

NORTHERN CHROMITE.
20-10-1980.
File ~~503.00~~ 503.00/12.

STAGE 2
SCOPE OF THE WORK

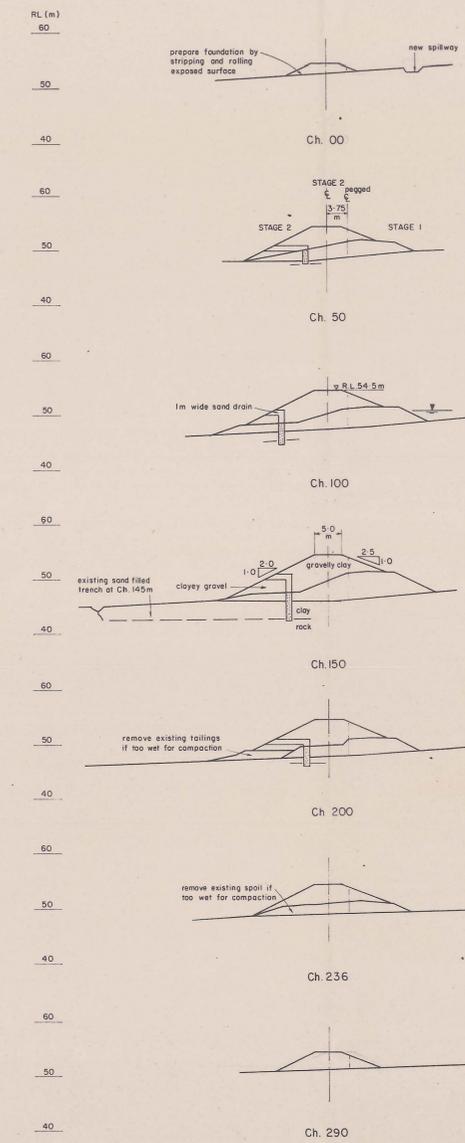
1. PREPARE NEW FOUNDATION AREAS BY REMOVING ANY EXISTING WASTE SPOIL AND TAILINGS, AND STRIPPING OFF VEGETATION AND TOPSOIL. WASTE MATERIALS MAY BE PUSHED DOWNSTREAM UNLESS INSTRUCTED OTHERWISE BY THE ENGINEER. THE EXPOSED SURFACE SHALL BE ROLLED WITH A SHEEPSFOOT ROLLER PRIOR TO PLACING FILL.
2. EXISTING EMBANKMENT SURFACES TO BE PREPARED BY BLADING OFF WET SURFACE MATERIALS AND ROLLING WITH A HEAVY SHEEPSFOOT ROLLER.
3. GRAVELLY CLAY FILL FOR THE UPSTREAM PORTION OF THE CROSS SECTION IS TO BE WON FROM THE BORROW AREAS. IT SHALL BE PLACED IN LAYERS (LOOSE LIFT APPROXIMATELY 0.2 - 0.3M) AND COMPACTED WITH A SHEEPSFOOT ROLLER TO 95% DRY DENSITY RATIO AS MEASURED IN THE STANDARD COMPACTION TEST, AS 1289 E1.1. - 1977. IT MAY BE NECESSARY TO ADJUST THE MOISTURE CONTENT OF THE CLAY TO ACHIEVE SATISFACTORY COMPACTION. THIS SHALL BE DONE BY TYING THE CLAY TO LOOSEN THE SURFACE AND THEN EITHER ALLOWING IT TO DRY OUT OR WATERING IT WITH A WATER TRUCK. SUCH WORK MAY BE DONE EITHER IN THE BORROW AREA OR ON THE EMBANKMENT. ALL COMPACTION TESTING SHALL BE UNDERTAKEN BY THE ENGINEER.
4. CLAYEY GRAVEL FILL FOR THE DOWNSTREAM PORTION OF THE CROSS SECTION SHALL BE WON FROM THE DEEPER PART OF THE BORROW AREAS. IT WILL PROBABLY NEED TO BE RIPPED BEFORE EXCAVATION. THE MATERIAL SHALL BE PLACED IN LAYERS (LOOSE LIFT 0.2 - 0.3M) AND ROLLED WITH A MINIMUM OF 4 PASSES WITH A SHEEPSFOOT ROLLER OR AS DIRECTED BY THE ENGINEER. IT MAY BE POSSIBLE TO USE COARSE TAILINGS OR TAILINGS SAND FOR THIS ZONE DEPENDING ON THE MOISTURE CONTENT OF THESE MATERIALS. IF THEY HAVE MOISTURE CONTENTS MORE THAN 2% WET OF OPTIMUM THEN THEY SHALL NOT BE USED.
5. AT THE END OF EACH DAY, AND DURING THE DAY IF WORK IS INTERRUPTED BY RAIN, THE SURFACE OF THE FILL SHALL BE BLADED TO A DOMED CROSS SECTION AND SEALED BY ROLLING WITH RUBBER TYRED CONSTRUCTION TRAFFIC OR BY BACK BLADING SO THAT RAIN DOES NOT GET TRAPPED IN HOLLOWES BUT SHEDS UPSTREAM AND DOWNSTREAM.

