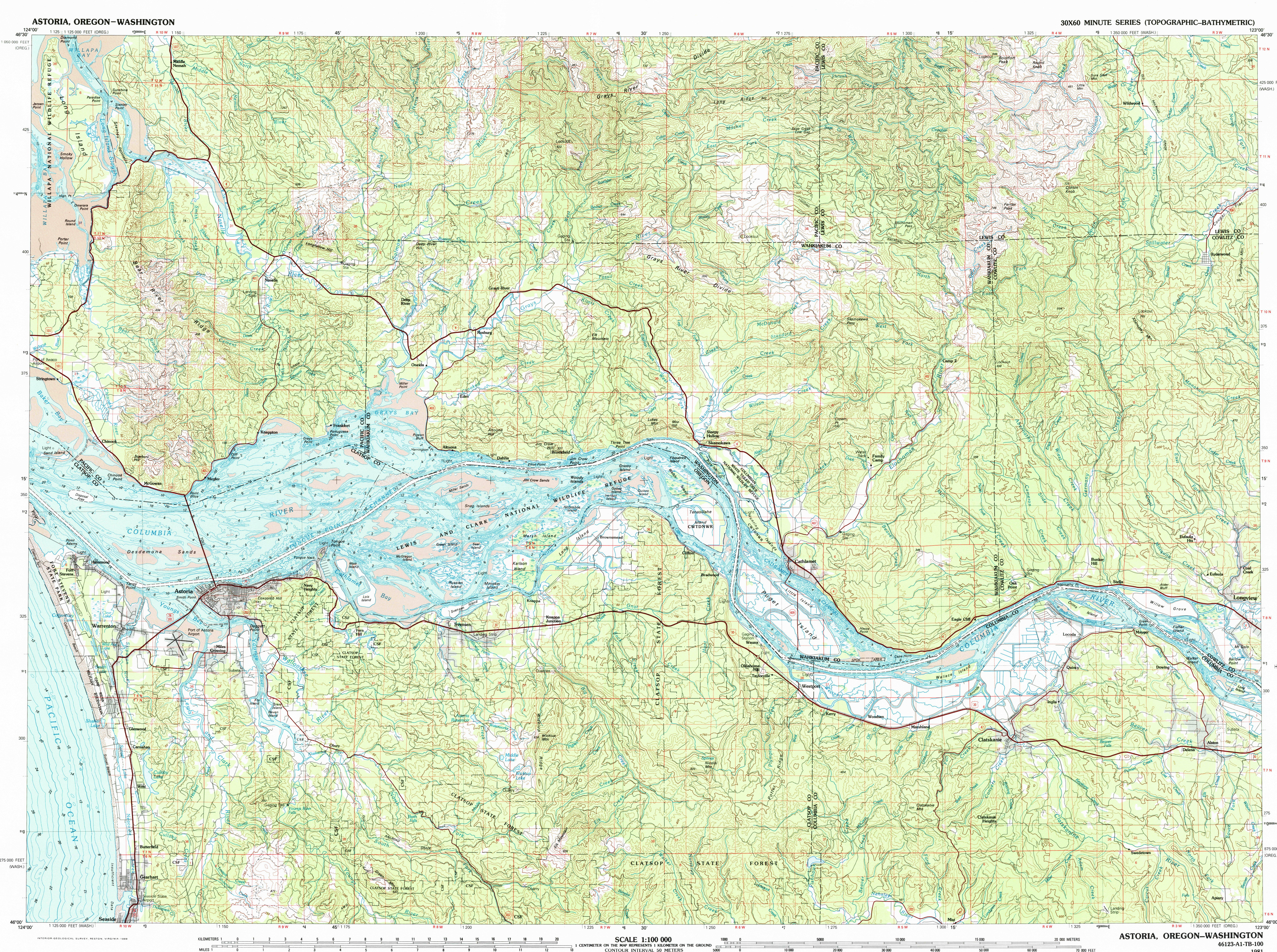


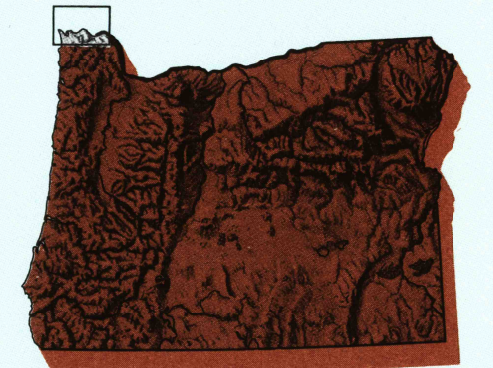




# Astoria

## OREGON-WASHINGTON

1:100 000-scale metric  
topographic-bathymetric map



30 X 60 MINUTE QUADRANGLE  
SHOWING

- Contours and elevations in meters
- Highways, roads and other manmade structures
- Water features
- Woodland areas
- Geographic names
- Bathymetric contours in meters



