

- NOTES:**
1. THE CITY OF LOWELL PROPERTY 186-2270-0086 HAS A NOMINAL 3FT. CAP (SOIL COVER) GENERALLY LOCATED ON THE PROPERTY OVER A DEMARCATION LAYER.
  2. THE EXISTING DEMARCATION LAYER CONSISTS OF BRIGHTLY COLORED, PERFORATED PLASTIC SHEETING AT THE BASE OF THE EXCAVATION AREAS TO SERVE AS A VISIBLE DELINEATION BETWEEN CLEAN SURFACE SOILS AND IMPACTED SUBSOIL REMAINING AT THE SITE. THE MARKER LAYER WAS ANCHORED TO THE UNDERLYING SOIL WITH APPROXIMATELY 6" SHAPED METAL STAPLES.
  3. THE BASE MAP IS BASED UPON A FIELD SURVEY CONDUCTED BY WESTON SOLUTIONS IN JULY 2015 AND IN PART A PLAN CREATED BY WESTON SOLUTIONS, "GRADING IMPROVEMENTS SKETCH-PLAN", SK-1, REV. 1, OCTOBER 1, 2014.
  4. VERTICAL DATUM: NAVD 1988  
HORIZONTAL COORDINATES: PROJECTION: MA STATE PLANE

- CONSTRUCTION NOTES:**
1. CONSTRUCT OVERFLOW CHANNEL IN THE AREA INDICATED, STARTING AT THE 122.5 CONTOUR NEAREST THE RAIN GARDEN. THE CHANNEL SHALL MEASURE 8 FEET WIDE AND MINIMUM OF 24 FEET LONG, WITH SLOPE OF 1% DOWNWARD AWAY FROM THE RAIN GARDEN. SIDE SLOPES OF THE CHANNEL SHALL BE 3 FT HORIZONTAL TO 1 FT VERTICAL. LINE THE CHANNEL BOTTOM AND SIDE WALLS WITH RIPRAP PER THE NOTES BELOW.  
  
AT THE DOWNSLOPE END OF THE CHANNEL THERE IS A TRANSITION FROM THE 1% SLOPE TO A SLIGHTLY STEEPER EXISTING SLOPE. MATCH THE EXISTING SLOPE IN THIS TRANSITION AREA AND LINE THE SLOPE WITH RIPRAP PER THE NOTES BELOW.

- 1.1 IN THE AREAS DESIGNATED FOR RIPRAP OVERFLOW CHANNEL LINING.
  - 1.1.1 INSTALL NON-WOVEN GEOTEXTILE MATERIAL ON A PREPARATORY GRADE 8 INCHES BELOW FINAL GRADE. FABRIC TO BE PLACED ON SLOPES SHALL HAVE THE LONG DIRECTION ORIENTED WITH THE SLOPE. ALL JOINTS BETWEEN ADJACENT FABRIC ROLL ENDS SHALL BE OVERLAPPED SHINGLE STYLE. ADJACENT PANELS SHALL BE LAPPED 24 INCHES. ANCHORING OF THE TERMINAL ENDS OF THE GEOTEXTILE SHALL BE ACCOMPLISHED USING KEY TRENCHES OR APRONS AT THE CREST OF SLOPE.
  - 1.1.2 PLACE AND COMPACT 8 INCHES OF RIPRAP UPON THE GEOTEXTILE TO PROVIDE A COMPACT MASS. THE RIPRAP PLACEMENT SHALL BEGIN AT THE TOE AND PROCEED UP THE SLOPE. PLACEMENT SHALL TAKE PLACE SO AS TO AVOID STRETCHING AND SUBSEQUENT TEARING OF THE GEOTEXTILE. RIPRAP SHALL NOT BE DROPPED FROM A HEIGHT OF MORE 2 FEET. AT LEAST 6 INCHES OF RIPRAP SHALL BE PLACED ONTO THE GEOTEXTILE AND SPREAD IN ADVANCE OF TRACKED CONSTRUCTION EQUIPMENT. EQUIPMENT SHALL NOT BE PERMITTED TO TRACK DIRECTLY ON THE GEOTEXTILE.