WHEN WORK RECOMMENCES ANY OVER-WET MATERIAL SHALL BE TRIMMED OFF AND REMOVED TO WASTE DUMPS. THE EXPOSED FILL SURFACE SHALL THEN BE ROLLED WITH A SHEEPSFOOT ROLLER TO CREATE A PITTED SURFACE THAT WILL BOND WELL WITH THE FIRST LAYERS OF NEW FILL.
6. THE SAND DRAIN WHICH SEPARATES THE TWO FILL ZONES MUST BE 1M WIDE AND FILLED WITH SAND CONFORMING TO THE FOLLOWING GRADING ENVELOPE.

PARTICLE SIZE MM	% FINER BY WEIGHT
6.70	100
4.00	95 - 100
2.36	90 - 95
0.85	45 - 55
0.425	25 - 35
0.150	5 - 10
0.075	0 - 2

THE DRAIN SHALL BE CONSTRUCTED BY EXCAVATING A TRENCH THROUGH THE FILL FROM RL 50M TO JOIN WITH THE DRAIN CONSTRUCTED ALREADY FOR STAGE 1. A 1M BLANKET OF SAND SHALL THEN BE PLACED TO THE DOWNSTREAM EDGE OF THE FILL.

TWO TRENCHES AT RIGHT ANGLES TO THE AXIS OF THE DAM SHALL BE EXCAVATED TO BACKACTOR REFUSAL IN ROCK AT CHAINAGES 100M AND 200M TO DISTANCES OF 30M DOWNSTREAM FROM THE STAGE 1 DRAIN. THESE TRENCHES SHALL BE FILLED WITH SAND TO THE STAGE 2 EMBANKMENT SURFACE OR NATURAL SURFACE TO ACT AS OUTLETS FOR THE SAND DRAIN. THE TRENCH AT CHAINAGE 150M SHALL ALSO BE RAISED WITHIN THE STAGE 2 FILL.
7. THE EXISTING SPILLWAY SHALL BE FILLED BY FIRST DIVERTING ANY OVERFLOW WATER, CUTTING BACK THE SIDE BANKS TO NO STEEPER THAN 2 HORIZONTAL TO 1 VERTICAL, CLEANING OUT THE CHANNEL FLOOR AND THEN PLACING FILL IN COMPACTED LAYERS IN ACCORDANCE WITH ITEMS 3 AND 4 ABOVE.
8. THE NEW SPILLWAY SHALL BE EXCAVATED TO A SILL LEVEL OF RL 53.0M, MINIMUM 2M WIDE. THE SILL AND CHANNEL SHALL BE LINED WITH RIP RAP IF THE FLOOR DOES NOT CONSIST OF IN-SITU ROCK.
9. THE EXISTING DECANT PIPELINE SHALL BE REMOVED AND PROGRESSIVELY RAISED AS CONSTRUCTION PROCEEDS SO THAT IT IS AT NO STAGE MORE THAN 1M BELOW THE FILL SURFACE. ANY TRENCHING ASSOCIATED WITH RAISING THE PIPE SHALL BE BACK-FILLED IN LAYERS AND COMPACTED WITH COMPRESSED AIR RAMMERS IN ACCORDANCE WITH ITEMS 3 AND 4.
10. THE WORK SHALL BE CARRIED OUT UNDER THE DIRECTION OF THE ENGINEER WHO SHALL BE RESPONSIBLE FOR APPROVING THE MATERIALS AND PROCEDURES TO BE USED DURING CONSTRUCTION, ALL COMPACTION TESTING, AND SURVEY CONTROL.



CROSS-SECTIONS
SCALE 1:500



PLAN

LEGEND
STAGE 1 □ TP7 TEST PIT
 ○ BH3 BOREHOLE
STAGE 2 □ TP17 TEST PIT

SCALE 1:1000