REPORT DOCUMENTATION PAGE

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| 1. AGENCY USE ONLY (Leave blank | 3 September 199 | J. REPORT TYPE AND Annual Perf | COMMENCE Report July 97 |
| | h/Integrated Marine Tec ngs and purchase of relat | | 5. FUNDING NUMBERS G-N00014-96-1-0873 |
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| 7. PERFORMING ORGANIZATION NA Marine and Environme c/o Clatsop Communit 1653 Jerome Avenue Astoria, OR 97103 | ental Research & Trainin | g Station (MERTS) | 8. PERFORMING ORGANIZATION REPORT NUMBER MERTS2-1996-97 |
| 9. SPONSORING / MONITORING AG | ENCY NAMES(S) AND ADDRESS(ES) | | 10. SPONSORING / MONITORING |
| - C | ald A. DeMarco ONR 33 One, 800 North Quincy | Street | AGENCY REPORT NUMBER |
| 11. SUPPLEMENTARY NOTES | | | 1 |
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| 13. ABSTRACT (Maximum 200 word: | Lz | | |
| The following steps ha grant: (1) employment of a qualified Contrac MERTS Field Research Price; (5) purchase of including: (a) a complethe period 21 April 97 | eve been taken to date to of a qualified architect; t Manager/General Conti n/Integrated Marine Tech related, selected materia etion date of 18 Decembe | (2) completion of cactor; (4) contract mology Center, with als and equipment; er 97; (b) constructing the status of ke | poses of the referenced facility design; (3) selection ing for completion of the h a Guaranteed Maximum (6) progress on construction, ion progress report covering by construction elements; |
| 14. SUBJECT TERMS | | | 15. NUMBER OF PAGES |
| | | | 16. PRICE CODE |
| 17. SECURITY CLASSIFICATION OF REPORT Unclassified | 18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified | 19. SECURITY CLASSIFICA OF ABSTRACT Unclassified | ATION 20. LIMITATION OF ABSTRACT UL |

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C - Contract PR - Project
G - Grant TA - Task
PE - Program WU - Work Unit
Element Accession No.

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- Block 7. Performing Organization Name(s) and Address(es). Self-explanatory.
- Block 8. <u>Performing Organization Report</u>
 Number. Enter the unique alphanumeric report number(s) assigned by the organization performing the report.
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Marine and Environmental Research and Training Station, Inc.

c/o Clatsop Community College

1653 Jerome Avenue ◆ Astoria, Oregon ◆ 97103 ◆ (503) 325-0910

MEMORANDUM

TO:

Ronald A. De Marco, Ph. D., Head of Engineering, Materials, and

Physical Sciences, S & T Dept., Office of Naval Research

FROM:

John Wubben, Principal Investigator

SUBJECT:

Annual Performance Report for Grant #N00014-96-1-0873

DATE:

September 3, 1997

The following steps have been taken to date to complete the purposes of the referenced grant:

- 1. Employment of a qualified architect, Mahlum and Nordfors Smith Gordon.
- 2. Completion of facility design by the architect.
- 3. Selection of a qualified Contract Manager/General Contractor (CM/GC), S.D. Deacon, Inc., for the facilities construction project.
- 4. Agreement between the architect, CM/GC, and MERTS, Inc., on a contract for completion of the MERTS Field Research/Integrated Marine Technology Center, with a Guaranteed Maximum Price (GMP) which is consistent with the terms of the grant.

- 5. Purchase of related, selected materials and equipment consistent with the terms of the grant.
- 6. Progress on construction of the MERTS Field Research/Integrated Marine Technology Center, documented as follows:
 - a. An agreed-upon completion date of 18 December 97, as reflected in the enclosed CPM chart (Attachment A). This chart also documents progress on all phases of construction as of 20 August 97.
 - b. Construction progress report covering the period 21 April 97 to 28 August 97 (Attachment B) by Al Jaques, Project Manager. This report details key construction elements and their status as completed, ongoing, or scheduled. As of 28 August 97 construction was 20 days behind schedule, but efforts are being made to make up for the lost time (see page 2 of Attachment B). Given that the projected completion date is 18 December 97, and the grant period runs through 14 February 98, we feel there is more than adequate time to complete the project by the conclusion of the grant period.
 - c. Photographs taken over a period of days from 15 August 97 to 28 August 97, showing the progress of the construction, which provides graphic illustration of points made in Attachments A and B.
- Dr. De Marco, we truly appreciate your excellent assistance and support in progressing toward completion of this grant.

