



City of Cambridge

54.
Amended Order

IN CITY COUNCIL

March 2, 1998

COUNCILLOR DAVIS
COUNCILLOR BORN
MAYOR DUEHAY
VICE MAYOR GALLUCCIO
COUNCILLOR REEVES
COUNCILLOR RUSSELL
COUNCILLOR SULLIVAN
COUNCILLOR TOOMEY
COUNCILLOR TRIANTAFILLOU

ORDERED: That the City Manager be and hereby is requested to transmit the attached report to relevant city departments in order to work toward improving water quality in the Charles River; and be it further

ORDERED: That the City Manager be and hereby is requested prepare a report for the City council on progress toward a swimmable Charles River; and be it further

RESOLVED: That the City Council thank **Roger Frymire** for this superb volunteer effort in putting this report together.

In City Council March 2, 1998.

Adopted as amended by the affirmative vote of nine members.

Attest:- D. Margaret Drury, City Clerk.

A true copy;

ATTEST:-

A handwritten signature in cursive script that reads "D. Margaret Drury".

D. Margaret Drury
City Clerk



City of Cambridge

54.
Original Order

IN CITY COUNCIL
March 2, 1998

COUNCILLOR DAVIS
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ORDERED: That the City Manager be and hereby is requested to transmit the attached report to relevant city departments in order to work toward improving water quality in the Charles River; and be it further

RESOLVED: That the City Council thank **Roger Frymire** for this superb volunteer effort in putting this report together.

~~W.H. Davis~~ ~~John~~

H.Davis (54)

~~W.H. Davis~~

ordered: That
CM b r h b 15
requested to

- (6) ~~Transmit the following~~
Re: Pipes that discharge into
the Charles River. Transmit the
attached report to ~~the CM and~~
~~to~~ relevant city departments in order
to ^{work toward} improving water quality in the Charles River, and
~~forward~~ to thank Roger Fagnone for his
~~superb~~ superb volunteer effort ~~to~~
in putting this report together

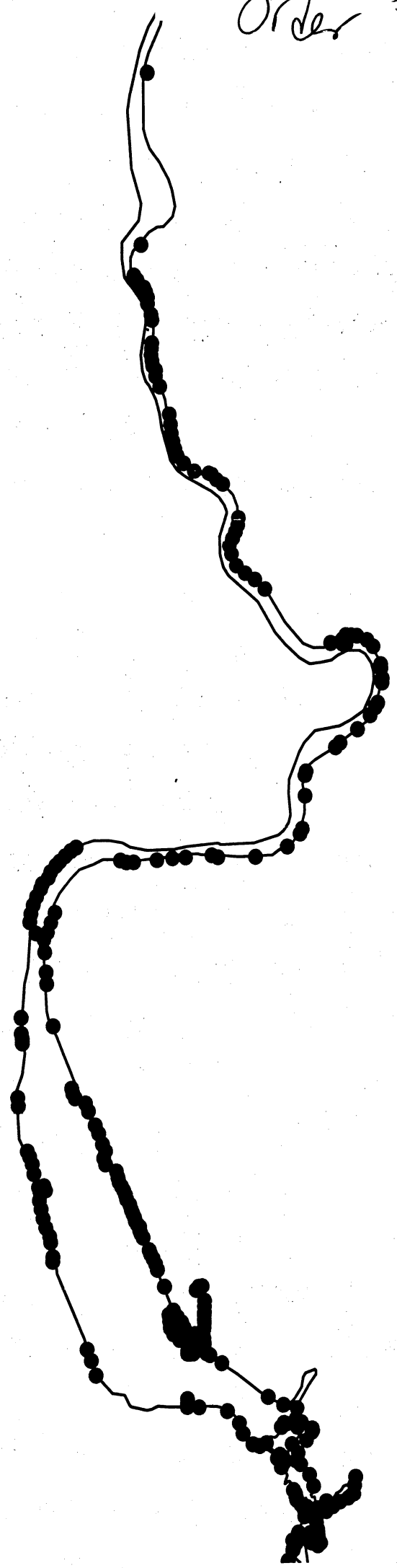
be it
further
Resolved
That the
cc

~~Transmit the following~~ ~~CM~~ ~~transmit to the~~

Order #54

Pipe Report on the Charles River Basin

From a volunteer
Riverbank Survey
of June, 1997



To: list

Subject: Charles Basin Riverbank Survey of June, 1997 Pipe List

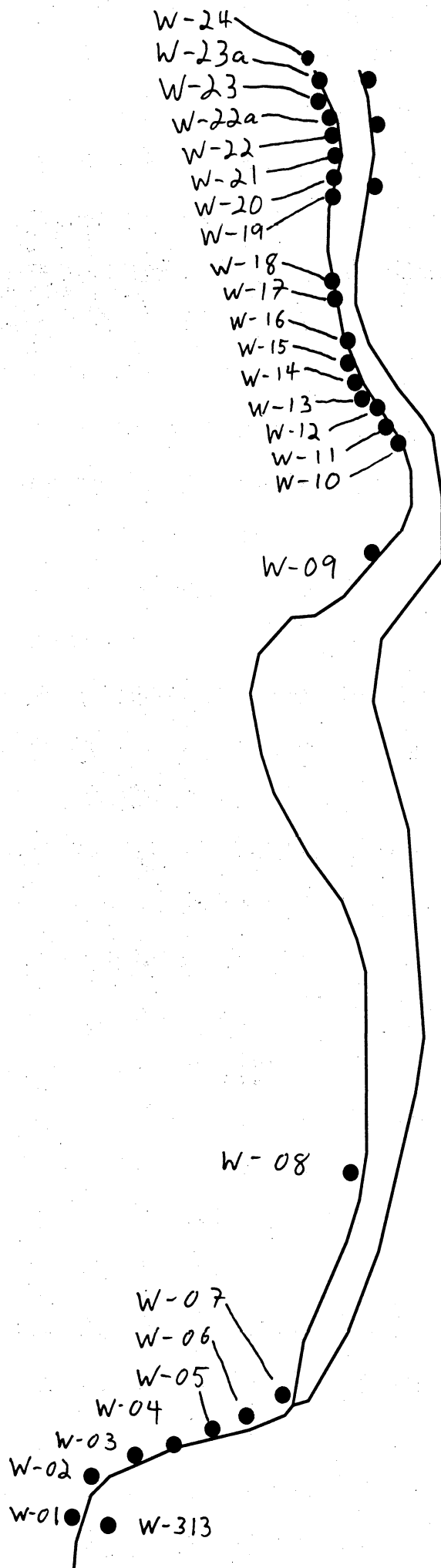
Date: 9Feb98

The first week of June, 1997 volunteers surveyed the Charles Riverbank covering the entire basin from Watertown Dam to the harbor. This is a compilation of just their lists of pipes found. Many attempted to correlate their findings with numbered pipe locations on a draft EPA map handed out so those numbers are included but are speculative at best. Weather was dry all summer and any pipes with flows are viewed as problems. Reports of fishy smells were discarded as meaningless during the herring run.

