



LAKE HAVASU CITY, ARIZONA

ADDENDUM NO. 2

Lake Havasu City Police Department Rehabilitation Project  
PROJECT NO. 103006

November 9, 2023

Attention is called to the following changes, additions, clarifications and/or deletions to the original solicitation and they shall be taken into account in preparing submissions:

There is no change in the opening date. **Submissions are due no later than 3:00 p.m., Arizona Time, November 21, 2023**, at the City Clerk's Office, 2330 McCulloch Blvd. N., Lake Havasu City, AZ 86403.

In accordance with the Information for Bidders, Section 00100 -16, Addenda and Interpretations, the following revisions to the Plans and Specifications shall become a part of the Contract Documents and each bidder shall acknowledge receipt thereof on page 00300-1 of the Bid Proposal.

1. Revised Plans **(Not included herewith; please download separately)**
2. Revised Project Manual **(Not included herewith; please download separately)**
3. Revised Plumbing Plans
4. Revised Bid Schedule- 00310 (Replace pages 00310-2 and 00310-3)
5. Revised Section Measurement and Payment- 01210 (Replace in its entirety)
6. Revised Crowther Engineering Memo- Structural
7. Questions & Answers
8. Plumbing Inspection Report

9. Pre-Bid Meeting Agenda & Sign-In Sheet

10. Plumbing As-Builts

BIDDER'S ACKNOWLEDGEMENT

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

BY: \_\_\_\_\_

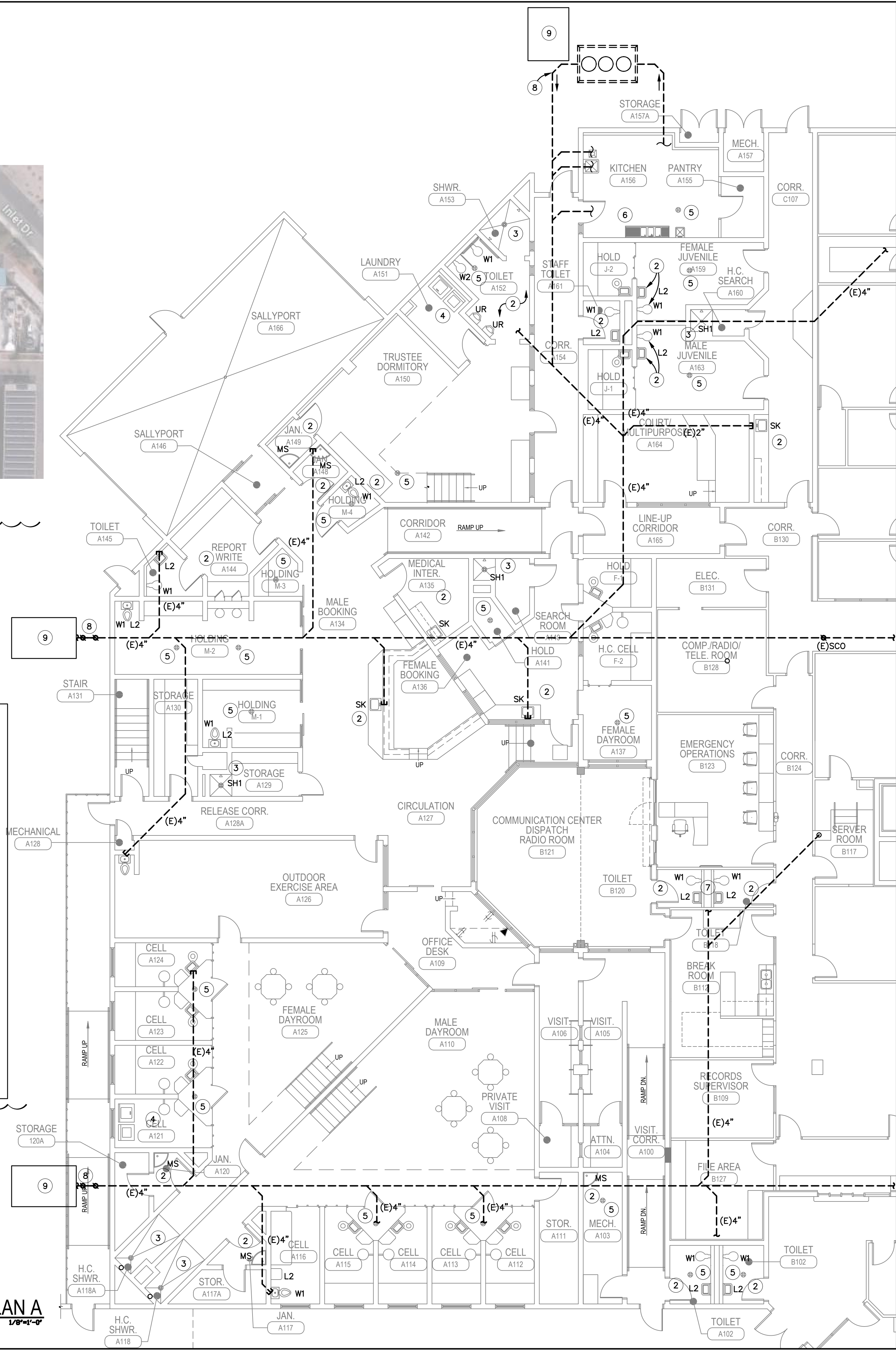
Name: \_\_\_\_\_

Title: \_\_\_\_\_





**1 KEY PLAN**  
N.T.S.



**CONSTRUCTION NOTES**

- FLOOR DRAINS & MOP SINKS: REMOVE EXISTING TRAP PRIMERS AND P-TRAPS. REPLACE WITH PVC/DWV P-TRAPS W/WATERLESS TRAP SEALS.
- SEWER MAINS: JET, DESCALE, AND LINE W/EPOXY.
- VENTS: REPLACE ORIGINAL FIXTURE VENTING THRU ROOF. VENTING THAT HAS ALREADY BEEN REPLACED TO REMAIN IN PLACE.
- CAST IRON PIPE:  
1ST FLOOR ADMIN AREAS: REPLACE ALL ABOVE FLOOR/SLAB UP TO MINIMUM ONE FT ABOVE CEILING GRID. CONNECT NEW PIPING TO EXISTING.  
JAIL AREA: REPLACE ALL ABOVE FLOOR/SLAB UP TO DECK CONNECT NEW PIPING TO EXISTING.
- CONCRETE: SAWCUT, REMOVE, AND REPLACE AS NEEDED TO COMPLETE PLUMBING WORK LOCATED BELOW SLAB.