U. S. GEOLOGICAL SURVEY  
NATIONAL OCEAN SERVICE

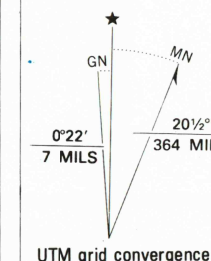
1981

Produced by the United States Geological Survey and the National Ocean Service  
Compiled from USGS 1:250,000 and 1:400,000-scale topographic maps dated 1945-1978. Planimetry revised from aerial photographs taken 1975-79 and other source data. Revised information not field checked. Map edited 1981.  
Bathymetry compiled by the National Ocean Service from tide-coordinated hydrographic surveys. This information is not intended for navigational purposes. Mean lower low water (dashed line) and mean high water (heavy solid line) compiled by NOS from tide-coordinated aerial photographs. Apparent shoreline (center edge of vegetation) shown by light solid line. Projection and 10 000-meter grid, zone 18, Universal Transverse Mercator (UTM) 18Q, grid ticks based on Washington coordinate system, south zone and Oregon coordinate system, north zone.  
To place on the predicted North American Datum 1983 move the projection lines 24 meters north and 16 meters east.  
Bathymetry added 1989.  
There may be private buildings within the boundaries of National or State reservations shown on this map.  
CONTOUR INTERVAL: 10 METERS  
NATIONAL GEODETIC VERTICAL DATUM OF 1929  
ELEVATIONS SHOWN TO THE NEAREST METER  
BATHYMETRIC CONTOUR INTERVAL: 10 METERS WITH SUPPLEMENTARY 5-METER CONTOURS IN DEEPER WATER  
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE  
BATHYMETRIC SURVEY DATA COMPILES WITH INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO) SPECIAL PUBLICATION 44 ACCURACY STANDARDS AND/OR STANDARDS USED AS OF THE DATE OF THE SURVEY

| CONVERSION TABLE |         |
|------------------|---------|
| Meters           | Feet    |
| 1                | 3.2808  |
| 2                | 6.5617  |
| 3                | 9.8425  |
| 4                | 13.1234 |
| 5                | 16.4042 |
| 6                | 19.6850 |
| 7                | 22.9659 |
| 8                | 26.2467 |
| 9                | 29.5276 |
| 10               | 32.8084 |

To convert meters to feet multiply by 3.2808  
To convert feet to meters multiply by 0.3048

DECLINATION DIAGRAM



UTM grid convergence (GN) and 1983 magnetic declination (MN) at center of map  
Diagram is approximate

ADJOINING MAPS

| 1        | 2                | 3             |
|----------|------------------|---------------|
| Westport | Chelatchie River | Centralia     |
| 3        | Centralia        | Beacon        |
| 5        | Mt. St. Helens   | 7             |
| 6        | 7                | Nahalem River |
| 7        | Nahalem River    | 8             |
| 8        | 8                | Vancouver     |

