BID SET No. _____

ACTON WATER DISTRICT

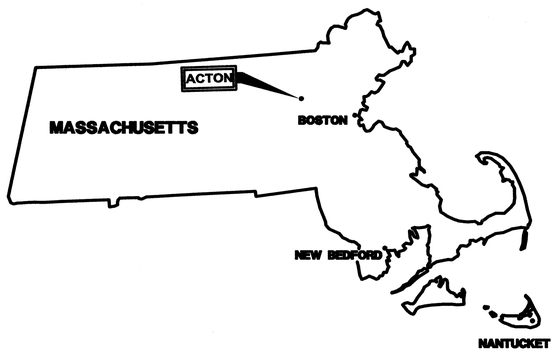
PERMITTING DRAWINGS FOR

SOUTH ACTON WATER TREATMENT PLANT

-

ACTON, MASSACHUSETTS

APRIL 2013



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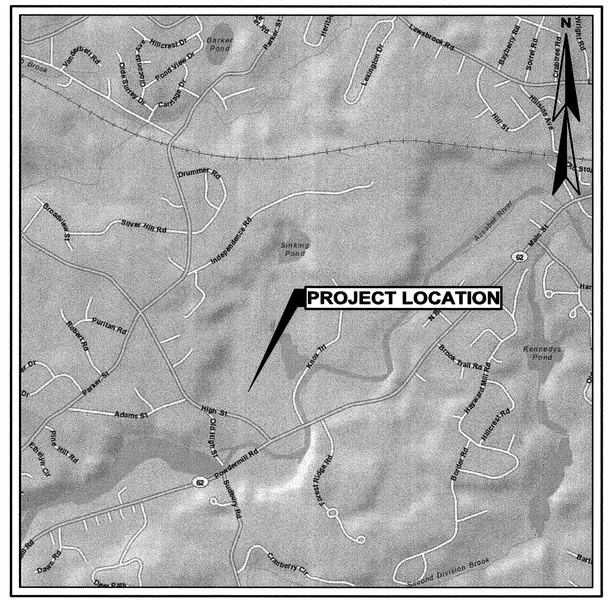
COMMONWEALTH OF MASSACHUSETTS
JAMES E. CRAY
CIVIL
No. 48099
REGISTERED PROFESSIONAL ENGINEER
4-22-13



LOCATION PLAN
NTS

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FOR REVIEW PERMITTING SET 4/16/13

FOR BIDDING _____

WP PROJECT No. 12254D

G:\DWGS\MA\ACTON\12254-SACTONWTP\12254E-FD\CIV\12254E-CS-GENNOTES.DWG | GENERAL NOTES LEGEND AND ABBREVIATIONS | 1:4.56 | ---- | 4/18/2013 9:52:20 AM | RXB   LAST SAVED BY: RXB 4/16/2013 2:31 PM

GENERAL SITE AND DEMOLITION PLAN NOTES

1. THE CONTRACTOR IS REFERRED TO SECTION 01050 OF THE SPECIFICATIONS REGARDING COORDINATION WITH OTHERS, INCLUDING RESPONSIBILITIES AND RELATED COSTS.

2. THE LOCATIONS OF UNDERGROUND UTILITIES AND STRUCTURES, AS SHOWN ON THE DRAWINGS, ARE APPROXIMATE AND MAY NOT BE COMPLETE. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE BASED ON PREVIOUS CONSTRUCTION DESIGN PLANS, (REFER TO SPECIFICATION SECTION 00800) WHICH ARE AVAILABLE FOR INSPECTION. NO GUARANTEE IS MADE THAT UTILITIES OR STRUCTURES WILL BE ENCOUNTERED WHERE SHOWN OR THAT ALL UNDERGROUND UTILITIES AND STRUCTURES ARE SHOWN. ALL LOCATIONS AND SIZES OF EXISTING UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD WITH TEST PITS AS REQUIRED PRIOR TO BEGINNING CONSTRUCTION OF NEW FACILITIES OR PIPING THAT MAY BE AFFECTED. THE CONTRACTOR WILL REALIGN NEW PIPE LOCATIONS AS REQUIRED TO CONFORM TO EXISTING LINES AND AS APPROVED BY THE ENGINEER. UTILITY CONTACTS ARE AS FOLLOWS:

ELECTRIC	TELEPHONE	NATURAL GAS
NSTAR ELECTRIC	VERIZON	NGRID
800 BOYLSTON ST	185 FRANKLIN ST	1 BEACON ST
BOSTON, MA 02199	BOSTON, MA 02107	BOSTON, MA 02108
800-592-2000	800-870-9999	800-548-8000

3. THE CONTRACTOR MAY ENCOUNTER ASBESTOS CEMENT PIPE DURING PROSECUTION OF THE WORK. CONTRACTOR SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF OSHA AND ALL OTHER FEDERAL, STATE AND LOCAL REGULATIONS WHEN HANDLING AND/OR DISPOSING OF ASBESTOS CEMENT PRODUCTS. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR HANDLING AND/OR DISPOSAL OF ASBESTOS CEMENT PIPE.

4. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRAFFIC FLOW AT ALL TIMES. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH THE OWNER AND NOT INTERFERE WITH TREATMENT FACILITY.

5. THE OWNER WILL BE RESPONSIBLE FOR OBTAINING THE PERMITS LISTED IN THE SUPPLEMENTARY CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH PERMIT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. COPIES OF ALL OBTAINED PERMITS ARE AVAILABLE FOR REVIEW FROM THE OWNER. ALL OTHER PERMITS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

6. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

7. ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE UNLESS OTHERWISE NOTED ON THE PLANS.