**\*\*VERIFY EXACT LOCATIONS IN FIELD AND COORDINATE.**

**1 LEVEL 1 PLUMBING PARTIAL FLOOR PLAN A**  
1/8"=1'-0"

**KEYED NOTES :**

- NOT USED.
- ALL LABELED FIXTURES ARE EXISTING FIXTURE(S) TO BE REPLACED LIKE-FOR-LIKE. RECONNECT ALL WATER, WASTE, AND VENT W/NEW ANGLE STOPS AND SUPPLY LINES.
- EXISTING SHOWER VALVES AND HARDWARE TO BE REPLACED LIKE-FOR-LIKE, RECONNECT ALL WATER.
- PROVIDE NEW 4" DRYER DUCT ROUTED TO EXTERIOR OF BUILDING WITH WALL CAP AND BACKDRAFT DAMPER. REFERENCE DETAIL 1, SHEET P2.01.
- REPLACE FLOOR DRAIN. SEE CONSTRUCTION NOTE FOR DIRECTIONS.
- KITCHEN IN JAIL AREA DISHWASHER UNIT. REPLACE CONNECTION.
- REPLACE EXISTING WALL CLEANOUT W/NEW. VERIFY EXACT LOCATION IN FIELD.
- REPLACE EXISTING CLEANOUT W/NEW 2-WAY CLEANOUT. VERIFY EXACT LOCATION IN FIELD, INVERT, AND DIRECTION OF FLOW PRIOR TO WORK.
- PIT FOR PIPELINING EQUIPMENT. 3 LOCATIONS TOTAL.
- MUNICIPAL WATER SERVICE BACKFLOW REPAIRS. REMOVE AND REPLACE (2) 4" GATE VALVES W/(2) 4" RISING STEMS GATE VALVES. REMOVE AND REPLACE 4" BACKFLOW. SEE LAKE HAVASU DETAIL NO. 309.

**GENERAL NOTES :**

- EXACT LOCATION OF PLUMBING FIXTURES SHALL BE DETERMINED FROM ARCHITECTURAL DRAWINGS.
- BEFORE SUBMITTING BID, THE PLUMBING CONTRACTOR SHALL REVIEW THE ARCHITECTURAL DRAWINGS AND INCLUDE IN HIS BID AN AMOUNT TO FURNISH AND INSTALL ANY FIXTURES WHICH ARE SHOWN IN ADDITION TO FIXTURES SHOWN ON THE PLUMBING DRAWINGS.
- CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF SEWERS TO WHICH NEW WASTE LINES ARE TO BE CONNECTED BEFORE MAKING UP OR INSTALLATION OF NEW WASTE SYSTEM.
- CONTRACTOR SHALL VERIFY AND COORDINATE MAKING OF ALL PLUMBING LINES WITH DUCTWORK AND ELECTRICAL SERVICES.
- CONTRACTOR SHALL NOT CUT HOLES IN STRUCTURAL MEMBERS WITHOUT FIRST SECURING WRITTEN APPROVAL FROM THE ARCHITECT.
- CONTRACTOR SHALL INSTALL DIELECTRIC UNIONS AT CONNECTIONS OF DISSIMILAR METALS.
- CONTRACTOR SHALL ROUGH-IN ALL WASTES AND SUPPLIES TO SPECIAL EQUIPMENT ACCORDING TO MANUFACTURERS SHOP DRAWINGS AND MAKE FINAL CONNECTIONS. ALL SUPPLIES SHALL BE VALVED.
- PLANS AND WORK SHALL CONFORM TO 2018 IPC AND IFGC AS ADOPTED BY THE CITY OF LAKE HAVASU.

**FIELD VERIFICATION NOTES :**

- THE PLUMBING CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO FIELD VERIFY ALL EXISTING CONDITIONS WHICH MAY AFFECT HIS BID. THE FOLLOWING ITEMS SHALL BE VERIFIED.
  - EXACT PLACEMENT SIZE CAPACITY MANUFACTURER AND CONDITION OF ALL EXISTING PLUMBING EQUIPMENT WITHIN SCOPE OF WORK, WHETHER SPECIFICALLY SHOWN OR NOT.
  - SIZE AND LOCATION OF ALL EXISTING WASTE, GREASE WASTE, VENT AND WATER PIPING.
- ALL REFERENCES ON THESE DRAWINGS TO EXISTING EQUIPMENT, WATER, WASTE, GREASE WASTE AND VENT PIPING ARE FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL THESE ITEMS PRIOR TO BID AND INCLUDE IN HIS BID ANY AND ALL AMOUNTS REQUIRED TO ACCOMMODATE EXISTING CONDITIONS.
- NO ALLOWANCES WILL BE MADE AFTER THE PROJECT HAS BEEN AWARDED FOR FAILURE TO VERIFY EXISTING CONDITIONS.
- ANY DISCREPANCIES WHICH MAY AFFECT THE CONTRACTORS BID SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND ARCHITECT FOR DIRECTION

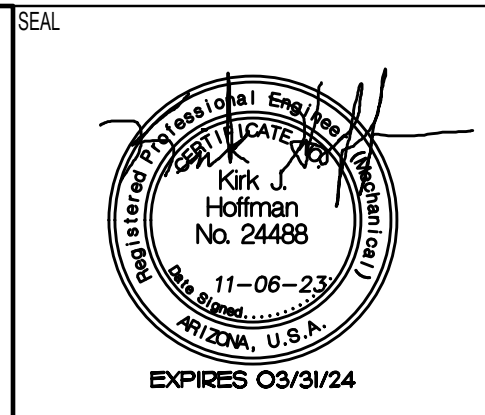
PLUMBING SYMBOL LIST			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
—GW—	GREASE WASTE (GW)	⊗	POINT OF CONNECTION
---	EXISTING (E)	⊘	SHUT OFF VALVE (GATE)
---	SOIL WASTE LINE (W)	⊘	CHECK VALVE
---	VENT LINE (V)	⊘	UNION
---	COLD WATER (C.W.)	⊘	LUBRICATED PLUG VALVE
---	HOT WATER (H.W.)	⊘	HOSE BIBB (H.B.)
---	HOT WATER RETURN	⊘	BRANCH RISE OFF MAIN
—G—	GAS LINE	⊘ S.C.O.	SURFACE CLEANOUT
—TW—	TEMPERED WATER	⊘ F.C.O.	FLOOR CLEANOUT
—SW—	SOFT WATER	⊘	GLOBE VALVE
⊘	BUILDING SEWER	⊘	BALL VALVE
⊘	FLOOR DRAIN (F.D.)		
⊘	FLOOR SINK (F.S.)		
⊘	MOP SINK (M.S.)		

NOTE: ONLY THOSE SYMBOLS SHOWN ON THE DRAWING APPLY

**PIPING MATERIALS**

SANITARY WASTE AND VENT SYSTEMS  
 PIPING:  
 PVC/DWV CONFORMING TO ASTM D 2665-20.  
 PIPING RESTORATION:  
 "PICOTE" #DC1000E EPOXY CONFORMING TO ASTM D 638-14, 695-15, 790-15E2, AND 4541-09  
 DOMESTIC WATER SYSTEM  
 PIPING:  
 ABOVE GRADE: TYPE "L" HARD DRAWN COPPER, CONFORMING TO ASTM B-88, OR PEX CONFORMING TO ASTM F 876. PEX PIPING 1.5" AND LARGER MUST BE RIGID TUBING.  
 BELOW SLAB: TYPE "K" SOFT DRAWN COPPER, CONFORMING TO ASTM B-88, WITH PLASTIC SLEEVE.  
 PIPING, EXTERIOR BELOW GRADE ONLY:  
 PVC CONFORMING ASTM D 1785, WITH TRACER WIRE.

