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Report : Mr. Borland

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32d CONGRESS, 1st Session. [SENATE.] REP. COM. No. 344.

IN THE SENATE OF THE UNITED STATES.

AUGUST 18, 1852.
Ordered to be printed.

Mr. BORLAND made the following

REPORT:

The Committee on Public Lands, to whom was referred the "memorial of Robert Mills, proposing a plan for a railroad and telegraphic communication with the Pacific ocean," have had it under consideration, and report:

The subject of railroad communication with the Pacific ocean, is one of obvious and great importance to the American people, to which their attention has been directed with deep and growing interest, and which, on several occasions and in various forms, has been considered and discussed in both houses of Congress, and especially in the Senate within the last few years. This committee, when the subject has heretofore been referred to them, have not found sufficient information to enable them to arrive at satisfactory conclusions, or embody any general views they might entertain into the definite form of a recommendation of any particular route for a road, or plan for its construction. They have, therefore, restricted their recommendations on two several occasions, to the institution of surveys and explorations of the country generally between the Mississippi river and the Pacific ocean by the engineers of the army, under the direction of the Secretary of War, with the view of ascertaining the proper route for the proposed and much desired road. Those recommendations of the committee were not adopted by the Senate; and, so far, no information of a character or in amount sufficient to determine such a route, and justify Congress in taking definite action for its location and construction, has yet been obtained. The memorialist, Mr. Mills, has given to this subject much examination, and has for many years sought to arouse and fix public attention upon it, with a view to a practical result, which, if ever attained, will be second to none in general interest and national importance. In his memorial, he has embodied the results of his researches and reflections, and digested and arranged them in a clear, methodical and forcible style. While, therefore, the committee do not undertake to adopt or endorse all the views of the memorialist, they find enough of obvious value to commend them to respect, and justify their publication as a contribution to desirable knowledge on the important subject to which they relate.

The committee, therefore, make the memorial an appendix to this report and ask that the two be printed as such.

MILLS'S CENTRAL ROUTE TO THE PACIFIC OCEAN.

The honorable the Senate and House of Representatives of the United States, in Congress assembled:

The memorial of the undersigned respectfully represents that your memorialist has for many years drawn public attention, as well as that of your honorable body, to the importance of opening a communication by railroad and telegraph with our possessions on the Pacific ocean, pointing out the advantages, commercial, political and religious, which our own citizens, nay the whole world, would realize from such intercourse. Since your memorialist first opened up this subject before the public in 1848, (when we had reference only to our Oregon Territory,) we have come into the possession of a vast country south of the same, stretching fifteen degrees along the Pacific coast, rich beyond measure in mimeral wealth, and agricultural powers.

Scarcely had this territory come into our possession before our enterprizing citizens rushed there to found cities, open mines, establish commerce and a government of laws, and is at this day meted out as one of the *independent* States of the Union: and here also, two *Territories* are formed under the government of our laws.

If thirty years ago the importance of opening a communication with our Pacific possessions was felt and appreciated, when a very few of our citizens had located themselves on the Columbia river, what shall we now say when a population of some hundred thousands of our people are congregated there, active, enterprising and vigilant to their interests.

The necessity of *immediate* action to open a *direct* communication with this community of our citizens, has become imperative, and not a day should be allowed to pass unimproved, to commence and perfect the work, first by suitable surveys to determine upon *the best route* for the road, which shall, as far as practicable, consult *the general interests of all the States, rather than the interest of any particular section of them.* Your memorialist having *but one interest* to serve—that of "his country, his whole country, and nothing but his country"—availing himself of all the information resulting from the reconnoissances of our government officers of all the country lying between the valley of the Mississippi and the Pacific ocean, projected a line of route for this road which, while it will best subserve the general interests of the States, will be found the most favorable on *topographical* grounds; and further, which is of great importance, *climate.*

Your memorialist would, explanative of this subject, subjoin herewith a topographical map, constructed by him from the data before stated, of all the *intermediate* country between the Mississippi valley and the Pacific ocean, and annexed to it the northern, eastern and southern sections of the Union, in order to show the connexion which each of the States have, or may have with this main stem. All the railroads completed and in progress, from the States to the Mississippi valley, are also here laid down, by which it will be seen that *all* will *merge* into the *main stem* terminating at the Pacific ocean.

On the margin of this map is laid down a *barometrical* section, showing

the grades between the Mississippi river and Pacific ocean, according with the line of the proposed route as here laid down; also, another barometrical section of the more northern route through the southwest pass, by the Great Salt lake over to San Francisco. The difference here exhibited in the grades between the two routes will be manifest, and the superiority of the El Paso route acknowledged.

The geographical extent embraced by this map includes within the latitudes 25° and 42′ north, and longitudes 75° and 123′ west of Greenwich observatory or 46° west of Washington. "This map also shows our continent as compared with Europe and Africa on one side, and Asia on the other, placing us in the centre, Europe 5,000 miles from us with a population of 250,000,000, and Asia on the other side, about 5,000 miles from us with a population of more than 700,000,000. The railroad across our continent will make us the centre and thoroughfare for both."

By reference to the two points of the Mississippi from which the road would start, namely: St. Louis, in latitude 38° 37′ 28″ north, and longitude 13° 13′ 52″ west of Washington, and Memphis, in latitude 35° 10′ north and longitude 13° 10′ west of Washington, San Diego, in latitude 32° 45′ north and longitude 40° 9′ 36″ west of Washington, distant from St. Louis, in a straight line, 1,782 miles, and from Memphis 1,710 miles, the general course to San Diego from St. Louis is west 6° 5′, and from Memphis west 3° 5′.

