K-625 1766

Mason & Dixon Survey 55-Mile Crownstone

Near Millington

Public

Standing about 100 feet south of the center of Maryland Route 291 east of Millington, mile marker number 55 of the Maryland-Delaware north-south boundary (counting from the south end) is a "crownstone" that was set in 1766 by the Mason and Dixon survey team. Standing about 26" high and measuring about 12" square with a pyramidal top, the grey limestone monument, though weathered and chipped, still displays its original decorative elements. The most notable are the shields on the east and west faces. The shield of the proprietary family of Maryland, the Calverts, faces west; the crown that is its topmost element gave these five-mile markers the appellation of crownstone. Facing east is the shield of the Penn family, the proprietary family of Pennsylvania and its Three Lower Counties, the name for Delaware until 1776. This crownstone stands as Kent County's most visible silent reminder of the historic Mason-Dixon survey of 1763-68, a remarkably accurate survey that settled the longstanding dispute between the Lords Baltimore and the Penn family over the precise extent of the lands of each. One of nine mile markers, and one of only two crownstones, placed on Kent County's portion of the Tangent Line (the north-south line), it is the only one that is easily accessible and visible to the public and is also in reasonably good condition. Still serving as a boundary monument, it also documents the little-known fact that the Mason-Dixon survey accomplished more than determining the northern boundary of Maryland, popularly known as the Mason-Dixon line.

Survey No. K-625

Magi No. 1506255234

DOE ___yes ___no

Maryland Historical Trust
State Historic Sites Inventory Form

1. Name (indicate preferred name)

historic

and/or common Mason & Dixon Survey 55-Mile Crownstone

2. Location

street & number South side Rt. 291 at the Maryland-Delaware boundary ___ not for publication

city, town Millington X vicinity of congressional district First

state Maryland county Kent

3. Classification

Category	Ownership	Status	Present Use	
___ district	X public	___ occupied	___ agriculture	___ museum
___ building(s)	___ private	___ unoccupied	___ commercial	___ park
___ structure	___ both	___ work in progress	___ educational	___ private residence
___ site	**Public Acquisition**	**Accessible**	___ entertainment	___ religious
X object	___ in process	___ yes: restricted	___ government	___ scientific
	___ being considered	X yes: unrestricted	___ industrial	___ transportation
	X not applicable	___ no	___ military	X other: bound. mont.

4. Owner of Property (give names and mailing addresses of all owners)

name States of Maryland and Delaware
Access easement: County Commissioners of Kent County

street & number Court House telephone no.: 778-4600

city, town Chestertown state and zip code Maryland 21620

5. Location of Legal Description Access easement

courthouse, registry of deeds, etc. Kent County Court House liber EHP 142

street & number Cross Street folio 120

city, town Chestertown state Maryland

6. Representation in Existing Historical Surveys

title None

date ___ federal ___ state ___ county ___ local

depository for survey records

city, town state

7. Description

Survey No. K-625

Condition		Check one	Check one
___ excellent	___ deteriorated	___ unaltered	_X_ original site
_X_ good	___ ruins	_X_ altered	___ moved date of move _____
___ fair	___ unexposed		

Prepare both a summary paragraph and a general description of the resource and its various elements as it exists today.

Standing about 100 feet south of the center of Maryland Route 291 east of Millington, mile marker No. 55 of the Maryland-Delaware north-south boundary (counting from its south end) is a "crownstone" that was set in 1766 by the Mason and Dixon survey team. Standing about 26" high and measuring about 12" square with a pyramidal top, the grey limestone monument, though weathered and chipped on some of its edges, still displays its original decorative elements. The most notable are the shields on the east and west faces. The shield of the proprietary family of Maryland, the Calverts, faces west; the crown that is its topmost element gave these five-mile markers the appellation of crownstone. Facing east is the shield of the Penn family, the proprietary family of Pennsylvania and its Three Lower Counties, the name for Delaware until 1776.

The crownstone that is mile marker number 55 of the Mason and Dixon survey of the eastern boundary of Maryland stands about 100 feet to the south of the center of Maryland Route 291 approximately 4-1/2 miles east of Millington. The ground immediately surrounding the stone appears to be slightly elevated. This writer does not know whether this is the result of a mid-twentieth-century resetting of the stone, perhaps in concrete, or whether this was its original position. Since a 1950 inspection report states that the stone was erect though leaning somewhat, it is not likely that the stone has ever been reset, though the 1961 National Geodetic Survey report for this monument reports it as plumb, with no indication if it was so because of being reset. It now appears to lean slightly to the southwest.

The center of its once more clearly pyramidal top, now eroded and slightly chipped at its edges, stands ca. 26" above the ground. The 1961 report states that during the site visit a small cross was inscribed in its top and center for traverse purposes. Although the marker stones are said to have measured originally 12" square, present apparent measurements are 11-1/4" north-south and 11-3/4" east-west.

The stone is a uniform, medium-grey limestone. At each corner both faces are horizontally fluted. The flutes are approximately 1/2" on center vertically and are ca. 2" wide. Fainter vertical striations, perhaps marks incidental to the cutting of the stone, perhaps intentionally decorative, can be detected in the main face areas.

(Continued)

8. Significance

Survey No. K-625

Period	Areas of Significance—Check and justify below			
___ prehistoric	___ archeology-prehistoric	___ community planning	___ landscape architecture	___ religion
___ 1400–1499	___ archeology-historic	___ conservation	___ law	___ science
___ 1500–1599	___ agriculture	___ economics	___ literature	___ sculpture
___ 1600–1699	___ architecture	___ education	___ military	___ social/humanitarian
X 1700–1799	___ art	X engineering /surveying	___ music	___ theater
___ 1800–1899	___ commerce	___ exploration/settlement	___ philosophy	___ transportation
___ 1900–	___ communications	___ industry	X politics/government	___ other (specify)
		___ invention		

Specific dates 1766 **Builder/Architect**

check: Applicable Criteria: __A __B __C __D
and/or
Applicable Exception: __A __B __C __D __E __F __G

Level of Significance: __national __state __local

Prepare both a summary paragraph of significance and a general statement of history and support.

Mile marker number 55, a crownstone, stands as Kent County's most visible silent reminder of the historic Mason and Dixon survey of 1763-68, a remarkably accurate survey that settled the longstanding dispute between the Lords Baltimore and the Penn family over the precise extent of the lands of each. One of nine mile markers, and one of only two crownstones, places on Kent County's portion of the Tangent Line (the north-south line run by Mason and Dixon between Maryland and the Three Lower Counties of Pennsylvania, as Delaware was then called), it is the only one that is accessible and visible to the public and is also in reasonably good condition. Still serving as a boundary monument, it also documents the little know fact that the Mason-Dixon survey accomplished more than determining the northern boundary of Maryland, popularly know as the Mason-Dixon line.

In the popular mind the Mason-Dixon line is a long east-west boundary line that divided the eastern part of the United States into the two great regions, North and South, that fought a civil war in the 1860s. Aside from the fact that Maryland was not a secessionist state (though much of the state could be call southern in outlook, culture and economy), relatively few know that the east-west line (called the West Line by Mason and Dixon) divided only Maryland from the lands of present-day Pennsylvania and that there were other components of the survey team's work. Most important for Kent County was the work on that part of the north-south line called the Tangent Line, which established authoritatively one of the boundaries between Maryland and Delaware (until 1766 called the Three Lower Counties of Pennsylvania).

