRIVEWAYS. CONSTRUCTION SEQUENCE AND BYPASS PUMPING PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY EXCAVATION.
- 3. DEWATERING MAY BE REQUIRED DURING CONSTRUCTION. THE CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS OF SPECIFICATION SECTION 02210, SECTION 01500, SECTION 02140 AND ALL DEWATERING PERMITS. THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN TO THE ENGINEER FOR APPROVAL AS SPECIFIED. DISCHARGE TO CITY DRAIN AND SEWER SYSTEMS SHALL REQUIRE AN MWRA CONSTRUCTION DEWATERING PERMIT. REFER TO SECTION 01060 OF SPECIFICATIONS.
- 4. ALL NEW AND RECONNECTED SANITARY SEWER SERVICES SHALL BE MIN. 6" PVC OR SHALL MATCH THE EXISTING SERVICE SIZE. WHERE THE EXISTING SERVICE IS 5" OR SMALLER, CONTRACTOR SHALL TRANSITION TO 6" PVC. REMOVE AND DISPOSE OF SECTIONS OF SERVICES REPLACED. CONTRACTOR SHALL PROVIDE APPROPRIATE FITTINGS WHERE NECESSARY.
- 5. DIVERSION, BYPASS, AND CONTROL OF SANITARY SEWER, STORM DRAIN AND DEWATERING FLOWS ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR'S INTENDED DIVERSION, BYPASS, AND CONTROL AND DEWATERING PLANS SHALL BE SUBMITTED TO THE OWNER AND ENGINEER FOR REVIEW AT LEAST 7 DAYS PRIOR TO ANY EXCAVATION. WHEN PERFORMING DEWATERING, THE CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS OF SECTION 02210, SECTION 01500, SECTION 02140, AND ALL DEWATERING PERMITS.

