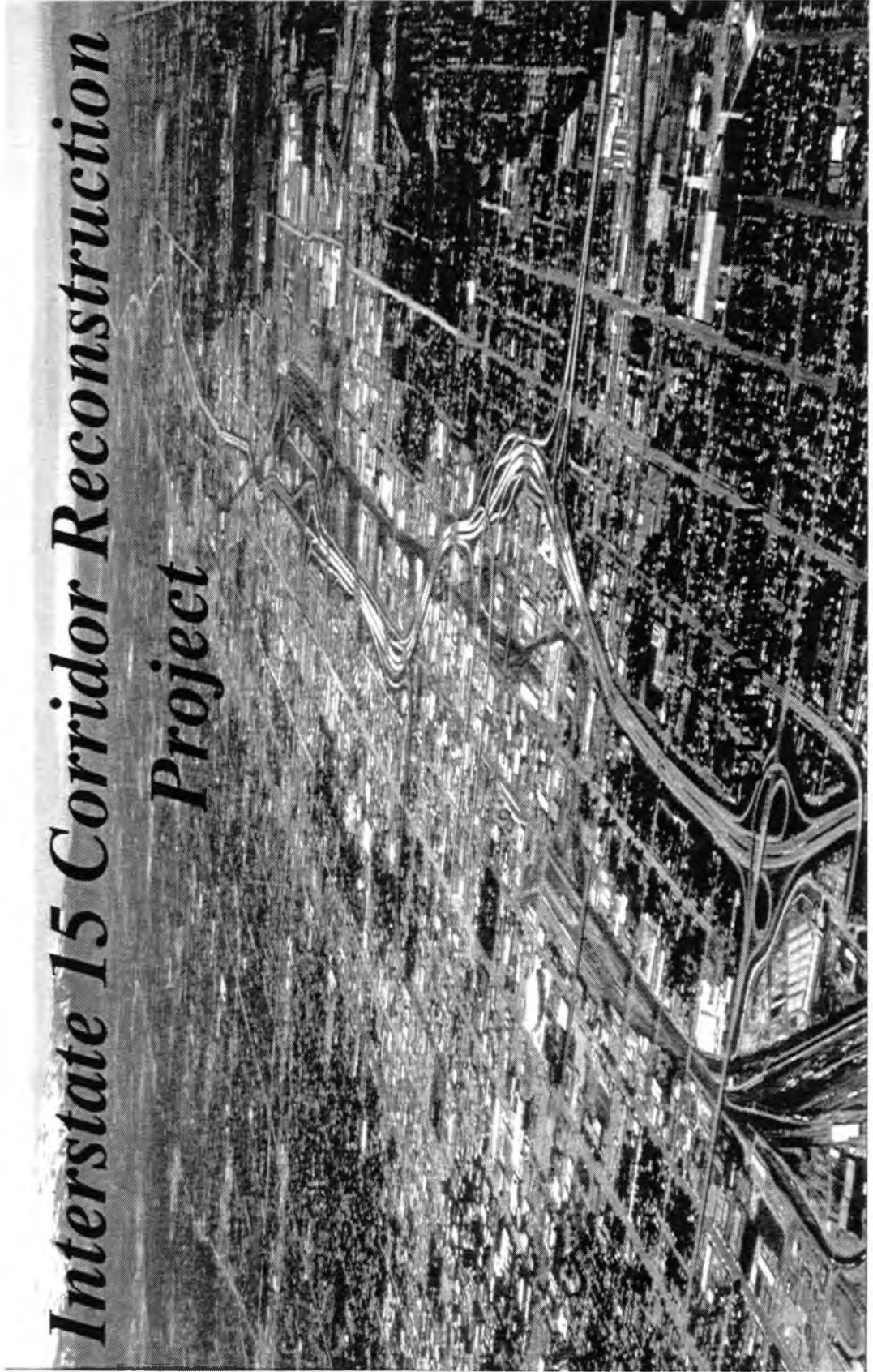
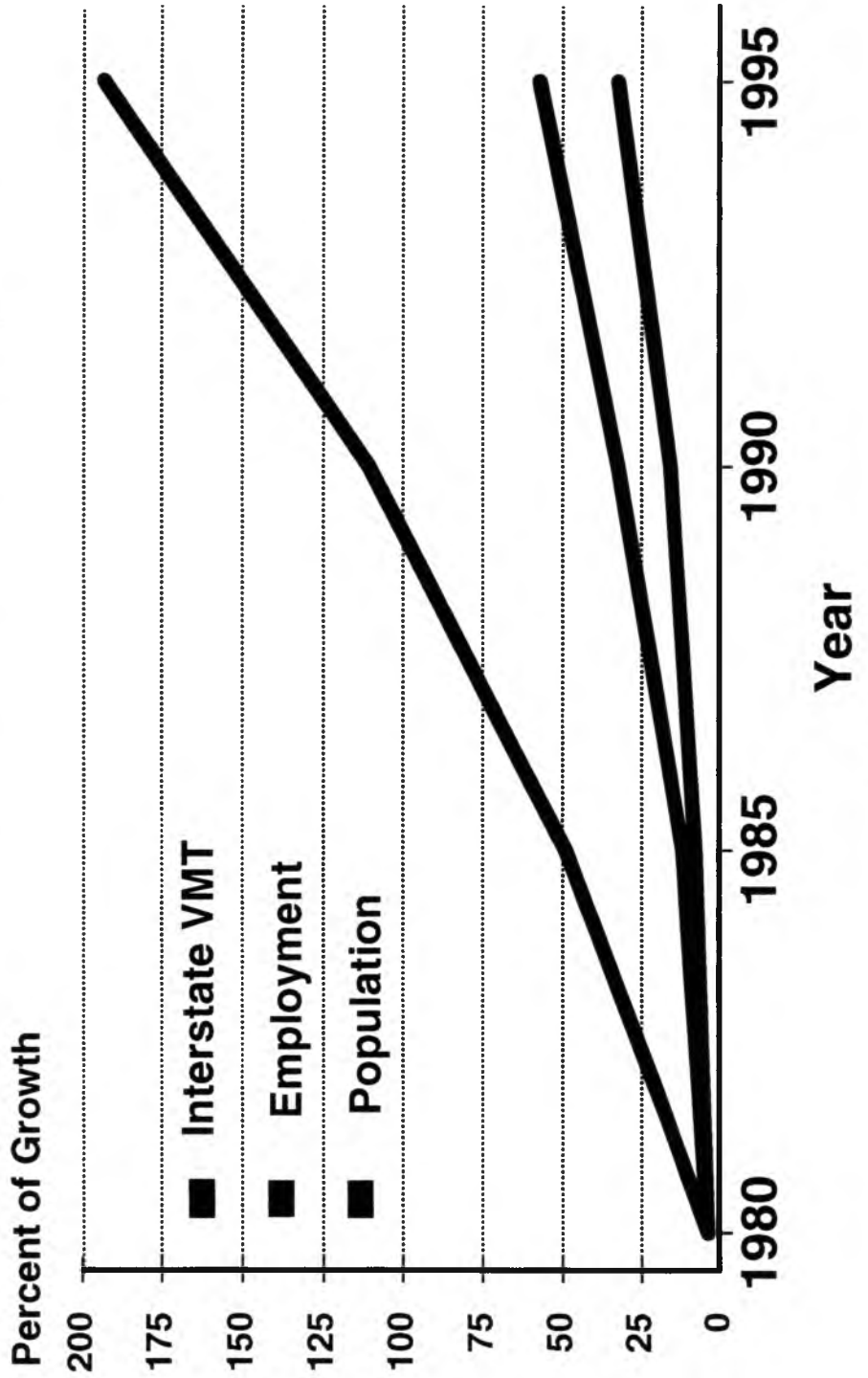


*Interstate 15 Corridor Reconstruction
Project*



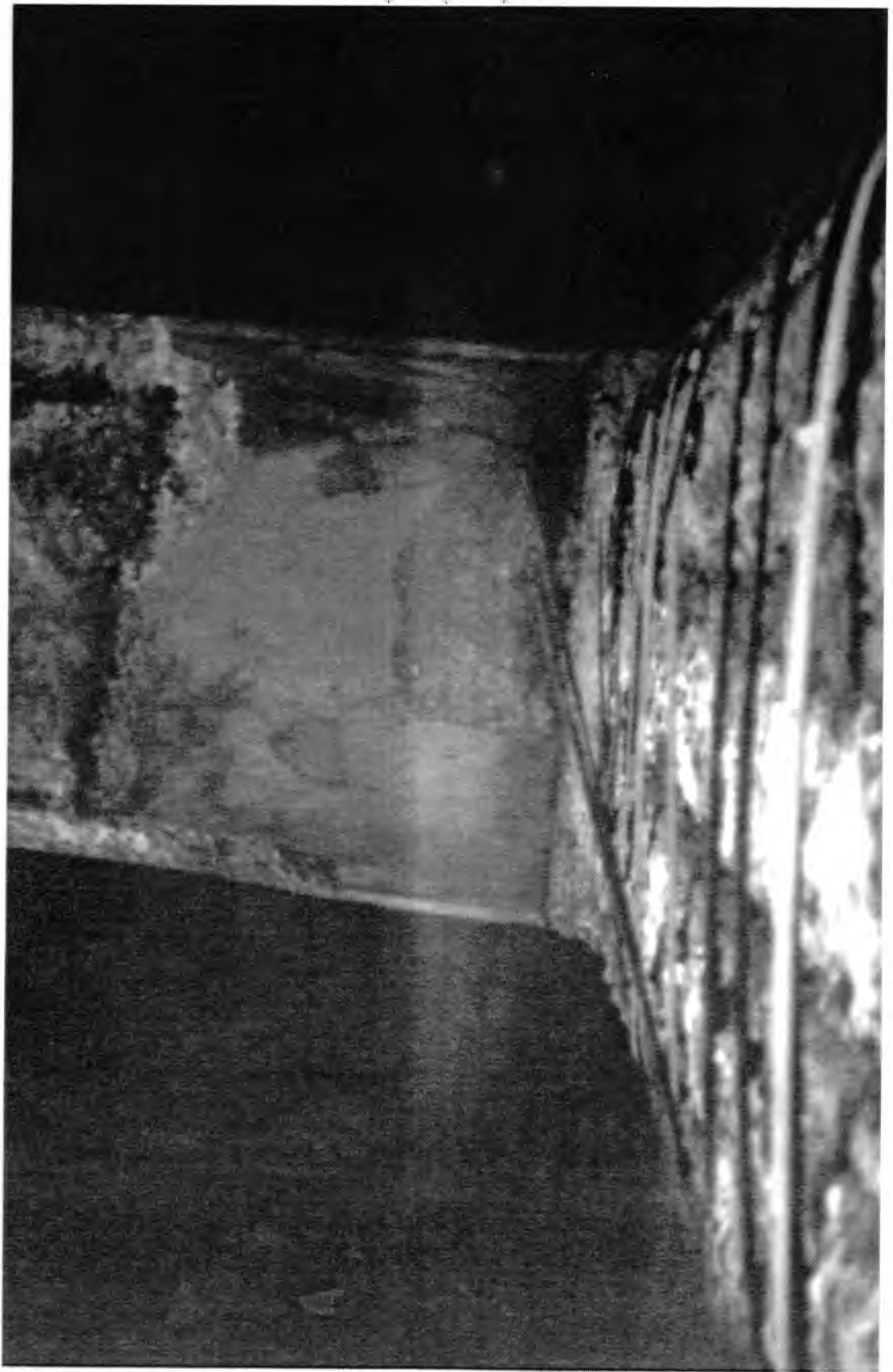
Utah's Urban Population, Employment & Interstate Vehicle Miles of travel



