

IN THE COMMISSIONERS COURT OF COWLITZ COUNTY, WASHINGTON.

In the Matter of the Organization

of

CONSOLIDATED DIKING IMPROVEMENT
DISTRICT NO. 1 OF COWLITZ COUNTY.

DETAILED REPORT OF

SPECIAL ENGINEER

TO THE HONORABLE BOARD OF COUNTY COMMISSIONERS OF COWLITZ COUNTY,
STATE OF WASHINGTON:

In compliance with your Order of October 13, 1923, the undersigned special engineer appointed by your Honorable Board has gone upon the lines described in the petition heretofore filed herein by The Longview Company, The Longview Suburban Company, The Long-Bell Lumber Company, S. M. Morris, T. P. Fisk, Alex Hay and E. L. Lambuth, and has surveyed and taken levels on the same, and set a stake at every hundred feet, numbering the same consecutively, and has noted the intersection of property lines and boundaries, township, city and county lines and road crossings, insofar as said intersections or any of them exist, and has made such other investigations as he has deemed necessary and herein makes his detailed report in this matter.

The undersigned has prepared and submits herewith a plat of the enlargements and additions to the system of improvement in Consolidated Diking Improvement District No. 1, prayed for in said petition. The said plat is drawn upon a scale sufficiently large to show all the meanderings of the proposed enlargements and additions and is marked "Exhibit 'A'-Accompanying and Forming a Part of Detailed Engineer's Report of October 13, 1923, on Consolidated Diking Improvement District No. 1 of Cowlitz County." The said plat is so drawn and inscribed as to serve the purpose not only of a plat of said enlargements and additions, but also of a profile of the same, showing,

at all material points, the elevation of the earth's surface, the grade line of the proposed enlargements and additions and the gradient fixed. Said plat is identified by the signature of the undersigned special engineer. The said plat is hereby referred to and incorporated in and made a part of this report.

The said plat distinctly shows the boundaries of each lot or tract of land, and the location of each public and other road and sewer system to be benefited by the proposed enlargements and additions, and in connection with the list of ownerships contained in this report, indicates, so far as known, the name of the owner of each lot or tract of land and each public or other road and sewer system affected, and the distance in feet through each tract or parcel of land crossed by the proposed enlargements and additions, together with such other matters as the undersigned special engineer has deemed material.

The undersigned special engineer has prepared and submits herewith a schedule and estimate of all property that will be damaged or both damaged and benefited by the proposed enlargements and additions, prepared and arranged in compliance with the laws and statutes of this State applicable thereto. Said schedule and estimate is marked "Exhibit 'B'-Accompanying and Forming a Part of Detailed Engineer's Report of October 13, 1923, on Consolidated Diking Improvement District No. 1 of Cowlitz County," and is identified by the signature of the undersigned special engineer. The said schedule is hereby referred to and incorporated in and made a part of this report.

The undersigned special engineer reports further to your Honorable Board as follows:

I. OUTLINE OF GENERAL PLAN FOR ENLARGEMENTS OF AND ADDITIONS TO THE SYSTEM OF IMPROVEMENT IN CONSOLIDATED DIKING IMPROVEMENT DISTRICT NO. 1 OF COWLITZ COUNTY.

The object of these proposed enlargements and additions is to protect from overflow from the waters of the Columbia and Cowlitz

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Rivers about eleven thousand acres of land lying in the peninsula formed by the confluence of these rivers, which has hitherto been either inadequately protected by inferior and undersized dikes or entirely unprotected from flood conditions.

To attain this object it is planned to strengthen old dikes and build new ones to such a height and of such size and strength as to place beyond danger of flood for all time this area, it being the plan to build to an elevation of 3 feet in excess of the highest flood water recorded in the memory of man at this point; viz, that of the year 1894.

In Order that this area shall not only be protected against flood, but also freed from any and all accumulation of surface drainage and seepage water, it is also planned to construct and maintain a drainage system with ditches of sufficient number and size, all leading to one central pumping plant to keep the elevation of the water table at all times below a practical working grade so that all business, industrial, agricultural and other activities may be efficiently carried on on the ground surface. /

A general description setting forth the character and extent of said proposed enlargements and additions and the location, route and termini thereof is contained in the petition heretofore filed in this matter by The Longview Company, The Longview Suburban Company, The Long-Bell Lumber Company, S. M. Morris, T. P. Viak, Alex Hay and B. L. Lambuth, and dated the 13 day of October, 1923, which said description is hereby referred to and incorporated in and made a part of this report.

II. ESTIMATE OF THE COST OF CONSTRUCTION.

The undersigned special engineer makes the following estimate of the cost of construction of the proposed enlargements and additions, the same being itemized so as to be reasonably specific as to the various parts thereof:

(1)

Dike Dredging, Willow Revetment, Bulk-heading, Rip Rap, etc. \$1,445,090.00

(2)

Excavation.

Ditch No.	Cu. Yds.	
1	105,000	
2	123,000	
3	378,000	
4	181,000	
5	155,000	
6	650,000	
7	361,000	
8	252,000	
9	21,000	
10	235,000	
11	119,000	
14	176,000	
	<u>2,755,000</u>	\$ 20¢
		<u>551,000.00</u>

(3)

Pump House 80,000.00

(4)

Machinery for Pump House 80,000.00

(5)

Pole Line and Transformer for same 15,000.00

Sub-total \$2,169,090.00
Engineering & Contingencies 216,909.00

Total \$2,585,999.00

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III. ESTIMATE OF THE TOTAL NUMBER OF ACRES THAT WILL BE BENEFITED.

The undersigned special engineer estimates and reports that the total number of acres which will be benefited by the proposed enlargements and additions is 11,013.07 acres.

IV. MANNER IN WHICH PROPOSED ENLARGEMENTS AND ADDITIONS ARE TO BE MADE.

The proposed enlargements and additions are to be constructed in the following manner:

A. Diking Improvements.

Said enlargements and additions, insofar as they consist of the enlargement of existing dikes or the construction of additional dikes connecting or to be connected therewith, are to be constructed by means of hydraulic dredges operating in the Cowlitz and Columbia Rivers, and pumping the material for such dikes from the beds of said rivers to its place in said dikes.

B. Drainage Ditches.

The portions of said enlargements and additions consisting of drainage ditches are to be constructed by means of hydraulic and dipper dredges and drag line excavators.

C. Pumping Plant.

The pumping plant is to be constructed so as to conform to the plan and description hereinafter set forth, and to be constructed and equipped in a thoroughly substantial and workmanlike manner and to the entire satisfaction of the County Engineer of Cowlitz County or of any engineer who may be specially employed by your Honorable Board to superintend the construction of the proposed enlargements and additions mentioned herein.

Certain portions of the above mentioned enlargements and additions have already been constructed and are now privately owned. Such construction has been done in accordance with the plans contained

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in this report and shown on the accompanying plat. Said construction has been done in a thoroughly substantial and workmanlike manner and to the entire satisfaction of the undersigned special engineer. As to such portions of the enlargements and additions further construction is unnecessary and the same may be acquired from the present owners by agreement or condemnation, together with an easement in the premises upon which said enlargements and additions are so constructed for their maintenance, repair and replacement. The cost of acquiring said previously constructed enlargements and additions should be the actual cost of the construction thereof, including the cost of organization and skilled supervision in said construction work, plus the reasonable value of such easement. The said actual cost of construction conforms substantially to the estimate of the cost of construction of the proposed enlargements and additions hereinabove set forth, insofar as said estimate applies to said portions of said enlargements and additions already constructed.

V. ARTIFICIAL FEATURES.

The number, kind and location of all water ways, ditches, outlets, flood gates and all other artificial appliances, bridges and crossings, insofar as the same or any of them exist or their existence is contemplated in the said proposed enlargements and additions, are clearly designated and shown on the accompanying plat.

