

LEGEND			
DESCRIPTION	EXISTING	PROPOSED	
SANITARY SEWER	S	8" S PVC	
FORCE MAIN	FM	6" FM DI	
WATER MAIN	W	6" W DI	
TEMPORARY WATER		4" W	
STORM DRAIN	D	18" D RCP	
GAS	G	4" G	
ELECTRIC	E	E	
TELEPHONE	T	T	
HOUSE CONNECTION		6" HOUSE CONN (TYP)	
GRINDER PUMP		GP	
SANITARY SEWER MANHOLE		SMH	
STORM DRAIN MANHOLE		SDMH	
ELECTRICAL MANHOLE		EMH	
TELEPHONE MANHOLE		TMH	
AIR RELEASE VALVE MANHOLE		ARMH	
FORCE MAIN CLEANOUT MANHOLE		FMCO	
CLEANOUT		CO	
CATCH BASIN		CB	
CATCH BASIN (CURB INLET)			
HYDRANT			
TEMPORARY HYDRANT			
GATE VALVE			
CHECK VALVE			
CURB STOP			
BUTTERFLY VALVE			
BALL VALVE			
REDUCER			
CAP OR PLUG			
GAS GATE VALVE			
UTILITY POLE			
GUY POLE			
LIGHT POST			
EDGE OF PAVEMENT			
EDGE OF UNPAVED ROAD			
CURB			
SIDEWALK			
RAILROAD			
STONE WALL			
RETAINING WALL			
FENCE			
INDIVIDUAL DECIDUOUS TREE			
INDIVIDUAL EVERGREEN TREE			
TREE LINE			
SURVEY MARKER			
PROPERTY LINE			
EASEMENT LINE			
LIMIT OF WORK			
APPROX. LIMIT OF REFUSE			
SPOT ELEVATIONS	x 141.5	x 141.5	
CONTOUR LINES		56	
DEPRESSION CONTOUR LINES			
HOUSE NUMBER	#35		
FLOOR ELEVATION	FL=56.7		
SILL ELEVATION	S=56.7		
WETLAND			
WETLAND FLAGS	1 2		
RIP RAP			
STATE HIGHWAY STATION			
SURFACE MOUNTED DELINEATOR			
GUARD POST			
BOLLARD			
SIGN			
BENCH MARK			
AUGER	A-1	A-1	
TEST PIT	1	TP-1	
BORING	B-10	B-11	
INLET PROTECTION			
SILTATION FENCE			
HAY BALES			
ROCK OUTCROP			
DRAINAGE DITCH / SWALE			

NOTE: ITEMS SHOWN IN THE LEGEND MAY NOT BE PRESENT IN THESE PLANS

ABBREVIATIONS

AC	ASBESTOS CEMENT PIPE
ACCOMP	ASPHALT COATED CORRUGATED METAL PIPE
ARY	AIR RELEASE VALVE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BC	BITUMINOUS CONCRETE
BIT	BITUMINOUS
BLDG	BUILDING
BM	BENCH MARK
BO	BLOW OFF
BV	BUTTERFLY VALVE
CATV	CABLE TELEVISION
CB	CATCH BASIN
CC	CONCRETE CURB
CI	CAST IRON
C	CENTERLINE
CL	CEMENT LINED
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CU FT	CUBIC FEET
CY	CUBIC YARD
D	STORM DRAIN, DEPTH FROM RIM TO INVERT
DI	DROP INLET, DUCTILE IRON
DIA	DIAMETER
DMH	DRAIN MANHOLE
DWG	DRAWING
E	EAST, ELECTRIC
EA	EACH
EF	EACH FACE
ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EW	EACH WAY
EXIST	EXISTING
FLG	FLANGE
FT	FEET, FOOT
G	NATURAL GAS
GALV	GALVANIZED
GC	GRANITE CURB
GR	GRANITE
HC	HOUSE CONNECTION
HORIZ	HORIZONTAL
HP	HIGH PRESSURE
HYD	FIRE HYDRANT
I	INVERT
INV	INVERT
ID	INSIDE DIAMETER
IP	IRON PIPE
LB	POUND
LF	LINEAR FEET
LS	LUMP SUM
MAX	MAXIMUM
MB	MAIL BOX
MDC	METROPOLITAN DISTRICT COMMISSION
MDPW	MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS
MECH	MECHANICAL
MH	MANHOLE
MHD	MASSACHUSETTS HIGHWAY DEPARTMENT
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MWRA	MASSACHUSETTS WATER RESOURCES AUTHORITY
N	NORTH
NE	NORTH EAST
NW	NORTH WEST
NF	NOT FOUND
NO OR #	NUMBER
OD	OUTSIDE DIAMETER
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PE	PLAIN END, POLYETHYLENE
R	PROPERTY LINE
PL	PLATE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT-OF-WAY
RQD	ROCK QUALITY
S	SEWER, SOUTH
SECT	SECTION
SF	SQUARE FEET
SHT	SHEET
SPEC	SPECIFICATIONS
SQ FT	SQUARE FEET
SS	SEWER SERVICE, STAINLESS STEEL
STA	STATION
STL	STEEL
SW	SIDEWALK, SOUTH WEST
T	HYDROSTATIC THRUST, TELEPHONE
TBM	TEMPORARY BENCH MARK
THK	THICK (NESS)
TYP	TYPICAL
UP	UTILITY POLE
VC	VITRIFIED CLAY
VERT	VERTICAL
W	WATER, WEST
W/	WITH
W/O	WITHOUT