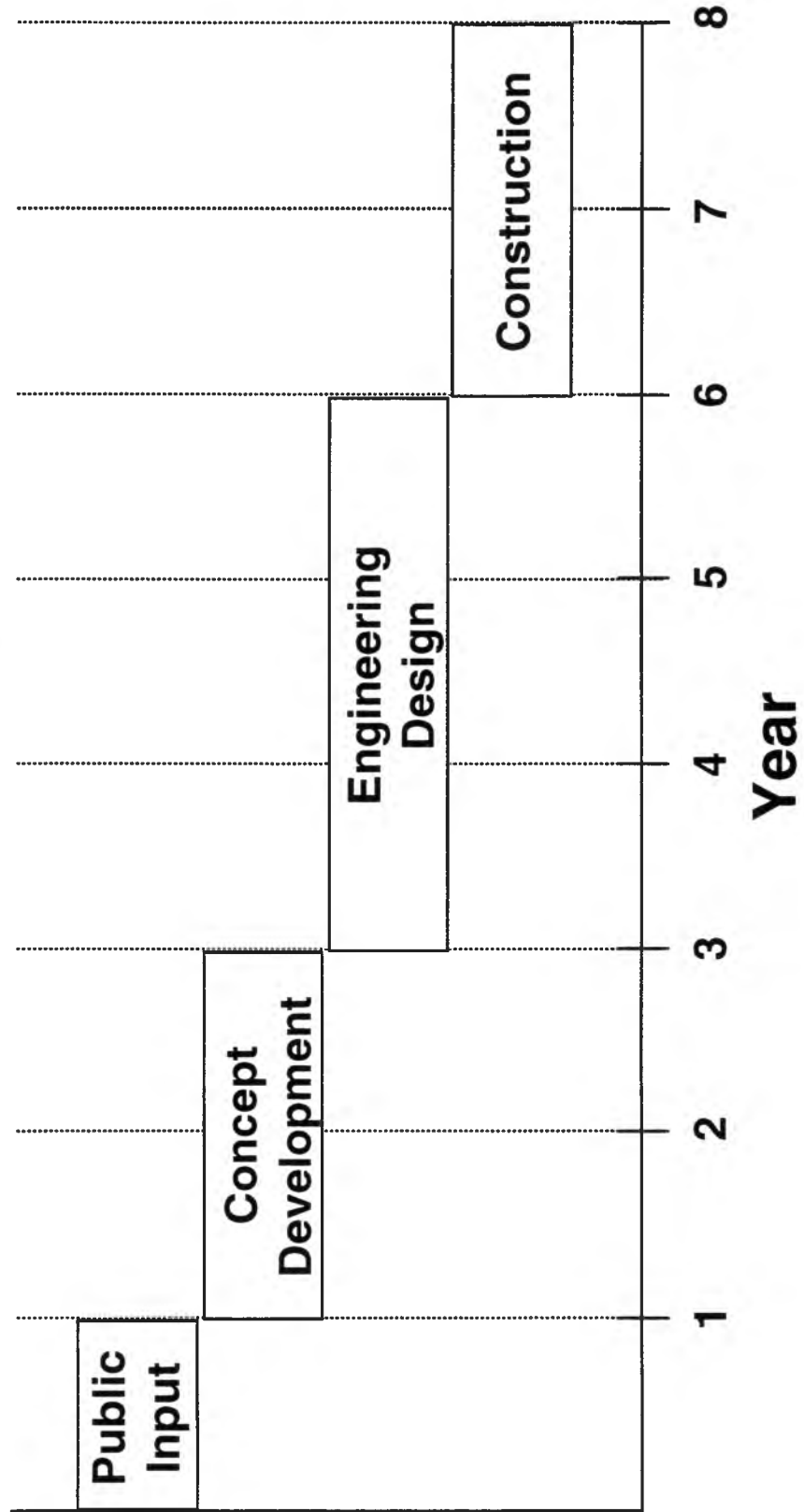


Age





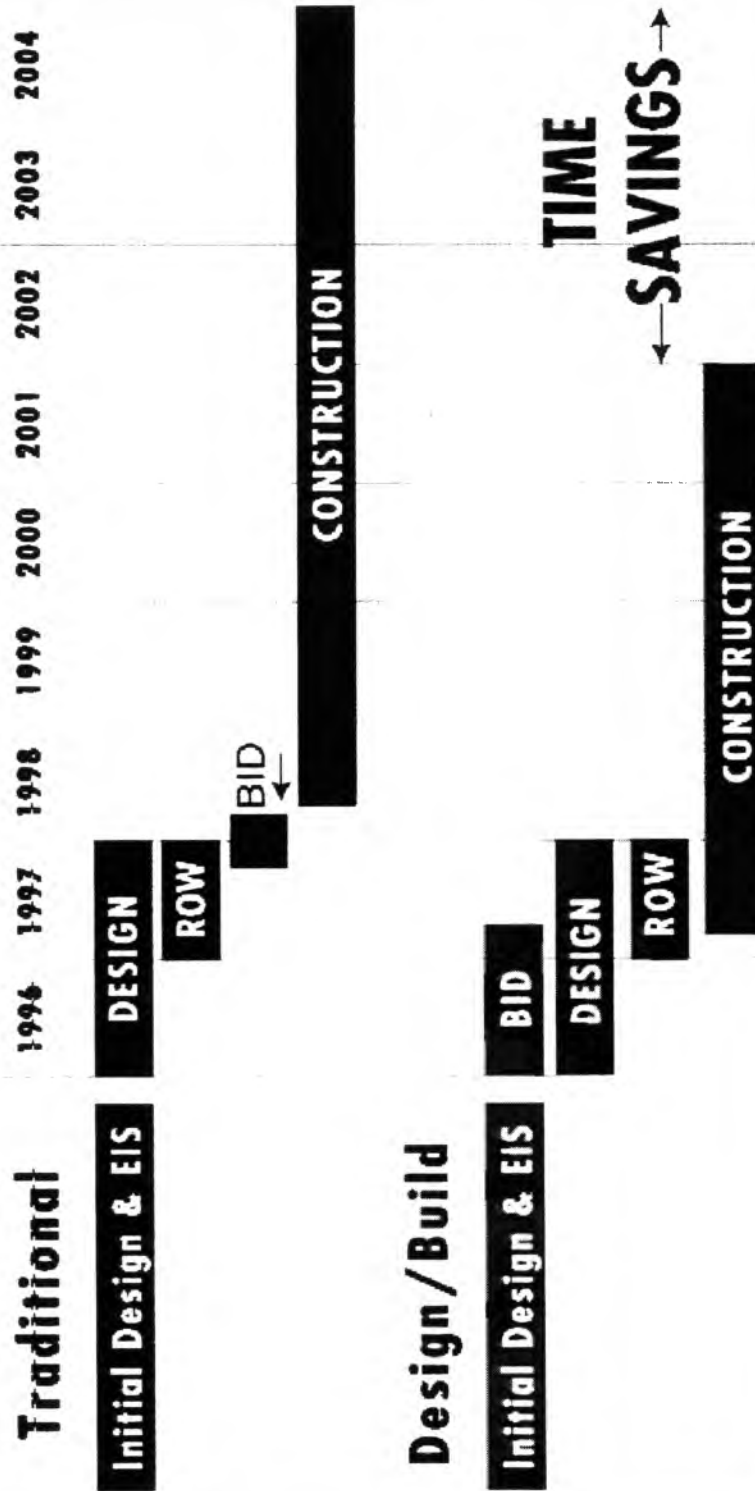
Project Delivery Process

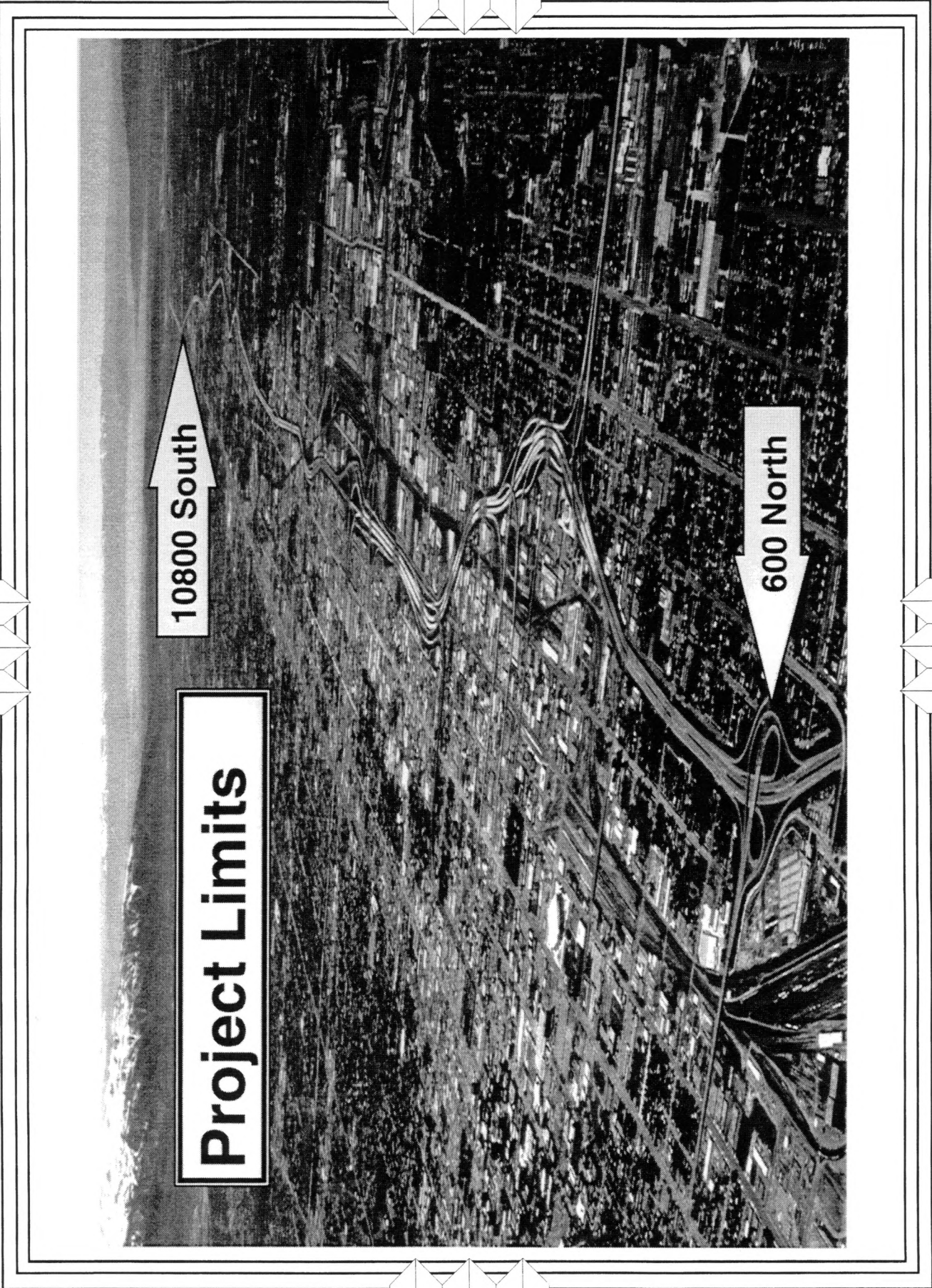


Conclusion of Past Research (1995)