A. Water Ways or Ditches.

The water ways or ditches contemplated are indicated upon the accompanying plat by _____ lines and are likewise designated by number as "Ditch No. 1", "Ditch No. 2", etc. These ditches are to have a total length of about 25 miles and are to be built to a grade, generally speaking, of about 1 foot per mile, all draining to a common basin at the pumping station whose location is shown on the plat, which basin will have a bottom elevation of about 4 feet below Mean Low Water Slaughter's Bar Datum. When functioning in connection with the channels

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of the natural sloughs, these ditches, with the said basin, pumping station and outlets, will tend to keep the level of the water table over the entire district benefited below a maximum elevation of 6 feet above Mean Low Water. A slough marked "Slough 'A'" on the accompanying plat will be used as a drainage ditch to carry off a considerable portion of this water and will be cleaned out, deepened, widened and straightened by dredge work to the extent necessary to make it function efficiently to this end.

The water draining from the foothills will be stopped and carried off by a ditch marked "Ditch No. 6" on the map, to be constructed immediately at the bottom of these hills, said ditch so disposing of such drainage water and doing away with a great portion of the water which at present underlies the surface of the valley during the rainy season. The other important source of the underlying water stratum directly below the surface is the seepage from the two rivers. All ditches through the valley are planned deep enough to intercept that portion of this seepage water which would under present conditions saturate the surface and carry it off to its ultimate discharge into the Columbia River.

B. Outlets and Pumping Station.

The outlets of said drainage ditches are to be through the pumping station whose location is designated on the accompanying plat. A description of said pumping plant and outlets follows:

X The pumping station will consist of a reinforced concrete building approximately 36 ft. x 64 ft. floor plan in which will be incorporated 1800 cu. yds. of concrete. The station will be equipped with 6 centrifugal pumps capable of discharging a total of 500 second feet, under average pumping conditions. These 6 pumps will each have

42 inch suction and 36 inch discharge and will be driven in pairs by 3 400 h.p. synchronous motors with proper switch board and transformer equipment. In addition to these larger units will be the customary priming sets and auxiliary sump pump; also 2 50 h.p. motor generator exciters, making a total of 1500 h.p. The station will also be provided with 10 tide gates for gravity flow. These gates will average 42 sq. ft. each, making the total discharge area 420 sq. ft. It is more practicable and desirable, in the opinion of the undersigned special engineer, to install and operate the pumps above described than to rely on the pumping equipment formerly serving Diking Improvement Districts Nos. 4 and 8 of Cowlitz County, and Diking District No. 1 of said County, said last mentioned equipment not being adapted to the needs of the enlarged improvement system. X

C. Dimensions of Artificial Features.

The contemplated dimensions of the drainage ditches above mentioned are as follows:

Ditch No.	Width at Top	Depth
1	70 feet	17 feet
2	50 "	10 "
3	60 "	12 "
4	74 "	16 "
5	60 "	12 "
6	40 "	8 "
7	150 "	10 "
8	40 "	10 "
9	35 "	6 "
10	60 "	10 "
11	35 "	6 "
14	60 "	12 "

The dimensions of each of the 10 outlets at the pump house above mentioned will be 6 ft. x 7 ft.

The tide gates to be constructed in the westerly portion of Ditch No. 6, as the same appears on the accompanying plat, at the intersection of said ditch with Clark Creek, are to be 2 in number and

the dimensions of each gate are to be 6 ft. x 7 ft. The location of said tide gates are indicated on the accompanying plat and the same are designated by the words "Tide Gates."

The dimensions of the overflow gate to be constructed in the Easterly portion of Ditch No. 6, at a point somewhat Northeast of the northerly extremity of Fowler's Lake, are to be 4 ft. x 5 ft. The location of said gate is shown on the accompanying plat and said gate is designated by the words "Overflow Gate", the said gate being located in Section 28, Township 8 North, Range 2 East, N. K.

Emergency gates are to be located on the Westerly side of Fowler's Lake in Section 32, Township 8 North, Range 2 East, N. K. The location of said gates is indicated on the accompanying plat and is designated by the words "Emergency Gates." These gates are to be 2 in number, the dimensions of each gate being 6 ft. x 8 ft.

VI. DESCRIPTION OF RIGHT OF WAY REQUIRED FOR DIKE.

The following is a description of the right of way necessary for the construction and maintenance of the proposed enlargements and additions, insofar as the same consist of diking improvements. The said description designates the entire right of way required for the diking improvement contemplated in Consolidated Diking Improvement District No. 1 of Cowlitz County, and includes portions of the right of way heretofore occupied by diking improvements authorized and constructed in Diking Improvement Districts Nos. 4, 6, 7, 8 and 10 of Cowlitz County, respectively, prior to the consolidation of said improvement districts into Consolidated Diking Improvement District No. 1 of Cowlitz County, which old dikes it is proposed to enlarge by covering them with material deposited over and around them and to add to by the construction of dikes connecting with them at either end and extending to the termini of the complete, enlarged diking improvement herein described.

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For the purpose of conforming to the survey of said right of way heretofore made by the undersigned special engineer, the said description is divided into two parts. The first part is designated "Dike Right of Way No. 1" and constitutes that portion of the entire dike right of way above mentioned lying on the Easterly side of the point designated as Station 0 plus 00 or the beginning point of the said survey, which point is 1887.3 feet West and 667.3 feet South of the corner common to Sections 31 and 32, Township 9 North, Range 2 West, T. N., and Sections 5 and 6, Township 7 North, Range 2 West, T. N. The second part is designated "Dike Right of Way No. 2" and constitutes that portion of the said entire dike right of way lying on the Easterly side of said Station 0 plus 00.

Both of said portions of said right of way are hereinafter described by reference to what is called a "center line", said line, however, not being always equidistant from the boundaries of said right of way. Said "center line" is divided into sections, designated, respectively, as "L line", "L¹ line", "L² line", etc. for the purpose of indicating distances along said center line, reference is made to certain points referred to as "stations" on said lines and established by the undersigned special engineer in his survey of said right of way. The intervals at which said stations are set are indicated in hundreds and in units of feet by the numbers by which said stations are designated, the number used in designating each station before the word "plus" indicating the number of hundreds of feet of distance along said center line between the station indicated and Station 0 plus 00 above described, or, in the case of certain stations hereinafter designated, which stations are located on certain subdivisions of said center line, from other points of origin hereinafter more particularly described, and the figure following the word "plus" indicating the number of additional feet in said distance.

Said description follows:

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A. Dike Right of Way No. 1:

A strip of land 250 feet wide for a distance of 4500 feet, being 150 feet inside and 100 feet outside of the center line described as follows:

Beginning at the point hereinabove mentioned and designated as the beginning point of the dike right of way survey made for purposes of this report by the undersigned special engineer, said point being designated as Station 0 plus 00 "L" line, and also Station 0 plus 00 "LM" line of said survey, which point is 1237.3 feet east and 667.3 South of the corner common to Sections 31 and 32, Township 8 North, Range 2 West, T. M.; Thence following along the "L" line of said survey, on a 5 deg curve to the right, having a back semi-tangent of South 63 deg 26 $\frac{1}{2}$ ' East 232.3 feet to Station 2 plus 82.3; Thence South 49 deg 19 $\frac{1}{2}$ ' East to Station 5 plus 16.9; Thence thru a 3 deg curve to the right to Station 6 plus 86.9; Thence South 44 deg 13 $\frac{1}{2}$ ' East to Station 9 plus 80.5; Thence thru a 3 deg and 39' curve to the left to Station 11 plus 59.4; Thence South 50 deg 45 $\frac{1}{2}$ ' East to Station 25 plus 54.6, passing between fractional Sections 5 and 6, Township 7 North, Range 2 West, T. M., at Station 24 plus 25.2; Thence thru a 3 deg and 30' curve to the left to Station 23 plus 49.8; Thence South 39 deg 43 $\frac{1}{2}$ ' East to Station 33 plus 48.9; Thence thru a 3 deg curve to the left to Station 36 plus 59.4; Thence South 40 deg 02 $\frac{1}{2}$ ' East to Station 37 plus 89.5; Thence thru a 2 deg and 30' curve to the right to Station 40 plus 77.8; Thence South 38 deg 50 $\frac{1}{2}$ ' East to Station 45 plus 00.