RECEIVED

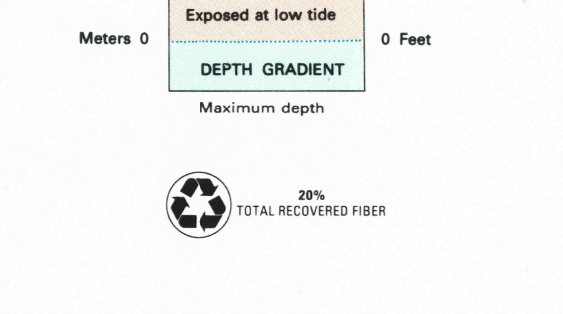
MAY 3 0 2002

HISTORICAL MAP ARCHIVES

Topographic Map Symbols

|                                                             |       |
|-------------------------------------------------------------|-------|
| Primary highway, hard surface                               | ..... |
| Secondary highway, hard surface                             | ..... |
| Light duty road, principal street, hard or improved surface | ..... |
| Other road or street, rail                                  | ..... |
| Route marker, Interstate, U. S. State                       | ..... |
| Railroad, standard gage; narrow gage                        | ..... |
| Bridge, overpass; underpass                                 | ..... |
| Tunnel; road, railroad                                      | ..... |
| Butt up area, locality, elevation                           | ..... |
| Airport, landing field, landing strip                       | ..... |
| National boundary                                           | ..... |
| State boundary                                              | ..... |
| County boundary                                             | ..... |
| National or State reservation boundary                      | ..... |
| Land grant boundary                                         | ..... |
| U. S. public lands survey; range, township, section         | ..... |
| Range, township, section line; protected                    | ..... |
| Power transmission line; pipeline                           | ..... |
| Dam; dam with lock                                          | ..... |
| Cemetery, building                                          | ..... |
| Windmill; water well; spring                                | ..... |
| Mine shaft; adit or cave; mine, quarry; gravel pit          | ..... |
| Campground; picnic area; U. S. location monument            | ..... |
| Run; cliff dwelling                                         | ..... |
| Distorted surface; strip mine, levee, sand                  | ..... |
| Contours; index, intermediate, supplementary                | ..... |
| Bathymetric contours; index, intermediate                   | ..... |
| Stream, lake; perennial; intermittent                       | ..... |
| Rapids, large and small; falls, large and small             | ..... |
| Area to be submerged; marsh, swamp                          | ..... |
| Land subject to controlled inundation; woodland             | ..... |
| Scrub; mangrove                                             | ..... |
| Orchard; vineyard                                           | ..... |

