

**CROSS STREET
CEMETERY
WITHIN
OAK GROVE CEMETERY
MEDFORD, MASSACHUSETTS**

**GRAVESTONE/MONUMENT
CONDITION ASSESSMENT**

**FOR
MEDFORD HISTORICAL COMMISSION**

DECEMBER 2024

CROSS STREET CEMETERY
WITHIN OAK GROVE CEMETERY, MEDFORD MA

GRAVESTONE/MONUMENT CONDITION ASSESSMENT REPORT
December 2024

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INTRODUCTION AND ACKNOWLEDGEMENTS

Cross Street Cemetery was relocated to Oak Grove Cemetery in 1958 to allow Interstate 93 to be built through Medford. Some 400 plus headstones, monuments, obelisks and markers were reinstalled in a rear section of the active Oak Grove Cemetery. The relocated Cross Street Cemetery has an attractive setting – bordered by trees in the back, the cemetery is enclosed within a handsome stone wall with an iron-gated entrance. A large plaque, on one of the entrance pillars, succinctly explains the history of the cemetery.

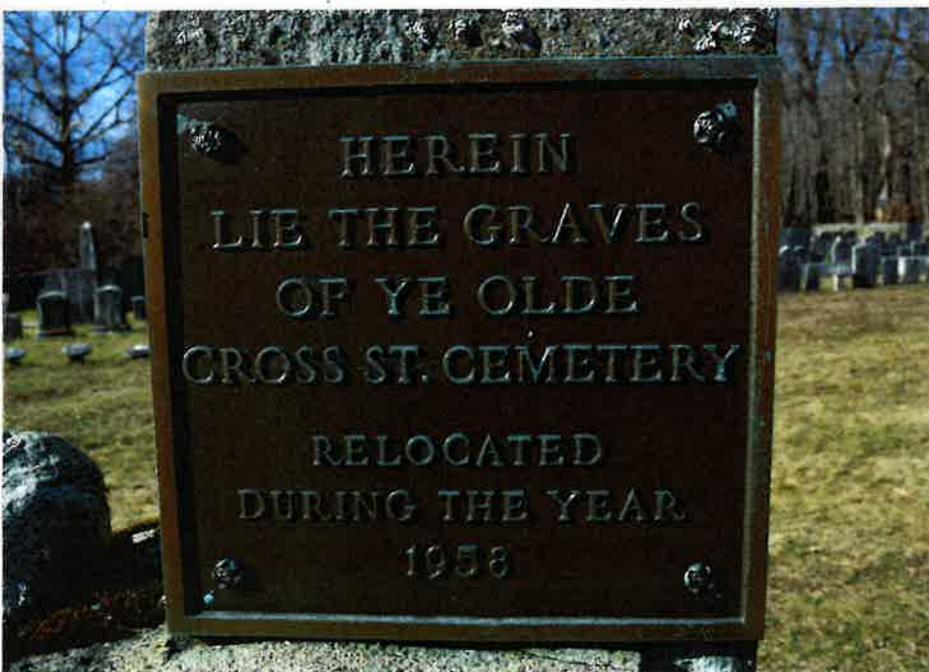
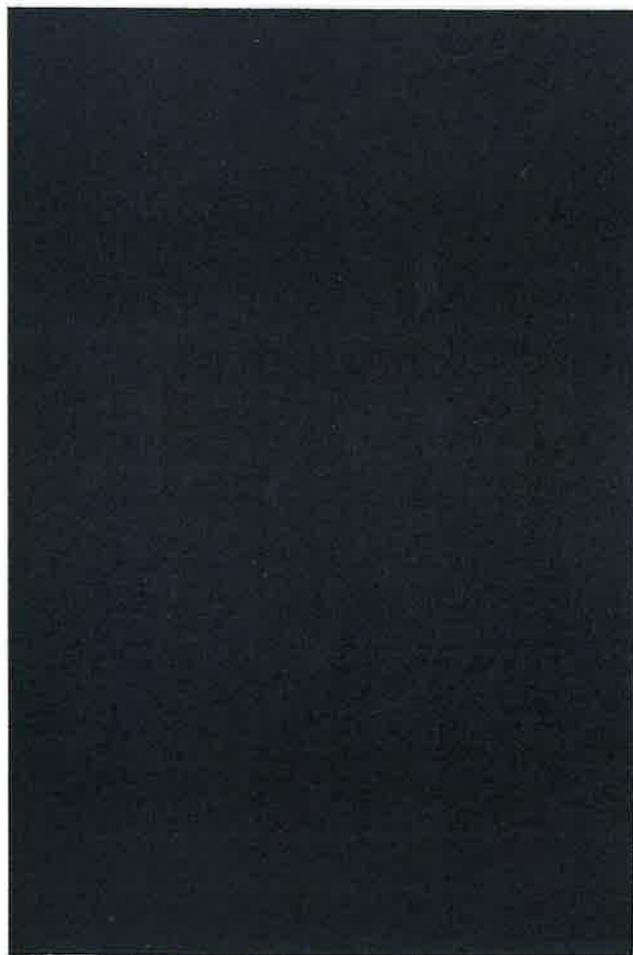
Cross Street Cemetery within Oak Grove Cemetery is unusual due to the method of resetting almost all stones and monuments in below grade concrete. It is essential to refer to Fannin/Lehner’s “Report of Test Excavations,” August 2024, before any conservation is initiated. The method for resetting the relocated stones utilized a series of trenches in which stones were set level and plumb, then concrete was poured the length of each trench. This method limits the choices for conservation as this method of setting the stones is not reversible so conservation techniques must be adjusted accordingly. This requires that the conservation of stones broken below grade will require careful uncovering of the bottom fragment captured in concrete. There must be thorough cleaning followed by drilling and pinning of all marble and some slate stones. There are a number of previous repair attempts evident and these materials must be removed from the fragments before attempting any further conservation.

We wish to acknowledge the stalwart help of Ryan D. Hayward, Vice-Chair of the Medford Historical Commission, who led both the test excavations and the condition assessment projects. Before the test excavations, he made a huge effort to find documents describing how the Commonwealth’s Department of Transportation actually excavated, transported and installed all the remains, headstones and monuments from the original Cross Street location to Oak Grove Cemetery. The intensive search was unsuccessful so the test excavations were necessary. Our thanks also to the Medford Historical Commission who supported this substantial planning effort for Cross Street Cemetery.

The wonderful condition of the grounds of Oak Grove Cemetery is due to Steve Brogan, Superintendent, and his team. Cross Street Cemetery was always mowed and clear of leaves and branches. It was a pleasure to work there.



GENERAL VIEWS



CROSS STREET CEMETERY

GUIDE TO GRAVESTONE/MONUMENT CONDITION ASSESSMENT LISTS

- **ROW / ROW #** Example: 8-274

ROW – This is Relocation Row 8 (Rows are numbered starting at the back of the Cemetery).

ROW # - This is the Relocation Stone Number 274 which stands in Row 8. Lists of stones, with the rows and numbers, can be obtained from the Medford Historical Commission.

- **LAST NAME**

- **FIRST NAME**

- **D OF DEATH:** Complete Date of Death.

- **TYPE:** Head (headstone), Foot (footstone), Mon (monument), Obelisk, Column, Marker (a smaller stone, usually related to a central monument but in Cross Street Cemetery there are a number of markers unrelated to a central monument), Fragment.

- **MATERIAL:** Slate, marble, sandstone/brownstone, granite, concrete.

- **TREATMENT:** Most common are: reset, adhesive repair, mortar into base, tack, cap and infill, stabilize delaminations. Cross Street Cemetery is unusual due to the resetting of almost all stones and monuments in concrete below grade. This occurred in 1958 when the Cemetery was moved to its present location. The method for resetting the relocated stones utilized a trench in which stones were set, then concrete was poured the length of the trench. Stones broken below grade will require uncovering of the bottom fragment, careful cleaning and drilling and pinning of all marble and some slate stones. All stones are completely cleaned before conservation is performed. Further treatment may

include removing old repairs, re-pinning or new pins, or making a new base or foundation. Some stones must be investigated before treatment can be determined. Some stones need to be reset in the proper location, order or direction.

- **NOTES:** Problems experienced by gravestones, monuments, obelisks, markers: tilted, fallen, broken, sunken, delaminating, broken out of base, loose on pins, severe biological growth.
- **PR:** Priority or urgency of repair with "1" signifying Urgent, "2" - Less urgent but necessary.