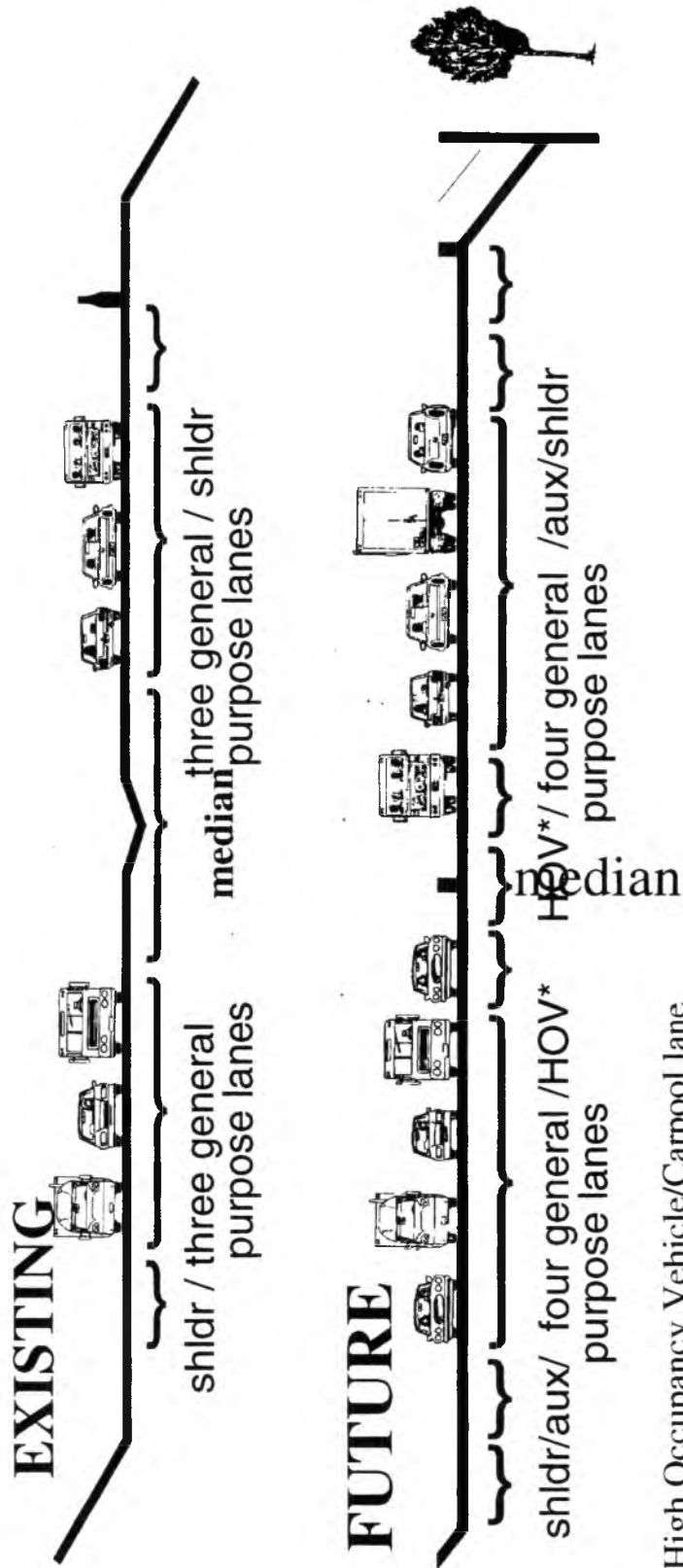
*The public would prefer
a greater level of impact
in exchange for a
shorter construction duration*

TRADITIONAL VS. DESIGN/BUILD SCHEDULE





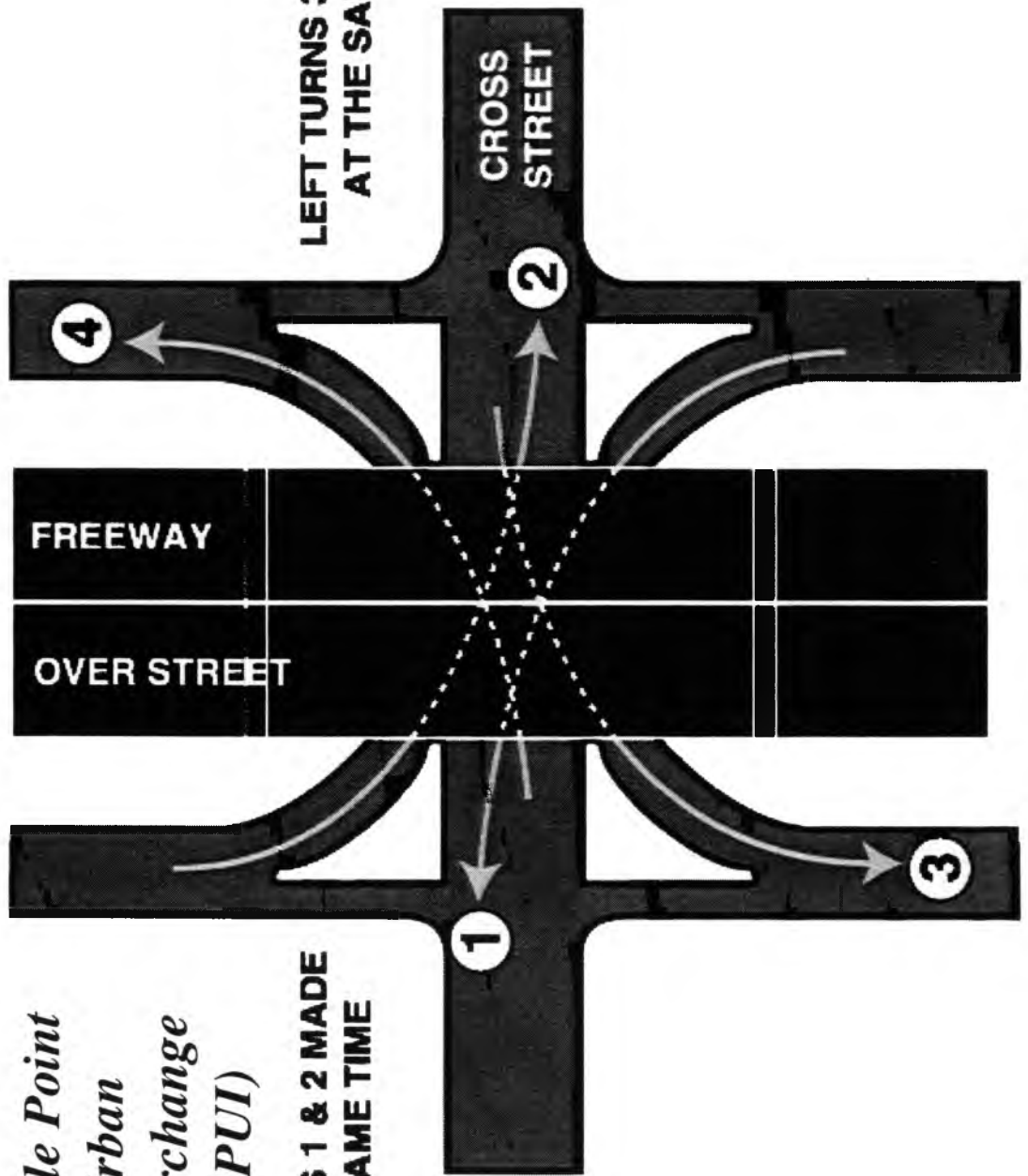
Typical Section



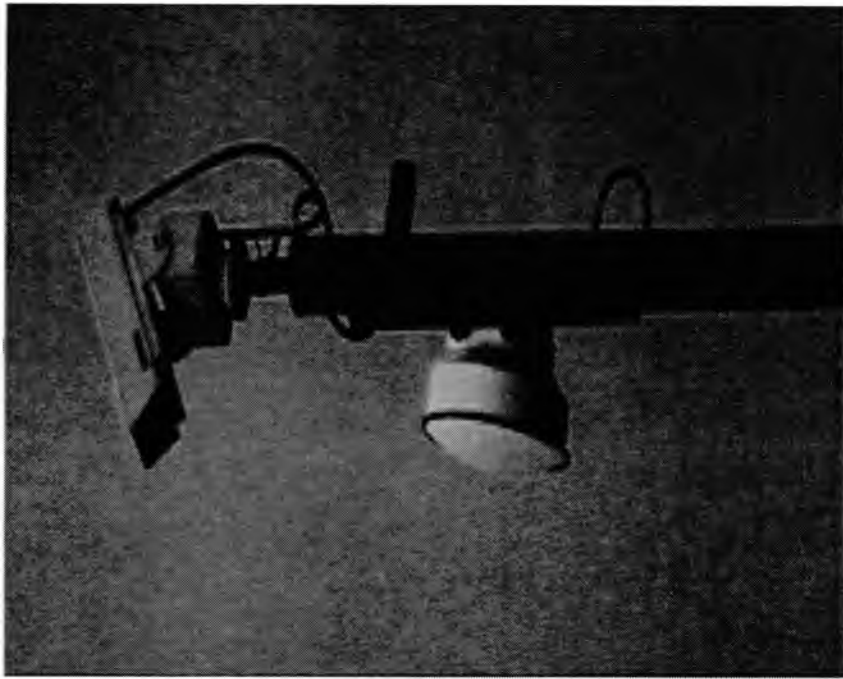
*High Occupancy Vehicle/Carpool lane

*Single Point
Urban
Interchange
(SPUI)*

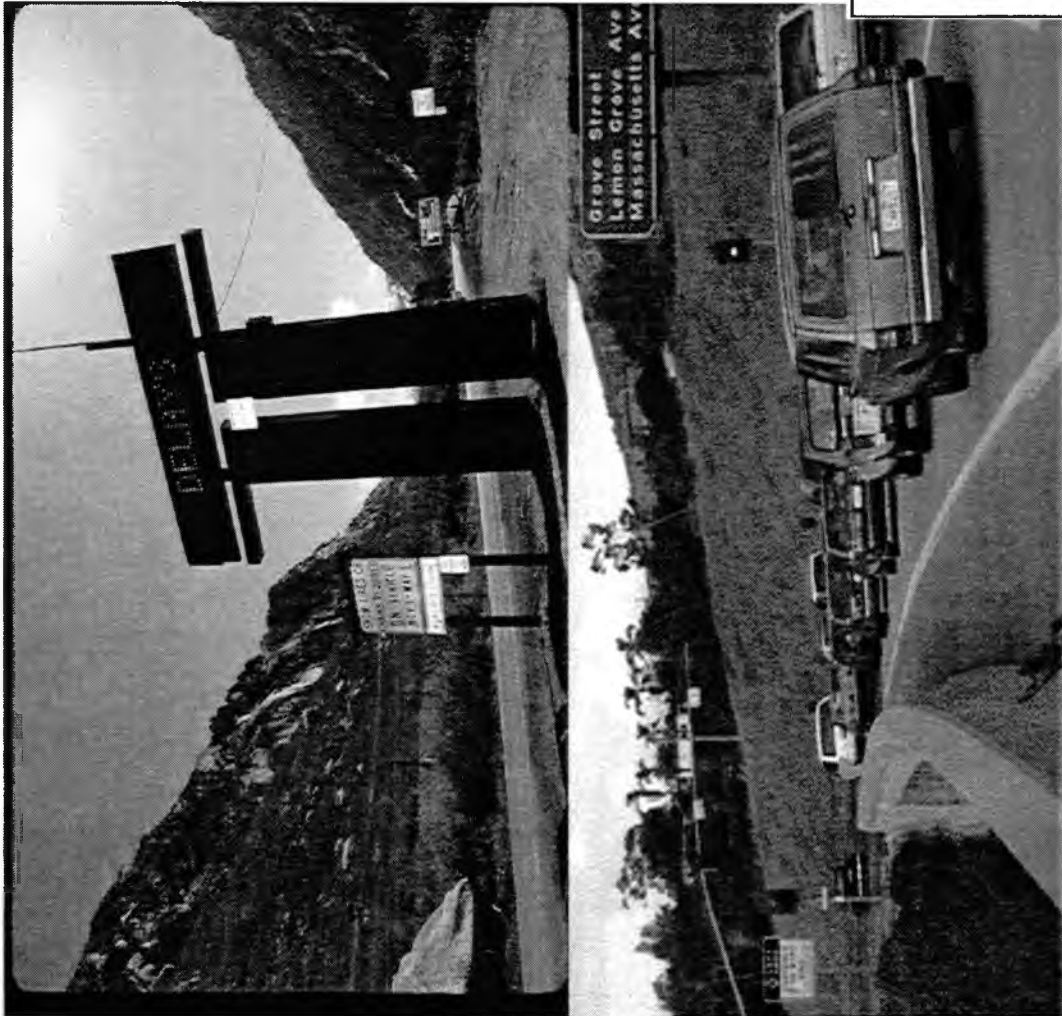
**LEFT TURNS 1 & 2 MADE
AT THE SAME TIME**