(Continued)

9. Major Bibliographical References

Survey No. K-625

William H. Bayliff, The Maryland-Pennsylvania and the Maryland-Delaware Boundaries. Bulletin 4, Second Edition, July 1959. Annapolis, Md.: Board of Natural Resources.

Howard Brice, "Mason-Dixon Line's 2ooth Birthday, "The Sun Magazine (of the Baltimore Sun), December 12, 1963, p. 13. (Continued)

10. Geographical Data

Acreage of nominated property _____

Quadrangle name _____ **Quadrangle scale** _____

UTM **References** do NOT complete UTM references

	Zone	Easting	Northing		Zone	Easting	Northing
A				B			
C				D			
E				F			
G				H			

Verbal boundary description and justification

List all states and counties for properties overlapping state or county boundaries

state	code	county	code
state	code	county	code

11. Form Prepared By

name/title	Margaret Q. Fallaw, Survey Consultant		
organization	County Commissioners of Kent County Historical Society of Kent County	date	June 18, 1986
street & number	Court House Church Alley	telephone	778-4600 778-3499
city or town	Chestertown	state	Maryland

The Maryland Historic Sites Inventory was officially created by an Act of the Maryland Legislature to be found in the Annotated Code of Maryland, Article 41, Section 181 KA, 1974 supplement.

The survey and inventory are being prepared for information and record purposes only and do not constitute any infringement of individual property rights.

return to: Maryland Historical Trust
Shaw House
21 State Circle
Annapolis, Maryland 21401
(301) 269-2438

PS-2746

The armorial shield (using only parts of the family coat of arms) of the Calvert family (the Lords Baltimore) carved on the west face, the Maryland side, measures ca. 7-3/4" wide x 11" high. The shield of the Penn family on the east face measures ca. 7-3/4" wide x 8-3/4" high. Both shields are noticeably eroded from the weather but still readily identifiable. The crown that is the upper portion of the Calvert shield (giving the term crownstone to every fifth mile marker) is badly chipped in the center. Despite the 1961 report of the Geodetic Survey, which states erroneously that the stone displays only M and P carvings, there are no number or letter markings on the stone (only the mile markers between crownstones displayed only a large carved M on the Maryland face and a P on the Delaware face).

The stone has not only been weathered but also has been chipped, most likely by farm implements. Unlike many other Mason-Dixon markers, it does not seem to have suffered intentional abuse. There have been two significant removals from the northwest vertical corner and even larger ones from the southeast corner and south side, from ground level to about 8" above the ground.

Three 36" high galvanized steel 4" x 6" I-beams have been set into the ground in a triangle around the crownstone to protect the stone from further damage. The edge of the nearest one to the stone is ca. 17" from it. An orange plastic witness post placed jointly by the Delaware Geological Survey and the Maryland Geological Survey stands nearby.

A patch of uncultivated, weedy land surrounds the stone, with corn fields beginning about 6' west of the stone on the Maryland side and 15' east of it on the Delaware side. To the south, beyond a ca. 15' weed patch, a large hedgerow extends southward along the boundary line, dividing the cultivated fields. Between the weedy patch to the north and the edge of the road right-of-way the farmfields are continuous across the border. There is now room for a car to park at the edge of the road, and the stone can be easily reached on foot.

A mid-twentieth-century one-story house surrounded by farm fields stands across the road to the north. Several other houses, both farmhouses and rural residences, are visible in the distance along the road on the Maryland side. No buildings in Delaware are visible from the site.

Uncertainty and controversy over the eastern and other boundaries of Maryland plagued Maryland from almost its beginning. The colony's charter of 1632, granted to the first Lord Baltimore, George Calvert, by Charles I, seemed quite precise in its description of boundaries, mentioning specific geographical locations by name, despite the fact that the geography of the area was not well known, mapped, or understood. Over the years some of the geographical locations named in the charter became obscure, and the language of the charter was itself subject to misinterpretation. According to the charter, Lord Baltimore seemed to have been granted all of present-day Delaware and part of present-day Pennsylvania--those lands south of the 40th degree of latitude; west of Delaware Bay, the Delaware River, and the Atlantic Ocean; north and east of the Potomac River; and north of a line from the Chesapeake Bay to the ocean that separated Maryland from Virginia.

Following the voyages of Henry Hudson, the Dutch were the first Europeans to settle in what was to become Maryland's charter area. In 1625 they established a settlement on Manhattan Island and in 1631, eager to extend their New World territory, began a settlement on the west bank of the Delaware at the location of present-day Lewes, Delaware. This settlement lasted only a year, and a second settlement on the west bank, in 1632, likewise did not endure so that by the time the first Maryland colonists arrived in 1634, there were no European colonists in the territory granted to Maryland. This situation was short-lived. During the remainder of the seventeenth century this part of Maryland's territory was hotly contested, first by other Europeans and then by other Englishmen.

The Swedes were the first to actually challenge Maryland land claims. In 1638 a group purchased from the Indians lands on the Delaware west bank from Bombay Hook to the mouth of the Schuykill, and a settlement was established around Fort Christina (now Wilmington). Although the Dutch had not re-colonized the west bank area, they considered the Swedes intruders and moved to eject them, sending a group to build a fort (Fort Casmir, at present-day New Castle) near the Swedish settlement. In 1654 the Swedes captured the fort, but two years later the Dutch recaptured it, renaming it New Amstel, and took Fort Christina as well, ending Swedish control of the area.

During this period Maryland's settlements on the present-day Eastern Shore, as well as on the Western Shore, were small and scattered. The enormity of the colonizing task--with a large territory, a distant seat of government, few colonists, and difficult living conditions--resulted in the Dutch's being left relatively undisturbed for several years. In 1659 Maryland finally sent a delegation to the Dutch at New Amstel to inform them, without effect, that they were illegally settled within Lord Baltimore's grant area. Maryland itself never pressed its claim, though it later benefited (or seemed to benefit) from Charles II's decision to drive the Dutch from North America. The Dutch had become particularly aggressive in the Connecticut Valley. Charles therefore granted to his brother James, the Duke of York, all the land from the west bank of the Connecticut to the Delaware River and Bay, and in 1674 the Duke of York sent a force to expel the Dutch from his lands. Not only did it accomplish that objective, but it also crossed the Delaware into Maryland lands and took the fort at New Amstel, which was then renamed New Castle. The Duke retained these lands by virtue of possession despite the efforts of Lord Baltimore to establish his settlers there; they were simply too few.

Controversy over Maryland's boundaries heightened in the 1680s, when William Penn received land in the New World, and it was not resolved until the Mason and

Dixon survey of the 1760s. In 1680 Penn asked for a royal grant of New World lands in consideration of debts owed his father. Although the intention apparently was to give Penn land to the north of Maryland, north of the 40th degree of latitude (shown on the Augustine Herman map of 1674 as Maryland's northern boundary) and Susquehanna Fort, provisions to which Penn seemed to be agreeable, the charter as written not only omitted reference to Susquehanna Fort but also introduced a new, confusing element.
An arc drawn northward 12 miles from New Castle was supposed to intersect the 40th degree of latitude and, together with it, form the southern border of Penn's lands. However, it was not possible for such a circle to intersect the 40th degree, even by varying interpretations of the size and location of the circle. The use of the circle had been introduced when defining the bounds of the lands of the Duke of York.