Also a strip of land 300 feet wide for a distance of 6000 feet, being 200 feet on the inside and 100 feet on the outside of a center line described as follows:

Beginning at Station 45 plus 00 mentioned above and running Thence South 38 deg 50 $\frac{1}{2}$ ' East to Station 52 plus 90.6; Thence thru a 2 deg and 30' curve to the left to Station 55 plus 57.3; Thence South 45 deg 30 $\frac{1}{2}$ ' East to Station 63 plus 06.8; Thence thru a 4 deg curve to the right to Station 66 plus 31.8; passing at Station 65 plus 10 the line between fractional Sections 5 and 6, Township 7 North, Range 2 West; Thence South 32 deg 26 $\frac{1}{2}$ ' East to Station 71 plus 63.5; Thence thru a 3 deg curve to the left to Station 74 plus 94.1; Thence South 42 deg 21 $\frac{1}{2}$ ' East to Station 79 plus 00, at which point said center line intersects the property line separating a tract owned by The Long-Bell Lumber Company, which tract included all of the right of way hereinabove described, from a tract owned by The R. A. Long Properties. Thence continuing along the same course to Station 79 plus 47.4; Thence thru a 5 deg curve to the left to Station 81 plus 09.1, passing at Station 81 plus 00, the property line separating the above mentioned tract owned by The Longview Suburban Company from a tract owned by

Thence South 50 deg 26 $\frac{1}{2}$ ' East to Station 93 plus 23.8;
Thence thru a 5 deg curve to the left to Station 94 plus 39.2;
Thence South 53 deg 54' East to Station 105 plus 00, passing at Station 102 plus 60 the line between fractional Sections 8 and 9, Township 7 North, Range 2 West, W. M.

Also a strip of land 275 feet wide for a distance of 2500 feet, being 175 feet on the inside and 100 feet on the outside of a center line described as follows:

Beginning at Station 105 plus 00 mentioned above and running thence South 53 deg 54' East to Station 116 plus 10.6;
Thence thru a 4 deg curve to the left to Station 118 plus 63.1;
Thence South 64 deg 00' East to Station 130 plus 00.

Also a strip of land 325 feet wide for a distance of 5000 feet, being 175 feet on the inside and 150 feet on the outside of a center line described as follows:

Beginning at Station 130 plus 00 mentioned above and running thence South 64 deg 00' East to Station 144 plus 69.0;
Thence thru a 5 deg curve to the left to Station 148 plus 68.8;
Thence South 85 deg 53 $\frac{1}{2}$ ' East to Station 154 plus 97.8;
Thence thru a 5 deg curve to the left to Station 159 plus 57.6;
Thence North 78 deg 15' East to Station 180 plus 00, passing the line between fractional Sections 9 and 10, Township 7 North, Range 2 West, W. M., at Station 161 plus 10.

Also a strip of land 275 feet wide for a distance of 3600 feet, being 175 feet on the inside and 100 feet on the outside of a center line described as follows:

Beginning at Station 180 plus 00, mentioned above;
Thence North 78 deg 15' East to Station 183 plus 57.5;
Thence thru a 5 deg curve to the left to Station 187 plus 99.8;
Thence North 56 deg 09' East to Station 196 plus 20;
Thence thru a 3 deg curve to the right to Station 198 plus 45.6;
Thence North 62 deg 55' East to Station 209 plus 78.6;
Thence thru a 5 deg curve to the right to Station 214 plus 92.9;
Thence North 88 deg 38' East to Station 216 plus 00.

Also a strip of land 310 feet wide for a distance of 400 feet, being 175 feet on the inside and 135 feet on the outside of the center line described as follows:

Beginning at Station 216 plus 00 mentioned above;
Thence North 88 deg 38' East to Station 220 plus 00, passing at Station 218 plus 20, the line between fractional Sections 10 and 11, Township 7 North, Range 2 West, W. M.

Also a strip of land 350 feet wide for a distance of 1500 feet, being 175 feet on the inside and 175 feet on the outside of the center line described as follows:

Beginning at Station 220 plus 00 mentioned above;
Thence North 88 deg 38' East to Station 222 plus 47.5;
Thence thru a 1 deg curve to the left to Station 235 plus 00.

Also a strip of land 275 feet wide for a distance of 1500 feet, being 175 feet on the inside and 100 feet on the outside of the center line described as follows:

Beginning at Station 235 plus 00, mentioned above, and continuing on a 1 deg curve to the left to Station 236 plus 12.4;
Thence North 74 deg 59½' East to Station 242 plus 21.3;
Thence thru a 4 deg curve to the left to Station 250 plus 00.

Also a strip of land 325 feet wide for a distance of 2000 feet, being 175 feet on the inside and 150 feet on the outside of the center line described as follows:

Beginning at Station 250 plus 00 mentioned above, and continuing on a 4 deg curve to the left to Station 270 plus 00.

Also a strip of land 275 feet wide for a distance of 1000 feet, being 175 feet on the inside and 100 feet on the outside of the center line described as follows:

Beginning at Station 270 plus 00 mentioned above, and continuing on a 4 deg curve to the left to Station 275 plus 34.6, passing at Station 275 plus 75 the line between fractional sections 2 and 11, Township 7 North, Range 2 West, W. M.;
Thence North 57 deg 32½' West to Station 280 plus 00.

Also a strip of land 233 feet wide for a distance of 3540 feet, being 135 feet on the inside and 100 feet on the outside of the center line described as follows:

Beginning at Station 280 plus 00 mentioned above and running thence North 57 deg 32½' West to Station 282 plus 08.4;
Thence thru a 2 deg curve to the left to Station 289 plus 25.1;
Thence North 72 deg 00' West to Station 293 plus 57.5;
Thence thru a 3 deg curve to the left to Station 296 plus 46.6;
Thence North 60 deg 40' West to Station 297 plus 62.5;
Thence thru a 3 deg curve to the right to Station 300 plus 38.0;
Thence North 72 deg 24' West to Station 304 plus 08.7;
Thence thru a 4 deg curve to the left to Station 307 plus 52.9, passing at Station 305 plus 30, the line between fractional sections 3 and 2, Township 7 North, Range 2 West, W. M.;

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Use Type written Courses

~~86° 02' 30"~~

Thence North ~~82 deg 10'~~ West to Station 308 plus 93.5;
 Thence thru a 3 deg curve to the right to Station 313 plus 40, which is a point on the South line of a tract of land owned by The Langview Company, the same being the boundary line between the said tract and the tract hereinabove mentioned belonging to
 Thence continuing along said curve to the right to Station 323 plus 08.9, passing at Station 313 plus 40 the line between the property of The R. A. Tong Props. and the property of The Long-Bell Lumber Company;
 Thence North ~~42 deg 22'~~ West to Station 337 plus 40.4;
 Thence thru a 2 deg and 30" curve to the right to Station 341 plus 47.1;
 Thence North ~~32 deg 32'~~ West to Station 345 plus 82.2;
 Thence thru a 4 deg curve to the right to Station 350 plus 62.2;
 Thence North ~~17 deg and 30"~~ West to Station 354 plus 22.1;
 Thence thru a 3 deg curve to the right to Station 356 plus 47.6;
 Thence North ~~7 deg 34'~~ West to Station 360 plus 00.

Also a strip of land 200 feet wide for a distance of 4000 feet, being 100 feet wide on each side of the center line described as follows:

~~70° 26' 30"~~

Beginning at Station 360 plus 00 mentioned above and running thence North ~~7 deg 34'~~ West to Station 360 plus 68.8;
 Thence thru a 4 deg curve to the right to Station 363 plus 99.6, passing at this point the line between fractional Section 34, Township 8 North, Range 2 West, and Section 3, Township 7 North, Range 2 West, T. N.;
 Thence North ~~4 deg 40'~~ East to Station 365 plus 20.4 1/2" line; line which is identical with Station 365 plus 20.8 "L"
 Thence along the "L" line thru a 5 deg curve to the left to Station 367 plus 62.8;
 Thence North ~~6 deg 2'~~ West to Station 372 plus 08.1;
 Thence thru a 6 deg curve to the right to Station 375 plus 81.4;
 Thence North ~~10 deg 22'~~ East to Station 393 plus 70.4;
 Thence thru a 1 deg curve to the right to Station 396 plus 53.7;
 Thence North ~~19 deg 12'~~ West to Station 397 plus 45.9;
 Thence thru a 2 deg curve to the left to Station 399 plus 54.2;
 Thence North ~~15 deg 2'~~ East to Station 400 plus 00;
 Save and except therefrom a strip of land about 100 feet wide lying on the east side of the dike center line between Stations 383 plus 76 and 385 plus 05.5, containing 0.30 acres, more or less.