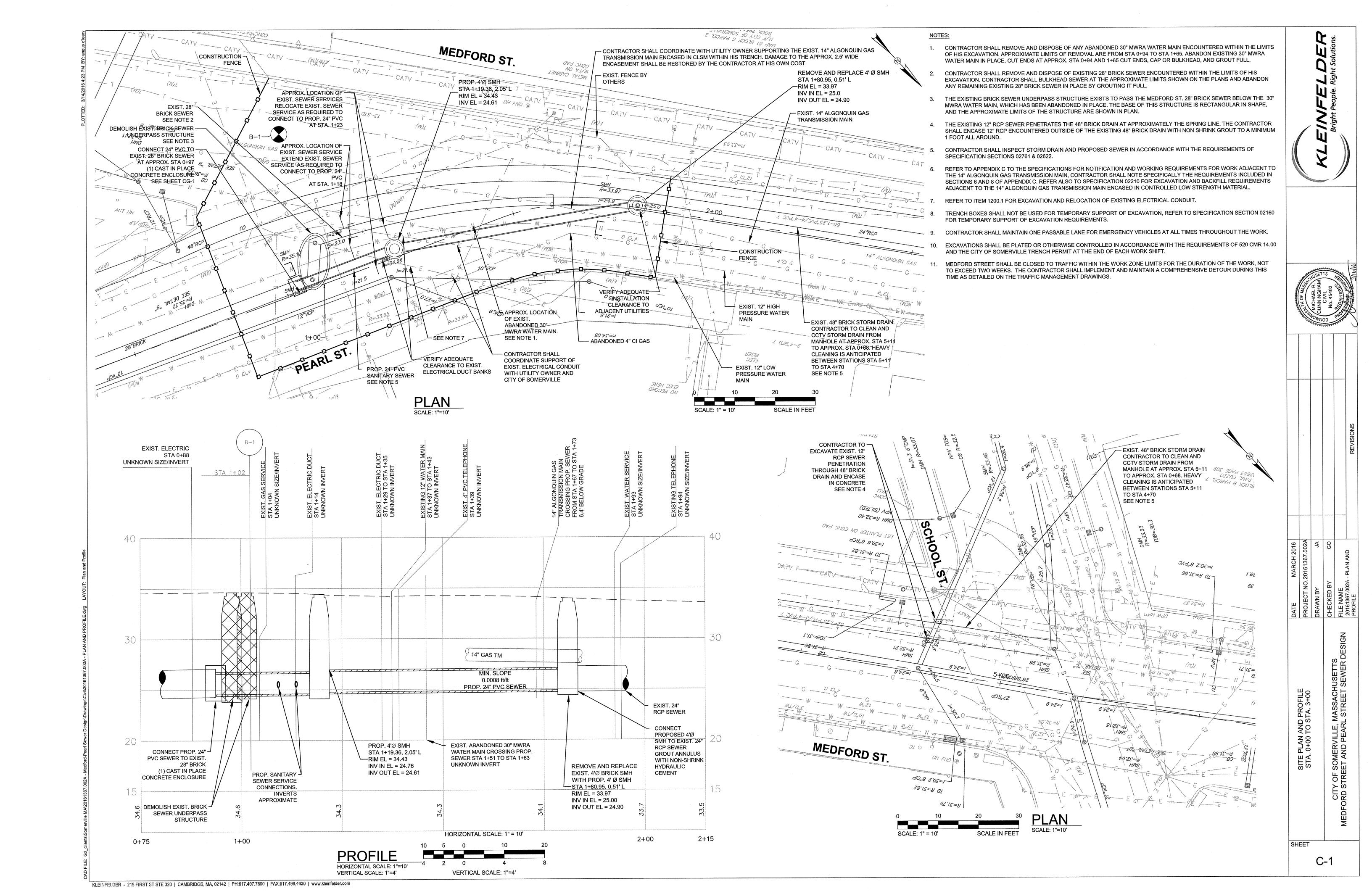
PROPOSED LEGEND

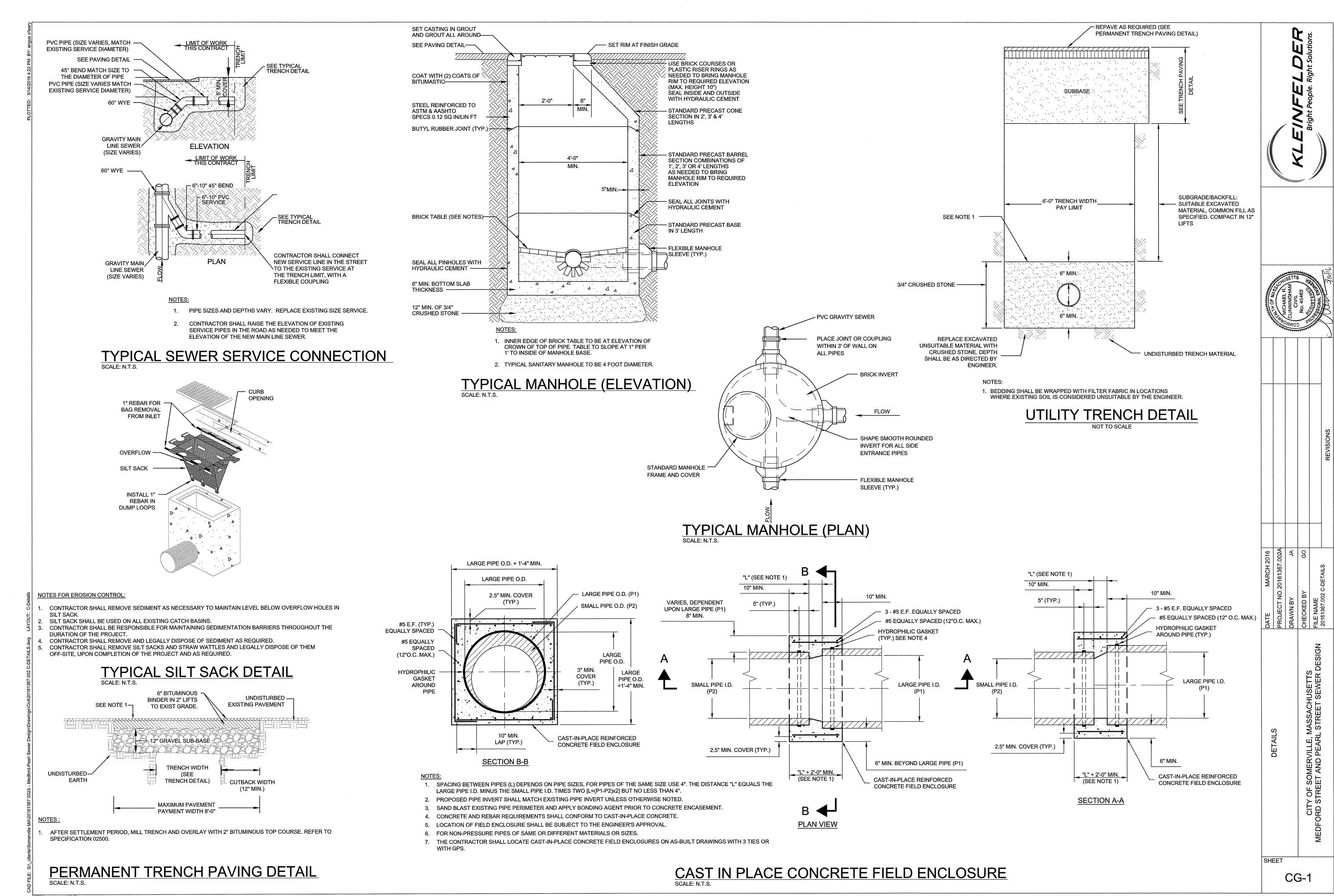


KLEINFELDEF Bright People. Right Solution.

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	₹/ ₫	CUNNINGHAM 35 CUNNINGHAM CUNINGHAM	No. 45	WAY OF STEEL STAND	1000000 3/16/16	
					REVISIONS	
	PROJECT NO.20161367.002A	DRAWN BY JA	CHECKED BY GO	FILE NAME	20161367.002 G-Notes	
RAL NOTES		OHHUO ITO COOKW II	LLE, MASSACHOSETTS EARL STREET SEWER DESIGN			

SHEET





KLEINFELDER - 215 FIRST ST STE 320 | CAMBRIDGE, MA, 02142 | PH:617.497.7800 | FAX:617.498.4630 | www.kleinfelder.com

GEOTECHNICAL NOTES:

- SURFACE ROADWAY BOX SHALL BE BOART LONGYEAR LEAK-RESISTANT MANHOLES, PART NO. TC-240, OR APPROVED EQUAL.
- 2. CONTRACTOR SHALL NOTIFY DIGSAFE PRIOR TO INSTALLATION OF UTILITY MONITORING
- 3. LOCATIONS OF ALL MONITORING POINTS ARE APPROXIMATE. COORDINATE ACTUAL LOCATION IN FIELD WITH ENGINEER.