8. CONTRACTOR TO NOTE THAT ALL EXISTING INFORMATION ON THE DRAWINGS IS SHOWN WITH A LIGHTER LINE WEIGHT AND INDICATED WITH A SLANTED TYPE TEXT.

9. MONITORING WELLS NOT SCHEDULED FOR REMOVAL SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION.

10. ALL PIPING, EQUIPMENT AND MATERIALS TO BE DEMOLISHED AND/OR REMOVED FROM SERVICE SHALL BE COORDINATED WITH THE OWNER AND ENGINEER BEFORE COMMENCING THAT WORK. EXISTING PIPES AND CONDUIT DESIGNATED AS "ABANDONED" MAY BE REMOVED IF THE CONTRACTOR SO CHOOSES. IF ABANDONED PIPE CONFLICTS WITH PROPOSED YARD PIPING, THEN A PORTION OF THE ABANDONED PIPE SHALL BE REMOVED AND THE NEW ENDS OF ABANDONED PIPE CAPPED, OR PLUGGED WITH CONCRETE.

11. SEVERING OF EXISTING UTILITIES FOR ABANDONMENT, OR REMOVAL OF A SEGMENT FROM SERVICE, SHALL BE PERFORMED IN SUCH A MANNER AS TO ALLOW THE REMAINING ACTIVE SEGMENT TO CONTINUE IN ITS INTENDED SERVICE. CAP ACTIVE SEGMENTS WITH APPROPRIATE FITTINGS, JOINT RESTRAINT, ETC. TO ENSURE THEIR INTEGRITY. PLUG ENDS OF ABANDONED PIPE SEGMENTS WITH CONCRETE UNLESS SPECIAL CIRCUMSTANCES DICTATE PLUGGING ABANDONED PIPES WITH BLIND FLANGES, RESTRAINED MECHANICAL JOINT PLUGS, ETC. AS APPROPRIATE.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING OF ALL DEMOLISHED PIPING, EQUIPMENT AND MATERIALS. DISPOSAL SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS AND SECTION 02050. THE OWNER RESERVES THE RIGHT TO RETAIN ANY SUCH PIPING, EQUIPMENT AND MATERIALS DESIGNATED FOR DEMOLITION FOR HIS USE. SUCH MATERIALS TO BE RETAINED SHALL BE PROPERLY STORED IN AN ON-SITE LOCATION. COORDINATE LOCATION AND MATERIALS TO BE SALVAGED WITH THE OWNER/ENGINEER.

13. THE CONTRACTOR SHALL KEEP A RECORD OF DEMOLITION AS PART OF THE PROJECT RECORD DOCUMENTS IN ACCORDANCE WITH SPECIFICATION SECTION 01720.

14. CONTRACTOR SHALL USE EXTREME CARE IN EXCAVATING ADJACENT TO EXISTING STRUCTURES TO PREVENT UNDERMINING OF FOUNDATIONS. SEE STRUCTURAL DRAWINGS FOR FURTHER INFORMATION.

15. CONTRACTOR SHALL CONTROL DUST ON THE CONSTRUCTION SITE TO A REASONABLE LIMIT. PAVEMENT MUST BE WETTED PRIOR TO SWEEPING.

GENERAL SITE LAYOUT NOTES

1. DO NOT SCALE DRAWINGS UNLESS OTHERWISE NOTED. WRITTEN DIMENSIONS AND STATIONING SHALL PREVAIL.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF ALL PROPOSED WORK AS SHOWN ON THE DRAWINGS. ALL COORDINATES ARE GIVEN FROM ON SITE CONTROL POINTS. THE ENGINEER WILL PROVIDE THE LOCATION AND COORDINATES FOR CONTROL POINTS TO BE UTILIZED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE PROVIDED LAYOUT INFORMATION THROUGHOUT THE COURSE OF CONSTRUCTION. REPORT ANY LAYOUT DISCREPANCIES IMMEDIATELY TO THE ENGINEER.

3. REFER TO THE SITE GRADING DRAWINGS FOR ADDITIONAL LAYOUT INFORMATION.

4. IN GENERAL THE GIVEN STRUCTURE LOCATIONS ARE TO THE OUTSIDE FACE OF THE STRUCTURE FOUNDATION WALL NOT FOOTINGS. REFER TO THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR BUILDING AND STRUCTURE DIMENSIONS. RADII SHOWN FOR ROADS ARE TO BE TO EDGE OF GRAVEL.

5. THE LOCATION AND LIMITS OF ALL ON-SITE WORK AND STORAGE AREAS SHALL BE REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO, THE OWNER AND ENGINEER. THE CONTRACTOR SHALL LIMIT HIS ACTIVITIES TO THESE AREAS.

6. THE GENERAL LIMITS OF WORK ARE SHOWN ON DRAWING C-2. CONTRACTOR SHALL CONFINE HIS ACTIVITIES TO THE NOTED AREA. WHEN WORKING IN EXISTING BUILDINGS CONTRACTOR SHALL CONFINE HIS ACTIVITIES TO ONLY THOSE AREAS DIRECTLY IMPACTED BY NEW WORK OR DEMOLITION WORK. OTHER AREAS WILL BE OFF LIMITS TO CONTRACTOR.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RE-ESTABLISHING AND RESETTING ALL EXISTING PROPERTY MONUMENTATION DISTURBED BY HIS OPERATIONS. THIS WORK SHALL BE DONE BY A LAND SURVEYOR REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS AT NO ADDITIONAL COST TO THE OWNER.