- 1.2 IN THE TRANSITION AREA:
  - 1.2.1 IN THE TRANSITION AREA ( THE AREA IMMEDIATELY DOWNSLOPE OF THE END OF THE CHANNEL), PLACE A MINIMUM 12 FT WIDE STRIP OF GEOTEXTILE TOED INTO THE EXISTING SLOPE. THE GEOTEXTILE FROM THE CHANNEL IS TO BE OVERLAPPED SHINGLE STYLE OVER THE SURFACE OF THE EXISTING SLOPE. THE TRANSITION GEOTEXTILE SHALL COVER THE SURFACE OF THE EXISTING SLOPE FROM THE END OF THE CHANNEL TO THE LIMIT OF CLEARING DOWNHILL OF THE OVERFLOW. COVER THE GEOTEXTILE WITH RIPRAP IN THE 12 FT WIDE STRIP PER THE NOTES FOR THE OVERFLOW CHANNEL. IN THE 12 FT WIDE STRIP, PLACE A NOMINAL AMOUNT OF TOPSOIL ON THE RIPRAP (DO NOT COMPLETELY COVER THE RIPRAP) AND HYDROSEED USING THE PROJECT SEED MIX.

2. MATERIALS
  - 2.1 RIPRAP. RIPRAP STONE MATERIALS SHALL MEET MASSDOT M2.02.4 MODIFIED ROCKFILL FOR QUALITY, SHAPE AND DURABILITY. RIPRAP SIZE SHALL BE EITHER 6" OR 8" NOMINAL AS MAY BE READILY AVAILABLE TO THE SITE.
  - 2.2 NON-WOVEN GEOTEXTILE MATERIAL. NON-WOVEN GEOTEXTILE MATERIAL SHALL BE A NON-WOVEN FILTRATION/SEPARATION GEOTEXTILE WITH SUFFICIENT STRENGTH AND DURABILITY MEETING THE FOLLOWING PROPERTIES AS MEASURED AS MINIMUM AVERAGE ROLL VALUE (MARV). ASTM STANDARD NOTED IN PARENTHESES:  
 GRAB TENSILE STRENGTH (D4632) 100 LBS;  
 TRAP TEAR (D4533) 50 LBS;  
 PUNCTURE (D6241) 310 LBS;  
 WATER FLOW RATE (D4491), 175 GPM/FT2; AND  
 APPARENT OPENING SIZE (D4751) 0.212 MM (AVERAGE OR MAXIMUM).  
 ACCEPTABLE MATERIALS INCLUDE: TENCATE - MIRAFI 140NL/0; OR OTHER PRODUCTS MEETING THE ABOVE REQUIREMENTS.

3. ALL DISTURBED AREAS TO RECEIVE MIN 6" TOPSOIL AND SEED, EXCEPT WHERE ALTERNATIVE RESTORATION IS SPECIFIED.

**LEGEND**

- PROPOSED CONTOUR ——— 123.5
- EXISTING CONTOUR - - - - - 124.0
- SPOT ELEVATION x123.1
- STONE BOUND □
- CHAIN LINK FENCE ——— ○ ———
- LIGHT POLE ☆
- WATER MANHOLE ⊙
- UTILITY POLE ⊕
- UNDERGROUND ELECTRIC UGE
- APPROXIMATE PROPERTY LINE

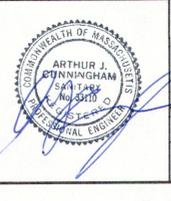


NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION
B	8/17/15	AJC	ADDED CONSTRUCTION NOTES				
A	8/12/15	AJC	FOR CLIENT REVIEW & APPROVAL OF CONTOURS				

**REMOVAL ACTION**  
 FAY STREET REMOVAL SITE (01LH)-LOWELL, MA  
 U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 1  
 CONTRACT NUMBER EP-S3-15-01  
 TDD NUMBER T02-01-15-07-0001

**WESTON SOLUTIONS**  
 NEW HAMPSHIRE

CHECKED	DATE	CLIENT APPROVALS	DATE
DES. ENG.			
PROJ. ENG.			
PROJ. MGR.			
APPROVED			
APPROVED		ISSUED FOR	DATE



**PROPOSED GRADING PLAN**

DRAWN	BEG	DATE	AUG 2015	DRAWING NO.	SK-2	REV. NO.	B
SCALE	AS SHOWN	W.O. NO.	30100.012.002	SHT.		OF	

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