- 4. UMP-1 AND UMP-2 SHALL BE INSTALLED ON THE 14-INCH GAS MAIN. UMP-1 SHALL BE INSTALLED 15-FT FROM THE SOUTHERN LIMIT OF THE EXCAVATION. UMP-2 SHALL BE INSTALLED 15-FT FROM THE NORTHERN LIMIT OF THE EXCAVATION, RESPECTIVELY. CONTRACTOR TO VERIFY THE EXCAVATION LIMITS PRIOR TO INSTALLATION OF UMPs.
- 5. GMP-1 THROUGH GMP-4 SHALL BE INSTALLED AT THE GROUND SURFACE DIRECTLY ABOVE THE 48" BRICK STORM DRAIN.
- 6. GMP-5 AND GMP-6 SHALL BE INSTALLED AT THE GROUND SURFACE DIRECTLY ABOVE THE 14-INCH GAS MAIN. GMP-5 SHALL BE 15 FEET SOUTH OF UMP-1, AND GMP-6 SHALL BE 15 FEET NORTH OF UMP-2.
- 7. INSTALL CRACK GAUGES ON EXISTING CRACKS AS IDENTIFIED DURING THE PRE-CONSTRUCTION SURVEY AND AT LOCATIONS APPROVED BY THE ENGINEER.
- 8. BMP-1 THROUGH BMP-3 SHALL BE INSTALLED ON FACE OF BRICK BUILDING AT 343 MEDFORD STREET
- 9. BMP-4 THROUGH BMP-6 SHALL BE INSTALLED ON FACE OF BRICK BUILDING AT 350 MEDFORD

LEGEND:

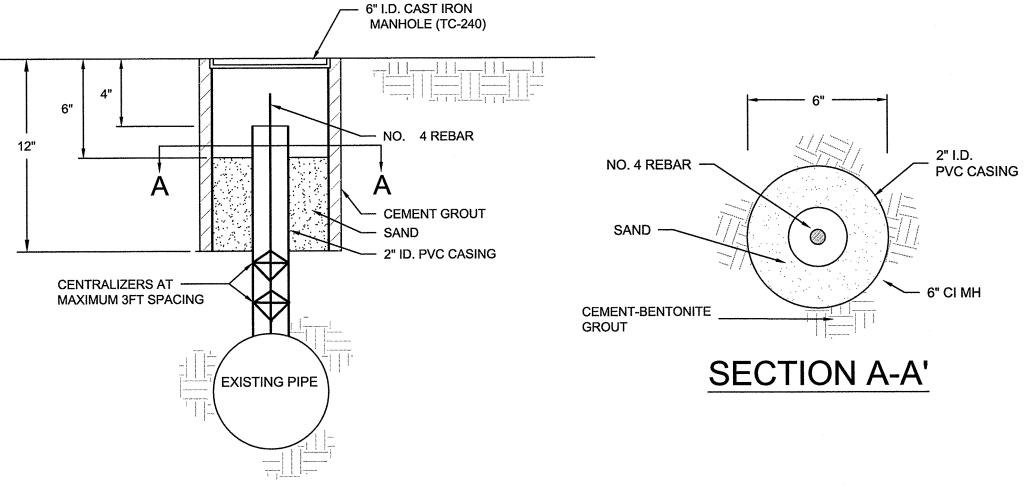
BMP-1 INDICATES BUILDING MONITORING POINT

UMP-1 INDICATES UTILITY

MONITORING POINT

MP-1 INDICATES GROUND SURFACE

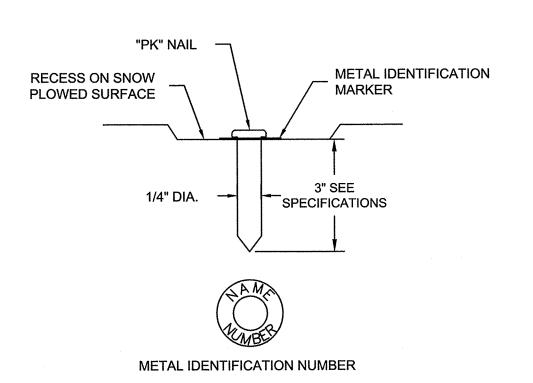
MONITORING POINT



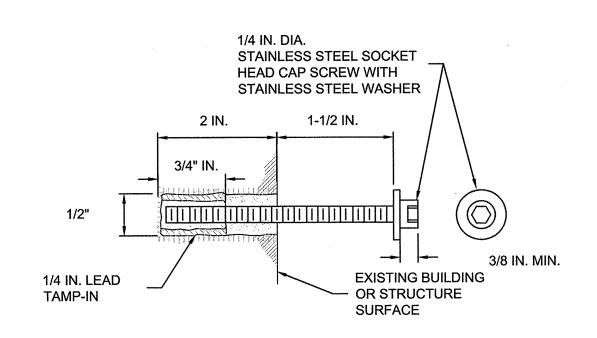
SCALE IN FEET

UTILITY MONITORING POINT (UMP) DETAIL

CONTRACTOR SHALL COMPLETE A PRE-CONSTRUCTION SURVEY OF \ EXIST. 28" BRICK SEWER EXIST. BUILDING PRIOR TO **BEGINNING WORK** EXIST 14" -ALGONQUIN GAS TRANSMISSION BITUIN YOU'S CONCRETE F/METAL HANDRAIL CATY CATY CATY CATY , ____ CATV EXIST. 12" CI GAS MAIN ABANDONED 4" CI GAS 1 018,7-2 WEER EIEC PROP. 24" PVC SEWER CONTRACTOR -SHALL COMPLETE A PRE-CONSTRUCTION SURVEY TO EXIST. **BUILDING PRIOR TO** MAP 60 BLC N/F PCJ BOOK 5; GEOTECHNICAL MONITORING PLAN

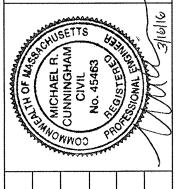


GROUND SURFACE MONITORING POINT (GMP) DETAIL FOR USE IN PAVED AREAS



TYPICAL BUILDING MONITORING POINT (BMP) DETAIL SCALE: N.T.S.