Pipe #	EPA#	Size	Type	Problem	Comments
W-01	-	18"	Concrete		50' upstream of Galen St. Across from EPA#12
W-02	11	36"	clay		broken
W-03	13	-	clay		broken, only 4" above water
W-04	10	18"	clay	scum	bulkhead separated from pipe
W-05	9	18"	clay		pipe broken before bulkhead
W-06	128	-	clay	pipe in concrete connected to nothing	
W-07	14	18"	clay	pipe goes nowhere	
W-08	-	30"	clay	broken	Across from Newton Yacht Club
W-09	-	-	concrete		Large concrete structure, no flow seen just downstream of Watertown Yacht

North Beacon Street Bridge

W-10	23?	12"	concrete		
W-11	24?	15"	metal		
W-12	-	8"	concrete		2' above water
W-13	-	12"	concrete		road runoff
W-14	-	15"	metal	trickle	this & W-15 diagonally across from
W-15	-	12"	concrete		'Newton' CSO behind 3 bar grate
W-16	17	12"	-	oily film	
W-17	19	12"	concrete		road drain
W-18	20	12"-18"	concrete		
W-19	21	12"-18"	-	dripping	
W-20	22	12"	metal		partly submerged
W-21	-	18"	red concrete	green algae bloom	
W-22	-	8"	concrete		
W-22a	23	12"	concrete	dripping	
W-23	-	~2'-3'	concrete	musty smell	
W-23a	24	30"	concrete		slightly submerged
W-24	-	12"-18"	concrete		



W-25		18"	clay	entirely blocked
W-26	-	2"	concrete	red?
W-27	25	18"	concrete	slight flow, smell, & algal bloom
W-28	-	12"	concrete	?
W-29	26	24"	concrete	black stains below pipe
W-30	85?	-	-	painted black

Arsenal Street Bridge

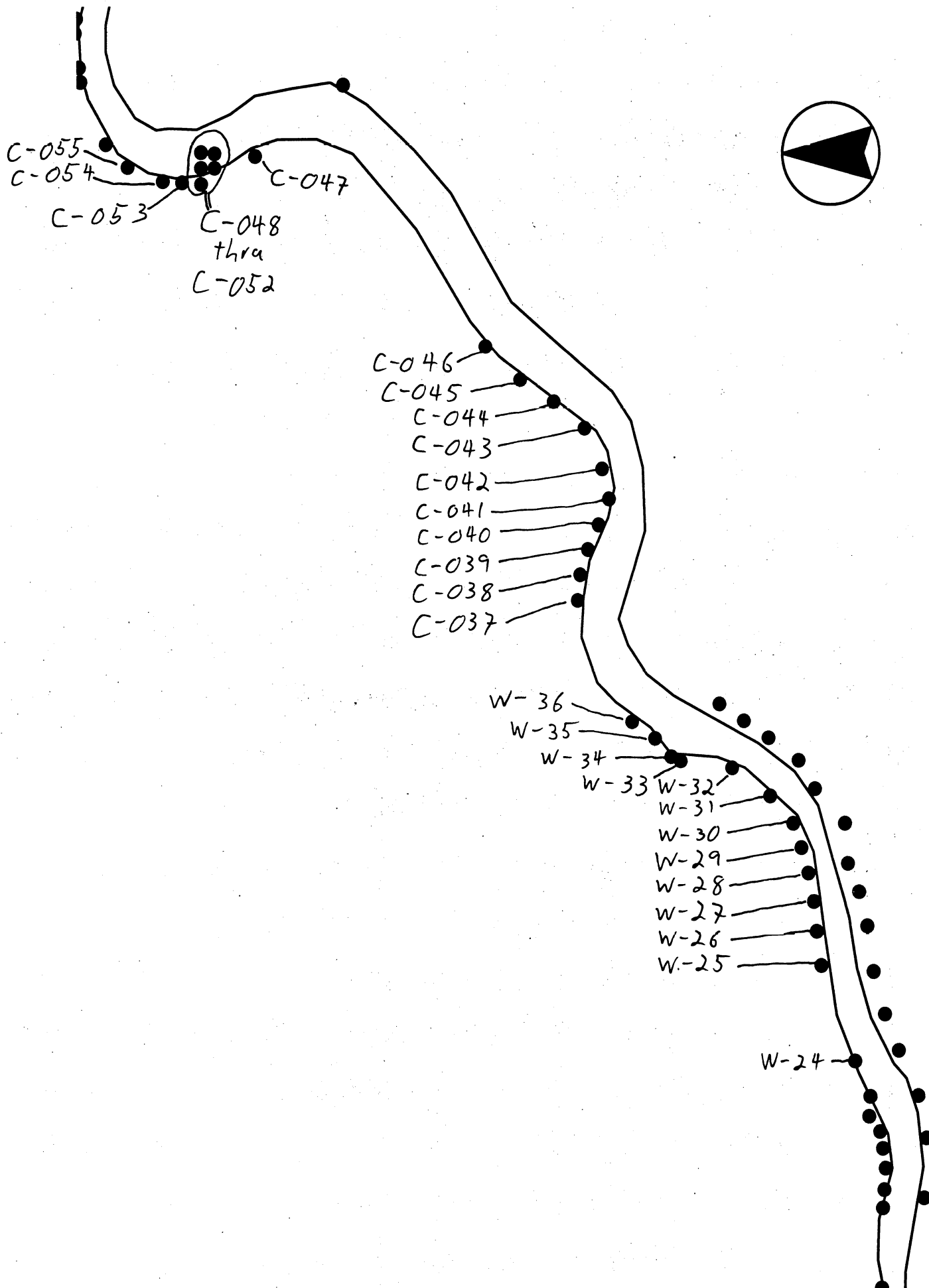
W-31	27	48"	concrete	~15gpm flow grey water in culvert with scum
W-32	-	-	-	? Sawins pond outflow
W-33	-	18"	concrete	trickle, yellow sediment (GOLD!)
W-34	-	12"	concrete	adjacent W-33
W-35	-	12"	corrugated	
W-36	29	12"	concrete	slight flow, gurgling sound

Cambridge City Limit

C-037	33	12"	concrete	probable road drain
C-038	34	18"	concrete	
C-039	-	12"	concrete	
C-040	35	12"	concrete	
C-041	-	12"	concrete	
C-042	-	12"	concrete	
C-043	36	12"	concrete	
C-044	37	12"	concrete	granite blocks on each side
C-045	132	12"	concrete	
C-046	133	12"	concrete	
C-047	134	24"-36"	concrete	

