

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF AUTHORIZING)	RESOLUTION NO. 93- 1759
THE ISSUANCE OF A REQUEST FOR)	
BIDS (RFB) #93B-5-SW FOR REPAIRS)	
AND IMPROVEMENTS TO THE ROOF)	Introduced by Rena Cusma
AND VENTILATION SYSTEM AT METRO)	Executive Officer
SOUTH STATION.)	
)	
)	

WHEREAS, The roof and ventilation systems at Metro South Station must be repaired, and;

WHEREAS, This work has been approved as part of the renewal and replacement budget, and;

WHEREAS, The resolution was submitted to the Executive Officer for consideration and was forwarded to the Council for approval; now, therefore,

BE IT RESOLVED, That the Metro Council authorizes issuance of a Request For Bids No. 93B-5-SW for repairs and improvements to the roof and ventilation system at Metro South Station.

ADOPTED by the Metro Council this 11th day of March, 1993.



 Judy Wyers, Presiding Officer

SOLID WASTE COMMITTEE REPORT

CONSIDERATION OF RESOLUTION NO. 93-1759, FOR THE PURPOSE OF AUTHORIZING THE ISSUANCE OF A REQUEST FOR BIDS #93B-5-SW FOR REPAIRS AND IMPROVEMENTS TO THE ROOF AND VENTILATION SYSTEM AT METRO SOUTH STATION

Date: March 3, 1993

Presented by: Councilor McLain

Committee Recommendation: At the March 2 meeting, the Committee voted unanimously to recommend Council adoption of Resolution No. 93-1759. Voting in favor: Councilors Buchanan, McFarland, McLain, Washington and Wyers.

Committee Issues/Discussion: Recent independent examination of the Metro South Station have resulted in a recommendation to replace the existing roof and the ventilation system. In addition, solid waste staff is recommending placing a permanent roof over the trailer tunnel used by HHW facility staff. The purpose of the resolution is to authorize issuance of an RFB for this work.

The current budget provides \$540,000 for this project. A total of \$40,000 has been spent on design services prior to the development of the RFB. Staff indicates that the total cost of the construction portion of the project will be about \$560,000. Thus, an additional \$60,000 will be requested in the next fiscal year. The additional funding will be needed due to the additional roof work over the trailer tunnel.

Rob Smoot, Solid Waste Staff, indicated that the project will take about three months. He noted that the contractor will need to probably work at night to avoid interfering with the normal operation of the transfer station. Councilor McLain noted that it would be impossible to to close the facility to accomodate the construction work. Jim Watkins, Solid Waste Engineering Manager, noted that staff has no intention of closing the facility.

Councilor McFarland expressed concern about the need for continual renovation needs at Metro South, noting that each time we receive assurances that the problems have been fixed. Watkins explained that the roof design is a new one that was used in the new transfer station in Clark County. He noted that staff would seek a 10-year warranty on the top of the roof and also would explore obtaining some type of warranty on the bottom side.

Councilor Wyers asked why Metro was seeking bids instead of proposals for the project. Bob Martin noted that state law generally governs contracting procedures and that most construction projects are bid unless specific conditions are met.

Councilor Washington expressed concern that the new roof had better work because Metro was investing a great deal of money in this project.

STAFF REPORT

IN CONSIDERATION OF RESOLUTION NO. 93-1759 FOR THE PURPOSE OF AUTHORIZING THE ISSUANCE OF A REQUEST FOR BIDS (RFB) NO. 93B-5-SW FOR REPAIRS AND IMPROVEMENTS TO THE ROOF AND VENTILATION SYSTEM AT METRO SOUTH STATION.

Date: February 16, 1993

Presented by: Jim Watkins

PROPOSED ACTION

Staff requests that the Metro Council authorize the issuance of a Request For Bids, (RFB) No. 93B-5-SW, for repairs and improvements to the roof and ventilation system at Metro South Station.

FACTUAL BACKGROUND AND ANALYSIS

Metro South Station is a prefabricated steel building manufactured by Armco Building Systems of Cincinnati, Ohio. The Facility was built in 1982, and opened in the spring of 1983. Last spring Metro had the firm R.T. Miller Engineering, Inc. inspect the condition of the roofing system. The engineer concluded that all of the roof panels and some of the Z-purlin (structural members supporting roofing panels) need to be replaced and that the structural steel should be sand blasted and refinished to protect against rust. The engineer also recommended further analysis of some of the deteriorated structural steel, I-joist and Z-purlin.

The ventilation over the tipping floor consists of four 25,000 CFM centrifugal fans. These fans have a tendency to become unbalanced due to dust and moisture adhering to the fan blades and have not been operational since 1990. R.T. Miller Engineering recommended that alternate ventilation be investigated.

Metro awarded a contract to SJO Consulting Engineers to complete the investigations previously recommended and prepare bid documents for repairs and improvements to the roof and ventilation system at Metro South Station. These documents are now complete.

The new roof is designed with translucent panels dispersed over the tipping floor to improve natural lighting within the transfer station. The new roof is also designed with an insulated roof panel to reduce the formation of condensation on the underside of the roof panels, which is a primary cause of deterioration.

The new ventilation system is designed to be more easily maintained and more reliable. A maintenance platform and roof access ladders have also been provided as a part of the design.

The scope of work for this bid also includes replacing the temporary steel panels over the old transfer trailer loading tunnel with a concrete floor. Water and dust leak past the steel panels presenting a health and safety risk to workers in the tunnel. The tunnel is currently used to bulk latex paint collected at the Household Hazardous Waste Collection Facility.

Staff anticipates entering into a contract by May 1993. The work is estimated to take three months to complete, however, this is contingent upon the contractor being able to schedule work in such a way as not to require closure of the facility. Some changes in operations will have to be made to allow demolition and replacement of the roof.

BUDGET IMPACT

The cost of these repairs and improvements is estimated to be \$560,000. \$500,000 has been set aside for this work as part of the renewal and replacement activities in FY 92-93, the remainder will be budgeted in FY 93-94.

EXECUTIVE OFFICER RECOMMENDATION

The Executive Officer recommends approval of Resolution No. 93-1759.

RSS:clk
STAF0202.RPT
February 19, 1993



METRO

2000 SW First Ave.
Portland, OR 97201-5398
(503) 221-1646

Memorandum

To: Solid Waste Committee Members

From: John Houser, Council Analyst

Date: February 24, 1993

Re: Resolution No. 93-1759, For the Purpose of Authorizing the Issuance of a Request for Bids for Repairs and Improvements to the Roof and Ventilation System at Metro South Station

Resolution No. 93-1759 is scheduled to be considered by the Committee at the March 2 meeting.

Background

The Metro South Station was built in 1982. An engineering firm has recommended that the roof and ventilation systems at the facility be replaced. The roof has shown signs of rust and other deterioration and the ventilation fan system has been inoperative since 1990.

Issues and Questions

The committee may wish to consider the following issues and questions regarding this resolution:

- 1) Have the roof and ventilation system designs proposed for Metro South been installed in any other transfer station facilities?
- 2) Does staff intend to provide any legal or contractual guarantees or warranties related to the new roof and ventilation system?



METRO

2000 SW First Ave.
Portland, OR 97201-5398
(503) 221-1646

Memorandum

DATE: March 11, 1993
TO: Metro Council
FROM: John Houser, Council Analyst *JHA*
RE: AGENDA ITEM NO. 7.6; RESOLUTION NO. 93-1759

In response to concerns expressed by the Solid Waste Committee, staff has prepared a revision (attached) to the RFB that would allow bidders to offer a bid that would include a warranty on the roof to be constructed.

Attachment

Metro will calculate the recycled product preference as follows: If any Bidder submits a bid price for an item that (1) meets the definition of "Recycled Product" (see Oregon Laws 1991, Chapter 385, Section 59, in Appendix), (2) meets applicable standards, and (3) can be substituted for a comparable non-recycled product, Metro will subtract 5 percent of that items bid price from the Total Bid Price for the purpose of comparing bids. It is Metro's responsibility to calculate any preferences required under Oregon law. A Bidder who claims a recycled product preference shall utilize in this Work, all of the recycled product claimed.

In determining the lowest responsive, responsible Bidder, Metro shall, for the purpose of awarding the Contract, add a percent increase on the Bid of a non-resident Bidder, as that term is defined in ORS 279.029(6)(c), equal to the percent, if any, of the preference given to that non-resident Bidder in the state in which that Bidder resides. For purposes of determining the percent increases to be applied pursuant to this section, Metro shall rely on the list published by the Oregon Department of General Services pursuant to ORS 279.029(3), and Metro shall not incur any liability to any Bidder by relying on such list.

13. ALTERNATES

Metro will select, at its discretion, one of the three alternates described in the SCHEDULE OF BID PRICES.

14. LIST OF PROPOSED SUBCONTRACTORS

Metro will require all Bidders to furnish in writing to Metro the names of all Subcontractors and Suppliers which Bidder proposes to use in completing the Work along with a brief description of the subcontract or supply work involved and the subcontract or supply work dollar amount by the close of the next working day following Bid opening. Metro will notify the Bidder in writing within ten (10) days following receipt from Bidder of the above-described information if Metro has any reasonable objection to any such proposed Subcontractor or Supplier. The Bidder shall not subcontract with any proposed Subcontractor or Supplier to whom Metro has made a reasonable objection. In the event of such objection, Bidder shall propose another entity to whom Metro has no reasonable objection. No amounts or prices bid by the Bidder shall be increased by any difference occasioned by such substitution. Failure of Metro to reply within the above-described time period shall be construed to mean that Metro has no objection at that time. Failure of the Bidder to comply with this section shall be cause for rejection of Bidder's Bid and, in such event, the bid security submitted by Bidder shall be taken by Metro and considered as liquidated damages.

Prospective Bidders are encouraged to verify the qualifications of proposed subcontractors/suppliers and be prepared to furnish Metro with a list of similar projects performed by the proposed subcontractors/suppliers.

SCHEDULE OF BID PRICES

The Bidder, whose legal signature binding the Bidder to the bid prices indicated on these pages is found on the signature page, hereby bids as follows:

NOTE: If any of the items for this project contain "recycled product" (See Appendix), the Bidder shall specify the amounts of such product in an attachment to the Bid Form. If no attachment is included, the amount of "recycled product" to be used by Bidder will be considered to be zero for the purpose of this Bid. Metro reserves the right to reject any or all Bids.

ALTERNATE BID #1

This is for Contractor's standard guarantee for the roof panels (Section 05500, 1.5, F.).

TOTAL BID PRICE ALTERNATE #1 \$ _____
(_____ DOLLARS)

ALTERNATE BID #2

This is for light colored roof panels with the following guarantee (Section 05500, 1.5, F.).

All surfaces shall be guaranteed for a minimum of 20 years against excessive chalking, cracking, or loss of film adhesion. Guarantee shall state that the building will remain watertight and that, upon receipt of written notice during guarantee period, defects will be promptly corrected, without cost to the owner.

TOTAL BID PRICE ALTERNATE #2 \$ _____
(_____ DOLLARS)

ALTERNATE BID #3

This is for dark colored roof panels with the following guarantee (Section 05500, 1.5, F.).

All surfaces shall be guaranteed for a minimum of 20 years against excessive chalking, cracking, or loss of film adhesion. Guarantee shall state that the building will remain watertight and that, upon receipt of written notice during guarantee period, defects will be promptly corrected, without cost to the owner.

TOTAL BID PRICE ALTERNATE #3 \$ _____
(_____ DOLLARS)

- B. Detailed drawings showing profile, thickness and gage of interior and exterior sheets, locations and type of fasteners, gages, shape and method of attachment of all trim, location and type of sealants, and any other details as may be required for a weathertight installation.
- C. Erection Plan: Submit for record purposes. Indicate the sequence of erection, temporary shoring and bracing.
- D. Welding Procedures and Qualifications: Submit certification for each welder, stating the type of welding and positions qualified for, the code and procedure qualified under, date qualified, and the firm and individual certifying the qualification tests.
- E. Written certification prepared and signed by a professional engineer, registered to practice in the State of Oregon, verifying that the panel design meets indicated loading requirements and the 1991 UBC.

1.5 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Perform shop welding required in connection with the work of this Section in strict accordance with pertinent recommendations of the American Welding Society. Field welding shall not be permitted.
- C. Erection shall be by a qualified contractor with not less than three years experience in pre-engineered building installation.
- D. Conflicts of Codes, Standards and Design Criteria shall be brought to the attention of SJO for resolution.
- E. Guarantee materials and workmanship against defects for a minimum of one year from completion of work. Guarantee shall state that the building will remain watertight and that, upon receipt of written notice during guarantee period, defects in workmanship will be corrected and defective material replaced promptly, without cost to the owner.
- F. Guarantee shall be as specified in the SCHEDULE OF BID PRICES, Section 00300. The Contractor is to provide a price for each alternate guarantee.

1.6 DESIGN CRITERIA

Roof panels shall be designed, fabricated, and erected to meet or exceed codes and standards referenced herein, with the following loading criteria:

- A. Roof Snow Load; 25 PSF.
- B. Ground Snow Load; 25 PSF.
- C. Dead Load; self weight.
- D. Wind Loads; 90 mph. Exp. B
- E. Seismic Zone; 2B.



METRO

2000 SW First Ave.
Portland, OR 97201-5398
(503) 221-1646

Memorandum

DATE: April 20, 1993
TO: Procurement Division
FROM: Paulette Allen, Clerk of the Council *PA*
RE: ADDENDUM 2 TO RFB # 93-5-SW FOR ROOF AND VENTILATION FOR METRO SOUTH STATION

I certify that the above-referenced Addendum was filed in the Council Department on April 20, 1993.

This addendum will be filed in the Resolution No. 93-1759 file for updating and future reference.

c: Metro Council
John Houser
Unette Worley
Todd Sádlo
Craig Lewis
Jim Watkins
Rich Wiley
Rob Smoot

MEMORANDUM

RECEIVED APR 20 1993

DATE: April 20, 1993

TO: Paulette Allen, Clerk of the Council
John Houser, Council Analyst
Unette Worley, Administrative Secretary, Executive Office
Todd Sadlo, Senior Assistant Counsel

FROM: Craig Lewis, Solid Waste Contract Compliance *CL*

RE: ADDENDUM 2 TO RFB # 93-5-SW for ROOF and VENTILATION REPAIRS for METRO SOUTH STATION

Rob Smoot is issuing the attached addendum 2 to the RFB for repairs and improvements to the Roof and Ventilation System at Metro South Station. Todd Sadlo has reviewed this addendum and indicated to Rob it is technical and does not materially alter the bid document. Pursuant to Metro code section 2.04.032 (e) we are filing the addendum with the General Counsel and the Clerk of the Council at the time of its release.

As a separate matter unrelated to the addendum, I have attached a summary of the second prebid meeting, which includes a list of questions received from potential bidders and Metro's answers to the questions.

cc: Jim Watkins, Engineering Manager
Rich Wiley, Procurement Officer
Rob Smoot, Sr. Engineer

TO: «NAME»	FAX: «FAX»
«COMPANY»	
FROM: Rob Smoot	FAX: 797-1795
	PHONE: 797-1689

**ADDENDUM NO. 2 to the Contract Documents for
Repairs and Improvements to the Roof and Ventilation System at Metro South Station**

Note: The following changes, additions and deletions to the Contract Documents dated March 1993, hereby become part of the Contract Documents. Bidders should notify all subcontractors affected by this Addendum. It is essential that all prospective Bidders note the contents of the Addendum, and Metro be made aware that each Bidder has received this Addendum. Therefore, please acknowledge receipt of this Addendum by inserting its number in the space provided in the bid forms.

1. SECTION 00500, "Construction Agreement", page 2, "5. Time of Completion, Adjusted Payments"

CHANGE "November 15, 1994" to "November 15, 1993".

2. SECTION 02050, "Demolition and Removal", page 02050-1, 1.1, B.5.
DELETE the first word of the third sentence, "New".

3. SECTION 02050, "Demolition and Removal", page 02050-2, 3.3, A.
REPLACE the third sentence, "Flame cutting...", with,

"Flame cutting will be allowed by Metro provided that the Contractor obtain the approval of the local fire officials and provide Metro with an acceptable plan for preventing fire and suppressing fire. The Contractor shall be solely responsible for the consequence of fire. The Contractor shall not cut, burn or damage any of the steel that is to remain in-place. All connections shall be subject to approval by the engineer. All damage from demolition to the existing structure shall be repaired by the Contractor at the Contractor's expense and at the direction of the engineer."

PREBID#2 SUMMARY
Metro South Station Roof and Ventilation Repairs and Improvements
WEDNESDAY, APRIL 14, 1993

1. Welcome - Sign-in
3. Introduction of Metro staff
Rob Smoot, Project Coordinator
4. Purpose of the meeting
 - A. Provide an overview of the project
 - B. Emphasize important dates and special project elements
 - C. Introduce Metro's Disadvantaged and Women Owned Business Program
 - D. Accept questions from attendees
 - E. Provide an opportunity for subcontractors and suppliers to meet prime contractors
5. Overview of project (Rob Smoot)
6. Important dates (Rob Smoot)
 - A. Last day to submit questions and requests for substitutions, this Friday, April 9, 1993
 - B. Bid opening, April 23, 1993
 - C. Conditional award, target date, May 5, 1993
 - D. Notice to proceed, target date, May 29, 1993
 - E. Substantial completion of contract, November 15, 1993
7. Special project elements
 - A. Coordination and Scheduling requirements. Because the facility operates seven days a week and 12 or better hours per day, it will require very careful planning and scheduling with the Operations people and with Metro staff on site. Metro staff will hire temporaries to handle traffic coordination and the operator will attempt to change his scheduling somewhat so that parts of the facility can be blocked off or cordoned off so the roof can be worked on. If this doesn't work it may be necessary to go to a night shift working when no one is there. The key interest is the safety of the public and workers in the facility and the facility can not be closed for any of the seven days.
 - B. Demolition. The facility can not be closed due to the demolition of the lighting and fire sprinkler system. The engineer has stated that it will take careful planning with the fire sprinkler system and it will require some coordination with the local fire officials to get authorization to demolish the building to remove parts of the fire safety system. The fire sprinkler system is attached to the permanent roof structure so it will have to be dismantled. The same goes for the lighting.
 - C. Personnel and Equipment staging. In the plans and specification there is a small space identified in the back corner of the parking lot in the trailer storage area. In conversations with the facility operator and the transport people there is no other space

available on the site. There is, however, on the other side of the street, the old landfill. Jack Parker of Parker Northwest might be able to lease or rent some space over there.

8. Prevailing wages

This is a public contract so prevailing wages will have to be adhered to.

9. DBE/WBE program

This is no longer a goals oriented program, this is now a good faith program.

Pages 6 and 7 and pages 8 and 9 outlines what needs to be done in order to meet the MBE and WBE requirement. These are two distinct programs, there needs to be good faith effort for both.

1. Identifying and Incorporating in the subcontracting plan *specific Economically Feasible Units* which may be performed by WBEs to increase the likelihood of participation by such enterprises;
2. Attendance at any Pre-solicitation or Prebid Meetings those at the meeting meet that requirement
3. Placing follow-up Phone Calls not later than five (5) days prior to Bid opening or Proposal submission *to all WBEs* who attended any Metro sponsored prebid or presolicitation meeting with the specific purpose of inquiring as to their intent to participate and encouraging their involvement. Only be required to contact those listed by Metro and provided by the end of the week. Document date and time of call, person talked to and the results.
4. Providing Project Information or referring interested MBEs or WBEs to the appropriate plan centers for identification of the subcontract or material supply work.
5. Negotiating with Interested, Capable and Competitive MBE and WBE Bidders; Not Rejecting any MBE or WBE Bid without Justification; Observing Bid Shopping Prohibition. Contractors should contact MBE/WBE's whose bids are within 10% of the lowest bid to see if there is a way they could be more competitive.
6. Notifying WBEs if Bonding is Required and referring them to a potential bond source.

At the bid opening it will be necessary to provide an MBE and WBE utilization form which is on page 10 and 12. By the end of two business days the good faith documentation must be submitted.

10. Questions ** Answers may be deferred to a written response at the discretion of staff. **

Q. Will Waste Management take the metal scrap from the demolition part of the job?

A. Yes, but should talk with Dan Dudley of Waste Management at 657-7947.

Q. Section 00500 page 2 states that November 15, 1994, is the date for substantial completion.

A. The correct date for substantial completion is November 15, 1993.

11. Closing statement (copy of sign-in and Q&A to be mailed)

Additional Questions

Q: Can the Fire Sprinkler pipe be salvaged or is it to be replaced with galvanized pipe?

A: The sprinkler pipe is in good shape according to the engineer and should be salvageable. This facility is not a corrosive environment by definition, therefore the pipe doesn't have to be galvanized.

Q: Will flame cutting be allowed?

A: Please see Addendum #2.

Q: Can the building be left open to the rain?

A: Most areas with an open ceiling can be left open to the rain, however, there will be some storage areas along the walls that will need to be protected with tarps or visqueen.

Q: Do the lights need to be replaced with identical lights?

A: The lights were refurbished in January of 1993 and should not need to be replaced.



METRO

2000 SW First Ave.
Portland, OR 97201-5398
(503) 221-1646

Memorandum

DATE: April 12, 1993
TO: Procurement Division
FROM: Paulette Allen, Clerk of the Council
RE: ADDENDUM 1 TO RFB # 93-5-SW FOR ROOF AND VENTILATION FOR METRO SOUTH STATION

I certify that the above-referenced Addendum was filed in the Council Department on April 12, 1993.

This addendum will be filed in the Resolution No. 93-1759 file for updating and future reference.

c: Metro Council
John Houser
Unette Worley
Todd Sadlo
Craig Lewis
Jim Watkins
Rich Wiley
Rob Smoot



METRO

2000 S.W. First Avenue
Portland, OR 97201-5398
503/221-1646

Memorandum

DATE: April 12, 1993

TO: Paulette Allen, Clerk of the Council
John Houser, Council Analyst
Unette Worley, Administrative Secretary, Executive Office
Todd Sadlo, Senior Assistant Counsel

FROM: Craig Lewis, Solid Waste Contract Compliance *CL*

RE: ADDENDUM 1 TO RFB # 93-5-SW for ROOF and VENTILATION
for METRO SOUTH STATION

Rob Smoot is issuing the attached addendum 1 to the RFB for repairs and improvements to the Roof and Ventilation System at Metro South Station. Todd Sadlo has reviewed this addendum and indicated to Rob it is technical and does not materially alter the bid document. Pursuant to Metro code section 2.04.032 (e) we are filing the addendum with the General Counsel and the Clerk of the Council at the time of its release.

As a separate matter unrelated to the addendum, I have attached a list of questions received from potential bidders and Metro's answers to the questions.

RS:clk

cc: Jim Watkins, Engineering Manager
Rich Wiley, Procurement Officer
Rob Smoot, Sr. Engineer

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ADDENDUM NO. 1 to the Contract Documents for
Repairs and Improvements to the Roof and Ventilation System at Metro South Station

Note: The following changes, additions and deletions to the Contract Documents dated March 1993, hereby become part of the Contract Documents. Bidders should notify all subcontractors affected by this Addendum. It is essential that all prospective Bidders note the contents of the Addendum, and Metro be made aware that each Bidder has received this Addendum. Therefore, please acknowledge receipt of this Addendum by inserting its number in the space provided in the bid forms.

1. Bid Book
REPLACE page 1 with the new page 1 attached.
2. SECTION 00030, "Invitation To Bid", Page 00030-2
ADD the following to the end of the third paragraph:

"A second Pre-Bid Conference will be held at the site (2001 Washington Street, Oregon City) on Wednesday April 14, 1993 at 8:00 a.m. at the entrance to the business offices of the main building. Contractors needing directions should call Rob Smoot at 220-1539. Those who attended the April 5 conference will not be required to attend the April 14 conference. However, all bidders will be required to contact MBE/WBE subcontractors who attend either conference. Bidders must attend one of the two Pre-Bid Conferences to be eligible to bid."

3. SECTION 00300, "Bid Forms", Page 00300-1:
ADD the following paragraph:

"SUB-ALTERNATE BID ITEM 1

Please provide the unit and total cost of replacing the Gutters. DO NOT INCLUDE IN BID PRICE TOTALS FOR ALTERNATES 1, 2, OR 3.

GUTTERS (unit price) \$ _____ TOTAL COST \$ _____ "

4. SECTION 02050, "Demolition and Removal", page 02050-1
ADD the following paragraph to 1.0 GENERAL:

"Demolition of the existing lights and fire protection sprinkler system is not required if the Contractor can present a reasonable approach for maintaining and supporting these utilities during demolition and construction. If Demolition of these utilities is necessary then salvage and reuse of materials will be allowed provided all salvaged materials intended for reuse are of good quality, otherwise new materials will be required."

5. SECTION 15870, "Power Ventilators", Page 15870-2, paragraph 2.1, D.
ADD the following:

"4. Peerless-Winsmith, Inc.
5. Greenheck"

6. SECTION 15890, "Ductwork and Accessories", Page 15890-2, paragraph 2.2, A., 1.
INSERT the following after "Strieimers":

"; Dee's Spiral Pipe and Fittings"

SCHEDULE OF BID PRICES

The Bidder, whose legal signature binding the Bidder to the bid prices indicated on these pages is found on the signature page, hereby bids as follows:

NOTE: If any of the items for this project contain "recycled product" (See Appendix), the Bidder shall specify the amounts of such product in an attachment to the Bid Form. If no attachment is included, the amount of "recycled product" to be used by Bidder will be considered to be zero for the purpose of this Bid. Metro reserves the right to reject any or all Bids.

ALTERNATE BID #1

This is for Contractor's standard guarantee for the roof panels (Section 05500, 1.5, F.).

TOTAL BID PRICE ALTERNATE #1 \$ _____
(_____ DOLLARS)

ALTERNATE BID #2

This is for light colored roof panels with the following guarantee (Section 05500, 1.5, F.).

All surfaces shall be guaranteed for a minimum of 20 years against excessive chalking, cracking, or loss of film adhesion. Guarantee shall state that the building will remain watertight and that, upon receipt of written notice during guarantee period, defects will be promptly corrected, without cost to the owner.

TOTAL BID PRICE ALTERNATE #2 \$ _____
(_____ DOLLARS)

ALTERNATE BID #3

This is for dark colored roof panels with the following guarantee (Section 05500, 1.5, F.).

All surfaces shall be guaranteed for a minimum of 20 years against excessive chalking, cracking, or loss of film adhesion. Guarantee shall state that the building will remain watertight and that, upon receipt of written notice during guarantee period, defects will be promptly corrected, without cost to the owner.

TOTAL BID PRICE ALTERNATE #3 \$ _____
(_____ DOLLARS)

SUB-ALTERNATE BID ITEM 1

Please provide the unit and total cost of replacing the Gutters. DO NOT INCLUDE IN BID PRICE TOTALS FOR ALTERNATES 1, 2, OR 3.

GUTTER (unit price) \$ _____ TOTAL COST \$ _____

PREBID SUMMARY
Metro South Station Roof and Ventilation Repairs and Improvements
MONDAY, APRIL 5, 1993

1. Welcome - Sign-in
2. It was announced that meeting is being taped
3. Introduction of Metro staff
Rob Smoot, Project Coordinator
Amha Hazen, Minority Business Enterprise Coordinator
4. Purpose of the meeting
 - A. Provide an overview of the project
 - B. Emphasize important dates and special project elements
 - C. Introduce Metro's Disadvantaged and Women Owned Business Program
 - D. Accept questions from attendees
 - E. Provide an opportunity for subcontractors and suppliers to meet prime contractors
5. Overview of project (Rob Smoot)
6. Important dates (Rob Smoot)
 - A. Last day to submit questions and requests for substitutions, this Friday, April 9, 1993
 - B. Bid opening, April 23, 1993
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 - D. Notice to proceed, target date, May 29, 1993
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C. Personnel and Equipment staging. In the plans and specification there is a small space identified in the back corner of the parking lot in the trailer storage area. In conversations with the facility operator and the transport people there is no other space available on the site. There is, however, on the other side of the street, the old landfill. Jack Parker of Parker Northwest might be able to lease or rent some space over there.

8. Prevailing wages

This is a public contract so prevailing wages will have to be adhered to.

9. DBE/WBE program (Amha Hazen)

This is no longer a goals oriented program, this is now a good faith program.

Pages 6 and 7 and pages 8 and 9 outlines what needs to be done in order to meet the MBE and WBE requirement. These are two distinct programs, there needs to be good faith effort for both.

1. Identifying and Incorporating in the subcontracting plan *specific Economically Feasible Units* which may be performed by WBEs to increase the likelihood of participation by such enterprises;
2. Attendance at any Pre-solicitation or Prebid Meetings those at the meeting meet that requirement
3. Placing follow-up Phone Calls not later than five (5) days prior to Bid opening or Proposal submission *to all WBEs* who attended any Metro sponsored prebid or presolicitation meeting with the specific purpose of inquiring as to their intent to participate and encouraging their involvement. Only be required to contact those listed by Metro and provided by the end of the week. Document date and time of call, person talked to and the results.
4. Providing Project Information or referring interested MBEs or WBEs to the appropriate plan centers for identification of the subcontract or material supply work.
5. Negotiating with Interested, Capable and Competitive MBE and WBE Bidders; Not Rejecting any MBE or WBE Bid without Justification; Observing Bid Shopping Prohibition. Contractors should contact MBE/WBE's whose bids are within 10% of the lowest bid to see if there is a way they could be more competitive.
6. Notifying WBEs if Bonding is Required and referring them to a potential bond source.

At the bid opening it will be necessary to provide an MBE and WBE utilization form which is on page 10 and 12. By the end of two business days the good faith documentation must be submitted.

10. Questions ** Answers may be deferred to a written response at the discretion of staff. **

Q. Will Waste Management take the metal scrap from the demolition part of the job?

A. Yes, but should talk with Dan Dudley of Waste Management at 657-7947.

Q. Section 00500 page 2 states that November 15, 1994, is the date for substantial completion.

A. The correct date for substantial completion is November 15, 1993.

11. Closing statement (copy of sign-in and Q&A to be mailed)

12. Adjourn to Metro South Station for tour.

Additional Questions

Q: Do I-beams over the disposal pit get replaced?

A: Yes, as shown on drawing S-2.

Q: Do purlins over the office get replaced?

A: All purlin on main roof are to be replaced as shown on drawing S-2.

Q: Who fabricates specified panel?

A: ECI in Tualatin OR, Butler in CA, Narco Pruden in CA, and USA in Houston TX.

Q: Are gutters to be replaced?

A: Gutters may need to be replaced, therefore, a line item has been added to the Schedule of Bid Prices to include the cost of gutters. Please refer to Addendum #1.

Q: If possible, can the lights and fire protection sprinklers be left in place?

A: Yes, if the Contractor's demolition plan indicates a reasonable method for doing so.

Q: What hours does the facility not operate?

A: The facility is usually closed up at 10 pm and reopened at 5 am.

**REPAIRS AND IMPROVEMENTS
TO THE ROOF
AND
VENTILATION SYSTEM
AT
METRO SOUTH STATION**

RFB #93B-5-SW

**Metro
Solid Waste Department
2000 S.W. First Avenue
Portland, Oregon 978201-5398**

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**SECTION 00030
INVITATION TO BID**

Sealed Bids for the Repairs and Improvements to the Roof and Ventilation System at Metro South Station, RFB #93B-5-SW, must be delivered to Metro, 2000 S.W. First Avenue, Portland, OR 97201-5398, to the attention of Rob Smoot, Project Manager, no later than 3:00 p.m., Pacific Standard Time (PST), Friday, April 23, 1993. At that time, the Bids will be opened and publicly read aloud at Metro in the Council Chambers.

The Work contemplated consists of repairing the roof and improving the ventilation system for the main building at Metro South Station. There is approximately 35,000 square feet of roof to repair. Repairs will include replacing the metal roof, purlins and structural steel. Repairs will also include cleaning and finishing structural steel. Ventilation improvements will include adding six new exhaust fans and ducting, to replace the existing exhaust fans, and adding roof vents. Demolition and replacement will require good coordination and careful planning. In addition a suspended floor (approximately 400 sq. ft.) will be constructed to fill the hole over the old transfer trailer loading tunnel.

Drawings and Specifications may be examined at the Metro Solid Waste Department, Room 320, 2000 S.W. First Avenue, Portland, OR 97201-5398. Sets of the documents may be purchased from Metro at the above address for \$50 per set (includes both Drawings and written Specifications) or by calling Metro's Solid Waste Department at (503) 221-1646, ext. 168.. The fee for the document sets will be non refundable.

Each Bid must be submitted on the prescribed form and accompanied by a certified check or cashier's check or Bid Bond executed on the prescribed form, payable to Metro in the amount of THIRTY THOUSAND DOLLARS (\$30,000.00). The Bid and bid security should be delivered in a sealed envelope marked "Repairs and Improvements to the Roof and Ventilation System at Metro South Station, RFB #93B-5-SW" to the attention of Rob Smoot.

The successful Bidder will be required to furnish the necessary additional Bonds for the faithful performance of the Contract and for the payment of all persons supplying labor and materials as prescribed in the Contract Documents.

Before a contract is awarded, Metro may conduct such additional investigations as are necessary to determine whether a Bidder is qualified. Upon request, the Bidder shall promptly submit such additional information as deemed necessary by Metro to evaluate the Bidder's qualifications.

Bidders shall use recyclable products to the maximum extent economically feasible in the performance of the contract work set forth in this document.

This is a public works project. By signing and submitting a Bid for this project, the Bidder certifies that it will comply with ORS 279.350, requiring payment of prevailing wage rates.

Each Bid must contain a statement as to whether the Bidder is a resident bidder, as defined in ORS 279.029.

Bidders and Subcontractors must be registered with the Oregon Construction Contractor's Board pursuant to ORS 701.035-90.

Bidders must comply with Metro's Minority and Women-Owned Business Enterprise Program. The purpose of the program is to establish and implement a program to encourage the utilization by Metro of minority and women-owned businesses, to the greatest extent permitted by law, by creating for such businesses the maximum possible opportunity to compete for and participate in locally-funded Metro contracting activities. All Bidders must certify and document compliance with the Minority and Women-Owned Business Enterprise Program. Failure to complete and submit the Program Compliance Forms, Utilization Forms, and adequately document good faith efforts will constitute a non responsive Bid. See "Instructions to Bidders" for references to applicable procedures and further details concerning this program. Any questions regarding MBE/WBE requirements should be addressed to the Metro Contracts Administrator, Mr. Amha Hazen at (503) 221-1646, x116.

A Pre-Bid Conference for prospective Bidders will be conducted at 10:00, PST, on April 5, 1993, at Metro, in the Council Chambers, 2000 S.W. First Avenue, Portland, Oregon. Attendance is mandatory for all potential prime bidders to comply with Metro's Minority and Women-Owned Business Enterprise Program. A Site visit is planned following the meeting.

Metro reserves the right to reject all Bids or any Bids not conforming to the intent and purpose of the Contract Documents, to reject for good cause any and all Bids upon a finding of Metro that it is in the public interest to do so or to waive any informality or irregularity in any Bid or Bids. Metro further reserves the right to award the Contract at any time within sixty (60) days following the Bid opening date.

For information concerning the proposed work, or to make an appointment to visit the site of the proposed work, contact Mr. Rob Smoot at Metro, (503) 221-1646.

Dated on this _____ day of _____, 1993.

METRO

By: _____
Bob Martin, Director, Solid Waste Department

**SECTION 00110
INSTRUCTIONS TO BIDDERS**

1. DESCRIPTION OF WORK

The Work contemplated consists of repairing the roof and improving the ventilation system for the main building at Metro South Station. There is approximately 35,000 square feet of roof to repair. Repairs will include replacing the metal roof, purlins and structural steel. Repairs will also include cleaning and finishing structural steel. Ventilation improvements will include adding six new exhaust fans and ducting, to replace the existing exhaust fans, and adding roof vents. Demolition and replacement will require good coordination and careful planning. In addition a suspended floor (approximately 400 sq. ft.) will be constructed to fill the hole over the old transfer trailer loading tunnel.

2. DEFINITIONS

Except as otherwise specifically provided herein, all words and phrases defined in the General Conditions shall have the same meaning and intent in these Instructions to Bidders. Bidders should refer to those definitions as they read these Instructions.

3. DOCUMENT INTERPRETATION

The Contract Documents are intended to be complementary and to provide all details reasonably required for the execution of the proposed Work. Any person contemplating the submission of a Bid shall have thoroughly examined all of the various parts of these Contract Documents. If the Bidder has any doubt as to the meaning or the intent of the Contract Documents or finds any inconsistency or discrepancy within the Contract Documents, the Bidder must provide and Metro must receive a written request for interpretation, at least ten (10) working days prior to Bid opening. Such requests for interpretation shall be mailed or delivered to Metro at 2000 S.W. First Avenue, Portland, Oregon 97201-5398, Attention: Mr. Rob Smoot. Any interpretations or changes in the Contract Documents will be made only in writing, in the form of Addenda to the Contract Documents which will be furnished to all Bidders receiving a set of the Bidding Documents and which shall be binding upon all Bidders as if set forth in the original Contract Documents. Bidders shall indicate receipt of all Addenda on their Bids. Metro will not be responsible for any other explanation or interpretation of the Bidding Documents. Bidders shall have no right to rely on any oral interpretation or instructions made by Metro or the Engineer, unless it is also committed to writing and issued as an Addendum.

In the absence of any pre-bid request for clarification, or any interpretation of the Contract Documents, as outlined above, any subsequent interpretation shall be made by Metro, and shall be final and binding on the successful Bidder, and Metro shall pay no extra costs or expenses to such Bidder resulting from such interpretation.

4. EXAMINATION OF CONTRACT DOCUMENTS AND SITE AND COMPLIANCE WITH LAWS

Before submitting a Bid, Bidders shall fully examine and read the Contract Documents; visit the site of the proposed Work, and examine the Site and the surrounding areas; and fully inform themselves of all conditions on, in, at and around the Site, the surrounding areas, and any work that may have been done thereon. The Bidder acknowledges by the submission of its Bid that it understands the nature and location of the Work, the general and local conditions, conditions of the Site, availability of labor, electric power, water, and the kind of surface materials on the Site, the kind of equipment needed, and all other matters which may in any way affect the Work or the cost, including utilities not identified in the Contract Documents.

Information derived from inspection of the Contract Documents and any specific sections thereof showing location of utilities and structures will not in any way relieve the Contractor from any risk, or from properly examining the Site and making such additional investigations as it may elect, or from properly fulfilling all the terms of the Contract Documents. Investigation of Site and soil conditions have been conducted for Metro. Bidders may inspect the records of such investigations at locations specified in Section 00200.

Metro does not in any way warrant the accuracy of any information in such investigations and Bidders shall have no right to rely on the information contained in such records or investigations. Furthermore, if the Bidder determines that additional investigations of site and/or soil conditions are necessary or desirable, Bidder shall cause such additional investigations to be made, at Bidder's expense, prior to submitting a Bid and subject to coordination with Metro.

Any failure of a Bidder to acquaint itself with all of the available information concerning conditions or having such additional investigations of Site and soil conditions conducted, as may be necessary, will not relieve it from responsibility for estimating properly the difficulties or cost of the Work and the Bidder shall, regardless of such failure, be bound to its Bid.

Each Bidder shall inform itself of, and the Bidder awarded a Contract shall comply with, federal, state, and local laws, codes, statutes, ordinances, and regulations, as amended, relative to the execution of the Work. Each Bidder shall prepare its Bid in accordance with, and all Bid prices shall assume compliance with, such laws, codes, statutes, ordinances and regulations. This requirement includes, but is not limited to, applicable regulations concerning minimum wage rates, prevailing wage rates, nondiscrimination in the employment of labor, protection of public and employee safety and health, environmental protection, the protection of natural resources, fire protection, burning and non burning requirements, permits, fees, and similar subjects.

If any portion of the Contract Documents does not conform to such laws, codes, statutes, ordinances or regulations as amended, the Bidder shall so advise Metro in writing at least ten (10) days before Bids are due. If it is shown that the Contractor, as Bidder, knew or should have known that any portion of the Contract Documents does not conform to such laws, codes, statutes, ordinances or regulations and had failed to so advise Metro, it shall be liable for costs of making any deviation(s) required for compliance with such laws, codes, statutes, ordinances or regulations.

Each Bidder, in submitting its Bid, certifies that the Bidder is eligible to bid on and to receive a contract for a public work, as set forth in ORS 279.361 and agrees, if awarded the Contract, that each of its Subcontractors will be required to certify such compliance, and certification will be filed with Metro prior to such Subcontractor commencing any work under the Contract. A copy of "PREVAILING WAGE RATES for Public Works Contracts in Oregon" is enclosed herein and applies to the work performed under the Contract.

5. MINORITY AND WOMEN-OWNED BUSINESS PROGRAM COMPLIANCE

Metro has made a strong commitment to provide maximum opportunities to Minority and Women-Owned Businesses in contracting. Bidders must demonstrate that they have made good faith efforts at maximizing opportunities for minority business enterprise (MBE) and women business enterprise (WBE) prior to the time bids are opened. Metro's MBE and WBE program requirements are contained in Metro Code sections 2.04.100-290, a copy of which is contained in the APPENDIX.

Bidders' special attention is directed to sections 2.04.160 (b) and 2.04.260 (b) which contain good faith efforts requirements for Bidders. As part of these requirements, Bidders must identify and incorporate into their subcontracting plans, "economically feasible units" which may be performed by MBEs and WBEs. Metro has established potential project elements or "targeted units", for which Metro believes MBE and WBE subcontracting opportunities may exist. The list of potential project elements Metro has identified for this project are listed below and described in the TECHNICAL SPECIFICATIONS. Bidders may identify project elements other than those identified by Metro.

General Contracting, Cleaning, Painting, Demolition, Concrete, Concrete Pumping, Concrete Drilling, Reinforcing Steel, Structural Steel, Roof Panels, Roof Walkway, Roof Ladder, Roof Accessories, Metal Fabrication (Parapet Panels), Galvanizing, Fans, Ducting, Fire Sprinklers, Electrical, Plumbing, Lifting and Moving Equipment.

Four (4) forms, contained in the FORMS section of these contract documents, must be submitted with the Bid. The MBE and WBE COMPLIANCE FORMS certify that the bidder has complied with the good faith effort requirements of the MBE/WBE program. Bidders should refer to the appropriate section of the Metro Code to determine these requirements. Within two (2) working days of bid submittal, the apparent low Bidder must submit written evidence of such efforts. Completion of the Compliance Forms and Documents of all actions outlined therein is mandatory to become the successful Bidder.

The MBE and WBE UTILIZATION FORMS, which also must be submitted with the Bid, list the names of the MBEs and WBEs who will be utilized and the nature and dollar amount of their participation. Within five (5) working days of bid opening, the apparent low Bidder shall submit to Metro signed Letters of Agreement between the Bidder and MBE/WBE subcontractors and suppliers to be utilized in performance of the Contract. Sample Letters of Agreement are available from Metro. Completion of the Utilization Forms and submission of the Letters of Agreement is mandatory to become the successful Bidder.

Bidders should review the MBE/WBE program requirements as specified in the Metro Code included in the APPENDIX. Questions concerning the MBE/WBE program requirements should be directed to Amha Hazen, Metro Contracts Administrator at (503) 221-1646, extension 116.

6. PREPARATION OF BIDS

All blank spaces in the Bid Forms must be completed either by typing or in ink. Amounts shall be shown in both words and figures. Any Bids which do not include prices on all Bid Items will be considered non-responsive and will be rejected. No changes shall be made in the phraseology of the forms.

Any Bid may be deemed non-responsive which contains omissions, erasures, alterations, or additions of any kind, or prices uncalled for, or in which any of the prices are obviously unbalanced, conditioned or which in any manner shall fail to conform to the conditions of the Contract Documents.

Each Bid shall give the full business address of the Bidder and be signed by it with its legal signature.

- a. Bids by partnerships must furnish the full name of all partners and must be signed in the partnership name by one of the members of the partnership authorized to sign contracts on behalf of the partnership, or by an authorized representative, followed by the printed name and title of the person signing.
- b. Bids by corporations must be signed with the legal name of the corporation, followed by the name of the state of incorporation and by the signature and designation of the president, secretary or other person authorized to bind it in the matter. When requested by Metro, satisfactory evidence of the authority of the officer signing in behalf of the corporation shall be furnished.
- c. If a Bid is submitted by a joint venture, a certified copy of the legal agreement constituting the joint venture shall be attached to the Bid.

The name of each person signing shall also be typed or printed below the signature. Signatures of all individuals must be in longhand.

Failure to fulfill any of the above requirements may render the Bid non-responsive.

7. SUBMISSION OF BIDS

All Bids must be submitted not later than the time prescribed, at the place, and in the manner set forth in the INVITATION TO BID. Bids must be made on the forms provided under separate cover as the BID BOOK, these forms are also contained herein as the Bid Forms. Each Bid and all other documentation required to be submitted with the Bid must be submitted in a sealed envelope, so marked as to indicate its contents without being opened, and addressed in

conformance with the instructions in the INVITATION TO BID and the ADVERTISEMENT FOR BIDS.

8. MODIFICATION OR WITHDRAWAL OF BIDS

Any Bid may be modified after delivery to the location specified in the Invitation to Bid by delivering to the same location before the time fixed for the Bid opening, a written sealed supplement to the original Bid, marked "Supplement to Bid of (Name of Bidder) for the Repairs and Improvements to the Roof and Ventilation System at Metro South Station, RFB #93B-5-SW". A supplement shall clearly identify the Bid item(s) that are changed by setting forth the original Bid item(s), and the modified item(s). Metro may reject any Bid supplement that, in its opinion, does not set forth the proposed modifications clearly enough to determine the definiteness and certainty of the item(s) offered by the Bidder. No Bidder shall be allowed to submit more than one (1) Bid for this Contract.

Bids may be withdrawn by the Bidder prior to the time fixed for the receipt of Bids by having an authorized representative of the Bidder with sufficient identification personally pick up the Bid. Bids may not be withdrawn for a period of sixty (60) days from and after the opening of Bids or on or prior to the last date of any extension of such time as may be agreed upon between Metro and the Bidder.

9. BID SECURITY

Bids must be accompanied by a certified check or cashier's check drawn on a bank in good standing, or a Bid Bond on the form provided herein by Metro, issued by a surety authorized to issue such bonds in Oregon, named on the current list of approved surety companies acceptable on federal bonds, and conforming with the underwriting limitations as published in the Federal Register by the audit staff of the Bureau of Accounts and the US. Treasury Department, in the amount of not less than FIFTY THOUSAND DOLLARS (\$50,000.00). This bid security shall be given as a guarantee that the Bidder will not withdraw its Bid for a period of sixty (60) days after Bid opening, and that if awarded the Contract, the successful Bidder will execute the attached Agreement and furnish a properly executed Performance Bond and a properly executed Labor and Materials Payment Bond, each in the full amount of the Bid, within the time specified. Bid security deposited in the form of a certified check or cashier's check shall be subject to the same requirements as a Bid Bond.

The Attorney-in-Fact (Resident Agent) who executes these bonds on behalf of the surety must attach a notarized copy of his/her Power of Attorney as evidence of his/her authority to bind the surety on the date of execution of the bond.

10. EXPERIENCE AND ABILITY TO PERFORM THE WORK

Within twenty-four (24) hours following request by Metro, any Bidder may be required to present information indicating that the Bidder has the necessary experience and qualifications in the class of Work to be performed, and the ability, equipment, key personnel and financial resources to

perform the Work satisfactorily within the time specified. In determining the award of this Contract, such information will be considered, and the Bidder is cautioned to make complete and comprehensive presentation of its abilities and resources. Failure of any Bidder to comply fully and timely with a request for information under this section shall be grounds for rejection of that Bid.

No Bidder will be considered for contract award unless such Bidder is authorized by law to execute the Contract or perform the Work for which such Bid is received. Should it appear, at any time, that any Bidder is not or might not be authorized by law to execute the Contract or perform such Work, then such Bidder may at any time be rejected and Metro may refuse to execute any contract with such Bidder regardless of whether or not the contract had been previously awarded by the Metro Council and without any liability whatever on the part of Metro, its Council, or any member of its Council, or Metro's officer, employees, or its agents, either as individuals or in official capacities.

11. REJECTION OF BIDS

Metro reserves the right to reject all Bids or any Bid not conforming to the intent and purpose of the Contract Documents, to waive any informality or irregularity in any Bid or Bids, to reject any Bid not in compliance with all prescribed public bidding procedures and requirements and, for good cause, to reject any or all Bids upon a finding by Metro that it is in the public interest to do so.

12. BASIS OF AWARD

Metro reserves the right to make award of this Contract to the lowest responsive, responsible Bidder, based on the lowest Total Base Bid amount.

Under Oregon Law ORS 279.570 (included in an Appendix to the bid documents), public agencies, including Metro, must give preference to the purchase of materials and supplies manufactured from recycled materials. All Bidders are required to specify the minimum, if not exact, percentage of recycled product in each product offered, and both the post-consumer and secondary waste content of each product offered. A Bidder may also specify that none of the products offered contain any recycled product. The definitions of "recycled product," "post-consumer waste," and "secondary waste material," as well as other explanatory materials, are included in the Appendix.

A form is included for submittal of recycled product information. The form allows a bidder to specify that different portions of a single bid item contain different amounts of recycled product. If the recycling information form is not submitted with the bid, Metro will assume that none of the products offered contain any recycled product. In addition, Metro will assume that a bid item contains no recycled product if information submitted for the item is in Metro's opinion incomplete, incorrect, or unintelligible.

Metro will calculate the recycled product preference as follows: If any Bidder submits a bid price for an item that (1) meets the definition of "Recycled Product" (see Oregon Laws 1991, Chapter 385, Section 59, in Appendix), (2) meets applicable standards, and (3) can be substituted for a comparable non-recycled product, Metro will subtract 5 percent of that item's bid price from the Total Bid Price for the purpose of comparing bids. It is Metro's responsibility to calculate any preferences required under Oregon law. A Bidder who claims a recycled product preference shall utilize in this Work, all of the recycled product claimed.

In determining the lowest responsive, responsible Bidder, Metro shall; for the purpose of awarding the Contract, add a percent increase on the Bid of a non-resident Bidder, as that term is defined in ORS 279.029(6)(c), equal to the percent, if any, of the preference given to that non-resident Bidder in the state in which that Bidder resides. For purposes of determining the percent increases to be applied pursuant to this section, Metro shall rely on the list published by the Oregon Department of General Services pursuant to ORS 279.029(3), and Metro shall not incur any liability to any Bidder by relying on such list.

13. ALTERNATES

No Alternate work is offered for Bid.

14. LIST OF PROPOSED SUBCONTRACTORS

Metro will require all Bidders to furnish in writing to Metro the names of all Subcontractors and Suppliers which Bidder proposes to use in completing the Work along with a brief description of the subcontract or supply work involved and the subcontract or supply work dollar amount by the close of the next working day following Bid opening. Metro will notify the Bidder in writing within ten (10) days following receipt from Bidder of the above-described information if Metro has any reasonable objection to any such proposed Subcontractor or Supplier. The Bidder shall not subcontract with any proposed Subcontractor or Supplier to whom Metro has made a reasonable objection. In the event of such objection, Bidder shall propose another entity to whom Metro has no reasonable objection. No amounts or prices bid by the Bidder shall be increased by any difference occasioned by such substitution. Failure of Metro to reply within the above-described time period shall be construed to mean that Metro has no objection at that time. Failure of the Bidder to comply with this section shall be cause for rejection of Bidder's Bid and, in such event, the bid security submitted by Bidder shall be taken by Metro and considered as liquidated damages.

Prospective Bidders are encouraged to verify the qualifications of proposed subcontractors/suppliers and be prepared to furnish Metro with a list of similar projects performed by the proposed subcontractors/suppliers.

15. AWARD AND EXECUTION OF CONTRACT

Within sixty (60) days after the opening of bids, Metro will accept one of the Bids or reject all of the bids. The acceptance of the Bid will be by written Notice of Award, mailed or delivered to the office designated in the Bid. The Notice of Award shall not entitle the party to whom it is delivered to any rights whatsoever.

The successful Bidder shall, within seven (7) days after award of the Contract by the Metro Council, sign and deliver to Metro the Agreement attached hereto together with an acceptable Performance Bond and a Labor and Materials Payment Bond, certificates of insurance and certified copies of insurance policies as required in these Contract Documents.

Upon receipt of the signed Agreement and all other documents required to be submitted by the successful Bidder, as prescribed herein, Metro shall sign the Agreement and issue a written Notice to Proceed to Contractor. Contractor shall commence work within ten (10) days of issuance of the Notice to Proceed.

In the event of failure of the lowest responsive, responsible Bidder to sign and return the construction Agreement and all other documents required to be submitted, as prescribed herein, Metro may award the Contract to the next lowest responsive, responsible Bidder.

16. PERFORMANCE BOND AND LABOR AND MATERIALS PAYMENT BOND

The successful Bidder shall file with Metro a Performance Bond on the form bound herewith and in the amount described below, as security for the faithful performance of this Contract and to cover all guarantees against defective workmanship or materials, or both. The successful Bidder shall additionally file a Labor and Materials Payment Bond on the form bound herewith and in the amount described below, as security for the payment of all persons supplying labor and materials for the performance of the Work. The surety furnishing these bonds shall have a sound financial standing and a record of service satisfactory to Metro, shall be authorized to do business in the state of Oregon, and shall be named on the current list of approved surety companies acceptable on federal bonds and conforming with the underwriting limitations as published in the Federal Register by the audit staff of the Bureau of Accounts and US. Treasury Department. If more than one surety is on a bond, then each surety must agree that it is jointly and severally liable on the bond for all obligations on the bond. A Letter of Credit, in a form suitable to Metro and otherwise in conformance with the Contract, may be substituted for a bond.

The amount of each bond described above shall be a sum not less than 100 percent of the Contract Amount. The Attorney-in-Fact (Resident Agent) who executes the Performance Bond and the Labor and Materials Payment Bond on behalf of the surety must attach a notarized copy of his/her Power of Attorney as evidence of his/her authority to bind the surety on the date of execution of the bond.

17. FAILURE TO EXECUTE CONTRACT AND FURNISH BONDS

The Bidder to whom a Contract is awarded who fails to promptly and properly execute this Contract and furnish the required bonds, certificates of insurance and certified copies of insurance policies shall forfeit the bid security that accompanied its Bid and the bid security shall be retained as liquidated damages by Metro. It is agreed that this sum is a fair estimate of the amount of damages Metro will sustain if the Bidder fails to enter into a Contract and furnish the bonds, certificates of insurance and certified copies of insurance policies required.

18. BID BACK-UP (Bid Preparation Documents)

Within six (6) days after Notice of Award and as a condition precedent to the award of the Contract, the apparent low responsive and responsible Bidder shall submit to Metro in a sealed envelope their complete bid summary, along with corresponding back-up including, but not limited to: quantity take-off sheets, pricing sheets and information/data substantiating the Total Bid amount. The back-up data provided will include that of all Subcontractors listed in the Bid, as well as all lower-tier Subcontractors. This bid summary and back-up data will be held in strict confidence by Metro in its original sealed envelope and will not be opened except in the event of dispute between Metro and Contractor. Bid Back-Up shall be delivered to Metro, 2000 S.W. First Avenue, Portland, OR 97201-5398, Attention: Mr. Rob Smoot, enclosed in a double envelope to prevent accidental opening. The envelope shall be marked "Bid Back-Up Documents of (Name of Bidder) for the Repairs and Improvements to the Roof and Ventilation System at Metro South Station, RFB #93B-5-SW."

SECTION 00200
INFORMATION AVAILABLE TO BIDDERS

A copy of the following permits and reports are available for review at the Metro Solid Waste Department Office:

REPORTS

Metro South Station Roof Repair Structural & Mechanical Field Inspections Evaluation Report -
by SJO Consulting Engineers, Inc., September 21, 1992.

PLANS

Metro South Station As Built Drawings

***** END OF SECTION *****

**SECTION 00300
BID FORMS**

NOTE TO BIDDER: Bidders must provide all of the information requested in this Bid. Bidder should preferably type or use **BLACK** ink for completing this Bid.

To: Metro

Address: 2000 S.W. First Avenue, Portland, OR 97201-5398

Contract: Metro South Station Roof Repairs and Ventilation Improvements

Bidder: _____

Address: _____

Bidder's Contact: _____

Date: _____ Telephone: () _____

BIDDER'S DECLARATION AND UNDERSTANDING

The undersigned, hereinafter called the Bidder, declares that the only persons or parties interested in this Bid are those named herein, that this Bid is, in all respects, fair and without fraud, that it is made without collusion with any official of Metro, and that the Bid is made without any connection or collusion with any person submitting another Bid on this Contract.

The Bidder further declares that it has carefully examined the Contract Documents for the completion of the Work, has personally inspected the Site, has satisfied itself as to the Work involved, and that this Bid is made in accordance with the provisions and under the terms of the Contract Documents which are hereby made a part of this Bid.

Any printed matter on any letter or paper enclosed herewith which is not part of the Bidding Documents or which was not requested by Metro is not to be considered a part of this Bid, and the undersigned agrees that such printed matter shall be entirely disregarded and, notwithstanding such printed matter, that the Bid is a bid to do the Work and furnish the labor and materials and all other things required by the Contract Documents strictly within the time and in accordance with such Specifications. This Bid is irrevocable for sixty (60) days following the date of the opening of Bids.

BID SECURITY

Bid security in the form of a certified check, cashier's check or bid bond as further described in the Instructions for Bidders and in the amount of **FIFTY THOUSAND DOLLARS (\$50,000.00)** is enclosed herewith and is subject to all the conditions stated in the Instructions for Bidders.

CONTRACT EXECUTION, BONDS AND INSURANCE

The Bidder agrees that if this Bid is accepted, it will, within seven (7) days after award of the Contract by the Metro Council, sign the Construction Agreement in the form annexed hereto, and will at that time deliver to Metro the Performance Bond and the Labor and Materials Payment Bond required herein and in the form annexed hereto, along with all certificates of insurance and certified copies of insurance policies specified and required in these Contract Documents, and will, to the extent of its Bid, furnish all machinery, tools, apparatus, and other means of operation and construction and do the Work and furnish all the materials necessary to complete all Work as specified or indicated in the Contract Documents.

COMMENCEMENT OF WORK AND CONTRACT COMPLETION TIME

The time frame for the award and execution of this Contract shall be as described in the Instructions for Bidders and other Contract Documents. The Successful Bidder further agrees to commence the Work within ten (10) days of issuance of the Notice to Proceed and to diligently prosecute the Work to its final completion in accordance with the Contract Documents.

ADJUSTED PAYMENTS

In the event the Bidder is awarded the Contract and fails to complete the Work in compliance with the time required by the Contract Documents, adjusted payments shall be paid to Metro as described in the General Conditions.

SALES AND USE TAXES

The Bidder agrees that all applicable federal, state and local sales and use taxes are included in the stated bid prices for the Work.

LUMP SUM AND UNIT PRICE WORK

The Bidder further proposes to accept as full payment for the Work proposed herein the amounts computed under the provisions of the Contract Documents and based on the listed lump sum and unit price amounts. The amounts shall be shown in both words and figures. In case of a discrepancy, the amount shown in words shall govern.

PREVAILING WAGES FOR PUBLIC WORK

Bidder hereby certifies that the provisions of ORS 279.350, regarding prevailing wages, shall be complied with on this project.

SCHEDULE OF BID PRICES

The Bidder, whose legal signature binding the Bidder to the bid prices indicated on these pages is found on the signature page, hereby bids as follows:

NOTE: If any of the items for this project contain "recycled product" (See Appendix), the Bidder shall specify the amounts of such product in an attachment to the Bid Form. If no attachment is included, the amount of "recycled product" to be used by Bidder will be considered to be zero for the purpose of this Bid. Metro reserves the right to reject any or all Bids.

TOTAL BID PRICE \$ _____
(_____ DOLLARS)

RECYCLED PRODUCT* ATTACHMENT TO SCHEDULE OF BID PRICES

BID ITEM NO. & DESCRIPTION	SUPPLIER	QUANTITY OF RECYCLED PRODUCT IN BID ITEM	RECYCLED PRODUCT (%)	POST-CONSUMER CONTENT (%)	SECONDARY WASTE CONTENT (%)	BID AMOUNT OF RECYCLED PRODUCT (\$)

*** NOTES:**

1. For definitions refer to Appendix, Oregon Law 1991, Chapter 385, Section 59 and 61.
2. It is the Bidder's responsibility to determine if the recycled product meets the Contract specifications. Metro reserves the right to confirm information submitted by contacting the manufacturer.

ADDENDA

The Bidder is presumed to have read and hereby acknowledges receipt and acceptance of Addenda Numbers:

(Insert No. and Date of Each Addendum Received)

SURETY

If the Bidder is awarded a Contract on this Bid, the surety or sureties who provide(s) the Performance Bond and Labor and Materials Payment Bond will be:

SURETY

ADDRESS

1.	_____	_____
2.	_____	_____

**MINORITY BUSINESS ENTERPRISE (MBE)
PROGRAM COMPLIANCE FORM**

Project Name _____

Bidder/Proposer _____

Address _____

Telephone Business () _____

Fax () _____

BIDDER/PROPOSER HEREBY CERTIFIES and it has made good faith efforts to maximize MBE opportunities and comply with Metro Code Sections 2.04.100-190 by performing and documenting the following actions:

1. **Identifying and Incorporating** in the subcontracting plan *specific Economically Feasible Units* which may be performed by MBEs to increase the likelihood of participation by such enterprises;

Minimum Documentation Required: Identification of selected economically feasible units (EFUs) in the Bidder's/ Proposer's subcontracting plan, utilizing at a minimum, project elements targeted by Metro.

2. **Attendance at any Pre-solicitation or Prebid Meetings** that were scheduled by Metro to inform MBEs of contracting and subcontracting or material supply opportunities available on the project;

Minimum Documentation Required: Signature of representative of Bidder/Proposer on prebid meeting attendance sheet.

3. **Placing follow-up Phone Calls** not later than five (5) days prior to Bid opening or Proposal submission *to all MBEs* who attended any Metro sponsored prebid or presolicitation meeting with the specific purpose of inquiring as to their intent to participate and encouraging their involvement.

Minimum Documentation Required:

Telephone Log providing the following information:

Dates and Times of Call(s) including the names of the individuals placing and receiving them;

Results Attained (Submitted, Will Submit, Declined to Submit or Failed to Respond)

If Bid(s)/Proposal(s) from MBEs were rejected an *itemization of the dollar amount(s) and reason(s) for rejection*, plus the dollar amount of the Bid accepted.

4. Providing Project Information or referring interested MBEs to the appropriate plan centers for identification of the subcontract or material supply work.
5. Negotiating with Interested, Capable and Competitive MBE Bidders; Not Rejecting any MBE Bid without Justification; Observing Bid Shopping Prohibition.
6. Notifying MBEs if Bonding is Required and referring them to a potential bond source.

By signing this document Bidder/Proposer hereby certifies that:

It has not discriminated against any MBEs in obtaining any subcontracts for this project, and the good faith efforts documented herein were reasonably expected to result in participation of MBEs in this project in compliance with the above cited Metro program.

Acknowledges that: Metro reserves the right to verify the documentation of the lowest responsible Bidder and require additional written documentation of good faith efforts;

Failure to complete and submit this form at the time of the Bid opening/submission deadline will result in the Bidder's rejection as non responsive;

Replacement of a MBE subcontractor before contract award or during contract performance without prior Metro notice and subsequent good faith efforts in selection of a replacement, is prohibited.

And, Executes this Compliance Agreement as:

Bidder/Proposer _____

By _____
Name Title Date

**WOMEN-OWNED BUSINESS ENTERPRISE (WBE)
PROGRAM COMPLIANCE FORM**

Project Name _____

Bidder/Proposer _____

Address _____

Telephone Business () _____

Fax () _____

BIDDER/PROPOSER HEREBY CERTIFIES and it has made good faith efforts to maximize WBE opportunities and comply with Metro Code Sections 2.04.100-190 by performing and documenting the following actions:

1. **Identifying and Incorporating** in the subcontracting plan *specific Economically Feasible Units* which may be performed by WBEs to increase the likelihood of participation by such enterprises;

Minimum Documentation Required: Identification of selected economically feasible units (EFUs) in the Bidder's/ Proposer's subcontracting plan, utilizing at a minimum, project elements targeted by Metro.

2. **Attendance at any Pre-solicitation or Prebid Meetings** that were scheduled by Metro to inform WBEs of contracting and subcontracting or material supply opportunities available on the project;

Minimum Documentation Required: Signature of representative of Bidder/Proposer on prebid meeting attendance sheet.

3. **Placing follow-up Phone Calls** not later than five (5) days prior to Bid opening or Proposal submission *to all WBEs* who attended any Metro sponsored prebid or presolicitation meeting with the specific purpose of inquiring as to their intent to participate and encouraging their involvement.

Minimum Documentation Required:

Telephone Log providing the following information:

Dates and Times of Call(s) including the names of the individuals placing and receiving them;

Results Attained (Submitted, Will Submit, Declined to Submit or Failed to Respond)

If Bid(s)/Proposal(s) from WBEs were rejected an *itemization of the dollar amount(s) and reason(s) for rejection*, plus the dollar amount of the Bid accepted.

4. Providing Project Information or referring interested WBEs to the appropriate plan centers for identification of the subcontract or material supply work.
5. Negotiating with Interested, Capable and Competitive WBE Bidders; Not Rejecting any WBE Bid without Justification; Observing Bid Shopping Prohibition.
6. Notifying WBEs if Bonding is Required and referring them to a potential bond source.

By signing this document Bidder/Proposer hereby certifies that:

It has not discriminated against any WBEs in obtaining any subcontracts for this project, and the good faith efforts documented herein were reasonably expected to result in participation of WBEs in this project in compliance with the above cited Metro program.

Acknowledges that: Metro reserves the right to verify the documentation of the lowest responsible Bidder and require additional written documentation of good faith efforts;

Failure to complete and submit this form at the time of the Bid opening/submission deadline will result in the Bidder's rejection as non responsive;

Replacement of a WBE subcontractor before contract award or during contract performance without prior Metro notice and subsequent good faith efforts in selection of a replacement, is prohibited.

And, Executes this Compliance Agreement as:

Bidder/Proposer _____

By _____
Name Title Date

MINORITY BUSINESS ENTERPRISE UTILIZATION FORM

Name of Metro Project _____

Name of Bidder _____

Address of Bidder _____

Phone Number (____) _____ - _____

THE ABOVE PARTICIPANT:

- A. _____ Will subcontract with minority business enterprises. Please complete the form below.
- B. _____ Will not subcontract with minority business enterprises.

**BIDDER/PROPOSER INTENDS TO SUBCONTRACT WITH THE FOLLOWING
MINORITY BUSINESS ENTERPRISE(S) (MBES)**

SUBCONTRACTOR/SUPPLIER	NATURE OF WORK BY COMMODITY CODE (SEE REVERSE)	DOLLAR VALUE OF PARTICIPATION

Amount of MBE Utilization _____

Authorized Signature _____

Total Bid/Proposal Amount _____

Percentage MBE Utilization _____ Date: _____

**THIS FORM MUST BE SUBMITTED
AT THE TIME OF BID OPENING OR PROPOSAL SUBMISSION**

COMMODITY CODES	
CONSTRUCTION	
1-01-00 Residential/Commercial General Contractor	1-02-00 Specialty Trades (Residential/ Commercial)
1-03-00 Highway/Road General Contractor	(Specify Below)
SPECIALTY TRADES	
1-04-02 Concrete Cutting	1-04-03 Concrete pumping
1-04-04 Demolition	1-04-05 Drainage
1-04-06 Drilling/Blasting	1-04-07 Electrical
1-04-08 Excavating	1-04-09 Fencing/Guardrail
1-04-10 Illumination	1-04-11 Irrigation
1-04-12 Landscaping	1-04-13 Masonry
1-04-14 Painting/Striping	1-04-15 Paving
1-04-16 Plumbing	1-04-17 Rebar Placement
1-04-18 Rock Crushing	1-04-19 Seeding
1-04-20 Signs	1-04-21 Site Preparation
1-04-22 Traffic Control/Flagging	1-04-22 Utilities
CONSULTANT/PROFESSIONAL SERVICES	
2-06-00 Engineering/Surveying	2-07-01 Architectural Design
2-07-02 Landscape Design	2-07-03 Interior Design
SUPPLIERS	
3-01-01 Asphalt	3-01-02 Cement
3-01-03 Concrete Pipe/Manholes	3-01-04 Crushed Rock/Gravel/Sand
3-01-05 Electrical	3-01-06 Flooring
3-01-07 Guard Rails	3-01-08 Irrigation
3-01-09 Lighting	3-01-10 Lumber
3-01-11 Masonry	3-01-12 Paint
3-01-13 Pipe (Steel)	3-01-14 Signs
3-01-15 Tools	3-01-16 Other Construction Suppliers
3-02-00 Construction Equipment (Lease/Rental/Sale)	3-04-00 Non-Construction Equipment (Lease/Rental/Sale)
3-06-00 Retail Sales	3-07-01 Automotive Supplies
3-07-02 Bus Parts	3-07-03 Truck Supplies
3-99-00 Other Suppliers:	
SERVICES	
4-02-00 Janitorial Services	4-03-00 Landscape/building/Facility Maintenance
4-04-01 Temporary Employment	4-04-02 Permanent Employment
4-05-00 Equipment Repair/Maintenance	4-06-00 Printing/Typesetting
4-08-00 Trucking/Hauling/Refuse	4-10-00 Newspapers
4-99-00 Other Services:	

WOMEN-OWNED BUSINESS ENTERPRISE UTILIZATION FORM

Name of Metro Project _____

Name of Bidder _____

Address of Bidder _____

Phone Number (____) _____ - _____

THE ABOVE PARTICIPANT:

- A. _____ Will subcontract with women-owned business enterprises. Please complete the form below.
- B. _____ Will not subcontract with women-owned business enterprises.

**BIDDER/PROPOSER INTENDS TO SUBCONTRACT WITH THE FOLLOWING
WOMEN-OWNED BUSINESS ENTERPRISE(S) (WBES)**

SUBCONTRACTOR/SUPPLIER	NATURE OF WORK BY COMMODITY CODE (SEE REVERSE)	DOLLAR VALUE OF PARTICIPATION

Amount of WBE Utilization _____

Authorized Signature _____

Total Bid/Proposal Amount _____

Percentage WBE Utilization _____ Date: _____

**THIS FORM MUST BE SUBMITTED
AT THE TIME OF BID OPENING OR PROPOSAL SUBMISSION**

COMMODITY CODES	
CONSTRUCTION	
1-01-00 Residential/Commercial General Contractor	1-02-00 Specialty Trades (Residential/ Commercial)
1-03-00 Highway/Road General Contractor	(Specify Below)
SPECIALTY TRADES	
1-04-02 Concrete Cutting	1-04-03 Concrete pumping
1-04-04 Demolition	1-04-05 Drainage
1-04-06 Drilling/Blasting	1-04-07 Electrical
1-04-08 Excavating	1-04-09 Fencing/Guardrail
1-04-10 Illumination	1-04-11 Irrigation
1-04-12 Landscaping	1-04-13 Masonry
1-04-14 Painting/Striping	1-04-15 Paving
1-04-16 Plumbing	1-04-17 Rebar Placement
1-04-18 Rock Crushing	1-04-19 Seeding
1-04-20 Signs	1-04-21 Site Preparation
1-04-22 Traffic Control/Flagging	1-04-22 Utilities
CONSULTANT/PROFESSIONAL SERVICES	
2-06-00 Engineering/Surveying	2-07-01 Architectural Design
2-07-02 Landscape Design	2-07-03 Interior Design
SUPPLIERS	
3-01-01 Asphalt	3-01-02 Cement
3-01-03 Concrete Pipe/Manholes	3-01-04 Crushed Rock/Gravel/Sand
3-01-05 Electrical	3-01-06 Flooring
3-01-07 Guard Rails	3-01-08 Irrigation
3-01-09 Lighting	3-01-10 Lumber
3-01-11 Masonry	3-01-12 Paint
3-01-13 Pipe (Steel)	3-01-14 Signs
3-01-15 Tools	3-01-16 Other Construction Suppliers
3-02-00 Construction Equipment (Lease/Rental/Sale)	3-04-00 Non-Construction Equipment (Lease/Rental/Sale)
3-06-00 Retail Sales	3-07-01 Automotive Supplies
3-07-02 Bus Parts	3-07-03 Truck Supplies
3-99-00 Other Suppliers:	
SERVICES	
4-02-00 Janitorial Services	4-03-00 Landscape/building/Facility Maintenance
4-04-01 Temporary Employment	4-04-02 Permanent Employment
4-05-00 Equipment Repair/Maintenance	4-06-00 Printing/Typesetting
4-08-00 Trucking/Hauling/Refuse	4-10-00 Newspapers
4-99-00 Other Services:	

RESIDENT/NON-RESIDENT BIDDER STATUS

Oregon law requires that Metro, in determining the lowest responsive Bidder, must add a percent increase on the Bid of a non-resident Bidder equal to the percent, if any, of the preference given to that Bidder in the state in which that Bidder resides. Consequently, each Bidder must indicate whether it is a resident or non-resident Bidder. A resident Bidder is a Bidder that has paid unemployment taxes or income taxes in the state of Oregon during the twelve (12) calendar months immediately preceding submission of this Bid, has a business address in Oregon, and has stated in its Bid that the Bidder is a "resident Bidder." A "non-resident Bidder" is a Bidder who is not a resident Bidder (ORS 279.029).

The undersigned Bidder states that it is: (check one)

1. _____ A resident Bidder
2. _____ A non-resident Bidder

Indicate state in which Bidder resides: _____

SIGNATURE PAGE

The name of the Bidder submitting this Bid is _____ doing business at

Street	City	State	Zip
--------	------	-------	-----

which is the full business address to which all communications concerned with this Bid and with the Contract shall be sent.

The names of the principal officers of the corporation submitting this Bid, or of all of the partners, if the Bidder is a partnership or joint venture, or of all persons interested in this Bid as individuals are as follows:

If Individual

IN WITNESS hereto the undersigned has set his/her hand this ___ day of _____, 19____.

Signature of Bidder _____

Printed Name of Bidder _____

Title _____

If Partnership or Joint Venture

IN WITNESS hereto the undersigned has set his/her hand this ____ day of _____, 19__.

Name of Partnership or Joint Venture

By: _____

Printed Name of Person Signing

Title: _____

If Corporation

IN WITNESS WHEREOF the undersigned corporation has caused this instrument to be executed and its seal affixed by its duly authorized officers this ____ day of _____, 19__.

Name of Corporation

State of Incorporation

By: _____

Printed Name of Person Signing

Title: _____

NON-COLLUSION AFFIDAVIT

STATE OF _____) County of _____)

I state that I am _____ (Title) of _____ (Name of Bidder) and that I am authorized to make this Affidavit on behalf of the Bidder. I am the person authorized by the Bidder and responsible for the price(s) and the amount of this Bid.

I state that: (1) The price(s) and amount of this Bid have been arrived at independently and without consultation, communication or agreement with any other contractor, Bidder or potential Bidder, except as disclosed in the attached appendix.

(2) Neither the price(s) nor the amount of this Bid, and neither the approximate price(s) nor approximate amount of this Bid, have been disclosed to any other person who is a Bidder or potential Bidder, and they will not be disclosed before bid opening.

(3) No attempt has been made or will be made to induce any person to refrain from bidding on this contract, or to submit a Bid higher than this Bid, or to submit any intentionally high or non-competitive bid or other from of complementary Bid.

(4) This Bid is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any person to submit a complementary or other noncompetitive Bid.

(5) _____ (Name of Bidder), its affiliates, subsidiaries, officers, directors and employees (as applicable) are not currently under investigation by any governmental agency and have not in the last four years been convicted of or found liable for any act prohibited by state or federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract, except as listed and described in the attached appendix.

I state that I and _____ (Name of Bidder) understand and acknowledge that the above representations are material and important, and will be relied on by Metro in awarding the Contract for which this Bid is submitted. Any misstatement in this Affidavit will be treated as fraudulent concealment from Metro of the true facts relating to the submission of Bids for this Contract.

Signature of Affiant

Printed Name of Affiant

Sworn to and subscribed before me this ____ day of _____, 19 ____.

Notary Public for _____ My Commission Expires: ____ / ____ / ____

BID BOND

(NOTE: BIDDERS MUST USE THIS FORM, NOT A SURETY COMPANY FORM)

KNOW ALL MEN BY THESE PRESENTS:

We the undersigned, _____, as PRINCIPAL, and _____, a corporation organized and existing under and by virtue of the laws of the state of _____ and duly authorized to do surety business in the state of Oregon and name on the current list of approved surety companies acceptable on federal bonds and conforming with the underwriting limitations as published in the Federal Register by the audit staff of the Bureau of Accounts and the U.S. Treasury Department and is of the appropriate class for the bond amount as determined by Best's Rating System, as SURETY, hereby hold and firmly bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, unto the METRO, as OBLIGEE, in the sum of \$ _____ in lawful money of the United States of America, for the payment of which sum well and truly to be made as agreed and liquidated damages.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT whereas the PRINCIPAL has submitted to METRO a certain Bid for work required for the Repairs and Improvements to the Roof and Ventilation System at Metro South Station at Metro South Station, which work is specifically described in the accompanying Bid;

NOW, THEREFORE, if Metro does not award a contract to the PRINCIPAL within the time specified in the Instructions to Bidders for the work described in said Bid, or in the alternate, if said Bid shall be accepted and the PRINCIPAL, within the time and in the manner described under the Contract Documents, enters into a written contract in accordance with the Bid, files the two bonds, one guaranteeing faithful performance of the work to be done and the other guaranteeing payment for labor and materials as required by law, and files the required certified copies of insurance policies and certificates of insurance, then the obligation shall be null and void; otherwise, the same shall remain in full force and effect.

The SURETY, for value received, hereby stipulates and agrees that the obligation of said SURETY and this bond shall be in no way impaired or affected by any extension of the time within which Metro may accept such Bid; and said SURETY does hereby waive notice of any such extension.

If more than one surety is on this bond, each surety hereby agrees that it is jointly and severally liable for all obligations on this bond.

IN WITNESS WHEREOF, we have hereunto set our hands and seals ____ day of _____, 19__.

SURETY

PRINCIPAL

By: _____

By: _____

Title: _____

Title: _____

**SECTION 00500
CONSTRUCTION AGREEMENT**

This Construction Agreement is made by and between _____
hereinafter called Contractor and Metro, a metropolitan service district organized under the laws
of the State of Oregon and the Metro Charter., hereinafter called Metro.

Contractor and Metro agree as follows:

1. Contract Documents

The Contract Documents consist of this Construction Agreement, the Advertisement for Bids, the Invitation to Bid, the Instructions to Bidders, the Bid Forms (including Schedule of Bid Prices, Surety, MBE/WBE Business Program Compliance, Prevailing Wage Rate Compliance, Resident/Non-resident Bidder Status, Signature Page, Non-Collusion Affidavit, Bid Bond, MBE and WBE Utilization), the Performance and the Labor and Materials Payment Bonds, the General Conditions, the Supplementary Conditions, the Technical Specifications, the Drawings, the approved and updated Construction Schedule, and other information and data as listed in the Supplementary Conditions, and any modifications of any of the foregoing in the form of Addenda or Change Orders in accordance with the terms of the Contract. Where applicable, reference to this Construction Agreement herein shall be deemed to refer to all of the Contract Documents.

These documents form the Contract and are, by this reference, expressly incorporated herein. All are as fully a part of the Contract as if attached to this Construction Agreement and repeated fully herein. No amendment made to this Contract nor Change Order issued shall be construed to release either party from any obligation contained in the Contract Documents except as specifically provided in any such amendment or Change Order.

2. Scope of Work

Contractor agrees to provide all labor, tools, equipment, machinery, supervision, transportation, permits, and every other item and service necessary to perform the Work described in the Contract Documents. Contractor agrees to fully comply with each and every term, condition and provision of the Contract Documents.

3. Contract Amount

As consideration for Contractor's performance hereunder, Metro agrees to pay contractor the Contract Amount as adjusted by approved Change Orders issued pursuant to the Contract Documents and subject to the availability of monies in the Construction Fund. Contractor agrees to accept the Contract Amount as full payment for contractor's performance of the above described Work.

The Contract Amount is _____

Metro shall make payments to Contractor in the manner and at the times provided in the Contract Documents.

4. Additional or Deleted Work

Contractor shall, when so instructed by Metro under the procedures of the contract Documents, perform additional Work or delete Work in accordance with the Contract Documents. Any increase or decrease in the Contract Amount shall be determined pursuant to the applicable provisions of the Contract Documents.

5. Time of Completion; Adjusted Payments

Time is of the essence of this Construction Agreement. The Contract Time shall commence upon issuance of the Notice to Proceed. Contractor shall commence work under this Contract within ten (10) calendar days after issuance of written Notice to Proceed. Contractor shall bring the work to substantial completion no later than November 15, 1994. By executing this Construction Agreement, Contractor confirms and accepts that the Contract Time so stated is a reasonable period for performance of all of the Work.

If Contractor fails to substantially complete the Work, within the Contract Time, as determined by Metro in accordance with the Contract Documents, Contractor shall be liable for adjusted payments to Metro as described in the Contract Documents.

6. Bonds

Contractor submits herewith a Performance Bond and a separate Labor and Materials Payment Bond, both in a form acceptable to Metro and otherwise in accordance with the Contract Documents and each in the Contract Amount to ensure full compliance, execution and performance of this Contract by Contractor and payment by Contractor of labor and material Suppliers as more fully described in the Contract Documents.

7. Remedies for Default

If Contractor fails to perform as specified in the Contract Documents, Metro shall be entitled to all the rights and remedies which this Contract provides, as well as all remedies provided by law. This Contract shall not be construed as limiting or reducing the remedies provided by law which Metro would have in the absence of any provision of the Contract.

8. Laws of Oregon Apply

The law of Oregon shall govern the interpretation and construction of this Construction Agreement and all of the Contract Documents.

9. Entire Agreement

The Contract Documents constitute the final written expression of all of the terms of this Construction Agreement and are a complete and exclusive statement of those terms. Any and all representations, promises, warranties, or statements by either party that differ in any way from the terms of this written agreement shall be given no force and effect. This Contract shall be changed, amended, or modified only by written instrument signed by both Metro and Contractor. This Contract shall not be modified or altered by any course of performance by either party.

CONTRACTOR

METRO

By: _____

By: _____

Title: _____

Title: _____

Date: _____

Date: _____

**SECTION 00600
PERFORMANCE BOND**

(NOTE: CONTRACTORS MUST USE THIS FORM, NOT A SURETY COMPANY FORM)

KNOW BY ALL MEN BY THESE PRESENTS:

We the undersigned _____ as PRINCIPAL (hereinafter called CONTRACTOR), and _____, a corporation organized and existing under and by virtue of the laws of the state of _____, duly authorized to do surety business in the state of Oregon and named on the current list of approved surety companies acceptable on federal bonds and conforming with the underwriting limitations as published in the Federal Register by the audit staff of the Bureau of Accounts and the U.S. Treasury Department and is of the appropriate class for the bond amount as determined by Best's Rating System, as SURETY, hereby hold and firmly bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, to pay to Metro as OBLIGEE (hereinafter called Metro), the amount of _____ Dollars (\$ _____), in lawful money of the United States of America.

WHEREAS, the CONTRACTOR entered into a contract with Metro dated _____, 19____, which contract is hereunto annexed and made a part hereof, for accomplishment of the project described as follows: Repairs and Improvements to the Roof and Ventilation System at Metro South Station at Metro South Station.

NOW, THEREFORE, the condition of this obligation is such that if the CONTRACTOR shall promptly, truly and faithfully perform all the undertakings, covenants, terms, conditions, and agreements of the aforesaid Repairs and Improvements to the Roof and Ventilation System at Metro South Station at Metro South Station, Metro having performed its obligations thereunder, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Whenever CONTRACTOR shall be declared by Metro to be in default under the Contract Documents for the project described herein, the SURETY may promptly remedy the default, or shall promptly complete the Repairs and Improvements to the Roof and Ventilation System at Metro South Station at Metro South Station in accordance with the Contract Documents and the project Specifications. SURETY, for value received, further stipulates and agrees that all changes, extensions of time, alterations, or additions to the terms of the Contract or Specifications for the Repairs and Improvements to the Roof and Ventilation System at Metro South Station at Metro South Station are within the scope of the SURETY's undertaking on this bond, and SURETY hereby waives notice of any such change, extension of time, alteration or addition to the terms of the Repairs and Improvements to the Roof and Ventilation System at Metro South Station at Metro South Station or to the Work or to the Specifications. Any such change, extension of time, alteration or addition to the terms of the Repairs and Improvements to the Roof and Ventilation System at Metro South Station at Metro South Station or to the Work or to the Specifications shall automatically increase the obligation of the SURETY hereunder in a like amount, provided that such

increase shall not exceed twenty-five percent (25%) of the original amount of the obligation without the consent of the SURETY.

This obligation shall continue to bind the PRINCIPAL and SURETY, notwithstanding successive payments made hereunder, until the full amount of the obligation is exhausted.

No right of action shall accrue on this bond to or for the use of any person or corporation other than Metro or its heirs, executors, administrators, successors or assigns.

If more than one SURETY is on this bond, each SURETY hereby agrees that it is jointly and severally liable for obligations on this bond.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 19__.

SURETY

By: _____

Title: _____

Street Address

City, State ZIP

Phone Number

CONTRACTOR

By: _____

Title: _____

Street Address

City, State ZIP

Phone Number

1132

**SECTION 00650
LABOR AND MATERIALS PAYMENT BOND**

(NOTE: CONTRACTOR MUST USE THIS FORM, NOT A SURETY COMPANY FORM)

KNOW ALL MEN BY THESE PRESENTS:

We the Undersigned _____ as PRINCIPAL and _____, a corporation organized and existing under and by virtue of the laws of the state of _____, and duly authorized to do surety business in the state of Oregon and named on the current list of approved surety companies acceptable on federal bonds and conforming with the underwriting limitations as published in the Federal Register by the audit staff of the Bureau of Accounts and the U.S. Treasury Department and which carries an "A" rating and is of the appropriate class for the bond amount as determined by Best's Rating System, as SURETY, hereby hold and firmly bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, unto Metro, as OBLIGEE, in the sum of _____ Dollars (\$ _____) in lawful money of the United States of America, for the payment of that sum for the use and benefit of claimants as defined below.

The condition of this obligation is such that whereas the PRINCIPAL entered into a contract with Metro dated _____, 19____, which contract is hereunto annexed and made a part hereof, for accomplishment of the project described as follows: Repairs and Improvements to the Roof and Ventilation System at Metro South Station.

NOW THEREFORE, if the PRINCIPAL shall promptly make payments to all persons, firms, subcontractors, corporations and/or others furnishing materials for or performing labor in the prosecution of the Work provided for in the aforesaid Repairs and Improvements to the Roof and Ventilation System at Metro South Station, and any authorized extension or modification thereof, including all amounts due for materials, equipment, mechanical repairs, transportation, tools and services consumed or used in connection with the performance of such Work, and for all labor performed in connection with such Work whether by subcontractor or otherwise, and all other requirements imposed by law, then this obligation shall become null and void; otherwise this obligation shall remain in full force and effect, subject, however, to the following conditions:

1. A claimant is as specified in ORS 279.526.
2. The above-named PRINCIPAL and SURETY hereby jointly and severally agree with the OBLIGEE and its assigns that every claimant as above-specified, who has not been paid in full, may sue on this bond for the use of such claimant, prosecute the suit to final judgment in accordance with ORS 279.536 for such sum or sums as may be justly due claimant, and have execution thereon. The OBLIGEE shall not be liable for the payment of any judgment, costs, expenses or attorneys' fees of any such suit.

PROVIDED, FURTHER, that SURETY for the value received, hereby stipulates and agrees that all changes, extensions of time, alterations to the terms of the Repairs and Improvements to the Roof and Ventilation System at Metro South Station or to Work to be performed thereunder or the Specifications accompanying the same shall be within the scope of the SURETY's undertaking on this bond, and SURETY does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Repairs and Improvements to the Roof and Ventilation System at Metro South Station or to the Work or to the Specifications. Any such change, extension of time, alteration or addition to the terms of the contract or to the Work or to the Specifications shall automatically increase the obligation of the SURETY hereunder in a like amount, provided that the total of such increases shall not exceed twenty-five percent (25%) of the original amount of the obligation without the consent of the SURETY.

This obligation shall continue to bind the PRINCIPAL and SURETY, notwithstanding successive payments made hereunder, until the full amount of the obligation is exhausted, or if the full amount of the obligation is not exhausted and no claim is pending resolution, until such time as no further claims can be made pursuant to law with regard to the above-described project, by any claimant specified in ORS 279.526.

If more than one SURETY is on this bond, each SURETY hereby agrees that it is jointly and severally liable for all obligations of this bond.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 19 ____.

SURETY

By: _____

Title: _____

Street Address

City, State ZIP

Phone Number

CONTRACTOR

By: _____

Title: _____

Street Address

City, State ZIP

Phone Number

1133

SECTION 00700
GENERAL CONDITIONS
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**SECTION 00700
GENERAL CONDITIONS**

ARTICLE 1 GENERAL PROVISIONS

- 1.1. **Definitions.** Unless otherwise defined or specified in the Contract Documents, the following terms shall have the meanings indicated:
- 1.1.1. **Act of God** -- means an earthquake, flood, typhoon, cyclone or other natural phenomenon of catastrophic proportions or intensity.
 - 1.1.2. **Addendum** (Plural: Addenda) -- means a document issued by Metro during the bidding period which modifies, interprets, supersedes or supplements the Contract Documents and becomes a part of the Contract Documents. It is the Bidder's responsibility to determine how addenda impact the Work. All Bids submitted shall include the cost of the Work included in any addenda issued prior to award.
 - 1.1.3. **Alternate Bids** -- are portions of the Work for which a Bidder must submit a separate Bid amount. Alternate Bid items may or may not be awarded at Metro's discretion.
 - 1.1.4. **"As-Builts" or Record Documents** -- are those drawings made, revised or annotated by Contractor and approved by Metro during the performance of the Contract, fully illustrating how all elements of the work were actually installed and completed.
 - 1.1.5. **Authorized Representative** -- is a person, corporation, partnership or other legal entity acting on behalf of another through expressly delegated authority as specified in these Contract Documents.
 - 1.1.6. **Bid** -- is the written offer of a Bidder to perform the Work as defined in these Contract Documents, when made out in accordance with all of the Contract Documents and submitted on the appropriate Bid Forms.
 - 1.1.7. **Bidder** -- is any individual, partnership, corporation, or joint venture, acting directly or through a duly and legally authorized representative, submitting or intending to submit a Bid for the Work as described in these Contract Documents.
 - 1.1.8. **Bidding Documents** -- See "Contract Documents."
 - 1.1.9. **Bid Forms** -- include the following: the Bid proposal (including Schedule of Bid Prices and Recycled Product Attachment), Surety, Minority and Women-Owned Business Program Compliance Form, Resident/Non-Resident Bidder Status form,

Signature Page, the Non-Collusion Affidavit, Bid Bond, Minority Business Enterprise Utilization Form and the Women Business Enterprise Utilization Form.

