



UNITED STATES WEST COAST  
OREGON - WASHINGTON  
**PORT OF PORTLAND  
INCLUDING VANCOUVER**

Mercaator Projection  
Scale 1:250,000 at Lat. 45° 30'

SOUNDINGS AND OVERHEAD CLEARANCES IN FEET  
AT COLUMBIA RIVER DATUM  
(MEAN LOWER LOW WATER DURING LOWEST RIVER STAGES)

U.S. DEPARTMENT OF COMMERCE  
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
COAST AND GEODETIC SURVEY  
WASHINGTON, D.C.  
April 1968

**GABRIEL MULTNOMAH CHANNEL  
TRIANGULATION DIAGRAM PART**

SOUNDINGS AND OVERHEAD CLEARANCES IN FEET  
HORIZONTAL CONTROL COLUMBIA RIVER DATUM  
(MEAN LOWER LOW WATER DURING LOWEST RIVER STAGES)

Maneuvered Point or Located Object  
See separate index for names of numbered stations  
Station reported not recovered  
TOWER  
Measured Base - Electronic or Taped  
Line of triangulation observed  
Line of triangulation observed from one end only  
Measured Length - Electronic  
Information may be obtained from the Coast and Geodetic Survey, Environmental Science Services Administration, Rockville, Maryland 20852

Scale 1:250,000  
Half Nautical Mile

U. S. DEPARTMENT OF COMMERCE  
 ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
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KEY TO NUMBERED STATIONS  
 TRIANGULATION DIAGRAM CHART 6155

