

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>			1. CONTRACT ID CODE J	PAGE OF PAGES 1   2
2. AMENDMENT/MODIFICATION NO. 0004	3. EFFECTIVE DATE 10 April 2002	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)	
6. ISSUED BY U.S. ARMY ENGINEER DISTRICT, ALBUQUERQUE CORPS OF ENGINEERS 4101 JEFFERSON PLAZA, N.E. ALBUQUERQUE, NEW MEXICO 87109-3435	CODE	7. ADMINISTERED BY (If other than Item 6)		CODE
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)			(√)	9A. AMENDMENT OF SOLICITATION NO. DACW47-02-R-0002
			X	9B. DATED (SEE ITEM 11) 23 January 2002
				10A. MODIFICATION OF CONTRACTS/ORDER NO.
				10B. DATED (SEE ITEM 13)
CODE	FACILITY CODE			

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers  is extended,  is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

**13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

- A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
- B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
- C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
- D. OTHER (Specify type of modification and authority)

**E. IMPORTANT:** Contractor  is not,  is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

**PROJECT: TWO-PHASE DESIGN/BUILD, BACA/Dlo'ay azhi CONSOLIDATED REPLACEMENT SCHOOL, PREWITT, MCKINLEY COUNTY, NEW MEXICO**

1. This is Amendment No. 4 to Solicitation No. DACW47-02-R-0002; 23 January 2002. The following revisions shall be incorporated into the specifications. All other provisions shall remain unchanged.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____	16C. DATE SIGNED
(Signature of person authorized to sign)		(Signature of Contracting Officer)	

2. SOLICITATION, OFFER, AND AWARD, Standard Form 1442: In Block 10 add the following information: "Contractor's wishing to visit the site must check-in with the Principal's Office prior to accessing the site."

3. WAGE RATES: Delete General Decision Number NM020001, Modification Number 0, in its entirety and replace with General Decision Number NM020001, Modification Number 1, attached hereto.

4. SPECIFICATIONS: Delete the following listed pages and substitute the pages attached hereto. On the revised pages, for convenience, changes are emphasized by the amendment number in parentheses before and after changes from the previous issue. All portions of the revised (or new) pages shall apply whether or not changes have been indicated.

<u>Delete Page</u>	<u>Insert Page</u>
<u>Volume 1 of 3</u>	
--	Page 5b and 5c of 171
01010-4	01010-4
01010-6	01010-6
<u>Volume 3 of 3</u>	
Appendix A, Mech 1.1 thru Mech 5.1	Appendix A, Mech 1.1 thru Mech 5.1
--	Appendix A, Fire 1.1 thru Fire 5.2
Appendix A, Vol 2, I thru Spec II	Appendix A, Vol 2, 1 thru Spec Spec 3.3

//////////LAST ITEM//////////

## SECTION 00650

### WAGE RATES

#### General Decision Number NM020001

General Decision Number **NM020001**

Superseded General Decision No. NM010001

State: **New Mexico**

Construction Type:

BUILDING

HEAVY

County(ies):

STATEWIDE

STATEWIDE - EXCLUDING EDDY AND LEA COUNTIES FOR BUILDING CONSTR  
GENERAL BUILDING AND HEAVY ENGINEERING CONSTRUCTION shall  
include the construction, alteration, repair and demolition of  
buildings, including office buildings, warehouses, industrial an  
commercial buildings, institutional and public buildings, and al  
air conditioning, conduit, heating and other mechanical and  
electrical works and site preparation for building or heavy  
engineering projects under this classification, stadia; and shall  
include electrical, gas, water, sewer lines, and other such  
utility construction which are part of projects under this  
classification and include within the property line or less than  
five (5) feet from the building or heavy engineering structure,  
whichever is closer, provided, however, regard to electrical  
utilities such construction shall include construction from the  
first attachment of incoming power source without regard to the  
property line or proximity to the building or the heavy  
engineering structure; and include construction, alteration,  
repair and demolition of heavy engineering work such as power  
generating plants, pump stations, natural gas compressing  
stations; covered reservoirs and covered sewage and water  
treatment facilities concrete linings for canals, ditches and  
channels; concrete dams; earth dams of one million (1,000,000)  
cubic yards or over; radio towers, ovens, furnaces, kilins,  
silos, shafts and tunnels (other than highway shafts and  
tunnels), hydro-electric projects; and well drilling, telephone  
and electrical transmission lines which are part of GENERAL  
BUILDING AND HEAVY ENGINEERING PROJECTS: mining appurtenances  
such as tripples, washeries and loading and discharging chutes,  
and specialized structures for testing, launching and recovering  
space and other rocket-type missiles.

Modification Number	Publication Date
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0	03/01/2002
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1	04/05/2002
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COUNTY(ies):

## STATEWIDE

ASBE0066D 03/01/2002

	Rates	Fringes
CURRY, HARDING, LEA, QUAY, ROOSEVELT, UNION COUNTIES ASBESTOS WORKERS/INSULATORS (Includes application of all insulating materials, protective coverings, coatings and finishings to all ltypes of mechanical systems and asbestos removal	17.05	4.96

ASBE0076B 01/01/2002

	Rates	Fringes
STATEWIDE, EXCLUDING CURRY, HARDING, LEA, QUAY, ROOSEVELT & UNION COUNTIES ASBESTOS WORKERS/INSULATORS (Includes application of all insulating materials, pro- tective coverings, coatings and finishings to all types of mechanical systems and asbestos removal)	21.72	5.67
LOS ALAMOS COUNTY	23.44	5.67

BOIL0627A 01/01/2001

	Rates	Fringes
STATEWIDE, EXCLUDING BERNALILLO, CIBOLA, MCKINLEY, RIO ARRIBA, SANDOVAL AND SOCORRO COUNTIES BOILERMAKERS	19.28	10.89

\* BRNM0001A 04/01/2002

	Rates	Fringes
BRICKLAYERS; MARBLE MASONS; STONEMASONS; TILE LAYERS & TERRAZZO WORKERS: DONA ANA COUNTY	17.20	3.39
GRANT, LUNE, OTERO & SIERRA COS.	19.70	3.39
HIDALGO COUNTY	21.70	3.39

\* BRNM0001B 04/01/2002

	Rates	Fringes
BERNALILLO, CATRON, CIBOLA, CHAVES, COLFAX, CURRY, DEBACA, GUADALUPE, HARDING, LINCOLN, LOS ALAMOS, MCKINLEY, MORA, RIO ARRIBA, ROOSEVELT, QUAY, SANDOVAL, SAN JUAN, SAN MIGUEL, SANTA FE, SOCORRO, TAOS, TORRENCE, UNION & VALENCIA COUNTIES BRICKLAYERS-STONEMASONS	21.53	3.51
MARBLE MASONS, TILE LAYERS & TERRAZZO WORKERS	18.35	3.51

CARP0092A 10/01/2001

	Rates	Fringes
CARPENTERS, LATHERS, & PILEDRIVERMEN	19.32	4.29
LIGHT COMMERCIAL CONSTRUCTION**	16.46	2.20

\*\*SEE DEFINITION AT THE END OF TRUCK DRIVERS

MILLWRIGHTS:

ZONE I	21.75	4.29
ZONE II	24.00	4.29

BASING POINTS FOR MILLWRIGHTS ONLY FROM ALBUQUERQUE CITY HALL

ZONE I	0 TO 15 ROAD MILES
ZONE II	15 TO 35 ROAD MILES

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ELEC0583B 12/01/2001

	Rates	Fringes
ELECTRICIANS		
Zone I	17.60	4.25%+3.85
Zone II	19.55	4.25%+3.85
CABLE SPLICERS:		
Zone I	17.85	4.25%+3.85
Zone II	19.80	4.25%+3.85

Zone 1: The area within a 25 mile radius from the downtown Post Office in El Paso, TX. Ft Bliss and Biggs Field proper to be included in this free zone. The area within a 15 mile radius from the Post Office in Las Cruces, **NM** and within a 5 mile radius from the Post Office in Alamogordo, Deming and Lordsburg. The area 10 miles East and 10 miles West of Interstate 10 between El Paso, Texas and Las Cruces, **NM**.

Zone 2: Dona Ana, Otero, Luna and Hidalgo Counties (except that area in Zone 1.

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\* ELEC0611B 01/01/2002

	Rates	Fringes
COMMERCIAL LINE WORK (also applies to switching stations and substations adjacent to power plants):		
Bernalillo, Catron, Chaves, Cibola, Colfax, Curry, DeBaca, Grant, Guadalupe, Harding, Lincoln, Los Alamos (USE ZONE 3 RATES), McKinley, Mora, Quay, Rio Arriba, Roosevelt, Sandoval, San Juan, San Miguel, Santa Fe, Sierra, Socorro, Taos, Torrance, Union, Valencia & White Sands Missile Range and that portion of Fort Bliss in <b>New Mexico</b> .		

Lineman - Technicians:

Zone I	22.55	3.5%+5.95
Zone II	24.58	3.5%+5.95
Zone III	25.93	3.5%+5.95
Zone IV	28.41	3.5%+5.95

Cable Splicers:

Zone I	24.81	3.5%+5.95
Zone II	26.84	3.5%+5.95
Zone III	28.19	3.5%+5.95
Zone IV	30.67	3.5%+5.95

Equipment Op. (includes helicopter op.) and

Equipment Mechanic (includes helicopter mechanic):

Zone I	21.41	3.5%+5.95
Zone II	23.44	3.5%+5.95
Zone III	24.79	3.5%+5.95
Zone IV	27.27	3.5%+5.95

Powderman:

Zone I	19.63	3.5%+5.95
Zone II	21.66	3.5%+5.95
Zone III	23.01	3.5%+5.95
Zone IV	25.49	3.5%+5.95

Groundman - Jackhammer Op.:		
Zone I	16.00	3.5%+5.95
Zone II	18.03	3.5%+5.95
Zone III	19.38	3.5%+5.95
Zone IV	21.86	3.5%+5.95

Zone 1	Basic Wage Rates	
City	Miles From	
	Main Post Office	
*Albuquerque	25 miles	
Santa Fe	10 miles	
Las Vegas	8 miles	
Farmington	6 miles	
Raton	6 miles	
Tucumcari	6 miles	
Gallup	10 miles	
Roswell	12 miles	
Ruidoso	12 miles	
Portales	12 miles	
Carrizozo	12 miles	
Clovis	12 miles	
Belen	12 miles	
Los Lunas	12 miles	
Espanola	14 miles	

\*The eastern edge of the Albuquerque Zone extends no further than the western boundary of the Village of Tjieras.

Zone 2 extending up to twenty (20) miles beyond Zone 1, EXCEPT ALBUQUERQUE.

Zone 3 extending up to thirty (30) miles beyond Zone 1, EXCEPT ALBUQUERQUE.

Zone 4 anything beyond thirty (30) miles from Zone 1, EXCEPT ALBUQUERQUE.

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 \* ELEC0611C 12/01/2001

	Rates	Fringes
ELECTRICIANS:		
Bernalillo, Santa Fe, Torrance, DeBaca, Guadalupe, Quay, San Miguel, Mora, Harding, Union, Colfax, Taos, Rio Arriba, Grant, Sandoval, Valencia, Socorro, Catron, McKinley, Sierra, San Juan, Chaves, Curry, Lincoln, Cibola & Roosevelt Counties		
Zone 1		
Electricians	22.55	6.81
Cable Splicers	24.81	6.81
Zone 2		
Electricians	24.58	6.81
Cable Splicers	26.84	6.81
Zone 3		
Electricians	25.93	6.81
Cable Splicers	28.19	6.81
Zone 4		
Electricians	28.41	6.81
Cable Splicers	30.67	6.81

	Basic Wage Rates	
City	Miles From	
	Main Post Office	
Albuquerque	40 miles	
Belen	12 miles	
Carrizozo	12 miles	

Clovis	12 miles
Espanola	14 miles
Farmington	6 miles
Gallup	10 miles
Las Vegas	8 miles
Los Lunas	12 miles
Portales	12 miles
Raton	6 miles
Roswell	12 miles
Ruidoso	12 miles
Santa Fe	10 miles
Tucumcari	6 miles

Zone 2 extending up to twenty (20) miles beyond Zone 1, EXCEPT ALBUQUERQUE.

Zone 3 extending up to thirty (30) miles beyond Zone 1, EXCEPT ALBUQUERQUE.

Zone 4 anything beyond thirty (30) miles from Zone 1, EXCEPT ALBUQUERQUE.

FOR ESTABLISHING THE OUTLYING ZONES FROM THE ALBUQUERQUE FREE ZONE ONLY, ZONE 2 SHALL EXTEND UP TO TEN (10) MILES BEYOND ZONE 1, ZONE 3 SHALL EXTEND UP TO TWENTY (20) MILES BEYOND ZONE 1, AND ZONE 4 ANYTHING BEYOND TWENTY (20) MILES FROM ZONE 1.

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 \* ELEC0611D 12/01/2001

	Rates	Fringes
LOS ALAMOS CO.		
ELECTRICIANS	25.93	6.81
CABLE SPLICERS	28.19	6.81

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 \* ELEC0611E 12/01/2001

	Rates	Fringes
EDDY AND LEA COUNTIES:		
ZONE A		
ELECTRICIANS	21.00	6.81
CABLE SPLICERS	22.05	6.81
ZONE B		
ELECTRICIANS	21.45	6.81
CABLE SPLICERS	22.50	6.81
ZONE C		
ELECTRICIANS	21.60	6.81
CABLE SPLICERS	22.65	6.81
ZONE D		
ELECTRICIANS	21.85	6.81
CABLE SPLICERS	22.90	6.81

ZONE A DISPATCH POINTS

Artesia - 12 miles  
 Carlsbad - 12 miles  
 Hobbs - 12 miles  
 Lovington - 12 miles

Zone A shall be designated from the Main Post Office of Artesia, Carlsbad, Hobbs and Lovington, **New Mexico**.

Zone B extending up to ten (10) miles beyond Zone A.

Zone C extending up to twenty-eight (28) miles beyond Zone A.

Zone D anything beyond twenty-eight (28) miles beyond Zone A.

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 ELEC0611I 01/01/2000

	Rates	Fringes
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COMMERCIAL LINE WORK (also applies to switching stations adjacent to power plants):

Eddy and Lea Counties:

Lineman - Technicians:

Zone I	19.00	3.75%+5.15
Zone II	19.45	3.75%+5.15
Zone III	19.60	3.75%+5.15
Zone IV	19.85	3.75%+5.15

Cable Splicers:

Zone I	19.35	3.75%+5.15
Zone II	19.80	3.75%+5.15
Zone III	19.95	3.75%+5.15
Zone IV	20.20	3.75%+5.15

Equipment Op. and Mechanics  
(includes Helicopter Op. & Mechanic):

Zone I	18.05	3.75%+5.15
Zone II	18.50	3.75%+5.15
Zone III	18.65	3.75%+5.15
Zone IV	18.90	3.75%+5.15

Powderman

Zone I	16.53	3.75%+5.15
Zone II	16.98	3.75%+5.15
Zone III	17.13	3.75%+5.15
Zone IV	17.38	3.75%+5.15

Groundman - Jackhammer Op.:

Zone I	13.49	3.75%+5.15
Zone II	13.94	3.75%+5.15
Zone III	14.09	3.75%+5.15
Zone IV	14.34	3.75%+5.15

FROM THE MAIN POST OFFICE OF ARTESIA,  
CARLSBAD, HOBBS & LOVINGTON, **NEW MEXICO**

- ZONE I - 0 to 12 miles
- ZONE II - 12 miles to 22 miles
- ZONE III - 22 miles to 40 miles
- ZONE IV - 40 miles and beyond

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ELEC0611Z 01/01/2000

Rates Fringes

COMMERCIAL LINE WORK (ALSO APPLIES TO SWITCHING STATIONS AND SUBSTATIONS ADJACENT TO POWER PLANTS):

Dona Ana, Hidalgo, Luna and Otero Cos., exclusive of White Sands Missile Range and that portion of Fort Bliss in **New**

**Mexico**

Linemen - Technicians

Zone I	16.85	3.75%+3.30
Zone II	18.80	3.75%+3.30

Cable Splicers

Zone I	17.19	3.75%+3.30
Zone II	19.18	3.75%+3.30

Equipment Op. (includes Helicopter Op.):

Zone I	14.66	3.75%+3.30
Zone II	16.36	3.75%+3.30

Equipment Mechanic (includes Helicopter Mech.):

Zone I	14.66	3.75%+3.30
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Zone II	16.36	3.75%+3.30
Powderman:		
Zone I	14.15	3.75%+3.30
Zone II	15.79	3.75%+3.30
Groundman - Jackhammer Op.:		
Zone I	11.96	3.75%+3.30
Zone II	13.35	3.75%+3.30

ZONE I:

a. The area within a 25 mile radius from the Downtown Post Office in El Paso, Texas. Fort Bliss and Biggs Field Property to be included in this Free Zone. Fort Bliss and Biggs Field to be defined by official U.S. Government Map

b. The area within a five mile radius of any city, town, or municipality within which an employer establishes or maintains his permanent place of business.

c. The area within a fifteen-mile radius from the Post Office in Las Cruces, **New Mexico**, and within a five mile radius from the Post Office in Alamogordo, Deming, and Lordsburg, **New Mexico**.

d. The area ten miles East and ten miles West of Interstate 10, between El Paso, Texas and Las Cruces, **New Mexico**.