**MAVEN ENGINEERING** Job #23PDL052  
 Tel: (480) 303-0180  
 Fax: (480) 302-7927  
 8011 S Avenida del Yaqui  
 Guadalupe, Arizona 85283  
 Note: Any changes made to final bid documents due to field changes will be billed hourly to the contractor.



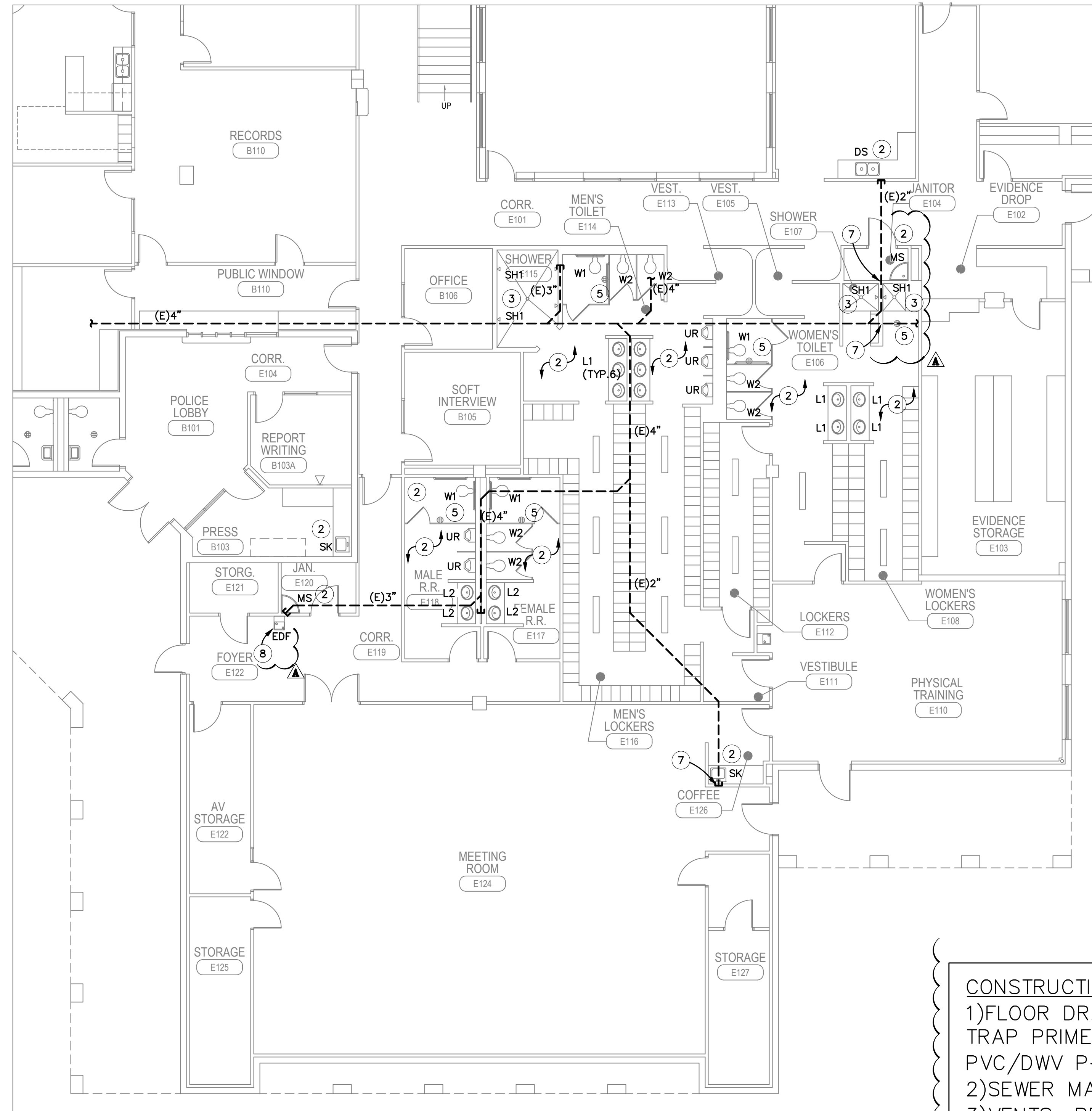
DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF THE DESIGN PROFESSIONAL. COPIES OF THE DRAWINGS AND SPECIFICATIONS RETAINED BY THE CLIENT MAY BE UTILIZED ONLY FOR HIS USE AND FOR OCCUPYING THE PROJECT FOR WHICH THEY WERE PREPARED, AND NOT FOR THE CONSTRUCTION OF ANY OTHER PROJECTS.

PROJECT NAME:  
**LHC POLICE DEPARTMENT REHABILITATION**  
 2360 McCULLOCH BLVD. N, LAKE HAVASU CITY, AZ 86403  
 APN: 108-27-041A

ARCHITECT OF RECORD:  
**SELBERG ASSOCIATES INC.**  
 ARCHITECTURE & PLANNING  
 2480 MHSQUITE AVE. SUITE 204  
 LAKE HAVASU CITY, ARIZONA 86403  
 (928) 855-8844

PROJECT NO.	23005
ISSUED FOR:	PERMIT SET
ISSUED DATE:	SEPTEMBER 29, 2023
REVISION	ISSUE DATE
A	ADDENDUM 11/03/23
SHEET TITLE:	
PLUMBING FLOOR PLAN	
1ST LEVEL	
SHEET NO.	





1 LEVEL 1 PLUMBING PARTIAL FLOOR PLAN B  
1/8"=1'-0"

**KEYED NOTES :**

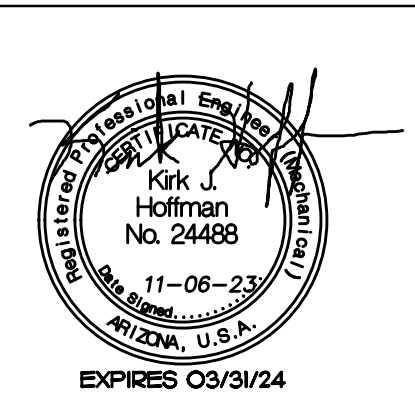
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3. EXISTING SHOWER VALVES AND HARDWARE TO BE REPLACED LIKE-FOR-LIKE, RECONNECT ALL WATER.
4. PROVIDE NEW 4" DRYER DUCT ROUTED TO EXTERIOR OF BUILDING WITH WALL CAP AND BACKDRAFT DAMPER. REFERENCE DETAIL 1, SHEET P2.01.
5. REPLACE FLOOR DRAIN. SEE CONSTRUCTION NOTE FOR DIRECTIONS.
6. KITCHEN IN JAIL AREA DISHWASHER UNIT. REPLACE CONNECTION.
7. REPLACE EXISTING WALL CLEANOUT W/NEW. VERIFY EXACT LOCATION IN FIELD.
8. REPLACE EDF W/NEW. SEE FIXTURE SCHEDULE FOR SPECIFICATIONS.