8. BOLLARD LOCATIONS SHOWN ARE APPROXIMATE. COORDINATE BOLLARD LOCATIONS WITH THE ENGINEER.

GENERAL SITE GRADING NOTES

1. COMPACTION TESTS SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 02200. ANY SETTLEMENT OCCURRING WITHIN ONE YEAR OF SUBSTANTIAL COMPLETION OF THE PROJECT WILL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.

2. STRIPPING OF TOPSOIL (LOAM) SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02115.

3. ALL GRAVEL ROAD AND PARKING AREA SURFACES SHALL PITCH 1/4 INCH PER FOOT MINIMUM UNLESS OTHERWISE NOTED.

4. ALL CATCH BASINS, MANHOLES, VALVE PITS, VALVE BOXES AND OTHER BURIED FACILITIES WITH SURFACE ACCESS SHALL BE ADJUSTED TO MATCH FINAL GRADES, UNLESS OTHERWISE INDICATED.

5. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL DEBRIS AND EXCESS EXCAVATED MATERIAL FROM WITHIN THE CONSTRUCTION LIMIT OF WORK, TO A SUITABLE SITE PROVIDED BY THE CONTRACTOR, IN COMPLIANCE WITH ALL STATE AND LOCAL REGULATIONS.

6. CONTRACTOR SHALL REPAIR ANY ITEMS DAMAGED BY HIS CONSTRUCTION ACTIVITIES TO AT LEAST THEIR ORIGINAL CONDITION, TO THE SATISFACTION OF THE OWNER AND ENGINEER.

7. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF NEW GRAVEL ROADWAY AND PARKING SURFACES IN THE WORK AREA UNTIL FINAL COMPLETION.

8. ALL AREAS THAT ARE EXCAVATED, FILLED, OR OTHERWISE DISTURBED BY THE CONTRACTOR SHALL BE LOAMED, GRADED, LIMED FERTILIZED, SEEDED AND MULCHED UNLESS OTHERWISE NOTED. REFER TO SPECIFICATION SECTION 02485 – LOAMING AND SEEDING.

9. CONTRACTOR SHALL NOT TRACK OR SPILL EARTH, DEBRIS, OR OTHER CONSTRUCTION MATERIAL ON PUBLIC OR PRIVATE STREETS AND PLANT DRIVES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE ASSOCIATED CLEAN-UP.

10. SEE DRAWING C-10 FOR EROSION CONTROL NOTES.

SURVEY NOTES

1. ELEVATIONS REFER TO NAVD 88.

2. BORINGS SHOWN WERE COMPLETED IN FEBRUARY 2013. SEE APPENDIX "B" FOR BORING LOGS.

3. UTILITY INFORMATION SHOWN IS BASED ON BOTH A FIELD SURVEY AND THE LATEST PLANS OF RECORD. THE LOCATIONS OF UNDERGROUND PIPES AND CONDUITS HAVE BEEN DETERMINED FROM THE AFOREMENTIONED RECORD PLANS AND ARE APPROXIMATE ONLY. BEFORE PLANNING FUTURE CONNECTIONS, THE PROPER UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED AND THE ACTUAL LOCATION OF SUB-SURFACE STRUCTURES SHOULD BE DETERMINED IN THE FIELD. CALL, TOLL-FREE, THE DIG SAFE CALL CENTER AT 1-888-DIG-SAFE 72 HOURS PRIOR TO EXCAVATION.

4. ALL STRUCTURES, UTILITIES, EQUIPMENT AND PIPING LAYOUT ELEVATIONS AND DIMENSIONS SHALL BE FIELD VERIFIED AND COORDINATED WITH EQUIPMENT SUPPLIED, AND/OR EXISTING CONDITIONS. CONTACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AS REQUIRED PRIOR TO BEGINNING CONSTRUCTION OF NEW FACILITIES, EQUIPMENT OR PIPING THAT MAY BE AFFECTED. IN SOME SPECIFIC INSTANCES, WHERE SPECIAL ATTENTION MAY BE REQUIRED BY THE CONTRACTOR, SOME DIMENSIONS, ELEVATIONS, ETC. HAVE BEEN NOTED WITH AN "*". THIS DOES NOT HOWEVER, LIMIT THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND COORDINATED ALL NECESSARY INFORMATION FOR HIS CONSTRUCTION.

5. WETLANDS WERE DELINEATED BY CARON ENVIRONMENTAL CONSULTING IN FEBRUARY 2013.

6. TOPOGRAPHIC INFORMATION BASED ON WRIGHT-PIERCE SURVEY OF FEBRUARY 2013 AND LIDAR INFORMATION.

SITE PIPING NOTES

1. PROCESS FLOW DIAGRAM AND PIPING LEGEND ARE ON THE PROCESS DRAWINGS. THE PROCESS PIPING SCHEDULE AND ADDITIONAL PIPING NOTES ARE LOCATED IN SPECIFICATION SECTION 15050.

2. ALL PIPE LINES SHALL SLOPE UNIFORMLY BETWEEN ELEVATIONS INDICATED ON THE DRAWINGS. NO CRESTS IN PIPING WILL BE PERMITTED. ALL HORIZONTAL AND VERTICAL BENDS IN PRESSURIZED LINES SHALL BE SUITABLY RESTRAINED WITH THRUST BLOCKS AND/OR RETAINER GLANDS (RETAINER GLANDS ALLOWED FOR DUCTILE IRON PIPE ONLY). SEE DRAWING C-12 FOR THRUST BLOCK DETAILS. PROVIDE ALL BENDS (HORIZONTAL AND VERTICAL) AS REQUIRED TO MEET THE GRADES AND ALIGNMENT INDICATED ON THE DRAWINGS.

3. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION AND SIZE OF EXISTING PIPING AND UTILITIES IN THE FIELD BY TEST PIT EXCAVATION PRIOR TO COMMENCING INSTALLATION OF ANY OF THE NEW PIPING AFFECTED. WHERE NEW PIPE CONNECTS TO EXISTING PIPING OR STRUCTURAL PENETRATION, CONTRACTOR SHALL VERIFY ELEVATION BY TEST PIT, AS REQUIRED, PRIOR TO INSTALLATION OF ANY OF THE ASSOCIATED/AFFECTED NEW PIPING. IDENTIFIED CONFLICTS WITH EXISTING PIPING AND UTILITIES WILL BE REVIEWED WITH THE ENGINEER PRIOR TO COMMENCING INSTALLATION. THE HORIZONTAL ALIGNMENT OF NEW PIPING MAY BE ADJUSTED IN THE FIELD SUBJECT TO PRIOR REVIEW AND ACCEPTANCE OF THE ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY LAYOUT OF ALL PROPOSED WORK AS SHOWN ON THE DRAWINGS AND REPORT ANY LAYOUT DISCREPANCIES IMMEDIATELY TO THE ENGINEER.

4. ALL WATER PIPING (EXCLUDING BUILDING DRAINS) AND ALL PRESSURIZED PIPES (I.E. PLANT WATER, CITY WATER, SOLUTION LINES, HEAT, ETC.) INSTALLED BENEATH STRUCTURES SHALL BE ENCASED IN CONCRETE. SEE STRUCTURAL DRAWING FOR DETAILS.

5. ALL BURIED CONNECTIONS TO STRUCTURES, SHALL HAVE SLEEVE TYPE FLEXIBLE CONNECTIONS APPROXIMATELY 4 FEET FROM THE STRUCTURES. ALL SLEEVE TYPE COUPLINGS ON PRESSURE LINES SHALL BE RESTRAINED (SOLID SLEEVE). REFER TO SPECIFICATION SECTION 15088.

6. PROVIDE CAST OR DUCTILE IRON WALL CASTINGS, OR GALVANIZED STEEL PIPE SLEEVES, FOR ALL PIPE PENETRATIONS MADE THROUGH CONCRETE FOUNDATIONS, WALLS AND SLABS. ALL WALL SLEEVES AND WALL CASTINGS SHALL HAVE WATERSTOPS. SEE PROCESS, MECHANICAL AND STRUCTURAL DRAWINGS FOR LOCATIONS OF PENETRATIONS. NEW PENETRATIONS THROUGH EXISTING STRUCTURE WALLS SHALL BE BY CORING MACHINE AND "LINK-SEAL" TYPE SEALS, UNLESS OTHERWISE INDICATED. OPENINGS TO BE COMPATIBLE WITH REQUIRED PIPING AND STANDARD LINK SEAL SIZES. SEE PROCESS DRAWINGS FOR WALL PENETRATION DETAILS.

7. TRENCH INSULATION SHALL BE USED WHERE DEPTH OF COVER IS LESS THAN 4'-6" FOR WATER MAIN, WHERE PIPE IS WITHIN 1 FOOT OF A STORM DRAIN. REFER TO DRAWING C-13 FOR TRENCH INSULATION DETAIL.

8. REFER TO SPECIFICATION SECTION 02200 FOR PIPE AND STRUCTURE BEDDING AND BACKFILL REQUIREMENTS.

9. COMPACTION TESTS WILL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 02200. ANY SETTLEMENT OCCURRING WITHIN ONE YEAR OF FINAL COMPLETION OF THE WORK SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST.

10. WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ADAPTERS, FITTINGS, AND ADDITIONAL PIPE AS REQUIRED TO COMPLETE THE CONNECTION. CONTRACTOR SHALL VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIAL OF CONSTRUCTION. TEST PITS SHALL BE USED AS REQUIRED.

11. WHERE POSSIBLE, WATER LINES SHOULD BE INSTALLED OVER WASTEWATER OR SLUDGE LINES. A MINIMUM SEPARATION OF 18 INCHES BETWEEN THE BOTTOM OF THE WATER LINE AND THE TOP OF THE WASTEWATER OR SLUDGE LINE SHALL BE MAINTAINED, IF POSSIBLE. WHERE A WATER LINE CROSSES UNDER A WASTEWATER OR SLUDGE LINE, A FULL LENGTH OF PIPE SHALL BE CENTERED ABOVE THE WASTE LINE SO THAT BOTH JOINTS WILL BE AS FAR FROM THE WASTE LINE AS POSSIBLE.

12. ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO ANY TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. DAMAGE TO ANY SUCH STRUCTURES CAUSED BY OR RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE OWNER.

13. PIPING ON THE SITE PIPING PLAN HAS BEEN SHOWN BROKEN FOR CLARITY ONLY. PIPE BREAKS DO NOT INDICATE RELATIVE ELEVATIONS OF PIPING.