					REVISIONS	
	PROJECT NO.20161367.002A	DRAWN BY JA	CHECKED BY GO	FILE NAME	20161367.002 C-DETAILS	
GEOTECHNICAL MONITORING AND PROJECT N INSTRUMENTATION PLAN AND DETAILS DRAWN BY			CILY OF SOMERVILLE, MASSACHOSELLS FORD STREET AND PEARL STREET SEWER DESIGN			

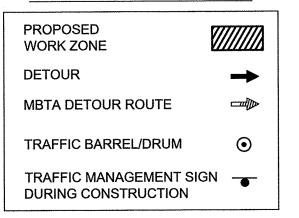
CONICTED ICTION SIGN I EGEND

NUMBER	WIDTH	OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS	COLOR BACK-
HOWDER	****			LETTER VERTICAL HEIGHT SPACING	
W6-3	48"	48"		MUTCD STANDARD DETAIL	MUTCD STANDARD DETAIL
W6-5	24"	18"	TWO WAY TRAFFIC		
W20-2	48"	48"	DETOUR		
W20-4	48"	48"	ONE LANE ROMO MEMO		
W20-7b	36"	36"	BE PREPARED TO STOP		
W20-8	36"	36"	COLUMN		
W20-1a	48"	48"	ROM WORK MEMO		
W20-1b	48"	48"	ROND WORK 500 FI		
W20-1c	48"	48"	ROND WORK 1000 FT		
W20-1d	48"	48"	STEEL PLATES		
W20-5L	48"	48"	UST UNIT		
W20-5R	48"	48"	Main Lieft Custs MED		
G20-2	36"	18"	END ROAD WORK		
W5-1	48"	48"	ROAD		
W8-8	36"	36"	ROUGH		
M4-9B	30"	24"	PEDESTRIAN DE TOUR		
M4-9L	30"	24"	DETOUR		
M4-9R	30"	24"	DETOUR		
M4-9V	30"	24"	DETOUR		
M4-8A	24"	18"	END DETOUR		
W11-1/W16-1	24"/18"	24"/24"	SHARE THE ROAD		
	60"	30"	CONSTRUCTION VEHICLE DO NOT FOLLOW		ORANGE/BLACK
W6-1	36"	36"			
W1-4L	30"	30"	\bigcirc		
W1-4R	30"	30"	(
W4-2R	36"	36"	(1)		
W4-2L	36"	36"			
R11-4	60"	30"	ROAD CLOSED TO THRU TRAFFIC		
R5-9L	30"	24"	PEDESTRIANS		
R5-9R	30"	24"	PEDESTRIANS		
R9-9	48"	24"	SIDEWALK CLOSED		WHITE/BLACK/BLUE
R9-11	24"	24"	SIDEWALK CLOSED AHEAD CROSS HERE		
	1	1	LOCAL TRAFFIC ONLY		MUTCD STANDARD DETAIL
D3-5	12"	18"			STANDARD DETAIL

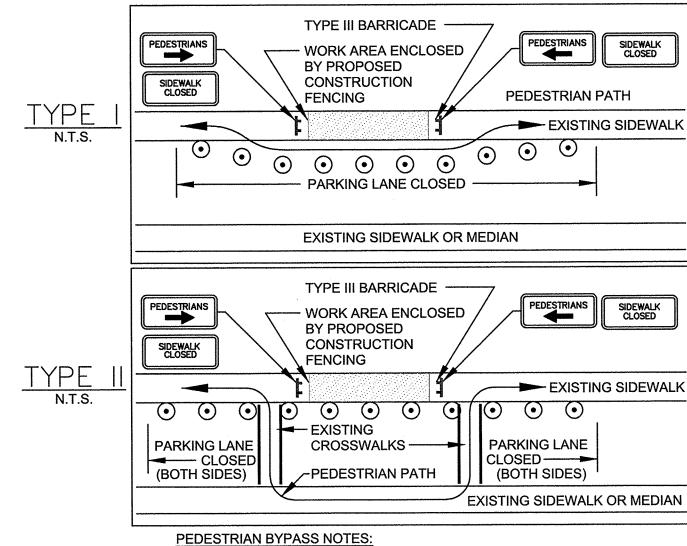
KLEINFELDER - 215 FIRST ST STE 320 | CAMBRIDGE, MA, 02142 | PH:617.497.7800 | FAX:617.498.4630 | www.kleinfelder.com