Lord Baltimore had been informed of the grant to Penn and was required to met with Penn's agents to fix the boundary. Delays, illness, and growing suspicions resulted in little being accomplished. However, Lord Baltimore refused to acknowledge the Penn claim to everything along the Delaware north of 12 miles north of New Castle since it lay below the 40th degree of latitude. Penn countered that Maryland's charter stated only that its lands were to lie "under the Fortieth Degree of North Latitude," which did not necessarily mean that they were to extend to it. In short, north-south territorial claims overlapped.

Lord Baltimore's difficulties were not limited to the area around New Castle. In August 1682, fearing that his colony would be landlocked if Baltimore's claim to the 40th degree was sustained (denying Penn access to the Chesapeake Bay as well as Delaware Bay), Penn persuaded the Duke of York, soon to become King James II, to transfer to him the land on the west bank of the Delaware taken earlier from the Dutch. Unwilling to stymie a future king, the Privy Council did not contest the Duke's professed right, by virtue of conquest and royal support, to transfer this land. In October 1682 Penn arrived at New Castle to take possession of his land west of New Jersey and also declared an "act of union" with that area and the Three Lower Counties on Delaware. Fearing that the success of any encroachments, even through purchase (which Penn offered), by Penn would ultimately invalidate claims to other portions of his grant, Baltimore protested. Each proprietor ordered residents in the disputed areas to pay taxes only to himself and not to his competitor. Under the circumstances the residents, fearing double taxation, were reluctant to pay taxes to either.

The king referred the controversy to the Board of Trade and Foreign Plantations. In 1685 the Board reported that the grant to Baltimore was for only "hitherto uncultivated" land and that the land between the Chesapeake Bay and the Delaware in fact had been in fact occupied by Christians (the Dutch) prior to the date of his charter. Therefore, the Board held that part of the grant to be invalid from the beginning. To resolve the dispute the Board recommended that the controversial tract, stated to be north of a line due west from a place they designated as Cape Henlopen, be divided into two approximately equal east-west parts from that line northward to the 40th parallel. Lord Baltimore had lost his claim at least half his lands between the Chesapeake Bay on the west and the Delaware River and the Atlantic Ocean on the east, but his right to at least some territory as far north as the 40th parallel was confirmed.

During the next few years English political changes, which resulted in both colonies' becoming royal colonies for a time, as well as financial difficulties and

successions of ownership within the Calvert and Penn families, led to a quiescence of the boundary dispute. Penn died in 1718, and his widow deeded his provincial holdings to their four sons. She also petitioned for resolution of the boundary question in accordance with the decision of 1685. Increasing population in the disputed areas, with attendant disputes over taxes, led Lord Baltimore to agree that the issue must be resolved; he petitioned in 1731 for charter confirmation and a resolution of the boundary conflict. The question was again referred to the Board for Trade and Plantations.

Since it was difficult to describe the boundaries only verbally, each side provided a map. Each side asserted later that it was the other's or a false map that was adopted, giving advantage to the opponent. The map showed a Cape Henlopen (one of the reference points mentioned in the 1685 decision), from which point a line was to be drawn west to the Chesapeake Bay, the line to be the southern limit of Penn territory. This line was also to be divided equally and a line run northward from its mid-point to touch (or be tangent) on the western edge of a circle 12 miles from New Castle. The Penns were to control the area north of the transpeninsular line that was east of the tangent line. What was shown on the map for the 1732 agreement as Cape Henlopen was not present-day Cape Henlopen, however, but Fenwick Island, 15 miles to the south, a disadvantage to Maryland. Present-day Cape Henlopen was labelled Cape Cornelius. In this agreement the Maryland proprietor also lost his claim to lands as far north as the 40th parallel. A north-south line was to be continued from the tangent point northward to an east-west line drawn 15 miles south of the southernmost point of the city of Philadelphia. This east-west line, substantially south of the 40th degree of latitude, was to form the northern boundary of Maryland.

Each side was to appoint seven commissioners to supervise marking of the boundaries as provided for in the agreement. Governor Ogle was one of the commissioners for Maryland while his counterpart in Pennsylvania, Governor Gordon, also served. The first meeting was held in Chestertown (then called New Town) and later in other locations. However, the commissioners could not agree on two crucial questions: what should be the center of New Castle from which any measurement should be made, and what was meant by a 12-mile circle. A more easterly location for the center of New Castle would favor Maryland, as would a small circle, which would place the tangent point farther to the east and thus give Maryland more land all the way from the middle point of the transpeninsular line to the tangent point on the circle. Pennsylvania argued for a circle with a 12-mile radius, while Maryland fought for a circle with a 12-mile circumference (which would have had a radius of about two miles). The commissioners finally signed a joint statement that they could reach no agreement.

Increasing border disputes, especially in the north of Maryland, caused the Governor and General Assembly to petition for protection and relief. In 1738 a moratorium on the making of further grants in the disputed area was decreed, and disorders were enjoined. The king ordered a temporary east-west boundary line drawn approximately 15 miles south of Philadelphia and extended westward. The matter of the New Castle circle and the location of the transpeninsular line were not treated.

In 1734 Lord Baltimore also petitioned the king for charter confirmation. The Penns then petitioned for dismissal of Maryland's petition and for confirmation of their own title. The dispute was referred to Chancery, where an acrimonious battle was waged from 1735 to 1750. The final decree by the High Chancellor in

1750 ordered the execution of the agreement of 1732 and also decreed a resolution of the previously unresolved questions about the latitude of the transpeninsular line and the size and location of the circle around New Castle. "The center of the circle was to be the center of the town of New Castle; the circle should have a radius of 12 miles; and 'Cape Henlopen should be taken to be situated at the place where it is laid down and described in the map or plan annexed' to the Articles of Agreement."

In late 1750 the commissioners of both colonies met in New Castle, where they agreed on the dome of the courthouse as the center of New Castle but disagreed over the method of locating the circle and how the English statute mile should be measured. The Maryland delegation refused to let work on the circle begin until further instructions were received. In the meantime two surveyors were sent south to Fenwick Island to begin clearing work on the transpeninsular line that was to run due west from "Cape Henlopen." After a break for the winter, the surveyors cut a swath and measured a line to the Chesapeake Bay. But then the commissioners could not agree on the precise location of the western end of the transpeninsular line. Although the line was to run to the Chesapeake Bay, there was no agreement as to what were the true Bay waters. The Marylanders wanted the line to stop at Slaughter Creek, 66 miles west of the beginning on Fenwick Island. The Pennsylvanians said that the creek was not really part of the Bay, that it was too shallow and not really open water. They favored a 69-mile long transpensinsular line to open water. A shorter transpeninsular line would favor Maryland, putting the middle point (from which a line would be run north to the New Castle circle) farther to the east, while a longer line would favor Pennsylvania by locating the middle point farther to the west. This dispute, with its import for the location of the middle point, was also referred to the High Chancellor. Meanwhile it was felt safe to mark permanently at least the eastern 25 miles of the transpeninsula line, which were not in dispute. This was accomplished in 1751 with the placement of 5-mile stones, which differed considerably from the later Mason-Dixon survey stones.