If I make provide additional information or clarification of this report, please contact me.

Merts/phaseII/an.report/onr



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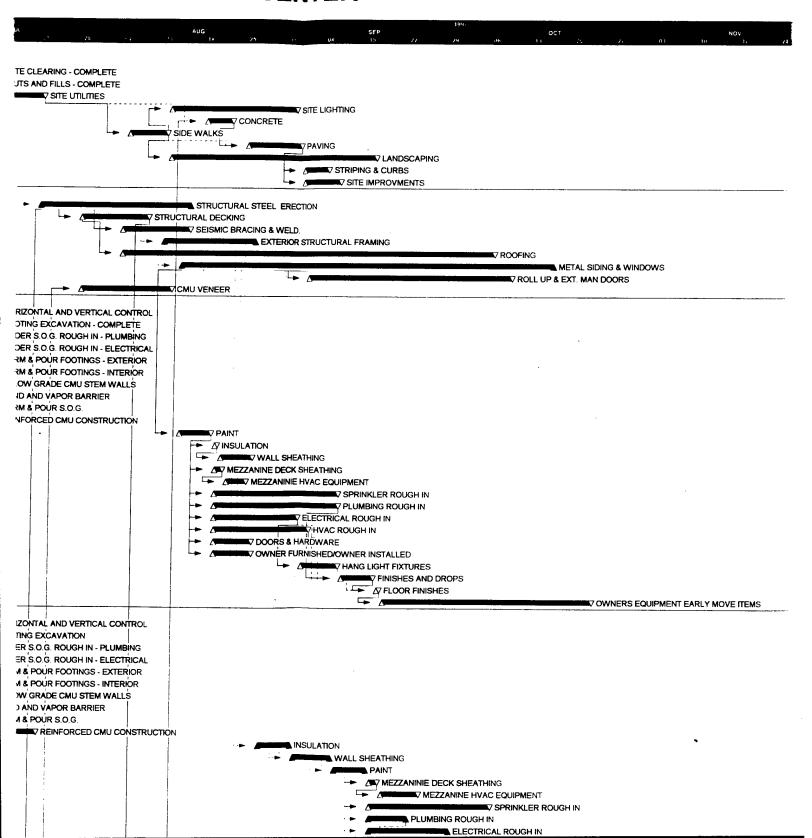
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FIELD RESEARCH INTEGRATED MARINE TECHNOLOGY CENTER