**CROSS STREET CEMETERY
MEDFORD MA**

**GRAVESTONE/MONUMENT
ASSESSMENT LIST**

**12/31/2024
FANNIN•LEHNER**

	A	B	C	D	E	F	G	H	I
1	OW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
2									
3	1-12	FIFIELD	WILLIAM E.	OCT. 28, 1894	MON	MARBLE/	EXCAVATE. RESET ON	ILTED FORWARD	1
4						GRANITE	CONCRETE FOUNDATION	ON CONCRETE	
5							CLEAN.	FOUNDATION.	
6								FIRMLY JOINED.	
7									
8									
9	1-13	HALL	EUPHEMIA S.	JAN. 2, 1887	MON	MARBLE/	CAVATE AND RESET TH	FALLEN/	1
10						GRANITE	TWO BASES. CLEAN.	BROKEN. BASES	
11							EXCAVATE DIE AND	FIRMLY JOINED.	
12							FRAGMENTS. CLEAN. DRIN	ON CONCRETE	
13							AND PIN FRAGMENTS TO D	FOUNDATION	
14							REMOVE PREVIOUS REPAIR.		
15							REPIN DIE TO BASES. INFILL.		
16									
17									
18	1-14	STIMPSON	EBENEZER	N/A	COL-	MARBLE/	CLEAN ALL ELEMENTS.	COLUMN FALLEN	1
19			JOHN	N/A	UMN	GRANITE	SET COLUMN. SEARCH F	OOT OF URN IN	
20							MORE URN FRAGMENTS	5 FRAGMENTS;	
21								ALSO A LOSS.	
22									
23									
24									
25									
26									
27									

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	A	B	C	D	E	F	G	H	I
1	OW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
28	1-19	TANTER	MARY G.	NOV. 5, 1895	MON	MARBLE/	EXCAVATE BASES AND	FALLEN/	1
29	.					GRANITE	BRING TO LEVEL. CLEAN	BROKEN. PINS	
30	.						CUT DOWN OR REMOVE PINS	BROKEN. BASES	
31	.						IN BASE. BASE SHOULD BE	FIRMLY JOINED.	
32	.						RESET 5" BACK, CENTERED	CONCRETE	
33	.						ON FOUNDATION. EXCAVATE	FOUNDATION.	
34	.						DIE, CLEAN. PIN TO BASE.		
35	.						INFILL LOSS.		
36	.								
37	1-20	TANTER	ALBERT	JULY 2, 1874	MON	MARBLE/	EXCAVATE. RESET LEVEL	FALLEN	1
38	.					GRANITE	FOUNDATION. CLEAN.	CONCRETE	
39	.							FOUNDATION.	
40	.								
41	1-23	JOHNSON	GEORGE L.	AUG. 6, ?	MON	MARBLE	MONITOR	LIGHTLY TILTED	
42	.		L.H.	MAR. 21, 1840					
43	.		ELIZA	MAY 12, 1895					
44	.								
45	2-24	WILD	HENRY M.	APRIL 6, 1898	HEAD	MARBLE	(BOTTOM FRAGMENT IN	BROKEN/	1
46	.						CONCRETE) CLEAN. DRILL	FALLEN/	
47	.						AND PIN. INFILL.	LIGHTLY TILTED	
48	.							BACKWARDS	
49	.								
50	2-28	FOGG	ISABELLA M.	AUG. 3(?),	HEAD	MARBLE	CLEAN. DRILL AND PIN.	BROKEN/	1
51	.			1848			INFILL.	FALLEN	
52	.								
53	2-37	NICKERSON	HARRIET E.	FEB. 22, 1878	MON	MARBLE/	MOVE DIE. CLEAN DIE AND	LOOSE ON BASE	1
54	.					GRANITE	BASE. REPIN.		
55	.								
56	.								
57	2-38	NICKERSON	WILLIAM J.	N/A	MON	MARBLE/	SET DIE ASIDE. EXCAVATE	FALLEN/	1

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1	OW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
58	.					MARBLE	DOUBLE TILTED BASE.	PINS BROKEN	
59	.						CLEAN. RESET ON CONCRETE		
60	.						FOUNDATION. PIN DIE TO		
61	.						BASE.		
62	.								
63	2-39	NICKERSON	FANNIE A.	MAY 17, 1891	MON	MARBLE/	ALREADY WITH #2-38.	FALLEN/	1
64	.					MARBLE	LEAN DIE. PIN DIE TO BAS	PINS BROKEN	
65	.								
66	2-40	MITCHELL	HATTIE M.	1925	SLANT	GRANITE	EXCAVATE. CLEAN. RESE	TILTED	2
67	.						FACED		
68	.					MON			
69	.								
70	2-42	ALEXANDER	EDWARD P.	JAN. 26, 1875	MON	MARBLE/	REMOVE DIE. EXCAVATE	TILTED/	1
71						GRANITE	BASES. RESET. CLEAN.	LOOSE ON BASE.	
72							CLEAN DIE. PIN DIE TO BAS	BASES FIRMLY	
73								JOINED	
74									
75	2-43	ALEXANDER	HANNAH W.	MAY 22, 1874	MON	MARBLE/	XCAVATE. CLEAN. RESE	FALLEN/	1
76						GRANITE	BASES. CLEAN DIE AND	TILTED/	
77							REPIN.	BASES FIRMLY	
78								JOINED	
79									
80	2-44	EDGERLY	ALVARADO	JUNE 15, 1862	MON	MARBLE/	XCAVATE BASES. RESET	FALLEN/	1
81						GRANITE	MOVE PREVIOUS REPA	TILTED	
82							CLEAN. CLEAN DIE. REPIN	BASES FIRMLY	
83								JOINED	
84									
85									
86									
87									
88	2-49	RICHARDS	NATHAN	JULY 17, 1877	MON	MARBLE/	XCAVATE. CLEAN. RESE	FALLEN/	1
89						GRANITE	GRANITE BASE. CLEAN DIE	DIE AND MIDDLE	
90							AND MIDDLE BASE. REPIN	BASE FIRMLY	
91								JOINED	
92									

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1	OW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
93	2-52	RICHARDS	BELLE M.	MAR. 2, 1883	MON	MARBLE/	CLEAN BASES. CLEAN DI	FALLEN/	1
94						GRANITE	RAGMENTS AND REMOV	BROKEN	
95							PREVIOUS REPAIR. PIN	BASES LEVEL	
96							BOTTOM FRAGMENT TO	AND FIRMLY	
97							BASES. PIN TOP TO BOTTO	JOINED	
98							FRAGMENT. INFILL.		
99									
100	2-53	TAYLOR	DANIEL A.	APRIL 14, 186	MON	MARBLE/	REMOVE DIE. CLEAN BASO	ON APPEARS T	1
101						GRANITE	END DIE. PIN DIE TO BASE	BE MISSING	
102								MIDDLE BASE. DIE	
103								LOOSE ON	
104								GRANITE BASE.	
105								NO PINS.	
106									
107	2-56	CHICK	AMOS R.	1856	MON	MARBLE/	EXCAVATE BASES AND	FALLEN/	1
108						GRANITE	RESET. REMOVE PREVIOL	DIE MAY HAVE	
109							REPAIR (CONCRETE). CLE	LOSS BELOW	
110							EXCAVATE AND CLEAN DI	GRADE)	
111							PIN DIE TO BASE.	BASES TILTED	
112								BUT FIRMLY	
113								JOINED	
114									
115	2-57	CROCKETT	EDWARD F.	N/A	SMALL	MARBLE	XCAVATE. CLEAN. RESE	TILTED. ALL	2
116					MON		MON	LEMENTS FIRMLY	
117								JOINED	
118									
119	3-62	JAMES	MARY	MAR. ?, 1860	HEAD	MARBLE	XCAVATE TOP FRAGMENT	FALLEN/	1
120							AND CLEAN. UNCOVER	BROKEN	
121							BOTTOM FRAGMENT AND	BOTTOM	
122							CLEAN. DRILL AND PIN.	FRAGMENT IN	
123								CONCRETE	
124									
125	3-64	JAMES	GALEN	APR. 11?,	HEAD	MARBLE	XCAVATE TOP FRAGMENT	FALLEN/	1
126				1879?			AND CLEAN. UNCOVER	BROKEN	
127							BOTTOM FRAGMENT AND	BOTTOM	