Due partly to disruptions within the Calvert family, it was not until 1757 that there was a ruling and a draft agreement to resolve the questions of procedure; the agreement was put into final form in 1760 and accepted by both parties. It appears to have favored the Penns throughout. The commissioners then ordered the middle point of the transpeninsular marked and the line calculated and begun from it that was to run north until it touched the New Castle circle due west of the court house. During 1761 this north-south tangent line was run toward New Castle; it is commonly referred to as the Experimental Line of 1761. However, after the New Castle circle was laid out, it was found that the tangent line was too far to the east to intersect a 12-mile-radius circle 12 miles due west of the courthouse. The 1761 surveyors were approximately five miles off to the east. If this line had been adopted, the Eastern Shore of Maryland (and Kent County) would have extended farther to the east than at present. The five-mile error (which favored Maryland) distressed Thomas Penn in particular, who felt it was attributable to faulty instruments (espcially one telescope), some basic astronomical miscalculations, and inability of colonial surveyors to handle the task. He also feared that the inaccurate running of the first line presaged a total survey of questionable accuracy and would lead the Calverts to demand yet another survey and even greater costs.

While Penn sought to arrange a more competent survey, during 1762 and 1763 the surveyors ran another tangent line slightly westward from the Experimental

Line of 1761. It was intended to intersect the due-west radius of the circle more correctly, at the proper distance of 12 miles from the courthouse. This time the goal was more nearly achieved. When the final measurement was made in August, 1763, the inaccuracy was found to be only about 332 feet, a discrepancy that might have become acceptable to the commissioners had they not been informed that the proprietors of both colonies had agreed in June 1763 to hire two new surveyors to come from England to assist with the running of the lines authorized in the 1760 agreement.

Although the new surveyors, Charles Mason and Jeremiah Dixon, would resurvey the tangent line most recently done (laying it still more accurately, only 18 feet off) and remeasure the circle and its radius, their mission was not merely to re-do the earlier work but also to calculate the southern point of Philadelphia, run a line west from it, and calculate an east-west line 15 miles south of the Philadelphia line, running it west as far as Maryland and Pennsylvania extended. Probably neither they nor the commissioners and proprietors realized the enormity of the task, which they would finish almost five years later.

Arriving in Philadelphia in November 1763, both Mason and Dixon (ages 40 and 35 respectively) were well-educated mathematicians and astronomers as well as surveyors. Trained by both the Royal Society and the Astronomers Royal of the Greenwich Observatory, they had conducted astronomical observations and experiments for the societies. Sent to Sumatra (but reaching only Capetown) to observe the transit of Venus across the disk of the sun in 1761, Mason had intended to use a zenith sector, a newly developed instrument. Although this early zenith sector was defective in design, its possibilities were recognized for surveying. Thomas Penn saw the desirability of a zenith sector for the Pennsylvania-Maryland survey and hired another instrument maker to design and build one. Lord Baltimore was to pay for another costly instrument.

Instead of beginning work on the transpeninsular line as the earlier survey team had done, Mason and Dixon first decided on and measured the latitude of the most southern point of Philadelphia. They then moved west and south of this line since the northern boundary of Maryland was to be a line of latitude 15 miles to the south and they wished to do their measuring in the vicinity of the the western part of the New Castle circle instead of in New Jersey. They determined this northern boundary to be 39°, 43', 17.6", very close to the modern measurement, a substantial distance to the south of the original Maryland grant of lands to the 40th degree. Having determined the major reference points not already located by the earlier surveyors, in June 1764 they traveled to the Middle Point of the Transpeninsular Line to begin work on the north-south Tangent Line. They had a large work party; it included axemen, "a Steward, Tent keepers, cooks, chain carriers, etc., amounting to 39." Benefiting from the work of the previous surveyors, they spent seven weeks on this line, which took them past Kent County, setting up wooden posts for mile markers as they went. After verifying the Transpeninsular Line and the Middle Point, they then, using the work of the previous surveyors, determined where the true Tangent Point should be. After checking and correcting their work with observations of the stars, they headed back south toward the Middle Point, checking the line post by post, reaching the Middle Point in September 1764. They were pleased to find that when they reached the Middle Point, they were only 2'2" off to the west and stated that the time and expense to make that small a correction were not worth it. They seem to have traversed the Tangent Line northward yet one more time, reaching the New Castle circle in November. After this third pass along the north-south line between present-day Maryland and

Delaware, in November 1764 they reported satisfaction that the Tangent Line met the radius of the circle properly at the Tangent Point and turned their attention to the West Line, the circle, and the North Line, none of which affected Kent County.

After extending the West Line during the summer and fall of 1765, they returned to the Middle Point of the Transpeninsular Line to begin setting the permanent stones of the Tangent Line in place of the earlier white oak posts. The first 50, taking them into Queen Anne's County, were set from mid-December 1765 to January 1, 1766. In the late October 1766 they returned to the Tangent Line and spent three weeks setting the final 31 stones, which included those at the Kent County boundary.

A stone of limestone, quarried on the Isle of Portland, Dorsetshire, England, was set every mile on the Tangent Line. Every fifth mile they set what has come to be called a crownstone, so called because the armorial shield, or partial coat of arms, of the Calvert family carved on the west side facing Maryland had above it a carved crown, symbolizing the supremacy of English law and crown. On the east side was the shield of the Penn family. The intermediate stones were simpler, bearing only a large M on the Maryland side and a P for Pennsylvania on the Delaware side. The measurements of the crownstones and intermediate stones were the same--12" square; the tops were a low pyramid. The stones had to be set in the presence of a commissioner from each province.

The survey team seems to have traversed the Tangent Line one more time after the stones were placed. After receiving new precision instruments from the Royal Society, which was to finance and sponsor the work, they spent the spring of 1768 once again measuring on the Tangent Line, but for basic scientific research purposes--to determine the exact linear measure of one degree of latitude at this distance from the equator and under New World magnetic conditions. "With the aid of these... improved instruments sent from abroad, Mason and Dixon determined, on the Delmarva Peninsula, the first precise value of dimensions of the earth ever made in North America." (Mason and Swindler, p. 93)

The last entry in the journal of Charles Mason was dated January 29, 1768. It stated that the plan, or map, which the surveyors were instructed to provide the commissioners had been delivered. In November 1768 the commissioners issued their final report, summarizing the work that had been done. Besides Mason's journal, which included his field notes, and this final report, other notable surviving documents of this great survey work are the "plan," probably drawn by Charles Mason himself, and the minutes of the commissioners' meetings. Study of the journal may prove revelatory for information on the Kent County portions of the survey, as well as providing information about colonial Chestertown and Georgetown, meeting sites of the commissioners in Kent County. The commissioners' minutes, especially if expense reports are attached, also might provide new information about these two locations. (See Bayliff and Cummings for the present archival locations of these documents.)

In September 1768, almost five years after they began their work for the Penns and Calverts (which cost over £16,000), Mason and Dixon sailed for England. Little is known of Dixon's later life; he died in England in 1779. Mason practiced his profession for the next eighteen years but returned, with his large family, to Philadelphia in 1786; he died there within within a few weeks.

By 1950 almost two centuries had passed since the Mason and Dixon survey.