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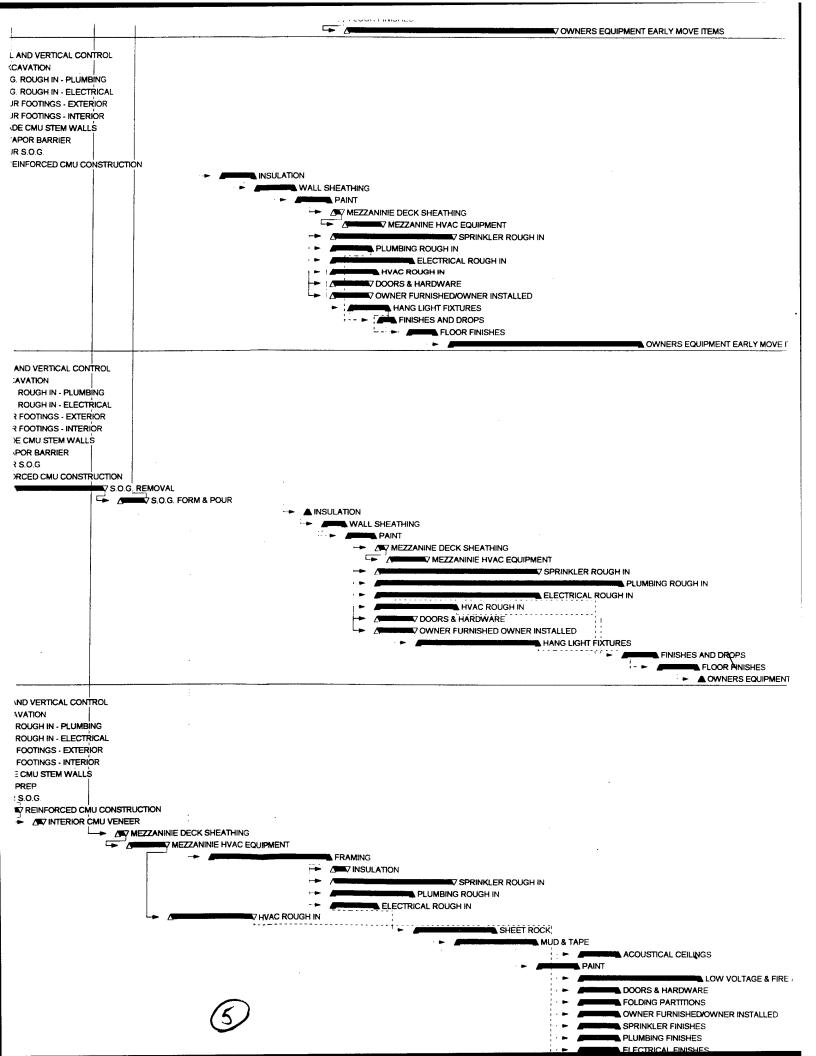
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| 3600 | WALL SHEATHING | 5d | + | 03SEP97 | 09SEP97 | |
| 162 0 | PAINT | 4d | | 10SEP97 | 15SEP97 | |
| 64 0 | MEZZANINIE DECK SHEATHING | 2d | + | 16SEP97 | 17SEP97 | |
| 66 0 | MEZZANINE HVAC EQUIPMENT | 5d | + | 18SEP97 | 24SEP97 | |
| 69 0 | SPRINKLER ROUGH IN | 15d | + | 16SEP97 | 06OCT97 | |
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| 780 | DOORS & HARDWARE | + | | | | |
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| 800 | HANG LIGHT FIXTURES | 5d | + | 19SEP97 | 25SEP97 | |
| 820 | FINISHES AND DROPS | 3d | + | 24SEP97 | 26SEP97 | |
| 840 | FLOOR FINISHES | 5d | + | 29SEP97 | 03OCT97 | |
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| 400 | REINFORCED CMU CONSTRUCTION | 5d | 5d | 14JUL97 | 18JUL97 | REINFORCED CMU CONSTRUCTION |
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| 52 5 | WALL SHEATHING | 4d | 4d | 15SEP97 | 18SEP97 | |
| 530 | PAINT | 3d | 3d | 19SEP97 | 23SEP97 | |
| 540 | MEZZANINE DECK SHEATHING | 2d | 2d | 24SEP97 | 25SEP97 | |
| 58 0 | MEZZANINIE HVAC EQUIPMENT | 5d | 5d | 26SEP97 | 02OCT97 | |
| 590 | SPRINKLER ROUGH IN | 20d | 20d | 24SEP97 | 21OCT97 | |
| 840 | PLUMBING ROUGH IN | 30d | 30d | 24SEP97 | 04NOV97 | |
| 660 | ELECTRICAL ROUGH IN | 20d | | 24SEP97 | 21OCT97 | |
| 880 | HVAC ROUGH IN | 10d | 10d | 24SEP97 | 07OCT97 | |
| 700 | DOORS & HARDWARE | 5d | 5d | 24SEP97 | 30SEP97 | |
| 740 | OWNER FURNISHED OWNER INSTALLED | 5d | 5d | 24SEP97 | 30SEP97 | |
| 760 | HANG LIGHT FIXTURES | 15d | 15d | 01OCT97 | 21OCT97 | |
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PLUMBING ROUGH IN