**CONSTRUCTION NOTES**

- 1) FLOOR DRAINS & MOP SINKS: REMOVE EXISTING TRAP PRIMERS AND P-TRAPS. REPLACE WITH PVC/DWV P-TRAPS W/WATERLESS TRAP SEALS.
- 2) SEWER MAINS: JET, DESCALE, AND LINE W/EPOXY.
- 3) VENTS: REPLACE ORIGINAL FIXTURE VENTING THRU ROOF. VENTING THAT HAS ALREADY BEEN REPLACED TO REMAIN IN PLACE.
- 4) CAST IRON PIPE:  
1ST FLOOR ADMIN AREAS: REPLACE ALL ABOVE FLOOR/SLAB UP TO MINIMUM ONE FT ABOVE CEILING GRID. CONNECT NEW PIPING TO EXISTING.  
JAIL AREA: REPLACE ALL ABOVE FLOOR/SLAB UP TO DECK CONNECT NEW PIPING TO EXISTING.
- 5) CONCRETE: SAWCUT, REMOVE, AND REPLACE AS NEEDED TO COMPLETE PLUMBING WORK LOCATED BELOW SLAB.

\*\*VERIFY EXACT LOCATIONS IN FIELD AND COORDINATE.

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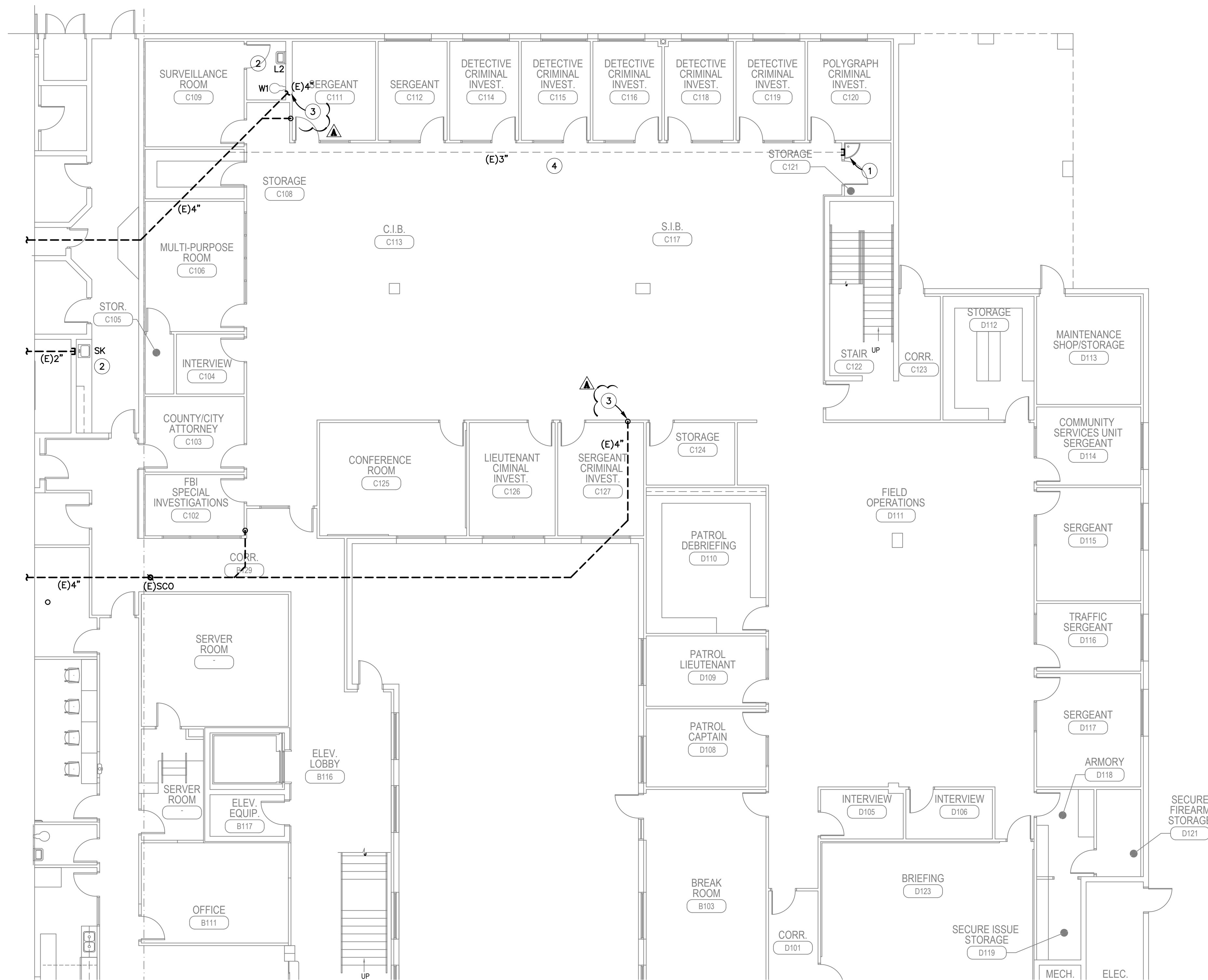
ARCHITECT OF RECORD  
  
**SELBERG ASSOCIATES INC.**  
 ARCHITECTURE & PLANNING  
 2180 MISSOULI AVE. SUITE 204  
 LAKE HAVASU CITY ARIZONA 86403  
 (928) 852-8244

PROJECT NO. 23005  
 ISSUED FOR: PERMIT SET  
 ISSUED DATE: SEPTEMBER 29, 2023

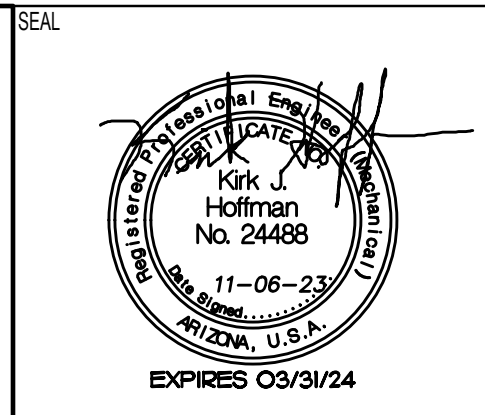
REVISION ISSUE DATE  
 A ADDENDUM 11/03/23

SHEET TITLE:  
 PLUMBING FLOOR PLAN  
 1ST LEVEL

SHEET NO.



- KEYED NOTES :**
- EXISTING MOP SINK TO BE REMOVED. CAP WASTE IN FLOOR, AND WATER AND VENT IN WALL.
  - ALL LABELED FIXTURES ARE EXISTING FIXTURE(S) TO BE REPLACED LIKE-FOR-LIKE. RECONNECT ALL WATER, WASTE, AND VENT W/NEW ANGLE STOPS AND SUPPLY LINES.
  - REPLACE EXISTING WALL CLEANOUT W/NEW. VERIFY EXACT LOCATION IN FIELD.
  - ABANDON WASTE BRANCH IN PLACE.



