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REPORT**

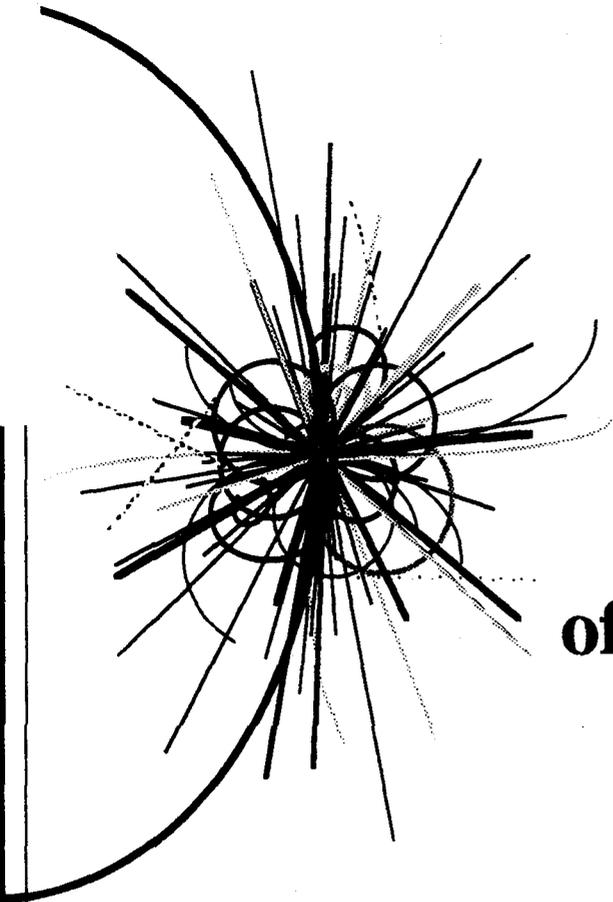
**of the Subcommittee
on Management**

Recommendations following the
meetings of July 16 and 17, 1990
held in Dallas, Texas

SUPERCONDUCTING SUPER COLLIDER LABORATORY

UNIVERSITIES RESEARCH ASSOCIATION

SSCL-SR-1060



SSC-SR-1060

SUPERCONDUCTING SUPER COLLIDER
UNDERGROUND TECHNOLOGY
ADVISORY PANEL
UTAP

RECOMMENDATIONS TO THE
SUPERCONDUCTING SUPER COLLIDER LABORATORY
CONCERNING THE
CONVENTIONAL CONSTRUCTION DIVISION

AUGUST 8, 1990

SSC UTAP COMMITTEE
Subcommittee on Management

August 8, 1990

Dr. Richard Briggs
Deputy Director
SSC Lab
2550 Beckleymeade Dr.
Dallas, Texas 75237

**RE: Report of the Subcommittee on Management of the
Underground Technology Advisory Panel (UTAP) following
meetings of July 16, 17, 1990, held in Dallas, Texas**

Dear Dr. Briggs:

Enclosed are copies of the referenced final report. The contents of this report have been discussed generally with members of your staff.

We appreciate the opportunity afforded us to work with the SSCL group on this important and complex project. We trust our participation will assist in achieving a well organized, well engineered and productive construction project.

Sincerely,



David G. Hammond, Chairman
Management Subcommittee

DGH/lmk
enclosure

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INTRODUCTION

At the request of the SSC Laboratory, the Management Subcommittee of the Underground Technology Advisory Panel (UTAP) was convened at the SSC Laboratory on July 16 and 17 to review management considerations related to the functioning of the Conventional Construction Division (CCD). Members of the subcommittee are listed in Appendix A; members of the SSC Laboratory with whom discussions were held are listed in Appendix B.

PURPOSE

The purpose of the meeting was to employ the experience of members of the UTAP, who have extensive experience in managing large and complex engineering and construction programs, in reviewing various aspects of the management functions, the organizational structure, and appropriate staffing of the CCD. For its review, the subcommittee was provided with information on the current status of plans and actions (taken and proposed) relevant to the establishment of management systems and practices, and for CCD organization and staffing.