- 1.1.10. City -- means the City of Oregon City, Oregon.
- 1.1.11. Change Order -- is a written document signed by Metro and Contractor stating their agreement upon all of the following:
- 1.1.11.1. a change in the Work;
 - 1.1.11.2. the amount of the increase or decrease in the Contract Amount, if any; and
 - 1.1.11.3. the extent of the adjustment to the Contract Time, if any.
- 1.1.12. Clarification -- is a written document consisting of supplementary details, instruction or information issued by Metro after the award of Contract which clarifies, or supplements the Contract Documents and becomes a part of the Contract Documents. A Clarification may or may not affect the scope of work.
- 1.1.13. Completion -- See "Substantial Completion" and "Final Completion and Acceptance."
- 1.1.14. Construction Coordinator -- is the Metro representative on the construction site. The Construction Coordinator will be an employee of Metro, who will represent Metro to the extent of his authority as delegated by the Executive Officer. For purposes of administering this contract the terms "Construction Coordinator", "Construction Manager", and "Engineer" will refer to the on site Metro representative and to any duly appointed assistants who may be designated in writing. The Engineer of Record, namely SJO, will be called upon as required by and at the direction of Metro for technical assistance and for interpretation of the Contract Documents.
- 1.1.15. Construction Manager See "Construction Coordinator."
- 1.1.16. Construction Schedule or Schedule -- is the timeline described in Section 01310 of the Specifications.
- 1.1.17. Contract Amount -- is the total amount shown in the Construction Agreement as revised by Change Orders.
- 1.1.18. Contract Documents or Contract or Bidding Documents -- consist of the Advertisement for Bids, the Invitation to Bid, the Instructions to Bidders, the Bid Forms, the Construction Agreement, the Performance Bond, the Labor and Materials Payment Bond, the General Conditions, the Supplementary Conditions,

the Specifications, the Drawings, the approved and updated Construction Schedule, and any modifications of any of the foregoing in the form of Addenda, Clarifications, Change Orders or Force Account Work.

- 1.1.19. Contractor -- is the party who has entered into this Contract with Metro and who is responsible for the complete performance of the Work contemplated by the Contract Documents and for the payment of all legal debts pertaining to the Work, including its officers, agents, employees and representatives.
- 1.1.20. Contract Time -- is the period of time, including adjustments approved by Metro, which is allowed in the Contract Documents for Contractor to substantially complete the Work.
- 1.1.21. Critical Path Method or CPM -- means the critical path method of scheduling as understood and interpreted by standard industry practice.
- 1.1.22. Days -- means calendar day including Saturdays, Sundays and legal holidays.
- 1.1.23. Direct Costs -- are those costs of labor (including benefits), material and equipment incurred by the person, corporation, partnership or joint venture whose employees are actually performing the task.
- 1.1.24. Minority Business Program -- is Metro's program to provide maximum opportunities to Minority and Women-Owned Business Enterprises in contracts, which is contained in Metro Code 2.4.
- 1.1.25. Drawings -- means the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.
- 1.1.26. Engineer - See "Construction Coordinator."
- 1.1.27. Equal, Approved, Approved Equal -- is used to indicate that the material or product to be supplied or installed must be equal to or better than that named in function, performance, reliability, quality and general configuration and that the substitute must be approved by Engineer. Equality in reference to the Project design requirements shall be determined by Engineer prior to installation of any material or product in the Project. Where the term "or equal" is not used and a sole product is specified, the term "or equal" is implied.
- 1.1.28. Final Completion and Acceptance -- means the completion by Contractor of all of the Work called for under the Contract, whether expressly or impliedly required,

including but not limited to, satisfactory operation of all equipment, completion and correction of all punch list items to the satisfaction of Metro, settlement of all claims, delivery of all warranties and agreements to correct Work, equipment operation and maintenance manuals, as-built drawings, required approvals and acceptances by federal, state or local governments or other authorities having jurisdiction over the Work, and removal of all rubbish, tools, scaffolding and surplus materials and equipment from the Site.

- 1.1.29. Final Payment -- is the balance of the Contract Amount to be paid to the Contractor upon Final Completion and Acceptance of the Work.
- 1.1.30. Force Account Work -- is work, ordered in writing by Metro, for which Contractor must report its actual costs in accordance with Paragraph 8.4 of the General Conditions.
- 1.1.31. Furnish -- means, unless the context requires otherwise, supply and deliver materials, systems and equipment to the Site, ready for unpacking, assembly, installation, etc., as applicable in each instance.
- 1.1.32. General Contractor -- is the party who enters into the Contract with Metro. See also "Contractor".
- 1.1.33. Geotechnical Engineer -- The Geotechnical Engineer is an agent of the Engineer.
- 1.1.34. Inclement Weather -- is a meteorological condition or conditions, abnormal to the Portland metropolitan area for the time of year in question, which cannot be reasonably anticipated and which has a significantly adverse effect on the Construction Schedule. Abnormality of the weather is defined as the number of days the weather parameters exceed the normal adverse weather days at the project. (See Appendix A)

For work under this contract, Metro defines adverse weather days as days on which Contractor is impacted by weather, normally defined as days with an average daily temperature of less than 32°F, significant daily precipitation or snow. Contractor will be cognizant of adverse weather days based upon long term averages when preparing project schedule, and shall refer to the annual publication of Local Climatological Data for Portland Oregon available at the Portland Weather Service Office.

- 1.1.35. Install -- includes, unless the context requires otherwise, unload, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, connect to electrical power and/or piping, and similar operations at the Site, as applicable in each instance.

- 1.1.36. Lump Sum -- means all costs and expenses of whatever nature, including Overhead and Profit, associated with the Work involved.
- 1.1.37. Material or Materials -- shall be construed to include machinery, equipment, manufactured articles, materials of construction such as formwork, fasteners, etc., and any other classes of items to be provided in connection with the Contract, except where a more limited meaning is indicated by the context.
- 1.1.38. Metro -- is a metropolitan service district organized under the laws of the State of Oregon and the Metro Charter.
- 1.1.39. Metro Executive Officer or Executive Officer -- means the Executive Officer of Metro.
- 1.1.40. Metro Council or Council -- means the elected Council of Metro.
- 1.1.41. Miscellaneous Phrases -- in the Contract Documents shall be interpreted as follows:
- Wherever the words "as directed," "as instructed," "as required," "as permitted," or words of like effect are used, it shall be understood that the direction, requirement, or permission of Metro is intended.
- The words "sufficient," "necessary," "proper," and the like shall mean sufficient, necessary or proper in the judgment of Metro.
- The words "approved," "acceptable," "satisfactory," or words of like import, shall mean approved by, or acceptable to, or satisfactory to, Metro.
- 1.1.42. Notice of Award -- is the document issued by Metro to the lowest responsive, responsible Bidder whose Bid complies with all the requirements prescribed by the Contract Documents. The Notice of Award shall be given pursuant to the provisions of the Instructions to Bidders. It shall not entitle the party to whom it is given to any payment under the Contract, nor shall Metro be liable to such party or to any person for any alleged damages for any action taken in reliance upon such notice.
- 1.1.43. Notice to Proceed -- is the written notice given Contractor to commence the prosecution of its Work as defined in the Contract Documents. The Notice to Proceed will also establish the date and time of a preconstruction conference.
- 1.1.44. Other Metro Contractors -- are all individuals, corporations, partnerships, or joint ventures (except Contractor or Engineer) with whom Metro has a contract to perform work on, or related to, the Project.

1.1.45. Overhead -- when applied to the cost of the work, shall include the following items, when reasonable and necessary for completion of the work:

1.1.45.1. All on-site payroll costs, taxes, insurance fringe benefits and bonuses of same, for supervising, estimating, expediting, purchasing, drafting and clerical/secretarial services where directly incurred in the performance of the Contract.

1.1.45.2. Small tools (less than \$250 capital cost per item).

1.1.45.3. Equipment maintenance and repairs.

1.1.45.4. Temporary construction, utilities, and safety requirements.

1.1.45.5. Transportation of materials other than direct identifiable cost of specific deliveries, or as included in price of material.

1.1.45.6. Parking fees for workers (if applicable).

1.1.45.7. Permit fees.

1.1.45.8. Cost of reproduction.

1.1.45.9. Field office costs.

Home or branch office overhead shall not be included, but shall be part of Contractor's profit and shall include, but is not limited to, the following:

1.1.45.9.1. Accounting functions of Contractor's Home and Branch Office.

1.1.45.9.2. General expenses of Contractor's Home and Branch Office.

1.1.45.9.3. Interest on capital.

1.1.45.9.4. Salaries of any home and branch office estimators and administration.

1.1.46. Owner -- means Metro.

1.1.47. Plans -- means Drawings.

1.1.48. Profit -- means that portion of Contractor's Bid price that is not Direct Costs or Overhead.

- 1.1.49. Project -- means the Work described in the Contract Documents.
- 1.1.50. Provide -- means furnish and install complete and in place and ready for operation and use.
- 1.1.51. Punch List -- is the list prepared by the Construction Manager at the time of Substantial Completion which reflects Contractor's incomplete, nonconforming work. Punch list items must be completed to the satisfaction of the Engineer and Metro in order for the Project to reach Final Completion and Acceptance.
- 1.1.52. Request for Clarification -- is a written request made by Contractor for additional information to clarify an ambiguity in the Contract Documents.
- 1.1.53. Retainage or Retention -- is the difference between the amount earned by Contractor on the Contract and the amount paid on the Contract by Metro.
- 1.1.54. Schedule of Values -- is the detailed breakdown of a lump sum contract amount as required in Section 01025 of the Specifications.
- 1.1.55. Separate Contract -- is a contract between Metro and a party other than Contractor for the construction or furnishing of a portion of the Project.
- 1.1.56. Shown, As Shown -- work shown on the Drawings which is a part of the Contract Documents.
- 1.1.57. Site -- is the real property upon which the Project is located.
- 1.1.58. Special Inspector -- is a representative of the Engineer or Geotechnical Engineer with specialized knowledge applicable to the installation of certain elements of the work.
- 1.1.59. Specifications -- are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards and workmanship for the Work, and performance of related services.
- 1.1.60. Subcontractor -- means a person, partnership, corporation or joint venture which has a direct contract with Contractor to perform a portion of the Work at the Site.
- 1.1.61. Submittals -- include shop drawings, samples, manufacturer's brochures, pamphlets, catalog cuts, color charts or other descriptive data, clearly defining the article, material, equipment or device proposed by Contractor for use in the Work. "Shop drawings" are the drawings and diagrams showing details of fabrication and erection which Contractor is required to submit to the Engineer.

- 1.1.62. Substantial Completion -- is the stage in the progress of the Work, as determined by Metro, when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that Metro can occupy or use the Work for its intended use.
- 1.1.63. Supplier -- means an individual, partnership, corporation or joint venture entering into an agreement with Metro or Contractor for furnishing a portion of the Work which requires no labor at the Site, other than common carriers.
- 1.1.64. Unit Prices -- are the costs for specific units of work as defined in the Bid and Supplementary Conditions and include all costs, including, but not limited to, equipment, labor, materials, incidentals, Overhead and Profit, for the unit of work described.
- 1.1.65. Work -- means, unless the context requires otherwise, the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by Contractor to fulfill Contractor's obligations. The Work may constitute all or a portion of the Project as the context requires.

1.2. Intent and Interpretation of Contract Documents

- 1.2.1. Intent -- The Contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. The intent of the Contract Documents is to include in the Contract price the cost of all labor and materials, water, fuel, tools, plant, scaffolding, equipment, power, light, transportation, and all other facilities, services and expense as may be necessary for the proper execution of the Work, unless otherwise indicated in these Contract Documents. In interpreting the Contract Documents, words describing materials or work which have a well-known technical or trade meaning, unless otherwise specifically defined in the Contract Documents, shall be construed in accordance with such well-known meaning recognized by Engineer and Metro.
- 1.2.2. Divisions and Headings -- Titles and headings are for the convenience of organizing the Contract Documents and shall not be construed to limit Contractor's obligations hereunder. The General Conditions are divided into fifteen (15) Articles. The first-tier subheadings of each Article shall be referred to as Paragraphs; the second-tier sub-headings shall be referred to as Subparagraphs; and the third-tier subheadings shall be referred to as Clauses.
- 1.2.3. Mandatory Nature of Specifications and Drawings -- mention in the Specifications or indication on the drawings of articles, materials, operations, sequence or methods requires Contractor to furnish and install (i.e., provide) each article mentioned or indicated, of quality or according to qualifications noted, to perform

each operation called for, in the sequence called for, and to provide therefor, all necessary labor, equipment and incidentals. The determination of the type of operations and methods to be utilized in the performance of the Work shall be the responsibility of Contractor unless the Contract Documents prescribe a specific type of operation, sequence or method, in which case Contractor shall comply with the prescribed operation, sequence or method. Sentences in the imperative tense or command format in these Contract Documents shall be deemed to be directed to Contractor and to require Contractor to perform the services and/or provide the materials described.

1.2.4. Precedence of Contract Documents -- all determination of the precedence of, or discrepancy in, the Contract Documents shall be made by Metro, but in general, precedence will be in accordance with the following list with the highest precedence item at the top:

1.2.4.1. Signed Construction Agreement.

1.2.4.2. Supplementary Conditions.

1.2.4.3. General Conditions, Advertisement for Bids, Instructions to Bidders, Invitation to Bid, Bid Forms, Performance Bond and Labor and Materials Payment Bond.

1.2.4.4. Specifications

1.2.4.5. Drawings.

Detailed information takes precedence over general information and words take precedence over numbers unless obviously incorrect.

Addenda, Clarifications and all Change Orders to the Contract Documents take the same order of precedence as the specific sections that they are amending.

1.2.5. Discrepancies, Errors and Omissions -- the intent of the Contract Documents is to require Contractor to perform and provide every detail and item necessary for completion of the Project. The Contract Documents are not complete in every detail, however, and Contractor shall comply with their intent and meaning, taken as a whole, and shall not avail itself of any manifest errors or omissions to the detriment of the Work. Should any error, omission, discrepancy or ambiguity appear in the Contract Documents, instructions or work done by others, Contractor shall immediately upon discovery submit a Request for clarification to Metro pursuant to Paragraph 3.2. If Contractor proceeds with any such work without receiving a Clarification, Contractor shall be responsible for all resulting damage and defects, and shall perform any work necessary to comply with Metro's Clarifications at no cost to Metro. Any work or material not indicated in the

Contract Documents, which is manifestly necessary for full and faithful performance of the Work in accordance with the intent of the Contract Documents shall be indicated by Contractor on the shop drawings and provided by Contractor to the same extent as if both indicated and specified. Any work indicated on the drawings but not specified, or vice versa, shall be furnished in the manner specified above as though fully set forth in both. Work not particularly detailed, marked or specified shall be the same as similar parts that are detailed, marked or specified. In case of discrepancy or ambiguity, in quantity or quality, the greater quantity or better quality as determined by Metro, shall be provided at no extra cost to Metro.

- 1.2.6. Standards to Apply Where Detailed Specifications Are Not Furnished --wherever in these Contract Documents or in any directions given by Metro pursuant to or supplementing these Contract Documents, it is provided that Contractor shall furnish materials or manufactured articles or shall do work for which no detailed Specifications are set forth, the materials or manufactured articles shall conform to the usual standards for first-class materials or articles of the kind required, with due consideration of the use to which they are to be put. Work for which no detailed Drawings or Specifications are set forth herein shall conform to the usual standards for first-class work of the kind required.
- 1.3. Supply of Contract Documents -- Metro shall supply Contractor, without charge, a maximum of ten (10) sets of Contract Documents. Contractor shall contact Metro for additional sets of documents for which Contractor shall be charged the cost of printing.
- 1.4. Use of Contract Documents -- the Contract Documents were prepared for use in the construction of this Project only. No part of the Contract Documents shall be used for any other construction or for any other purpose except with the written consent of Metro. Any unauthorized use of the Contract Documents is at the sole responsibility of the user and such unauthorized use shall be deemed an activity in the performance of the Contract for purposes of Contractor's duty to indemnify under Article 11.
- 1.5. Copyright -- all submittals, record documents and any other products or documents produced by Contractor pursuant to this Contract are the property of Metro and it is agreed by the parties hereto that such documents are works made for hire. Contractor does hereby convey, transfer and grant to Metro all rights of reproduction and the copyright to all such documents.
- 1.6. Severability Clause -- should any provision of this Contract at any time be in conflict with any law, regulation or ruling, or be legally unenforceable for any reason, then such provision shall continue in effect only to the extent that it remains valid. In the event that any provision of this Contract shall become legally unenforceable, in whole or in part, the remaining provisions of this Contract shall nevertheless remain in full force and effect.
- 1.7. Notice or Service -- any written notice required or allowed under the Contract shall be deemed to have been communicated to the other party and service thereof shall be deemed

to have been made if such notice is delivered in person to the individual, a member of the partnership or joint venture, or an officer of the corporation for whom it was intended or if delivered at or sent by regular, registered or certified mail to the last business address of the relevant person or party known to the person or party giving the notice or to Contractor's Site office if the notice is directed to Contractor. The date or time of service for purposes of all notices required or allowed under the Contract shall be the date and/or time upon which the relevant document was mailed or delivered as above-described.

The address given in the Bid is hereby designated as the legal business address of Contractor, but such address may be changed at any time by ten (10) days prior notice in writing, delivered to Metro.

ARTICLE 2 CONTRACTOR'S ORGANIZATION

- 2.1. Contractor's Authorized Representatives -- prior to commencing any work under this Contract, Contractor shall submit in writing to Metro a list of Contractor's authorized representatives. Such list shall include the name and title of each representative along with the extent to which each representative is authorized to represent, bind and act for Contractor. The description of extent of representation shall include, but not be limited to, the maximum dollar value of Change Orders which the individual may authorize, whether the individual may respond to Request for Proposals and for what maximum dollar amount and whether the individual may submit a claim pursuant to Paragraph 3.3. Contractor shall be fully liable for the acts, omissions and decisions of such representatives to the extent stipulated in the written list submitted to Metro.

Contractor shall at all times be represented at the Site by one or more of such authorized representatives, who, cumulatively, shall have complete authority to represent, bind and act for Contractor in all matters pertaining or related to this Contract. In the event that Contractor does not comply with this paragraph and, consequently, is not fully represented at the Site at all times, Contractor shall be deemed to acquiesce in all actions taken by Metro which pertain or relate to this Contract.

- 2.2. Contractor's Office at the Site -- prior to commencement of work at the site, Contractor shall establish a field office at the site acceptable to the Construction Coordinator. This office shall be located in a job trailer or temporary building. This office shall be the headquarters of Contractor's representatives authorized to receive notices, instructions, drawings or other communications from the Construction Manager on behalf of Metro or the Engineer and to act on Change Orders or other actions. Such notices, instructions, drawings or other communications given to such a representative or delivered to Contractor's site office in his/her absence shall be deemed to have been given to Contractor.
- 2.3. Key Personnel -- Contractor shall submit, in writing, to Metro a list of the names, addresses, and telephone numbers of its key personnel who are to be contacted in case of

emergencies on the job during non-working hours, including Saturdays, Sundays and holidays and all other key personnel as may be required.

- 2.4. Contractor's Employees -- Contractor shall enforce strict discipline and good order among Contractor's employees and other persons carrying out the Work. Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

Whenever Metro shall notify Contractor that any employee on the Work is, in the judgment of Metro, incompetent, unfaithful, disorderly or refuses to carry out the provisions of the Contract, such employee shall be discharged or transferred from the Work.

Contractor shall give Metro, at its request at any time, full and correct information as to the number of workers employed in connection with each subdivision of the Work, the classification and rate of pay of each worker, the cost to Contractor of each class of materials, tools and appliances used by it in the Work, and the amount of each class of materials used in each subdivision of the Work.

- 2.5. Daily Construction Reports -- each day Contractor shall deliver to the Construction Manager a daily construction report which shall include, at a minimum, the following information:

2.5.1. Name of Contractor and Project.

2.5.2. Weather, temperature and any unusual Site conditions for the day in question.

2.5.3. A brief description and location of the day's work activities and any special problems and/or serious accidents or environmental releases, including preventative or mitigation measures taken. (including work of Subcontractors)

2.5.4. A description of significant progress in construction for that day as well as any problems encountered that might affect the progress of the Project as they relate to the Construction Schedule.

2.5.5. Any other information as requested by Metro or its representative.

- 2.6. Contractor to Supply Sufficient Material and Workers -- Contractor shall at all times keep on the premises sufficient material and employ sufficient supervision and workers to prosecute the Work at the rate necessary to substantially complete the Work herein required within the time specified in the Contract and in accordance with the Construction Schedule. Contractor shall coordinate the Work of its Subcontractors so that information required by one will be provided by others involved in time for incorporation in the Work in proper sequence and without delay of any materials, devices or provisions for future work.

- 2.7. Construction Plant, Equipment and Methods --the construction plant and equipment provided by Contractor, and Contractor's methods and organization for handling the Work shall be such as will secure a good quality of work and rate of progress which will ensure the completion of the Work within the time specified, in accordance with the Construction Schedule, and without violating city, local, state or federal environmental regulation during construction.

Contractor shall give Metro full information in advance as to Contractor's plans for carrying on any part of the Work. If at any time before the commencement or during the progress of the Work, any part of Contractor's plant or equipment, or any of Contractor's methods of executing the Work, appears to Metro to be inadequate to ensure the required quality, environmental protection or rate of progress of the Work, Metro may order Contractor to increase or improve its facilities or methods, and Contractor shall promptly comply with such orders. Neither compliance with such orders nor failure of Metro to issue such orders shall relieve Contractor from obligation or liability to secure the quality of work and the rate of progress required by the Contract. Contractor shall be responsible for overload of any part or parts of structures beyond their safe calculated carrying capacities, and for release of pollutants into surrounding waters resulting from Contractor's activities on the Site.

Contractor shall provide temporary utilities pursuant to the Specifications and shall be responsible for the safety and adequacy of its plant, equipment and methods.

- 2.8. Contractor's Temporary Structures -- Contractor shall obtain all necessary permits for and shall erect and maintain at its own expense, and remove upon completion of the Work or as ordered by Metro temporary structures, sheds, barriers, walks, hoisting equipment, scaffolds, etc., as are necessary for the Work pursuant to these Contract Documents.

Contractor's temporary structures, equipment, stored materials, stored equipment, etc., shall be located so as not to interfere with the prosecution of the Work. If not so located, they shall be moved by Contractor, as directed by Metro, at no cost to Metro. Contractor's temporary structures, equipment or materials that obstruct progress of any portion of the work shall be removed or relocated by Contractor at Contractor's expense.

ARTICLE 3 ADMINISTRATION OF THE CONTRACT

3.1. Authority and Relationships of Metro and Engineer -- the following provisions shall govern the authority of the various officers, agents, representatives, consultants and employees of Metro, and Engineer. Except as specifically provided in this section, no individual acting or purporting to act as an officer, agent, representative, consultant or employee of Metro or Engineer shall have any authority to make representations, statements or decisions of whatever nature binding Metro or Engineer regarding any aspect of this Contract. Except as specifically provided in this Article, Contractor shall have no right to, and shall not rely on any such representation, statement or decision. Any reference to action by Metro in this Contract requires the written approval of the Metro Executive Officer or a person who is designated in writing by the Metro Executive Officer as having authority to act for Metro but only to the extent that such authority is expressly delegated in writing.

3.1.1. Authority of Metro -- except as otherwise provided herein, Metro shall determine the amount, quality, acceptability, fitness, and progress of the Work covered by the Contract. Metro and Engineer will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the work, and they will not be responsible for Contractor's failure to carry out the Work in accordance with the Contract Documents. Metro and Engineer will not be responsible for or have control over the acts or omissions of Contractor, Subcontractors, or any of their agents or employees, or any other persons performing any of the Work. Nothing contained in this Contract is intended nor shall be construed to create any third-party beneficiary relationship between Metro and Contractor's subcontracting agents or employees.

It shall be the duty of Contractor to comply with all procedures established and/or implemented by Metro as stated above. In the event any such procedures are at variance with other provisions of these Documents, such procedures shall prevail.

Metro may call for meetings of Contractor, Contractor's Subcontractors and Suppliers as Metro deems necessary for the proper supervision and inspection of the Work. Such meetings shall be held at the Site on regular working days during regular working hours, unless otherwise directed by Metro. Attendance shall be mandatory for all parties notified to attend.

Contractor shall immediately comply with any and all orders and instructions given in accordance with the terms of this Contract by Metro.

Contractor has no right to, and shall not, rely on representations of whatever nature made by any individual, whether or not employed by or purporting to represent Metro or Engineer, unless such individual has been specifically and expressly delegated authority to make such representations pursuant to these

Contract Documents. Likewise Contractor has no right, and shall not rely on any representations of authorized changes in the contract of whatever size or nature unless such change is in writing and signed by Metro.

Nothing contained in this Paragraph shall obligate Metro or Engineer to supervise Contractor's work under this Contract and Contractor shall remain fully responsible for the complete and proper supervision of all of the Work.

- 3.2. Clarifications -- should it appear that the Work to be done or any of the matters relative to the Contract Documents are not sufficiently detailed or explained in the Contract Documents, or should there be any questions which may arise as to the meaning or intent of the Contract Documents, Contractor shall immediately submit to Metro a written Request for Clarification which shall fully describe the information sought. It is Contractor's responsibility to request information under this Paragraph in sufficient time for review by Engineer and Metro so that the orderly progress and prosecution of the Work is not delayed.

The Engineer, in consultation with Metro, shall interpret the meaning and intent of the Contract Documents and shall issue, within ten (10) working days of receiving a Request for Clarification from Contractor, a written Clarification describing such meaning and intent. Additionally, the Engineer, after consulting with Metro, may at any time issue written Clarifications as deemed necessary to carry out the Work included in the Contract Documents. Notwithstanding any dispute or disagreement which Contractor may have concerning any such Clarifications, Contractor shall perform the Work as prescribed and in accordance with all such Clarifications.

If notified by Metro that a Clarification is forthcoming, any related work done before the receipt of the Clarification shall be coordinated with Metro so as to minimize the effect of the Clarification on work in progress. Any related work not coordinated with Metro done before receipt of the Clarification shall be at Contractor's risk and at no cost to Metro if that work does not conform to the Clarification.

If Contractor proceeds with work which is not sufficiently detailed or explained in the Contract Documents without requesting and obtaining a Clarification pursuant to this Paragraph, Contractor shall do so at its own risk and shall, at no cost to Metro, perform any additional work which may be required by Metro to bring the work into conformance with the intent of the Contract Documents.

3.3. Contractor's Claims

3.3.1. Generally -- no claims of any sort whatsoever by Contractor shall be considered or allowed under this Contract except as specifically provided and prescribed under this Paragraph. Failure to make a claim as specifically prescribed by this Paragraph or failure to perform disputed work, if any, as directed by Metro shall bar Contractor from any recovery of any sort or extension of time resulting from the facts surrounding the claim. Contractor's full and complete compliance with this Paragraph shall be a condition precedent to any right of Contractor to further prosecute any claim against Metro arising out of or related to Work described in the Contract Documents. Every decision and action of Metro shall be considered final unless Contractor makes a claim concerning such decision or action pursuant to this Paragraph.

3.3.2. Types of Claims -- the types of claims which Contractor may make are limited to the following:

3.3.2.1 Claims based upon justifiable delays as described in Subparagraph 3.3.3

3.3.2.2. Claims based upon differing Site conditions as described in Subparagraph 3.3.4;

3.3.2.3. Claims based upon Clarifications or Change Orders issued by Metro or any other decision, action or failure to act by Metro as described in subparagraph 3.3.5.

As a condition precedent to any such claim, Contractor shall comply with all applicable procedural and substantive requirements of this Contract.

Contractor may make claims which include requests for extensions of the Contract Time and/or requests for increases in the Contract Amount. If Contractor believes that a single circumstance or set of facts gives rise to both a claim for an extension to the Contract Time and an increase in the Contract Amount, Contractor must state both such allegations in one written claim or waive the unstated allegation.;

3.3.3. Claims For Justifiable Delays

3.3.3.1. Definition of Justifiable Delay -- if Contractor is significantly and justifiably delayed in the prosecution of the Work due to any of the acts, events or conditions described as justifiable delays below, Contractor may make a claim for an increase in the Contract Time and/or Contract Amount pursuant to Clause 3.3.3.2.

"Justifiable Delay" shall mean, and is limited to, the acts, events or conditions described in sections (a) through (j) below, if such act, event or

condition has a materially adverse effect on the ability of Contractor to obtain the benefits of its rights or to perform its obligations under this Contract or materially increases the cost to Contractor to obtain the benefits of such rights or to perform such obligations and if such act, event or condition and its effect:

1. are beyond the reasonable control of Contractor (or any third party for whom Contractor is directly responsible);
2. do not arise out of (a) strikes, labor disputes or other labor difficulties involving Contractor or its Subcontractors or Suppliers or entities providing transportation to Contractor or its Subcontractors or Suppliers, (b) labor shortages, or (c) changing economic conditions; and
3. could not have been reasonably anticipated by Contractor.

..... The acts, events and conditions are:

- (a) An Act of God.
- (b) Inclement Weather.
- (c) Acts of a public enemy, war (whether or not declared) or governmental intervention resulting therefrom, blockage, embargo, insurrection, riot or civil disturbance.
- (d) The failure to issue or renew, or the suspension, termination, interruption or denial of, any permit, license, consent, authorization or approval essential to the Work, if such act or event shall not be the result of the willful or negligent action or inaction of Contractor, or of any third party for whom Contractor is directly responsible, and if Contractor shall be taking or have taken or shall cause to or have caused to be taken, all reasonable actions in good faith to contest such action (it being understood that the contesting in good faith of any such action shall not constitute or be construed as a willful or negligent act of Contractor).
- (e) The failure of any appropriate federal, state, municipal, county or other public agency or authority or private utility having operational jurisdiction over the Work or Site to provide and maintain utilities, services, water and sewer lines and power transmission lines to the Site, which are required for and essential to the Work.

- (f) Epidemics or quarantines.
- (g) Material, equipment or fuel shortages or freight embargoes.
- (h) Priorities or privileges established for the manufacture, assembly or allotment of material by order, decree, or otherwise of the U. S. or by any department, bureau, commission, committee, agent or administrator of any legally constituted public authority.
- (i) Changes in the work ordered by Metro if they require additional time to complete the work and adversely impact the Critical Path.
- (j) The prevention by Metro of Contractor from commencing or prosecuting the Work.

Acts, events, or conditions outside the control of the Engineer, Construction Manager, Metro or Contractor which are found to be justifiable delay under 3.3.3.1.3 (a) through (h), may result in a time extension but the risk for bearing the cost of extended overhead will remain with Contractor.

No claim for extension of the Contract Time will be considered for Inclement Weather unless Contractor submits documentation that such weather conditions are abnormal for the area and period of time in question; that they could not have been reasonably anticipated; and that the Inclement Weather had a significantly adverse effect on the Construction Schedule.

Delays in delivery of equipment or material purchased by Contractor or its Subcontractors or Suppliers (including Metro-selected equipment) shall not be considered as a just cause for delay if timely ordering would have made the equipment available. Contractor shall be fully responsible for the timely ordering, scheduling, expediting, delivery, and installation of all equipment and materials.

The term "delay" shall specifically not include and no extension of the Contract Time or increase in the Contract Amount shall be allowed for (i) any delay which could have been avoided by the exercise of care, prudence, foresight and diligence on the part of Contractor; (ii) any delay in the prosecution of parts of the Work, which may in itself be unavoidable but which does not necessarily prevent or delay the prosecution of other parts of the Work, nor the Substantial Completion of the Work of this Contract within the time specified; (iii) any reasonable delay resulting from the time required by Metro for review

of Submittals or Shop Drawings submitted by Contractor and for the making of surveys, measurements and inspections; (v) any delay arising from an interruption in the prosecution of the Work on account of the reasonable interference from Other Metro Contractors which does not necessarily prevent the Substantial Completion of the Work of this Contract within the time specified; and (vi) any delay resulting in any manner from labor disputes, strikes or difficulties or any delay resulting in any manner from any labor-related event, act or condition whether or not Contractor has any control over such event, act or condition.

3.3.3.2. Justifiable Delay Claims Procedure -- Contractor shall, within twenty-four (24) hours of the start of the occurrence or Contractor's first knowledge of the occurrence which is the basis of the claim for justifiable delay, which ever is earlier, notify Metro in writing of such delay. The written notice by Contractor shall indicate the cause of the delay and shall estimate the possible time extension requested. Within ten (10) days after the cause of the delay has been remedied, Contractor shall give written notice to the Construction Manager of any actual time extension and any increase in the Contract Amount requested as a result of the aforementioned occurrence in accordance with this Contract.

Within Twenty-one (21) days after Contractor submits to the Construction Manager such a written notice for an extension of time and/or increase in the Contract Amount, the Construction Manager will issue the decision on each request. If Contractor is dissatisfied with such decision, Contractor may preserve its claim as provided and prescribed by Subparagraph 3.3.6.

3.3.4. Claims for Differing Site Conditions -- Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Construction Manager of (i) subsurface or latent physical conditions at the Site which differ materially from those indicated in this Contract, or (ii) unknown physical conditions at the Site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

The Construction Manager shall investigate the Site conditions promptly after receiving the notice. If the conditions do materially so differ as to cause an increase or decrease in Contractor's cost of, or the time required for performing any part of the Work under this Contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made and a Change Order issued.

If Contractor is dissatisfied with the decision of the Construction Manager under this Subparagraph, Contractor may preserve its claim as provided and prescribed by Subparagraph 3.3.6.

3.3.5. Other Contractor Claims -- Contractor claims based upon Clarifications or Change Orders issued by Metro or any other decision, action or failure to act by Metro shall be made according to this Subparagraph.

Contractor shall, within twenty-four (24) hours following discovery of the facts which give rise to its claim, notify the Construction Manager in writing of its intent to make the claim. Within ten (10) days following discovery of the facts which give rise to its claim and prior to commencing the work or conforming to the Clarification on which the claim is based, if any, Contractor shall submit its formal written claim to the Construction Manager. Contractor's formal claim shall include a description of:

- 3.3.5.1. the factual occurrences upon which Contractor bases the claim including the decision, action or failure to act by Metro or its authorized representatives that allegedly give rise to the claim;
- 3.3.5.2. how Metro's decision, action or failure to act has affected Contractor's performance or otherwise affected Contractor;
- 3.3.5.3. whether the claim is for an extension in the Contract Time or increase in the Contract Amount or both and the specific extension or increase requested;
- 3.3.5.4.the provisions of the Contract upon which the claim is based.

Submission of written notice of intent to make a claim and formal claim as specified above shall be mandatory and failure to comply shall be a conclusive waiver to any claim by Contractor. Oral notice or statement will not be sufficient nor will notice or statement after commencing the work in question.

After the written notification is submitted by Contractor (if the claim is not resolved or withdrawn in writing) and only upon written direction by the Construction Manager, Contractor shall proceed without delay to perform the work pursuant to the direction of the Construction Manager. While the work on an unresolved claim is being performed, Contractor shall keep track of costs and maintain records in the manner set forth in the section on Force Account Work, at no cost to Metro. Such notice by Contractor and the fact that Contractor is keeping track of costs and maintaining records shall not in any way be construed as proving the validity of the claim nor the costs thereof.

Provided the claim or claims have been submitted in accordance with the requirements of this Article, the Construction Manager will consider and investigate the claim or claims of Contractor. Within twenty-one (21) days of receipt of the above-described written notification of claim the Construction Manager will advise Contractor of the Construction Manager's decision to accept

or reject the claim or claims, in full or in part. If Contractor is dissatisfied with the decision of the Construction Manager under this Subparagraph, Contractor may preserve its claim as provided and prescribed by Subparagraph 3.3.6.

- 3.3.6. Preservation of Claims -- Within thirty (30) days after a rejection of claim, in whole or in part, by Metro under Subparagraphs 3.3.3, 3.3.4 or 3.3.5, Contractor may preserve its claim by submitting a fully documented claim package to Jim Watkins, Manager, Engineering and Analysis Division, Solid Waste Department, Metro. That package shall include substantiating documentation with an itemized breakdown of Contractor and Contractor's Subcontractor's costs on a daily basis which shall include, but not be limited to, labor, material, equipment, supplies, services, Overhead and Profit. All documentation that Contractor believes is relevant to the claim shall be provided in the claim package including without limitation, payroll records, purchase orders, quotations, invoices, estimates, correspondence, profit and loss statements, daily logs, ledgers and journals. Failure to submit the claim package in full compliance with this requirement, and/or maintain cost records as herein required, will constitute a waiver of the claim.

If Contractor elects to pursue any claims by filing a lawsuit against Metro, it must commence such lawsuit within six (6) months after the date of Substantial Completion. Failure to commence a lawsuit within this time limitation shall constitute a waiver of all such claims by Contractor.

3.4. Metro's Right to Adjust Payments

- 3.4.1. Adjusted Payments for Delay -- Time is of the essence in this Contract. Metro and Contractor understand and agree that Metro will be damaged if Contractor fails to substantially complete the Work within the Contract Time, and that Metro will be vulnerable to further damages if Metro is obligated to continue paying Contractor for work performed after the Contract Time has expired. It is therefore agreed that after the Contract Time, Metro may adjust its payments to Contractor by any combination of the following : (1) making no further payments to Contractor until the Work is substantially complete, (2) paying the Subcontractor costs incurred by Contractor without any overhead, profit or fee of any kind going to Contractor, and/or (3) by collection of liquidated damages in the amount of five hundred dollars (\$500.00) per day.

Permitting Contractor to continue and finish the work or any part thereof after the Contract Time has expired shall in no way operate as a waiver on the part of Metro of any of its rights under this subparagraph or the balance of the Contract Documents.

- 3.4.2. Adjusted Payments Not a Bar to Metro's Right to Other Damages -- Payment of adjusted payments shall not release Contractor from obligations in respect to the complete performance of the Work, nor shall the payment of such adjusted

payments constitute a waiver of Metro's right to collect any additional adjusted payments which it may sustain by failure of Contractor to fully perform the Work, it being the intent of the parties that the aforesaid adjusted payments be full and complete payment only for failure of Contractor to complete the Work on time. Metro expressly reserves the right to make claims for any and all other damages which Metro may incur due to Contractor's failure to perform in strict accordance with this Contract.

- 3.5. Arbitration -- Both parties shall, in good faith, attempt to negotiate resolutions to all disputes arising out of this Contract. Subject to the conditions and limitations of this paragraph, any controversy or claim arising out of or relating to this Contract which remains unresolved after such negotiations shall be exclusively settled by arbitration under the laws of the state of Oregon, in accordance with the Commercial Arbitration Rules of the American Arbitration Association. All disputes shall be heard and decided by one arbitrator and all arbitration proceedings shall be held in Portland, Oregon. However, all disputes concerning Metro's right to the equitable remedy of specific performance shall not be subject to arbitration, but shall be decided exclusively by a court of competent jurisdiction in Multnomah County, Oregon, under the laws of the state of Oregon.

Contractor agrees to consolidation of any arbitration between Metro and Contractor with any other arbitration involving, arising from, or relating to this Contract.

In the event that Metro determines, in its sole opinion, that the public interest requires a speedy resolution of any controversy or claim regardless of the amount, Metro shall have the option of electing resolution of the controversy or claim by the Expedited Procedures of the Commercial Arbitration Rules of the American Arbitration Association (Rules 54 through 58).

In no event shall submission of a dispute arising out of this Contract, by either party, relieve Contractor of its obligation to fully perform the requirements of the Contract as directed by Metro, pending resolution of the dispute pursuant to the procedures set forth in this Article. In the event Contractor, in Metro's opinion, fails to fully perform the requirements of the Contract pending resolution of a dispute, Metro shall be entitled to exercise its rights to impose adjusted payments pursuant to Subparagraph 3.4.1, and/or terminate the Contract pursuant to Article 15 of this Contract.

Each party hereto and Contractor's Surety accepts jurisdiction of the courts of the state of Oregon for the purposes of commencing, conducting and enforcing such arbitration proceedings and agrees to accept notice in writing sent by certified letter addressed to said party of intention to proceed with arbitration and of any other step in connection therewith or enforcement thereof, with the same effect as though personally served therewith in the state of Oregon. The decision of the arbitrator shall be final and binding upon both parties and Contractor's Surety who hereby agree to comply therewith. The parties agree that proper venue for any judicial proceeding to enforce any decision or award made by an

arbitrator under this section shall be exclusively in the county of Multnomah in the state of Oregon.

ARTICLE 4 SUBCONTRACTING AND ASSIGNMENT OF THE CONTRACT

- 4.1. Contractor's Responsibility for the Work -- Contractor shall perform or cause to be performed all labor, services and work of whatever nature and shall provide or cause to be provided all materials, equipment, tools and other facilities of whatever nature necessary to complete the Work and shall otherwise cause the Work to be completed in accordance with the Contract Documents.

Contractor shall take and assume all risk for all work and material involved in the Project until the entire Project has been finally accepted by Metro.

Contractor shall supervise and direct the Work, using Contractor's best skill and attention. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters.

- 4.2. Subcontracting -- Contractor shall arrange and delegate its work in conformance with trade practices and union regulations, if applicable, but shall remain responsible to Metro for performance of all work required or implied by the Contract Documents. Contractor shall also be responsible for coordinating the efforts of its Subcontractors and Suppliers.

- 4.2.1. Objection to Subcontractors or Suppliers -- Metro reserves the right to make reasonable objection to any of Contractor's Subcontractors or Suppliers if Metro discovers any data or information at any time during the performance of the Contract which gives Metro a basis for such reasonable objection.

Metro will notify Contractor in writing if Metro has any reasonable objection to any of Contractor's Subcontractors or Suppliers. Contractor shall not subcontract with any Subcontractor or Supplier to which Metro has made a reasonable objection. In the event of Metro's reasonable objection to any Subcontractor or Supplier, Contractor shall propose another entity to which Metro has no reasonable objection. The Contract Amount shall not be increased by any difference in cost occasioned by such substitution, nor shall the Contract Time be extended.

- 4.2.2. Substitution, Change or Addition of Subcontractors or Suppliers -- At any time that Contractor intends to substitute, change or add a Subcontractor or Supplier during the performance of the Contract, Contractor shall give Metro prior written notice of such intention. Contractor shall not substitute, change or add any such Subcontractor or Supplier if Metro gives Contractor reasonable objection in writing within ten (10) days after Metro receives such notice.

When any Subcontractor fails to prosecute a portion of the Work in a satisfactory manner, Metro may so notify Contractor. If the Subcontractor fails to cure the unsatisfactory work promptly, Contractor shall remove such Subcontractor immediately upon written request of Metro and Contractor shall request approval from Metro of a new Subcontractor to perform this section of the Work at no increase in the Contract Amount, and with no change in the Contract Time.

4.2.3. Metro Not Obligated to Detect Unsatisfactory Work -- Nothing contained in this Contract shall obligate Metro or place on Metro an affirmative duty to detect or discover unsatisfactory work or materials of Contractor's Subcontractors or Suppliers. Failure of Metro to detect or discover such unsatisfactory work or materials shall not relieve Contractor of any of its obligations under this Contract.

4.2.4. No Contractual Relationships Between Metro and Contractor's Subcontractors and Suppliers --Nothing contained in this Contract is intended nor shall be construed to create any contractual or third-party beneficiary relationship between Metro and any of Contractor's Subcontractors, Suppliers or agents, save and except in relation to the Labor and Materials Payment Bond .

4.2.5. Contractor's Agreements with Subcontractors -- Contractor shall provide in all subcontract and supply agreements that the Subcontractor or Supplier will be bound by the terms and conditions of this Contract to the extent that they relate to the Subcontractor's or Supplier's work. Where appropriate, Contractor shall require each Subcontractor to enter into similar agreements with sub-tier Subcontractors and Suppliers. Contractor shall make available to each proposed Subcontractor and Supplier, prior to the execution of the subcontract or supply agreement, copies of the Contract Documents which apply to the work and materials to be provided by the Subcontractor or Supplier. Subcontractors and Suppliers shall similarly make copies of applicable portions of such documents available to their respective proposed sub-tier Subcontractors and Suppliers.

All Subcontractor's and Supplier's agreements shall also provide that they are assignable to Metro at Metro's option, in the event that Metro terminates the Contract. Contractor will provide to Metro, a copy of all subcontracts and supply contracts for permanent materials.

Nothing contained in this Subparagraph shall be construed as creating a direct or indirect contractual relationship between Metro and any of Contractor's Subcontractors or Suppliers. No such Subcontractor or Supplier shall have, or shall claim to have, any third-party beneficiary rights or status in relations to this Contract, save and except in relation to the Labor and Materials Payment Bond provided by Contractor.

- 4.3. Assignment -- Contractor shall constantly give its personal attention to the faithful prosecution of the Work. Contractor shall keep the Work under its personal control and shall not assign any or all of Contractor's rights, by power of attorney or otherwise, nor delegate any of its duties except with the prior written approval of the Metro Council.

ARTICLE 5 TIME OF COMPLETION AND SCHEDULE FOR THE WORK

- 5.1. Prosecution of Work Generally -- Contractor shall commence the Work within ten (10) days after issuance of written Notice to Proceed from Metro and will diligently prosecute the Work to its Final Completion and Acceptance. The start of Work shall include attendance at preconstruction conferences, preparation and submittal of shop drawings, equipment lists, Schedule of Values, CPM construction schedules, requests for substitutions and other similar activities, as described by these Contract Documents.

- 5.2. Time of Completion -- Contractor shall bring the Work to Substantial Completion within the Contract Time as set forth in the Construction Agreement.

The time limits stated in these Contract Documents are of the essence of this Contract. By executing the Construction Agreement, Contractor confirms that the Contract Time is a reasonable period for performing all of the Work.

Failure of Contractor to substantially complete the Work within the Contract Time and according to the provisions of these Contract Documents shall subject Contractor to damages pursuant to the applicable sections of these Contract Documents.

- 5.3. Extensions of Time -- Extensions of the Contract Time shall be made pursuant to the procedure and according to the provisions and requirements contained in Articles 3 and 8 of these Contract Documents.

- 5.4. Project Scheduling -- Contractor shall submit to Metro a detailed Construction Schedule for completion of the work pursuant the Specifications. The Construction Schedule shall, when approved and as updated and approved by Metro, become a part of the Contract Documents.

- 5.5. Use of Completed Parts of the Work Before Acceptance -- Whenever, in the opinion of Metro, the Work or any part thereof is in a condition suitable for use and it is in the best interest of Metro to require such use, Metro may take possession of, connect to, open for public use, or use the Work or a part thereof. When so used, maintenance and repair due to ordinary wear and tear or vandalism will be made at Metro's expense and Metro will defend liability claims which may result from such use by Metro. The use by Metro of the Work or part thereof as contemplated in this Paragraph shall in no case be construed as constituting acceptance of the Work or any part thereof. Such use shall neither relieve Contractor of any of its responsibilities under the Contract Documents, nor act as a waiver by Metro of any of the conditions thereof.

ARTICLE 6 COORDINATION WITH OTHER METRO CONTRACTORS

- 6.1. Other Metro Contractors Generally -- Metro reserves the right to award other contracts in connection with the work. Contractor shall afford all such Other Metro Contractors reasonable opportunity for storage of their materials and execution of their Work, shall provide that the execution of Contractor's Work properly connects and coordinates with work of all Other Metro Contractors, and shall cooperate with Other Metro Contractors to the end of facilitating the Work in such a manner as Metro may direct. Connection between the work of the Contractor and other Metro Contractors will be the responsibility of the party which is last in time to construct, unless otherwise directed in the Contract Documents.
- 6.2. Duty to Inspect Other Metro Contractors' Work -- Where Contractor's Work is associated with that of Other Metro Contractors, or is to interface in any way with such Other Metro Contractor's work, Contractor shall examine, inspect and measure the adjacent or in-place work of such Other Metro Contractors. If Contractor determines that any defect or condition of such adjacent or in-place work will impede or increase the cost of Contractor's performance or otherwise prevent the proper execution of Contractor's Work, Contractor shall immediately, and before performing any work affected by the Other Metro Contractors' work, submit a Request for Clarification to Metro pursuant to Paragraph 3.2. If Contractor proceeds without examining or inspecting the work and submitting a Request for Clarification, Contractor shall be held to have accepted the Other Metro Contractors' work or material and the existing conditions, and shall be responsible for any defects in Contractor's Work resulting therefrom and shall not be relieved of any obligation or any warranty under this Contract because of any such condition or imperfection. This provision shall be included in any and all of Contractor's subcontracts for Work to be performed.
- The foregoing does not apply to latent defects. Contractor shall report latent defects in any Other Metro Contractors' work at any time such defects become known or Contractor should have known, and Metro shall promptly thereafter take such steps as may be appropriate. If Contractor in the exercise of reasonable care should have known of such defects but did not report them, such defects shall not be considered latent.
- 6.3. Duty to Maintain Schedule -- It shall be the responsibility of Contractor to maintain its schedule so as not to delay the progress of the Project or the work of Other Metro Contractors. Contractor is required to cooperate in every way possible with Other Metro Contractors. Except as otherwise specifically provided in this Contract, no additional compensation will be paid for such cooperation. If Contractor delays the progress of the Project or the progress of Other Metro Contractors, it shall be the responsibility of Contractor to take all of the steps necessary to bring the affected work into compliance with any affected schedules and to indemnify Metro from all liability for such delays pursuant to Article 11.

Metro shall be under no duty to monitor or detect any delays of Contractor or any Other Metro Contractor on the Project or any lack of coordination on the Project. Consequently, the failure of Metro to so monitor or detect shall not be construed as relieving Contractor of its duties to fully perform all of its obligations under the Contract.

6.4. Failure to Maintain Schedule -- If, in the opinion of Metro, Contractor falls behind the Construction Schedule or delays the progress of Other Metro Contractors and is not entitled to an extension of time pursuant to the Contract Documents, Contractor shall perform all steps which are necessary, in the opinion of Metro, to bring Contractor's Work into compliance with the Construction Schedule or to remedy any delay to the progress of Other Metro Contractors. Contractor shall submit operation plans to Metro, which plans shall fully demonstrate the manner of intended compliance with this Paragraph. The steps referred to above shall include, but not be limited to:

6.4.1. Increase manpower in such quantities and crafts as will substantially eliminate the backlog of work.

6.4.2. Increase, when permitted, the number of working hours per shift, shifts per working day, working days per week, or the amount of equipment or any combination of the foregoing, sufficient to eliminate the backlog of work.

6.4.3. Reschedule activities to achieve maximum practical concurrence of accomplishment of activities.

6.4.4. Expedite delivery of materials and equipment such as use of air freight.

If Metro directs Contractor to take measures described in this Paragraph, or if Contractor takes such measures without direction from Metro, Contractor shall bear all costs of complying. Metro shall, however, reimburse Contractor for reasonable costs of complying if such directive to accelerate from Metro was issued to overcome delay caused by the acts or omissions of Metro or persons acting for Metro, provided Contractor has complied with all applicable provisions of Articles 3 and 8 of this Contract.

Failure to maintain the construction schedule or to take action to regain the schedule or to furnish a schedule as outlined in the specifications may result in withholding of all or part of the monthly progress payments.

6.5. Failure to Coordinate Work -- If Contractor fails to coordinate its work with the work of Other Metro Contractors as directed by Metro, Metro may, upon written notice to Contractor:

6.5.1. Withhold any payment otherwise due hereunder until Contractor complies with Metro's directions.

- 6.5.2. Direct others to perform portions of the affected Work and charge the cost of such Work against the Contract Amount or deduct the cost from sums held in Retainage.
- 6.5.3. Terminate any or all portions of the Work for Contractor's failure to perform in accordance with the Contract.
- 6.6. Other Metro Contractors' Failure to Coordinate -- If Contractor determines that any Other Metro Contractor on this Project is failing to coordinate its work with the Work of Contractor, Contractor shall immediately and before performing any affected Work submit a Request for Clarification to Metro pursuant to Paragraph 3.2.
- 6.7. Conflicts Among Contractors -- Any difference or conflict that may arise between Contractor and Other Metro Contractors in regard to their work shall be adjusted as determined by Metro. If directed by Metro, Contractor shall suspend any part of the Work specified or shall carry on the same in such manner as may be prescribed by Metro when such suspension or prosecution is necessary to facilitate the work of Other Metro Contractors.
- 6.8. Coordination Drawings -- Contractor shall prepare coordination drawings as determined necessary by Metro, to satisfactorily coordinate and interface its Work with the work of all Other Metro Contractors, thereby avoiding conflicts which may arise.
- 6.9. Conferences -- At any time during the progress of the Work, Metro shall have authority to require Contractor to attend any conference of any or all of Contractors engaged in the Project or related projects.

ARTICLE 7 CONTROL AND QUALITY OF WORK AND MATERIAL

7.1. Quality Control

- 7.1.1. Generally -- Contractor has the primary responsibility for quality control. Contractor will provide continuous superintendence and inspection to insure that the work is completed in accordance with the plans and specifications, Additionally, during the performance of the Work, Metro, the Engineer, and Special Inspectors, or any other persons deemed necessary by any of them acting within the scope of the duties entrusted to them, including representatives of federal, state, and local agencies having jurisdiction over the Work, may at any time, and for any purpose, enter upon the Site, the shops where any part of such Work may be in preparation, or the factories or sites where any materials for use in the Work are being or are to be manufactured or derived. Contractor shall provide proper and safe facilities therefor, and shall make arrangements with manufacturers or other suppliers to facilitate inspection of their processes and products to such extent as Metro's interest may require.

No claims for extension of the Contract Time or increase in the Contract Amount shall be allowed for any access allowed to Metro under this Paragraph.

- 7.1.2. **Quality Control Plan** -- Contractor shall prepare and submit to the Construction Manager within thirty (30) days following Notice to Proceed a Quality Control Plan which describes Contractor's procedures for implementing the Quality Control Program. The Plan shall include, but not be limited to, the Quality Control Organization, inspection procedures, tests anticipated, materials control, contingency plans related to fire protection and remediation of contaminated releases or other environmental improvement, and reports. Metro reserves the right to accept or reject or modify the Quality Control Plan. Contractor will submit an interim Quality Control Plan prior to the start of work to cover the first thirty (30) days of construction.
- 7.1.3. **Quality Control Manager** -- Prior to initiation of construction Contractor shall designate in writing a Quality Control Manager who shall be responsible for coordinating Contractor's Quality Control Program. The individual so designated shall be the interface with the Construction Manager on matters relating to submittals, inspection, scheduling, unacceptable work product and corrective actions. Metro reserves the right to accept or reject the Quality Control Manager designated by Contractor.
- 7.2. **Inspection** -- Contractor has the primary responsibility for providing inspection and testing, except as otherwise set forth in the specifications. Metro and its agents will also inspect at their discretion or as outlined in the specifications.
 - 7.2.1. **Generally** -- Contractor shall at all times commencing with the issuance of the Notice to Proceed until Final Completion and Acceptance of the Work, permit Metro, the Engineer, and Special Inspectors, or any other persons deemed necessary by any of them acting within the scope of the duties entrusted to them, including representatives of federal, state, and local agencies having jurisdiction over the Work, to visit and monitor the progress of the Work for conformance of the Work with the Contract Documents.
 - 7.2.2. **Special Inspections** -- Contractor shall at all times, commencing with the issuance of the Notice to Proceed until Final Completion and Acceptance of the Work, permit Metro, the Engineer, and Special Inspectors, or any other persons deemed necessary by any of them acting within the scope of the duties entrusted to them, including representatives of federal, state, and local agencies having jurisdiction over the Work, to visit and inspect the Work, the materials and the manufacture and preparation of such materials, and subject the Work and materials to inspection and testing to determine if the Work conforms to the requirements of the Contract Documents. Contractor shall maintain proper facilities and safe access for all such inspections. Where the Contract requires work to be inspected

or tested, it shall not be covered up until inspected, tested and approved by Metro. Contractor shall be solely responsible for notifying Construction Manager at least two (2) working days prior to performing such work, so that necessary arrangements for inspection and testing can be made. Should any work be covered without such inspection or test and approval, it shall be uncovered and repaired at Contractor's expense.

- 7.2.3. Notice to Metro for Certain Work Days -- Whenever Contractor intends to perform work on Saturday, Sunday or any legal holiday, it shall give written notice to Metro of such intention at least two (2) working days prior to performing such work, or such other period as may be specified by Metro, so that Metro may make the necessary arrangement for testing and inspection.
- 7.2.4. Correction of Defective Work Before Acceptance -- Any defective work or work which otherwise fails to conform to the Contract Documents, which is discovered before Final Completion and Acceptance of the Work, shall be corrected immediately by Contractor, and any unsatisfactory materials shall be rejected and replaced with satisfactory materials, notwithstanding that they may have been overlooked by the authorized inspector. The inspection of the Work by Metro, the Engineer or any other agency shall not relieve Contractor of any of its obligations to perform fully all of the terms and provisions of the Contract Documents.
- 7.2.5. Acceptance Not Implied by Failure to Object -- Failure or neglect on the part of Metro or any of its authorized representatives to condemn or reject defective, improper or inferior work or materials shall not be construed to imply a final acceptance of such work or materials and shall not be construed as relieving Contractor of its duties to perform fully all requirements of the Contract Documents.

7.3. Unsatisfactory Materials and Workmanship

- 7.3.1. Generally -- Material, work or workmanship which, in the opinion of the Construction Manager, does not conform to the Contract Documents, or is not equal to the samples submitted to and approved by the Construction Manager, or is in any way unsatisfactory or unsuited to the purpose for which it is intended, will be rejected. Contractor shall bear the cost of correcting or removing as deemed necessary by Metro, all non-conforming materials, work or workmanship. Contractor shall make a close inspection of all materials as delivered, and shall promptly replace all defective materials with conforming materials without waiting for their rejection by Metro.
- 7.3.2. Removal of Rejected or Non-Conforming Work or Material -- All rejected material or work, and all defective or non-conforming work or material, shall be removed from the Site without delay. If Contractor fails to do so within forty-eight (48) hours after having been so directed by Metro, the rejected material may be

removed by Metro and the cost of removal charged against Contractor and deducted from Retainage held by Metro or offset against payments due Contractor, at Metro's option.

If in the judgment of Metro it is undesirable or impracticable to replace any defective or non-conforming work or materials, the compensation to be paid to Contractor shall be reduced by Change Order or Force Account, as applicable, by such amount as, in the judgment of Metro, shall be equitable.

- 7.4. General Warranty of Contractor -- Contractor warrants to Metro that materials and equipment provided under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects and contaminants not inherent in the quality required or permitted, and that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear under normal usage. If required by Metro, Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

The warranty made by Contractor under this Paragraph shall be in addition to any other specific warranties and certifications required elsewhere in these Contract Documents.

- 7.5. Correction of Work by Contractor -- Contractor shall be responsible for and shall promptly correct or replace any defective Work, whether due to faulty or contaminated materials or errors in workmanship, or Work failing to conform to the requirements of the Contract Documents which may be discovered or which may develop within one (1) year after the date of Substantial Completion or within such longer period as is specified below or otherwise in these Contract Documents.

In the case of equipment manufactured by others and supplied and/or installed by Contractor, the one (1) year period shall commence upon the date of first beneficial operation of such equipment by Metro. In the case of Work which is corrected or replaced by Contractor, the one (1) year period shall commence again on the date of acceptance by Metro of such corrected or replaced Work. Testing shall not be construed to mean acceptance.

If Metro does not require correction or replacement of defective Work or Work failing to conform to the Contract Documents, Contractor, if required by Metro, shall repay to Metro such portion of the Contract Amount as is equitable under the circumstances, as determined by Metro.

Contractor's responsibilities under this Paragraph shall not extend to correction or replacement of defects which are attributable to mistreatment by Metro or to normal wear and tear.

7.6. Warranty and Correction Agreements by Subcontractors

7.6.1. Generally -- In addition to any requirements for written warranties required by the Specifications, Contractor shall require all of its Subcontractors and Suppliers of any tier to make the same warranty to Metro as Contractor makes under Paragraph 7.4. Contractor shall also require all of its Subcontractors and Suppliers of any tier to agree to correct or replace defective Work or Work not conforming to the Contract Documents, and to take full responsibility for defective materials, in the same manner as Contractor agrees to correct or replace such Work under Paragraph 7.5.

7.6.2. Form of Submissions -- Contractor shall require all of its Subcontractors and Suppliers of any tier to sign documents evidencing the promises made pursuant to Subparagraph 7.6.1 above and shall submit such documents to Metro with its request for Final Payment. Such documents shall be signed by both Contractor and the applicable Subcontractor or Supplier and shall be in the following form:

"We the undersigned hereby warrant that the _____

(described work performed and/or materials provided)

which we have provided for the reroofing and ventilation improvements at Metro South has been done in accordance with the Contract Documents and that the work as provided will fulfill the requirements of the warranty included in Article 7 of the Contract Documents.

"We agree to correct or remove and replace any or all of our work, together with any other adjacent work which may be displaced or affected by so doing, that may be defective in its workmanship or materials or which may fail to conform to the requirements of the Contract Documents within a period of one (1) year following the applicable date described in Paragraph 7.5 without any expense whatsoever to Metro, normal wear and tear and mistreatment excepted.

"In the event of our failure to comply with the above-mentioned conditions within twenty (20) calendar days after Metro notifies Contractor in writing, we collectively and separately do hereby authorize Metro to proceed to have said defects repaired and corrected at our expense and we will honor and pay the costs and to dispose of nonconforming materials and charges therefore upon demand."

7.7. Remedies Not Restrictive -- The remedies provided for in this Article shall not be restrictive of but shall be cumulative and in addition to all other remedies of Metro in respect to latent defects, frauds or failure to perform all work as required by the Contract Documents.

7.8. Proof of Compliance with Contract Provisions -- For Metro to determine whether Contractor has complied or is complying with the requirements of the Contract which are not readily enforceable by inspection and test of the Work, Contractor shall, upon request, promptly submit to Metro such properly authenticated documents as may be necessary to demonstrate compliance with the Contract or other satisfactory proof of its compliance with such requirements.

7.9. Patents, Copyrights, Trademarks -- All fees or costs of claims for any patented invention, article or arrangement or any copyrights or trademarks that may be used upon or in any manner connected with the performance of the Work or any part thereof, shall be included in the Bid for doing the Work. Contractor shall save, keep, hold harmless, and fully

indemnify Metro and Engineer from all damages, claims for damage, lawsuits, costs, expenses or liabilities of whatever nature in law or equity, including attorney's fees and court costs, which may at any time arise or be set up for any infringement of the patent rights, copyrights or trademarks of any person or persons in consequence of the use by Metro of articles to be supplied under the Contract and of which Contractor is not the patentee or assignee or has not the lawful right to sell the same. This is in addition to all other hold harmless and indemnification clauses in these Contract Documents.

- 7.10. Anti-Trust Claims -- By entering into this Contract, Contractor, for consideration paid to Contractor under the Contract, does irrevocably assign to Metro any claim for relief or cause of action which Contractor now has or which may accrue to Contractor in the future, including, at Metro's option, the right to control any such litigation on such claim for relief or cause of action, by reason of any violation of 15 USC Section 1-15, ORS 646.725 or ORS 646.730, in connection with any goods or services that are used, in whole or in part, for the purpose of carrying out Contractor's obligations under this Contract.

Contractor shall require all Subcontractors and Suppliers to irrevocably assign to Metro, as a third party beneficiary any right, title or interest that has accrued or may accrue to the Subcontractors or Suppliers by reason of any violation of 15 USC Section 1-15, ORS 646.725 or ORS 646.730, including, at Metro's option, the rights to control any litigation arising thereunder, in connection with any goods or services provided to the Subcontractors or Suppliers by any person, in whole or in part, for the purpose of carrying out the Subcontractors' or Suppliers' obligations as agreed to by Contractor in pursuance of the completion of the Contract.

In connection with Contractor's, Subcontractors' or Suppliers' assignment, it is an express obligation of Contractor, Subcontractor or Supplier that it will take no action which will in any way diminish the value of the rights conveyed or assigned hereunder to Metro. It is an express obligation of Contractor, Subcontractor or Supplier to advise the General Counsel of Metro:

- 7.10.1. In advance, of its intention to commence any action on its own behalf regarding such claims for relief or causes of action;
- 7.10.2. Immediately, upon becoming aware of the fact that an action has been commenced on its own behalf by some other person or persons, of the pendency of such action; and
- 7.10.3. The date on which it notified the obligor(s) of any such claims for relief or causes of action of the fact of its assignment to Metro.

Furthermore, it is understood and agreed that in the event that any payment under any such claim is made to Contractor, Subcontractor or Supplier, it shall promptly pay over to Metro its proportionate share thereof, if any, assigned to Metro hereunder.

ARTICLE 8 CHANGES IN THE WORK

- 8.1. Change Orders Generally -- Metro may order changes in the Work herein required, including deletions of work, and may order additional materials and work in connection with the performance of the Work.

If such changes in the Work increase or decrease the cost of any part of the Work or change the time necessary to complete the Work, the Contract Amount shall be increased or decreased by such amount and the Contract Time changed as Contractor and Metro may agree upon as reasonable in a written Change Order. Contractor shall promptly comply with such Change Orders and carry them out in accordance with the Contract Documents.

No order for any alteration, modification or additional work which shall increase or decrease the Contract Amount or change the Contract Time shall become part of the Contract unless the resulting Change Order shall have been agreed upon in writing and the Change Order signed by Contractor and Metro, unless the work is Force Account work. Metro may, at its discretion, also require the signature of Contractor's surety on the Change Order. Prior to the approval of such Change Order, the Engineer shall have approved any design modifications entailed thereby.

- 8.2. Procedure for Determining Impact of Change Orders on Contract Amount

8.2.1. Price before Proceeding -- If Metro intends to order changes in the Work, it may request a proposal by Contractor for the proposed added or deleted work before directing Contractor to commence work. Within fourteen (14) days after issuance of such request by Metro, Contractor shall furnish three copies of a complete breakdown of costs of both credits and additions directly attributable to the change in the Work proposed, itemizing materials, labor, taxes, affect on Contract Time, if any, and Overhead and Profit on a form approved by Metro and in accordance with the limitations described in the following Paragraph. Subcontract work shall be so indicated and written proposals from Subcontractors or Suppliers shall be included with similar breakdowns provided. Following submission of its cost breakdown, Contractor shall meet with Metro to discuss all aspects of scope, costs, scheduling and construction methods.

8.2.2. Proceed While Pricing -- If Metro finds it necessary to make changes in the Work in an expeditious manner, it may direct Contractor to proceed with the change while preparing a proposal for the added or deleted Work. In such an instance, Metro may assign an estimated value to the change which Contractor shall not exceed without further authorization by Metro. Within fourteen (14) days after issuance of such by Metro, Contractor shall furnish three copies of a complete breakdown of costs of both credits and additions directly attributable to the change in the Work proposed, itemizing materials, labor, taxes, affect on Contract Time, if

any, and Overhead and Profit on a form approved by Metro and in accordance with the limitations described in the following Paragraph. Subcontract work shall be so included with similar breakdowns provided. Following submission of its cost breakdown, Contractor shall meet with Metro to discuss all aspects of scope, costs, scheduling and construction methods.

8.2.3. Unit Prices -- If the proposed additional or deleted work is the subject of Unit Prices stated in the Contract Documents or subsequently agreed upon, such Unit Prices shall be binding upon Contractor in calculating the increase or decrease in the Contract Amount attributable to the proposed additional or deleted work.

8.3. Limitations when Change Orders Impact Contract Amount-- The following limitations shall apply in the calculation of the costs of changes in the Work:

8.3.1. Overhead and Profit -- Contractor will be permitted a reasonable allowance for Profit and Overhead on its increased Direct Cost resulting from any changes in the Work ordered by Metro. Likewise, Profit and Overhead will be deducted for any portion of the Work which is deleted. In the case of a change involving both credits and extras, Overhead and Profit shall be applied to the net extra after subtraction of credits.

Overhead and Profit for the entity performing the work with its own crews shall not exceed 10 percent of the Direct Cost of the changed work.

Overhead and Profit for Contractor or Subcontractor who has had the work performed by a lower tier Subcontractor shall not exceed ten percent of the Direct Cost of the changed work.

If the Work is performed by a second-tier or inferior Subcontractor, the total Overhead and Profit for all tiers shall in no event exceed 25 percent of the Direct Cost of the changed work. Distribution of this Overhead and Profit among the tiers is the responsibility of Contractor.

8.3.2. Taxes and Insurance -- Federal, state, regional, county and local taxes, including, but not limited to, income taxes, excise taxes, sales and use taxes and payroll taxes and insurance shall be shown separately and will be allowed on extras and shall be credited on credits. No Overhead and Profit will be allowed on taxes and insurance.

8.3.3. Bond Premiums -- The actual rate of bond premium as paid on the additional Direct Cost plus the cost of taxes defined in 8.3.2 will be allowed. No Overhead and Profit will be allowed on such premiums.

8.3.4. Equipment Costs -- The allowance for equipment costs (both rental as well as Contractor-owned equipment) shall be limited to those rates in the Rental Rate

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- 8.4. Force Account Work -- If Contractor does not respond to Metro's Request for Proposal with a cost breakdown within the fourteen (14) day period as required above, or if Metro determines that Contractor's breakdown of costs is unreasonable in consideration of the work proposed to be added or deleted, or if Metro determines that the proposed work must be commenced promptly to avoid delay to the Project, Metro may issue an order for Force Account work and Contractor shall promptly perform or delete the work described in such order. Change, if any, in the Contract Amount due to such Force Account work shall be the sum total of the following items:
- 8.4.1. Actual labor cost, including premium on compensation insurance and charge for social security taxes, and other taxes pertaining to labor.
 - 8.4.2. The proportionate cost of premiums of public liability property damage and other insurance applicable to the extra work involved and required by these Contract Documents.
 - 8.4.3. Actual cost of material, including applicable taxes pertaining to materials.
 - 8.4.4. Actual cost of plant and equipment rental, at rates to be agreed upon in writing before the work is begun or at rates per Subparagraph 8.3.4 above. No charge for the cost of repairs to plant or equipment will be allowed. Equipment items having a capital cost of under \$250.00 are considered small tools and classified as Overhead.
 - 8.4.5. Overhead and Profit as provided and limited in Paragraph 8.3.
 - 8.4.6. The proportionate actual costs of premiums for bonds required by these Contract Documents.

Whenever any Force Account work is in progress, Contractor shall furnish each working day to Metro a detailed written report signed by Contractor of the amount and cost of all of the items listed in (1) through (6) above, and no claim for compensation for such extra work will be allowed unless such report shall have been made. Metro reserves the right to provide such materials as it may deem expedient and no compensation, overhead or profit will be allowed to Contractor for such materials.

- 8.5. Oral Modifications -- No oral statement of any person whomsoever shall in any manner or degree modify or otherwise affect the terms of this Contract.
- 8.6. Contractor Proposals for Changes in Work

- 8.6.1. Generally -- At any time during the performance of the Work, Contractor may propose to Metro changes in work which Contractor believes will result in higher quality work, improve safety, shorten the Contract Time, decrease the Contract Amount, or otherwise result in better or more efficient work.
- 8.6.2. Purpose -- Metro encourages Contractor to submit Value Engineering Change Proposals (VECPs) in order to avail Metro of potential cost saving that may result. Contractor and Metro will share any savings, computed in accordance with instructions herein. Contractor is encouraged to submit VECPs whenever he identifies an area which can be improved, using the format described herein.
- 8.6.3. Application -- This clause applies to a contractor developed and documented VECP which: (1) requires a change to this Agreement to implement the VECP; and (2) reduces the Contract Price without impairing essential functions or characteristics of the Work, provided it is not based solely on a change in specified quantities.
- 8.6.4. Documentation -- At a minimum, the following information shall be submitted by Contractor with each VECP: (1) description of the existing requirements of the Contract Documents which are involved in the proposed change; (2) description of the proposed change; (3) discussion of differences between existing requirements and the proposed change, together with advantages and disadvantages of each changed item; (4) itemization of the requirements which must be changed if the VECP is accepted (e.g., Drawing numbers and Specifications); (5) justification for changes in function or characteristics of each such affected item and effect of the change on the performance of the end item; (6) effect of proposed change on life-cycle costs, including operation and maintenance, replacement costs, and life expectancy; (7) date or time by which a Change Order adopting the VECP must be issued in order to obtain the maximum cost reduction, noting any effect on Contract Time or delivery schedule; and (8) cost estimate for existing contract requirements correlated to his lump sum breakdown and proposed changed requirements. Costs of development and implementation by Contractor shall be identified. Estimated Metro costs (e.g., cost of testing and redesign) shall also be identified.
- 8.6.5. Submission --Proposals will be processed expeditiously; however, Metro will not be liable for any delay in acting upon any proposal submitted pursuant to this clause. Contractor shall have the right to withdraw, in whole or in part, any VECP at any time prior to acceptance by Metro.
- 8.6.6. Acceptance -- Metro may accept, in whole or in part, by Change Order, any VECP submitted pursuant to this clause. Until a Change Order is issued, Contractor shall remain obligated to perform in accordance with this Agreement. The decision as to acceptance or rejection of any VECP will be at the sole discretion of Metro and will be final and not subject to review by arbitration or otherwise.

- 8.6.7. Sharing -- If a VECP submitted by Contractor pursuant to this clause is accepted, Contractor shall proceed with the change and the Contract Price will be adjusted in accordance with the following provisions:

Definitions

- 8.6.7.1. Estimated Gross Savings to Contractor (GS): The difference between cost of performing the Work according to the existing requirement and the cost if performed according to the proposed change. In each instance, Contractor's profit shall not be considered part of the cost.
- 8.6.7.2. Contractor Costs (CC): Reasonable costs incurred by Contractor in preparing the VECP and making the change such as cancellation or restocking charges where required.
- 8.6.7.3. Estimated Net Savings to Contractor (NS): Gross savings (GS) less Contractor costs (CC).
- 8.6.7.4. Metro's Costs (OC): Reasonable costs incurred by Metro for evaluating and implementing the VECP, such as testing and redesign, where required.

Calculations

- 8.6.7.5. The Contract Price shall be reduced by an amount equal to 50 percent of (NS) plus 50 percent of (OC), expressed by the formula:

$$\text{Reduction} = 0.5 (\text{NS}) + 0.5 (\text{OC}).$$

- 8.6.7.6. Contractor's profit will not be reduced by application of the VECP.
- 8.6.8. Subcontracts -- Contractor shall include appropriate value engineering incentive provisions in all subcontracts of \$25,000 or greater. He may include such provisions in any Agreement. Subcontracts shall contain a provision that any benefits accruing to Contractor as a result of an accepted VECP initiated by a Subcontractor shall be shared by Contractor and Subcontractor. To compute any adjustment in the Contract Price under Paragraph 6.45 above, Contractor's costs of preparation and charge for a VECP shall include any preparation and change costs. Examples are cancellation or restocking charges when required.
- 8.6.9. Disclosure Restrictions -- Contractor may restrict Metro's right to use any sheet of a VECP or of the supporting data submitted pursuant to this clause, in accordance with the terms of the following legend if it is marked on such sheet:

Legend

To the extent allowed by law, data furnished pursuant to the value engineering incentive clause of the Agreement shall not be: (1) disclosed to any outside person or agency, (2) duplicated, or (3) used. Metro may disclose, duplicate, or use furnished data to evaluate a VECP submitted under said clause. This restriction does not limit Metro's right to use information that has been obtained, or is otherwise available, from Contractor or from another source without limitations. If such a VECP is accepted, Metro shall have the right to duplicate, use, and disclose any data reasonably necessary to the full utilization of such VECP as accepted, in any manner and for any purpose whatsoever, and have others so do.

- 8.7. Impact of Authorized Changes in the Contract -- Changes in the Work made pursuant to this Article and extensions of the Contract Time allowed by Metro due to such changes shall not in any way release any warranty or promises given by Contractor pursuant to the provisions of the Contract Documents, nor shall such changes in the Work relieve or release the sureties of bonds executed pursuant to said provisions. The sureties, in executing such bonds, shall be deemed to have expressly agreed to any such change in the Work and to any extension of Contract Time made by reason thereof.

ARTICLE 9 PAYMENTS AND COMPLETION

- 9.1. Scope of Payment -- Payment to Contractor of the Contract Amount for performing all Work required under the Contract, as adjusted for any Change Orders approved as hereinbefore specified, shall be full compensation for furnishing all labor, materials, equipment and tools necessary to the Work, and for performing and completing, in accordance with these Contract Documents, all Work required under the Contract, and for all expenses incurred by Contractor for any purpose in connection with the performance and completion of said Work.

Whenever it is specified herein that Contractor is to do work or provide materials of any class for which no price is fixed in the Contract, it shall be understood that Contractor is to do such work or provide such materials without extra charge or allowance or direct payment of any sort, and that the cost of doing such work or providing such materials is included in its Bid.

- 9.2. Schedule of Values

9.2.1. Generally -- Within thirty (30) days after the Notice to Proceed and at least 15 days prior to Contractor's application for the first progress payment, Contractor shall submit a detailed breakdown on its lump sum bid. The format and detail of the breakdown shall be as directed by Metro and in accordance with Section 01025 of the Specifications to facilitate and clarify future progress payments to Contractor. This breakdown shall be referred to as the Schedule of Values.

9.2.2. Review of Schedule of Values -- Metro will review the Schedule of Values to ascertain that the dollar amounts of the Schedule of Values are in fact fair cost

allocations for the work item listed. Upon concurrence by Metro, a formal approval of this Schedule of Values will be issued. Metro shall be the sole judge of fair cost allocations. Contractor's monthly progress payment requests shall reflect the cost figures included in the approved Schedule of Values and shall be based upon completed work items or percentages of work items completed prior to the end of the payment period as more fully described below.

9.3. Progress Payment Procedure

- 9.3.1. Generally -- Subject to the approval of Metro, disbursements shall be made by Metro of progress payments upon written request of Contractor and pursuant to the Contract Documents as specified in Section 01025 of the Specifications.

Before the end of each calendar month, Contractor shall file with the Construction Manager in duplicate on a form approved by Metro, a proposed payment estimate for the period commencing on the 26th day of the previous month through midnight on the 25th day of the calendar month in question. Metro and the Construction Manger shall review Contractor's estimate and shall determine the value of Contractor's work based upon the Schedule of Values and incorporated labor and materials for the payment period. Contractor shall not be paid for any work which is, in Metro's opinion, defective or improper or for work needed to correct Contractor's defective or improper work. Contractor shall be paid 95 percent (95%) of the determined value of work accomplished less any offset or withholding of sums by Metro allowed under the Contract Documents within thirty (30) days after receipt by Metro of Contractor's payment estimate. Metro will routinely withhold five percent (5%) as Retainage.

No inaccuracy or error in any monthly progress payment estimates shall operate to release Contractor or its surety from damages arising from such work or from the enforcement of each and every provision of the Contract Documents, and Metro shall have the right subsequently to correct any error made in any estimate for progress payments.

- 9.3.2. Retainage -- If, in Metro's opinion, work on the Project is progressing satisfactorily, Metro may eliminate additional Retainage on any remaining monthly progress payments after 50 percent (50%) of the Work under the Contract is, in Metro's opinion, completed. Elimination of additional Retainage under this Subparagraph shall be allowed by Metro only upon written application by Contractor, which application shall include written approval of Contractor's surety.

If after Metro allows such an elimination of additional Retainage, Metro determines that progress of the Work is not satisfactory or that Contractor has breached any provision of the Contract, Metro may again retain and continue to retain, in addition to that Retainage already being held by Metro, five percent (5%) of any future progress payments made to Contractor.

When Metro determines that the Work is 97-½ percent (97-½%) complete, Metro may, at its discretion and without application by Contractor reduce the retained amount to 100 percent (100%) of the value of the Work remaining to be done.

All funds retained by Metro under this section shall be retained in a fund by Metro and paid in accordance with ORS 279.435.

Contractor may elect to deposit bonds or securities of the type described below with Metro or in any bank or trust company to be held in lieu of the cash retainage described above and for the benefit of Metro. In such event, Metro shall reduce the Retainage in an amount equal the value of the bonds and securities and shall pay the amount of the reduction to Contractor in accordance with ORS 279.435. Interest on such bonds or securities shall accrue to Contractor.

Bonds and securities deposited or acquired as described above shall be of a character approved by the Director of Oregon's Department of General Services including, but not limited to:

9.3.2.1.Bills, certificates, notes or bonds of the United States.

9.3.2.2. Other obligations of the United States or its agencies.

9.3.2.3. Obligations of any corporation wholly owned by the federal government.

9.3.2.4. Indebtedness of the Federal National Mortgage Association.

Contractor may elect to require Metro to deposit the accumulated Retainage in an interest bearing account in a bank, savings bank, trust company or savings association for the benefit of Metro. Interest on such an account shall accrue to Contractor.

If Metro incurs additional costs as a result of Contractor's exercise of any of the above-described options, Metro may recover such costs from Contractor by reduction of the Final Payment. Metro shall inform Contractor of all such accrued costs.

9.3.3. Payment for Material Stored Off Site --Payment for material stored off of the Site will not be allowed unless the payment for such material benefits Metro in terms of lead time, scarcity, schedule, etc. Metro has sole discretion as to what materials will be paid for in advance of delivery to or installation on Site. Proof of off-site material purchases (invoice or checks) and appropriate insurance coverage will be

required for payment. Title to all equipment and materials shall pass to Metro upon payment therefor or incorporation in the Work, whichever shall first occur, and Contractor shall prepare and execute all documents necessary to effect and perfect such transfer of title. Contractor must provide to Metro written consent from Contractor's surety approving the advanced payment for materials stored off-site.

The maximum prepayment allowed by Metro shall be 75 percent of the actual fair market value of the item being considered. Metro shall be the sole judge of fair market value. Contractor shall protect stored materials from damage, and damaged or otherwise unacceptable materials, even though paid for, shall not be incorporated into the Work.

- 9.3.4. Other Conditions Precedent to Payment -- It is a condition precedent to Contractor's rights to any payments under the Contract that all bills for labor and materials, including labor and materials supplied by or to Contractor, shall have been paid in full and, if requested by Metro, Contractor shall submit receipted invoices and/or lien waivers, as evidence of payment in full of all such accounts. As a further condition precedent to Contractor's right to any payments under this Contract, if requested by Metro, Contractor shall submit a claims release before any payment, and a final claims release stating Contractor has been paid in full prior to the Final Payment.

Payments to Contractor shall be conditioned upon Contractor complying with all provisions of this Contract regarding scheduling and progress reports submissions and upon Contractor furnishing all other information and data necessary to ascertain actual progress. Metro's determination that Contractor has failed or refused to furnish the required information, data, schedules or other reports shall constitute a basis for withholding all payments until the required information, data, revised schedules and diagrams, if necessary, and other reports are furnished.

- 9.3.5. Payment Does Not Imply Acceptance of Work -- The granting of any progress payment, or the receipt thereof by Contractor, shall not constitute acceptance of the Work or any portion thereof, and shall in no way lessen the liability of Contractor to replace unsatisfactory work or material, though the unsatisfactory character of such work or material may or may not have been apparent or detected at the time such payment was made.

- 9.3.6. Offset of Sums Due Metro from Contractor -- In addition to any retention rights allowed Metro under this Contract, it is mutually understood and agreed that Metro may, upon prior written notice to Contractor, offset from any payment otherwise due Contractor, as much as may be necessary to protect and compensate Metro from any costs or expenses it may incur due to any breach of the Contract by Contractor, including applicable liquidated damages. Any sums so offset shall become the property of Metro.

9.3.7. Time of the Essence --Time is of the essence for the performance of the Work under this Contract.

9.4. Substantial Completion -- When Contractor considers the Work to be substantially complete, Contractor shall submit to Metro a written notice that the Work is substantially complete and a punch list of items to be completed or corrected. Within a reasonable time after receipt of such notice, Metro and Engineer will review the Work, including a physical inspection, to determine the status of completion. Should the Engineer and Metro determine that the Work is not substantially complete:

9.4.1. Construction Manager will promptly notify Contractor in writing, giving the reasons therefor.

9.4.2. Contractor shall remedy the deficiencies in the Work, and thereafter send a second written notice of Substantial Completion to Metro.

The above-described procedure shall be followed until the Work is, in the opinion of Metro and Engineer, substantially complete. At that point:

9.4.2.1. The Engineer will prepare a Certification of Substantial Completion on AIA Document G704, accompanied by the approved punch list of items to be completed or corrected as verified and amended by the Engineer.

9.4.2.2. Metro shall submit the Certificate of Substantial Completion to Contractor for signature. Contractor shall complete the items on the approved punch list.

9.5. Final Completion and Acceptance -- When Contractor considers the Work to be finally complete, Contractor shall submit written certification to Metro that:

9.5.1. Contract Documents have been reviewed.

9.5.2. Work has been inspected for compliance with Contract Documents.

9.5.3. Work has been completed in accordance with Contract Documents to include submission of record documents.

9.5.4. Equipment systems have been tested in presence of Metro and are operational.

9.5.5. Work is ready for final inspection.

Engineer and Metro will promptly review the Work and include a physical inspection to verify the status of completion and shall inform Metro of the conclusions. Metro shall, within fifteen (15) days after receipt of Contractor's

certification, either accept the Work or notify Contractor of the work yet to be performed on the Contract as outlined below.

Should the Engineer and Metro consider that the work is incomplete or defective:

9.5.5.1. Construction Manager will promptly notify Contractor in writing, listing the incomplete or defective work.

9.5.5.2. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to Metro that the Work is complete. Metro will then advise the Engineer.

9.5.5.3. Engineer and Metro will review and reinspect the Work.

The above-described procedure shall be followed until the Work is, in the opinion of Metro and Engineer, finally complete. Contractor shall immediately thereafter prepare and submit Closeout Submittals as described below.

9.6. Closeout Submittals -- Contractor shall submit the following items, as applicable, with its request for Final Payment:

9.6.1. Evidence of Compliance with Requirements of Governing Authorities.

9.6.2. Project record documents in accordance with the Specifications.

9.6.3. Operation and maintenance data in accordance with the Specifications.

9.6.4. Warranties in accordance with requirements of various Specification sections and these General Conditions.

9.6.5. Extra stock and maintenance materials. Contractor shall submit receipts, signed by Metro, for the various specific items.

9.6.6. Evidence of payment and release of claims in accordance with the following section.

9.6.7. Consent of surety to Final Payment.

9.6.8. Certificates of insurance for products and completed operations in accordance with Article 11 of these General Conditions.

9.6.9. If Contractor is a "foreign contractor" as that term is defined in Subparagraph 14.3.6, complete documentation of Contractor's compliance with ORS 279.021.

9.7. Releases -- Contractor and each assignee under any assignment in effect at the time of Final Payment shall execute and deliver, at the time of application for Final Payment, as a condition precedent to Final Payment, a release in form and substance satisfactory to Metro, discharging and releasing Metro and the Engineer of and from all liabilities, obligations and claims arising under this Contract.

In addition to the above-described release, Contractor shall:

9.7.1. Submit to Metro an affidavit certifying that Contractor has paid all federal, state and local taxes including excise, use, sales, and employee withholding taxes.

9.7.2. Deliver to Metro written releases of all rights to file claims against Metro or to file claims on any bonds in connection with the Contract, signed by each Subcontractor and Supplier who performed labor or furnished materials in connection with the work.

9.7.3. Deliver to Metro Contractor's written undertaking, with sureties acceptable to Metro:

9.7.3.1. To promptly pay and obtain a release of claims on any bonds which may in the future affect the premises; and

9.7.3.2. To defend, indemnify and save Metro harmless from any liability or expense because of any claim on any bond or any other claim related to the Contract or the Work.

9.8. Final Payment -- Upon application of Contractor and Contractor's completion of and compliance with all of the provisions of the above Paragraphs and settle of all claims arising from the agreement including claims that Metro may have against Contractor, Metro shall pay Contractor the balance of the Contract Amount subject to the availability of monies in the Construction Fund as described in Paragraph 9.1 and less any previous payments, offsets and withholdings allowed Metro under this Contract and Retainage which has been returned to Contractor.

Acceptance of Final Payment by Contractor shall constitute a waiver of all claims of whatever nature which Contractor may have or allege to have against Metro arising out of or related to Work described in the Contract Documents.

9.9. No Waiver of Rights -- Neither the final review by Metro, nor any order or certificate for the payment of money, nor any payment for, nor acceptance of the whole or any part of the Work by Metro, nor any extension of time, nor any position taken by Metro shall operate as a waiver of any provision of this Contract or of any power herein reserved by Metro or any right to damage herein provided; nor shall any waiver of any breach of this Contract be held to be a waiver of any other or subsequent breach. All of Metro's remedies provided in this Contract shall be taken and construed as cumulative; that is, in addition to each and every other remedy herein provided; and Metro shall have any and all equitable and legal remedies which it would in any case have.

ARTICLE 10 SAFETY AND PROTECTION OF THE WORK

10.1. Safety Requirements

- 10.1.1. Safety Generally -- Contractor shall be solely and completely responsible for the safety of the Work and the Site, including, but not limited to, the safety of all persons and property involved in the Work at the Site at any time until Final Completion and Acceptance of the Work.

All Work shall be performed in full accordance with all applicable safety codes, laws, ordinances and requirements including, but not limited to, the Safety and Health Regulations for Construction, promulgated by the Secretary of Labor under Section 107 of the Contract Work Hours and Safety Standards Act as set forth in Title 29 of the Code of Federal Regulations, federal and state OSHA, Metro's insurance standards, and all other applicable safety codes. Where any of these are in conflict, the more stringent requirement shall be followed. Contractor's failure to thoroughly familiarize itself with the aforementioned safety provisions shall not relieve it from any requirements in the Contract Documents to comply with such safety provisions or from any penalties for failure to so comply.

Contractor shall inspect the Work and the Site daily and immediately correct any unsafe conditions. All job personnel shall be knowledgeable of and comply with the above safety requirements.

Contractor shall take all precautions to prevent the possibility of fire resulting from contract operations. Contractor shall provide properly maintained emergency fire extinguishing equipment of a readily available type and quantity as necessary to meet potential fire hazards.

- 10.1.2. Health and Safety Program -- Contractor shall develop, publish and implement the overall Health and Safety Program for the Project. Refer to Section 01500 of the Technical Specifications. This Program shall conform to all applicable codes. Contractor shall submit the written Health and Safety Program to Metro for review and comment within fourteen (14) days after the receipt of the written Notice To Proceed. The Program, as approved by Metro, shall subsequently be distributed to and implemented by Contractor's personnel as well as its Subcontractors and Suppliers. Contractor shall fully implement and comply with the approved Safety Program.
- 10.1.3. Health and Safety Officer -- Prior to initiation of construction, Contractor shall designate in writing a Site Health and Safety Officer who shall be responsible for coordinating Contractor's Health and Safety Program. The individual so designated shall be the interface with the Construction Manager on matters relating to safety, and

Contractors compliance with the approved Safety Program. Metro reserves the right to accept or reject the Health and Safety Officer designated by Contractor.

- 10.2. First Aid -- Contractor shall maintain on the Site during work operations, a member of its work force who is qualified in administering first aid to its personnel and shall have available in its job office the first aid equipment as required to meet all applicable safety codes. The names and credentials of qualified personnel will be submitted to the Construction Manager.

Contractor shall require or provide adequate clothing and protective gear for all personnel working on the job site. This includes but is not limited to hard hats; substantial boots or shoes, shirts with sleeves at all times; eye and ear protection, gloves, face masks, welding hoods, safety belts as required for the type of work being done.

- 10.3. Protection of Work, Persons and Property Against Damages -- Contractor shall protect the Work from damage due to construction operations, the action of the elements, including erosion due to normal and extraordinary weather conditions, the carelessness of other contractors, vandalism, or any other cause whatever until Final Completion and Acceptance of the Work.

Contractor shall protect all public and private property insofar as it may be endangered by operations of Contractor including adjoining lands, air and waterways, and shall be fully responsible for taking proper precautions for the prevention of accidents to persons and/or damage to such property at, on or near the Site.

All federal, state and local safety and environmental protection laws, rules and orders including fire codes, applicable to the Work to be done under the Contract, shall be obeyed, complied with and enforced by Contractor.