CONSTRUCTION NOTES:

- THE CONTRACTOR SHALL CALL DIGSAFE AT 1-888-344-7233 AT LEAST 72 HOURS, SATURDAYS, SUNDAYS, AND HOLIDAYS EXCLUDED, PRIOR TO EXCAVATING AT ANY LOCATION. A COPY OF THE DIGSAFE PROJECT REFERENCE NUMBER(S) SHALL BE GIVEN TO THE OWNER PRIOR TO EXCAVATION.
- LOCATIONS OF EXISTING PIPES, CONDUITS, UTILITIES, FOUNDATIONS AND OTHER UNDERGROUND OBJECTS ARE NOT WARRANTED TO BE CORRECT AND THE CONTRACTOR SHALL HAVE NO CLAIM ON THAT ACCOUNT SHOULD THEY BE OTHER THAN SHOWN.
- TEST PITS TO LOCATE EXISTING UTILITIES MAY BE ORDERED BY THE ENGINEER.
- STONE WALLS, FENCES, MAIL BOXES, SIGNS, CURBS, LIGHT POLES, ETC.. SHALL BE REMOVED AND REPLACED AS NECESSARY TO PERFORM THE WORK. UNLESS OTHERWISE INDICATED, ALL SUCH WORK SHALL BE INCIDENTAL TO CONSTRUCTION OF THE PROJECT.
- ALL PAVEMENT DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN ACCORDANCE WITH THE SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS.
- ALL AREAS DISTURBED BY THE CONTRACTOR BEYOND PAYMENT LIMITS SHALL BE RESTORED AT NO ADDITIONAL COST TO THE OWNER.
- CONCRETE CRADLES OR ARCHES SHALL BE CONSTRUCTED WHERE SHOWN ON THE DRAWINGS OR WHERE DIRECTED BY THE ENGINEER. UNLESS OTHERWISE INDICATED, CONCRETE USED FOR PIPE ANCHOR BLOCKS, BACKING, PIPE CRADLES, ARCHES, AND FILL SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.
- THE CONTRACTOR SHALL NOT STORE ANY APPARATUS, MATERIALS, SUPPLIES, OR EQUIPMENT ON DRAINAGE STRUCTURES OR WITHIN 100 FEET OF WETLANDS.
- SEWER TRENCHES MAY BE EXCAVATED WIDER THAN THE 'LIMIT OF EXCAVATION AND PAYMENT FOR EARTH EXCAVATION' ABOVE THE 'LINE OF NARROW TRENCH LIMIT.' ANY SUCH ADDITIONAL EXCAVATION SHALL BE AT THE CONTRACTORS EXPENSE AND SHALL NOT BE MEASURED FOR PAYMENT.
- BELOW THE 'LINE OF NARROW TRENCH LIMIT' THE TRENCH SHOULD NOT BE EXCAVATED BEYOND THE TRENCH WIDTH 'W'. IF MATERIAL IS LOOSENED OR REMOVED BEYOND THE ABOVE MENTIONED LIMITS, THE CONTRACTOR WILL BE REQUIRED TO PROVIDE CRUSHED STONE FOR THE FULL WIDTH OF THE TRENCH AT NO ADDITIONAL COST TO THE OWNER.
- SHEETING TO BE LEFT IN PLACE SHALL BE USED WHERE SHOWN ON THE DRAWINGS OR WHERE DIRECTED BY THE ENGINEER. IT SHALL BE LEFT IN PLACE BELOW A LINE 12 INCHES ABOVE THE TOP OF THE PIPE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- FOUR FOOT INSIDE DIAMETER MANHOLES SHALL BE USED WITH SEWERS LESS THAN 24 INCHES IN DIAMETER, AND FIVE FOOT INSIDE DIAMETER MANHOLES SHALL BE USED WITH SEWERS EQUAL TO OR GREATER THAN 24 INCHES IN DIAMETER, UNLESS OTHERWISE SPECIFIED.
- OPENINGS FOR PIPE IN PRECAST MANHOLE BASES SHALL BE CAST IN THE REQUIRED LOCATIONS DURING MANHOLE MANUFACTURE. FIELD CUT OPENINGS WILL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.