Although there had been two nineteenth-century resurveys of small portions of their work, and in 1900-03 the Pennsylvania-Maryland "West Line" had been inspected and resurveyed, the Tangent Line (the main Maryland-Delaware north-south line) had never been systematically inspected or resurveyed. There was also no state official or agency responsible for maintaining Maryland's boundaries. At the suggestion of the Board (now Department) of Natural Resources, which was concerned about an uncertain boundary's leading to hunting and fishing without proper licenses, the 1950 General Assembly directed the Board to inspect both of Maryland's boundary lines with Delaware (the north-south line and the east-west line, or the Transpeninsular Line). Preservationists had also expressed concern about boundary markers that had been neglected for the duration of their existence. During 1950 Dr. A. L. Trussell, an optometrist whose hobby was the Mason-Dixon line, visited each marker site. He found and located all but six of the monuments. Many others, however, were found to be either badly broken or out of position. Among the missing monuments was one Kent County monument, for Mile 61, which he concluded must be either removed entirely or buried under the fill for the rail line from Golts to Townsend, Delaware. (Bayliff, pp. 37-41)

He reported as follows for the other Kent County monuments: No. 55, the crownstone of this report, was found to be leaning "slightly to the southwest but firmly set. Some edges badly broken. Coats of arms in excellent condition." No. 56 was "leaning about 10°, moderately broken on northeast corner of top. Surface generally good. Marked with M and P." No. 57 was "leaning about 20° and insecure. No serious damage except for chipped edges. Marked with M and P." No. 58, in 1986 at the north side of the Massey-Delaware Line Road, "has aged apeparance from general surface erosion. Is reported to have been moved and may not now be on boundary. Marked with M and P." No. 59 had "several large pieces broken from surface. Extent of this damage suggests deliberate vandalism with a heavy maul. Marked with M and P, neither letter being complete." No. 60, Kent County's only other crownstone, was "deeply eroded at ground level, apparently by acid swamp water. Upper surface of the stone found prone and badly eroded. Coats of arms indistinguishable. Monument was moved a few feet to a new drier location." No. 62 was "leaning at 45° angle. Large pieces broken from upper surface. Most of P broken off, M intact." No. 63, the most northerly Kent County monument, had "upper corners chipped. Marked with M and P." (Bayliff, pp. 90-91)

In 1951 the Maryland General Assembly passed an act prohibiting removing or damaging boundary markers and made the Board of Natural Resources responsible for working with adjacent states to care for and restore markers. At the request of Maryland, Delaware passed a similar law. In a spirit of cooperation in marked contrast to the controversies of the seventeenth and eighteenth centuries, Maryland and Delaware in 1954 began to plan for the restoration of their mutual boundaries. They agreed to ask the Congress to authorize the U. S. Coast and Geodetic Survey "to reproduce with the greatest possible fidelity the original Maryland-Delaware boundaries laid down by Colonial surveyors in 1751 and by Mason and Dixon during the years 1763-67," "to locate as accurately as possible the original position of each marker installed on these boundaries," and "to tie the original position of each boundary marker to the triangulation system of the surrounding territory so that the correct position of any marker can be accurately determined at any time in the future." Besides making other provisions, they also agreed that the boundary should be inspected at least every ten years. (Bayliff, pp. 43-46)

In 1955 such a bill was passed by the Congress, but it proved to be merely an

enabling act since funds were not appropriated until years later. However, since the Coast and Geodetic Survey assumed that the funding would eventually be provided, in 1956 it conducted a reconnaissance survey whose purpose "was to determine the best procedure and the probable cost of a complete resurvey." All the markers found by Dr. Trussell were located and similarly described. (Bayliff, p. 48)

In August 1961 a Coast and Geodetic Survey team began work on the north-south line, completing it in March 1962. Their methods and equipment were markedly different from those used by Mason and Dixon. Working southward from a Wilmington headquarters, they moved equipment and the survey team of only eleven by a fleet of eleven trucks. Whereas Mason and Dixon had traveled on horseback with carriages and wagons and used a zenith sector, two transits, and two reflecting telescopes--state-of-the-art instruments of their time--the later team employed instruments using light and radio waves to measure distances and angles. Instead of working on the ground as did the original surveyors, who cut wide swaths (or "vistos") approximately eight yards wide and measured with rods and chains, the modern team erected, dismantled, and re-erected along the survey line a set of 24 steel towers up to 116 feet high so that they could work above the trees. The 1961-62 resurvey confirmed the high quality of Mason and Dixon's work. In a survey line more than 80 miles long, they were inaccurate by only about 18 feet. The head of the modern team stated that "Considering the equipment they had to work with and the conditions of the terrain, Mason and Dixon did an astounding job." (Sun Magazine, 1963)

The 58-mile stone, located a few feet north of the pavement of the Massey-Delaware Line Road in a patch of weeds, is easily located by only those who know what they are looking for. Protruding only a few inches above ground level, it has been broken off, sunk, or had fill placed around it. An M and P could not be seen on it.

The 60-mile monument was the only other crownstone placed in Kent County by the Mason and Dixon survey team, and it is neither as easily found and seen as the No. 55 crownstone, nor has it been reported to have survived the years in as good condition. It is located east of the village of Golts near Bradford Johnson Road. It could not be found by this writer. According to a nearby long-time resident, Mrs. Reba Wharton, the proper location for the crownstone is to the south of the road, probably less than 100 feet from the road. This indeed is where the monument should be, if one measures exactly one mile northward from the symbol for mile marker No. 59 on the USGS Millington Quadrangle 7.5 minute map. However, the map shows no Mason-Dixon marker there, but only the convention for a triangulation station (called Wharton) to the north of the road. A 1976 report by R. G. Poust of the U. S. Department of Commerce's National Geodetic Survey states that "the old Maryland-Delaware Monument number 60 was recovered in the prone position at this date. It was reset at the computed position of the boundary. There was no evidence to indicate the original location of the monument." Not surprisingly, given the probably acidic, dark swamp water of the vicinity, the report describes the coats of arms as nearly worn away (Trussell had described them as indistinguishable and stated that he moved the monument to a drier location a few feet from where he found it). However, the report goes on to state that the marker, a 12" square limestone monument now "set in a concrete monument that projects one foot," with a "small cutcross in the top and center of the monument" to mark the point intersected, stands 62 feet northeast [emphasis added] of the center of the paved road, 20 feet south of an 8-inch tree, 5.7 feet

southwest of a witness post, and 2.09 feet west of station WHARTON 1934." Whether this location is correct is questionable.

