

TECHNICAL MEMORANDUM

DATE: NOVEMBER 16, 2017
TO: MPE INC ; PAT SWEENEY
FROM: ROB MCMAHON P.E. ; P.L.S.
RE: WOODRUFF EXCAVATION VOLUME QUANTITY

Pat;

Please see the attached calculation spread sheet and exhibit EX-W1 that outlines the estimation of excavation material that could be expected from one development scenario based on the set of conceptual plans that were submitted as part of the 1985 Master Plan Application (Woodruff).

Methodology:

The Woodruff drawings are general conceptual drawings that depict the volume metrics of the buildings and the placement on the Treasure site. The purpose and subsequent level of detail required for the Master Plan submittal did not address design elements that would be developed for a conditional use permit or building permit. One development scenario is depicted on the Exhibit EX-W1. Assumptions were made on the design requirements that would be anticipated to be required by the by the Conditional Use Permit (CUP) application process and the development of the concept plans into a working final design set of construction plans based upon a resort hotel concept.

The estimate of the expected excavation quantities contained in the attached calculation spread sheet is divided into three categories; the quantity based upon the footprint of the Woodruff Plan as submitted, the quantity based upon of the contingent design items that would be required for a CUP approval and issuance of a building permit, and the quantity based upon the anticipated items to be included in a commercially viable resort hotel project.

The excavation quantity of the footprint of the submitted Woodruff Plan buildings is based upon actual footprints and height & volume envelopes. Finish floor elevations were established and the anticipated depth of footing excavation was developed based upon the building configurations and the anticipated subterranean spaces necessary. A 10 foot wide construction access corridor was included around each building and parking structures. Excavation cut slopes were kept at 8H:1V assuming shoring would be employed.

The excavation quantity for the contingent design items that would be required for a CUP approval and issuance of a building permit included the design elements anticipated for an acceptable fire protection plan, required ski run improvements, construction access & staging, and life & safety egress requirements.

The excavation quantity estimation of a commercially viable resort hotel project include exterior amenity spaces, design elements to accommodate pedestrian and clientele, support commercial uses, and ski interface, and design elements to accommodate service and delivery operations.

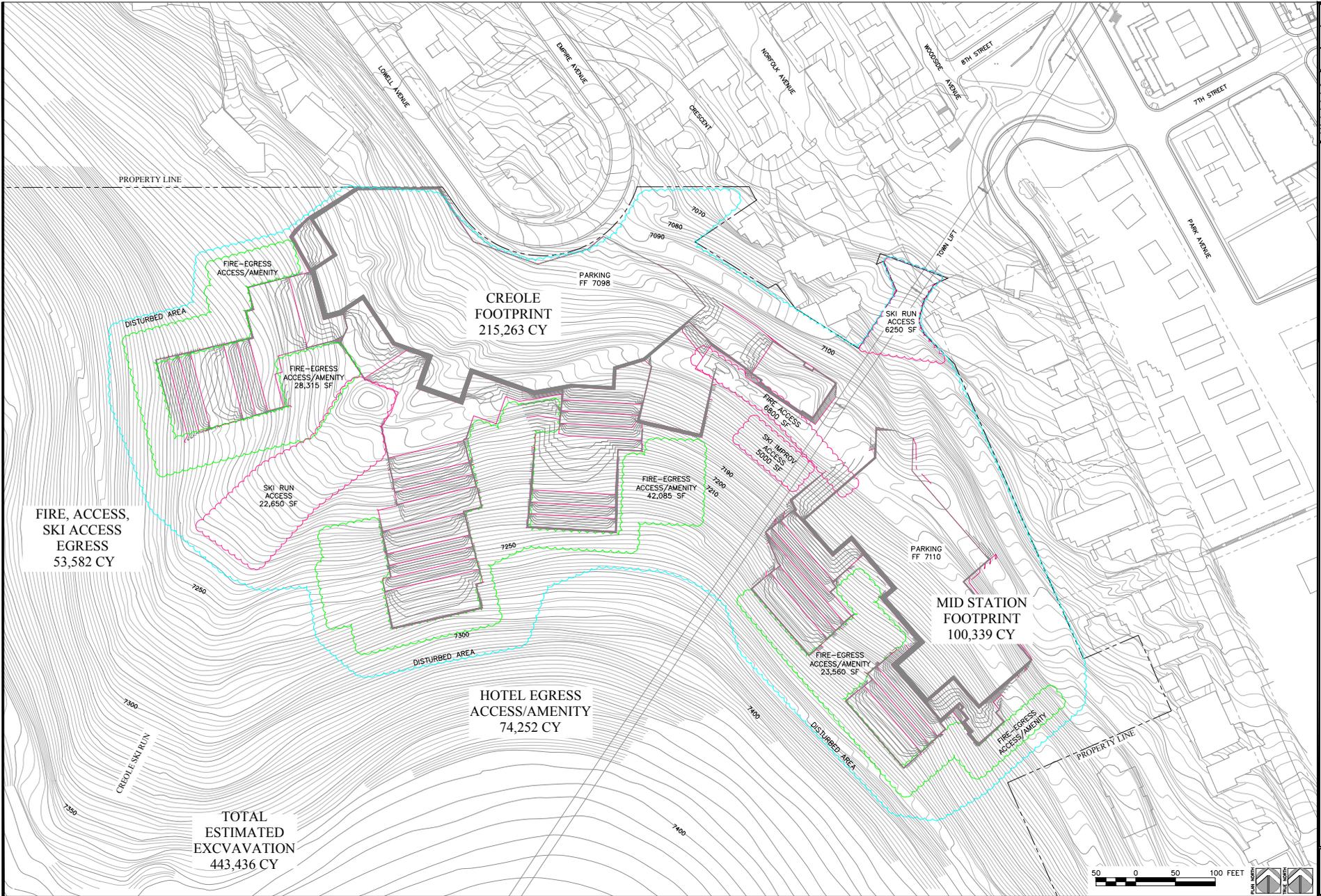
The quantities listed are calculated as “Neat Line” template quantities and do not account for expansion of the excavated material. A contingency of 15% was applied to all the estimated quantities to account for the uncertainty of the final design requirements that would be developed and imposed through the design and approval process.