Also a strip of land 175 feet wide for a distance of 2630 feet, being 75 feet on the inside and 100 feet on the outside of the center line described as follows:

Beginning at Station 400 plus 00 mentioned above and running thence North ~~15 deg 02'~~ East to Station 411 plus 80.3;

~~15° 09' 30"~~

100 ft wide
for a distance
of 946.5 feet
being 50 feet
628'30"
wide on either
side of the
center line
described as
follows:
Beginning
at Station
426+30
mentioned
above

Thence thru a 3 deg curve to the right to Station 415 plus 04.2;
Thence North $24 \text{ deg } 45'$ East to Station 421 plus ^{72.5} 72.6;
Thence thru a 2 deg curve to the left to Station 430 plus 92.5, crossing the corporate limits of and entering the City of Kelso at Station 426 plus 30;
Thence North $6 \text{ deg } 12'$ East to Station 435 plus 91.6;
Crossing the South line of Cedar Street in West Kelso at Station 432 plus 33.1, crossing the North line of Cedar Street and entering the James Catlin property, (Block "C" Catlin's Third Addition) at Station 432 plus 93.6, the right of way previously described being on the property of The Long-Bell Lumber Company, a corporation, leaving the James Catlin property and entering the M. J. Catlin property (Block "A" Catlin's Third Addition) at Station 434 plus 29.5, crossing the center line of Main Street at Station 435 plus 76.5.

The aforementioned Station 435 plus 91.6 being a point on the center line of the West approach of the new Cowlitz River Bridge 99.4 feet from the West end of said bridge.

100 feet wide for a distance of 2253.5 feet, being 50 feet on each side of the center line described as follows:

Beginning at a point on the West approach of the new Cowlitz River Bridge, said point being 51 feet West from the West end of said bridge and being designated as Station 0 plus 00 "L" line;
Thence North $6 \text{ deg } 03'$ East to Station 14 plus 63.1 "L" line, crossing at Station 0 plus 07 the North line of Main Street, West Kelso, and entering the M. T. Hutchinson property, (lot 5 Block B Catlin's Third Addition), leaving the M. T. Hutchinson property and entering Cowlitz County Tract (former approach to old bridge) at Station 0 plus 78, leaving Cowlitz County property and entering the property of The Long-Bell Lumber Company at Station 1 plus 08, crossing the South line of Fir Street at Station 6 plus 00, crossing the North line of Fir Street at Station 6 plus 30.5;
Thence thru a 2 deg curve to the left to Station 21 plus 83.1, crossing the corporate limits of and leaving West Kelso at Station 17 plus 40;
Thence North $8 \text{ deg } 27'$ West to Station 33 plus 35.5;
Thence thru a 4 deg curve to the left to Station 36 plus 33.9;
Thence North $20 \text{ deg } 23'$ West to Station 36 plus 40.7 "L" line which is identical with Station 473 plus 74.8 "L" line, thence continuing North $20 \text{ deg } 23'$ West to Station 475 plus 40, "L" line, at which point said "L" line connects with the 28 foot elevation of the foothills, passing at Station 475 plus 15.9, the center line of the Longview, Portland & Northern Railway as at present surveyed and located, said point being Station 356 plus 37.9 of the said survey of said railway.

B. Dike Right of Way No. 2:

Beginning at the point hereinabove mentioned and designated as the beginning point of the dike right of way survey made for purposes of this report by the undersigned special engineer, said point being designated as Station 0 plus 00 "L" line, and also as Station 0 plus 00 "IX" line of said survey, which point is 1887.3 feet West and 667.3 feet South of the corner common to Sections 31 and 32, Township 8 North, Range 2 West, T. M.;
Thence following the stationing of the "IX" line North 63 deg 26½' West to Station 1 plus 85.5;
Thence thru a 3 deg curve to the right to Station 6 plus 85.5;
Thence North 48 deg 26½' West to Station 15 plus 44.0, passing at Station 10 plus 39.0 the line between fractional Sections 31, Township 8 North, Range 2 West, T. M., and 6, Township 7 North, Range 2 West, T. M.;
Thence thru a 5 deg curve to the right to Station 19 plus 93.0;
Thence North 25 deg 59½' West to Station 20 plus 51.2.

Also a strip of land 240 feet wide for a distance of 477.3 feet, being 150 feet on the inside and 90 feet on the outside of the center line described as follows:

Beginning at Station 20 plus 51.2 mentioned above;
thence thru a 3½ deg curve to the left to Station 23 plus 23.5.

Also a strip of land 250 feet wide for a distance of 953.5 feet, being 150 feet on the inside and 100 feet on the outside of the center line described as follows:

Beginning at Station 25 plus 23.5 mentioned above;
Thence North 42 deg 42' West to Station 32 plus 51.1;
Thence thru a 5 deg curve to the left to Station 38 plus 53.6, ~~passing at Station 34 plus 82 the Easterly boundary of a tract of land owned by School District No. 66, and at Station 35 plus 80 "IX" line the Easterly boundary of said tract;~~

Thence North 72 deg 42½' West to Station 43 plus 53.7;
Thence thru a 7 deg curve to the right to Station 48 plus 43.3;
Thence North 37 deg 3' West to Station 43 plus 63.3;
Thence thru a 4 deg curve to the left to Station 50 plus 90.8 "IX" line which point is identical with Station 19 plus 53.0 "IX" line;
Thence along the "IX" line North 45 deg 09' West to Station 29 plus 01.1;
Thence thru a 2 deg curve to the left to Station 35 plus 46.1;
Thence North 59 deg 3' West to Station 42 plus 94.4;
Thence thru a 1 deg and 30' curve to the left to Station 48 plus 23.7;
Thence North 67 deg 7½' West to Station 50 plus 00.

Also a strip of land 325 feet wide for a distance of 3000 feet, being 175 feet on the inside and 150 feet on the outside of the center line described as follows:

Beginning at Station 50 plus 00 mentioned above;
Thence North 67 deg 57 $\frac{1}{2}$ ' West to Station 62 plus 42.8;
Thence thru a 3 deg curve to the left to Station 65 plus 09.5;
Thence North 75 deg 7 $\frac{1}{2}$ ' West to Station 80 plus 00, passing at about Station 70 plus 20 the line between fractional sections 35 and 36, Township 8 North, Range 3 West, W. N.

Also a strip of land 375 feet wide for a distance of 3900 feet, being 200 feet on the inside and 175 feet on the outside of the center line described as follows:

Beginning at Station 80 plus 00 mentioned above;
Thence North 75 deg 7 $\frac{1}{2}$ ' West to Station 102 plus 55.1, passing at Station 94 plus 97.0 the line between fractional sections 26 and 35, Township 8 North, Range 3 West, W. N.;
Thence thru a 4 deg curve to the right to Station 107 plus 30.1;
Thence North 56 deg 07 $\frac{1}{2}$ ' West to Station 119 plus 69.1;
Thence thru a 4 deg curve to the right to Station 124 plus 21.6;
Thence North 34 deg 01 $\frac{1}{2}$ ' West to Station 147 plus 49.4;
Thence thru a 4 deg curve to the right to Station 150 plus 49.4;
Thence North 22 deg 1 $\frac{1}{2}$ ' West to Station 186 plus 69.2;
Thence thru an 8 deg curve to the right to Station 195 plus 85.0;
Thence North 51 deg 18 $\frac{1}{2}$ ' East to Station 200 plus 00.