A large, erect, highly visible stone, known locally as the "white stone," or the "big stone," stands at the southeast corner of the intersection of Big Stone-Peacock's Corner Road with the Massey-Delaware Line Road. It stands about four feet above ground, with perhaps another three to four feet below ground. Periodically it has been whitewashed or painted over the years by the owner of the adjacent farm, known as White Stone Farm. In fact, during one period it had the farm name painted on it. Whether it has any connection with the Mason-Dixon survey (whose No. 58 mile marker is only about one-half mile farther to the east on the north side of the Massey-Delaware Line Road) is not known. Nor is it known whether it might have been a monument for an earlier Maryland-Delaware survey or even for a property survey. The present owner of White Stone Farm, Warren VanCulin, states that in the 1950s he talked with a man then about 80 years old who said he helped erect the stone in the 1880s, undoubtedly a considerable undertaking requiring the efforts of one or more teams of horses. The stone then had the farm name painted on it, and another, smaller stone was placed at the end of the farm lane at Big Stone Road. This explanation could not be verified, but in the 1950s, when the state widened, paved, and altered slightly the location of the Massey-Delaware Line Road, it moved the stone (then somewhat leaning), which was in the right-of-way, and re-erected it set in concrete. Given the important size and proximity to the present Maryland-Delaware boundary and Milestone No. 58, however, there may be some relationship between this stone and either the Mason-Dixon or earlier boundary surveys. An experimental tangent line (the north-south line) was run in 1761, but by the time it reached the latitude of Kent County, it was considerably to the east of even the subsequent Mason-Dixon line rather than to the west, the location of the "big stone." In Wicomico County several "mystery monuments" have been found (though having the M and P markings characteristic of the non-crownstone monuments of the Mason-Dixon survey) at some distance from the boundary. Their possible import is presently being studied; it is thought that they may relate to the 1768 work of the team calculating the measure of a degree of latitude.

In 1975 a Maryland state forester long interested in the Mason-Dixon boundary suggested to the Kent County Bicentennial Committee that it sponsor the erection of a "permanent protective structure" around the No. 55 crownstone. The crownstone, surrounded by weeds and cornfields, had been difficult to see and damaged by farm implements maneuvering around it or turning at the edge of the field. In 1982, as a result of the efforts of the Bicentennial Committee and the Kent County Committee of the Maryland Historical Trust, the owners of the farm surrounding the crownstone on the Maryland side of the boundary conveyed a right-of-way easement of 2,216 square feet to the County Commissioners of Kent County (Kent County Land Records EHP 142/120). The intention was to provide access for the public to the crownstone, including parking space, and to allow construction of a simple, open-sided, roofed structure to protect the crownstone from damage from farm machinery and from further erosion from the elements, as well as to call attention to Kent County's most accessible reminder of the historic Mason and Dixon survey. (One-half of the structure will of necessity be in Delaware.) Plans call for a roadside historical marker as well. It is hoped that the site improvements, approved also by the State of Delaware (whose Blackiston Wildlife Area surrounds the Delaware half of the stone) and supported by a contribution from a Delaware Bicentennial Committee, will be in place by the spring of 1987.

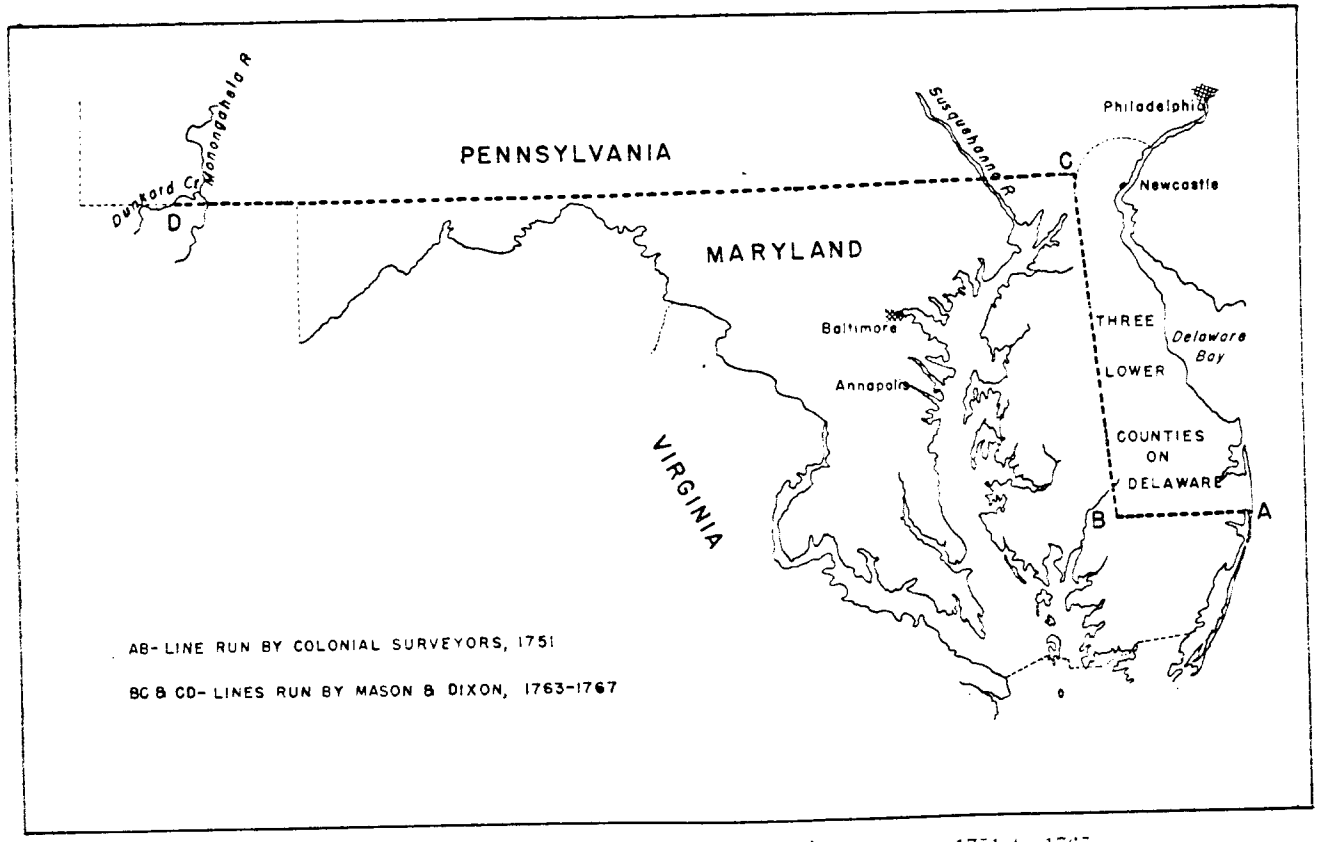

Fig. 9. Extent of the Maryland-Pennsylvania boundary surveys 1751 to 1767.