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1	OW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
128							CLEAN. DRILL AND PIN.	FRAGMENT IN	
129								CONCRETE	
130									
131	3-64	JAMES	CAROLINE J.	JUNE 15, 1858	HEAD	MARBLE	CAVATE TOP FRAGMENT	FALLEN/	1
132		JAMES	CARRIE	AUG. 15, 1858			AND CLEAN. UNCOVER	BROKEN	
133			MANSFIELD				BOTTOM FRAGMENT AND	BOTTOM	
134							CLEAN. DRILL AND PIN.	FRAGMENT IN	
135								CONCRETE	
136									
137	3-67	JAMES	MAJOR JOHN	JAN. 9, 1826	HEAD	SAND-	BOTTOM FRAGMENT	FALLEN/	1
138						STONE	ROBABLY IN CONCRETE	BROKEN	
139							CLEAN TOP FRAGMENT.		
140							UNCOVER BOTTOM		
141							FRAGMENT. CLEAN. DRILL		
142							AND PIN.		
143									
144	3-69	JAMES	MARY	?	HEAD	MARBLE	CAVATE TOP FRAGMENT	FALLEN/	1
145			THOMAS	JULY 17?,			AND CLEAN. UNCOVER	BROKEN	
146				18?			BOTTOM FRAGMENT IN		
147							CONCRETE. DRILL AND PIN.		
148									
149									
150	3-?	JAMES	MARY	SEPT. 14,	HEAD	MARBLE	CAVATE TOP FRAGMENT	FALLEN/	1
151				18?4			CLEAN. UNCOVER BOTTO	BROKEN	
152							FRAGMENT IN CONCRETE		
153							AND CLEAN. DRILL AND PIN.		
154									
155	3-71	JAMES	SARAH CLAPP	AUG. 14, 1848	HEAD	MARBLE	CAVATE TOP FRAGMENT	FALLEN/	1
156							CLEAN. UNCOVER BOTTO	BROKEN	
157							FRAGMENT IN CONCRETE		
158							AND CLEAN. DRILL AND PIN.		
159									
160	3-74	JAMES	PATIENCE	AUG. 19, 1840	HEAD	SLATE	CAVATE TOP FRAGMENT	FALLEN/	1
161							CLEAN. UNCOVER BOTTO	BROKEN	
162							FRAGMENT IN CONCRETE		

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1	OW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
163							AND CLEAN. DRILL AND PIN.		
164									
165	3-75	JAMES	JOHN	SEPT. 10, 186	HEAD	MARBLE	KCAVATE TOP FRAGMENT	FALLEN/BROKEN	1
166							CLEAN. UNCOVER BOTTOM		
167							FRAGMENT IN CONCRETH AND		
168							CLEAN. DRILL AND PIN		
169									
170	3-?	JAMES	ELLEN LEAVIT	AUG. 8, 1848	HEAD	MARBLE	CLEAN TOP FRAGMENT.	FALLEN/	1
171							UNCOVER BOTTOM	BROKEN	
172							FRAGMENT AND CLEAN.		
173							DRILL AND PIN.		
174									
175	3-?	JAMES	JOHN MILTON	MAR. 13, 184	HEAD	MARBLE	CLEAN TOP FRAGMENT.	FALLEN/	1
176							SEARCH FOR BOTTOM	BROKEN	
177							FRAGMENT. CLEAN. DRILL		
178							AND PIN.		
179									
180									
181	3-76	FLAGG	CAROLINE M.	AUG. 31, 1846	HEAD	MARBLE	KCAVATE AND CLEAN TO	FALLEN/	1
182							FRAGMENT. UNCOVER	BROKEN	
183							BOTTOM FRAGMENT AND		
184							CLEAN. DRILL AND PIN.		
185									
186									
187	3-77	FLAGG	ELLIOT S.	AUG. 27, 1876	HEAD	MARBLE	KCAVATE AND CLEAN TO	FALLEN/	1
188							FRAGMENT. UNCOVER	BROKEN	
189							BOTTOM FRAGMENT AND		
190							CLEAN. DRILL AND PIN.		
191									
192	3-78	LITTLEFIELD	CHARLES A.	APR. 29 1845	HEAD	MARBLE	KCAVATE TOP FRAGMENT	FALLEN/	1
193			WILLIAM H.	MAR. 6, 1849			AND CLEAN. UNCOVER	BROKEN	
194			GEORGE H.	JULY 21, 1870			BOTTOM FRAGMENT AND		
195							CLEAN. DRILL AND PIN.		
196									
197	3-78	LITTLEFIELD	VILLIAM H., JF	MAR. 18, 1860	HEAD	MARBLE	KCAVATE TOP FRAGMENT	FALLEN/	1

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	A	B	C	D	E	F	G	H	I
1	OW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
198							AND CLEAN. UNCOVER	BROKEN	
199							BOTTOM FRAGMENT WHICH		
200							IS IN CONCRETE. CLEAN.		
201							DRILL AND PIN.		
202									
203	3-80	HATCH	ANTHONY	AUG. 24, 1826	HEAD	SLATE	CLEAN TOP FRAGMENT.	FALLEN/	1
204			(DAUGHTER)	N/A			LOCATE BOTTOM FRAGME	BROKEN	
205							NEW BASE POURED ON TOP		
206							OF CONCRETE FOUNDATION?		
207									
208	3-81	HATCH	MARY W.	AUG. 28, 18?	HEAD	MARBLE	CLEAN TOP AND BOTTOM	FALLEN/	1
209							FRAGMENT. DRILL AND PI	BROKEN	
210							INFILL.		
211									
212	3-82	HATCH	ELIZABETH	FEB. 10, 1865	HEAD	SLATE	CLEAN. STABILIZE	DELAMINATION	1
213							DELAMINATIONS. CAP.		
214									
215	3-97	FORD	SARAH FIDELI	JAN. 22, 1849	HEAD	MARBLE	CLEAN THE TWO TOP	FALLEN/	1
216				?			FRAGMENTS. UNCOVER A	BROKEN TOP	
217							CLEAN BOTTOM FRAGMEN	FRAGMENT IN	
218							DRILL AND PIN MIDDLE	TWO	
219							FRAGMENT TO BOTTOM	FRAGMENTS	
220							FRAGMENT. DRILL AND PIN		
221							TOP FRAGMENT TO MIDDLE		
222							FRAGMENTS. INFILLS.		
223									
224	3-?	BOND	HARRIET A.	AUG. 23, 1849	HEAD	MARBLE	CLEAN TOP FRAGMENT.	FALLEN/BROKEN	1
225							DETERMINE LOCATION.		
226							DRILL AND PIN.		
227									
228	3-100	OTIS	HANNAH	JUNE 18, 185	HEAD	MARBLE	CAVATE AND CLEAN TO	FALLEN/	1
229							FRAGMENT. UNCOVER	BROKEN	
230							BOTTOM FRAGMENT. DRILL		
231							AND PIN.		
232									

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	A	B	C	D	E	F	G	H	I
1	OW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
233	3-101	TOLMAN	NATHANIEL	OCT. 29, 1839	HEAD	MARBLE	CLEAN TOP FRAGMENT	FALLEN/	1
234			WINSLOW				AND CLEAN. LOCATE	BROKEN	
235							BOTTOM FRAGMENT AND		
236							CLEAN. DRILL AND PIN.		
237									
238	3-102	NEWMAN	MARY L.	DEC. 2, 1840	HEAD	MARBLE	CLEAN TOP FRAGMENT	FALLEN/BROKEN	1
239							UNCOVER BOTTOM		
240							FRAGMENT. DRILL AND PIN.		
241									
242									
243	3-103	TOLMAN	GEORGE	AUG. 19, 1846	HEAD	MARBLE	CLEAN TOP FRAGMENT.	FALLEN/	1
244							LOCATE BOTTOM FRAGMENT	BROKEN	
245							IN CONCRETE AND CLEAN.		
246							DRILL AND PIN.		
247									
248	4-107	LANCASTER	WILLIE KEENE	JAN. 11, 1864	HEAD	MARBLE	CLEAN TOP FRAGMENT.	FALLEN/	1
249							LOCATE BOTTOM FRAGMENT	BROKEN	
250							IN CONCRETE AND CLEAN.		
251							DRILL AND PIN.		
252									
253	4-113	MONK	HANNAH F.	AUG. 14, 1846	HEAD	MARBLE	CLEAN TOP FRAGMENT.	FALLEN/	1
254							LOCATE BOTTOM FRAGMENT	BROKEN	
255							IN CONCRETE. CLEAN. DRILL		
256							AND PIN.		
257									
258	4-131	EWELL	AUGUSTUS	MAR. 15, 1831	HEAD	SLATE	CLEAN TOP FRAGMENT.	FALLEN/	1
259			JAMES B.	NOV. 18, 1825			LOCATE BOTTOM FRAGMENT	BROKEN	
260							IN CONCRETE. CLEAN. DRILL		
261							AND PIN.		
262									
263	4-131	EWELL	MR. CHARLES	APR. 13, 1844	HEAD	SLATE	CLEAN	BIOGROWTH	2
264								MAKES	
265								INSCRIPTION	
266								ALMOST	
267								ILLEGIBLE	