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PROJECT NO.	23005
ISSUED FOR:	PERMIT SET
ISSUED DATE:	SEPTEMBER 29, 2023
REVISION	ISSUE DATE
ADDENDUM	11/03/23
SHEET TITLE:	PLUMBING FLOOR PLAN 1ST LEVEL
SHEET NO.	P1.03

**CONSTRUCTION NOTES**

- FLOOR DRAINS & MOP SINKS: REMOVE EXISTING TRAP PRIMERS AND P-TRAPS. REPLACE WITH PVC/DWV P-TRAPS W/WATERLESS TRAP SEALS.
- SEWER MAINS: JET, DESCALE, AND LINE W/EPOXY.
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- CAST IRON PIPE: 1ST FLOOR ADMIN AREAS: REPLACE ALL ABOVE FLOOR/SLAB UP TO MINIMUM ONE FT ABOVE CEILING GRID. CONNECT NEW PIPING TO EXISTING. JAIL AREA: REPLACE ALL ABOVE FLOOR/SLAB UP TO DECK CONNECT NEW PIPING TO EXISTING.
- CONCRETE: SAWCUT, REMOVE, AND REPLACE AS NEEDED TO COMPLETE PLUMBING WORK LOCATED BELOW SLAB.

\*\*VERIFY EXACT LOCATIONS IN FIELD AND COORDINATE.

**LEVEL 1 PLUMBING PARTIAL FLOOR PLAN C**  
 1/8"=1'-0"

\* VERIFY EXACT FIXTURES WITH OWNER/ARCH. PRIOR TO ORDERING. ALTERNATES TO BE APPROVED BY OWNER & ENGINEER PRIOR TO ORDERING.

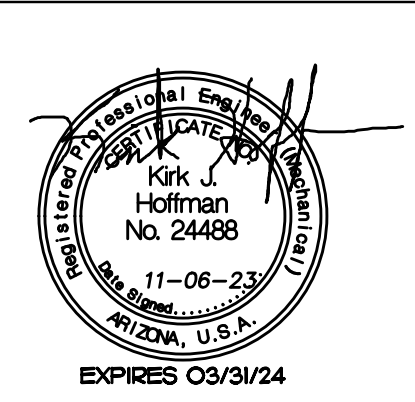
PLUMBING FIXTURE SCHEDULE							
FIXTURE SPECIFICATIONS					FIXTURE CONNECTIONS		
MARK	DESCRIPTION	MANUFACTURER AND MODEL NUMBER	FITTING & CAPACITY	ACCESSORIES/REMARKS	C.W.	H.W.	WASTE VENT
FD	FLOOR DRAIN	"SIOUX CHIEF" #832-25ANQ	"SIOUX CHIEF" TRAP SEAL #835	SQUARE TOP 3" - #832-35ANQ	-	-	2" 1 1/2"
MS	MOP SINK	"FIAT" #MSB-2424	SERVICE FAUCET #830-AA	HOSE & BRACKET - MOP HANGER W/ VACUUM BREAKER	3/4"	3/4"	3" 2"
EDF	ADA ELECTRIC DRINKING FOUNTAIN/BOTTLE FILLER NON-FILTERED	"ELKAY" #EZSL8WS (BI-LEVEL)	"ELKAY" 8 GPH OF 50°F WATER 115V, 1"	THREE PUSH PAD ACTIVATING 5 YEAR WARRANTY	1/2"	-	2" 1 1/2"

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**KEYED NOTES :**

1. REPLACE FLOOR DRAIN. SEE CONSTRUCTION NOTE FOR DIRECTIONS.
2. EXISTING SHOWER VALVES AND HARDWARE TO BE REPLACED LIKE-FOR-LIKE, RECONNECT ALL WATER.