ZONE II: All other areas of the jurisdiction except those specified in Zone I.

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ELEV0131A 07/01/2001

	Rates	Fringes
ELEVATOR CONSTRUCTORS:		
MECHANIC	22.885	7.195+a
FOOTNOTE: a. Under 5 years service 6%; over 5 years service 8%. 7-Paid Holidays New Years Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Day.		

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\* ENGI0953C 04/01/2002

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
HEAVY CONSTRUCTION:		
ZONE 1:		
GROUP I	15.57	3.15
GROUP II	16.96	3.15
GROUP III	17.11	3.15
GROUP IV	17.32	3.15
GROUP V	17.38	3.15
GROUP VI	17.52	3.15
GROUP VII	17.64	3.15
GROUP VIII	19.08	3.15
ZONE 2:		
GROUP I	18.07	3.15
GROUP II	19.46	3.15
GROUP III	19.61	3.15
GROUP IV	19.82	3.15
GROUP V	19.88	3.15
GROUP VI	20.02	3.15
GROUP VII	20.14	3.15
GROUP VIII	21.58	3.15
ZONE 3:		
GROUP I	19.57	3.15
GROUP II	20.96	3.15

GROUP III	21.11	3.15
GROUP IV	21.32	3.15
GROUP V	21.38	3.15
GROUP VI	21.52	3.15
GROUP VII	21.64	3.15
GROUP VIII	22.08	3.15

SHAFT AND TUNNEL WORK - \$.15 per hour above regular rate.

HAZARDOUS PAY - The following pay shall be applicable for every hour an operating engineer is required by governmental regulations and does wear special equipment for hazardous work at the designated levels. This is applicable in all three zones

LEVEL C - 10% above regular hourly wage

LEVEL B - 10% above regular hourly wage

LEVEL A - 15% above regular hourly wage

#### ZONE PAY

The reference point for determining zone pay shall be from the intersection of Interstate Highway 25 and Interstate Highway 40 (the Big "I") in Albuquerque.

ZONE I - Albuquerque - 0 to 50 mile radius from the Big "I" shall be a Free Zone

- Farmington - 0 to 15 mile radius of Farmington City Hall shall be a Free Zone

Zone II - Shall be \$2.50 per hour above base pay. Will apply outside of above parameters up to 35 miles

Zone III - Shall be \$1.50 cents per hour above Zone II for a total of \$4.00 per hour and will apply after 35 miles of Zone I's parameters.

#### POWER EQUIPMENT OPERATOR CLASSIFICATIONS

##### GROUP I

Fireman, Oiler, Screedman, Scale Operators, Rubber Tired farm type tractor, tractors under 50 hp w/o attachments, Breakman, Concrete Paving Curbing Machine (Bridge-Type).

##### GROUP II

Rollers, Sheepsfoot or Pneumatic Self-Propelled w/o Dozer, Concrete Conveyor, Service Truck operator, Air compressor (315 CFM & Over), Pumps (6" & Over), Screening plants, Concrete Mixers (Under 1 CY), Concrete Saw or grinder-span type, 1 Drum Hoist (tugger), Air Tugger, Elevating Belt Type Loaders, Forklift, Lumber Stacker, Tractor Farm Type (under 50 HP w/Attachments), Motorman and Industrial Locomotive op., Winch Truck, Front End Loaders (under 2 CY), Power Plants which Generate Over 15 KW., Welding Machines.

##### GROUP III

Bituminous Distributors, Boilers, Retort & Hot Oil Heaters, Concrete Mixers, (1 CV & Over), Conc. Paver-Single Drum, Drilling Equip., Motor Grader (rough), Shaft and Tunnel Equipment: (Refrigeration, slusher, jumbo forms), Trenching Machines (all types), Pump crete and gunite machines, Slipform Paver, Mechanical Bullfloats, Concrete Slab Spreading Machine, Concrete Slab Finishing Machine, Space Heaters, Bituminous Finishing Machines, Water Carrier (all types), Concrete Cleaning Decontamination Machine Operator, Horizontal Directional Drill Locator.

##### GROUP IV

Front End Loaders (2 thru 10 CY), Rollers Steel Wheeled-All Types, Bulldozer, Scrapers (Motor or Towed), Elevating Graders

Self-Propelled Rollers - Equipped W/Dozer, Twin-Bowl Scrapers and Quad 8 or 9 pushers (35 cents over basic rate), Three bowl scrapers (60 cents over basic rate), Backhoes up to 3/4 yard bucket, Head Oiler (Service Truck Operator).

GROUP V

Hydraulic Cranes-With less than 50 feet of Boom (20 Tons and Under), Concrete Paver-Double Drum, Cat Cranes, Hysters, 2 Drum Hoist, Auto Fine Grade.

GROUP VI

Mucking Machines-All Types

GROUP VII

Steam Engineers, Loader (Front End Over 10 CV) Concrete Pump (Snorkel Type), Concrete batching plants and Asphalt plants, Crushing plants, Hot plants.

GROUP VIII

All Shovel Type Equipment, Cranes, Draglines, Backhoes over a 3/4 yard bucket, Derricks Guy and Stiff Leg, Pipe mobile (No 2 Operator), Piledriver, Hydrulic Cranes (20 Tons & Over), Mine Hoist, Belt Loader ("C.M.I." Type), Boom and Jibs 150 ft. Through 199 ft.-\$.50 per hour above base pay, 200 ft and over-\$1.00 per hour above base pay. Shovel (Wheel Type), Boring Machine (Tunnel or Shaft Mole), Pipe Mobile, Side and swing-boom cats, Motor grader (finish), Mechanic-Welder, Heavy Equipment Robotics Operator/Mechanic, Ultra High Pressure Waterjet Cutting Tool System Operator/Mechanic, Vacuum Blasting Machine Operator/Mechanic, Mater Environmental Maintenance Mechanic, Horizontal Directoral Drill Operator.

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 ENGI0953E 11/01/2001

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
BUILDING CONSTRUCTION:		
GROUP I	15.65	3.00
GROUP II	17.16	3.00
GROUP III	17.28	3.00
GROUP IV	17.56	3.00
GROUP V	17.69	3.00
GROUP VI	17.83	3.00
GROUP VII	17.93	3.00
GROUP VIII	19.93	3.00

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP I

Fireman, Oiler, Screedman, Scale op. such as Bin-a-Batch, Rubber Tired Farm Type Tractor, Tractors under 50 hp w/o Attachments, Brakeman, Concrete Curing Machine(Bridge Type).

GROUP II

Rollers, Sheepsfoot or Pneumatic Self-Propelled w/o Dozer, Concrete Conveyor, Service Truck op. (Head Oiler), Air Compressor (600 CFM & Over), Pumps (6" & Over), Screening Plants, Concrete Mixers (Under 1 CY), Concrete Saw or Grinder-Span Type, 1 Drum Hoists, Elevating Belt Type Loaders, Lumber Stacker, Tractor Farm Type (under 50 HP w/Attachments), Winch Trucks, Front End Loader (under 2 CY), Welding Machines, Cat Head Winch, Power Plants which generate over 15 KW, Oiler with CDL, Concrete Curbing Machine.

GROUP III

Bituminous Distributors, Boilers, Retort & Hot Oil Heaters

Concrete Mixers, (1 CY & Over), Concrete Paver-Single Drum, Drilling Equip., Shaft and Tunnel Equipment: Refrigeration, Slusher, Jumbo forms, Trenching Machines (all Types), Pump Crete & Guniting Machines, Slipform Paver, Mechanical Bullfloats, Concrete Slab Spreading Machine, Concrete Slab Finishing Machine, Asphalt Plants, Bituminous Finishing Machines, Crushing Plants, Certified Forklift.

GROUP IV

Front End Loaders (2 thru 19 CY), Rollers Steel Wheeled-All Types, Bulldozer, Scrapers (Motor or Towed), Elevating Graders Concrete Batching Plants, Self-Propelled Rollers - Equipped W/Dozer, Twin-Bowl Scrapers and Quad 8 or 9 Pushers (\$.35 Over Basic Rate), Three Bowl Scrapers (\$.60 Over Basic Rate), Bobcat w/Hydraulic Backhoes with buckets up to one and one quarter cubic yards, Motor Grader (Rough), Small Articulating Trucks.

GROUP V

Concrete Paver, Double Drum, Two Drum Hoist, Auto Fine Grader Hysters, Forklift over 2,000 lbs. Lifting Capacity

GROUP VI

Mucking Machines-All Types, Tractor with Hydraulic Backhoe, Backhoes with Buckets up to one and one quarter cubic yards.

GROUP VII

Hydraulic Cranes with less than 50 feet of boom (20 tons and under), Steam Engineers, Loaders (Front end over 10 cubic yards), Concrete Pump (Snorkel Type), Heavy Equipment Low Boy Driver with CDL, Mining Machine, Roof Bolting Machine, Shuttle Car.

GROUP VIII

All Shovel Type Equipment, Side Boom Cats, Cranes, Draglines, Track or Excavator Backhoe, Backhoes with Buckets over one and one quarter cubic yards, Derricks, Guy and Stiff Leg, Pipemobile (No.2 Operator), Pile Driver, Hydraulic Cranes (20 ton and over), Mine Hoists, Belt Loader (C.M.I. type) Cranes and Draglines with Booms over 150 ft. through 199 feet \$.75 above base rate per hour additional; 200 feet and over \$1.00 above base rate per hour additional, Shovel (Wheel type), Boring Machine (Tunnel or Shaft Mode), Pipe Mobile, Motor Grader (Finish), Mechanic, Welder, Mobile Pipeline Inspection Camera, Operator/Rigger, Crane Inspector, Continuous Mining Machine, VAC Jet Rodder, Equipment Instructor.

-----  
IRON0263D 01/01/2002

	Rates	Fringes
CHAVES, CURRY, DONA DNA, EDDY, GRANT, HARDING, HIDALGO, LEA, LUNA, OTERO, QUAY, ROOSEVELT, SIERRA AND UNION COUNTIES		
IRONWORKERS:		
Ornamental; Structural and reinforcing	18.04	4.35

-----  
\* IRON0495A 01/01/2002

	Rates	Fringes
BERNALILLO, CATRON, CIBOLA, COLFAX, DeBACA, GUADALUPE, LINCOLN, LOS ALAMOS, TAOS, McKINLEY, MORA, RIO ARRIBA, SAN JUAN, SAN MIGUEL, SANDOVAL, SANTA FE, SOCORRO, TORRANCE, VALENCIA COUNTIES		
IRONWORKERS:		

Ornamental; Structural and reinforcing	17.51	7.06
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LABO0016A 10/01/2001

	Rates	Fringes
LABORERS:		
BUILDING CONSTRUCTION:		
GROUP I	12.19	2.40
GROUP II	12.78	2.40
GROUP III	13.50	2.40
GROUP IV	14.97	2.40

LABORER CLASSIFICATIONS

GROUP I: Chainmen, Stakedrivers, Stake Hopper, Heater Tenders, Pick and Shovel Work, Window Cleaning and Clean up, Flagman, Landscaping and Planter, Fence Builder, Guardrail Builder, Unloading of Furniture and Fixtures, Shop Helper. (Chainman and Stakedrivers working solely for an engineering firm are not subject to this agreement.)

GROUP II: Carpenter Tenders, Concrete Workers, Concrete Buggy Operators, Industrial and Plant Laborers, Fire Watch, Swinging Scaffolds Tender, Fine Grader, Form Stripper, Gabian Basket Builders, Rip Rap Stoneman, Drywall, Stocking and Handling, Fly Ash Vacuum Operator, Man Hole Builder, Tool Room Person and Checker on Jobsite.

GROUP III: Electric Air and Gas Operated Power Tools, Asphalt Rakers, Chain Saw Operators, Oxy Gasoline Torch Operators, Cutting Torch Operators or Burner Person, Gunite Rebound Men, Fog Machine Operators, Power Buggy Operators, Rodmen, Sandblasters (potmen), Wagon Drill and Diamond Core Driller, Air Track, Drill Operator Hydraulic Core Drill Diamond, Tenders Outside with Pumps under 6", Concrete Burners, Cement Mason Tenders, Plasterers Hodcarriers, Mortar Mixer, Plaster Spreader Operators, Plaster Tenders, Gunite Nozzlemen, Pipelayer, Pumpcrete Nozzlemen, Powdermen Tender Demolition, Grade Checker, Vibrator Operator, Concrete Saw Operators, Stone Mason Tender, Jack Hammer and Chipping Hammer Operator, Green Cutter High Pressure Air and Water on Concrete Blaster, Pipelayer (includes but not limited to water pipe, sewer pipe, drainage pipe, pvc, and all underground tile, pipe), Cast Iron Concrete pipe, unloading, handling, distribution, and installation.

GROUP IV: Asbestos Abatement Laborer, Toxic and Hazardous Waste Removal Laborer, Lead Base Paint Removal Laborer, Laborer/Concrete Specialist, Pest Technician (Licensed by the Bureau of Rodent Management), State Licensed Powder man and, Blaster, Laborers AGC Certified Scaffold Builder Laborer, or Hydromobile Scaffold Builder, Radiation Worker II.

\* LABO0016C 04/01/2002

	Rates	Fringes
LABORERS:		
HEAVY CONSTRUCTION:		
ZONE 1:		
GROUP I	13.39	2.45
GROUP II	14.14	2.45
ZONE 2:		
GROUP I	15.89	2.45
GROUP II	16.64	2.45

ZONE 3:		
GROUP I	17.39	2.45
GROUP II	18.14	2.45

LABORER CLASSIFICATIONS

GROUP I: Construction and General Laborers, Carpenter Tenders, Concrete Workers, Stakedrivers, Concrete Buggy Operators, Hand Flagman.

GROUP II: Air and Power Tool Operators, Asphalt Rakers, Chain Saw Operators, Cutting Torch Operators, Demolition, Gunite Rebound Men, Rod and Chainmen, Grade Setters, Power Buggy Operators, Sand Blasters (pot men), Nozzleman, Wagon Core and Diamond Drillers Tenders, Outside Scalers, Fog Machine Operators, Air, Gas, Hydraulic Tool and Electrical Tool Operators, Barco Hammers Cutting Torches, Drill, Diamond and Core Drills, Electric Hammers, Jackhammers, Hydraulic Jacks, Tampers, Air Tampers, Concrete Processing Material, Form-Setters, Airport Runways, Operators of Concrete Saws on Pavement (other than gangsaws) Power Operated Concrete Buggies, Hot Asphalt Labor, Paving Breakers, Cofferdams, Boxtenders, Caissons 8' to 12', Jack-Hammer Operators in Caissons over 12', Labor Applicable to Pipe Coating or Wrapping, Pipe Wrappers, Plant and Yard, Relining Pipe, Hydroliner (a plastic may be used to waterproof), Pipelayer on Underground Bores, Sewer, Monitors, Jeep Holiday Detector Men, Pump Operators, Rakers, Vibrators, Hydro-Boom, Mixer Man, Gunnite Nozzlemen, Shortcrete Operator, Timberman, Timber and Chain Saws, Sand Blasters, Licensed Powdermen, Powdermen and Blasters, Siphons, Signalmen, Grade Checker.