The terminus at St. Louis will connect with all the railroads coming from the north, east and southeast, as low down as Richmond on the seaboard; and the terminus at Memphis will connect with all the railroads coming from south of Richmond, Charleston and Savannah, and round by the gulf of Mexico, as low down as New Orleans.

Thus these two main branches will equalize the commercial interests of the States on the seaboard, and, by these branches intersecting the Mississippi, upper and lower, those of all the western States by means of this noble river. The distance from St. Louis, by the northern branch, to the seaboard cities may be stated as follows: passing through the States of Illinois, Indiana, Ohio and Kentucky, this main branch will be met, 1st, by the roads leading from New York and Boston, the first 1,082 miles, the second 1,200 miles; 2d, the roads leading from Philadelphia 1,000 miles, Baltimore 890 miles, Washington 856 miles, Richmond 900 miles. The distance from Memphis, the southern branch, to the seaboard cities may be stated thus: passing through the States of Tennessee, Mississippi, Alabama, Georgia and South Carolina, this main branch will be met 1st, by the roads leading from Charleston 700 miles, Savannah 650 miles, Tallahassee 500 miles, Pensacola 350 miles, Mobile 300 miles, New Orleans 396 miles, &c. Thus every shipping port on the Atlantic would be connected with these main branches at St. Louis and Memphis, and by these with the Pacific ocean. It will be seen by reference to the map that several branches from the main stem of this road are laid down, one passing down the valley of the Red river by Fort Towson, Natches, to New Orleans, another through Texas by the valley of the Brazos or Trinity, through Austin, Washington, Houston, to Galveston, another west of the Rio del Norte, down the valley of the Huaqui river to Guaymas, on the Gulf of California.

The admirable topography of this country between the valley of the Mississippi and the Pacific ocean for a railroad will be manifest by examin-

ing the map; the rivers emptying into the Mississippi all flow from the west, and the intermediate spaces made up of prairie lands. The roads would mostly be located along the ridges or valleys of these rivers; the only stream of importance to cross before entering the valley of the Gila river (emptying into the Pacific waters) is the Rio del Norte, after crossing which a beaten wagon track, mostly through a prairie region, will be found nearly all the way to San Diego. These facts give assurance of the facilities afforded by this country for a railroad.

The whole of this region between the valley of the Mississippi and Pacific ocean, has been so recently explored, during our military occupancy of the country, and by our traders for years past, that the practicability of carrying a railroad through it is no longer a question. From all the topographical information we have received from our talented and enterprising engineers and scientific travellers, we can no longer doubt of the feasibility of constructing such a road-way; and of its expediency, the *public interests* and the *vast trade* waiting to be carried over it, must be the answer. Colonel Abert on the question of routes, &c., for this road, &c. See Appendix A.

The commerce of Europe with Asia, in which we do not now participate to the value of one dollar, amounts to an aggregate annually of $250,000,000, employing about two thousand ships, of a tonnage in weight of at least 1,200,000, and employing about five thousand seamen. All this immense commerce would be changed to this new route, and at the tolls above named—one half cent. per ton weight per mile—would give to this road $12,180,000 per annum; and to the roads leading to and connecting with it from the Atlantic and gulf cities $12,000,000 more; making the sum of $24,180,000 per annum with the commerce of Europe with Asia, which would be tributary to us alone for transit across our continent, and which is small compared with all the other advantages to grow out of and be subject to it; so that it is possible this road would not be able to accommodate all the business now ready for it, *but not probable* there *would not* be business enough to support it.

The *barometrical* observations made by the several United States scientific corps that have traversed this country, show that little difficulty in respect *to grading the road* will occur, and that the *maximum* speed on such roads (forty miles per hour) can be attained the whole route; the elevation of the point of starting at St. Louis is about seven hundred feet above the sea; the valley of the Arkansas three thousand feet; the crossing the dividing ridge near the Rio Grande or Del Norte four thousand feet; the entrance of the Gila valley four thousand six hundred feet, from which point this valley gradually *descends* the whole way to its discharge into the Rio Colorado of the west, nearly level with the sea; from thence it gradually rises to the valleys of the dividing ridge, (the Cordilleras of California) the Sierra Nevada, and then descends to San Diego on the seacoast at tide water level. Thus we see, from the peculiar character of country traversed by this road (mostly prairie,) its practicability is ensured, and that at an expense not greater than the cost per mile on other railroads. Colonel Cooke, of the second United States dragoons, who conducted a train of wagons through the most difficult part of the proposed route, namely, from the Rio del Norte to San Diego, thus writes to Colonel J. J. Abert, of the topographical bureau:

WASHINGTON, *December* 6, 1847.

SIR: I have the honor, at your request, to address you a brief memoir on the subject of the district of country in Sonora, Mexico, which I passed over in November and December last with a wagon train, when I deviated, in search of a practicable route, from the mule trail of Brigadier General S. W. Kearney, on his march from New Mexico to California.

When he turned off from the Rio Grande, opposite the copper mines and the heads of the Gila river, I kept the river for thirty miles to the south, and making a southern bend turned again towards the north, and struck his route (as surveyed by Mr. Emory, of your corps) just above the village of the Pimo and Maracopa Indians—an estimated distance of four hundred and forty-four miles.

Immediately below the point of deviation on the Rio Grande, the country bordering the river became sensibly flatter and less broken. I left the river when in view of a point marked on the common maps as San Diego, and the distant view towards *El Paso proved the country to be unbroken and comparatively level.*

From the high valley of the river I ascended to the table land of Mexico by an almost insensible slope, over smooth prairie. For one hundred and fifty miles on this smooth, level table land, which is studded with insulated hills or mountains, I journeyed without any difficulty, passing over but three hills; in two cases I believe (I know in the third) unnecessarily. I then unexpectedly and suddenly arrived at a great break-off to a lower level of country, the descent to which was very broken, and rough mountains for fifteen miles. I found, however, that I had at that moment fallen into an old wagon-trail, which led, I was told, from Yanos. I was able to get my wagons through, following a stream all the way, and descending in the fifteen miles possibly one thousand feet. This was the head of the Huaqui river, which empties into the California gulf. I was told that this was the Pass of Guadaloupe.