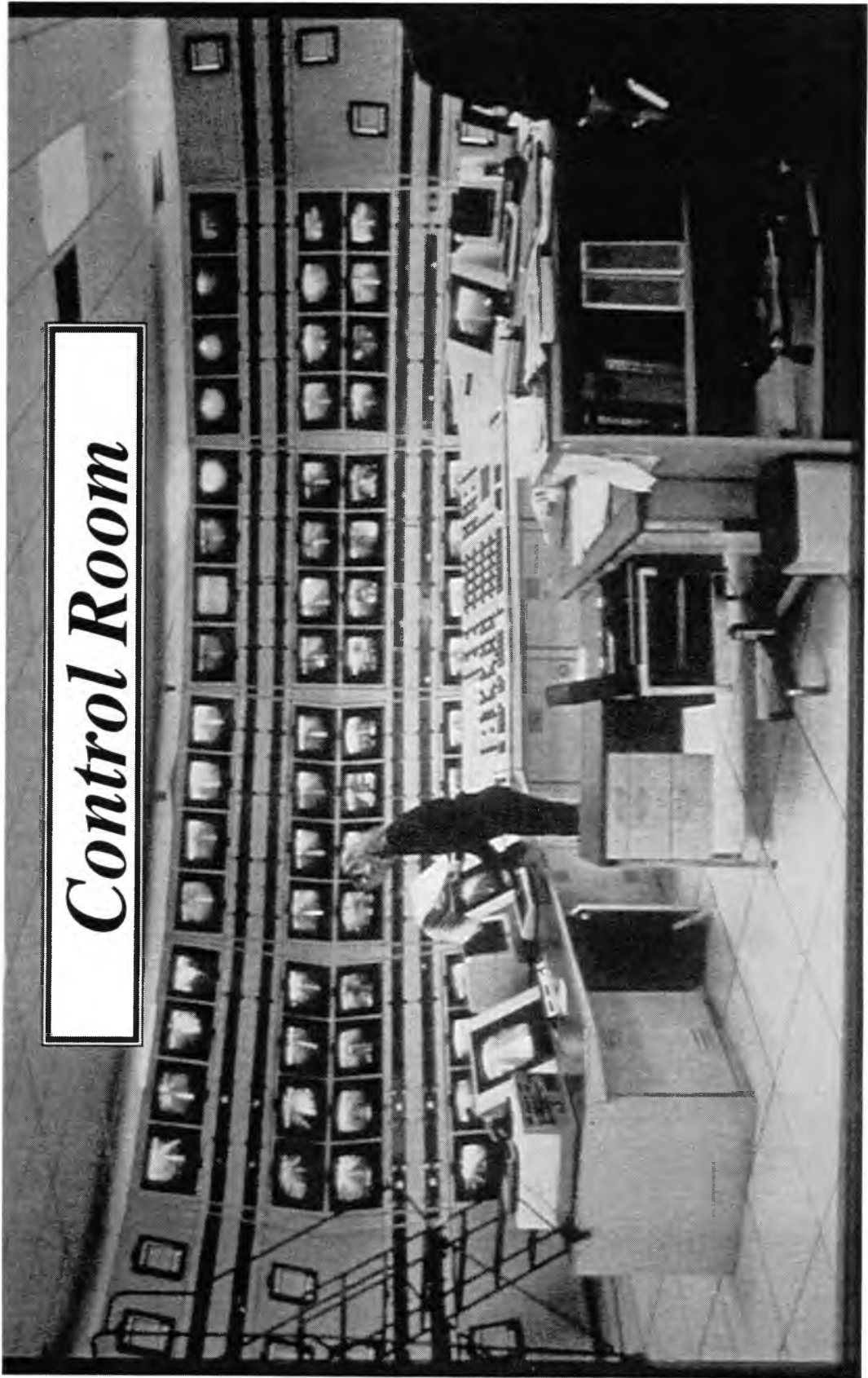
**LEFT TURNS 3 & 4 MADE
AT THE SAME TIME**



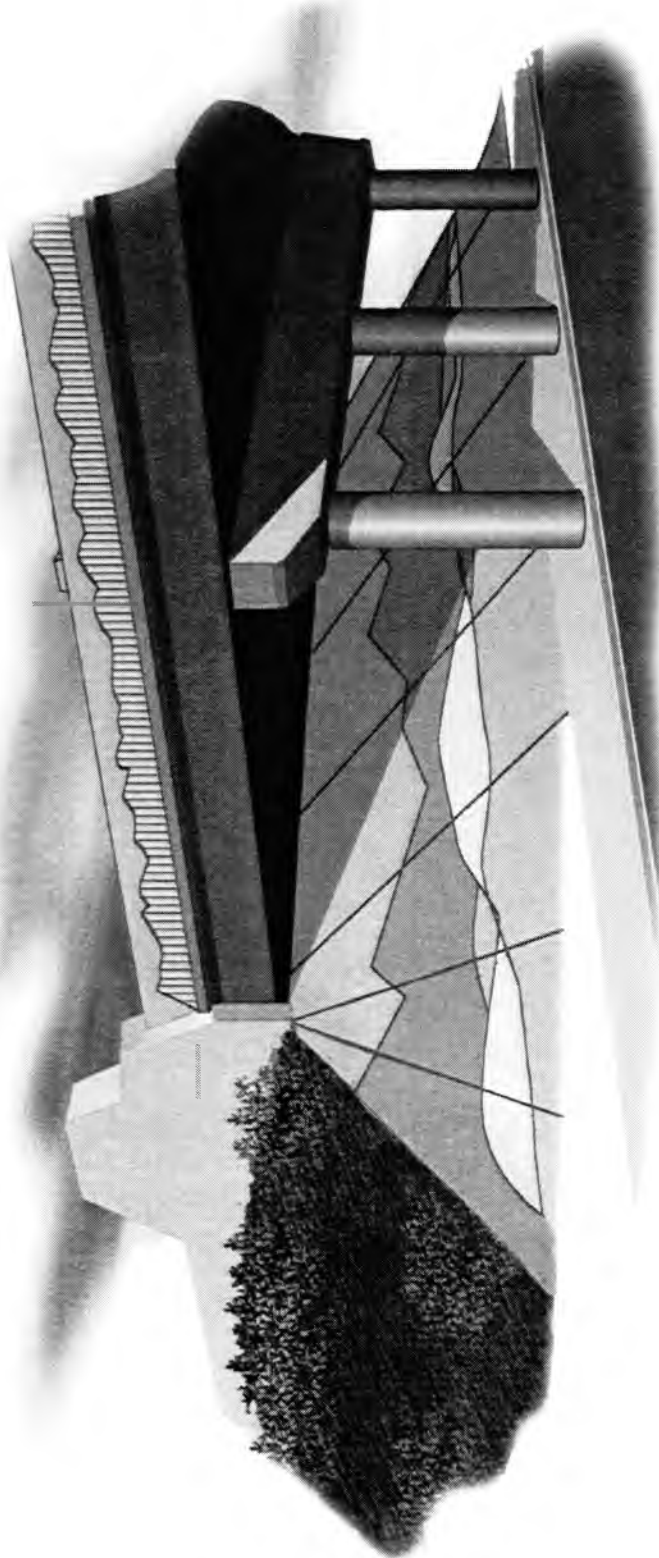
Variable Message Signs
Ramp Metering
Incident Detection



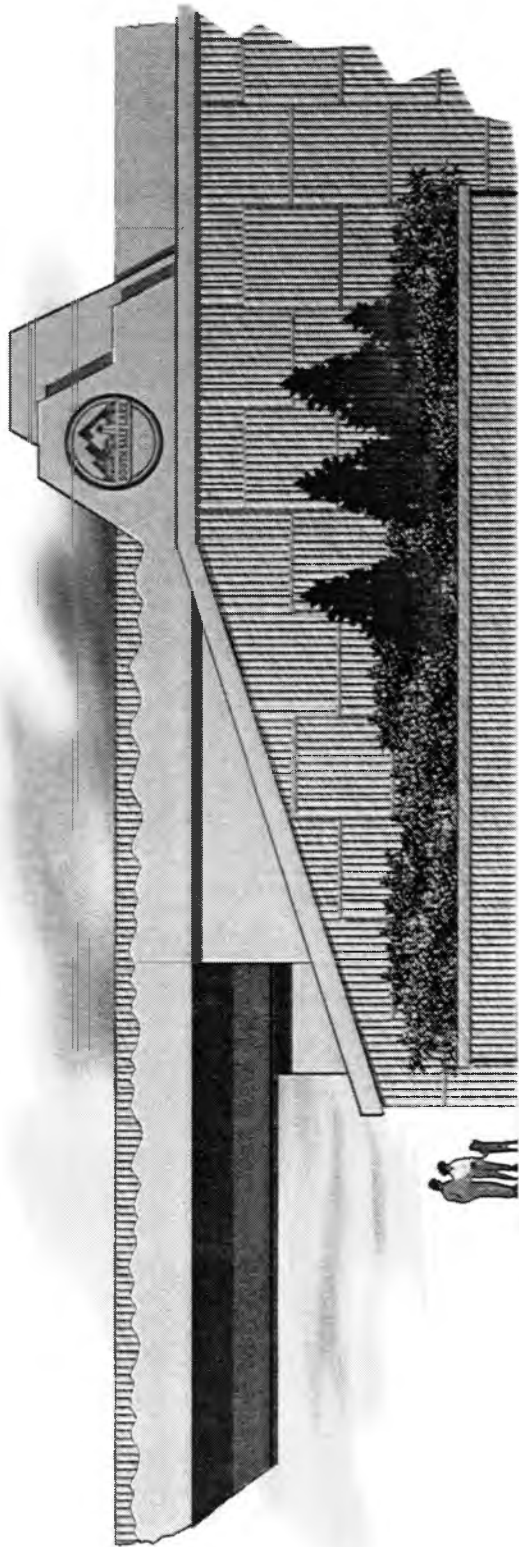
Control Room



Aesthetics



Aesthetics



Request for Qualifications (RFQ)

Rating Guidelines

- ▲ **Very Highly Qualified**
- ▲ **Highly Qualified**
- ▲ **Qualified**
- ▲ **Marginally Qualified**
- ▲ **Not Qualified**

Request for Qualifications (RFQ)

Evaluation Criteria

- ◆ **Legal and Financial**
 - Legal Structure
 - Financial Profile
- ◆ **Organization and Experience**
 - Organizational Structure
 - Organization Charts
 - Proposer Experience
 - Key Staff Background and Experience
- ◆ **Project Approach**
 - Project Risk
 - Project Management
 - Project Administration
 - Planning and Execution
- ◆ **Record of Performance**
 - Cost and Schedule Performance
 - Penalties and Termination's
 - Record of Meeting Regulatory Requirements
 - Ratios of Change Orders and Claims to Total Project Costs
 - Experience with Award Fee Contracts
- ◆ **Certification**

Selection Schedule

- ◆ D/B decision - Jan 1996
- ◆ Three teams selected — July 26, 1996
- ◆ RFP issued — Oct. 1, 1996
- ◆ Proposals received — Jan. 15, 1997
- ◆ BAFOs received — March 7, 1997
- ◆ Selection announced March 26, 1997
- ◆ Notice To Proceed - April 15, 1997