Contractor shall provide and maintain such guards, fences, barriers, signs, regulatory and warning lights, and other traffic control and safety devices adjacent to and on the Site as may be necessary to prevent accidents to the public and damage to property. Contractor shall also provide, place and maintain such lights as may be necessary for illuminating the said signs, guards, fences, barriers and other traffic and safety control devices.

Upon Final Completion and Acceptance of the Work, Contractor shall remove all temporary signs, lights, barriers, etc., from the Site.

ARTICLE 11 INDEMNIFICATION AND INSURANCE

- 11.1. Indemnification -- Contractor agrees that for purposes of the Oregon Tort Claims Act (ORS 30.260 through 30.300), neither Contractor, its officers, agents and employees nor any Subcontractor or Supplier of Contractor of any tier, or its officers, agents or employees, are agents of Metro. Contractor for itself and its officers, agents, employees and its Subcontractors and Suppliers of any tier and their officers, agents and employees

will make no claim whatsoever against Metro for indemnification pursuant to ORS 30.260 to 30.300 and Contractor agrees to hold Metro harmless and indemnify Metro from any such claims.

Contractor shall assume all responsibility for the Work and shall bear all losses and damages directly or indirectly resulting to Contractor, Metro, Engineer, their officers, agents and employees, or to others on account of the character or performance of the Work, or accidents, unless such cause is due to the sole negligence of Metro or Engineer.

Contractor shall assume the defense, if requested, indemnify and hold harmless Metro and Engineer from all claims, liability, loss, damage, consequential or otherwise, and injury of every kind, nature and description, directly or indirectly resulting from activities in the performance of the Contract, the ownership, maintenance or use of motor vehicles in connection therewith, or the acts, omissions, operations, or conduct of Contractor or any Subcontractor or Supplier under the Contract or in any way arising out of the Contract, irrespective of whether fault is the basis of the liability or claim.

Any specific duty or liability imposed or assumed by Contractor, as may be otherwise set forth in the Contract Documents, shall not be construed as a limitation or restriction of the general liability or duty imposed upon Contractor by this Paragraph.

Such liabilities and losses from which Contractor shall indemnify and hold harmless the above-described indemnities shall include, but not be limited to:

- 11.1.1. Special activities by Metro to verify and/or expedite delivery of materials and those losses incurred by Metro as a result of any delays to Other Metro Contractors resulting from acts of Contractor or its failure to act.
- 11.1.2. Acceleration payments to Other Metro Contractors on the project or related projects resulting from Contractor falling behind the Construction Schedule for causes not entitling it to an extension of time under any provisions of the Contract Documents which cause other Metro Contractors to fall behind the Construction Schedule and who must then accelerate the performance of the work, as directed by Metro, in order to maintain progress.
- 11.1.3. Violations of the ordinances or regulations of Metro, any federal, state, county or city laws or order of any properly constituted authority in any manner affecting this Contract, in addition to any laws or regulations which might affect this Contract.
- 11.1.4. Any and all suits, actions, damages or claims of every name and description to which the above indemnified may be subjected or put by reason of injury to persons or property arising out of, in connection with, or incident to the execution of the work or resulting from acts or omissions on the part of Contractor, its

Subcontractors, officers, employees or agents and all attorney's fees and court costs incident thereto.

11.2. Insurance

11.2.1. Public Liability and Property Damage Insurance

Contractor shall purchase and maintain, at the Contractor's expense, the following types of insurance covering the Contractor, its employees and agents.

- A. Broad form comprehensive general liability insurance covering bodily injury, property damage, and personal injury with automatic coverage for premises/completed operations and product liability. The policy must be endorsed with contractual liability coverage.
- B. Automobile bodily injury and property damage liability insurance.

Insurance coverage shall be on an occurrence basis with an annual aggregate limit of \$5,000,000.

METRO, its elected officials, departments, employees and agents shall be named as an ADDITIONAL INSURED. Notice of any material change or policy cancellation shall be provided to METRO thirty (30) days prior to the change.

- C. Subcontractor's Insurance -- Contractor shall require that all of its Subcontractors and Suppliers of any tier provide insurance coverage and conditions identical to Contractor's insurance coverage, except that the policy limits of all Subcontractors' insurance coverage shall be at least \$1,000,000 combined single limit for each occurrence and in the aggregate.

11.2.2. Workers' Compensation and Employer's Liability Insurance

The Contractor, its subcontractors, and all employers working under this contract are subject employers under the Oregon Workers' Compensation Law and shall comply with ORS 656.017, which requires them to provide workers' compensation coverage for all their subject workers. The Contractor shall provide METRO with certification of workers' compensation insurance including employer's liability of \$1,000,000.

11.2.3. Forms of Policies and Other Insurance Requirements --

In addition to filing any other insurance certificates specified elsewhere in these Contract Documents, Contractor shall, within seven (7) days following Notice of Award of Contract, provide Metro two (2) certified copies of the policies of all insurance herein required to be obtained by Contractor except that Worker's Compensation Insurance may be evidenced by a Certificate of Insurance. At Metro's request, Contractor shall immediately deliver to Metro the receipts for payment of premiums on any or all such policies.

All policies of insurance and Certificates of Insurance shall be satisfactory to Metro. Approval of the insurance by Metro shall not relieve or decrease the extent to which Contractor or Contractor's Subcontractors and Suppliers of any tier may be held responsible for payment of any and all damages resulting from performance of the Work.

Each such policy or Certificate of Insurance shall bear an endorsement precluding its cancellation, expiration or any reduction in its coverage without giving to Metro at least sixty (60) days prior written notice. Contractor shall file with Metro two (2) certified copies of the required new or renewed policy or two (2) Certificates of Insurance for each such policy, as applicable, before the effective date of such cancellation, change or expiration.

If Contractor neglects to obtain or maintain in force any such insurance or to deliver such policy or policies, certificates and receipts to Metro, then Metro may, at its option, obtain and maintain such insurance. Contractor hereby appoints Metro its true and lawful attorney, to do all things necessary to obtain and maintain such insurance. All monies expended by Metro for such insurance shall be charged to Contractor and Metro may offset its costs in obtaining and/or maintaining such policies from sums due or to become due Contractor under the Contract or otherwise collect such sums from Contractor. Failure of Metro to obtain or maintain such insurance shall in no way relieve Contractor of any of its responsibilities under this Contract.

Contractor's failure to maintain any item of the required insurance shall be sufficient cause for termination or suspension of this Contract.

All insurance required shall be obtained through a company or companies having a policyholders surplus of at least ten (10) times the amount or limit of liability afforded by such insurance company on policies issued for this Contract. Such company shall be duly and legally licensed to transact business in the state of Oregon and shall be acceptable to Metro. Said insurance shall be primary over any insurance or self-insurance of Metro.

11.3. Builder's All Risk Insurance

- 11.3.1. Contractor, for the life of this Contract, shall effect and maintain Builders All Risk Insurance and fire insurance with extended coverage and malicious mischief coverage upon the structures on which the work of this Contract is to be done to 100 percent (100%) of the insurable value thereof, protecting: 1) Owner's interest; 2) Contractor's interest; and 3) the subcontractor's interests in the work. Contractor's interest and the subcontractor's interests, as used herein, means their property interests and the property interests of others for which they are responsible in the Project, in all materials and supplies entering into or used or

destined for use therein, and in all expendable items of equipment which are used in or are incidental to but which do not become a part of the finished Project, located at the job site at the time of loss or damage. Such insurance shall not exclude coverage for landslides, collapse, explosion or loss due to the result of faulty workmanship.

- 11.3.2. Contractor and all subcontractors shall be responsible for any loss or damage to their machinery and apparatus and nonexpendable items of their equipment.
- 11.3.3. Contractor shall provide adequate fire protection equipment and safeguards to protect Owner's and Contractor's interests in accordance with Owner's insurance carrier's requirements.

11.4. Labor and Materials and Performance Bonds

- 11.4.1 Contractor shall provide continuous coverage of a separate Performance Bond and a Labor and Materials Bond for the duration of the Contract. The Bonds shall be in the forms provided in these Contract Documents.
- 11.4.2 As an alternative to providing either or both of the bonds specified in this section 11.03, Contractor may provide a Letter or Letters of Credit, issued by a sound financial institution satisfactory to Metro. Such Letter or Letters of Credit shall be in a form acceptable to Metro. The Letter or Letters of Credit shall be in an amount equivalent to the bonds required under this section.

ARTICLE 12 MINORITY BUSINESS PROGRAM

Contractor shall comply with all pertinent provisions of Metro's Minority Business Program which are contained in Metro Code 2.04 and which are contained in the Appendix to these Contract Documents and which are by this reference expressly incorporated herein and made a part of this Contract.

Contractor shall not replace a minority or women-owned business enterprise Subcontractor with another Subcontractor, either before Contract award or during Contract performance, without prior written approval of Metro. In replacing a minority or women-owned business Subcontractor, Contractor shall replace such minority or women-owned business Subcontractor with another certified minority or women-owned business Subcontractor or make good faith efforts to do so. Failure to do so shall constitute Contractor's default of this Contract, and Metro, at its option, may terminate this Contract under the procedures set out in Article 15.

Metro reserves the right, at all times during the period of this Contract, to monitor Contractor's compliance with the terms of the Minority Business Program and enforce the program if Contractor should fail to so comply. Contractor shall be bound by any and all representations made concerning its compliance with the program prior to Contract award and

any and all representations made by Contractor concerning the replacement of a minority or women-owned business Subcontractor during the performance of this Contract.

ARTICLE 13 EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION REQUIREMENT

Contractor shall be certified as Equal Employment Opportunity Affirmative Action Employers by the City of Portland, Oregon, for the entire term of the Contract. Contractor's Subcontractors and Suppliers shall be certified prior to commencement of any of their Work on the Project and shall remain certified for the entire duration of the Contract.

ARTICLE 14 MISCELLANEOUS STATUTORY RESPONSIBILITIES OF CONTRACTOR

- 14.1. Generally -- Contractor shall keep itself fully informed of and shall fully comply with all federal, state, regional and local laws, rules, regulations, ordinances and orders pertaining in any manner, to this Contract and those rules, regulations and orders of any agency or authority having jurisdiction over the work or those persons employed or engaged therein. Contractor shall pay all taxes, including federal, state, regional, county, city or taxes of any other governmental entity applicable to the work performed or materials provided under this Contract.
- 14.2. Environmental Laws -- Contractor shall fully comply with all federal, state and local laws, ordinances and regulations dealing with the prevention of environmental pollution and the preservation of natural resources and all amendments thereto. Contractor shall also fully comply with all rules, regulations and ordinances enacted or to be enacted by any federal, state or local agency dealing with the prevention of environmental pollution and the preservation of natural resources that affect the performance of the Contract. Such statutes, rules, regulations and ordinances shall include, but are not limited to those in 7 USCA Sections 136 to 136Y, 15 USCA Sections 2601 to 2629, 33 USCA Sections 1251 to 1376, 33 USCA Sections 1401 to 1445, 42 USCA Sections 300f to 300j-11, 42 USCA Sections 4321 to 4370a, 42 USCA Sections 4901 to 4918, 42 USCA Sections 6901 to 6991i, 42 USCA Sections 7401 to 7642, 42 USCA Sections 9601 to 9675, 29 USCA Sections 651 et seq., Oregon Administrative Rules Chapter 61, and Title 18 of the City of Portland Code.

Such agencies shall include, but not be limited to, the following:

FEDERAL AGENCIES

Agriculture, Department of
Forest Service
Soil Conservation Service
Defense, Department of
Army Corps of Engineers
Energy, Department of
Environmental Protection Agency
Health and Human Services, Department of
Interior, Department of
Fish and Wildlife Service
Heritage Conservation and Recreation Service
Bureau of Land Management
Bureau of Indian Affairs
Water and Power Resource Service
Office of Surface Mining
Labor, Department of
Occupational Safety and Health Administration
Mine Safety and Health Administration
Transportation, Department of
Coast Guard
Federal Highway Administration

STATE AGENCIES

Agriculture, Department of
Energy, Department of
Environmental Quality, Department of
Fish and Wildlife, Department of
Forestry, Department of
Geology and Mineral Industries, Department of
Human Resources, Department of
Land Conservation and Development, Department of
Soil and Water Conservation Commission
State Engineer
State Land Board and Division of State Lands
Water Resources Board, Department of
Bureau of Labor and Industries

LOCAL AGENCIES

City of Oregon City
Clackamas County
Metro
Planning Commissions (as applicable)

14.3. Other Provisions of Oregon Law

14.3.1. Generally -- The provisions set out in Oregon Revised Statutes Chapters 187 and 279, as amended or superseded, including the latest additions and revisions, are incorporated by reference as part of these Contract Documents. Such sections include, but are not necessarily limited to, ORS 187.010, 187.020 279.021, 279.312, 279.314, 279.316, 279.318, 279.320, 279.334, 279.338, 279.348, 279.350, 279.352, 279.354, 279.355, 279.356, 279.359, 279.361, 279.365, and 279.400 through 279.435. Contractor shall fully comply with all applicable provisions of these statutes. The specific requirements of certain of these sections are set out below.

14.3.2. Payment to Subcontractors and Laborers -- Pursuant to ORS 279.312, Contractor shall make payment promptly, as due, to all persons supplying such Contractor labor or material for the projection of the Work provided in this Contract. Contractor shall pay all contributions or amounts due the Industrial Accident Fund (IAF) from such Contractor, Subcontractor or Supplier incurred in the performance of the Contract. Contractor shall not permit any lien or claim to be filed or prosecuted against Metro, the State, County, school district, municipality, municipal corporation, or subdivision thereof, on account of any labor or material furnished. Contractor shall pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.

14.3.3. Failure to Make Payment for Labor or Services -- Pursuant to ORS 279.314, if Contractor fails, neglects, or refuses to make prompt payment of any claim for labor or services furnished to Contractor or a Subcontractor by any person in connection with this Contract as such claim becomes due, Metro may pay such claim to the person furnishing the labor or services and charge the amount of the payment against funds due or to become due Contractor by reason of such Contract. Metro's payment of such a claim in the manner authorized by ORS 279.314 shall not relieve Contractor or Contractor's surety from obligation with respect to any unpaid claims.

14.3.4. Hours of Work -- Except as provided in ORS 279.334, no person shall be employed for more than eight (8) hours in any one day, or forty (40) hours in any one week, except in cases of necessity, emergency, or where the public policy absolutely requires it, and in such cases the laborer shall be paid at least time and a half pay for all overtime in excess of eight (8) hours a day and for

work performed on Saturday and on any legal holiday specified in ORS 279.334. Contractor shall furthermore comply with any applicable provisions of ORS 279.316, 279.334, 279.336 and 279.338.

14.3.5. Payment for Medical Care -- Pursuant to ORS 279.320, Contractor shall promptly, as due, make payment to any person, co-partnership, association or corporation, furnishing medical, surgical and hospital care or other needed care and attention, incident to sickness or injury, to the employees of Contractor, of all sums which Contractor agrees to pay for such services and all monies and sums which Contractor collected or deducted from the wages of employees pursuant to any law, contract or agreement for the purpose of providing or paying such service.

14.3.6. Requirements for Foreign Contractors -- Pursuant to ORS 279.021, any "foreign contractor" awarded a public contract with a price exceeding \$10,000, shall promptly report to the Department of Revenue, on forms to be provided by the Oregon Department of Revenue, the total contract price, terms of payment, length of contract and such other information as may be required before Final Payment can be received on the public contract. Final Payment shall not be made until this provisions has been complied with.

For purposes of this paragraph, a "foreign contractor" is one who is not domiciled in or registered to do business in the state of Oregon.

14.3.7. Prevailing Wage -- Except as limited by Oregon Revised Statutes, Contractor shall pay his/her workers and require his/her Subcontractors to pay its workers the prevailing rate of wage as required in ORS 279.350, and shall comply with all other requirements contained therein. The Appendix to this Contract contains a schedule of the existing prevailing rate of wage which may be paid to workers in each trade or occupation required to perform the Work, either by Contractor or its Subcontractors or any other person doing or contracting to do the whole or any part of the Work contemplated by this Contract, and such workers shall be paid not less than such specified minimum hourly rate of wage. The specifications for each subcontract shall include a copy of the prevailing wage schedule applicable to this project, and each subcontract shall include a clause regarding conformance to the schedule.

14.3.8. Sanitary Facilities -- Contractor shall be responsible for all costs that may be incurred in complying with ORS 654.150 and the rules adopted pursuant thereto including, but not limited to, securing exemption or partial exemption from the requirements of ORS 654.150, (sanitary facilities at construction projects; standards, exemptions).

14.3.9. Royalty Payments -- Contractor shall promptly pay when due, all royalties owed to the State of Oregon or other governmental entity under ORS Chapter 274 or other provision of law.

14.4. Work to Comply with Codes -- All Work shall be in full compliance with any and all codes specified in the Contract Documents and all federal, state and local laws, ordinances, rules, regulations and orders and all amendments to such codes, laws, ordinances, rules, regulations and orders. If Contractor observes or discovers that any portion or portions of the Contract Documents are at variance with any such requirements, Contractor shall promptly submit a written Request for Clarification to Metro pursuant to Paragraph 3.2 which shall fully describe the variance. If Contractor performs Work contrary to codes, laws, ordinances, rules, regulations or orders without submitting such Request to Metro, Contractor shall assume full responsibility for such Work and shall bear all costs attributable thereto.

Persons authorized by Metro or any governmental body having jurisdiction over the Project may at any time enter upon any part of the work to ascertain whether Contractor is complying with such laws, ordinances, regulations or orders.

14.5. No Additional Compensation Allowed for Compliance with Laws -- The Contract Amount includes full compensation for compliance with all applicable laws, rule, regulations, ordinances and orders and all amendments thereto and Contractor shall not make claim for nor be allowed any additional compensation for such compliance.

ARTICLE 15 TERMINATION OR SUSPENSION OF THE WORK

15.1. For Default of Contractor -- If Contractor should be adjudged bankrupt, or if Contractor should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of insolvency, or if Contractor should refuse to or fail to supply enough properly skilled workers or proper materials for the efficient prosecution of the Work, disregard laws, ordinances or the instructions of Metro, or otherwise be in violation of any provision of the Contract, Metro may, without prejudice to any other right or remedy and after giving Contractor and Contractor's surety on the Performance Bond prior written notice, terminate the Contract or any portion of the Contract, which termination shall be effective ten (10) days after service of such notice. Such notice shall contain the reasons for the termination and shall state that unless, within ten (10) calendar days of service of the termination notice on Contractor, Contractor or its surety on the Performance Bond shall have cured or shall have made, in Metro's opinion, appropriate arrangements for prompt cure of all of the cause(s) for termination cited in the notice of termination, the Contract shall terminate.

Upon termination, Metro may take possession of the premises and of all materials, tools and appliances thereon as well as all other materials whether on the premises or not, for which Contractor has received partial payment, and finish the Work or the portion terminated by whatever method it may deem expedient.

In the event action as above indicated is taken by Metro, Contractor, or Contractor's surety, shall provide Metro with immediate and peaceful possession of all of the materials, tools and appliances located on the premises as well as all other materials whether on the premises or not, for which Contractor has received any progress payment. Upon termination, in the event that the surety does not complete the Contract, at the election of Metro, Contractor shall assign any and all subcontracts and material contracts to Metro or Metro's designee. Further, Contractor shall not be entitled to receive any further payment until the Work is completed. On completion of the Work, determination shall be made by Metro of the total amount Contractor would have been entitled to receive for the Work, under the terms of the Contract, had Contractor completed the Work. If the difference between said total amount and the sum of all amounts previously paid to Contractor, which difference will hereinafter be called the "unpaid balance," exceeds the expense incurred by Metro in completing the Work, including expense for additional managerial and administrative service, and all other costs, damages and expenses incurred by Metro due to Contractor's failure to complete the Contract, such excess will be paid to Contractor, with the consent of the surety. If, instead, the described expenses incurred by Metro exceed the unpaid balance, the amount of the excess shall be paid to Metro by Contractor or his/her surety. If only a portion of the Contract is terminated, this paragraph shall be deemed to apply to that portion of the Work only.

In addition to the above-mentioned right, Metro shall have the right, at its option, to suspend all or part of Contractor's performance under the Contract should any of the events occur which give Metro the right to terminate the Contract as above-described. In such event Metro shall give Contractor and Contractor's surety prior written notice of such suspension and Contractor shall stop or cause to stop all such work under the Contract immediately on receipt of such notice and shall not commence such work under the Contract again unless and until Contractor shall receive written notice from Metro to proceed. Metro shall not be responsible or liable to Contractor or others for any costs or expenses of whatever nature related to Contractor's failure to stop work as directed by Metro.

After receipt of a notice of termination or suspension, and except as otherwise directed by Metro, Contractor shall as regards those portions of the Contract terminated or suspended:

- 15.1.1. Stop work under the Contract on the date and to the extent specified in the notice of termination or suspension.
- 15.1.2. Place no further orders or subcontracts, or suspend the same, as applicable, for materials, services or facilities except as necessary to complete the portion of the work under the Contract which is not terminated or suspended.

15.1.3. Terminate or suspend, as applicable, all orders and subcontracts to the extent that they relate to the performance of such work terminated or suspended.

Metro may, at its discretion, avail itself of any or all of the above rights or remedies and its invoking of any one of the above rights or remedies will not prejudice or preclude Metro from subsequently invoking any other right or remedy set forth above or elsewhere in the Contract.

None of the foregoing provisions shall be construed to require Metro to complete the Work, nor to waive or in any way limit or modify the provisions of the Contract relating to the fixed and liquidated damages suffered by Metro on account of failure to complete the Project within the time prescribed.

15.2 Termination in the Public Interest -- It is hereby agreed that Metro has the right to terminate the Contract in whole or in part when Metro considers it to be in the public interest.

In the event the Contract is terminated as being in the public interest, Contractor shall be entitled to a reasonable amount of compensation for preparatory work and for all reasonable costs and expenses arising out of the termination, excluding lost profits.

In the event of termination under this Paragraph, the amount to be paid to Contractor shall be determined on the basis of the Schedule of Values in the case of any fully completed separate item or portion of the Work for which there is a separate or unit contract price and in respect to any other work under the Contract, Contractor will be paid a percent of the Contract price equal to the percentage of the work completed.

* * * END OF SECTION * * *

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**SECTION 01010
SUMMARY OF WORK**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. This section describes the project and the work to be performed under this Contract. Detailed requirements and extent of work are stated in applicable Specification sections and shown on the Drawings.

1.2 ORGANIZATION AND INTERPRETATION OF CONTRACT DOCUMENTS

- A. Specifications and Drawings included in these Contract Documents establish the performance, quality requirements, location and general arrangement of materials and equipment, and establish the minimum standards for quality of workmanship and appearance.
- B. Specification sections have not been divided into groups for work of subcontractors or various trades. Should there be questions concerning the applicability or interpretation of a particular section or part of a section or Drawing, direct questions to the Engineer.
- C. Piping work shown on the Drawings is intended to be depictive and may not be an exact and complete representation of the actual finished work. Include fittings, joints, supports, nuts, bolts, and other accessories required to provide complete and satisfactory piping systems, as specified, even though some items may not be specifically shown on the Drawings.
- D. A part of the work that is necessary or required to make each installation satisfactory and operable for its intended purpose, even though it is not specifically included in the Specifications or on the Drawings, shall be performed as incidental work as if it were described in the Specifications and shown on the Drawings.

1.3 DESCRIPTION OF PROJECT

A. General

- 1. The project will provide the Owner with a sound roof and an effective ventilation system.
- 2. The Contractor shall, except as otherwise specifically stated in applicable parts of these Contract Documents, provide and pay for labor, materials, equipment, tools, construction equipment, facilities, and services necessary for proper execution, testing, and completion of the work.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

PART 4 PAYMENT

4.1 LUMP SUM BID

- A. Payment for work in this section will be included as part of the lump sum bid amount stated in the Proposal.

*** * * END OF SECTION* * ***

**SECTION 01025
MEASUREMENT AND PAYMENT**

PART 1 GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. General Conditions: Article 9
- B. Coordination and Site Conditions: Section 01040
- C. Construction Schedules: Section 01310

1.2 INITIAL APPLICATION FOR PAYMENT: Prior to the submittal of the first Application for Payment, the contractor shall submit:

- A. Quality Control Plan
- B. List of subcontractors
- C. List of suppliers
- D. Schedule of Values
- E. Contractor's Construction Schedule
- F. Submittal Schedule
- G. List of Contractor's staff assignments
- H. Copies of building permits required to be procured by the Contractor
- I. Copies of licenses from governing authorities
- J. Certificates of insurance and insurance policies
- K. Performance and payment bonds

1.3 SCHEDULE OF VALUES: Refer to General Conditions Article 9.

- A. Contractor shall prepare the Schedule of Values as follows:

1. Prepare Line Item Breakdown

Break Contract Amount down in line items corresponding to each Division Specification Section and in enough detail to facilitate evaluation of Applications for Payment. Break subcontract amounts down into several line items. Round amounts off to the nearest hundred dollars; the total shall equal the Contract Amount.

Breakdown shall be balanced so that progress payments will not create a condition where sufficient funds are not available to complete the work. Contractor shall provide documentation substantiating the cost allocation if the Engineer believes that the costs are unbalanced.

- 2. Arrange the Schedule of Values in a tabular form with columns to indicate the following for each line item:**

- a. Description
- b. Related specification section
- c. Name of subcontractor
- d. Name of manufacturer or fabricator
- e. Name of supplier
- f. Change Orders (numbers) that have affected value
- g. Dollar value
- h. Percentage of Contract sum to the nearest percent, adjusted to total 100 percent

3. Include the following on the Schedule of Values:

- a. Project name and location
- b. Name of the Engineer
- c. Contractor's name and address

B. The Schedule of Values shall be consistent with:

1. Contractor's Construction Schedule
2. Application for Payment form
3. List of subcontractors
4. List of products
5. Schedule of submittals

C. Submit the Schedule of Values to Metro for review and approval within thirty (30) days after issuance of Notice to Proceed, but no later than fifteen (15) days before the date schedules for submittal to the initial Application for Payment. Update and resubmit the Schedule of Values when Change Orders or Construction Change Directives change the Contract Sum.

D. Upon acceptance of the Schedule of Values by Metro, it shall be used as a basis for all requests for partial payment.

1.3 APPLICATION FOR PAYMENT

A. Application for Payment Format

Use the AIA Document G702 and Continuation Sheets G703 as the form for the application. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions have been made. Include amounts of Change Orders and Force Account Work issued prior to the last day of the period covered by the application. Show items in accord with Article 8 of the General Conditions. Each item in the Schedule of Values and Applications for Payment shall be complete including total cost and share of overhead and profit.

- B. For each item where an Application of Payment includes products purchased or fabricated and stored, but not installed, provide separate line items for initial cost and installed value.
- C. Temporary facilities and items not a direct cost of Work-in-place may be shown either as separate line items or distributed as general overhead expense.
- D. Where Maintenance Manuals are required, no more than 50% of the applicable portion of the lump sum bid shall be paid prior to receipt of a rough draft of the Maintenance Manual and no more than 90% of the final payment shall be made before receipt of the Maintenance Manual complete.

1.4 **WAIVERS OF LIEN:** With each application, submit waivers of lien from every entity who may file a lien arising out of the Contract and related to the Work covered by the payment. Submit partial waivers on each item for the amount requested, prior to deduction for retainage. When an application show completion of an item, submit final or full waivers.

1.5 **FINAL PAYMENT APPLICATION:** Prior to submitting the application, the contractor shall submit:

- A. Written certification of Final Completion approved by Metro
- B. Completion of Project Closeout requirements as outlined in the General Conditions
- C. Completion of items specified for completion after Substantial Completion
- D. Transmittal of required Project construction records to Owner
- E. Occupancy permits
- F. Warranties and maintenance agreements
- G. Test/adjust/balance heating and ventilating systems
- H. Maintenance instructions
- I. Meter Readings
- J. Final cleaning
- K. Application for reduction of retainage and consent of surety
- L. Punchlist of work remaining and corrections required

1.6 **CHANGE ORDER AND FORCE WORK PROCEDURES:** Refer to Article 8 in Section 00700 General Conditions.

PART 2 PRODUCTS: (not used)

PART 3 EXECUTION: (not used)

***** END OF SECTION *****

**SECTION 01040
COORDINATION AND SITE CONDITIONS**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Requirements for coordinating and sequencing the work under the Contract and requirements regarding existing site conditions.
- B. Requirements for cutting and patching of new and existing work.

1.2 JOBSITE COORDINATION

- A. The project work shall be coordinated with the operation of the Metro South Transfer Station. Performance of the work shall not interfere with the operation of the transfer station. Where there are utility interfaces with transfer station systems (i.e., water, electrical, etc.) work under this Contract shall be scheduled and coordinated to minimize the effects on transfer station operation. Construction traffic shall also be coordinated so as to minimize its effects on transfer station operation.

1.3 SUBMITTALS

- A. Contractor shall submit the following information as applicable to coordination activities:
 - 1. Field Relocation: Clearly show proposed relocation of new or existing facilities, or related work affected by the relocation, on clean copy of the Contract Drawings and submitted prior to performing the relocation.
 - 2. Connecting Work: Proposed methods of connecting new work to existing facilities, where not shown or specified.
 - 3. Cutting and Patching
 - a. Written notice requesting consent to perform cutting which may affect structural safety or normal functioning of existing facilities.
 - b. Cost estimate before proceeding with cutting and patching, where such work is not included in these Contract Documents.
 - c. Recommendations indicating changed conditions, alternative materials or methods, time when uncovered work may be observed, and other information necessary to evaluate substitutions when work conditions necessitate change of materials or methods.
 - 4. Requirements for parking, storage, office trailers, and other construction related activities.

1.4 SITE CONDITIONS

A. Information On Site Conditions

1. **General:** Information obtained by the Owner regarding site conditions, topography, subsurface information, groundwater elevations, existing construction of site facilities as applicable, and similar data will be available for inspection at the office of the Engineer upon request. Such information is offered as supplementary information only. Neither the Engineer nor the Owner assumes any responsibility for its accuracy or completeness or for the Contractor's interpretation of such information.
 - a. Where measurement of quantities depends on elevation of existing ground, elevations obtained in the field will be compared with those shown on the Drawings. Variations of 1 foot or less will be ignored, and the profiles shown on the Drawings will be used. Variations greater than 1 foot will be compensated for by holding the shape of the drawn profile but shifting each end vertically upward or downward by the amount of the variation.
2. **Control Points:** Contractor shall establish vertical and horizontal survey control points on structures and improvements located in the vicinity of the work prior to beginning work, and shall check the points for movements when directed by the Engineer. Furnish Engineer with copies of survey notes for each survey and a copy of the layout of survey control points.
3. Contractor will provide all field engineering services and record changes in the location, or layout, of permanent structures on the Project Record Documents.

B. Existing Utilities

1. **Location**
 - a. Known utilities and facilities adjacent to or within the work area are shown on the Drawings. The locations shown are taken from existing records and the best information available from existing utility plans; however, it is expected that there may be some discrepancies and omissions in the locations and quantities shown. Those shown are for the convenience of the Contractor only, and no responsibility is assumed by either the Owner or the Engineer for their accuracy or completeness. Contractor's request for additional compensation or Contract time resulting from encountering utilities not shown will be considered as set forth in the General Conditions.
 - b. Contractor shall exercise reasonable care to verify locations of utilities and facilities shown on the Drawings and to determine the presence of those not shown. Immediate and adjacent areas where excavations are to be made shall be thoroughly checked by visual examination for indications of underground facilities, and also checked with electronic metal and pipe detection equipment.
2. **Contractor's Responsibilities**
 - a. Where Contractor's operations could cause damage or inconvenience to railway, telegraph, telephone, television, power, oil, gas, water, sewer, or irrigation systems, the Contractor shall make arrangements necessary for the protection of

these utilities and services. Replace existing utilities removed or damaged during construction, unless otherwise provided for in these Contract Documents.

- b. Notify utility offices that are affected by construction operations at least 48 hours in advance. Under no circumstances expose any utility without first obtaining permission from the appropriate agency. Once permission has been granted, locate, expose, and provide temporary support for the utilities.
- c. Contractor shall be solely and directly responsible to owner and operator of such properties for damage, injury, expense, loss, inconvenience, delay, suits, actions, or claims of any character brought because of injuries or damage which may result from construction operations under this Contract.
- d. Neither Owner nor its officers or agents shall be responsible to Contractor for damages as a result of Contractor's failure to protect utilities encountered in the work.
- e. In event of interruption to domestic water, sewer, storm drain, or other utility services as a result of accidental damage due to construction operations, promptly notify the proper authority. Cooperate with said authority in restoration as promptly as possible and pay for repair. Prevent interruption of utility service unless granted by the utility owner.
- f. In the event Contractor encounters water service lines that interfere with trenching, obtain prior approval of the water utility, cut the service, dig through, and restore service to previous conditions using equal materials.

C. Interfering Structures

1. Take necessary precautions to prevent damage to existing structures whether on the surface, aboveground, or underground. An attempt has been made to show major structures on the Drawings. While the information has been compiled from the best available sources, its completeness and accuracy cannot be guaranteed.
2. Protect existing structures from damage, whether or not they lie within limits of easements obtained by the Owner. Where existing fences, gates, buildings, or other structure must be removed to properly carry out work, or are damaged during work, restore them to original condition and to the satisfaction of property owner.
3. Contractor may remove and replace in equal or better than original condition, small structures such as fences, that interfere with Contractor's operations.

D. Field Relocation

1. During construction, it is expected that minor relocations of proposed facilities will be necessary. Make such relocations only by direction of the Engineer. If existing structures are encountered that prevent construction as shown, notify the Engineer before continuing with work so Engineer may make necessary field revisions.
2. Where shown or directed by and acceptable to the Engineer, provide relocation of existing facilities to include piping, utilities, equipment, structures, electrical conduit wiring, electrical duct bank, and other miscellaneous items. Use only new materials

for relocation of existing facilities. Match materials of existing facilities, unless otherwise shown or specified. Perform relocations to minimize downtime of existing facilities. Install new portions of existing facilities in their relocated position prior to removing existing facilities, unless otherwise accepted by Engineer. Comply with cutting and patching requirements in this section.

E. Easements

1. It is anticipated that required easements and permits will be obtained before construction is started. However, should the procurement of any easement or permit be delayed, schedule work so that operations are confined to areas where easements or permits have been obtained or are not required, until such time as easements and permits have been secured.
2. Before final payment will be authorized, Contractor shall furnish the Owner written releases from property owners or public agencies where side agreements or special easements have been made, or where Contractor's operations have not been kept within the Owner's property.
3. In the event Contractor is unable to secure written releases, inform the Owner of the reasons.
 - a. Owner or its representatives will examine the site, and Owner will direct Contractor to complete work that may be necessary to satisfy terms of the easement.
 - b. Should Contractor refuse to do this work, Owner reserves the right to have it done by separate contract and deduct the cost of same from the Contract amount, or require the Contractor to furnish a satisfactory bond in a sum to cover legal claims for damages.
 - c. When Owner is satisfied that work has been completed in agreement with the Contract Documents and terms of easements, the right is reserved to waive the requirement for written release if:
 - 1) Contractor's failure to obtain such statement is due to the grantor's refusal to sign, and this refusal is not based upon any legitimate claims that Contractor has failed to fulfill the terms of the easement, or
 - 2) Contractor is unable to contact or has had undue hardship in contacting the grantor.

F. Salvage of Materials: Contractor shall salvage materials for Contractor's use where shown on Drawings.

G. Connecting to Existing Facilities: Unless otherwise shown or specified, determine methods of connecting new work to existing facilities, and obtain Engineer's review and acceptance of connections.

1. Determine location, elevation, nature, materials, dimensions, and configurations of existing facilities where necessary for connecting new work.

2. Inspect existing record drawings and shop drawings, conduct exploratory excavations and field inspections, and conduct similar activities as needed.
3. Shutdown of Owner's existing facility prior to connection, if necessary, shall be by Owner or as specified.

1.5 PROJECT MEETINGS

- A. Preconstruction Conference: Within 20 days following execution of Contract but before start of work at the site, Contractor shall meet with Owner and Engineer for discussion of scheduling requirements, procedures for handling shop drawings and other submittals, processing application for payment, and establishing a working understanding among the parties. The conference shall be attended by:
 1. Contractor's office representative.
 2. Contractor's general superintendent.
 3. Subcontractors' representatives whom Contractor may desire or Engineer may request to attend.
 4. Engineer's representatives.
 5. Owner's representatives.
- B. Progress Meetings: Contractor will schedule regular progress meetings to be held once every week to review work progress, schedules, and other matters needing discussion and resolution.

1.6 SEQUENCE OF WORK

- A. Operation and Shutdown of Existing Facilities
 1. Continuous operation of Owner's facilities is of critical importance.
 - a. Schedule and conduct activities to enable existing facilities to operate continuously, unless otherwise specified.
 - b. Conduct work outside normal working hours as may be necessary to meet project schedule and avoid undesirable conditions.
 2. Provide 7 days advance notice to Engineer of need to shut down a process or facility. Do not proceed with work affecting a facility's operation without obtaining Engineer's advance approval of the need for, and duration of, such work.
- B. Modifications to Existing Facilities: Where existing facilities are to be modified during the course of work, obtain Engineer's review and acceptance of submittals for temporary shutdown, demolition, modification, corrections between new and existing work, and other related work. Conform to other sections as applicable.

C. Milestone Completion Dates for Portions of Work: Refer to the Proposal for completion dates and Section 1310 Construction Schedule for detailed scheduling requirements.

D. Time of Work

1. No work shall be done between 6:00 p.m. and 7:00 a.m., nor on Sundays or legal holidays, without the written permission of the Owner. However, maintenance or emergency work during these hours may be done without prior permission.
2. Night work may be scheduled by Contractor as regular procedure with the written permission of Owner. Such permission, however, may be revoked at any time if Contractor fails to properly execute and control nighttime work.

E. Overtime Notice: If Contractor for convenience should desire to carry on work at night or outside regular hours, submit written notice to the Engineer and allow ample time for satisfactory arrangements to be made for inspecting work in progress.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 CUTTING AND PATCHING

A. General

1. Execute cutting (including excavating), fitting, or patching of work, required to:
 - a. Make the several parts fit properly.
 - b. Uncover work to provide for installation of specified work.
 - c. Remove and replace defective work or work not conforming to requirements of Contract Documents.
 - d. Remove samples of installed materials as specified for testing.
 - e. Install specified work in existing construction.
2. Perform the following upon written instruction of Engineer:
 - a. Uncover work to provide for Engineer's observation of covered work.
 - b. Remove samples of installed materials for testing.
 - c. Remove work to provide for alteration of existing work.
3. Contractor shall not, without written consent of Engineer:
 - a. Cut or alter work of another contractor.
 - b. Cut structural or reinforcing steel.
 - c. Endanger existing or new structures or facilities.
 - d. Shut down or disrupt existing operations.
4. Materials for replacement of work removed shall comply with applicable sections of these Specifications for corresponding type of work to be done.
5. Provide all tools and equipment required to accomplish cutting and patching.

B. Inspection and Preparation

1. Inspect existing conditions of work, including elements subject to movement or damage during cutting, patching, excavating, and backfilling.
2. After uncovering work, inspect conditions affecting installation of new products.

C. Procedures

1. Execute fitting and adjustment of products to provide finished installation to comply with specified tolerances and finishes.
2. Execute demolition as specified in Section DEMOLITION.
3. Execute excavating and backfilling as specified in Section EARTHWORK.

4. Restore work which has been cut or removed; install new products to provide completed work in accordance with specified requirements.
5. Refinish entire surfaces as necessary to provide an even finish.
 - a. Refinish continuous surfaces to nearest intersection.
 - b. Refinish entire assemblies.
6. Restore structures and surfaces damaged that are to remain in the completed work including concrete-embedded piping, conduit, and other utilities.
7. Make restorations with new materials and appropriate methods as specified for new work of similar nature; if not specified, use best recommended practice of manufacturer or appropriate trade association.
8. Restore damaged work so there is a secure and intimate bond or fastening between new and old work. Finish restored surfaces to such planes, shapes, and textures that no transition between new and old work is evident in finished surfaces.

PART 4 PAYMENT

4.1 LUMP SUM BID

- A. Payment for work in this section will be included as part of the lump sum bid amount stated in the Proposal.

*** * * END OF SECTION * * ***

**SECTION 01092
REFERENCE STANDARDS**

PART 1 GENERAL

1.1 SUMMARY

- A. These specifications and the Contract Drawings list many of the construction industry organizations, professional and technical associations, societies and institutes, and government agencies issuing, promoting, or enforcing standards to which references may be made in the Contract Document, along with the abbreviations commonly used for those references. Also included are certain general requirements for the use of industry standards specified, and for application of the standards in quality control.

1.2 USE OF REFERENCE STANDARDS

- A. Work specified by reference to the published standard or specification of a government agency, technical association, trade association, professional society or institute, testing agency, or other organization shall conform to or surpass the minimum standards of quality for materials and workmanship established by the designated standard or specification.
- B. Where so specified, products or workmanship shall also conform to the additional prescriptive or performance requirements included within the Contract Document to establish a higher or more stringent standard of quality than that required by the referenced standard.
- C. Where the specific date or issue of the standard is not included with the reference to the standard, the edition, including all amendments published and available on the first published date of the Invitation to Bid, shall apply.
- D. Where two or more standards are specified to establish quality, the product and workmanship shall conform to or surpass the requirements of both.
- E. In case of conflict between referenced standards, the more stringent shall apply.
- F. Where both a standard and a brand name are specified for a product in the Contract Document, the proprietary product named shall conform to or surpass the requirements of the specified reference standard. The listing of a trade name in a Contract Document shall not be construed as warranting that such product conforms to the respective reference standard.
- G. Copies of standards:
1. Copies of applicable referenced standards have not been bound in this Contract Document.
 2. Where copies of standards are needed by the Contractor for superintendence and quality control of the work, obtain a copy or copies directly from the publication source and maintain in an orderly manner at the jobsite, available to the Contractor's personnel, subcontractors, Owner, and Engineer.

3. **Submittals:** Submit for approval the requests to use products conforming to printed standards or publications with a different publication date from that effective under the Contract. Clearly indicate the changes in product or workmanship quality involved in the proposed change, if any, and reasons for the request.

*** * * END OF SECTION * * ***

**SECTION 01310
CONSTRUCTION SCHEDULES**

PART 1 GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. Summary of Work: Section 01010
- B. Coordination and Site Conditions: Section 01040
- C. Shop Drawings, Project Data and Samples: Section 01340
- D. Schedule of Values: Section 01025

1.2 PRELIMINARY SCHEDULE

- A. The Contractor shall submit within ten (10) days after Notice to Proceed, a preliminary project schedule in graphic form (e.g. bar chart) showing proposed schedule of anticipated progress to include all major operations and items and time of anticipated completion of major portions of the work.
- B. The preliminary schedule shall be accompanied by a narrative work plan which will include the following information:
 - 1. Manpower levels planned to achieve durations shown in the preliminary schedule.
 - 2. Equipment utilization planned for each activity taking place on site.
 - 3. Identification of work planned for overtime or additional shifts.
 - 4. Plans for wet weather work.
 - 5. Identification of critical work or supply activities.
- C. The preliminary schedule will be reviewed within seven (7) days by the Engineer and Metro. Comments will be forwarded to Contractor for his consideration and action where appropriate. A revised preliminary schedule shall be resubmitted by the Contractor three (3) days after receiving Engineer and Metro comments, if so required.

1.3 CONSTRUCTION SCHEDULE

- A. The Contractor shall submit within 25 days of Notice to Proceed an overall project schedule in both graphic and tabular form.
- B. The schedule shall utilize an approved standard Critical Path Method (CPM) computer program using either the Arrow Diagram Method (ADM) or Precedence Diagram Method (PDM) which will furnish a mathematical analysis and identification of the critical path.
- C. Reports to be furnished with the CPM schedule will include:
 - 1. Work Item Number in ascending order
 - 2. Total Float/Early Start in ascending order
 - 3. Early Start in ascending order
 - 4. Late start in ascending order
 - 5. Predecessor report
 - 6. Successor report

- D. The graphic schedule will be of a format suitable for use by the Contractor and acceptable to Metro.
- E. The work activities in the CPM will provide a complete sequence of construction, as well as submittal and delivery activity.
- F. Information shown for each activity on the CPM will include description, responsibility, duration, float, early and late start dates, early and late finish dates, preceding and succeeding activities and relationships, percentage complete or remaining duration.
- G. The Construction Schedule will be accompanied by an narrative similar in format to the provided in the Preliminary Schedule reflecting any refinements or changes to the planning process.
- H. The Engineer and Metro will review the Construction Schedule and provide comments to the Contractor for appropriate action including potentially revision and resubmittal. Once schedule is determined acceptable by Metro, this schedule will be designated the initial or zero progress schedule.
- I. Contractor will update the CPM and submit two copies to Engineer on a monthly basis. CPM will be accompanied by a narrative report which will include:
 - 1. Description of work completed during the past month.
 - 2. Discussion of problem areas including current and anticipated delay factors.
 - 3. Description of schedule revisions made for this months update.
 - 4. Actions planned to mitigate delays or to facilitate construction progress.
- J. Contractor will provide electronic copy on computer diskette of the approved progress schedule and each monthly update which will function with approved CPM software program to allow Metro to analyze impacts on the schedule as required.

1.4 CONTRACTOR TO SCHEDULE WORK

- A. Contractor shall keep the Engineer informed sufficiently in advance of the time and places at which he intends to work in order that the necessary measurements for record and payment may be made with the minimum of inconvenience and delay to both the Engineer and the Contractor.

1.5 TWO WEEK SCHEDULE

- A. Provide to the Engineer, on a weekly basis, a two week schedule using bar chart format in sufficient detail to plan and properly coordinate upcoming work.

1.6 SUBMITTALS BY CONTRACTOR

- A. Submit Preliminary Schedule prior to starting work.
 - 1. Engineer and Metro will review overall schedule and may return reviewed copy with suggested revisions within 7 days after receipt.
 - 2. If required by the Engineer, contractor shall resubmit a revised preliminary schedule within 3 days after return of reviewed copy.

- B. Submit initial CPM Construction Schedule within 25 days after Notice to Proceed. Include a cash flow summary based on a monthly estimate of revenue with the initial project schedule.
- C. Submit monthly updated CPM Construction Schedule by the seventh day of each month. Updated schedule shall reflect actual progress of the project to within 5 working days prior to submittal.
- D. Submit a Two Week Schedule every week. Deliver to Engineer at the weekly Progress Meeting.
- E. Submit six copies of schedules to Engineer, both initial submittals and revised or updated schedules.

1.7 DISTRIBUTION BY CONTRACTOR

A. Distribute copies of reviewed schedules to:

- 1. Job site file
- 2. Other contractors
- 3. Subcontractors
- 4. Other concerned parties

***** END OF SECTION *****

**SECTION 01340
SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

PART 1 GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. Coordination and Site Conditions: Section 01040
- B. Construction Schedules: Section 01310
- C. Contractor's Quality Control: Section 01400
- D. Project Record Documents: Section 01720

1.2 SUBMITTAL REGISTER AND SCHEDULE

- A. Contractor will review the Contract Documents and identify all requirements for submittal of information to the Engineer and Metro. Contractor will arrange the listing of these submittals in order by section and paragraph beginning with the General Conditions, Supplementary Conditions and finally, the Technical Specifications in numerical order by section and paragraph. This document will be identified as the Submittal Schedule and will include the following information about each required submittal.
 - 1. Specification Section and Paragraph
 - 2. Transmittal Number (leave blank until submittal is made)
 - 3. Description
 - 4. Responsibility (Contractor, Sub or Supplier)
 - 5. Schedule Date - Date on which Contractor plans to submit
 - 6. Approval Required - Date approval is required to deliver the material by required date.
 - 7. Material Required - Date material is needed onsite.
 - 8. Submittal Date - Leave blank until submittal is actually made.
 - 9. Review Status - No Exceptions Taken, Make Corrections Noted, Rejected, Revise and Resubmit, Submit Specified Item.
 - 10. Action Date - Date on which Metro actually returned the reviewed submittal to Contractor.
 - 11. Comment - Cross reference on notes as required.
- B. The Submittal Schedule will be submitted no later than 10 days after Notice to Proceed and should be coordinated with the information presented in the Construction Schedule.
- C. Sufficient lead time should be allowed for review and approval by Metro. Allow thirty (30) days for review and approval. Specifically identify those submittals which will require an expedited review process.

- D. The Submittal Schedule upon acceptance by Metro will form the basis for the Submittal Register. Contractor will keep track of submittals as submitted by sequential number. Contractor will update his submittal Schedule with information from the Submittal Register on a monthly basis and furnish a copy to Metro.

1.3 SUBMITTALS

- A. All submittals including shop drawings, data and samples shall be submitted attached to a form approved by the Engineer. Location by drawing number and paragraph of specification shall be shown on the form for the product or material being submitted. Each transmittal shall be assigned a unique number in sequential order.

- B. Shop drawings shall be submitted and reviewed in the following manner:

1. Contractor shall review, stamp with his approval and submit postpaid with such promptness as to cause no delay in his work or in that of any other contractor, the required number of copies of all shop drawings, schedules, data, and samples required for the work of the various trades determined necessary by the Engineer, required in the General Conditions and/or described elsewhere in the Project Specifications.
2. Shop drawings shall establish the actual detail of all manufactured or fabricated items. All shall be drawn to scale and be completely dimensioned.
3. Sheet sizes of shop drawings shall be in multiples of 8 1/2 by 11 inches, preferably not exceeding 22 by 34 inches unless there is a special requirement for larger size sheets.
4. Provide on each drawing a clear space for the Engineer's review and approval stamps and comments.
5. Four (4) copies of shop drawings, manufacturer's literature, brochures, catalog cuts, and other pertinent printed matter or data shall be submitted in addition to the number of copies Contractor wishes returned to him.
6. Contractor shall obtain and provide such number of prints or copies of drawings as is required for his field distribution.
7. Shop drawings may be submitted to the Engineer in the form of a reproducible transparency, along with one blackline or blueline print. Mylars are preferred.
8. The Engineer shall review the shop drawings with reasonable promptness and will affix the Shop Drawing Review Stamp with notations thereon indicating "No Exceptions Taken", "Make Corrections Noted", "Revise and Resubmit", "Rejected" or "Submit Specified Item".
9. When shop drawings and/or other submittals are required to be revised or corrected and resubmitted, Contractor shall make such revisions and/or corrections and resubmit the drawings or other material in the same manner as specified above.
10. It shall be Contractor's responsibility to clearly note on the shop drawings, and in writing specifically call to the Engineer's attention, any changes and deviations that

vary from the Contract Drawings and Specifications. No review of the shop drawings by the Engineer shall relieve Contractor of full responsibility and at his own cost and expense to comply with the Contract Documents.

11. If corrections are required, Contractor shall make the corrections required by the Engineer and file with him the same number of corrected copies as indicated above. Contractor shall direct specific attention in writing or, on resubmitted Shop Drawings to revisions other than the corrections requested on previous submissions. The Engineer will return to Contractor copies of drawings in the same manner and number as before.
 12. Shop Drawings shall give complete information necessary for the fabrication and installation of all component parts of the equipment, structure, facility, etc. In the case of structural drawings, they shall include the location, type, and size and extent of all welds, if any are necessary. Manufacturer's standard details, catalogues, advertising literature, etc., shall not necessarily constitute all of the shop drawings required for any unit or facility. Additional shop details designed for the particular project shall be furnished when required by the Engineer. Shop drawings of electrical equipment shall include complete diagrams of electrical circuitry.
 13. The Engineer's review of and placement of shop drawing review stamp on any shop drawing is understood to be an acceptance of the character of the details and not a check of any dimension or quantity and will not relieve Contractor from responsibility for errors of any sort in shop drawings data or schedules, whether or not such errors are found by the Engineer in his review of such details.
 14. No changes will be made in any shop drawing after it has been reviewed except by the consent or direction of the Engineer in writing.
- C. Samples shall be submitted in the same manner as shop drawings.
1. Samples to be physical examples to illustrate materials, equipment or workmanship, and to establish standards by which completed work is judged.
 - a. Office samples: of sufficient size and quantity to clearly illustrate
 - (1) Functional characteristics of product or material, with integrally related parts and attachment devices.
 - (2) Full range of color samples.After review the Engineer will retain two samples and return the remainder to Contractor.
 - b. Field samples and mockups
 - (1) Erect at project site location acceptable to Engineer.
 - (2) Construct each required sample or mock-up complete, including work of all trades required in finished work.
 - (3) Coordinate sampling of natural materials with Field Engineer.

2. If any test sample fails to meet the specification requirement, all previous approvals will be withdrawn and such materials or equipment, which fail the testing, shall be subject to removal and replacement by Contractor with materials or equipment meeting the specification requirement.
3. Affected finish work shall not be commenced until the Engineer has given written approval for the field samples.

1.4 CONTRACTOR RESPONSIBILITY

- A. All submittals shall be attached to a "Shop Drawing Transmittal" form approved by the Engineer.
- B. Contractor shall review and approve shop drawings before submittal. Submittal directly from Subcontractor or Suppliers will not be accepted.
- C. By approving and submitting Shop Drawings and Samples, Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials, catalog numbers and similar data, or will do so, and that he has checked and coordinated each Shop Drawing with the requirements of the Work and of the Contract Documents and that there is no conflict with other submittals that may affect the work of another contractor of Metro.
- D. A copy of each approved shop drawing and each approved sample shall be kept in good order by Contractor at the job site and shall be available to the Engineer.

1.5 LIMITATION

- A. Two submittals (initial and revised) of each item requiring samples and/or shop drawings will be reviewed by the Engineer in the regular course of the Contract. However, all subsequent reviews of the same item over two will be reviewed at the expense of Contractor unless the right to an additional review without charge was previously approved in writing by the Engineer. Contractor will be billed by Metro at the Engineer's current established rates.

1.6 GENERAL PRODUCT REQUIREMENTS

- A. Unless otherwise specifically provided, all workmanship, equipment, and materials incorporated in the work covered by the Contract are to be new and of the best available grade of their respective kinds.
- B. For products specified only by reference standards, select any product meeting standards, by any manufacturer.
- C. For products specified by naming one or more products, but indicating the option of selecting equivalent products by stating "or equivalent" after specified product, Contractor must submit request, as required for substitution, for any product not specifically named.

1.7 SUBSTITUTIONS REVIEW AND APPROVAL PROCEDURE

- A. Engineer will consider formal requests from Contractor for substitution of products in place of those specified. Provide complete list of all products which are proposed for installation as substitutions or product options. Tabulate list by each specification section. The Contractor shall pay any engineering expenses associated with review of substitution requests.
- B. Submit detail request for substitution in accordance with requirements for submittal of shop drawings and the following additional requirements.
 - 1. For construction methods
 - a. Detailed description of proposed method.
 - b. Drawings illustrating methods.
 - 2. Itemized comparison of proposed substitution with product or method specified.
 - 3. Data relating to changes in construction schedule.
 - 4. Accurate cost data on proposed substitution in comparison with product or method specified.
- C. In making request for substitution, Contractor shall specifically represent:
 - 1. He has personally investigated proposed product or method, and determined that it is equivalent or superior in all respects to that specified.
 - 2. He will provide the same guarantee for substitution as for product or method specified.
 - 3. He will coordinate installation of accepted substitution into work, making such changes as may be required for work to be complete in all respects.
 - 4. He waives all claims for additional costs related to substitution which consequently becomes apparent.
 - 5. Cost data is complete and includes all related costs under his Contract.
- D. Substitutions will not be considered if:
 - 1. They are indicated or implied on shop drawings or project data submittals without formal request submitted in accord with Section 01340.
 - 2. Acceptance will require substantial revision of Contract Documents or redesign by the Engineer, without substantial benefit to Metro.
- E. The above shall not be construed to mean that any substitution for materials and equipment will be allowed. The Engineer reserves the right to reject and disapprove any request he deems irregular or not in compliance with the Specifications.

***** END OF SECTION *****

**SECTION 01400
CONTRACTOR'S QUALITY CONTROL**

PART 1 GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. General Conditions - Article 7 Control and Quality of work and Material.
- B. Technical Specifications pertaining to the work.

1.2 RESPONSIBILITIES

- A. Contractor is primarily responsible for quality control and will provide for sufficient supervision and control measures on a daily basis to ensure that the Work is completed in accordance with the Contract Documents.
- B. Metro and the Engineer are responsible for quality assurance. Their activities in no way relieve Contractor of his quality control responsibilities.

1.3 REQUIREMENTS

- A. Quality Control Plan - Contractor will prepare and submit a plan of action to establish and maintain a Quality Control Program. The program as a minimum will contain:
 - 1. The quality control organization chart beginning with the responsible corporate officer.
 - 2. The names and qualifications of personnel selected to implement the program onsite.
 - 3. Authority and responsibility of the quality control staff.
 - 4. A breakdown of the schedule of work which includes proposed inspections, tests or other means of controlling the quality of work for each phase.
 - 5. Provides controls for each phase of work by establishing a system of inspections as follows:
 - a. Preparatory Inspection - This inspection will be conducted by Contractor prior to starting any new phase of work. Contractor's Quality Control Manager will review the contract documents to ensure that required materials, equipment and procedures have been submitted and approved, are onsite and checked, that a reasonable, coordinated work plan has been prepared, that all previous work has been completed, inspected and tested as required. Contractor will schedule a preparatory conference with the Engineer to discuss the findings and to develop a material understanding on execution of the work and the quality standards which will be used. The inspection results and minutes of the conference will be documented by Contractor and a copy furnished to the Engineer. Subsequent to the conference, but prior to start of work, all involved working personnel and inspectors will be briefed on the work plan and the quality standards expected.
 - b. Initial Inspection - This joint inspection by Contractor and the Engineer/Metro Construction Coordinator will be made as soon as a representative portion of the

work has been accomplished. This inspection will be repeated if new crew member(s) are assigned to the work or if acceptable standards of workmanship are not being met. Contractor will, as a minimum, document this inspection in the daily Quality Control Report.

- c. Followup Inspections - Contractor will perform daily inspections of the work until completion.
6. Establish a system of Quality Control Deficiency Reports to report deficiencies in the work or materials to determine appropriate correction and to track the execution of the correction.

B. Documentation

1. Daily Quality Control Report - This report will be furnished by Contractor in a suitable format on a daily basis over the signature of the Quality Control Manager or onsite Quality Control Representative. It shall be delivered to the onsite Metro Representative and/or Engineer by 10:00 a.m. on the following work day, and will contain as a minimum:
 - a. Weather
 - b. Manpower (listed by craft for Contractor and total for each Subcontractor)
 - c. Equipment used
 - d. A summary of activity for each shift and evaluation of the workmanship
 - e. A record of any inspections which were made
 - f. Results of tests
 - g. Identification of deficiencies or rejections
 - h. Proposed remedial sections
 - i. Corrective actions taken
 - j. Safety related issues
 - k. Permanent materials deliveries and inspections
2. Preparatory Inspection Meeting Record - This record will be delivered to the onsite Metro Representative and/or Engineer prior to the start of each phase of work but not later than three work days after the meeting. The hazard analysis separately described in Section 01100 can be delivered at the same time.
3. Test Reports - A record of all tests shall be kept by Contractor on the job site. A copy of all test reports done by Contractor shall be provided to the Engineer and/or Metro.
4. Quality Control Deficiency Reports - Contractor will prepare a deficiency report on all deficiencies in the work or in the quality of materials. The report will be logged and numbered and submitted to the Engineer and/or Metro along with the recommended remedy. Contractor will track the action through to completion, submitting a final report of inspection on the work in question.

C. Duties and responsibilities of the Quality Control Manager or a designated representative includes:

1. Have the authority to stop or reject work.

2. Be onsite during normal working hours and will be assigned full time to the project.
3. Establish the Quality Control Plan and execute the Quality Control Program.
4. Review all submittals, including shop drawings and materials submittals. Reject those submittals not in accordance with the Contract Documents, approve and submit those which are in accordance. Maintain a jobsite submittal file.
5. Ensure that line, grade, depth and compaction, density and composition of materials are in accordance with the Contract Documents.
6. Ensure that all work to be inspected includes an opportunity for Metro to check work prior to covering the work.
7. Coordinate required tests and inspections with the Engineer and Metro's Construction Coordinator.
8. Inspect the work of Contractor and all Subcontractors.
9. Submit all required quality control documentation and maintain records.
10. Verify that all permanent materials delivered to the jobsite are in accordance with the Contract Documents. Submit certifications and test reports as required.
11. Accompany the Engineer and/or Metro Construction Coordinator on jobsite inspections as required.
12. Prepare and submit the project punch lists prior to job completion and acceptance.
13. Furnish representative samples for testing as required by the Contract Documents or Metro.

1.4 INSPECTION

- A. Contractor will provide continuous inspection over his daily operations, including overtime and additional shifts.
- B. The Engineer and other regulatory agencies may also inspect as required by law and custom. The inspection by any of the above does not relieve Contractor of the requirement to inspect and to produce work in accordance with the plans and specifications. Contractor shall at all times provide safe access and assistance to the Engineer, and other authorized inspectors for inspection of the work.

1.5 TESTING

- A. Contractor will be responsible for all testing which may be required. Contractor will submit the qualifications of an independent test laboratory to provide testing services as required.
- B. The Engineer may conduct additional testing to check on the quality of work, materials or testing.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

The planning, execution and results of Contractor's Quality Control Program are considered incidental to the payment for the work as indicated by the bid items. Failure to comply with the Quality Control Program may result in withholding of all or a portion of the monthly progress payments by Metro at its discretion and Metro may use these withheld funds to contract or pay for this work outside of this Contract.

*** * * END OF SECTION * * ***

**SECTION 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Temporary utilities required during construction.
- B. Temporary construction facilities, including field offices and project signs.
- C. Requirements for security and protection of facilities and property.
- D. Requirements for traffic regulation and access to the work.
- E. Temporary controls for protection of environment.

1.2 SUBMITTALS

A. Temporary Utility Submittals

- 1. Electric power supply and distribution plans.
- 2. Water supply and distribution plans, including metering device.
- 3. Wastewater routing plans including piping, ditches, culverts, etc.

B. Temporary Construction Submittals

- 1. Access roads and parking area plans.
- 2. Storage yard and storage building plans, including gravel surfaced area.
- 3. Fencing and protective barrier locations and details.
- 4. Engineer's field office plans and equipment list.
- 5. Staging area plan and notification of any obstructions encountered during mobilization.

C. Temporary Control Submittals

- 1. Copies of permits or approvals for construction from governing environmental protection agencies.
- 2. Plan for disposal of waste materials.

D. Safety and Protection Submittals

- 1. Copies of permits or approvals for construction activities from governing safety authorities.
- 2. Copies of survey notes taken to establish control points for structures affected by the work, and layout of survey control points.

E. Traffic Routing Submittal: Submit specified plan for temporary traffic routing.

1.3 MOBILIZATION

- A. Use area designated for Contractor's temporary facilities as shown on Drawing attached to this section.
- B. Notify Owner of obstructions not shown or not readily apparent by visual inspection of the staging area. If such obstructions adversely affect Contractor's operations, proper adjustment to Contract will be considered. Do not remove obstructions without Owner's prior consent.

1.4 TEMPORARY UTILITIES

- A. Permits Obtained by Owner: Copies of permits or approvals for temporary utilities to be obtained by Owner will be made available to Contractor at the preconstruction conference.
- B. Costs After Substantial Completion: Upon acceptance of the work or a portion of the work defined and certified as substantially complete by Engineer, and Owner commences full-time successful operation of the facility or portion thereof, the Owner will bear the cost for utilities used for Owner's operation. Contractor shall continue to pay for utilities used until final acceptance of the work, except as provided herein.
- C. Electric Power
 - 1. Locate and determine the type and amount of electric power available and make arrangements for obtaining temporary electric power service, metering equipment, and pay all costs for the electric power used during the Contract period, except as specifically provided for utilities used by the Owner on portions of the work designated in writing by the Engineer as substantially complete.
 - 2. Temporary electric power installations shall meet construction safety requirements of OSHA, state, and other governing agencies.
 - 3. Cost of electric power used in performance and acceptance testing shall be borne by Contractor.
- D. Water: Owner will provide a place of temporary connection for water at the site. The contractor will provide temporary facilities and piping required to bring water to the point of use, and remove them when no longer needed. Install an acceptable metering device and pay for water used at the Owner's current rate.
- E. Sewage: Provide and maintain sanitary facilities for Contractor's employees and subcontractors' employees that comply with regulations of local and state health departments.
- F. Telephone
 - 1. Arrange for onsite telephone service for Contractor's use during construction. Costs of installation and monthly bills for Contractor's telephone service shall be borne by the Contractor.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 TEMPORARY CONSTRUCTION

- A. Access Roads and Parking:** Use area designated on the Drawing attached to this section for parking of Contractor's employee vehicles.
- B. Storage Yards and Buildings**
 - 1. Construct temporary storage yards for the storage of products that are not subject to damage by weather conditions. Materials such as pipe, reinforcing and structural steel, shall be stored on pallets or racks, off the ground, and in a manner to allow ready access for inspection and inventory. Temporary gravel surfacing of storage yards must be approved by the Engineer.
 - 2. Erect or provide temporary storage buildings of various sizes needed to protect mechanical and electrical equipment and other materials, as recommended by manufacturers of such equipment and materials.
 - a. Provide environmental control systems that meet recommendations of manufacturers of equipment and materials stored in the buildings.
 - b. Buildings shall be of sufficient size.
 - c. Arrange or partition buildings to provide security for their contents and ready access for inspection and inventory.
 - d. At or near completion of the work, temporary storage buildings shall be dismantled, removed from the site, and remain the property of the Contractor.
 - 3. Store combustible materials (paints, solvents, fuels, etc.) in a well-ventilated building remote from other buildings.
- C. Fencing and Barricades**
 - 1. **Security Fence:** The Contractor may erect a temporary security fence with gates around the construction site.
 - 2. **Barricades:** Provide barricades as necessary to prevent unauthorized entry to construction areas, both inside and outside of fenced area. Also provide barricades to protect existing facilities and adjacent properties from potential damage. Locate barriers to enable access by facility operators and property owners.

3.2 SAFETY AND PROTECTION

- A. Examination of Existing Facilities**

1. After the Contract is awarded and before the commencement of work, Contractor and Engineer shall make a thorough examination of all existing buildings, structures, and other improvements in the vicinity of the work, as applicable, which might be damaged by construction operations.
2. Periodic examinations of existing buildings, structures, and other improvements in the vicinity of the work shall be made jointly by authorized representatives of the Contractor and the Owner. The scope of the examination shall include cracks in structures, settlement, leakage, and similar conditions.
3. Records in triplicate of all observations shall be prepared by the Contractor and each copy of every document shall be signed by the authorized representative of the Owner and of the Contractor. Photographs, as requested by the Owner, shall be made by the Contractor and signed in the manner specified above. One signed copy of every document and photograph will be kept on file in the office of the Engineer.
4. These records and photographs are intended for use as indisputable evidence in ascertaining whether and to what extent damage occurred as a result of the Contractor's operations, and are for the protection of the adjacent property owners, the Contractor, and the Owner.

B. Safety Requirements

1. Contractor shall do whatever work is necessary for safety and be solely and completely responsible for conditions of the jobsite, including safety of all persons (including employees) and property during the Contract period. This requirement shall apply continuously and not be limited to normal working hours.
2. Safety provisions shall conform to Federal and State Departments of Labor Occupational Safety and Health Act (OSHA), and other applicable federal, state, county, and local laws, ordinances, codes, requirements set forth herein, and regulations that may be specified in other parts of these Contract Documents. Where these are in conflict, the more stringent requirement shall be followed. Contractor shall become thoroughly familiar with governing safety provisions and shall comply with the obligations set forth therein.
3. Contractor shall develop and maintain for the duration of the Contract, a safety program that will effectively incorporate and implement required safety provisions. Contractor shall appoint a qualified employee who is authorized to supervise and enforce compliance with the safety program.
4. Engineer's duty to conduct construction review of the Contractor's performance is not intended to include a review or approval of the adequacy of Contractor's safety supervisor, safety program, or safety measures taken in, on, or near the construction site.
5. As part of safety program, Contractor shall maintain at its office or other well-known place at the jobsite, safety equipment applicable to the work as prescribed by the governing safety authorities, and articles necessary for giving first-aid to the injured. Establish procedures for the immediate removal to a hospital or a doctor's care of persons who may be injured on the jobsite.

6. Contractor shall do all work necessary to protect the general public from hazards, including, but not limited to, surface irregularities or unramped grade changes in pedestrian sidewalk or walkway, and trenches or excavations in roadway. Barricades, lanterns, and proper signs shall be furnished in sufficient amount to safeguard the public and the work.
7. Construct and maintain satisfactory and substantial temporary chain link fencing, solid fencing, railing, barricades or steel plates, as applicable, at all openings, obstructions, or other hazards in streets, sidewalks, floors, roofs, and walkways. Such barriers shall have adequate warning lights as necessary or required for safety.
8. Comply with Owner's safety rules while on Owner's property.
9. If death or serious injuries or damages are caused, the accident shall be reported immediately by telephone or messenger to the Engineer. In addition, Contractor shall promptly report in writing all accidents whatsoever arising out of, or in connection with, the performance of the work whether on or adjacent to the site, giving full details and statements of witnesses.
10. If claim is made by anyone against Contractor or any subcontractor on account of accident, Contractor shall promptly report the facts in writing, giving full details of the claim.
11. Furnish reports of weekly toolbox safety training meetings as completed.

C. Traffic Safety and Access

1. Comply with rules and regulations of the city, state, and county authorities regarding closing or restricting the use of public streets or highways. No public or private road shall be closed, except by written permission of the proper authority. Assure the least possible obstruction to traffic and normal commercial pursuits.
2. Where traffic will pass over backfilled trenches before they are paved, maintain top of trench to allow normal vehicular traffic to pass over. Provide temporary access driveways where required. Cleanup operations shall follow immediately behind backfilling.
3. When flagmen and guards are required by regulation or when deemed necessary for safety, furnish them with approved orange wearing apparel and other regulation traffic control devices.
4. Traffic control procedures and devices used on all local, county, and state rights-of-way shall meet the requirements of the applicable current laws and regulations for traffic control. See 3.3 TRAFFIC REGULATION below.
5. Provide snow removal to facilitate normal vehicular traffic on public or private roads affected by construction. Perform snow removal promptly and efficiently by means of suitable equipment whenever necessary for safety, and as may be directed by proper authority.

6. Contractor shall leave its night emergency telephone number or numbers with the police department, so that contact may be made easily at all times in case of barricade and flare trouble or other emergencies.
- D. Fire Prevention: Perform all work in a firesafe manner. Furnish and maintain on the site adequate fire fighting equipment capable of extinguishing incipient fires. Comply with applicable federal, local, and state fire prevention regulations. Where these regulations do not apply, follow applicable parts of the National Fire Prevention Standard for Safeguarding Building Construction Operations (NFPA No. 241).
 - E. Protection of Work and Property:
 1. General
 - a. Contractor shall employ such means and methods necessary to adequately protect public property and property of the Owner against damage. In the event of damage to such property, immediately restore the property to a condition equal to its original condition and to the satisfaction of the Engineer and the owner of said property, and bear all costs thereof.
 - b. Protect stored materials and other items located adjacent to the proposed work.
 2. Finished Construction
 - a. Contractor shall assume the responsibility for protection of finished construction and shall repair and restore any and all damage to finished work to its original or better condition.
 - b. Where responsibility can be fixed, costs for replacement or repair of damaged work shall be charged to the party responsible. If responsibility cannot be fixed, costs shall be prorated among all parties in proportion to their activities at the time the damage was done.
 - c. Prevent wheeling of loads over finished floors, either with or without plank protection, except in rubber-tired wheelbarrows, buggies, or dollies. Protect finished floors and concrete floors exposed as well as those covered with composition tile or other applied surfacing.
 - d. At such time temporary facilities and utilities are no longer required for the work, notify Engineer of intent and schedule for their removal. Remove temporary facilities and utilities from the site as Contractor's property and leave the site in such condition as specified, as shown on the Drawings or as directed by the Engineer.
 - e. In unfinished areas, leave the site evenly graded, seeded, or planted as necessary, in a condition that will restore original drainage, and with an appearance equal to or better than original.

3.3 TRAFFIC REGULATION

A. Traffic Routing

1. Prior to starting work at project site, Contractor shall submit traffic routing plans to the Engineer for review and approval showing:
 - a. Sequences of construction affecting the use of roadways.
 - b. Time required for each phase of the work.
 - c. Provisions for decking over excavations or phasing of operations, or a combination of these two methods, to provide necessary access.
 2. This provision shall not be construed as preventing the Contractor from proceeding with mobilization of plant and equipment, and from placing orders for materials upon receipt of Notice to Proceed. Contractor shall not be entitled to delays due to "DISAPPROVED" traffic routing plans.
- B. Signs and Equipment: Furnish at the site, or convenient to and immediately available to the site, the following signs and equipment:
1. Barricades, as required by the Vehicle Code, in sufficient quantity to safeguard the public and the work.
 2. Portable "TOW-AWAY - NO STOPPING" signs, placed where approved by police department and owner.
 3. Traffic cones, to delineate traffic lanes to guide and separate traffic movements.

3.4 ENVIRONMENTAL CONTROLS

A. General

1. The Contractor in executing the work shall maintain affected areas within and outside project boundaries free from environmental pollution that would be in violation of federal, state, or local regulations.
2. Do not impair operation of existing sewer systems. Prevent construction material, pavement, concrete, earth, volatile and corrosive wastes, and other debris from entering sewers, pump stations, or other sewer structures. Maintain original site drainage wherever possible.

B. Water Pollution Control

1. Comply with laws, rules, and regulations of the State of Oregon and agencies of the United States Government prohibiting the pollution of lakes, wetlands, streams, or river waters from the dumping of refuse, rubbish, or debris.
2. Divert sewage and waste flow, including stormwater flow, interfering with construction and requiring diversion to sewers leading to a wastewater treatment plant. Do not cause or permit action to occur which would cause an overflow to an existing waterway. Prior to commencing excavation and construction, obtain Engineer's agreement with detailed plans showing procedures intended to handle and dispose of sewage, groundwater, and stormwater flow, including dewatering pump discharges.
3. Contractor shall comply with the procedures outlined in the U.S. Environmental Protection Agency manuals entitled "Guidelines for Erosion and Sedimentation

Control Planning and Implementation", "Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity".

C. Dewatering Procedures

1. The Contractor shall construct, maintain, and operate cofferdams, channels, flume drains, sumps, pumps, or other temporary diversion and protection works. Furnish materials required, install, maintain, and operate necessary pumping and other equipment for the environmentally-safe removal and disposal of water from the various parts of the work. Maintain the foundations and parts of the work free from water.
2. Where an excavation extends below the water table, dewater in a manner that will prevent loss of fines from the foundation. Maintain stability of slopes and bottom of the excavation, and perform construction operations in the dry. Use screened wells or equivalent methods for dewatering. Control seepage along the bottom of excavations, which may require ditches and pipe drains leading to sumps from which the water shall be pumped and properly discharged.

D. Waste Material Disposal

1. Excess excavated material not required or suitable for backfill, and other waste material, must be disposed of in accordance with existing regulations.
2. Unacceptable disposal sites include, but are not limited to, sites within a wetland or critical habitat and sites where disposal will have a detrimental effect on surface water or groundwater quality.
3. Contractor shall make his own arrangements for disposal subject to submission of proof that the owner(s) of the proposed site(s) has a valid fill permit issued by the appropriate governmental agency. Submit intended haul route plan, including a map of the proposed route(s). Provide watertight conveyance for liquids, semiliquids, or saturated solids that tend to bleed during transport.
4. Maintain areas covered by the Contract and affected public properties free from accumulations of waste, debris, and rubbish caused by construction operations. Remove excavated materials from the site.
5. Cleaning and disposal shall comply with local ordinances and pollution control laws. Do not burn or bury rubbish or waste materials on the project site. Do not dispose of volatile wastes such as mineral spirits, oil, chemicals, or paint thinner in storm or sanitary drains. Disposal of wastes into streams or waterways is prohibited. Provide acceptable containers for collection and disposal of waste materials, debris, and rubbish.

E. Air Pollution Control

1. Minimize air pollution likely to occur from construction operations by wetting down bare soils during windy periods, requiring proper combustion emission control devices on construction vehicles and equipment, and by shutdown of motorized equipment not in use. Trash burning will not be permitted on the construction site.
2. If temporary heating devices are necessary for protection of the work, they shall be an approved type as specified under Article TEMPORARY UTILITIES.

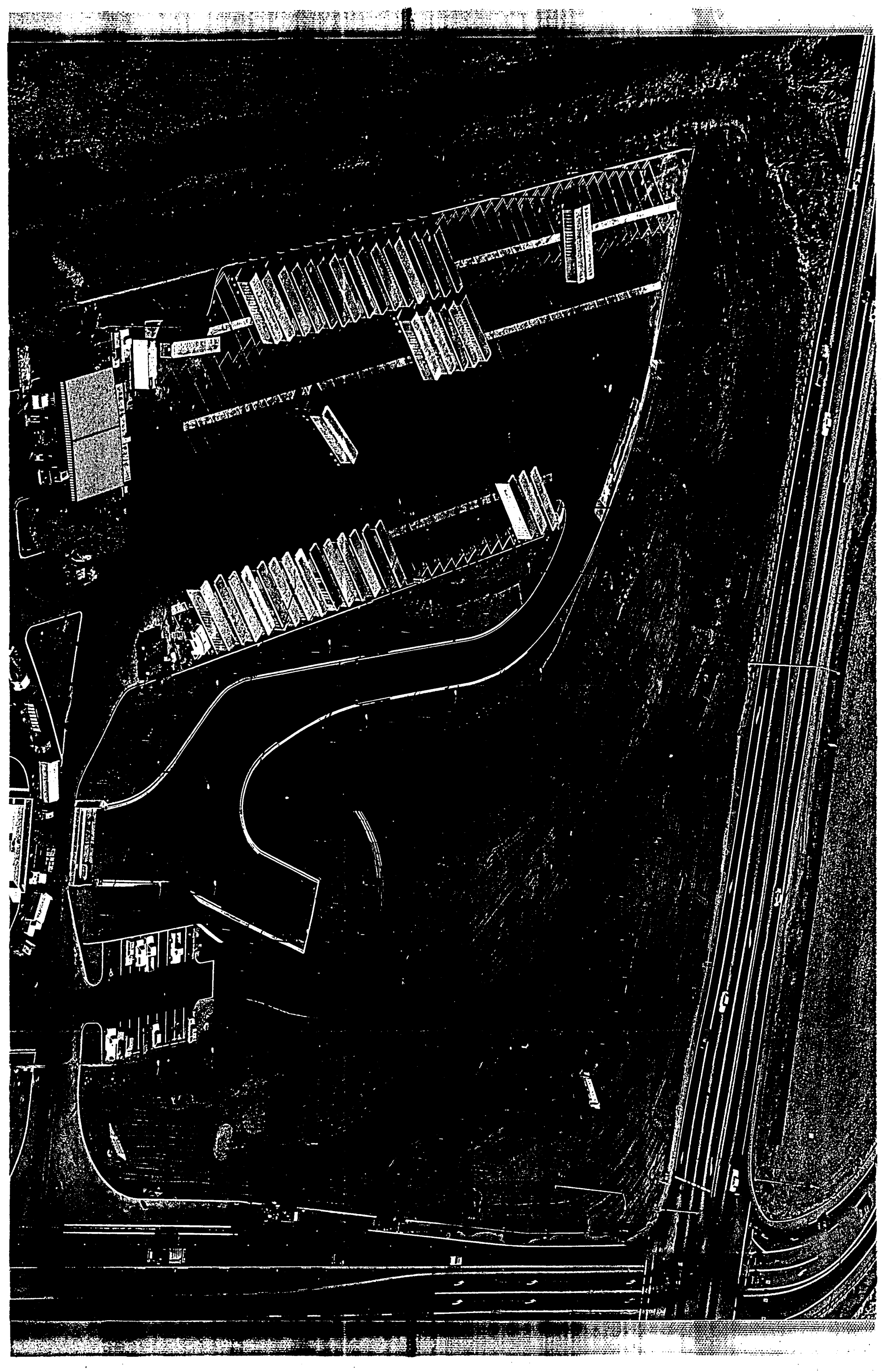
3. Operations of dumping rock and of carrying rock away in trucks shall be conducted to cause a minimum of dust. Give unpaved streets, roads, detours, or haul roads used in the construction area a dust-preventive treatment, or periodically water to prevent dust. Strictly adhere to applicable environmental regulations for dust prevention.
- F. Noise Control: Minimize noise by executing work using appropriate construction methods and equipment. Provide acoustical barriers so noise emanating from tools or equipment will not exceed legal noise levels.
- G. Pest and Rodent Control
1. Comply with local health requirements for pest and rodent control. Cooperate with agencies and companies authorized to spray or provide other treatments to prevent insect outbreaks.
 2. Maintain closures of means of entry into finished buildings by rodents. Inspect for rodents during cleaning, remove debris, and treat infested areas to Owner's satisfaction.

PART 4 PAYMENT

4.1 LUMP SUM BID

- A. Payment for work in this section will be included as part of the lump sum bid amount stated in the Proposal.

*** * * END OF SECTION * * ***



**SECTION 01600
PRODUCT SHIPMENT, HANDLING, STORAGE, AND PROTECTION**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Requirements and procedures for work necessary for shipment, handling, storage, and protection of material and equipment products.

1.2 SUBMITTALS

- A. Contractor shall submit the following:

- 1. Assembly instructions for parts shipped unassembled.
- 2. Manufacturer's instructions for unloading, handling, storage, and protection prior to installation, with each shipment of each product type.
- 3. Copy of manufacturer's notice of shipment for products critical to project schedule.
- 4. Documentation of products in storage, submitted with each progress payment request.

1.3 PREPARATION FOR SHIPMENT

- A. When practical, products shall be factory assembled.

- 1. Furnish assembly instructions for parts and assemblies that are shipped unassembled.
- 2. Mark or tag the separate parts and assemblies for field assembly.
- 3. Cover machined and unpainted parts that may be damaged by the elements with a strippable protective coating.

- B. Package or crate products to provide protection from damage during shipping, handling, and storage.

- 1. Mark or tag outside of each package or crate to indicate its purchase order number, bill of lading number, contents by name, name of project and Contractor, equipment number, and approximate weight.

- C. Mark spare parts and special tools to identify the associated products by name, equipment, and part number. Package parts for protection against damage from the elements during shipping, handling, and storage. Ship in boxes or containers marked to indicate the contents and as stated above. Deliver spare parts and special tools before the associated equipment is scheduled for the initial test run.

- D. Contractor shall request a minimum 7-day advance notice of shipment from manufacturers.

- E. Where specified for specific product, factory test results shall be reviewed and accepted before such product is shipped.

1.4 RECEIVING, INSPECTION, AND UNLOADING

- A. Contractor shall record the receipt of products at the jobsite.
- B. Upon receipt of products at the jobsite, Contractor shall inspect for completeness and evidence of damage during shipment.
 - 1. Engineer may be present for inspection.
 - 2. Should there appear to be damage, notify the Engineer immediately and inform the manufacturers and the transportation company.
 - 3. Expedite replacement of damaged, incomplete, or lost items.
- C. After completion of inspection, unload products in accordance with manufacturer's instructions for unloading, or as specified. Do not unload damaged or incomplete products to be returned to manufacturer for replacement, except as necessary to expedite return shipment.

1.5 HANDLING, STORAGE, AND MAINTENANCE

- A. Handle products in accordance with the manufacturer's written recommendations, and in a manner to prevent damage.
- B. Store products prior to installation as recommended by the manufacturer.
 - 1. Store products such as pipe and reinforcing steel off the ground in approved storage yards.
 - 2. Store items subject to damage by the elements, vandalism, or theft in secure buildings.
 - 3. Provide environmentally controlled storage facilities for items requiring environmental control for protection.
 - 4. Storage yards and storage buildings shall conform to requirements of Section 1500 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS.
- C. Provide manufacturer's recommended maintenance during storage, installation, and until products are accepted for use by Owner.
- D. Store products to provide access for inspection and inventory control. Contractor shall document products in storage to facilitate inspection and to estimate progress payments for products delivered but not installed in the work.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

PART 4 PAYMENT

4.1 LUMP SUM BID

- A. Payment for work in this section will be included as part of the lump sum bid amount stated in the Proposal.

*** * * END OF SECTION * * ***

**SECTION 01650
TESTING, STARTUP AND OPERATION**

PART 1 GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. Construction Facilities and Temporary Controls: Section 01500
- B. Contract Closeout: Section 01700
- C. Operation and Maintenance Data: Section 01730
- D. Equipment: Division 11
- E. Mechanical: Division 15
- F. Electrical: Division 16

1.2 RESPONSIBILITY

- A. Testing, startup and operation shall not be cause for claims for delay by the Contract and all expenses accruing therefrom, shall be deemed to be incidental to the Contract.
- B. The Contractor shall provide all materials, supplies and labor necessary to efficiently complete the testing, startup and operation.
- C. All power and utility bills shall be paid by the Contractor up to and including the day of final acceptance of the Contract by Metro. If not paid, these charges shall be treated as claims against the Contractor.
- D. If Metro chooses to commence operations prior to final acceptance, Metro will assume payment of all power and utility charges effective the day that operation is assumed by Metro and notice is given in writing.

1.3 SCHEDULE

- A. Placing all applicable phases of the project in service shall consist of three parts: testing, start up and operations.
- B. Not less than thirty (30) days before anticipated time for beginning the testing, the Contractor will submit to the Engineer for approval, a complete plan for:
 - 1. Schedules for tests.
 - 2. Detail schedules of procedures for startup.
 - 3. Complete schedule of events to be accomplished during startup.
 - 4. Schedule operator training as specified.
 - 5. An outline of work remaining under the Contract that will be carried out concurrently with the operation phases.

1.4 TESTING

- A. Testing shall consist of individual tests and checks made on equipment intended to provide proof of performance of units and proper operation of unit controls together with such necessary tests whether or not described elsewhere in these Specifications to assure proper alignment, size, condition, capability, strength, proper adjust, lubrication, pressure, hydraulic tests, leakage tests and all other checks deemed necessary by the

Engineer to determine that all materials and equipment are of specified quality, properly situated, anchored and in all respects ready for use.

- B. All gravity pipe and pressure piping shall be tested as required by these specifications and applicable codes.
- C. Tests on individual items of equipment, pipelines, vessels, structures, tanks, controls and other items shall be as described in various sections describing such items.
- D. Testing will be done by the Contractor in the presence of an Inspector designated by the Engineer. Records of all official tests will be made by the Inspector.
- E. During tests, the Contractor shall correct any defective work discovered or that is not in first class operating condition.

1.5 STARTUP

- A. Startup shall consist of testing by a simulated operation, all operational equipment and controls. The purpose of these tests shall be to check that all equipment will function under operating conditions, that all interlocking controls and sequences are properly set and that the facility will function as an operating unit.
- B. Checks for leakage of tanks, ponds, piping, valves, gates and all other hydraulic systems and structures will be made.
- C. Factory representatives of all major units shall be present for the startup phase. The test shall continue until it is demonstrated that all disfunction of controls and machinery are corrected.
- D. The startup shall not begin until all tests required by these Specifications have been completed and approved by the Engineer.

1.6 OPERATION

- A. Operation of the facility shall be immediately started after completion of testing and startup and after satisfactory repairs and adjustments have been made and providing supply and disposal facilities furnished by others are available. If these facilities are not available, the plant will be closed down and no further testing or operation by the Contractor will be required. The Contractor, however, will be responsible that all details required by the Contract shall remain in good order until final acceptance of the whole Contract.
- B. The facility will be operated by personnel placed on the project by Metro who will perform all duties and operate all equipment.
- C. Taking possession and use of the facility shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents.
- D. If such prior use increases or causes refinishing of completed work, the Contractor shall be entitled to such extra compensation or extension of time or both, as the Engineer may determine.

***** END OF SECTION *****

**SECTION 01700
CONTRACT CLOSEOUT**

PART 1 GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. Adjusted Payments for Delay: Article 3 General Conditions
- B. Payments: Article 9 General Conditions
- C. Certification and Final Payment: Article 9 General Condition
- D. Coordination and Site Conditions: Section 01040
- E. Project Record Documents: Section 01720
- F. Operation and Maintenance Data: Section 01730

1.2 SUBSTANTIAL COMPLETION

A. Contractor

- 1. After testing and startup, submit written certification to Engineer that Project or designated portion of Project is substantially complete.
- 2. Submit punch list of items to be completed or corrected.

B. Engineer will make an inspection after receipt of Contractor's certification, together with Metro's representative.

C. If it appears to the Engineer and Metro that work is substantially complete:

- 1. The Engineer may request of and Contractor shall prepare and submit to the Engineer, a list of items to be completed or corrected as determined by the inspection.
- 2. If the Engineer then considers the work to be substantially complete, the Engineer may, with Metro's approval, issue a Certificate of Substantial Completion, with appropriate conditions, accompanied by a list of the items to be completed and corrected, as verified and amended by Engineer. Omission of any item from the list shall not relieve Contractor from responsibility to complete all the work in accordance with the Contract.
- 3. Metro occupancy of Project or designated portion of Project:
 - a. Metro may use all or part of the work within the time designated in the Certificate of Substantial Completion, upon notice to the insurance company or companies as provided in Article 9 of the General Conditions.
- 4. Contractor shall complete all the work within the time designated in the Certificate, or if not so designated within a reasonable time.

D. Should the Engineer and Metro consider that work is not substantially complete:

- 1. Engineer shall notify Contractor, in writing stating reasons and list of items.

2. Contractor shall complete work and send second written notice to Engineer and Metro certifying that Project or designated portion of Project is substantially complete.
- E. Warranties: Under Article 7 of the General Conditions guarantee and warranty periods begin with the date of final acceptance. However, in connection with any specific equipment certified by the Engineer as completed and its use or operation thereof for its intended purpose is assumed by Metro, the warranty period for such equipment shall begin with the beginning date of such use or operation.

1.3 FINAL INSPECTION

- A. Contractor shall submit written certification that:
1. Contract Documents have been reviewed.
 2. Work has been completed in accordance with Contract Documents.
 3. Equipment and systems have been tested in presence of Metro's representative and are operational.
 4. Project is completed, and ready for final inspection.
- B. Engineer will make final inspection within a reasonable time after receipt of certification.
- C. Should Engineer consider that work is complete in accordance with requirements of Contract Documents, Engineer shall request Contractor to make project closeout submittals.
- D. Should Engineer and Metro consider that work is not complete:
1. Engineer shall notify Contractor, in writing, stating reasons.
 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send second written notice to Engineer certifying that work is complete.
 3. Engineer will reinspect work.

1.4 REINSPECTION COSTS

In addition to any overtime inspection due under Article 9 of the General Conditions, should Engineer be required to perform second inspections because of failure of work to comply with original certifications of Contractor, Metro will compensate Engineer for additional services as stated in said article and charge Contractor for such fees at the Engineer's currently established billing rate.

1.5 CLOSEOUT SUBMITTALS

- A. Project Record Documents: To requirements of Section 01720.
- B. Guarantees and bonds required by these specifications: See Article 7 of General Conditions and specific equipment or material specifications.

- C. Easement Release: (where applicable).
- D. At the close of the Contract Contractor shall:
 - 1. Pay all utility bills.
 - 2. Remove all electrical, sanitary, gas, telephone, water, offices and any other temporary service equipment that may remain.
 - 3. Arrange for transfer of electrical, water and other applicable utility accounts to Metro's name.
- E. Deliver evidence of compliance with requirements of governing authorities (where applicable).