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1	OW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
268									
269									
270									
271									
272									
273									
274	4-137	EWELL	ALMIRA	DEC. 5, 1838	HEAD	SLATE	CLEAN	BIOGROWTH	2
275								MAKES	
276								INSCRIPTION	
277								ALMOST	
278								ILLEGIBLE	
279									
280	4-140	TUFTS	GERSHOM	JAN. 19, 1835	HEAD	SLATE	CLEAN	BIOGROWTH	2
281								MAKES	
282								INSCRIPTION	
283								ALMOST	
284								ILLEGIBLE	
285									
286	4-141	TUFTS	MARY ELIZA	MAR. 26, 1847	HEAD	MARBLE	CAVATE TOP FRAGMENT	FALLEN/	1
287							AND CLEAN. LOCATE	BROKEN	
288							BOTTOM FRAGMENT IN		
289							CONCRETE AND CLEAN.		
290							DRILL AND PIN.		
291									
292	5-151	MOOR	CHARLOTTE	MAR. 25, 1887	HEAD	MARBLE	CAVATE TOP FRAGMENT	FALLEN/	1
293							(AT LEAST THREE) AND	BROKEN	
294							CLEAN. CLEAN BOTTOM		
295							FRAGMENT. DRILL AND PIN.		
296							INFILL.		
297									
298	5-152	MOOR	BENJAMIN	ILLEGIBLE	HEAD	MARBLE	REMOVE PREVIOUS REPAIR	FALLEN/	1
299							FROM TOP AND BOTTOM	BROKEN	
300							FRAGMENT. REMOVE OR CUT		
301							OFF OLD PINS. CLEAN BOTH		
302							FRAGMENTS. DRILL AND PIN.		

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1	OW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
303							INFILL.		
304									
305	5-157	WALKER	GEORGE	MAY 15, 1850	OBE-	MARBLE	BOTTOM BASE IS LEVEL	FALLEN	1
306					LISK		DISASSEMBLE. CLEAN.		
307							REASSEMBLE WITH SETTING		
308							COMPOUNDS AND SETTING		
309							CUSHIONS. NEEDS LARGE		
310							HOIST.		
311									
312	5-168	MCRAE	JOHN	OCT. 1, 1853	MON	MARBLE/	CAVATE. BRING TO LEV	TILTED	1
313			CATHERINE	MAY 19, 1872		GRANITE	CLEAN. STABILIZE DIE.	(NO CONCRETE	
314								FOUNDATION)	
315									
316	5-170	PORTER	JAMES	NOV. 25, 1866	MON	MARBLE/	CAVATE. BRING TO LEV	TILTED	1
317			HONORA	JAN. 1895		GRANITE	CLEAN. STABILIZE DIE.	(NO CONCRETE	
318								FOUNDATION)	
319									
320	5-173	SNOWDEN	WILLIAM H.	DEC. 20, 1903	MON	MARBLE/	XCAVATE AND BRING TO	LOOSE ON PINS	1
321						GRANITE	LEVEL. REMOVE OLD REPA	TILTED	
322							CLEAN. STABILIZE DIE.		
323									
324	5-174	SNOWDEN	NANCY	APR. 28, 1866	MON	MARBLE/	CAVATE. BRING TO LEV	TILTED	1
325						GRANITE	CLEAN.		
326									
327	5-175	SNOWDEN	HENRY F.	JAN. 17, 1889	MON	MARBLE/	REMOVE BUSH! EXCAVAT	FALLEN/	1
328						GRANITE	TERMLY JOINED BASES AN	BASE TILTED	
329							BRING TO LEVEL. CLEAN T	(PINS BROKEN)	
330							FRAGMENT AND BASES.		
331							REMOVE OR CUT OFF PINS.		
332							PIN DIE TO MIDDLE BASE.		
333									
334									
335									
336	5-176	EMERY	EVERETT	N/A	MON	MARBLE	ET DIE ASIDE. EXCAVAT	DIE FALLEN/	1
337							AND BRING BASES TO LEV	BASES TILTED/	

**CROSS STREET CEMETERY
MEDFORD MA**

**GRAVESTONE/MONUMENT
ASSESSMENT LIST**

**12/31/2024
FANNIN•LEHNER**

	A	B	C	D	E	F	G	H	I
1	OW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
338							CLEAN. REPAIR MIDDLE BA	MIDDLE BASE	
339							PIN DIE TO MIDDLE BASE	BROKEN	
340									
341	6-179	WHITE	SUSAN	AUG. 24, 1848	HEAD	MARBLE	EXCAVATE AND CLEAN ALL	FALLEN/	1
342							THREE FRAGMENTS. DRILL	BROKEN	
343							AND PIN MIDDLE TO BOTTOM		
344							FRAGMENT (IN CONCRETE)		
345							DRILL AND PIN TOP TO		
346							MIDDLE FRAGMENTS. INFILLS.		
347									
348	6-189	CARLTON	NATHAN E.	DEC. 26, 1843	HEAD	MARBLE	LEAN BOTH FRAGMENTS	FALLEN/	1
349							(BOTTOM FRAGMENT IN	BROKEN	
350							CONCRETE) DRILL AND PIN		
351							TOP TO BOTTOM FRAGMENT.		
352							INFILL.		
353									
354	6-190	DYER	ROSWELL	N/A	HEAD	MARBLE	APPEARS TO HAVE FOU	FALLEN/	1
355							FRAGMENTS- BOTTOM	BROKEN	
356							FRAGMENT IN CONCRETE)		
357							VISIBLE. EXCAVATE AND		
358							CLEAN ALL FRAGMENTS.		
359							DRILL AND PIN ALL		
360							FRAGMENTS. INFILL.		
361									
362	6-214	N/A	"MOTHER"	1876	SMALL	MARBLE	EXCAVATE. CLEAN. RESE	RAISED/	1
363					MON	SAND-		TILTED	
364						STONE		(ELEMENTS	
365								FIRMLY JOINED)	
366									
367	7-238	HATHAWAY	ROLAND H.	MAY 27, 1877	OBE-	MARBLE	DISASSEMBLE. CLEAN.	LOOSE ON PIN/	1
368					LISK		REASSEMBLE AND REPIN	BASE	
369									
370	7-240	JAQUITH	ELEANOR	SEPT. 28, 187	HEAD	MARBLE	MOVE PREVIOUS REPAIR	FALLEN/	1
371							AND PINS. CLEAN BOTH	BROKEN	
372							FRAGMENTS. PIN TOP TO		

**CROSS STREET CEMETERY
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**GRAVESTONE/MONUMENT
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	A	B	C	D	E	F	G	H	I
1	OW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
373							BOTTOM FRAGMENT. INFILL.		
374									
375	7-242	RENDALL	LEONARD	JAN. 5, 1841	HEAD	MARBLE	XCAVATE. CLEAN. DRILL	FALLEN/	1
376							AND PIN TOP TO BOTTOM	BROKEN	
377							FRAGMENT (IN CONCRETE)		
378									
379	7-245	NUTTELL	BENNET	AUG. 20, 1852	HEAD	MARBLE	XCAVATE. CLEAN. DRILL	BROKEN	1
380			THOMAS	SEPT. 26, 1841			AND PIN TOP AND BOTTOM		
381							FRAGMENT (IN CONCRETE)		
382									
383	7-247	GLOVER?	"DAU"	N/A	HEAD	MARBLE	CLEAN ALL THREE	FALLEN/	1
384							FRAGMENTS. DRILL AND P	BROKEN	
385							INFILL.	(THREE	
386								FRAGMENTS)	
387									
388	7-252	PARSONS	HULDAH S.	MAR. 7, 1837	HEAD	SLATE	EXCAVATE. CLEAN TWO	BROKEN/	1
389							FRAGMENTS. BOTTOM IN	SEVERELY	
390							CONCRETE AND NOT USAB	TILTED	
391							NEEDS A NEW BASE. MORTAR		
392							INTO BASE.		
393									
394	8-261	SYMMES	BETSEY	JUNE 21, 1857	HEAD	MARBLE	CLEAN. READHERE	TOP	1
395							FRAGMENT ON BACK. LAR	FRAGMENT	
396							INFILL.	RAISED ON PINS	
397									
398	8-262	SYMMES	JOSIAH	MAY 19, 1832	HEAD	MARBLE	CLEAN. PROFILE CAP OVE	DELAMINATIONS	1
399							TYMPANUM AND	TOP EDGE, FACE	
400							SHOULDERS. STABILIZE FACE		
401							DELAMINATIONS.		
402									
403	8-264	SAMSON	SENECA	OCT. 16. 1825	HEAD	SLATE	EXCAVATE. CLEAN.	FALLEN/	1
404							AD REP TOP TO	BROKEN	
405							BOTTOM FRAGMENT.		
406									
407	8-266	CRAM	FRANKLIN	SEPT. 2, 1842	HEAD	MARBLE	XCAVATE. CLEAN. DOUB	FALLEN/	1