Evaluation Process

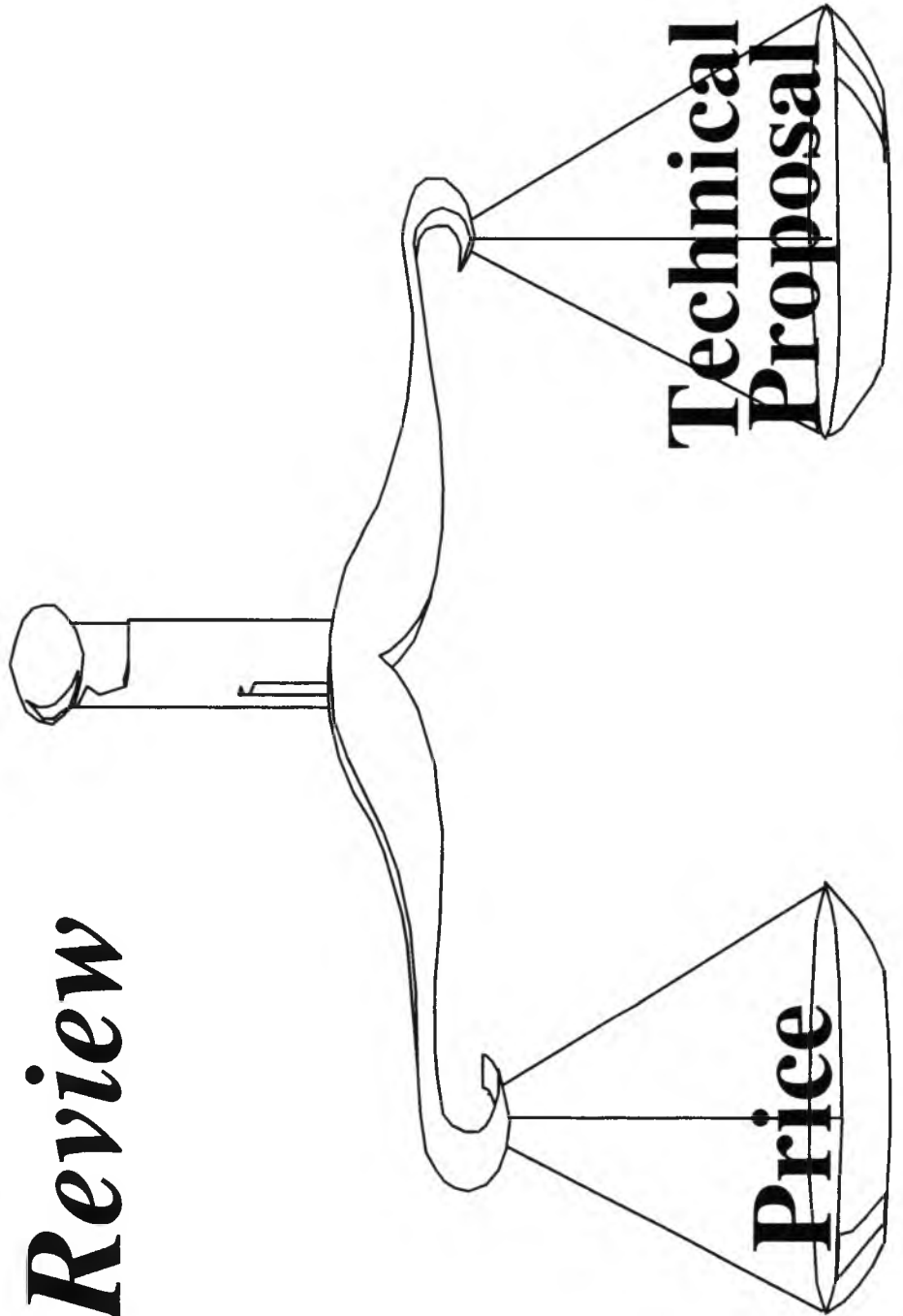
- ◆ **Most rigorous review ever.**
- ◆ **Proposals reviewed for completeness.**
- ◆ **Oral presentations made.**
- ◆ **Technical Evaluation Board (TEB) reviews 15 different aspects.**

Price & Proposal Evaluation

- ◆ **Blinded review by Price Evaluation Team
(PET)**
- ◆ **TEB and PET make recommendations to
Proposal Evaluation Board (PEB)**
- ◆ **PEB makes final recommendation to
Selection Official**
- ◆ **Final selection announced March 26**

The Selection Process :

A Review



Price Evaluation

- **Based on:**
- **Realism**
- **Accuracy**

Performance Specifications

- ◆ Drainage
- ◆ Roadway Geometrics
- ◆ Geotechnical
- ◆ Water Quality
- ◆ Lighting
- ◆ Pavements
- ◆ Signing
- ◆ Traffic Signals
- ◆ Structures
- ◆ Management of Traffic
- ◆ Maintenance During Construction
- ◆ Maintenance After Construction
- ◆ ATMS
- ◆ Concrete Barriers
- ◆ Landscape & Aesthetics

Rating Guidelines

- Automated Transportation Management System (ATMS)
- Drainage / Water Quality
- Aesthetics
- Roadway Geometrics
- Lighting / Signals / Signing
- Harmful / Hazardous Materials Remediation
- Concrete Barriers

Rating Guidelines

- **Organization Qualifications**
- **Management**
- **Work Plan / Schedule**
- **Maintenance of Traffic**
- **Geotechnical**
- **Pavement**
- **Structures**
- **Maintainability**

TEB Rating Guidelines

- ◆ **Exceptional (E)**
- ◆ **Good (G)**
- ◆ **Acceptable (A)**
- ◆ **Susceptible to becoming acceptable (S)**
- ◆ **Unacceptable (U)**
- ◆ **Pluses (+) and minuses (-) added if needed**

Technical Factors
Descending order of importance

Proposer	TEB	Org. Quals.	Mgmt	Work Plan/Sched.	Tech. Sol.
Lake Bonneville	A+ (A)*	A+ (S)*	G+ (G)*	A-	A+ (A)*
Salt Lake	G-	G+	G+	A+	G-
Wasatch	E-	E	E-	G+	E-

Technical Subfactors

Equal weight

Proposer	Tech. Sol.	MOT	Geo-tech	Pave-ment	Struc-tures	Main-tain-ability	Other
Lake Bonneville	A+ (A)*	A	A	A (A)*	G+	A- (S+)*	G
Salt Lake	G-	A-	G	G	E-	A+	A+
Wasatch	E-	E (E-)*	G+	E-	G (G-)*	E	E-

Other Technical Subfactors

High significance Med. significance Low significance

Proposer	Other	ATMS	Drain-age/W. Q.	Road-way Geom.	Aesth-etics	Light/Sig.	H/H Mat. Rem.	Conc. Bar.
Lake Bonneville	G	E-	A+	A	G	G	E-	G (A+)*
Salt Lake	A+	A- (S-)*	A	G	A	A+	E-	G
Wasatch	E-	E-	G+ (G-)*	E (E-)*	E	A	A	G+

Technical Subfactors

Equal weight

Proposer	Tech. Sol.	MOT	Geo-tech	Pave-ment	Struc-tures	Main-tain-ability	Other
Lake Bonneville	A+ (A)*	A	A	A (A-)*	G+	A- (S+)*	G
Salt Lake	G-	A-	G	G	E-	A+	A+
Wasatch	E-	E (E-)*	G+	E-	G (G-)*	E	E-

Overall Rating

■ Lake Bonneville	A+
■ Salt Lake	G-
■ Wasatch	E-

Wasatch Constructors

- ◆ Kiewit Pacific*
- ◆ Granite Construction*
- ◆ Washington*
- ◆ Sverdrup
- ◆ DeLeuw Cather
- ◆ MK Centennial
- ◆ URS Consultants Inc.
- ◆ Greiner Inc.
- ◆ H.W. Lochner Inc.

Technical Evaluation Board Results

◆ **RFP Completion Date**

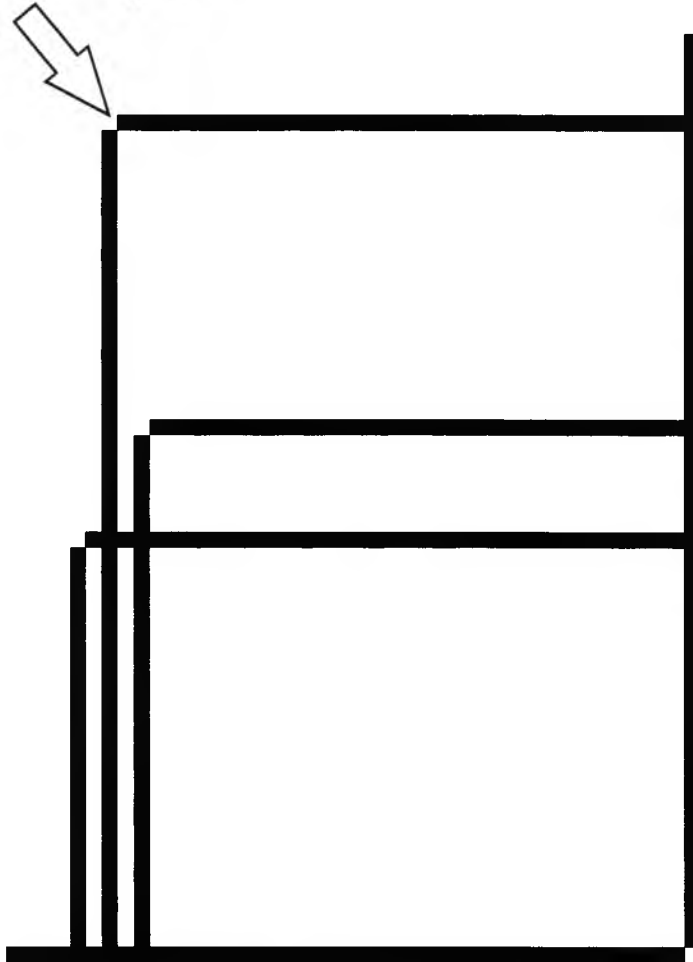
~~**October 15, 2001**~~

Wasatch "Value Added"

July 15, 2001

Best Value Selection

*“Best Value”
Wasatch*



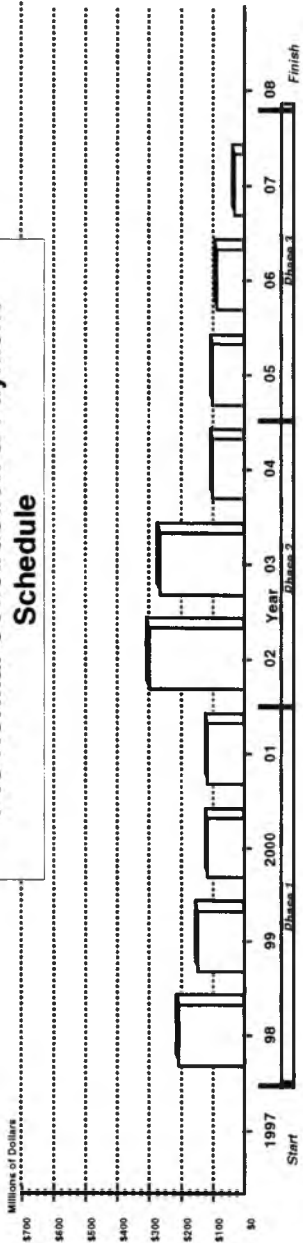
PRICE

QUALITY

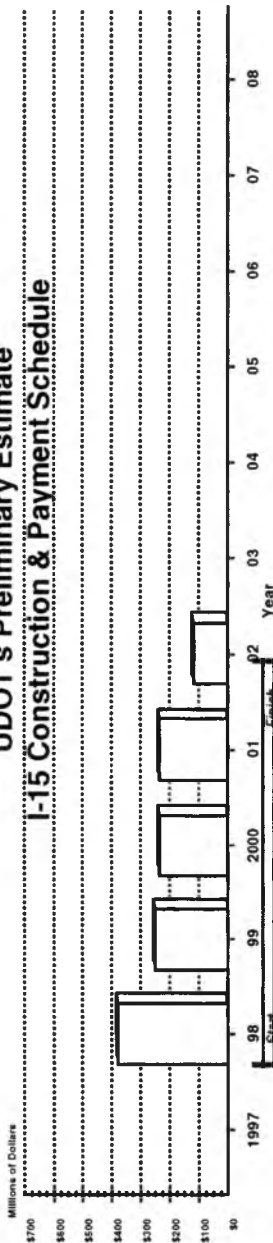
Stipends

- ◆ **\$950,000**
- ◆ **Ownership of concepts**
- ◆ **Recognition of Contractor Investment**

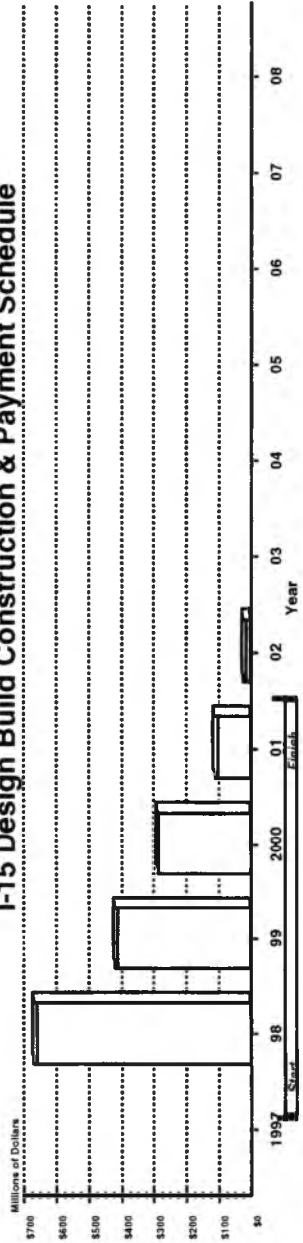
I-15 Normal Construction & Payment Schedule