- FORM BRICK INVERTS IN MANHOLES WITH BRICK ON EDGE TO A DEPTH OF 0.8 INSIDE DIAMETER OF PIPE AND FORM A 1 INCH SLOPED BENCH WITH BRICK FLAT. INVERT SHALL BE SLOPED UNIFORMLY BETWEEN INLET AND OUTLET PIPE AND SHALL BE FORMED AND FILLED AS REQUIRED TO DIRECT THE FLOW AS INDICATED AND TO PREVENT DEPOSITION OF SOLIDS.
- IN ACCORDANCE WITH DEP REGULATIONS, ALL MANHOLES WITHIN A 2,640 FOOT RADIUS OF A PUBLIC WELL SHALL HAVE WATERTIGHT FRAMES AND COVERS.
- IN PAVED AREAS THE TOP OF THE MANHOLE COVER SHALL BE SET FLUSH WITH THE PAVED SURFACE. IN OTHER AREAS THE TOP OF THE COVER SHALL EXTEND 6 INCHES ABOVE FINISHED GRADE, OR AS SHOWN ON THE DRAWINGS, OR AS DIRECTED BY THE ENGINEER.
- SEWER CHIMNEY AND HOUSE CONNECTION LOCATIONS ARE SHOWN FOR ESTIMATING PURPOSES, AND ARE APPROXIMATE IN LOCATION. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
- CALCULATION OF PIPE SLOPES IS BASED ON ELEVATION CHANGES DIVIDED BY THE DISTANCE BETWEEN THE OUTSIDE EDGES OF THE MANHOLE WALLS. FOR FOUR FOOT DIAMETER MANHOLES, THIS DISTANCE WAS CALCULATED AS THE CENTERLINE STATIONING MINUS FIVE FEET. FOR FIVE FOOT DIAMETER MANHOLES, THIS DISTANCE WAS CALCULATED AS THE CENTERLINE STATIONING MINUS SIX FEET. 'IN' INDICATES UPSTREAM END OF MANHOLE, 'OUT' INDICATES DOWNSTREAM END OF MANHOLE.
- PROTECTION OF WATER SUPPLIES - WHENEVER A SEWER MUST CROSS UNDER A WATER MAIN, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE TOP OF THE SEWER IS AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER MAIN. WHEN THE ELEVATION OF THE SEWER CANNOT BE VARIED TO MEET THE ABOVE REQUIREMENT, THE WATER MAIN SHALL BE RELOCATED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER TO PROVIDE THIS SEPARATION OR THE CONTRACTOR SHALL CONSTRUCT THE NEW SEWER OF CLASS 150 PRESSURE PIPE FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE WATER MAIN. ONE FULL LENGTH OF CLASS 150 PRESSURE PIPE SEWER SHOULD BE CENTERED ON THE WATER MAIN AS MUCH AS POSSIBLE. THE SEWER CONSTRUCTED OF THE PRESSURE PIPE MUST BE PRESSURE TESTED TO ASSURE WATER TIGHTNESS.
- APPROVED JOINT RESTRAINT METHODS SHALL BE PROVIDED FOR WATER MAINS WHERE ANY BENDS, TEES, PLUGS, OR WYES ARE INSTALLED. CONCRETE THRUST BLOCKS, ANCHOR BLOCKS AND TIE RODS MAY BE USED FOR 6-INCH AND 8-INCH PIPE WHERE JOINT RESTRAINT IS NOT FEASIBLE. FOR THRUST BLOCK DETAILS AND MINIMUM BLOCK BEARING AREAS, SEE DETAILS AND SPECIFICATIONS.
- NEW WATER MAINS AND SERVICES SHALL BE INSTALLED AT THE MINIMUM DEPTH FROM FINISH GRADE TO TOP OF PIPE AS SHOWN ON THE DRAWINGS. WHERE NECESSARY, NEW WATER MAINS SHALL BE INSTALLED AT A GREATER DEPTH TO CLEAR OBSTACLES SHOWN ON THE DRAWINGS AT NO ADDITIONAL COST TO THE OWNER. MINIMUM CLEARANCES TO UTILITIES, AS SHOWN ON THE DRAWINGS SHALL BE MAINTAINED.