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K-6.75

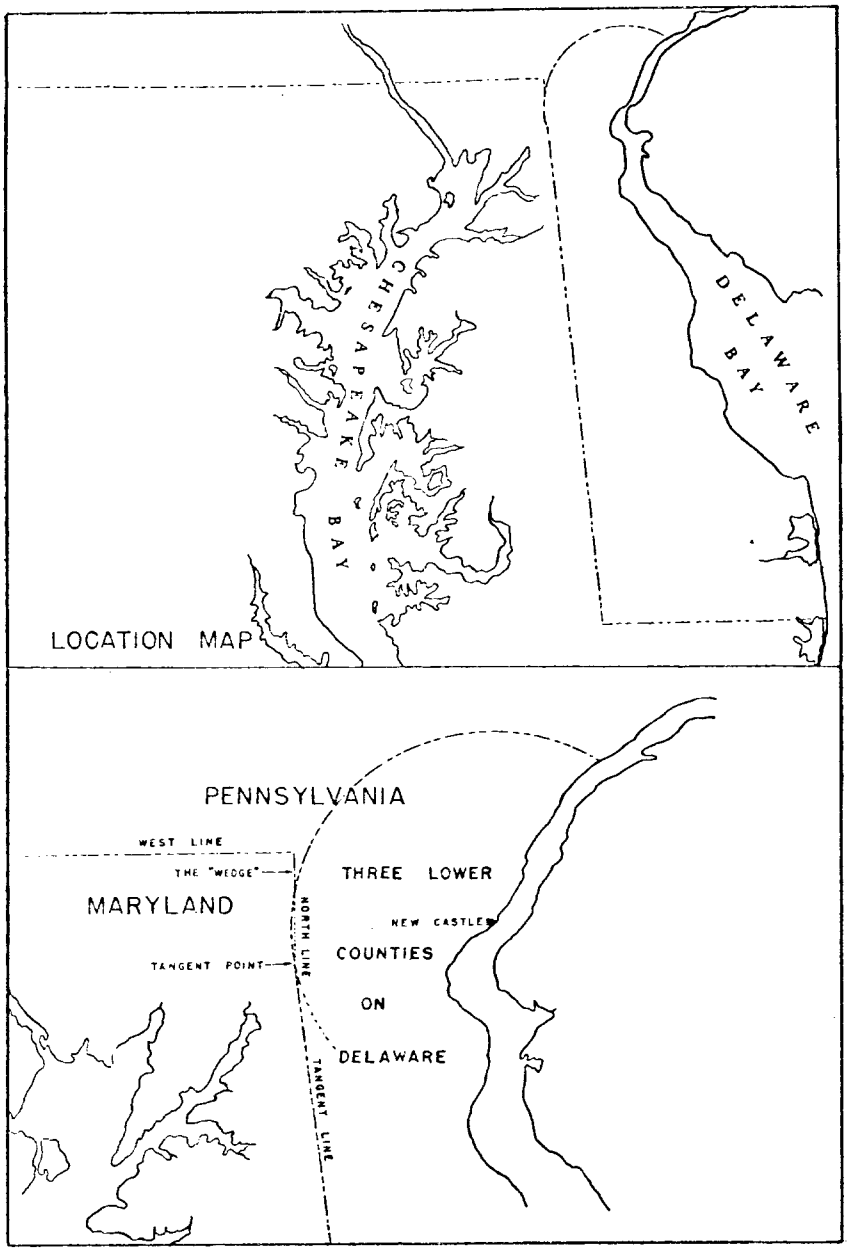


Fig. 7. Location map, above, and the relationship between the Tangent Line, the Circle and the North Line.

K-625

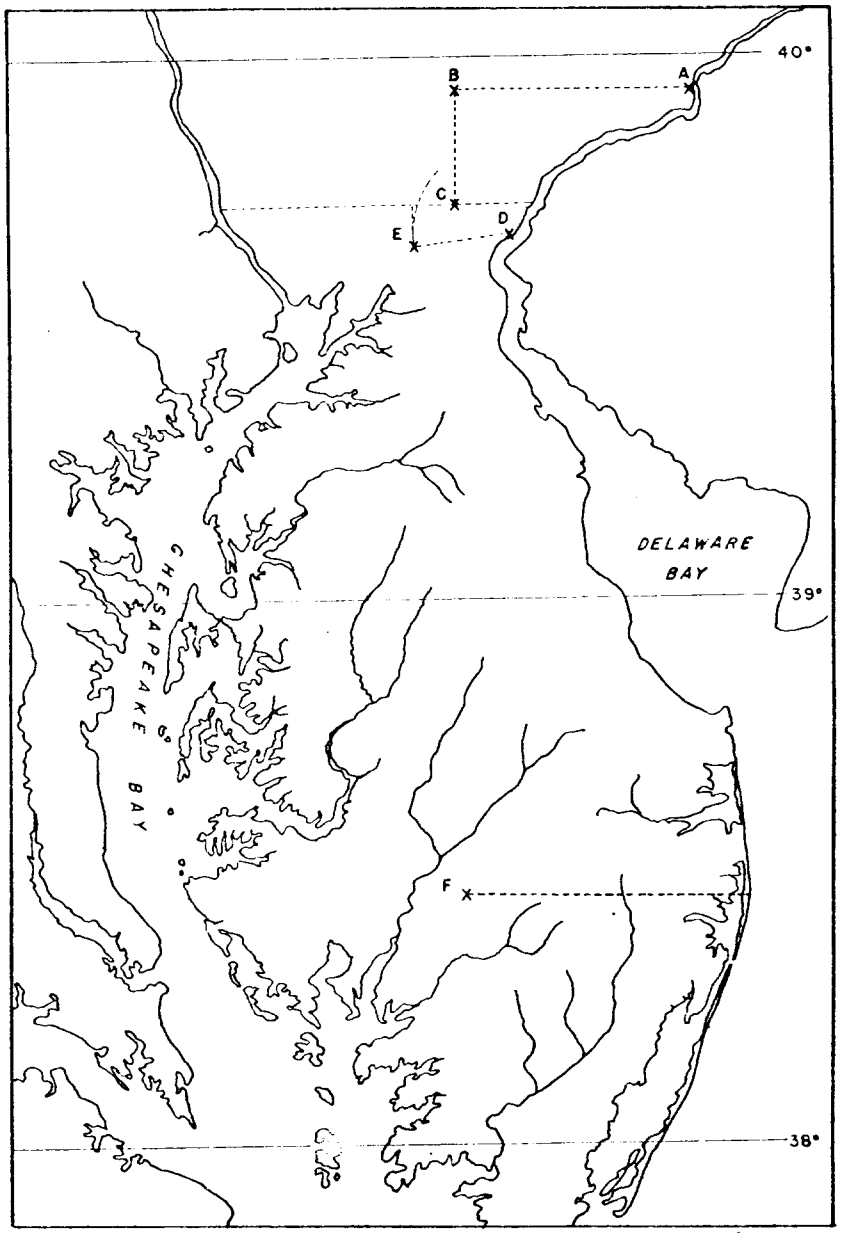


Fig. 6. Initial points in the Mason and Dixon surveys. A, south point of Philadelphia; B, headquarters and observatory on Mr. Harlan's farm; C, the "Post marked West" 15 miles south of Philadelphia; D, New Castle; DE, radius of the New Castle Circle; F, Middle Point.

K-625

would make the line 69 miles and 298 perches long. This dispute, which in reality concerned the position of the Middle Point, was referred to the Lord High Chancellor, and the Commissioners adjourned to await his decision and further instructions from the proprietors.