Also a strip of land 425 feet wide for a distance of 2600 feet, being 225 feet on the inside and 200 feet on the outside of the center line described as follows:

Beginning at Station 200 plus 00 mentioned above;
Thence North 51 deg 18 $\frac{1}{2}$ ' East to Station 203 plus 22.7;
Thence thru an 8 deg curve to the right to Station 207 plus 35.2;
Thence North 84 deg 19 $\frac{1}{2}$ ' East to Station 216 plus 62.7 = 216 plus 67.8;
Thence thru an 8 deg curve to the left to Station 221 plus 98.4;
Thence North 41 deg 3 $\frac{1}{2}$ ' East to Station 225 plus 00.

Also a strip of land 200 feet wide for a distance of 6455.3 feet, being 100 feet on each side of a center line described as follows:

Beginning at Station 225 plus 00 mentioned above, and running thence North 41 deg 3 $\frac{1}{2}$ ' East to Station 230 plus 83.9;
Thence thru a 7 deg curve to the left to Station 234 plus 22.9;
Thence thru a 12 deg and 10' curve to the left to Station 237 plus 36.2;

Thence North 20 deg 47 $\frac{1}{2}$ ' West to Station 241 plus 10.8;
 Thence thru a 12 deg curve to the right to Station 246
 plus 01.9, which is identical with Station 33 plus 53.4
 "LW²" line;
 Thence along the "LW²" line North 30 deg 09' East to Station
 29 plus 65.9;
 Thence thru an 8 deg curve to the left to Station 26 plus
 44.4;
 Thence North 12 deg 26 $\frac{1}{2}$ ' East to Station 25 plus 81.5;
 Thence thru a 10 deg and 50' curve to the right to Station
 22 plus 74.4;
 Thence thru a 10 deg curve to the left to Station 17 plus
 82.1;
 Thence North 3 deg 50 $\frac{1}{2}$ ' West to Station 4 plus 00.

Also a strip of land 200 feet wide, being 100 feet on
 each side of the center line described as follows:

Beginning at Station 4 plus 00 above mentioned and
 running thence South 89 deg 49' East 2070 feet;
 Thence North 67 deg 45' East 620 feet, connecting at said
 point with the walls of the pump house hereinabove mentioned,
 the front wall of which pump house will connect with the
 28 foot elevation of the foothills.

VII. DESCRIPTION OF RIGHT OF WAY REQUIRED FOR DRAINAGE

DITCHES.

The following is a description of the right of way required
 for drainage ditches to form a part of the enlargements and additions
 to the system of improvement in Consolidated Diking Improvement District
 No. 1 of Cowlitz County dealt with in this report, subject, however,
 to possible necessity of revision to some extent in the course of actual
 construction:

Drainage Ditch Right of Way No. 1:

A strip of land 80 feet wide being 40 feet on either side
 of the center line described as follows:

Beginning at a point 2321.38 feet South and 579.43 feet
 West of the corner common to Sections 28, 29, 32 and 33,
 Township 8 North, Range 2 West, E. M.; thence South 81 deg
 02' West 5712.9 feet to a point which is 1831.32 feet North
 and 1597.34 feet West of the one quarter ($\frac{1}{4}$) corner between
 Section 32, Township 8 North, Range 2 West and Section 5,
 Township 7 North, Range 2 West, E. M., containing 6.92 acres,
 more or less.

Drainage Ditch Right of Way No. 2:

A strip of land 100 feet wide, being 50 feet on either side of the center line described as follows:

Beginning at a point 1761.63 feet South and 1116.2 feet East of the corner common to sections 19, 20, 29 and 30, Township 8 North, Range 2 West, W. M., which point is at the intersection of Ditch No. 7 and Ditch No. 2, and running thence along the center line of a slough in a southerly direction to a point 1831.32 feet North and 1597.34 feet West of the ($\frac{1}{4}$) corner between sections 32, Township 8 North, Range 2 West, and Section 5, Township 7 North, Range 2 West, W. M., containing 15.84 acres, more or less.

Drainage Ditch Right of Way No. 3:

A strip of land 80 feet wide, being 40 feet on either side of the center line described as follows:

Beginning at a point 761.1 feet South and 1506.9 feet West of the one quarter ($\frac{1}{4}$) corner between sections 31 and 32, Township 8 North, Range 3 West, W. M., said point being at the intersection of the center lines of Ditch No. 5 and Ditch No. 3;

Thence South 49 deg 05' East 7916.37 feet to a point on the South line of Alder Street produced West which is ditch survey Station 65 plus 85.6;

Thence East 5969.4 feet to Station 123 plus 55.0;

Thence on a 22 deg 57' curve to the left to Station 123 plus 58.63;

Thence North 20 deg 19' East to Station 140 plus 75.0;

Thence North 70 deg 19' East to Station 150 plus 03.5, which is identical with Station 233 plus 49.0 of the located line of the Longview, Portland & Northern Railway;

Thence North 70 deg 19' East to Station 150 plus 35, which is the intersection of the center line of Ditch No. 3 and the center line of Ditch No. 4, which point is 1187.8 feet South and 854.3 feet East of the corner common to sections 33 and 34, Township 8 North, Range 2 West, and sections 3 and 4, Township 7 North, Range 2 West, W. M., containing 30 acres, more or less.

Drainage Ditch Right of Way No. 4:

A strip of land, the center line of which is described as follows:

Beginning at a point on the right of way of the Longview, Portland and Northern Railway 1187.8 feet South and 854.3 feet East of the corner common to sections 33 and 34, Township 8 North, Range 2 West, W. M., and sections 3 and 4, Township 7 North, Range 2 West, W. M., said point being at survey Station 150 plus 35 of the ditch center line location of Ditch No. 3;

Thence thru an angle of 91 deg 59' to the left on a curve having a radius of 41.87 feet, a distance of 65.2 feet, which curve has for a back semi-tangent a course of North 70 deg 19' East to Station 151 plus 00.2 (point of reverse curve);

Thence on a 2 deg 8' and 21" curve to the right thru a central angle of 36 deg 46' to Station 168 plus 18.94 (point of compound curvature)

Thence on a 32' curve to the right with a central angle of 13' to Station 168 plus 43.8;

Thence North 15 deg 19' East a distance of 3741.8 feet;

Thence on a 2 deg and 15' curve to the left thru a central angle of 2 deg and 15' to a point opposite Station 290 plus 50 of the located center line of the Longview, Portland & Northern Railway;

Thence North 13 deg 04' East 251 feet;

Thence thru a 2 deg curve to the right with a central angle of 1 deg and 58' to a point South 74 deg 58' East 78 feet from Station 293 plus 99.0 of the located center line of the Longview, Portland & Northern Railway;

Thence North 15 deg 02' East 1696 feet to a point on the South line of Washington Street, West Kelso, South 74 deg 58' East 78 feet from Station 310 plus 95 of the located center line of said Longview, Portland & Northern Railway.

The aforesaid strip being of the following widths:

From the starting point to a point opposite Station 293 plus 99.0 on the located center line of the Longview, Portland & Northern Railway, being 50 feet wide and lying on the right of the above described center line of ditch.

From the point last mentioned above northerly to a point on the South line of Washington Street in West Kelso opposite Station 310 plus 95 of the located line of the Longview, Portland & Northern Railway, said strip of land being 50 feet wide and lying on the right of the aforementioned ditch center line.

Also an easement for right of way along the Longview, Portland & Northern Railway as now located from Station 233 plus 48 to Station 310 plus 95, a strip of land 50 feet wide, parallel to the railroad center line and the westerly line of which strip is 50 feet easterly from the located center line of said railway.

The above descriptions embracing 8.11 acres, more or less, outside the Longview, Portland & Northern Railway right of way, and 8.89 acres, more or less, easement inside said right of way.

Drainage Ditch Right of Way No. 51

A strip of land, the center line of which is described as follows:

Beginning at a point 761.1 feet South and 1806.9 feet West of the quarter ($\frac{1}{4}$) corner between Sections 31 and 32, Township 8 North, Range 2 West, W. M., and running thence North 49 deg 05' West a distance of 3800 feet.

Also a strip thence due North 3800 feet which is a point approximately 440 feet East 2850 feet North of the corner common to Sections 30 and 31, Township 8 North, Range 2 West, and Sections 28 and 29, Township 8 North, Range 3 West, W.M.

Said strip being 80 feet wide, 40 feet on each side of the center line, for the first 3800 feet, and 100 feet wide, 50 feet on each side of the center line, for the second 3800 feet, containing 15.70 acres, more or less.