A pamphlet describing topographic maps is available on request



Exposed at low tide

DEPTHS GRADIENT

Maximum depth

25% NOTAL COVERED FIBER

| HYDROGRAPHIC SURVEY INFORMATION |             |              |                                   |               |             |              |                                   |
|---------------------------------|-------------|--------------|-----------------------------------|---------------|-------------|--------------|-----------------------------------|
| SURVEY NUMBER                   | SURVEY DATE | SURVEY SCALE | SURVEY LINE SPACING (NAUT. MILES) | SURVEY NUMBER | SURVEY DATE | SURVEY SCALE | SURVEY LINE SPACING (NAUT. MILES) |
| H-4612                          | 1926        | 1:250,000    | 05-25                             | H-7815        | 1950        | 1:100,000    | 01-08                             |
| H-4613                          | 1926        | 1:250,000    | 05-25                             | H-7816        | 1950        | 1:100,000    | 01-08                             |
| H-4614                          | 1926        | 1:250,000    | 05-25                             | H-7817        | 1950        | 1:100,000    | 01-08                             |
| H-4615                          | 1926        | 1:250,000    | 05-25                             | H-7818        | 1950        | 1:100,000    | 01-08                             |
| H-4616                          | 1926        | 1:250,000    | 05-25                             | H-7819        | 1950        | 1:100,000    | 01-08                             |
| H-4617                          | 1926        | 1:250,000    | 05-25                             | H-7820        | 1950        | 1:100,000    | 01-08                             |
| H-4618                          | 1926        | 1:250,000    | 05-25                             | H-7821        | 1950        | 1:100,000    | 01-08                             |
| H-4619                          | 1926        | 1:250,000    | 05-25                             | H-7822        | 1950        | 1:100,000    | 01-08                             |
| H-4620                          | 1926        | 1:250,000    | 05-25                             | H-7823        | 1950        | 1:100,000    | 01-08                             |
| H-4621                          | 1926        | 1:250,000    | 05-25                             | H-7824        | 1950        | 1:100,000    | 01-08                             |
| H-4622                          | 1926        | 1:250,000    | 05-25                             | H-7825        | 1950        | 1:100,000    | 01-08                             |
| H-4623                          | 1926        | 1:250,000    | 05-25                             | H-7826        | 1950        | 1:100,000    | 01-08                             |
| H-4624                          | 1926        | 1:250,000    | 05-25                             | H-7827        | 1950        | 1:100,000    | 01-08                             |
| H-4625                          | 1926        | 1:250,000    | 05-25                             | H-7828        | 1950        | 1:100,000    | 01-08                             |
| H-4626                          | 1926        | 1:250,000    | 05-25                             | H-7829        | 1950        | 1:100,000    | 01-08                             |
| H-4627                          | 1926        | 1:250,000    | 05-25                             | H-7830        | 1950        | 1:100,000    | 01-08                             |
| H-4628                          | 1926        | 1:250,000    | 05-25                             | H-7831        | 1950        | 1:100,000    | 01-08                             |
| H-4629                          | 1926        | 1:250,000    | 05-25                             | H-7832        | 1950        | 1:100,000    | 01-08                             |
| H-4630                          | 1926        | 1:250,000    | 05-25                             | H-7833        | 1950        | 1:100,000    | 01-08                             |
| H-4631                          | 1926        | 1:250,000    | 05-25                             | H-7834        | 1950        | 1:100,000    | 01-08                             |
| H-4632                          | 1926        | 1:250,000    | 05-25                             | H-7835        | 1950        | 1:100,000    | 01-08                             |
| H-4633                          | 1926        | 1:250,000    | 05-25                             | H-7836        | 1950        | 1:100,000    | 01-08                             |
| H-4634                          | 1926        | 1:250,000    | 05-25                             | H-7837        | 1950        | 1:100,000    | 01-08                             |
| H-4635                          | 1926        | 1:250,000    | 05-25                             | H-7838        | 1950        | 1:100,000    | 01-08                             |
| H-4636                          | 1926        | 1:250,000    | 05-25                             | H-7839        | 1950        | 1:100,000    | 01-08                             |
| H-4637                          | 1926        | 1:250,000    | 05-25                             | H-7840        | 1950        | 1:100,000    | 01-08                             |
| H-4638                          | 1926        | 1:250,000    | 05-25                             | H-7841        | 1950        | 1:100,000    | 01-08                             |
| H-4639                          | 1926        | 1:250,000    | 05-25                             | H-7842        | 1950        | 1:100,000    | 01-08                             |
| H-4640                          | 1926        | 1:250,000    | 05-25                             | H-7843        | 1950        | 1:100,000    | 01-08                             |
| H-4641                          | 1926        | 1:250,000    | 05-25                             | H-7844        | 1950        | 1:100,000    | 01-08                             |
| H-4642                          | 1926        | 1:250,000    | 05-25                             | H-7845        | 1950        | 1:100,000    | 01-08                             |