1.6 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit final statement of accounting to Engineer.
- B. Statement shall reflect all uncompleted adjustments
 - 1. Additions and deductions resulting from:
 - a. Previous Change Orders.
 - b. Cash Allowances.
 - c. Unit Prices.
 - d. Other Adjustments.
 - e. Deductions for Liquidated Damages.
 - 2. Unadjusted sum remaining due.

1.7 FINAL APPLICATION FOR PAYMENT

Contractor shall submit final application for payment in accordance with requirements of General Conditions and shall reflect the final adjustment of accounts in Paragraph 1.6.

1.8 FINAL CERTIFICATE FOR PAYMENT

- A. Engineer will issue Final Certificate in accordance with provisions of General Conditions.
- B. Should final completion be materially delayed through no fault of Contractor, Engineer may issue a Final Certificate for Payment, in accordance with provisions of General Conditions and existing laws.

1.9 POST-CONSTRUCTION INSPECTION

- A. Prior to expiration of one year from Date of Substantial Completion or Final Acceptance, Engineer may make visual inspection of Project in company with Metro and Contractor to determine whether correction of work is required, in accordance with warranty/guarantee provisions of General Conditions.

- B. For guarantees beyond one year, Engineer will make inspections at request of Metro, after notification to Contractor.
- C. Metro will promptly notify Contractor, in writing, of any observed deficiencies.

***** END OF SECTION *****

**SECTION 01720
PROJECT RECORD DOCUMENTS**

PART 1 GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. Closeout Submittals: Article 9 General Conditions and Section 01700.
- B. Coordination and Site Conditions: Section 01040
- C. Shop Drawings, Project Data, and Samples: Section 01340
- D. Operation and Maintenance Data: Section 01730

1.2 MAINTENANCE OF RECORD DOCUMENTS

- A. Contractor shall maintain at job site, one record copy of:
 - 1. Contract Drawings.
 - 2. Project Specifications.
 - 3. Addenda.
 - 4. Reviewed Shop Drawings.
 - 5. Change Orders.
 - 6. Other Modifications to Contract.
 - 7. Field Test Records.
 - 8. Operational and Maintenance Data Delivered with Mechanical and Electrical Equipment.
 - 9. Certified Weight Tickets
- B. Store record documents apart from working documents used for construction.
- C. Provide files and shelves for storage of record documents.
- D. Maintain record documents in clean, dry, legible condition.
- E. Do not use record documents for daily construction purposes.
- F. Make record documents available at all times for inspection by Engineer and Metro.

1.3 RECORDING

- A. Do not permanently conceal any work until required information has been recorded.
- B. Keep record documents current.
- C. Contract Drawings: Legibly mark to record actual construction:
 - 1. Horizontal and vertical location of underground utilities and appurtenances and references to permanent surface improvements.
 - 2. Field changes of dimension and detail.
 - 3. Changes made by Change Order.
 - 4. Details not on original Contract Drawings.
- D. Specifications and Addenda: Legibly mark up each Section to record:
 - 1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.

2. Changes made by Change Order.
 3. Other matters not originally specified.
- E. Shop Drawings: Maintain as record documents; legibly annotate drawings to record changes made after review.

1.4 SUBMITTAL

- A. At completion of project, deliver complete set of all record documents to Engineer.
- B. Accompany submittal with transmittal letter signed by Contractor or his authorized site representative.

***** END OF SECTION *****

**SECTION 01730
OPERATION AND MAINTENANCE DATA**

PART 1 GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. Testing, Startup and Operation: Section 01650
- B. Shop Drawings, Product Data and Samples: Section 01340
- C. Contract Closeout: Section 01700
- D. Material and Equipment Specified: All Divisions

1.2 REQUIREMENTS

- A. The Contractor shall submit to Engineer two copies of draft operations and maintenance manuals for each major piece of equipment and system component at least 30 days prior to scheduled testing and at least 30 days prior to submitting written notice of substantial completion.
- B. Engineer and Metro will review and return one copy with comments. If corrections are required, the Contractor will make corrections and resubmit one corrected copy plus corrected pages for the copy in Metro's possession.
- C. Upon approval, the Contractor will furnish six (6) copies of the Operations and Maintenance Manuals. Complete approval of all required manuals will be a condition for final completion and payment.
- D. The Operations and Maintenance Manuals will include as a minimum the following:
 - 1. Table of Contents.
 - 2. System Description and Functions of Individual Items of Equipment.
 - 3. As Built Layout. Include locations of all elements and wiring diagram of control circuits.
 - 4. Operations and Maintenance Instructions for each major item of equipment. These instructions will clearly identify the equipment actually provided and information pertaining to other models or variations will be lined out. The instructions will include information on:
 - a. Operating conditions
 - b. Installation instructions
 - c. Startup procedures
 - d. Shut down procedures
 - e. Maintenance instructions

- f. Trouble shooting procedures.
- 5. Maintenance Schedules - Cross reference these schedules to specific paragraphs in the O&M Instructions.
- 6. Spare Parts and lubricants lists
- 7. Warranties
- E. Specific requirements for the Electrical Operations and Maintenance Manual are included in Division 16.

1.3 MANUAL ASSEMBLY

- A. Data shall be bound in first quality, heavy, permanent 3-ring type binders.
- B. Manuals shall be assembled and indexed so that information on any piece of equipment can be readily found.

1.4 MAINTENANCE SCHEDULE

- A. Maintenance schedules for each item of equipment will include a "summary of maintenance" substantially in the format as attached:

(Typical Maintenance Summary Form attached)

***** END OF SECTION *****

TYPICAL MAINTENANCE SUMMARY FORM

1. EQUIPMENT ITEM
2. MANUFACTURER
3. EQUIPMENT IDENTIFICATION NUMBER(S)
4. WEIGHT OF INDIVIDUAL COMPONENTS (OVER 100 POUNDS)
5. NAMEPLATE DATA (hp, voltage, speed, etc.)
6. MANUFACTURER'S LOCAL REPRESENTATIVE

Name _____ Telephone No. _____

Address _____

7. MAINTENANCE REQUIREMENTS

Maintenance Operation	Frequency	Lubricant (If Applicable)	Comments
List briefly each maintenance operation required and refer to specific information in manufacturer's standard maintenance manual, if applicable.	List required frequency of each maintenance operation.	Refer by symbol to lubricant list required.	

8. LUBRICANT LIST

Reference Symbol	Shell	Standard Oil	Gulf	Arco	Or Equal
List symbols used in Item 7. above.	List equivalent lubricants, as distributed by each manufacturer for the specific use recommended.				

9. SPARE PARTS. Include your recommendations regarding what spare parts, if any, should be kept on the job.

* * * END OF SECTION * * *

**TECHNICAL SPECIFICATIONS
FOR
ROOF REPAIR AT METRO SOUTH STATION**

Prepared for:

**Metropolitan Service District
Solid Waste Department
2000 S.W. First Avenue
Portland, OR 97201**

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Portland, OR 97201**

February 9, 1993

TECHNICAL SPECIFICATIONS
FOR
ROOF REPAIR AT METRO SOUTH STATION

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1.0 GENERAL

1.1 WORK INCLUDED

Demolition work includes but is not limited to the following:

- A. All demolition work shall be done as specified herein and as necessary to fully complete all work. Contractor shall furnish all labor and material necessary to cut, alter, remove, or temporarily remove and replace existing construction where indicated, specified herein, or as necessary for completion of the project.
- B. Selective Demolition: As specified herein, and as shown on reference drawings, this work shall be coordinated with Owner to maintain system operation.
 - 1. Demolition of existing roof system including purlins, roof panels, connections, bracing, flashing, and appurtenances.
 - 2. Demolition of existing roof-mounted exhaust fans.
 - 3. Removal and salvage of existing lights. Lights shall be reinstalled after construction of new structural roof system.
 - 4. Demolition of existing electrical circuits. Circuits for lighting and power to fans shall be installed after roof construction.
 - 5. Demolition of existing fire protection sprinkler system. New dry-pipe sprinkler system to be constructed after completion of new structural roof system.
- C. All demolition activities to conform to Section 01040 - Coordination and Site Conditions.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Structural Division 5
- B. Mechanical Division 15
- C. Electrical Division 16

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

- A. Submit proposed demolition and removal procedures to Owner's Representative for approval before work is started. Procedures shall provide for careful removal and disposition of materials specified to be salvaged, coordination with other work in progress, a disconnection schedule of utility services, a detailed description of methods and equipment to be used for each operation and of the sequence of operations.

- B. Demolition plan shall, in particular address the demolition items specified in this section and shall identify a sequence of operation in order to assure the ongoing operation of the South Station facility. Ongoing operation includes public vehicle access, commercial vehicle access, material handling within the pit, power and lighting during construction, approved fire protection system and safety and emergency procedures.
- C. Demolition plan shall be submitted per Section 01340 - Shop Drawings, Product Data, and Samples

1.5 QUALITY ASSURANCE

The work includes demolition or removal of all construction indicated or specified. Do not begin demolition until authorization is received from the Owner's Representative. Remove rubbish and debris daily, unless otherwise directed; do not allow accumulations inside or outside the building. Store materials that cannot be removed daily in areas specified by the Owner's Representative.

2.0 PRODUCTS

Not used in this Section.

3.0 EXECUTION

3.1 GENERAL

- A. Existing Work: Protect existing work, services, and utilities which are to remain in place, or are to be reused. Items which are to remain and which are damaged during performance of the work shall be repaired to their original condition or replaced with new. Do not overload structural elements. Provide new supports and reinforcement for existing construction weakened by demolition or removal work.
- B. Stockpiling of debris will not be permitted. All Contractors shall cooperate in keeping the work area broom clean and shall protect all finish and existing surfaces from damage.
- C. The Contractor shall notify the Owner's Representative where wires, conduits and pipes require cutting or alterations. This notice must be given at least 24 hours before cutting or alterations begin.

3.2 DISPOSITION OF MATERIAL

- A. Title to materials: The Owner has the option to take possession of all reusable materials. Provided the Owner does not want materials, Contractor will dispose of them properly at Contractor's expense.
- B. Reuse of materials and equipment: Carefully remove and store materials and equipment to be reused or relocated to prevent damage, and reinstall per specifications as the work progresses.

3.3 STRUCTURAL DEMOLITION

- A. Remove existing roof flashing, trim, and panels according to the submitted and approved demolition schedule. Where possible, extract screws and remove components in full sections. Flame cutting will not be allowed.

- B. Disconnect mainframe flange braces from the existing roof purlins and discard all removed bolts. Do not remove flange braces from mainframes that are intended for reuse. Existing flange braces will be reused at the Contractor's option.
- C. Remove and discard purlin splice bolts.
- D. Remove purlin to mainframe bolts and secure purlin by temporary means. Discard used bolts.
- E. Remove purlins from mainframe with due care for the safety of personnel and property. Roof purlins shall not be allowed to drop from the mainframes.
- F. Clean exposed connection surfaces with a wire brush, wash with a liquid cleaner as recommended by the primer manufacturer, and prime with "1099 Tnemec Primer" or "Rustoleum #5769 Primer". Apply the specified primer to a dry film thickness not less than 2.0 mils.
- G. After the specified curing time as indicated by the primer manufacturer, paint primed surfaces with white "Rustoleum". The shade of white shall be approved by the Owner, in advance.

3.4 DEMOLITION OF EXHAUST FANS

Remove four (4) existing, roof-mounted exhaust fans EF-1 through EF-4 from the transfer building. Contractor shall properly dispose of the fans at Contractor's expense.

3.5 REMOVAL AND SALVAGE OF LIGHTS

- A. Remove existing roof-mounted, pendant-hung lighting fixtures in transfer building.
 - 1. Remove fixtures without damaging the fixtures. The fixtures will be reinstalled after roof is replaced.
 - 2. Clean the fixtures and repair as necessary. Clean exterior of fixture. Clean exterior and interior of lens or refractor of the fixture. Replace lamp or ballast, if necessary, to bring the fixture to properly operating condition.
 - 3. Remove conduit and wire for lighting installation as required for roof demolition, at least back to the South wall of the transfer building. The lighting fixtures shall be reinstalled in the same locations to match existing.
- B. Installation of fixtures.
 - 1. Coordinate installation of conduit, wire, boxes, and fixtures with pendants with other contractors.
 - 2. Install new conduit and wire for lighting to match previous installation. See Section 16500 - Lighting.
 - 3. See Electrical Plan reference drawing for existing lighting locations.

C. Temporary Lighting

1. Contractor shall install and maintain temporary lighting as required for continuous operation of the facility during construction.

3.6 DEMOLITION OF CONDUITS

A. Conduit for existing exhaust fans and controls.

Remove power and control conduit for existing exhaust fans EF-1 through EF-4.

B. Conduit for existing circuits that will remain in place.

1. Conduit and wire for damper motors, electrical powered door operators, etc., shall remain in place. Provide temporary support as required during roof demolition and repair.
2. Conduit and wire from the emergency generator, at approximately columns F-K/7-8, shall remain in place. Provide temporary support as required during roof demolition and repair.

C. The building structural steel will remain in place during construction, and may be used for attachment of conduit support systems for temporary or permanent arrangement. The roof purlins will be removed and replaced during this work, and may be used for permanent support installation only after the new roof has been installed.

3.7 DEMOLITION OF FIRE PROTECTION SYSTEM

Existing dry-pipe sprinkler system to be dismantled, salvaged, and reassembled. See Section 15300 - Fire Protection.

3.8 CLEANUP

Debris and rubbish: Remove and transport debris and rubbish in a manner that will prevent spillage on streets or adjacent areas. Clean up spillage from streets and adjacent areas. Dispose of wastes in landfills approved for such wastes in accordance with all applicable regulations.

END OF SECTION

DIVISION 3 - CONCRETE

03100
CONCRETE FORMWORK

1.0 GENERAL

1.1 WORK INCLUDED

Provide formwork in accordance with provisions of this Section for cast-in-place concrete shown on the Drawings or required by other Sections of these Specifications.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Concrete Reinforcement Section 03200
- B. Cast-In-Place Concrete Section 03300

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

Product Data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit manufacturer's data and installation instructions for proprietary materials including form coatings, ties, and accessories, and manufactured form systems if used.

1.5 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Design of formwork is the Contractor's responsibility.
- C. Standards: In addition to complying with pertinent regulations of governmental agencies having jurisdiction, comply with pertinent provisions of the current ACI.

2.0 PRODUCTS

2.1 FORM MATERIALS

- A. Except for metal forms, use new materials. Materials may be re-used during progress of the work, provided they are completely cleaned and reconditioned, recoated for each use, and capable of producing formwork of the required quality.

2.2 DESIGN OF FORMWORK

- A. Design, erect, support, brace, and maintain formwork so it will safely support vertical and lateral loads that might be applied, until such loads can be supported by the concrete structure.

- B. Carry vertical and lateral loads to ground by formwork system and in-place construction that has attained adequate strength for that purpose.
- C. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position.
- D. Design forms and falsework to include assumed values of live load, dead load, weight of moving equipment operated on the formwork, concrete mix, height of concrete drop, vibrator frequency, ambient temperature, foundation pressures, stresses, lateral stability, and other factors pertinent to safety of the structure during construction.
- E. Provide shores and struts with positive means of adjustment capable of taking up formwork settlement during concrete placing operations, using wedges or jacks or a combination thereof.
- F. Provide trussed supports when adequate foundations for shores and struts cannot be secured.
- G. Support form materials by structural members spaced sufficiently close to prevent objectionable deflection.
- H. Fit forms placed in successive units for continuous surfaces to accurate alignment, free from irregularities, and within the allowable tolerances.
- I. Provide formwork sufficiently tight to prevent leakage of cement paste during concrete placement. Solidly butt joints, and provide backup material at joints as required to prevent leakage and prevent fins.

3.0 EXECUTION

3.1 SURFACE CONDITIONS

Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.2 FORM CONSTRUCTION

A. General:

- 1. Construct forms complying with the current edition of the ACI to the exact sizes, shapes, lines, and dimensions shown, and as required to obtain accurate alignment, location, grades, and level and plumb work in the finished structure.
- 2. Provide for openings, offsets, keyways, recesses, moldings, reglets, chamfers, blocking, screeds, bulkheads, anchorages, inserts, and other features as required.

B. Fabrication:

- 1. Fabricate forms for easy removal without hammering or prying against concrete surfaces.

2. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces.
- C. Forms for exposed concrete:
1. Provide sharp, clean corners at intersecting planes, without visible edges or offsets. Back the joints with extra studs or girts to maintain true, square intersections.

3.3 FORM COATINGS

Coat form contact surfaces with form coating compound before reinforcement is placed.

- A. Do not allow excess form coating material to accumulate in the forms or to come in contact with surfaces which will bond to fresh concrete.
- B. Apply the form coating material in strict accordance with its manufacturer's recommendations.

3.4 REMOVAL OF FORMS

- A. General:
 1. Do not disturb or remove forms until the concrete has hardened sufficiently to permit form removal with complete safety.
 2. Do not remove shoring until the member has acquired sufficient strength to support its own weight, the load upon it, and the added load of construction.
- B. Finished surfaces:
 1. Exercise care in removing forms from finished concrete surfaces so that surfaces are not marred or gouged, and that corners are true, sharp, and unbroken.
 2. Release sleeve nuts or clamps, and pull the form ties neatly.
 3. Do not permit steel spreaders, form ties, or other metal to project from, or be visible on, any concrete surface except where so shown on the Drawings.
 4. Solidly pack form tie holes, rod holes, and similar holes in the concrete. For packing, use the cement grout, flushing the holes with water before packing, screeding off flush, and grinding to match adjacent surfaces.

END OF SECTION

SECTION 03200
CONCRETE REINFORCEMENT

1.0 GENERAL

1.1 WORK INCLUDED

Provide concrete reinforcement where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Concrete Formwork Section 03100
- B. Cast-In-Place Section 03300

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

- A. Product data: Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
 - 1. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;

1.5 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Comply with pertinent provisions of the following, except as may be modified herein.
 - 1. ACI 318-89;
 - 2. CRSI "Manual of Standard Practice".

1.6 PRODUCT HANDLING

- A. Use necessary precautions to maintain identification after bundles are broken.
- B. Store in a manner to prevent excessive rusting and fouling with dirt, grease, and other bond-breaking coatings.

2.0 PRODUCTS

2.1 REINFORCEMENT MATERIALS AND ACCESSORIES

- A. Bars and dowels:
 - 1. Provide deformed billet steel bars complying with ASTM A615, using grades shown on the Drawings.
 - 2. Where grades are not shown on the Drawings, use grade 60.

- B. Steel wire:
 - 1. Comply with ASTM A82.
 - 2. For tie wire, comply with Fed Spec QQ-W-461, annealed steel, black, 16 gage minimum.
- C. Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcement in place:
 - 1. Use wire bar type supports complying with CRSI recommendations, unless otherwise shown on the Drawings.
 - 2. Do not use wood, brick, or other non-complying material.
 - 3. For slabs on grade, use supports with sand plates or horizontal runners where base material will not support chair legs.
 - 4. For exposed-to-view concrete surfaces, where legs of supports are in contact with forms, provide supports with either hot-dip galvanized or plastic-protected legs.
- D. Epoxy used to secure dowels to existing concrete shall meet or exceed ASTM-C881, Type I, Grade 3, Class A.
- E. Dowels shall be galvanized to ASTM A767 with a minimum weight of zinc coating of 3.50 oz/sq ft of surface area.

2.2 FABRICATION

A. General:

- 1. Fabricate reinforcing bars to conform to the required shapes and dimensions, with fabrication tolerances complying with the CRSI Manual.
- 2. In case of fabricating errors, do not straighten or rebend reinforcement in a manner that will weaken or injure the material.
- 3. Reinforcement with any of the following defects will not be acceptable.
 - a. Bar lengths, depths, and/or bends exceeding the specified fabrication tolerances;
 - b. Bends or kinks not shown on the Drawings;
 - c. Bars with reduced cross-section due to excessive rusting or other cause.

3.0 EXECUTION

3.1 SURFACE CONDITIONS

Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. General:

1. Comply with the specified standards for detail and method of placing reinforcement and supports, except as may be modified herein.
 2. Clean reinforcement to remove loose rust and mill scale, earth, and other materials which reduce or destroy bond with concrete.
 3. Position, support, and secure reinforcement against displacement by formwork, construction, and concrete placing operations.
 4. Locate and support reinforcement by metal chairs, runners, bolsters, spacers, and hangers, as required.
 5. Place reinforcement to obtain minimum coverages for concrete protection.
 6. Arrange, space, and securely tie bars and bar supports together with the specified tie wire.
 7. Set wire ties so twisted ends are directed away from exposed concrete surfaces.
- B. Provide sufficient numbers of supports, and of strength to carry the reinforcement.
- C. Do not place reinforcing bars more than 2" beyond last leg of any continuous bar support.
- D. Do not use supports as bases for runways for concrete conveying equipment and similar construction loads.

3.3 SPLICES

A. Lap splices:

1. Tie securely with the specified wire to prevent displacement of splices during placement of concrete.

B. Splice devices:

1. Obtain the Engineer's approval prior to using splice devices.
2. Install in accordance with manufacturer's written instructions.
3. Splice in a manner developing at least 125% of the yielding strength of the bar.

END OF SECTION

SECTION 03300
CAST-IN-PLACE CONCRETE

1.0 GENERAL

1.1 WORK INCLUDED

Provide cast-in-place concrete where shown on the drawings, as specified herein, and as needed for a complete and proper installation.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- | | | |
|----|------------------------|---------------|
| A. | Concrete Formwork | Section 03100 |
| B. | Concrete Reinforcement | Section 03200 |

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

Contractor Furnished Mix Design: Submit for approval a concrete mix design for each compressive strength of concrete included in the work.

- A. Mix Design Review: Before concrete is placed at the job site, for each concrete mix, submit a mix design review accomplished by the laboratory. Include in the laboratory's review calculations cement mix, water-cement ratio (by weight), percentage of fine aggregate (ratio) to total aggregate by weight, weight in pounds of saturated surface-dry aggregate (fine and coarse) per sack of cement, volume of admixtures and yield for one cubic yard of concrete.
- B. Manufacturer's Data:
1. Curing materials
 2. Joint sealers
 3. Joint fillers
- C. Ready-Mix Concrete: Submit the following:
1. Name and location of the ready-mix concrete plant.
 2. Batch ticket information as specified in ASTM C94.

1.5 QUALITY ASSURANCE

Not used in this Section.

2.0 PRODUCTS

2.1 CEMENT

Provide a standard brand of portland cement complying with ASTM C150, type I or II, low alkali. Do not change the brand of cement during progress of the Work except as approved in writing by the Engineer.

2.2 AGGREGATES

A. General:

1. Provide hardrock aggregate complying with ASTM C33, with additional attributes as specified herein.
2. For making grading tests of fine and coarse aggregate, use square mesh wire cloth complying with ASTM E11.

B. Fine aggregate:

1. Provide washed natural sand having strong, hard, durable particles, and containing not more than 2% by weight of deleterious mater such as clay lumps, mica, shale, or schist.
2. Grade from coarse to fine within the following limits:

Sieve size:	Percentage by weight passing sieve:	
	Minimum:	Maximum:
3/8"	100	----
No. 4	95	100
No. 8	65	95
No. 16	45	75
No. 30	30	50
No. 50	10	22
No. 100	2	8

C. Coarse aggregate:

1. Provide coarse aggregate consisting of clean, hard, fine grained, sound crushed rock or washed gravel, or a combination of both, containing not more than 5% by weight of flat, chip-like, thin, elongate, friable, or laminated pieces, nor more than 2% by weight of shale or cherty material.
 - a. Any piece having a length in excess of five times the average thickness shall be considered flat or elongated.
2. Use coarse aggregate of the largest practicable size for each condition of placement, subject to the following maximum size limitations:
 - a. Do not exceed 3/4 of the clear distance between reinforcing bars, 1/5 of the narrowest dimension between sides of forms, or 1/3 the depth of any slab section.

3. Grade combined aggregates within the following limits:

Sieve size or size in inches:	Percentage by weight passing sieve:					
	1-1/2" aggregate:		1" aggregate:		3/4" aggregate:	
	Min:	Max:	Min:	Max:	Min:	Max:
1-1/2"	95	---	---	---	---	---
1"	75	90	90	100	---	---
3/4"	55	77	70	90	90	100
3/8"	40	55	45	65	60	80
No. 4	30	40	31	47	40	60
No. 8	22	35	23	40	30	45
No. 16	16	30	17	35	20	35
No. 30	10	20	10	23	13	23
No. 50	2	8	2	10	5	15
No. 100	0	3	0	3	0	5

D. Lightweight aggregate, coarse and fine: Provide rounded, sealed, expanded shale or clay conforming to ASTM C330.

2.3 WATER

Use only water which is clean and free from deleterious amounts of acid, alkali, salt, and organic materials.

2.4 ADMIXTURES

Only a standard brand of admixture for concrete may be used when approved by the Engineer, meeting or exceeding the following requirements:

- A. Reduce the required mixing water at least 75% without entraining air in excess of 2% by volume.
 - 1. If the admixture used entrains more than 2% air, the water reduction shall be at least 10%, but in no case shall the volume of air entrained exceed 5%.
- B. A separate approved air-training agent may be used in addition to the water-reducing admixture, provided the combination of the two admixtures meets the requirements listed above.
- C. If pozzolanic materials are used, make them from an oil-impregnated diatomaceous shale, or from an opaline cherty shale, chart, or porcelaneous rock found in the Monterey formation, or other Miocene strats, or material of similar mineralogical composition.
- D. Use only automatic dispensers approved by the testing agency for adding admixture.
- E. If an air-entraining agent is used, run air content determinations periodically during the pour to make certain the volume of air entrained is less than 5%.

2.5 OTHER MATERIALS

A. Curing materials:

- 1. Curing paper: Comply with ASTM C171, type I, regular.
- 2. Liquid curing compounds: Provide a standard brand, clear or black.

3.0 EXECUTION

3.1 SURFACE CONDITIONS

Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 CONCRETE MIXING

A. Unless otherwise approved by the Engineer, use ready mixed concrete complying with ASTM C94, except as may be modified by the following:

1. For materials for ready mixed concrete, and for methods of measuring materials, comply with applicable provisions of this Section.
2. Equip the loading plant to handle not less than four sizes of aggregates until loaded into the weighing hopper.
3. Mixing:
 - a. Mix each batch of concrete not less than 16 minutes, five minutes of which shall be at the site.
 - b. Rotate the drum at the rate specified by the manufacturer of the mixer as "mixing speed".
 - c. Whenever there is a delay in unloading, rotate the drum slowly at intervals to prevent incipient set of concrete.
4. Addition of water:
 - a. Normally, do not deliver concrete with total permissible amount of water incorporated therein.
 - b. Unless otherwise approved by the Engineer withhold at least 2-1/2 gal per cu yd and add before the concrete is discharged.
 - c. After water is added, at least five minutes of mixing time shall be immediately prior to discharge.
 - d. Concrete will be rejected if not placed in final position within 1-1/2 hours after water is first added to the batch.
5. Concrete at time of placing shall be in such condition that it can be placed properly.
6. Discharge all wash water from the mixing drum before the truck reloads at the batching plant.

C. Concrete consistency:

Use the amount of water established by the approved mix design.

1. Do not exceed the maximum quantity specified for the grade of concrete.

2. Use the minimum amount of water necessary to produce concrete of the workability required by the Engineer.
3. Do not supplement the predetermined amount of water with additional water for any reason.

D. Cement grout and dry-pack grout:

1. Mix at the site, in composition of one volume of portland cement to 2-1/2 volumes of fine aggregate.
2. Mix the materials dry; then add sufficient water to make the mixture flow under its own weight.
3. When grout is used as dry-pack concrete, add sufficient water to make a stiff mixture which can be molded into a sphere.

E. Miscellaneous provisions:

1. Provide strengths of concrete as shown on the Drawings.
2. Provide concrete dense and free from honeycomb and other defects.
3. Place and finish members to conform to the shapes and dimensions indicated, with all surfaces true to line, plumb, and level.

3.4 CONVEYING AND PLACING CONCRETE

A. Before placing concrete, thoroughly clean forms, wash out with water, and make tight.

B. Time of placing:

1. Do not place concrete until reinforcement and anchors, are securely and properly fastened in their correct positions.

C. Preparation:

1. Before new concrete is deposited upon or against concrete that has taken its initial set or has hardened, remove all incrustation from forms and reinforcement.
2. Remove all laitance, oil, and loose particles from concrete and concrete surfaces, and thoroughly clean the forms with water under stiff pressure.

D. Method of placing:

1. Do not permit concrete to free drop more than 5'-0".
2. Deposit concrete directly into conveyances, and direct from conveyances to final points of repose, except where troughs, buckets, or the like are used, in which case dump concrete into hoppers and then into the conveyances.
3. Where tremies are used, or where the free drop is 5'-0" or more, and through reinforcement, use a dumping box or board, moving the concrete there by shovels or hose.

4. Deposit concrete so that the surface is kept level throughout, a minimum being permitted to flow from one position to another, and place as rapidly as practicable after mixing.
5. Do not use in this work any concrete not placed within 30 minutes after leaving the mixer.

E. Tamping and conveying:

1. Thoroughly work concrete around reinforcement and embedded fixtures, and into corners of forms, during placing operations.
2. Completely compact with tamping poles and by tapping forms until the concrete is thoroughly compact and without voids. Determine the number of tampers needed by the amount and method of placing concrete.
3. Exercise care to tamp concrete vigorously and thoroughly to obtain maximum density.
4. Use manual tampers as well as mechanical vibrators.
 - a. Exercise care to direct the quick handling of vibrators from one position to another.
 - b. Do not over-vibrate concrete.
 - c. Do not move concrete by use of vibrator.

3.5 DEFECTIVE CONCRETE

- A. The following concrete will be deemed to be defective, and shall be removed promptly from the job site.
1. Concrete which is not formed as indicated, is not true to intended alignment, is not plumb or level where so intended, is not true to intended grades and levels;
 2. Has sawdust, shavings, wood, or embedded debris;
 3. Or does not conform fully to provisions of the Contract Documents.
- B. Repairs and replacements:
1. Defective concrete may be cut out and repaired with gunite.
 2. Where defective concrete is found after removal of the forms, cut out the defective concrete, if necessary and make the surfaces match adjacent surfaces.
 3. Work uneven surfaces and angles of concrete to a surface matching adjacent concrete surfaces.

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

- A. Provide structural steel and accessories as shown on the drawings, specified herein, and needed for a complete and proper installation.
- B. Hot dip galvanizing of steel materials.
- C. See Section 02050-Demolition and Removal for Demolition Requirements.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Metal Fabrications Section 05500

1.3 REFERENCES

In addition to complying with pertinent codes and regulations, comply with:

- A. AISC "Specifications for Design, Fabrication, and Erection of Structural Steel for Buildings";
- B. AISC "Code of Standard Practice";
- C. AISC "Specification for Structural Joints Using ASTM A325 or A490 bolts".
- D. AISI (American Iron and Steel Institute) Specifications for the Design of Cold-Formed Steel Structural Members (1983)
- E. American Society for Testing and Materials (ASTM):
- F. ASTM A123 ZINC (Hot-Dip Galvanized) Coatings on Iron and Steel Products
- G. ASTM A143 Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedure for Detecting Embrittlement
- H. ASTM A153 Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- I. ASTM A384 Safeguarding Against Warpage and Distortion During Hot-Dip Galvanizing of Steel Articles
- J. ASTM A385 Providing High-Quality Zinc Coatings (Hot-Dip)
- K. ASTM A780 Repair of Damaged Hot-Dip Galvanized Coatings

1.4 SUBMITTALS

Product Data: Within 35 calendar days after the contractor has received the Owner's Notice to Proceed, submit:

- A. Sufficient technical data to demonstrate compliance with the specified requirements.

- B. Submit an original and two copies of the coating applicator's Certificate of Compliance that the hot dip galvanized coating meets or exceeds the specified requirements of ASTM A123 or A153 (as applicable).
- C. Furnish the galvanizer's notarized Certificate of Compliance with ASTM Standards and Specifications herein listed. The Certificate must be signed by the galvanizer and contain a detailed description of the material processed. The Certificate shall include information as to the ASTM standard used for the coating.

1.5 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.
- B. Perform welding with electric arc process and in accordance with AWS "Code for Arc and Gas Welding in Building Construction".
- C. Include visual examination in accordance with ASTM A123 or A153 application to determine weight or mass of zinc coating per unit area of metal surface.
- D. Galvanized materials subject to extended periods of storage in exterior locations, to be given a light oiling to prevent wet storage stain.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the job site properly marked to identify the location for which they are intended.
- B. Use markings for which they are intended.
- C. Store in a manner to maintain identification and prevent damage, off the ground, using pallets or other supports, and to permit easy access for inspection.
- D. Load and store galvanized articles to prevent formation of wet storage stain:
 - 1. Stack or bundle Articles to allow air between the galvanized surfaces during transport. Load in such a manner that continuous drainage will occur.
 - 2. Raise Articles above the ground and separate with strip spacers to provide free access of air to the galvanized surfaces. Store in a manner to promote continuous drainage. Do not allow galvanized material to rest on cinders or clinkers or on wet soil or decaying vegetation.

2.0 MATERIALS

2.1 STRUCTURAL STEEL AND ACCESSORIES

- A. High strength bolts: ASTM A325, Type 1 ASTM A 490. Bolt heads and the nuts of supplied fasteners must be marked with the manufacturer's identification mark, the strength grade and type specified by ASTM specifications.

- B. Nuts: ASTM A563, Grade A, hex style
- C. Washers: ASTM F436 for ASTM A325 bolts
- D. Steel plates, shapes, and bars: ASTM A36
- E. Steel plates to be bent or cold-formed: ASTM A283, Grade C
- F. Steel tubing: ASTM 501
- G. Steel bars and bar-size shapes: ASTM A306, Grade 65 or ASTM A26
- H. Cold-finished steel bars: ASTM A108
- I. Arc welding electrodes: ASTM A233, E60XX series

2.2 OTHER MATERIALS

3.0 EXECUTION

3.1 FABRICATION

- A. Shop fabrication and assembly:
- B. Fabricate items of structural steel in accordance with AISC specifications and as shown on the approved shop drawings.
- C. Galvanize all steel members, fabrications, and assemblies after fabrication, by the hot dip process in accordance with ASTM A123.
- D. Do not flame cut holes or enlarge holes by burning.
- E. Remove all welding slag and burrs prior to delivery for galvanizing.
- F. Provide holes and/or lifting lugs to facilitate handling during the galvanizing.
- G. Consult with the galvanizer about removal of grease, oil paint and other deleterious material prior to fabrication.
- H. Remove by blast cleaning or other methods surface contaminants and coatings which would not be removable by the normal chemical cleaning process in the galvanizing operation.
- I. Handle all articles to be galvanized in such a manner as to avoid any mechanical damage and to minimize distortion.

3.2 COATING REQUIREMENTS

- A. Coating Weight: conform with paragraph 5.1 of ASTM A123 or Table 1 of ASTM A153, as appropriate.
- B. Surface Finish: Continuous, adherent, as smooth and evenly distributed as possible and free from any defect detrimental to the end use.
- C. Adhesion: Withstand normal handling consistent with the nature and thickness of the coating.

3.3 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation.

3.4 REPAIR

- A. The maximum area to be repaired is defined as follows:

At the galvanizing plant before first shipment, any area 1" or less in its narrowest dimension and 36 in² per ton of steel or 1/2 of one percent of the surface area whichever is less.

- B. Repair areas damaged by welding, flame cutting or during handling, transport or erection by one of the approved methods in accordance with ASTM A780 whenever damage exceeds 3/16" in width. Minimum thickness requirements for the repair methods on steel galvanized after fabrication are:

1. Organic Zinc Rich Paint (e.g., cold galvanizing compound) complying with DOD-P-21035, (formerly mil-p-21035) or MIL-P26915: 4 mils
2. Zinc-Repair Solder: 4 mils
3. Sprayed Zinc: 4 mils

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

- A. Provide miscellaneous metal work shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. All steel-faced, factory-assembled panels with insulating foam core for the roof as shown on the contract drawings.
- C. All related metal trim, accessories, fasteners and sealants indicated on the contract drawings as part of this section.
- D. All purlins, eave struts, splices, and connectors.
- E. See Section 02050-Demolition and Removal for Demolition Requirements.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Structural Steel Section 05120

1.3 REFERENCES

Codes and Standards. The latest revision of the following codes and standards shall be used, unless noted:

- A. (MBMA) Building Manufacturer's Association. Recommended Design Practices Manual.
- B. (AISC) American Institute of Steel Construction, Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings.
- C. (AISI) American Iron and Steel Institute Specifications for the Design of Cold-formed Steel Structural Members.
- D. The Aluminum Association Specification for Aluminum Structures and Aluminum Formed Sheet Building - Sheathing Design Guide.
- E. (AWS) American Welding Society Code for Welding in Building Construction.
- F. Uniform Building Code 1988 (UBC)

1.4 SUBMITTALS

Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:

- A. Manufacturer's specifications and other data needed to prove compliance with this specification.

- B. Detailed drawings showing profile, thickness and gage of interior and exterior sheets, locations and type of fasteners, gages, shape and method of attachment of all trim, location and type of sealants, and any other details as may be required for a weathertight installation.
- C. Erection Plan: Submit for record purposes. Indicate the sequence of erection, temporary shoring and bracing.
- D. Welding Procedures and Qualifications: Submit certification for each welder, stating the type of welding and positions qualified for, the code and procedure qualified under, date qualified, and the firm and individual certifying the qualification tests.
- E. Written certification prepared and signed by a professional engineer, registered to practice in the State of Oregon, verifying that the panel design meets indicated loading requirements and the 1991 UBC.

1.5 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Perform shop welding required in connection with the work of this Section in strict accordance with pertinent recommendations of the American Welding Society. Field welding shall not be permitted.
- C. Erection shall be by a qualified contractor with not less than three years experience in pre-engineered building installation.
- D. Conflicts of Codes, Standards and Design Criteria shall be brought to the attention of SJO for resolution.
- E. Guarantee materials and workmanship against defects for a minimum of one year from completion of work. Guarantee shall state that the building will remain watertight and that, upon receipt of written notice during guarantee period, defects in workmanship will be corrected and defective material replaced promptly, without cost to the owner.
- F. Guarantee exterior exposed finishes for minimum of 10 years against excessive chalking, cracking, or loss of film adhesion.

1.6 DESIGN CRITERIA

Roof panels shall be designed, fabricated, and erected to meet or exceed codes and standards referenced herein, with the following loading criteria:

- A. Roof Snow Load; 25 PSF.
- B. Ground Snow Load; 25 PSF.
- C. Dead Load; self weight.
- D. Wind Loads; 90 mph. Exp. B
- E. Seismic Zone; 2B.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store prefabricated components, sheets, panels, and other manufactured items so that they will not become damaged or deformed.
- B. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weather-tight ventilated covering.
- C. Store metal sheets or panels so that water will drain off freely.
- D. Do not store sheets or panels in contact with other materials that might cause staining.

2.0 MATERIALS

2.1 In fabricating items which will be exposed to view, limit materials to those which are free from surface blemishes, pitting, rolled trade names, and roughness.

2.2 Comply with following standards, as pertinent.

- a. Steel plates, shapes, and bars: ASTM A36;
- b. Steel plates to be bent or cold-formed: ASTM A283, grade C;
- c. Steel tubing (hot-formed, welded, or seamless): ASTM A501;
- d. Steel bars and bar-size shapes: ASTM A306, grade 65, or ASTM A36;
- e. Cold-finished steel bars: ASTM A108;
- f. Cold-formed purlins, eave struts, clips, and associated hardware: ASTM A570, minimum yield strength of 55,000 psi. Roll form or press brake from a pregalvanized coil with not less than 1.25 ounce G90 zinc coating per ASTM A525.

2.3 STRUCTURAL FASTENERS

A. Bolts

ASTM A325, Type 1 ASTM A490. The bolt heads and the nuts of the supplied fasteners must be marked with the manufacturer's identification mark, the strength grade and type specified by ASTM specifications.

B. Nuts

ASTM A563, Grade A, hex style.

C. Washers

ASTM F436 washers for ASTM A325 bolts.

2.4 PANEL FASTENERS

- A. Shall be manufacturer's standard system of self-tapping screws, bolts and nuts, self-locking rivets, self-locking bolts, and welded studs, and other suitable fasteners designed to withstand design loads.

- B. All exposed fasteners shall be stainless steel, stainless steel clad, aluminum or cast zinc-aluminum alloy.
- C. Where exposed, color finish after plating shall match associated siding.

2.5 ROOFING

- A. Provide roofing sheets formed with 1-1/4" minimum depth ribs on 12" centers. Each sheet shall have a 36" minimum coverage. Provide flashings, closers, fillers, metal expansion joints, ridge covers, and other factory formed accessories as required by the panel manufacturer.
- B. Interior and exterior panels shall be 50,000 psi minimum yield strength, galvanized conforming to ASTM A446, Grade D, with not less than 1.25 ounce G90 zinc coating per ASTM A525.
- C. Insulating foam core shall be a foamed-in-place rigid modified isocyanurate and have the following physical properties:
 - 1. Density: 2.2 pcf
 - 2. Compressive strength: 20 psi
 - 3. Tensile strength: 23 psi
 - 4. Shear strength: 27 psi
 - 5. Closed cell: 93%
 - 6. Water absorption: 0.026 psf
 - 7. Thermal Properties: Panels shall provide a "U" value of 0.045 BTU/Hr./Sq.Ft./°F, corrected to 15 mph wind outside and still air inside, when tested in accordance with ASTM C236 by a recognized testing laboratory.
 - 8. Water Penetration: When tested in accordance with ASTM E331 at a static pressure of 20 psi there shall be no water penetration through the roof panel joints.
 - 9. Roof Wind Uplift: Roof panels shall provide a I-90 windstorm classification with purlin spacing up to 6' - 8" according to Factory Mutual Standard.
- D. Panel trim and flashings shall be 26 gauge minimum.
- E. The paint coating system shall be factory applied over steel substrates using the coil coating process. Surfaces shall be chemically cleaned and pretreated to remove contaminants and provide adequate corrosion resistance. The pretreated substrate shall be primed with a nominal 0.2 mil of corrosion resistant, high performance primer. The weather resisting top coat shall be applied over the primed substrate at a nominal dry film thickness of 0.8 mil.
- F. Exterior face shall be coated with a (siliconized polyester or 70% Kynar) finish system compatible with a G90 zinc coating in one of the manufacturer's standard colors, as approved by Owner's Representative.

- G. Interior face shall be coated with a (siliconized polyester or 70% Kynar) finish system compatible with a G90 zinc coating in one of the manufacturer's standard colors, as approved by Owner's Representative.
- H. Flexible closure strips: Provide closure strips consisting of closed cell, expanded cellular rubber, self extinguishing, cut or pre-molded to match profile of roofing and siding sheets. Provide where necessary to ensure weather tight construction.
- I. Sealing tape: Provide pressure sensitive polyisobutylene compound tape, 100% solids, with release paper backing, not less than 1/2-inch wide and 1/8-inch thick, nonsag, nontoxic, nonstaining and permanently elastic. It shall be provided on the exterior roofing by providing double rows of tape on all end laps, with not less than a single row of tape on side laps.
- J. Translucent roof panels shall be insulated and conform to the configuration of the roof panel. The Insulated Package shall include a sandwich construction whereby a 5 oz. fiberglass panel is bonded to the underside of an 8 oz. translucent roof panel to provide an 1/8" minimum dead air space. The insulated translucent roof panels shall be 36" wide x 11'-0" long and compatible for use over two 5'-0" purlin spaces.

2.6 LADDER

- A. Fabricate ladder for the location shown, with dimensions, spacings, details and anchorages as indicated. Comply with the requirements of ANSI A14.3, except as otherwise indicated.
- B. Unless otherwise shown, provide 1/2" x 2-1/2" continuous structural steel flat bar side rails with eased edged, spaced 18" apart.
- C. Provide 3/4" diameter solid structural steel bar rungs, spaced 12" on center.
- D. Fit rungs in centerline of side rails, plug weld and grind smooth other rail faces.
- E. Support each ladder at top and bottom and at intermediate points spaced not more than 5'0" on center. Use welded or bolted steel brackets, designed for adequate support and anchorage, and to hold the ladder clear of the wall surface with a minimum of 7" clearance from wall to centerline of rungs.
- F. Galvanize steel ladder after fabrication, by the hot dip process in accordance with ASTM A123.
 - 1. Do not flame cut holes or enlarge holes by burning.
 - 2. Remove all welding slag and burrs prior to delivery for galvanizing
 - 3. Remove by blast cleaning or other methods surface contaminants and coatings which would not be removable by the normal chemical cleaning process in the galvanizing operation.
 - 4. Handle all articles to be galvanized in such a manner as to avoid any mechanical damage and to minimize distortion.

2.7 ROUND GRAVITY VENTILATORS

- A. Ventilators shall have a 20" diameter throat with a bird screen and shall be G90 zinc-aluminum coated.
- B. Ventilator base configuration shall match the roof panel on which it is flashed.
- C. Base rating shall be not less than 500 cubic feet per minute.
- D. Exposed finish shall match the roof panel in color and be composed of a siliconized polyester or 70% Kynar, and must be compatible with a G90 zinc-aluminum coating.

2.8 ROOF CURBS

- A. Roof curb units shall be used for roof mounted mechanical equipment.
- B. Openings in roof and flashing units shall be field cut to required sizes.
- C. Flashing units shall not support any type of load. Loads shall be supported by means of subframes and auxiliary secondary support systems.
- D. Flashing base configuration shall match the roof panel profile and shall be white in color.
- E. Units shall be thermoformed ABS material, or approved equal, and of 1/8 inch minimum thickness.
- F. All fasteners shall be furnished by the roof curb manufacturer.

2.9 ROOF WALKWAY

- A. Walkway shall be fabricated using not less than 18 gage, G90 galvanized steel, ASTM A525, or 18 gage AZ50 "Galvalume" steel.
- B. Channel height shall be not more than 4.00 inches.
- C. Supporting base plates shall be not less than 14 gage G90 galvanized steel or AZ50 "Galvalume".
- D. Clips, hold-down clamps, bolts and nuts shall be compatible with walkway material as well as roofing material.
- E. Walkway shall be so constructed as to eliminate the possibility of roof panel damage due to walkway mounting hardware, and shall not bear on panel ribs.

2.10 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation.

3.0 EXECUTION

3.1 FABRICATION

- A. Except as otherwise shown on the Drawings, use materials of size, thickness, and type required to produce reasonable strength and durability in the work of this Section.
- B. Fabricate with accurate angles and surfaces which are true to the required lines and levels, grinding exposed welds smooth and flush, forming exposed connections with hairline joints, and using concealed fasteners wherever possible.
- C. Prior to erection, members shall be identified by a painted erection mark. Connecting parts assembled in the shop for reaming holes in field connections shall be match marked with scratch and notch marks. Do not locate match markings in areas that will decrease member strength or cause stress concentrations.
- D. Except as modified in this section, connections not detailed shall be designed in accordance with AISC. Bolts, nuts, and washers shall be clean of dirt and rust, and lubricated immediately prior to installation.
- E. ASTM bolts shall be tightened to a "snug tight" fit. "Snug tight" shall mean the tightness that exists when piles in a joint are in firm contact, and obtained with a few impacts of an impact wrench, or the full effort of a man using a spud wrench.
- F. Secondary structural framing including purlins, eave struts and clips, shall be shop fabricated complete with clips and/or holes in webs and/or flanges for field attachment.
- G. Splice plates for field connections shall be factory fabricated for precision fit complete with connection bolt holes.
- H. All welding shall be performed in the shop and in accordance with the standard practices of the American Welding Society.

3.2 SURFACE CONDITIONS

Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.3 TRANSLUCENT ROOF PANELS

- A. Attach translucent panels to structural framing in accordance with manufacturer's instructions and located as shown on drawings.
- B. Provide end laps of not less than 6 inches and side laps of not less than 1-1/2 inch corrugations for translucent roofing panels.
- C. Seal intermediate end laps and side laps of translucent panels as per manufacturer's recommendations.

3.4 COORDINATION

Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

- A. It is the intent of these specifications and the accompanying drawings to describe complete and functional mechanical systems.
- B. Furnish and install all material and equipment in accordance with these documents.
- C. Include all incidental items and work not specifically shown or specified but required by good practice in a complete system.
- D. The drawings and specifications are complementary. What is called for in one shall be called for in both.
- E. The drawings are diagrammatic and are based on one manufacturer's equipment. They should be followed as closely as possible, yet are not intended to show every item in its exact location or all the details of the equipment. Where required by job-site conditions, relocate and provide fittings, etc., as required. Any deviations from the drawings must be approved by the Owner's Representative.
- F. Contractor shall obtain all permits and arrange all inspections required by codes applicable to this section. Contractor shall also submit written evidence to Owner that required permits and inspections have been secured and all code requirements have been met.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. The special conditions of this specification apply to the work specified in Mechanical Division 15 which encompasses Section 15010 through 15999.
- B. Refer to Division 1 for the General Requirements of the Contract.

1.3 REFERENCES

- A. American National Standards Institute (ANSI)
- B. American Society of Mechanical Engineers (ASME)
- C. American Society for Testing Materials (ASTM)
- D. Manufacturer's Standardization Society (MSS)
- E. National Electrical Manufacturers Association (NEMA)
- F. National Bureau of Standards (NBS)
- G. Occupational Safety and Health Act (OSHA)
- H. Pipe Fabrication Institute (PFI)
- I. Underwriters' Laboratories (UL)

- J. Air Diffusion Council
- K. American Gas Association
- L. Air Movement and Control Association (AMCA)
- M. American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. (ASHRAE)
- N. National Environmental Balancing Bureau
- O. National Fire Protection Association (NFPA)
- P. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)
- Q. Uniform Plumbing Code (UPC)
- R. Uniform Mechanical Code (UMC)
- S. Uniform Building Code (UBC)
- T. National Electric Code (NEC)
- U. Uniform Fire Code (UFC)
- V. American Welding Society (AWS)
- W. American Water Works Association (AWWA)

1.4 SUBMITTALS

- A. Transmit submittals per Section 01340 - Shop Drawings, Product Data, and Samples to the Owner for approval. The submittals shall be bound in three-ring binders, have major topic tabs and an index. In order to expedite approval of certain items, it is not necessary to transmit all submittals initially. The initial transmittal shall include the binder, expected tabs and an index indicating which items are included, the date each is transmitted, and which items are yet to be transmitted. Future transmittals shall include a revised index.
- B. The submittals shall contain performance data and technical specifications on all materials and equipment to be used on the project. A statement of conformance will suffice where materials or equipment to be provided are that specified by catalog number and complete description in the contract documents.
- C. Submittals shall contain the following information, as applicable:
 1. Complete layout drawings, including plan, elevations and relevant details.
 2. Submit suggested structural steel support including dimensions, sizes, and locations for mounting bolt holes. Include weight distribution drawings showing point loadings.
 3. Electrical requirements
 4. Any exceptions to the specifications

5. Special handling instructions
 6. Installation instructions
 7. List of recommended spare parts
- D. Shop drawings shall be included with the submittals where specifically requested in the specifications, where necessary to determine clearance, where the Contractor proposes alternate equipment or material arrangements, and when requested by the Owner.
 - E. All shop drawings must be reviewed and approved by the General Contractor prior to being submitted to the Engineer. Any shop drawings submitted without Contractor's approval stamp shall be rejected.
 - F. Items transmitted for approval must be received in the Owner's office within ten (10) working days of contract award. All materials and equipment must be approved by the Owner and Engineer prior to installation.
 - G. Review of submittals or shop drawings by the Owner and Engineer does not relieve the Contractor from the requirements of the contract documents unless specific approval has been requested for a given deviation.
 - H. By submitting the Contractor/Supplier certifies that the materials or equipment proposed is satisfactory for the application intended.
 - I. Fabrication of materials and installation of equipment is not authorized prior to approval of shop drawings and vendor data.
 - J. Alternate items installed without the Owner's approval shall be replaced with the specified materials at the Contractor's expense. The Contractor assumes full responsibility that alternate items or procedures will meet the job requirements and is responsible for cost of redesign and of modifications to this and other parties' work caused by alternate items furnished under work of this section.

1.5 QUALITY ASSURANCE

- A. Provide all equipment and material and perform all work in accordance with all local, State, and National codes and regulations.
- B. For work on this project, comply with the applicable and/or specifically referred standards and codes published by the following:
 1. American National Standards Institute (ANSI)
 2. American Society of Mechanical Engineers (ASME)
 3. American Society for Testing Materials (ASTM)
 4. Manufacturer's Standardization Society (MSS)
 5. National Electrical Manufacturers Association (NEMA)
 6. National Bureau of Standards (NBS)

7. Occupational Safety and Health Act (OSHA)
 8. Pipe Fabrication Institute (PFI)
 9. Underwriters' Laboratories (UL)
 10. Air Diffusion Council
 11. American Gas Association
 12. Air Movement and Control Association (AMCA)
 13. American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. (ASHRAE)
 14. National Environmental Balancing Bureau
 15. National Fire Protection Association (NFPA)
 16. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)
 17. Uniform Plumbing Code (UPC)
 18. Uniform Mechanical Code (UMC)
 19. Uniform Building Code (UBC)
 20. National Electric Code (NEC)
 21. Uniform Fire Code (UFC)
 22. American Welding Society (AWS)
 23. American Water Works Association (AWWA)
- C. Where any of the above codes and standards are at variance with the Drawings and Specifications, the more stringent requirements shall take precedence.
- D. Contractor shall be skilled in his trade and is solely responsible for compliance with health and safety regulations, performing work in a safe and competent manner, and in installation procedures required for the work outlined in these documents.
- E. Maintain the highest standards of workmanship throughout the project. Utilize workers only in their areas of skill, expertise, qualifications and experience. Under no circumstances provide any on the job training without direct supervision and thorough review of the quality of the work step by step.
- F. Inspect all material and equipment upon arrival at the site and return or refinish any which is not in new condition. All refinishing is subject to Owner's approval.
- G. All equipment, valves, and instruments shall be installed in such a way that all components requiring operation or maintenance are readily accessible.

1.6 DEFINITIONS

- A. Or approved: Where used in conjunction with manufacturers' names, the meaning of the term "or approved" requires written approval prior to bid date.
- B. Indicated:
 - 1. The term "indicated" is a cross reference to details, notes, or schedules on the drawings, other paragraphs or schedules in the specifications, and similar means of recording requirements in the contract documents.
 - 2. Where terms such as "shown," "noted," "scheduled," and "specified" are used instead of "indicated," it is for the purpose of helping the reader locate the cross reference, and no limitation of location is intended except as specifically noted.
- C. Directed, Requested, Etc.: Where not otherwise explained, terms such as "directed," "requested," "authorized," "selected," "approved," "required," "accepted," and "permitted" mean "directed by the Owner," "requested by the Owner," etc. However, no such implied meaning will be interpreted to extend the Owner's responsibility into the Contractor's area of construction supervision.
- D. Site or Project Site: The space available to the Contractor for the performance of the work, either exclusively or in conjunction with others performing the work as part of the project. The extent of the project site is shown on the drawings and is not identical with the description of the land upon which the project is to be built.
- E. Approved: In no case will "approval" by the Owner be interpreted as a release of the Contractor from responsibilities to fulfill requirements of the contract documents.
- F. Provide: The term "provide" means to furnish and install, complete and ready for the intended use.
- G. Owner: The term "Owner," when used in conjunction with the approvals and direction and other administrative functions, is to be the Project Coordinator assigned by the Owner.

1.7 PRODUCT HANDLING

- A. The equipment and materials specified herein shall be delivered f.o.b. factory with freight allowed to the jobsite and include full-value insurance coverage while in transit.
- B. Contractor shall inspect the equipment and materials for damage upon delivery and shall immediately report damage to Owner and replace or repair such damage to the satisfaction of Owner.
- C. Handle materials as recommended by the manufacturer, with approved equipment in a manner that will prevent damage.
- D. Store materials in a secure area designated by Owner off the ground and in an orderly manner that will prevent damage.

- E. Store materials subject to temperature or humidity damage in a controlled environment as recommended by the manufacturer and approved by Owner.
- F. Dangerous and highly combustible materials shall be packaged, shipped, and stored in compliance with Federal, OSHA, State, and local safety and fire codes as approved.

1.8 WARRANTY

- A. Provide a written guarantee covering the work of this division for a period of one calendar year from the date of acceptance by the Owner and required by the General Conditions.
- B. Provide manufacturer's written warranties for materials and equipment furnished under this division, insuring parts and labor for a period of at least one year from the date of Owner acceptance of work of this division.

1.9 ALTERNATES

- A. Manufacturers' trade names, catalog numbers and material specifications used in this specification are intended to establish the quality of equipment or materials expected. Materials and manufacturers not listed require approval by the Engineer prior to the bid date.
- B. All requests for approval of substitute items shall be submitted on the CSI Substitution Request Form endorsed by the local chapter of CSI and must be received in the Owner's office prior to bid date. Requests must be accompanied by samples, technical data and any other pertinent information. The Owner or Engineer may require additional information if a determination cannot be made from the data supplied. All requests must be in writing.
- C. Approval of substitute equipment or materials will be based upon performance, quality and other factors deemed important by the Owner and Engineer. The Contractor will be responsible for making any changes in other work required as a result of the substitution.

1.10 SPECIFICATIONS COMPLIANCE

The requirements of these specifications shall be complied with in every respect. Therefore, it shall be absolutely mandatory that the job foreman, all lead mechanics, subcontractors and their foreman have completely studied these specifications, be completely knowledgeable as to their entire contents, and maintain a copy at the job-site. Failure to comply with this requirement will be reason to presume the mechanic or subcontractor is not in responsible charge of his work due to ignorance of job requirements, and will be reason for the Owner to require dismissal and replacement with approved personnel. Every foreman and lead mechanic shall be provided with a complete copy of this specification.

2.0 PRODUCTS

Not Applicable

3.0 EXECUTION

3.1 COORDINATION

- A. Contractor shall be responsible for continual coordination of the mechanical work with other trades so as to avoid conflicts in installation. Cooperate with other trades to assure that construction proceeds in an orderly and timely manner.
- B. Study the civil, structural, electrical, shop and any specialty drawings and specifications to determine required coordination.
 - 1. Anchor bolts, sleeves, inserts and supports that may be required for the mechanical work shall be furnished and installed under the same division of the specifications as the respective items to be supported. Excluded from this requirement are cast in place anchor bolts.
 - 2. Slots, chases, openings and recesses through floors and walls as specified will be provided by the various trades in their respective materials, but the trade requiring them shall see that they are properly located.
 - 3. Locations of pipes, panels, equipment, fixtures, etc., shall be adjusted to accommodate interferences encountered. The Project Coordinator shall determine the exact rerouting and location of each pipe and/or duct encountered prior to fabrication.
 - a. Right-of-Way: Lines which pitch shall have the right of way over those which do not pitch. Lines whose elevations cannot be changed shall have the right of way over lines whose elevations can be changed.
 - b. Offsets, transitions and changes in direction in pipes shall be made as required to maintain proper head room and pitch of sloping lines whether or not indicated on the drawings.
 - 4. Installation of arrangement: The Contractor shall install all mechanical work to permit removal of, and access to, (without damage to other parts) all parts requiring periodic replacement or maintenance.
- C. Prepare detailed shop drawings where necessary to assure proper fit and necessary clearance.

3.2 PERMITS, FEES AND INSPECTIONS

- A. Obtain all required permits and pay for all fees and connection charges.
- B. Schedule all required inspections.

3.3 MATERIALS AND WORKMANSHIP

- A. Furnish all materials and equipment in new condition, free from defects and of size, materials, make, type and quality specified. Installation shall be in a neat and workmanlike manner.

- B. When two or more items of the same kind, type or class are required, use items of a single manufacturer.
- C. Workmanship shall be first class throughout and performed only by competent and experienced workmen in a manner satisfactory to the Project Coordinator and/or Engineer. Constant supervision of the work, either by the Contractor or his competent representative, shall be maintained. Work insulated or concealed before being inspected and approved shall be opened and uncovered upon request at the Contractor's expense.

3.4 MEASUREMENTS

- A. Verify all indicated elevations, building measurements, rough-in dimensions, and equipment locations before proceeding with any of the work.
- B. Take all measurements from reference datums established by the general contractor.
- C. Establish all inverts, slopes and elevations by appropriate instruments.
- D. Provide a means of allowing the Owner to check that slopes and elevations are in accordance with the drawings and specifications.

3.5 EQUIPMENT INSTALLATION

- A. Install all equipment in strict accordance with the manufacturer's instructions unless otherwise indicated.
- B. The drawings in general are based upon one of the specific manufacturers listed for a particular equipment item. The other specified manufacturers and additional approved manufacturers of equipment may require deviations from the drawings to properly install the particular equipment in accordance with the manufacturer's recommendations and to provide the system results required. The Contractor shall provide the work necessary to install this equipment.
- C. Where the installation shown or specified is contrary to the manufacturer's instructions, advise the Owner of the differences before proceeding with the installation.
- D. All mechanical equipment shall be installed with suitable access clearances for maintenance or removal of replaceable parts and components, and with necessary couplings or flanges to perform the maintenance or removal without removing the connecting appurtenances.
- E. Supports for all apparatus shall be furnished as specified, detailed or as required by the manufacturers of specific equipment. Anchor all floor mounted equipment, with size and spacing of anchor bolts as recommended by the respective equipment manufacturer.
- F. A copy of the manufacturer's installation instructions shall be maintained at the job-site for all equipment.

3.6 PROTECTION

- A. Protect all work, material and equipment from loss or damage until the project is accepted by the Owner.
- B. As the work progresses, keep all equipment covered and cap all piping which may temporarily be left unconnected.
- C. Notify all other trades of any required precautions necessary to protect the work and personnel.

3.7 INSPECTION

- A. Contractor shall inspect his work to ensure the installation and workmanship are in accordance with acceptable industry standards and applicable codes for the work being done and with these specifications.
- B. All materials, equipment, and workmanship shall be subject to inspection at any time by Owner. Correct any work, materials, or equipment not in accordance with these Contract Documents or found to be deficient or defective.

3.8 CLEANING

- A. Maintain premises and public properties free from accumulations of waste, debris and rubbish during construction.
- B. Clean all mechanical equipment and plumbing fixtures of dust, grease, iron cuttings, unnecessary stamps or shipping labels, etc.
- C. Touch up factory painted materials and/or equipment, as necessary, with paint of matching color and compatible type.

3.9 PROJECT RECORD DRAWINGS

- A. Maintain one complete set of Contract documents (drawings and specifications) at the job-site for the purpose of recording work of the mechanical contract, as actually installed. An accurate, complete, and neat daily record shall be kept in red.
- B. Record all piping by dimensions from gridlines, below grade, above floor, etc.
- C. Document any approved material or equipment substitutions/deletions/additions/changes.
- D. The Contractor shall make the record drawings available to the Owner for review during construction.
- E. Deliver record drawings to the Owner promptly upon completion of the project.

3.10 OPERATION AND MAINTENANCE MANUALS

Provide operation and maintenance manuals in accordance with Section 01730 "Operation and Maintenance Manuals".

3.11 TURN OVER TO OWNER

- A. Schedule a meeting, or series of meetings if required, between the Contractor's representative and the Owner for the purpose of reviewing operation and maintenance of the mechanical systems. The Contractor's representative shall be well qualified and knowledgeable of the systems in this facility.
- B. The meeting shall be scheduled to allow the Owner, appropriate subcontractors and equipment suppliers to attend.
- C. The meeting shall be scheduled promptly upon completion of the project and approval of the operation and maintenance manuals.
- D. The Contractor shall review the operation and maintenance manuals and record drawings in detail with the Owner. He shall then walk the job with the Owner, pointing out locations of equipment, lubrication points, controller settings, and other items.

3.12 START-UP

- A. Contractor shall be responsible for proper operation of all systems, minor subsystems, and services provided under this section. He shall coordinate start-up procedures, calibration and system check-out with all subcontractors involved. Any system operational problems shall be diagnosed; all correctional procedures shall be initiated with the various subcontractors as required to bring the system into compliance with the design, and the problem then shall be rechecked to verify that the system operates normally. Any knowledge of remaining difficulties shall be brought to the attention of the Owner.
- B. Belt-drive tensions and alignments shall be checked. All motors and bearings shall be lubricated in accordance with the manufacturer's service manuals prior to equipment start-up.

3.13 CUTTING AND PATCHING

- A. Cut work as required for installation and patch to match original conditions as directed and approved by Owner. Do not cut any structural members or bracing without Engineer's written approval.
- B. Prior to cutting any existing work, locate all concealed utilities to eliminate any possible service interruption or damage.

3.14 CONNECTION TO EXISTING SERVICES

Arrange time of connection with Owner's Representative. Hold duration of service outage as short as possible. See Section 01650 Facility Commissioning and Startup.

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

Provide all labor, material, equipment and services necessary to furnish and install a complete piping system to Owner equipment as shown on drawings and specified herein. The work shall include, but not be limited to, all pipe, tubing, hangers, supports, restraints, isolators, and testing. In addition, this section covers the installation of all in-line valves, instruments, controls, and other devices.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A.	Mechanical General Requirements	Section 15010
B.	Copper Piping Systems	Section 15071
C.	Valves and Accessories	Section 15100
D.	Pipe Supports	Section 15140
E.	Mechanical Identification	Section 15190

1.3 REFERENCES

- A. Uniform Mechanical Code (UMC)
- B. Uniform Plumbing Code (UPC)
- C. National Fire Protection Association (NFPA)
- D. Oregon State Plumbing Laws and Administrative Rules
- E. American Society of Mechanical Engineers (ASME)
- F. American Society of Testing Materials (ASTM)
- G. Occupational Safety and Health Act (OSHA)
- H. Underwriter's Laboratories (UL)
- I. ASME Code for Pressure Piping
- J. All local codes, statutes and ordinances
- K. American Water Works Association (AWWA)
- L. American National Standards Institute (ANSI)
- M. Manufacturers Standardization Society (MSS)
- N. Uniform Fire Code (UFC)

1.4 SUBMITTALS

Submit the following to the Engineer for review and approval.

- A. Pipe and fittings - Certifications of Compliance
- B. Joint materials - Specify type and grade.
- C. Pressure Testing Chart Recording.
- D. Proposed Piping Drawing Modifications.

1.5 QUALITY ASSURANCE

A. The Contractor shall comply with the following codes and standards:

- 1. Uniform Mechanical Code (UMC)
- 2. Uniform Plumbing Code (UPC)
- 3. National Fire Protection Association (NFPA)
- 4. Oregon State Plumbing Laws and Administrative Rules
- 5. American Society of Mechanical Engineers (ASME)
- 6. American Society of Testing Materials (ASTM)
- 7. Occupational Safety and Health Act (OSHA)
- 8. Underwriter's Laboratories (UL)
- 9. ASME Code for Pressure Piping
- 10. All local codes, statutes and ordinances
- 11. American Water Works Association (AWWA)
- 12. American National Standards Institute (ANSI)
- 13. Manufacturers Standardization Society (MSS)
- 14. Uniform Fire Code (UFC)

B. Any deviation from the cleaning, installation, testing and certification requirements of this specification must be approved in writing by the Engineer.

C. Owner reserves the right to reject all or part of any system that does not conform to the requirements of this specification. Any rejected material or equipment shall be replaced or reworked to conform with this specification at the Contractor's expense.

D. Owner's Representative will have the authority to approve or disapprove workmanship provided by the Contractor. He shall have full technical jurisdiction over the Contractor in matters relating to quality and control of the cleaning, fabrication, installation and testing of the systems in accordance with the Specification.

All problems, requests, questions, etc., relating to this specification or methods, procedures, and revisions shall be subject to his approval. The pressure and purity testing shall be witnessed and/or verified by him. Any rejected material or equipment will be removed at Contractor's expense.

- E. Only experienced, competent and properly equipped workers shall be employed on the job. Workers shall be qualified for the work they do and provide first class workmanship in all respects.

1.6 DELIVERY, STORAGE AND HANDLING

All components and materials used during the installation of the piping systems shall be delivered, stored and handled in such a way as to prevent damage and/or contamination at all times. Care shall be exercised to keep foreign matter out of the system. All open pipe ends and connections shall be kept plugged to keep out dust, dirt, moisture, etc.

2.0 PRODUCTS

2.1 GENERAL

All pipe, fittings and valves shall bear manufacturer's name and trademark; valves shall have service and pressure rating cast in bodies. Only new materials shall be used. Any used or defective material shall be removed from the site. Any material or equipment which becomes damaged or contaminated during the handling on the job shall not be used unless it is repaired and/or recleaned to the original requirements.

2.2 PIPING SPECIFICATIONS

Detailed material specifications may be found in the applicable Specification Sections for each piping material. Piping systems are classified by fluid type and line size and are summarized on Table 1, Pipe and Valve Schedule at the end of this section.

3.0 EXECUTION

3.1 GENERAL

Piping shall follow the general arrangement shown on drawings. Piping shall be installed without springing or forcing, except where indicated on the drawings. Piping shall be kept clean and free of foreign materials, both inside and outside, or cleaned before installation.

A. Clearances for Thermal Insulation

Piping to be insulated shall be arranged and installed to provide proper standoffs and clearances from any obstruction to allow insulation installation.

B. Cold Springing for Fitup

No cold springing for fitup shall be done unless called out on the drawings as intentional cold springing.

C. Pipe Sleeves

1. Pipe sleeves shall be provided where pipes pass through masonry or concrete walls, floors, roofs and partitions. Pipe sleeves shall be either as shown on construction details or shall be standard pipe. Space between pipe, tubing or insulation and the sleeve shall not be less than 1" unless specified. Sleeves shall be of sufficient length to pass through entire thickness of walls, partitions or slabs.
2. Casing of pipes directly into concrete is prohibited except where specifically indicated on the drawings.

D. Pipe Drains/Air Vents

1. Drain connections of 1/2" or larger ball valves of the same material as the piping system shall be provided for all equipment (pumps, tanks, etc.) and for all piping systems at one or more low points in the system for draining. Provide threaded caps for valves.
2. Provide 1/2" or larger ball valves of the same material as the piping system at high points in the piping system and as required to bleed air from the lines during system start-up. Provide threaded caps for valves.

E. Piping Identification

All piping, valves and accessories shall be labelled as shown in Section 15190, "Mechanical Identification".

3.3 ANCHORING, GUIDING AND SUPPORTING PIPING

- A. Wall brackets may be used where pipes are adjacent to walls or other vertical surfaces which may be used for supports. Supports shall be installed to carry adequately the weight of the lines and maintain proper alignment.
- B. Any additions of pipe guides, anchors, expansion joints, or flexible couplings to those shown on the Drawings and specified herein shall require written approval from the Engineer prior to installation.
- C. Miscellaneous Structural Supports: Miscellaneous structural steel for pipe supports shall be as shown on the drawings and as required.
- D. Temporary Supports: Adequate temporary supports shall be installed during erection and during hydrostatic testing of piping so not to overstress piping or equipment to which piping is connected. Contractor shall be responsible for properly locating and sizing all temperature supports. Perforated strap or strip steel is not acceptable. Temporary supports shall be removed after permanent supports have been installed.

3.4 PIPE TESTING

A. Preparation for Pipe Testing

1. When hydro-tests are performed at temperatures below 40°F outside, necessary precautions shall be taken to prevent freeze-ups. When tests are completed, the lines shall be completely drained.

B. Testing

1. All pressure piping shall be hydrostatically tested by the Contractor before any insulating covering has been applied. Each pipeline shall be subjected to a test pressure of 150% of the maximum operating pressure as specified on the Piping System Specification Sheets.
2. Piping normally open to the atmosphere, such as drains and vents, shall be tested by filling the system with city water and checking all joints for leakage after the test duration specified on the Piping System Specification Sheets.
3. Be certain to remove all air from the piping system prior to pressurizing the line.
4. The testing pressure shall be accurately applied for at least four (4) hours. Any addition or removal of water to maintain test pressure shall be recorded as to quantity, time, and temperature. Temperature of water used for testing shall not exceed 100°F.
5. Examination for leakage shall be made at all joints and connections. The piping system shall show no visual evidence of weeping or leaking.
6. Any leaks or other defects disclosed as a result of the tests shall be repaired and retested by the Contractor to the satisfaction of the Engineer and without additional cost to the Owner.
7. The Contractor shall provide all personnel, pumps, piping and fittings, test gauges, etc. required to make the test. All testing shall be done in the presence of and be approved by the Engineer/Owner.

**Table 1
Pipe and Valve Schedule**

Stream Identification	Service	Primary Piping Material	Specification Section	Pressure Rating (psig)	Pressure Test (psig)	Valve Reference
NPW	Nonpotable Water	Copper	15071	80	150	---

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

Provide materials, fabrication and installation of the copper piping systems specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Pipe and Fittings Section 15060

B. Pipe Supports Section 15140

1.3 REFERENCES

A. American Society of Mechanical Engineers (ASME)

B. American Society of Testing Materials (ASTM)

C. American National Standard Institute (ANSI)

1.4 SUBMITTALS

Not used in this Section.

1.5 QUALITY ASSURANCE

Not used in this Section.

2.0 PRODUCTS

2.1 PIPE AND PIPE FITTINGS

Material requirements are specified in the Piping System Specification Sheet provided at the end of this Section.

2.2 DIELECTRIC CONNECTIONS

Dielectric connections shall be provided at all transitions from one metallic piping system to another of different composition.

3.0 EXECUTION

3.1 INSTALLATION

A. Tools: Flat-faced wrenches and vises are to be used for copper systems. Pipe wrenches and vises with toothed jaws will damage copper materials and shall not be used.

B. Preparation:

1. When a section of tubing is to be cut from a length, it shall be cleaned with an abrasive cloth sufficient for a joint area on each side of the intended cutoff point and the surface wiped clean with lint-free cloth before cutting with cleaned cutter wheel.

2. Tubes shall be cut with ends square and true to size using sharp wheeled cutters. Hack saws or similar type cutting tools shall not be used. All burrs must be removed.
- C. Brazing Operation: The qualification of brazing procedures, brazers, and brazing operators shall be in accordance with the requirements of Section IX of the ASME Code.
- D. All joints in the piping, except those at valves or equipment requiring screwed connections, shall be made with fluxless type braze material.
- E. In joining fittings to 3/4" diameter tubing or smaller, the entire joint can be brazed in one simultaneous heating operation. When tube and fittings are larger than 3/4" diameter, sectional heating is necessary.
- F. Torch-braze joints with 15% SIL-PHOS brazing alloy without flux, using oxyacetylene torch with a slightly carburizing flame. 100% penetration is required.
- G. All joints that show evidence of over-heating, cracking, poor penetration, or other defects of fit-up or workmanship shall be replaced, as directed by the Owner.
- H. Piping shall be run as direct as possible parallel to the building column lines from the nearest terminal valve.
- I. Install tubing so it does not directly contact the structure except where shown or specified otherwise.
- J. No tube bends shall be made.

3.2 COPPER PIPE SUPPORT SPACING

- A. Maximum allowable pipe support spacings are provided in Tables 1 and 2.
- B. Support spacings listed in the tables only applies to straight runs of piping. Additional supports are required at the following areas:
 1. Valves and accessories
 2. Tees and elbows

TABLE 1
COPPER PIPE SUPPORT SPACING - LIQUID SERVICE

<u>Pipe Size</u> <u>inches</u>	<u>Maximum Spacing</u> <u>feet</u>
1/2	5

PIPING SYSTEM SPECIFICATION SHEET

SERVICE: FLUID MAX. PRESSURE OPERATING TEMP. RANGE OPERATION	NPW 100 PSIG 60-80°F ON/OFF	PIPE SPEC. NO.: 15071-1
PIPE		
SIZE RANGE	1/4" - 2"	
MATERIAL	COPPER TUBING	
STANDARD	ASTM B88	
GRADE		
WALL THICKNESS	TYPE L	
END PREPARATION	PLAIN, FOR SOLDER TYPE FITTINGS	
NOTES: ALLOY USED FOR JOINTS SHALL BE 95-5 TIN - ANTIMONY SOLDER PER ASTM B32		
FITTINGS		
SIZE RANGE	1/4" - 2"	
ELBOWS/TEES	LONG RADIUS, WROUGHT COPPER, SOLDER TYPE, ASTM B16.22	
WALL THICKNESS	STANDARD	
UNIONS		
FLANGES	N/A	
BOLTING	N/A	
GASKETS	N/A	
NOTES: GENERAL NOTES:		

PIPING SYSTEM SPECIFICATION SHEET

SERVICE:	FLUID MAX. PRESSURE OPERATING TEMP. RANGE OPERATION	ICW/EW/HWS/HWR 100PSIG 60-80°F CONTINUOUS	PIPE SPEC. NO.: 15071-2
PIPE			
SIZE RANGE	1/4" - 2"		
MATERIAL	COPPER TUBING		
STANDARD	ASTM B88		
GRADE			
WALL THICKNESS	TYPE L		
END PREPARATION	PLAIN, FOR SOLDER TYPE FITTINGS		
NOTES:	ALLOY USED FOR JOINTS SHALL BE 95-5 TIN - ANTIMONY SOLDER PER ASTM B32		
FITTINGS			
SIZE RANGE	1/4" - 2"		
ELBOWS/TEES	LONG RADIUS, WROUGHT COPPER, SOLDER TYPE, ASTM B16.22		
WALL THICKNESS	STANDARD		
UNIONS			
FLANGES	N/A		
BOLTING	N/A		
GASKETS	N/A		
NOTES:			
GENERAL NOTES:	1. PROVIDE BRASS CAJON PRECISION PIPE FITTINGS FOR EQUIPMENT FIT-UP		

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

Provide all labor, material, equipment and services necessary for the installation of all valves and accessories as noted on the drawings and specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Mechanical General Requirements Section 15010
- B. Pipe and Fittings Section 15060
- C. Pipe Supports Section 15140

1.3 SUBMITTALS

Submit detailed product data to the Owner for review and approval under provisions of Section 15010. Clearly indicate make, model, location, type, size, pressure rating, and flow characteristics.

2.0 PRODUCTS

2.1 VALVES

- A. Provide valves of same manufacturer throughout where possible.
- B. Approved manufacturers as Nibco, Crane, and Stockham.

3.0 EXECUTION

3.1 INSTALLATION

- A. Install valves with stems upright or horizontal, not inverted.
- B. Install valves where shown on drawings. Full size of pipe unless otherwise indicated. Provide neat appearance and easy grouping with all parts easily accessible. Valve stems shall be installed in the horizontal or upright position.
- C. All valves shall be installed in a manner that make them fully accessible for operation and maintenance.
- D. Contractor shall install all valves in accordance with manufacturer's installation recommendations.
- E. All valves are to be independently supported from the piping system.
- F. Valve Tag: Tag all actuated valves in accordance with Section 15190, Mechanical Identification.
- G. Unions: Install unions in all non-flanged pipe connections to apparatus and adjacent to all screwed control valves, traps, and appurtenances required access for maintenance.

END OF SECTION.

1.0 GENERAL

1.1 WORK INCLUDED

Provide all labor, material, equipment and services necessary for the installation of all supports and anchors as noted on the drawings and specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- | | | |
|----|---------------------------------|---------------|
| A. | Mechanical General Requirements | Section 15010 |
| B. | Pipe and Fittings | Section 15060 |
| C. | Valves and Accessories | Section 15100 |

1.3 SUBMITTALS

Submit the following to Owner for review and approval. Specifically indicate which supports will be used for each piping system.

- A. Hangers
- B. Channel framing
- C. Shop drawings as necessary
- D. Attachment clamps

1.4 QUALITY ASSURANCE

All pipe supports shall be manufactured and installed in accordance with the Manufacturer's Standardization Society of the Valve and Fitting Industry, Standard Practices MSS SP-58 and SP-69.

1.5 DEFINITIONS

- A. Supports: Supports shall limit all downward vertical movement. They shall allow horizontal movement in all directions.
- B. Guides: Guides shall limit all downward vertical movement and all horizontal movement, except in one direction. Guides shall allow for horizontal movement longitudinally along the pipe only.
- C. Anchors: Anchors shall limit all movement and rotation of the pipe.

2.0 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Pipe Hangers and Supports: Grinnell, Elcen or Kin-Line.
- B. Pipe Hanger Isolation Shields: Pipe Shields Incorporated or Insul-Shield.
- C. Metal Framing Systems: Elcen, Unistrut, or Superstrut.

2.2 GENERAL

All hangers, rods, clamps, protective shields, metal framing support components, and hanger accessories shall be electro-galvanized or cadmium-plated unless noted otherwise, or it is subjected to welding.

2.3 PIPE HANGERS AND SUPPORTS

- A. Individual hangers for Pipe Sizes 1/2 to 1- 1/2": Malleable iron adjustable swivel, split ring type, Grinnell Figure 104.
- B. Wall Support for Pipe Sizes to 3": Steel channel with pipe clamp.
- C. Copper Pipe or Tubing Support: Carbon steel ring with copper finish, adjustable tubing ring. Grinnell Figure CT-99. Alternate: Plastic coated, Grinnell Figure CT-99C.

2.4 HANGER RODS AND BEAM CLAMPS

- A. Steel Hanger Rods: All thread. Grinnell Figure 146.
- B. Beam Clamps: Forged steel UFS beam clamp with weldless eyenut. Grinnell Figure 292.

2.5 FABRICATION

Prime coat exposed black steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

3.0 EXECUTION

3.1 GENERAL

- A. No attempt has been made to show all required pipe supports in all locations, either on the Drawings or in the Details. The absence of pipe supports and details on any Drawing shall not relieve the Contractor of the responsibility for furnishing and installing them as required.
- B. All pipe support system components shall withstand the dead loads imposed by the weight of the pipes filled with water along with the support assembly and shall have a minimum safety factor of five.
- C. All piping shall be supported in a manner which will prevent undue stress on any valve, fitting, or piece of equipment. In addition, pipe supports shall be provided at changes in direction or elevation, adjacent to flexible couplings, and where otherwise shown. Pipe supports and hangers shall not be installed in equipment access areas.
- D. Where horizontal piping is arranged with two or more parallel lines, trapeze hangers may be used in lieu of individual hangers. Trapeze assembly shall consist of structure attachments as previously specified with rod size dependent upon the total weight supported, spacing of assemblies determined by the minimum pipe size included in the group supported. Trapeze horizontal shall be a structural angle or channel section of sufficient size to prevent measurable sag between rods, all lines attached to the horizontal with intermediate pipe guides and U-bolts or one-hole clamps. Pre-

engineered support equipment may be used when selected and installed in accordance with the manufacturer's recommendations.

- E. No piping shall be supported from the pipe above.
- F. Horizontal piping hanger support rods shall attach to steel beams with center-loading I-clamps, to concrete with inserts or flanges fastened with flush shells.
- G. Stiff leg support is not approved for vibration isolated piping.
- H. No copper pipe shall contact a pipe support or hanger of dissimilar metal. Hangers and supports for copper pipe shall be copper-plated, plastic coated, or copper pipe shall be isolated with insulating Neoprene strips, or as approved.
- I. Provide sufficient pipe support spacing to allow for a 25 percent expansion.

3.2 PIPE HANGERS AND SUPPORTS.

- A. Hanger rod sizing for copper pipe shall be same as for steel pipe. Hanger spacing shall be 2' less per size than for steel pipe, with 1" and smaller supported every 5'.
- B. Install hangers to provide a minimum 1/2" space between finished covering and adjacent work.
- C. Place a hanger within 12" of each horizontal elbow, and on both sides of valves weighing 20 pounds or more.
- D. Use hangers with 1-1/2" minimum vertical adjustment.

3.3 STRUCTURAL ATTACHMENTS

All pipe hangers and supports shall be supported either from structural steel members using beam clamps or with concrete inserts into the concrete where approved by the Engineer. In the event there is not a structural member at a required hanger location, the mechanical contractor shall furnish and install supplementary steel members as required to support the hanger.

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

Requirements for tagging equipment and valves, and marking piping and ducting.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A.	Mechanical General Requirements	Section 15010
B.	Pipe & Fittings	Section 15060
C.	Copper Piping System	Section 15071
D.	Valves and Accessories	Section 15100
E.	Power Ventilators	Section 15870
F.	Ductwork and Accessories	Section 15890

1.3 QUALITY ASSURANCE

All piping system identification markers shall meet the requirements of ANSI A13.1, "Scheme for the Identification of Piping Systems".

1.4 SUBMITTALS

- A. Submittals shall be provided in accordance with Section 01340, Submittals, and the requirements of this Section.
- B. Prior to having name plates engraved, pipe markers printed, and valve tags stamped, the Contractor shall submit to the Engineer for his review, a complete list of equipment labels, pipe markers and valve tags.
- C. Product samples.

2.0 PRODUCTS

2.1 EQUIPMENT IDENTIFICATION PLATES AND CODING

- A. Equipment identification plates shall be installed on all exhaust fans and miscellaneous items of heating, ventilating, air conditioning, and plumbing equipment. The identification shall include both the tag number indicated on the schematic drawings and associated reference name.
- B. Identification plates shall consist of engraved plastic, Bakelite, or stainless steel nameplates.

2.2 VALVE IDENTIFICATION TAGS

A. Valves shall be tagged with numbered stainless steel tags, attached to the valve with a stainless steel chain. All valves in each piping system shall be tagged. Tags manufactured by W. H. Brady Company, Milwaukee, WI, or Seton Nameplate Corporation, New Haven, CT, or equal approved by the Engineer.

1. Manual valves shall be tagged with numbers corresponding to the identification code shown on the piping Drawings (V-1, V-2, etc.)

2.3 PIPING IDENTIFICATION MARKERS

A. All plant piping shall be identified by identification labels.

B. Identification labels shall bear "service" name as specified in Section 15060, Pipe and Valve Schedule and as shown on the Drawings. Separate flow directional arrows shall be installed with each label. Labels shall include lettering on self-adhesive vinyl or vinyl cloth. Lettering height shall conform to ANSI A13.1. The label and adhesive shall be long lasting, resistant to moisture, oils, solvents, and weathering, and shall conform to OSHA requirements. Labels and directional arrows shall be as manufactured by W.H. Brady Company, Milwaukee, WI or Seton Nameplate Corporation, New Haven, CT.

2.4 DUCTWORK IDENTIFICATION

A. All exhaust ducts shall be identified as to the exhaust stream and the direction of flow.

B. Exhaust streams shall be identified as "VENTILATION EXHAUST".

3.0 EXECUTION

3.1 EQUIPMENT IDENTIFICATION PLATES

A. Installation:

1. Attach identification plates to equipment with stainless steel hardware or mastic to create a permanent bond. Valve tags shall be attached to valve handle or yoke with stainless steel wire or chain.
2. Plates shall be placed in a clearly visible location.

3.2 PIPING IDENTIFICATION MARKERS

A. Location:

1. Attach pipe markers to lower quarter of the pipe on horizontal runs where view is not obstructed. Flow indicator arrow shall point away from pipe marker. Piping shall be identified wherever it is not permanently concealed by the structure.
2. Identifying Pipes:
 - a. At each valve
 - b. On both sides of wall penetrations

- c. At floor or roof penetrations
- d. On each riser
- e. On each leg of a tee
- f. At connections to equipment
- g. Every 50 feet maximum on the above floor utilities and 10 feet maximum on the below floor utilities.

3.3 DUCT IDENTIFICATION

A. Location:

1. Attach to duct in upper quarter so as to be visible when viewed from above. Flow direction indicator shall point away from the duct marker.
2. Identify Ducts:
 - a. At both sides of wall or floor penetrations
 - b. At each riser
 - c. At equipment connections
 - d. At every 50 feet maximum along duct runs

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

- A. For purposes of new roof construction, existing sprinkler system shall be dismantled, salvaged, and reassembled in coordination with roofing operations. Furnish all labor and material, and perform such other services necessary and reasonably incidental to the disassembling and reinstallation of the dry-pipe system. Install per the latest applicable sections of NFPA 13, and as required by the governing agency. It is the intent that all work shall be complete in every respect, tested, and ready for operation.
- B. The contractor shall familiarize himself with all necessary work required to perform properly the intent of these Specifications, National Fire Protection Association (NFPA) Codes, Owner's Insurance Underwriter, and Uniform Fire Code (UFC) as amended by local authority requirements.
- C. Coordinate with Metro, the new roofing contractor, and the local authority having jurisdiction to develop a fire protection plan to provide the Metro Facility with temporary fire protection during all construction phases. The fire protection plan shall have input from and approved by both Metro and the local authority. Furnish all labor and materials necessary for the development of the plan and the installation of temporary services to implement the plan.
- D. Existing system shown in Discount Fire Systems, Inc., reference shop drawings.

1.2 RELATED WORK

- A. Mechanical General Requirements Section 15010
- B. Pipe Supports Section 15140

1.3 REFERENCES

- A. NFPA 13, 14, 90, 91
- B. Underwriters Laboratories (UL)
- C. Factory Mutual (FM)
- D. Uniform Fire Code (UFC)

1.4 QUALITY ASSURANCE

- A. The fire protection contractor shall be regularly engaged in the installation of automatic fire sprinkler systems and employ workmen experienced and skilled in this trade. All equipment and devices shall be of a make and type listed in the U.L. Fire Protection Equipment list and/or the Factory Mutual Approval Guide for the specific purpose for which it is used.

B. Cutting and Repairing: Cutting of construction shall be done only with Owner's written approval. Damage to buildings, piping, wiring or equipment as a result of cutting or due to the installation shall be repaired by skilled mechanics in a neat and effective manner for the trade involved and at contractor's expense.

C. Workmanship and Qualifications:

1. All materials and equipment shall be installed in accordance with NFPA Standards 13 and 14 and all applicable local and state codes and ordinances, and shall be listed by Underwriter's Laboratories (UL) and/or Factory Mutual (FM).
2. The system shall be installed by a state-licensed firm regularly engaged in the design and installation of fire protection sprinkler systems. Owner may reject any proposed contractor who cannot show evidence of such qualifications. Owner's approval will not relieve contractor from his responsibilities to perform all work in accordance with specifications and contract terms.
3. Contractor shall guarantee that all work and materials conform to the requirements set forth by this specification. Welding shall be in accordance with NFPA Standard 13 by certified welders.

1.5 DELIVERY, STORAGE AND HANDLING

- A. All salvaged materials, fixtures and equipment shall be properly and effectively protected during construction.
- B. Open ends of all piping and all openings in equipment shall be capped or plugged until installation so as to prevent entrance of any foreign matter. Test plugs, flanges, cover plate or screw caps, or plugs shall be used.
- C. All equipment, valves, alarms, gauges, etc., shall be covered and protected during the execution of the work. All equipment and piping shall be protected from freezing. Labeling to remain in place.
- D. All unloading, hauling, handling of materials, and all cutting and patching required for installation shall also be the responsibility of contractor.

1.6 GOVERNING AGENCY

All work in accordance with, and to be accepted by, Governing Agency, and designed to comply with the latest issue of NFPA Pamphlet 13 and Factory Mutual Pamphlet Rules for Installing Sprinklers.

2.0 PRODUCTS

2.1 SYSTEM SALVAGE

Existing sprinkler system to be dismantled and reassembled. System design to be verified with Governing Agency. In the event new components are required, the following products specifications apply.

2.2 PIPE AND FITTINGS

Use standard weight black steel pipe and cast iron screwed or mechanical joint fittings especially adapted for sprinkler work and suitable for 175 pounds working pressure. Use reducing fittings where changes in pipe size occur. Bushings are prohibited. All sprinkler specialty material shall be: Grinnell, Star, Viking, Automatic Sprinkler Corporation of America, or approved equivalent with Underwriters' approval for the specific use in system.

2.3 VALVES

Iron body, OS&Y pattern, bronze mounted, double disc, parallel seat.