14. ELECTRICAL CONDUIT RUNS ARE INDICATED ON THE ELECTRICAL DRAWINGS.

CIVIL ABBREVIATIONS

&	AND
Ø, DIA	DIAMETER
#, NO	NUMBER
ALP	AIR, LOW PRESSURE
APP'D	APPROVED
BLDG	BUILDING
BVW	BORDERING VEGETATED WETLAND
CB	CATCH BASIN
CEN	CENTER
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CONC	CONCRETE
COORD	COORDINATE
COR	CORNER
CSO	COMBINED SEWER OVERFLOW
CY	CUBIC YARD
DEC	DECHLOR
DEMO	DEMOLITION
DMH	DRAIN MANHOLE
DI	DUCTILE IRON
DR	DRAIN
DWG	DRAWING
EL	ELEVATION
EMH	ELECTRIC MANHOLE
EXC	EXCAVATION
FM	FORCE MAIN
FT	FEET
G	GAS
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HYD	HYDRANT
HYP	SODIUM HYPOCHLORITE
IN	INCH
INF	INFLUENT
INV	INVERT
LBS	POUNDS
LR	LONG RADIUS
MAX	MAXIMUM
MH	MANHOLE
MHV	HIGH VOLTAGE MANHOLE
MIN	MINIMUM
MLV	LOW VOLTAGE MANHOLE
MIL	MILLIMETER
MW	MONITOR WELL
N	NORTH
NGVD	NATIONAL GEODETIC VERTICAL DATUM
N/A	NOT AVAILABLE/APPLICABLE
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
PC	PERFORATED CLAY
PCCP	PRECAST CONCRETE CYLINDER PIPE
PCE	PRIMARY CLARIFIER EFFLUENT
PCI	PRIMARY CLARIFIER INFLUENT
PERM	POTASSIUM PERMANGANATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PS	PRIMARY SLUDGE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PW	PLANT WATER
RAS	RETURN ACTIVATED SLUDGE
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REQ'D	REQUIRED
S	SLOPE
SAM	SAMPLER LINE
SD	STORM DRAIN
SEP	SEPTAGE
SF	SQUARE FEET
SFM	STATE FORCE MAIN
SMH	SANITARY SEWER MANHOLE
SQ	SQUARE
STA	STATION
T, XFMR	TRANSFORMER
TBM	TEMPORARY BENCH MARK
TD	TANK DRAIN
THK	THICKNESS
TOS	TOP OF STRUCTURE
TW	TOWN WATER
TYP	TYPICAL
UD	UNDERDRAIN
UG	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
VC	VITRIFIED CLAY
W/	WITH
W	POTABLE WATER
WAS	WASTE ACTIVATED SLUDGE
WS	WATER SURFACE
WWF	WELDED WIRE FRAME
WWTP	WASTE WATER TREATMENT PLANT
YD	YARD

LEGEND

EXISTING		PROPOSED
	PROPERTY/ROW LINE	
	SETBACK LINE	
	EASEMENT LINE	
	WETLAND SETBACK	
	400' WELL RADIUS	
	CENTERLINE	
	EDGE OF PAVEMENT	
	CURBING	
	EDGE OF GRAVEL	
	EDGE OF CONCRETE	
122	CONTOUR	123
	BUILDING	
	STONEWALL	
	TREELINE	
	CHAIN LINK FENCE	
	STOCKADE FENCE	
	BARB WIRE FENCE	
	RETAINING WALL	
	GUARDRAIL	
8" S	SEWER	8"S
4" FM	SEWER FORCE MAIN	4"FM
4" G	GAS	4"G
	WATER	8"W
15" SD	STORM DRAIN	15"SD
6" UD	UNDERDRAIN	6"UD
12" CMP	CULVERT	12" CMP
UGE	UNDERGROUND ELECTRIC	UGE
	OVERHEAD ELECTRIC	OHE
	IRON PIPE/REBAR	
	DRILLHOLE	
	MONUMENT	
	SURVEY CONTROL POINT	
124.6	SPOT ELEVATION	134.5
SMH	SEWER MANHOLE	SMH
DMH	DRAINAGE MANHOLE	DMH
CB CB	CATCH BASIN	CB CB
EMH	ELECTRIC MANHOLE	EMH
TMH	TELEPHONE MANHOLE	TMH
	SHUTOFF VALVE	
	WATER SERVICE SHUTOFF	
	YARD HYDRANT	
	HYDRANT	
	UTILITY POLE	
	UTILITY POLE W/ GUY	
	UTILITY POLE W/ LIGHT	
	LIGHT POLE	
	BOLLARD	
	FLAGPOLE	
	CONIFEROUS TREE	
	DECIDUOUS TREE	
	SHRUB	
	EDGE OF WATER	
	STREAM	
	EDGE OF WETLANDS	
	FLOODPLAIN	
	WETLANDS	
	DRAINAGE FLOW	
	DRAINAGE SWALE	
	SIGN	
MB	MAILBOX	
	TEMPORARY BENCH MARK	
TP TP-2	TEST PIT	
B-3	TEST BORING	
P-4	TEST PROBE	
MW	MONITORING WELL	
	LIMIT OF WORK	
	SILT FENCE	
	RIPRAP	
	MATCHLINE	
8" S	SEWER	8"S
4" FM	SEWER FORCE MAIN	4"FM
4" G	GAS	4"G
8" W	WATER	8"W
15" SD	STORM DRAIN	15"SD
6" UD	UNDERDRAIN	6"UD
12" CMP	CULVERT	12" CMP
128.11	PIPE SPOT ELEVATION	128.11
6"XX	CULVERT/UNDERDRAIN	6"XX
6"XX	PIPING	6"XX
30"XX	LARGE DIA PIPING (18"+)	30"XX
6"XX (AB)	PIPE PREVIOUSLY ABANDONED	
6"XX	PIPING TO BE DEMOLISHED	
6"XX	PIPING TO ABANDON	
	WETLAND SETBACK	
	WELL RADIUS	