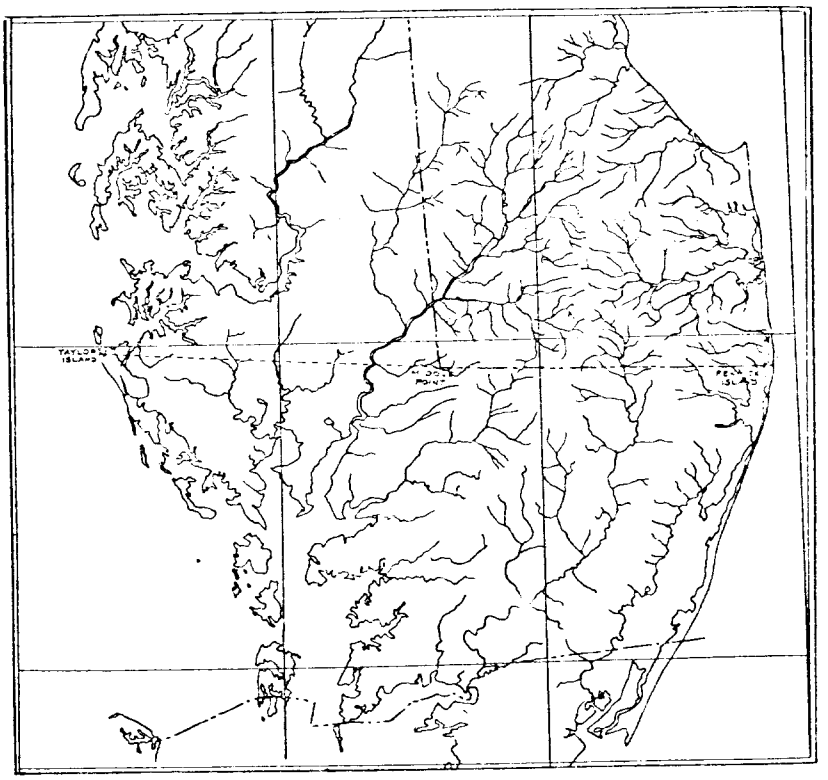


Fig. 3. The Transpeninsular Line showing the Middle Point.

At the outset of the survey of the Transpeninsular Line the Commissioners had instructed the surveyors to mark each mile with a post and to set up stones provided for the purpose at the end of every five miles "so far as 25 miles." It was believed that the Middle Point would lie at least 25 miles from the ocean and it seemed safe to mark permanently the first 25 miles of the line. The surveyors began at the "verge of the main Ocean"; the first stone was planted "due west 139 perches" and "near a mulberry tree."

The monuments used for marking each five-mile interval were cut

K-625

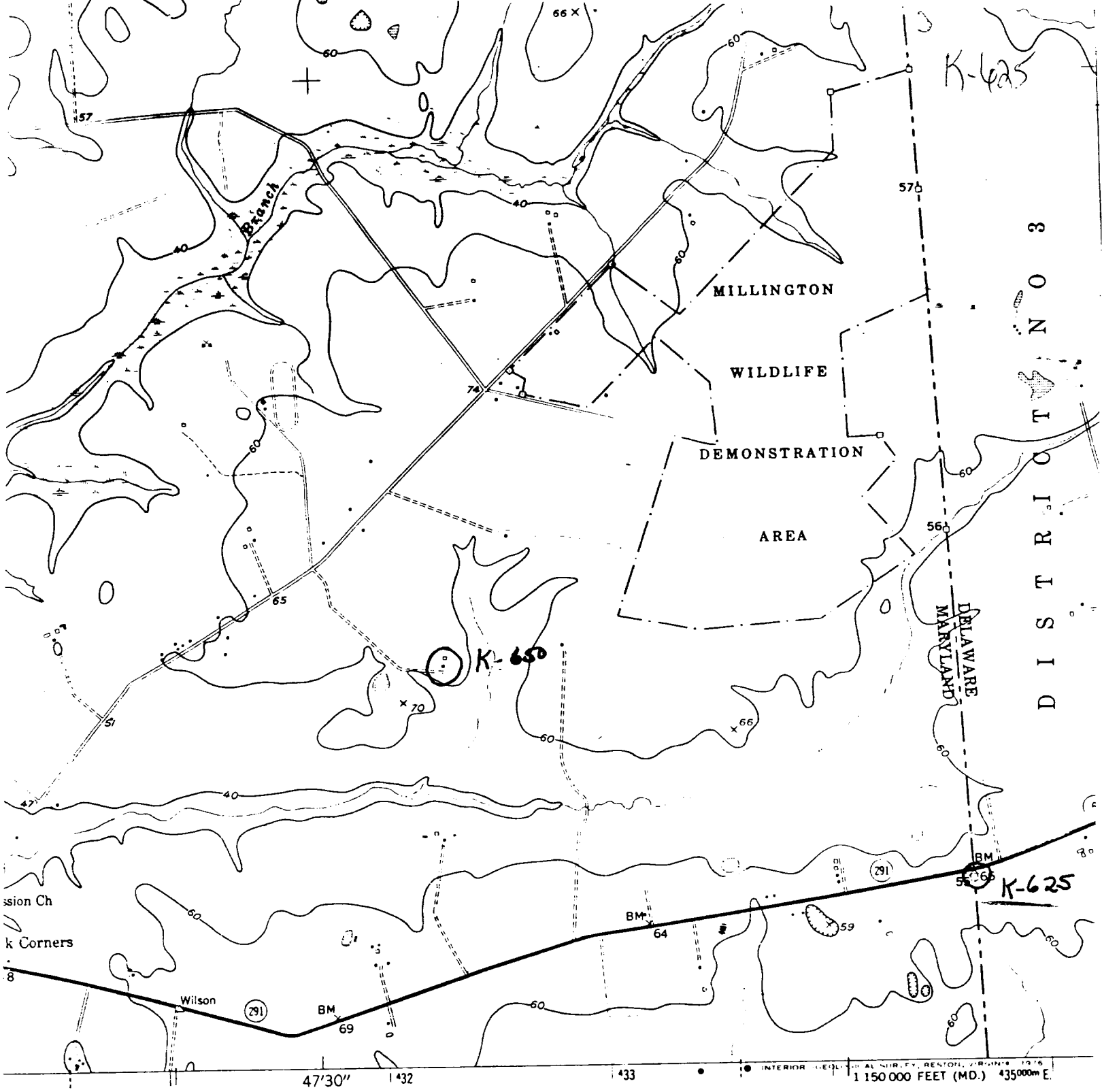
Copied from the original (no reduction of scale)

Hubertis M. Cummings, The Mason and Dixon Line: Story for a Bicentenary 1763-1963. Commonwealth of Pennsylvania, Department of Internal Affairs, 1962

William Stump, "The Mason-Dixon Line is Still an Actuality," The Sun Magazine (of the Baltimore Sun), Dec. 2, 1956, pp. 14-18.

John N. Wilford, The Mapmakers. New York: Knopf, 1981. _____, The Mapmakers: The Story of the Great Pioneers of Cartography from Antiquity to the Space Age. New York: Random House, 1982.

A. Hughlett Mason and William F. Swindler, "Mason & Dixon: Their Line and its Legend," American Heritage, Vol. XV, No. 2 (Feb. 1964), pp. 22-29, 93-96.



ROAD CLASSIFICATION

Heavy-duty — 4 LANE 6 LANE — Light-duty

Medium-duty — 4 LANE 6 LANE — Unimproved dirt

U. S. Route — State Route

MILLINGTON QUADRANGLE

MARYLAND

QUADRANGLE LOCATION

MILLINGTON, MD.—DE

SE/4 CECILTON 15' QUADRANGLE

N3915—W7545/7.5

1953

PHOTOREVISED 1973

ATU. OF 1929

ACCURACY STANDARDS

RESTON, VIRGINIA 22092

ABOLS IS AVAILABLE ON REQUEST

K-625
55-mile Mason & Dixon Crownstone
Rt. 291, near Millington
M. Q. Fallaw - 6/18/86
West face

K625-30

K-625
55-mile Mason & Dixon Crownstone
Rt. 291, near Millington
M. Q. Fallaw - 6/18/86
East face

K 625 - 27