ELECTRICAL ROUGH IN

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MUD & TAPE

ACOUSTICAL CEILINGS

PAINT

LOW VOLTAGE & FIRE ALARM

DOORS & HARDWARE

FOLDING PARTITIONS

OWNER FURNISHED/OWNER INSTALLED

SPRINKLER FINISHES

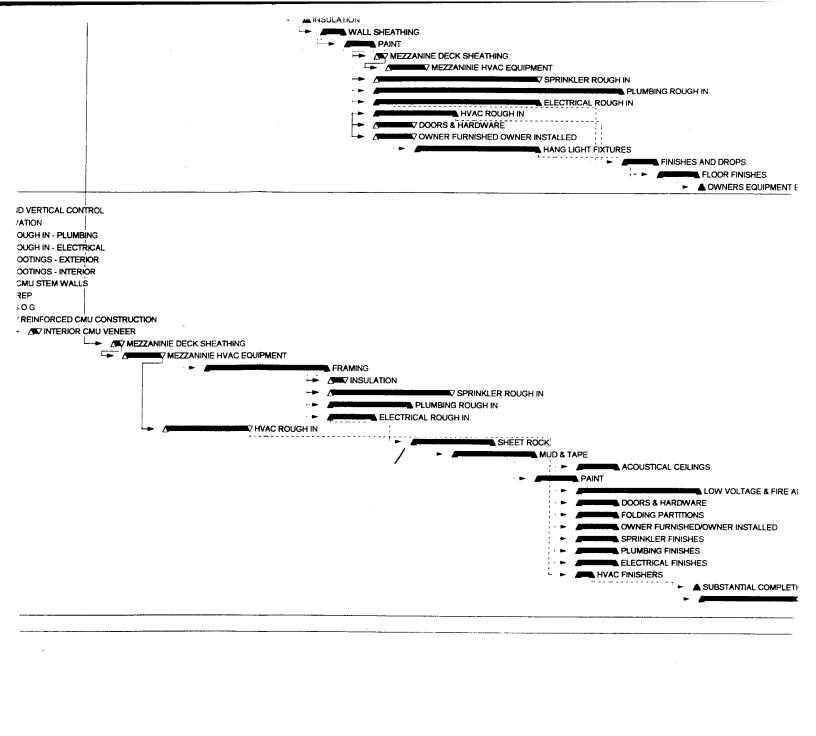
PLUMBING FINISHES



| 4 15 25 | WALL SHEATHING | 4d |] ∆ n | 1 15SEP97 | 18SEP97 |
|-----------------------|---|------|---------------|--------------------|---------|
| 1530 | PAINT | 3d | | 19SEP97 | |
| 1540 | MEZZANINE DECK SHEATHING | 2d | - | 24SEP97 | |
| 1560 | MEZZANINIE HVAC EQUIPMENT | 5d | + | 26SEP97 | |
| 1590 | SPRINKLER ROUGH IN | 20d | _ | 24SEP97 | |
| 1640 | PLUMBING ROUGH IN | 30d | | 24SEP97 | |
| 1660 | ELECTRICAL ROUGH IN | 20d | | 24SEP97 | 21OCT97 |
| 1680 | HVAC ROUGH IN | 10d | | 24SEP97 | 07OCT97 |
| 1700 | DOORS & HARDWARE | 5d | | 24SEP97 | 30SEP97 |
| 1740 | OWNER FURNISHED OWNER INSTALLED | - | | 24SEP97 | 30SEP97 |
| 1760 | HANG LIGHT FIXTURES | 15d | | 01OCT97 | |
| 1770 | FINISHES AND DROPS | 4d | | 05NOV97 | 21OCT97 |
| 1780 | FLOOR FINISHES | 5d | - | + | 10NOV97 |
| 1800 | OWNERS EQUIPMENT EARLY MOVE | 1d | | 11NOV97 18NOV97 | 17NOV97 |
| | OWNERS ECOIPMENT EARCH MOVE | l lu | 10 | 10NOV97 | 18NOV97 |
| 1860 | HORIZONTAL AND VERTICAL CONTROL | 0 | . 0 | 14JUL97 | 11JUL97 |
| 1880 | FOOTING EXCAVATION | 0 | _ | 14JUL97 | |
| 1900 | UNDER S.O.G. ROUGH IN - PLUMBING | 0 | | 14JUL97 | 11JUL97 |
| 1920 | UNDER S.O.G. ROUGH IN - ELECTRICAL | 0 | | | 11JUL97 |
| 1940 | FORM & POUR FOOTINGS - EXTERIOR | 0 | | 14JUL97 | 11JUL97 |
| 1960 | FORM & POUR FOOTINGS - EXTERIOR | 0 | | 14JUL97 14JUL97 | 11JUL97 |
| 1980 | BELOW GRADE CMU STEM WALLS | 0 | | 14JUL97 | 11JUL97 |
| 2000 | UNDER S.O.G. PREP | 0 | | | 11JUL97 |
| 2020 | FORM & POUR S.O.G. | 1d | | 14JUL97 | 11JUL97 |
| 2040 | REINFORCED CMU CONSTRUCTION | 5d | | 14JUL97 | 14JUL97 |
| 2120 | INTERIOR CMU VENEER | 2d | | 21JUL97 | 25JUL97 |