2.4 SPRINKLERS

- A. Sprinklers shall have 1/2" orifice and temperature rating to match existing, except when specified otherwise and where specific conditions require different temperature ratings in accordance with NFPA 13.
- B. Sprinkler heads and accessories shall be as manufactured by Grinnell, Central Sprinkler Corp., or Viking.

2.5 SLEEVES

Galvanized steel pipe sleeves shall be provided for all pipes passing through walls, floors and ceilings. Space between the pipe and sleeve shall be not less than one inch. The space shall be packed with mineral wool and caulked.

2.6 MISCELLANEOUS MATERIALS

- A. Flexible couplings shall be provided in conformance with NFPA No. 13.
- B. Gages shall be provided in conformance with NFPA No. 13.
- C. Supports, hangers, etc. shall be of an approved pattern and placed to conform to the requirements of NFPA No. 13. Sway bracing shall conform to NFPA No. 13.

3.0 EXECUTION

3.1 INSTALLATION

- A. Tour site and locate all water supply sources to verify existing system components.
- B. Install all piping in a true and even manner with lines pitched for drainage and system arranged so that it can be entirely emptied of water.
- C. Install hangers at all branch line connections to cross mains and at all other points required in herein before specified Underwriters' standards.
- D. Support all pipe work from building construction with steel hangers spaced not more than 12 feet 0 inches on centers. Support mains independently of branches, and in no case are branch hangers to assume any portion of the weight of mains.

- E. Provide seismic bracing for piping.
- F. Coordinate construction activities with Metro Station operation and roofing construction sequence.

3.2 TESTS

- A. Test and flush all pipes as specified in NFPA Standard No. 13 and as follows. Perform other tests as may be directed by the Governing Agency.
- B. Piping: The completed system shall be subjected to a pressure test and to such other tests as the Authority having jurisdiction may require.
 - 1. The pressure test shall be hydrostatic pressure of a minimum of 200 psi for a period of two hours or 50 psi above static pressure where static pressure exceeds 150 psi. The completed system shall show no leaks under this test.
 - 2. Refer to NFPA Standards 13 and 14 for tests and acceptance requirements. Before applying specified test pressure all air must be expelled from the line through Inspector's test connections.
 - 3. All defects of whatever type shall be repaired or replaced to the satisfaction of (Owner or the Construction Manager) and Authority having jurisdiction and at contractor's expense.
 - 4. Packing rings, special joints bolts, gaskets and other material required for the proper installation of the pipe and fittings shall be provided by contractor.

3.3 IDENTIFICATION

- A. Apply signs to control, drain test and alarm valves to identify their purpose and function. Provide lettering size and style from NFPA's suggested styles.
- B. Sprinkler piping and valves shall be color coded as required by ANSI A13.1, "American National Standards Institute Scheme for The Identification of Piping Systems," latest revision.

3.4 SPARE PARTS

Contractor shall furnish spare automatic sprinklers in accordance with the requirements of NFPA Standard 13 for stock of extra sprinklers. The sprinklers shall be packed in a suitable container and shall be representative of, and in proportion to, the number of each type and temperature rating of the sprinklers installed. Contractor shall furnish no less than two (2) special sprinkler head wrenches, or at least one (1) head wrench for each container or sprinkler box, whichever is greater.

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

Furnish and install exhaust fans as specified herein and shown on the drawings.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Mechanical General Requirements Section 15010
- B. Testing, Adjusting, and Balancing Section 15990

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

Submit to the Owner the following for review and approval:

- A. Shop drawings, operating point plotted on curves.
- B. Manufacturer's printed installation instructions.
- C. Base mounting drawings for coordination with roof curb layouts.

1.5 QUALITY ASSURANCE

Exhaust fans shall be rated in accordance with AMCA certified rating procedures and bear the AMCA label.

1.6 JOB CONDITIONS

Do not operate fans for any purpose, temporary or permanent until duct-work is completed, bearings lubricated and fan has been run under observation.

2.0 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Manufacturer named items are for standard of reference and do not necessarily limit supply to named manufacturer. Items of same physical size, function and performance are acceptable with approval by Engineer.
- B. Equivalent fan selections shall not decrease motor horsepower, increase noise level, increase tip speed by more than 10%, or increase inlet air velocity by more than 20% from that specified.
- C. Fan performance based on sea level conditions.

D. Acceptable Manufacturers:

1. Barry Blower
2. Brod & McClung - Pace
3. Buffalo.

2.2 SELECTION AND BALANCING.

- A. Provide fans capable of accommodating static pressure variations of plus or minus 10%.
- B. Provide balanced variable sheaves for motors 15 hp and under.
- C. Statically and dynamically balance fans to eliminate vibration or noise transmission to occupied areas of the building.

2.3 CENTRIFUGAL EXHAUST FANS

- A. Centrifugal fan, single-width, single-inlet, Arrangement 10, rated and tested in accordance with AMCA Standards for Class I service. Backward inclined or airfoil aluminum wheel shall be statically and dynamically balanced. Housing shall be heavy gauge steel, adequately braced and supported, with spun inlet cone and shaped cutoff. Fan wheel shaft to be solid or tubular stainless steel with center punched ends to accept tachometer.
- B. Bearings to be self-aligning, grease-packed heavy duty pillow block type, L-50 life at 100,000 hours for roller bearings or L-10 life at 120,000 hours for roller bearings. Provide felt seals on all bearings.
- C. V-belt drives shall be cast iron or steel sheaves, dynamically-balanced, and keyed. Provide adjustable pitch sheaves for 15 hp and under motors, and fixed sheave for 20 hp and above. Matched belts and drive rated as recommended by manufacturer or a minimum of 1.5 times nameplate rating of motor, whichever is greater.
- D. Provide belt guard with 3/4-inch diamond mesh wire screen welded to steel angle frame or equivalent. Secure to fan or fan supports without short circuiting vibration isolation, with provisions for adjustment of belt tension, lubrication, and use of tachometer with guard in place.
- E. Provide 1-inch drain at low point in fan scroll.
- F. Provide seismic and vibration isolation fan mounts. Mounts shall be an all-directional, captive neoprene type mount. Mason Industries #BR.
- G. Motors shall be in accordance with Section 15170. Motors to be open-drip proof.
- H. Provide weatherproof cover over motor and drive on outdoor units, removable belt guard, and drip-proof motor mounted on adjustable motor base.
- I. Provide fan scroll clean-out door with bolts and wing nuts for easy access and cleaning.

2.4 FAN MOTORS

A. Motors:

1. The service factor for all motors shall be 1.15.
2. When motors are furnished separately or with the driven equipment as a package, the torque characteristics and speed specified shall be the responsibility of the driven equipment Vendor.
3. Motors shall be designed for full-voltage starting and rated for continuous operation. Motors shall be able to overcome starting load inertial as well as accelerating the load to rated speed under both rated and reduced (85 percent) voltage conditions during starting without injurious heating. Motor Vendor will be advised when reduced voltage conditions exist on the individual motor data sheet.
4. Motors shall exceed the speed-torque requirements of the driven equipment over its entire operating range by at least 10 percent at the rated voltage.
5. Motor fans shall preferably be suitable for rotation in either direction. They shall be of nonsparking, corrosion resistant material, accurately balanced before assembly on rotor. Plastic, fiberglass, or other nonmetallic fans housings are not acceptable.
6. All motors shall be equipped with a grounding lug on the motor frame on same side as main terminal box.
7. Motors shall be the manufacturer's "high efficiency" design.

B. Motor Junction Boxes:

1. Motor terminal and protective equipment boxes shall be adequately sized to accommodate the cable types and devices specified on the individual motor data sheet.
2. The main motor lead junction box shall be heavy-duty class, weather-tight. Boxes shall be able to be routed in 90 degree increments.
3. All motor terminal and protective equipment boxes shall be thoroughly coated internally and externally with corrosion-resistant paint.

C. Balancing and Vibration

Motors shall be dynamically balanced. No solder or similar balancing deposits are acceptable. Parent metal removed to effect the balance shall be removed so as not to affect the structural strength or rotating equipment.

D. ACCEPTABLE MANUFACTURERS

1. General Electric
2. Westinghouse

3. Allis-Chalmers

4. Reliance Electric

3.0 EXECUTION

3.1 INSTALLATION

A. General: Install exhaust fan as shown on the drawings. Comply with the manufacturer's recommendations for installation, connection and start-up.

3.2 TESTING AND BALANCING

A. Test and adjust the exhaust fan to perform as designed and leave in operating condition.

B. Correct all defects disclosed by these tests without any additional cost to the owner.

C. Include final test results in Testing and Balancing Report required in Section 15990.

EXHAUST FAN DATA SHEET

Quantity: 6

Name: Ventilation Exhaust Fans

<u>Tag Number</u>	<u>Location</u>	<u>Area Served</u>
EF-1	Building Roof	Transfer Facility
EF-2	Building Roof	Transfer Facility
EF-3	Building Roof	Transfer Facility
EF-4	Building Roof	Transfer Facility
EF-5	Building Roof	Transfer Facility
EF-6	Building Roof	Transfer Facility

Fan

Type	Centrifugal air foil
Wheel Diameter	40 inches
Air Flow	22,000 CFM
Outlet Velocity, maximum	2200 FPM
Total static pressure	0.5 inches W.C.
Motor	
Brake horsepower	5.5 bhp
Horsepower	7-1/2 hp
Speed, maximum	1,800 rpm
Voltage	480 volts
Frequency	60 Hz
Phase	3 Phase
Type	Open, Dripproof

Fan Class

I

Drive Type

Adjustable pitch sheave, belt driven

Basis of Design:

Brod & McClung-Pace Company
Centrifugal 40 SWSI AF

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

Furnish and install ductwork and accessories, see the Schedule at the end of this Specification.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Mechanical General Requirements Section 15010
- B. Mechanical Identification Section 15190

1.3 REFERENCES

- A. ASHRAE Handbooks
- B. SMACNA, HVAC Duct Construction Standards, Metal and Flexible, 1985
- C. SMACNA, Round and Rectangular "Industrial Duct Construction Standards"
- D. SMACNA "Seismic Restraint Manual, Guidelines For Mechanical Systems", 1991.
- E. SMACNA "Accepted Industry Practice for Industrial Duct Construction"
- F. NFPA 90A, "Standard For the Installation of Air Conditioning and Ventilating Systems"
- G. NFPA 90B, "Standard for the Installation of Warm Air Heating and Air Conditioning Systems"
- H. NFPA 91, "Standard For the Installation of Blower and Exhaust Systems for Dust, Stock and Vapor Removal or Conveying".
- I. UL Standards 555, 33 and 181
- J. ASTM Standards A-525 and A-527
- K. ASHRAE Test Standard 52-76

1.4 SUBMITTALS

- A. Required After Execution of the Contract but Before Construction:
 - 1. Shop drawings coordinated with other trades.
 - 2. Shop drawings for review by the Engineer at 1/4 inch scale.
 - 3. Product data for duct accessories.
 - 4. Details showing proposed method of support connection to structure.
 - 5. Data on materials of construction; including but not limited to sheet metals, gasketing, sealants.

- B. Required After Construction: Certificate of test approval by Owner's representative on all systems. The Engineer will acknowledge observance of tests that are witnessed by him.

1.5 QUALITY ASSURANCE

- A. All ductwork shall be in accordance with this Specification and the Drawings and with the applicable referenced codes, standards, and guidelines. Where a conflict arises, the most stringent requirement shall apply.
- B. Ductwork shall be fabricated and installed by qualified, experienced mechanics as specified herein and in accordance with the requirements of ASHRAE and the latest edition of the applicable SMACNA Manual.

2.0 PRODUCT

2.1 GALVANIZED STEEL (GALV)

Galvanized steel sheet, lockforming grade, conforming to ASTM Standards A525 and A527, having zinc coating of 1.25 ounces per square foot total for two sides, in conformance with ASTM A90, unless heavier galvanizing is specified.

2.2 ROUND SPIRAL LOCK-SEAM HVAC DUCTWORK

- A. Acceptable Manufacturers:
 - 1. Duct: United Sheet Metal Company "UniSeal"; Rolok; Streimers.
 - 2. Fittings: United Steel Metal "Uniform", or equivalent shop fabricated.
- B. Materials: Construct round HVAC ductwork and all components and accessories from materials specified above as scheduled.
- C. Fabrication:
 - 1. General:
 - a. Fabricate ducts using spiral lock-seam construction technique out of sheet material equaling or exceeding the minimum gauge shown in the SMACNA Round Duct Gauge selection tables and SMACNA Flat Oval Duct Construction table for the duct pressure classifications specified.
 - 2. Fittings:
 - a. General: machine-formed, shop-fabricated with continuous corrosion-resistant welded seams.
 - b. Branch Takeoffs: Duct fittings must be a completely separate fitting and not tapped directly into spiral ducts. Branch takeoffs shall be as shown on the Drawings. Where branch takeoffs are not explicitly shown, provide 45 degree laterals or conical tees.
 - c. Branch Takeoffs, Rectangular to Round: Conical bell mouth or conical transition fittings.

d. Joints - Circumferential:

1. Provide couplings with centering beads.
2. Flanged joints may be used for connections to equipment and at other locations where couplings are inappropriate.
3. Crimped end joints are prohibited.

2.3 SEALANTS AND TAPES

A. Duct Sealer:

Acceptable Manufacturers: United Duct Sealer; Duro-Dyne HPS Sealant; Vulkem (one part polyurethane) Sealant.

B. Tape and Adhesive/Activator System:

1. Acceptable Manufacturers: Hardcast or NASHUA.
2. General Usage: Hardcast Type DT tape and HD-20 adhesive.
3. Cleanroom: Hardcast shall not be used within cleanroom airflow. Use NASHUA No. 324 tape.

C. Duct Tape:

Acceptable Manufacturers: United Duct Tape or NASHUA No. 357 silver cloth tape.

D. Shrink Band (round ducts only):

Acceptable Manufacturers: Raychem.

2.4 DUCT ACCESSORIES

A. General: Fabricate duct accessories from the same material as the ductwork in which the accessory will be installed, unless specified otherwise.

B. Manual Single Blade Balancing Dampers (2 inches WG Construction):

1. Fabricate in accordance with SMACNA standards, except as detailed on the Drawings and as specified.
2. Blade, rod and fastener material shall be the same as the ductwork in which the damper is to be installed.
3. Dampers shall be of a length suitable to shut off branch ducts without causing damper flutter.
4. Cross break dampers and stiffen edges with two edge brakes for rigidity. Provide additional stiffening angles, as required.
5. Provide continuous rods and outside end bearings on all damper assemblies. Additionally, provide inside end bearings on internally lined ducts. Mark the ends of damper rods with a saw cut to indicate blade position.

6. Maximum single blade balancing damper size shall be 12 by 48 inches. Provide manual opposed-blade balancing dampers in ducts wider than 12 inches. Section damper blades over 48 inches wide horizontally.

7. Provide a specified regulator or locking quadrant for adjustment.

C. On/Off Blast Gate:

1. Provide a slide-type blast gate with gate housing and housing cover plate. All housings shall have a removable, bolted cover plate when the slide gate is not installed. Provide two (2) slide gates to Metro. The intent and purpose of the blast gate is to provide a means to isolate any one fan from the exhaust duct system for routine fan maintenance and cleaning. The slide gate will only be installed in the housing during the fan shutdown.

D. Regulators and Quadrants:

1. Acceptable Manufacturers: Ventlok or Duro-Dyne Specline/Quadline equivalent.

2. Concealed Accessible Uninsulated Ductwork:

a. Ventlok Figure 635 dial regulator.

b. Ventlok Figure 555 locking quadrant.

E. Flexible Connectors:

1. Acceptable Manufacturers: Ventfabrics Ventlon, Duro-Dyne Durolon.

2. Neoprene-coated, fire retardant woven glass fabric, minimum 36 oz per sq yd density, UL listed, crimped into metal edge strip, with 2" minimum clearance between equipment casing and ductwork, unless otherwise indicated.

F. Duct Access Doors:

1. Acceptable Manufacturers: Ventlok, Duro-dyne, Ruskin.

2. Solid sheet metal access door, where ductwork is either insulated or sound-lined, provide double wall construction with minimum 1-inch-thick insulation between walls.

3. Provide Ventlok No. 100 quick release latches. Access doors smaller than 12 inches square may be secured with sash locks.

Sizes shall be as follows:

<u>Duct Size</u>	<u>Frame Size</u>	<u>No. of Hinges</u>	<u>Access Requirements</u>
6" thru 8"	6 x 8	2	Hand hole
10"	10 x 12	2	One hand and sight
12" thru 16"	12 x 16	2	Two hands and head sight
Greater than 16"	16 x 24	3	Body entry

4. Patch plates attached with screw fasteners are prohibited, except in locations where they are specifically noted.

2.5 DUCT HANGERS AND SUPPORTS

A. General:

1. Duct hanger and support material gauges shall comply with details on the Drawings. Where details are not provided, comply with SMACNA, HVAC Duct Construction Standards.
2. Suspension material may be threaded rod, metal strap, structural shapes, or strut material, however, the use of strap is limited to inaccessible areas, or those accessed through a ceiling. The use of wire as suspension material is prohibited except for flexible ductwork.

B. Upper Attachments:

1. Steel Construction:

- a. Acceptable Manufacturers: Fee and Mason Manufacturing Co., Grinnell, Elcen Metal Products Company.
- b. Support ductwork from structure or supplementary steel. Support from metal decking above is prohibited. Provide supplementary steel as detailed or as required.

C. Trapezes: Utilize structural steel shapes or strut material.

D. Support Frames: Structural steel shapes or strut frames for support of ductwork, accessories, and HVAC system components, with nuts, bolts, fittings, etc., compatible with the frame material.

3.0 EXECUTION

3.1 FABRICATION AND INSTALLATION

A. General:

1. The Drawings do not attempt to show exact details of all ductwork. No extra payment will be allowed for obstruction by work of other trades or local obstructions to the work which require offsets. Where diagrams have been made to show duct connections, the Contractor is cautioned that these diagrams must not be used for obtaining material quantities.
2. Changes in location of equipment or ductwork advisable in the opinion of the Contractor shall be submitted to the Owner or Engineer for review before proceeding with the work. All measurements and dimensions shall be verified at the site.
3. Duct sizes shown on the Drawings represent the nominal free area required for that service. Where changes in duct dimensions are necessary to coordinate the installation, the Contractor may change to an equivalent duct area with different dimensions as determined using a Trane Ductulator, Carrier equivalence chart, or ASHRAE equivalence chart.
4. Install the entire duct system with a minimum number of bends and transitions.

5. Except where Hardcast or Raychem are applied, seal all nonwelded joints with a specified chemical-resistant mastic sealant while joining.
 6. Install additional reinforcement to preclude ballooning or breathing of ducts.
- B. Purchased Components: Install ductwork components such as Duct-Mate, Hardcast, etc., and accessories in accordance with the manufacturer's instructions.
- C. Joints:
1. Assemble round and oval sections using couplings with duct sealer mastic applied to inside and outside of section. After applying mastic, push sections together with 1 inch minimum overlap. Apply a coat of duct sealer mastic over joint and coupling.
 2. At the Contractor's option, sections may be assembled with all joints brazed or welded.
 3. Outdoor Hardcast, or Raychem "shrinkwrap" may be used in lieu of mastic and tape system.
 4. Joints shall be as corrosion resistant as the duct.
- D. Construction tees, bends, and elbows with a radius of not less than 1-1/2" times the width of the duct on the center line. Refer to the applicable SMACNA publication.
- E. Balancing Dampers: Install quadrants or regulators as specified, leaving all dampers locked wide open.
- F. Flexible Connectors: Make connections to fans and other rotating equipment using flexible connectors with 2 inches minimum clearance between casing and ductwork. Flexible connectors are not required on internally spring-isolated units equipped with internal flexible connectors.
- G. Connections to Equipment:
1. Install flanges to match those of connecting factory-fabricated equipment.
 2. Make transitions in ductwork from rectangular to round, or to accommodate the sizes of factory fabricated equipment using tapered ducts, not by safining.
- H. Duct Access Doors: Provide duct access doors for inspection, cleaning, and maintenance at each location as indicated.
- I. Painting:
- Paint exterior exposed ductwork and supports on the roof with primer and two coats of exterior flat enamel paint or weatherproof epoxy paint in accordance with the paint manufacturer's recommended method. Paint color shall match new roof system.

J. Seismic Restraints:

Install seismic restraints to comply with the building code for the seismic zone at the site, with materials and installation in accordance with SMACNA publications.

3.2 INSTALLATION OF DUCT HANGERS AND SUPPORTS

A. General Support Locations:

1. Install hangers close to transverse joints of main ducts and branches, clinch collar branch connections and the first branch elbows after nested splits.
2. Locate hangers of ducts penetrating walls or partitions as though the walls will contribute no support to the duct.
3. Install hangers in pairs on exact opposite sides of duct. Install duct supports from floors and walls when necessary.
4. Maintain hanger spacing intervals less than, equal to, but not greater than the specified maximums.
5. Provide at least one set of hangers for short duct branches 3 feet or less in length.

C. Maximum Hanger Spacing:

1. Ducts with areas up to 4 square feet may have their hangers spaced up to 8 feet apart.
2. Ducts with areas from 4 to 10 square feet may have their hangers spaced not more than 6 feet apart.
3. Ducts with areas over 10 square feet may have their hangers located up to 4 feet apart.

D. Support Method:

1. Support ductwork suspended from overhead using trapeze supports for rectangular ducts, or straps for round ducts with the hanger strap wound completely around the duct.
2. Use of sheet metal screws for attaching support straps to ducts not permitted.

3.3 FIELD QUALITY CONTROL

Ductwork shall be leak-tested using a small high pressure blower with a calibrated orifice and manometer. The blower shall maintain the maximum positive static pressure rating for the ductwork being tested for the duration of the test. Duration of test shall be from start of inspection to end of inspection of the sections being tested. All audible or visible leaks shall be sealed. Schedule all tests with the Owner and/or the Engineer.

3.4 CLEANING

Thoroughly clean all parts of the installation at the completion of the work.

Ductwork Schedule							
System Description	Duct Material	Pressure Class, inch WG	Minimum Gage	Applicable Standard	SMACNA Reference	Pressure Test	Remarks
All Exhaust Duct	GS	1	UMC Code	--	--	No	Note 2
Notes: (1) SMACNA, HVAC Duct Construction Standards, Metal and Flexible, 1985. (2) SMACNA, Round and Rectangular "Industrial Duct Construction Standards." (3) Thermoplastic Duct Construction Manual (4) Accepted industry practice for Industrial Duct Construction							

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

This Section covers the services required by the Balancing Agency to measure, test, adjust, and record, complete, the exhaust air systems capacities to match design conditions for the systems listed below.

A. All exhaust air outlets and ducting for the project area.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Testing, Startup, and Operation	Section 01650
B. Mechanical General Requirements	Section 15010
C. Power Ventilators	Section 15870

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

A. Required with the Proposal:

1. Written presentation outlining the testing, adjusting, and balancing procedures to be performed on this Contract.
2. Description of all instrumentation and test equipment to be used on this Contract, as well as calibration documentation.
3. Sample of all field data reports, charts, and forms proposed to document measured conditions.
4. List of names and qualifications for the staff who will work on the project.
5. Unit price of jobsite visits.

B. Required Prior to Air Systems Capacity Tests

1. Schematic drawing of each system which requires capacity testing.
2. Show location of pressure, airflow, and ampere readings for the test on the schematic.
3. Show the capacity ratings for each reading location on the schematic.
4. Show all volume adjustment devices (fan inlet vanes, volume dampers, variable frequency drive, etc.) on the schematic.

C. Required at Completion of Balancing Work

1. Balance Report with all associated data and field notes, and Balance Problem Descriptions separated into individual sections associated with the area being balanced.
2. Orderly handwritten or computerized field reports, charts, and forms completed with all measured data.
3. Description of operating condition of all areas.
4. Reduced set of mechanical floor plan drawings, maximum size 11 by 17", showing all sample points referred to on other field data sheets.
5. Separate section in the report outlining any operating or balancing problems remaining at the completion of the balancing work.
6. A list of all instrumentation and test equipment actually used in the certification process, including manufacturer, model, and last calibration data.
7. Description of all tests performed, including the purpose, instrumentation, procedure, results, and analysis of the data. All data shall be properly presented and graphically displayed to permit full understanding of all tests. Include where the data tests were taken and the field technicians performing the tests.
8. Two copies of the completed Balance Report shall be submitted for the Owner's review and acceptance within three weeks after the completion of work.
9. Submit one set of floppy disks if the report is done on PC. Preferred software for all PC work are WordPerfect, Lotus 123, and dBASE III (newest version for all).

1.5 QUALITY ASSURANCE

- A. All systems shall be tested and adjusted by a qualified registered professional engineer, or a firm specializing in piping and air systems testing and balancing. The Engineer or Balancing Agency shall follow the procedures of the Associated Air Balance Council.
- B. Firms proposing on this service shall have been in business a minimum of 5 years specializing in piping and air systems testing and balancing work. A list shall be available upon request of projects similar in size and complexity to this Contract that the firm has completed. Include the project name, description of mechanical system, range of services provided, and the name and phone number of the Design Consultant or Owner who had responsibility for final inspection and acceptance of the service.
- C. A sample of all field data reports, charts, and forms shall be submitted with the proposal. In addition, a sample test report of a similar project shall be available for inspection by the Owner to verify the Agency's expertise in data collection and interpretation.
- D. The Owner shall have responsibility for selecting and contracting this balancing service.

1.6 UNIT PRICES

- A. The Balancing Agency representative shall visit the jobsite a minimum of one day during the construction work for knowledge of the air systems. The cost of this time and associated expenses shall be included as a unit price, and this single visit shall be part of the Bidder's Proposal.
- B. Provide unit prices for the staff of the Balancing Agency who will be doing the testing and balancing. The unit prices will be used by the Owner for jobsite visits after completion of this contract. Jobsite visits by the Balancing agency shall be at mutually agreeable times for the Owner.

1.7 WARRANTY

- A. The Balancing Agency shall make all tests and adjustments as required in these specifications to meet the satisfactory performance of all systems. The balancing Agency shall therefore demonstrate to the Owner the balancing work and its ability to satisfy the specification.
- B. The service to be furnished by the Balancing Agency shall be considered complete and accepted when the Balance Report has been approved by the Owner.

2.0 PRODUCTS

2.1 The Balancing Agency shall supply all materials, tools, equipment, and instrumentation required to perform the systems balancing as described in these Specifications.

- A. All test equipment used in the testing and balancing procedure shall be of the present technology.
- B. Airflow velocity measurements shall be taken with a calibrated air measuring cone. In areas where an air measuring cone is not practical, a Velgrid Velocity instrument, registered by Shortridge Instruments, will be accepted to take direct velocity measurements.

3.0 EXECUTION

3.1 EXAMINATION

The Balancing Agency representative shall visit the jobsite (a minimum of one day) during the construction work for knowledge of the air systems.

3.2 PREPARATION

A. Prebalancing Conference

Prior to commencing with balancing, the Balancing Agency shall meet with the Owner and the Engineer to review the system and the balancing procedures, and to ensure that the balancer has a full understanding of the Owner's requirements.

B. Equipment Verification

Verify that equipment installed and duct sizes correspond with the latest shop drawings. Bring deviations other than ductwork aspect ratio to the attention of the Owner.

3.3 GENERAL AIR SYSTEMS BALANCING PROCEDURES

- A. Adjust air volumes on exhaust grilles, to the quantity shown, with allowable variation of +10/-5%.
- B. Adjust fan speeds and motor drives or blade settings for required equipment air volumes, with allowable variation of +10/-5%. After final adjustments, motor shall not operate above nameplate amperage on any phase. Airflow test readings shall be performed under simulated or actual conditions.
- C. Adjust all exhaust air dampers for all requirements.
- D. Provide static pressure readings at unit inlet and discharge, for all exhaust fans.
- E. Provide equipment nameplate data on all fans, motors, etc., indicating equipment identification, motor and drive data, and starter data.
- F. Air systems shall be adjusted in accordance with standard procedures and recognized practices of the Associated Air Balance Council.

3.4 ACCEPTANCE CRITERIA

A. Verification Procedures

1. The Balancing Agency representative shall present and review all field data with the Owner and the Engineer to ensure that a full understanding is transferred to the Owner's staff of the base operating condition of the systems.

B. Balance Report

1. The Balancing Agency representative shall oversee any changes or corrections required of the final Balance Report. An Oregon registered professional engineer shall then stamp the final sets signifying his approval of the Balance Report.
2. The Balance Report shall include all data and logs.
3. After all balancing has been completed, tabulate the following and include in The Balance Report.
 - a. Motor Data
RPM, amperage and voltage input to all motors.
 - b. Motor Protection
Nameplate data and overload heater capacity installed for each motor.
 - c. Air Pressure
Entrance and exit static pressure at each exhaust fan.

d. Air Quantities

- 1) CFM capacity and RPM of each fan.
- 2) CFM at each grilles, registers, and diffusers.

e. Identify all equipment by tag number, location and area.

f. Discrepancies

Make note of any discrepancy between recorded parameters and specified parameters.

g. Balancing Equipment

List all balancing equipment used and show calibration date.

h. Adjustments

List all adjustments made to all systems.

i. Balancing Agency Staff.

- 1) List the names of the staff who worked on this contract.

END OF SECTION

1.0 GENERAL

- A. The conditions of this specification applies to the work described in the Electrical Division 16, which encompasses Sections 16010 through 16950.
- B. This Section 16010 applies to all Sections of Division 16 - Electrical.

1.1 WORK INCLUDED

- A. Provide all labor, material, equipment and services necessary for the installation of components, equipment, and materials as noted on the drawings and specified herein.
- B. Electrical modifications and installations shall include, but is not limited to, the following items.
 - 1. Remove and reinstall conduit, wire, and lighting fixtures in transfer building.
 - 2. Provide temporary and permanent support for existing conduit that will remain in place.
 - 3. Furnish and install conduit and wire for power and lights.
 - 4. Furnish and install combination controllers for new motors.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Not used in this Section.

1.3 REFERENCES

- A. All work shall be in accordance with the National Electric Code; OSHA; and Local Inspection Authorities.
- B. All material shall be listed by Underwriter's Laboratories or other approved independent testing facility.

1.4 SUBMITTALS

Transmit submittals as required by each Section of Division 16 - Electrical, and as per Section 01340.

1.5 QUALITY ASSURANCE

- A. The Contractor shall obtain the applications, permits, licenses, and inspection certificates required to do the work. The Contractor is responsible for payment of the above items.
- B. The Contractor shall furnish certificates of approval from the local inspection authorities before the work can be accepted by the Owner.

1.6 WORK BY OTHERS

There is work being done by other contracts in the area of work. Work under this Contract shall be conducted in a manner to cooperate with the installation of other contracts and equipment.

1.7 DRAWINGS

- A. The electrical plans are diagrammatic, indicating approximate locations of components, and conduit. Consult actual field conditions and Equipment Layout Drawings to avoid conflicts. Conflicts shall be resolved with the Owner before "rough-in".
- B. Maintain "As-Built" drawings, especially where deviations from the electrical plans occur. Submit the "As-Built" drawings to the Owner for final approval.

1.8 MATERIAL SAFETY DATA SHEETS

The Contractor shall provide the Owner "Material Safety Data Sheets" (MSDS) for all materials such as pulling compounds, thread cutting fluids, thread lubrication, etc., before beginning this work. The MSDS is required for any fluid used on the construction site per the Federal Resource Conservation and Recovery Act.

2.0 PRODUCTS

2.1 MATERIAL AND COMPONENTS

As listed in the following Sections 16110-16950.

3.0 EXECUTION

3.1 INSTALLATION

As listed in the following Sections 16110-16950.

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

- A. Conduit and couplings
- B. Conduit fittings
- C. Flexible conduit

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Electrical General Requirements Section 16010
- B. Boxes Section 16130

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

Not used in this Section.

1.5 QUALITY ASSURANCE

Not used in this Section.

2.0 PRODUCTS

2.1 MATERIAL AND COMPONENTS

- A. Conduit: Rigid Galvanized Steel (RGS), minimum 3/4" diameter. In general, RGS conduit shall be used for all exterior work unless otherwise specified. Exposed conduit shall be RGS..
- B. Conduit: Electrical Metallic Tubing (EMT), minimum 3/4" diameter:
 - 1. EMT may be used for lighting system conduit where located at least 20 feet above finished floor (AFF).
 - 2. EMT may be used for power circuit where located at least 20 feet AFF, and interior routing.
- C. Couplings and fittings: All couplings and fittings shall be liquid-tight. Couplings and fittings for EMT shall be compression-type. Set-screw type fittings are NOT acceptable.
- D. Flexible Conduit: Flexible plastic jacketed type with liquid-type connectors. Connections to motors and equipment shall be made with the liquid tight flexible conduit.

3.0 EXECUTION

3.1 INSTALLATION

- A. Install conduit exposed in all areas.
- B. Install conduit free from dents and bruises.
 - 1. Plug ends to prevent entry of dirt and moisture.
 - 2. All openings in conduit systems shall be capped during construction to prevent entrance of water or debris.
- C. Clean out conduit before installation of conductors. A swab shall be drawn through the entire length of the conduit to remove any moisture, metal cuttings, or other foreign material before installing wire or cable in the conduit.
- D. Alter conduit routing to avoid structural obstructions, minimizing crossovers.
- E. Route all exposed conduit parallel or perpendicular to buildings lines.
- F. Conduit ends shall be cut square, interior edges reamed smooth, and conduit ends made up as tight and as close as possible.
- G. Conduit bends shall be factory made or shall be carefully made in the field to avoid damaging or flattening the conduit. Use hydraulic or mechanical (Chicago) benders to form the conduit bends.
- H. Conduit runs shall form a permanent continuous electrical circuit. To ensure this, all threaded joints and all locknuts at sheet metal enclosures shall be made up tight. Where conduits cannot be fastened to electrical enclosures with either threaded hubs or locknuts, a grounding type bushing shall be used. All bushings shall then be connected together with a No. 6 AWG copper wire and connected to the system ground.
- I. Pull boxes or conduit fittings shall be installed where necessary on conduit runs to facilitate pulling wire or cables. Pull boxes shall be installed in accessible locations. Pull box and conduit fitting covers shall be accessible from walkways, platforms, stairways, or ladders.
- J. In general, straight runs shall not exceed 200 feet. Deduct 50 feet for each 90° bend, with no more than three 90° bends per run.
- K. Conduits crossing expansion joints shall be provided with appropriate fittings which permit movement. Electrical bonds shall be provided across all expansion joints.
- L. Conduit fitting covers, pull and terminal box covers shall be installed on all conduit systems before the work can be accepted as completed.

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

A. Wire and Cable

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Electrical General Requirements Section 16010

B. Electrical Identification Section 16195

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

A. Instrumentation Cable

1.5 QUALITY ASSURANCE

Not used in this Section.

2.0 PRODUCTS

2.1 MATERIAL AND COMPONENTS

A. Conductors for power shall be minimum AWG #12; UL approved soft annealed copper, stranded.

B. Conductors for control shall be minimum AWG #14; UL approved soft annealed copper, stranded.

C. Insulation shall be 600v rated, type THW for conductors sizes AWG #14 to AWG #1; type XHHW for conductors sizes AWG #1/0 and larger.

3.0 EXECUTION

3.1 INSTALLATION

A. Install wire and cable in code conforming raceway. Communication cable may be installed without raceway to match the existing installation.

B. All cable or wire shall be handled during installation so as to prevent damage due to accidental contact with sharp objects, dirt, grit, etc.

C. Use wire pulling lubricant, other than talc, powdered soapstone, or non-hardening compounds, during wire and cable installation.

D. All conductors shall be identified at terminations or splices. All wires shall be identified with a permanent marker or label. All labels shall be typewritten.

- E. All 120 volt, single phase loads shall be supplied with a separate neutral conductor for each phase conductor. The neutral for each phase conductor shall be counted as a current carrying conductor in determining conductor ampacity (derating) and conduit fill, as required by the N.E.C.
- F. All wiring in control panels with wiring devices in the door and within the cabinet shall have the wiring neatly harnessed and installed so that it is out of the way when the control panel door is fully open.
- G. All circuits shall include a separate stranded grounding conductor, sized per Article 250 of the National Electrical Code. The raceway will not be acceptable for grounding.

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

- A. Conduit Bodies or Junction Boxes
- B. Device Boxes

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Electrical General Requirements Section 16010
- B. Raceways Section 16110
- C. Motor Control Section 16480

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

- A. Non-classified area device boxes and covers.
- B. Classified area junction and devices boxes, and conduit bodies.

1.5 QUALITY ASSURANCE

Not used in this Section.

2.0 PRODUCTS

2.1 MATERIAL AND COMPONENTS

- A. Junction boxes used in exposed work may be formed sheet metal, 2-1/8" deep.
- B. Conduit bodies shall be cast Feraloy, threaded rigid bodies; sheet metal covers with neoprene gaskets.
- C. Device boxes work shall be cast Feraloy, with threaded hubs, cast Feraloy covers and neoprene gasket. Manufacturer: Crouse-Hinds, Cat. No. FD2, or equal.

3.0 EXECUTION

3.1 INSTALLATION

- A. Install a conduit body or junction box in conduit runs so that in general, straight runs shall not exceed 200 feet. Deduct 50 feet for each 90° bend.

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

- A. Wall switches
- B. Receptacles
- C. Wire and Cable Terminations

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Electrical General Requirements Section 16010
- B. Boxes Section 16130

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

- A. Wall switches
- B. Receptacles
- C. Wire and Cable Terminations

1.5 QUALITY ASSURANCE

Not used in this Section.

2.0 PRODUCTS

2.1 MATERIAL AND COMPONENTS

- A. Receptacles: Extra Hard Use Specification Grade; brown.
 - 1. Single, 20A: Straight Blade; 125V; 20A; NEMA 5-20R Configuration. Manufacturer: Pass & Seymour Cat. # 5361, Leviton Cat. # 5361, or equal.
 - 2. Ground Fault Circuit Interrupter: Straight Blade; 125V; 20A; NEMA 5-20R Configuration. Manufacturer: Leviton Cat. # 6898, or equal.
- B. Receptacle Device Plate:
 - Wet Location: Leviton Cat. # 6196-VFS , or Crouse-Hinds Cat. # WLRS-1, or equal.
- F. Wire Terminations:
 - 1. Wire sizes up to and including AWG #10: Compression, or crimp terminals shall be similar to "STA-KON" (by Thomas & Betts).

2. Wire sizes AWG #8 and larger: Connectors shall be compression type. Use manufacturer's recommended tooling.
3. Pigtail splices may be made with hand-twist wire nuts similar to "Skotchlok" by 3M Company.

3.0 EXECUTION

3.1 INSTALLATION

- A. Install wall switches and receptacles located as shown on the Drawing.
 1. Install devices level and plumb.
 2. Install switches with OFF position down.
 3. Install receptacles with grounding pole on bottom.
 4. Connect wiring devices by wrapping conductor around screw terminal; "poke-in" type connections are NOT acceptable.
- B. Conductors shall be terminated or spliced with pressure or bolted type lugs or connectors.
- C. No solder connections or termination devices shall be permitted.

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

- A. Raceway, or conduit supports.
- B. Concrete anchors

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Electrical General Requirements Section 16010
- B. Raceways Section 16110

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

- A. Concrete anchors.

1.5 QUALITY ASSURANCE

Not used in this Section.

2.0 PRODUCTS

2.1 MATERIAL AND COMPONENTS

- A. Kindorf or Unistrut support systems, including channel, hanger rods, nuts, channel spring nuts, conduit clamps, and fittings shall be used to support conduit and conduit racks. Where possible use existing channel support systems.
- B. One hole malleable iron pipe straps may be used for installation of single conduit runs along a wall. If more than one raceway is to be installed on a wall, the channel support system as described in paragraph 2.1.A, above shall be used.
- C. Concrete Anchors: Fasten raceway support systems, enclosures, or control panels using adhesive concrete anchors as required. Hilti Catalog No. HVA-1/2, or equal.

3.0 EXECUTION

3.1 INSTALLATION

- A. Exposed conduit shall be installed parallel with, or at right angles to, the structural members of the buildings, unless otherwise specified.
- B. Vertical conduits shall be straight and plumb.
- C. Exposed conduits shall be supported and fastened at intervals not exceeding 10 feet, unless otherwise specified.

- D. Do not fasten supports to pipes, ducts, or mechanical equipment.
- E. Do not drill or cut structural members, unless specifically called for on the Drawings or in the Specifications.
- F. Use clamp supports for attachment of conduits, boxes or other electrical equipment to building structural steel. Welding is prohibited.
- G. In wet or damp locations, use channel supports to stand cabinets or panel boards at least 1" off wall.
- H. Horizontal Conduit Support Rack: Supported from building steel - channel section, supported from adjustable beam clamps by means of proper diameter and length threaded rod, provided with double nuts at the bottom.
- I. Vertical Conduit Support Rack: channel section, clamped to building steel by "nut seats" or "beam grips" of proper size and type; secured to concrete, masonry, etc., with concrete anchors or anchored to wood with galvanized lag screws.
- J. When galvanized or cadmium plated surfaces are cut, drilled, reamed, or damaged during installation, a suitable protective coating shall be applied immediately to prevent the formation of rust or corrosion.
- K. All new miscellaneous support steel, unless galvanized or cadmium plated, shall be given a prime coat of metal grip primer and two (2) coats of Dupont "Imron" catalyzed epoxy enamel, or equal.

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

- A. Wire labelling or identification.
- B. Panel and enclosure labelling or identification.
- C. Device labelling or identification.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Electrical General Requirements Section 16010
- B. Wire and Cable Section 16120
- C. Wiring Devices Section 16140

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

- A. Wire labelling or identification.
- B. Panel and enclosure labelling or identification.

1.5 QUALITY ASSURANCE

Not used in this Section.

2.0 PRODUCTS

2.1 MATERIAL AND COMPONENTS

- A. Conductor labels/identification: self-laminating marker, with 0.5" high x 1.0" wide area for wire number to be typed or printed; with clear plastic over wrap. Manufacturer: Panduit PSWMS-1015, or W.H. Brady Catalog No. DAT-34-292, or equal.
- B. Panel labels: two-ply plastic labels with white exterior surface and black core. Manufacturer: Gravoply, or Lamicoid, or equal. Fasten to panels with foam tape. Manufacturer: Panduit Catalog No.: P63W2A2, or equal.
- C. Conduit, Pull Box and Terminal Box Labels: Vinyl marker; yellow background; 1" high black legend. Manufacturer: Panduit Cat. # PVL100BY series, or equal.
- D. Wiring Device Labels: Dymo-type embossed marking tape, to match existing installation; black for standard circuits, red for emergency circuits; 3/8" wide maximum.

3.0 EXECUTION

3.1 INSTALLATION

A. All wires shall be color coded as shown:

1. In the 480Y/277 volt distribution system, the following colors shall be considered as standard:

Phase 1 (or A).....Brown
Phase 2 (or B).....Yellow
Phase 3 (or C).....Purple
Neutral (or common).....White/Grey
Grounding conductor.....Green

2. In the 208Y/120 volt distribution system, the following colors shall be considered as standard:

Phase 1 (or A).....Black
Phase 2 (or B).....Red
Phase 3 (or C).....Blue
Neutral (or common).....White/Grey
Grounding conductor.....Green

3. Conductors #4 AWG and larger may be black and identified with color tape at all terminations identifying the phase. All smaller conductors shall have the proper color insulation.

B. All conductors shall be identified at terminations or splices.

C. All wires shall be identified with a permanent marker or label.

D. All labels shall be typewritten.

E. All pull boxes shall be identified as shown on the Drawings.

F. Label outlets with panel and circuit number using plastic label, or Dymo label.

G. Labels shall be applied identifying hazards such as HIGH VOLTAGE, or 120 VOLTS BENEATH COVER.

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

Local motor safety disconnect switch, or non-fused disconnect.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Electrical General Requirements Section 16010

B. Motor Control Section 16480

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

A. Safety switch

1.5 QUALITY ASSURANCE

Not used in this Section.

2.0 PRODUCTS

2.1 MATERIAL AND COMPONENTS

Safety Switch: 480v; 3 phase; heavy duty; sized as required by loading; NEMA 3R enclosure. Manufacturer: Square D, Cat. No. HU36XRB. (The X number identifies ampacity of switch), or equal.

3.0 EXECUTION

3.1 INSTALLATION

Install safety switch as shown on the drawings, or as required by code if not shown.

END OF SECTION

1.1 WORK INCLUDED

Three phase combination motor controller.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A.	Electrical General Requirements	Section 16010
B.	Boxes	Section 16130
C.	Disconnects	Section 16440
D.	Over Current Protective Devices	Section 16475

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

A. Individual combination controllers.

1.5 QUALITY ASSURANCE

Not used in this Section.

2.0 PRODUCTS

2.1 MATERIAL AND COMPONENTS

- A. FULL VOLTAGE NON-REVERSING (FVNR) COMBINATION MOTOR CONTROLLER: Individual full voltage non-reversing motor controllers shall be furnished and installed by the contractor. The controllers shall be for 460V, 3 phase, 60 Hz motors as noted on the drawings; NEMA size 1; NEMA 12 enclosure; 120V control circuit transformer with two primary fuse and a single secondary fuse; three overload relays sized as required for the motor served; motor circuit protector type circuit breaker disconnect; three-position selector switch, Hand-Off-Auto, on cover; indicating lamp, green lens, on cover. Manufacturer: Allen-Bradley Cat. No. 513-BJB-6-38.
- B. MOTOR CONTROL CENTER: Use the existing FVNR controllers for the existing exhaust fans, for the new exhaust fans.
1. Adjust or replace, as required, the motor circuit protection devices. Size as required for new exhaust fan motors.
 2. Adjust or replace, as required, the motor thermal overload protection devices. Size as required for new exhaust fan motors.
 3. Use the existing circuit breaker, now used for the "clamshell" system, to supply power for the two new FVNR controllers.

3.0 EXECUTION

3.1 INSTALLATION

- A. Install the individual motor controllers. Locate the combination controllers in the electric room as indicated on the drawings.

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

A. H.I.D. lighting.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Demolition and Removal	Section 02050
B. Electrical General Requirements	Section 16010
C. Raceways	Section 16110
D. Boxes	Section 16130

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

A. Fluorescent luminaire

1.5 QUALITY ASSURANCE

Not used in this Section.

2.0 PRODUCTS

2.1 MATERIAL AND COMPONENTS

A. HIGH INTENSITY DISCHARGE LUMINAIRES

Existing H.I.D. bay lighting to be salvaged and reused. See Section 02050-Demolition and Removal.

3.0 EXECUTION

3.1 INSTALLATION

- A. Remove and replace existing H.I.D. fixtures as required during roof repair. Coordinate with other contractors as necessary.
- B. Clean and repair existing H.I.D. fixtures as is necessary to provide complete operational lighting system. Clean interior and exterior of lens, repair or replace ballast if required.
- C. Re-use existing lighting circuits for transfer floor H.I.D. fixtures.

END OF SECTION

1.0 GENERAL

1.1 WORK INCLUDED

- A. Installation and final check out procedures.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- | | |
|------------------------------------|---------------|
| A. Testing, Startup, and Operation | Section 01650 |
| B. Electrical General Requirements | Section 16010 |
| C. Wire and Cable | Section 16120 |
| D. Motor Control | Section 16480 |

1.3 REFERENCES

Not used in this Section.

1.4 SUBMITTALS

Not used in this Section.

1.5 QUALITY ASSURANCE

Not used in this Section.

2.0 PRODUCTS

2.1 MATERIAL AND COMPONENTS

- A. Ohmmeter:
b. Megger: 500v megger

3.0 EXECUTION

3.1 WIRING

- A. The Contractor shall test the electrical installations and shall make sure such personnel are available during final testing of the systems as is considered necessary by the Owner to make immediate adjustments or corrections.
- B. All wiring shall be tested for continuity, shorts, and grounds before the circuits are energized.
- C. Use and ohmmeter for continuity tests.
- D. Use the 500v megger for short and ground tests on motor individual power conductors, and all other power conductors. Megger tests are not required on Instrumentation-&-Control circuitry.

The minimum resistance between conductors, or between conductors and ground shall be:

All 480v circuits	50 megohm
All 240/120v circuits	50 megohm

- E. All wiring shall be checked for circuit completeness to verify continuity, correct circuiting, identification and labelling at the terminals.
- F. Functional and performance checks shall verify the normal and correct operation of all components where possible. Tests should be conducted under actual or simulated operating conditions.

3.2 MOTOR CONTROL, ROTATION, FUSE AND HEATER SIZING

- A. Proper push button control of the motors shall be verified with the Owner present during the check out procedure.
- B. Motor rotation shall be checked for proper direction with the Owner present during the check out procedure. Motors shall not be run until bearings and gear boxes are checked for proper lubrication.
- C. The Contractor shall verify the circuit breakers and the thermal overload relays supplied with the motor controllers are the correct size for the motors served. (Motor sizes may vary from the drawings to a reasonable degree). The Contractor shall supply and install the thermal overloads where required. During the check out phase of the work, the thermal overload sizes may need to be changed due to actual load conditions. The Contractor shall supply and install these items as necessary.
- D. After the testing is complete, all covers, hangers, supports, etc., shall be installed so as to leave the installation in satisfactory operating conditions.

END OF SECTION

APPENDICES

- APPENDIX A METHODOLOGY FOR DETERMINING NORMAL ADVERSE WEATHER DAYS FOR CONSTRUCTION
- APPENDIX B PREVAILING WAGE RATES
- APPENDIX C METRO MINORITY AND WOMEN-OWNED BUSINESS PROGRAM
- APPENDIX D OREGON LAWS 1991, CHAPTER 385, SECTION 59 & 61

APPENDIX A

**METHODOLOGY FOR DETERMINING NORMAL ADVERSE
WEATHER DAYS FOR CONSTRUCTION**

METHODOLOGY FOR DETERMINING
NORMAL ADVERSE WEATHER DAYS FOR
CONSTRUCTION AT ST. JOHNS LANDFILL

I. Analysis of Weather Impacts

- A. General Climatology - The work site is approximately seven miles from the Portland Airport, which is the nearest weather station. The U.S. Weather Service publishes Local Climatological Data for Portland, Oregon yearly. We will use the 1990 issue for our base line data (in particular, page 3, entitled "Normals, Means and Extremes").
- B. Rain - Rainfall will have a heavy impact on earth work, due to difficulty in compacting soils, trafficability, possible damage to existing landfill cover, etc. Metro will consider that the category of "Precipitation, .01 Inches or More" will describe the number of rainy days we can expect each month. If the actual number of rainy days experienced during a particular month exceeds those expected, a justifiable delay may have occurred. In this case, the Contractor must show that the rainfall impacted the work by at least 50% on a particular work day. The upper limit for justifiable delay due to rain would be the difference in calendar days between the expected and actual numbers of rainy days. The Contractor would then multiply the number of scheduled work days impacted by a factor to convert work days to calendar days in order to determine the amount of this request.

Example - The weather in April 1992 is extremely rainy. The U.S. Weather Service records rainfall of .01" or more on 17 calendar days, while the Climatology Report tells us to expect 12. The Contractor is rained out and sends his entire work force home on each of six working days. On two more rainy days, a 50% loss of productivity is experienced. The calculations for justifiable delay due to rain would be as follows:

Actual Rain Days	17 calendar days
- <u>Expected Rain Days</u>	<u>12</u> calendar days
Upper Limit of Rain Delay	5 calendar days
Actual Days of Rain Impact	6 work days x 100%
	<u>2 work days x 50%</u>
	7 work days
	x 1.4 cal days/workdays
	<u>(5 day work week)</u>
	9.8 cal days > 5 cal days

Justifiable delay for rain is 5 cal days for April 1992.

- C. Snow - Snowfall could impact the progress of the work for many of the same reasons as rainfall. In addition, snow may cause visibility or traffic problems for the truck haul, perhaps even preventing the work force from getting to the site. The Climatology Report forecasts the expected frequency of snow or ice pellets over 1" deep for each month. If the Contractor experiences actual delays caused by snow during a particular month, calculations to determine the justifiable delay for snow will be the same as for rainfall.
- D. Freezing Temperatures - Excavation, placement and compaction of fill materials in freezing weather is nearly impossible. In addition, freezing temperatures may cause unsafe road conditions. The Climatology Report gives us a monthly forecast of the number of days that the maximum temperature is below 32° F, and the number of days when the minimum temperature is below 32° F for each month. The tendency for soil to remain frozen is great when the temperatures are fluctuating above and below freezing during a 24-hour period. The number of days that the minimum temperature is below 32° F will be used as the criteria for determining if freezing temperatures are a possible source of justifiable delay. If the Contractor experiences actual delays because of freezing temperatures during a particular month, calculations to determine the justifiable delay will be the same as for rain and snowfall.

II. In order for Metro to grant a time extension for inclement weather, the following conditions must be satisfied:

- A. The weather at the job site during the Contract period must be found to be unusually severe; that is, more severe than the adverse weather anticipated.
- B. The unusually severe (inclement) weather must actually cause a delay to the completion of the project. The delay must be documented and reported to Metro in the daily Quality Control Report as the work progresses. Further, the delay must be beyond the control and without the fault or negligence of the Contractor. The delay must occur on a normal work day, and must prevent work on actual activities for at least 50% of the Contractor's scheduled work day.

III. Enclosed is the schedule of monthly anticipated adverse weather delays based upon Local Climatological Data for Portland, 1990. The Contractor's schedule will reflect this anticipated adverse weather in all weather-dependent activities.

IV. Actual adverse weather delay days must prevent work on critical activities for 50% or more of the Contractor's work day. The calculations for each type of weather delay will

follow the example in Enclosure 2. An actual delay day will only be used in calculations for one type of delay (rain, snow or freezing temperatures). If a day is impacted by more than one factor, the Contractor may choose the factor that brings him the most advantage.

- V. The Contractor may rely on the monthly weather records of the U.S. Weather Service for Portland, or upon other proposed records that may be agreeable to Metro for computation of actual adverse weather delays.
- VI. Requests for time extension for inclement weather will be prepared on a monthly basis and submitted in a timely manner within the following month. The Contractor will include copies of all supporting documentation in the request.
- VII. Article 3 of the General Conditions provides for extensions of time for inclement (unusually severe) weather, but does not provide for compensation.

PH:gbc

- Enclosures -
- 1. Schedule of Monthly Anticipated Adverse Weather Delays for St. Johns Landfill
 - 2. Example of Weather Delay Computation

**MONTHLY ANTICIPATED ADVERSE WEATHER DELAYS
FOR ST. JOHNS LANDFILL**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rain (.01" or more)	18	16	17	14	12	9	4	5	8	13	18	19
Snow (1" or more)	1	0	0	0	0	0	0	0	0	0	0	1
Freezing Temperatures	13	8	5	1	0	0	0	0	0	1	5	10

Example of Weather Delay Computation

Example - The weather in December 1991 is typical for Portland weather. The U.S. Weather Service records the following for the month.

of Delay	Actual	-	Expected (climatology)	=	Upper limit
Rain (>.01")	18 cal days		19 cal days		0 cal days
Snow (>1")	3 cal days		1 cal days		2 cal days
Freezing Temperatures	10 cal days		7 cal days		3 cal days

The Contractor is running behind schedule and has scheduled work for six days per week. During the month, the Contractor calls off work on six working days because of rain. Wet soil prompts Metro to stop work on three additional working days. The Contractor is also prevented from working on two out of the three snow days this month and in addition is prevented from working on two additional work days because of a heavy accumulation of snow which fell at the end of November. On both of the snow impact days in December the ground was frozen and the Contractor could not have worked even if it had not been snowing. The Contractor experienced several other days when the temperatures dropped below freezing at night but was able to continue working. Calculations for weather delays could be made as follows.

A. Rain

Actual days of rain impact	6 working days
Metro stops work - wet soil	+ 3 working days
	9 working days

Conversion factor working days to cal days 7/6	x 1.17
	= 10.5 cal days impact

No time for rain is justified because actual rainfall does not exceed expected.

B. Snow

The Contractor has experienced four working days of impact because of snow. Based upon climatology and the actual weather in December the maximum allowable delay due to snow is only two calendar days. The Contractor decided to claim only the two working days he missed at the beginning of the month for the snow on the ground left over from November.

Actual days of snow impact
working days to cal days 7/6

2 working days
x 1.17
2.34 cal days impact

The upper limit of delay due to snow in December 1991 is two calendar days. The justifiable delay for snow is therefore two calendar days.

C. Freezing temperatures

Actual days of freezing impact
working days to cal days 7/6

2 working days
x 1.17
2.34 cal days impact

The upper limit of delay due to freezing temperatures is three calendar days. Therefore the justifiable delay for freezing temperatures is 2.34 calendar days.

D. Recap of justifiable weather delays for December 1991

Rain	0	calendar days
Snow	2	calendar days
Freezing temperatures	<u>2.34</u>	calendar days
TOTAL	4.34	calendar days

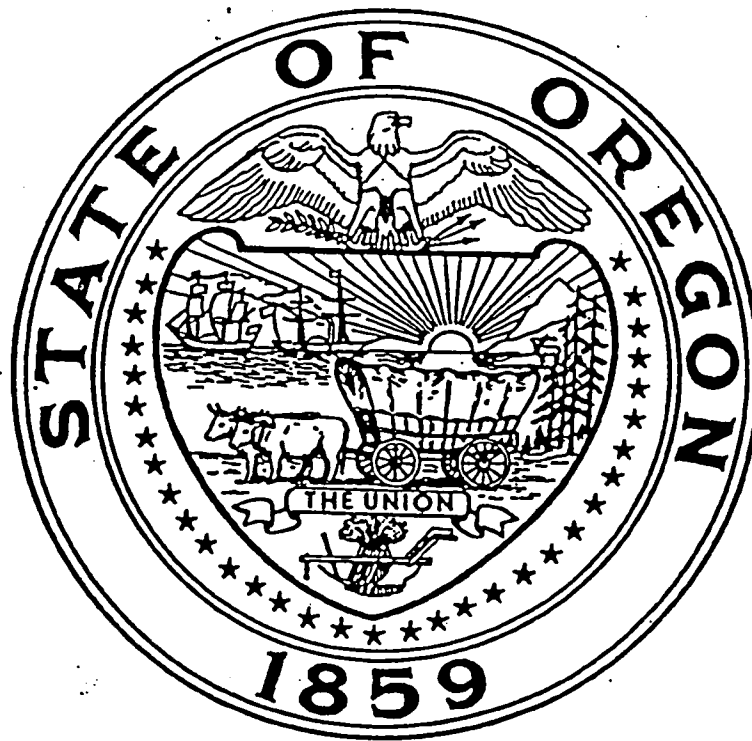
which rounds to four calendar days for the month.

APPENDIX B
PREVAILING WAGE RATES

PREVAILING WAGE RATES

for

Public Works Contracts in Oregon



BOLI

Mary Wendy Roberts
Commissioner
Bureau of Labor and Industries

Effective January 1, 1993

January 1, 1993




MARY WENDY ROBERTS
COMMISSIONER

This booklet contains the Prevailing Wage Rates for non-residential building and construction trades in the State of Oregon. These rates are effective January 1, 1993. These rates have been amended in accordance with ORS 279.348 through ORS 279.365. A new determination of these rates is issued two times each year.

Prevailing Wage Rates are the minimum wages that must be paid to all workers employed in the construction, reconstruction, major renovation or painting of any public works. Copies of these rates must be incorporated into all bid specifications when the advertisement for a public works contract is issued. A provision that Prevailing Wage Rates be paid must also be put in the contract. The rates in effect at the time the bid specifications are first advertised are those that apply for the duration of the project, with one exception; if during the bidding process the Prevailing Wage Rates change, the public contracting agency has the option of amending the bid specifications to reflect such changes.

If you identify any errors in the rates published, please bring them to the attention of the Prevailing Wage Rate Coordinator in Portland (731-4466). If you have any questions about the manner in which the Prevailing Wage Rates are enforced, contact the Wage and Hour Division in Portland (731-4074 x233).


MARY WENDY ROBERTS
Commissioner
Bureau of Labor and Industries

PORTLAND
800 NE Oregon St. # 32
Portland, OR 97232
(503) 731-4200
FAX (503) 731-4069

EUGENE
165 E 7th Street, Suite 220
Eugene, OR 97401
(503) 686-7623
FAX (503) 686-7980

PENDLETON
721 SE 3rd, Suite 2
PO Box 730
Pendleton, OR 97801
(503) 276-7884
FAX (503) 276-2950

BEND
1250 NE 3rd, Suite B105
Bend, OR 97701
(503) 388-6330
FAX (503) 388-6273

MEDFORD
700 E Main, Suite 105
Medford, OR 97504
(503) 776-6270
FAX (503) 776-6284

SALEM
3865 Wolverine St. NE; E-1
Salem, OR 97310
(503) 373-1447
FAX (503) 373-7636

COOS BAY
320 Central Ave., Suite 510
Coos Bay, OR 97420
(503) 269-4575
FAX (503) 267-3194

AN EQUAL OPPORTUNITY EMPLOYER

ANNOUNCEMENT

The Prevailing Wage Rates contained in this booklet generally reflect non-residential building, heavy, and highway construction rates determined for Oregon by the Secretary of Labor of the United States pursuant to the Davis-Bacon Act; certain changes have been made to better reflect prevailing practices in Oregon. Pursuant to ORS 279.348 to ORS 279.365, these rates have been adopted for use on public works contracts in Oregon. If you have specific questions regarding how rates are determined or if you would like a copy of this booklet, please contact:

Prevailing Wage Rate Coordinator
Bureau of Labor and Industries
Wage and Hour Division
800 NE Oregon St. # 32
Portland, OR 97232
(503)731-4466

The first copy is free. Additional copies are available for \$2.00 each.

GENERAL INFORMATION

Information in this section and in the "Commonly Asked Questions" is meant to provide a convenient reference to Oregon's Prevailing Wage Rate Law. It is in no way a complete statement of the laws and rules.

If you have questions about the enforcement of Prevailing Wage Rates, please contact the Wage and Hour Division. Division offices may be reached at the following phone numbers:

Bend	388-6330
Eugene	686-7623
Medford	776-6201
Pendleton	276-7884
Portland	731-4074
Salem	378-3292

Apprentices and Trainees

Apprentices and trainees may be employed on public works projects. To qualify as an apprentice or trainee, the worker must be registered in a bona fide apprenticeship or training program of the U.S. Department of Labor, Bureau of Apprenticeship and Training (BAT) or with any State Apprenticeship and Training Agency recognized by BAT. For information call 731-4072. The apprentice or trainee is to receive all fringe benefits and a percentage of the journeyman's wage rate which is listed in this booklet. This rate may be different than the rate contained in the Apprenticeship Standards for the trade. The correct percentage shall be determined by the appropriate apprenticeship or training committee. All other workers must receive rates as published.

Zone Pay

In certain trades, the basic hourly rate of pay progressively increases based upon the distance between the job site and a designated landmark; this is commonly referred to as zone pay. To determine the hourly wage, find the correct zone based on the number of road miles the job site is from the closest designated city (based either on distance from city hall or from geographical center of the city, depending on the trade) and add the amount for that zone to the basic hourly rate. Zone pay, unlike travel pay, is the basic hourly wage upon which overtime is computed.

Bid Specifications

The specifications for every public works contract must include the current Prevailing Wage Rates in effect at the time the specifications are first advertised. A statement incorporating the existing rates by reference will not satisfy this requirement (ORS 279.352).

NOTE: If a public agency fails to include the Prevailing Wage Rates in the contract specifications or fails to include in the contract the provision that Prevailing Wage Rates must be paid, the liability for any unpaid prevailing wages shall be exclusively that of the agency. [ORS 279.356(3)]

Fringe Benefits

Payments for fringe benefits are in addition to the basic hourly rate. The term "fringe benefits" refers to the payments such as:

- a) medical or hospital care; pensions on retirement or death; compensation for injuries or illness resulting from an occupational activity, or insurance to provide any of the foregoing;
- b) unemployment benefits, life insurance, disability and sickness insurance or accident insurance;
- c) vacation and holiday pay;
- d) defraying costs of apprenticeship or other similar programs; and
- e) other such bona fide benefits.

NOTE: For the purpose of Prevailing Wage Rates, fringe benefits do not include any benefits which may be required by federal, state or local law (e.g. Workers' Compensation, Unemployment Insurance, etc.).

Fringe benefits may be paid to the worker in cash or to a third party administering a fringe benefit program. When an hourly rate in excess of the required prevailing base rate is paid, the amount by which the rate is exceeded may be credited toward payment of fringe benefits.

Overtime

Workers employed on a public works job for more than eight hours in a day or 40 hours in a week must be paid overtime for each additional hour so worked (ORS 279.334). Overtime is calculated at no less than one and one-half times the basic hourly rate as determined by the Commissioner of Labor (not including fringe benefits which are paid at the straight rate for every hour worked). In the computation of overtime, travel pay does not need to be included but zone pay differentials do.

Work performed on Saturday, Sunday or legal holidays must also be compensated at time and one-half. Legal holidays for purposes of Prevailing Wage Rates include the following: 1) New Year's Day on January 1; 2) Memorial Day on the last Monday in May; 3) Independence Day on July 4; 4) Labor Day on the first Monday in September; 5) Thanksgiving Day on the fourth Thursday in November; 6) Christmas Day on December 25.

NOTE: Contractors who are signatory to a collective bargaining agreement may be subject to different overtime requirements (ORS 279.334[3]).

Certification of Payroll

The law requires every contractor and subcontractor to file certain information on wages paid to each worker employed on a public works contract. This statement must completely and accurately reflect payroll records for the work week immediately preceding the submission. A contractor or subcontractor must complete and submit the certified statement contained on Form WH-38 as well as the information required on the weekly payroll. A copy of Form WH-38 and instructions for completing it are included in the back of this booklet; xeroxed copies may be used for filing.

The schedule for submitting payroll information is as follows: Once within 15 days of the date the contractor or subcontractor first began work on the project; once before the final inspection of the project by the public contracting agency; in addition, for projects exceeding 90 days, submissions are to be made at 90 day intervals. Payroll information is to be filed with both the public contracting agency and the Wage and Hour Division, Bureau of Labor and Industries, 800 NE Oregon St. # 32, Portland, Oregon 97232. The payroll information must be kept by the contractor and or subcontractor for three years.

COMMONLY ASKED QUESTIONS

1) What are "Prevailing Wage Rates?"

A prevailing wage rate is the minimum wage, including fringe benefits, to be paid workers employed on contracts for public works. Different rates are established for specific trades and specific geographical areas.

2) Who must be paid "Prevailing Wage Rates?"

~~All employees of a contractor or subcontractor engaged on a public works project when the total price of the project is \$10,000 or more must receive at least the Prevailing Wage Rate (PWR) for time worked on the project, unless otherwise exempt.~~

Supervisory and office/clerical employees are not required to be paid the PWR. A person who owns and operates his/her own truck on construction projects (Owner/Operator) is not required to be paid the PWR.

3) What about contracts when Federal funds are used?

When more than \$2,000 of federal funds are involved, the contract is usually subject to the provisions of the Davis-Bacon Act, not Oregon statutes. Further information may be obtained from the U.S. Department of Labor, Wage and Hour Division, Portland, Oregon (326-3057). However, in the event that federal funds are involved, but the contract is not regulated under Davis-Bacon, Oregon's Prevailing Wage Rates Statutes may apply (ORS 279.348 - 279.365).

4) I don't have a pension fund. How do I calculate fringe benefits?

Workers must receive at a minimum the sum of the basic hourly rate plus all fringe benefits for each hour worked on a public works contract. Fringe benefits may be paid either to a third party trust account or in cash directly to the worker.

5) My employees receive health benefits. Do I get credit for the health benefit when I prepare my payroll on a public works project?

Yes. Any expenditures an employer makes for bona fide employee benefits can be charged against the fringe benefit payments designated in the Prevailing Wage Rate Booklet. To learn how to compute the correct hourly charge, call the Wage and Hour Division (731-4074).

6) What if the employees are not paid on an hourly basis?

All workers must receive at least the basic hourly rate of wage and fringe benefits for each hour worked on the project. If an employee is paid other than on an hourly basis, the equivalent hourly rate (for both wages and fringe benefits) must still be at least equal to the rates published.

7) How do I classify workers?

Virtually all of the job classifications/trades normally used in the non-residential construction industry are represented by the job classifications used in this PWR publication. These classification titles should be used according to common practice. Try to fit your workers into existing classifications. If you need residential construction rates, or if you have questions about how to classify workers, contact the Prevailing Wage Rate Coordinator at 731-4466.

Laborers who do basic work requiring no specific skills, training, or knowledge are generally classified as Group I Laborers.

(Note that Landscapers are classified as Laborers, and Ornamental Ironworkers are classified as Ironworkers.)

COMMONLY ASKED QUESTIONS (Continued)

8) When are new rates determined? How long are they effective?

Prevailing Wage Rates are determined once each year by the Commissioner of the Bureau of Labor and Industries. The Commissioner may amend the rates at any time. The rates are usually amended at least once each year. The rates in effect at the time the bid specifications are first advertised are those that apply for the duration of the contract, with one exception. If during the bidding process the prevailing wage rate changes, the public contracting agency (not the contractor) has the option of amending the bid specifications to reflect such change.

9) How do I post Prevailing Wage Rates?

Every contractor or subcontractor employing workers on a public works project is required to post the applicable Prevailing Wage Rates in a conspicuous and accessible place in or about the work-site. Rates need to be posted for the duration of the job. Contractors and subcontractors who intentionally fail to post the PWR can be made ineligible to receive any public works contract for up to three years.

10) What can I do about a contractor who is not complying with Oregon's PWR law?

File a complaint with the nearest office of the Oregon Bureau of Labor and Industries or contact the Wage and Hour Division, Bureau of Labor and Industries, 800 NE Oregon St. # 32, Portland, Oregon 97232 (731-4074). Other Bureau offices are located in Bend (388-6330), Coos Bay (269-4575), Eugene (686-7623), Medford (776-6201), Pendleton (276-7884) and Salem (378-3292). You may also complain to the contracting agency, which has the contractual authority to pay PWR claims directly to a contractor's or subcontractor's workers (ORS 279.314).

11) What happens to contractors who do not comply with PWR statutes?

Contractors and subcontractors who pay less than the Prevailing Wage Rates may be liable to the workers affected for the amount found due plus an equal amount as liquidated damages (ORS 279.356). Contracting agencies also have the contractual authority to withhold payments due or to be due to the contractor or subcontractor in order to pay the unpaid prevailing wages directly to the worker (ORS 279.314).

Contractors and subcontractors who intentionally refuse to pay the Prevailing Wage Rate to workers employed on public works or to post the PWR on the job site may be determined to be ineligible to receive any public works contracts for a period of up to three years (ORS 279.361). Workers employed by the contractor or subcontractors have a right of action against the surety of the prime contractor for any unpaid prevailing wages.

A list is kept of all contractors, subcontractors, and other persons ineligible to receive public works contracts and subcontracts. When a contractor or subcontractor is a corporation, the individual officers and agents of the corporation can be debarred in addition to the corporation. As a result, individuals who intentionally fail to pay or post the PWR are prevented from simply moving from one corporation to another.

In addition, Chapter 323, Oregon Laws 1991, provides that any person that loses a competitive bid for a construction contract may bring an action for damages against the person who is awarded the contract, if the losing bidder can establish that the winner has knowingly violated any one of several laws, including the requirement to pay Prevailing Wage Rates while performing work under the contract. The losing bidder is entitled to recover, as liquidated damages, 10% of the losing bid amount, or \$5,000, whichever is greater, plus reasonable attorney fees.

COMMONLY ASKED QUESTIONS (Continued)

12) How much do I pay apprentices?

To qualify as an apprentice, the worker must be registered in a bona fide apprenticeship program of the U.S. Department of Labor, Bureau of Apprenticeship and Training (BAT) or with any State Apprenticeship Agency recognized by BAT. For information call 731-4072. The apprentice is to receive all fringe benefits and a percentage of the journeyman's wage rate as listed in this booklet. ~~This rate may be different than the rate~~ contained in the Apprenticeship Standards for the trade. The correct percentage shall be determined by the appropriate apprenticeship committee. All other workers receive rates as published.

13) What records must I keep? For how long?

Contractors and subcontractors are required to keep records necessary for determining if Prevailing Wage Rates were paid. These records must include the Payroll and Certified Statement Form (WH-38) as well as the following: The name and address of each employee; the work classification(s) of each employee; the rate(s) of wages and fringe benefits paid to each employee; the rate(s) of fringe benefit payments made in lieu of those required to be provided to each employee; total daily and weekly compensation paid to each employee; daily and weekly hours worked by each employee; apprenticeship and training agreements; any payroll and other such records pertaining to the employment of employees upon a public works contract.

These need to be kept for a period of three (3) years from the completion of the public work contract. Records relating to public works contracts must be maintained separately from records relating to private projects/contracts.

14) What forms are public agencies required to file with the Bureau of Labor and Industries?

Public agencies are required to prepare and file a list of every public improvement that the agency intends to fund during the subsequent budget period with the Commissioner of the Bureau of Labor and Industries (ORS 279.023[2]). If, after the original filing, the agency plans additional public improvements, a revised list is to be submitted (OAR 839-16-008[2]).

The "Notice of Award of Public Works Contract" is to be filed with the Wage and Hour Division within 30 days of the date when a contract is awarded which requires the payment of Prevailing Wage Rates (i.e., is regulated under ORS 279.348 to 279.365).

Copies of the "Planned Public Improvement Summary" (Form No. WH-118), the "Capital Improvement Project Cost Comparison Estimate" (WH-119), and the "Notice of Award of Public Works Contract" (WH-81) can be found at the back of this booklet.

15) Does a contracting agency have any power to enforce payment of Prevailing Wage Rates on its public works projects?

Yes. According to ORS 279.314, all public contracts for work or services must contain a clause or condition permitting the contracting agency to pay a worker's past due wage claim, charging the payment against funds due or to become due to the contractor.



NOTE

There have been several important changes in addition to the usual wage and fringe benefit updates in this booklet. The wage determinations in this booklet are now separated into two parts. Pages 7 through 21 list the prevailing wage rates to be used for heavy construction and highway construction for the entire state, and for non-residential building construction in all counties except Coos, Curry, Douglas and Josephine. The rates for non-residential building construction for those four counties are listed in the second part on pages 22 through 24.

The Payroll/Certified Statement Form WH-38 and its instruction sheet have been modified in an attempt to make them easier to understand and complete. The Notice of Award of Public Works Contract Form WH-81 has also been modified to improve its usefulness and clarity.

We have attempted to make other changes more noticeable by printing them in Bold Type. You will find these and other changes under the following trades:

Carpenters

A note on Certified Welders has been added under Group 4.

Roofers

A note regarding sheetmetal roofing has been included in this section.

Sheetmetal Workers

Area 4 has been changed and a new Area 5 has been created.

Soft Floor Layers

This classification now has just one state-wide rate.

Tile Setters

Rates for this classification are now listed only for Area 1.

Tile, Terrazzo, Brick & Marble Finishers

An additional wage differential has been added for certain work.

TRADES	BASIC HOURLY RATE	FRINGE BENEFITS	TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
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ASBESTOS WORKERS

Installation of insulation on mechanical systems*

Journeyman Asbestos Worker

- o Projects in buildings which are not used for manufacturing, manufacturing services or similar processes (Offices, schools, laboratories, etc.) 18.70 5.25
- o Projects in buildings which are used for manufacturing, manufacturing services and similar processes (water treatment plants, electrical generating plants, road maintenance shops, etc.) 20.05 5.25

Removal of insulation on mechanical systems* which are not going to be scrapped.**

- o Hazardous Materials Handler Mechanic (in any type of project regardless of value) 13.25 3.10

* Mechanical systems include pipes, boilers, ducts, flues, breechings, etc.

** The removal of all insulation materials from mechanical systems is exclusively the work of Asbestos Workers, unless the mechanical systems are going to be scrapped. It does not matter whether the insulation materials contain asbestos. Laborers do all removal of insulation materials on mechanical systems to be scrapped and any non mechanical (walls, ceilings, floors, beams, etc.) insulation. They also do loading of any insulation materials that have already been removed, bagged and tagged, as well as cleanup at the removal site and all work done at the disposal site. Laborers performing asbestos removal are classified as Group 3 laborers.

BOILERMAKERS 22.21 6.86

BRICKLAYERS/STONEMASONS

Area 1 20.48 5.04
(add \$0.75 per hour to Fringe for Refractory repair work.)

Area 2 19.00 4.62
(add \$0.75 per hour to Fringe for Refractory repair work.)

Area 1

Baker	Hood River	Multnomah	Wallowa
Benton (a)	Lincoln (a)	Polk	Wasco (a)
Clackamas	Linn (a)	Sherman	Washington
Clatsop	Malheur (a)	Tillamook	Yamhill
Columbia	Marion	Umatilla	
Gilliam	Morrow	Union	

Area 2

Benton (b)	Douglas	Josephine	Linn (b)
Crook	Grant	Klamath	Malheur (b)
Coos	Harney	Lake	Wasco (b)
Curry	Jackson	Lane	Wheeler
Deschutes	Jefferson	Lincoln (b)	

- a) North half
- b) South half

CARPENTERS

Under the following circumstances a rate lower than the basic hourly rate may be used for carpenters:

The lower rate applies to all public works projects of less than \$750 thousand involving construction, reconstruction, major renovation or painting. In determining the \$750 thousand figure, do include the cost of all surfacing and paving, but do not include the cost of underground utilities (i.e., the amount of the contract dedicated to facilities for electricity, water, gas, sewerage including storm water, and communications) which are five feet or more outside of and away from any building, bridge or dock which is a part of the project, and are subordinate and incidental to the major purpose of the project.

NOTE: In determining whether or not the lower rates are applicable, consider the total project cost, and not the cost of any individual contract (or schedule) within that project.

TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
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TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
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CARPENTERS (See above for explanation of when the lower rates may be used)

CARPENTERS (Continued)
Zones for Groups 5, 6 and 7 Carpenters are determined as follows:

	LESS THAN		
	100%	100%	
Zone 1 (Base Rate):			
o Group 1	16.89	19.87	4.57
o Group 2	17.01	20.02	4.57
o Group 3	17.34	20.37	4.57
o Group 4	17.46	20.52	4.57
o Group 5	17.37	20.37	4.57
o Group 6	17.45	20.52	4.57
o Group 7	17.87	20.87	4.57
Zone Differential for Carpenters (Add to Zone 1 Rate)			
Zone 2	.85		
Zone 3	1.25		
Zone 4	1.70		
Zone 5	2.00		
Zone 6	3.00		

- For those workers who reside within zone 1 of a reference city below, their zone pay differential shall be computed based upon the distance from the city hall of that city to the project site.
- For those workers who reside nearer to the project than is the city hall of any reference city below, the mileage from their residence to the project may be used in computing their zone pay differential.
- The zone pay differential for all other projects shall be computed from the city hall of Longview, North Bend, or Portland, whichever is closer to the project.

- Zone 1:** Projects within 30 miles of City Hall in the Cities listed below.
- Zone 2:** More than 30 miles but less than 40 miles.
- Zone 3:** More than 40 miles but less than 50 miles.
- Zone 4:** More than 50 miles but less than 60 miles.
- Zone 5:** More than 60 miles but less than 70 miles.
- Zone 6:** More than 70 miles.

Reference Cities for Groups 5, 6 and 7

Astoria	Eugene	Newport	Salem
Bend	Klamath Falls	Portland	The Dalles
North Bend	Medford	Roseburg	Longview

Reference cities for Group 1 and 2 Carpenters

Albany	Eugene	Longview	Portland
Astoria	Goldendale	Madras	Port Orford
Baker	Grants Pass	Medford	Reedsport
Bend	Hermiston	McMinnville	Roseburg
Brookings	Hood River	Newport	Salem
Burns	Klamath Falls	Oregon City	The Dalles
Coos Bay	LaGrande	Ontario	Tillamook
Corvallis	Lakeview	Pendleton	Vancouver

Group 1	Group 2
Auto. Nailing Machine Carpenters	Floor Layers & Finishers
Form Stripper	Stationary Power Saw Operators
Manhole Builders	Wall & Ceiling Insulators
Non-irritating Ins.	Irritating Insulation
Cabinet & Shelving Installers (wood or steel)	

Zones for Groups 3 and 4 Carpenters are determined by the distance between the project site and either 1) the worker's residence or 2) City Hall of a reference city for the appropriate group shown below, whichever is closer.

Group 3	Group 4
Millwrights	Millwright/Welders
Machine Erectors	(Certified Welders receive \$0.25/hour over Group 3)
Machinists	

Reference Cities for Group 3 and 4 Carpenters

Eugene	Medford	Portland	Vancouver
Longview	North Bend	The Dalles	

Group 5	Group 6
Bridge, Dock & Wharf Builders	Boom Men
Piledrivermen	
Group 7	
Marine Piledriver	

TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
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TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
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CEMENT MASONS

Zone 1 (Base Rate):

o Group 1	17.14	6.42
o Group 2	17.48	6.42
o Group 3	17.48	6.42
o Group 4	17.83	6.42

Group 1 Cement Masons, finishing, hand chipping and patching grouting, end pointing, screed setting, plugging, filling bolt holes, dry packing, setting curb forms, planks, stakes, lines and grades.

Group 2 Composition Workers (includes installation of epoxy & other resinous toppings), and Power Machine Operators.

Group 3 Cement masons working on suspended, swinging and/or hanging scaffold.

Group 4 Cement Masons performing work of both Group 2 and Group 3 at the same time.

Zone Differential for Cement Masons
(Add to Zone 1 Rate)

Zone 2	.65
Zone 3	1.15
Zone 4	1.70
Zone 5	2.75

Zone 1: Projects within 30 miles of City Hall in the cities listed below.

Zone 2: More than 30 miles but less than 40 miles.

Zone 3: More than 40 miles but less than 50 miles.

Zone 4: More than 50 miles but less than 80 miles.

Zone 5: More than 80 miles.

Cities

Bend	Corvallis	Coos Bay	Roseburg	Eugene
Pasco	The Dalles	Medford	Longview	K. Falls
Salem	Pendleton	Astoria	Portland	Newport

DIVERS & DIVERS' TENDERS

o Divers	49.40	4.57
o Divers' Tenders	21.97	4.57

Depth Pay and Enclosure Pay are added to the Divers' Basic Hourly Rate to obtain the Total Hourly Rate for the diver.

BASIC HOURLY RATE	HOURLY PAY	HOURLY ENCLOSURE PAY	DIVERS' HOURLY PAY	=	TOTAL HOURLY PAY
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DIVERS & DIVERS' TENDERS (continued)

o Divers' Depth Pay

Depth of Dive	Hourly Depth Pay
50-100 ft	$[(\text{total ft} - 50) \times \$1.00]/\text{hr.}$
100-150 ft	$\$50 + [(\text{total ft} - 100) \times \$1.50]/\text{hr.}$
150-200 ft	$\$125 + [(\text{total ft} - 150) \times \$2.00]/\text{hr.}$

o Divers' Enclosure Pay (working without vertical escape)

Distance Travelled

In the Enclosure	Hourly Enclosure Pay
5 - 50 ft	\$.50/hr
50 - 100 ft	\$.63/hr
100 - 150 ft	\$ 2.13/hr
150 - 200 ft	\$ 4.63/hr
200 - 300 ft	$\$4.63 + [(\text{total ft} - 200) \times \$0.05]/\text{hr}$
300 - 450 ft	$\$9.63 + [(\text{total ft} - 300) \times \$0.10]/\text{hr}$
450 - 600 ft	$\$24.63 + [(\text{total ft} - 450) \times \$0.20]/\text{hr}$

DREDGING

Zone 1 (Base Rate):

o Leverman	22.68	5.92
o Asst. Engineer (including: Watch Engineer, Welder, Mechanic, Machinist)	21.98	5.92
o Tenderman (Boatman, Attending Dredge Plan); Fireman	21.46	5.92
o Fill Equipment Operator	21.00	5.92
o Assistant Mate (Deckhand); Oiler	19.61	5.92

Zone Differential for Dredging
(Add to Zone 1 Rate)

Zone 2	1.50
Zone 3	1.90
Zone 4	2.40
Zone 5	3.00

Zone 1: Center of job site not more than 15 miles from the City Hall of Portland

Zone 2: More than 15 miles but not more than 30

Zone 3: More than 30 miles but not more than 50

Zone 4: More than 50 miles but not more than 70

Zone 5: More than 70 miles.

TRADES	BASIC HOURLY RATE	FRINGE BENEFITS	TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
DRYWALL/WETWALL			ELEVATOR CONSTRUCTORS		
o Drywall (Acoustical and Drywall Applicator)	18.20	5.82	<u>Area 1</u>		
o Wetwall (Lather)	17.30	6.72	o Mechanic	21.11	6.13 + a
ELECTRICIANS			o Helper	14.78	6.13 + a
<u>Area 1:</u>			o Probationary Helper	10.56	-
o Electricians	18.70	3.78	<u>Area 2</u>		
o Cable Splicers	20.57	3.88	o Mechanic	22.83	6.13 + a
<u>Area 2:</u>			o Helper	15.98	6.13 + a
o Electricians	21.70	6.56	o Probationary Helper	11.42	-
o Cable Splicers	22.79	6.59	a) Plus 8% of basic hourly rate for employees with more than 5 years of service; 6% of basic hourly rate for 6 months to 5 years of service.		
<u>Area 3:</u>	19.50	5.63	<u>Area 1</u>		
<u>Area 4:</u>			Umatilla		
o Electricians	21.95	4.51	Wallowa		
o Cable Splicers	24.15	4.57	Union		
<u>Area 5:</u>			Baker		
o Electricians	22.25	7.07	<u>Area 2</u>		
o Cable Splicers	23.00	7.09	All		
<u>Area 6:</u>			Remaining		
o Electricians	19.50	6.04	Counties		
o Cable Splicers	21.45	6.09	GLAZIERS		
<u>Area 1</u>	<u>Area 2</u>	<u>Area 2(cont)</u>	<u>Area 3</u>		
Malheur	Baker	Umatilla	Coos	Area 1	20.00 3.86
	Gilliam	Union	Curry	(Add \$1.00 to base rate if safety belt is required by State safety regulations)	
	Grant	Wallowa	Lincoln	(Add \$4.00 to base rate for work done from a non-motorized single-man bosun chair)	
	Morrow	Wheeler	Douglas (a)	Area 2	14.36 3.04
			Lane (a)	(Add \$0.50 to base rate if working at over 35 feet of free fall in height)	
<u>Area 4</u>	<u>Area 5</u>	<u>Area 5(cont)</u>	<u>Area 6</u>	<u>Area 1</u>	
Benton	Clackamas	Washington	Harney	All Counties	
Crook	Clatsop	Yamhill (d)	Jackson	except Malheur	
Deschutes	Columbia		Josephine	<u>Area 2</u>	
Jefferson	Hood River		Klamath	Malheur	
Lane (b)	Multnomah		Lake		
Linn	Sherman		Douglas (b)		
Marion	Tillamook				
Polk	Wasco				
Yamhill(c)					
a) Those portions lying west of a line North and South from the NE corner of Coos County to the SE corner of Lincoln County					
b) That portion lying east of a line running North and South from the NE corner of Coos County to the SE corner of Lincoln County					
c) South half					
d) North half					
				HIGHWAY AND PARKING STRIPERS	
					18.60 2.40
				IRONWORKERS	
				o Structural, Reinforcing, Ornamental, Riggers, Fence Erectors, Signal Men	19.96 7.46

TRADES	BASIC HOURLY RATE	FRINGE BENEFITS	TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
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LABORERS

Zone 1 (Base Rate):

o Group 1	15.02	5.47
o Group 2	15.37	5.47
o Group 3	15.67	5.47
o Group 4	15.92	5.47
o Group 5	13.43	5.47

Note: A Hazardous Waste Removal Differential must be added to the base rate if work is performed inside the boundary of a Federally Designated Hazardous Waste Site. A Group 1 base rate is used for General Laborer on such a site. For further information on this, call the Prevailing Wage Rate Coordinator at 731-4466.

**Zone Differential for Laborers
(Add to Zone 1 Rate)**

Zone 2	.65
Zone 3	1.15
Zone 4	1.70
Zone 5	2.75

Zone 1: Projects within 30 miles of City Hall in the Cities listed below.

Zone 2: More than 30 miles but less than 40 miles.

Zone 3: More than 40 miles but less than 50 miles.

Zone 4: More than 50 miles but less than 80 miles.

Zone 5: More than 80 miles.

Reference Cities

Albany	Eugene	Longview	Portland
Astoria	Goldendale	Madras	Port Orford
Baker	Grants Pass	Medford	Reedsport
Bend	Hermiston	McMinnville	Roseburg
Brookings	Hood River	Newport	Salem
Burns	Klamath Falls	Oregon City	The Dalles
Coos Bay	LaGrande	Ontario	Tillamook
Corvallis	Lakeview	Pendleton	

Group 1

Asphalt Plant Laborers	General Laborer ***
Asphalt Spreaders	Guardrail, Median
Batch Weighman	Rail (c)
Broomers	Landscape or Planting
Brush Burners/Cutters	Laborer
Carpenter Tender	Leverman or Aggregate
Car & Truck Loaders	Spreader (d)
Change-House Man	Material Yard Man (e)
Choke Setter	Powderman Tender
Chipper Operator (a)	Railroad Track Laborers
Clean-up Laborers ***	Ribbon Setters (f)
Concrete Laborers	Rip Rap Man (Hand
Culvert (hand labor)	Placed)
Curing, concrete	Road Pump Tender

LABORERS Group 1 (continued)

Demolition, wrecking and moving ***	Sewer Laborer
Driller Tender	Signalman
Dry-shack Man	Skipman
Dumpers, road oiling crew	Slopers
Dumpmen for grading crew	Sprayman
Elevator Feeders	Stake Setter
Fence Builder	Stockpiler
Fine Graders	Timber Faller/Bucker (Hand Labor)
Fire Watch	Toolroom Man (Job site)
Form Strippers (b)	Tunnel Bull Gang (Above Ground)
	Weight-Man-Crusher (g)

- a) Pittsburg or similar types
- b) Not swinging stages
- c) Reference Post, Guide Post, or Right-of Way Marker
- d) Flaherty, Loading Spotters or similar types
- e) Including electrical
- f) Including steel forms
- g) Aggregate when used

*** Laborers can tear off roofs, clean up or handle roofing materials only when at least one new story is added or in demolition work, where no reroofing will occur.