ZONE PAY

The reference point for determining zone pay shall be from the intersection of Interstate Highway 25 and Interstate Highway 40 (The Big "I") in Albuquerque.

ZONE 1 - FREE ZONE - 0 to 50 miles

ZONE 2 - 50 to 85 miles from reference points. \$2.50 per hour above base wage.

ZONE 3 - over 85 miles from reference points. \$4.00 per hour above base wage.

Workmen employed on work forty (40) or more feet above the ground or above a solid floor, deck, or flat roof shall receive premium pay as follows:

40 to 80 feet - \$0.25 per hour  
 80 to 120 feet - \$0.50 per hour  
 120 to 160 feet - \$0.75 per hour  
 above 160 feet - \$1.00 per hour

SHAFTS, RAISES, MISSILE SILOS, AND ALL OTHER UNDERGROUND WORK (EXCLUDING REPROCESSING PIPE UNDERGROUND):

ZONE 1:

GROUP I	15.40	2.45
GROUP II	15.67	2.45
GROUP III	15.82	2.45
Shifter	16.05	2.45

ZONE 2:

GROUP I	17.90	2.45
GROUP II	18.17	2.45
GROUP III	18.32	2.45
Shifter	18.55	2.45

ZONE 3:

GROUP I	19.40	2.45
---------	-------	------

GROUP II	19.67	2.45
GROUP III	19.82	2.45
Shifter	20.05	2.45

LABORER CLASSIFICATIONS

GROUP I: Tunnel Workers: Laborers and Hand Muckers Top Landers, Groutmen, Nippers, Trackmen.

GROUP II: Chuck Tenders.

GROUP III: Shaft Workers, Air Tugger Operators, Concrete Workers (including all cement chipping and finishing underground), Drillers, Form Setters and Handlers, Hand Muckers, Miners, Powdermen, Steel Setters, Tunnel Liners, Plate Setters, Reinforcing Steel Setters, all Cutting and Welding incidental to Miners' work, Powdermen and Blasters, Timbermen.

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LABO0016D 10/01/2001

	Rates	Fringes
LABORERS:		
HEAVY CONSTRUCTION:		
ZONE 1:		
GROUP I	13.65	2.45
GROUP II	13.90	2.45
GROUP III	14.05	2.45
GROUP IV	14.97	2.45
ZONE 2:		
GROUP I	16.15	2.45
GROUP II	16.40	2.45
GROUP III	16.55	2.45
GROUP IV	17.47	2.45
ZONE 3:		
GROUP I	17.65	2.45
GROUP II	17.90	2.45
GROUP III	18.05	2.45
GROUP IV	18.97	2.45

ZONE PAY

The reference point for determining zone pay shall be from the intersection of Interstate Highway 25 and Interstate Highway 40 (The Big "I") in Albuquerque.

Free Zone - 0 to 50 miles.

Zone 2 - 50 to 85 miles from above reference points. \$2.50 per hour above base wage.

Zone 3 - over 85 miles from above reference points. \$4.00 per hour above base wage.

Workmen employed on work forty (40) or more feet above the ground or above a solid floor, deck, or flat roof shall receive premium pay as follows:

40 to 80 feet - \$0.25 per hour

80 to 120 feet - \$0.50 per hour

120 to 160 feet - \$0.75 per hour

above 160 feet - \$1.00 per hour

LABORER CLASSIFICATIONS

GROUP I: Wagon Core, Diamond Drillers

GROUP II: Concrete Burner, Hodcarriers, Mortar Mixers, Plaster Spreader Operators, Plaster Tenders, Gunite Nozzlemen, Pipelayers Pumpcrete Nozzlemen.

GROUP III: Powdermen and Blasters.

GROUP IV: Includes but is not limited to the following specialty categories of Construction Specialists: Asbestos Abatement

Laborers, Toxic and Hazardous Waste Removal Laborers, Lead Base Paint Removal Laborers, Laborer/Concrete Specialist, Pest Technician (Licensed by the Bureau of Rodent Management), State Licensed Powderman and Blaster, Laborers-AGC Certified Rigger and Signal Man, Laborers-AGC Certified Scaffold Builder Laborer, or Hydromobile Scaffold Builder, Radiation Worker II.

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 \* PAIN0823A 04/01/2000

	Rates	Fringes
PAINTERS:		
Mines, mills, Power plants, energy plants, refineries, coal gassification plants, nuclear related facilities & all steel work incidental thereto including stacks of all descriptions:		
Brush, roller, pot tender, sandblaster, grinder operator:		
New Work:		
Zone I	16.05	4.08
Zone II	17.05	4.08
Zone III	18.55	4.08
Repaint/remodel:		
Zone I	13.64	4.08
Zone II	14.64	4.08
Zone III	16.14	4.08
Spray; Preparation for and application of epoxy & special coatings; Hand Finisher/Machine Texture:		
New Work:		
Zone I	16.55	4.08
Zone II	17.55	4.08
Zone III	19.05	4.08
Repaint/remodel:		
Zone I	14.57	4.08
Zone II	15.57	4.08
Zone III	17.07	4.08
Hand texture		
New Work:		
Zone I	16.75	4.08
Zone II	17.75	4.08
Zone III	19.25	4.08
Repaint/remodel:		
Zone I	14.24	4.08
Zone II	15.09	4.08
Zone III	16.36	4.08
Paperhangers:		
New Work:		
Zone I	17.05	4.08
Zone II	18.05	4.08
Zone III	19.55	4.08
Repaint/remodel:		
Zone I	14.49	4.08
Zone II	15.49	4.08
Zone III	16.99	4.08
Drywall finisher; Ames		

Tool operator:

New Work:

Zone I	17.25	4.08
Zone II	18.25	4.08
Zone III	19.75	4.08

Repaint/remodel:

Zone I	14.66	4.08
Zone II	15.51	4.08
Zone III	16.79	4.08

HIGH PAY: High pay shall apply to any free fall area exceeding 30 feet from the ground level. The hourly wage rate shall be increased \$.50 per hour from the 30 foot level up. The determining factor in high pay shall be a stationary floor, landing or grate, excluding elevated tank walkways.

PAINTERS ZONE DEFINITIONS

Free Zone: An area within a 30 mile radius of the main post office in the city or town where an employee permanently resides at the time of hire shall be considered Zone 1. All jobs beyond the 30 mile radius shall be covered by the zone schedule below:

- ZONE I - BASE PAY UP TO 30 MILES
  - ZONE II - EXTENDING 30 MILES TO 75 MILES BEYOND ZONE I
  - ZONE III - EXTENDING 75 MILES AND BEYOND
- Albuquerque, Santa Fe and Belen shall be considered in Zone 1.

-----  
 \* PAIN0823B 04/01/2002

	Rates	Fringes
0		
1 GLAZIERS	19.15	4.11

-----  
 4 \* PAIN0823C 04/01/2002

	Rates	Fringes
5		
6 SOFT FLOOR LAYERS:		
7 ZONE I	16.73	4.58
8 ZONE II	17.73	4.58
9 ZONE III	19.23	4.58

1 SOFT FLOOR LAYERS ZONE DEFINITIONS

2  
 3 Free Zone: An area within a 30 mile radius of the main post  
 4 office in the city or town where an employee permanently  
 5 resides at the time of hire shall be considered Zone 1. All  
 6 jobs beyond the 30 mile radius shall be covered by the zone  
 7 schedule below:

- 8 ZONE I -- Up to 30 miles
- 9 ZONE II -- 30 to 75 miles
- 1 ZONE III - 75 miles and beyond

2  
 3 Albuquerque, Santa Fe and Belen shall be considered Zone 1.  
 4 -----

5  
 6 \* PAIN0823D 04/01/2000

	Rates	Fringes
7		
8 PAINTERS:		
9 All Other Work: Commercial:		
0 Brush, roller, spray and		

1	special coatings:		
2	Zone I	14.24	3.58
3	Zone II	15.24	3.58
4	Zone III	16.74	3.58
5	Sand blasters; striping		
6	machine operators:		
7	Zone I	15.69	3.58
8	Zone II	16.69	3.58
9	Zone III	18.19	3.58
0	Sign painters:		
1	Zone I	16.04	3.58
2	Zone II	17.04	3.58
3	Zone III	18.54	3.58
4	Paper hangers:		
5	Zone I	16.19	3.58
6	Zone II	17.19	3.58
7	Zone III	18.69	3.58
8			
9	Tenant Improvement*:		
0	Hand texture:		
1	Zone I	14.14	3.58
2	Zone II	15.14	3.58
3	Zone III	16.64	3.58
4	Paper hangers:		
5	Zone I	14.44	3.58
6	Zone II	15.44	3.58
7	Zone III	16.94	3.58
8	Drywall finishers:		
9			
0	Zone I	14.49	3.58
1	Zone II	15.49	3.58
2	Zone III	16.99	3.58
3	Ames Tool operators:		
4	Zone I	14.74	3.58
5	Zone II	15.74	3.58
6	Zone III	17.24	3.58
7			

8 \*Tenant improvement shall be considered the following types of  
9 work: repaint, remodel, alterations and additions to an existing  
0 building, the painting and repair of hotels, motels and  
1 apartment buildings five stories and over, new and repair.

2  
3 HIGH PAY: High pay shall apply to any free fall area exceeding  
4 30 feet from the ground level. The hourly wage rate shall be  
5 increased \$.50 per hour from the 30 foot level up. The  
6 determining factor in high pay shall be a stationary floor,  
7 landing or grate, excluding elevated tank walkways.

8  
9 PAINTERS ZONE DEFINITIONS

0  
1 Free Zone: An area within a 30 mile radius of the main post  
2 office of the city or town where an employee permanently  
3 resides at the time of hire shall be considered Zone 1. All  
4 jobs beyond the 30 mile radius shall be covered by the zone  
5 schedule below:

6  
7 ZONE I - BASE PAY UP TO 30 MILES

8 ZONE II - EXTENDING 30 MILES TO 75 MILES BEYOND ZONE I  
9 ZONE III - EXTENDING 75 MILES AND BEYOND  
0  
1 Albuquerque, Santa Fe and Belen shall be considered in Zone 1.  
2 -----  
3  
4 PLAS0254A 10/01/2001

	Rates	Fringes
6 CEMENT MASONS	16.95	3.98

7 -----  
8  
9 PLAS0254B 07/01/2001

	Rates	Fringes
1 PLASTERERS	17.00	3.42

2 -----  
3  
4 PLUM0412A 04/01/2001

	Rates	Fringes
6 REMAINING COUNTIES		
8 PLUMBERS & PIPEFITTERS	22.98	5.95
0 LOS ALAMOS, WHITE ROCK, SOUTH MESA, MCGREGOR, WHITE SANDS MISSILE 1 RANGE AND/OR PROVING GROUNDS		
3 PLUMBERS & PIPEFITTERS	23.78	5.95
5 LIGHT COMMERCIAL :		
7 All irrigation & 8 lawn sprinkler	15.96	4.20

9 -----  
0  
1 ROOF0174A 10/01/1994

	Rates	Fringes
3 ROOFERS	13.30	1.99

4 -----  
5  
6 \* SHEE0049A 04/01/2002

	Rates	Fringes
8 REMAINING COUNTIES		
0 SHEET METAL WORKERS	23.30	7.11

1 -----  
2  
3 \* SHEE0049B 04/01/2002

	Rates	Fringes
5 LOS ALAMOS COUNTY		
7 SHEET METAL WORKERS	25.30	7.17

8 -----  
9  
0 SUNM1002A 08/11/1993

	Rates	Fringes
2 SPRINKLER FITTERS: 3 Bernalillo, Los Alamos & 4 Santa Fe, Counties	15.55	

5	Otero County	17.45	3.75
6	Remaining Cos. (Except Dona Ana)	16.06	2.95

7 -----

8

9 TEAM0492A 06/01/1993

0 Rates Fringes

1 TRUCK DRIVERS:

2 BUILDING CONSTRUCTION:

3 Zone I:

4	GROUP I	9.83	1.89
5	GROUP II	10.10	1.89
6	GROUP III	10.18	1.89
7	GROUP IV	10.30	1.89
8	GROUP V	10.35	1.89
9	GROUP VI	10.45	1.89
0	GROUP VII	10.55	1.89
1	GROUP VIII	10.69	1.89
2	GROUP IX	10.84	1.89

3 Zone II

4	GROUP I	11.58	1.89
5	GROUP II	11.85	1.89
6	GROUP III	11.93	1.89
7	GROUP IV	12.05	1.89
8	GROUP V	12.10	1.89
9	GROUP VI	12.20	1.89
0	GROUP VII	12.30	1.89
1	Group VIII	12.44	1.89
2	Group IX	12.59	1.89

3

4 Zone III:

5	GROUP I	12.08	1.89
6	GROUP II	12.35	1.89
7	GROUP III	12.43	1.89
8	GROUP IV	12.55	1.89
9	GROUP V	12.60	1.89
0	GROUP VI	12.70	1.89
1	GROUP VII	12.80	1.89
2	GROUP VIII	12.94	1.89
3	GROUP IX	13.09	1.89

4 BUILDING CONSTRUCTION:

5 Light Commercial Construction:

6 Zone I:

7	GROUP I	7.86	1.89
8	GROUP II	8.08	1.89
9	GROUP III	8.14	1.89
0	GROUP IV	8.24	1.89
1	GROUP V	8.28	1.89
2	GROUP VI	8.36	1.89
3	GROUP VII	8.44	1.89
4	GROUP VIII	8.55	1.89
5	GROUP IX	8.67	1.89

6 Zone II:

7	GROUP I	9.26	1.89
8	GROUP II	9.48	1.89
9	GROUP III	9.54	1.89
0	GROUP IV	9.64	1.89
1	GROUP V	9.68	1.89

2	GROUP VI	9.76	1.89
3	GROUP VII	9.84	1.89
4	Group VIII	9.95	1.89
5	Group IX	10.07	1.89
6	Zone III:		
7	GROUP I	9.66	1.89
8	GROUP II	9.88	1.89
9	GROUP III	9.94	1.89
0	GROUP IV	10.04	1.89
1	GROUP V	10.08	1.89
2	GROUP VI	10.16	1.89
3	GROUP VII	10.24	1.89
4	GROUP VIII	10.35	1.89
5	GROUP IX	10.47	1.89
6	HEAVY CONSTRUCTION:		
7	Zone I:		
8	GROUP I	10.08	1.79
9	GROUP II	10.35	1.79
0	GROUP III	10.43	1.79
1	GROUP IV	10.55	1.79
2	GROUP V	10.60	1.79
3	GROUP VI	10.70	1.79
4	GROUP VII	10.80	1.79
5	GROUP VIII	10.94	1.79
6	GROUP IX	11.09	1.79
7	Zone II:		
8	GROUP I	11.58	1.79
9	GROUP II	11.85	1.79
0			
1	GROUP III	11.93	1.79
2	GROUP IV	12.05	1.79
3	GROUP V	12.10	1.79
4	GROUP VI	12.20	1.79
5	GROUP VII	12.30	1.79
6	GROUP VIII	12.44	1.79
7	GROUP IX	12.59	1.79
8	Zone III:		
9	GROUP I	11.83	1.79
0	GROUP II	12.10	1.79
1	GROUP III	12.18	1.79
2	GROUP IV	12.30	1.79
3	GROUP V	12.35	1.79
4	GROUP VI	12.45	1.79
5	GROUP VII	12.55	1.79
6	GROUP VIII	12.69	1.79
7	GROUP IX	12.84	1.79
8			
9	TRUCK DRIVER (BUILDING & HEAVY CONSTRUCTION) CLASSIFICATIONS		
0			
1	GROUP I:		
2	Pickup 3/4 Ton and Under, Lubrication, Light Tire Repair and		
3	Washer, Swamper, 2 or 4 and up.		
4			
5	GROUP II:		
6	Dump or Batch Truck Under 8 C.Y.W.L.: Flat Bed (bobtail) 2		
7	Ton and Under, Warehouseman including Material Check, Fork		
8	Lift Under 5 Ton MRC.		