UDOT's Preliminary Estimate I-15 Construction & Payment Schedule

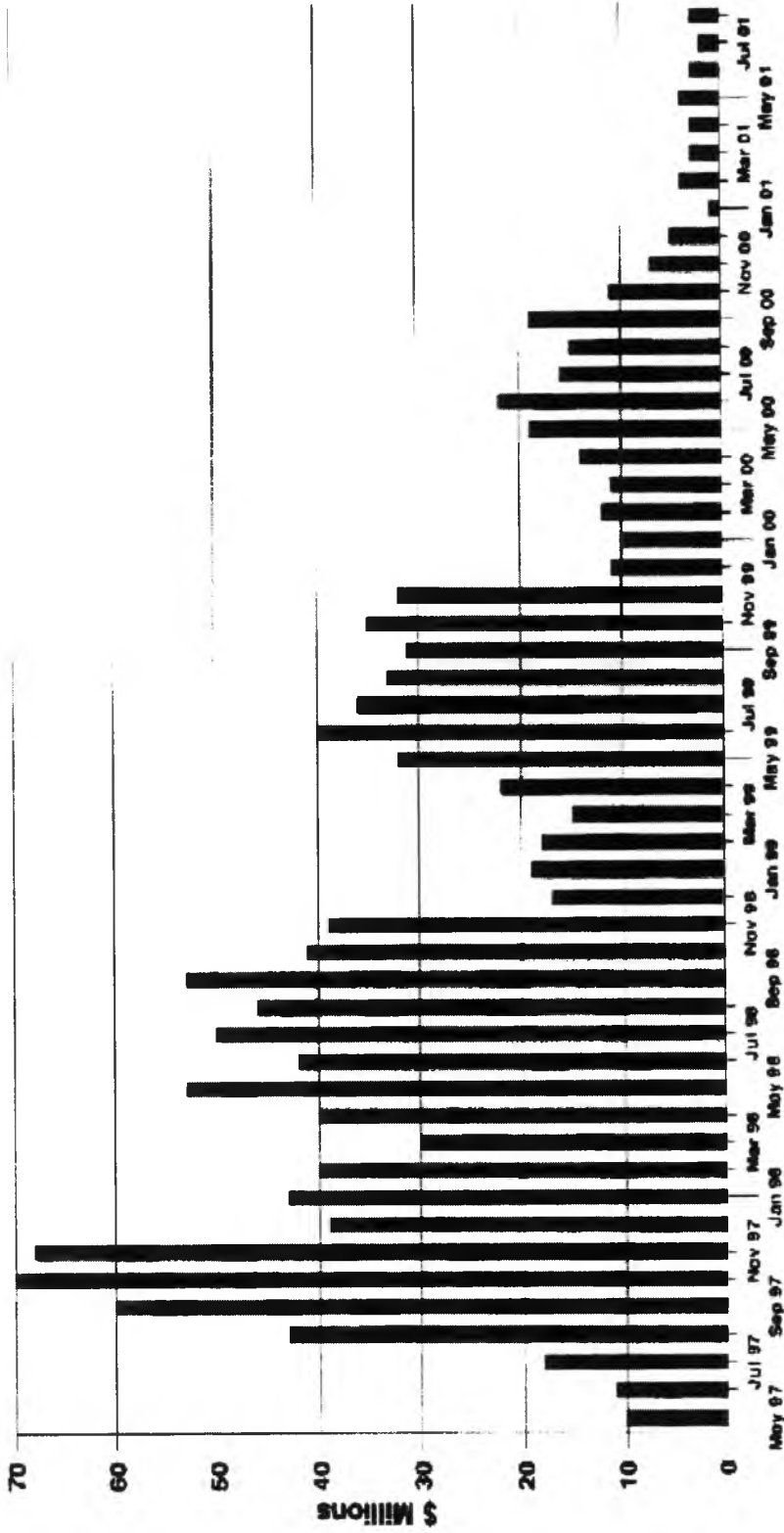


I-15 Design Build Construction & Payment Schedule



WASATCH CONSTRUCTORS BASE CONTRACT

I-15 Reconstruction Monthly Payment Schedule



Other Concepts

- ◆ Partnering
- ◆ OCIP (Owner Controlled Insurance Program)
 - ➔ (Savings: \$ 10 - 15 M)
- ◆ Expedited Payment
 - ➔ (Savings: \$ 30 M)
- ◆ Public Information Program
- ◆ 4 CD-ROMS
- ◆ Subcontracting

OCIP- Wrap Up

- ◆ **Workers Compensation**
- ◆ **General Liability**
- ◆ **Errors & Omissions**
- ◆ **Builders Risk**
- ◆ **Environmental Risk**

***Traditional UDOT Role vs.
Design/Build***

Traditional Role

UDOT

- ◆ Design Review
- ◆ Issue Resolution
- ◆ Construction Management
- ◆ Inspection
- ◆ Material Testing

Design/Build Role

UDOT

■ Oversight

Wasatch

- ◆ Design Review
- ◆ Issue Resolution
- ◆ Construction Management
- ◆ Inspection
- ◆ Material Testing

Risk Chart

Risk/Responsibility Category	"Traditional" Design-Bid-Build		Typical Design-Build		I-15 Design-Build	
	Owner	Designer or Constructor	Owner	Design-Builder	Owner	Design-Builder
Final Alignment Geometry	X			X		X
Original Geotechnical Data	X			X	X	
Design Criteria	X		X		X	
Design Defects	X			X		X
Constructibility of Design	X			X		X
Obtaining ROW	X			X	X	
Coordinating with Utilities & Railroads				X	Agreements	Coordination
Quality Control and Quality Assurance	Significant inspection and testing	Quality of Workmanship	Oversight only	X	Oversight Only	X
Coordination with other work	X			X		X

Award Fee

- ◆ **Philosophy/Benefits:**
 - ➔ **Motivates contractor to quality performance desired by owner**
 - ❖ **timely performance**
 - ❖ **quality of work**
 - ❖ **management**
 - ❖ **community relations/maintenance of traffic**
 - ➔ **Positive means of achieving desired results**
 - ➔ **Incentivize performance throughout project (not just an end)**
 - ➔ **Financial incentive to contractor**
 - ➔ **Consistent with partnering**
- ◆ **Proven and Successful**

Lessons Learned

- ◆ **Level of Design** ◆ **Public Information**
- ◆ **Utility Agreements** ◆ **Industry Acceptance**
- ◆ **Cost Estimate** ◆ **Award Fee**
- ◆ **Statutory Requirements** ◆ **Audits**
- ◆ **Design Review**



What's the Public Thinking?



Project Statistics

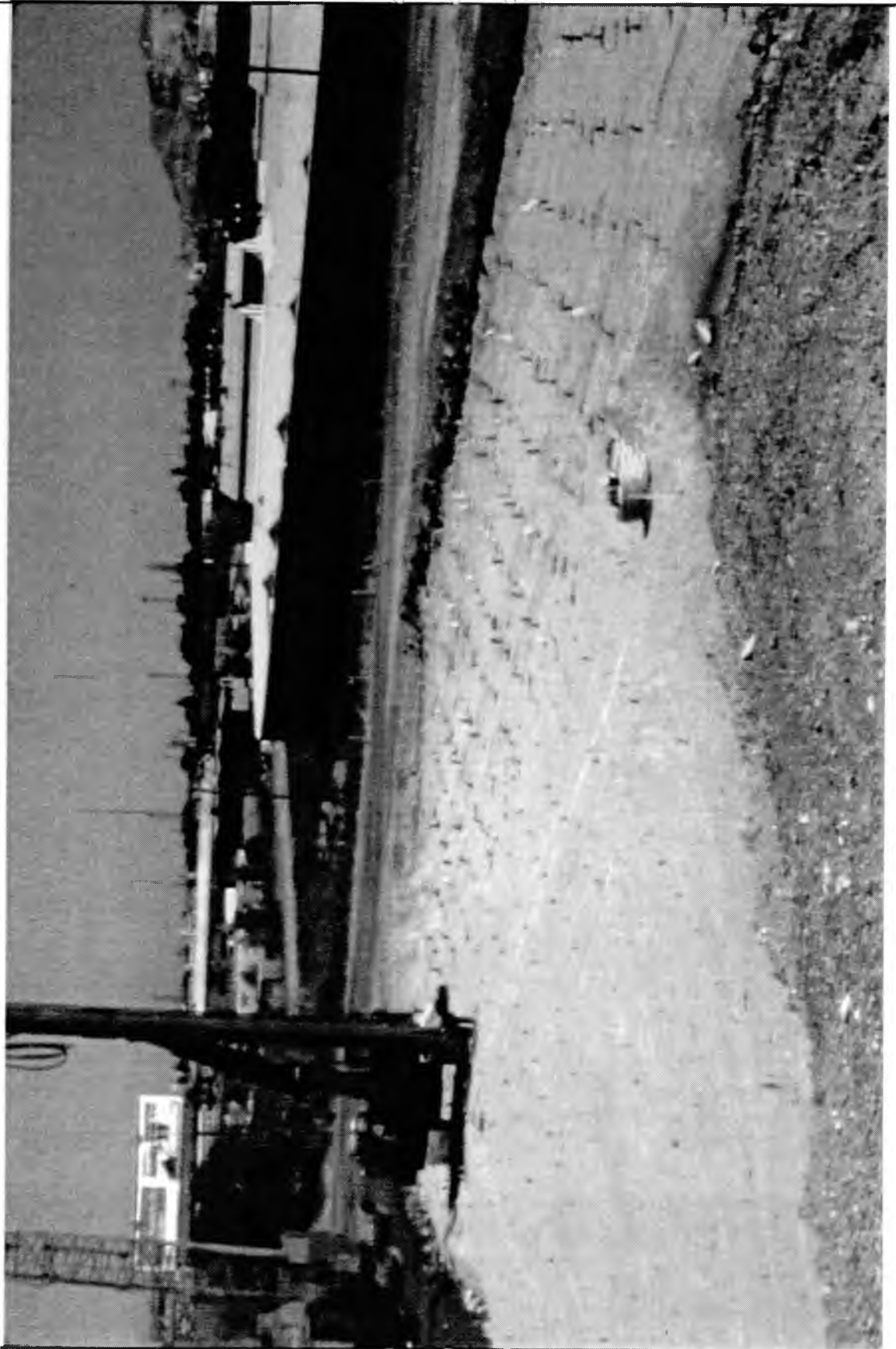
Construction Scope of Work

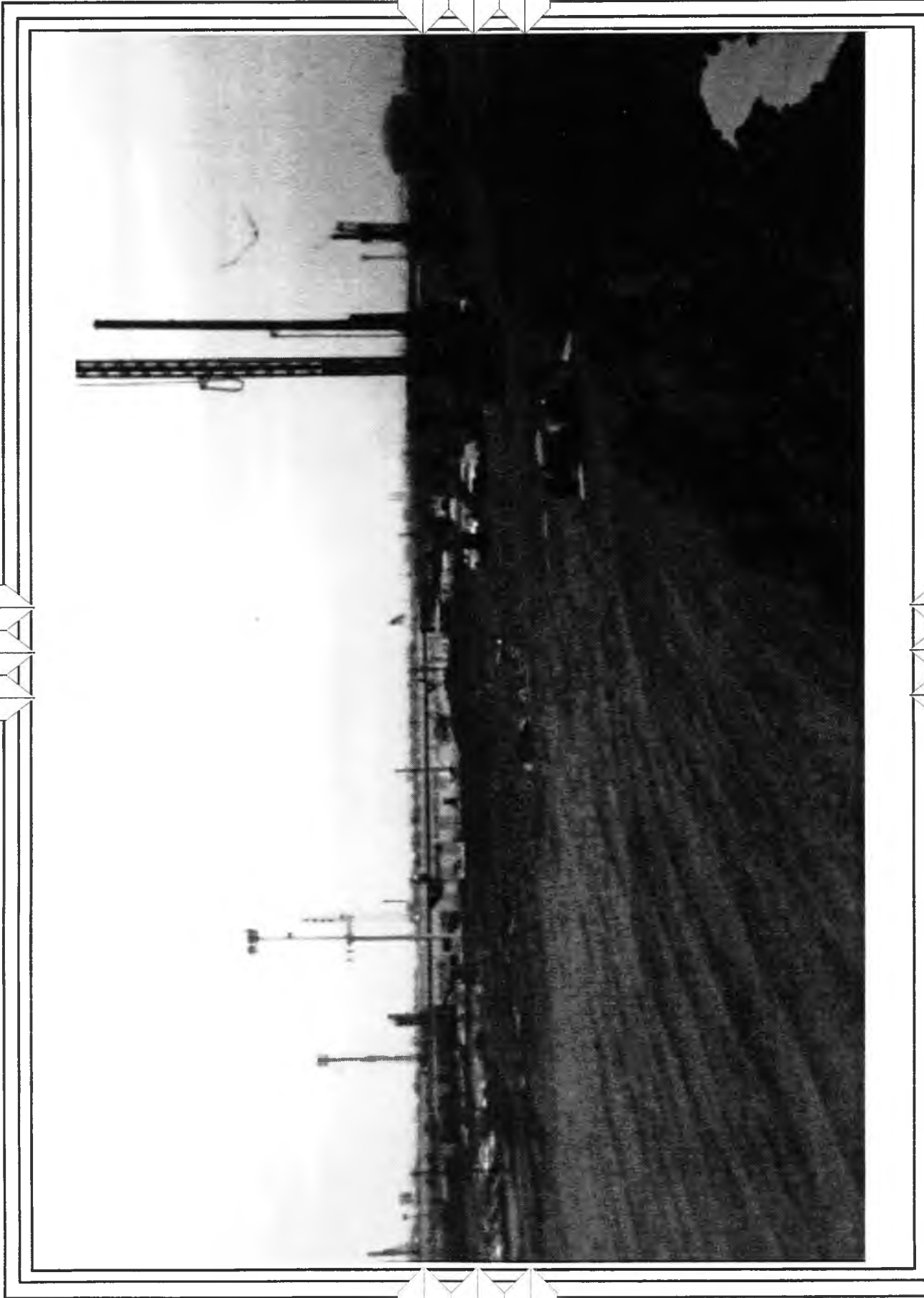
- ◆ **6.9 Million cubic meters embankment**
- ◆ **2.1 million square meters concrete pavement**
- ◆ **390,000 square meters of bridge**
 - **143 bridges total**
- ◆ **128,000 square meters of retaining walls**
- ◆ **70,000 meters of drainage facilities**