I then passed *an unbroken country, about eighty miles*, when I fell upon the Jose Pedro river, which empties into the Gila. I descended this, without difficulty of ground, about eighty miles. In turning off there is an ascent to a nearly level country, of perhaps above a hundred feet, but it *could be made very gradual*. It is then about forty-eight miles to Tueson, a town of about five hundred inhabitants, with a fort and garrison. This distance is over much smooth ground, maintaining the same general level. Tueson is in a rich and well-cultivated valley, where there is also a dense forest of maguay. From Tueson it is some seventy-five miles to the Gila. It is a level plain, generally of clay, where my wagons and footmen (water being very scarce) passed at the rate of about thirty miles a day.

On the map which I made, and which is in your bureau, is marked a route considerably to the north of the Guadaloupe pass, *which some of my guides believed would avoid that broken descent, and found to be nearly level throughout to San Pedro*, at the point where I turned off from that beautiful little river. The most intelligent and experienced of these men, Laroux, who lives in Taos, New Mexico, and who had trapped on the Gila, and passed in a different direction over that country, was decidedly of this opinion. But his knowledge, on the other hand, was sufficient to forbid to explore it in my situation, on account of scarcity of the water.

The Rio Grande bottoms for a hundred miles above, and at the point where I left, are well timbered. There is no timber on the table lands, save upon the small mountains which are everywhere to be seen. This is cedar and pine, but of small growth. Rock is everywhere to be had; secondary rocks of almost every kind; *but by this wonderfully level route the continent may be passed with scarcely a view of granite.*

As far as Tueson the gramma grass is abundant; it will fatten cattle while working, and in winter. The route from Tueson passes through a country abounding in exceedingly rich gold mines.

I am, very respectfully, your obedient servant,

P. ST. GEO. COOKE,
Major Second Dragoons.

Col. J. J. ABERT,
Topographical Engineer.

And with regard to that section of country lying between the Mississippi and Rio del Norte valleys, we have many accounts of trails favorable to our road; and recently, Lieutenant Burford, of the United States dragoons, left Fort Smith with his command, by the Canadian trail, and without the least difficulty, and in a very short time reached Santa Fé, reporting the route he travelled as the best from the States to Santa Fé, California, and Oregon. A late writer thus speaks of the route according to the testimony of gentlemen acquainted with all the localities, and who speak from personal examinations of the entire country.

The distance from the head of steamboat navigation on the Arkansas to Santa Fé is less by three hundred miles than from Independence to Santa Fé. From the early opening of the spring in the late trade of the southern route, caravans are enabled to start for a month or six weeks earlier than on the northern route. The route runs mainly between the forks of the Canadian river, on the dividing ridge, which is as level as could be desired, and abounds with springs the entire distance.

The discovery of *coal* which has lately been made on this route promises favorable for a rich supply; the shaft already sunk proving a thick bed, and extending over a large area.

At some suitable point of the main stem of this road, before reaching San Diego, *a branch road leads off to San Francisco.* The point assumed on the map is at the crossing denominated *Walker's pass* on the maps at the Sierra Nevada, dividing the waters falling into the Pacific through the San Joaquin river and Gulf of California, an elevated point, which may be necessary to enter the valley of San Joaquin, descending all the way to San Francisco bay.

"*A canal can easily be cut here* (says Mr. Farnham, who travelled through this country,) *from the head of steamboat navigation on the San Joaquin to the head waters of the Gulf of California;* this for commercial and warlike purposes would be invaluable;" and, in passing down the same, a branch road may lead through some gorge in the high land west to Monterey; thus would all the important harbors on this section of the coast of the Pacific be reached. It is probable that the route of the *Gila* will be found the most advantageous line for a railroad even to the Bay of San Francisco, by means of the San Joaquin valley, rather than by the *Great Salt Basin* and Sacramento valley, 7° or 8° further north. The valley of the San Joaquin is about three hundred miles long and sixty broad, between the slopes of the coast mountains and Sierra Nevada, with a general elevation of only a few hundred feet above the level of the sea. It presents a variety of soil, from dry and unproductive to well-watered and luxuriantly fertile. The eastern (which is the fertile) side of the valley is intersected with numerous streams, forming large and very beautiful bottoms of fertile land, wooded principally with white oaks (querens and ligландi—Tor. and Frem,) in open groves of handsome trees, often five or six feet in diameter, and sixty to eighty feet high. Only the larger streams, which are fifty to one hundred and fifty yards wide, and drain the upper parts of the mountains, pass entirely across the valley, forming the Tulare lakes and the San Joaquin river, which in the rainy reason make a continuous stream from the head of the valley to the bay. The foot hills of the Sierra Nevada, which limit the valley, make a woodland country, diversified with undulating grounds and pretty valleys, watered with small streams which reach only a few miles beyond the hills, the springs which supply them not being copious enough to carry them across the plains. These afford many advantageous spots for farms, making sometimes large bottoms of rich, moist land. The rolling surface of the hills presents sunny exposures, sheltered from the winds, and having a highly favorable climate and suitable soil, are considered to be well adapted to the cultivation of the grape, and will probably become the principal vine-growing region of California.

The uplands bordering the valleys of the large streams are usually wooded with evergreen oaks, and the intervening plains also are timbered with groves or belts of evergreen oaks, among prairie and open land. The surface of the valley consists of level plains along the Tulare lakes and

San Joaquin river, changing into undulating and rolling ground nearer the foot-hills of the mountains.