9

0 GROUP III:

1 Dump Trucks (Including All Highway and Off Highway) 8 up to  
2 16 C.Y.W.L.C.; Water, Fuel or Oil Trucks Less Than 3,000 gal.  
3 Flat Bed (bobtail) Over 2 Tons.

4

5 GROUP IV:

6 Distributor Driver, Heavy Tire Repair, Lumber Carrier Driver,  
7 Young Buggy or Similar Equipment, Transit Mix or Agitator 2  
8 or 3 Axle Bobtail Equipment, Scissor Truck, Bulk Cement  
9 Bobtail 2 or 3 Axle, Semi-Trailer Flat Bed or Van Single Axle  
0 Forklift 5 Ton and over M.R.C.

1

2 GROUP V:

3 Dumpsters and Dumpcrete Driver; Water, Fuel or Oil Trucks  
4 3,000 to 6,000 Gallons; Lowboys and Light Equipment Driver;  
5 Euclid Type Tank Wagon Under 6,000 Gallons.

6

7 GROUP VI:

8 Vacuum Truck; Dump Trucks (including all highway and off-  
9 highway 16 up to 22 C.Y.W.L.C.

0

1 GROUP VII:

2 Transit Mix or Agitator Semi or 4 Axle Equipment Driver;  
3 Flaherty Truck Type Spreader Box Driver; Slurry Truck Driver  
4 Bulk Cement Driver; Semi-Doubles; 5 Axle Bobtail; Winch Truck

5

6 and "A" Frame; Dump Truck (including all Highway and Off-  
7 Highway) 22 CY up to 35 C.Y.W.L.C.

8

9 GROUP VIII:

0 Euclid Diesel Power Turnarocker; Terra Coba-DW20-Tourneau  
1 Pulls and Similar Diesel Powered Equipment when used to haul  
2 Materials and Assigned to a Teamster-Lowboy Heavy Equipment  
3 Driver; Water, Fuel and Oil Trucks 6,000 Gallons and Over  
4 Including Tank Wagon Drivers, Semi-Trailer Driver (Flat-Bed  
5 or Van Tandems); Light Equipment Mechanic; Dump Trucks  
6 (Including All Highway and Off-Highway) 35 C.Y.W.L.C. and  
7 Over; Truck and Trailer or Semi-Trailer (Flated); eject all.

8

9 GROUP IX:

0 Lowboy (Heavy Equipment Double Gooseneck); Heavy Equipment  
1 Mechanic; Welder (Body and Fender Men).

2

3 TRUCK DRIVERS ZONE PAY BASING POINTS AND DEFINITIONS LISTED BELOW  
4 FOR BUILDING AND HEAVY CONSTRUCTION - BASING POINTS ARE AS  
5 FOLLOWS:

6

7 ALAMOGORDO, ALBUQUERQUE, ARTESIA, BAYARD, BELEN, CARLSBAD,  
8 CLOVIS, DEMING, ESPANOLA, EUNICE, FARMINGTON, GALLUP, GRANTS,  
9 HOBBS, LAS CRUCES, LAS VEGS, LORDSBURG, LOVINGTON, PORTALES,  
0 RATON, ROSWELL, RUIDOSO, SANTA FE, SANTA ROSE, SILVER CITY,  
1 SOCORRO, TAOS, TUCUMCARI

2

3 ZONE I

4 Projects within 15 miles from the starting points above

5

6 ZONE II  
7 Projects 15 or more road miles but less than 35 miles from  
8 above, includes all of Los Alamos County

9  
0 ZONE III  
1 Projects more than 35 road miles, or more from above.

2  
3 -----  
4 FOOTNOTE:

5  
6 \*\*LIGHT COMMERCIAL DEFINITION

7  
8 Construction, erection, alteration, repair, modification,  
9 addition to or improvement in whole or in part of structures for  
0 which the major support system is wood frame construction and  
1 will also include all apartments over 4 stories, all convenience  
2 stores, fast food restaurants, automobile service stations &  
3 motels up to 2 stories high.

4 -----  
5  
6 WELDERS - Receive rate prescribed for craft performing operation  
7 to which welding is incidental.

8 =====  
9  
0 Unlisted classifications needed for work not included within  
1 the scope of the classifications listed may be added after  
2 award only as provided in the labor standards contract clauses  
3 (29 CFR 5.5(a)(1)(v)).

4 -----  
5 In the listing above, the "SU" designation means that rates  
6 listed under that identifier do not reflect collectively  
7 bargained wage and fringe benefit rates. Other designations  
8 indicate unions whose rates have been determined to be  
9 prevailing.

0  
1 WAGE DETERMINATION APPEALS PROCESS

2  
3 1.) Has there been an initial decision in the matter? This can  
4 be:

- 5  
6 \* an existing published wage determination  
7 \* a survey underlying a wage determination  
8 \* a Wage and Hour Division letter setting forth a  
9 position on a wage determination matter  
0 \* a conformance (additional classification and rate)  
1 ruling

2  
3 On survey related matters, initial contact, including requests  
4 for summaries of surveys, should be with the Wage and Hour  
5 Regional Office for the area in which the survey was conducted  
6 because those Regional Offices have responsibility for the  
7 Davis-Bacon survey program. If the response from this initial  
8 contact is not satisfactory, then the process described in 2.)  
9 and 3.) should be followed.

0  
1 With regard to any other matter not yet ripe for the formal  
2 process described here, initial contact should be with the Branch

3 of Construction Wage Determinations. Write to:

4

5 Branch of Construction Wage Determinations

6 Wage and Hour Division

7 U. S. Department of Labor

8 200 Constitution Avenue, N. W.

9 Washington, D. C. 20210

0

1 2.) If the answer to the question in 1.) is yes, then an  
2 interested party (those affected by the action) can request  
3 review and reconsideration from the Wage and Hour Administrator  
4 (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

5

6 Wage and Hour Administrator

7 U.S. Department of Labor

8 200 Constitution Avenue, N. W.

9 Washington, D. C. 20210

0

1 The request should be accompanied by a full statement of the  
2 interested party's position and by any information (wage payment  
3 data, project description, area practice material, etc.) that the  
4 requestor considers relevant to the issue.

5

6 3.) If the decision of the Administrator is not favorable, an  
7 interested party may appeal directly to the Administrative Review  
8 Board (formerly the Wage Appeals Board). Write to:

9

0 Administrative Review Board

1 U. S. Department of Labor

2 200 Constitution Avenue, N. W.

3 Washington, D. C. 20210

4

5 4.) All decisions by the Administrative Review Board are final.

6

END OF GENERAL DECISION

If the offer is submitted by a corporation, partnership or a Joint Venture, the applicable form listed below must be completed and submitted with the Standard Form 1442. In the alternative, other evidence must be submitted to substantiate the authority of the person signing the offer. If a corporation, the same officer shall not execute both the offer and the certificate.

**CORPORATE CERTIFICATE**

I, \_\_\_\_\_, certify that I am the Secretary of the corporation named as Offeror/Contractor herein; that \_\_\_\_\_ who signed this offer/contract on behalf of the Offeror/Contractor was then \_\_\_\_\_ of said corporation; that said offer/contract was duly signed for and on behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

\_\_\_\_\_  
(Secretary) (CORPORATE SEAL)

**AUTHORITY TO BIND PARTNERSHIP**

This is to certify that the names and signatures of all partners are listed below and that the person signing the offer had authority to actually bind the partnership pursuant to its partnership agreement. Each of the partners individually has full authority to enter into and execute contractual instruments, on behalf of said partnership, with the United States of America, except as follows: (State "none" or describe limitations, if any.)

This authority shall remain in full force and effect until such time as the revocation of authority by any cause whatsoever has been furnished in writing to, and acknowledged by, the Contracting Officer.

\_\_\_\_\_  
(Type or Print Name)

\_\_\_\_\_  
(Signature)

**JOINT VENTURE**

Provide a copy of the Joint-Venture (JV) agreement. The SF 1442, Solicitation, Offer and Award form must be sign by the party with the authority to bind the JV as indicated in the agreement. Each entity to the JV agreement should complete one of the following entries:

I, \_\_\_\_\_, certify that I am the Secretary of the Corporation named as \_\_\_\_\_ Offeror/Contractor herein, that \_\_\_\_\_ who signed this offer/contract on behalf of the Offeror/Contractor was then \_\_\_\_\_ of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation this \_\_\_\_\_ day of \_\_\_\_\_.

AFFIX CORPORATE SEAL

\_\_\_\_\_  
(Secretary)

I, \_\_\_\_\_, certify that I am the Secretary of the Corporation named as \_\_\_\_\_ Offeror/Contractor herein, that \_\_\_\_\_ who signed this offer/contract on behalf of the Offeror/Contractor was then \_\_\_\_\_ of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation this \_\_\_\_\_ day of \_\_\_\_\_.

AFFIX CORPORATE SEAL

\_\_\_\_\_  
(Secretary)

3.2.10 National Fire Protection Association (NFPA) 22, Standard for Water Tanks for Private Fire Protection, latest edition.

3.2.11 National Fire Protection Association (NFPA), Fire & Life Safety

3.3 **Project Site.** The project site is located on Indian Allotment land (land under the control of the BIA), northwest of the I-40 Interchange with State Highway 412, between I-40 and old Route 66. Route 66 is currently being used as the Interstate access road. Approximately 1,000 feet to the north of the school, across Route 66, is the Burlington Northern Santa Fe Railroad line. The current school site is approximately 40 acres and is currently occupied by 16 buildings. Other structures include 2 Quonset buildings, hogans, some framed structures, several portable buildings and a few trailers. The project site is presently prairie land, with some mature deciduous trees and some planted areas within the existing school compound. Approximate boundary locations for the project site are indicated on drawing Sheet C2. The Contractor shall indicate project site boundaries on submitted drawings. See the Planning Document for the Design of a New Baca/Dlo'ay Azhi Consolidated Replacement School, Prewitt, New Mexico, for the project location map and vicinity map. The Contractor shall note the locations of the Contractor's yard, Project Engineer's Office, and the Contractor's access and haul route on the location map. The site plan provided with this RFP shows the general location of the new school. However, areas south and east are also available for site amenities as required.

(4)

(4)

3.4 **Project Site Survey.** A preliminary survey of the site is included as Sheet C2. A supplemental survey of the construction site will be required. See paragraph 3.4.1 below. The existing survey included some topographic information and surface features of the site.

3.4.1 **Supplemental Survey Required.** Underground utility information is not available. The Contractor shall provide supplemental survey information including a planimetric survey, utilities survey (above and below ground), topography survey at 1-foot contours, and horizontal and vertical control. Provide the drawings in 1 inch = 50 feet scale. Horizontal control shall be based on the North American Datum of 1983 (NAD 83) and controlling points shall be occupied as a station within a closed traverse that will meet or exceed Corps Third-Order Class I accuracy. The vertical control shall be based on the North American Vertical Datum of 1988 (NAVD 88) and controlling points shall be established within a closed level loop that shall meet or exceed Corps Third-Order accuracy. The Contractor shall provide 2 benchmarks, the locations of survey benchmarks, including the benchmark name, coordinates and elevation on the location map or on a separate survey control sheet. Provide the name of the firm that performed the survey, how it was accomplished (e.g. aerial or field), survey dates, target map scale, references to benchmark vertical and horizontal datums, and the coordinate system. The survey requirements listed above shall also apply for the sewer lagoons/septic tank and areas where existing utilities are connected or capped.

3.5 **Protection from Traffic.** New aboveground electrical appurtenances shall be located so as to minimize potential damage from vehicles. New aboveground electrical devices such as transformers and sectionalizers shall be placed no closer than 6 feet from the gutter line of an existing street. Where traffic

(tank farm, piping, valves, etc., domestic water service line, a new sanitary sewer system, a storm drainage system, communication lines, and all associated valves, manholes, fittings, specials, etc. Any disturbance to the landscaping adjacent to site shall be repaired/replaced by the Contractor to pre-project condition or better as determined by the Contracting Officer.

3.10.1 **Building Siting.** The site for the school building is relatively flat. An existing sandstone, rock knoll exists on the south side of the school complex and west side of the existing school. The rock knoll is approximately 13 feet in height and composed of sandstone with sandy soil cover. The elementary school shall be sited to ensure an interesting, attractive, and functional site taking into consideration the existing features of the site and adjacent facilities. Consideration shall be given to views, solar orientation, and the topography of the site. The building shall be sited on the northwest side of the existing school complex as shown on drawing Sheet C2.

3.10.2 **Building Arrangements.** The building arrangement should be informal and imaginative with setbacks and orientation to provide for solar access, view, privacy, and variety. Site planning shall take into consideration topography, natural characteristics of the environs, climatic conditions, and prevailing winds. Design should capitalize upon economies inherent in the natural characteristics of the site, using existing terrain to minimize cut and fill, reducing street frontage, and consolidating utilities and common open spaces. Contractors are encouraged to consider energy conservation when developing their proposed site arrangement. To the extent possible, attention to solar orientation is recommended in accomplishing the above. One requirement that must be incorporated into the orientation of the building is that the main entrance to the elementary school shall face to the east.

3.10.2.1 **Flood Plain.** See the Planning Document for the Design of a New Baca/Dlo'ay Azhi Consolidated Replacement School, Prewitt, New Mexico for the 100-year flood plain. The school shall not be located within the 100-year flood plain. Where such information is not available from federal, state, or local agencies conduct a site-specific analysis.

3.10.2.2 **Building Spacing.** Clearances from the building shall consider requirements for fire protection, safety, privacy, and emergency access.

3.10.2.3 **Boundary Fences.** Boundary fences shall be located within the property line as indicated in paragraph, **Project Boundary**, of the "Fencing" portion of this section. Property line locations for the Baca/Dlo'ay azhi Consolidated Replacement School shall be verified with the BIA. Remove the existing barbed wire perimeter fencing and replace with a new 6-foot chain-link fence.

- (4) 3.10.3 **School Facility Entrances.** There shall be a minimum of one entrance into the Baca/Dlo'ay azhi Consolidated Replacement School. Access to the elementary school shall be provided from a new access road off Route 66. A culvert following the ditch/gutter line shall be provided across this new driveway to pass runoff under the access road. All site entrances or access driveways/roads to the Baca school site from U.S. 66 shall be designed in accordance with New Mexico State Highway and Transportation Department, District 6, criteria. The design shall be submitted to the Contracting Officer and the New Mexico State Highway and Transportation Department, District 6, for review and approval. (4)

## MECH 1      GENERAL APPROACH

### A. VARIATIONS FROM MINIMUM CRITERIA

Submit requests for approval of deviations from this criteria to the BIA at the earliest possible submittal phase, and include with the request, a full explanation of the reasoning and if applicable, the life-cycle costs.

### B. ENERGY CONSERVATION

#### 1. BIA Commitment/Scope

- a. COMMITMENT. The Federal Government and the BIA are committed to effective energy conservation.
- b. RESPONSIBILITY. It is the responsibility of the A/E contractor and all subcontractors to work together to develop integrated systems that minimize energy consumption.
- c. SCOPE. Energy conservation must be considered at every phase of design, beginning with initial schematic design. Factors in conservation include building configuration, orientation, climate, wind direction and velocity, construction materials, mechanical and electrical systems.

#### 2. Limiting Factors

- a. LIFE-CYCLE COSTS. Incorporate cost effective energy-conservation measures. Give due consideration to life-cycle cost and other factors such as the limited availability of technical assistance in remote areas. All systems shall be reliable and feasible for operation and maintenance by local service personnel.
- b. RELIABILITY. Do not specify sophisticated state-of-the-art systems that may reduce energy use but will not be reliable or serviceable over the life of the building.