- THE LOCATION OF PIPES, CAPS, REDUCERS, BENDS, AND OTHER FITTINGS AT POINTS OF CONNECTIONS TO EXISTING MAINS IS APPROXIMATE. CONTRACTOR SHALL DIG A TEST PIT AT EACH LOCATION TO DETERMINE THE DIAMETER AND MATERIAL OF THE EXISTING PIPE AND THE LOCATION OF THE TIE-IN POINT.
- THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVES WHICH HOLD WATER IN THE SYSTEM. THE OWNER WILL, ON 24 HOURS NOTICE FROM THE CONTRACTOR, OPEN AND/OR CLOSE ANY VALVES REQUIRED FOR DRAINING OR ADMITTING WATER TO THE VARIOUS SECTIONS OF THE WATER MAINS. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY IN WRITING 24 HOURS IN ADVANCE, ANY OCCUPANT THAT WILL BE WITHOUT WATER DUE TO A SHUTDOWN.
- SOME WATER SERVICE CONNECTIONS MAY NOT BE SHOWN ON THE DRAWINGS. THE OWNER WILL MARK THE LOCATION OF SUCH CONNECTIONS. PROVIDED THE CONTRACTOR GIVES THE OWNER AT LEAST 24 HOURS ADVANCE NOTICE.
- ALL STREET EXCAVATIONS SHALL BE COMPLETELY CLOSED AT THE END OF EACH WORKING DAY BY BACKFILLING OR COVERING WITH STEEL PLATES. NO TRENCHES SHALL REMAIN OPEN ON WEEKENDS OR HOLIDAYS WITHOUT PRIOR APPROVAL OF THE OWNER.
- ALL STREET EXCAVATIONS SHALL BE PAVED WITH PERMANENT TRENCH BINDER COURSE AT THE END OF EACH WEEK.
- EXISTING UTILITY AND PROPERTY LINE INFORMATION, TOPOGRAPHIC INFORMATION, EDGE OF PAVEMENT, UTILITY POLE LOCATIONS, AND LOCATIONS OF EXISTING ABOVE GROUND STRUCTURES AT REDSTONE DRIVE WERE TAKEN FROM FIELD SURVEY BY SHERMAN AND WOODS.
- TOPOGRAPHIC INFORMATION, EDGE OF PAVEMENT, UTILITY POLE LOCATIONS, AND LOCATIONS OF EXISTING ABOVE GROUND STRUCTURES AT DRAINAGE IMPROVEMENT SITES FROM FIELD SURVEY BY WESTON AND SAMPSON. PROPERTY LINES FROM ASSESSORS MAPPING.
- ELEVATIONS REFERENCED AT EACH DRAINAGE IMPROVEMENT SITES FROM AN ASSUMED DATUM.
- EXISTING UTILITIES AT DRAINAGE IMPROVEMENT SITES FROM INFORMATION PROVIDED BY THE TOWN OF EAST LONGMEADOW.
- WETLANDS DELINEATED BY PIONEER ENVIRONMENTAL, 25 GRANBY STREET, EAST LONGMEADOW, MA. NO WETLANDS FLAGGED IN VICINITY OF THE PROJECT.
- SEE SPECIFICATIONS FOR BORING LOG INFORMATION.
- INLET PROTECTION AND EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

Weston & Sampson ENGINEERS, INC.		Five Centennial Drive, Peabody, MA 01960	
RECORD DRAWING		DATE	
Description		A P R O V E D	
App. By		P P R O V E D	
DRL		Ck. By	
WCS		Dr. By	
2/05		Date	
1		No.	
REGISTERED PROFESSIONAL ENGINEER		DATE	
TOWN OF EAST LONGMEADOW, MASSACHUSETTS BOARD OF PUBLIC WORKS			
REDSTONE DRIVE SEWER AND WATER IMPROVEMENTS AND MISCELLANEOUS DRAINAGE IMPROVEMENT PROJECTS			
ABBREVIATIONS, NOTES AND LEGEND			
CAAD NO.	SCALE:	CONTRACT:	FILE NO.
R-REDSTONE	143-6	AS NOTED	143-6
SHEET 2 OF 11			

RECORD DRAWING