This stream has a deep and tranquil current; its waters are transparent and well stocked with salmon and other fish; it is navigable for small steamboats about two hundred and fifty miles; a high range of mountains on the northeast, at an average distance of forty miles from the river, bounds its valley in that direction; and a range of hills, rather low in the north but becoming lofty in the south, bounds it on the west, forming a prairie vale six hundred miles in length, nowhere less than forty, and often more than one hundred miles in width. This vast plain extends, indeed, with little interruption, from the bay of San Francisco to the Columbia, gradually growing wider and wider and more uneven in its surface till it reaches that river—a space sufficient for an empire.

A very large proportion of its surface is open prairie, covered with grasses and a species of wild oats; but it is so diversified by lines of trees skirting the streams by wooded spots, standing out like islands on the green plain, by arms of timber stretching far down from the mountains' sides, and by extensive circular groves connected with large forests by a thin fringe of trees, that of the valley presents the appearance of a vast series of plains of every conceivable area and shape, from the little wood-bound plantation to the township, the county and the State. Over this immense plain rove innumerable bands of wild horses, mules, elk, deer, grisly bears, and other animals. The portion of the valley within twenty miles of the river is wholly uninhabited.

San Diego—its harbor, climate, &c.

Situated at the foot of a high hill on a sand flat, two miles wide, reaching from the head of San Diego bay to False bay. A high promontory of nearly the same width runs into the sea four or five miles, and is connected by a flat to the main land. The road to the hide-houses leads eastward of this promontory, and abreast the frigate Congress and the sloop-of-war Portsmouth were at anchor. The hide-houses are a collection of store-houses, where the hides of cattle are packed before being shipped, this article forming the only trade of the little town.

The bay is a narrow arm of the sea, indenting the land some four or five miles, easily defended, and having twenty feet of water. At the lowest tide the rise is said to be five feet, making the greatest depth of water twenty-five feet.

South of Point Conception the climate and general appearance of the country exhibit a marked change. The coast from that cape tends almost directly east, the face of the country has a more southern exposure, and is sheltered by ranges of low mountains from the violence and chilling effects of the northwest winds; hence the climate is still more mild and genial, fostering a richer variety of productions, differing in kind from those of the northern coast.

Bay of San Francisco, and climate.

The bay of San Francisco has been celebrated from the time of its first discovery as one of the finest in the world, and is justly entitled to that character, even under the seaman's view of a mere harbor; but where all

the necessary advantages which belong to its fertile and picturesque dependant country, mildness and salubrity of climate, connexion with the great interior valley of the Sacramento and San Joaquin, its vast resources for ship-timber, grain and cattle; when these advantages are taken into account, with its geographical position on the line of communication with Asia, it rises into an importance far above that of a mere harbor, and deserves a particular notice in any account of maritime California. Its latitudinal position is that of Lisbon, its climate is that of southern Italy; settlements upon it for more than half a century attest its healthiness, bold shores and mountains give it grandeur, the extent and fertility of its dependant country give it great resources for agriculture, commerce and population.

The seaward coast of the Californias, extending through twenty degrees of latitude, has only two good harbors. There are, indeed, very many *roadsteads and bays* where vessels anchor with considerable safety, and take in and discharge cargoes; but they are all exposed to some of the prevailing winds. The only *well protected harbor* is *San Diego*, lying in latitude 33° 17′ north; this is *land-locked*, without surf, with a smooth hard sand beach, and free from rocks and stones; but it is much less in extent and far less valuable to commerce than the bay of San Francisco.

The bay of *San Francisco* is the glory of the western world; its mouth is in latitade 37° 58′, the water on the bar is eight fathoms at low tide, the mountains on either hand rise several hundred feet above the sea, and form fine *landmarks* in foggy weather to point out the bar and the channel into the harbor. The capes at the ocean's edge are about two miles apart, always verdant and refreshing to the eye; and as you go up the passage the little streams tumbling from the rocks among the green wood, and the wild game standing out on the cliffs, or frolicking among the brush, and the seal, barking in the water, give promise of pleasure and rest from the toils of the sea.

The advantages of the *San Diego route*, while it would equally facilitate the intercourse with San Francisco and Monterey, and, if required, with Astoria by the coast route, will be made manifest by examining the map where the line of the road crosses the Colorado river, which opens an intercourse with the gulf of California, *rich in the pearl fisheries*, and all the ports of the same. Besides this, there will be the commerce descending the *Rio Colorado and Gila*, the former of which is now navigable several hundred miles and the latter many miles.

Between the mouth of the Colorado and the Pacific, there is a region of very delightful climate. The mountains increase in height, and among them are many beautiful plains watered with abundant springs and brooks, and interspersed with many pleasant woodlands, which together render the air charmingly temperate.

In the country between the Gila and the Colorado there is a great variety of temperature. From the junction of the two rivers, for the distance of two hundred miles up the Colorado and about one hundred up the Gila, the climate is exceedingly hot in summer and in winter rather frosty.

The river Gila forms the southeastern boundary of the Californias; it rises among the mountains west of Santa Fe, in latitude 36° north, and running westwardly, a distance of about five hundred miles, falls into the Colorado about sixty miles from the California gulf. It is a rapid rushing stream of excellent water; its banks, like those of the Colorado, in a gr

degree, are composed of basalt and trap rock, rising perpendiularly, much in the manner of the palisades on the Hudson. The valleys of the upper branches of this stream are comparatively rich and beautiful. The lofty mountains, among which it rises, the highest peaks of which are covered with snow throughout the year; the bold cliffs which at irregular intervals burst up from the plains, the conical hills of rich earth clad with forest; the grass fields covered with wild animals and Indian lodges, present a panoramic view of the Gila and its neighboring lands, which invite us to expect hereafter to see them inhabited by a somewhat dense and thriving population.