1. HLM 6 (USE)
2. HLM 11 (USE)
3. HLM 13 (USE)
4. Ross  
 Portland, Ross Island, Apex of Power Line Tower
5. Portland, Radio Station KWJJ, Mast
6. Portland, Radio Station KPDQ, Mast
7. Portland, Veterans Hospital, Water Tank
8. Ket  
 Ket RM 2  
 HLM 24 (USE)  
 HLM 25 (USE)
9. Portland, Terminal 2, S End Flagstaff
10. Burnside  
 Portland, Burnside Bridge, W Control Tower Steel
11. Steel  
 RR Semaphore Signal at Station Steel
12. HLM 27 (USE)
13. HLM 31 (USE)  
 Portland Crown Mills Blue Tank
14. Ore  
 Pope  
 45 (USE)  
 45-2 (USE)  
 HLM 36 (USE)  
 HLM 39 (USE)
17. HLM 39A (USE)
18. Albert  
 Upstream  
 Upstream Mile Front Range
19. HLM 41 (USE)
20. P of P Brass Plug
21. HLM 42 (USE)
22. HLM 43A (USE)
23. Dock  
 Dock Mile Front Range
24. HLM 44A (USE)
25. HLM 45 (USE)  
 Portland, Dolphin 3, E Side of River
26. HLM 46 (USE)
27. HLM 48 (USE)
28. HLM 49 (USE)  
 Portland, Block Signal At NE End of SP & SRR Bridge
29. 35-2 (USE)  
 HLM 52 (USE)
30. HLM 54 (USE)
31. HLM 59 (USE)
32. 24 (USE)  
 24-2 (USE)  
 HLM 60 (USE)  
 HLM 65 (USE)
33. Post Office Bar, Rear Range Light (1913)
34. 17-2 (USE)  
 Willamette River Light 11 (1963)
35. HLM 68 (USE)  
 Howells House, E Chimney
36. HLM 79 (USE)
37. N Portland Harbor E End Range Rear Light (1964)
38. Willamette Dike Light (1937) (LOST)
39. Willamette River Light 44 (1963)
40. Willamette River Light 2 (1964)
41. Willamette River Entrance Light (1938)
42. Willamette River Light 3 (1963)
43. Willamette River Light 6 (1963)
44. Post Office Range Front Light 16 (1963)
45. Post Office Bar, Front Range Light (1938)
46. Post Office Range Rear Light (1963)
47. Willamette River Light 19 (1963)
48. Multnomah Channel Entrance Light (1963)
49. Multnomah Channel Light 11 (1963)
50. Multnomah Channel Light (1938)
51. Swan Island Lower Light (1963)
52. Swan Island Middle Light (1963)
53. Swan Island Lower Light (1954)
54. Portland, Swan Island, Lower Light (1938)
55. Swan Island Middle Light (1963)
56. Dike V2.2, Dolphin at S End (LOST)
57. Vancouver, Upper Range Front Light 53 (1964)
58. HLM 75 (USE)
59. Vancouver, Alcoa Stack (1946)
60. Vancouver, Alcoa New Stack (1963)
61. Miller RM 1 (BM 101-1932 OSHD)
62. Pace  
 Pacific  
 Vancouver, Pacific Milling Co., Elevator, Flagstaff
63. Columbia  
 U (USE)
64. Portland, Weatherly Bldg, Kale Radio Tower
65. Portland, Buckman School, Stack
66. Portland, Centenary Wilber Methodist Church, Spire
67. Portland, Benson Polytechnic School, Stack
68. Portland, Stettler Co., Tank
69. Portland, Sears Roebuck Co., Flagpole
70. Portland, Public Service Bldg, Flagpole
71. Portland, John Deere Plow Co., Flagpole
72. Portland, Honeyman Hardware Co., Tank
73. Portland, Albers Brothers Milling Co., Tank
74. Portland, Union Depot (USE)
75. Portland, Union Pacific RR, Tank
76. Portland, Union Pacific RR, Stack
77. Portland PRL&P, White Concrete Stack
78. Portland, Old Garbage Plant, Chimney
69. Portland, St Andrews Church S Spire
70. Portland, Union Pacific RR, Elevated Black Tank
71. Portland, Continental Grain Co, Water Tank
72. Portland, KOIN SE Radio Tower (LOST)
73. Portland, Barnes Heights, KOIN, Radio Tower
74. W Portland, Radio Station KOIN, W Tower
75. Council, Crest, Standpipe
76. Portland, Council Crest, City Radio Mast
77. Portland, Council Crest Airway Beacon, Flashing Red 50 (1963)
78. Portland, General Electric Co, Stack
79. Portland, General Electric Co, Tank
80. Center  
 Center 2  
 Center 3
81. Terminal 2  
 27 (USE)  
 KPK Radio Mast
82. Up  
 RR Switch Light  
 Fire Hydrant 33  
 59-2 (USE)
83. Portland, KERR-Gifford Elevator Flagstaff (Near Steel Bridge)
84. Willamette River Entrance Light 1 (1938)
85. Gillihan Light (1938)
86. Post Office Bar, Lower Light (1938)
87. Post Office Bar, Lower Light (1913)
88. Post Office Bar, Light 3 (1938)
89. Post Office Bar, Upper Light (1938)