- 1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D).
- 2. ALL SIGN LOCATIONS ON DETAILS ARE SHOWN SCHEMATICALLY. FINAL LOCATIONS SHALL BE DETERMINED BASED ON ACTUAL FIELD CONDITIONS AND CITY APPROVAL.
- 3. ADDITIONAL TRAFFIC CONTROL DEVICES SHALL BE PROVIDED UPON THE ENGINEER OR OWNER'S REQUEST.
- 4. ALL TEMPORARY SIGNAGE AND TRAFFIC CONTROL DEVICES SHALL BE PROPERLY SECURED.
- 5. ALL DRUMS NOT OTHERWISE SPECIFIED SHALL BE EQUIPPED WITH TYPE "C" -STEADY BURN WARNING LIGHTS. ALL DRUMS SHALL BE SET @ 5 O.C. MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER OR OWNER.
- 6. TEMPORARY TRAFFIC LANES WITHIN THE WORK ZONE SHALL BE A MINIMUM OF 11 FEET.
- 7. ADVISORY SPEED LIMITS SHALL BE POSTED AS DIRECTED BY THE ENGINEER OR OWNER.
- 8. FLASHING ARROW BOARDS SHALL BE UTILIZED FOR LANE SHIFTS WHERE THE EXISTING SPEED LIMIT IS 30 M.P.H. OR GREATER.
- 9. NON-ESSENTIAL TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORK HOURS.
- 10. ALL TRAVEL WAYS SHALL BE PROTECTED FROM DUST AND CONSTRUCTION DEBRIS AT ALL TIMES.
- 11. TRAFFIC CONTROL INCLUDES NECESSARY STREET SWEEPING AND SNOW REMOVAL WITHIN THE WORK ZONE.
- 12. VEHICULAR AND PEDESTRIAN SHALL BE ALLOWED ACCESS TO PRIVATE PROPERTY AT ALL TIMES DURING CONSTRUCTION.
- 13. ALL TRAFFIC CONTROL DEVICES SHALL BE PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNAGE AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH WORK AREAS BOTH DURING AND AFTER WORK HOURS.
- 14. EACH ABUTTER SHALL BE NOTIFIED BY THE CONTRACTOR AT LEAST 72 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS.
- 15. CONSTRUCTION WORK ZONE SHALL BE STAGED AS TO ALLOW FOR CONTINUOUS ACCESS AT DRIVE ENTRANCES AND TO MINIMIZE DETOURS TO SOMERVILLE ROADS.
- 16. EXCAVATIONS SHALL BE PROTECTED BY STEEL PLATES OR BARRICADES DURING NON-WORK HOURS OF 8 P.M. TO 7 A.M.
- 17. GRADE SEPARATIONS IN EXCESS OF 2" DURING NON WORKING HOURS WILL REQUIRE DELINEATION BY DRUMS.
- 18. EXCAVATION EDGES IN EXCESS OF 4" DEEP SHALL BE PROTECTED DURING NON-WORKING HOURS BY BACKFILLING WITH A WEDGE OF GRAVEL COMPACTED TO A 4:1 SLOPE.
- 19. SAFE PEDESTRIAN WALKWAYS AND ACCESS TO LOCAL BUSINESSES AND RESIDENCES SHALL BE PROVIDED. PUBLIC WALKWAYS SHALL REMAIN OPEN AND ACCESSIBLE UNLESS OTHERWISE DIRECTED BY CITY.
- 20. ALL EXISTING PEDESTRIAN CROSSINGS SHALL BE MAINTAINED. ALTERNATIVE CROSSINGS SHALL BE PROVIDED WHEN EXISTING CROSSINGS ARE DISRUPTED BY CONSTRUCTION ACTIVITY. ALTERNATIVE CROSSING SHALL BE ADA COMPLIANT. TEMPORARY LOCATIONS, SAFETY SIGNAGE AND SAFETY CONTROLS SHALL BE APPROVED BY THE ENGINEER OR OWNER PRIOR TO IMPLEMENTATION.
- 21. POLICE DETAILS SHALL BE SCHEDULED AND COORDINATED BY THE CONTRACTOR TO MAINTAIN THE SAFETY OF PEDESTRIAN AND VEHICULAR
- 22. DETOURS SHALL ONLY BE ALLOWED AS INDICATED OR AS APPROVED BY THE CITY OF SOMERVILLE.
- 23. PARKING SHALL BE RESTRICTED WITHIN WORK ZONES, AND BUFFER AND TAPER LENGTHS. CONTRACTOR TO COORDINATE NO PARKING RESTRICTIONS WITH THE CITY OF SOMERVILLE.
- 24. CONTRACTOR SHALL COORDINATE WITH SOMERVILLE TRAFFIC AND PARKING TO OBTAIN AND PLACE SIGNS FOR PARKING RESTRICTIONS, IF REQUIRED.
- 25. MEDFORD STREET SHALL BE CLOSED TO TRAFFIC WITHIN THE WORK ZONE LIMITS FOR THE DURATION OF THE WORK, NOT TO EXCEED TWO WEEKS. THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN A COMPREHENSIVE DETOUR DURING THIS TIME AS DETAIL ON THE TRAFFIC MANAGEMENT DRAWINGS.