#### 3. Utility Programs

- a. PARTICIPATION. To the fullest extent possible, participate in utility company programs that offer assistance to implement energy-conserving features in new and renovated buildings.
- B. PROGRAM IDENTIFICATION. Identify available programs early in the design phase and involve participating utilities.

#### 4. Compliance With 10 CFR Part 435

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- a. **COMPLIANCE.** In designing new BIA facilities, comply with the energy conservation requirements of 10 CFR Part 435.
  - b. **CERTIFICATION STATEMENT.** Provide an energy conservation certification statement in the Design Development, 40% substantiating that the principles of effective energy conservation outlined in 10 CFR Part 435, have been incorporated. An energy conservation certification statement is shown on sheet MECH 1.8.

This statement shall be inserted into the submittal manual.

## C. DRAWING REQUIREMENTS

### 1. Engineer's Seal

- a. **GENERAL REQUIREMENT.** Stamp or affix each sheet of the mechanical drawings with the seal of registration of the professional engineer in charge. (This individual must be licensed to practice mechanical engineering in the state where his or her business is located.)
- b. **ON RECORD DRAWINGS ONLY.** If the state prohibits the placement of seals on reproducible drawings (such as on mylar) that will be used to make multiple copies or will otherwise be transferred from the engineer's control, then have the responsible engineer seal, sign, and date only the record sets of drawings. The record sets are those documents used for the permanent record of the project owner, project engineers, and involved regulatory agencies.

### 2. General

- a. Do not superimpose mechanical equipment, duct work, and piping on architectural plans.
- b. Indicate room numbers on all mechanical drawings and match numbers given on the architectural floor plans.
- c. Assemble sheets by building and number in proper sequence.
- d. Title each mechanical sheet as to building, building number and pages of work, in addition to the title block, for example: School Building No. 201: Plumbing. Sheet numbers for HVAC sheets shall be preceded by "M" and for Plumbing by "P".
- e. The systems designs shall be clear, simple, and orderly, with legible lettering.
- f. Clearly indicate by symbol or note which part of the work shown is new and which part existing. Prepare the drawings in such a manner that there is no

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question as to the extent of the contract. Existing material and equipment to remain and to be reused shall be so noted. Wherever possible, elements no longer to be used shall be removed: do not "abandon-in-place" unless absolutely necessary.

- g. Use the word "Contractor". Do not refer to "general contractor", "plumbing contractor", and such terms. Use "Government" in lieu of "Owner". Do not use the expression "by others". The government's representative shall be referred to as "the Contracting Officer".
- h. Avoid the use of trade names in describing materials or equipment. Note: After a system, or equipment is described to the greatest extent possible and it is judged helpful to refer to trade name, it should be used with the modifying phrase, "or approved equal". Avoid designing around a system or equipment for which there is only one manufacturer. Assure the availability of equipment to suit the design by selecting the products of three or more manufactures. Include equipment selection data sheets in the Design Analysis. A complete specification is required although a trade name and model number is used.
- i. Clearly show specific project requirements on the drawings and will describe in detail, the scope of the project, type of construction, source and type of fuel, basic mechanical requirements, and type of utilities and their locations.
- j. Include a north arrow on each mechanical floor plan sheet orientation.
- k. Title each floor plan, partial plan, detail, and show scale.
- l. Provide plan and elevation of all mechanical or equipment rooms for boiler, furnace, or domestic hot water storage facilities a scale of not less than 1:32 (3/8" = 1'-0") is recommended.
- m. Provide details (standard or unique) and elevations as needed to illustrate or clarify equipment installation. Scale shall be as needed to illustrate or clarify equipment installation and to identify all component parts.
- n. Coordinate all building utilities with outside utility plans.
- o. Provide complete legends to cover all mechanical systems. Separate legends shall be provided for plumbing and HVAC. Legends shall include all symbols and letter abbreviations used on the drawings.
- p. Coordinate the mechanical work indicated on the drawings with all other disciplines to the extent that there will be no conflict with the installation of the mechanical equipment. Coordinate with electrical to the extent that controls, voltage and phase characteristics indicated for the equipment are in conformity with the electrical drawings.
- q. Coordinate the mechanical work indicated on the drawings with the specifications.
- r. Provide drawings and details to clearly indicate the extent and quantities of all

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demolition work. As-built drawings furnished by the Government which will not produce legible prints shall be redrawn to the extent necessary to define the work. Drawings must be detailed enough to permit bidding and construction of the work.

- s. Each sheet of the mechanical drawings shall include the seal and signature of the Registered Mechanical Engineer responsible for the design.

## 2. Controls for Mechanical Systems

- a. General: Controls for the mechanical systems shall be kept as simple as possible to provide the required functions and affect energy conservation. Elaborate and unnecessary controls are to be avoided.
- b. Provide complete control diagrams, written sequences and ladder diagrams (coordinate with electrical) to show all control functions required to operate all the mechanical systems. Show all automatic dampers and automatic valves which require control. Indicate all control parameters (temperatures, time sequences, valve and damper positions, etc.) required to fully describe all functions. Provide panel schedules to clearly indicate components (switches, gages, indicator lights, etc.) which go in each panel and give location of panel. Provide detail of control air compressor and dryer and indicate location.

NOTE: All controls shall be consolidated on one or more drawing sheets. Control drawings and sequences scattered on other drawing sheets will not be accepted.

## 3. Equipment Schedules.

Provide complete equipment schedules which include all items of equipment and all parameters of equipment selection. For all electrically powered equipment, show the power requirement (Horsepower or KWH), phase (single or three), voltage and frequency (coordinate with electrical drawings). Show motor speeds required. Consolidate all schedules on one or more sheets.

## 4. Heating, Ventilating, and Air Conditioning (HVAC)

- a. Provide complete equipment, duct work and diffuser/register plan layout showing all heating and air conditioning units to scale and clearly indicating their location (ceiling, space, exposed, etc). Show all offsets, risers structural and architectural elements which interfere with ducts (provide required details/section to clarify), thermostat locations, control panels, duct sizes, equipment symbols fire and smoke dampers, clearly identify all sections of lined duct work, splitter dampers, extractors, required access panel locations and size, balancing dampers, furred in spaces, etc. Minimum scale for these plans is 1:100 (1/8" = 1'-0") (see note under 4.b. below).
- b. Provide complete heating/cooling pipe plan layout and isometric diagram which show all required valves, special fittings, pipe sizes, vent and drain locations, expansion joints or loops (size all loops), guides, anchors, coils, radiation units, equipment symbols, offsets, sleeves, structural and architectural elements which

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interfere with piping (provide required details/section to clarify), thermostat and control panel locations, furred in spaces, riser locations, etc. Minimum scale for these plans is 1:100 (1/8" = 1'-0").

NOTE: Duct work and piping plans indicated above will normally be separate plans; they will only be combined when it will not result in a congested, difficult to read drawing. A larger scale may be used if it results in a plan that clearly shows all required information. Recommended scale is 1:50 (1/4" = 1'-0").

- c. Provide large scale plan of boiler room, showing location of all equipment and piping. Include sections for clarity. Show clearances around equipment for servicing and coordinate with electrical for panelboard locations. Locate piping with relation to floors, walls, and ceiling. Clearly show location and size of combustion air openings.
- d. Provide boiler/chiller and mechanical room isometric or schematic diagram complete with all fittings, valves, pump strainers, balancing valves, thermometers, flow indicators, control valves, drain valves, expansion tanks, water treatment equipment, air separators, fuel piping, pipe sizes, etc.
- e. Provide plot plan to show all outside equipment, piping, fences, etc. Coordinate with Civil.
- f. Provide complete details as follows:
  - Equipment supports and hangers
  - AH Unit duct arrangements complete with dampers, turning vanes, flexible connections, etc.
  - Fire/smoke damper detail and schedule giving size, type, and rating.
  - Coil and radiation unit piping including pipe size schedule, control valves, balancing valves, air vents, etc.
  - Roof mounted equipment, vents, penetrations, etc.
  - Pipe sleeves
  - Pipe guides, expansion joints or loops and anchors
  - Diffusers, grille, and register installation
  - Automobile exhaust systems (shops and garages)
  - Dust collector systems (shops)
  - Ventilation hoods (all type)
  - Kitchen exhaust systems complete
  - Pumps with connecting piping gages, etc.

## 5. Plumbing

- a. Provide complete plan layout (provide separate water and waste plans if required for clarity) to show all roof drain, waste, vent, and water piping including plumbing fixtures, fixture numbers, vents, risers, cleanouts, offsets, sleeves, wall hydrants, isolation valves, all pipe sizes, service entrance locations, etc. Recommended scale is 1:100 (1/8" = 1'-0") minimum.
- b. Provide large scale for any area of congested piping including kitchens, toilet areas, shower areas, etc. Recommended scale is 1:50 (1/4" = 1'-0") minimum.

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- c. Provide complete and separate isometric or schematic diagrams for waste/vent, roof drain and water piping showing all plumbing fixture numbers, traps, cleanouts, offsets, vents (number vents), pipe sizes, valves, pipe sleeves, isolation valves, access panel locations, vent through roof, air chambers, connection to existing, capped lines, drain locations and valves, indicate pipe location (crawl space, tunnel, furred chase, etc.) roof drain swing joints, etc.
  - d. Soil and waste shall be shown to 1524 mm (5 ft) outside of building for connection to outdoor utilities. Provide cleanout. Show invert elevation. Coordinate with utility plot plan.
  - e. Water service shall be shown to outside of building. Provide service valve and valve box.

**6. Fire Protection Systems**

- a. Show location of fire line entrance into the building (may be shown on plumbing plan but shall be clearly identified).
- b. Provide complete detail of fire sprinkler riser including all valves, check valve, pressure gages and taps, flow switches, water alarms, retarding chamber, test fitting, drains, pipe sizes, etc.
- c. Provide complete details diagram of kitchen hood fire protection system including all required components.

**7. Fuel Distribution System (Interior)**

- a. Complete plan layout (may be incorporated with plumbing plan if it does not confuse or clutter the plan).
- b. Provide fuel piping isometric diagram showing all valves, special fittings, pipe sizes, PRV's, meters, etc. required.
- c. Complete details to cover the following:
  - Connections to kitchen equipment, burners, tanks, unit heater, etc. complete with all required unions, strainers, drip legs, PRV's, pipe sizes, strainers, check valves, etc. required.
  - Wall, partition, floor sleeves and roof penetrations
  - Pressure regulators and meters
  - Day tanks and storage tanks
  - Laboratory gas distribution system with emergency shut-off valve(s)

**8. Fuel Distribution Systems (Exterior)**

- a. Provide plans (may be incorporated on Civil drawings if it can be done with clarity and does not confuse or clutter the plans) to show all fuel distribution piping, storage tank locations, meter location, valves, locations and size of

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existing, etc.

b. Provide details as follows:

- Storage tank installation complete with supports, anchors, piping, fittings, piping containment chambers, manholes, manhole access pits, valves, fitt station details, capacity, pipe sizes, meter, PRV's, etc.
- Building and master meter loops.
- Connections to existing utilities including all pipe sizes.
- Vaporizer piping details with pipe sizes.
- Plan of storage facility (minimum 1/4"-1'0") giving dimensions to fences, adjacent building, fill stations, regulators, meters, vaporizer; show gage sizes, access roads, etc. Coordinate with Civil drawings.
- Valve box

c. Gas Systems: Indicate in W (BTUH or CFH) the required service capacity at each building.

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ENERGY CONSERVATION CERTIFICATION  
STATEMENT

PROJECT NAME: \_\_\_\_\_

LOCATION: \_\_\_\_\_ SRS#: \_\_\_\_\_

DESIGN CONTRACT #: \_\_\_\_\_

THIS FACILITY HAS BEEN DESIGNED IN A MANNER THAT PROVIDES FOR CONSIDERATION OF THE PRINCIPLES OF EFFECTIVE ENERGY BUILDING DESIGN PRESCRIBED IN 10 CFR PART 435, "ENERGY CONSERVATION VOLUNTARY PERFORMANCE STANDARDS FOR COMMERCIAL AND MULTI-FAMILY HIGH RISE RESIDENTIAL BUILDINGS; MANDATORY FOR NEW FEDERAL BUILDINGS."

COMPANY: \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

TITLE: \_\_\_\_\_  
PROJECT MECHANICAL ENGINEER

COMPANY: \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

TITLE: \_\_\_\_\_  
PROJECT ELECTRICAL ENGINEER

COMPANY: \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

TITLE: \_\_\_\_\_  
PROJECT ARCHITECT

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## MECH 2            CODES, STANDARDS, AND LAWS

### A. GENERAL

For mechanical engineering design, follow industry and government codes, standards, and laws relevant to the field of design responsibility. Use codes and standards in force at the time of the design contract award.

### B. APPLICABLE CODES

- Uniform Mechanical Code (UMC)
- Uniform Plumbing Code (UPC)
- Uniform Fire Code (UFC) (may be used for guidance, not officially applicable)
- ASME Boiler and Pressure Vessel Code
- National Fire Codes (25 BIAM, Supp. 18, 1.3B)

### C. STANDARDS

- NFPA 31, "Standard for Installation of Oil Burning Equipment"
- NFPA 45, "Fire Protection for Labs Using Chemicals"
- NFPA 54, "National Fuel Gas Code"
- NFPA 58, "Standard for the Storage and Handling of Liquefied Petroleum Gases"
- NFPA 8501, "Prevention of Furnace Explosions in Fuel Oil and Natural Gas Single Burner Furnace" (IRI fuel train requirements)
- NFPA 90A, "Installation of Air Conditioning and Ventilating Systems"
- NFPA 96, "Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment"
- Standards in ASHRAE handbooks, including *Fundamentals; Systems and Equipment; Applications; and Refrigeration*
- ASHRAE 62-1989, *Ventilation for Acceptable Indoor Air Quality*
- Standards in *Industrial Ventilation: A Manual of Recommended Practice*, by OSHA and the American Conference of Governmental Industrial Hygienists
- 10 CFR Part 435, "Energy Conservation Voluntary Performance Standards for New Commercial and Multi-Family High Rise Residential Buildings; Mandatory for New Federal Buildings" (format similar to but not identical to, ASHRAE/IES 90.1-1989)
- Standards in reference manuals of the Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA)
- "41 CFR, 101-19.6, App. A, Uniform Federal Accessibility Standards"

SEE ALSO: ACCESS - Building Accessibility chapter of this handbook.

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**MECH 3 HEATING, VENTILATING, AIR CONDITIONING (HVAC) SYSTEMS**

**A. DESIGN CRITERIA**

**1. Indoor Design Criteria**

Design HVAC systems to maintain the following indoor temperatures in BIA buildings.

Building Type	Summer	Winter
Dormitory	25°C (78°F)	21°C (70°F)
Detention	25°C (78°F)	22°C (72°F)
School	24°C (75°F)	22°C (72°F)
Offices	24°C (75°F)	22°C (72°F)

**2. Outdoor Design Criteria**

Base outdoor design criteria on the 99% winter and 2-1/2% summer design dry-bulb columns from the ASHRAE *Fundamentals Handbook*, unless severe local conditions require otherwise. Identify the proposed outdoor design criteria in the 20% Schematic submittal.

**B. CALCULATIONS AND DESIGN ANALYSIS**

**1. Calculations**

- a. **FORMAT.** Submit relevant engineering calculations at each phase of design, using 216 mm x 279 mm (8-1/2 in x 11 in) preprinted data sheets. For computer-generated calculations, submit complete input and output data for calculations in accordance with recognized industry standards and include a legend for symbols and code letters used. Partial calculations and rule-of-thumb estimating are not acceptable.
- b. **CONTENT.** At minimum, submit calculations for:
  - Heat loss (room by room)
  - Heat gain (room by room) in air-conditioned buildings; include a psychometric chart for each air-conditioning system (for labs, classrooms, dining areas, and so on)
  - Total heating and cooling loads for each building and for each zone within the building
  - Heating system equipment sizing and model selection
  - Cooling equipment sizing and model selection
  - Life Cycle Cost Analysis
  - Pump heads (using piping lengths and fitting counts by type) and model selection

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- System volumes and expansion tank sizing
  - Primary fuel requirements (including initial gas pressures, one-month storage capacities, vaporization capacities for LP gas systems, and distribution line sizing)

## 2. Design Analysis

In the Design Analysis, discuss relevant codes, criteria and factors in system selection (design temperatures, outside air volumes, exhaust air changes/hour, HVAC zoning, control system selection, fuel alternatives, energy conservation, connection to existing utilities, operating and maintenance concerns, special training requirements, and so on).