When we have reached San Francisco, the valley of Sacramento running north, opens the way for extending our railroad to Oregon city, or Astoria, as there is a continuance of this valley between the coast mountains and those of Sierra Nevada.

"Until recently," says a writer, now in that country, (Oregon,) "the coast range of mountains has been supposed to form the *immediate shore* of the Pacific; such is the appearance from the sea, but the *fact is otherwise*. The coast of the Pacific has been explored about eight hundred miles south of the Columbia river, and for this distance the bold rocky reef, forming the shore of the Pacific is found to be *distant from the coast range of mountains*, and separated from it by a *considerable valley*. This valley is from about two to twelve miles in width, mostly covered with timber, yet containing many prairies, some of which are several miles in extent. The soil of the valley is deep, black and rich.

"Some prairies are covered with *clover* and other grasses, but these are more usually covered with *fern*, which grows to the height of eight and some say ten feet.

"Fern lands have been usually avoided in this country, yet a tall growth of fern indicates a *rich deep soil*. We have frequently noticed that where we have seen fern growing the rankest, the soil appeared loosest, blackest and richest. The *best garden* we have seen in the country was made in a fern patch without manure. The coast range furnishes the head springs of several small rivers, some of which cross the valley, while others traverse it north and south. The rivers usually empty into bays some of which are quite spacious."

By *this route* we shall get rid of all the *mountains* north of El Paso del Norte, and the *interruptions* of the *winter frost*, to say nothing of the *superior agricultural character of the country along and on each side of this central route*. If your honorable body will notice the *general direction* of the *main line* of the route on the map annexed, you will see that it runs nearly *parallel* with the *seacoast* and gives the *shortest lines to the sea ports of the several States on the Atlantic and Gulf of Mexico*.

Your memorialist has thus sketched an outline of the plan of international communication with our extensive country west and east, and will indulge the hope that when the subject is brought up before your honorable bodies its importance will be felt and appreciated, and that early measures may be taken to order such surveys (if only preliminary) as will enable you to judge of *the route* that will *centralize* the *advantages growing out of such a line of commercial wealth, so that every State in the Union may*, according to their relative geographical position, *derive their proportionate benefit from a branch connection with it*.

This great work properly belongs to the *nation* to accomplish; it is *emphatically therefore a national work*, because *every State is interested in it. No single State or people should have the control of its operations, it must be the joint stock of all the States expressed* through *the act of the general government*, and to identify it as the *common property* of all the States, and *their right* to *use it, the stock created to build the road, guaranteed by the people through their representatives and senators in Congress assembled, shall be redeemed in a definite time by the sale of the public lands on each side of the road appropriated by Congress to this end.*

The clear revenue from the main stem would then be the common property of all the States, and may be appropriated to any object hereafter to be designated by Congress, or be distributed among the States in the ratio of their population.

The working of railroads is now so *systematized*, that little deception can be practised on the revenue from this source, and there would be less objection to the employment of public agents here—a settlement of accounts taking place at short periods. But these are matters on which your honorable bodies are better able to pass judgment. The commercial world has, ever since the discovery of the western continent, been seeking a shorter passage to the Pacific and to India and China than by doubling Cape Horn or the Cape of Good Hope. Millions of money have been lavished to effect a *northwest* passage to the western ocean without avail; and failing in this, commercial Europe has turned its attention to opening a passage through the *mountains of the South American isthmus* which divide the two oceans; but however flattering the scheme appears, no success yet has attended any of the efforts made to realize this commercial passage across; and could it be effected, it could not compete with the facilities offered through our own country to secure such overland communication with the Pacific.

The isthmuses of Darien, Nicaragua and Tehuantepec are *too remote, too far down south*, to accommodate the great demands of commerce flowing from Europe and from our own country to the Pacific; and it never would take this equinoctial route if it had another, not only more direct but in a healthier clime.

Our *proximity with the Pacific ocean* would always give us the advantages of its trade, if we but open a commercial highway through *our own country* overland to this ocean, which would enable us to effect the passage in at least *the same time with other routes named*; then shall we make it the interest of all commercial nations to pass by this route, and thus shall we become the recipients of this trade and bring all nations into commerce with us.

Since the introduction of *steam as a commercial agent, land conveyance has been rendered as cheap as water transportation, and the safety and despatch which attend the former will render its use more general, and for safety to be preferred.*

Even should a ship canal be made through one of the southern isthmuses named, the preference would be given the more northern route here proposed, on account of the advantages it would possess, both on the ground of *economy, despatch* and *safety*. When we consider the loss of time consequent upon sailing a distance of *four thousand miles*, and twenty days additional steaming, via the Panama railroad or canal, or by Cape Horn the present route, a distance of twenty-four thousand miles, and the saving of one hundred and twenty days sail, (steaming such a distance being too expensive,) we must be convinced of the vast advantages derived to commerce by opening a route through our own country. (See table of nautical distances of trade—Appendix B.)

We shall say nothing of *those benefits* which would secure to us as a *people*, by having this *vast trade* passing through our cities, *for each of these ports would become the depositories of this trade.* Under this view of the subject, *we should not delay a moment to enter upon this glorious work, especially as ample means are at hand to insure its execution at an early day.*

The wisdom and patriotism of the national councils are invoked to apply

these means, and thus make this highway, what it really should be, *a national work.*

The *public lands* through which this road would pass, would be *amply sufficient to reimburse all expenses incurred on the work,* and when it went into operation it would sustain itself. The expediency of appropriating such public lands for this purpose, would be not only conceded on the ground of its national importance, but of the value of the commerce it would secure. A stock based upon the sale of so much of these public lands as may be required would realize at once the necessary funds to carry on and complete the work, which may be effected in *five years* by the employment of *ten thousand men*—(for it has been ascertained that *five thousand* men can complete *one hundred and fifty miles* of railroad in one year.) The cost of constructing *seventeen hundred* miles of rail road here would be by estimate thirty-four million dollars. This will require the appropriation of a strip of the public domain of forty miles in width which will bring on sale, after the road is completed, *fifty million dollars.* The value of the public lands on this central route greatly *exceeds* that of those in more northern latitudes—and would be immediately sought after; the public treasury therefore would realize from the consummation of this work *seventy millions of dollars* by the sale of lands now comparatively worthless.