"XX" DENOTES PIPE DESCRIPTION

SEE LIST OF CIVIL ABBREVIATIONS FOR PIPE DESCRIPTIONS

FOR PERMITTING PURPOSES ONLY

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
	60% Review		4-13
1	FOR PERMITTING	JEC	4-13
2			
3			
4			

DESIGNED BY:
CAD COORD: LAB
CAD: JJM
CHECKED BY:
DATE:
APPROVED BY:
DATE:
PROJECT NO: 12254E

COMMONWEALTH OF MASSACHUSETTS — JAMES E. GRAY — CIVIL — No. 48069 — REGISTERED PROFESSIONAL ENGINEER — 4-22-13

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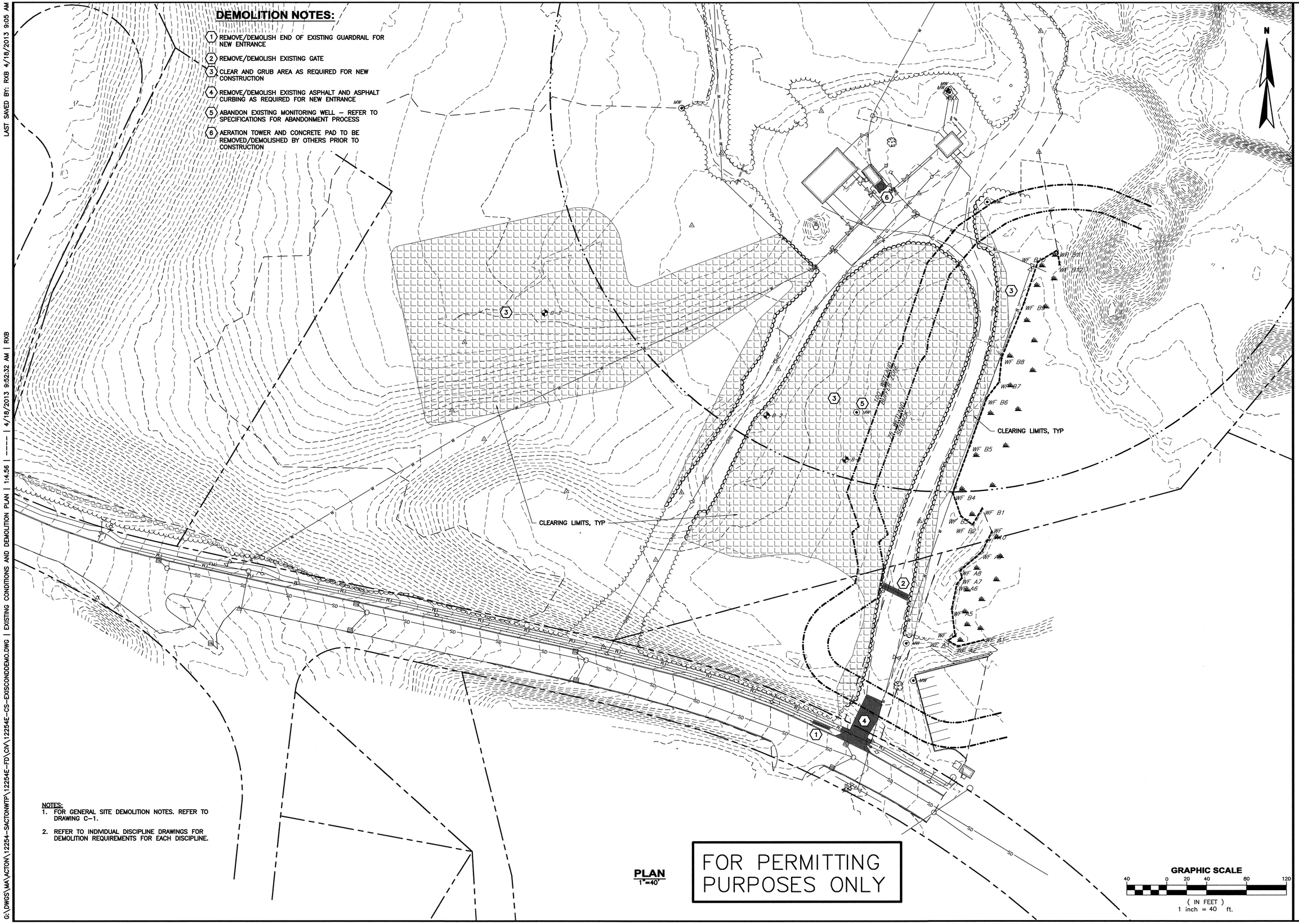
ACTON WATER DISTRICT
ACTON, MASSACHUSETTS
SOUTH ACTON WATER TREATMENT PLANT

GENERAL NOTES, LEGEND, AND ABBREVIATIONS

DRAWING
C-1

DEMOLITION NOTES:

1. REMOVE/DEMOLISH END OF EXISTING GUARDRAIL FOR NEW ENTRANCE
2. REMOVE/DEMOLISH EXISTING GATE
3. CLEAR AND GRUB AREA AS REQUIRED FOR NEW CONSTRUCTION
4. REMOVE/DEMOLISH EXISTING ASPHALT AND ASPHALT CURBING AS REQUIRED FOR NEW ENTRANCE
5. ABANDON EXISTING MONITORING WELL – REFER TO SPECIFICATIONS FOR ABANDONMENT PROCESS
6. AERATION TOWER AND CONCRETE PAD TO BE REMOVED/DEMOLISHED BY OTHERS PRIOR TO CONSTRUCTION



NOTES:
1. FOR GENERAL SITE DEMOLITION NOTES. REFER TO DRAWING C-1.
2. REFER TO INDIVIDUAL DISCIPLINE DRAWINGS FOR DEMOLITION REQUIREMENTS FOR EACH DISCIPLINE.