| 2140 | MEZZANINIE DECK SHEATHING | | | 28JUL97 | 29JUL97 |
| 2160 | MEZZANINIE DECK SHEATHING MEZZANINIE HVAC EQUIPMENT | 2d | | 11AUG97 | 12AUG97 |
| 2250 | | 5d | | 13AUG97 | 19AUG97 |
| 226 0 | FRAMING | 14d | | 27AUG97 | 16SEP97 |
| 2270 | INSULATION SPRINK ER POUGLIN | 3d | | 17SEP97 | 19SEP97 |
| 2300 | SPRINKLER ROUGH IN | 15d | | 17SEP97 | 07OCT97 |
| 2320 | PLUMBING ROUGH IN | 10d | | 17SEP97 | 30SEP97 |
| 2340 | ELECTRICAL ROUGH IN HVAC ROUGH IN | 6d | | 17SEP97 | 24SEP97 |
| 2360 | | 10d | - | 20AUG97 | 03SEP97 |
| 2380 | SHEET ROCK | 10d | | 01OCT97 | 14OCT97 |
| 2390 | MUD & TAPE | 10d | - | 08OCT97 | 21OCT97 |
| 2400 | ACOUSTICAL CEILINGS PAINT | 5d | | 29OCT97 | 04NOV97 |
| 2410 | | 5d | | 22OCT97 | 28OCT97 |
| 2420 | LOW VOLTAGE & FIRE ALARM | 15d | | 29OCT97 | 18NOV97 |
| 2440 | DOORS & HARDWARE FOLDING PARTITIONS | 5d | +- | | 04NOV97 |
| 2480 | | 5d | $\overline{}$ | | 04NOV97 |
| 2470 | OWNER FURNISHED/OWNER INSTALLED | 5d | | 29OCT97 | 04NOV97 |
| 2470 25 0 0 | SPRINKLER FINISHES | 5d | | | 04NOV97 |
| | PLUMBING FINISHES ELECTRICAL FINISHES | 5d | | 29OCT97 | 04NOV97 |
| 530 | HVAC FINISHERS | 5d | | | 04NOV97 |
| 550 | SUBSTANTIAL COMPLETION | 3d | | | 31OCT97 |
| | PUNCH LIST | 1d | | 8NOV97 | 18NOV97 |
| 590 | | | | 9NOV97 | 17DEC97 |
| J-00 | CERTIFICATE OF OCCUPANCY | 1d | 10 1 | 8DEC97 | 18DEC97 |
| | | | | | |
| Early start | rt point | | | | |
| Early finish | • | | | | |
| Early bar | | | | | |
| Progress b | bar | | | | |
| Critical bar | I | | | | |
| | - ' | | | | |

Summary bar
Progress point
Critical point
Summary point
Start milestone point
Finish milestone poin

(7)





PLUMBING ROUGH IN AL ROUGH IN

MUD & TAPE

ACOUSTICAL CEILINGS

DOORS & HARDWARE
FOLDING PARTITIONS

OWNER FURNISHED/OWNER INSTALLED

SPRINKLER FINISHES
PLUMBING FINISHES
ELECTRICAL FINISHES

HVAC FINISHERS

▲ SUBSTANTIAL COMPLETION

LOW VOLTAGE & FIRE ALARM

PUNCH LIST

► ▲ CERTIFICATE OF OCCUPANCY

SDDEACON GENERAL CONTRACTOR

(g)