A summary of excavation quantities is listed below:

Estimation of Woodruff Footprint	315,602 CY
Contingent Estimation for Approval	53,582 CY
Contingent Estimation for Viable Design	<u>74,252 CY</u>
Total	443,436 CY

As has been discussed in the development of the design scenario used for this excavation quantity estimation, it should be anticipated that there would be additional excavation quantities in addition to the above numbers and substantial additional area of disturbance resulting from practical construction methods.

Robert J. McMahon
Rob McMahon, P.E.; P.L.S.



DATE: NOV 15, 2017
 PROJECT NO.: 04-02-16
 FILE: TREASURE

REVISIONS	DATE

ALTA ENGINEERING
 CIVIL ENGINEERING, SURVEYING,
 ENVIRONMENTAL & PROJECT MANAGEMENT
 1000 10TH AVENUE, SUITE 1000, DENVER, CO 80202

FORM.P.E.
TREASURE
WOODRUFF CONCEPT
ESTIMATED EXCAVATION QUANTITIES



**WOODRUFF CONCEPT
EXCAVATION ESTIMATE**

November 15, 2017

ESTIMATION OF WOODRUFF FOOTPRINT

	<u>QTY</u>	<u>UNIT</u>	
Woddruff Creole Site Footprint	214,245	CY	186,300 + 15% contingency
Depth to Footing Creole	1,018	CY	3,985 x 3' x 2' + 15% contingency
Woddruff Midstation Site Footprint	99,820	CY	86,800 + 15% contingency
Depth to Footing Midstation	<u>519</u>	CY	2,029 x 3' x 2' + 15% contingency
Sub Total	315,602	CY	

CONTINGENT ESTIMATION OF NECESSARY ITEMS FOR APPROVAL

Fire Access & Management Plan Requirements (10% max grade, height clearance)	25,182	CY	4.5' additional clearance from 9' height in parking 4.5'x (74,418+38,805) + access tunnel +15%
Fire Egress Requirements (10' width 10% max grade)	24,035	CY	50% of building amenity space
Ski Run & Lift Improvements	<u>4,366</u>	CY	Lift 10' x (4000) +15% contingency
Sub Total	53,582	CY	

CONTINGENT ESTIMATION OF NECESSARY ITEMS FOR RESORT HOTEL DESIGN

Common Ammenity Spaces (3)	24,035	CY	Areas with 12' avg cut +15% contingency 50% allocated to Fire Egress
Design Elements to Accommodate Service & Delivery	12,778	CY	Access Roads, Service Corridors, Delivery Bays +15% contingency
Design Elements to Accommodate Ski inteface (to development & old town)	14,439	CY	Town Lift Modern lift system with Old Town access & Ski Run Modification
Design Elements to Accommodate Clientel	<u>23,000</u>	CY	Lobby, Maintenance, Suppourt Commercial
Sub Total	74,252	CY	3@ 15000 sf 12' avg cut +15% contingency
Total	443,436	CY	