90. W Oregon Lumber Co., Dolphin 1
91. W Oregon Lumber Co., Dolphin 2
92. Linton Landing Light (1913)
93. Post Office Bar, Front Range Light (1913)
94. W Oregon Lumber Co., Tallyer & Farther Downstream of 2 Stacks
95. W Oregon Lumber Co., Stack
96. Portland, St Johns, Terminal 4, Pier 1, Flagstaff
97. Portland, St Johns, Terminal 4, Pier 2, Flagstaff
98. Portland, St Johns, Terminal 4 Black Elevated Tank
99. Portland, Linnton, Clark & Wilson Lumber Co., Tallest & Farthest  
 Downstream of 3 Stacks
100. Portland, Linton, Clark & Wilson Lumber Co., Burner
101. Portland, Linnton Sunset Oil Co., N Derrick
102. Portland, Linnton, Sunset Oil Co, S Derrick
103. Portland Woolen Mills, Stack
104. Portland Woolen Mills, Red Tank
105. Portland Woolen Mills Power House, Apex
106. St Johns Bridge, NW Spire
107. St Johns Bridge, SW Spire
108. St Johns Bridge, NE Spire
109. St Johns Bridge, SE Spire
110. St Johns Fire & Police Station, Cupola, Flagstaff
111. Inshore 1 of 2 White Tanks
112. Portland, Willamette Blvd & N Oswego Ave, Water Tank
113. Portland, Lumber Co., Farther Upstream of 2 Stacks
114. Portland, Elevated Brown Wooden Tank (St Johns LBR Co 1913)
115. St Johns Lumber Co., Inshore Stack
116. Portland, Veneer Co., Black Stack
117. Portland Manufacturing Co., Elevated Black Tank
118. Portland, USE Mooring Derrick
119. Fairmount Gas Co., Stack
120. Portland, Gas & Coke Co, Plant, Stack
121. Portland, Block Signal, NE End of SP&S RR Bridge
122. Portland, Light Stand, Downstream End of SP&S RR Bridge
123. Downstream Mile Marker
124. Portland, Light Stand, Upstream End of SP&S RR Bridge
125. Portland, Shell Oil Co., Dock, Flagpole
126. Portland, Standard Oil Co., Dock, Flagpole
127. Portland, Union Oil Co., Dock, Flagpole
128. Portland, Dolphin 4, E Side of River
129. Portland Measured Mile Front Range, Downstream End, Target
130. Portland, Swan Island, Aviation Beacon
131. Portland, Swan Island, Middle Light
132. Portland, Front Range Measured Statute Mile, Target
133. Portland, Front Range Measured Nautical Mile, Target
134. Portland, Dolphin 4
135. Portland, Dolphin 3
136. Portland, Dolphin 1
137. Olympic Flour Mill, Water Tank
138. Portland, KERR-Gifford Elevator, Flagstaff
139. Portland, Union Pacific RR Dock, Flagstaff
140. Portland, A-Frame, Ball, Eagle, Flagstaff
141. 48-2 (USE)
142. Portland, Eastern & Western Lumber Co. Tank
143. Portland, Eastern & Western LBR Co., More Easterly of 2 Stacks
144. Portland, Quaker, Calif, Eastern States Line, Tank
145. Portland, US Custom-House, N End, Flagstaff
146. Portland, US Custom-House, S End, Flagstaff
147. Portland, American Hotel, Flagstaff
148. Portland, Red Wooden Tank Near Hirsch-Weiss Co.
149. Portland, Hirsch-Weiss Co, Elevated Black Tank
150. Portland, Trinity Lutheran Church Cross
151. Portland, Burnside Bridge, E Control Tower
152. Portland, Blake, Moffat & Towne, Elevated Black Tank
153. Portland, Seed Co., Elevated Black Tank
154. Portland, John Deere Co., Tank
155. Portland, Wadhams Food Products, Elevated Black Tank
156. Portland, Terminal 2, N End, Flagstaff
157. Portland, KXL Radio Mast (On Multnomah Hotel Roof)
158. Portland, Public Market, S Tower
159. Portland, Public Market, N Tower
160. Portland, International Harvester Co., Flagstaff
161. Portland, Spaulding Bldg Materials Co., Black Tank
162. Portland, Columbia Contract Co., Black Tank
163. Portland, Courthouse, Dome (LOST)
164. Portland, County Building, Flagstaff
165. Portland, Northwestern Electric Co., Farthest Downstream of 3 Stacks
166. Portland, Inman-Poulson Lumber Co., Elevated Gray Tank
167. Portland, Ford Motor Co., Elevated Aluminum Colored Tank
168. Portland, Church Cupola, Cross on Gold Ball
169. Portland, Red Conical Roof (E End of Ross Island Bridge)
170. Portland, Green Conical Roof (E End of Ross Island Bridge)
171. Portland, Church Steeple, Silver Cross