PLAN
1"=40'

FOR PERMITTING PURPOSES ONLY

GRAPHIC SCALE
40 0 20 40 80 120
(IN FEET)
1 inch = 40 ft.

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
	60% Review		4-13
1	FOR PERMITTING	JEC	4-18
2			
3			
4			

DESIGNED BY:
CAD COORD: LAB
CAD: JJM
CHECKED BY:
DATE:
APPROVED BY:
DATE:
PROJECT NO: 12254E

COMMONWEALTH OF MASSACHUSETTS
JAMES E. CRAY
CIVIL
No. 48369
REGISTERED PROFESSIONAL ENGINEER

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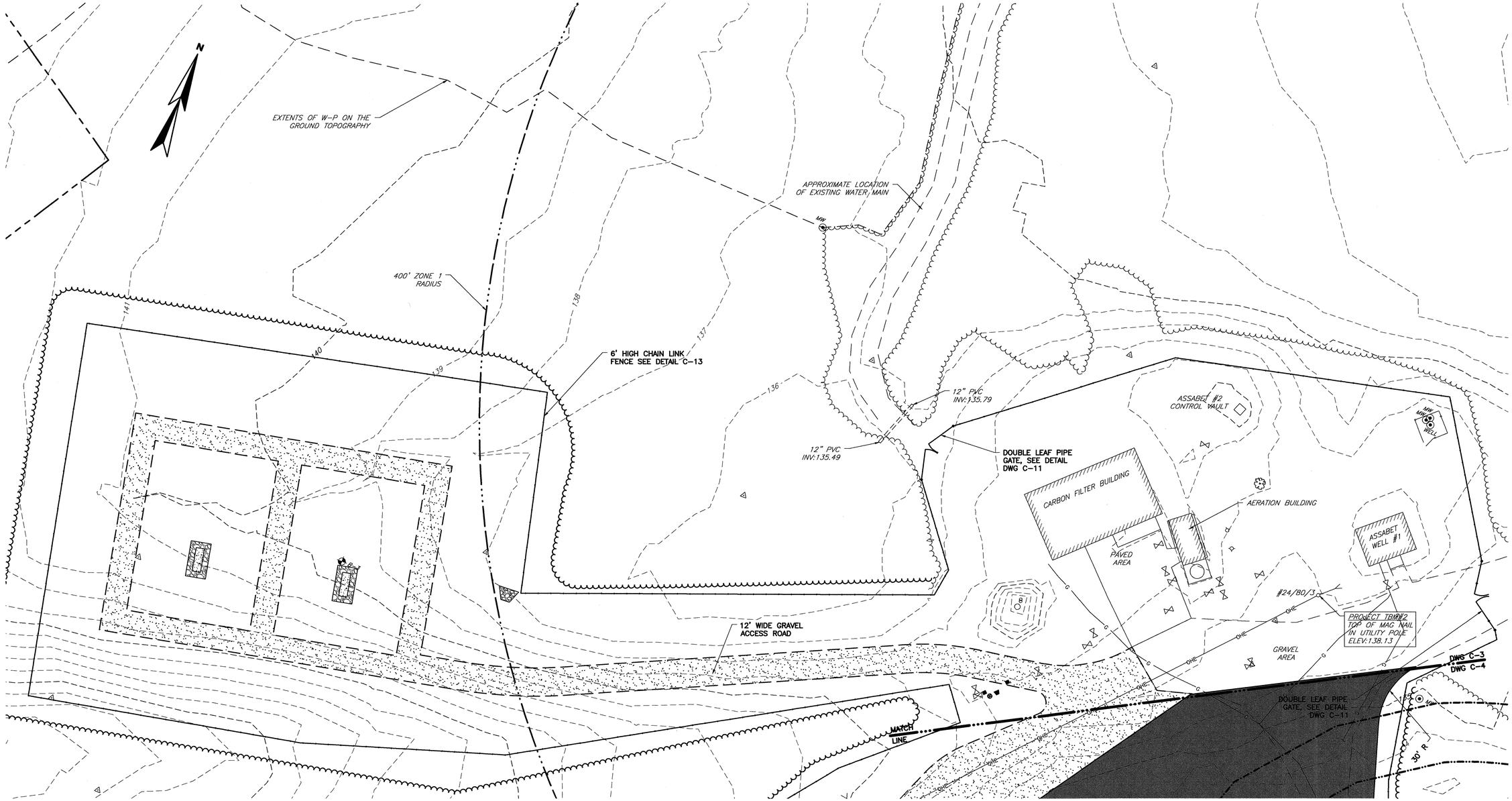
ACTON WATER DISTRICT
ACTON, MASSACHUSETTS
SOUTH ACTON WATER TREATMENT PLANT

EXISTING CONDITIONS AND DEMOLITION PLAN

DRAWING
C-2

LAST SAVED BY: RXB 4/18/2013 9:05 AM
G:\DWGS\MA\ACTON\12254-SACTONWTP\12254E-FD\CIV\12254E-CS-EXISCONDDEMO.DWG | EXISTING CONDITIONS AND DEMOLITION PLAN | 1:4.56 | ---- | 4/18/2013 9:52:32 AM | RXB



PLAN
1"=20'

FOR PERMITTING PURPOSES ONLY

GRAPHIC SCALE
20 0 10 20 40 60
(IN FEET)
1 inch = 20 ft.