For the information of your honorable bodies the following particulars have been collected. When the committee of Roads and Canals of the House of Representatives (Doc. No. 31, 3d session, 27th Congress) had this subject under consideration, the following facts were elicited. Our *Oregon territory* then was the point of attention:

"The distance from the mouth of the Kansas, says Captain Fremont, to the *South Pass* of the *Rocky Mountains* by the usual route is one thousand miles; from this to Fort Percé, near the junction with the Lewis river with the Columbia, one thousand miles; from this point to the Pacific, three hundred and fifty miles, making the whole distance twenty-three hundred and fifty miles, to which must be added the distance from the Mississippi to the mouth of the Kansas, three hundred and fifty miles, and we find the result twenty-seven hundred miles. The highest point on this route, to be overcome is about eighty-two hundred feet. This point is about one hundred and forty miles west of the southwest pass upon the ridge dividing the waters flowing into the Gulf of California, from those flowing into the Great Salt lake. The elevation of the south pass dividing the waters of the Gulf of California and those of the *Nebraska* is stated upon the same authority to be seventy-five hundred feet above tide."

In reviewing this route, Colonel Abert remarks:

"The difficulties of the route would probably not be greater from *Missouri* until it should approach the *Rocky Mountains*, and there these mountains would, no doubt, present the difficulties common to those regions, and the necessity of numerous and extensive surveys. From the difficult character of this country the surveys would be, necessarily, greatly increased in distance, Col. Abert puts it down at 4,186 miles, and the average progress of the work from the same causes, but *three miles per day.* This estimate of the engineer force, to complete their survey of this route in *one season*, is $42,240, besides contingencies."

From the statement of Col. Abert, whose knowledge and good judgment on the subject under consideration no one questions, we must be convinced of the superior claims which the *central or El Paso route* presents. In the first place as respects *distance*, from the Mississippi to the Pacific ocean the difference is as 1700 to 2700, or one thousand miles in *favor of the El Paso route.* Second. In respect to the *geological structure* of the country, there is no comparison, for on the central route there would be *no mountain*, properly so called, intervening in the entire route to San Francisco, and but a slight one on the route to San Diego. Third. Besides these advantages

this central route passes through a *latitude of perpetual verdure*, free from the interruptions of frost or snow, to which the more northern route is subject for half the year. Fourth. The difference of *expense* in the construction of the two routes would amount to nearly *a moiety* in favor of the *El Paso* route. The Missouri and Southwest pass route would cost, at twenty thousand dollars per mile, *fifty-four millions of dollars*, and the central route, at twenty thousand dollars per mile, *thirty four millions of dollars*. The difference of cost in the *grading* between the two routes would reduce this last item about four or five thousand dollars per mile.

Expense of Surveying the El Poso route.

It is more than probable that the actual extent of ground *which would* require to be surveyed within the United States Territory would not exceed *one thousand miles*, because the greater portion of the country to be passed is *prairie land*, and with regard to the daily *progress* of the parties of surveyors, it would be more *than double* the distance named in the *Missouri route*, or six miles a day. Col. Abert estimates the cost of our party, detailed for this service, at eight hundred and eighty dollars per month, allowing an average of twenty days service in the month, then at six miles a day progress, the party will have surveyed one hundred and twenty miles in this time, and in six months seven hundred and twenty miles. But, to insure an efficient force to complete the survey in one season, the service of *two parties* will be required, whose expenses will be ten thousand five hundred and sixty dollars, and including contingencies, say twelve thousand five hundred dollars, or but one-fourth of the expenses on the other route.

The *economy* and *superior* local advantages possessed by this work are so manifest, that your *honorable bodies* will join with the undersigned in giving it a decided preference to every other route. The appeal can be made in truth to *every member of your honorable bodies that no route for this great highway of commerce could compare with this route, which would subserve the common interests of each and every State in the Union greater than this, opening as it will equality of commercial advantage to every State*, according to the relative geographical position of each; no other route can thus equalize *the* commercial advantages to the States to this, as by reference to the map will be made manifest. The great artery of the country, the *noble Mississippi*, is now being approached and intersected by numerous *branching railroads* from all the Atlantic States, and their *termini* are favorable to the *central route* beyond the Mississippi to the Pacific; all the *northern and eastern railroads concentering at St. Louis*, and those south intersecting at *Memphis*. Every inhabitant of the Mississippi valley must feel a deep interest in this subject and will think seriously upon it. Situate as it were midway between the two oceans, they can fear nothing of the result, whatever may be the direction given this route; but they *can and will judge disinterestedly on the route most proper for this road to take to subserve the general interests of the States in contradistinction to those of but one or two.* In "Thomson's Recollections of Mexico," we find the following remarks in relation to the importance of this subject.