**CROSS STREET CEMETERY
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**GRAVESTONE/MONUMENT
ASSESSMENT LIST**

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	A	B	C	D	E	F	G	H	I
1	OW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
408			INFANT?				DRILL AND PIN (BOTTOM	BROKEN	
409							FRAGMENT IN CONCRETE	THREE	
410							INFILL.	FRAGMENTS.	
411								BAD CRACK TOP	
412								FRAGMENT.	
413									
414	8-272	ROWE	CHARLOTTE	JUNE 10, 1856	MON	MARBLE	CLEAN MONUMENT.	FALLEN/	1
415							REATTACH FRAGMENT A	OUT OF BASE	
416							BOTTOM. REINSERT	(THERE IS A	
417							MONUMENT INTO BASE	CONCRETE PAD	
418							RESET CONCRETE PAD ON	BASE ABOUT FOUR	
419							INCH BELOW GRADE.	INCHES BELOW	
420							RESET MONUMENT ON PA	GRADE)	
421									
422	NOTE:	NEXT TO #8-272	THERE IS AN	UNKNOWN	MARBLE	BOTTOM	FRAGMENT AND		
423			AN EMPTY	BROKEN	SAND	STONE	BASE. DESPITE MUCH	PROBING AND	
424		INVESTIGATING	NO NEW	STONES	WERE		DISCOVERED.		
425									
426									
427									
428									
429	9-292	JENKINS	MARY A.	DEC. 5, 1852	HEAD	MARBLE	CLEAN. DRILL AND PIN TO	FALLEN/	1
430							TO BOTTOM FRAGMENT.	BROKEN	
431							INFILL.	(BOTTOM	
432								FRAGMENT	
433								SLIGHTLY TILTED	
434								BACKWARDS)	
435									
436	9-293	JENKINS	CHARLES	DEC. 25, 18?	HEAD	MARBLE	EXCAVATE TOP AND	FALLEN/	1
437							BOTTOM FRAGMENT. CLEA	BROKEN	
438							DRILL AND PIN? WILL NEE	(STONE	
439							A LARGE BACKER.	DEGRADED)	
440									
441	9-309	BEATY	RITH R.	JAN. 13, 1849	HEAD	MARBLE	MOVE PREVIOUS REPA	FALLEN/	1
442							CLEAN TOP AND BOTTOM	BROKEN	

**CROSS STREET CEMETERY
MEDFORD MA**

**GRAVESTONE/MONUMENT
ASSESSMENT LIST**

**12/31/2024
FANNIN•LEHNER**

	A	B	C	D	E	F	G	H	I
1	OW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
443							FRAGMENTS. REMOVE OLD		
444							PIN. DRILL AND PIN. INFILL.		
445									
446	9-317	CHRISTIES	SARAH A.	MAR. 30?,	OBE-	MARBLE/	DISASSEMBLE. EXCAVAT	TILTED/	1
447				1826?	LISK	SAND-	ANDSTONE BASE. CLEA	BROKEN	
448						STONE	L ELEMENTS. RESET BASE.		
449							REASSEMBLE. DRILL AND PIN		
450							TOP TO BOTTOM OF OBELISK.		
451							INFILL.		
452									
453	9-318	WESTON	WILLIE	JUNE 20, 1855	HEAD	MARBLE	ONLY OPTION IS CLEANIN	TILTED	1
454			THORNDIKE						
455			MARY JANE	JULY 23, 1850					
456									
457	9-322	AYRES	EDWIN L.	AUG. 1, 1851	DOUBLE	MARBLE	EXCAVATE. CLEAN. RE-PI	FALLEN/	1
458			MARIA P.	AUG. 1, 1851	HEAD		TO FOUNDATION.	BROKEN	
459									
460	10-323	STEVENS	LYDIA	AUG. 20, 1867	HEAD	MARBLE	SEARCH FOR MORE SMAI	FALLEN/	1
461							FRAGMENTS. EXCAVATE A	BROKEN	
462							CLEAN ALL FRAGMENTS	(THREE	
463							REMOVE PREVIOUS REPA	FRAGMENTS)	
464							AND REMOVE OLD PINS. DRILL		
465							AND PIN FRAGMENTS		
466							TOGETHER. INFILL.		
467									
468	10-327	CLAPP	CORNELIA	N/A	HEAD	MARBLE	CLEAN BOTH FRAGMENTS	FALLEN/	1
469							DRILL AND PIN. INFILL.	BROKEN	
470									
471	10-328	CLAPP	MARY H.	SEPT 26, 1848	HEAD	MARBLE	CLEAN BOTH FRAGMENTS	FALLEN/	1
472							DRILL AND PIN. INFILL.	BROKEN	
473									
474	10-333	N/A	N/A	N/A	HEAD	MARBLE	UNIDENTIFIED HEADSTON	BROKEN/	1
475							HEAVILY FRAGMENTED AN	FALLEN	
476							DEGRADED.		
477									

**CROSS STREET CEMETERY
MEDFORD MA**

**GRAVESTONE/MONUMENT
ASSESSMENT LIST**

**12/31/2024
FANNIN•LEHNER**

	A	B	C	D	E	F	G	H	I
1	OW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
478	10-334	EWELL	RUTH B.	FEB. 19, 1870	HEAD	MARBLE	MOVE PINS AND PREVIC	FALLEN/	1
479			"MOTHER"				REPAIR. CLEAN. DRILL AN	BROKEN	
480							PIN. INFILL.		
481									
482	10-340	EWELL	GEORGE F.	NOV. 10, 1851	HEAD	MARBLE	MOVE PREVIOUS REPA	FALLEN/	1
483			AMELIA F.(?)	APRIL 14, 1849			AND PINS. CLEAN. DRILL A	BROKEN	
484							PIN. INFILL.		
485									
486	10-344	KERSHAW	ABRAHAM	AUG. 13, 1856	HEAD	MARBLE	EXCAVATE FOR BOTTON	FALLEN/	1
487							FRAGMENT. CLEAN ALL	BROKEN	
488							FRAGMENTS. DRILL AND PIN.		
489							INFILL.		
490									
491	10-345	EWELL	ANN	AUG. 5, 1884	HEAD	MARBLE	TOP FRAGMENT NOW BY	FALLEN/	1
492							#10-357. CLEAN BOTH	BROKEN	
493							FRAGMENTS. DRILL AND PIN.		
494							INFILL.		
495									
496	10-357	HARTSHORN	AMORY	APRIL 10, 185	HEAD	MARBLE	MOVE PINS AND PREVIC	FALLEN/	1
497							REPAIR. CLEAN. DRILL AN	BROKEN	
498							PIN. INFILL.		
499									
500		TWO HEADSTON		NEAR END OF	ROW #10 BUT	UN-	RECORDED		
501									
502	10-?	SAMSON	(DAUGHTER)	N/A	HEAD	MARBLE	ATTEMPT TO LOCATE	EXCEPTIONALLY	1
503							MIDDLE FRAGMENT. IF	PARVED ORNATE	
504							SUCCESSFUL: CLEAN. DRI	STONE	
505							AND PIN. INFILL.	FALLEN/	
506								BROKEN	
507								MISSING MIDDLE	
508								FRAGMENT	
509									
510	10-?	FOSTER	ELLEN A.	SEPT. 8, 1848	HEAD	MARBLE	MOVE PINS AND PREVIC	FALLEN/	1
511							REPAIR. CLEAN. DRILL AN	BROKEN	
512							PIN. INFILL.		