Eliot Bridge

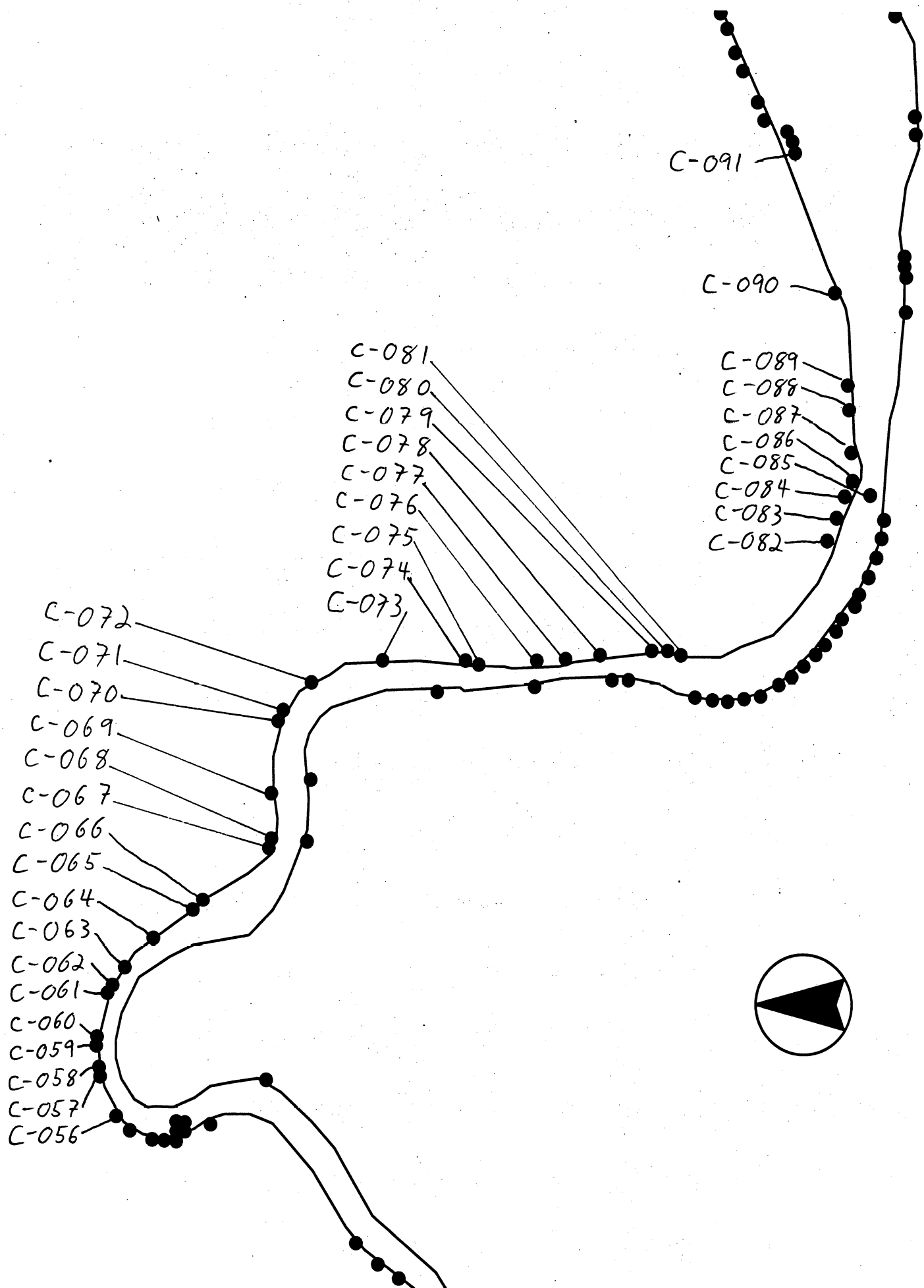
C-048	-	12"	rust	asymmetry of sizes and placement of these 5 drains on the Cambridge end of the bridge suggest more bridge drains have fallen completely away. these last two are on the upstream side.
C-049	-	12"	rust	
C-050	-	12"	rust	
C-051	-	6"	rust	
C-052	-	12"	rust	
C-053	136	-	concrete	submerged, 10yd. upstream of Cambridge Boat Club
C-054	-	-	spring?	a footbridge on boat club grounds is required to cross the channel cut by water from some unfindable broken pipe.
C-055	-	-	concrete/granite bulkhead	may have drain. area smells of latrine



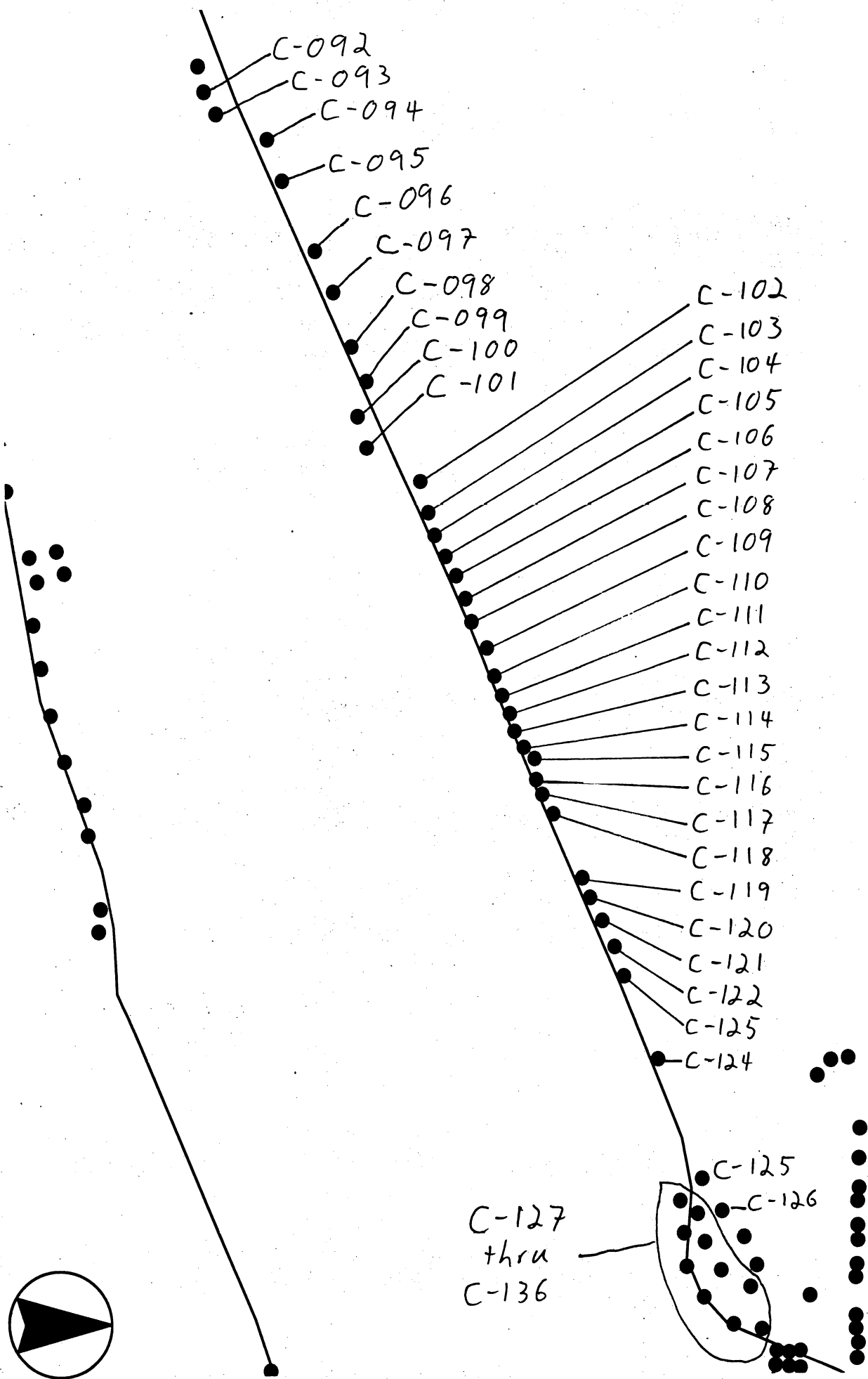
C-056	136?	54"	CAM005 CSO structure	
C-057	137	8"	concrete	
C-058	137	8"	concrete	juts 4' into river-dangerous
C-059	138	8"	concrete	pointing downward
C-060	33	10"-12"	concrete	broken, cobwebs
C-061	140	8"	concrete	broken concrete on end
C-062	140?	76"x32"	CAM007 CSO structure	
C-063	141	-	-	blocked with debris
C-064	not 142?	-	concrete bulkhead & railing may have pipe beneath	
C-065	142	6"-8"	iron	
C-066	142?	6"-8"	iron	part submerged
C-067	143	6"-8"	iron	80% submerged
C-068	143?	30"x26"	CAM009 CSO structure	
C-069	144	6"-8"	-	foam at bank, pipe broken
C-070	145	6"-8"	metal	debris filled
C-071	145?	48"x48"	CAM011 CSO structure	
C-072	146	-	concrete bulkhead houses the homeless	
C-073	147	48"-60"	grate 1/2 submerged	CSO?
C-074	148	8"	blue plastic	
C-075	149	-	blue plastic	
C-076	150	-	blue plastic	in front of nursery
C-077	151	72"	grate	submerged
C-078	152	6"	metal	
C-079	153	6"	metal	broken, pigeon nest
C-080	153	12"	concrete	this and C-081 paired
C-081	153	12"	concrete	next to Riverside boathouse
C-082	154	6"	metal	broken
C-083	155	12"	metal	
C-084	155?	4"	clay	roof drain from old CSO facility
C-085	-	96"	Cottage Farm MWRA CSO outfall	
C-086	156?	24"	drain from 1/2 traffic circle	