| H-4643                          | 1926        | 1:250,000    | 05-25                             | H-7846        | 1950        | 1:100,000    | 01-08                             |
| H-4644                          | 1926        | 1:250,000    | 05-25                             | H-7847        | 1950        | 1:100,000    | 01-08                             |
| H-4645                          | 1926        | 1:250,000    | 05-25                             | H-7848        | 1950        | 1:100,000    | 01-08                             |
| H-4646                          | 1926        | 1:250,000    | 05-25                             | H-7849        | 1950        | 1:100,000    | 01-08                             |
| H-4647                          | 1926        | 1:250,000    | 05-25                             | H-7850        | 1950        | 1:100,000    | 01-08                             |
| H-4648                          | 1926        | 1:250,000    | 05-25                             | H-7851        | 1950        | 1:100,000    | 01-08                             |
| H-4649                          | 1926        | 1:250,000    | 05-25                             | H-7852        | 1950        | 1:100,000    | 01-08                             |
| H-4650                          | 1926        | 1:250,000    | 05-25                             | H-7853        | 1950        | 1:100,000    | 01-08                             |
| H-4651                          | 1926        | 1:250,000    | 05-25                             | H-7854        | 1950        | 1:100,000    | 01-08                             |
| H-4652                          | 1926        | 1:250,000    | 05-25                             | H-7855        | 1950        | 1:100,000    | 01-08                             |
| H-4653                          | 1926        | 1:250,000    | 05-25                             | H-7856        | 1950        | 1:100,000    | 01-08                             |
| H-4654                          | 1926        | 1:250,000    | 05-25                             | H-7857        | 1950        | 1:100,000    | 01-08                             |
| H-4655                          | 1926        | 1:250,000    | 05-25                             | H-7858        | 1950        | 1:100,000    | 01-08                             |
| H-4656                          | 1926        | 1:250,000    | 05-25                             | H-7859        | 1950        | 1:100,000    | 01-08                             |
| H-4657                          | 1926        | 1:250,000    | 05-25                             | H-7860        | 1950        | 1:100,000    | 01-08                             |
| H-4658                          | 1926        | 1:250,000    | 05-25                             | H-7861        | 1950        | 1:100,000    | 01-08                             |
| H-4659                          | 1926        | 1:250,000    | 05-25                             | H-7862        | 1950        | 1:100,000    | 01-08                             |
| H-4660                          | 1926        | 1:250,000    | 05-25                             | H-7863        | 1950        | 1:100,000    | 01-08                             |
| H-4661                          | 1926        | 1:250,000    | 05-25                             | H-7864        | 1950        | 1:100,000    | 01-08                             |
| H-4662                          | 1926        | 1:250,000    | 05-25                             | H-7865        | 1950        | 1:100,000    | 01-08                             |
| H-4663                          | 1926        | 1:250,000    | 05-25                             | H-7866        | 1950        | 1:100,000    | 01-08                             |
| H-4664                          | 1926        | 1:250,000    | 05-25                             | H-7867        | 1950        | 1:100,000    | 01-08                             |
| H-4665                          | 1926        | 1:250,000    | 05-25                             | H-7868        | 1950        | 1:100,000    | 01-08                             |
| H-4666                          | 1926        | 1:250,000    | 05-25                             | H-7869        | 1950        | 1:100,000    | 01-08                             |
| H-4667                          | 1926        | 1:250,000    | 05-25                             | H-7870        | 1950        | 1:100,000    | 01-08                             |
| H-4668                          | 1926        | 1:250,000    | 05-25                             | H-7871        | 1950        | 1:100,000    | 01-08                             |
| H-4669                          | 1926        | 1:250,000    | 05-25                             | H-7872        | 1950        | 1:100,000    | 01-08                             |
| H-4670                          | 1926        | 1:250,000    | 05-25                             | H-7873        | 1950        | 1:100,000    | 01-08                             |
| H-4671                          | 1926        | 1:250,000    | 05-25                             | H-7874        | 1950        | 1:100,000    | 01-08                             |
| H-4672                          | 1926        | 1:250,000    | 05-25                             | H-7875        | 1950        | 1:100,000    | 01-08                             |
| H-4673                          | 1926        | 1:250,000    | 05-25                             | H-7876        | 1950        | 1:100,000    | 01-08                             |
| H-4674                          | 1926        | 1:250,000    | 05-25                             | H-7877        | 1950        | 1:100,000    | 01-08                             |
| H-4675                          | 1926        | 1:250,000    | 05-25                             | H-7878        | 1950        | 1:100,000    | 01-08                             |
| H-4676                          | 1926        | 1:250,000    | 05-25                             | H-7879        | 1950        | 1:100,000    | 01-08                             |
| H-4677                          | 1926        | 1:250,000    | 05-25                             | H-7880        | 1950        | 1:100,000    | 01-08                             |
| H-4678                          | 1926        | 1:250,000    | 05-25                             | H-7881        | 1950        | 1:100,000    | 01-08                             |