**CROSS STREET CEMETERY
MEDFORD MA**

**GRAVESTONE/MONUMENT
ASSESSMENT LIST**

**12/31/2024
FANNIN•LEHNER**

	A	B	C	D	E	F	G	H	I
1	ROW/ROW	LAST NAME	FIRST NAME	D. OF DEATH	TYPE	MATERIAL	TREATMENT	NOTES	PR
513									
514	11-?	(TREFETHEN)	E. L.	N/A	FOOT	MARBLE	XCAVATE. CLEAN. RESE	TILTED	1
515									
516	11-368	T(TREFETHEN)	SARAH ANN H	N/A	FOOT	MARBLE	XCAVATE. CLEAN. RESE	EVERELY TILTE	1
517									
518									
519	11-369	TREFETHEN	JOHN E.	N/A	FOOT	MARBLE	XCAVATE. CLEAN. RESE	SEVERELY TILTED	1
520									
521									
522	11-?	B.	M. C.	N/A	FOOT	MARBLE	CLEAN. RESE.	FALLEN	1
523									
524	11-372	MITCHELL	THOMAS O. H.	N/A	OVAL	MARBLE	CLEAN. INFILL CRACK.	LARGE CRACK O	1
525								FACE OF OVAL	
526								MARKER	
527									
528	11-378	DEBBINS	JOHN	N/A	OVAL	MARBLE	REMOVE PREVIOUS REPA	BROKEN	1
529								AND OLD PIN. DRILL AND PIN	
530								OVAL. PIN OVAL TO POST.	
531									
532	11-?	CURTIS	JAMES O.	N/A	FLAT	MARBLE	T AWAY TURF. SURROU	LONGATED FLA	1
533			CHARLES	N/A	MAR-		WITH CRUSHED STONE.	MARKER	
534					KER		CLEAN.	(42" X 12")	
535								SUNKEN	
536									
537	11-?	BURBECK	MARY ANNE	N/A	FLAT	MARBLE	T AWAY TURF. SURROU	SUNKEN	1
538								WITH CRUSHED STONE.	
539								CLEAN.	

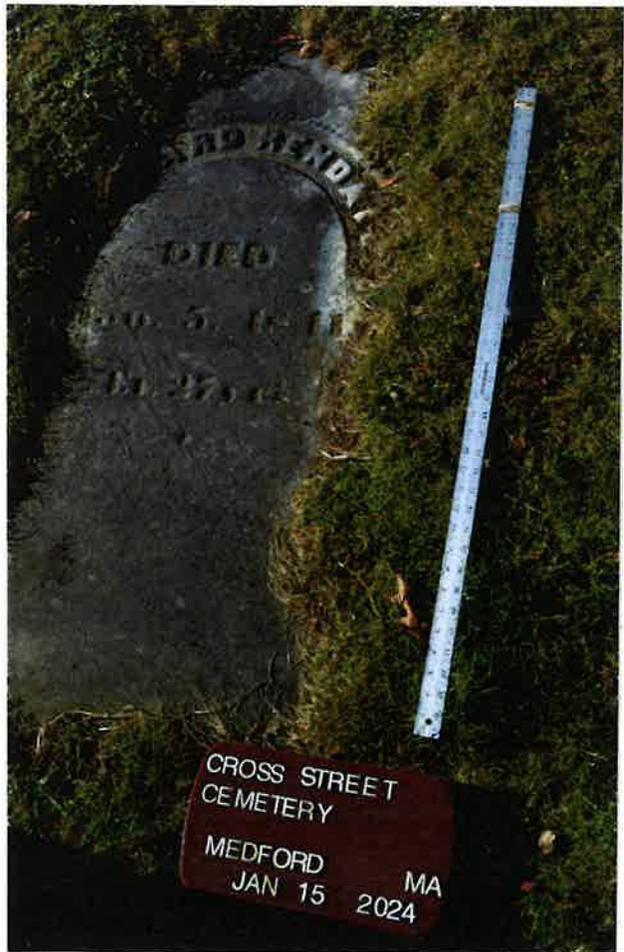


**GRAVESTONES/MONUMENTS
REQUIRING CONSERVATION**





**GRAVESTONES/MONUMENTS
REQUIRING CONSERVATION**



**CROSS STREET CEMETERY
WITHIN
OAK GROVE CEMETERY
MEDFORD MA**

**GRAVESTONES/MONUMENTS
REQUIRING CONSERVATION**

SKETCH MAP NOT TO SCALE

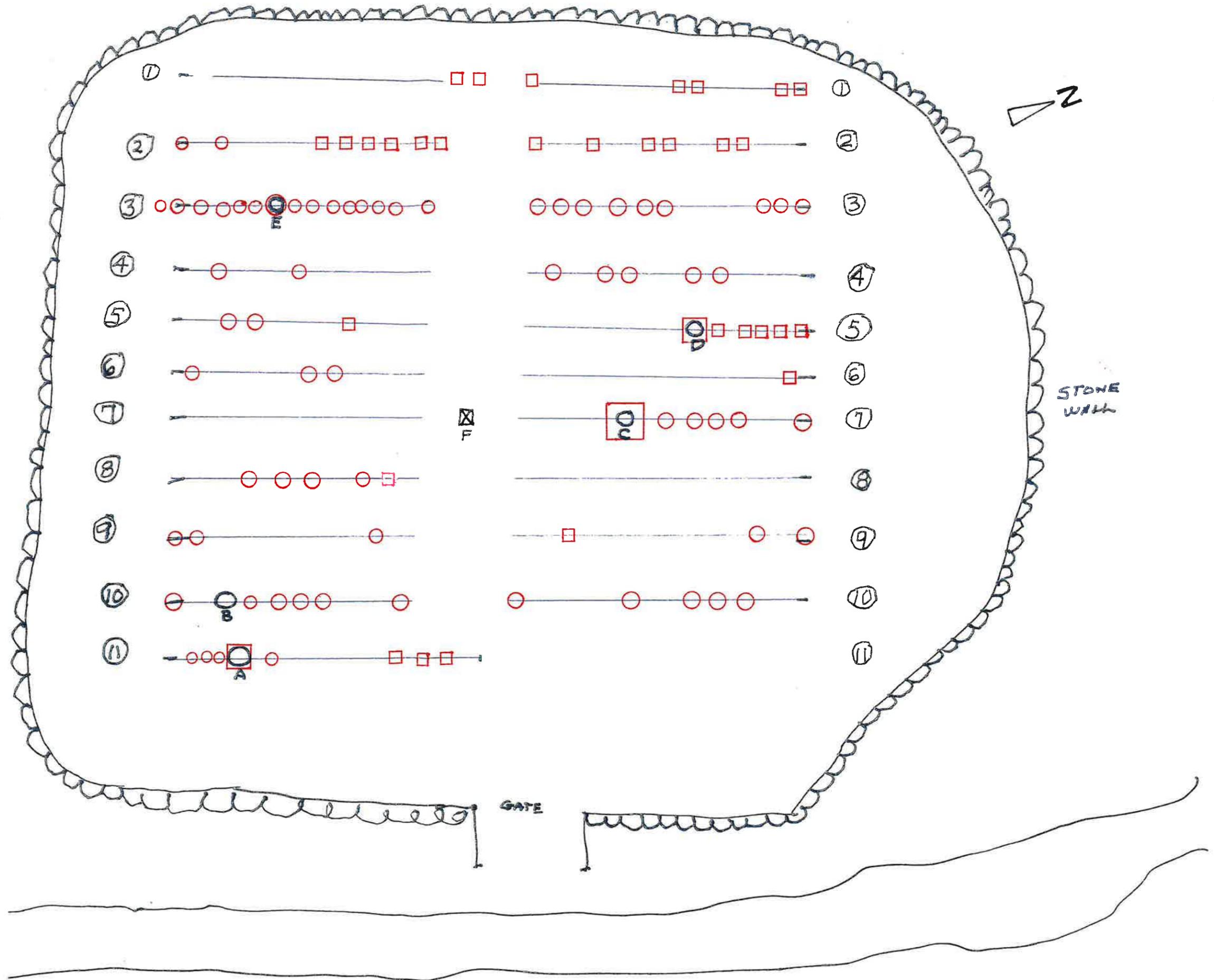
○ HEADSTONE, FOOTSTONE

□ MONUMENT, MARKER,
OBELISK

○
A LOCATION OF TEST
EXCAVATIONS

FANNIN-LEHNER PRESERVATION
CONSULTANTS
CONCORD MA

DECEMBER 2024



CROSS STREET CEMETERY, MEDFORD MA

CONSERVATION COST ESTIMATE

Total number of gravestones and monuments, requiring conservation as determined by assessment----- 100

Estimated cost of conservation of 106 gravestones and monuments, including expenses: ----- \$70,000

TOTAL ESTIMATED COST OF CONSERVATION ----- \$70,000*

*This estimate is based upon 2024 costs and no inflation factor has been included. (Please See Explanatory Notes for Cost Estimate.)