## C. SYSTEMS AND EQUIPMENT

### 1. Boilers

- a. **GENERAL.** Specify boilers, pressure vessels, hot water heaters, and heating and cooling systems in accordance with applicable ASME and other codes, and include relevant code symbol stamps on the drawings:
  - ASME Section I - Power
  - ASME Section IV - Heating Boilers
  - ASME Section VIII - Division I - Pressure Vessels
  - ASME CSD-1-1992 - Controls and Safety Devices for Automatically Fired Boilers
  - ASME Section IX - Welding and Brazing Qualifications
  - Industrial Risk Insurers (IRI) and Military Specification MIL-B-1B796E
  - ASME B31.1 - Power Piping
  - ASME B31.2 - Fuel Gas Piping
  - ASME B31.4 - Liquid Petroleum Transportation Piping System
  - ASME B31.5 - Refrigeration Piping
  - ASME B31.9 - Building Service Piping
- b. **DRAWINGS.** On the detailed mechanical drawings and specifications, show:
  - All new and existing boilers and pressure vessels, trim, controls, and piping
  - Safety relief valves and discharge piping
  - Boiler and burner types and manufacturers' kW (BTUH or LBS/HR) ratings; fuel types; and controls and their functions
  - Fuel train diagrams (gas and oil)
- c. **CONTROLS AND SAFETY DEVICES.**

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INSPECTION/REGISTRATION.

e. NEW INSTALLATION START-UP. Provide a trained, factory-authorized representative, to test, start-up, balance, and to provide appropriate training to the boiler operators/maintenance personnel at the location (ASME CSD-1-1192, Part CG).

FOOD SERVICE EQUIPMENT.

**2. Air Conditioning Systems**

- a. GENERAL. Do not include mechanical air conditioning in building designs unless called for in the *Program of Requirements*. User requests are insufficient justification for inclusion.
- b. REFRIGERANTS.
- c. EVAPORATIVE COOLING.

**3. Air Handling Systems**

- a. GENERAL. Specify factory-fabricated, packaged air handling units. Indoor units are preferred over roof mounted equipment.
- b. HEATING COILS AND FAN SECTIONS. Equip all units with hot water heating coils (rather than specifying gas-fired units). Wherever feasible, specify internally isolated fan sections versus externally isolated units.

**4. Steam Systems**

Specify steam systems for heating only when an existing steam system is being expanded to serve a building addition. Do not specify steam heat systems for a new facility.

**5. Water Treatment Systems**

Provide water treatment equipment for closed-loop heating and cooling systems, steam systems, and open-loop cooling tower systems. For closed-loop systems, use shot-type feeders. In the specifications, detail testing requirements, treatment standards, operating instructions, and the provision of one year's supply of chemicals and tests.

**6. Heating Systems**

- a. GENERAL TYPES. Design circulating hot water heating systems with reverse return piping. For each system, provide steel water tube or cast iron boilers. If two boilers are used each shall be capable of meeting 67 percent of the total connected heating load. Provide emergency boiler shutdown switches at the boiler room exit.

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- b. **FUEL TYPE.** Fuel selection shall be based on availability and life cycle cost analysis. Remote locations may have only LPG or fuel oil available. For environmental reasons, LPG would be preferred if the mechanical room is not below-grade level. Electricity is rarely the most cost effective fuel and must be justified with LCC analysis.
  - c. **PIPING SYSTEMS.** For hydronic piping, specify schedule 40, black steel pipe with threaded grooved or flanged fittings, or type L copper with 95-5 solder joints up to 50 mm (2 in), and schedule 40 black steel with welded joints for piping 65 mm (2-1/2 in) and larger. Insulate all piping in accordance with 10 CFR Part 435, "Energy Conservation Standards".
  - d. **ANTIFREEZE.** In cold climates -- minus 12°C (+10°F) or lower -- design heating systems with 30% propylene glycol antifreeze (industrial grade, with inhibitors formulated for heating water systems). Correct equipment capacities for the effect of the antifreeze on heating coils, pumps, boilers, and so on, and provide a glycol mixing tank and electric feed pump.

#### 7. Fuel Oil Systems

- a. **GENERAL.** When possible, specify fuel systems other than oil. Heating with fuel oil involves significant initial and ongoing expenses that increase life cycle costs. If fuel oil is selected, clearly indicate on the contract documents all required components of the fuel oil system, including (but not limited to) tanks, manholes, access manways to grade, fuel supply and return piping, vent piping, vent caps, remote fuel oil gauges, monitoring wells, and backfill materials. Oil tanks installed within the expected ground water must be provided with concrete hold-down pads and anchor straps.
- b. **TANKS.** For underground fuel oil storage, specify "UL Listed" double-wall steel or fiber reinforced plastic tanks, installed in accordance with EPA regulations, and include electronic leak detection.

#### 8. Underground Hot Water, Chilled Water, and Steam Distribution Systems

- a. Use prefabricated or pre-engineered underground piping systems between buildings composed of a single assembly with inner pipe, insulation, and outer conduit.
- b. Design piping systems in accordance with site ground water conditions, operating temperatures, and site soil classifications.
- c. On the construction drawings, include assembly details and locations for joints, thrust blocks, expansion loops, and manholes, and show compaction requirements and depth of burial. Provide sufficient isolation valves for sectionalizing the distribution system for maintenance, inspection, and repair.

#### 9. Temperature Control Systems

- a. **GENERAL.** Specify electric, pneumatic or direct digital (DDC) temperature controls. Direct Digital Control systems are desirable in most large or complex

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facilities and shall be specified BacNet compliant.

- b. **COMPONENTS.** Use copper for all exposed air piping. Concealed air piping may be polyethylene, but must be plenum-rated when installed in a return air plenum. Size tank-mounted duplex compressors so that each compressor runs no more than one-sixth of the time. For air receivers, specify ASME-stamped and registered pressure vessels. Provide a refrigerated air dryer, and locate compressors and dryers in the boiler room.
- c. **SEQUENCES.** Design complete sequences of operation for each mechanical system, and show the sequences on the drawings. The control sequences may also be in the specifications, but they must be shown on the drawings below the applicable control schematic drawings. Keep control sequences as simple as possible, while providing both functionality and energy conservation.

#### 10. Miscellaneous Requirements

- a. **SHOWER/TOILET EXHAUST.** Do not vent exhaust systems into a concealed space such as an attic. Extend exhaust systems to roof or wall terminations.
- b. **ELECTRIC HEAT.** May be used for spot heating remote spaces like a pump house or concession stand when the central heating system is not available.

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## MECH 4 PLUMBING SYSTEMS

### A. DESIGN CRITERIA

Design plumbing systems in accordance with the Uniform Plumbing Code or equivalent local codes. Identify the controlling code in the first design submittal.

### B. CALCULATIONS AND DESIGN ANALYSIS

#### 1. Calculations

a. **FORMAT.** Submit relevant engineering calculations at each phase of design using 216 mm x 279 mm (8-1/2 in x 11 in) preprinted data sheets. For computer-generated calculations, submit complete input and output. Complete all calculations in accordance with recognized industry standards. Partial calculations and rule-of-thumb estimations are not acceptable.

b. **CONTENT.** At minimum, submit calculations for:

- Storm drainage requirements for low sloped roofs
- Pipe carrying capacities
- Fixture counts for domestic hot water and cold water, sewer drainage, and vent capacities
- Domestic cold water probable peak flow demands, pressure requirements, pressure availability, and pipe sizing
- Domestic hot water probable peak flow demands, water heater storage and recovery sizing, heater fuel requirements
- Heating fuel requirements -- include list of fuel burning equipment -- boilers, water heaters, kitchen equipment, laundry equipment, laboratory equipment, and so on -- including inputs and outputs)

#### 2. Design Analysis

a. In the Design Analysis, discuss relevant codes, criteria and factors in system selection (water heater type, water supply and sanitary drainage systems, fuel alternatives, energy conservation, connection to existing utilities, operating and maintenance concerns, special training requirements, and so on).

### C. SYSTEMS AND EQUIPMENT

#### 1. Drain, Waste, and Vent Systems

a. **MATERIALS.** For sanitary waste systems, specify PVC, ABS or cast iron pipe as soil conditions dictate for below-grade installations.

b. **DRAWINGS.** Indicate complete systems on the drawings, showing sizes, locations of each fixture, pipe routing and sizes, equipment drawn to proper scale and fully detailed.

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## 2. Domestic Cold Water Systems

- a. **WATER CONSERVATION.** Incorporate the latest proven water-conserving methods, materials, and equipment in all domestic cold water systems.
- b. **DOMESTIC WATER PIPING.** Above ground, specify type L rigid copper piping with 95-5 soldered wrought copper fittings. Below grade, specify type K soft copper piping with no joints. Plastic piping is prohibited for domestic water systems.
- c. **LEAD BAN.** Consistent with the requirements of Section 1417 of the Safe Drinking Water Act (June 19, 1986), do not use lead solder, lead flux, or lead piping in any repairs or new installations of building plumbing systems and public water systems.

## 3. Domestic Hot Water Systems

- a. **GENERAL.** Specify domestic water heaters separate from hot water heating systems, with separate vent stacks. Do not use space heating systems to generate domestic hot water. Also, provide a hot water recirculation system. Do not specify heat traced systems in lieu of a recirculating system unless shown to be cost effective by a life cycle cost analysis.
- b. **STUDENT SHOWERS AND LAVATORIES.** Provide a tempered water system to deliver 43°C (110°F) water to student showers and student lavatories. Make mixing valves accessible only to building staff. Generate and store domestic hot water at 60°C (140°F). Temper to 43°C (110°F) for distribution to the showers and lavatories. For systems with a substantial hot water demand evaluate using copper fin tube hot water heaters with separate storage tanks in lieu of tank type hot water heaters. Do not specify helical fin heat exchanger.

## 4. Plumbing Fixtures

- a. **HEAVY-DUTY FIXTURES.** Specify only heavy-duty, institutional quality plumbing fixtures. Avoid fixtures that can be easily cracked, chipped, broken, plugged, or disassembled.
- b. **SPECIAL FIXTURES.** In unsupervised locations, use vandal-resistant fixtures. Use detention fixtures in detention facilities.
- c. **SAFETY SHOWERS.** Include eye wash and safety showers in all mechanical rooms, laboratories, and other rooms where chemicals will be used.
- d. **SPECIFICATIONS.** Provide detailed specifications, including model numbers for all fixtures.
- e. **ACCESSIBLE FIXTURES.** Provide handicap accessible fixtures and controls, mounted in accordance with the Uniform Federal Accessibility Standards (UFAS) and, as applicable, use the adopted elementary school standards, "Recommendations for Accessibility to Serve Physically Handicapped Children in Elementary Schools".

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5. **Potable Water System Sanitizing**

In the specifications, include requirements for cleaning, flushing, and sanitizing all components of potable water systems.

6. **Gas Distribution Systems**

- a. **GENERAL.** Show underground LP or natural gas distribution piping on the construction drawings from the system connection point to the building served. Specify only polyethylene piping with compatible fittings and valves for underground use with natural gas. Refer to the fuel gas systems guide specifications for LPG and natural gas in the SPEC - Specifications chapter.
- b. **NATURAL GAS.** Locate natural gas distribution systems away from loading docks, driveways, sidewalks, air inlet louvers, and other locations where physical damage might occur or where pressure-reducing valve venting could enter the building served. Show the location of the gas meter and pressure-reducing valve on the contract documents.
- c. **LIQUIFIED PETROLEUM GAS (LP Gas).** Install LP gas storage tanks, vaporizers (when required), and distribution systems in accordance with NFPA 58, "Standard for the Storage and Handling of Liquefied Petroleum Gases". On the contract documents, clearly indicate all components of the LP gas system -- including, but not limited to, the tank, tank support saddles, piping, relief valves, pressure gauge, volume gauge, thermometer, vaporizer, unloading station, emergency shutoff valves, power supply to the vaporizer, pressure regulator, chain link fencing, gates, etc. The design mechanical engineer shall determine if a vaporizer is required based on the design heating load and the site minimum temperature.
- d. **RESPONSIBILITY.** The natural gas or LP gas distribution system shall be indicated on the site utility plan, but shall be the responsibility of the design mechanical engineer. System sizing, routing, and coordination with the fuel supplier shall also be accomplished by the design mechanical engineer.

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## MECH 5 ? STANDARD DETAILS

Sample details illustrating requirements for mechanical system construction are shown on exhibits MECH 5.2 through MECH 5.10 at the end of this chapter.

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|----|-------------------------------------|-----------|
| 1. | Hot Water Convactor Piping Detail   | MECH 5.2  |
| 2. | LP Gas Storage Tank Piping (Single) | MECH 5.3  |
| 3. | LP Gas Storage Tank Piping (Double) | MECH 5.4  |
| 4. | LP Gas Tank Support Detail          | MECH 5.5  |
| 5. | Oil Tank Piping Details             | MECH 5.6  |
| 6. | Oil Burner Piping Detail            | MECH 5.7  |
| 7. | Hot Water Boiler Schematic          | MECH 5.8  |
| 8. | Hot Water Unit Heater Piping Detail | MECH 5.9  |
| 9. | Roof Mount Exhaust Fan              | MECH 5.10 |

## **FIRE 1                    QUALIFIED PERSONNEL**

### **A.    EDUCATION AND EXPERIENCE**

A qualified fire protection engineer is an individual meeting one of the following criteria:

1.    An engineer having a Bachelor of Science or Masters of Science Degree in Fire Protection Engineering from an accredited university engineering program, plus a minimum of 2 years work experience in fire protection engineering.
2.    A registered professional engineer (P.E.) in fire protection engineering.
3.    A registered P.E. in a related engineering discipline and member grade status in the National Society of Fire Protection Engineers (NSFPE).
4.    An engineer with a minimum of 10 years experience in fire protection engineering and member grade status in the NSFPE.
5.    A registered architect (R.A.) with member grade status in the NSFPE. Services of the R.A. shall be limited to building code applications and life safety code analysis.
6.    Anyone certified at Level III with the National Institute for Certifying of Engineering Technologies (NICET), in Fire Protection.

### **B.    INVOLVEMENT OF FIRE PROTECTION ENGINEER**

1.    All new, renovation, and additions that affect the design or modification of fire detection, fire suppression or life safety systems.
2.    A qualified fire protection engineer shall be an integral part of the design team and shall be involved in every aspect of the design relating to fire protection, including:
  - @    Code analysis
  - @    Life safety review
  - @    Design of automatic detection and suppression systems
  - @    Water supply analysis
  - @    A multi-discipline review of the entire project

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## **FIRE 2            GENERAL**

### **A.    RESPONSIBILITY FOR**

1.    The A/E contractor is responsible for coordinating the overall fire protection plan. Requirements relative to each engineering discipline are discussed in the chapters of this handbook devoted to these disciplines (civil, structural, etc.) consistent with the National Fire Code.
2.    Do not deviate from this criteria in the planning, engineering, design, and construction of BIA facilities without prior approval.
3.    Do not reference this section in Federal Specifications or other procurement documents.

### **B.    CRITERIA**

This section establishes BIA fire protection engineering policy and criteria.

### **C.    WHEN REQUIRED/TYPES**

#### **1.    New Buildings**

Install fire sprinkler systems in all new buildings exceeding 185 m<sup>2</sup> (2,000 sf). Use wet systems unless a building cannot be designed to protect piping from freezing temperatures. "Cold attic" systems approved only in one- and two- family residential buildings. Do not use a dry system to justify use of a "cold attic" construction.