"To say nothing of other harbors in California, that of San Francisco is capacious enough for the navies of the world, and its shores are covered with enough of timber (a species of live oak) to build those navies. If a man were to ask of God a climate, he would ask first such a one as California, if he had ever been there. There is no portion of the western country that

produces all the grains as well. I have been told by more than one person on whom I entirely relied, that he had known whole fields to produce a quantity so incredible that I will not state it. The whole face of the country is covered with the finest oats growing wild; sugar, rice and cotton find there their own congenial climate. Besides all these the *richest mines of gold and silver* have been discovered there, and the *pearl fisheries* have always been the source of the largest profits; and more than these are the *markets of India and China*, with nothing intervening but the calm and stormless Pacific ocean."

The distance from the head of navigation on the Arkansas and Red rivers to a navigable point of the waters of the gulf of California is not more than *five or six hundred miles*. Let that distance be overcome by a railroad, and what a vista opens to the prosperity and power of our country. I have no doubt that the time will come when New Orleans will be the greatest city in the world. That period will be incalculably hastened by the completion of this great work.

Your memorialist before concluding, would present to the consideration of your honorable bodies the association of a *telegraphic communication* to the Pacific with this plan of the road-way. Your memorialist brought this part of the subject before your honorable bodies in 1848, (Senate, Mis. Doc. No. 51, 1st session 30th Congress,) and as its importance has increased with the improvements in this mode of communication, your memorialist would recommend that in the event of your honorable bodies ordering a survey of a route or routes for this road, to *connect a line of telegraph wires with such survey or surveys;* the advantages of which would be of incalculable importance to the work in its progress. The cost of fixing a line of these wires would be but trifling compared with the value of the service rendered by them, that there should be no hesitation in their adoption. (The expense of fixing a single wire for operation is only from fifty to sixty dollars a mile.) By means of this silent messenger the proceedings of every day along the line will be known to every State; and to render security to the line Indian guards may be taught and charged with its oversight.

In the final consummation of this great work, and when laying down of but *one track* of the road, the telegraphic wires might then assume their *permanent position with the rail. The rail* now most approved of for these roads is that in the form of the letter U, ∩ reversed, and which is well fitted to receive the wires in the cavity formed underneath—the wire being previously coated with *gutta percha* to check any outer metallic influences. By this means the accidents and mishaps to which the wires under the present system are subject will be remedied, and a perfect communication of intelligence be formed from one end of our country to the other, free from interruptions of every kind. Thus by this *lightning speeded agent*, the merchant of Boston may be made acquainted with the daily transactions of his agent on the shores of the Pacific, and those *impositions* of trade which once prevailed in the commercial world be *banished* as the variations of exchange and value of goods or *produce* would be *open to all* alike.

Respectfully submitted by your memorialist.

ROBT. MILLS,
Engineer and architect.

City of Washington, D. C., 1852.

APPENDIX A.

Extract from letter of Colonel J. J. Abert. (1849.)

It is generally admitted that, in the present condition of California and Oregon—I mean in reference to delays and difficulties of communication—they cannot be expected to remain as parts of our Union. What, then, is the remedy? Is it not to remove these difficulties and delays? Certainly, you will say. Well, then, what method so effectual, so certain of success, as a railroad? It is not a mere question about a road; it is a question about our Union—a question upon which our greatest statesmen may well expand their strength, and hope for anything as they befriend it; aye, and fear everything as they are found to oppose it.

But what, you may ask, are my particular notions about this road, its trace, &c. I will briefly explain them.

The road should involve the following general considerations:

1st. It should be as short a route as the peculiarities of the country will admit.

2d. It should be as diffusive as possible in its advantages—a main artery of the great political body, admitting of branches in every direction.

3d. It should be a road for the whole year, and not a mere summer or seven months' road, with all its facilities closed for the winter.

4th. It should pass through a good soil—an inhabited or inhabitable country, possessing from climate and soil attractions to settlers, so that its advantages would be felt, and its cost be compensated in the enhanced value and occupation of adjacent lands.

5th. It should lead to our northern and eastern coast, and to our southern and eastern coast.

6th. It should take advantage, as far as practicable, of existing railroads.

These appear to me to be the general considerations, which, as far as practicable, should be fulfilled in such a road.

We will assume as the starting point on the Pacific the harbor of San Diego, because it is a frontier harbor and will have to be fortified; because it is the best harbor on our Pacific coast, that of San Francisco alone excepted, and because from this point the road is to be easily continued to any part of the coast, (through the valley of the Sacramento,*) and to be made an efficient element in the defence of that coast.

From San Diego it will have to pursue, generally, Emory's trace of General Kearny's march, as exhibited in Emory's report.

From San Diego to the crossing of the Colorado will probably be about two hundred miles by the railroad trace. At this vicinity there will no doubt be a very clever town, for, at this vicinity, the railroad will have to open its fostering arms to the trade of the valley of the Colorado, and to the vast commercial resources of the bay of California and of the southern coast of Mexico, which will, no doubt, prefer a port in this vicinity to the more exposed and more dangerous navigation of the Pacific coast of Lower California.

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* This is the received designation of the valley formed by the Sacramento and San Joaquin.

From the Colorado, the railroad will not be able to leave the valley of the Gila, but will pursue its course in that valley to its junction with the Rio del Norte, within our boundary on that river. On reaching this point, its facilities are opened to the whole valley of that river, by boating from below, and at seasons from above, or by a branch railroad to Santa Fé. There cannot be much choice in the route thus far, as in that distance it is essential for a military as well as commercial road.

From the Rio del Norte the road will have to pursue its course through Texas to the Mississippi. Various notions exist about the course of the road through Texas, and we are much in want of information on this part of the subject; but keeping in mind the general principles before indicated, and calling to aid the knowledge we have of that country, I am disposed to think that, after crossing the Rio del Norte, the road will have to tend somewhat southwardly, in order to turn the Guadaloupe range of mountains,* then passing through San Antonio, Bastrop, or La Grange, Washington, &c., to Nacogdoches.