CROSS STREET CEMETERY, MEDFORD MA

EXPLANATORY NOTES FOR COST ESTIMATE

1. Cost Estimate – The cost estimate covers the expense of conserving headstones, footstones, monuments and markers in the Cross Street Cemetery. The cost of equipment needed to reset large monuments and obelisks is not included. Often this equipment is available from the maintenance department.
2. Phasing of Project - The volume and difficulty of work is such that a two-phase project is a suggested approach for completion of all the conservation required.
3. Professional Services - The estimate of conservation costs is based upon Fannin • Lehner’s analysis of the professional time requirements for conservation efforts using the firm's experience gained over more than thirty years of historic burial ground conservation. The figures reflect the firm’s estimated labor costs for all crew members and conservators and expenses for the conservation of the gravemarkers along with the requisite documentation. In this required documentation, each conserved gravestone or monument has “before and “after” photographs as part of a two-page conservation form on which is recorded a summary of the markers problems and all conservation procedures employed. The completed conservation forms and photographs comprise the report to the Medford Historical Commission with a photocopy to the Massachusetts Historical Commission.
4. The Craft of Gravestone Conservation - Many of the procedures required to conserve the markers are complex and require a skilled conservator to complete. Like the gravestone carvers and monument makers of old, gravestone and monument conservation is an artisanal craft requiring training and experience along with a thorough understanding of the nature of different types of stone and an intimate knowledge of seventeenth, eighteenth and nineteenth century methods of gravestone and monument building.
5. Expenses - An estimate for expenses is included in the cost of conservation figure. These expenses include conservator’s supplies (adhesives, pins, material for new bases, etc.), sand and peastone along with photographic, travel, administrative and other costs associated with the project and the report.

CROSS STREET CEMETERY, MEDFORD MA

STONE CONSERVATOR: TECHNICAL RECOMMENDATIONS FOR PROJECT COMPLETION

SECTION I - GENERAL

A. STANDARDS OF PRACTICE -- All work performed should be accomplished in accordance with the Code of Ethics and Standards of Practice of the American Institute for the Conservation (AIC). Conservators not holding membership in AIC should secure these documents and utilize them for guidance during the project.

For projects in the Commonwealth of Massachusetts, a burial ground permit must be obtained from the Massachusetts Historical Commission, Archives Building, 220 Morrissey Boulevard, Boston MA 02125, ATTN: Burial Ground Officer. To satisfy the requirements of this permit, a photocopy of the completion report must be transmitted to the Massachusetts Historical Commission.

B. DOCUMENTATION -- The stone conservator is responsible for the documentation of all conservation work he/she executes. All work done by the conservator must be documented thoroughly with "Before" and "After" photographs along with a two-page inventory form. All conservation procedures performed will be described on the form and a complete inscription included. All forms become the property of the authority responsible for the cemetery.

SECTION II – BASIC PROCEDURES

Cross Street Cemetery within Oak Grove Cemetery is unusual due to the method of resetting almost all stones and monuments in below grade concrete. This occurred in 1958. The method for resetting the relocated stones utilized a series of trenches in which stones were set level and plumb, then concrete was poured the length of each trench. This method means that the conservation of stones broken below grade will require uncovering the bottom fragment captured in concrete, careful cleaning and drilling and pinning of all marble and some slate stones.

A. PREPARATION -- Of primary importance in the performance of any conservation procedure is extremely thorough preparation of the gravestone or monument as well as the site. Resetting requires careful attention to the preparation of the hole into which the base of the stone is set along with meticulous care in setting the stone level and plumb. Adhesive repairs require clean, degreased and dry surfaces and careful adherence to temperature restrictions of the repair material. All previous repair must be removed. When performing conservation procedures there is no substitute for careful, thorough preparation.

B. CLEANING – Thorough brushing, then washing with water and scrubbing with soft to medium bristle brushes can dramatically improve the appearance of many gravestones and monuments. It is important to gently remove biological growths such as algae or lichen as they trap moisture against the stone.

All markers must be entirely and thoroughly cleaned before conservation procedures, including resetting, are undertaken. Washing with water at hose pressure, using brushes, is permissible. Pressure/power washing of the soft stone markers (marble, slate, limestone and sandstone) is not allowed due to the adverse and irreversible effects of this method. Use of D2 Biological Solution is recommended due to its ability to enhance removal of lichen and algae and to retard biological growth from 2-4 years. Honing of the surface of marble stones to achieve a “new stone” appearance is not permitted.

C. RESETTING -- This is a basic procedure to prevent serious damage to tilting markers. It involves the excavation of the stone and resetting in a sand and peastone mixture, which is carefully compacted and provides the proper support and drainage. Tabletstones, small monuments, etc., which require resetting will be reset in a 1:1 sand/peastone mixture. A large enough excavation must be made to allow the stone to be supported on all sides by this

mixture. There must be a minimum of 3 inches below the bottom of any tabletstone and 10 inches below the base of any monument. The mixture must be wet down and compacted thoroughly in 4-inch lifts to make certain complete compaction takes place. All markers must be level and plumb after resetting.

In no case should marble, slate, soapstone or sandstone fragments be placed in concrete due to the deleterious effects of this method. Stones currently set this way generally should be left as is, unless the concrete is failing, since attempts to free the marker can result in even more damage to the stone.

SECTION III – ADVANCED PROCEDURES

A. ADVANCED CLEANING -- Conservation cleaners are available specifically designed for stone and similar materials, e.g. D/2 Biological Solution, as noted earlier, is a very effective product for stone cleaning and is in widespread use by gravestone preservation professionals. When using D/2 it is very important to follow the application guidelines noted by the manufacturer.

The goal is to remove atmospheric dirt and biological growth, not to return the stones to "like new" coloration. On any surfaces to be adhesively repaired, final cleaning with acetone after initial cleaning with water is required to assure proper bonding.

B. ADHESIVE REPAIR -- For repairs of any stone type, surfaces to be adhered must be clean and free of all contaminants. The stones should be initially cleaned with water and D/2, then the faces of the break cleaned with acetone as a final application. Care should be taken to avoid any handling of cleaned break faces before the adhesive is applied once the acetone application has been completed.

SLATE: Repair should be made using Akemi Akepox 2010 Knife Grade stone epoxy (available from Stone Boss, Inc. 888-868-BOSS) or equal as submitted to and approved in writing by the client.

MARBLE: Drilling and blind pinning is strongly recommended when marble is repaired. Pins (Stainless steel, bronze, fiberglass or carbon fiber) should be set in Akemi Akepox 2010 Knife Grade stone epoxy or equal as submitted to and approved in writing by the client.

SANDSTONE: Repair with epoxy alone will be performed using Akemi Akepox 2010 Knife Grade stone epoxy or equal as submitted to and approved in writing by the client. The conservation specialist must determine if pinning of the sandstone fragments is necessary.

REQUIREMENTS FOR ADHESIVE REPAIRS: Extreme care must be taken to keep a minimum of adhesive from squeezing onto the face or back of the stone during the procedure. Any adhesive that does squeeze out of the break must be removed before it sets up using a solvent for epoxy adhesive, such as acetone. Utilizing the “squeeze” as infill and grinding it down when set is not permitted. For sandstone the adhesive should be applied in dots, not spread over the surface to permit moisture to pass through the repair. Clamp all repairs for a minimum of 8 hours.

C. BLIND PINNING -- The gravestone conservator is responsible for determining when drilling and blind pinning is necessary in the conservation of damaged stones. Slate stones are rarely pinned, especially under field conditions. It is recommended that broken marble, limestone and sandstone gravestones and monuments be pinned. Pins used will be consistent with the pinning technique selected and secured in place with an appropriate adhesive such as Akemi Akepox 2010 knife grade stone epoxy. Pin materials may be fiberglass, stainless steel, bronze, and carbon fiber. No aluminum, copper or iron pins are permissible.

D. MORTARING INTO A BASE -- Markers will be reinserted with mortar into the slots of their original bases, if in the judgement of the gravestone conservator, the slot will properly support the stone. The mortar utilized should be a lime-based mortar such as Limeworks Ecologic Mortar, to permit expansion and contraction of the stone while continuing to hold it in place. Straight cement or commercial pre-mixed mortars should never be used for this procedure.