OTHER RELATED REPORTS

The subcommittee notes other reports covering, in part, the subjects of management, organization and staffing of the SSC Laboratory CCD. These include:

1. UTAP report of the May 7 and 8, 1990 meeting (Management Section)
2. Draft Report, DOE Review of Site Specific Conceptual Design 25-30 June 1990. (Chapter 6 and Section 10.8)
3. Contracting Practices for the Underground Construction of the Superconducting Super Collider, USNCTT 1989

The subcommittee concurs in the comments and recommendations contained in these reports. In particular, the committee calls attention to the section in report No.1 on Management, which includes statements of principles and procedures which the committee strongly suggests are most appropriate for application to the management, organization, staffing and functioning of the CCD. Particular attention is called to the Report No.3, USNCTT Report "Contracting Practices for the Underground Construction of the Superconducting Super Collider".

Salient Points include:

- (a) The importance of getting underway promptly and efficiently with detailed design and construction . It is vital to demonstrate that the project is being managed in a way that merits further support.
- (b) The soundness of the decision to employ an integrated A-E/CM firm to perform design and construction functions under the guidance and assistance of the CCD who are the principal interface with the scientific and technical divisions.
- (c) The accompanying principle of keeping a small manageable CCD staff who will not duplicate the A-E/CM functions but will provide to the A-E/CM the requirements and direction obtained from, and coordinated with, the cognizant SSC Technical Divisions. The CCD staff will work closely with the A-E/CM to keep abreast of progress and problems in order to assist in achieving timely, cost-effective and fully-coordinated resolutions.
- (d) The urgency of bringing an A-E/CM on board under full contract with ability to perform planning, engineering, design and construction on a long range basis. This in contrast to current piece-meal activities by the CCD staff, the A-E/CM and others.
- (e) Organizing and staffing of the CCD is equally urgent. This should be related to, and be fully cognizant with, the organization and staffing of the A-E/CM. The importance of establishing clear and positive lines of communication and the establishment of prompt decision making at proper levels should be stressed.

(f) To make progress, the CCD should have in hand, authority and an approved program to act on the following:

- A **management plan** with emphasis on the first two fiscal years of the project. This will be an expansion of the Mission Statement as discussed in the UTAP report from the May, 1990 meeting.
- A **staffing plan**, including an organization chart and job descriptions including responsibilities. Lines of authority and reporting channels should be shown, as well as planned dates for filling jobs, i.e., construction supervisors later than design managers. Organization and staffing should be made flexible to meet the inevitable changing developments.
- A **plan for negotiations** with the A-E/CM. Based on a Mission Statement, it should include a work program with emphasis on the first two years, estimated manpower requirements, estimated costs and reimbursements, procedures to handle flexibility and change, and a fee arrangement tailored to an uncertain amount of reimbursement in any given contract period, i.e., not a dollar amount fixed in advance.

PRIORITIES

As discussed, there are several urgent matters that require priority action. All should be addressed at the same time because they interrelate. The organization proposed by the A-E/CM will have an effect on the organization, staffing and procedures of the CCD. In turn, the size and composition of the CCD staff can be determined only after the organizational framework is established for the CCD. The CCD's relationship to the other SSC divisions and its relationship to the A-E/CM will, in turn, establish the skills and performance required of the people at the CCD.

We believe the sequence of actions listed in priority of results to be achieved are:

1. Complete action by all involved agencies in achieving a NTP on a Letter Contract with the A-E/CM.
2. The A-E/CM form of organization, staffing and action plan should be considered in the establishment of an organizational format for the CCD.
3. Establish personnel position and job descriptions required for the CCD organization . Key positions (e.g. Project Managers) should be SSCL employees.
4. Institute a vigorous recruitment and employment program. Suggestions or assistance should be sought from organizations and individuals active in the engineering and construction industries.
5. Complete action leading to the full A-E/CM contract in order for both the A-E/CM and the CCD to operate more effectively. This must be accomplished before the "stop-gap" Letter Contract expires.

ITEMS SPECIFICALLY DISCUSSED WITH CCD

A . Exchange of views with members of current staff.

The committee held informal open discussions with volunteer members of the current CCD Staff. Those who attended were encouraged to voice their opinions and participate in a general question and answer session.