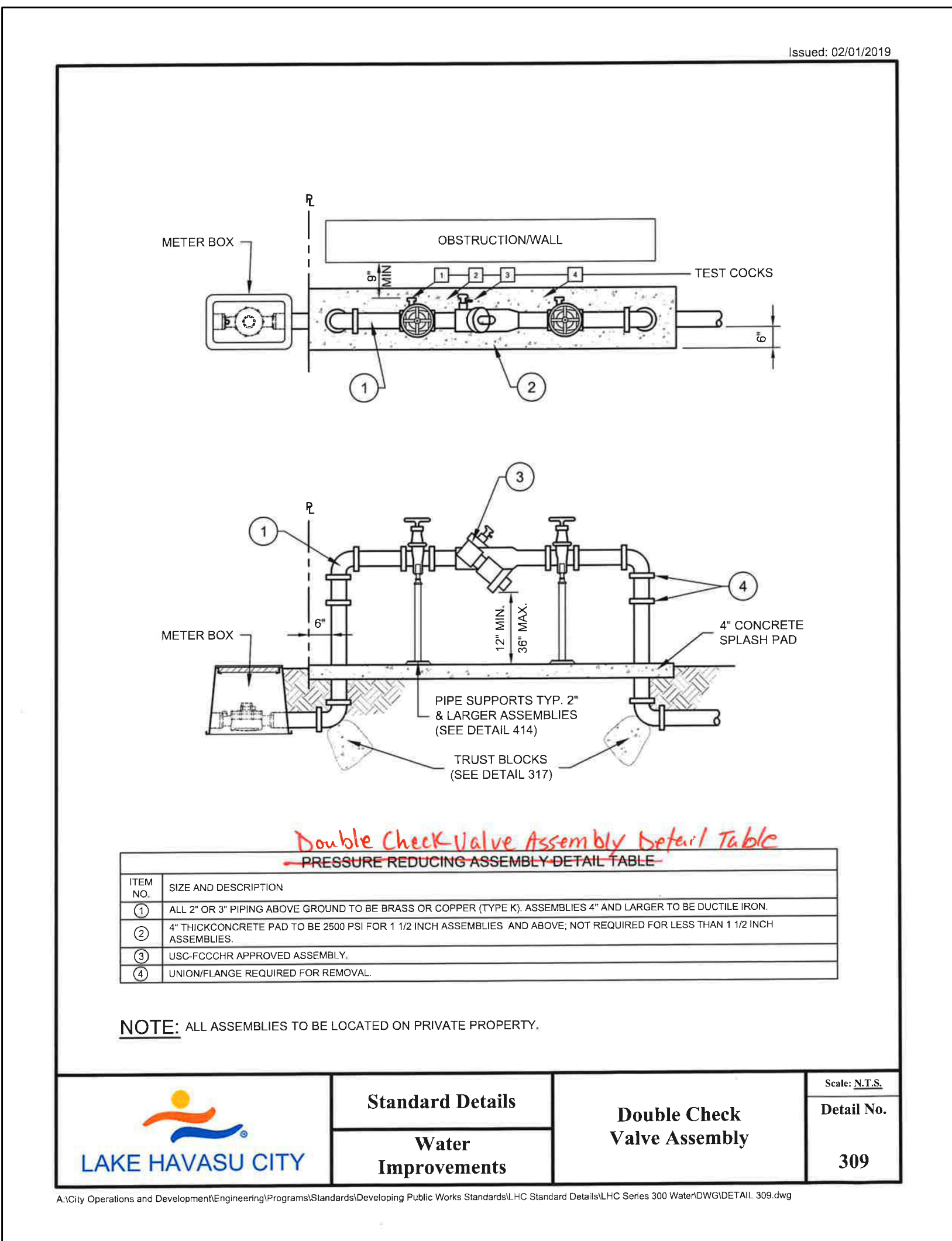


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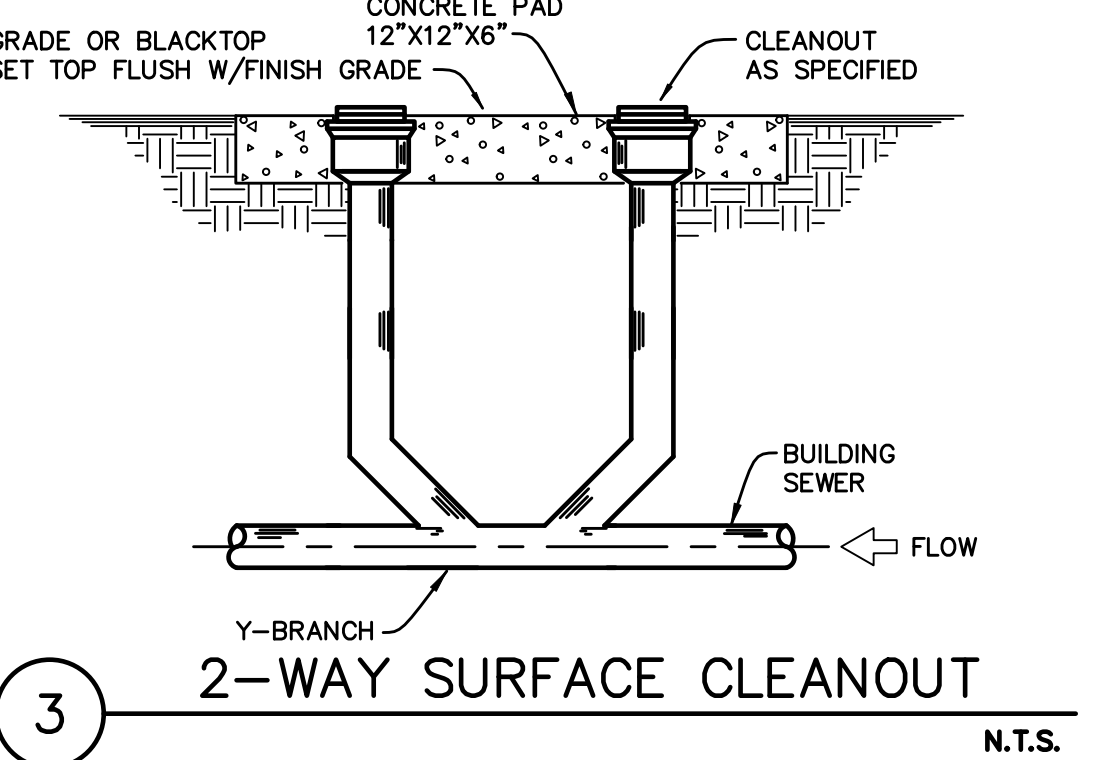
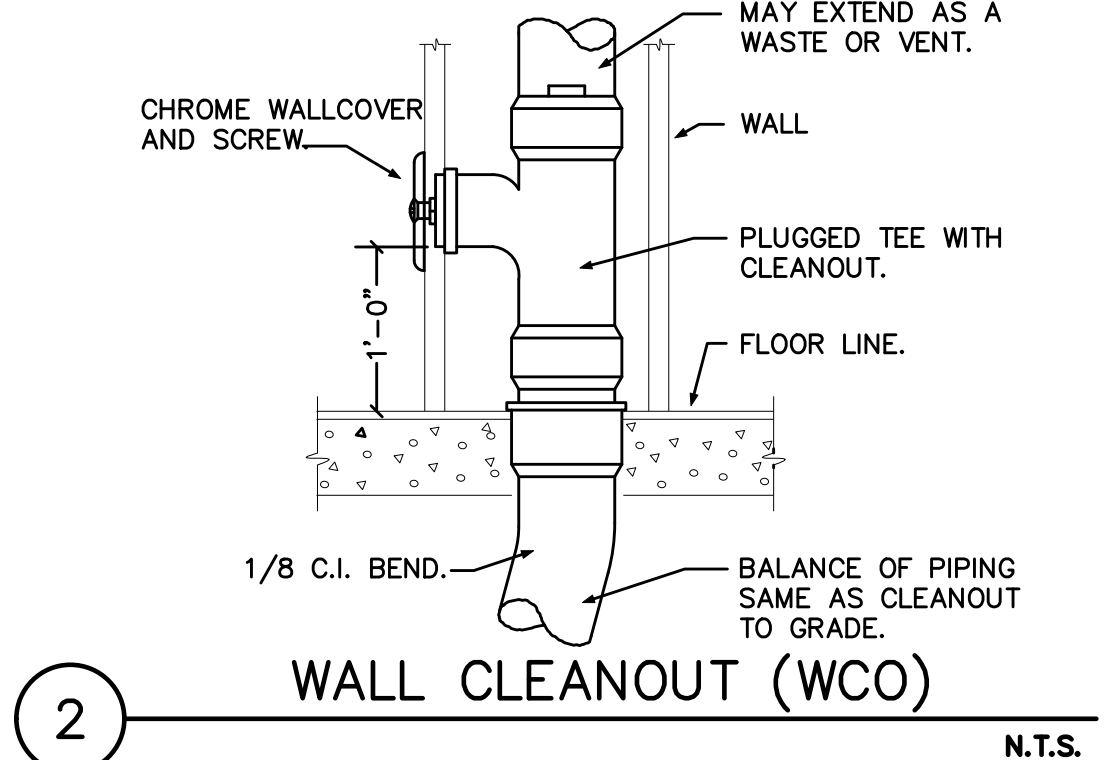
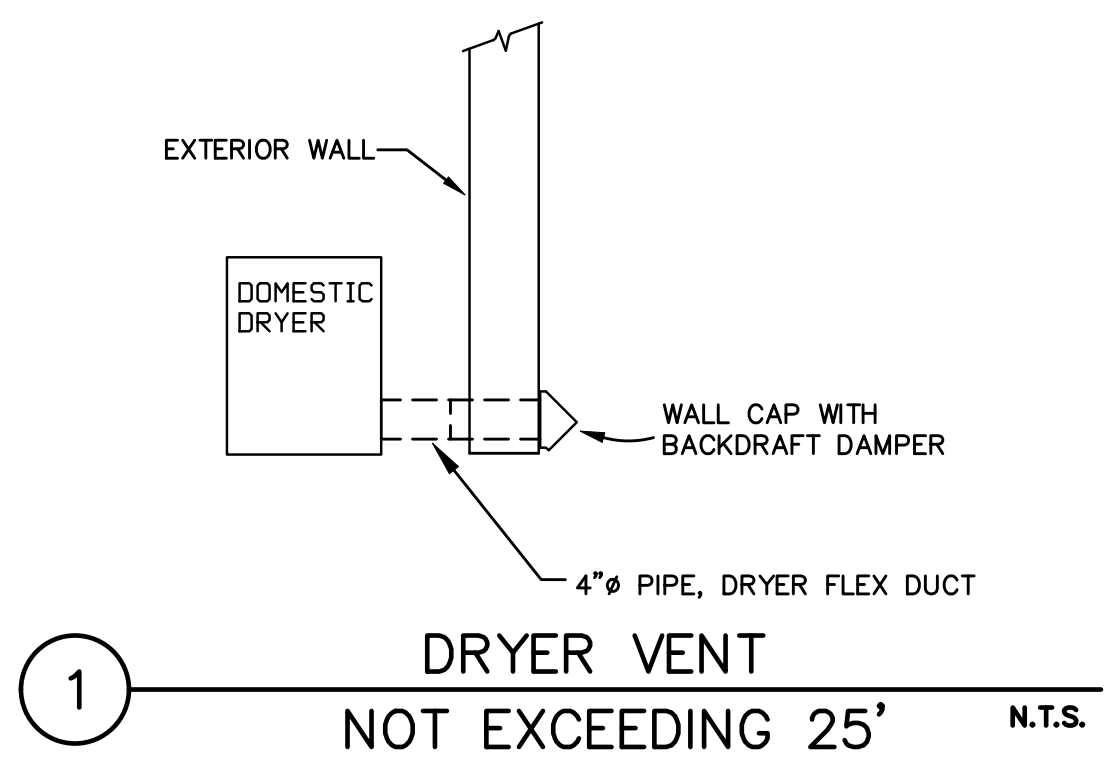
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 ARCHITECTURE & PLANNING  
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PROJECT NO.	23005
ISSUED FOR:	PERMIT SET
ISSUED DATE:	SEPTEMBER 29, 2023
REVISION	ISSUE DATE
<b>A</b> ADDENDUM	11/03/23
SHEET TITLE:	PLUMBING FLOOR PLAN 2ND LEVEL
SHEET NO.	P2.01