Boston University Bridge

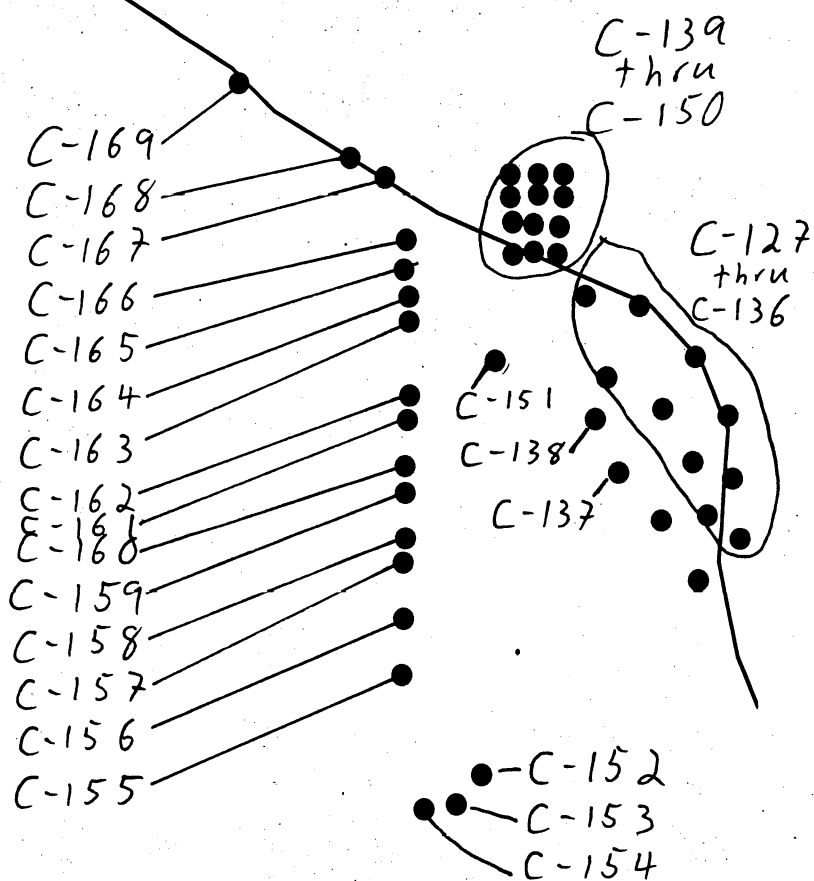
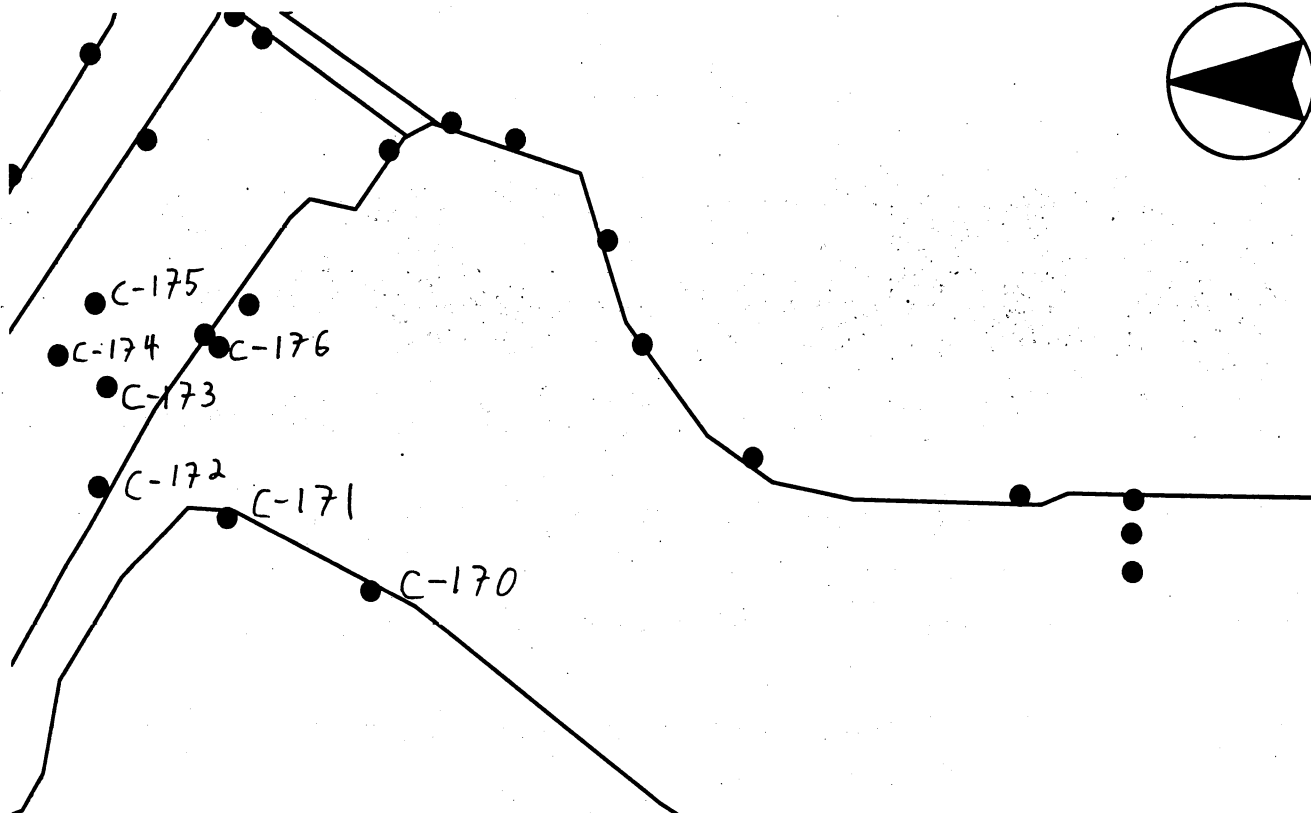
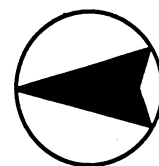
C-087	-	24"	possible 2nd circle drain	
C-088	this pair of road drainpipes on either side of the BU boathouse each used to drain a pair			
C-089	of street drains directly to the river. They no longer exist. Almost all Memorial Drive			
	drains in areas without seawalls have collapsed and disappeared.			
C-090	157?	6"	clay	this pipe disappeared in early 1997. Often before,
	it was boomed and remnants remain along with a noticeable sand delta. Directly in front			
	of the Hyatt traffic light, this area has a pair of road drains and two city storm drains			
	as well as a closed CSO.			
C-091	-	2"	iron	On the street side of the MIT boathouse, three