The discussions surfaced several suggestions concerning organization and the ways in which current staff might fit into the future functioning of the CCD and the A-E/CM. For example, Appendix C was the suggestion of a current staff member.

In general the staff members seemed to have an appreciation of the future roles of CCD members and their potential in the organization but the need for firm, prompt determination for their job responsibilities is very apparent if the morale is to be maintained and the project is to be kept moving. We hope the discussion contributed to a better understanding of the role for the CCD.

B . Insurance Program

Questions were discussed concerning the SSCL plan for a comprehensive insurance program covering most of the activities in the Construction Program.

Committee members who have had experience with such programs know them as "wrap-up" insurance. While the SSCL/DOE program apparently is not technically "wrap-up", it has the same features. The committee enthusiastically reported success and satisfactions with this type of insurance program. It was noted that, in addition to reducing adversarial situations, such a program should reduce costs and improve safety.

C. **Safety**

It was agreed that safety is a concern that should be given special and high level attention and prominence. Both the CCD and the A-E/CM need to include positions having responsibility for Safety Programs.

D. **Disputes Review Boards (DRB)**

Questions were raised as to the desirability of using DRBs on the project and, if so, where does CCD fit in.

Committee replied that DRBs are very useful and cost effective in avoiding and, if necessary, resolving disputes.

As the A-E/CM will be the contracting party, not CCD or SSCL, the A-E/CM should assume the role of the owner with a DRB. The CCD has no role in DRB other than to mandate to the A-E/CM their use. It is expected that PB/MK will cooperate in the establishment and use of DRBs. It may be desirable for the CCD to indicate in the Procedures Guidelines that the use of DRBs is expected under management of the A-E/CM.

E. **Procedures Guidelines**

The committee considers the Draft Procedures Guidelines to be an excellent starting document.

Comments made on the draft guidelines document included criticism of the draft based on perceived lack of detailed responsibilities for the CCD (para 2.1.1, Section 2). The UTAP pointed out that the CCD organization must first be determined and then the procedural guidelines can be developed. Care must be taken against developing guidelines in such extreme detail as to preclude operational flexibility. Guidelines should be moderate in specifying procedures and should be modified (added to, subtracted from, changed, etc.,) as the situation requires.

RECOMMENDATIONS

1. Complete actions at all levels, including DOE, to issue NTP on Letter of Intent to A-E/CM as soon as possible.
2. Continue process leading to a full contract with intent to have the A-E/CM on board, fully functioning, by end of 1990.
3. Establish and publish an official CCD organization, patterned on the principles discussed above.
4. Two suggested organizations for the CCD are as outlined on Appendix C and D. The chart at Appendix C was proposed by a CCD staff employee. The UTAP feels that a large technical staff is indicated which would duplicate functions performed by the A-E/CM and result in higher cost. The structure outlined in Appendix D appears more streamlined, effective and efficient. It is the CCD organizational structure recommended by the UTAP.
5. Simultaneously prepare descriptions for all positions, relating them to the A-E/CM, SSCL Technical Divisions and DOE field office.
6. Determine assignments of present Staff.
7. Promptly recruit and employ personnel needed for new positions or vacancies.
8. All hires for personnel in key positions should be on the Laboratory staff for better prospects of keeping their individual attention and loyalty, as well as prospects for long-term retention on the project.
9. Prepare a management plan setting forth:
 - (a) Goals, responsibilities and authorities at the CCD, A-E/CM and others performing functions for CCD as appropriate.
 - (b) Policy Guidelines for CCD Staff interactions with A-E/CM, TNRLC, etc.
 - (c) Procedures Guidelines - as discussed under specific items.