#### **2.    Existing Facilities**

Those which are acceptable to the authority having jurisdiction and meet the requirements of NFPA 101 and Life Safety for existing occupancies do not have to be modified to comply with this section if they are not renovated, modernized or rehabilitated.

#### **3.    Building Additions**

Extend sprinkler systems installed for building additions to provide fire protection to the original buildings. Dry sprinkler systems are acceptable for additions if required by the existing building construction.

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## D. DESIGN REQUIREMENTS

### 1. Basic Criteria

Design and install all sprinkler systems in accordance with NFPA 13, "Installation of Sprinkler Systems" using as a minimum "ordinary" hazard occupancy classification. On the drawings, indicate the fire sprinkler water supply location, pressure, and flow capabilities, and include hydraulic calculations and complete installation instructions. If a fire pump is required, include a size and capacity schedule, show the pump location, and indicate any electrical supplies to be provided. Use schedule 40 black steel for piping and provide an outside service line post indicator valve as required by NFPA.

Conform to UBC for building construction, fire separation requirements, allowable floor area and building height limitations.

### 2. BIA Standards

The BIA does not allow antifreeze loops off wet systems to protect freezing locations. Dry pendant heads may be used if adequate coverage can be provided.

### 3. Design Analyses

Required for all designs. Submit in accordance with the SUB - Submittal Requirements chapter of this handbook.

Verify the adequacy of the water supply with flow tests and pressure measurements. Submit a report to the BIA stating whether or not the water supply system can support a fire sprinkler system. On the drawings, show available residual fire flow water pressure at the fire sprinkler riser.

### 4. Egress and Life Safety

Comply with NFPA 101. Conflicts between UBC and NFPA 101 related to fire resistance rating shall conform to NFPA 101 and criteria contained in this section.

### 5. Water Demands for Sprinklered Facilities

- a. The water demand required for sprinkler protection depends upon occupancy, discharge density, design area, and type of sprinkler system (wet or dry), type of construction, and other building features.
- b. Hose streams are needed concurrently with sprinkler discharge in order to effect final extinguishment or to wet down adjacent structure.
- c. The total water demand for sprinklered occupancies is equal to the sum of the

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domestic demand plus the sprinkler system(s) water demand and the hose stream(s) demand. The total demand shall be available at the sprinkler system connection to the underground main, and at the pressure necessary to produce the required sprinkler density over the required hydraulically most remote area of sprinkler operation.

- d. Water demands for buildings and facilities that are not fully sprinklered are based on fire department hose stream requirements.

#### **6. Water Pressure Required for Sprinklered Facilities**

Provide pressure as required to meet the total demand as determined by hydraulic calculations. The total demand is the required sum of the domestic demand, sprinkler demand, and hose stream demand.

#### **7. Water Storage**

- a. If the public water system supplying a facility is reliable, provide a minimum of two connections, each providing at least 50 percent of the required capacity, having adequate capacity and pressure to meet water requirements, and continuous reserve storage capacity at least equal to the required fire protection water storage. If this is done, then no separate water storage facility is required.

- b. Requirements for fire protection water storage are based on the assumption that there will be only one fire at a time. The quantity of water required is equal to the product of the fire protection water demand and the required duration. This quantity represents fire protection requirements only, and shall be available at all times. Water supply for domestic, industrial, and other demands shall be added to these requirements to determine the total amount of water that is necessary at a facility.

- c. The total stored supply for fire protection purposes shall be sufficient to meet the maximum required fire flow demand for the duration specified.

- d. In computing the fire protection storage requirement, a reduction in storage capacity is acceptable if an adequate replenishment source is available. Factors that must be evaluated include the reliability of the makeup facility, its sustained flow capacity, its method of operation (automatic or manual), and flow limitations imposed by the capacity of treatment operations.

- e. The water storage shall be self-replenishing. It shall reach required volume during normal consumption within 48 hours, and with 24 hours curtailing normal consumption.

#### **8. Sources of Water Supply**

Primary water supplies shall consist of one or a combination of the following:

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? Two connections to a public water system (one connection is ample for a small activity, such as a Reserve Training Facility).

? Elevated tanks or reservoirs.

? Multiple pumps with adequate suction supply.

## 9. Fire Pumps

a. Pumps for fire protection shall have adequate capacity with reliable power and water supply. This equipment shall conform to requirements of NFPA 20, "Installation of Centrifugal Fire Pumps". Fire pumps, drivers and other equipment, including automatic accessories shall be listed by UL or approved by FM or listed or classified by a Nationally Recognized Testing Laboratory (NRTL).

b. A fire pump may be either a horizontal or vertical shaft centrifugal pump or a vertical shaft turbine pump, whichever is most economical and appropriate for the intended use. A horizontal centrifugal pump in either the horizontal or vertical position shall not be used where suction lift is required. A vertical shaft turbine pump shall be used for suction lift.

c. Fire pumps shall be arranged to start automatically, except that they shall be arranged for manual starting when other available water supply sources are capable of providing demands for automatic sprinkler systems simultaneously with domestic and industrial demands.

d. When electric power is economically available from a reliable single power source or from two independent sources in accordance with NFPA 20, pumps shall be electric driven only. A reliable single power source is defined as a power source having an average forced down time, excluding scheduled repairs, which does not exceed 8 consecutive hours for any one incident nor more than 24 hours cumulatively over the last 3 years. When such electrical power supplies are not available, fire pumps shall be diesel driven. Spark-ignited, internal combustion engines shall not be used to drive fire pumps.

e. Manual controls, double-acting altitude valves, or other automatic devices shall be used to maintain the water level in elevated storage tanks. Altitude valves shall be arranged with bypasses.

f. Where meters are installed on water distribution systems, they shall be listed by a NRTL as fire flow meters.

## 10. Water Distribution Systems

a. The distribution system shall be sized to accommodate fire flows plus domestic and industrial or flushing demands that cannot be restricted during fires. Distribution shall be looped to provide at least 50 percent of the required fire flow in case of a single break. Dead-end mains shall be avoided. Distribution

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systems shall be designed in accordance with NFPA 24, "Installation of Private Fire Service Mains and Their Appurtenances".

- b. Control valves shall be provided in each source of water supply, such as tanks and pumps. A sufficient number of sectional valves shall be provided so that not more than a combined total of five (5) hydrants and sprinkler systems, shall be out of service due to a single break. Control valves shall be either post indicating or outside-stem and yoke types. All new valves shall be right handed valves.
- c. Provide drawings showing control valve locations and size. Indicate all existing left-handed valves clearly on the drawings.

## 11. Hydrants

Refer to page CIVIL 3.B.4.a. of this handbook.

- a. **INSTALLATION REQUIREMENTS.** Hydrants shall be installed adjacent to paved areas, not closer than 1 m (3 ft) and not further than 2 m (7 ft) from the roadway shoulder or curb line, where they will be accessible to fire department apparatus.

Install with not less than 152 mm (6 in) connection to the supply main, and valved at the connection. Barrels shall be long enough to permit at least 457 mm (18 in) clearance between the center of the 133 mm (5-1/4 in) pumper connection and grade. The ground shall be graded so that any surface drainage is away from the hydrant. Installation shall be in accordance with NFPA 24, except as modified herein. Pumper connection should be perpendicular to the street to allow straight lined connection to the pumper.

- b. **SPACING REQUIREMENTS.** Refer to CIVIL 3.B.4.b of this handbook.
- c. **PROTECTION.** Hydrants located adjacent to parking areas or other vehicle traffic areas shall be protected by bollards.
- d. **PRESSURE-REGULATING VALVES (PRVs).** Restricted in use on fire protection water systems by NFPA 24. Where essential, PRVs shall be installed on individual services rather than on the main piping. Where PRVs are provided in mains supplying systems or portions of systems with fire hydrants, automatic sprinkler systems, or other installed fire protection, the following features shall be provided to safeguard against failures and to facilitate maintenance:
  - ? Control valves on each side of the PRVs
  - ? Bypasses around PRVs

## E. FIRE EXTINGUISHING SYSTEMS

### 1. Automatic Sprinkler Systems

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- a. **CRITERIA CHARACTERISTICS.** Design to detect the presence of fire, activate both local and remote (fire department) alarms, and distribute water in sufficient quantity to either control or extinguish the fire. Include provisions regarding sprinkler contractor qualifications in the sprinkler specifications.
- b. **APPLICATION REQUIREMENTS.** The following requirements are in addition to the sprinkler requirements listed in applicable NFPA codes and standards:
- ? Any new building 185 m<sup>2</sup> (2000 sf) gross floor area or more.
  - ? Child development centers.
- c. **FIRE ADMINISTRATION AUTHORIZATION ACT OF 1992.** Provide automatic sprinklers in multi-family housing and federal employee office buildings in accordance with NFPA 101. Federal employee office buildings are defined as any building with 25 or more Federal employees.
- d. **DESIGN REQUIREMENTS.** Use equipment and devices listed by a NRTL. Follow applicable criteria set forth in NFPA 13 and NFPA 16, "Deluge Foam-Water Sprinkler and Foam-Water Spray Systems" for sprinkler systems in light, ordinary, and extra hazard occupancies.
- 1) Hydraulic Calculations. Use hydraulic calculations for designing new sprinkler systems with areas 185 m<sup>2</sup> (2000 sf) or more. Use of pipe schedule designs is strongly discouraged for any sprinkler system. Discharge densities and areas of discharge operation shall follow the format of NFPA 13. Pipe friction losses and equivalent lengths of pipe for fittings and valves shall be in accordance with NFPA 13.  
  
NOTE: Additions to the existing pipe schedule systems may be designed using the pipe schedule method.
  - 2) Sprinkler Coverage. Provide 100 percent building coverage. This includes, but is not limited to, telephone rooms, electrical equipment rooms, boiler rooms, switch gear rooms, transformer rooms, and other electrical and mechanical spaces. Coverage per sprinkler shall be in accordance with NFPA 13, except that it shall not exceed 21 m<sup>2</sup> (225 sf) for light hazard occupancies or 12 m<sup>2</sup> (130 sf) for ordinary hazard.  
  
**Exception 1:** Facilities that are designed in accordance with NFPA 13R and NFPA 13D.  
**Exception 2:** Sprinklers may be omitted from small rooms which are exempted for specific occupancies in accordance with NFPA 101.
  - 3) Connections to Exterior Fire Reporting Systems. Connect sprinkler systems electrically to the fire reporting system for transmission of sprinkler water flow alarms, in facilities with station or base fire reporting systems.
- e. **SPRINKLER SHOP DRAWINGS.** Sprinkler shop drawings shall be prepared and submitted by a qualified sprinkler contractor.

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## 2. Water Spray Systems

Requirements: Conform to NFPA 15, "Water Spray Fixed Systems for Fire Protection".

## 3. Standpipe Systems

When required, standpipe systems shall be installed in accordance with NFPA 14, "Installation of Standpipe and Hose Systems".

Exception: Residual pressure requirements specified in NFPA 14 may be omitted for buildings under 46 m (150 ft) in height where fire department apparatus are expected to boost pressure in standpipe systems.

## 4. Dry Chemical Extinguishing Systems

- a. APPLICATION. Fixed dry chemical systems are approved for protection of certain types of special occupancies, hazards, and facilities, such as cooking surfaces, cooking exhaust systems, and other operations involving flammable liquids.
- b. DESIGN REQUIREMENT. Conform to NFPA 17, "Dry-Chemical Extinguishing Systems".
- c. LIMITATIONS. Do not use to protect sensitive electronics.

## 5. Carbon Dioxide Systems

- a. APPLICATION. Carbon dioxide systems are normally effective against flammable liquid (Class B) and electrical (Class C) fires. New systems are not authorized in occupiable areas.
- b. DESIGN REQUIREMENT. Conform to NFPA 12, "Carbon Dioxide Extinguishing Systems".

## 6. Halon 1301 Systems

Installation of new Halon 1301 Systems is prohibited except by special approval of the BIA.

## 7. Portable Fire Extinguishers

- a. Provide in accordance with NFPA 10, "Portable Fire Extinguishers". Provide extinguishers as part of the construction contract.
- b. Provide recessed or semi-recessed, enclosed cabinets in all facilities except

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storage and industrial occupancies.

**8. Wet Chemical Extinguishing Systems**

- a. **APPLICATION.** Fixed wet chemical systems are suitable for protection of certain types of special occupancies, hazards, and facilities, such as cooking surfaces and cooking exhaust systems.
- b. **DESIGN REQUIREMENT.** Conform to NFPA 17A, "Wet-Chemical Extinguishing Systems".

**9. Fire Alarm Reporting Systems**

Refer to ELEC 6 - Special Electrical Systems in this handbook.

**F. FIRE PROTECTION PLAN**

**1. Information to Include**

In the fire protection plan(s), provide sufficient information to allow adequate fire and life safety reviews by the BIA/FMCC. Include:

- ? Applicable occupancy classifications
  - NFPA Assembly Sub Classification
  - NFPA Detention and Correction Occupancy Use Conditions
- ? Minimum construction requirements
- ? Fire resistance requirements
- ? Exit width requirements
- ? Egress travel distance
- ? Fire walls (i.e., area or occupancy)
- ? Required smoke walls and zones
- ? Fire alarms (pull stations, alarm horns, smoke detectors, visual alarms, etc.)
- ? Portable fire extinguishers
- ? Exit signs
- ? Emergency lighting
- ? Occupant loading
- ? Assembly area occupant loading (i.e. concentrated use, less concentrated use)
- ? Longest travel distance within zones

Provide additional information as deemed necessary for adequate life safety.

SEE ALSO: ARCH 5 - Other Requirements/Considerations

**2. Sample Fire Plan & Detail Sheets**

See pages FIRE 5.2 & 5.3 of this chapter for sample fire protection plan and detail sheets. Use these as a guide only. It is not intended to dictate plan format or content.

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**G. OPERATING AND MAINTENANCE MANUALS**

Submit complete operating and maintenance manuals for each fire protection system specified. Provide a minimum of four (4) hours of training for each fire protection system.

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## **FIRE 3      ?    CODES AND STANDARDS**

### **A.    RELEVANT TO DESIGN**

#### **1.    Applicable Codes**

- a.    **GENERAL.** Design all new construction, major alterations, improvements, and minor remodeling to conform to applicable building codes (as they apply to your field of design responsibility) and to the National Fire Code (NEC) as published by the National Fire Protection Association (NFPA).  
  
? Fire protection criteria shall conform to the requirements of this section, the National Fire Code, published by the National Fire Protection Association (NFPA) and portions of the Uniform Building Code (UBC), Uniform Federal Accessibility Standards (UFAS), and the Americans with Disabilities Act (ADA).
- b.    **NFPA 13.** Design sprinkler systems in accordance with NFPA 13, using as a minimum "Ordinary" hazard occupancy classification (25 BIAM, Supp. 18, 1.4).
- c.    **CURRENCY.** Use the most recently published or adopted codes, standards, or laws in force at the time of the A/E contract award.

#### **2.    Resolution of Conflicts**

- a.    Consult with the BIA/FMCC to resolve any conflicts or questions regarding code application. Where applicable building codes conflict with NFC provisions, the latter prevail. When requirements established by law conflict with BIA/FMCC policy, the requirements promulgated by law prevail if the law is more stringent. When BIA/FMCC policy is more stringent than the law, the policy prevails.
- b.    When this section does not cover a specific application, follow the codes listed above in 1. In the absence of any such information being in the codes, contact the BIA authority having jurisdiction.

### **B.    RELEVANT TO DRAWING SYMBOLS**

On the drawings, use symbols for fire protection consistent with NFPA 170.