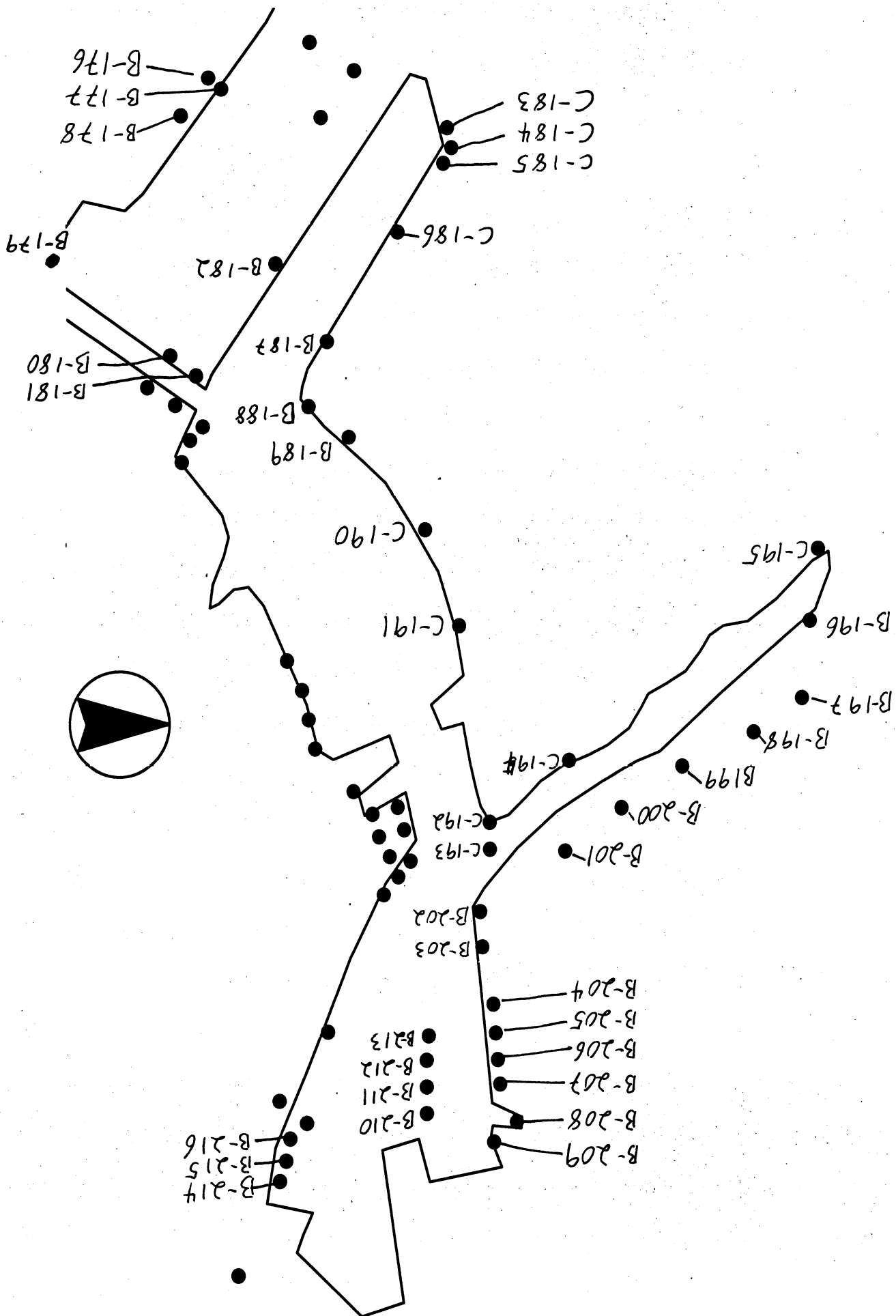
C-092	-	4"	iron	pipes protrude for unknown reasons. Where do
C-093	-	1"	PVC	roof drains go, anyway?
C-094	-	72"	brick	the river still slowly flows INTO this outfall from MIT nuclear reactor.
C-095	-	48"+	grated	this and previous pipe parallel a very overloaded storm drain/sewer pipe from Cambridgeport
C-096	158	10"	ceramic	this and C-097 close, otherwise seem
C-097	159	10"	ceramic	to match EPA#'s 158-159
C-098	-	10"	plugged	2" above water
C-099	160	15"	ceramic	trash-filled.
C-100	-	6"	PVC	one of two Harvard Bridge drains in the first span
C-101	-	6"	PVC	
C-102	-	18"	submerged CSO just downstream from Mass. Ave.	
C-103	-	10"	clay	
C-104	-	10"	clay	seem
C-105	-	10"	clay	likely
C-106	-	10"	clay	MDC
C-107	-	10"	clay	road
C-108	-	6"	-	4' above waterline
C-109	-	10"	clay	
C-110	-	10"	clay	drain
C-111	-	10"	clay	pipes.
C-112	-	1"	iron	very near MIT sailing pavilion
C-113	-	4"	-	eight sailing pavilion roof drains
C-114	-	10"	clay	road
C-115	-	10"	clay	drains
C-116	-	10"	clay	
C-117	-	10"	partly disguised near end of Yacht club docks in seawall	
C-118	-	?	rectangular cutout hiding drain inaccessible behind clubhouse.	
C-119	-	10"	clay	halfway to Harvard sailing
C-120	-	3"/8"	-	3" hole in plug in 8" pipe in triangular concrete
C-121	-	12"	clay	valved! upstream of H. sail
C-122	-	?	steel	large submerged steel pipe
C-123	-	18"	concrete	3' above water
C-124	-	12"	clay	downstream...
C-125	-	12"	-	under Mem. Drive
C-126	-	21"	concrete	3' above water
C-127	-	4"	iron	
C-128	-	4"	iron	draining Mem. Drive which is on two
C-129	-	4"	iron	long bridge spans approaching the
C-130	-	4"	iron	Longfellow are an estimated sixty
C-131	-	4"	iron	4" vertical drains rusted into sharp
C-132	-	4"	iron	slivers. only ten are listed here