Construction Project Stats

(42 weeks from NTP)

- ◆ **2.5 million meters of wick drain**
 - **1,553 Miles of wick drain**
 - ❖ **Enough to go to on a round trip from Salt Lake to San Diego, California**
 - ❖ **Enough to go from Salt Lake to Houston, Texas**





Construction Project Stats

(42 weeks from NTP)

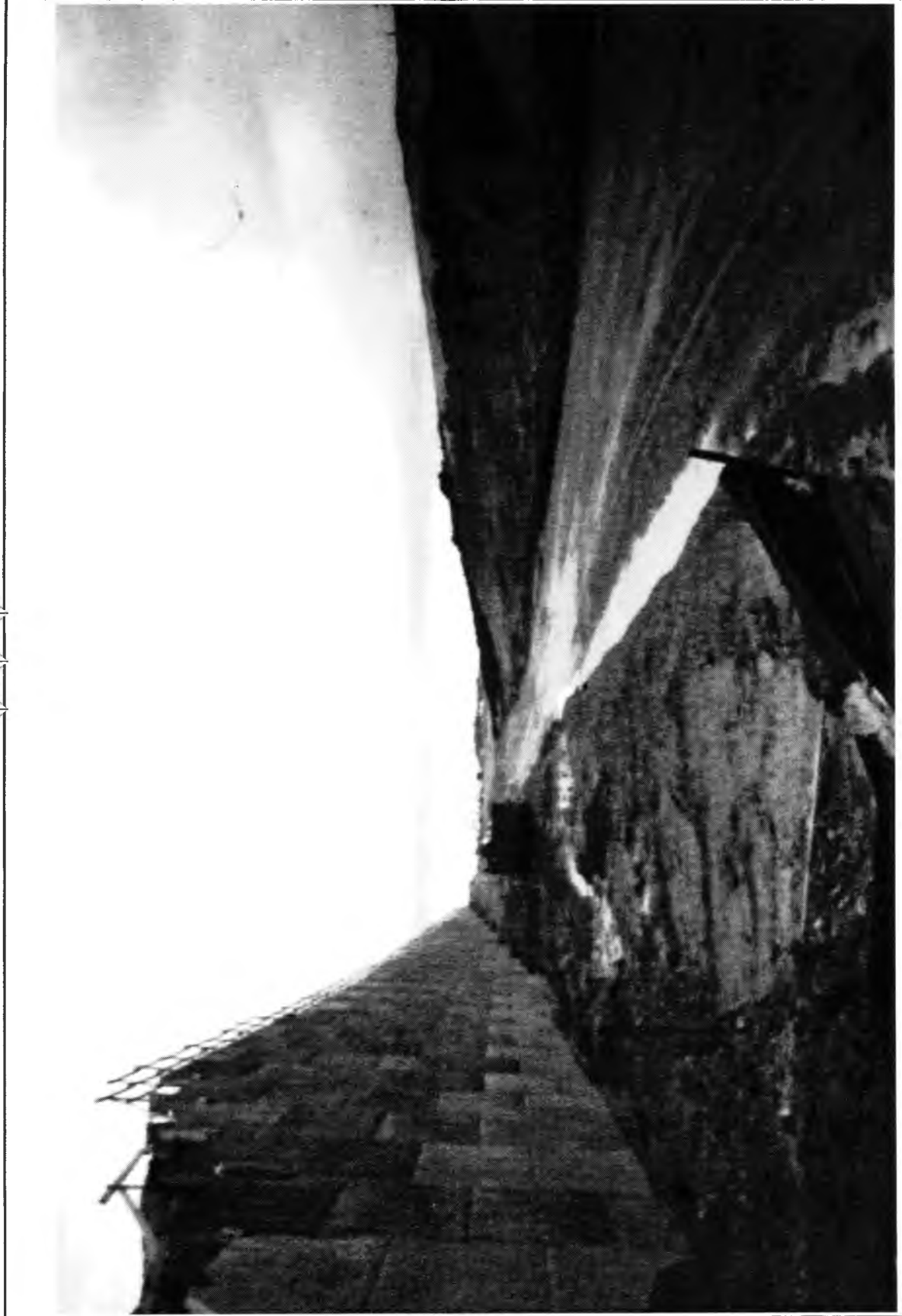
- ◆ **3.1 million cubic meters of fill**
 - ➔ **4.05 million cubic yards**
 - ❖ **7.5 million tons**
 - ✓ **178,400 belly dump truck and pup loads**
- ◆ **1.3 million cubic meters of excavation**
 - ➔ **1.7 million cubic yards**
 - ❖ **3.15 million tons moved on site**



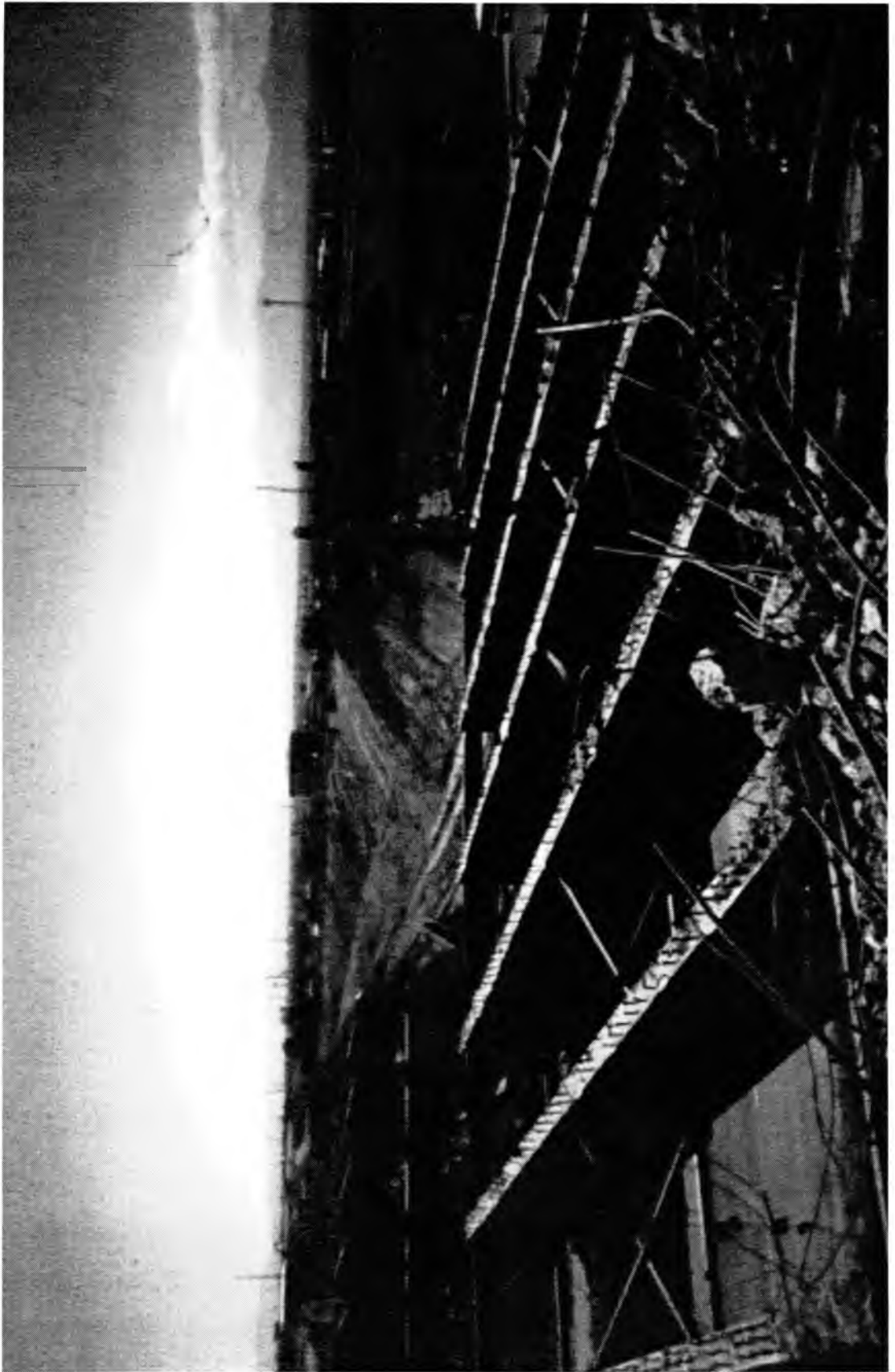


Construction Project Stats
(42 weeks from NTP)

- ◆ **21,200 square meters of Mechanically Stabilized Earth (MSE) wall**
 - **25,400 square yards of single stage, two stage, and three stage retaining wall**
- ◆ **42 bridges demolished**







Construction Project Stats

(42 weeks from NTP)

◆ 36,600 meters of pile driven

→ 120,100 feet of piling

❖ 22.75 miles

◆ 770,000 hours labor

→ 370 years of time invested





Design Project Stats (42 weeks from NTP)

- ◆ **2,146 Quality Audits have been performed**
- ◆ **436 packages have been approved for construction**
- ◆ **Over 5,455 plan sheets have been released for construction**
 - **2,587 of 12,000 final plans**

Design Project Stats
(42 weeks from NTP)