Drainage Ditch "Right of Way No. 51"

A strip or parcel of land of varying width, lying on each side of the center line described below, the widths of said strip of land being as follows:

100 feet in width, being 50 feet wide on each side of said center line and extending from the beginning of said center line to the East line of Section 29, Township 8 North, Range 2 West, W. M.; 80 feet in width, being 40 feet wide on each side of said center line and extending from the East line of said Section 29, to the East line of the West $\frac{1}{2}$ Section 28, Township 8 North, Range 2 West, W. M.; 60 feet in width, being 30 feet wide on each side of said center line and extending from the East line of the West $\frac{1}{2}$ of said Section 28 to the East line of said Section 28; 40 feet in width, being 20 feet wide on each side of said center line and extending from the said East line of Section 28 to the end of said center line.

The following is a description of the center line of courses and distances:

Beginning at a point in Section 14, Township 8 North, Range 3 West, W. M., 1785.9 feet South and 1335.0 feet East of the section corner common to Sections 14, 15, 10 and 11, Township 8 North, Range 3 West, W. M.; running thence North 89 deg 47' 09" East 1984.33 feet; thence South 77 deg 12' East 507.85 feet; thence Easterly on a 873.69 feet radius curve to the left, having a total angle of 41 deg 09' 08", a distance of 411.35 feet; thence North 61 deg 39' 52" East 277.05 feet; thence Easterly on a 410.23 feet radius curve to the right, having a total angle of 59 deg 10' 54", 422.72 feet; thence South 59 deg 09' 14" East 430 feet more or less to a point in the East line of aforesaid Section 14, at a point approximately 1250 feet South of the Northeast corner of said Section 14; running thence South 59 deg 09' 14" East 136.62 feet; thence Southeasterly on a 955.37 feet radius curve to the left having a total angle of 24 deg 32' 45", 409.10 feet;

Thence South 83 deg 42' East 1701.46 feet;
 Thence Southeasterly on a 2865.00 feet radius curve to the right having a total angle of 12 deg 41", 634.17 feet;
 Thence South 71 deg 01' East 524.98 feet; thence Easterly on a 955.37 feet radius curve to the left having a total angle of 44 deg 49', 746.67 feet;
 Thence North 84 deg 11' East 149.10 feet;
 Thence Easterly on a 955.00 foot radius curve to the right having a total angle of 71 deg 29", 1191.39 feet;
 Thence South 44 deg 20' East 172 feet more or less to a point in the East line of Section 13, Township 8 North, Range 3 West, T. M., approximately 2490 feet North from the Southeast corner of said Section 13;
 Thence South 44 deg 20' East 276.70 feet;
 Thence Easterly on a 821.9 feet radius curve to the left having a total angle of 30 deg 56' 30", 475.90 feet;
 Thence South 75 deg 16' 30" East 199.11 feet;
 Thence Southeasterly on a 1910.0 feet radius curve to the right having a total angle of 26 deg 10', 872.22 feet;
 Thence South 49 deg 06' 30" East 446.00 feet;
 Thence Southeasterly on a 1657.2 feet radius curve having a total angle of 21 deg 26", 612.38 feet;
 Thence South 70 deg 32' 30" East 46.12 feet;
 Thence Southeasterly on a 1910.0 feet radius curve to the right having a total angle of 23 deg 17' 30", 776.39 feet;
 Thence South 47 deg 15' East 820 feet more or less to a point in the South line of Section 18, Township 8 North, Range 2 West, T. M., approximately 1110 feet East from the Southeast corner of said Section 18;
 Thence South 47 deg 15' East 227.00 feet;
 Thence Southeasterly on a 1910.00 feet radius curve to the right having a total angle of 28 deg 58", 954.44 feet;
 Thence South 18 deg 37' East 830 feet more or less to a point in the East line of Section 19, Township 8 North, Range 2 West, T. M., approximately 1880 feet South from the Northeast corner of said Section 19;
 Thence South 18 deg 37' East 303.02 feet;
 Thence Southeasterly on a 819.02 feet radius curve to the left, having a total angle of 39 deg 31", 564.52 feet;
 Thence South 58 deg 08' East 940.83 feet;
 Thence Southeasterly on a 5730 feet radius curve to the left having a total angle of 10 deg 40', 1066.67 feet;
 Thence South 68 deg 48' East 1165.56 feet;
 Thence Southeasterly on a 636.66 feet radius curve to the right having a total angle of 42 deg 32', 472.59 feet;
 Thence South 26 deg 16' East 16.74 feet;
 Thence on a 1432.7 feet radius curve to the left having a total angle of 13 deg 50', 345.93 feet;
 Thence South 40 deg 06' East 266.73 feet;
 Thence Southeasterly on a 1146.00 feet radius curve to the right, thru an angle of approximately 28 deg 30', a distance of 570 feet, more or less, to a point in the South line of Section 20, Township 8 North, Range 2 West, T. M., approximately 1005 feet West from the Southeast corner of said Section 20;
 Thence continuing on a 1146.00 feet radius curve to the right, tangent at its point of beginning with end of last

above described curve and having a total angle of 3 deg
 56', a distance of 68.65 feet;
 Thence South 8 deg 10' East 361.86 feet;
 Thence Southeasterly on a 537.27 feet radius curve to the
 left, having a total angle of 49 deg 22', 548.52 feet;
 Thence South 57 deg 32' East 116.98 feet;
 Thence Southeasterly on a 1432.69 feet radius curve to the
 left having a total angle of 14 deg 01', 350.42 feet;
 Thence South 71 deg 33' East 250 feet more or less to a
 point in the East line of Section 29, Township 8 North,
 Range 2 West, T. 8 N., approximately 1178 feet South from the
 Northeast corner of said Section 29;
 Thence South 71 deg 33' East 20.80 feet;
 Thence Southeasterly on a 955.00 feet radius curve to the
 right, 409.44 feet;
 Thence South 46 deg 59' East 86.18 feet;
 Thence Southeasterly on a 955.00 feet radius curve to the
 left having a total angle of 20 deg 11', 336.59 feet;
 Thence South 67 deg 10' East 321.03 feet;
 Thence Southeasterly on a 955.00 feet Radius curve to the
 right having a total angle of 32 deg 34', 542.78 feet;
 Thence South 34 deg 38' East 258.02 feet;
 Thence Southeasterly and Easterly on a 410.28 feet radius
 curve to the left having a total angle of 65 deg 45',
 469.64 feet;
 Thence North 79 deg 39' East 120.73 feet;
 Thence Easterly on a 1432.5 feet radius curve to the right
 having a total angle of 25 deg 46', 644.15 feet;
 Thence South 74 deg 35' East 140.39 feet;
 Thence Southeasterly on a 2365 feet radius curve to the
 right having a total angle of 3 deg 15', 312.55 feet;
 Thence South 68 deg 20' East 663.60 feet;
 Thence on a 2864.93 feet radius curve to the left with a
 total angle of 12 deg 44', 636.67 feet;
 Thence South 81 deg 04' East 303.59 feet;
 Thence Easterly on a 819.02 feet radius curve to the left
 thru an approximate angle of 41 deg 26' for a distance of
 592 feet more or less to a point in the East line of
 Section 28, Township 8 North, Range 2 West, T. 8 N., at a
 point approximately 380 feet South from the quarter section
 corner common to Sections 27 and 28, Township 8 North,
 Range 2 West, T. 8 N.;
 Thence continuing Easterly on a 819.02 radius curve to the
 left, tangent at its point of beginning to last described
 curve and having a total angle of 8 deg 05', 116.37 feet;
 Thence North 49 deg 25' East 10.84 feet;
 Thence Easterly on a 716.78 feet radius curve to the right
 having a total angle of 43 deg 20', 541.67 feet;
 Thence South 67 deg 15' East 670.17 feet;
 Thence Easterly and Northeasterly on a 410.28 feet radius
 curve to the left with a total angle of 62 deg 16' 30",
 587.68 feet;
 Thence North 10 deg 28' 30" East 46.72 feet;
 Thence Northeasterly on a 573.69 feet radius curve to the
 right with a total angle of 57 deg 12', 672.00 feet;
 Thence North 67 deg 40' 30" East 306.07 feet;

Thence Easterly on a 521.67 feet radius curve to the right with a total angle of 43 deg 41', 597.12 feet; Thence South 68 deg 38' East 201.44 feet to a point approximately 1925 feet South and 2910 feet East from the Section corner common to Sections 22, 21, 23 and 27, Township 8 North, Range 2 West, T. M.