Group 2

Applicators (a)	Gunite or Pot Tender
Brush Cutters (b)	Handlers/Mixers (f)
Burners	Post Hole Digger, Air, gas or electric
Choker Splicer	Power Tool Operators (g)
Clay Power Spreader(c)	Sand Blasting (wet)
Clean up Nozzleman- Green Cutter (d)	Stake Setter
Concrete Power Buggyman	Tampers
Crusher Feeder	Tunnel Muckers/Brakeman/ Concrete Crew/Bull Gang (underground)
Demolition/Wrecking (e)	
Grade Checker	
Granite Nozzleman Tender	

- a) Including Pot Tender for same, applying protective material by hand or nozzle on utility lines or storage tanks on project
- b) Power saw
- c) And similar types of spreaders
- d) Concrete, rock, etc.
- e) Charred Materials
- f) Of all materials of an irritating nature including cement and lime
- g) Includes, but not limited to: Dry Pack Machine, Jackhammer, Chipping Guns, Paving Breakers, Vibrators (less than 4" diameter)

TRADES	BASIC		TRADES	BASIC	
	HOURLY RATE	FRINGE BENEFITS		HOURLY RATE	FRINGE BENEFITS

LABORERS(continued)

Group 3

Asbestos Removal	Power Saw Operators (d)
Asphalt Rakers	Pumpcrete Nozzleman
Bit Grinder	Sand Blasting (dry)
Concrete Saw Operator	Pipe Layers of all Types
Drill Doctor	Sewer Timberman
Drill Operators (a)	Track Liners (e)
Guniting Nozzleman	Tugger Operator
High Scalars,	Tunnel-Chuck Tenders,
Strippers, Drillers(b)	Nippers, Timberman
Laser Beam (c)	Vibrator (4" and larger)
Manhole Builder	Water Blaster
Powdermen	Welder

- a) Air Tracks, Cat Drills, Wagon Drills, Rubber-mounted drills, and other similar types
- b) Covers work in Swinging Stages, chairs or belts, under extreme conditions unusual to normal drilling, blasting, barring-down, or sloping and stripping
- c) Pipe laying, applicable when employee assigned to move, set up, align Laser Beam.
- d) Bucking and falling
- e) Anchor Machines, Ballast Regulators, Multiple Tampers, Power Jacks

Group 4

Laser Beam (Tunnel), applicable when employee assigned to move, set-up, align laser beam
 Tunnel Miners
 Tunnel Powderman

Group 5

Flagger

LIMITED ENERGY ELECTRICIANS

May only be used for electrical work not exceeding 100 va in Class II and III installations (as defined in Article 725 of the National Electrical Code):

Area 1	17.75	5.43
Area 2	17.75	5.43
Area 3	11.50	2.45
Area 4	11.81	2.61
Area 5	12.89	2.64
Area 6	11.64	2.79
Area 7	12.04	2.15
Area 8	11.47	2.65
Area 9	17.75	5.43
Area 10	11.96	1.94
Area 11	12.98	2.02
Area 12	15.57	2.05
Area 13	13.15	2.49
Area 14	12.84	2.24

- Area 1 Clatsop, Columbia, Tillamook
- Area 2 Clackamas, Multnomah, Washington, Yamhill (north half)
- Area 3 Marion, Polk, Yamhill (south half)
- Area 4 Benton, Lincoln, Linn
- Area 5 Lane
- Area 6 Douglas
- Area 7 Coos, Curry
- Area 8 Jackson, Josephine
- Area 9 Hood River, Sherman, Wasco
- Area 10 Crook, Deschutes, Jefferson
- Area 11 Klamath, Lake
- Area 12 Gilliam, Grant, Morrow, Umatilla, Wheeler
- Area 13 Baker, Union, Wallowa
- Area 14 Harney, Malheur

LINE CONSTRUCTION.

Area 1:		
o Group 1	24.01	5.59
o Group 2	21.69	5.51
o Group 3	16.87	4.34
o Group 4	18.71	4.40
o Group 5	16.37	4.32
o Group 6	15.39	4.29
Area 2:		
o Cable Splicers	19.41	3.52
o Journeyman Lineman	17.65	3.46
o Line Equip. Mech. (Right-of-way)	15.89	3.39
o Line Equip. Oper.	15.89	3.39
o Groundman	11.92	3.23

TRADES BASIC HOURLY RATE FRINGE BENEFITS

LINE CONSTRUCTION(continued)

Area 1
All counties except Malheur County

<u>Group 1</u>	<u>Group 2</u>
Cable Splicers	Certified Lineman Welder
Leadman Pole Sprayer	Heavy Line Equipment Man
	Lineman
	Pole Sprayer

<u>Group 3</u>	<u>Group 4</u>
Tree Trimmer	Line Equipment Man

<u>Group 5</u>	<u>Group 6</u>
Head Groundman	Groundman
Jackhammer Man	
Powderman	

Area 2
Malheur County

MARBLE SETTERS (Includes Granite)

Area 1	21.48	5.04
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Area 1

Baker	Hood River	Multnomah	Wallowa
Benton (a)	Lincoln (a)	Polk	Wasco (a)
Clackamas	Linn (a)	Sherman	Washington
Clatsop	Malheur (a)	Tillamook	Yamhill
Columbia	Marion	Umatilla	
Gilliam	Morrow	Union	

a) North half

PAINTERS & DRYWALL TAPERS

<u>Area 1</u>		
o Painters & Drywall Tapers	13.15	2.26
<u>Area 2</u>		
o Brush	16.00	2.44
o Spray, sandblasting, other pressure blasting over 3000 psi, and steam cleaning.	16.50	2.44
o Drywall Tapers	20.75	3.30

<u>Area 1</u>	<u>Area 2</u>
Malheur County	Remaining Counties

TRADES BASIC HOURLY RATE FRINGE BENEFITS

PLASTERERS

<u>Area 1</u>		
o Nozzleman	20.38	4.52
o Swinging scaffold	19.88	4.52
o all other work	19.38	4.52

<u>Area 2</u>		
o Nozzleman	21.18	4.31
o Swinging scaffold	20.18	4.31
o all other work	19.68	4.31

<u>Area 1</u>	<u>Area 1(cont)</u>	<u>Area 1(cont)</u>	<u>Area 2</u>
Benton	Deschutes	Lincoln (b)	All
Coos	Harney	Linn (b)	remaining
Crook	Jefferson	Wasco (b)	counties
Curry	Klamath (a)	Wheeler (b)	
Douglas	Lane		

a) Northern one-third b) South half

PLUMBERS & STEAMFITTERS/PIPEFITTERS

Area 1 (Both)	20.74	5.25
Area 2 (Both)	22.95	6.55
Area 3 (Both)	21.40	5.60

<u>Area 1</u>	<u>Area 2</u>	<u>Area 3</u>
Baker	Grant (b)	All remaining counties
Harney (a)	Morrow	
Malheur	Umatilla	
	Wallowa	
	Union	

a) Except Northwest Portion
b) Except Southwest Corner

TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
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TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
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POWER EQUIPMENT OPERATORS

Zone 1 (Base Rate):

o Group 1	20.00	5.92
o Group 2	19.65	5.92
o Group 3	19.05	5.92
o Group 4	18.65	5.92
o Group 5	18.15	5.92
o Group 6	17.45	5.92

Note: A Hazardous Waste Removal Differential must be added to the base rate if work is performed inside the boundary of a Federally Designated Hazardous Waste Site. For further information on this, call the Prevailing Wage Rate Coordinator at 731-4466.

ZONE RATES AND DESCRIPTIONS
(Add to Zone 1 Rate)

Zone 2	.65
Zone 3	1.15
Zone 4	1.70
Zone 5	2.75

- Zone 1: Projects within 30 miles of City Hall in the Cities listed below.
- Zone 2: More than 30 miles but less than 40 miles.
- Zone 3: More than 40 miles but less than 50 miles.
- Zone 4: More than 50 miles but less than 80 miles.
- Zone 5: More than 80 miles.

Reference Cities

Albany	Eugene	Longview	Portland
Astoria	Goldendale	Madras	PortOrford
Baker	Grants Pass	Medford	Reedsport
Bend	Hermiston	McMinnville	Roseburg
Brookings	Hood River	Newport	Salem
Burns	Klamath Falls	Oregon City	The Dalles
Coos Bay	LaGrande	Ontario	Tillamook
Corvallis	Lakeview	Pendleton	

POWER EQUIPMENT OPERATORS (continued)

GROUP CLASSIFICATIONS

ASPHALT

- 6 Plant Oiler
- 6 Plant Fireman
- 6 Pugmill Operator (any type)
- 6 Truck mounted asphalt spreader, with screed
- 4 Screed Operator
- 5 Extrusion Machine Operator
- 2 Asphalt Plant Operator (any type)
- 4 Asphalt Paver Operator
- 5 Roller Operator (any asphalt mix)
- 4 Diesel-Electric Engineer, Plant
- 5 Asphalt Burner and Reconditioner Operator (anytype), 84
- 4 Roto-Mill, pavement profiler operator, under 6 foot lateral cut
- 5 Roto-Mill, pavement profiler, ground man
- 2 Roto-Mill, pavement profiler operator, 6 foot lateral cut and over

BLADE

- 6 Blade Operator, pulled type
- 4 Blade Operator
- 4 Blade Operator, Finish
- 4 Blade Operator, externally controlled by electronic, mechanical hydraulic means
- 4 Blade Operator, multi-engine
- 2 Auto Grader or "Trimmer" Operator

BULLDOZERS

- 4 Bulldozer Operator
- 4 Drill Cat Operator
- 4 Side-Boom Operator
- 2 Tandem bulldozer operator (quadnine and similar type, D-11)
- 4 Bulldozer Operator, twin engine (TC 12 and similar type, D-10)
- 4 Cable-Plow Operator (any type)

CLEARING

- 4 Log Skidder Operator
- 4 Chipper Operator
- 4 Incinerator Operator
- 4 Stump Splitter Operator
- 4 Faller/Buncher Operator

TRADES	BASIC HOURLY RATE	FRINGE BENEFITS	TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
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POWER EQUIPMENT OPERATORS
(GROUP CLASSIFICATIONS continued)

COMPRESSORS

- 6 Compressor Operator (any power), under 1,250 cu. ft. total capacity
- 5 Compressor Operator (any power), over 1,250 cu. ft. capacity

COMPACTORS - Self-Propelled

- 5 Compactor Operator, including vibratory
- 5 Wagner Patcor Operator or similar type (without blade)
- 4 Compactor Operator, with blade
- 4 Compactor Operator, multi-engine

CONCRETE

- 6 Plant Oiler
- 6 Assistant Conveyor Operator
- 6 Conveyor Operator
- 6 Mixer Box Operator (C.T.B., dry batch, etc.)
- 6 Cement Hog Operator
- 6 Concrete Saw Operator
- 6 Concrete Curing Machine Operator (riding type)
- 6 Wire Mat or Brooming Machine Operator
- 5 Combination Mixer and Compressor Operator, gunite work
- 5 Concrete Batch Plant Quality Control Operator
- 5 Belcrete Operator
- 5 Pumpcrete Operator (any type)
- 5 Pavement Grinder and/or Grooving Machine Operator (riding type)
- 4 Mixer Mobile Operator
- 5 Cement Pump Operator, Fuller-Kenyon and similar
- 5 Concrete Pump Operator
- 5 Grouting Machine Operator
- 4 Screed Operator
- 4 Concrete Cooling Machine Operator
- 5 Concrete Mixer Operator, single drum, any capacity
- 2 Batch Plant and/or Wet Mix Operator, 1 and 2 drum
- 1 Batch Plant and/or Wet Mix Operator, 3 units or more
- 5 Cast in place pipe laying machine
- 5 Maginnis Internal Full Slab Vibrator Operator
- 5 Concrete Finishing Machine Operator, Clary, Johnson, Bidwell, Burgess bridge deck or similar type
- 5 Curb Machine Operator, Mechanical Berm, Curb and/or Curb and Gutter
- 5 Concrete Joint Machine Operator
- 5 Concrete Planer Operator
- 5 Tower Mobile Operator

POWER EQUIPMENT OPERATORS
(GROUP CLASSIFICATIONS continued)

CONCRETE (continued)

- 5 Power Jumbo Operator setting slip forms etc., in tunnels
- 5 Slip Form Pumps, power driven hydraulic lifting device for concrete forms
- 5 Concrete Paving Machine Operator
- 5 Concrete Finishing Machine Operator
- 5 Concrete Spreader Operator
- 4 Concrete Paving Road Mixer
- 2 Automatic Concrete Slip Form Paver Operator
- 2 Concrete Canal Line Operator
- 4 Concrete Breaker
- 4 Reinforced Tank Banding Machine (K-17 or similar types)
- 2 Concrete Profiler, Diamond Head

CRANE

- 6 Oiler
- 6 Truck Crane Oiler-Driver, 25 ton capacity or over
- 6 Fireman, all equipment
- 6 A-Frame Truck Operator, single drum
- 6 Tugger or Coffin Type Hoist Operator
- 5 Helicopter Hoist Operator
- 5 Hoist Operator, single drum
- 5 Elevator Operator
- 5 A-Frame Truck Operator, double drum
- 5 Boom Truck Operator
- 4 Chicago Boom and similar types
- 4 Lift Slab Machine Operator
- 4 Boom Type lifting device, 5 ton capacity or less
- 4 Cherry Picker or similar type crane-hoist, 5 ton capacity or less
- 4 Crane Operator, under 25 ton (except for rough terrain)
- 4 Hoist Operator, two drum
- 4 Hoist Operator, three or more drums
- 4 Derrick Operator, under 100 ton
- 4 Hoist Operator, stiff leg, guy derrick or similar type, 50 ton and over
- 4 Cableway Operator, up to 25 tons
- 2 Cableway Operator, 25 tons and over
- 4 Crane Operator, over 25 tons and including 40 tons
- 4 Bridge Crane Operator, Locomotive, Gantry, Overhead
- 2 Crane Operator, over 40 tons and including 200 tons
- 1 Crane Operator, over 200 tons
- 2 Tower Crane Operator

BASIC
HOURLY FRINGE
RATE BENEFITS

BASIC
HOURLY FRINGE
RATE BENEFITS

TRADES

TRADES

POWER EQUIPMENT OPERATORS

POWER EQUIPMENT OPERATORS

(GROUP CLASSIFICATIONS continued)

(GROUP CLASSIFICATIONS continued)

CRANE (continued)

FORK LIFT(continued)

- 2 Whirley Operator, up to and including 150 tons
- 1 Whirley Operator, over 150 tons
- 1 Helicopter Operators, when used in erecting work
- 5 Hydraulic Boom Truck Operator, Pittman

- 5 Fork Lift, over 5 tons
- 3 Rock Hound Operator

CRUSHER

GENERATORS

- 6 Crusher Oiler
- 6 Crusher Feederman
- 4 Generator Operator
- 4 Diesel-Electric Engineer
- 4 Grizzly Operator
- 4 Crusher Plant Operator

- 4 Generator Operator
- 4 Diesel-Electric Engineer

GUARDRAIL EQUIPMENT

DRILLING

- 6 Oiler
- 6 Auger Oiler
- 6 Oiler, combination guardrail machines
- 4 Guardrail Punch Operator (all types)
- 6 Guardrail Punch Oiler
- 4 Guardrail Auger Operator (all types)
- 4 Combination Guardrail machines. i.e. punch, auger etc.

- 6 Drill Tender
- 6 Auger Oiler
- 5 Churn Drill and Earth Boring Machine Operator
- 4 Drill Doctor
- 4 Boring Machine Operator
- 4 Driller - Percussion, Diamond, Core, Cable, Rotary and similar type

HAZARDOUS WASTE REMOVAL

FLOATING EQUIPMENT

- 5 Assistant to the Engineer (Oiler)
- 4 Assistant Incinerator Control Board Operator
- 3 Incinerator Control Board Operator

- 6 Deckhand
- 6 Boatman
- 5 Fireman
- 4 Diesel-Electric Engineer
- 4 Jack Operator, elevating barges
- 4 Barge Operator, self-unloading
- 4 Piledriver Operator (not crane type)
- 4 Floating Clamshell, etc. Operator, under 3 cu. yd.
- 4 Floating Crane (derrick barge) Operator, less than 30 tons
- 2 Floating Clamshell, etc. Operator, 3 cu. yd. and over
- 2 Floating Crane (derrick barge) Operator, 30 tons but less than 150 tons
- 1 Floating Crane, 150 tons and over

HEATING PLANT

- 6 Temporary Heating Plant Operator
- 4 Surface Heater and Planer Operator

FORK LIFT

HYDRAULIC HOES

- 6 Self-Propelled Scaffolding Operator (excluding working platform)
- 6 Fork Lift or Lumber Stacker Operator
- 6 Ross Carrier Operator
- 5 Lull Hi-Lift Operator or similar type

- 5 Hydraulic Backhoe Operator, wheel type 3/8 cu. yd. and under with or without front end attachments 2-1/2 cu. yd. and under (Ford, John Deere, Case type)
- 4 Hydraulic Backhoe Operator, Track Type 3/8 cu.yd. (Note: Over 3/8 cu. yd. takes Shovel Classification rate)

LOADERS

- 6 Bucket Elevator Loader Operator, Barber-Greene and similar types
- 5 Loaders, rubber-tired type, 2-1/2 cu. yd. and under
- 5 Elevating Grader Operator, Tractor Towed requiring Operator or Grader
- 4 Belt Loader Operator, Kolman and Ko Cal types
- 4 Loader Operator, front end and overhead, 2-1/2 cu. yd. and under 4 cu. yd.
- 4 Elevating Loader Operator, Athey and similar types

TRADES	BASIC		TRADES	BASIC	
	HOURLY RATE	FRINGE BENEFITS		HOURLY RATE	FRINGE BENEFITS

POWER EQUIPMENT OPERATORS

(GROUP CLASSIFICATIONS continued)

LOADERS(continued)

- 4 Elevating Grader Operator, Sierra, Euclid or similar types
- 3 Loader Operator, 4 cu. yd. but less than 6 cu. yd.
- 2 Loader Operator, 6 cu. yd. and over

OILERS

- 6 Oiler
- 6 Guardrail Punch Oiler
- 6 Truck Crane Oiler-Driver, 25 ton or over
- 6 Auger Oiler
- 6 Grade Oiler, required to check grade

OILERS(continued)

- 5 Service Oiler (Greaser)
- 6 Grade Checker

PILEDRIVERS (Use Crane rates when driving or pulling piling)

- 4 Hammer Operator
- 4 Piledriver Operator (not crane type)

PIPE LINE - Sewer Water

- 6 Tar Pot Fireman
- 6 Tar Pot Fireman (power agitated)
- 6 Hydraulic Pipe Press Operator
- 5 Hydra Hammer or similar types
- 5 Pavement Breaker Operator
- 4 Pipe Cleaning Machine Operator
- 4 Pipe Doping Machine Operator
- 4 Pipe Bending Machine Operator
- 4 Pipe Wrapping Machine Operator
- 4 Boring Machine Operator
- 4 Back Filling Machine Operator

PUMPS

- 6 Pump Operator, any power
- 6 Hydrostatic Pump Operator
- 5 Pump Operator, more than 5 (any size)
- 5 Pot Rammer Operator

POWER EQUIPMENT OPERATORS

(GROUP CLASSIFICATIONS continued)

RAILROAD EQUIPMENT

- 6 Brakeman
- 6 Oiler
- 6 Switchman
- 6 Motorman
- 6 Ballast Jack Tamper Operator
- 5 Locomotive Operator
- 5 Ballast Regulator Operator
- 5 Ballast Tamper Multi-Purpose Operator
- 5 Track Liner Operator
- 5 Tie Spacer Operator
- 5 Shuttle Car Operator

REMOTE CONTROL

- 2 Remote controlled earth-moving equipment

REPAIRMEN, Heavy Duty

- 6 Parts Man (Tool Room)
- 6 H.D. Repairman Tender
- 6 Welder's Tender
- 4 Diesel-Electric Engineer (Plant or Floating)
- 4 Bolt Threading Machine Operator
- 4 Drill Doctor (Bit Grinder)
- 4 H.D. Mechanic
- 4 H.D. Welder
- 4 Machine Tool Operator
- 4 Combination H.D. Mechanic-Welder, when dispatched and/or when required to do both
- 4 Welder - Certified, when dispatched and/or required

RUBBER-TIRED SCRAPERS

- 4 Rubber-tired Scraper Operator, single engine, single scraper
- 4 Self-loading, paddle wheel, auger type under 15 cu. yd.
- 4 Rubber-tired Scraper Operator, twin engine
- 4 Rubber-tired Scraper Operator, with push-pull attachments
- 3 Rubber-tired Scraper Operator with tandem scrapers
- 2 Rubber-tired Scraper Operator, with tandem scrapers, multi-engine
- 4 Self-loading, paddle wheel, auger type 15 cu. yd. and over, single engine
- 3 Self-loading, paddle wheel, auger type, finish and/or 2 or more units

BASIC
HOURLY RATE FRINGE
BENEFITS

BASIC
HOURLY RATE FRINGE
BENEFITS

TRADES

TRADES

POWER EQUIPMENT OPERATORS

(GROUP CLASSIFICATIONS continued)

**SHOVEL, DRAGLINE, CLAMSHELL, BACKHOE,
SKOOPER, ETC., OPERATOR**

- 6 Oiler
- 6 Grade Oiler (required to check grade)
- 6 Grade Checker
- 6 Fireman
- 4 Diesel-Electric Engineer
- 4 Stationary Drag Scraper Operator
- 4 Shovel, Dragline, Clamshell, Hoe etc., Operator under 3 cu. yd.
- 4 Grade-all Operator
- 2 Shovel, Dragline, Clamshell, Hoe etc., Operator 3 cu. yd. and over

SIGNALMAN

- 6 Bell Boy, phones, etc., Operator
- 6 Helicopter Radioman (ground)

SURFACING (BASE) MATERIAL

- 6 Roller Operator, grading of base rock (not asphalt)
- 5 Roller Operator, Oiling, C.T.B.
- 6 Tamping Machine Operator, mechanical, self-propelled
- 6 Hydrographic Seeder Machine Operator, straw, pulp or seed
- 5 Rock Spreaders, self-propelled
- 5 Pulva-mixer or similar types
- 4 Blade Mounted Spreaders, Ulrich and similar types
- 5 Chip Spreading Machine Operator
- 5 Lime Spreading Operator

SWEEPERS

- 6 Broom Operator, self-propelled
- 5 Sweeper Operator (Wayne type) self-propelled

TRACTOR - RUBBER TIRED

- 5 Tractor Operator, rubber-tired, 50 H.P. Flywheel and under
- 4 Tractor Operator, rubber-tired, over 50 H.P. Flywheel
- 4 Tractor Operator, with boom attachment
- 4 Rubber-tired Dozers and Pushers (Michigan, Cat, Hough type)

POWER EQUIPMENT OPERATORS

(GROUP CLASSIFICATIONS continued)

TRENCHING MACHINE

- 6 Oiler
- 6 Grade Oiler (required to check grade)
- 3 Trenching Machine Operator, maximum digging capacity 3 ft. depth
- 4 Trenching Machine Operator, maximum digging capacity over 3 ft. depth
- 4 Back Filling Machine Operator
- 2 Wheel Excavator
- 2 Canal Trimmer
- 2 Band Wagon (in conjunction with wheel excavator)

TUNNEL

- 4 Mucking Machine Operator
- 6 Conveyor Operator (any type)
- 4 Shield Operator
- 6 Air Filtration Equipment Operator

WELDING MACHINES

- 6 Welding Machine Operator

UNDERWATER EQUIPMENT

- 2 Underwater Equipment Operator, remote or otherwise, when used in construction work

ROOFERS

(Installation and removal of sheet metal roofing is done by sheetmetal workers.)

Area 1:

- o Roofers 17.64 4.35
- o Handling coal tar pitch 19.40 4.35

Area 2:

- o Roofers 16.54 4.78
- (Add \$2.00 per hour to Fringe for work with irritable Bituminous material.)

Area 3:

- o Roofers 14.40 2.50
- (Add \$1.50 per hour to Fringe for work with irritable Bituminous material.)

TRADES	BASIC HOURLY RATE	FRINGE BENEFITS	TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
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ROOFERS(continued)

Area 4:
o Roofers 15.75 4.20
(Add \$2.00 per hour to Fringe for work with irritable Bituminous materials)

Area 5:
o Roofers 16.78 4.07
(Add \$3.00 per hour to Fringe for work with irritable Bituminous materials)

Area 1	Area 1(cont)	Area 2	Area 2(cont)
Baker	Multnomah	Benton	Klamath
Clackamas	Sherman	Coos	Lake
Clatsop	Tillamook	Crook	Lane
Columbia	Wasco	Curry	Lincoln
Jefferson	Washington	Deschutes	Linn
Gilliam	Wheeler	Douglas	Marion
Grant		Harney	Polk
Hood River		Jackson	Yamhill
		Josephine	

Area 3	Area 4	Area 5
Malheur	Umatilla	Morrow
	Union	
	Wallowa	

SHEETMETAL WORKERS

Area 1 19.30 5.98
(Add \$0.75 to base rate for work performed on any swinging platform, swinging chair, or swinging ladder)

Area 2 17.41 4.75
(Add \$1.75 to base rate for work performed whenever it is possible for worker to fall 30 feet or more)
(Add \$1.75 to base rate for work performed in an area where epoxy resins or other injurious chemicals are being applied)

SHEETMETAL WORKERS(continued)

Area 3 20.22 5.95
(Add \$1.00 to base rate for work where it is necessary to wear a chemically activated face mask)
(Add \$1.00 to base rate for work where employee is required to wear a fresh air mask due to nuclear related work)
(Add \$.45 to base rate for work on a swinging stage, swinging scaffold or bosun chair in excess of 30 feet above the ground)

Area 4 17.55 4.18

Area 5 17.38 4.35

Area 1

Benton	Gilliam	Linn	Tillamook
Clackamas	Grant	Marion	Wasco
Clatsop	Harney	Multnomah	Washington
Columbia	Hood River	Polk	Wheeler
Crook	Jefferson	Sherman	Yamhill
Deschutes	Lincoln		

Area 2	Area 3	Area 4	Area 5
Baker	Morrow	Douglas	Coos
Malheur	Umatilla	Jackson	Curry
	Union	Josephine	
	Wallowa	Klamath	
		Lake	
		Lane	

SOFT FLOOR LAYERS 16.45 4.72 + a

a) plus 4% of basic hourly rate for employees with less than one year of service, 6% for those with more than one year.

SPRINKLER FITTERS 21.40 6.03

TRADES	BASIC	FRINGE	TRADES	BASIC	FRINGE
	HOURLY RATE	BENEFITS		HOURLY RATE	BENEFITS

TENDERS TO MASON TRADES

o Tenders for Bricklayers, Tile Setters, Marble Setters and Terrazzo Workers; Topping for Cement Finishers and Mortar Mixers.
 16.39 4.47
 (Add \$0.50 to base rate for refractory work)
 (Add to base rate an amount equal to that received for safety belt requirements or other unusual job conditions by the mechanic this worker is tending)

TENDERS TO PLASTERERS 15.90 4.47

TILE SETTERS

Area 1 18.70 4.58
 (Add \$.50 to base rate if safety belt required by State safety regulations or if work involves epoxy, furnane, alkox acetylene black grouting or trowel applied waterproof membrane.)

Area 1

Baker	Hood River	Multnomah	Wallowa
Benton (a)	Lincoln (a)	Polk	Wasco (a)
Clackamas	Linn (a)	Sherman	Washington
Clatsop	Malheur (a)	Tillamook	Yamhill
Columbia	Marion	Umatilla	
Gilliam	Morrow	Union	

a) North half

TILE, TERRAZZO, BRICK & MARBLE FINISHERS

o Assists Tile Setters, Brick Layers, Marble Masons, Stone Masons, and Terrazzo Workers by striking, sawing, cleaning, washing or grouting. Does not lay or set any material.
 Area 1 14.27 3.25
 (Add \$.50 to base rate if safety belt required by State safety regulations or if work involves epoxy, furnane, alkox acetylene black grouting or trowel applied waterproof membrane.)
 (Add \$0.75 to fringe for Refractory repair work.)

Area 1

Baker	Hood River	Multnomah	Wallowa
Benton (a)	Lincoln (a)	Polk	Wasco (a)
Clackamas	Linn (a)	Sherman	Washington
Clatsop	Malheur (a)	Tillamook	Yamhill
Columbia	Marion	Umatilla	
Gilliam	Morrow	Union	

a) North half

TRUCK DRIVERS

Zone 1 (Base Rate):

o Group 1	17.24	5.74
o Group 2	17.36	5.74
o Group 3	17.49	5.74
o Group 4	17.74	5.74
o Group 5	17.96	5.74
o Group 6	18.11	5.74
o Group 7	18.31	5.74

Note: A Hazardous Waste Removal Differential must be added to the base rate if work is performed inside the boundary of a Federally Designated Hazardous Waste Site. For further information on this, call the Prevailing Wage Rate Coordinator at 731-4466.

Zone-Differential for Truck Drivers

(Add to Zone 1 Rate)

Zone 2	.65
Zone 3	1.15
Zone 4	1.70
Zone 5	2.75

Zone 1: Projects within 30 miles of City Hall in the Cities listed below.

Zone 2: More than 30 miles but less than 40 miles.

Zone 3: More than 40 miles but less than 50 miles.

Zone 4: More than 50 miles but less than 80 miles.

Zone 5: More than 80 miles.

TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
TRUCK DRIVERS (continued)		
<u>Reference Cities</u>		
Albany	Eugene	Longview
Astoria	Goldendale	Madras
Baker	Grants Pass	Medford
Bend	Hermiston	McMinnville
Brookings	Hood River	Newport
Burns	Klamath Falls	Oregon City
Coos Bay	LaGrande	Ontario
Corvallis	Lakeview	Pendleton
		Portland
		Port Orford
		Reedsport
		Roseburg
		Salem
		The Dalles
		Tillamook
<u>Work</u>		<u>Group</u>
A-Frame or Hydra-lift Truck w/load bearing surface.....		1
Battery Rebuilder.....		1
Bus or Man-Haul Driver.....		1
Concrete Buggies (Power operated) Drivers and Helpers handling sacked cement--add 15¢ per hour.....		1
Dump Trucks, Side, End and Bottom Dumps, including Semi-Trucks and trains or combinations thereof:		
Up to and inc. 10 cu. yds.....		1
Over 10 cu. yds. and inc. 30 cu. yds.....		3
Over 30 cu. yds. and inc. 50 cu. yds.....		4
Over 50 cu. yds. and inc. 60 cu. yds.....		5
Over 60 cu. yds. and inc. 80 cu. yds.....		6
Over 80 cu. yds. and inc. 100 cu. yds.....		7
Dumpsters or Similar Equipment--all sizes.....		2
Flaherty Spreader Driver or Leverman.....		2
Lift Jitneys, Fork Lifts--all sizes--used in loading, unloading & transporting material on job site.....		1
Loader and/or Leverman on Concrete Dry Batch Plant, manually operated.....		1
Low Bed Equipment, Flat Bed Semi-Truck and Trailer or Doubles transporting equipment or wet or dry materials.....		2

TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
TRUCK DRIVERS (Continued)		
Lubrication Man, Fuel Truck Driver, Driver, Tireman, Wash Rack, Steam Cleaner or combination.....		1
Lumber Carrier, Driver-Straddle		
Carrier--used in loading, unloading and transportation of material on job site.....		2
Oil Distributor Driver or Leverman.....		2
Pilot Car.....		1
Slurry Truck Driver or Leverman.....		1
Solo Flat Bed and Misc. Body Trucks-- 0-10 tons.....		1
Transit Mix and Wet or Dry Mix Trucks:		
5 cu. yds. and under.....		1
Over 5 cu. yds. and inc. 7 cu. yds.....		2
Over 7 cu. yds. and inc. 11 cu. yds.....		3
Over 11 cu. yds. and inc. 15 cu. yds.....		4
Team Drivers.....		1
Tireman, full-time basis.....		1
Truck Helper.....		1
Truck Mechanic--Welder--Body Repairman....		3
Truck Mechanic Helper.....		1
Water Wagons (Rated Capacity) up to:		
3000 gallons.....		1
3000 to 5000 gallons.....		2
5000 to 10,000 gallons.....		3
10,000 to 15,000 gallons.....		4
Winch Truck--takes classification of truck on which winch is mounted		
WELDERS; RIGGERS		
Receive rate for craft performing operation to which welding and rigging are incidental.		

TRADES	BASIC HOURLY RATE	FRINGE BENEFITS	TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
<u>ASBESTOS WORKERS</u>			<u>BRICKLAYERS/STONEMASONS</u>		
<u>Installation of insulation on mechanical systems*</u>				19.00	4.62
Journeyman Asbestos Worker			<u>CARPENTERS</u>		
o Projects in buildings which are not used for manufacturing, manufacturing services or similar processes (Offices, schools, laboratories, etc.)				13.20	3.67
	18.70	5.25	<u>CEMENT MASONS</u>		
o Projects in buildings which are used for manufacturing, manufacturing services and similar processes (water treatment plants, electrical generating plants, road maintenance shops, etc.)				10.00	0
	20.05	5.25	<u>DRYWALL/WETWALL</u>		
<u>Removal of insulation on mechanical systems* which are not going to be scrapped.**</u>			o Drywall (Accoustical and Drywall Applicator)		
o Hazardous Materials Handler Mechanic (in any type of project regardless of value)				18.20	5.82
	13.25	3.10	o Wetwall (Lather)		
				17.30	6.72
* Mechanical systems include pipes, boilers, ducts, flues, breechings, etc.			<u>ELECTRICIANS</u>		
** The removal of all insulation materials from mechanical systems is exclusively the work of Asbestos Workers, unless the mechanical systems are going to be scrapped. It does not matter whether the insulation materials contain asbestos. <u>Laborers do all removal of insulation materials on mechanical systems to be scrapped and any non mechanical (walls, ceilings, floors, beams, etc.) insulation. They also do loading of any insulation materials that have already been removed, bagged and tagged, as well as cleanup at the removal site and all work done at the disposal site.</u>			Coos, Curry, Douglas (eastern portion)		
				19.50	5.63
<u>BOILERMAKERS</u>			Josephine, Douglas (western portion)		
	22.21	6.86	o Electricians		
				19.50	6.04
			o Cable Splicers		
				21.45	6.09
			<u>ELEVATOR CONSTRUCTORS</u>		
			o Mechanic		
				22.83	6.13 + a
			o Helper		
				15.98	6.13 + a
			o Probationary Helper		
				11.42	-
			a) Plus 8% of basic hourly rate for employees with more than 5 years of service; 6% of basic hourly rate for 6 months to 5 years of service.		
			<u>GLAZIERS</u>		
				20.00	3.86
			(Add \$1.00 to base rate if safety belt is required by State safety regulations)		
			(Add \$4.00 to base rate for work done from a non-motorized single-man bosun chair)		
			<u>INSULATORS (BAT AND BLOWN)</u>		
				7.85	0
			<u>IRONWORKERS</u>		
			o Structural, Reinforcing, Ornamental, Riggers, Fence Erectors, Signal Men		
				19.96	7.46
			<u>LABORERS</u>		
				9.10	4.65

TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
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LIMITED ENERGY ELECTRICIANS

May only be used for electrical work not exceeding 100 va in Class II and III installations (as defined in Article 725 of the National Electrical Code):

Douglas	11.64	2.79
Coos, Curry	12.04	2.15
Josephine	11.47	2.65

PAINTERS 13.00 0

PLASTERERS

Coos, Curry, Douglas		
o Nozzleman	20.38	4.52
o Swinging scaffold	19.88	4.52
o all other work	19.38	4.52

Josephine		
o Nozzleman	21.18	4.31
o Swinging scaffold	20.18	4.31
o all other work	19.68	4.31

PLUMBERS & STEAMFITTERS/PIPEFITTERS

21.40 5.60

POWER EQUIPMENT OPERATORS

Backhoes	12.94	1.56
Bulldozers	13.50	1.56
Loader	13.50	1.56

ROOFERS 8.00 0

SHEETMETAL WORKERS

Coos, Curry	17.38	4.35
Douglas, Josephine	17.55	4.18

SOFT FLOOR LAYERS 16.45 4.72 + a

a) plus 4% of basic hourly rate for employees with less than one year of service, 6% for those with more than one year.

SPRINKLER FITTERS 21.40 6.03

TRADES	BASIC HOURLY RATE	FRINGE BENEFITS
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TENDERS TO MASON TRADES

o Tenders for Bricklayers 16.39 4.47
 (Add \$0.50 to base rate for refractory work)
 (Add to base rate an amount equal to that received for safety belt requirements or other unusual job conditions by the mechanic this worker is tending)

TENDERS TO PLASTERERS 15.90 4.47

TRUCK DRIVERS

Zone 1 (Base Rate):

o Group 1	17.24	5.74
o Group 2	17.36	5.74
o Group 3	17.49	5.74
o Group 4	17.74	5.74
o Group 5	17.96	5.74
o Group 6	18.11	5.74
o Group 7	18.31	5.74

Note: A Hazardous Waste Removal Differential must be added to the base rate if work is performed inside the boundary of a Federally Designated Hazardous Waste Site. For further information on this, call the Prevailing Wage Rate Coordinator at 731-4466.

Zone Differential for Truck Drivers (Add to Zone 1 Rate)

Zone 2	.65
Zone 3	1.15
Zone 4	1.70
Zone 5	2.75

Zone 1: Projects within 30 miles of City Hall in the Cities listed below.

Zone 2: More than 30 miles but less than 40 miles.

Zone 3: More than 40 miles but less than 50 miles.

Zone 4: More than 50 miles but less than 80 miles.

Zone 5: More than 80 miles.

BASIC
HOURLY RATE FRINGE
BENEFITS

BASIC
HOURLY RATE FRINGE
BENEFITS

TRADES
TRUCK DRIVERS (continued)

TRADES
TRUCK DRIVERS (Continued)

Reference Cities

Albany	Eugene	Longview	Portland
Astoria	Goldendale	Madras	Port Orford
Baker	Grants Pass	Medford	Reedsport
Bend	Hermiston	McMinnville	Roseburg
Brookings	Hood River	Newport	Salem
Burns	Klamath Falls	Oregon City	The Dalles
Coos Bay	LaGrande	Ontario	Tillamook
Corvallis	Lakeview	Pendleton	

Work

Group

A-Frame or Hydra-lift Truck w/load bearing surface.	1
Battery Rebuilder	1
Bus or Man-Haul Driver.	1
Concrete Buggies (Power operated)	1
Drivers and Helpers handling sacked cement—add 15¢ per hour	
Dump Trucks, Side, End and Bottom Dumps, including Semi-Trucks and trains or combinations thereof:	
Up to and inc. 10 cu. yds.	1
Over 10 cu. yds. and inc. 30 cu. yds	3
Over 30 cu. yds. and inc. 50 cu. yds	4
Over 50 cu. yds. and inc. 60 cu. yds	5
Over 60 cu. yds. and inc. 80 cu. yds	6
Over 80 cu. yds. and inc. 100 cu. yds	7
Dumpsters or Similar Equipment—all sizes	2
Flaherty Spreader Driver or Leverman	2
Lift Jitneys, Fork Lifts—all sizes—used in loading, unloading & transporting material on job site.	1
Loader and/or Leverman on Concrete Dry Batch Plant, manually operated.	1
Low Bed Equipment, Flat Bed Semi-Truck and Trailer or Doubles transporting equipment or wet or dry materials	2

Lubrication Man, Fuel Truck Driver, Driver, Tireman, Wash Rack, Steam Cleaner or combination.	1
Lumber Carrier, Driver-Straddle Carrier—used in loading, unloading and transportation of material on job site.	2
Oil Distributor Driver or Leverman.	2
Pilot Car	1
Slurry Truck Driver or Leverman	1
Solo Flat Bed and Misc. Body Trucks—0-10 tons	1
Transit Mix and Wet or Dry Mix Trucks:	
5 cu. yds. and under	1
Over 5 cu. yds. and inc. 7 cu. yds	2
Over 7 cu. yds. and inc. 11 cu. yds	3
Over 11 cu. yds. and inc. 15 cu. yds.	4
Team Drivers.	1
Tireman, full-time basis.	1
Truck Helper.	1
Truck Mechanic—Welder—Body Repairman	3
Truck Mechanic Helper	1
Water Wagons (Rated Capacity) up to:	
3000 gallons	1
3000 to 5000 gallons	2
5000 to 10,000 gallons.	3
10,000 to 15,000 gallons	4
Winch Truck—takes classification of truck on which winch is mounted	

(1)	(2)	(3) DAY AND DATE	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Name, Address, And Social Security Number of Employee	Trade Classification (Include group number if applicable)	OT	Total Hours	Basic Hourly Rate Of Pay	Hourly Fringe Benefit Paid As Wage To Employee	Gross Amount Earned	Total Deductions FICA, FED, STATE, ETC.	Net Wage Paid For Week	Hourly Fringe Benefit Paid To Party, Plan, Fund Program	Name Of Benefit Party, Plan, Fund, Program
		HOURS WORKED EACH DAY								
		OT								
		s								
		OT								
		s								
		OT								
		s								
		OT								
		s								

CERTIFIED STATEMENT

I _____ do here by state:

(Name of signatory party) (Title)

(1) That I pay or supervise the payment of the persons employed by _____ on the _____; that during the payroll period commencing on the _____ day of _____, 19____, and ending the _____ day of _____, 19____, all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said _____ from the full weekly wages earned by any person, and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as specified in ORS 652.610, and described as follows: _____

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for workers contained therein are not less than the applicable wage rates contained in any wage determination incorporated in the contract; that the classification set forth therein for each worker conform with work performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

I have read this certified statement, know the contents thereof and it is true to my knowledge.

NAME AND TITLE

SIGNATURE

BUREAU OF LABOR AND INDUSTRIES - WAGE AND HOUR DIVISION

INSTRUCTIONS FOR COMPLETING PAYROLL/CERTIFIED STATEMENT FORM,
WH-38 (Rev 1/93)

General: This form meets needs resulting from the 1983 amendments to the Prevailing Wage Rate Law. Under this amended law, the contractor is required to pay not less than fringe benefits as predetermined by the Bureau of Labor and Industries, in addition to payment of not less than the predetermined rates. The contractor's obligation to pay fringe benefits may be met either by payment of the benefits to the various plans, funds, or programs or by making these payments to the employees as cash in lieu of fringe benefits.

This form provides for the contractor's showing of the payroll and all monies paid to the employees, whether as basic rates or as cash in lieu of fringe benefits and provides for the contractor's representation in the payroll/certified statement that he/she is paying other benefits required by the contract and not paid as cash in lieu of fringe benefits. Detailed instructions concerning the preparation of the form follow:

Fill in the box at the top of the form. Fill in the appropriate Prime Contractor or Subcontractor box. Be sure to enter the date the contract was first advertised for bid by the contracting agency. This date should appear on the bid documents.

Column 1 - Name, Address, and Social Security number of Employee: The employee's full name must be shown on each payroll submitted. The employee's address must also be shown on the first payroll submitted. The address need not be shown on subsequent payrolls unless the address changes. Although not required, space is available in the name and address section so that Social Security numbers can be listed.

Column 2 - Trade Classifications: List classification descriptive of work actually performed by employees. Include group and area number when applicable. Consult trade classifications and minimum Prevailing Wage Rate schedule set forth in contract specifications. Refer to the appropriate Prevailing Wage Rates in effect at the time the contract was first advertised for bid for information regarding trade classifications, basic hourly rates, and hourly fringe benefits. Indicate which workers are apprentices, if any, and give their current percentage, trade classification, and group number when applicable. If additional trade classifications are deemed necessary, see the Contracting Officer or Public Agency representative. If an employee works in more than one trade classification, use the highest rate for all hours worked, or use separate line entries to show hours worked, rate of pay, and fringe benefit for each classification.

Column 3 - DAY AND DATE: Enter month and day in the appropriate box corresponding to the hours worked.

HOURS WORKED EACH DAY: Enter as overtime hours all hours worked in excess of 8 hours per day, all hours worked on Saturday and Sunday and all hours worked on legal holidays as defined in ORS 279.334.

Column 4 - Total Hours: Enter separately the total number of overtime hours and straight time hours worked in the appropriate boxes.

Column 5 - Basic Hourly Rate of Pay: Enter the basic hourly rate and the overtime hourly rate (if any) paid the employee in the appropriate Straight time and Overtime boxes. Payment of not less than one and one half times the basic or regular rate paid is required for overtime under ORS 279.334.

Column 6 - Hourly Fringe Benefit Paid as Wages to the Employee: Enter any cash paid directly to the employee as a fringe benefit, in lieu of fringe benefits paid to an approved party, plan, fund or program. It is not necessary to pay time and a half for overtime work on wages paid in lieu of fringe benefits.

Column 7 - Gross amount earned: Enter gross amount earned on this project.

Column 8 - Total Deductions, FICA, FED, STATE, ETC: Enter the total amount of deductions withheld from each employee for just those hours reported on the payroll/certified statement for this project. All deductions must be in accordance with the provisions of ORS 652.610.

~~Column 9 - Net Wages Paid for Week: Enter the amount of wage paid to the employee after subtracting the total deductions reported in Column 8 from the gross amount earned shown in Column 7.~~

Column 10 - Hourly Fringe Benefit Paid to Party, Plan, Fund or Program: Enter the hourly amount of fringe benefits paid to each individually approved party, plan, fund or program for each employee. Any contactor who is making payments to approved parties, plans, funds or programs in amounts less than the required hourly fringe benefit is obligated to pay the difference directly to the employee as wages in lieu of fringe benefits.

Column 11 - Name of Benefit Party, Plan, Fund or Program: Enter the name of the party, plan, fund or program that corresponds to the amount shown as an hourly fringe benefit in Column 10.

PLANNED PUBLIC IMPROVEMENT SUMMARY

FISCAL YEAR _____ - _____

PAGE _____ OF _____

(Name of State or Local Government Agency)

Project Number	Project Name	Project Type	Project Location	Estimated Project Cost	Agency of Contract Work

ORS 279.023 generally states that not less than 30 days prior to adoption of its budget for the subsequent budget period, each public agency shall prepare and file with the Commissioner of the Bureau of Labor and Industries a list of every public improvement known to that agency that the agency plans to fund in the budget period... If the agency decides to use its own equipment and personnel for constructing projects estimated to cost more than \$50,000, the agency shall show that the decision conforms to the policy of the State of Oregon that public agencies shall make every effort to construct public improvements at the least cost to the public agency, and the public agency shall cause to be kept and preserved a full, true and accurate account of the costs of performing the work including all engineering and administrative expenses and a reasonable estimate of the cost, including investment cost, of the equipment used. **NOTE:** This Improvement Summary together with the project estimate and least cost determination constitutes a public record available in the usual manner for public review or copying. Mail a copy of this public improvement summary to: Wage and Hour Division, 800 NE Oregon St. # 32, Portland, Oregon 97232.

CAPITAL IMPROVEMENT PROJECT COST COMPARISON ESTIMATE

(Name of State or Local Government Agency)

DEPARTMENT:
PROPOSED YEAR:
PROJECT DESCRIPTION:

PROJECT NAME:

FUND:
PROJECT NUMBER:

Rough Quantity Estimate	Units	Work Class Description	Agency Force Estimate		Agency Contract Estimate	
			Unit Cost	Total Cost	Unit Cost	Total Cost
Estimated Construction Period _____				\$		\$

_____ determines that (Agency Forces)(Contractor) can perform this work at the least cost.

(cross out one)

(Name of Agency)

(Agency Official)

BUREAU OF LABOR AND INDUSTRIES
NOTICE OF AWARD OF PUBLIC WORKS CONTRACT
(For use by Public Agencies in Complying with ORS 279.363)

1. CONTRACTING AGENCY INFORMATION

Name _____
Address _____
City, State, Zip _____
Agency Representative _____ Phone _____

2. CONTRACT INFORMATION

Contract Name _____ Number _____
Project Manager Name _____ Fax Number _____
Phone _____
Location of Work _____
County _____
Contract Amount _____
Source of Funds (i.e. 100% Federal Funds, 50/50 Federal/State, 100% Local, etc.)

Date Contract Specifications First Advertised For Bid _____
Date Contract Awarded _____ Date Work Expected To Begin _____

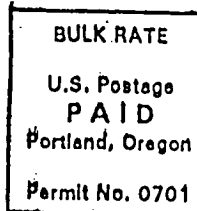
3. PRIME CONTRACTOR INFORMATION

Name _____
Address _____
City, State, Zip _____ Phone _____
Construction Contractors Board Registration Number _____
Workers' Comp Insurance Company _____
Workers' Comp Policy/Binder Number _____

RETURN THIS COMPLETED FORM TO:
Bureau of Labor and Industries
Wage and Hour Division Rm 1160
Prevailing Wage Section
800 NE Oregon # 32
Portland, Oregon 97232
731-4074 ext: 233
Fax Number 741-4069

BUREAU OF LABOR AND INDUSTRIES
800 NE OREGON STREET # 32
PORTLAND, OREGON 97232

ADDRESS CORRECTION REQUESTED



DEC 16 1992

APPENDIX C

METRO MINORITY AND WOMEN-OWNED BUSINESS PROGRAM

METRO CODE SECTION 2.04.100
Minority and Women-Owned Business Program
METRO
Revised January 1993

2.04.100 Minority Business Enterprise Program (MBE Program) For
Locally-Funded Contracts, Findings, Purpose and Authority:

(a) The Metro Council supports the aspirations of minorities to enter the mainstream of social, political and economic life.

(b) The Metro Council finds:

- (1) The opportunity for full participation in our free enterprise system by minorities is essential;
- (2) Greater economic opportunity for minorities is essential;

- (3) Review of Metro programs to remedy historical patterns of exclusion of and discrimination against racial or ethnic groups is needed;
- (4) Public policies and programs to eliminate the effects of long-term, open and pervasive exclusion of and discrimination against minorities from the business sector, including increased opportunities to integrate minorities into the full economic life of the community should be reviewed; and
- (5) In cooperation with the private sector, the affected populations, interested groups and appropriate governmental entities, a program of review should be established to recommend remedies for the unfortunate effects of social, political and economic inequity that still exist.

(c) It is the purpose of the MBE Program to establish and implement a program to encourage the utilization by Metro of minority-owned businesses, to the greatest extent permitted by law, by creating for such businesses the maximum possible opportunity to compete for and participate in locally-funded Metro contracting activities. The MBE Program does not apply to federally-funded contracts, which are governed by Metro Code 2.04.300 et seq. The MBE Program shall be administered simultaneously and in addition to the provisions of Metro Code Sections 2.04.200-.290.

(d) Metro Code Sections 2.04.100-.190 shall be known and may be cited as the "Metro Minority Business Enterprise Program," hereinafter referred to as the "MBE Program."

(Ordinance No. 83-165, Sec. 1; amended by Ordinance No. 84-181, Sec. 1; all previous Ordinances repealed by Ordinance No. 87-216, Sec. 1; amended by Ordinance No. 87-231, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2)

2.04.105 Policy Statement:

(a) Through this MBE Program, Metro:

- (1) Expresses its strong commitment to provide maximum opportunity to MBEs in contracting; and
- (2) Informs all employees, governmental agencies and the general public of its intent to implement this policy statement.

(b) It is the policy of Metro to provide equal opportunity to all persons to access and participate in the locally-funded projects, programs and services of Metro. Metro and Metro contractors shall not discriminate against any person or firm on

the basis of race, color, national origin, sex, sexual orientation, age, religion, physical handicap, political affiliation or marital status.

(c) The policies, practices and procedures established by the MBE Program shall apply to all Metro departments, commissions and project areas except as expressly provided herein.

(d) The objectives of the MBE Program shall be:

- (1) To assure that provisions of the MBE Program are adhered to by all Metro departments, contractors and employees; and
- (2) To initiate and maintain efforts to increase, to the greatest extent permitted by law, program participation by minority businesses.

(Ordinance No. 83-165, Sec. 2; amended by Ordinance No. 84-181, Sec. 1; all previous Ordinances repealed by Ordinance No. 87-216, Sec. 1; amended by Ordinance No. 87-231, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2)

2.04.110 Definitions: For purposes of Metro Code Sections 2.04.100-.190, the following definitions shall apply:

(a) "Capable" means a Minority Business Enterprise registered with the Executive Department who upon request from the bidder can supply two favorable references of prior work of the type being subcontracted for.

(b) "Competitive" means the subcontract bid submitted by the Minority Business Enterprise was within 10 percent of either the budgeted amount, subbid estimate or the lowest bid received by the bidder. The bidder shall make either the budgeted amount or the subbid estimate available upon request. This term relates to price only and must not be interpreted to mean that a bid deemed competitive is therefore entitled to the subcontract award.

(c) "Construction Contract" means a contract for construction of buildings or other facilities, and includes reconstruction, remodeling and all activities which are appropriately associated with a construction project.

(d) "Contract" means a mutually binding legal relationship or any modification thereof obligating the seller to furnish supplies or services, including construction, and the buyer to pay for them. For purposes of the MBE Program a lease or a purchase order of \$500.00 or more is a contract.

(e) "Contractor" means the one who participates, through a contract or subcontract, in the MBE Program and includes lessees.

(f) "Documentation" means written materials purporting to establish the satisfaction of a good faith effort requirement that are capable of verification. These may include, but are not limited to, copies of business logs, correspondence or newspaper ads.

(g) "Economically Feasible Unit" means a unit of work identified in a project suitable for subcontracting in the normal course of business. These would be units that a contractor would ordinarily identify as suitable for performance by a subcontractor. The intent here is to have identified units that would be attractive to a serious and qualified subcontractor and not be shunned by that subcontractor because the unit of work is too small to be profitable.

(h) "Executive Department" means the State of Oregon's Executive Department.

(i) "Interested" means a Minority Business Enterprise that has expressed to Metro and/or the bidder an interest in learning more about the project identified in the initial solicitation by the bidder.

(j) "Joint Venture" is defined as an association of two or more businesses to carry out a single business enterprise for profit for which purpose they combine their property, capital, efforts, skills and knowledge. In a joint venture between a MBE and non-MBE, the MBE must be responsible for a clearly defined portion of the work to be performed and must share in the ownership, control, management responsibilities, risks and profits of the joint venture. A joint venture of a MBE and a non-MBE must receive Metro approval prior to contract award.

(k) "Justification" means a maintaining or showing of a sufficient reason why an action was taken and that the action was not taken for an impermissible reason. Permissible reasons include, but are not limited to, not meeting bid invitation specifications or not being the low bid. An impermissible reason would be one that is arbitrary or capricious or based on race, sex, national origin, marital status or religion.

(l) "Labor and Materials Contract" is a contract including a combination of service and provision of materials other than construction contracts. Examples may include plumbing repair, computer maintenance or electrical repair, etc.

(m) "Lessee" means a business or person that leases, or is negotiating to lease, property from Metro or an actual or potential Metro contractor on Metro's or the contractor's facility for the purpose of operating a transportation-related activity, or for the provision of goods or services to the facility or to the public at the facility.

(n) "Minority Business Enterprise or MBE" means a small business concern which is certified as such by the Executive Department and:

- (1) Which is at least 51 percent owned by one or more minority individuals, or, in the case of any publicly-owned business, at least 51 percent of the stock of which is owned by one or more minority individuals; and
- (2) Whose management and daily business operations are controlled by one or more of the minority individuals who own it.

(o) "Minority Individual" has the meaning established by ORS 200.005(7).

(p) "Negotiate" means to engage in good faith discussions with the potential subcontractors about their proposals/bids, and the work for which a bid is sought, including sharing with them any cost estimates from the request for proposals or invitation to bid documents, if available.

(q) "Personal Services Contract" means a contract for services of a personal or professional nature.

(r) "Procurement Contract" means a contract for the purchase or sale of supplies, materials, equipment, furnishings or other goods not associated with a construction or other contract.

(s) "Reasonable Number" means at least three (3) firms of those MBEs certified as such by the Executive Department, or a greater number of such firms, if so specified in any particular contract by the Liaison Officer. Consideration should be given to the specialty of subcontracting or materials supply desired as well as the location of the project and whether or not the subcontractor is willing to perform work out of their geographic area.

(t) "Rebuttable Presumption" means a presumption which may be rebutted, or disproved, by evidence.

(u) "Small Business Concern" means a small business as defined pursuant to section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

(Ordinance No. 165, Sec. 3; amended by Ordinance No. 84-181, Sec. 2; all previous Ordinances repealed by Ordinance No. 87-216, Sec. 1; amended by Ordinance No. 87-231, Sec. 1; and Ordinance No. 88-252, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2)

2.04.115 Notice to Contractors and Subcontractors: Contractors of Metro accepting locally-funded contracts under the MBE Program shall be advised that failure to carry out the applicable provisions of the MBE Program shall constitute a breach of contract and, after notification by Metro, may result in termination or such other remedy as Metro deems appropriate.

(Ordinance No. 83-165, Sec. 4; all previous Ordinances repealed by Ordinance No. 87-216, Sec. 1; amended by Ordinance No. 87-231, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2)

2.04.120 Liaison Officer:

(a) The Executive Officer shall be responsible for administering the MBE Program. The Executive Officer may, by Executive Order, designate a Liaison Officer and, if necessary, other staff adequate to administer the MBE Program on the Executive's behalf. For purposes of Metro Code Sections 2.04.100-.190, all references to the "Liaison Officer" shall mean the Executive Officer, unless the Executive Officer has designated another individual as the "Liaison Officer," in which case the individual so designated shall perform the functions required by the MBE Program.

(b) The Liaison Officer shall be responsible for developing, managing and implementing the MBE Program, and for disseminating information on available business opportunities so that MBEs are provided an equitable opportunity to bid on Metro contracts. In addition to the responsibilities of the Liaison Officer, all department heads and program managers shall have responsibility to assure implementation of the MBE Program.

(c) The Liaison Officer shall begin immediately to design a technical assistance and outreach program which shall be established by January 1, 1993. This program shall include at least the following elements:

- (1) A regularly-scheduled contractor orientation program to promote compliance with and understanding of the provisions of the MBE Program and Metro;
- (2) Feasible options for bonding, insurance, and banking assistance for MBEs;
- (3) A program designed to assist Metro departments in enhancing opportunities for MBEs;

- (4) A fully-developed and maintained resource list to include all available resources for MBEs; and
- (5) A system for agency-wide reporting of MBE outreach efforts and accomplishments.

(d) The Liaison Officer shall have the responsibility for monitoring implementation of the requirements of the MBE Program and shall have the power to request from Metro departments, bidders/proposers, and/or contractors any relevant records, information and documents.

(e) The Liaison Officer shall be responsible for gathering all information concerning compliance with this chapter and shall have access to all pertinent Metro records.

(Ordinance No. 83-165, Sec. 5; amended by Ordinance No. 86-197, Sec. 1; all previous Ordinances repealed by Ordinance No. 87-216, Sec. 1; amended by Ordinance No. 87-231, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2)

2.04.125 Directory: A directory of MBEs certified by the Executive Department shall be maintained by the Liaison Officer to facilitate identifying such businesses with capabilities relevant to general contracting requirements and particular solicitations. The directory shall be available to contract bidders and proposers in their efforts to meet the MBE Program requirements.

(Ordinance No. 83-165, Sec. 6; all previous Ordinances repealed by Ordinance No. 87-216, Sec. 1; amended by Ordinance No. 87-231, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2)

2.04.130 Minority-Owned Banks: Metro will seek to identify minority-owned banks and banks utilizing equal opportunity banking practices, including community reinvestment, and, to the greatest extent permitted by law, use their services. In addition, Metro will encourage prime contractors, subcontractors and consultants to utilize such services by sending them brochures and service information on such banks.

(Ordinance No. 83-165, Sec. 7; amended by Ordinance No. 84-181, Sec. 3; all previous Ordinances repealed by Ordinance No. 87-216, Sec. 1; amended by Ordinance No. 87-231, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2)

2.04.135 Affirmative Action and Equal Opportunity Procedures: Metro shall use affirmative action techniques to facilitate MBE participation in contracting activities. These techniques include:

(a) Making affirmative efforts to solicit proposals from MBEs.

(b) Examining alternatives for arranging contracts by size and type of work so as to enhance the possibility of participation by MBEs.

(c) Arranging solicitations, time for the presentation of bids, quantities specifications and delivery schedules so as to facilitate the participation of MBEs.

(d) Referring MBEs in need of management assistance to established agencies that provide direct management assistance to such businesses.

(e) Carrying out specific information and communications programs on contracting procedures and specific contracting opportunities in a timely manner, with such programs being bilingual, and in conformance with any requirements of the Americans with Disabilities Act, where appropriate.

(f) Distribution of copies of the MBE Program to organizations and individuals concerned with MBE programs.

(g) Periodic reviews with department heads to ensure that they are aware of the MBE Program goals and desired activities on their parts to facilitate the purposes of the MBE Program. Additionally, departmental efforts toward and success in meeting the purposes of the MBE Program shall be factors considered during annual performance evaluations of the department heads.

(h) Monitoring and ensuring that MBE planning centers and likely MBE contractors are receiving requests for bids, proposals and quotes.

(i) Distribution of lists to potential MBE contractors of the types of goods and services which Metro regularly purchases.

(j) Advising potential MBE vendors that Metro does not certify MBEs, and directing them to the Executive Department.

(k) Specifying purchases by generic title rather than specific brand name whenever feasible.

(l) Establishing an interdepartmental contract management committee which will meet regularly to monitor and discuss, among other issues, potential MBE participation in contracts. In an effort to become more knowledgeable regarding MBE resources, the committee shall also invite potential MBE contractors to attend selected meetings.

(m) Requiring that at least one MBE vendor or contractor be contacted for all contract awards which are not exempt from Metro's contract selection procedures and which are 1) for more than \$500 but not more than \$15,001 in the case of non-personal services contracts; and 2) for more than \$2,500 but not more than \$10,001 for personal services contracts. The Liaison Officer may waive this requirement if he/she determines that there are no MBEs on the certification list capable of providing the service or item. Any such waivers shall be in writing, and shall be kept in the appropriate files. For contracts over the dollar amounts indicated in this section, all MBEs known to Metro in the business of providing the service(s) or item(s) required shall be mailed bid or proposal information.

(n) Requiring that all prospective bidders attend scheduled prebid conferences on all construction contracts with an estimated value of over \$50,000.

(o) The Executive Officer or his/her designee, may establish and implement additional affirmative action techniques which are consistent with the MBE Program and designed to facilitate participation of MBEs in Metro contracting activities.

(Ordinance No. 83-165, Sec. 8; amended by Ordinance No. 84-181, Sec. 4; Ordinance No. 86-197, Sec. 1; all previous Ordinances repealed by Ordinance No. 87-216, Sec. 1; amended by Ordinance No. 87-231, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2)

2.04.140 Certification of Minority Business Eligibility:

(a) To participate in the MBE Program, contractors, subcontractors and joint ventures must have been certified by the Executive Department as described in subsection (b) of this section.

(b) Metro will not perform certification or recertification of businesses or consider challenges to socially and economically disadvantaged status. Rather Metro will rely upon the Executive Department's list in determining whether a prospective contractor or subcontractor is certified as a MBE. A prospective contractor or subcontractor must be certified as a MBE by the Executive Department or appear on its certification list prior to the pertinent bid opening or proposal submission date to be considered by Metro to be an eligible MBE. Metro will adhere to any applicable Recertification Rulings.

(c) Prospective contractors or subcontractors which have been denied certification by one of the above agencies may appeal such denial to the certifying agency pursuant to applicable law. However, such appeal shall not cause a delay in any contract award by Metro.

(Ordinance No. 83-165, Sec. 9; amended by Ordinance No. 84-181, Sec. 5; all previous Ordinances repealed by Ordinance No. 87-216, Sec. 1; amended by Ordinance No. 87-231, Sec. 1; and Ordinance No. 88-252, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2)

2.04.145 Annual Minority Business Goals:

(a) The Metro Council shall, by resolution each June, establish annual MBE goals for the ensuing fiscal year. Such annual goals shall be established separately for construction contracts, labor and materials contracts, personal services contracts and procurement contracts regardless of type.

(b) Annual goals will be established taking into consideration the following factors:

- (1) Projection of the number and types of contracts to be awarded by Metro;
- (2) Projection of the number, expertise and types of MBEs likely to be available to compete for the contracts;
- (3) Past results of Metro's efforts under the MBE Program; and
- (4) Existing goals of other Portland metropolitan area contracting agencies, and their experience in meeting these goals.

(c) Metro will publish notice regarding proposed contract goals not later than ten (10) days prior to adoption of the goals.

(Ordinance No. 83-165, Sec. 10; amended by Ordinance No. 86-197, Sec. 1; all previous Ordinances repealed by Ordinance No. 87-216; amended by Ordinance No. 87-231, Sec. 1; Ordinance No. 88-252, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2).

2.04.150 Good Faith Efforts at Maximizing MBE Opportunities:

(a) Good faith efforts at maximizing MBE opportunities shall be required for construction contracts over \$50,000.

(b) At the discretion of the Liaison Officer, good faith efforts at maximizing MBE opportunities may be required for any other contract. This requirement shall be made in writing prior to the solicitation of bids for such contract.

(c) Where good faith efforts are required, the Liaison Officer shall direct the inclusion of a clause in any RFP or bid documents which requires that the prime contractor, prior to entering into any subcontracts, make good faith efforts at maximizing MBE opportunities, as that term is defined in Section 2.04.160.

(Ordinance No. 83-165, Sec. 11; repealed by Ordinance No. 87-216, Sec. 1; amended by Ordinance No. 87-231, Sec. 1; Ordinance No. 88-252, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2)

2.04.155 Contract Award Criteria:

(a) To be eligible for award of contracts subject to good faith efforts requirements, prime contractors must prove that they have made good faith efforts at maximizing MBE opportunities prior to the time bids are opened or proposal are due. Bidders/Proposers are required to utilize the most current list of MBEs certified by the Executive Department in all of the bidders'/proposers' good faith efforts solicitations. The address where certified lists may be obtained shall be included in all applicable bid/proposal documents.

(b) All invitations to bid or request for proposals on contracts for which good faith efforts requirements have been established shall require all bidders/proposers to submit with their bids and proposals a statement indicating that they have made good faith efforts as defined in Section 2.04.160. To document good faith efforts, all bidders and proposers shall complete and endorse a Minority Business Program Compliance form and include said form with bid or proposal documents. The form shall be provided by Metro with bid/proposal solicitations.

(c) Agreements between a bidder/proposer and a MBE in which the MBE promises not to provide subcontracting quotations to other bidders/proposers are prohibited.

(d) Bidders/proposers shall, at the time of bid opening, (or proposal submission date when no public opening is had), submit to Metro detailed MBE Utilization forms listing names of MBEs who will be utilized and the nature and dollar amount of their participation. This form will be binding upon the bidder/proposer. Within five (5) working days of bid opening or proposal submission date, such bidders/proposers shall submit to Metro signed Letters of Agreement between the bidder/proposer and MBE subcontractors and suppliers to be utilized in performance of the contract. A sample Letter of Agreement will be provided by Metro. The MBE Utilization forms shall be provided by Metro with bid/proposal documents.

(e) An apparent low bidder/proposer who states in its bid/proposal that good faith efforts at maximizing MBE opportuni-

ties were performed shall submit written evidence of such good faith efforts within two (2) working days of bid opening or proposal submission in accordance with Section 2.04.160. Metro reserves the right to determine the sufficiency of such efforts.

(f) Except as provided in paragraph (g) of this section, apparent low bidders or apparent successful proposers who state in their bids/proposals that they will show good faith efforts at maximizing MBE opportunities, but who fail to comply with paragraph (d) or (e) of this section, shall have their bids or proposals rejected and shall forfeit any required bid security or bid bond. In that event the next lowest bidder or, for personal services contracts, the firm which scores second highest shall, within two (2) days of notice of such ineligibility of the low bidder, submit evidence of good faith efforts as provided above. This process shall be repeated until a bidder or proposer is determined to meet the provisions of this section or until Metro determines that the remaining bids are not acceptable because of amount of bid or otherwise.

(g) The Liaison Officer, at his/her discretion, may waive minor irregularities in a bidder's or proposer's compliance with the requirements of this section provided, however, that the bid or proposal substantially complies with public bidding requirements as required by applicable law. Any such waivers shall be in writing, and shall be kept in the appropriate files.

(Ordinance No. 83-165, Sec. 12; amended by Ordinance No. 86-197, Sec. 1; all previous Ordinances repealed by Ordinance No. 87-216, Sec. 1; amended by Ordinance No. 87-231, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2)

2.04.160 Definition and Determination of Good Faith Efforts:

(a) Good Faith Efforts by Metro: Metro, through its Liaison Officer, shall make good faith efforts to maximize MBE opportunities on locally-funded contracts to which good faith efforts requirements apply, including the following:

- (1) Identifying project elements for which a significant minority capability exists for execution and/or a significant interest by minority firms has been expressed and directing that contractors define economically feasible units as a part of their subcontracting plan which address these identified or targeted project elements;
- (2) Advertising in, at a minimum, one newspaper of general circulation, one minority-oriented publication, and one trade-oriented publication. The advertisement must announce subcontracting or material supply opportunities on the project at

least ten (10) days before bids or proposals are due;

- (3) Providing written notice soliciting subbids/proposals to not less than a reasonable number of MBEs for each subcontracting or material supply work item selected pursuant to (1) above not less than ten (10) days before bids/proposals are due.

If there are less than three certified MBEs listed for that work or supply specialty then the solicitation must be mailed to at least the number of MBEs listed for that specialty. The solicitation shall include a description of the work for which subcontract bids/proposals are requested and complete information on bid/proposal deadlines along with details regarding where project specifications may be reviewed.

- (4) Using the services of minority community organizations, including at least two minority contractor groups, local, state and federal minority business assistance offices or other organizations identified by the Executive Department that provide assistance in the recruitment and placement of MBEs; where applicable, advising and assisting MBEs in obtaining lines of credit or insurance required by Metro or the bidder/proposer; and, otherwise, making efforts to encourage participation by MBEs.

The Liaison Officer shall maintain adequate documentation of all of Metro's good faith efforts.

(b) Good Faith Efforts by Bidders/Proposers: Bidders or proposers on locally-funded contracts to which good faith efforts requirements apply shall demonstrate that they have made good faith efforts at maximizing MBE opportunities. Performing and documenting all of the following actions constitutes a rebuttable presumption that the bidder has made good faith efforts as required by Metro's MBE Program:

- (1) Identifying and incorporating in the subcontracting plan specific economically feasible units which may be performed by MBEs to increase the likelihood of participation of such enterprises;

Documentation Required: Identification of selected economically feasible units in subcontracting plan; inclusion of Metro targeted units mandatory.

- (2) Attendance at any pre-solicitation or prebid meetings that were scheduled by Metro to inform MBEs of

contracting and subcontracting or material supply opportunities available on the project;

Documentation required: Signature of representative of bidder or proposer on prebid meeting attendance sheet.

- (3) Making, not later than five (5) days before bids/proposals are due, follow-up phone calls to all MBEs who attended any pre-solicitation or prebid meetings that were scheduled by Metro, to determine if they would be submitting bids and/or to encourage them to do so;

Minimum documentation required: Log showing a) dates and times of follow-up calls along with names of individuals contacted and individuals placing the calls; and b) results attained from each MBE to whom a solicitation letter was sent (e.g., bid submitted, declined, no response). In instances where MBE bids were rejected, the dollar amount of the bid rejected from the MBE must be indicated along with the reason for rejection and the dollar amount of the bid which was accepted for that subcontract or material supply item.

- (4) Providing those MBEs expressing an interest with information about the plans, specifications and the requirements for the identified subcontracting or material supply work. This may be satisfied by a referral to a plan center.
- (5) Negotiating with interested, capable and competitive MBEs submitting bids and not rejecting any bids without justification. Bid shopping is prohibited.
- (6) If Metro or the bidder/proposer requires bonding, lines of credit or insurance, notifying the MBE of this requirement and referring them to a potential source where this requirement may be met.

(c) The good faith efforts documented by the bidder/proposer must be certified to be reasonably expected to produce participation in this project by capable and competitive MBEs.

(d) Bid invitations will contain a MBE Program Compliance form for recording and documenting the completion of the above-listed actions. Completion of the form and documentation of the above-listed actions, 1 through 6, is mandatory. Failure to complete and submit the form and/or any required documentation will result in the bid being rejected as nonresponsive. The Liaison

Officer shall determine, if necessary, whether good faith efforts have been met pursuant to the criteria of the MBE Program by verifying the documentation of the lowest, responsible bidder.

(e) A bidder/proposer who contracts with Metro shall not discriminate against MBEs in the awarding of subcontracts. A contractor's good faith efforts at maximizing MBE opportunities must be reasonably expected by the contractor to produce participation by MBEs. Contractor shall certify as part of the bid documents accompanying the bid on a public contract that the contractor has not discriminated against MBEs in obtaining any required subcontracts and that the contractor reasonably expected the above-documented good faith efforts to result in participation by MBEs. Example of certifying statement: By signing this document bidder hereby certifies that bidder has not discriminated against MBEs in obtaining any subcontracts for this project, and that the documented good faith efforts of bidder/proposer at maximizing MBE opportunities were reasonably expected to result in participation of MBEs in this project in compliance with Metro's MBE Program.

(f) Notwithstanding any other provision of this section, bidders and proposers on locally-funded contracts to which good faith efforts apply need not accept the bid of a MBE on any particular subcontract or material supply item if the bidder/proposer demonstrates that none of the MBEs submitting bids were the lowest, responsible, responsive and qualified bidders/proposers on that particular subcontract item and that the subcontract item was awarded to the lowest, responsible, responsive bidder/proposer.

(g) Metro reserves the right to require additional written documentation of good faith efforts and bidders and proposers shall comply with all such requirements by Metro. It shall be a rebuttable presumption that a bidder or proposer has made good faith efforts if the bidder has performed and submits written documentation of all of the above actions. It shall be a rebuttable presumption that the bidder has not made a good faith effort if the bidder has not performed or has not submitted documentation of all of the above actions.

(Ordinance No. 83-165, Sec. 13; amended by Ordinance No. 84-181, Sec. 6 and Ordinance No. 86-197, Sec. 1; all previous Ordinances repealed by Ordinance No. 87-216, Sec. 1; amended by Ordinance No. 87-231, Sec. 1; Ordinance No. 88-252, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2)

2.04.165 Replacement of MBE Subcontractors: Prime contractors shall not replace a MBE subcontractor with another subcontractor, either before contract award or during contract performance, without prior notice to Metro. Prime contractors who replace a MBE

subcontractor shall make good faith efforts as described in the preceding section in selecting a replacement.

(Ordinance No. 83-165, Sec. 14; amended by Ordinance No. 86-197, Sec. 1; all previous Ordinances repealed by Ordinance No. 87-216, Sec. 1; amended by Ordinance No. 87-231, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2)

2.04.170 Monitoring, Records and Reports:

(a) Metro, through the Liaison Officer, shall develop and maintain a record keeping system to identify and assess MBE contract awards, and prime contractors' progress in demonstrating good faith efforts. Specifically, the following records will be maintained:

- (1) The name of the contractor;
- (2) Awards to MBEs by number, percentage and dollar amount;
- (3) A description of the types of contracts awarded to MBEs;
- (4) The extent to which good faith efforts were demonstrated and reasons therefor;
- (5) The extent to which annual contract goals were met or not and the reasons therefor; and
- (6) Any other information the Liaison Officer deems necessary.

(b) All MBE records will be separately maintained.

(c) The Liaison Officer shall prepare reports, at least semiannually, detailing performance of the MBE Program. The reports shall be forwarded to the Metro Council no later than January 1 and June 30 of each year, and shall include at least the following:

- (1) The number of contracts awarded;
- (2) Categories of contracts awarded;
- (3) Dollar value of contracts awarded;
- (4) Percentage of the dollar value of all contracts awarded to MBE firms in the reporting period;

- (5) Statistics, and narrative where appropriate, demonstrating the utilization of MBEs by department and contract category;
- (6) Statistics, and narrative where appropriate, demonstrating the extent to which annual contract goals have been met or not met;
- (7) Statistics, and narrative where appropriate, demonstrating the number and type of waivers granted;
- (8) Explanations of any investigative actions taken by any administrative agency touching on the implementation, monitoring and enforcement of the MBE Program;
- (9) Descriptions of any problems in the implementation reported by the department, including proposed solutions; and
- (10) Recommendations, as appropriate, regarding amendments to this MBE Program, including recommendations on changes needed to meet annual contract goals, if those goals have not been met.

(Ordinance No. 83-165, Sec. 15; amended by Ordinance No. 84-181, Sec. 7, and Ordinance No. 86-197, Sec. 1; all previous Ordinances repealed by Ordinance No. 87-216, Sec. 1; amended by Ordinance No. 87-231, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2)

2.04.180 Compliance:

(a) Metro shall reserve the right, at all times during the period of any contract, to monitor compliance with the terms of this chapter and the contract and with any representation made by a contractor prior to contract award pertaining to good faith efforts on MBE participation in the contract.

(b) The Liaison Officer may require, at any stage of contract completion, additional documented proof from the contractor of good faith efforts.

(Ordinance No. 83-165, Sec. 17; all previous Ordinances repealed by Ordinance No. 87-216, Sec. 1; amended by Ordinance No. 87-231, Sec. 1; all previous Ordinances repealed by Ordinance No. 92-466A, Sec. 2)

2.04.190 Severability and Intent:

(a) The provisions of the MBE Program shall be effective in all cases unless otherwise provided for by state or federal law.

The provisions of the MBE Program are separate and severable. The invalidity of any clause, sentence, paragraph, subdivision, section or portion of the MBE Program or the invalidity of the application thereof to any person or circumstances shall not affect the validity of the remainder of the MBE Program, or the validity of its application to other persons or circumstances.

(b) The MBE Program is intended, and should be construed, as establishing and requiring the maximum efforts at assuring MBE participation in Metro contracting activities that is consistent with the United States and Oregon Constitutions and applicable federal and state law.

(Ordinance No. 92-466A, Sec. 2)

2.04.200 Women Business Enterprise Program (WBE Program) For Locally-Funded Contracts, Findings, Purpose and Authority:

(a) The Metro Council supports the aspirations of women to enter the mainstream of social, political and economic life.

(b) The Metro Council finds:

- (1) The opportunity for full participation in our free enterprise system by women is essential;
- (2) Greater economic opportunity for women is essential;
- (3) Review of Metro programs to remedy historical patterns of exclusion of and discrimination against women is needed;
- (4) Public policies and programs to eliminate the effects of long-term, open and pervasive exclusion of and discrimination against women from the business sector, including increased opportunities to integrate women into the full economic life of the community should be reviewed; and
- (5) In cooperation with the private sector, the affected populations, interested groups and appropriate governmental entities, a program of review should be established to recommend remedies for the unfortunate effects of social, political and economic inequity that still exist.

(c) It is the purpose of the WBE Program to establish and implement a program to encourage the utilization by Metro of women-owned businesses, to the greatest extent permitted by law, by creating for such businesses the maximum possible opportunity to compete for and participate in locally-funded Metro contracting

activities. The WBE Program does not apply to federally-funded contracts, which are governed by Metro Code 2.04.300 et seq. The WBE Program shall be administered simultaneously and in addition to the provisions of Metro Code Sections 2.04.100-.190.

(d) Metro Code Sections 2.04.200-.290 shall be known and may be cited as the "Metro Women Business Enterprise Program," hereinafter referred to as the "WBE Program."

(Ordinance No. 92-466A, Sec. 2)

2.04.205 Policy Statement:

(a) Through this WBE Program, Metro:

- (1) Expresses its strong commitment to provide maximum opportunity to WBEs in contracting; and
- (2) Informs all employees, governmental agencies and the general public of its intent to implement this policy statement.

(b) It is the policy of Metro to provide equal opportunity to all persons to access and participate in the locally-funded projects, programs and services of Metro. Metro and Metro contractors shall not discriminate against any person or firm on the basis of race, color, national origin, sex, sexual orientation, age, religion, physical handicap, political affiliation or marital status.

(c) The policies, practices and procedures established by the WBE Program shall apply to all Metro departments, commissions and project areas except as expressly provided herein.

(d) The objectives of the WBE Program shall be:

- (1) To assure that provisions of the WBE Program are adhered to by all Metro departments, contractors and employees; and
- (2) To initiate and maintain efforts to increase, to the greatest extent permitted by law, program participation by women businesses.

(Ordinance No. 92-466A, Sec. 2)

2.04.210 Definitions: For purposes of Metro Code Sections 2.04.200-.290, the following definitions shall apply:

(a) "Capable" means a Women Business Enterprise registered with the Executive Department who upon request from the bidder can

supply two favorable references of prior work of the type being subcontracted for.

(b) "Competitive" means the subcontract bid submitted by the Women Business Enterprise was within 10 percent of either the budgeted amount, subbid estimate, or the lowest bid received by the bidder. The bidder shall make either the budgeted amount or the subbid estimate available upon request. This term relates to price only and must not be interpreted to mean that a bid deemed competitive is therefore entitled to the subcontract award.

(c) "Construction Contract" means a contract for construction of buildings or other facilities, and includes reconstruction, remodeling and all activities which are appropriately associated with a construction project.

(d) "Contract" means a mutually binding legal relationship or any modification thereof obligating the seller to furnish supplies or services, including construction, and the buyer to pay for them. For purposes of the WBE Program a lease or a purchase order of \$500.00 or more is a contract.

(e) "Contractor" means the one who participates, through a contract or subcontract, in the WBE Program and includes lessees.

(f) "Documentation" means written materials purporting to establish the satisfaction of a good faith effort requirement that are capable of verification. These may include, but are not limited to, copies of business logs, correspondence or newspaper ads.

(g) "Economically Feasible Unit" means a unit of work identified in a project suitable for subcontracting in the normal course of business. These would be units that a contractor would ordinarily identify as suitable for performance by a subcontractor. The intent here is to have identified units that would be attractive to a serious and qualified subcontractor and not be shunned by that subcontractor because the unit of work is too small to be profitable.

(h) "Executive Department" means the State of Oregon's Executive Department.

(i) "Interested" means a Women Business Enterprise that has expressed to Metro and/or the bidder an interest in learning more about the project identified in the initial solicitation by the bidder.

(j) "Joint Venture" is defined as an association of two or more businesses to carry out a single business enterprise for profit for which purpose they combine their property, capital, efforts, skills and knowledge. In a joint venture between a WBE

and non-WBE, the WBE must be responsible for a clearly defined portion of the work to be performed and must share in the ownership, control, management responsibilities, risks and profits of the joint venture. A joint venture of a WBE and a non-WBE must receive Metro approval prior to contract award.

(k) "Justification" means a maintaining or showing of a sufficient reason why an action was taken and that the action was not taken for an impermissible reason. Permissible reasons include, but are not limited to, not meeting bid invitation specifications or not being the low bid. An impermissible reason would be one that is arbitrary or capricious or based on race, sex, national origin, marital status or religion.

(l) "Labor and Materials Contract" is a contract including a combination of service and provision of materials other than construction contracts. Examples may include plumbing repair, computer maintenance or electrical repair, etc.

(m) "Lessee" means a business or person that leases, or is negotiating to lease, property from Metro or an actual or potential Metro contractor on Metro's or the contractor's facility for the purpose of operating a transportation-related activity, or for the provision of goods or services to the facility or to the public at the facility.

(n) "Women Business Enterprise or WBE" means a small business concern which is certified as such by the Executive Department and:

- (1) Which is at least 51 percent owned by one or more women, or, in the case of any publicly-owned business, at least 51 percent of the stock of which is owned by one or more women; and
- (2) Whose management and daily business operations are controlled by one or more of the women who own it.

(o) "Woman" or "Women" has the meaning established by ORS 200.005(7).

(p) "Negotiate" means to engage in good faith discussions with the potential subcontractors about their proposals/bids, and the work for which a bid is sought, including sharing with them any cost estimates from the request for proposals or invitation to bid documents, if available.

(q) "Personal Services Contract" means a contract for services of a personal or professional nature.

(r) "Procurement Contract" means a contract for the purchase or sale of supplies, materials, equipment, furnishings or other goods not associated with a construction or other contract.

(s) "Reasonable Number" means at least three (3) firms of those WBEs certified as such by the Executive Department, or a greater number of such firms, if so specified in any particular contract by the Liaison Officer. Consideration should be given to the specialty of subcontracting or materials supply desired as well as the location of the project and whether or not the subcontractor is willing to perform work out of their geographic area.

(t) "Rebuttable Presumption" means a presumption which may be rebutted, or disproved, by evidence.

(u) "Small Business Concern" means a small business as defined pursuant to section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

(Ordinance No. 92-466A, Sec. 2)

2.04.215 Notice to Contractors and Subcontractors: Contractors of Metro accepting locally-funded contracts under the WBE Program shall be advised that failure to carry out the applicable provisions of the WBE Program shall constitute a breach of contract and, after notification by Metro, may result in termination or such other remedy as Metro deems appropriate.

(Ordinance No. 92-466A, Sec. 2)

2.04.220 Liaison Officer:

(a) The Executive Officer shall be responsible for administering the WBE Program. The Executive Officer may, by Executive Order, designate a Liaison Officer and, if necessary, other staff adequate to administer the WBE Program on the Executive's behalf. For purposes of Metro Code Sections 2.04.200-.290, all references to the "Liaison Officer" shall mean the Executive Officer, unless the Executive Officer has designated another individual as the "Liaison Officer," in which case the individual so designated shall perform the functions required by the WBE Program.

(b) The Liaison Officer shall be responsible for developing, managing and implementing the WBE Program, and for disseminating information on available business opportunities so that WBEs are provided an equitable opportunity to bid on Metro contracts. In addition to the responsibilities of the Liaison Officer, all department heads and program managers shall have responsibility to assure implementation of the WBE Program.

(c) The Liaison Officer shall begin immediately to design a technical assistance and outreach program which shall be established by January 1, 1993. This program shall include at least the following elements:

- (1) A regularly-scheduled contractor orientation program to promote compliance with and understanding of the provisions of the WBE Program and Metro;
- (2) Feasible options for bonding, insurance, and banking assistance for WBEs;
- (3) A program designed to assist Metro departments in enhancing opportunities for WBEs;
- (4) A fully-developed and maintained resource list to include all available resources for WBEs; and
- (5) A system for agency-wide reporting of WBE outreach efforts and accomplishments.

(d) The Liaison Officer shall have the responsibility for monitoring implementation of the requirements of the WBE Program and shall have the power to request from Metro departments, bidders/proposers, and/or contractors any relevant records, information and documents.

(e) The Liaison Officer shall be responsible for gathering all information concerning compliance with this chapter and shall have access to all pertinent Metro records.

2.04.225 Directory: A directory of WBEs certified by the Executive Department shall be maintained by the Liaison Officer to facilitate identifying such businesses with capabilities relevant to general contracting requirements and particular solicitations. The directory shall be available to contract bidders and proposers in their efforts to meet the WBE Program requirements.

(Ordinance No. 92-466A, Sec. 2)

2.04.225 Directory: A directory of WBEs certified by the Executive Department shall be maintained by the Liaison Officer to facilitate identifying such businesses with capabilities relevant to general contracting requirements and particular solicitations. The directory shall be available to contract bidders and proposers in their efforts to meet the WBE Program requirements.

(Ordinance No. 92-466A, Sec. 2)

2.04.230 Women-Owned Banks: Metro will seek to identify women-owned banks and banks utilizing equal opportunity banking practices, including community reinvestment, and, to the greatest

extent permitted by law, use their services. In addition, Metro will encourage prime contractors, subcontractors and consultants to utilize such services by sending them brochures and service information on such banks.

(Ordinance No. 92-466A, Sec. 2)

2.04.235 Affirmative Action and Equal Opportunity Procedures: Metro shall use affirmative action techniques to facilitate WBE participation in contracting activities. These techniques include:

(a) Making affirmative efforts to solicit proposals from WBEs.

(b) Examining alternatives for arranging contracts by size and type of work so as to enhance the possibility of participation by WBEs.

(c) Arranging solicitations, time for the presentation of bids, quantities specifications, and delivery schedules so as to facilitate the participation of WBEs.

(d) Referring WBEs in need of management assistance to established agencies that provide direct management assistance to such businesses.

(e) Carrying out specific information and communications programs on contracting procedures and specific contracting opportunities in a timely manner, with such programs being bilingual, and in conformance with any requirements of the Americans with Disabilities Act, where appropriate.

(f) Distribution of copies of the WBE Program to organizations and individuals concerned with WBE programs.

(g) Periodic reviews with department heads to ensure that they are aware of the WBE Program goals and desired activities on their parts to facilitate the purposes of the WBE Program. Additionally, departmental efforts toward and success in meeting the purposes of the WBE Program shall be factors considered during annual performance evaluations of the department heads.

(h) Monitoring and ensuring that WBE planning centers and likely WBE contractors are receiving requests for bids, proposals and quotes.

(i) Distribution of lists to potential WBE contractors of the types of goods and services which Metro regularly purchases.

(j) Advising potential WBE vendors that Metro does not certify WBEs, and directing them to the Executive Department.

(k) Specifying purchases by generic title rather than specific brand name whenever feasible.

(l) Establishing an interdepartmental contract management committee which will meet regularly to monitor and discuss, among other issues, potential WBE participation in contracts. In an effort to become more knowledgeable regarding WBE resources, the committee shall also invite potential WBE contractors to attend selected meetings.

(m) Requiring that at least one WBE vendor or contractor be contacted for all contract awards which are not exempt from Metro's contract selection procedures and which are 1) for more than \$500 but not more than \$15,001 in the case of non-personal services contracts; and 2) for more than \$2,500 but not more than \$10,001 for personal services contracts. The Liaison Officer may waive this requirement if he/she determines that there are no WBEs on the certification list capable of providing the service or item. Any such waivers shall be in writing, and shall be kept in the appropriate files. For contracts over the dollar amounts indicated in this section, all WBEs known to Metro in the business of providing the service or item(s) required shall be mailed bid or proposal information.

(n) Requiring that all prospective bidders attend scheduled prebid conferences on all construction contracts with an estimated value of over \$50,000.

(o) The Executive Officer or his/her designee, may establish and implement additional affirmative action techniques which are consistent with the WBE Program and designed to facilitate participation of WBEs in Metro contracting activities.

(Ordinance No. 92-466A, Sec. 2)

2.04.240 Certification of Women Business Eligibility:

(a) To participate in the WBE Program, contractors, subcontractors and joint ventures must have been certified by the Executive Department as described in subsection (b) of this section.

(b) Metro will not perform certification or recertification of businesses or consider challenges to socially and economically disadvantaged status. Rather Metro will rely upon the Executive Department's list in determining whether a prospective contractor or subcontractor is certified as a WBE. A prospective contractor or subcontractor must be certified as a WBE by the Executive Department or appear on its certification list prior to the pertinent bid opening or proposal submission date to be considered by Metro to be an eligible WBE. Metro will adhere to any applicable Recertification Rulings.

(c) Prospective contractors or subcontractors which have been denied certification by one of the above agencies may appeal such denial to the certifying agency pursuant to applicable law. However, such appeal shall not cause a delay in any contract award by Metro.

(Ordinance No. 92-466A, Sec. 2)

2.04.245 Annual Women Business Goals:

(a) The Metro Council shall, by resolution each June, establish annual WBE goals for the ensuing fiscal year. Such annual goals shall be established separately for construction contracts, labor and materials contracts, personal services contracts, and procurement contracts regardless of type.

(b) Annual goals will be established taking into consideration the following factors:

- (1) Projection of the number and types of contracts to be awarded by Metro;
- (2) Projection of the number, expertise and types of WBEs likely to be available to compete for the contracts;
- (3) Past results of Metro's efforts under the WBE Program; and
- (4) Existing goals of other Portland metropolitan area contracting agencies, and their experience in meeting these goals.

(c) Metro will publish notice regarding proposed contract goals not later than ten (10) days prior to adoption of the goals.

(Ordinance No. 92-466A, Sec. 2)

2.04.250 Good Faith Efforts at Maximizing WBE Opportunities

(a) Good faith efforts at maximizing WBE opportunities shall be required for construction contracts over \$50,000.

(b) At the discretion of the Liaison Officer, good faith efforts at maximizing WBE opportunities may be required for any other contract. This requirement shall be made in writing prior to the solicitation of bids for such contract.

(c) Where good faith efforts are required, the Liaison Officer shall direct the inclusion of a clause in any RFP or bid documents which requires that the prime contractor, prior to entering into any subcontracts, make good faith efforts at

maximizing WBE opportunities, as that term is defined in Section 2.04.160.

(Ordinance No. 92-466A, Sec. 2)

2.04.255 Contract Award Criteria:

(a) To be eligible for award of contracts subject to good faith efforts requirements, prime contractors must prove that they have made good faith efforts at maximizing WBE opportunities prior to the time bids are opened or proposal are due. Bidders/Proposers are required to utilize the most current list of WBEs certified by the Executive Department in all of the bidders'/proposers' good faith efforts solicitations. The address where certified lists may be obtained shall be included in all applicable bid/proposal documents.