| H-4679                          | 1926        | 1:250,000    | 05-25                             | H-7882        | 1950        | 1:100,000    | 01-08                             |
| H-4680                          | 1926        | 1:250,000    | 05-25                             | H-7883        | 1950        | 1:100,000    | 01-08                             |
| H-4681                          | 1926        | 1:250,000    | 05-25                             | H-7884        | 1950        | 1:100,000    | 01-08                             |
| H-4682                          | 1926        | 1:250,000    | 05-25                             | H-7885        | 1950        | 1:100,000    | 01-08                             |
| H-4683                          | 1926        | 1:250,000    | 05-25                             | H-7886        | 1950        | 1:100,000    | 01-08                             |
| H-4684                          | 1926        | 1:250,000    | 05-25                             | H-7887        | 1950        | 1:100,000    | 01-08                             |
| H-4685                          | 1926        | 1:250,000    | 05-25                             | H-7888        | 1950        | 1:100,000    | 01-08                             |
| H-4686                          | 1926        | 1:250,000    | 05-25                             | H-7889        | 1950        | 1:100,000    | 01-08                             |
| H-4687                          | 1926        | 1:250,000    | 05-25                             | H-7890        | 1950        | 1:100,000    | 01-08                             |
| H-4688                          | 1926        | 1:250,000    | 05-25                             | H-7891        | 1950        | 1:100,000    | 01-08                             |
| H-4689                          | 1926        | 1:250,000    | 05-25                             | H-7892        | 1950        | 1:100,000    | 01-08                             |
| H-4690                          | 1926        | 1:250,000    | 05-25                             | H-7893        | 1950        | 1:100,000    | 01-08                             |
| H-4691                          | 1926        | 1:250,000    | 05-25                             | H-7894        | 1950        | 1:100,000    | 01-08                             |
| H-4692                          | 1926        | 1:250,000    | 05-25                             | H-7895        | 1950        | 1:100,000    | 01-08                             |
| H-4693                          | 1926        | 1:250,000    | 05-25                             | H-7896        | 1950        | 1:100,000    | 01-08                             |
| H-4694                          | 1926        | 1:250,000    | 05-25                             | H-7897        | 1950        | 1:100,000    | 01-08                             |
| H-4695                          | 1926        | 1:250,000    | 05-25                             | H-7898        | 1950        | 1:100,000    | 01-08                             |
| H-4696                          | 1926        | 1:250,000    | 05-25                             | H-7899        | 1950        | 1:100,000    | 01-08                             |
| H-4697                          | 1926        | 1:250,000    | 05-25                             | H-7900        | 1950        | 1:100,000    | 01-08                             |
| H-4698                          | 1926        | 1:250,000    | 05-25                             | H-7901        | 1950        | 1:100,000    | 01-08                             |
| H-4699                          | 1926        | 1:250,000    | 05-25                             | H-7902        | 1950        | 1:100,000    | 01-08                             |
| H-4700                          | 1926        | 1:250,000    | 05-25                             | H-7903        | 1950        | 1:100,000    | 01-08                             |
| H-4701                          | 1926        | 1:250,000    | 05-25                             | H-7904        | 1950        | 1:100,000    | 01-08                             |
| H-4702                          | 1926        | 1:250,000    | 05-25                             | H-7905        | 1950        | 1:100,000    | 01-08                             |
| H-4703                          | 1926        | 1:250,000    | 05-25                             | H-7906        | 1950        | 1:100,000    | 01-08                             |
| H-4704                          | 1926        | 1:250,000    | 05-25                             | H-7907        | 1950        | 1:100,000    | 01-08                             |
| H-4705                          | 1926        | 1:250,000    | 05-25                             | H-7908        | 1950        | 1:100,000    | 01-08                             |
| H-4706                          | 1926        | 1:250,000    | 05-25                             | H-7909        | 1950        | 1:100,000    | 01-08                             |
| H-4707                          | 1926        | 1:250,000    | 05-25                             | H-7910        | 1950        | 1:100,000    | 01-08                             |
| H-4708                          | 1926        | 1:250,000    | 05-25                             | H-7911        | 1950        | 1:100,000    | 01-08                             |
| H-4709                          | 1926        | 1:250,000    | 05-25                             | H-7912        | 1950        | 1:100,000    | 01-08                             |
| H-4710                          | 1926        | 1:250,000    | 05-25                             | H-7913        | 1950        | 1:100,000    | 01-08                             |
| H-4711                          | 1926        | 1:250,000    | 05-25                             | H-7914        | 1950        | 1:100,000    | 01-08                             |
| H-4712                          | 1926        | 1:250,000    | 05-25                             | H-7915        | 1950        | 1:100,000    | 01-08                             |
| H-4713                          | 1926        | 1:250,000    | 05-25                             | H-7916        | 1950        | 1:100,000    | 01-08                             |