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	60% Review		4-13
2	FOR PERMITTING	JEC	4-18
3			
4			

DESIGNED BY:
CAD COORD: LAB
CAD: JJM
CHECKED BY:
DATE:
APPROVED BY:
DATE:
PROJECT NO: 12254E

COMMONWEALTH OF MASSACHUSETTS JAMES E. CRAY CIVIL No. 46069 REGISTERED PROFESSIONAL ENGINEER

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ACTON WATER DISTRICT
ACTON, MASSACHUSETTS
SOUTH ACTON WATER TREATMENT PLANT

SITE LAYOUT PLAN I

DRAWING
C-3

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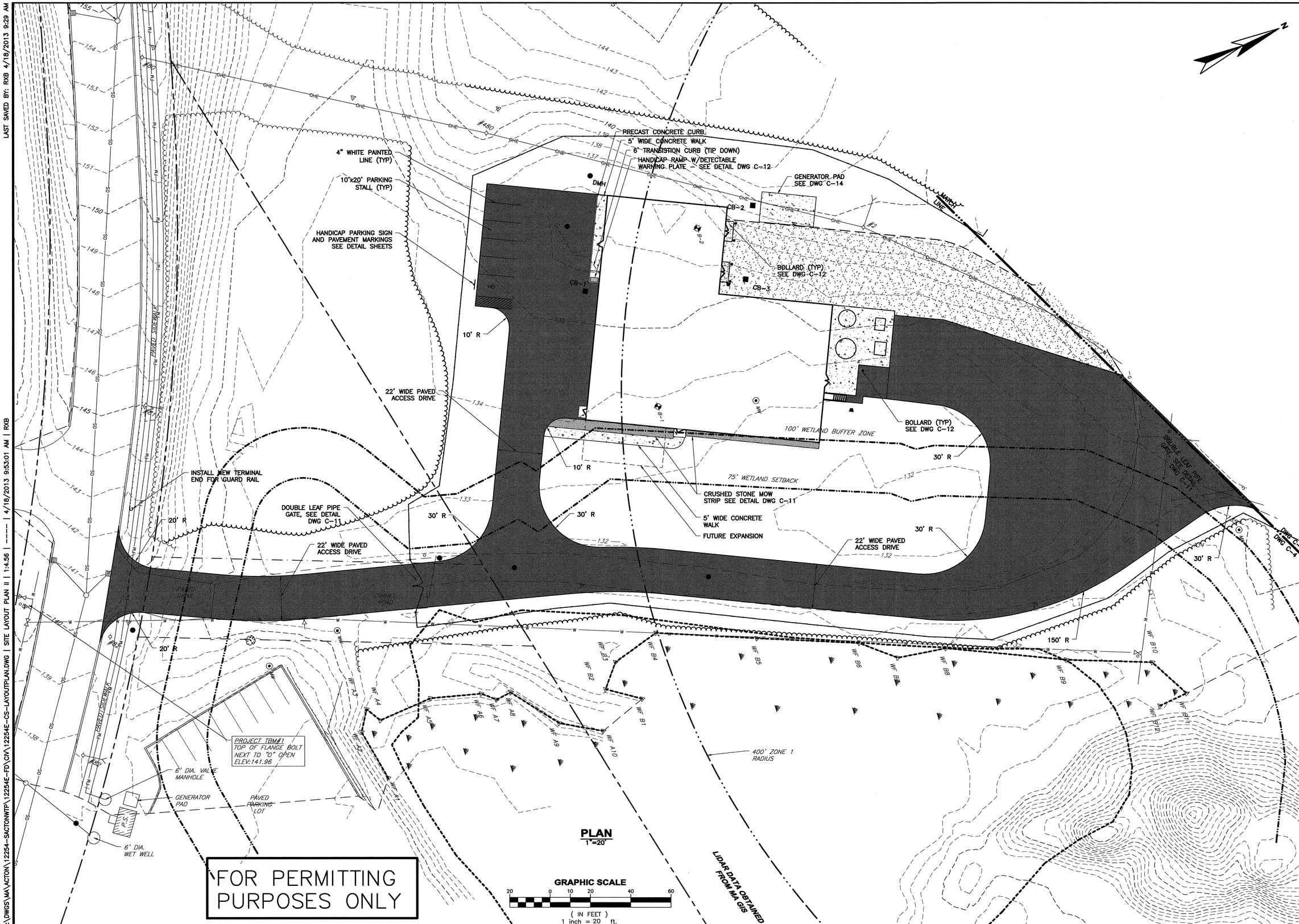

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NO	SUBMISSIONS/REVISIONS	APP'D	DATE
	60% Review		4-13
1	FOR PERMITTING	JEC	4-18
2			
3			
4			

DESIGNED BY:
CAD COORD: LAB
CAD: JJM
CHECKED BY:
DATE:
APPROVED BY:
DATE:
PROJECT NO: 12254E

COMMONWEALTH OF MASSACHUSETTS JAMES E. CRAY CIVIL No. 46089 REGISTERED PROFESSIONAL ENGINEER

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ACTON WATER DISTRICT
ACTON, MASSACHUSETTS
SOUTH ACTON WATER TREATMENT PLANT

SITE LAYOUT PLAN II

DRAWING
C-4