Dr. Heeschen

MEMORANDUM

August 30, 1967

SUBJECT: Cost of putting 85-2 and 85-3 on rails

Mr. Pottmeyer says bogeys for a 60 foot Tatel-type telescope like the one of DTM will cost $36,000 each or two for $64,000. Assume weight of telescope varies as diameter cubed. Assume cost of bogeys varies as weight of telescope. Then the cost of bogeys for 85 foot dish would be $100,000 each. This sounds somewhat high. Let us assume $75,000 per antenna. The RCA Antenna Study lists $30,000 for the "transport equipment" for the VLA antenna prototype. Some sort of transition structure would be needed to adapt the Blaw-Knox antennas to the RCA transporters, so $75,000 seems reasonable for the one complete transport system for 85 foot antennas.

Railroad track (2 parallel tracks, 4 rails in all) costs $30/foot (RCA Study). Assuming the present roadbed is adequate on the 243° baseline, we would need three tracks, so the cost per foot is $45.00.

Length of present baseline roadbed = 8900 feet Costs of tracks = $45.00/foot Cost of triple-tracking the baseline	$400,000
Cost of one transport system (usable for either antenna)	75,000
Total cost of converting present interferometer to rail transport, while providing only for observing from prepared station	$475,000

The cost of a system, whereby the antennas could observe from the rails, would be very much greater. There seems to be little merit in this scheme. Possibly it would be worthwhile to build one 300-meter section of continuous, precision track for observing. Estimated cost is as follows:

Continuous concrete foundation, 6' x 2' reinforced concrete beam - 12 ft^2 cross section, 0.45 cu yd/linear foot, @ $100/cu yd installed = $45/linear foot x 3000 ft =	$135,000
Reinforcing rods, 15 tons @ $252 installed	3,800
Excavation @$1.00/cu yd	1,350
Cables, $20/ft - 1000 ft. installed	20,000
Rails, $10/ft (installed) x 3000 ft.	30,000
Surveying, shimming, adjusting rails	10,000
Misc. & contingency	25,000
Total for 300 meters of "observing track"	$225,150
Cost of wheel system and prime movers, per antenna	40,000
Grand total for one antenna on 300 meter "observing track"	$265,150

G. W. Swenson, Jr.