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## **FIRE 4 ? DESIGN CRITERIA**

### **A. GENERAL**

#### **1. System Types/Materials**

##### **a. SYSTEM TYPES.**

- ? Use only Class A fire protection systems and double-action manual stations.  
? For new buildings, use wet systems unless piping cannot be protected from freezing temperatures. "Cold attic" systems approved only in one- and two-family residences. Dry systems may be specified for building additions if required by the original building construction. However, wet systems are preferred. See FIRE 2.C.1.

b. ASBESTOS BAN. Do not use asbestos-containing material for fire protection of structural members.

c. SPRINKLER PIPING. Use schedule 40 black steel for sprinkler piping.

d. HEAT DETECTORS. Use linear beam detectors for fire protection in gymnasiums and auditoriums. (NOTE: Refer to NFPA for definition of platform and stage.)

e. FIRE EXTINGUISHERS. Placement must comply with the most stringent of 29 CFR 1910.157(d) and NFPA 10 Tables 3-2.1 (for Class A hazards) and 3-3.1 (for Class B Hazards). "Light" hazard is the minimum that may be utilized when using these tables.

#### **2. Hazard Class**

a. Ordinary hazard classification shall be the design basis for every sprinkler system.

### **B. MECHANICAL EQUIPMENT**

#### **1. Equipment Requirements**

a. POST INDICATOR VALVE. Provide post indicator valve in the fire line except when fire lines and domestic water lines are not separated.

b. WATER STORAGE TANKS. Provide 567,811 L (150,000 gal) of water storage for boarding schools, and 283,906 L (75,000 gal) for day schools.

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- c. BACKFLOW PREVENTERS. Do not use when the water supply is private. Available pressure and local codes can mitigate the need for a backflow preventer.

SEE ALSO: CIVIL 3.B.4.a. for fire hydrant requirements.

**2. Drawings/Specifications**

- a. WATER SOURCE. On the drawings, show the pressure and flow capabilities of the water supply source for fire protection.
- b. HYDRAULIC CALCULATIONS. Include complete hydraulic calculations and installation drawings in the specifications.
- c. FIRE PUMPS. For fire pumps (if required), include a size and capacity schedule, indicate required electrical supplies, and indicate pump locations.
- d. WATER PRESSURE. On the drawings, show the available residual fire flow water pressure at the fire sprinkler riser.
- e. INSTALLATION DRAWINGS. Provide complete installation drawings and specifications.

**3. Tests and Reports**

- a. TESTING. Perform a flow test and pressure measurements on water main.
- b. REPORTING. Provide a written report to the BIA documenting whether the water supply can support a fire sprinkler system.

**C. ELECTRICAL SYSTEMS**

SEE: ELEC 6.B. - Fire Alarm Systems for a discussion of electrical requirements.

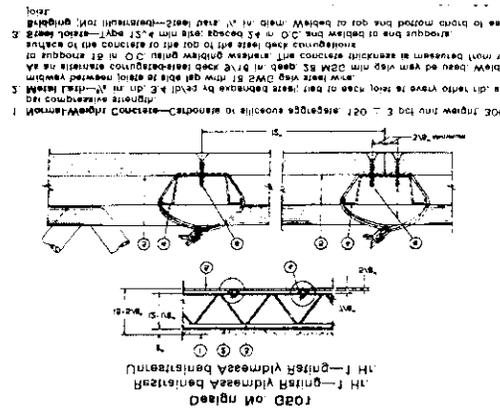
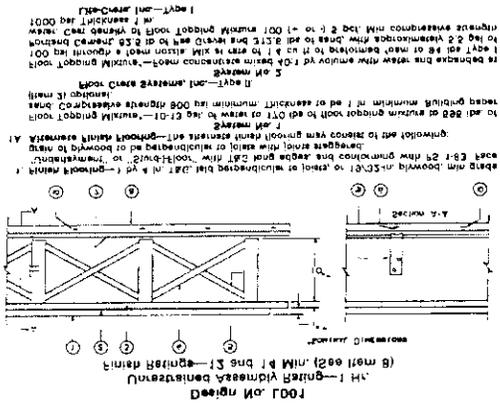
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## **FIRE 5      ?    STANDARD DETAILS**

Sample plan and detail sheets are shown on pages FIRE 5.2 and FIRE 5.3. These are to be used for guidance only.

- |                            |          |
|----------------------------|----------|
| 1. Fire Protection Plan    | FIRE 5.2 |
| 2. Fire Protection Details | FIRE 5.3 |





FLOOR/CEILING ASSEMBLY

## Preface

### GENERAL

This two volume handbook presents detailed design standards for the new construction or improvement of buildings owned, operated, or contract-leased (self determination 638, grant contract, compacts) by the Bureau of Indian Affairs (BIA). It is intended 1) to guide architect/engineer (A/E) contractors and their subcontractors in the proper design of buildings and improvements, 2) to guide the Bureau of Indian Affairs Facilities Management & Construction Center (FMCC) in its review of design work, and 3) to make clear the contract responsibilities of all parties.

### DESIGN CONSIDERATIONS

Included are instructions for all major considerations in design -- from mechanical and electrical systems, to historical preservation, to accessibility. Also discussed are the content and timing of information to be submitted to the BIA, including progress schedules, cost estimates, drawings, and specifications. A partial sample specification is included for reference.

### APPLICATION

Except where noted otherwise, requirements apply to projects completed under both the New Construction Program and the Facilities Improvement and Repair Program administered by the FMCC.

### COORDINATION

It is the A/E contractor's responsibility to coordinate all architectural and engineering work so that all disciplines and subcontractors are aware of project requirements. This can best be accomplished by providing all disciplines and subconsultants with sections of this handbook relevant to their work, and all front matter (Preface; Using This Handbook; Conflicts, Questions, and Appeals; and so on).

### COMPUTERIZATION

Careful attention to the information in this handbook will contribute to the timely and professional completion of designs and contract documents, with a minimum of costly addenda and change orders.

**This handbook is available on CD-ROM media.**

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# Volume 2 Contents (Page 1 of 1)

*Preface i*

## CHAPTER

### Sections

#### Specifications (SPEC)

This chapter identifies CSI specification sections for which the BIA prefers particular information. Not all of the CSI sections are included. The specifications shall be adapted to each project.

SPEC 1.1 - SPEC

- SPEC 1 - Introduction
- SPEC 2 - Format
- SPEC 3 - Guide Specifications

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# SPECIFICATIONS

## *Contents* *(Page 1 of 2)*

This chapter identifies CSI specification sections for which the BIA prefers particular information. Not all of the CSI sections are included. The specifications should be adapted to each project.

<u>SPEC Section</u>	<u>SPEC Page</u>
<b>1 INTRODUCTION</b>	1.1-1.3
A. General	
1. Projects	
2. Boiler Plate	
3. Guide Specifications	
B. Specification Divisions	
1. Division 1	
2. Divisions 2 thru 16	
C. Methods	
1. Manual of Practice	
2. Approved Methods	
3. Addressing	
<b>2 FORMAT</b>	2.1-2.3
A. Cover	
B. Table of Contents	
C. Page Numbering and Format	

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# SPECIFICATIONS

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*(Page 2 of 2)*

<u>SPEC Section</u>	<u>SPEC Page</u>
D. Proprietary	
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2. Open Proprietary Specification	
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<b>GUIDE SPECIFICATIONS</b>	<b>3.1-3.193</b>
A. Use of	
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C. List of Guide Specifications	

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## SPEC 1 INTRODUCTION

### A. GENERAL

#### 1. Projects

All differ in their scope and complexity and have their own unique requirements, but the instructions in this manual can generally be applied to all projects.

#### 2. Boiler Plate

Do not repeat anything in the boiler plate in the technical specifications. The A/E contractor will be provided with a standard BIA boiler plate for reference.

- a. The technical specifications contain sections from the 16 Uniform Construction Index divisions.
- b. A copy of the specifications on computer disk will be required at the 100% submittal - See SUB 6 - Final Construction Documents.

#### 3. Guide Specifications

Specifications for certain divisions are included in SPEC 3 of this chapter.

### B. SPECIFICATION DIVISIONS

#### 1. Division 1

The sections of Division 1 - General Requirements contain all items which are contractor-furnished, administrative in content, or relate to the work as a whole. Division 1 will be prepared by the BIA.

#### 2. Divisions 2 thru 16

The sections of Division 2 through 16 contain all items which cover the technical or construction requirements of the project and shall be prepared by the A/E. The A/E will be responsible for incorporating Division 1, as prepared by the BIA, into the final project manual.

### C. METHODS

#### 1. Manual of Practice

The approved methods for compiling specifications are briefly discussed below; however, if you need additional information about these methods, the Manual of Practice, as developed by the Construction Specifications Institute (CSI), discusses these methods at length. This information is available by contacting:

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CSI  
601 Madison Street  
Alexandria, VA 22314-1791  
(703) 684-0300

## 2. Approved Methods

- a. **DESCRIPTIVE.** Describes exact properties of the materials and methods of installation without naming products by their trade names.

CSI gives this example:

A concrete mix of four-parts coarse aggregate, two-parts fine aggregate, and one-part cement with a 0.5 water-cement ratio is a descriptive specification. A performance strength of 20 684 kPa after 28 days is implied in the design mix, but not specified. If concrete conforming to the descriptive specification was supplied, but did not withstand a 20 684 kPa load, the contractor could not be held responsible since only the design mix was specified. The burden of performance is assumed by the A/E when a descriptive specification is used.

Once widely preferred, the descriptive method is being used less frequently as projects become more complex and as better reference standards become available. Writing a descriptive specification is a lengthy and tedious process. However, when proprietary names are prohibited by law, and when adequate reference standards do not exist, a descriptive specification may be the only remaining choice.

- b. **PERFORMANCE.** States the criteria of performance by which a product or installation will be judged.

CSI gives this example:

A requirement of 20 684 kPa concrete strength is a performance specification. The end result is specified rather than the means to the end result. A performance specification is defined as *a statement of required results with criteria for verifying compliance, but without unnecessary limitations on the methods for achieving the required results.*

"A statement of required results" means that all desired end results must be spelled out. An incomplete performance specification can result in a major loss of control over the quality of materials, equipment, and workmanship going into a project.

"With criteria for verifying compliance" means that the criteria is capable of measurement, test evaluation, or other acceptable assurances.

Measurement and testing may be done prior to manufacturer, at the time of manufacture, in place at the site, or after a period of service.

"Without unnecessary limitations on the methods for achieving the required

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results" means that only essential restrictions are placed upon the system. Limitations on the means should be avoided. Performance specifying should keep specific material and process descriptions to a minimum to encourage the devising of new means to achieve desired results.

- c. REFERENCE STANDARD. Identifies the established standards to which a product or installation must comply. The BIA requires performance requirements be included in reference specifications.

CSI gives the following examples of references that might occur:

Basic materials standards such as ASTM B221, "Standard Specifications for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wires, Shapes, and Tubes".

Product standards such as ANSI/AAMA 302.9, "Specifications for Aluminum Prime Windows".

Design standards such as ACI 318, "Building Code Requirements for Reinforced Concrete".

Workmanship standards such as ASTM E737, "Standard Practice for Installation of Storm Windows, Replacement Windows, Multi-Glazing, Storm Doors and Replacement Doors".

Test method standards such as ASTM E34, "Chemical Analysis of Aluminum and Aluminum Alloys".

Codes such as ANSI/ASME A17.1, "Safety Code for Elevators and Escalators".

### 3. Addressing

Always address specifications to the General Contractor, never to third parties such as installers, suppliers, labs, workers, the A/E, etc.

Refer to the owner as the Government, Contracting Officer, or Contracting Officer's Representative.

The two parties of the contract are the Contractor and the Government.

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## **SPEC 2      FORMAT**

### **A. COVER**

Include the following:

Project title, name, and location  
Owner and/or user, name, and address.  
A/E contractor, name, address, and phone.  
Date of issuance.

### **B. TABLE OF CONTENTS**

Use CSI division format.

### **C. PAGE NUMBERING AND FORMAT**

Number all paragraphs, down to the lowest subparagraph level. Numbering may utilize either the decimal system, or the alphanumeric system recommended by the CSI Manual of Practice. The numbering is to be consistent throughout the project specifications. Be consistent throughout the project specifications.

SEE ALSO: SPEC 3 - Guide Specifications

### **D. PROPRIETARY**

There are two forms of this method, one known as "closed" and the other known as "open".

#### **1. Closed Proprietary Specification**

Only one product is named.  
Several products may be named as options.  
No substitutions.

#### **2. Open Proprietary Specification**

Prices are requested for specified alternates.  
Substitutions and cost adjustments may be proposed by the bidders.  
Products are allowed as substitutions after approval by A/E.

On Federal projects, a proprietary specification would be required for the following situations:

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A fire alarm system for a new building or addition that would be connected to an existing fire alarm system. If the existing fire alarm system was a Gamewell system, it may be required to specify a proprietary Gamewell system to be compatible with the existing system.

OR

There may be only one manufacturer of a product, in which case, a proprietary specification would be required. An example would possibly be a high temperature hot water boiler.

There are no pre-bid approvals of product or material submittals or of substitutions for "or approved equal" specified items.

If a proprietary specification is necessary, the A/E shall submit a request to the Contracting Officer and receive written approval. The request should state the special circumstances that make a proprietary specification necessary.

## **E. ADDITIONAL REQUIREMENTS**

### **1. Contractual Portion of the Project Manual**

The contractual portion of the project manual contains the construction contract information for Bidders (IFB) and is prepared by the C.O. The IFB will include the following:

- Invitation for Bids, SF 20
- Instruction to Bidders, SF 22
- Bid Form, SF 21
- Representations and Certifications, SF 19-B
- Bid Bond, SF 24
- Performance Bond, SF 25
- Payment bond, SF 25-A
- Construction Contract, SF 23
- Labor Standards Provisions, SF 19-A
- General Provisions, SF 23-A
- Special Provisions
- Any attachments or alterations to Standard Forms

Specifiers should familiarize themselves with these documents, as they may be somewhat different from comparable conditions for non-Federal work, and may have an impact on the content of the section being prepared.

### **2. Addressing the Contractor**

Specifications should address the contractor, not one of the subcontractors, as the contractor may subdivide the work as he or she chooses.

### **3. Approvals**

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All approvals are by the Contracting Officer or the Contracting Officer's authorized representative.

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## **SPEC 3            GUIDE SPECIFICATIONS**

### **A.    USE OF**

The guide specifications included in this section should be used for developing project specifications. These specifications must be tailored to fit specific project requirements.

### **APPROPRIATENESS**

The intent and wording should be preserved to the extent practicable as they incorporate public laws, federal mandates, industry coordination and lessons learned.

Information contained in this section may not be applicable for every project. Review and verify appropriateness of the information for each project before using.

### **C.    LIST OF GUIDE SPECIFICATIONS**

- 01330 - SUBMITTAL PROCEDURES
- 02316 - EXCAVATION, TRENCHING AND  
          BACKFILLING FOR UTILITIES
- 02510 - WATER DISTRIBUTION SYSTEM
- 02531 - SANITARY SEWERS
- 02556 - GAS DISTRIBUTION SYSTEM
- 07600 - SHEET METAL WORK, GENERAL
- 07840 - FIRESTOPPING
- 07900 - JOINT SEALING
- 09900 □ PAINTING, GENERAL
- 11250 □ WATER SOFTENERS, CATION-EXCHANGE (SODIUM CYCLE)
- 13110 □ CATHODIC PROTECTION SYSTEM (SACRIFICIAL ANODE)
- 13851 □ FIRE DETECTION AND ALARM SYSTEM, ADDRESSABLE
- 13930 □ WET PIPE SPRINKLER SYSTEM, FIRE PROTECTION
- 15080 □ THERMAL INSULATION FOR MECHANICAL SYSTEMS
- 15190 □ GAS PIPING SYSTEM
- 15400 □ PLUMBING, GENERAL PURPOSE
- 15569 □ WATER AND STEAM HEATING; OIL, GAS OR BOTH; UP TO 20  
          MBTUH
- 15650 □ CENTRAL REFRIGERATED AIR-CONDITIONING SYSTEM
- 15895 □ AIR SUPPLY, DISTRIBUTION, VENTILATION AND EXHAUST  
          SYSTEM
- 15951 □ DIRECT DIGITAL CONTROL FOR HVAC
- 15990 □ TESTING, ADJUSTING AND BALANCING OF HVAS SYSTEMS
- 15995 □ COMMISSIONING OF HVAC SYSTEMS
- 16415 □ ELECTRICAL WORK, INTERIOIR