By this route, the road will pass through a highly valuable part of Texas and communicate with the principal rivers of that State at boatable points, from which it will have access to the ports of this State on the gulf by means of these rivers, or by branch roads.

At Nacogdoches will probably be the best point for the two great branches—one leading to the northeastern coast of the United States, the other to the southeastern.†

The northern branch will probably find its better course to cross the Red river at the Great Bend or its vicinity, then crossing the Arkansas at Little Rock, pursue its most direct course to St. Louis; then crossing the river, to pursue the most direct favorable course which can be obtained south of the great lakes to Pittsburgh.

From Pittsburgh, its connexion north and east may be said to be already accomplished. At St. Louis, the road will open all its facilities to the upper Mississippi and to the Missouri and their tributaries.

From Nacogdoches the southern branch will probably take the most direct route to the Mississippi, distant about one hundred and seventy-five miles, at a point near to and below the mouth of Red river. On arriving at this river, (the Mississippi,) the facilities of the road are open to the trade of that river at all seasons of the year, south to New Orleans and north to the Ohio. The crossing of this river should be by a ferry. A good steamboat ferry will be found to oppose no obstacles to the intercourse, and will admit of extension to any favorable point on the opposite side, up or down the river.

We will suppose for a moment this point to be Vicksburg; from Vicksburg to Washington by probable railroad trace is about 1,220 miles, of which 760 are already a made and used railroad; and this route has now in existence its communications with Savannah, Ga., Charleston, S. C., Wilmington, N. C., Norfolk or Norfolk harbor, at Portsmouth, Va.; and other branch roads are in contemplation and being made, which will accom-

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*It is said there is a very good route on the northern flank of the Guadaloupe mountains, in a course somewhat direct from the Rio del Norte, near our southern boundary on that river, to the head of steamboat navigation on the Red river of Louisiana, probably near old Fort Washita.

†It may probably be better to have this grand junction further back in Texas, about Washington, and from thence conduct the southern route more directly to the Mississippi.

plish connexions with other harbors of the coast, and with Pensacola on the gulf.

Now, by either of these routes, the St. Louis route or the Vicksburg route, a traveller can go from Washington, the capital of the Union, to San Diego, on the Pacific, in less than seven days; that is, about six days and a half, at an average rate of twenty miles the hour.

All will be within our own territory—all will be under our own control. All the money expended in the construction of the road will be for the benefit of our citizens; and all those great accessory benefits of additional value to the soil, the creation of cities and towns, encouragement to emigration, &c., &c., will enure to the benefit of our own country and of our own citizens. In a word, all the advantages of such a communication, direct and indirect will be our own.

The road from Washington to Vicksburg will, without doubt, be soon completed, by the same kind of company and State efforts, with which existing parts have been made.

The question, then, of interest, is the construction of the road from the Mississippi to the Pacific. At a meeting held in Boston, in reference to this road, in April last, it seemed to be a favorite scheme to have one grand charter for the road.

The right of the United States to grant a charter for such a purpose, within the limits of a State, would perhaps be questioned. But the right of the United States to aid the chartered companies of States for such purposes has the sanction of precedent in the United States subscription to the Louisville and Portland canal, the Delaware and Chesapeake canal, the Potomac and Ohio canal, and the Dismal Swamp canal; and in the exercise of this right, the subscription could be on prescribed conditions of dimensions and strength of road, and of privileges to transport the mail and munitions of war free of charge.

But the right of the United States to grant a charter for such a purpose from the Rio del Norte to the Pacific is, I believe, without question in reference to constitutional power, as within those limits there is no organized State government; and this charter could be granted on prescribed conditions and proportional aid.

Should the course of a charter be preferred, some plan like that just indicated could be pursued. Or the United States could make the road from the Rio del Norte to the Pacific, under numerous legal precedents of constructing military roads within territories, and there need be no fears that the connecting links from the Rio del Norte to Washington would be long delayed.

But the great question is the road. Any plan that is proper can be pursued in making it; and a great preliminary question is, the surveys in reference to the road. Upon this last, I believe there are no conflicting opinions in reference to the right of the United States to authorize the survey and to meet its expenses.

APPENDIX B.

The following table from the map of James B. Moore, Esq., will be useful for reference.

From—	To—	Miles.
San Francisco (or San Diego)	Shanghae	5,775
Do do	Canton	6,575
Do do	Singapore	7,875
Do do	Calcutta	9,585
Do do	Persian Gulf	10,960
Do do	Manilla	6,775
Do do	Batavia	8,160
Do do	Sandwich Islands	2,100
Do do	Bombay	10,560
Do do	Northeast end of Australia	6,150
Do do	Sidney	6,480
Do do	Society Islands	5,660
Do do	New Zealand	5,960
Do do	New York via Cape Horn	14,300
Do do	Liverpool	14,175
Do do	Valparaiso	5,100
Do do	Lima	3,960
Do do	Panama	3,275
New York do	Via Panama	5,500
Do do	Via Tehuantepec	4,160
Do do	New Orleans	1,800
Do do	Liberia	3,960
Do do	Panama	2,225
Do do	Tehuantepec	1,960
Do do	Rio Janeiro	5,160
New Orleans do	Liverpool	4,700
Do do	Liberia	4,850
Do do	Havanna	650
Do do	Panama	1,550
Do do	Tehuantepec	850

From—	To England.	To Oregon.	Difference.
	Miles.	*Miles.*	*Miles.*
Bombay	11,500	9,630	1,870
Calcutta	12,275	8,700	3,575
Shanghae	14,400	5,000	9,400
Jesso Islands	15,660	3,660	12,000
Singapore	12,300	7,020	5,280
Batavia	12,000	7,450	4,550
Northeast end of Australia	13,560	6,120	7,440

NOTE.—The above distances are calculated for nautical miles.