**LEVEL 2 PLUMBING FLOOR PLAN**  
 1/16"=1'-0"

**CONSTRUCTION NOTES**  
 1)CAST IRON PIPE:  
 JAIL AREA. REPLACE ALL PIPE ABOVE THE SLAB, UP TO ROOF PENETRATION.  
 \*\*VERIFY EXACT LOCATIONS IN FIELD AND COORDINATE.



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**BID SCHEDULE  
LAKE HAVASU CITY**

Lake Havasu Police Department Remodel  
103006

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>EST QTY</u>	<u>UNIT OF MEASURE</u>	<u>UNIT PRICE (Word)</u>	<u>UNIT PRICE<sup>1</sup> (Figure)</u>	<u>ITEM TOTAL COSTS<sup>2</sup></u>
<b>BASE BID</b>						
1	Mobilization, Bonds, Insurance	1	L.S.	_____	\$ _____	\$ _____
	<b>Division 2:</b>					
2	Demolition work on Showers, Restrooms, and Flooring	1	L.S.	_____	\$ _____	\$ _____
	<b>Division 4:</b>					
3	Restoration of footing at exterior column and perimeter walls including waterproof coating			_____	\$ _____	\$ _____
	<b>Division 8:</b>					
4	Lobby Bullet Resistant Window and Jail Door Hardware replacement	215	C.Y.	_____	\$ _____	\$ _____
	<b>Division 9:</b>					
5	Jail Carpet, LVT Flooring, Wall Base, and Paint. Bathrooms Wall and Floor Tile, FRP Surfaces	2	EA	_____	\$ _____	\$ _____
	<b>Division 12:</b>					
6	Upper & Lower Cabinetry, and Countertops	1	L.S.	_____	\$ _____	\$ _____

<sup>1</sup> The "Unit Price" column shall indicate unit or lump sum prices for each bid item and shall be indicated in written and numerical form.

<sup>2</sup> The "Item Total Costs" column shall indicate the extension of the unit prices, which is obtained by multiplying the "Estimated Quantity" column by the "Unit Price" column.

7	<b>Division 22:</b> Plumbing Fixture Replacement, Sewer System Repair, Domestic Backflow Repair, and Related Concrete Demo & Repairs	1	L.S.	_____	_____	_____
				_____	_____	_____
				_____	\$ _____	\$ _____
8	<b>Division 26:</b> Electrical work required to complete any of the mentioned work	1	L.S.	_____	_____	_____
				_____	_____	_____
				_____	\$ _____	\$ _____
8	Public Safety Fueling Facility – Spezzano Way Southern Screen Wall	360	L.F.	_____	_____	_____
				_____	_____	_____
				_____	\$ _____	\$ _____
9	<b>Force Account:</b>	1	L.S.	Two Hundred Fifty Thousand Dollars	\$ 250,000.00	\$ 250,000.00
				_____	_____	_____
				_____	_____	_____
				_____	\$ _____	\$ _____
				_____	_____	_____

**BASE BID TOTAL<sup>3</sup> + FORCE ACCOUNT**

<sup>3</sup> The “Base Bid Total” amount shall be the sum of all costs listed in the “Item Total Costs”. Additive Alternates are not to be included.

## **SECTION 01210**

### **MEASUREMENT AND PAYMENT**

#### **PART 1 - GENERAL**

##### **1.1 Description**

The outline of measurement and payment in this section is intended to provide a general guideline to the Contractor in preparing bids and submitting pay requests. Listing of work included in each bid item is not intended to include all work, but is to provide general guidance to the Contractor for allocating costs. All work will be paid for on a unit price basis with payment made for the quantity of each item completed.

All materials required for construction shall be furnished by the Contractor unless specifically stated. Items not specifically measured and paid for shall be considered as subsidiary items required to complete the installation in accordance with the intent of the contract documents. The Contractor shall include in the unit price bid items all costs associated with subsidiary items not being measured for payment.

##### **1.2 Authority**

Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.

Take all measurements and compute quantities. The Engineer will verify measurements and quantities.

##### **1.3 Unit Quantities**

Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Engineer shall determine payment.

If the actual Work requires more or fewer quantities than indicated, provide the required quantities at the unit prices contracted.

## **PART 2 – UNITS AND METHODS OF MEASUREMENT**

### **2.1 General**

All items that are included in the bid for measurement and payment are included herein. All other items of work shall be considered subsidiary to construction and will not be measured for payment.

### **2.2 Units and Methods of Measurement**

#### **2.2.1 Mobilization**

The Contract Lump Sum Price for this item shall constitute full compensation for furnishing all materials, labor, equipment and tools for all required bonds, insurance, mobilization of staff and equipment, and any other costs associated with complying with the contract administrative requirements and commencing work at the project site. This item also includes all work and materials necessary to complete the work as described in the plans and specifications. Payment for this item shall be lump sum and shall not be requested until at least thirty days from the notice to proceed has elapsed.