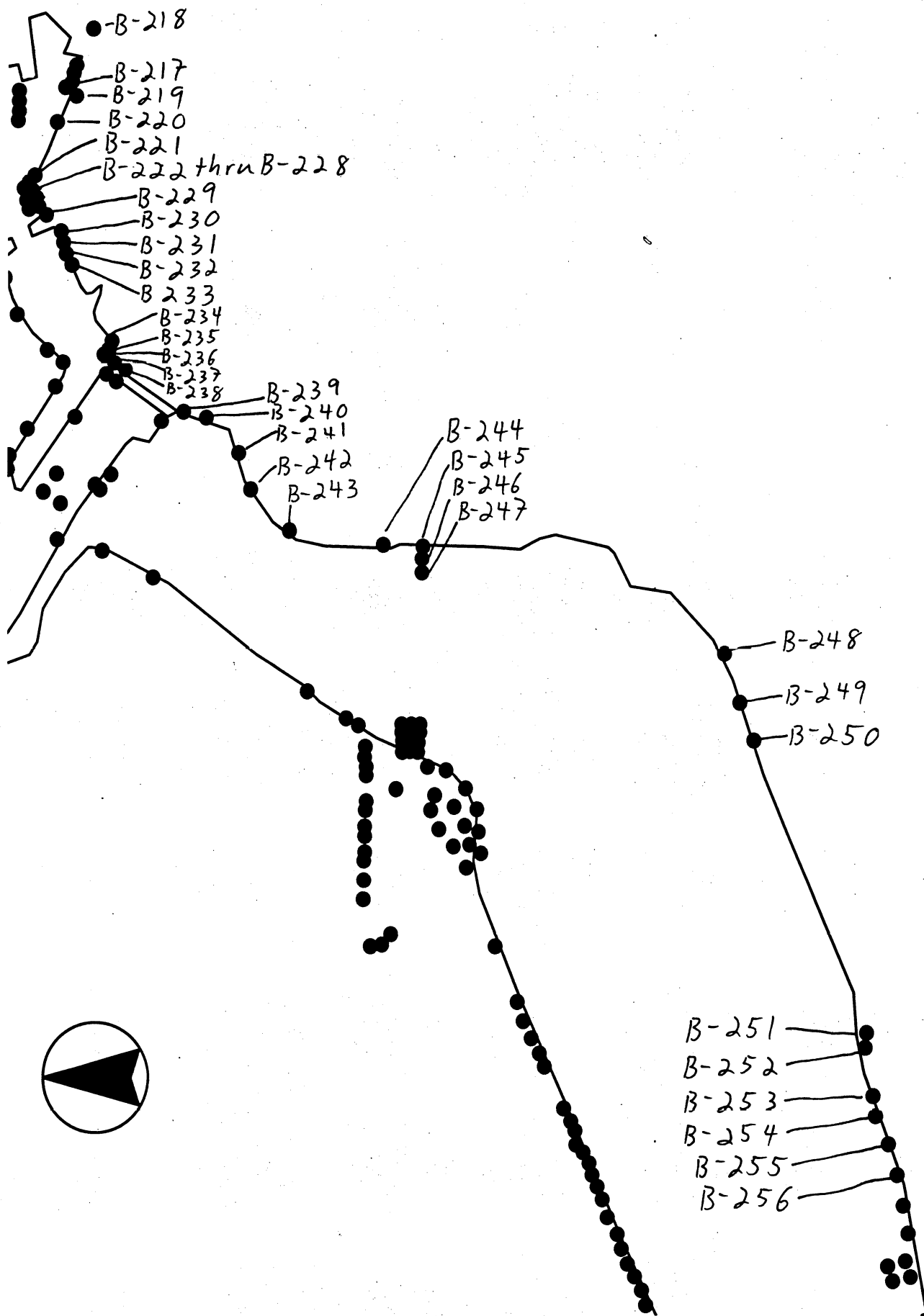
C-133	-	4"	iron	for simplicity.
C-134	-	4"	iron	
C-135	-	4"	iron	
C-136	-	4"	iron	
C-137	-	14"x14"	stone	square notch in seawall ALWAYS runs strongly
C-138	-	10"	-	running slowly
C-139	-	varies	-	
C-140	-	varies	-	these twelve various pipes are all
C-141	-	varies	PVC	suspended from the first span
C-142	-		or	of the Longfellow Bridge; possible
C-143	-		iron	separate sidewalk, road, and T
C-144	-			drainage systems.
C-145	-			
C-146	-			
C-147	-			
C-148	-			
C-149	-			
C-150	-			
C-151	-	12"	clay	running strongly, brown buildup
C-152	-	3"	iron	on left @ end of Broad canal
C-153	-	21"	iron	on left end on canal
C-154	-	54"	grated	center end of canal street drain
C-155	-	12"	iron	@ south end of oil tank area
C-156	-	2"	iron	
C-157	-	large	grated	three pair of two large grated
C-158	-			intakes @ three seawall indents
C-159	-			alongside COMenergy
C-160	-			
C-161	-			
C-162	-	large	grated	
C-163	-	8"	iron	vertical, hidden behind another pipe
C-164	-	10"	-	
C-165	-	14"	-	
C-166	-	4"	-	all 3 under drawbridge
C-167	-	42"	-	COM deice discharge ports
C-168	206	42"	-	below surface, flow evident
C-169	-	18"	concrete	3' above water, swarming mosquitos
C-170	-	12"x12"	-	hidden behind chink in seawall
C-171	-	2"	iron	5' above water
C-172	-	10"	-	just north of garage
C-173	-	6"	PVC	3 underneath garage in sluiceway
C-174	-	6"	PVC	Always flows & steams
C-175	-	6"	PVC	Always flows & growth indicating fertilizer



B-176	-	8"	-	pair of pipes behind northernmost
B-177	-	12"	-	of 6 large pillars
B-178	-	10"	-	behind southernmost pillar
B-179	-	-	-	pipe or conduit @ park corner
B-180	-	6"	iron	possible bridge abutment drains
B-181	-	6"	iron	identical pair opposite
B-182	-	12"	-	fronts Museum entrance
C-183	CAM019?	72"	bulkhead	
C-184	-	30"	PVC	new construction street drain
C-185	-	12"	-	grouped tightly with 184,185
C-186	-	8"-12"	metal	evenly spaced, maybe old storm
B-187	-	8"-12"	metal	drainage
B-188	-	8"-12"	metal	
B-189	-	8"-12"	metal	
C-190	-	8"-12"	metal	
C-191	-	1"	PVC	in seawall near and under R/R, many PVC weep holes?
C-192	-	40"	concrete	culverts to Millers River to be
C-193	-	40"	concrete	removed CA/T
C-194	-	16"	iron	next to old R/R bldg up Millers R.
C-195	SOM010	large	sedimented in	at tip of Millers R.
B-196	BOS028	large	bulkhead	oil slick and many sets of booms
B-197	-	various	I-93	along the Millers River every drain off
B-198			I-93	I-93 is broken and drains to the surface
B-199			I-93	haphazardly
B-200			I-93	
B-201	-	-	I-93	
B-202	-	4"	-	first vertical section of seawall
B-203	-	4"	-	has NINE 4" near water level
B-204	-	6"	iron	just before I-93 bridge
B-205	-	8"	steel	two I-93 drains on N shore
B-206	-	8"	steel	
B-207	-	1"	PVC	FIVE more PVC wall drains
B-208	-	14"	grated	clogged vicinity of fish ladder
B-209	-	18"x18"	grated	garbage clogged, partly submerged, immediate vicinity of fish ladder
B-210	-	8"	PVC	I-93 four banana pier drains
B-211	-	8"	PVC	
B-212	-	8"	PVC	
B-213	-	8"	PVC	
B-214	-	8"	PVC	I-93 bridge south pier four more
B-215	-	8"	PVC	
B-216	-	8"	PVC	