APPENDIX A

MEMBERS OF THE UTAP MANAGEMENT SUB COMMITTEE
DALLAS, TEXAS
JULY 16 AND 17, 1990

MR. DAVID HAMMOND CHAIRMAN

MR. EUGENE B. WAGGONER

MR. JAMES A. LILLY

MAJOR GENERAL JAMES JOHNSON (RET)

APPENDIX B

SSC LABORATORY MEMBERS WHO PARTICIPATED IN DISCUSSIONS

Susan Archer

Deryl Earsom

Tracy Lundin

Priscilla Nelson

Richard Wiebe

Jim Sanford

Steve Brumley

Martin Butalla

Ron Hoffman

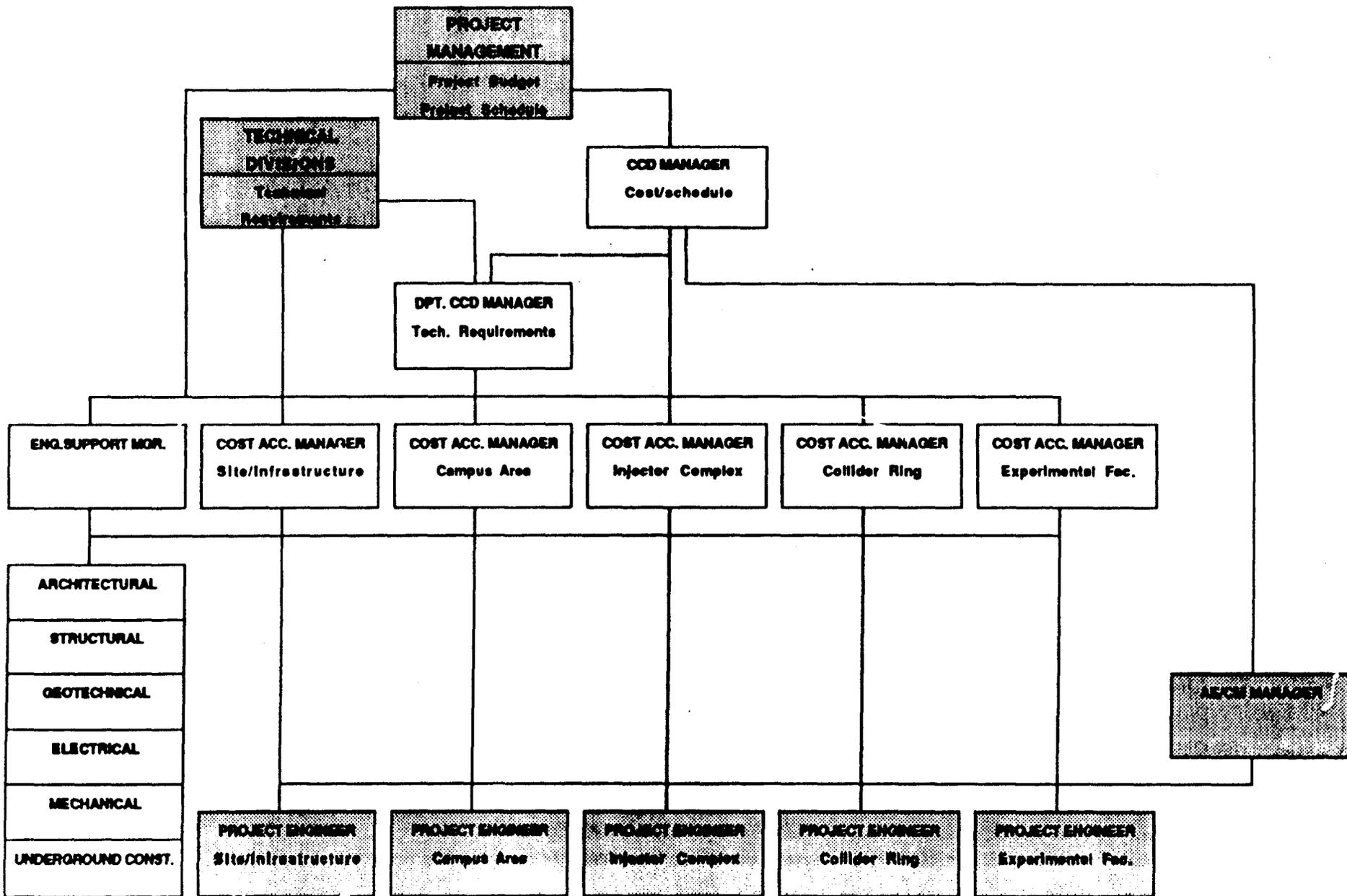
Tony Massing

Craig Trimble

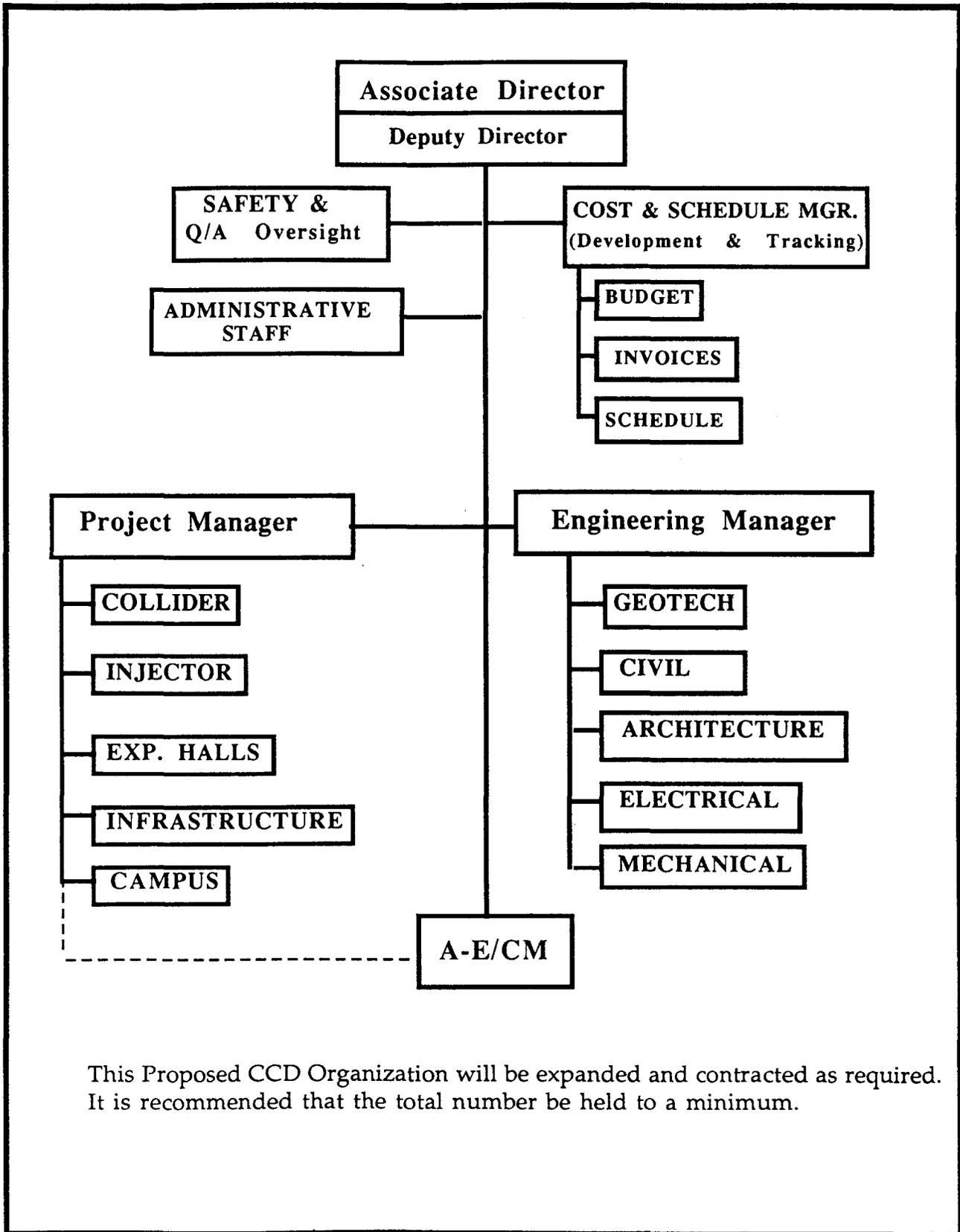
Linda Kuklenski

Bob Matyas

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APPENDIX C



This Proposed CCD Organization will be expanded and contracted as required. It is recommended that the total number be held to a minimum.