(b) All invitations to bid or request for proposals on contracts for which good faith efforts requirements have been established shall require all bidders/proposers to submit with their bids and proposals a statement indicating that they have made good faith efforts as defined in Section 2.04.160. To document good faith efforts, all bidders and proposers shall complete and endorse a Women Business Program Compliance form and include said form with bid or proposal documents. The form shall be provided by Metro with bid/proposal solicitations.

(c) Agreements between a bidder/proposer and a WBE in which the WBE promises not to provide subcontracting quotations to other bidders/proposers are prohibited.

(d) Bidders/proposers shall, at the time of bid opening, (or proposal submission date when no public opening is had), submit to Metro detailed WBE Utilization forms listing names of WBEs who will be utilized and the nature and dollar amount of their participation. This form will be binding upon the bidder/proposer. Within five (5) working days of bid opening or proposal submission date, such bidders/proposers shall submit to Metro signed Letters of Agreement between the bidder/proposer and WBE subcontractors and suppliers to be utilized in performance of the contract. A sample Letter of Agreement will be provided by Metro. The WBE Utilization forms shall be provided by Metro with bid/proposal documents.

(e) An apparent low bidder/proposer who states in its bid/proposal that good faith efforts at maximizing WBE opportunities were performed shall submit written evidence of such good faith efforts within two (2) working days of bid opening or proposal submission in accordance with Section 2.04.160. Metro reserves the right to determine the sufficiency of such efforts.

(f) Except as provided in paragraph (g) of this section, apparent low bidders or apparent successful proposers who state in

their bids/proposals that they will show good faith efforts at maximizing WBE opportunities, but who fail to comply with paragraph (d) or (e) of this section, shall have their bids or proposals rejected and shall forfeit any required bid security or bid bond. In that event the next lowest bidder or, for personal services contracts, the firm which scores second highest shall, within two days of notice of such ineligibility of the low bidder, submit evidence of good faith efforts as provided above. This process shall be repeated until a bidder or proposer is determined to meet the provisions of this section or until Metro determines that the remaining bids are not acceptable because of amount of bid or otherwise.

(g) The Liaison Officer, at his/her discretion, may waive minor irregularities in a bidder's or proposer's compliance with the requirements of this section provided, however, that the bid or proposal substantially complies with public bidding requirements as required by applicable law. Any such waivers shall be in writing, and shall be kept in the appropriate files.

(Ordinance No. 92-466A, Sec. 2)

2.04.260 Definition and Determination of Good Faith Efforts:

(a) Good Faith Efforts by Metro: Metro, through its Liaison Officer, shall make good faith efforts to maximize WBE opportunities on locally-funded contracts to which good faith efforts requirements apply, including the following:

- (1) Identifying project elements for which a significant minority capability exists for execution and/or a significant interest by minority firms has been expressed and directing that contractors define economically feasible units as a part of their subcontracting plan which address these identified or targeted project elements;
- (2) Advertising in, at a minimum, one newspaper of general circulation, one minority-oriented publication, and one trade-oriented publication. The advertisement must announce subcontracting or material supply opportunities on the project at least ten (10) days before bids or proposals are due;
- (3) Providing written notice soliciting subbids/proposals to not less than a reasonable number of WBEs for each subcontracting or material supply work item selected pursuant to (1) above not less than ten (10) days before bids/proposals are due.

If there are less than three certified WBEs listed for that work or supply specialty then the solicitation must be mailed to at least the number of WBEs listed for that specialty. The solicitation shall include a description of the work for which subcontract bids/proposals are requested and complete information on bid/proposal deadlines along with details regarding where project specifications may be reviewed.

- (4) Using the services of women community organizations, including women contractor groups, local, state and federal business assistance offices or other organizations identified by the Executive Department that provide assistance in the recruitment and placement of WBEs; where applicable, advising and assisting WBEs in obtaining lines of credit or insurance required by Metro or the bidder/proposer; and, otherwise, making efforts to encourage participation by WBEs.

The Liaison Officer shall maintain adequate documentation of all of Metro's good faith efforts.

(b) Good Faith Efforts by Bidders/Proposers: Bidders or proposers on locally-funded contracts to which good faith efforts requirements apply shall demonstrate that they have made good faith efforts at maximizing WBE opportunities. Performing and documenting all of the following actions constitutes a rebuttable presumption that the bidder has made good faith efforts as required by Metro's WBE Program:

- (1) Identifying and incorporating in the subcontracting plan specific economically feasible units which may be performed by WBEs to increase the likelihood of participation of such enterprises;

Documentation Required: Identification of selected economically feasible units in subcontracting plan; inclusion of Metro targeted units mandatory.

- (2) Attendance at any pre-solicitation or prebid meetings that were scheduled by Metro to inform WBEs of contracting and subcontracting or material supply opportunities available on the project;

Documentation required: Signature of representative of bidder or proposer on prebid meeting attendance sheet.

- (3) Making, not later than five (5) days before bids/proposals are due, follow-up phone calls to

all WBEs who attended any pre-solicitation or prebid meetings that were scheduled by Metro, to determine if they would be submitting bids and/or to encourage them to do so;

Minimum documentation required: Log showing a) dates and times of follow-up calls along with names of individuals contacted and individuals placing the calls; and b) results attained from each WBE to whom a solicitation letter was sent (e.g., bid submitted, declined, no response). In instances where WBE bids were rejected, the dollar amount of the bid rejected from the WBE must be indicated along with the reason for rejection and the dollar amount of the bid which was accepted for that subcontract or material supply item.

- (4) Providing those WBEs expressing an interest with information about the plans, specifications and the requirements for the identified subcontracting or material supply work. This may be satisfied by a referral to a plan center.
- (5) Negotiating with interested, capable and competitive WBEs submitting bids and not rejecting any bids without justification. Bid shopping is prohibited.
- (6) If Metro or the bidder/proposer requires bonding, lines of credit or insurance, notifying the WBE of this requirement and referring them to a potential source where this requirement may be met.

(c) The good faith efforts documented by the bidder/proposer must be certified to be reasonably expected to produce participation in this project by capable and competitive WBEs.

(d) Bid invitations will contain a WBE Program Compliance form for recording and documenting the completion of the above-listed actions. Completion of the form and documentation of the above-listed actions, 1 through 6, is mandatory. Failure to complete and submit the form and/or any required documentation will result in the bid being rejected as nonresponsive. The Liaison Officer shall determine, if necessary, whether good faith efforts have been met pursuant to the criteria of the WBE Program by verifying the documentation of the lowest, responsible bidder.

(e) A bidder/proposer who contracts with Metro shall not discriminate against WBEs in the awarding of subcontracts. A contractor's good faith efforts at maximizing WBE opportunities must be reasonably expected by the contractor to produce participation by WBEs. Contractor shall certify as part of the bid

documents accompanying the bid on a public contract that the contractor has not discriminated against WBEs in obtaining any required subcontracts and that the contractor reasonably expected the above-documented good faith efforts to result in participation by WBEs. Example of certifying statement: By signing this document bidder hereby certifies that bidder has not discriminated against WBEs in obtaining any subcontracts for this project, and that the documented good faith efforts of bidder/proposer at maximizing WBE opportunities were reasonably expected to result in participation of WBEs in this project in compliance with Metro's WBE Program.

(f) Notwithstanding any other provision of this section, bidders and proposers on locally-funded contracts to which good faith efforts apply need not accept the bid of a WBE on any particular subcontract or material supply item if the bidder/proposer demonstrates that none of the WBEs submitting bids were the lowest, responsible, responsive and qualified bidders/proposers on that particular subcontract item and that the subcontract item was awarded to the lowest, responsible, responsive bidder/proposer.

(g) Metro reserves the right to require additional written documentation of good faith efforts and bidders and proposers shall comply with all such requirements by Metro. It shall be a rebuttable presumption that a bidder or proposer has made good faith efforts if the bidder has performed and submits written documentation of all of the above actions. It shall be a rebuttable presumption that the bidder has not made a good faith effort if the bidder has not performed or has not submitted documentation of all of the above actions.

(Ordinance No. 92-466A, Sec. 2)

2.04.265 Replacement of WBE Subcontractors: Prime contractors shall not replace a WBE subcontractor with another subcontractor, either before contract award or during contract performance, without prior notice to Metro. Prime contractors who replace a WBE subcontractor shall make good faith efforts as described in the preceding section in selecting a replacement.

(Ordinance No. 92-466A, Sec. 2)

2.04.270 Monitoring, Records and Reports:

(a) Metro, through the Liaison Officer, shall develop and maintain a record keeping system to identify and assess WBE contract awards, and prime contractors' progress in demonstrating good faith efforts. Specifically, the following records will be maintained:

(1) The name of the contractor;

- (2) Awards to WBEs by number, percentage and dollar amount;
- (3) A description of the types of contracts awarded to WBEs;
- (4) The extent to which good faith efforts were demonstrated and reasons therefor;
- (5) The extent to which annual contract goals were met or not and the reasons therefor; and
- (6) Any other information the Liaison Officer deems necessary.

(b) All WBE records will be separately maintained.

(c) The Liaison Officer shall prepare reports, at least semiannually, detailing performance of the WBE Program. The reports shall be forwarded to the Metro Council no later than January 31 and June 30 of each year, and shall include at least the following:

- (1) The number of contracts awarded;
- (2) Categories of contracts awarded;
- (3) Dollar value of contracts awarded;
- (4) Percentage of the dollar value of all contracts awarded to WBE firms in the reporting period;
- (5) Statistics, and narrative where appropriate, demonstrating the utilization of WBEs by department and contract category;
- (6) Statistics, and narrative where appropriate, demonstrating the extent to which annual contract goals have been met or not met;
- (7) Statistics, and narrative where appropriate, demonstrating the number and type of waivers granted;
- (8) Explanations of any investigative actions taken by any administrative agency touching on the implementation, monitoring and enforcement of the WBE Program;
- (9) Descriptions of any problems in the implementation reported by the department, including proposed solutions; and

- (10) Recommendations, as appropriate, regarding amendments to this WBE Program, including recommendations on changes needed to meet annual contract goals, if those goals have not been met.

(Ordinance No. 92-466A, Sec. 2)

2.04.280 Compliance:

(a) Metro shall reserve the right, at all times during the period of any contract, to monitor compliance with the terms of this chapter and the contract and with any representation made by a contractor prior to contract award pertaining to good faith efforts on WBE participation in the contract.

(b) The Liaison Officer may require, at any stage of contract completion, additional documented proof from the contractor of good faith efforts.

(Ordinance No. 92-466A, Sec. 2)

2.04.290 Severability and Intent:

(a) The provisions of the WBE Program shall be effective in all cases unless otherwise provided for by state or federal law. The provisions of the WBE Program are separate and severable. The invalidity of any clause, sentence, paragraph, subdivision, section or portion of the WBE Program or the invalidity of the application thereof to any person or circumstances shall not affect the validity of the remainder of the WBE Program, or the validity of its application to other persons or circumstances.

(b) The WBE Program is intended, and should be construed, as establishing and requiring the maximum efforts at assuring WBE participation in Metro contracting activities that is consistent with the United States and Oregon Constitutions and applicable federal and state law.

(Ordinance No. 92-466A, Sec. 2)

APPENDIX D

OREGON LAWS 1991, CHAPTER 385, SECTION 59 & 61

velopment, revision, amendment and implementation of local solid waste reduction, reusing, recycling and solid waste management programs that comply with the opportunity to recycle established in ORS 459.165. The department shall give special emphasis to assisting rural and remote counties.

NOTE: Sections 53 to 58 were deleted by amendment. Subsequent sections were not renumbered.

SECTION 59. ORS 279.731 is amended to read: 279.731. As used in ORS 279.731 to 279.739, unless the context otherwise requires:

(1) "Post-consumer waste" means a finished material which would normally be disposed of as solid waste, having completed its life cycle as a consumer item. "Post-consumer waste" does not include manufacturing waste.

(2) "Public agency" means a county, city, special district or other public or municipal corporation, and any instrumentality thereof.

(3) "Recycled material" means any material that would otherwise be a useless, unwanted or discarded material except for the fact that the material still has useful physical or chemical properties after serving a specific purpose and can, therefore, be reused or recycled.

[(2)] (4) "Recycled paper" means a paper product with not less than:

(a) Fifty percent of its total weight consisting of secondary waste materials; or

(b) Twenty-five percent of its total weight consisting of post-consumer waste.

(5) "Recycled product" means all materials, goods and supplies, not less than 50 percent of the total weight of which consists of secondary and post-consumer waste with not less than 10 percent of its total weight consisting of post-consumer waste. "Recycled product" also includes any product that could have been disposed of as solid waste, having completed its life cycle as a consumer item, but otherwise is refurbished for reuse without substantial alteration of the product's form.

[(3)] (6) "Secondary waste materials" means fragments of products or finished products of a manufacturing process which has converted a virgin resource into a commodity of real economic value, and includes post-consumer waste, but does not include excess virgin resources of the manufacturing process. For paper, "secondary waste materials" does not include fibrous waste generated during the manufacturing process such as fibers recovered from waste water or trimmings of paper machine rolls, mill broke, wood slabs, chips, sawdust or other wood residue from a manufacturing process.

[(4)] (7) "State agency" includes the Legislative Assembly, the courts and their officers and committees and the constitutional state officers.

SECTION 60. ORS 279.733 is amended to read:

279.733. (1) All state agencies purchasing supplies, materials, equipment or personal services shall:

[(1)] (a) Review their procurement specifications currently utilized in order to eliminate, wherever economically feasible, discrimination against the procurement of recovered resources or recycled materials.

[(2)] (b) Provide incentives, wherever economically feasible, in all procurement specifications issued by them for the maximum possible use of recovered resources and recycled materials.

[(3)] (c) Develop purchasing practices which, to the maximum extent economically feasible, assure purchase of materials which are recycled or which may be recycled or reused when discarded.

[(4)] (d) Establish management practices which minimize the volume of solid waste generated by [them by] reusing paper, envelopes, containers and all types of packaging and by limiting the amount of materials consumed and discarded.

[(5)] (e) Use and require persons with whom they contract to use, in the performance of the contract work, to the maximum extent economically feasible, recycled paper.

(2) Any invitation to bid or request for proposal under ORS chapter 279 shall include the following language: "Vendors shall use recyclable products to the maximum extent economically feasible in the performance of the contract work set forth in this document."

SECTION 61. ORS 279.739 is amended to read:

279.739. (1) Notwithstanding provisions of law requiring a state agency or a public agency to enter into contracts with the lowest responsible bidder and subject to subsection (2) of this section, any state agency or public agency charged with the purchase of materials and supplies for any public use [may, in its discretion,] shall give preference to the purchase of materials and supplies manufactured from recycled materials.

(2) A state agency or public agency [may] shall give preference to materials and supplies manufactured from recycled materials [only] if:

[(a) The bids of the persons or manufacturing concerns supplying the recycled materials, or the prices quoted by them, do not exceed by more than five percent the lowest bid or prices quoted by persons and manufacturing concerns offering nonrecycled materials; and]

[(b) The public agency finds that the public good will be served thereby.]

(a) The recycled product is available;

(b) The recycled product meets applicable standards;

(c) The recycled product can be substituted for a comparable nonrecycled product; and

(d) Recycled product costs do not exceed the costs of nonrecycled products by more than five percent.

[(3) As used in this section:]

[(a) "Public agency" means a county, city, special district, or other public and municipal corporations, and any instrumentality thereof.]

[(b) "Recycled material" means any material that would otherwise be a useless, unwanted or discarded material except for the fact that the material still has useful physical or chemical properties after serving a specific purpose and can, therefore, be reused or recycled.]

(3) At its discretion, a state or public agency may give preference to the purchase of materials and supplies manufactured from recycled materials, even if the cost differential exceeds the five percent preference set forth in subsection (2) of this section.

(4) State agencies, unless otherwise specified in ORS 279.731 to 279.739, and public agencies may give preference to the suppliers of recycled products and recycled paper or to products that reduce the amount of waste generated. State agencies, unless otherwise specified in ORS 279.731 to 279.739, and public agencies may determine the amount of this preference.

(5) In any bid in which the state has reserved the right to make multiple awards, the recycled product or recycled paper preference shall be applied to the extent possible to maximize the dollar participation of firms offering recycled products or recycled paper in the contract award.

(6) A state or public agency shall require the bidder to specify the minimum, if not exact, percentage of recycled paper in paper products or recycled product in products offered, and both the post-consumer and secondary waste content regardless of whether the product meets the percentage of recycled material specified for recycled paper or recycled products in ORS 279.731. For paper products, a state agency or public agency also shall require that the bidder specify the fiber type. The contractor may certify a zero percent recycled paper or product. All contract provisions impeding the consideration of products with recycled paper or recycled products shall be deleted in favor of performance standards.

(7) The department shall review and work with state agencies to develop procurement specifications that encourage the use of recycled products whenever quality of a recycled product is functionally equal to the same product manufactured with virgin resources. Except for specifications that have been established to preserve the public health and safety, all procurement and purchasing specifications shall be established in a manner that encourages procurement and purchase of recycled products.

(8) All public and state agencies shall establish purchasing practices that assure, to the maximum extent economically feasible, purchase of materials, goods and supplies that may be recycled or reused when discarded.

SECTION 62. Sections 63 to 81 of this Act are added to and made a part of ORS 279.731 to 279.739.

SECTION 63. (1) The Legislative Assembly finds that:

(a) It is the policy of the state to conserve and protect its resources. The maintenance of a quality environment for the people of this state now and in the future is a matter of statewide concern.

(b) The volume of solid waste generated within the state, an increased rate in the consumption of products and materials, including paper products, and the absence of adequate programs and procedures for the reuse and recycling of these products and materials threaten the quality of the environment and well-being of the people of Oregon.

(2) Therefore, the Legislative Assembly declares that the policy and intent of ORS 279.731 to 279.739 is to improve environmental quality by providing for:

(a) The procurement of products made from recycled materials; and

(b) The recycling of waste materials.

SECTION 64. As used in sections 64 to 67 of this 1991 Act:

(1) "Industrial oil" means any compressor, turbine or bearing oil, hydraulic oil, metal-working oil or refrigeration oil.

(2) "Lubricating oil" means any oil intended for use in an internal combustion crankcase, transmission, gearbox or differential or an automobile, bus, truck, vessel, plane, train, heavy equipment or machinery powered by an internal combustion engine.

(3) "Recycled oil" means used oil that has been prepared for reuse as a petroleum product by refining, rerefining, reclaiming, reprocessing or other means provided that the preparation or use is operationally safe, environmentally sound and complies with all laws and regulations.

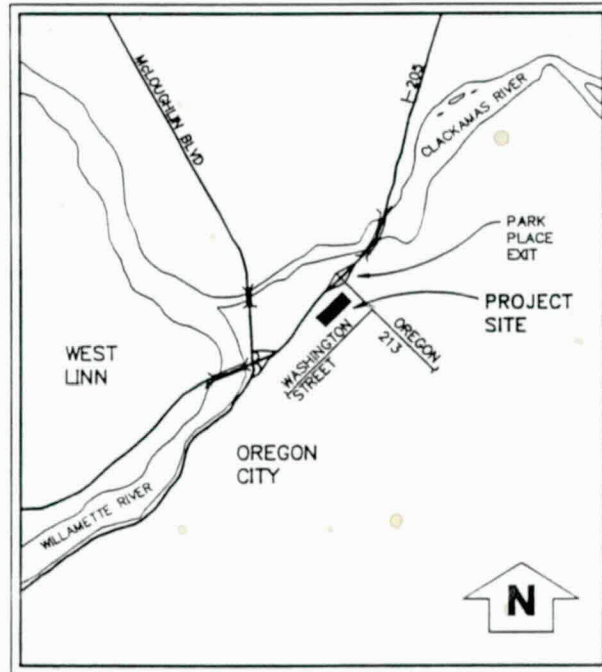
(4) "Used oil" has the meaning given that term in ORS 468.850.

(5) "Virgin oil" means oil that has been refined from crude oil and that has not been used or contaminated with impurities.

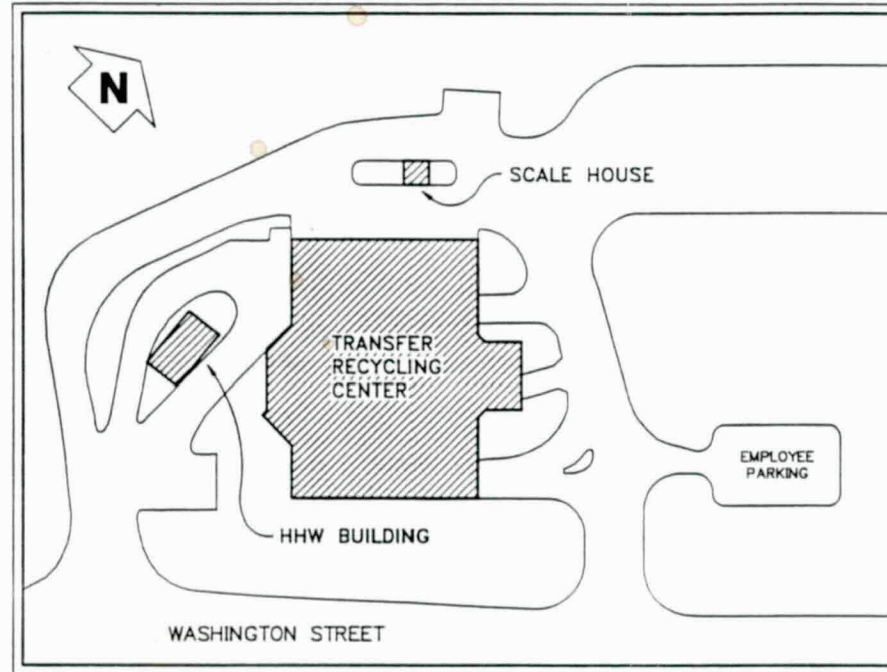
SECTION 65. Every state agency or public agency shall revise its procedures and specifications for the purchase of lubricating oil and industrial oil to eliminate any exclusion of recycled oils and any requirement that oils be manufactured from virgin materials.

SECTION 66. Every state agency and public agency shall require that purchases of lubricating oil and industrial oil be made from the seller whose oil product contains the greater percentage of recycled oil, unless a specific oil product containing recycled oil is:

(1) Not available within a reasonable period of time or in quantities necessary to meet an agency's needs;



VICINITY PLAN



SITE MAP



SOLID WASTE DEPARTMENT

METRO

ROOF REPAIRS
METRO SOUTH STATION
OREGON CITY, OR

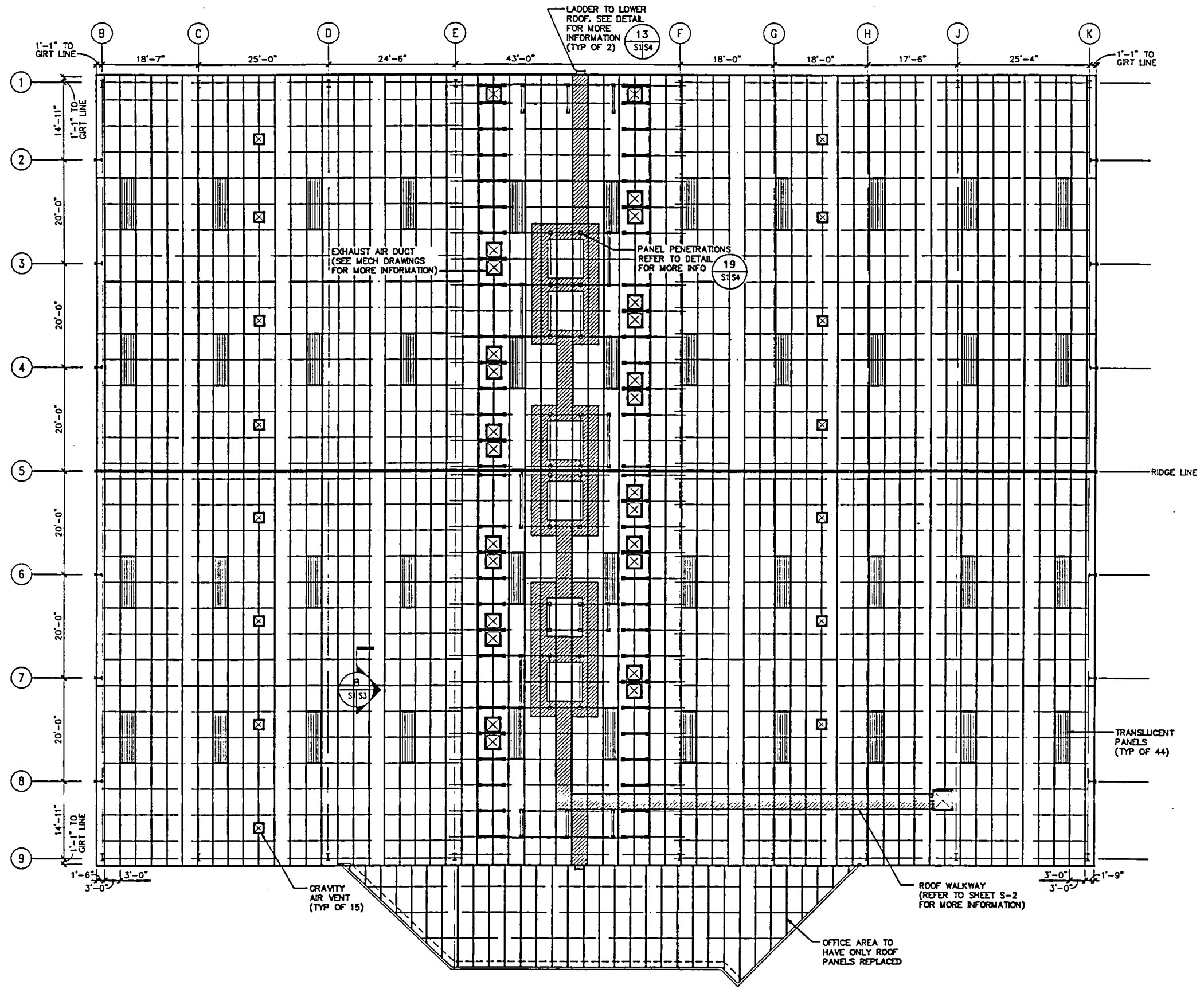
DRAWING LIST

DWG. NO.	DESCRIPTION
T-1	TITLE SHEET
S-1	ROOF PANEL LAYOUT
S-2	ROOF FRAMING PLAN
S-3	ROOF DETAILS
S-4	ROOF DETAILS
S-5	ABANDONED CHUTE CONCRETE FLOOR PLUG
H-1	ROOF DUCTWORK PLAN
H-2	HVAC DETAILS AND SECTIONS
E-1	EXHAUST FAN ELECTRICAL PLAN

REFERENCE DRAWING LIST

SHEET	DRAWING TITLE	SOURCE
2 of 30	Elevation & Building Sections	Black & Veatch
3 of 30	Elevation & Building Sections	Black & Veatch
4 of 30	Architectural Floor Plan	Black & Veatch
25 of 30	Plumbing & Dust Suppression	Black & Veatch
28 of 30	Electrical Floor Plan	Black & Veatch
30 of 30	Electrical Power & One-Line	Black & Veatch
S-1	Shakeout Plan	Armco
S-2	Roof Structural	Armco
S-3	Sidewall Bracing	Armco
D-1	Structural Details	Armco
D-3	Structural Details	Armco
D-4	Structural Details	Armco
D-5	Structural Details	Armco
D-6	Structural Details	Armco
A/S-5	Pit Room Level Plan	SCS Engineers
A/S-10	Building Section	SCS Engineers
M-2	Pit Room Ventilation & Sprinklers	SCS Engineers
1 of 3	Plot Plan	Discount Fire
2 of 3	Overhead Pipe in Roof Area	Discount Fire
3 of 3	Office, Trailer Transfer Area	Discount Fire

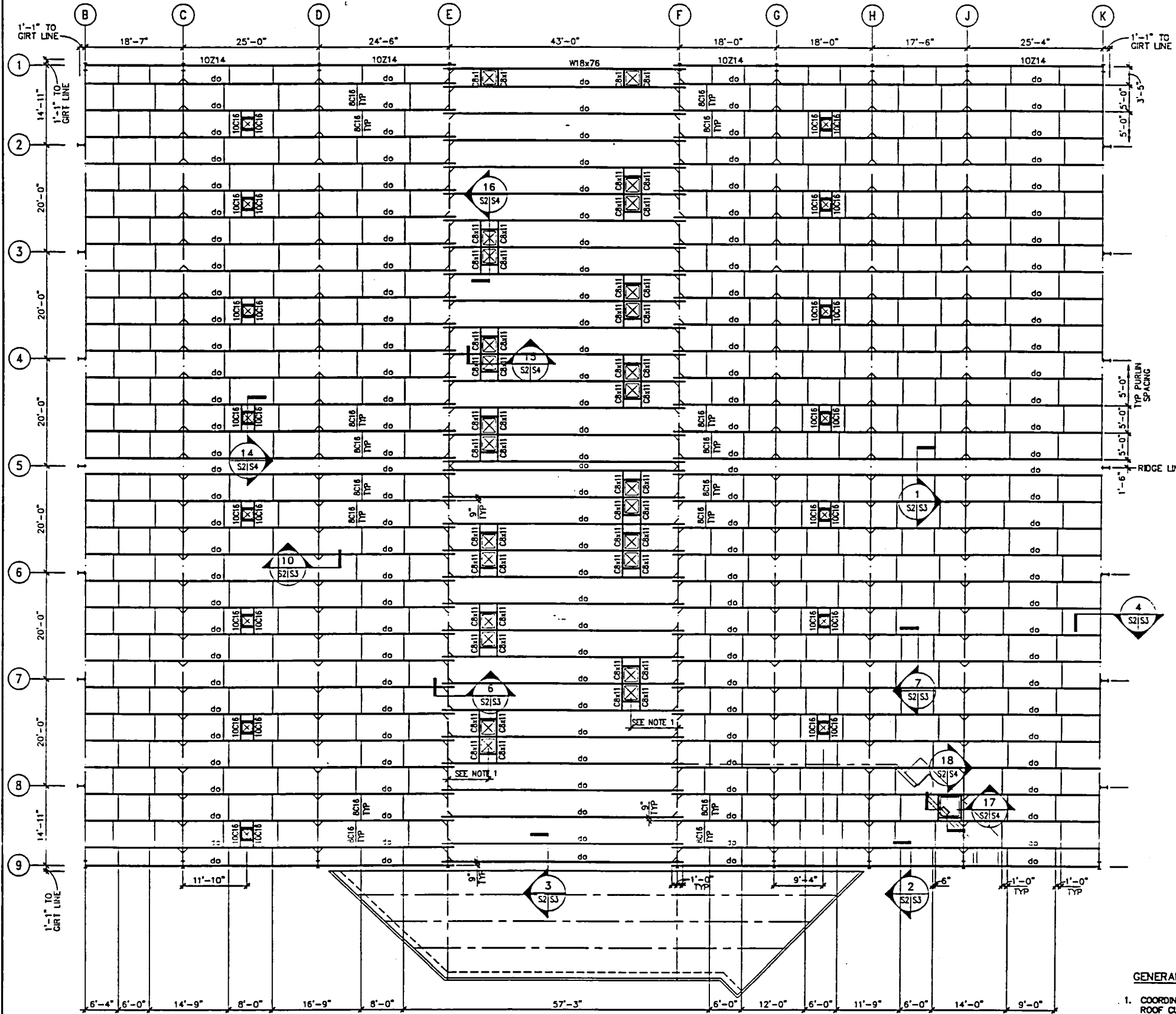
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A	12/11/92 MBW	ISSUED FOR 100% CLIENT REVIEW	
no	date	by	revisions
SJO			
CONSULTING ENGINEERS INC. Portland, Oregon			
project METRO SOUTH STATION ROOF REPAIR			
dwg. title TITLE SHEET			
filename	designator	date	
E:\ACAD\1991.01\T01.DWG	MBW		
drawn	date		
MBW			
approved	date		
SJO			
project no.			
1991			
drawing no.			
T-1			



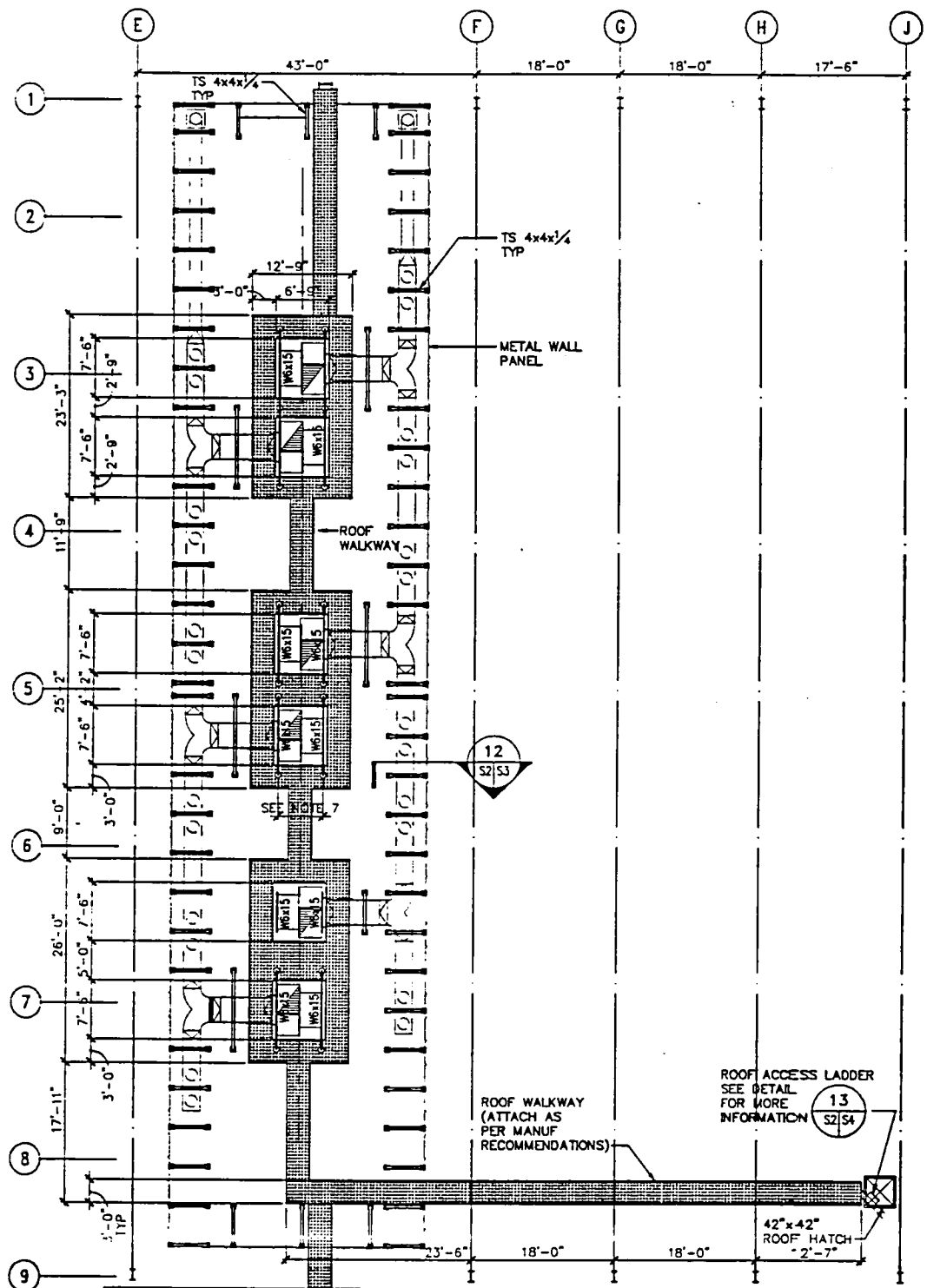
1 ROOF PANEL LAYOUT
 SCALE: 3/32" = 1'-0"
 N

- GENERAL NOTES:
- LOADS:
 LIVE - 25 PSF
 GROUND SNOW - 25 PSF
 ROOF SNOW - 25 PSF
 WIND - 90 MPH EXP 3B
 SEISMIC ZONE - 2B
 - EXISTING METAL BUILDING
 ARMO BUILDING SYSTEMS
 ORDER NUMBER: W-9607
 DATE: 9/2/82
 - REUSE OR REPLACE ALL EXISTING
 MANFRAME FLANGE BRACES.
 - ROOF CURBS TO HAVE MECHANICAL
 MOUNTING SURFACE PARALLEL
 TO ROOF SLOPE.
 - ALL ROOF WALKWAYS TO BE
 PERMANENTLY MOUNTED IN PLACE.
 - FIELD VERIFY ALL DIMENSIONS.
 - ASTM BOLTS SHALL BE TIGHTENED TO
 A "SNUG TIGHT" FIT. "SNUG TIGHT" SHALL
 MEAN THE TIGHTNESS THAT EXISTS WHEN
 PIES IN A JOINT ARE IN FIRM CONTACT,
 AND OBTAINED WITH A FEW IMPACTS OF
 AN IMPACT WRENCH, OR THE FULL
 EFFORT OF A MAN USING A SPUD
 WRENCH.
 - REUSE GUTTER, TRIM, AND WALL TO
 ROOF FLASHING WHERE POSSIBLE.
 - PANEL END LAPS MUST OCCURE AT
 PURLIN LOCATIONS.
 - VISUAL JOB SITE INSPECTIONS
 TO BE PERFORMED BY SJO
 CONSULTING ENGINEERS. CONTRACTOR
 TO COORDINATE INSPECTION SCHEDULE
 AND PROVIDE NECESSARY EQUIPMENT
 FOR CLOSE INSPECTION OF ANY OR
 ALL COMPONENTS AND/OR
 CONNECTIONS.

0 02/08/93 MEW ISSUED FOR BID		
A 12/11/82 MEW ISSUED FOR 100% CLIENT REVIEW		
no.	date	by
		revisions
SJO		
CONSULTING ENGINEERS INC.		
Portland, Oregon		
project		
METRO		
SO. STATION ROOF REPAIR		
orig. title		
ROOF PANEL LAYOUT		
filename	designed	date
1881.01\501	MEW	
drawn	BY	date
	SJO	
approved	SJO	date
project no.	1881	or
drawing no.		
		S-1 2-3-93



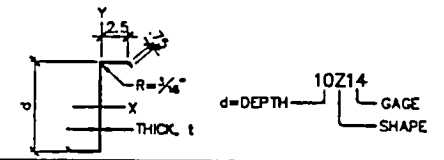
1 ROOF FRAMING PLAN
 SCALE: 3/32" = 1'-0"



2 PARTIAL ROOF PLAN
 SCALE: 3/32" = 1'-0"

GENERAL NOTES:

- COORDINATE FRAMED OPENING WITH ROOF CURB SUPPLIER.
- 10Z14 MINIMUM SECTION PROPERTIES:
 THICKNESS - 0.075 in
 I_x - 17.22 in⁴
 I_y - 1.55 in⁴
 S_x - 3.45 in³
 S_y - 0.515 in³
- CALCULATION DIMENSIONS ARE OUT TO OUT OF SECTION THICKNESS, t.
- DESIGN SECTIONS WITH REFERENCE TO THE "SPECIFICATIONS FOR COLD-FORMED STEEL STRUCTURAL MEMBERS", AISI 1983 EDITION.
- SPECIFIC YIELD STRENGTH OF LIGHT GAGE COLD-FORMED STEEL, $F_y = 50$ KSI MIN.
- METAL WALL PANEL:
 26 GAGE
 $S_x = .0428$ IN³
 COLOR TO MATCH ROOF
- COORDINATE LOCATION OF W6x15'S W/ MECHANICAL CONTRACTOR.



0	12/08/93	MEW	ISSUED FOR BID
A	12/11/93	MEW	ISSUED FOR 100% CLIENT REVIEW
no	1	date	by
			revisions

SJO
 CONSULTING ENGINEERS INC.
 Portland, Oregon

project
METRO
SO. STATION ROOF REPAIR

designed
 MEW

drawn
 BWJ

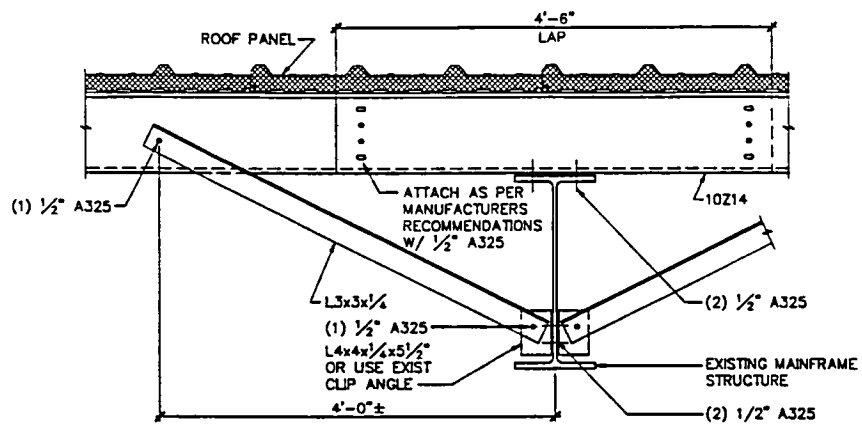
checked
 SJO

project no.
 1881

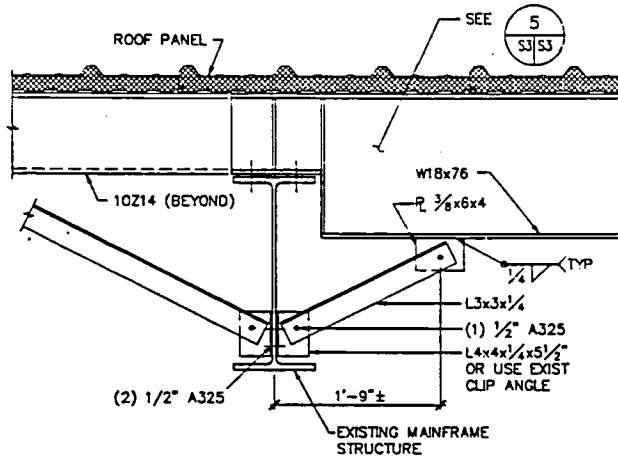
drawing no.
S-2

REGISTERED PROFESSIONAL ENGINEER
 15.192
 EVAN WILLIAMS
 OCT 2, 1957

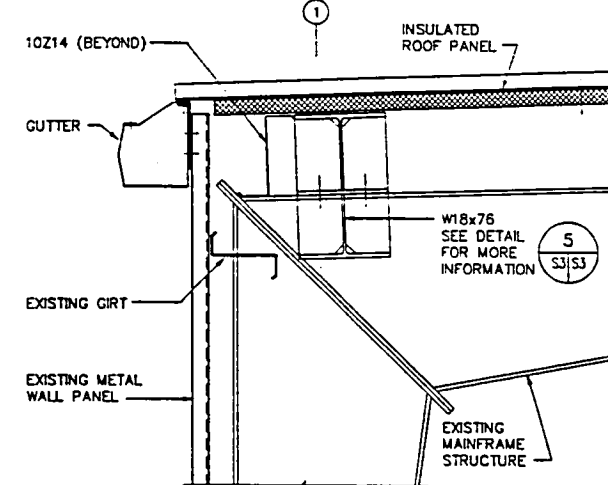
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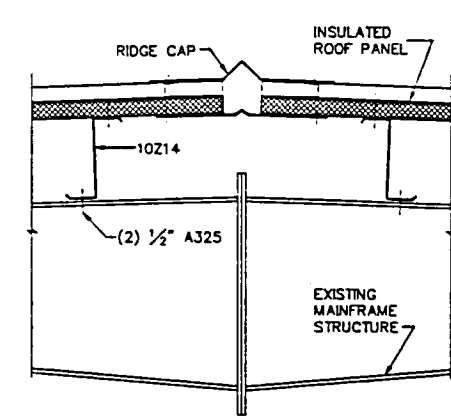
10 MAINFRAME FLANGE BRACE DETAIL
S2/S3 SCALE: 1" = 1'-0"



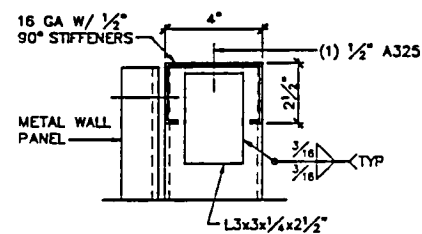
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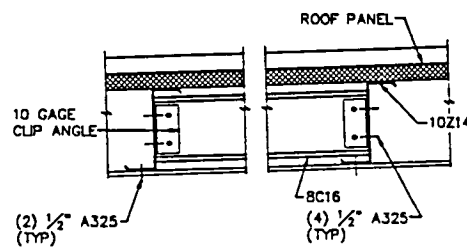
3 EAVE DETAIL
S2/S3 SCALE: 1" = 1'-0"



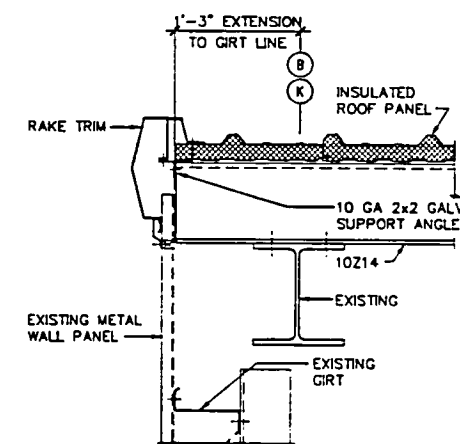
1 EDGE DETAIL
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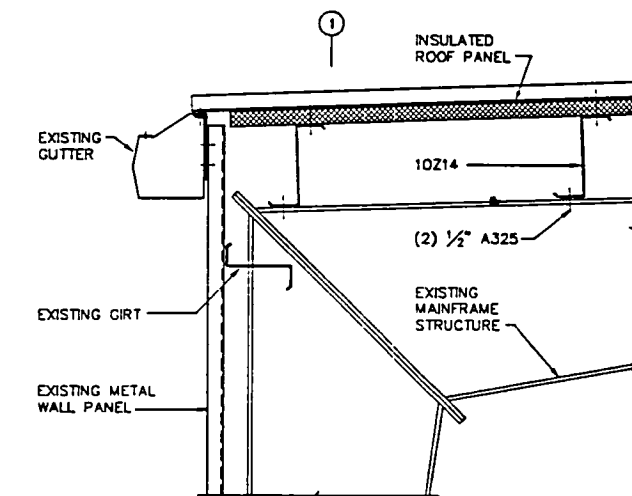
11 ROOF CLIP DETAIL
S3/S3 SCALE: 3" = 1'-0"



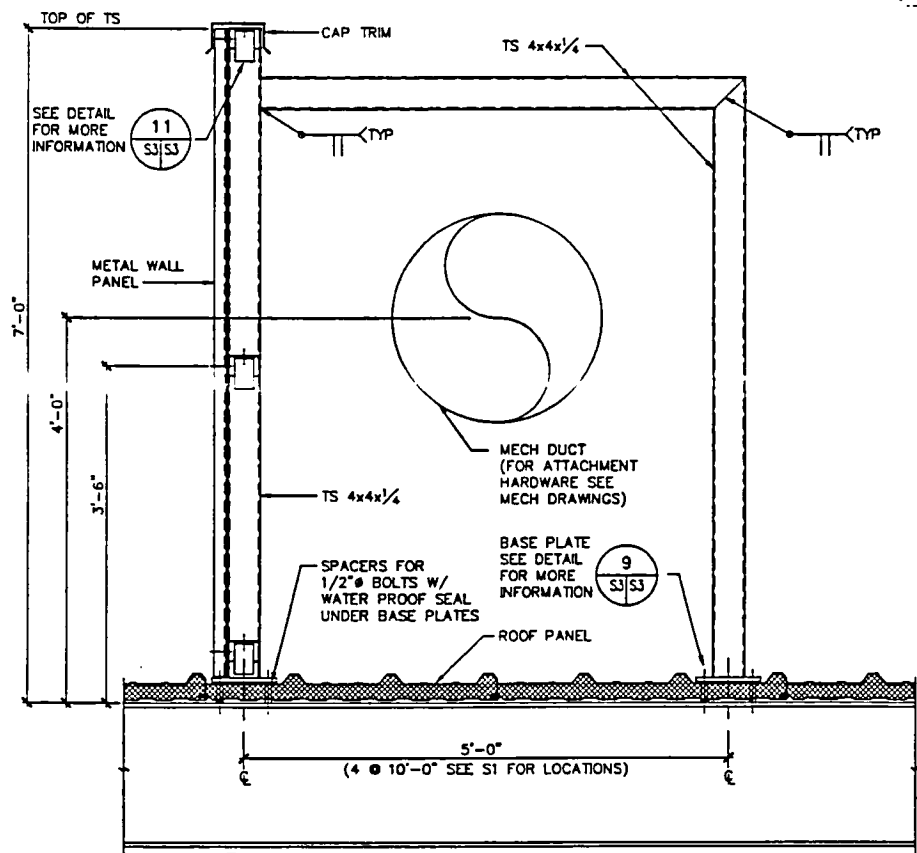
7 PURLIN FLANGE BRACE DETAIL
S2/S3 SCALE: 1" = 1'-0"



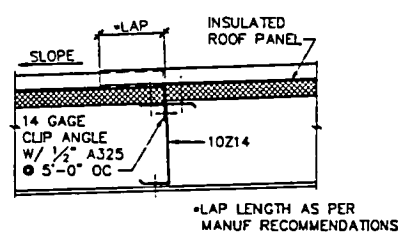
4 RAKE DETAIL
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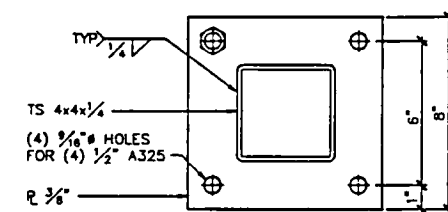
2 EAVE DETAIL
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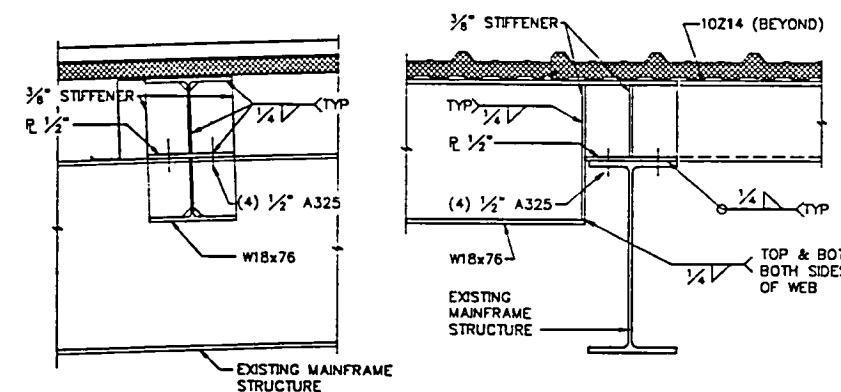
12 MECHANICAL AND PARAPET DETAIL
S2/S3 SCALE: 1" = 1'-0"



8 LAP DETAIL
S1/S3 SCALE: 1" = 1'-0"

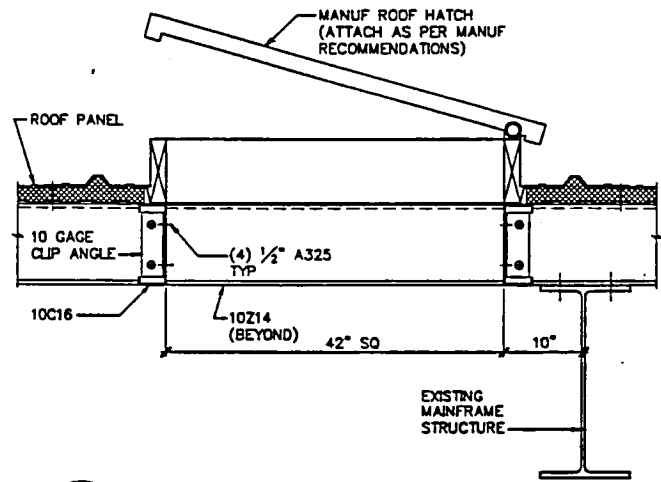


9 BASE PLATE DETAIL
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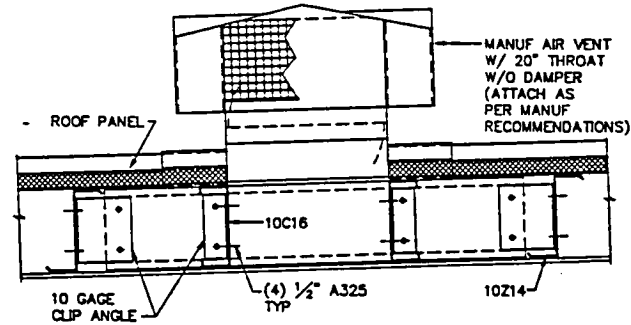


5 ROOFING DETAIL
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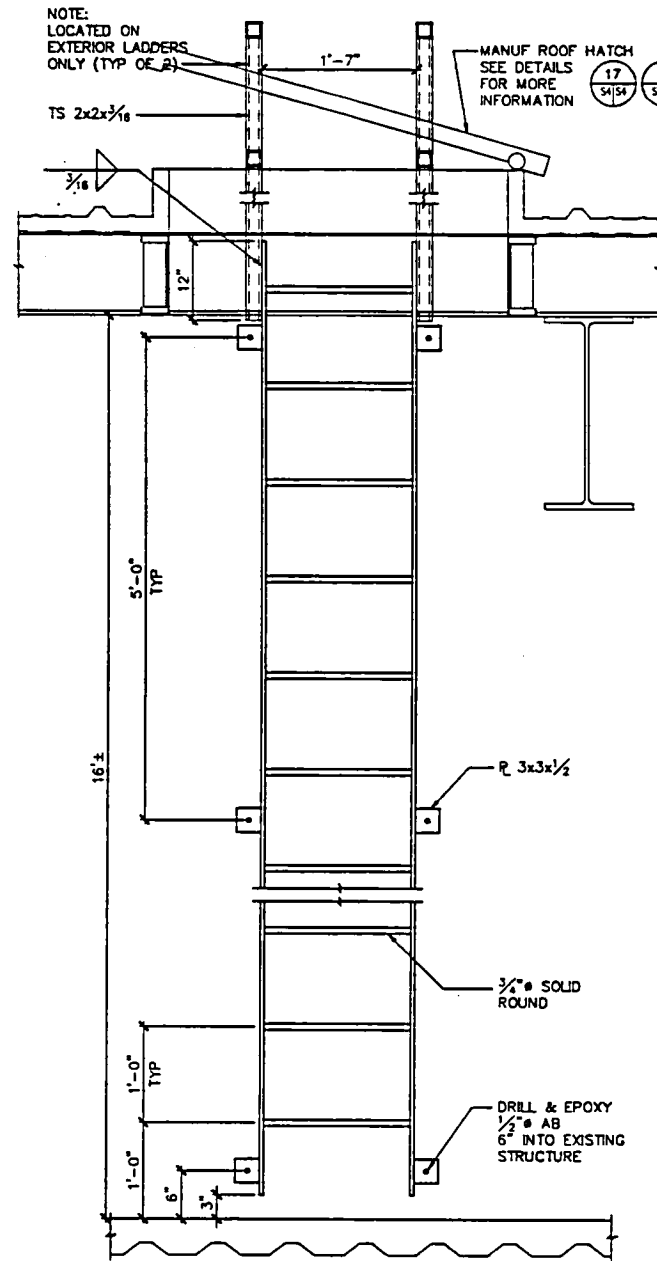
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orig. title ROOF DETAILS			
filename 1881.dwg	designed MEW	date	
drawn SJO	approved SJO	date	
project no. 1881	sheet no. 01	drawing no.	
			S-3



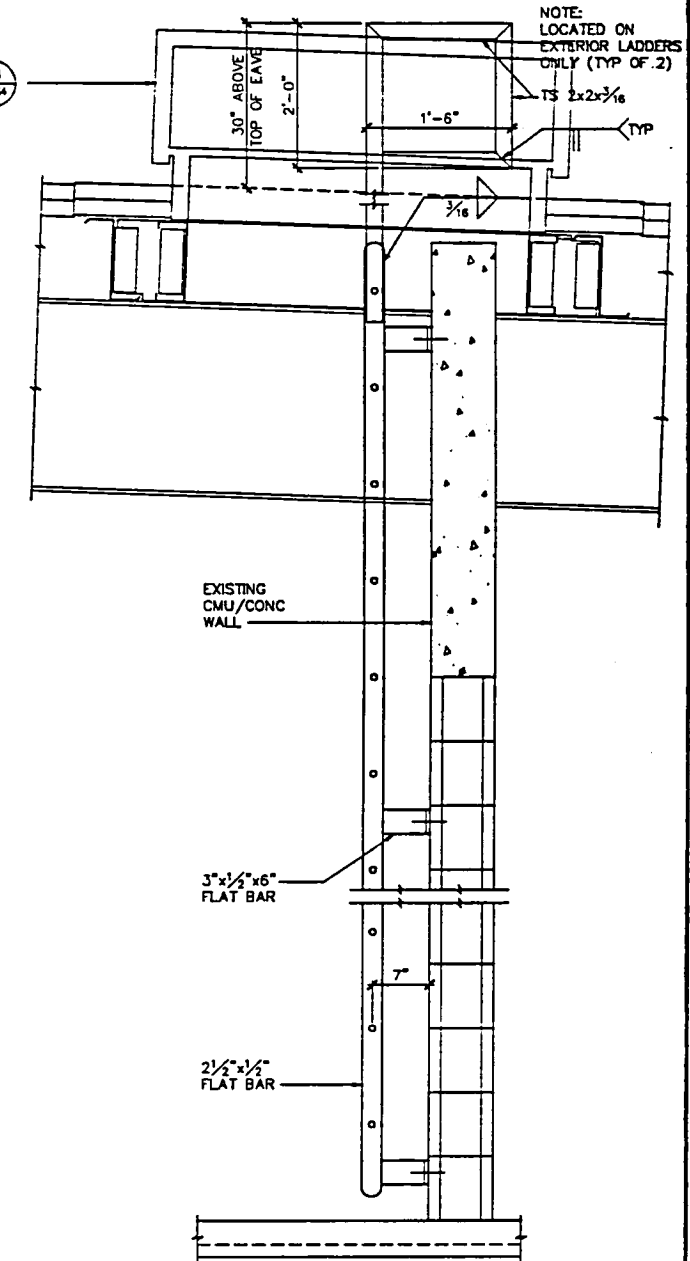
17 ROOF HATCH DETAIL
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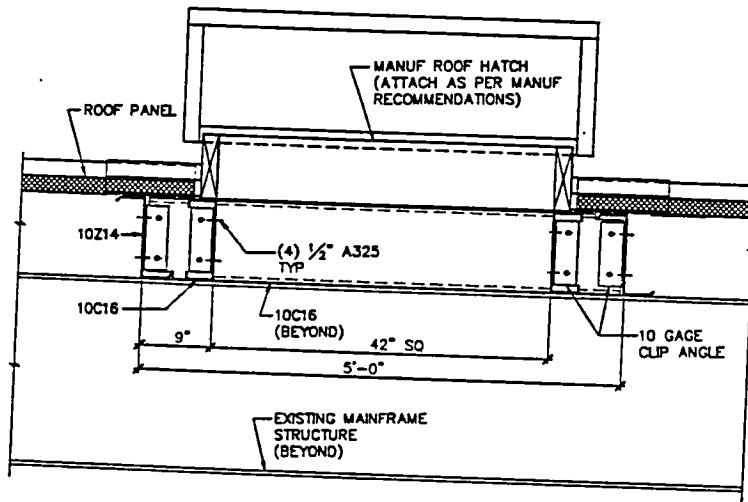
14 GRAVITY VENT DETAIL
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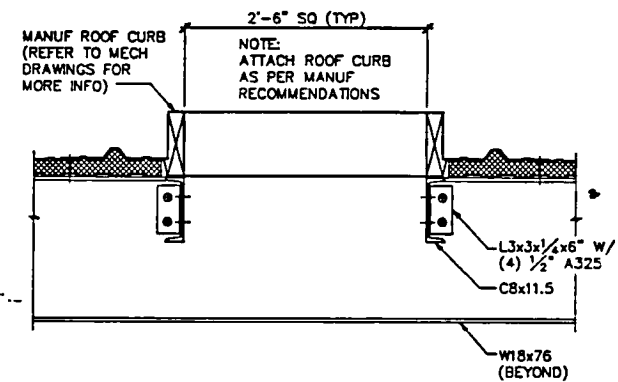
13 LADDER DETAIL
S1/S4 SCALE: 1" = 1'-0"



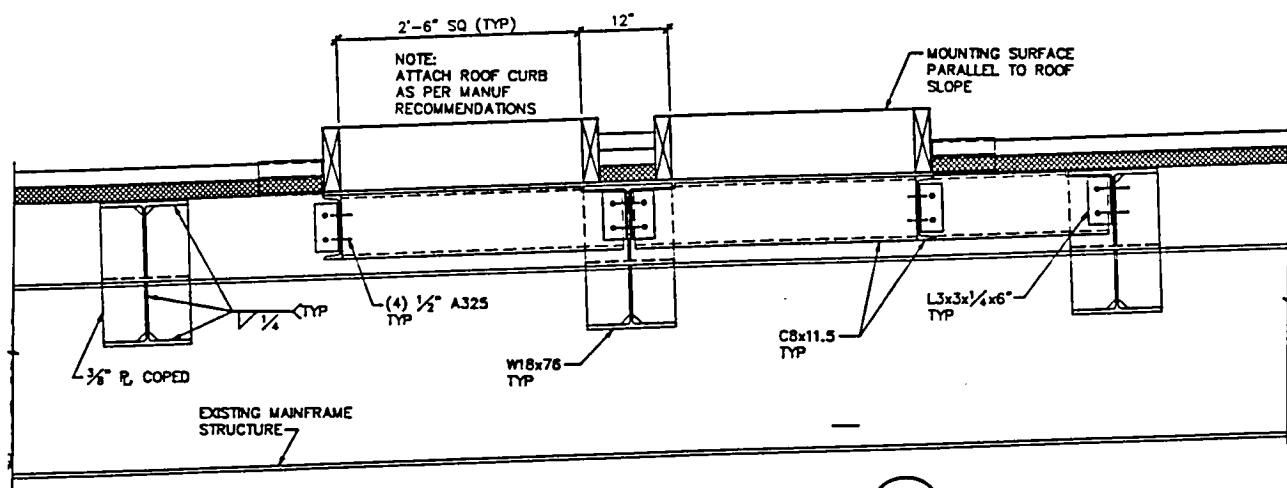
19 MECHANICAL PLATFORM DETAIL
S1/S4 SCALE: 1" = 1'-0"



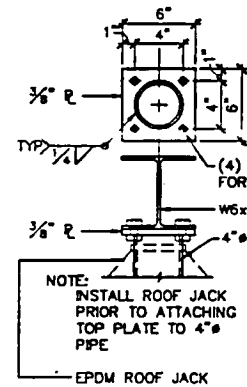
18 ROOF HATCH DETAIL
S2/S4 SCALE: 1" = 1'-0"



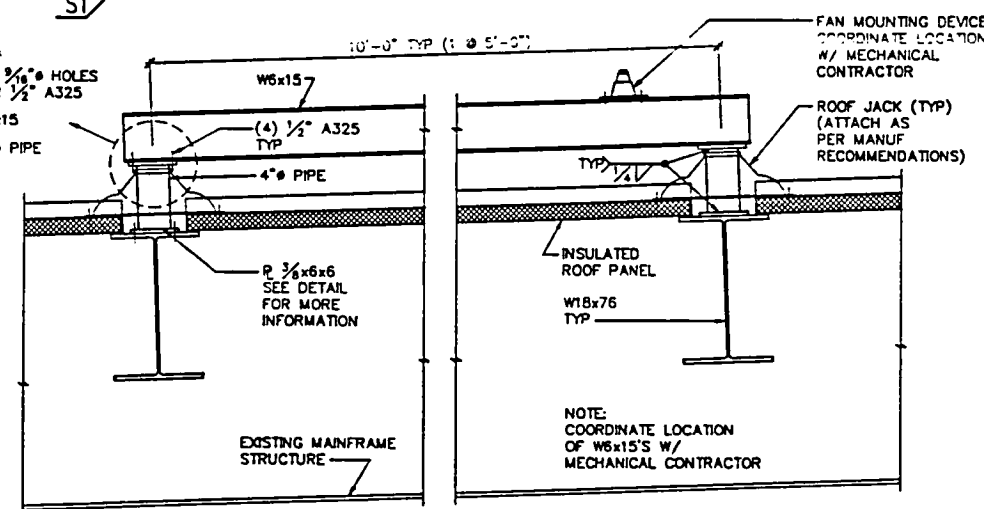
15 ROOF CURB DETAIL
S2/S4 SCALE: 1" = 1'-0"



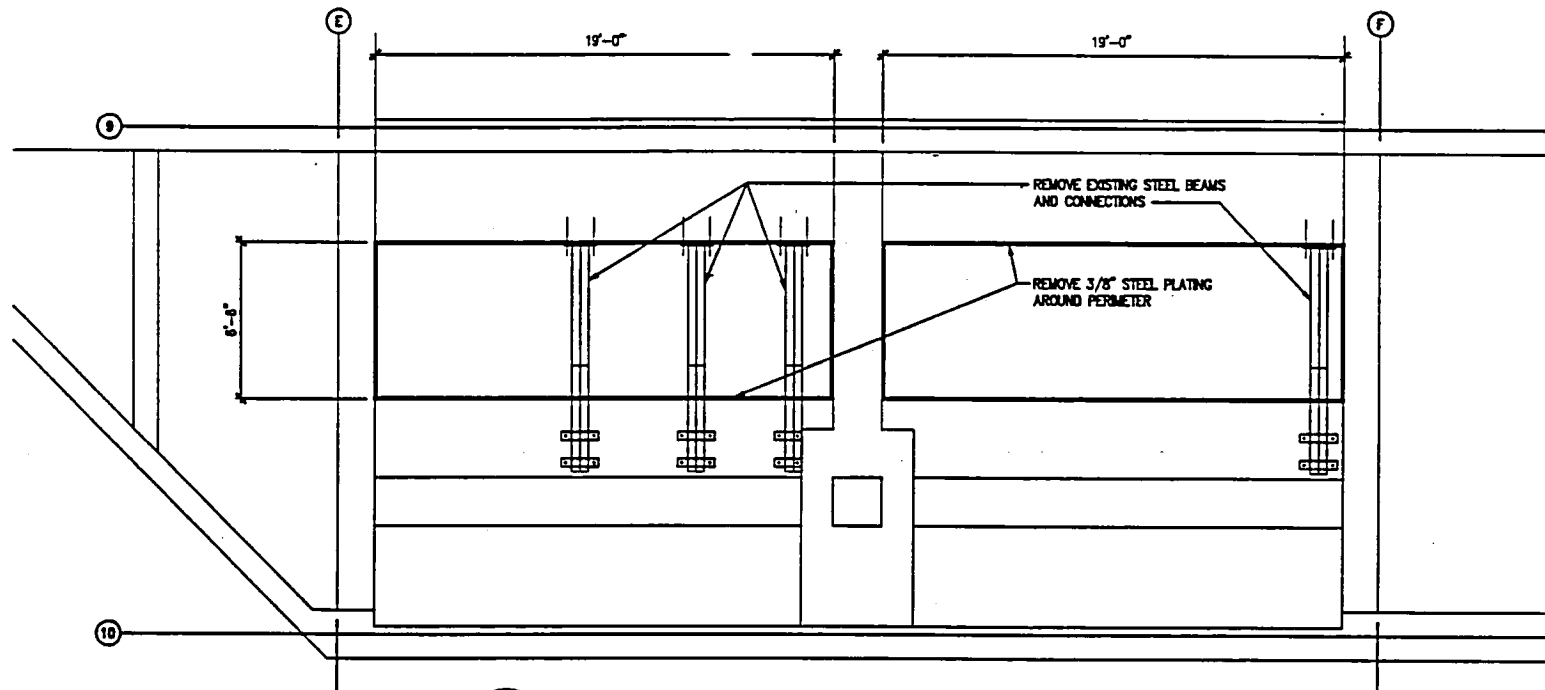
16 ROOFING DETAIL
S2/S4 SCALE: 1" = 1'-0"



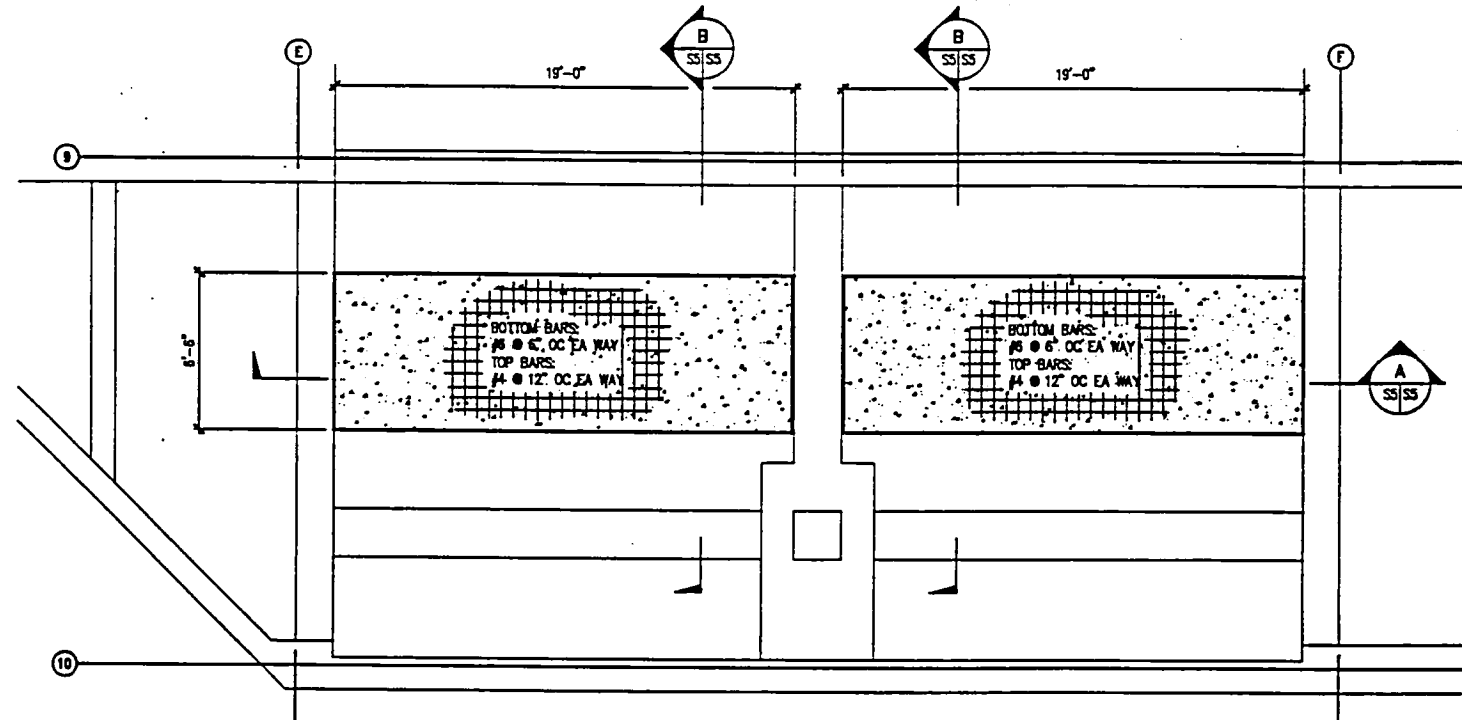
NOTE: INSTALL ROOF JACK PRIOR TO ATTACHING TOP PLATE TO 4\"/>



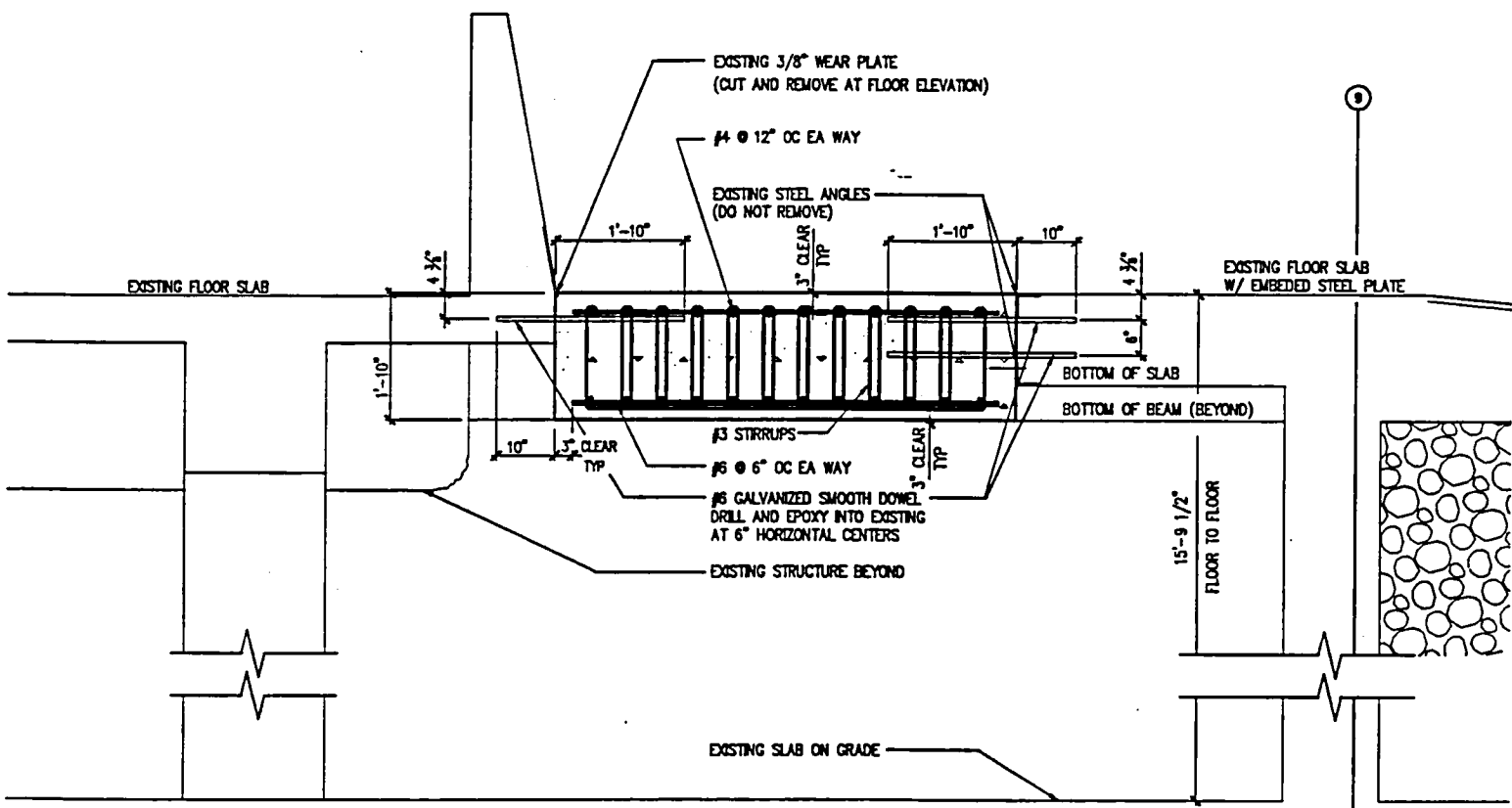
0	02/08/93	MEW	ISSUED FOR BID		
A	12/11/92	MEW	ISSUED FOR 100% CLIENT REVIEW		
no.	date	by	revisions		
SJO					
CONSULTING ENGINEERS INC. Portland, Oregon					
project					
METRO					
SO. STATION ROOF REPAIR					
dwg. title					
ROOF DETAILS					
filename	1881.01\1504	designed	MEW	date	
		drawn	SMU	date	
		approved	SJO	date	
		project no.	1881		01
		drawing no.			
S-4					



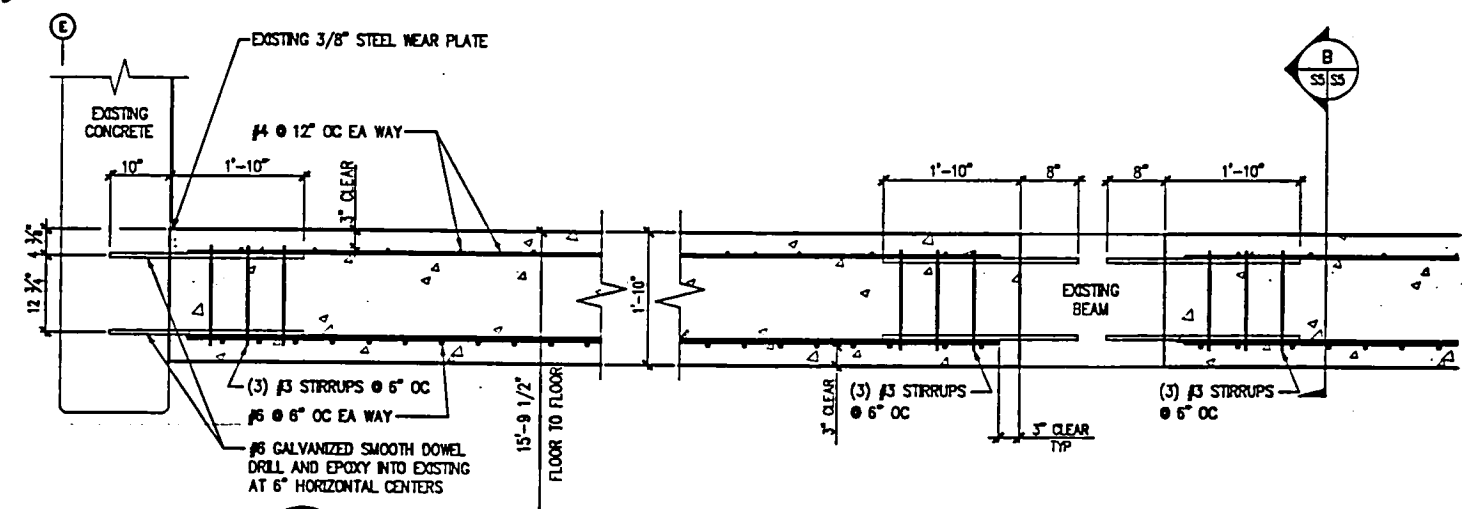
2 STEEL DEMOLITION PLAN
 SS/SS SCALE: 1/4" = 1'-0"



1 NEW CONCRETE FILL PLAN
 SS/SS SCALE: 1/4" = 1'-0"



B NEW CONCRETE FILL SECTION
 SS/SS SCALE: 3/4" = 1'-0"



A NEW CONCRETE FILL SECTION
 SS/SS SCALE: 3/4" = 1'-0"





NOTES:

- REMOVE ALL EXISTING PLATES, CLIPS, BEAMS, AND ATTACHMENTS, THAT WOULD OTHERWISE COME IN CONTACT WITH NEW CONCRETE PLACEMENT SHOWN ON THIS SHEET.
- EXISTING WEAR PLATES TO REMAIN IN PLACE ABOVE NEW FLOOR CONSTRUCTION.
- CONCRETE CRUSHING STRENGTH 4,000 PSI
- REINFORCING STEEL YIELD STRENGTH 60,000 PSI
- EPOXY TENSILE STRENGTH 2500 PSI MIN. COMPRESSIVE STRENGTH 9000 PSI MIN. ELONGATION BREAK 5% MAX. SHORE D HARDNESS 80 MIN.
- THE FOLLOWING SPECIAL INSPECTIONS WILL BE CONDUCTED BY SJO CONSULTING ENGINEERS, INC., AND COORDINATED BY THE CONTRACTOR:
 A- DOWEL LOCATIONS, LENGTHS, AND EMBEDMENT DEPTH
 B- REINFORCING STEEL IN PLACE AND PRIOR TO POUR
 C- SURFACE PREPARATION AT INTERFACE OF EXISTING AND NEW CONCRETE

0	02/08/93	MEW	ISSUED FOR BID
A	1-8-93	MEW	100% CLIENT REVIEW
no	date	by	revisions
SJO			
CONSULTING ENGINEERS INC. Portland, Oregon			
Project "METRO" TRANSFER & RECYCLING CENTER			
dwg. title ABANDONED CHUTE CONCRETE FLOOR PLUG			
filename	188LAL.S55	designed	MEW
drawn	MEW	date	12-22-92
checked	MEW	date	12-22-92
approved	SJO	date	
project no.	1881		
drawing no.			S-5

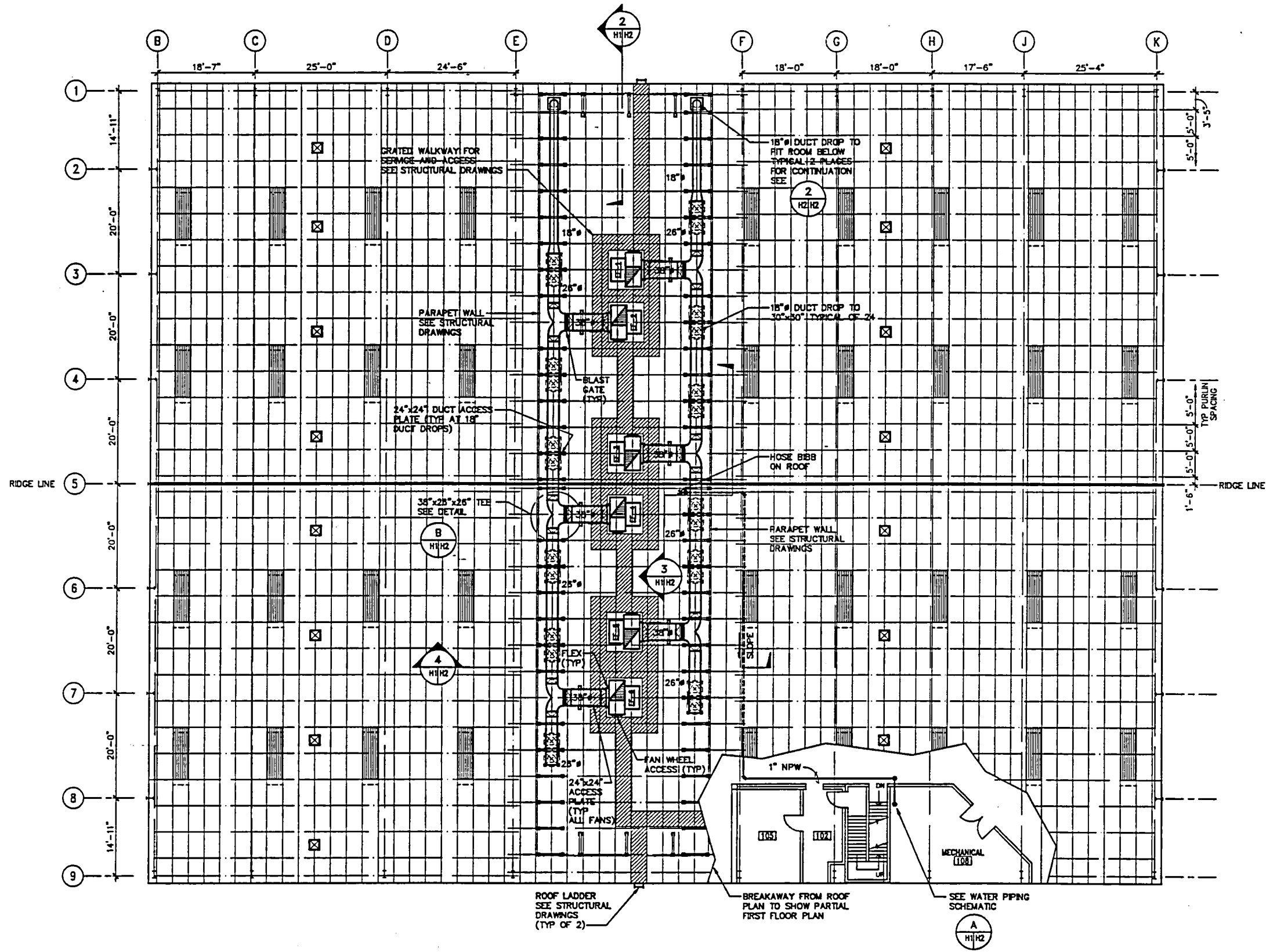
MECHANICAL LEGEND

SYMBOLS

- (A) — EQUIPMENT REFERENCE
- (1) — NOTE REFERENCE
-  — EXHAUST/RETURN AIR DROP/RISER
-  — FIRE DAMPER w/ ACCESS DOOR
-  — VOLUME DAMPER
-  — HVAC EQUIPMENT ON ROOF
- (A) — COLUMN GRID DESIGNATION

ABBREVIATIONS

- ABV ABOVE
- EF EXHAUST FAN
- EXH EXHAUST
- FD FIRE DAMPER
- HP HORSEPOWER
- HT HEIGHT
- MIN MINIMUM
- NPW NONPOTABLE WATER
- QTY QUANTITY
- SP STATIC PRESSURE
- TYP TYPICAL
- VO VOLUME DAMPER



1 ROOF DUCTWORK PLAN
 H1/H1 SCALE: 3/32" = 1'-0"



0	02/08/83	SWN	ISSUED FOR BID	
A	12/11/82	SWN	ISSUED FOR 100% CLIENT REVIEW	
no	date	by	revisions	