B-217	-	8"	PVC	
B-218	-	8"	broken	several I-93 downspouts around the Gahden area are broken as in Charlestown
B-219	-	16"	grated	dripping clogged grate
B-220	-	18"	capped and broken,	dripping green slime
B-221	-	40"	grated	ominous
B-222	-	6"	hard	
B-223	-	6"	to	of SEVEN vertical drains under the first R/R
B-224	-	6"	see	trestle span, MOST were dripping. With many
B-225	-	6"		more spans there may be another 50-100 of these
B-226	-	6"		
B-227	-	6"		
B-228	-	6"		
B-229	-	6"	rust	west end of R/R trestle
B-230	-	6"	rust	tucked in close
B-231	-	1"	PVC	under fishing dock and R/R are 50 more drains set in concrete patches in seawall
B-232	-	10"	steel	
B-233	-	-	swale stained grey with runoff from Spaulding compactor	
B-234	BWSC049	14"x14"	concrete	two sides of triangular bulkhead
B-235	BWSC049	14"x14"	concrete	
B-236	-	8"	grey pipe or conduit cover, on T bridge pier	
B-237	-	4"	iron	trickling under drawbridge, part of set
B-238	-	4"	iron	last under drawbridge
B-239	-	?	grey metal double pipe cover enters vertically, also two conduit	
B-240	-	6"	-	exact enter of seawall indent
B-241	-	?	bulkhead	identical to 243
B-242	-	8"	clay	
B-243	MWRA022	?	bulkhead	sign MWRA022
B-244	-	?	bulkhead	similar to 243
B-245	-	6"	-	Longfellow drain
B-246	-	6"	-	why so few?
B-247	-	4"	-	Longfellow sidewalk drain?
B-248	-	10"?	concrete	anomalous concrete in rip-rap
B-249	-	6"	steel	
B-250	-	10"	concrete	
B-251	-	4"	grey PVC	these two PVC point at an
B-252	-	2"	grey PVC	enclosure on shore
B-253	-	10"	concrete	storrow drains?
B-254	-	10"	concrete	from last lagoon
B-255	-	10"	concrete	to
B-256	-	10"	concrete	Mass. Ave.



B-257	-	4"	PVC	pedestrian ramp drains 2x4"
B-258	-	4"	PVC	
B-259	-	6"	PVC	Four 6" road drains
B-260	-	6"	PVC	in first bridge span
B-261	-	6"	PVC	
B-262	-	6"	PVC	
B-263	-	12"	concrete	
B-264	-	12"	concrete	
B-265	-	6'x28'	concrete	scum, foam Muddy River four 6'x7' openings
B-266	-	10"	cast iron	@ Kenmore exit
B-267	-	12"	concrete	
B-268	-	12"	concrete	
B-269	-	12"	concrete	near public dock with next 2 pipes
B-270	-	6"	concrete	
B-271	-	12"	concrete	
B-272	-	12"	concrete	

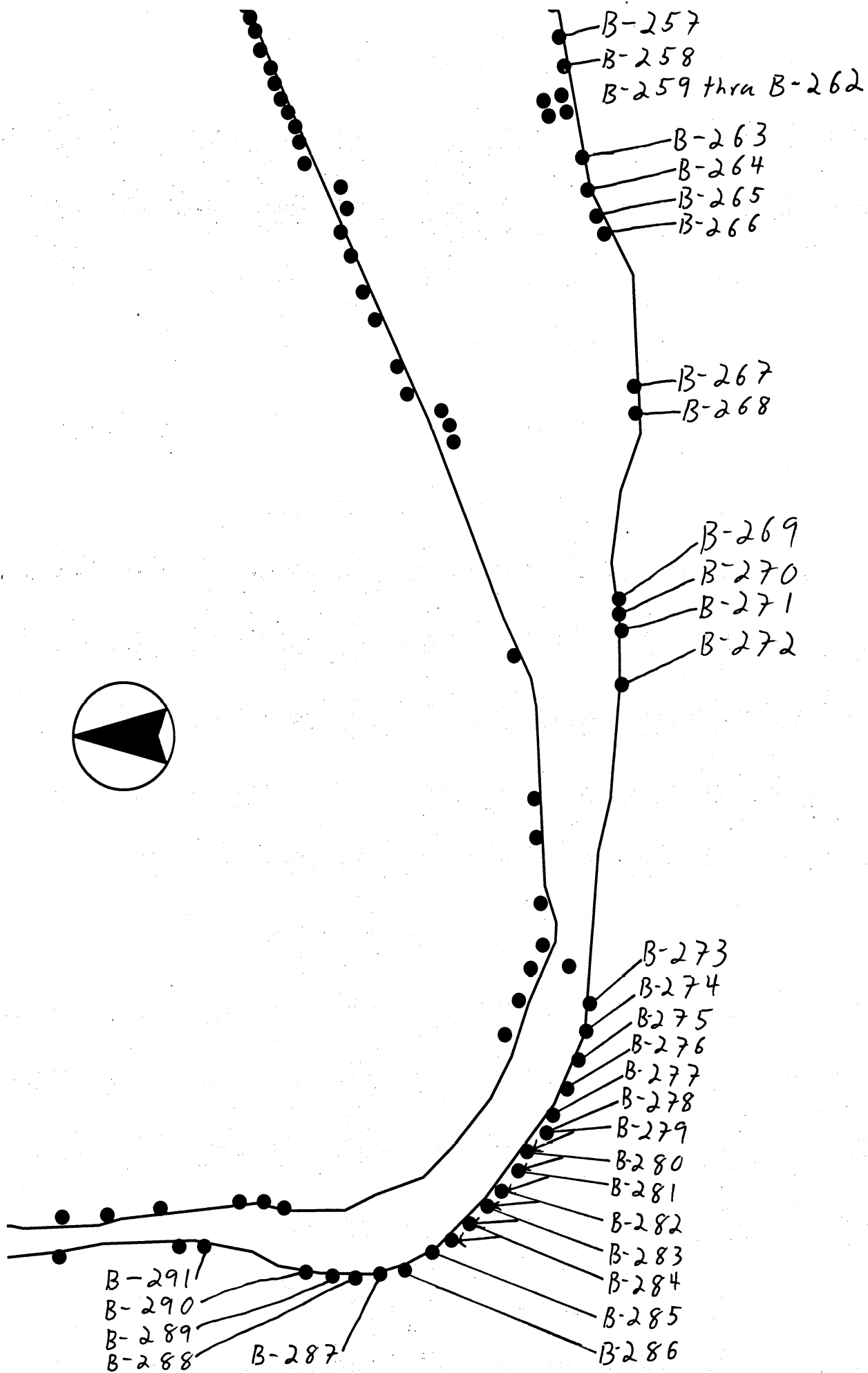
no drain pipes the next quarter mile till past the BU Bridge?

From BU to the River Street Bridge observers claim six additional 12"-18" pipes but did not specify where among the EPA preliminary numbered pipes these appeared...