| H-4714                          | 1926        | 1:250,000    | 05-25                             | H-7917        | 1950        | 1:100,000    | 01-08                             |
| H-4715                          | 1926        | 1:250,000    | 05-25                             | H-7918        | 1950        | 1:100,000    | 01-08                             |
| H-4716                          | 1926        | 1:250,000    | 05-25                             | H-7919        | 1950        | 1:100,000    | 01-08                             |
| H-4717                          | 1926        | 1:250,000    | 05-25                             | H-7920        | 1950        | 1:100,000    | 01-08                             |
| H-4718                          | 1926        | 1:250,000    | 05-25                             | H-7921        | 1950        | 1:100,000    | 01-08                             |
| H-4719                          | 1926        | 1:250,000    | 05-25                             | H-7922        | 1950        | 1:100,000    | 01-08                             |
| H-4720                          | 1926        | 1:250,000    | 05-25                             | H-7923        | 1950        | 1:100,000    | 01-08                             |
| H-4721                          | 1926        | 1:250,000    | 05-25                             | H-7924        | 1950        | 1:100,000    | 01-08                             |
| H-4722                          | 1926        | 1:250,000    | 05-25                             | H-7925        | 1950        | 1:100,000    | 01-08                             |
| H-4723                          | 1926        | 1:250,000    | 05-25                             | H-7926        | 1950        | 1:100,000    | 01-08                             |
| H-4724                          | 1926        | 1:250,000    | 05-25                             | H-7927        | 1950        | 1:100,000    | 01-08                             |
| H-4725                          | 1926        | 1:250,000    | 05-25                             | H-7928        | 1950        | 1:100,000    | 01-08                             |
| H-4726                          | 1926        | 1:250,000    | 05-25                             | H-7929        | 1950        | 1:100,000    | 01-08                             |
| H-4727                          | 1926        | 1:250,000    | 05-25                             | H-7930        | 1950        | 1:100,000    | 01-08                             |
| H-4728                          | 1926        | 1:250,000    | 05-25                             | H-7931        | 1950        | 1:100,000    | 01-08                             |
| H-4729                          | 1926        | 1:250,000    | 05-25                             | H-7932        | 1950        | 1:100,000    | 01-08                             |
| H-4730                          | 1926        | 1:250,000    | 05-25                             | H-7933        | 1950        | 1:100,000    | 01-08                             |
| H-4731                          | 1926        | 1:250,000    | 05-25                             | H-7934        | 1950        | 1:100,000    | 01-08                             |
| H-4732                          | 1926        | 1:250,000    | 05-25                             | H-7935        | 1950        | 1:100,000    | 01-08                             |
| H-4733                          | 1926        | 1:250,000    | 05-25                             | H-7936        | 1950        | 1:100,000    | 01-08                             |
| H-4734                          | 1926        | 1:250,000    | 05-25                             | H-7937        | 1950        | 1:100,000    | 01-08                             |
| H-4735                          | 1926        | 1:250,000    | 05-25                             | H-7938        | 1950        | 1:100,000    | 01-08                             |
| H-4736                          | 1926        | 1:250,000    | 05-25                             | H-7939        | 1950        | 1:100,000    | 01-08                             |
| H-4737                          | 1926        | 1:250,000    | 05-25                             | H-7940        | 1950        | 1:100,000    | 01-08                             |
| H-4738                          | 1926        | 1:250,000    | 05-25                             | H-7941        | 1950        | 1:100,000    | 01-08                             |
| H-4739                          | 1926        | 1:250,000    | 05-25                             | H-7942        | 1950        | 1:100,000    | 01-08                             |
| H-4740                          | 1926        | 1:250,000    | 05-25                             | H-7943        | 1950        | 1:100,000    | 01-08                             |
| H-4741                          | 1926        | 1:250,000    | 05-25                             | H-7944        | 1950        | 1:100,000    | 01-08                             |
| H-4742                          | 1926        | 1:250,000    | 05-25                             | H-7945        | 1950        | 1:100,000    | 01-08                             |
| H-4743                          | 1926        | 1:250,000    | 05-25                             | H-7946        | 1950        | 1:100,000    | 01-08                             |
| H-4744                          | 1926        | 1:250,000    | 05-25                             | H-7947        | 1950        | 1:100,000    | 01-08                             |
| H-4745                          | 1926        | 1:250,000    | 05-25                             | H-7948        | 1950        | 1:100,000    | 01-08                             |
| H-4746                          | 1926        | 1:250,000    | 05-25                             | H-7949        | 1950        | 1:100,000    | 01-08                             |
| H-4747                          | 1926        | 1:250,000    | 05-25                             | H-7950        | 1950        | 1:100,000    | 01-08                             |
| H-4748                          | 1926        | 1:250,       |                                   |               |             |              |                                   |