Said strip of land lying and being a part of Sections 13 and 14, Township 8 North, Range 3 West, T. M., and a part of Sections 18, 19, 20, 27, 28 and 29, Township 8 North, Range 2 West, T. M., containing 68.60 acres of land, more or less.

Drainage Ditch Right of Way No. 8:

A strip of land 80 feet wide, being 40 feet on each side of a center line which is parallel to and 70 feet South of the center line of Ocean Beach Highway, said center line of Ocean Beach Highway being described as follows:

Beginning at a point about 505.4 feet South and 1002.0 feet East of the corner common to Sections 14, 15, 22 and 23, Township 8 North, Range 3 West, T. M., said point being designated as Station 0 plus 00 R and D line, and running thence South 12 deg 47' 15" East 1599.54 feet to Station 15 plus 89.44; Thence thru a 5 deg 14' curve to the left to Station 32 plus 29.38; Thence North 81 deg 23' 45" East 1812.87 feet to Station 50 plus 42.19 R and D line, which is identical with Station 183 plus 36.75 O. B. Line; Thence on the O. B. line on a 5 deg 20' curve to the right to Station 191 plus 66.87; Thence South 62 deg 52' East 103.76 feet to Station 190 plus 62.91; Thence on a 1 deg 00' curve to the left to Station 178 plus 62.91; Thence South 64 deg 58' East 4745.15 feet to Station 151 plus 17.76; Thence thru a 1 deg 50' 58" curve to the right to Station 124 plus 77.95; Thence South 53 deg 02' East 1098.72 feet to Station 113 plus 79.23; Thence thru a 0 deg 29' 26" curve to the left to Station 93 plus 38.2 5.

At the station last mentioned above the ditch center line turns northerly and leaves Ocean Beach Highway. The center line of the ditch is described from here as follows:

Beginning at a point South 34 deg 56' 04" West 70 feet from Station 93 plus 38.25 O. B. line and running thence North 34 deg 56' 04" East 2165.0 feet to an intersection with Ditch No. 7 at a point which is 106.0 feet North and 1548.7 feet West of the corner common to Sections 19, 20,

29 and 30, Township 8 North, Range 2 West, W. M., containing 28.84 acres, more or less.

Drainage Ditch Right of Way No. 10:

A strip of land 80 feet wide, being 40 feet on either side of the center line, which is approximately described as follows:

Beginning at a point about 2300 feet South and 1000 feet East of the corner common to Sections 14, 15, 22 and 23, Township 8 North, Range 3 West, W. M., said point being in Ditch No. 8;

Thence southeasterly on the northeast side of the road and following approximately a line at an elevation 10 feet above mean low water (Slaughter's Bar Datum), along the South line of Mt. Solo crossing the line between Sections 26 and 23, Township 8 North, Range 3 West, W. M., at a point 3100 feet East of the West line of said Sections, crossing the line between Sections 25 and 26, Township 8 North, Range 3 West, at a point approximately 2300 feet South of their North line;

Thence easterly thru Section 25, Township 8 North, Range 3 West, crossing the line between Section 25, Township 8 North, Range 3 West and Section 30, Township 8 North, Range 2 West, at a point approximately 1700 feet South of their North line;

Thence southeasterly to a point approximately 1650.0 feet East and 2500 feet South of the Northwest corner of Section 30, Township 8 North, Range 2 West, W. M., being in all a length of approximately 14,000 feet, containing 25.7 acres, more or less.

Drainage Ditch Right of Way No. 11:

An easement for ditch right of way over the Longview, Portland & Northern Railway right of way, being a strip of land 60 feet in width, the center line of which is described as follows:

Beginning at a point on the East side of the Longview, Portland & Northern Railway right of way, said point being the beginning point of Ditch No. 4; and being opposite Station 233 plus 43 of the Longview, Portland & Northern Railway survey;

Thence southeasterly along the Longview, Portland & Northern Railway parallel to and 70 feet distant from the center line of said Longview, Portland & Northern Railway to a point opposite Station 173 plus 54.7 of said railway center line, containing 8.26 acres, more or less.

PROPERTY OWNERSHIPS IN WEST KELSO.

For the sake of clearness, property ownerships in that portion of West Kelso which is platted into blocks and numbered lots is not shown on the accompanying plat, but is indicated by reference to said plat and to this report in the following manner: In the lower left hand corner of said plat is an enlarged detailed drawing showing West Kelso with its block and lot numbers and reference is there made to this report as showing the ownership of the numbered lots in said blocks. Said ownerships, sofar as known to the undersigned special engineer, are as follows:

All land in West Kelso North of the North line of Cedar Street, whose ownership is not otherwise indicated on said detail in the accompanying plat or by the following noted exceptions, is the property of The Longview Suburban Company. All land in West Kelso South of said North line of Cedar Street, whose ownership is not otherwise indicated as aforesaid, is the property of The Longview Company.

Other ownerships of numbered lots in West Kelso are the following:

In the original Town of Marysville, later the Town of Catlin, now a part of the City of Kelso:

Acreage.

In Block 1.

All owned by H. D. Vaughn

In Block 2.

Lots 1 & 2	owned by	V. L. Barlow	.20
" 3	" "	Mrs. Moffatt	.115
" 4 & 5	" "	G. W. Fisher	.23
" 6	" "	R. F. Fisher	.115
" 7 & 8	" "	G. A. Poland	.23
" 9	" "	H. G. Schultz	.145

	Acreage
In Block 3.	
Lot 1 owned by C. W. Tutto	.15
Lot 2 " " J. Crouch	.115
Lot 3 " " L. Galloway et al	.115
Lot 4 & 5 " " Florence Christenson	.32
Lot 6 " " Florence Christenson	.32
In Block 4.	
Lots 1 & 2 owned by Laura Olson	.22
In Block 5.	
Lots 1 & 2 owned by John H. Larson	.23
Lot 3 " " O. Olson	.115
Lots 4 & 5 " " F. G. Barnes, E. W. Ross & H. E. McKinney	.23
In Block 6.	
Lots 1 & 2 owned by E. B. Barlow	.23
Lots 3, 4 & 5 owned by Fred Peters	.345
Lot 6 " " F. G. Barnes	.115
Lots 7 & 8 " " F. G. Barnes	.23
Lots 9 & 10 " " A. O. Dahlquist	.23
In Block 7.	
Lot 1 owned by Oliver Knowls	.115
Lots 2 & 3 " " Wm. Mooney	.23
Lot 4 and North 10 ft. of Lot 5, owned by Wesley Vandercook	.139
Lot 5, South 40 ft. Owned by I.O.O.F. No. 66	.09
Lot 6, West 40 ft. owned by E. W. Ross	.05
Lot 6, East 60 ft. owned by C. H. Olson	.065
Lots 7 & 8 owned by E. W. Ross	.23
Lots 9 & 10 " " T. P. Fisk	.23
In Block 8.	
Lots 1, 2 & 3 owned by H. D. Vaughn	.23
Lot 4, North 30 ft. owned by Cowlitz County	.037
Lot 4, South 20 ft. & Lot 5 owned by A. W. Porter	.21
In Riverview Addition to the Town of Catlin, now a part of the City of Kelso:	
In Block 4.	
Lot 3, West 35 ft. owned by Laura Olson	.06
Lot 3, West 65 ft. owned by Charles Olson	.10

Acreege

In Block 5.

Lots 6 & 7, 2/3 interest owned by H. E. McKinney	.154
Lots 6 & 7, 1/3 interest owned by F. O. Barnes	.076

In Block 9.