153. Portland, Apex of Power Line (Near Rock Crusher)
154. Portland, Multnomah LBR & Box Co, More Northerly of 2 Stacks
- Portland, Multnomah LBR & Box Co, More Southerly of 2 Stacks
155. Portland, Oaks Park, Offshore Dolphin
156. Portland, Oregon Yacht Club, Cupola, Flagstaff
157. Portland, E Side Mill & LBR Co & Ore Door Co., Farthest Downstream of 5 Stacks
158. Selwood West
- Portland Sellwood Bridge, Light Pole Over W Pier
159. Portland, E Side Mill & LBR Co & Ore Door Co., Tank
160. Vancouver, Columbia River Paper Mills, Tank
161. Quartermaster Wharf (LOST)
162. Dolphin (Old Rear) (USE) (LOST)
163. Dike V2.3, Dolphin At N End (LOST)
- Vancouver, Lower Front Range Light (1938) (LOST)
164. Dike V1.5, Dolphin At N End (LOST)
165. Smaller of 2 Stacks Near Station Pacific
166. Vancouver, Port of Vancouver Elev Tank, Silver Top, Near Station Pacific
167. N Portland, Yacht Club, Cupola, Flagstaff
168. Tomahawk Island, Upper Dike Light (1938)
169. N Portland, Columbia Edgewater Golf Club, Flagpole (LOST)
170. Vancouver, County Couthouse, Clock Tower, Cupola (LOST)
171. Vancouver, Silver Elevated Round Topped Tank
172. Vancouver, Silver Elevated Tank, Conical Top
173. Vancouver, Upstream 1 of 5 Stacks
174. N Portland, Swift & Co, Smaller of 2 Stacks
175. 39 (USE)
- 39-2 (USE)
176. Portland, Waterworks, Pumping Tower (LOST)
177. Gattons House, Chimney
178. Portland, Congregational Church, Spire (LOST)
179. Portland BM (USGS)
- Portland Latitude Station (LOST)
- Portland Longitude Station (LOST)
- Portland Custom-House, Dome
180. Portland, Methodist Church, Spire (LOST)
181. Vancouver, Lower Flagstaff (LOST)
- Vancouver Barracks, Flagstaff, West
182. RR Depot, NW Gable (LOST)
183. Vancouver, Upper Flagstaff (LOST)
184. Vancouver, Presbyterian Church (LOST)
185. Vancouver, Episcopal Church (LOST)
186. Oil
- Oil ECC
187. East Tower
188. University of Portland, Observatory Telescope Center
189. Swan Island Channel, Rear Range Light (1913)
190. Wood (USE)
191. Y (USE)
192. Star (USE)
193. R (USE)
194. 35 (USE)
195. 33 (USE)
196. 26 (USE)
- 26-2 (USE)
197. 23 (USE)
- 23-2 (USE)
198. 54-2 (USE)
199. 58-2 (USE)
200. Portland, YMCA, E Wireless
201. Yeon (Portland, Yeon Building Flagstaff)
202. Portland, St Francis Cathedral, N Spire
- Portland, St Francis Cathedral, S Spire
203. Portland, Olds, Wortman & King Dept Store, Black Iron Stack
204. Lumber Mill, Tall Stack
- Dock Mile Rear Range
205. Swan Island, Rear Range Light (1913)
206. Swan Island Bar, Lower Light (1913)
207. Mocks Bottom Light (1913)
208. Swan Island, Front Range Light (1913)
209. Union Oil Co, White Tank
210. Northern Pacific RR Bridge, Light on Center of Draw
211. Swan Island Bar, Upper Light (1913)
212. St Johns High School
213. High Red Tank On Bluff
214. Red Tank On Bluff, Spindle
215. University, Flagstaff
216. Windmill on Bluff
217. Swan (USE)
- Upstream Mile Rear Range
218. Portland, NE Prescott St & NE 19th Ave, Water Tank
219. Portland, Radio Station KFFD, Mast
220. Portland, Sheraton Hotel, Dome
221. Portland, Willamette Blvd & N Alma Ave., Water Tank
222. Portland, Wisco Water Tank
223. Water Tank W of Station Sub