E. REPLACEMENT BASES -- In cases where replacement bases are necessary to reerect a marker, a base will be cast from concrete (Sakrete Concrete Mix or equal) with a slot set into it that is sized to contain the stone with sufficient space around it to permit solid packing with soft, high-lime mortar. Bases must be of a size to securely support the stone.

Replacement bases are to be set in the ground with the top 1-3 inches below grade in a sand/peastone mixture (minimum 4” below and 2” on all sides.) The mortar must be a lime-based mortar to permit expansion and contraction of the stone while continuing to hold it in place. Straight cement or commercial pre-mixed mortars should never be used for this procedure. In some cases, where the size and design of the damaged original base is known, new matching marble or granite bases can be obtained through a monument company.

F. INFILLS -- Areas of loss along breaks must be infilled in a neat and workmanlike manner using a lime-based material, which closely matches the stone being patched. Use of Natural Hydraulic Lime (NHL) mortars (e.g. Virginia Lime Works NHL 2 or 3.5 and Mix & Go mortar mix - www.virginalimeworks.com or U.S. Heritage Co. - usheritage.com) for infills is another material that performs well. More time is needed for curing of lime mortars; freezing during curing must be avoided. Limeworks St. Astier Lithomex Repair Mortar is an excellent infill mortar and comes in a wide variety of colors.

G. FRAGMENTS -- Whenever possible, fragments should be readhered to the marker in a neat fashion, using approved adhesives and providing infills if aesthetics or water shedding needs require. Jahn Marble Patching Mortar or Limeworks St. Astier Lithomex Repair Mortar may be used for infills if color match is acceptable.

H. BACKER STONE -- When fragments are in a condition that is too weak for adhesive repair, a “backer” stone of similar size may be used to permit the fragments to be reset. The procedure is to adhere the fragments to this stone and then set it up and infill. This “backer” may be long enough to reset in sand and peastone or a concrete base can be utilized to secure the “backer” and attached fragments in a vertical position.

I. CONSOLIDATION – Chemical consolidation of a stone is accomplished by applying a solution specially designed to strengthen the stone. The procedure is most often performed on sandstone and limestone but some marbles are candidates, as well. The consolidant is sprayed or brushed on to the point of rejection in three cycles with drying time between cycles. Prosoco, Inc. Conservare consolidants are very effective and therefore often utilized for this procedure. The consolidated stone will withstand weather and acid rain much better than it could prior to treatment.

SELECTED GLOSSARY

This glossary attempts to clarify the meaning of terms commonly used in the field of gravestone conservation.

Acidic Deposition: Laying down of acidic matter, either wet or dry on a marker's surface.

Atmospheric Soiling: Combustion products such as soot, as well as dust.

Adhesive Repair: Rejoin fragments using appropriate adhesives.

Backer Stone: A stone similar in size to the original fragmented gravestone onto which fragments are adhered to provide sufficient length and strength for either resetting in sand/peastone or mortaring into a base.

Base: Usually used with marble headstones. Often made of marble, sandstone or granite into which a slot has been cut and the marker mortared in. Bases for monuments are often multiple under the die. The base immediately below the die and to which it is usually pinned is designated Base #1, the next lower Base #2, etc.

Bases, Replacement: Occasionally new concrete slotted bases have to be made for slate and marble gravestones if they are broken off at ground level and an adhesive repair is not feasible. These new concrete bases are set with the top just below grade and covered with earth after the stone is mortared into the slot. For exceptionally large stones the base and slot are formed and poured in the ground. These are often called "in-ground bases".

Blister: Air spaces that form slightly below the surface of the stone and eventually cause the top layer to slough off.

Calcareous: Composed of, containing or characteristic of calcium carbonate, calcium or limestone. Marble is a calcareous stone.

Cap: Placing a lime mortar cap along a delaminated area of a stone to prevent direct water infiltration.

Consolidation: Treating a stone with a chemical consolidant to strengthen it and provide water resistance.

Crack: Narrow fracture or break across or through a material, either straight-line or branching in form.

Delamination: Peeling away or separation of layers of stone that were previously a solid mass.

Die: The upper portion of a gravemarker, which stands upon a base or bases, and usually carries the identification or inscription.

Drill and Pin: A technique utilized to join stone fragments. Matching holes are drilled in each surface to be joined and a pin (stainless steel, fiberglass, bronze) is secured in the holes with an adhesive. Marble and sandstone markers are always drilled and pinned. Slate stones are occasionally pinned but usually adhesively repaired without the use of a pin.

D2 Biological Solution: A liquid cleaner which kills lichenous growth and helps keep regrowth from occurring for 2-4 years.

Efflorescence: Crusty accumulation of salts or minerals on the surface of stone.

Enframement: Badly broken stones are set into a granite, slate or concrete frame which holds the stone in a vertical position.

Ferrous: The inclusion of iron in the matrix of a stone which, when it oxidizes (rusts), can cause the stone to lose portions of the surface or even come completely apart in multiple fragments.

Fieldstones: When a carved stone was unavailable or unaffordable, early graves were often marked with rocks taken from the fields. Occasionally some information is carved in the stone, but usually they are uncarved and serve as an unmarked headstone and footstone.

Fragment: A portion of a gravestone, which can be large or small.

Granite: A very hard igneous rock, with a somewhat speckled appearance; its surface can range from a rough, naturally occurring finish, to a highly polished one. Colors range from white to black, red, pink, or brown.

Hood: Usually made of metal, most often copper, a hood covers the top of a stone across the shoulders and tympanum. It is intended to prevent water infiltration into the bedding planes of a slate stone and reduce the incidence of delamination.

Infills: Using a lime-based mortar to fill voids in a stone. One place infills are usually utilized is along the void created when adhesive repairs are made. The lime-based mortar infill will prevent direct water infiltration but allows water vapor to pass through it from inside the stone preventing damage from freezing moisture within the stone.

Iron pins: In older monuments the pins were soft iron which was prone to severe rusting, staining the stone orange (rust) color. In addition, rusting iron can exert a force of up to 6000 Lbs. per Square Inch (oxide jacking), which is much greater than the stone can withstand. This results in cracking and eventual breaking of bases and die.

Lichen: An organism that is a combination of algae and fungus and grows on stone, secreting oxalic acid to digest the stone surface. Removal is advised to extend the life of the marker. (See D2)

Marble: A dense crystalline or granular metamorphosed limestone (Calcareous); it is usually white or grayish with black mottling and streaks, but can be red, green, pink, etc.

Marker: A smaller stone which is placed adjacent to a large monument. It denotes the burial place of an individual recorded on the monument.

Monitor: Refers to a stone that is in a condition which may require conservation in the future but not immediately. The recommendation is to observe the stone over time to assess its need for conservation.

Mortar: A lime-based material used to secure stones into bases and in a specially refined form for infills and capping.

Mortar into Base: Reinsertion of marker into existing slotted base or new slotted cast base and securing it using a lime mortar.

Pin: Reinforcing an adhesive repair by drilling the fragments and inserting rods (pins) to strengthen the connection and contain shear forces. Pins may be steel, fiberglass, carbon fiber or bronze.

Proper Right/Proper Left: In analyzing a gravestone or monument, the description is based on viewing the stone as if standing behind the object, similar to Stage Left or Stage Right. For example, this means the proper right is on the left when viewing the stone from the front. It provides a consistent method for describing stones.

Raised: The gravemarker is sitting much higher in the ground than originally intended.

Repin: Reuse loose rods (pins) that were originally used to stabilize a marker.

Reset: Excavate and carefully set level and plumb (in a compacted sand/peastone mixture) a marker or base, which is tilted or out of the ground.

Setting Compound: A putty-like substance utilized between the layers of stone of a monument to prevent water infiltration and to give a neat appearance to the joints.

Slab: A carved piece of stone without any visible support system that just sits on the ground.

Slate: A relatively soft metamorphic stone, which has a layered composition.

Sunken: The gravemarker is sitting much lower in the ground than originally intended.

Sugar Decay: A calcareous stone (most frequently marble) whose surface is roughened due to attack by the acidic environment (see Acidic Deposition). As the process advances, the carving of both the design and the inscription become gradually fainter and eventually illegible.

Tack: Applying adhesive in several locations along a delamination to stabilize the layers before cementitious capping is applied.

Tomb Marker: There are two major free standing categories of tomb markers:

- 1) Box Tomb Marker - An oblong box of granite blocks, brick, or a single block of stone. It may be carved on the surface of the block or have a carved top, usually made of marble, slate or sandstone.
- 2) Table Tomb Marker – An oblong structure with four or six legs standing on a base and supporting a horizontal piece of carved stone, usually marble, granite or sandstone.