Lots 1 & 2 owned by C. H. Olson	.115
Lot 3 " " W. H. Sharp, J. K. Herdon & R. C. Cabbage	.058
Lots 4, 5 & 6 owned by E. W. Ross	.172
Lot 7 owned by W. H. Sharp	.06
Lot 8 " " C. A. Silvia	.17
Lot 11 " " C. A. Silvia	.115
Lot 12 " " W. H. Sharp	.115
Lot 13 " " M. J. Catlin	.115
Lots 14 & 15 " " E. W. Ross	.23

In Block 10.

Lots 1, 2 & 3 owned by O. Olson estate	.345
Lot 4 owned by H. J. Catlin	.115
Lots 5 & 6 owned by A. S. Keesel	.23
Lot 7 owned by City of Kelso	.115
Lot 8, West 38-1/3 ft. owned by John McCarthy	.07
Lot 8, East 61-2/3 ft. owned by McKinney and Barnes	.23
Lot 9, West 38-1/3 ft. of the South 1/2 owned by John McCarthy	.07
Lot 9, East 61-2/3 ft. of the South 1/2 and East 68-2/3 ft. of the North 1/2 owned by McKinney and Barnes	.23
Lot 9, West 33-1/3 ft. of the North 1/2 owned by L. Dahlquist	.07
Lot 10, West 33-1/3 ft. owned by Lenora Dahlquist	.06
Lot 10, East 68-2/3 ft. owned by McKinney and Barnes	.23

In Block 11.

Lots 1 & 2 owned by H. E. McKenney	.23
Lot 3 " " H. E. McKenney	.115
Lots 4 & 5 " " Cowlitz County	.23
Lots 6 & 7 " " Frank Fogel	.23
Lot 8 " " G. T. Augustine	.115
Lots 9 & 10 " " McKinney & Barnes	.23

In Park Addition to the Town of Catlin, now a part of
the City of Kelso:

	Acreage
In Block 1.	
Lot 1 owned by Olga Peterson	.17
Lot 2 " " Melane Fir Products Company	.06
Lots 3, 4, 5, 6, 7 and 8 owned by J. W. Crouch et al	.69
Lots 9 & 10 owned by E. W. Ross	.23
In Block 2.	
Lots 1 & 2 owned by Fred Peters	.23
Lot 3 " " C. M. Allen	.115
Lots 4 & 5 " " Lounda Jacobs	.23
Lots 6, 7, & 8 owned by Charles Leach	.345
Lots 9 & 10 owned by Fred Peters	.23
In Block 3.	
Lot 1 owned by Eva S. Janes	.115
Lot 2 " " E. J. Brasemann	.115
Lots 3 & 4 owned by Charles Clark	.23
Lot 5 owned by Howard Roberts	.115
Lots 6, 7 & 8 owned by W. A. Croce	.345
Lots 9 & 10 owned by George Klein	.23
In Block 5.	
Lot 1 owned by Ed Coles	.115
Lot 2 " " Clyde Bush	.115
Lot 3 " " C. R. Erwin	.115
Lots 4, 5, 6 & 7 owned by Ed Gillehm	.46
Lots 8, 9 & 10 owned by Mrs. Metcalf	.345
In Block 6.	
Lots 1 & 2 owned by R. A. Rogers	.23
Lot 3 " " Laura Olson	.115
Lots 4 & 5 " " M. J. Catlin	.23
Lots 6 & 7 " " Hans Holverson	.23
Lot 8 " " G. H. Imus	.115
Lots 9 & 10 " " J. W. Crouch	.23
In Block 7.	
Lots 1 & 2 owned by J. M. Gwelle	.23
Lots 3 & 4 " " S. L. Crouch	.23
Lot 5 " " S. A. Barnes	.115
Lots 6 & 7 " " Mattie B. Olson	.23
Lot 8 " " McKinney & Barnes	.115
Lots 9 & 10 " " T. H. Karnes	.23
In Block 8.	
Lot 1 and North $\frac{1}{2}$ of Lot 2 owned by E. A. Martin	.172
Lot 3 and South $\frac{1}{2}$ of Lot 2 owned by R. N. Sterling	.143
Lots 4 & 5 owned by Joseph Bennett	.245

Acreage

In Block 9.

Lot 1 owned by J. W. Thompson .14
 Lots 2, 3 & 4 owned by John Backus .411
 Lots 5, 6 & 7 owned by C. E. Chatterton .68

In Maplewood Addition to the City of Kelso:

In Block 1.

Lots 1, 2 & 3 owned by Mary J. Catlin .59
 Lots 4, 5 & 6 " " Joseph Gullain .69
 Lots 7, 8 & 9 " " Joseph Gullain .68
 Lots 10 & 11 " " Mary J. Catlin .115

In Block 2.

All - City of Kelso, for public park 1115

In Block 5.

All owned by Mary J. Catlin

In Block 6.

All owned by Mary J. Catlin

In Catlin's Third Addition to Catlin, now a part of the City of Kelso:

In Block 1.

Lot 1 owned by C. A. Young .115
 Lot 2 " " Grant Hill .115
 Lot 3 " " E. J. Oyster .115
 Lots 4, 5, 6 & 7 owned by J. M. Moore .46
 Lots 8 & 9 owned by Grant Hill .25
 Lot 10 owned by Mrs. M. E. Fletcher .115

In Block 2.

Lots 1 & 2 owned by F. M. Jarnot .23
 Lot 3 " " M. H. Mowery .115
 Lots 4 & 5 " " James Lewis .23
 Lots 6 & 7 " " G. C. Bilyew .23
 Lot 8 " " Cora C. Bilyew .115
 Lot 9 " " Mary E. Hill .115
 Lot 10 " " J. M. Hill .115

In Block 3.

Lots 1 & 2 owned by A. W. Wohl .23
 Lot 3 " " L. S. Bailey .115
 Lots 4 & 5 " " O. D. Karney .23
 Lots 6 & 7 " " Hazel David .23
 Lots 8, 9 & 10 owned by R. L. Crouch .345

	Acreage
In Block 5.	
Lots 1 & 2 owned by Paul Flebuch	.23
Lots 3, 4 & 5 owned by S. A. Roberts	.345
Lots 6 & 7 owned by S. L. Roberts	.23
Lots 8, 9 & 10 owned by G. H. Catlin	.345
In Block 6.	
Lots 1 & 2 owned by James W. Stephens	.23
Lots 3, 4 & 5 owned by E. B. Barlow	.345
Lots 6, 7 & 8, 2/3 interest owned by E. B. Barlow and 1/3 interest by H. E. McKinney	.23 .115
Lots 9 & 10 owned by Wm. Brazee	.23
In Block 7.	
Lots 1 & 2 owned by A. M. McAuliffe	.23
Lot 3 " " Rose Brunett	.115
Lot 4 and North 10 ft. of Lot 5 owned by Carrie M. Lee	.115
Lots 5 & 7 and South 40 ft. of Lot 6 owned by R. S. Thompson	.345
Lot 8 owned by E. L. Swabe	.115
Lots 9 & 10 owned by T. E. Shellenberger	.23
In Block 8.	
Lots 1 & 2 owned by Alta J. Gildes et al	.23
Lot 3 owned by J. R. Johnson	.115
Lot 4 " " J. W. Crouch	.115
Lot 5 " " Grant Watson	.115
Lots 6 & 7 owned by Ona Shellenberger	.23
Lot 8 owned by J. R. Johnson	.115
Lots 9 & 10 owned by Rea Odney et al	.23
In Block 9.	
Lots 1 & 2 owned by O. Olson	.23
Lot 3 " " Clyde Hansen	.115
Lots 4 & 5 " " J. W. Stephens	.23
Lots 6 & 7 " " Mart Horn	.23
Lot 8 " " Clyde Hansen	.115
Lots 9 & 10 " " J. E. Cullom	.23
In Block 10.	
Lots 1, 2 & 3 owned by Geo. J. Augustine	.55
Lot 4 owned by Cowlitz County	.17
Lot 5 " " Albert Ayers	.11
Lot 6 " " H. E. McKinney	.115
Lots 7 & 8 owned by Cowlitz County	.23
In Block "A" - All owned by M. J. Catlin	
In Block "C" - All owned by James Catlin	
Catlin Avenue - Owned by the City of Kelso	