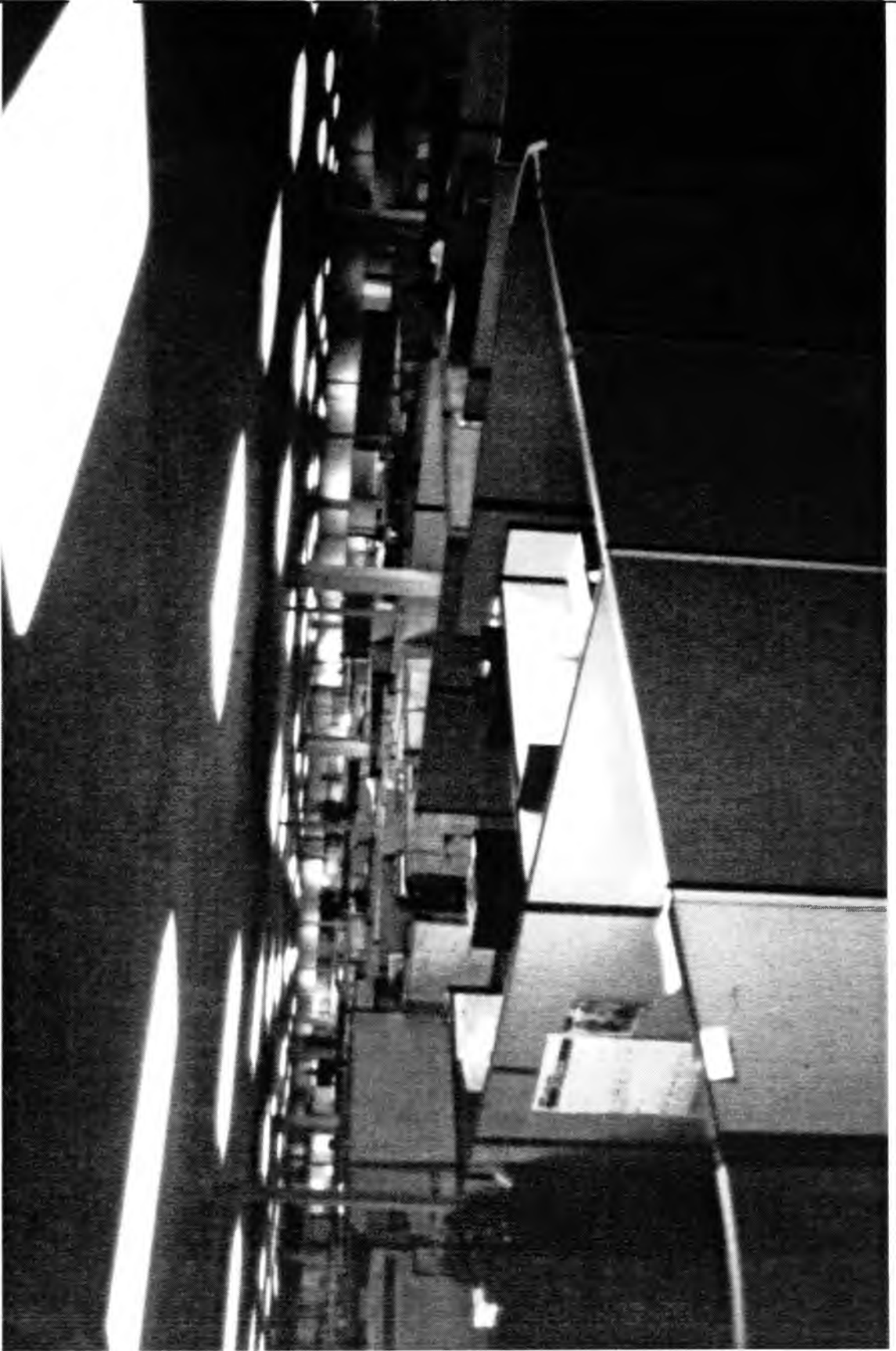
- ◆ **Design Services during construction**
- **295 shop drawing submittals**
- **96 major field design changes**



Design Project Stats

(42 weeks from NTP)

- ◆ 15 Design Subcontractors
- ◆ 420 Design Professionals
- ◆ 1,060,000 hours labor
 - 510 years of time invested



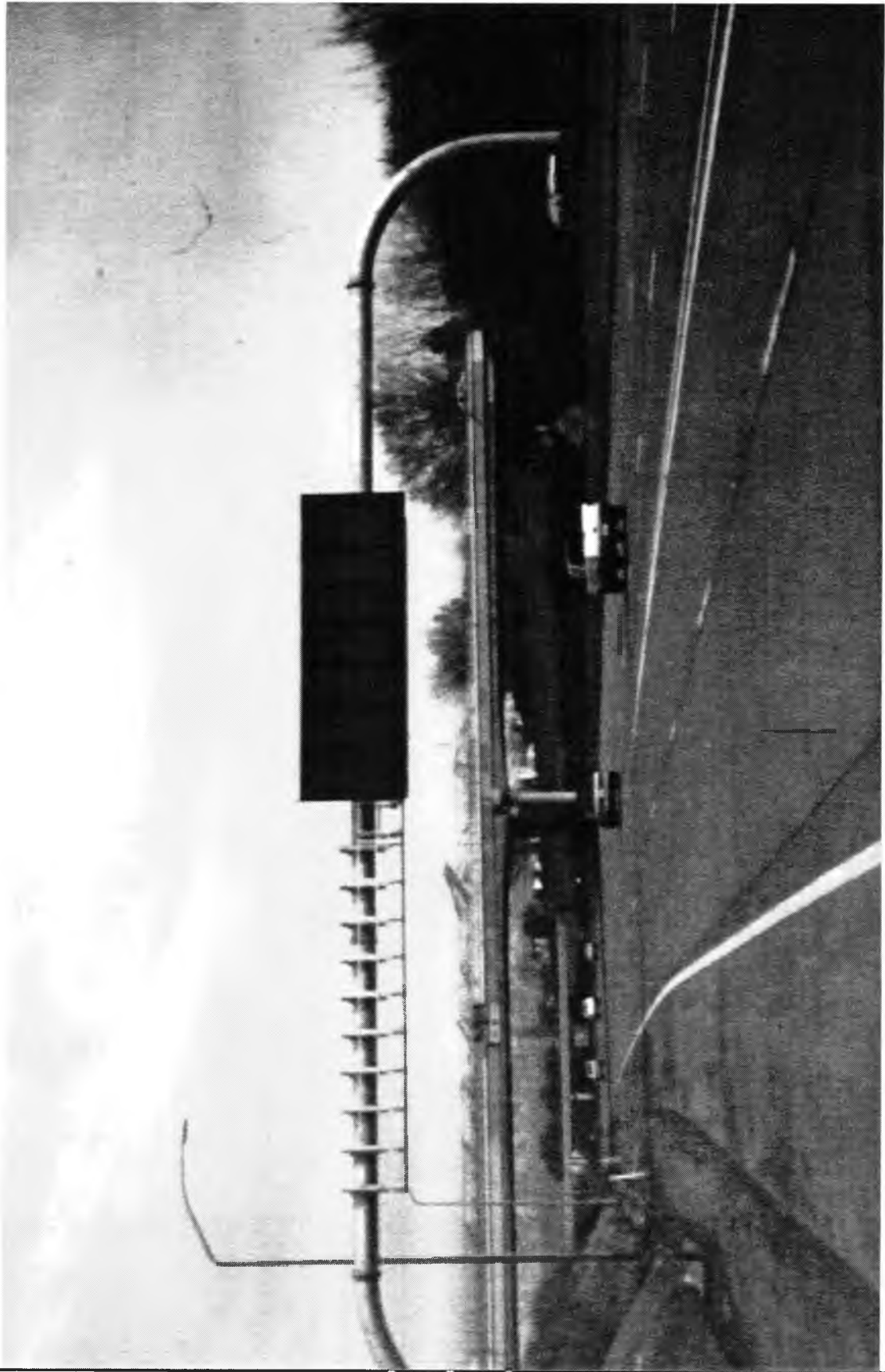
ATMS Project Stats

(42 weeks from NTP)

- ◆ **5 Field Crews**
- ◆ **15 Design Professionals**
- ◆ **56,000 hours labor**
 - **27 years of time invested**

ATMS Project Stats
(42 weeks from NTP)

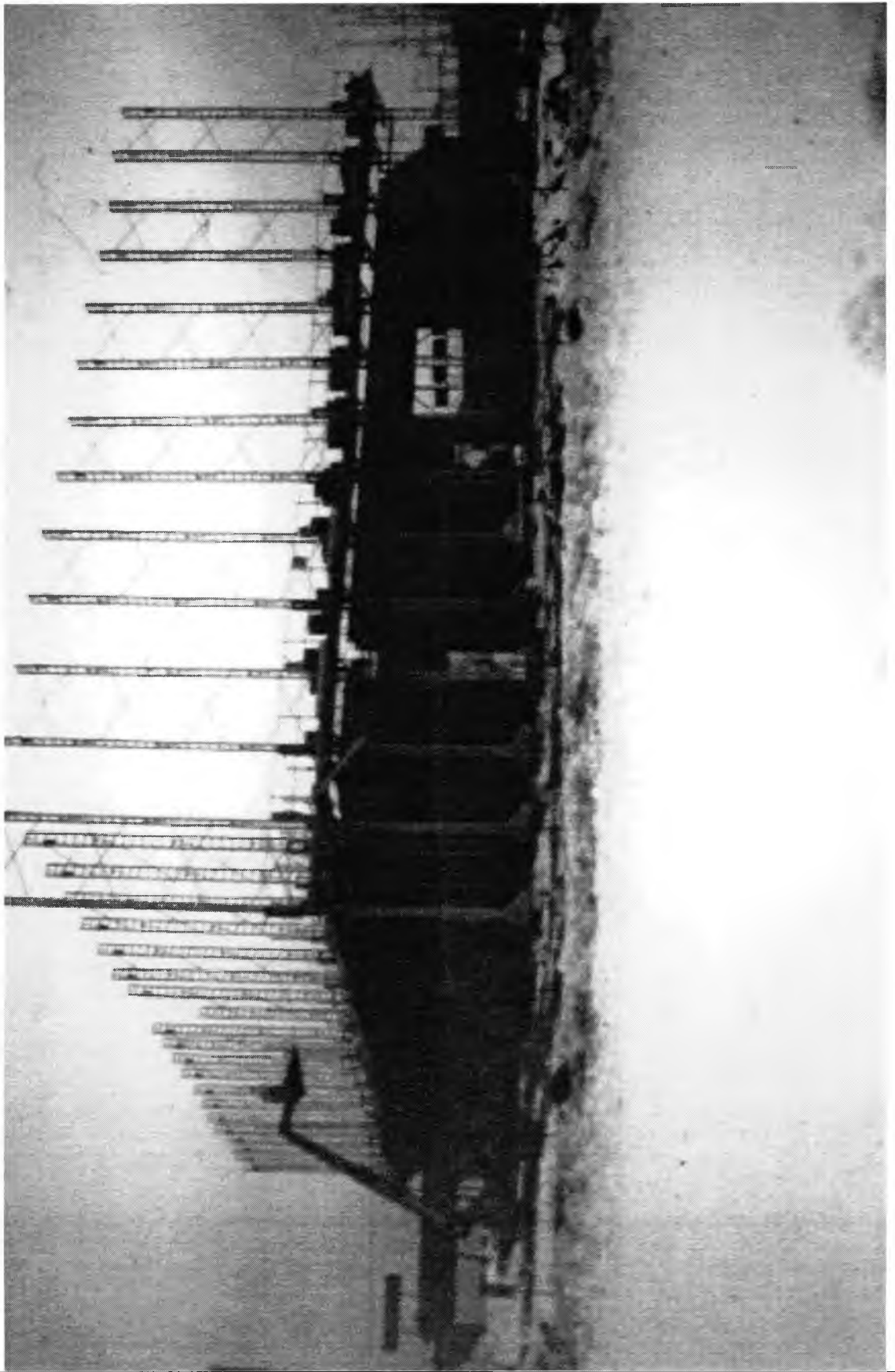
- ◆ **65 Traffic Controllers and Cabinets replaced**
- ◆ **4 large VMS signs placed and operational on freeway system**
- ◆ **7 Communication hub buildings installed**



ATMS Project Stats

(42 weeks from NTP)

- ◆ **109 km of communication conduit placed**
 - ➔ **68 miles**
- ◆ **17 km of fiber optic cable pulled into conduit**
 - ➔ **11 miles**
- ◆ **300 Vehicle Detector Loops installed on I-215 West**



Project Stats
UDOT and Wasatch Management
(42 weeks from NTP)

- ◆ **85 Managers and administrative personnel**
- ◆ **178,500 hours labor**
 - **86 years of time invested**

Project Stats
Quality Control/Quality Assurance
(42 weeks from NTP)

- ◆ 105 QA/QC inspectors in the field
 - Began inspections in June 1997
- ◆ 178,500 hours labor
 - 86 years of time invested

Project Stats ***(42 weeks from NTP)***

◆ Construction	770,000 Hours
◆ Design	1,060,000 Hours
◆ ATMS	56,000 Hours
◆ Management	178,500 Hours
◆ QA/QC	<u>178,500 Hours</u>
Total	2,243,000 Hours

➔ **1,078 years of time invested**