TMP LEGEND



TO BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING AND AS DIRECTED BY THE ENGINEER OR OWNER.

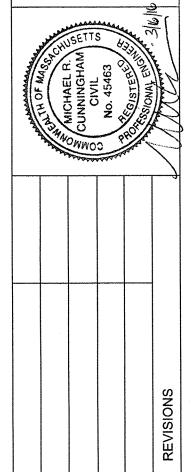


- 1. ADDITIONAL ADVANCE WARNING MAY BE REQUIRED BY THE ENGINEER OR OWNER.
- 2. CONTROLS FOR PEDESTRIAN TRAFFIC ONLY, ARE SHOWN. VEHICULAR TRAFFIC SHALL BE MAINTAINED AS DETAILED ELSEWHERE.
- 3. STREET LIGHTING SHALL BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
- 4. DIRECTION OF PEDESTRIAN TRAVEL.
- 5. PEDESTRIAN PATHS SHALL BE MINIMUM 36" WIDE AND ADA ACCESSIBLE

PEDES	STR	IAN	I BYP	ASS	DETAI	IL
-------	-----	-----	-------	-----	-------	----

BICYCLE TRAFFIC NOTES

- 1. BICYCLE TRAFFIC SHALL BE ACCOMMODATED ON ALL PUBLIC STREETS EITHER WITHIN BICYCLE LANES WHERE EXISTING OR IN VEHICULAR TRAVEL LANES.
- 2. WHERE BICYCLE LANES ARE NOT PRESENT, PROVIDE A SHARED VEHICLE LANE AS WIDE AS PHYSICALLY FEASIBLE.
- 3. WHEN TRAVEL LANES ARE RESTRICTED TO LESS THAN 14-FOOT IN WIDTH WARNING SIGNAGE (W11-1/W16-1 COMBINATION BICYCLE WARNING SYMBOL WITH SHARE THE ROAD PLAQUE) SHALL BE PLACED WARNING MOTOR VEHICLE OPERATORS OF THE PRESENCE OF BICYCLES IN THE ROADWAY.
- 4. IF THE DISRUPTION OCCURS IN A BICYCLE LANES OVER A SHORT DISTANCE (APPROXIMATELY 500 FEET OR LESS), BICYCLISTS
- SHOULD BE ROUTED TO SHARE A MOTOR VEHICLE LANE. 5. ON PROJECTS WHERE THE DISRUPTION OCCURS OVER A LONGER DISTANCE (MORE THAN 500 FEET), AND ON BUSY ROADWAYS, A TEMPORARY BICYCLE LANE OR WIDE OUTSIDE LANE (AT LEAST 14 FOOT WIDE) SHOULD BE PROVIDED. IF THAT IS NOT FEASIBLE, PROVIDE ACCESS, INCLUDING RAMPS IF NECESSARY, FOR BICYCLISTS TO HAVE THE OPTION OF USING SIDEWALKS, EXCEPT WITHIN ZONES WHERE SIDEWALK BICYCLE RIDING IS PROHIBITED BY THE CITY.
- 6.1. WHEN STEEL PLATES ARE USED IN THE TRAVEL WAY WARNING SIGNAGE (WARNING STEEL PLATES AHEAD) SHALL BE PLACED AT
- LEAST 50 FEET IN ADVANCE. STEEL PLATES SHALL BE SET SO THERE IS NO VERTICAL LIP OVER 1/4 INCH BETWEEN THE PLATE AND ADJACENT PAVEMENT.
- THIS SHALL BE ACCOMPLISHED IN ONE OF THE FOLLOWING WAYS: RECESSING THE PLATE SO THAT THE TOP OF THE PLATE MATCHES ADJACENT PAVEMENT (WITH NO LIP OVER 1/4 INCH).