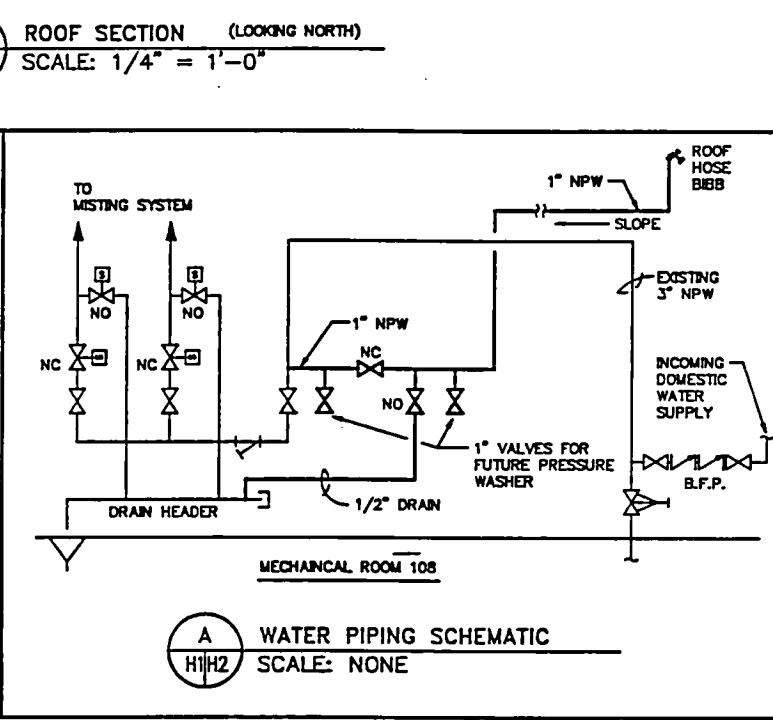
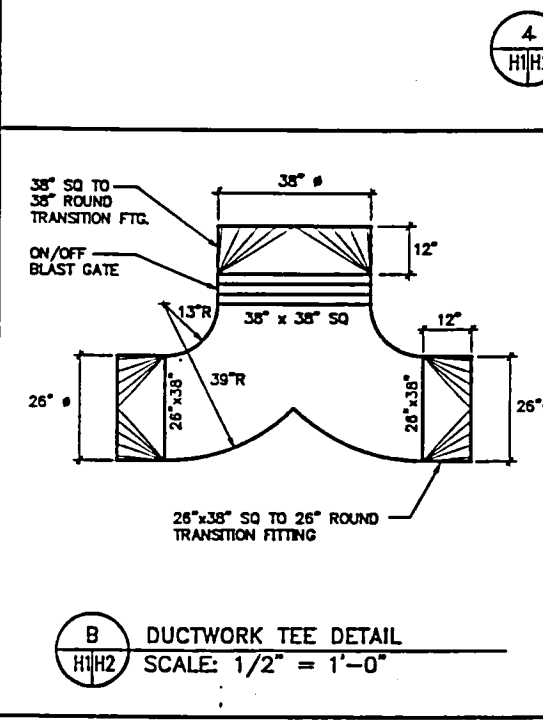
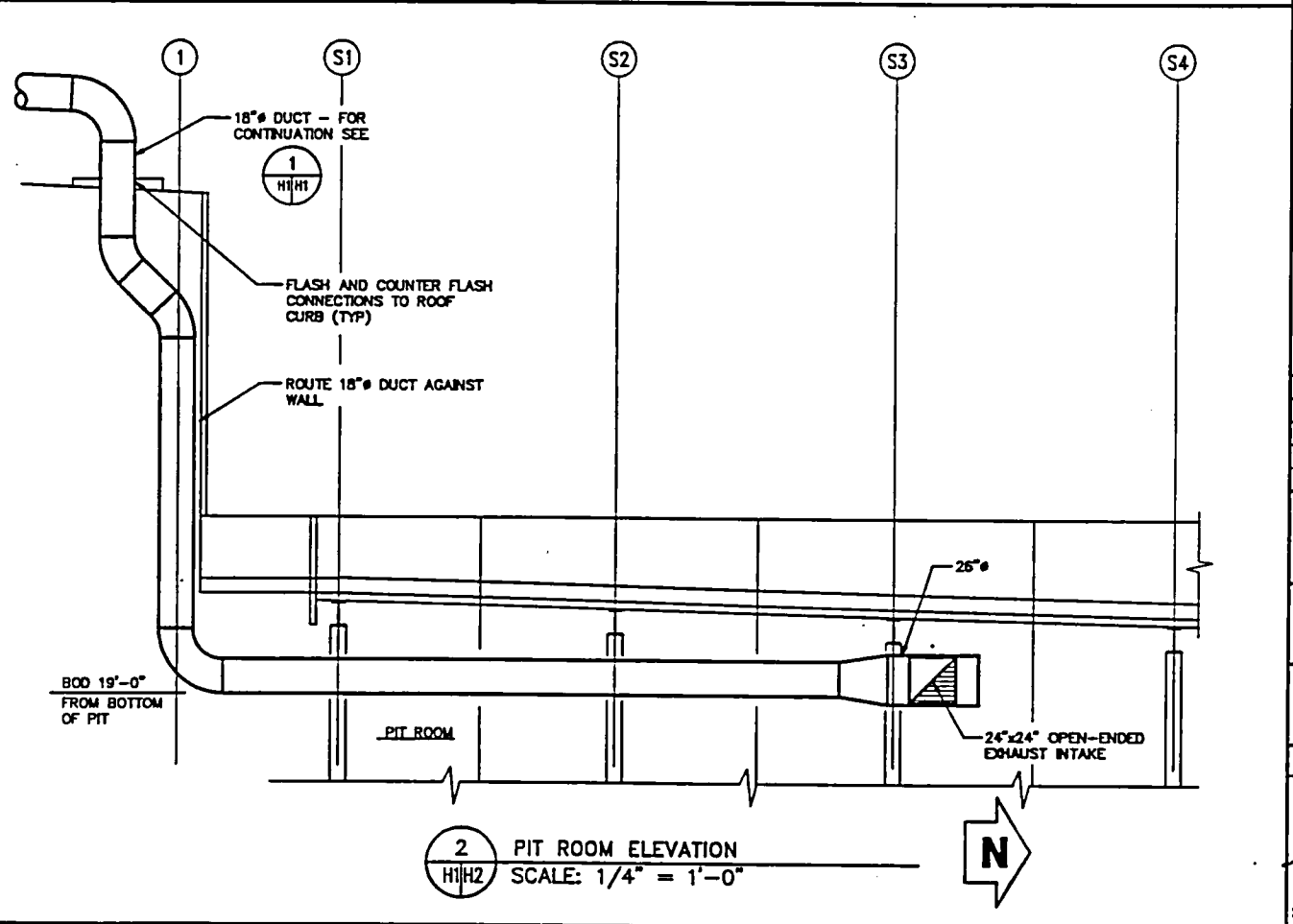
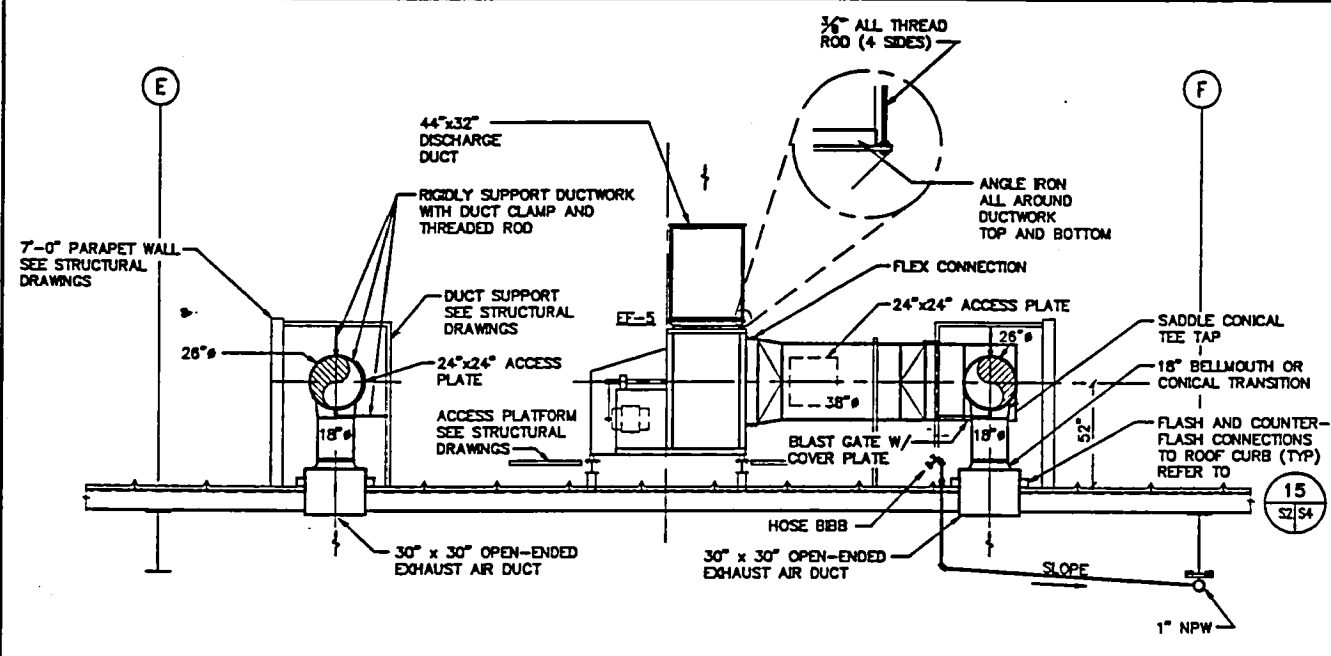
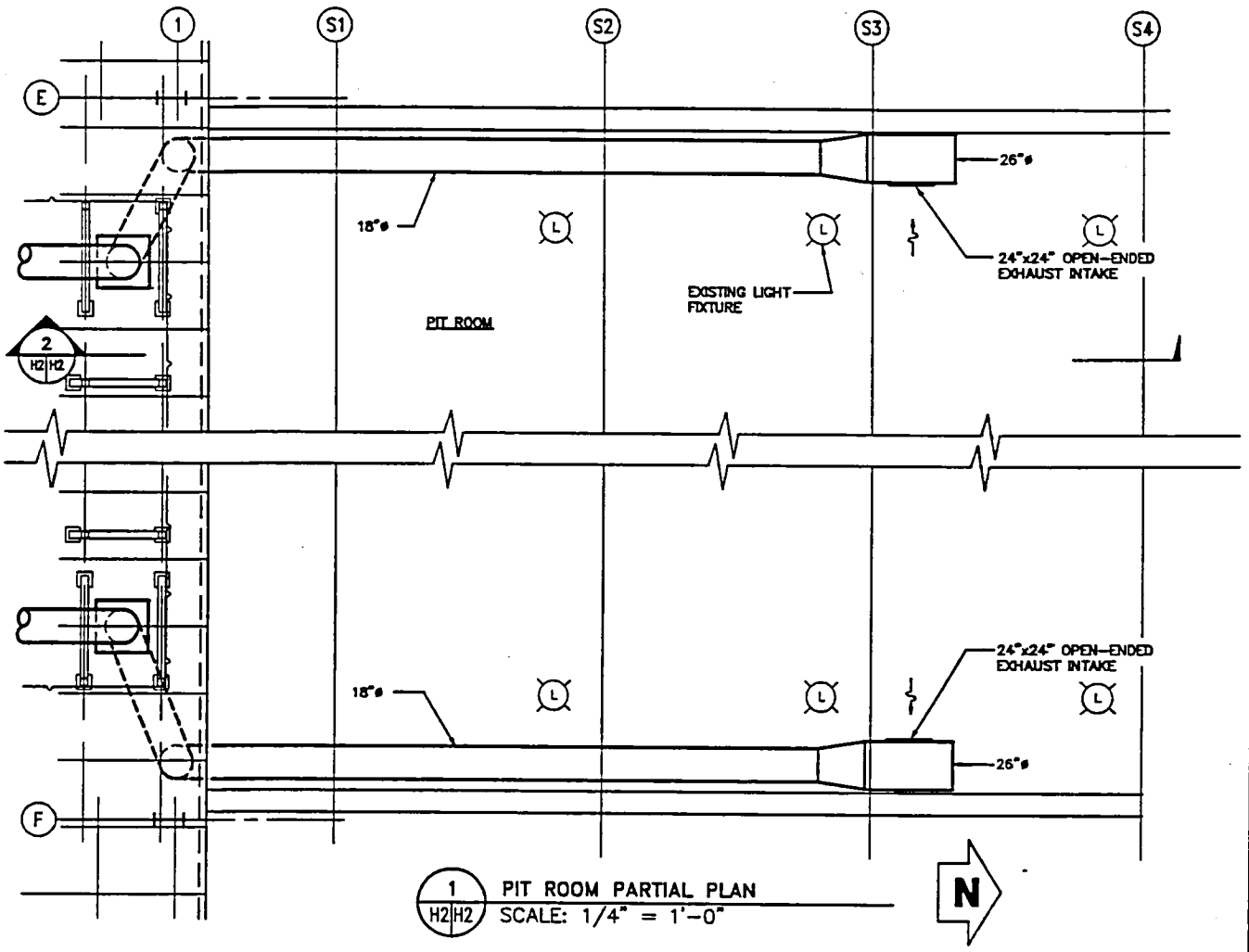
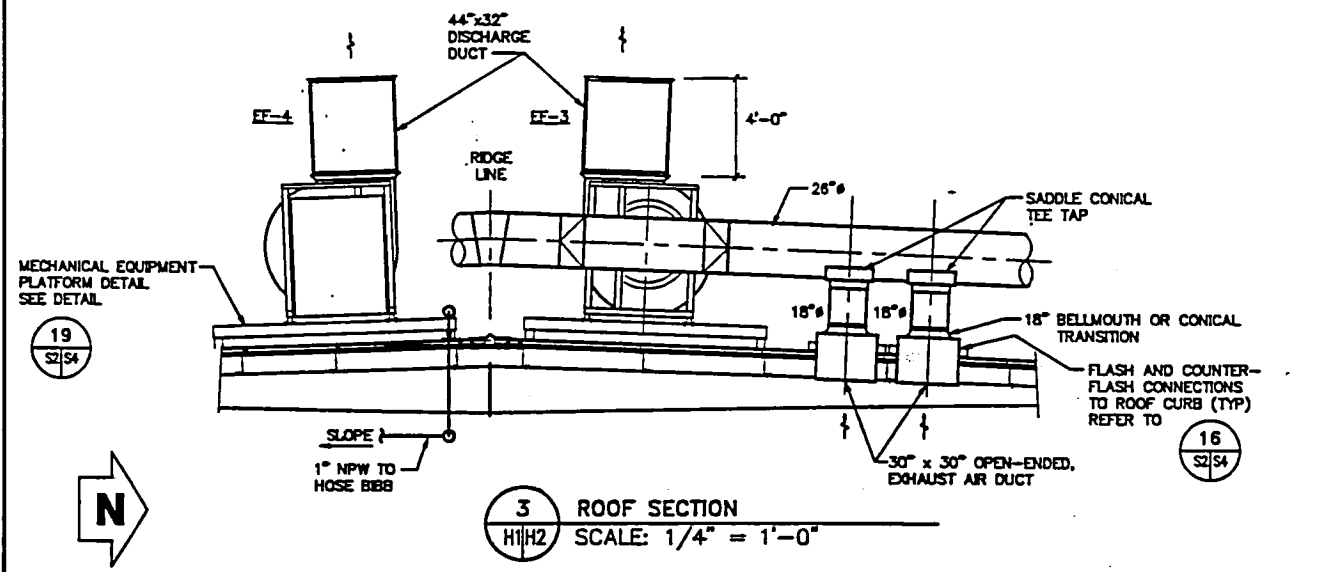
SJO
 CONSULTING ENGINEERS INC.
 Portland, Oregon

project
METRO
SO. STATION ROOF REPAIR

dwg. title
ROOF DUCTWORK PLAN

designed MTC	date 10/08/82
drawn MTC	date 10/08/82
approved SWN	date
project no. 1881	01
drawing no.	H-1





0	12/08/23 SWN	ISSUED FOR BID	
A	12/11/22 SWN	ISSUED FOR 100% CLIENT REVIEW	
no	date	by	revisions

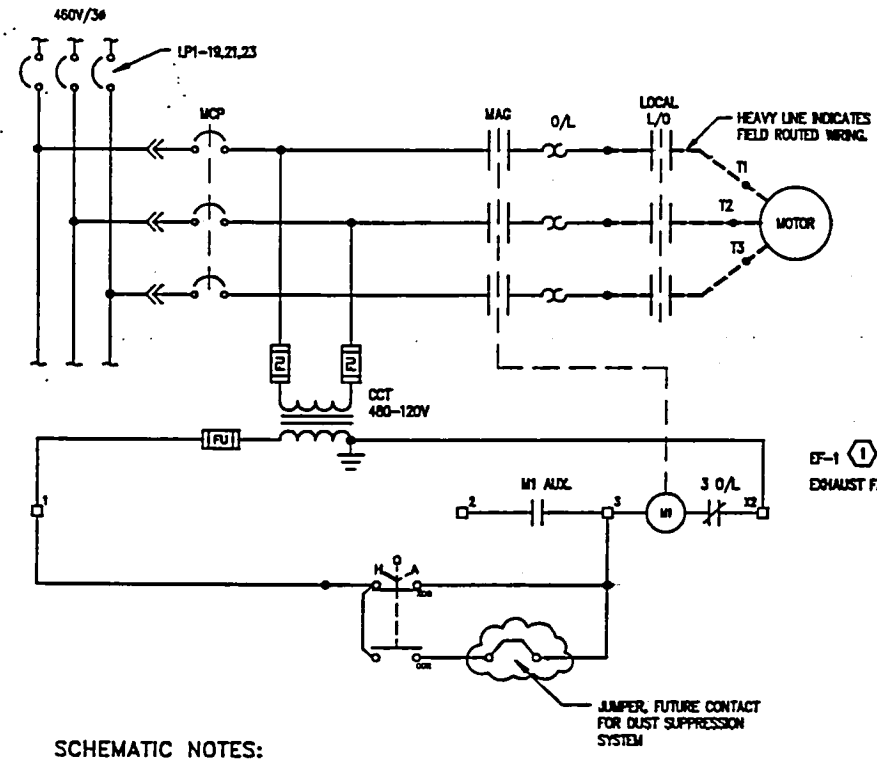
SJO
CONSULTING ENGINEERS INC.
Portland, Oregon

project
METRO
SO. STATION ROOF REPAIR

orig. title
HVAC DETAILS
AND SECTIONS

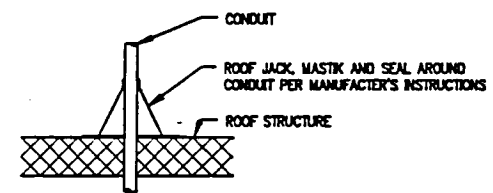
file name	designed	date
C:\1881.01\H02.DWG	MTC	10/08/22
	drawn	date
	MTC	10/08/22
	approved	date
	SWN	
project no.	1881	01
drawing no.	H-2	

3/0/23
REGISTERED PROFESSIONAL ENGINEER
FLORIAN WILHELM
OREGON
STATE W. NELSON

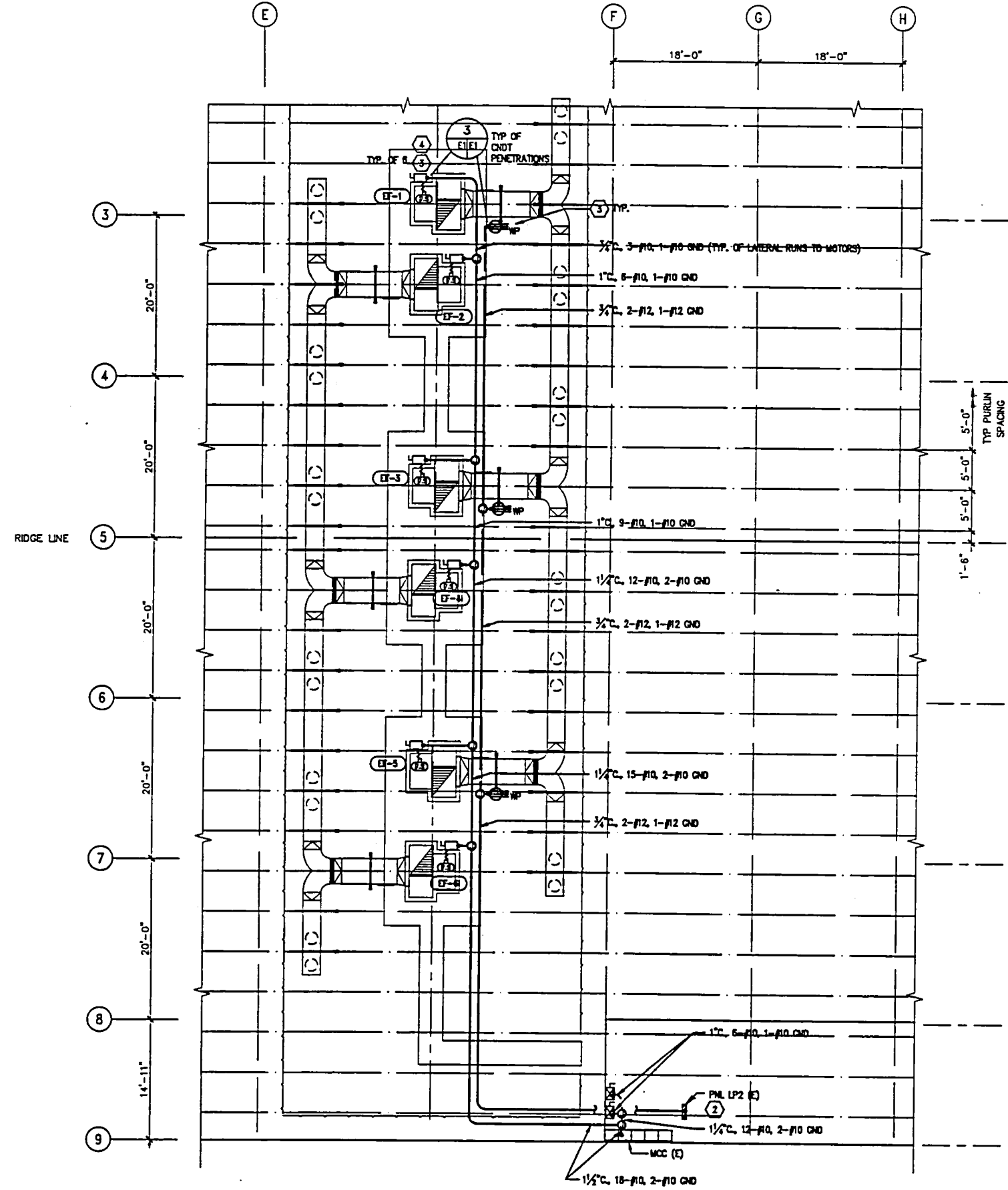


SCHEMATIC NOTES:
 1 TYPICAL FOR CONTROL OF EXHAUST FANS FROM MCC. EF1-EF8

2 EXHAUST FAN SCHEMATIC
 SCALE: NONE



3 CONDUIT ROOF PENETRATION
 SCALE: NONE



1 ELECTRICAL PLAN
 SCALE: 1/8" = 1'-0"



ABBREVIATIONS

- A - AMPS
- AF - ABOVE FINISHED FLOOR
- AF - AMPS FRAME
- AT - AMPS TRIP
- CB - CIRCUIT BREAKER
- CHOT - CONDUIT
- CRKT - CIRCUIT
- DPLX - DUPLEX
- (E) - EXISTING ITEM
- FVNR - FULL VOLTAGE NON-REVERSING
- EMT - ELECTRICAL METALLIC TUBING
- GFCI - GROUND FAULT CIRCUIT INTERRUPTER
- GND - GROUND
- HP - HORSEPOWER
- JB - JUNCTION BOX (TYP. CHOT BODY)
- KVA - KILOVOLT-AMPS
- Kcmil - THOUSAND CIRCULAR MILS
- MCP - MAIN DISTRIBUTION PANEL
- NEW - NEW
- NFD - NON-FUSED DISCONNECT
- PANEL - PANEL
- PVC - POLYVINYL CHLORIDE
- RECP - RECEPTACLE
- ROPT - RECEPTACLE
- TYP - TYPICAL
- WP - WATERPROOF

SYMBOLS

- CIRCUIT BREAKER
- FUSE
- INDICATING PILOT LIGHT
- NON-FUSED DISCONNECT (FDY INDICATES FUSED DISC.)
- COMBINATION MOTOR STARTER (FVNR)
- JUNCTION BOX (TYP. - CHOT BODY)
- CONDUIT - EXPOSED
- CONDUIT - CONCEALED OR BURIED
- CONDUIT - LIQUIDTIGHT FLEX
- CIRCUITS - WITH NEUTRAL & GND
- HOME RUN TO PANEL & CRKT
- CONDUIT - ROUTED "UP"
- CONDUIT - ROUTED "DOWN"
- MOTOR W/ HP RATING
- DUPLEX RECEPTACLE
- GFCI RECEPTACLE

NOTES

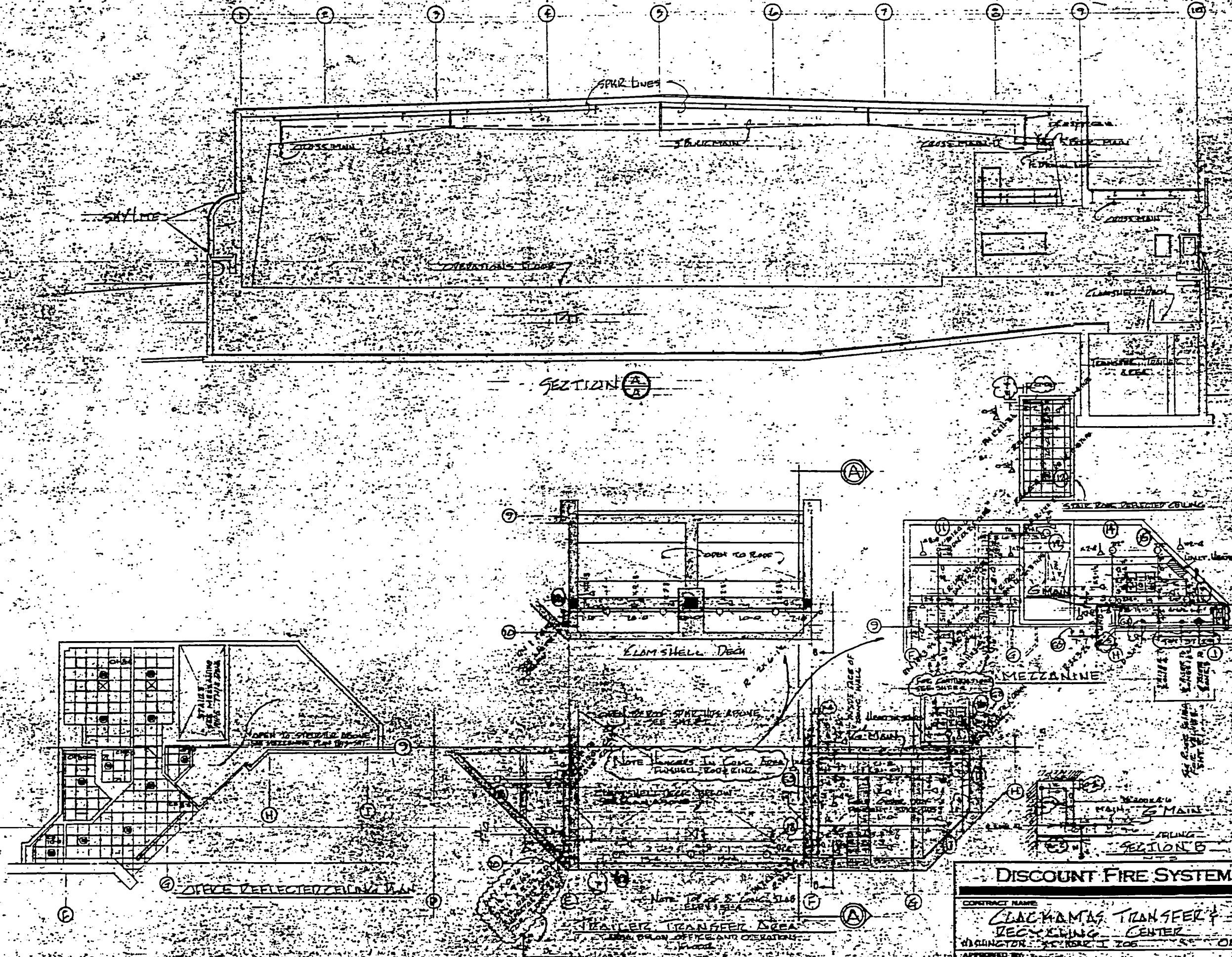
- 1 REFERENCE DRAWINGS: PROJECT #8782, DATED 6/17/83, DRAWINGS 28, 29, 30.
- 2 PROPOSED RECEPTACLE CIRCUIT: LP2-17. FIELD VERIFY. ADD ADDITIONAL CIRCUIT BREAKER IF NECESSARY.
- 3 COORDINATE LOCATION OF ROOF PENETRATIONS, DISCONNECTS, AND RECEPTACLES WITH MECHANICAL AND ROOFING CONTRACTORS. LOCATE RECEPTACLE SO ACCESSIBLE FROM MAINTENANCE WALKWAY.
- 4 CONDUIT ROUTED UNDER ROOF WITH RISERS PENETRATING ROOF AT DISCONNECTS AND RECEPTACLES.

0	12/18/83	GAS	ISSUED FOR BID
A	12/1/83	GAS	ISSUED FOR 100% CLIENT REVIEW
no	date	by	revisions

SJO
 CONSULTING ENGINEERS INC.
 Portland, Oregon

project: **METRO SO. STATION ROOF REPAIR**
 dep. title: **EXHAUST FAN ELECTRICAL PLAN**

designed	GAS	date	10/16/82
drawn	DOJ	date	10/16/82
approved		date	
project no.	1881	of	
drawing no.	E-1		



NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	10/1/78
2	ISSUED FOR CONSTRUCTION	10/1/78
3	ISSUED FOR RECORD	10/1/78
4	ISSUED FOR RECORD	10/1/78
5	ISSUED FOR RECORD	10/1/78
6	ISSUED FOR RECORD	10/1/78
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10	ISSUED FOR RECORD	10/1/78
11	ISSUED FOR RECORD	10/1/78
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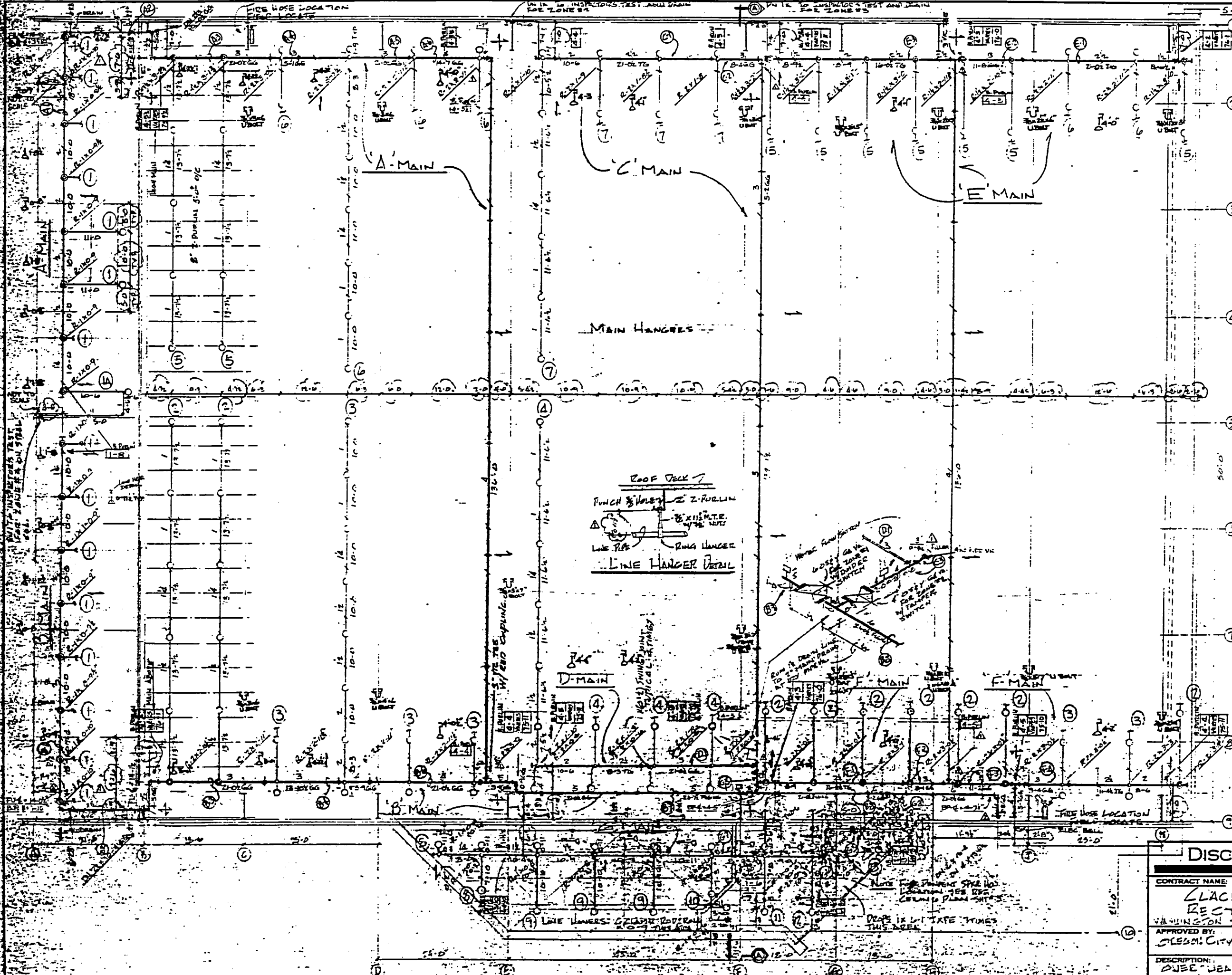
DISCOUNT FIRE SYSTEMS INC.

CONTRACT NAME
CLACKAMAS TRANSFER & RECYCLING CENTER

WASHINGTON, OREGON 97146

APPROVED BY
DISCOUNT FIRE SYSTEMS INC.

DESCRIPTION
OFFICE AND OPERATIONS AREA



NOTE: ALL
ORIGINE 4"

NO.	DATE	DESCRIPTION
1	10-15-83	ISSUED FOR PERMITS
2	11-15-83	ISSUED FOR PERMITS
3	12-15-83	ISSUED FOR PERMITS
4	1-15-84	ISSUED FOR PERMITS
5	2-15-84	ISSUED FOR PERMITS
6	3-15-84	ISSUED FOR PERMITS
7	4-15-84	ISSUED FOR PERMITS
8	5-15-84	ISSUED FOR PERMITS
9	6-15-84	ISSUED FOR PERMITS
10	7-15-84	ISSUED FOR PERMITS
11	8-15-84	ISSUED FOR PERMITS
12	9-15-84	ISSUED FOR PERMITS

ALL EQUIPMENT TO BE NEW AND UL LISTED
 ALL MATERIALS TO BE APPROVED BY THE ARCHITECT
 ALL MATERIALS TO BE APPROVED BY THE ARCHITECT
 ALL MATERIALS TO BE APPROVED BY THE ARCHITECT

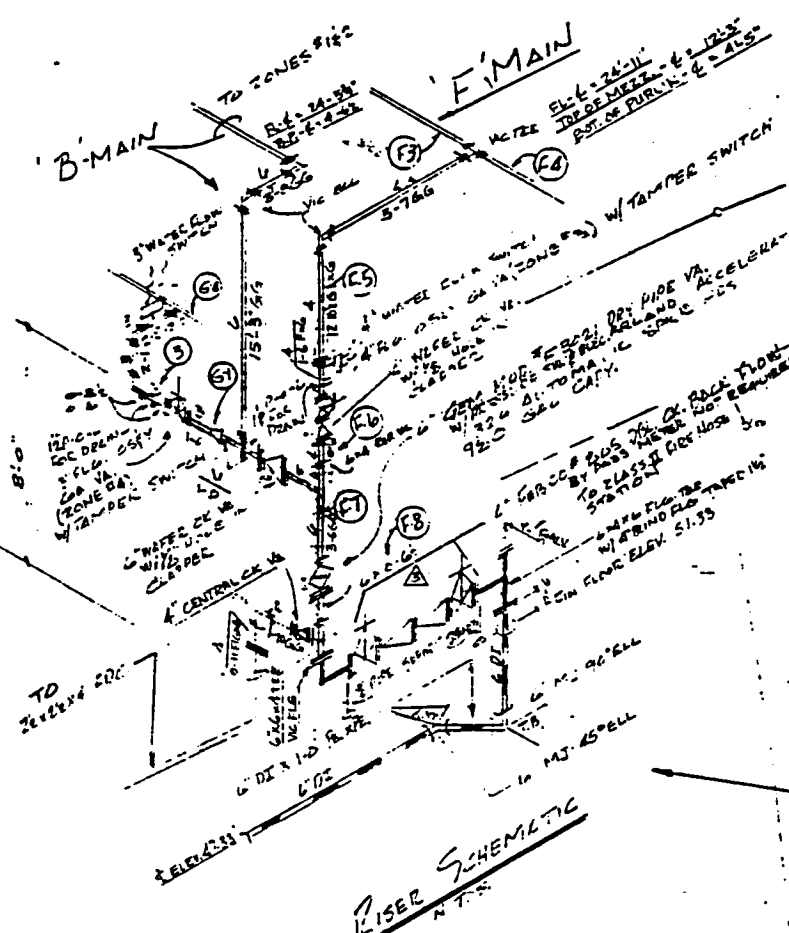
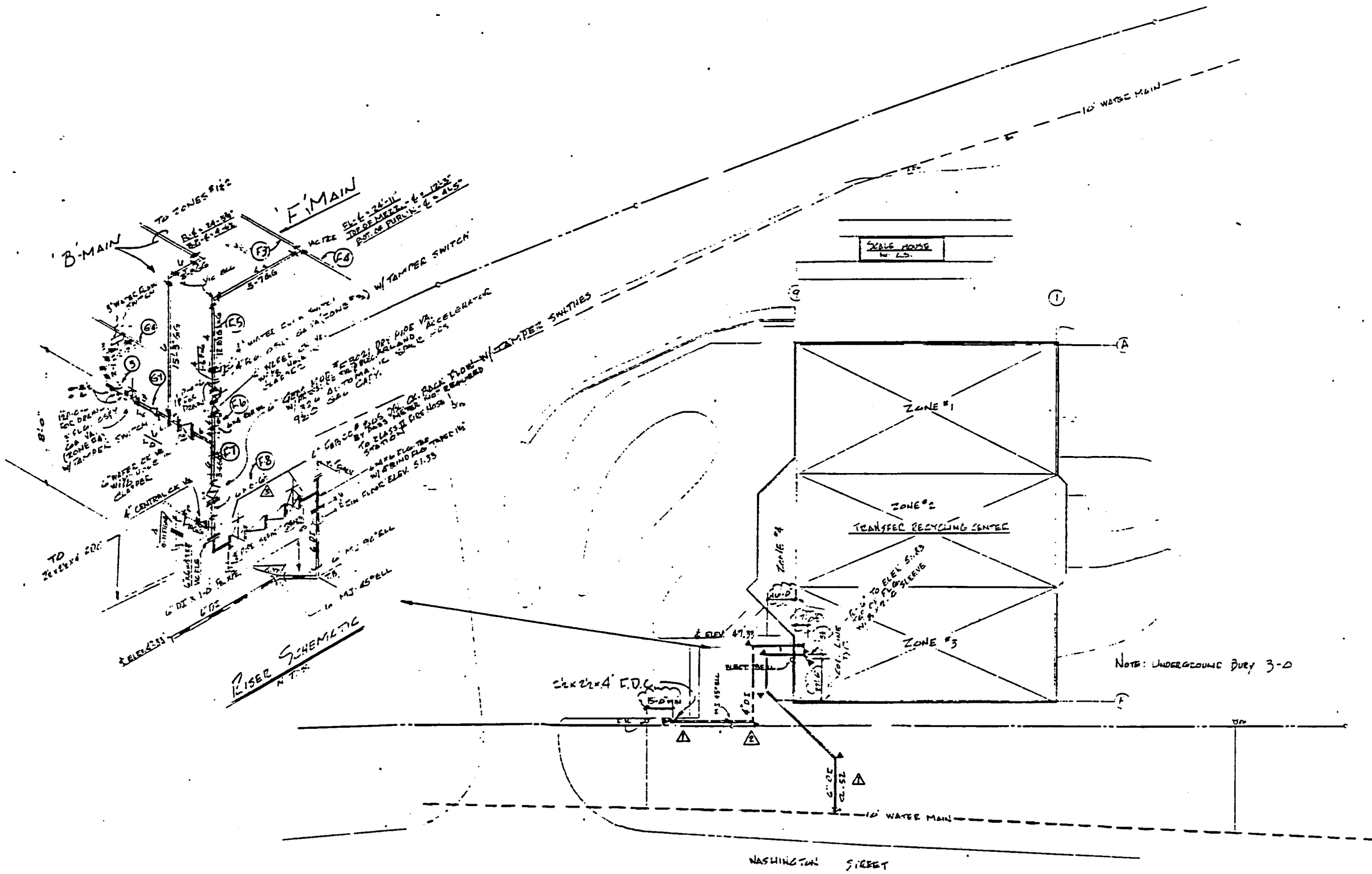
203

TRANSFER & RECYCLING PLANT
 FACILITY: NORTHWEST

HAZARD - ORDINARY SCHEDULE
 SEE MEMO'S

DISCOUNT FIRE SYSTEMS INC.

CONTRACT NAME:
LACKAWAS TRANSFER & RECYCLING CENTER
 WASHINGTON ST NEAR E 205
 APPROVED BY:
 CLEON CITY FIRE PREVENTION DEPT. & PROJECT ENGINEER
 DESCRIPTION:
 OVERHEAD TRUSS IN ROOF AREA



Plot Plan
SCALE 1/8\"/>

REVISION			
NO.	DATE	BY	DESCRIPTION



REVISION
 A RELOCATED F.R.C. AND L.F.I.E. LINE 12-3-82
 A RELOCATED F.R.C. LINE 12-30-82
 DRAWN BY
 CONTRACT NO. 82-14
 DATE 7-21-82
 SCALE AS NOTED
 A 7-4-82

NOTES
 1. UNDERGROUND PIPE TO BE CAST IRON
 IRON TYPON JOINT CLASS 50 AND
 SHALL BE PROPERLY THROUST PACKED
 BENEATH ALL BRANCHES AND CHANGES
 OF DIRECTION.

103

TRANSFER RECYCLING FLAG.
 PARKER NORTHWEST

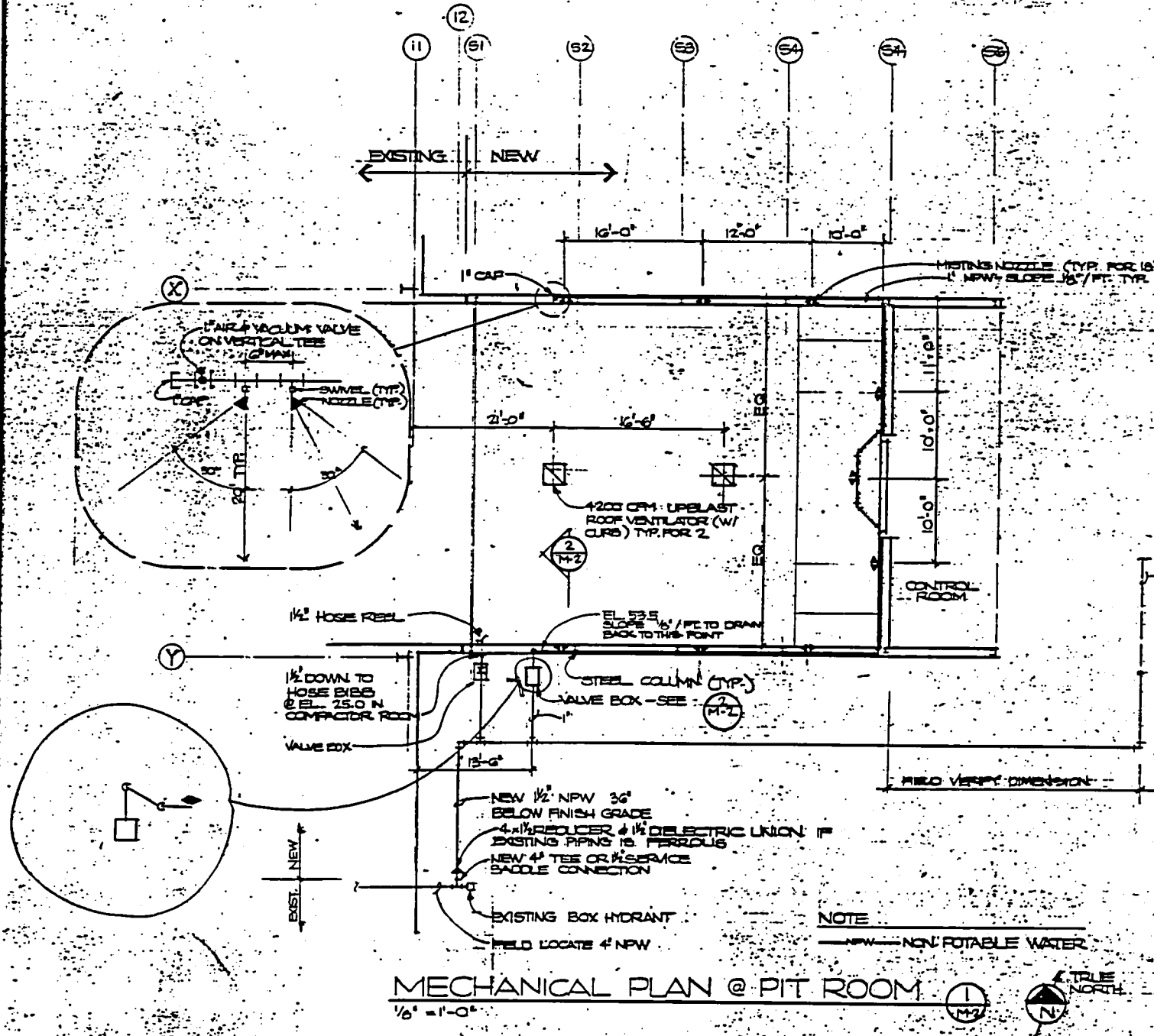
DISCOUNT FIRE SYSTEMS INC.

CONTRACT NAME:
 CLACKAMAS TRANSFER &
 RECYCLING CENTER
 WASHINGTON ST NEAR I 505 OREGON CITY ORE

APPROVED BY:
 OREGON CITY FIRE PREVENTION REP & PROJECT ENGINEER

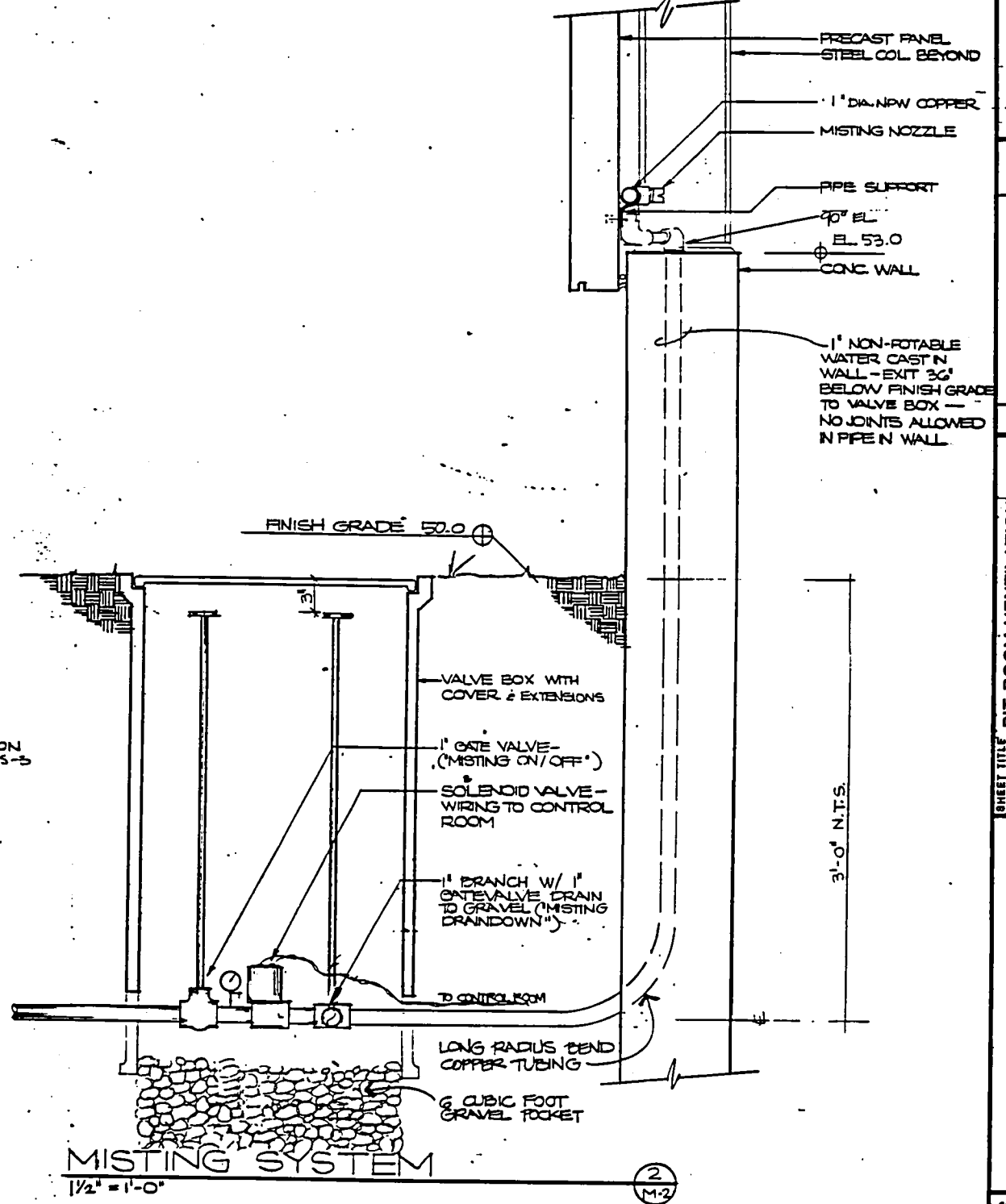
DESCRIPTION:
 PLOT PLAN

SHT # 1 OF 3



MECHANICAL PLAN @ PIT ROOM
 1/8" = 1'-0"

NOTE
 — NPW — NON-POTABLE WATER



MISTING SYSTEM
 1/2" = 1'-0"



DATE	REVISION	NO.
		1
		2

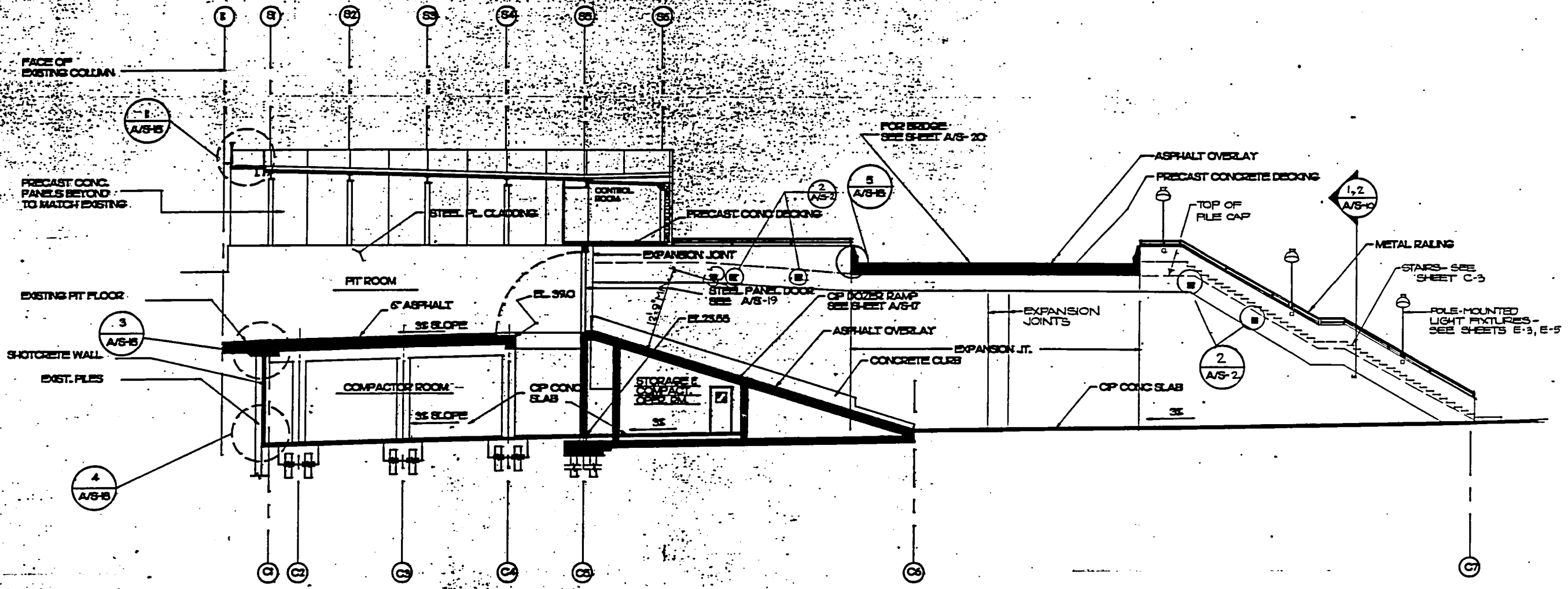
SHEET TITLE: PIT ROOM VENTILATION & MISTING SYSTEMS
 PROJECT TITLE: METRO SOUTH STATION MODIFICATIONS

SCS ENGINEERS
 STEARNS, CONRAD AND SCHMIDT
 CONSULTING ENGINEERS, INC.

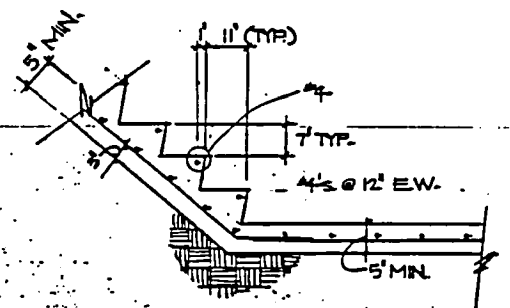
DATE: 1 MAY 90
 SCALE: AS NOTED
 DRAWING NO. M-2 of

PROJ. NO. 88918
 DATE: 1/11/90
 DWN. BY: MC
 CHK. BY: NM
 APP. BY: NM

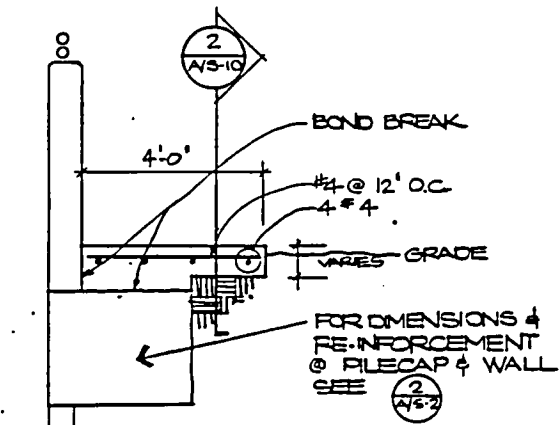
A permit to practice in Oregon has been granted to ROBERT RICHARD GRIESENOW valid only until official action is taken on his application for Oregon registration dated September 19, 1989.



LONGITUDINAL SECTION THRU BULLDOZER RAMP
 SCALE 1/8" = 1'-0"



STAIR DETAIL @ RETAINING WALL
 1/2" = 1'-0"



STAIRS @ PILE CAP
 1/2" = 1'-0"

REV	DATE	BY	CHK
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

SHEET TITLE: BUILDING SECTION
 PROJECT TITLE: METRO SOUTH STATION MODIFICATIONS

SCS ENGINEERS
 STEARNS, CONRAD AND SCHMIDT
 CONSULTING ENGINEERS, INC.
 DRAWN BY: PV
 CHECKED BY: JH
 DATE: 1 MAY 90

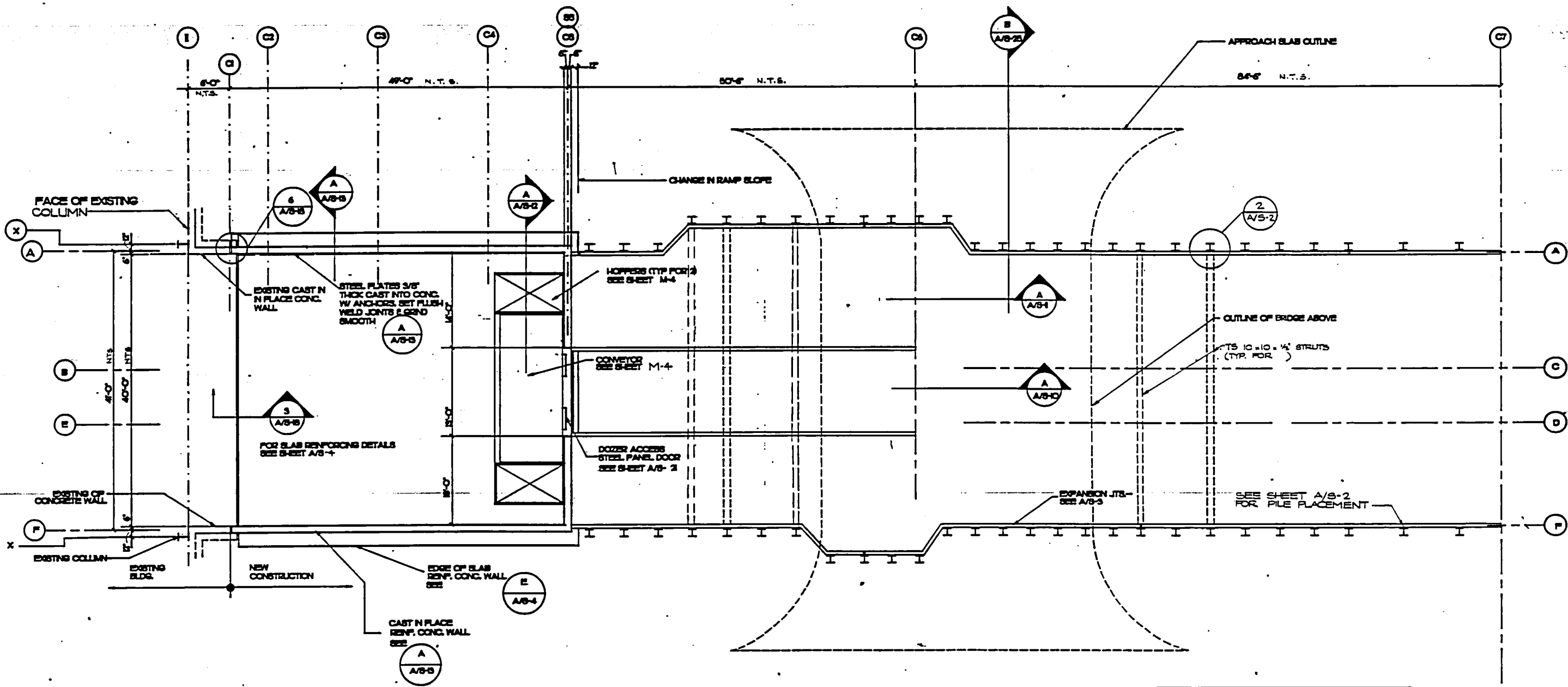
DATE: 1 MAY 90
 SCALE: 1/8" = 1'-0"
 DRAWING NO.: A/S-10

A permit to practice in Oregon has been granted to ROBERT RICHARD GRIEBENOW valid only until official action is taken on his application for Oregon registration, dated September 19, 1989.

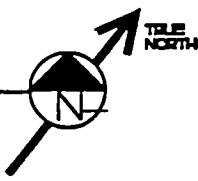


REV	DATE	BY

SHEET TITLE: **PIT ROOM LEVEL PLAN**
 PROJECT TITLE: **METRO SOUTH STATION MODIFICATIONS**



PIT ROOM LEVEL PLAN
 SCALE 1/8" = 1'-0"

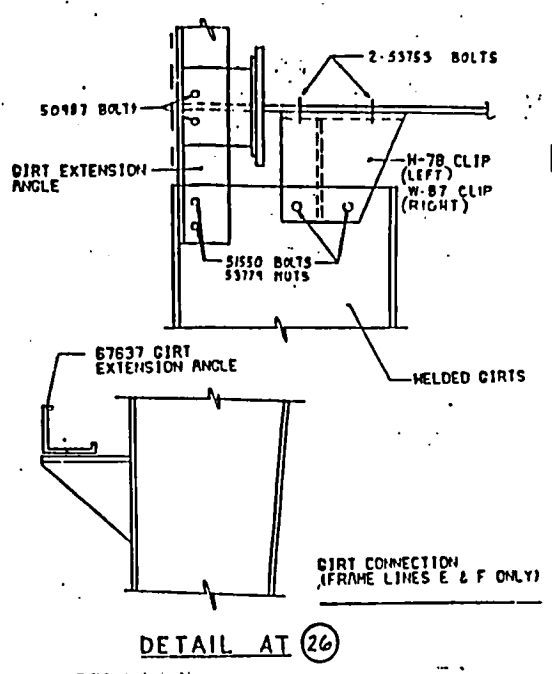
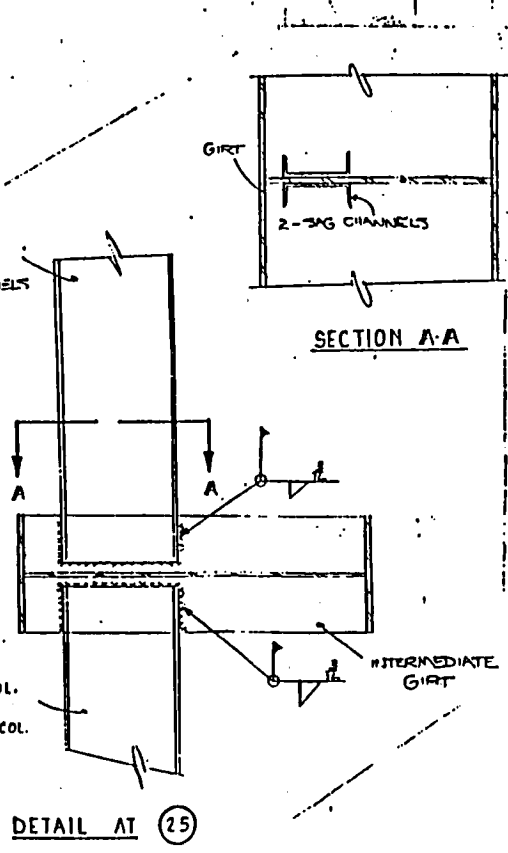
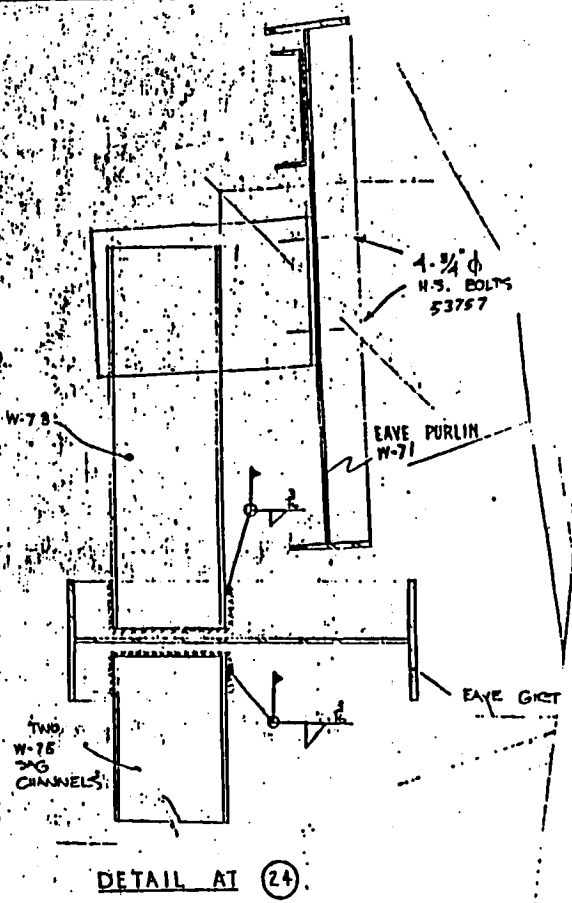
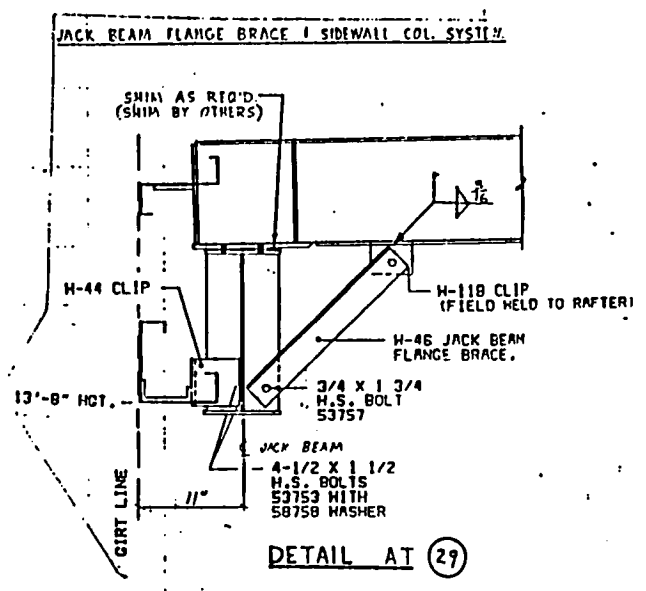
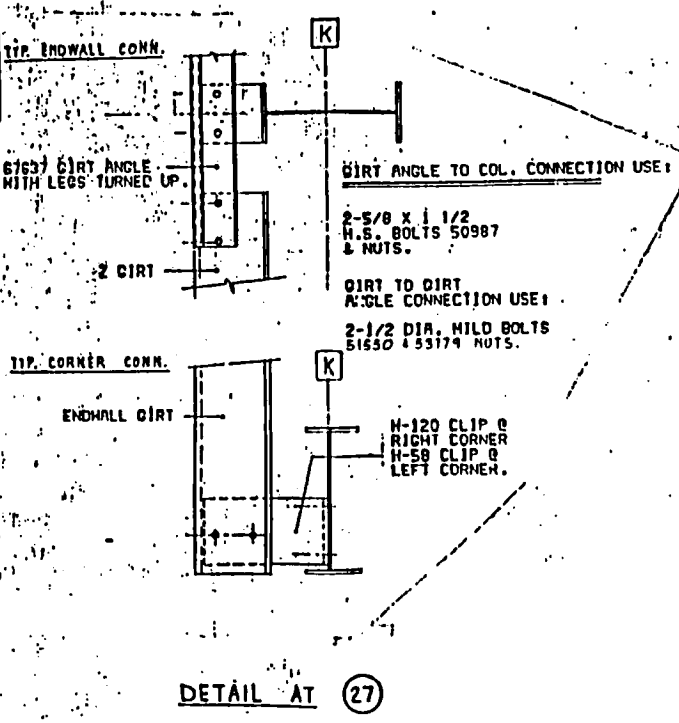
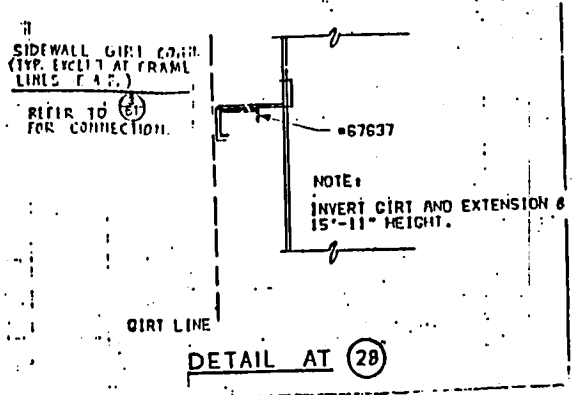
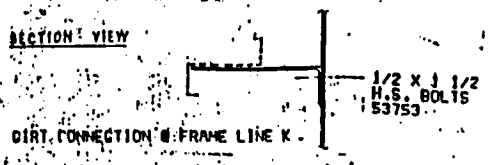


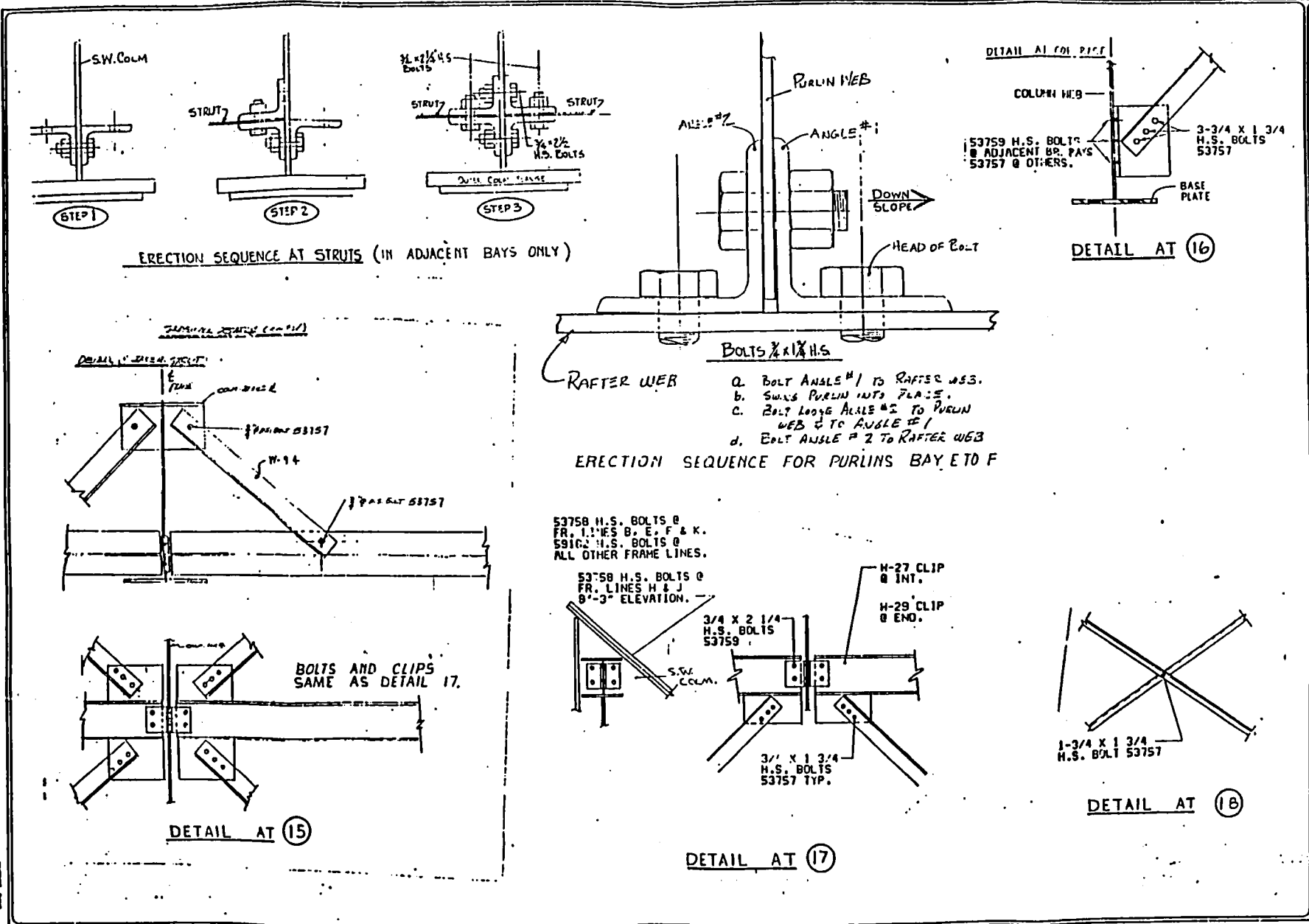
NOTES:
 1. FOR DEFINITION OF GRIDLINES, SEE A/S-1
 2. FOR DOZER RAMP DETAILS, SEE A/S-19

SCS ENGINEERS
 STEARNS, CONRAD AND SCHMIDT
 CONSULTING ENGINEERS, INC.

DESIGNED BY: PV
 DRAWN BY: LM
 CHECKED BY: JJC
 QA/RV BY: TJC
 APPROVED BY: JJC
 PROJECT NO: 14818

DATE: 1 MAY 99
 SCALE: 1/8" = 1'-0"
 DRAWING NO: **A/S-5**





STRUCTURAL DETAILS

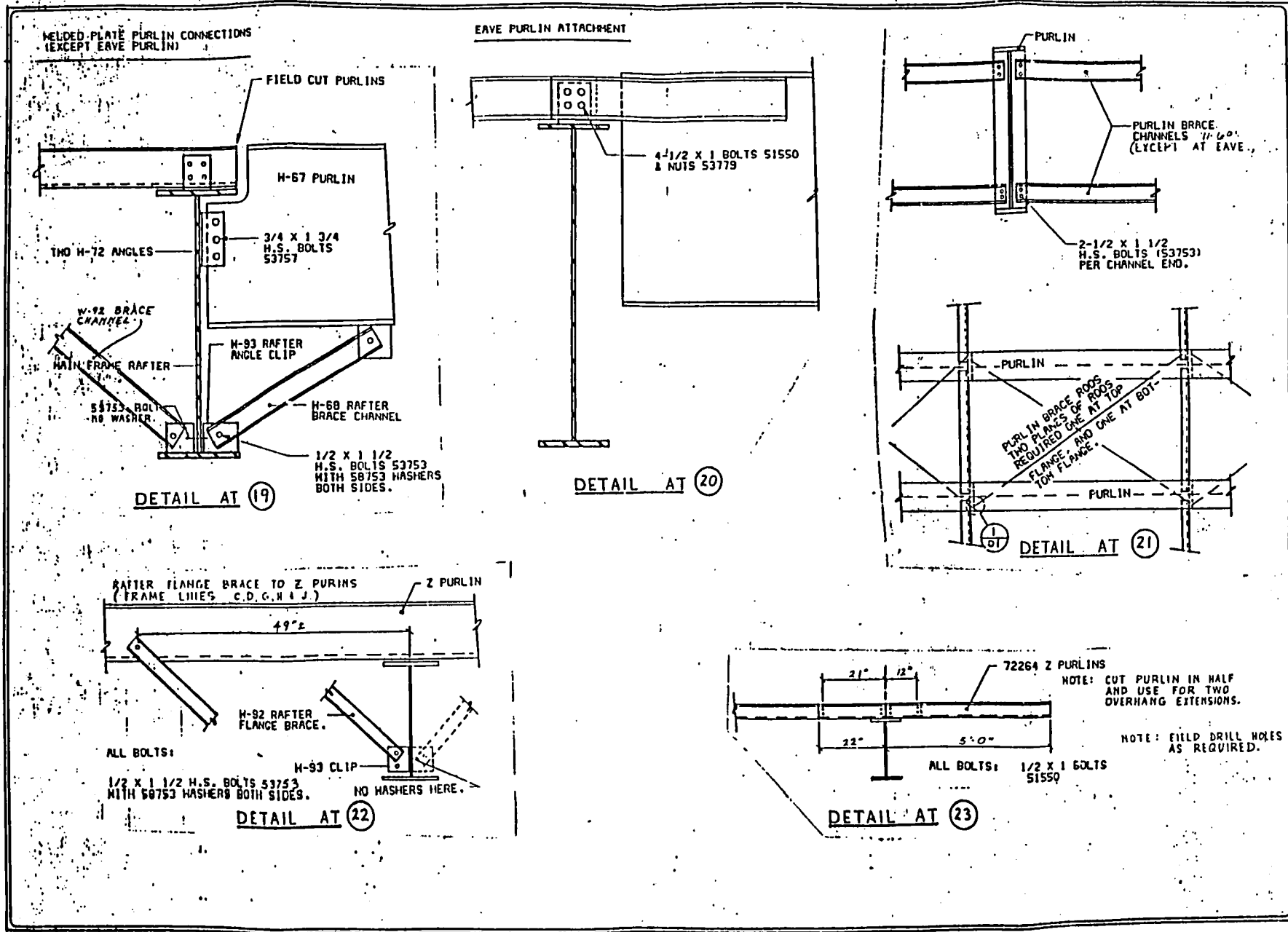
Arco Building Systems
20 TRAINOR DRIVE
CINCINNATI, OHIO 45248

ORDER NO. W-9607

DATE 1-8-82

REVISION 9-23-92

SHEET NO. D3



STRUCTURAL DETAILS

Arco Building Systems
20 TRAINOR DRIVE
CINCINNATI, OHIO 45248

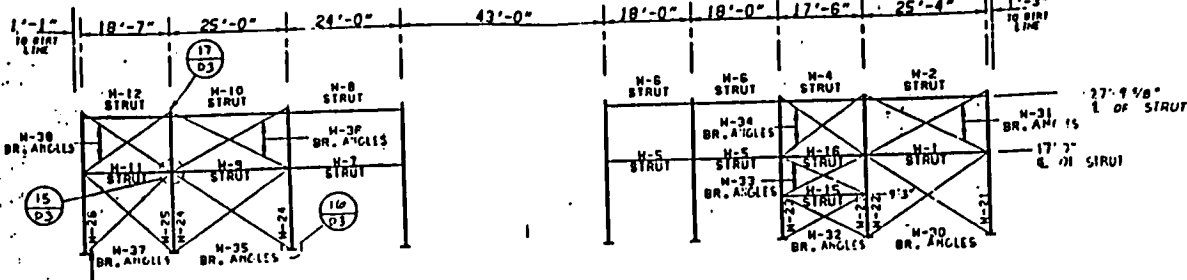
ORDER NO. W-9607

DATE 1-8-82

REVISION 9-23-92

SHEET NO. D4

B C D E F G H J K

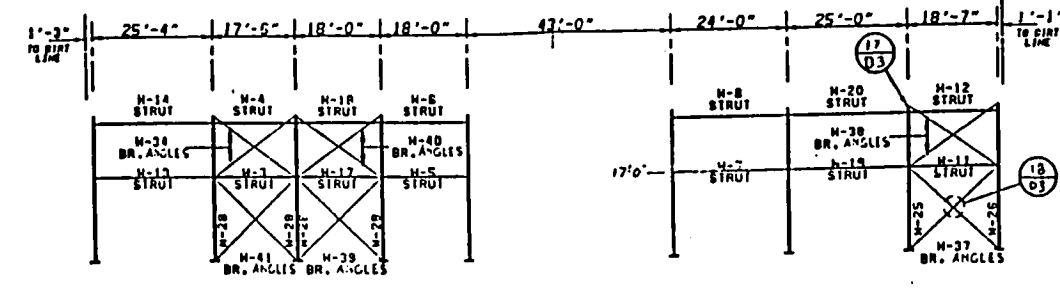


NOTE: INDICATES CLIP USED TO ATTACH ANGLE TO COLUMN BASE.

S.M. STRUCTURAL AUX. COL. LINE 3

NOTE: FOR ERECTION SEQUENCE OF STRUTS SEE SHEET D3...

K J H G F E D C B



S.M. STRUCTURAL AUX. COL. LINE 1

SIDEWALL BRACING

Armcro Building Systems
20 TRIANGLE DRIVE
CINCINNATI, OHIO 45246

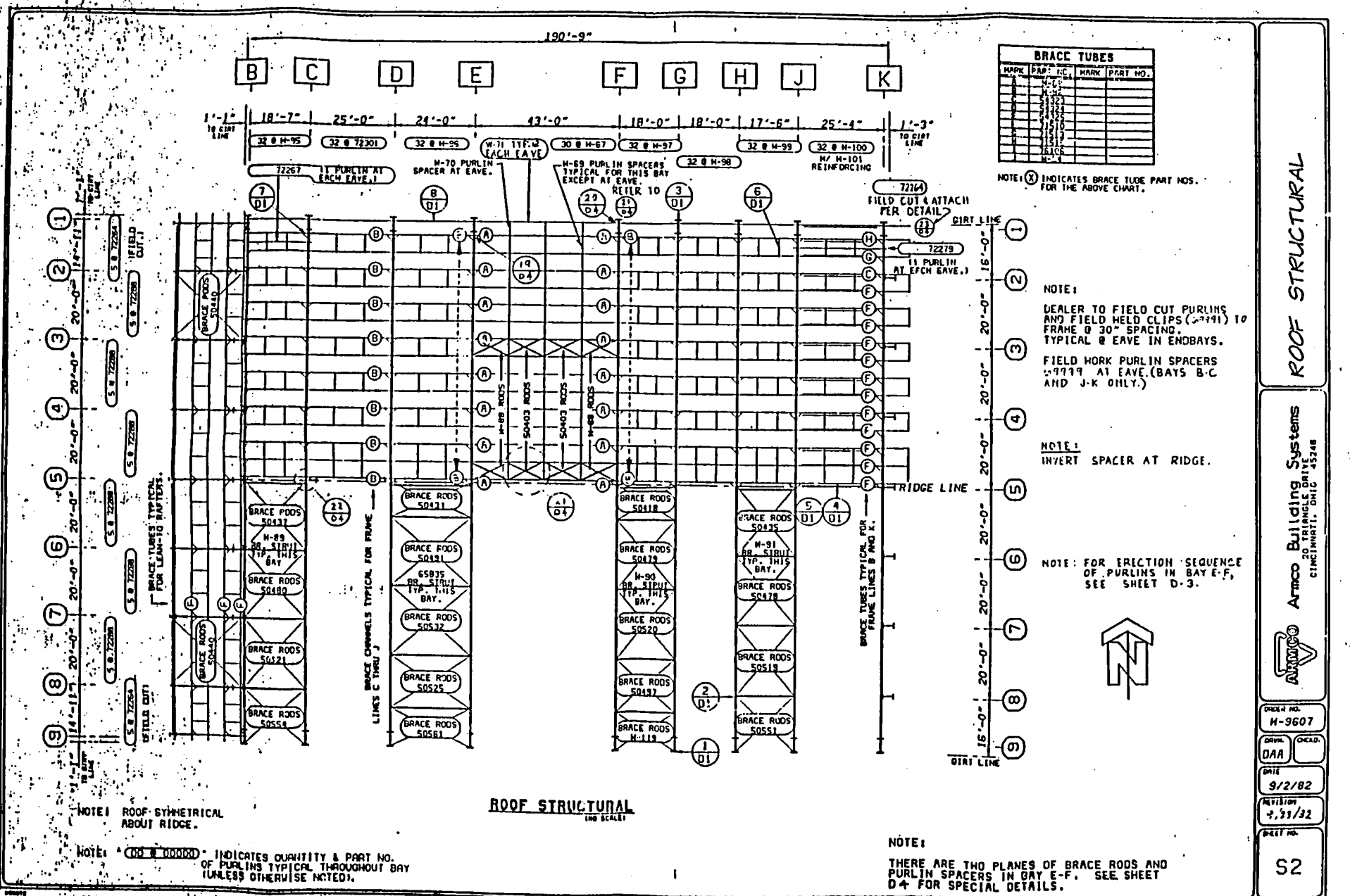
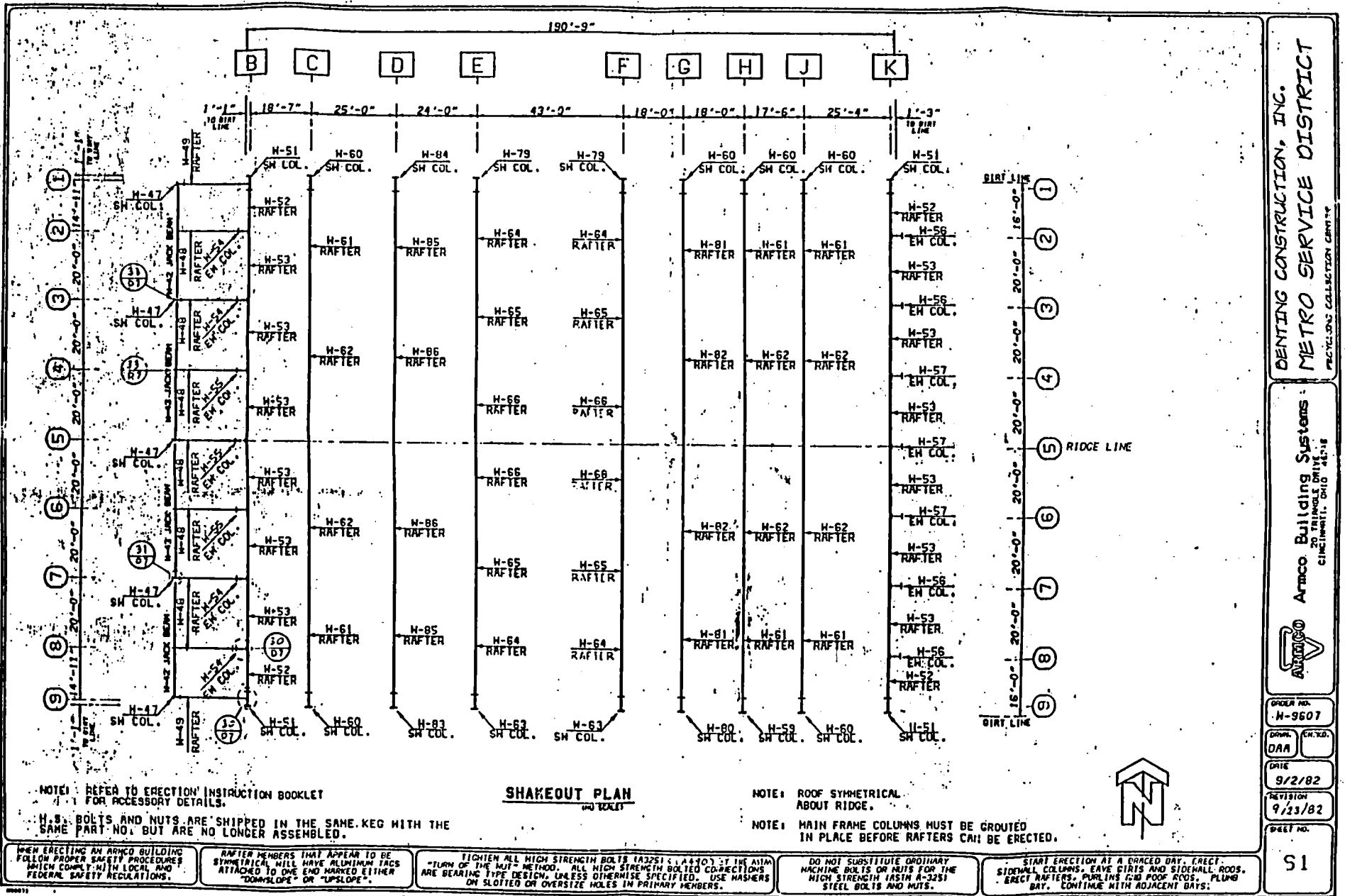
ORDER NO.	H-9607
DRAWN	DAA
DATE	9/2/82
REVISION	9/13/82
SHEET NO.	S3

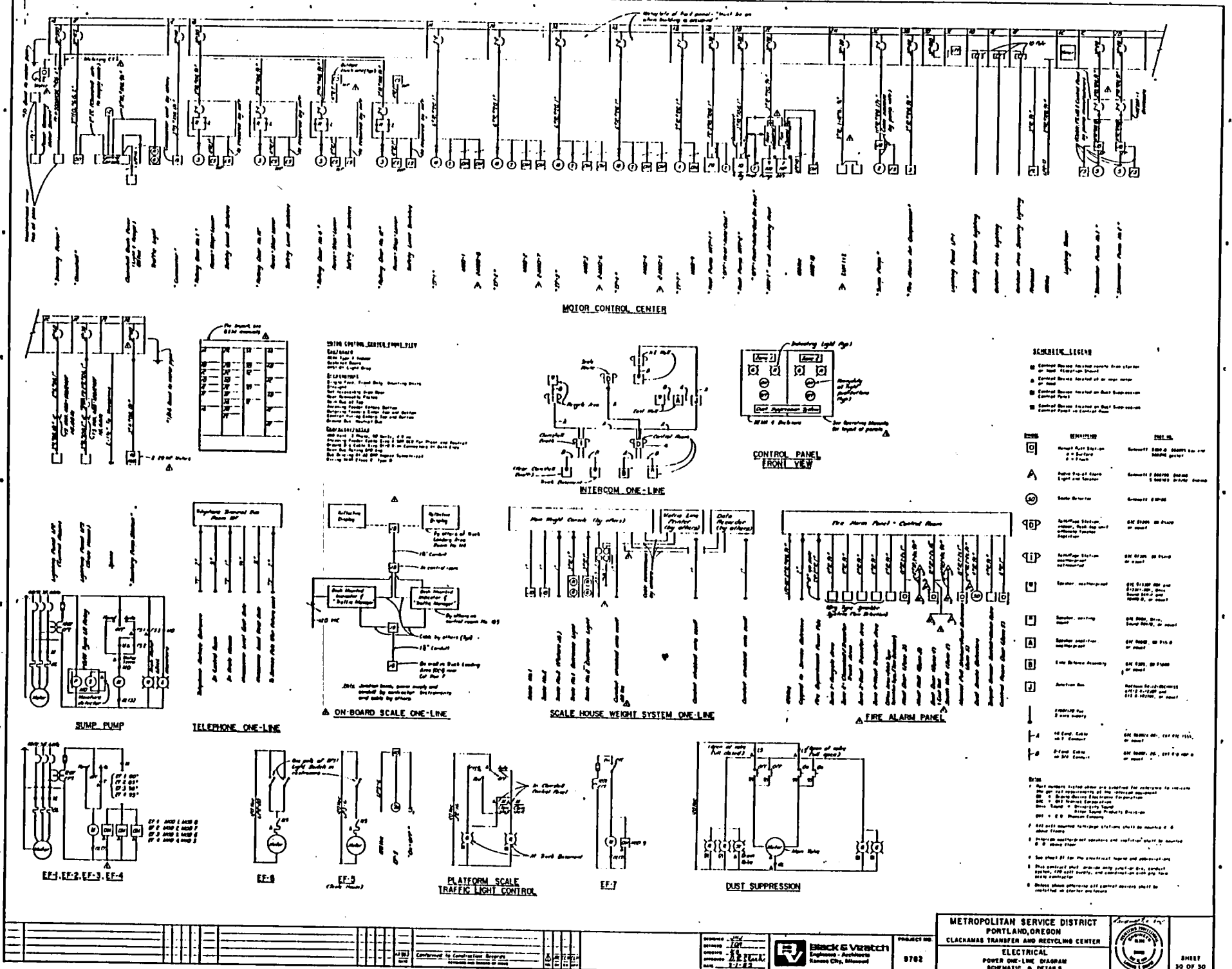
<p>TYPICAL HILLSIDE WASHER CONNECTION</p> <p>DETAIL AT ① 12/81</p> <p>TYP: HILLSIDE WASHER CONNECTION</p>	<p>DETAIL AT ② 12/81</p> <p>BRACE STRUT BETWEEN RAFTERS</p>	<p>DETAIL AT ③ 12/81</p> <p>INTERIOR FRAME AT EAVE</p>	<p>DETAIL AT ④ 12/81</p> <p>END BAY PURLIN REINFORCING-20', 24' & 25' BAYS</p>
<p>DETAIL AT ⑤ 12/81</p> <p>PURLIN RESTRAINT CLIP</p>	<p>DETAIL AT ⑥ 12/81</p> <p>OPPOSING PURLINS AT PURLIN SPACER-</p>	<p>DETAIL AT ⑦ 12/81</p> <p>INTERIOR FRAME AT PURLIN LAP SHOWING BRACE TUBES</p>	<p>DETAIL AT ⑧ 12/82</p> <p>LAP PURLIN AT EAVE GIRTS SUPPORT ANGLE AND GIRTS STRAP</p>
<p>DETAIL AT ⑨ 12/81</p> <p>GIRTS & GIRTS EXT. CONNECTION TO COLUMN W/ BRACE TUBES</p>	<p>DETAIL AT ⑩ 12/81</p> <p>GIRTS & GIRTS EXT. CONNECTION TO COLUMN</p>	<p>DETAIL AT ⑪ 12/81</p> <p>END FRAME AT EAVE-ARM-IX RAKE GIRTS</p>	<p>DETAIL AT ⑫ 12/82</p> <p>ARM-IX RAKE GIRTS BOLTING TO LAPPED PURLIN. BOLT REQ'D. & CAP</p>

STRUCTURAL DETAILS

Armcro Building Systems
20 TRIANGLE DRIVE
CINCINNATI, OHIO 45246

ORDER NO.	H9607
DRAWN	DAA
DATE	09/03/82
REVISION	9/13/82
SHEET NO.	D1



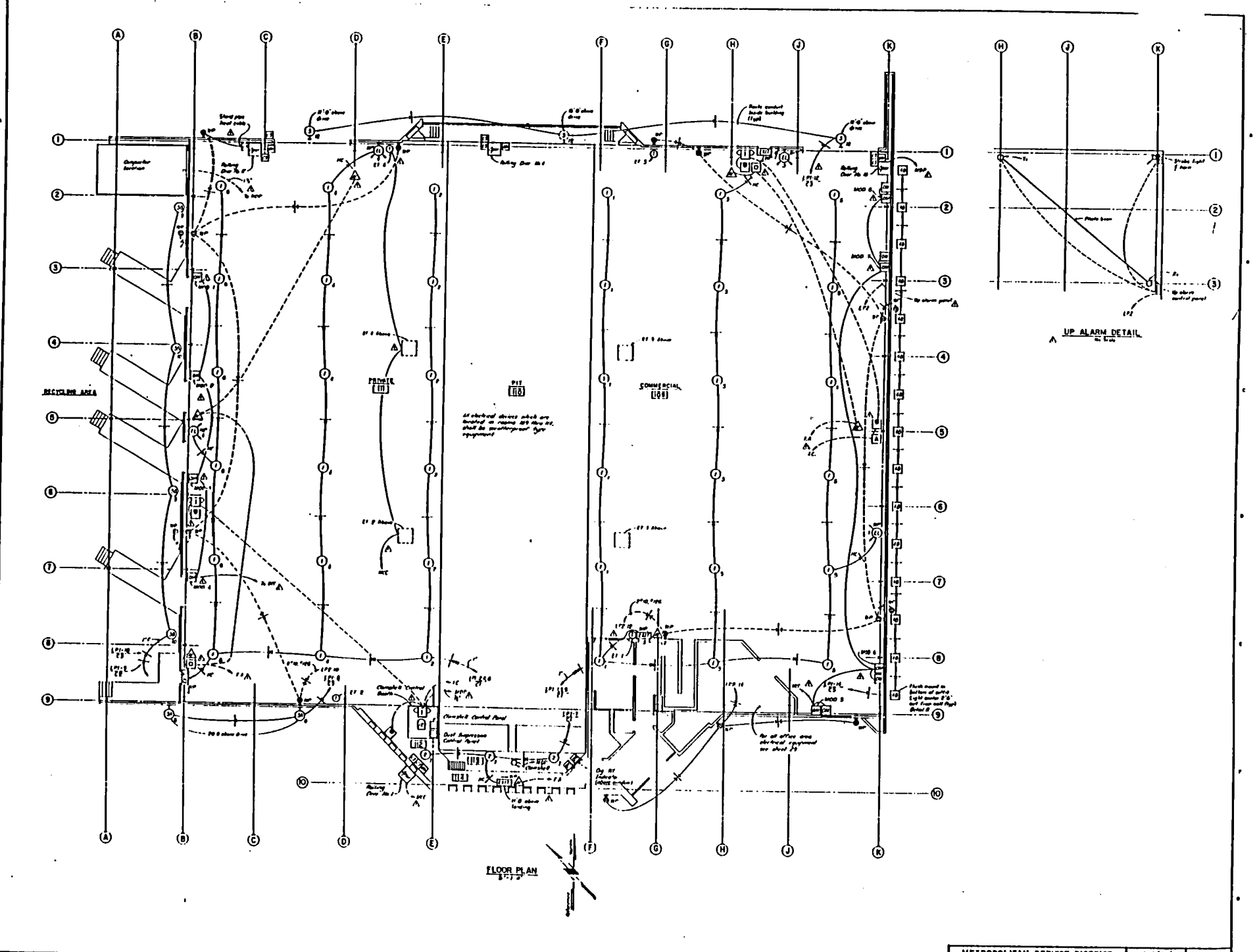


METROPOLITAN SERVICE DISTRICT
 PORTLAND, OREGON
 CLACKAMAS TRANSFER AND RECYCLING CENTER
 ELECTRICAL
 POWER ONE-LINE DIAGRAM
 SCHEMATIC & DETAILS

PROJECT NO. 9782

BRICK & VERBICCH
 Engineers - Architects
 Kansas City, Missouri

SHEET 28 OF 30



METROPOLITAN SERVICE DISTRICT
 PORTLAND, OREGON
 CLACKAMAS TRANSFER AND RECYCLING CENTER
 ELECTRICAL
 TRANSFER BUILDING FLOOR PLAN

PROJECT NO. 9782

BRICK & VERBICCH
 Engineers - Architects
 Kansas City, Missouri

SHEET 28 OF 30