CLATSOP COMMUNITY COLLEGE

MERTS Campus Construction

Field Research & Integrated Marine Technologies Center Project

Date: 8/28/97

To: CCC Board Members & Staff From: Al Jaques, Project Manager

Re: Construction Progress Report 4/21/97-8/28/97, 130 Contract Days to Date

Status Legend: Completed / Ongoing / Scheduled

- Owner's testing representative Braun/Intertec on-site for inspection & testing requirements
- **O** CCC & Astoria Police Department providing random security patrols
- O Site cuts/fills (excavation/grading to design specs) 80% to date
- **S** Final sub-grading preparation prior to paving
- **C** Roof drain underground piping runs w/cleanouts
- **C** Foundation perimeter drains
- **C** SOG replacement in Fabrication shop
- **C** All main structure SOG poured
- C First coat of sealer & hardener applied to all interior SOG
- **S** Fabrication shop exterior SOG
- S Sidewalks
- **S** Asphalt paving
- O Site-lighting conduit runs & light pole bases, 90% complete
- © Electrical transformer pad/vault and pull (junction) boxes set
- **C** Excavate & install primary electrical conduits
- O Communications tie-conduits between phase 1 & 2 bldgs
- O Fire alarm interface phase 1 & 2 bldgs
- <u>C</u> Northwest Natural Gas, mains & services to campus buildings
- **C** Exterior / Interior structural masonry walls
- © Damproofing application on CMU walls prior to veneer lay-up
- © Rigid insulation installation on CMU walls prior to veneer lay-up
- O Exterior veneer block installation, 95% complete
- O Structural steel erection & roof decking, 95% complete
- Q Membrane built-up roofing @ flat roofs, 95% complete
- **Q** Insulation & metal roofing installation
- O Exterior / Interior gauge framing (metal studs)
- **Q** Field verification for rough opening of windows prior to fabrication

- **Q** CMU wall filler (base paint) & misc. painting preparation
- **Q** Interior piping infrastructure
- **O** HVAC infrastructure
- **Q** Interior electrical infrastructure

Contractors on site

Workforce on-site at present: approx. 50

- > Electrical, Wadsworth Electric Co.
- Plumbing, J P Plumbing Co.
- > Testing & Inspection, Braun Intertec
- Masonry Grout Supplier, A1 Ready Mix
- > Concrete Supplier, Fisher Ready Mix
- Steel Fabrication & Erection, Fisher Fabrication
- Gauge Framing, Landco
- Metal Roofing & Siding, Architectural Metal Works
- > Painting, Black Oak Construction
- Masonry, B & B Tile and Masonry
- Concrete Slab Cleaning & Application of Hardener/Sealer, Brightway Inc.
- > Earthwork, Jim Wilkins Co.
- Glazing (Windows), Culver Glass
- > HVAC, HVAC Inc.

Coordination Activities

- Weekly scheduled team meetings, (General Contractor, Architect & Owner's Rep.)
- > Weekly scheduled sub-contractors meetings, providing review of project status in terms of three week outlook, safety issues and project coordination requirements.
- > 8/19/97, Mechanical & Electrical infrastructure coordination meeting with all relevant subcontractors
- > 8/25/97, OSHA consultation on-site w/General and Subcontractors

Schedule Status

Overall schedule status to date: approximately 20 days behind due to weather, late steel deliveries & erection delays. Coordination efforts are ongoing with all subcontractors to rectify any schedule deviation.

Budget Status

- > Ten add/deduct CO's to date resulting in savings of \$16,289 below the original GMP
- Contract GMP \$3,706,469, Current GMP with CO's to-date, \$3,690,180
- ➤ Overall project expenditures to-date approximately \$1,800,000
- ➢ Overall construction contract expenditures to-date approximately \$1,002,000

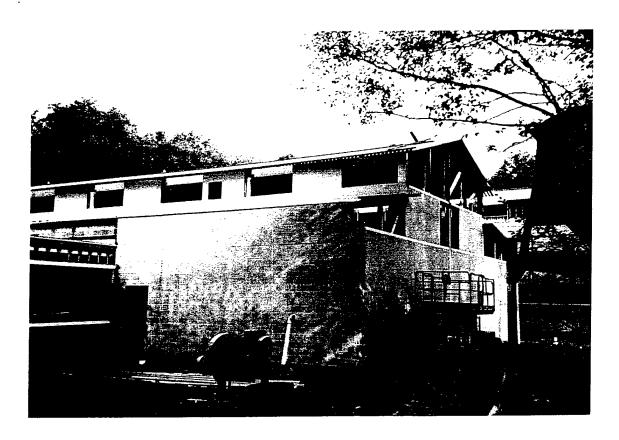
Legend

SOG Slab-on-Grade

GMP Guaranteed Maximum Price (General Contractor's Construction Contract with Owner)

CO's Change Orders

OSHA Occupational Safety & Health Administration





Construction of MERTS Field Research/ Integrated Marine Technology Center as of 28 August 1997