B-273	192	12"	concrete	
B-274	191	12"	concrete	
B-275	190	12"	concrete	
B-276	189	12"	concrete	
B-277	188	48"	concrete	oil sheen near BU bridge
B-278	187	12"	concrete	
B-279	186	12"	concrete	
B-280	185	12"	concrete	
B-281	184	12"	concrete	
B-282	183	12"	concrete	
B-283	182	12"	concrete	
B-284	181	48"	concrete	wood deck, well boomed
B-285	180	12"	concrete	
B-286	179	12"	concrete	
B-287	178	3x36"	concrete	wood deck, well boomed, three 3' pipes
B-288	177	12"	concrete	
B-289	176	12"	concrete	
B-290	175	12"	concrete	oily sheen seen in past runoff

River Street Bridge

B-291	174	12"	concrete	at Bridge
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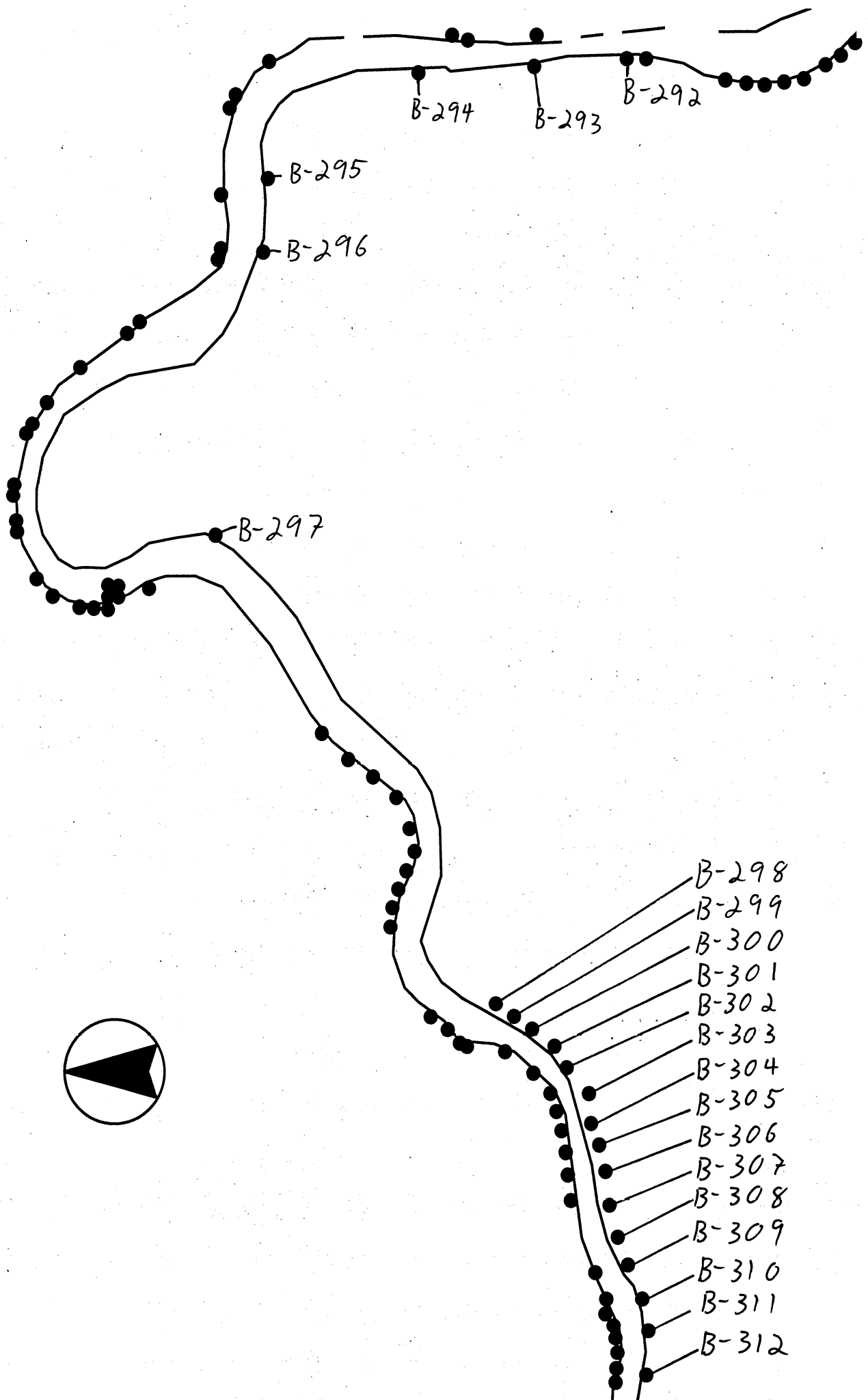
B-292	173	12"	concrete	below B-291
B-293	-	?	concrete	near Western Ave.
B-294	~170	-	concrete	half submerged
B-295	~166	-	bank	milky or colored ooze from the bank here
B-296	-	-	concrete	collapsed drain 60yd before Brattle
B-297	-	12"	concrete	many storrow drains from this pedestrian bridge to past Herter Park are visible only in a line of lush vegetation leading from street drains but never quite reaching the river anymore
B-298	CSO033	-	concrete	
B-299	-	12"	concrete	drain from arsenal bridge

The next eleven pipes run from Arsenal St. to N. Beacon but did not have placement mapped.. The two referenced EPA 46 & 48 were reported separately, are spaced arbitrarily, and may duplicate one or two of the other eleven.

B-300	-	12"-18"	concrete	3' back from water
B-301	-	12"-18"	concrete	at water level
B-302	-	-	-	CSO034?
B-303	-	24"-36"	corrugated	block with valve and "gas line xing" sign duplicate across river
B-304	-	12"	concrete	on top of boulder wall
B-305	-	8"-12"	concrete	4' above water in boulder wall
B-306	46	30"	concrete	
B-307	-	24"-36"	concrete	
B-308	48	42"	concrete	
B-309	-	8"	concrete	200m from bridge
B-310	-	36"	concrete	across from SBK bldg.
B-311	-	12"	concrete	3' from river halfway up bank
B-312	-	CSO032		boom being pushed into outfall by current or rising river

Somehow we seem to have missed surveying or misplaced our data on the stretch of Newton shore which follows to the Watertown dam. Other pipes obviously missing from this visual search are most CSO's and storm drains which are entirely below water. Another thirty or so of these appear in Cambridge DPW maps alone. Vast numbers of MDC road drains seem to have collapsed or disappeared. Most bridge drains are missing, especially mid-span. Though not surveyed, the next pipe mentioned with W-01 is included to partly complete this list:

W-313	12	-	-
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Thanks to all the other survey volunteers whose data was used in compiling this list:

Sascha Potzka	Alex Strysky	Barbara Barros	Jennifer Hill
Gedainis Kavlenas	Jenna Ide	Sheila Cook	Larissa Brown
Julie Duncan	Susan Kalstad	Marie-Dolores Solano	Nathaniel Stevens
Ruth A. Glover	E. Anne Robinson	Fred Woods	Nancy Woods
Richard Bock	Henrietta Davis	Caroline Ganley	Carl Manning
David Shultz	Peter Curry	Brooke Stevens	Sandy Kendall
Traci Craig	Dave Green	Jeanette Rimsa	Carol MacPherson
Chrissy Connelly	Dick Weisman	Jonathan Kleinman	Bob White

And special thanks to Gary Barden and Cathy Baskin of CRWA and Becka Roolf of the state Riverways program for organizing the survey and running the survey and subsequent meetings. Kudos also to the Cambridge Boat Club for frequent FREE use of their meeting space.

Sincerely,



Roger Frymire
492-0180

list: CRWA	MIT	Museum of Science	Cambridge Conservation Commission
MEPA	EPA	Watertown DPW	Boston Conservation Commission
MWRA	MDC	Cambridge DPW	Boston Water & Sewer Commission
SRH			



City of Cambridge

54.

IN CITY COUNCIL

March 2, 1998

COUNCILLOR DAVIS

ORDERED: That the City Manager be and hereby is requested to transmit the attached report to relevant city departments in order to work toward improving water quality in the Charles River; and be it further

RESOLVED: That the City Council thank Roger Frymire for this superb volunteer effort in putting this report together.

Councillor Davis re: thanks to Roger
Frymire for his superb volunteer effort
in working toward improving water quality
in the Charles River.

In City Council March 2, 1998

ORDER ADOPTED

as amended