- PROVIDING BITUMINOUS CONCRETE LIP PAINTED REFLECTIVE ORANGE TO PROVIDE A SMOOTH TRANSITION SLOPE UP FROM EXISTING PAVEMENT TO TOP OF PLATE. 7. RAISED CASTINGS: WHERE RAISED CASTINGS ARE PRESENT AFTER COLD PLANING AND/OR IN ANTICIPATION OF FINAL PAVING,
- PROVIDE THE FOLLOWING: 7.1. ADVANCE WARNING SIGNS SAYING: "CAUTION – RAISED CASTINGS AHEAD."
- 7.2. SPRAY PAINT REFLECTIVE FLUORESCENT ORANGE THE RAISED PORTIONS OF THE CASTINGS.
- 8. PAVEMENT INSTALLATION: WHERE THE INSTALLATION OF PAVEMENT IN LIFTS RESULTS IN VERTICAL JOINTS GREATER THAN 1/4 INCH, PROVIDE TEMPORARY BITUMINOUS CONCRETE LIP PAINTED REFLECTIVE ORANGE TO PROVIDE A SMOOTH TRANSITION SLOPE BETWEEN THE PAVEMENT LAYERS.
- 9. WHEN THE ROADWAY OR TRAVEL LANES NARROW DUE TO CONSTRUCTION, ADVANCE WARNING SIGNS SHOULD BE PLACED AT LEAST 20 FEET IN ADVANCE.
- 10. NARROW CUTS THAT ARE PARALLEL WITH THE DIRECTION OF TRAVEL CREATE AN EXTREME HAZARD FOR CYCLISTS, WHOSE TIRES COULD GET CAUGHT. THESE SHOULD NEVER BE MADE AND LEFT IN AN AREA WHERE BICYCLISTS WILL BE TRAVELING. IF NECESSARY, THEY SHOULD BE BLOCKED OFF AND CYCLISTS ROUTED AROUND THE HAZARD. WHEN PERFORMING ADVANCE PAVEMENT CUTTING FOR TRENCHING OR OTHER ROADWAY EXCAVATION, USE ONLY SAW CUTTING (APPROXIMATELY 1/4 INCH OR NARROWER).
- 11. DEBRIS SHOULD BE SWEPT TO MAINTAIN A REASONABLY CLEAR RIDING SURFACE IN THE BICYCLE LANES OR, WHERE THERE ARE NO BICYCLE LANES, THE OUTER 5 OR 6 FEET OF ROADWAY. PROMPTLY REMOVE GRAVEL, DEBRIS, LITTER, SAND, STONE, AND OTHER OBSTRUCTIONS FROM BICYCLE LANES AND TRAVEL LANES.
- 12. ADVANCE CONSTRUCTION SIGNS SHALL NOT BE PLACED IN BICYCLE LANES AND SHALL NOT OTHERWISE OBSTRUCT BICYCLISTS'
- 13. TEMPORARY RAMPS FOR SITE ACCESS RAMPS. THE CREATION OF RAMPS IN THE ROADWAY IS NOT PERMITTED UNLESS BEING CREATED IN AN AREA THAT IS OTHERWISE USED BY ON-STREET PARKING.
- 14. RESTORE PAVEMENT MARKINGS FOR BIKE LANES WITHIN 2 WEEKS OF PAVING.



SHEET

TMP-1

TRAFFIC MANAGEMENT GENERAL NOTES