Payment for this item shall be made in accordance with Table A.

TABLE A

Payment for Mobilization on First Partial Payment	Not to exceed 2.5% of the Lump Sum Base Bid
Subsequent payments for Mobilization	Not to exceed 2.5% of the Lump Sum Base Bid
Payment For Mobilization on Final Partial Payment	Any remaining Mobilization in excess of 5% of the Lump Sum Base Bid

#### **2.2.2 Division 2: Demolition Work on Showers and Restrooms**

The Contract Lump Sum Price for this item shall constitute full compensation for furnishing all materials, labor, equipment, and tools for demolition, replacement and disposal of ceramic wall tile, floor tile, and wall carpet. Demolition work is described in plans and shall be replaced per the finish schedule on Sheet A2.03. Measurement and Payment for these items shall be per square foot.



**2.2.3 Division 4: Restoration of footing at exterior column and perimeter walls**

The Contract Lump Sum Price for this item shall constitute full compensation for furnishing materials, labor and equipment, and tools for the restoration of footing at exterior column and perimeter walls including masonry waterproofing. Locations are specified in structural exhibit. There is no measurement for these items and Payment of these items shall be a lump sum.

**2.2.4 Division 8: Lobby Bullet Resistant Window and Jail Hardware Replacement**

The Contract Lump Sum Price for this item shall constitute full compensation for furnishing all materials, labor, equipment, and tools for the replacement of the existing lobby communication window. The replacement includes the addition of a second transaction window that meets ADA requirements per plan specification. This includes the wall improvements necessary to accommodate this new window.

In addition, Contract Lump Sum Price for this item shall include the removal and replacement of the door hardware and sliding mechanisms at jail doors with AirTeq Sliding Mechanisms, software updates, and the rekeying of Jail doors. Measurement and Payment for these items shall be per unit.

**2.2.5 Division 9: Jail Finishes: Carpet, LVT Flooring, Wall Base, Drywall Repair and Paint. Restroom Wall and Floor Tile, FRP Surfaces.**

The Contract Lump Sum Price for this item shall constitute full compensation for furnishing all materials, labor, equipment, and tools for installation of new finishes in Jail including carpet, LVT Flooring, wall base and paint as specified in plans per Sheet A2.03 Measurement and Payment for these items shall be per square foot.

**2.2.6 Division 12: Upper and Lower Cabinetry**

The Contract Lump Sum Price for this item shall constitute full compensation for furnishing all materials, labor, equipment, and tools for removing, disposing, and installing new upper and lower cabinets and countertops as specified in plans. Measurement and Payment for these items shall be per linear foot.

**2.2.7 Division 22: Plumbing Fixture Replacement and Sewer System Repair and Domestic Water Backflow Upgrade**

The Contract Lump Sum Price for this item shall constitute full compensation for furnishing all materials, labor, equipment, and

tools for replacement of plumbing fixtures specified in plumbing plans and replace connection to dish washer unit. In addition, it shall include the repair of the sewer system which will include the following:

- The preparation and installation pit for the pipelining machine at three locations will require removal of the existing cleanout to allow alignment of the equipment with the pipe. New 2-way clean-out to be installed prior to backfill.
- Epoxy of underground cast iron sewer main lines, replace all "P" Traps, mop sinks, floor sinks and remove, and cap trap primers and installation of waterless trap seals.
- Administration Areas- Replacement of all cast iron pipes above floor slab up to minimum one foot above ceiling grid in first floor, connect new pipe to existing pipe.
- Jail Areas- Replacement of all cast iron pipes above floor slab up to the roof deck in Jail areas.
- Demolition and excavation work at Kitchen Grease Trap Area, replace failed cast iron two-way clean out.

Measurement and Payment for these items shall be per linear foot.

#### **2.2.8 Division 26: Electrical Work**

The Contract Lump Sum Price for this item shall constitute full compensation for furnishing all materials, labor, equipment, and tools for any electrical work that results of any of the above items and the addition of Bug-eye Emergency light at Trustee's Pod. There is no measurement for these items and Payment of these items shall be a lump sum.

**\*\*END OF SECTION 01210\*\***

October 23, 2023

Selberg Associates, Inc.  
2130 Mesquite Ave., Ste. 204  
Lake Havasu City, AZ 86403

Subject: Police Department Remodel  
2360 McCulloch Blvd N  
Lake Havasu City, AZ 86403  
Crowther Engineering, LLC Project No. 23-402

To whom it may concern:

I am writing to provide my professional structural recommendations for the areas shown to me via photos by Brisa Barraza of Selberg Associates, Inc.

The structure listed above is constructed of Concrete Masonry Unit (CMU) blocks with concrete slab-on-grade, and conventional spread footings and is estimated to have been constructed circa 1992. Figure 1 shows the locations highlighted in red on a plan view from the architect of the locations shown in the photos. Photos 1-3 show the deteriorated column, photos 4-6 show the wall, and photos 7-9 show other locations as shown from Figure 1.

It is our professional opinion that the current structural condition does not pose a life safety risk, and that the retrofits mentioned below should be performed in a timely manner such that further spalling and deterioration doesn't occur. Further deterioration may cause a life safety risk.

Masonry, if not constructed to be resistant to corrosive soils, may leach corrosive chemicals from the soils up from the ground and can cause deterioration of the masonry blocks. It is common to see the lower halves of walls deteriorate before the upper halves. Lack of grout may allow water intrusion inside the masonry cells and could potentially exacerbate the corrosion and deterioration of the masonry.

The structural retrofit for the columns from Photos 1-3 and 8 is shown in Figure 2 below. Where the exterior sidewalk is cracked in locations such as that in Photo 8, cut and remove the sidewalk square containing the cracked-off piece. Drill & epoxy #4x18" bars into the center of the existing concrete slab at 18-inches on center with Simpson Set-3G at new-to-existing slab locations.

Our recommendation for the wall spalls is to use a stiff wire brush to remove any loose debris and then apply a high-quality mortar such as Sikadur-35 Hi-Mod LV or equivalent to the spalls and cracks and ensuring the mortar penetrates the full depth of the CMU shell. A low-viscosity mortar may help to ensure there is adequate penetration into the CMU. The testing agency mentioned previously should apply a crack measuring system to determine if the spalls continue to grow over time after applying the mortar.

Our recommendation for the site wall shown in Figure 9 is to retrofit using the aforementioned mortar and wire brush, or per the structure owner option remove and replace may be desirable.

A breathable masonry sealant such as A-Tech Masonry & Brick Sealer or equivalent should be applied to at least the bottom two courses of masonry above grade (or from the top of the slab, whichever is greater) around the entire masonry structure and masonry columns to protect it from water intrusion. The sealant should be applied down to at least 6" below the bottom of the CMU (or 6" below grade, whichever is greater) onto the concrete stem. If ponding around the structure next to the walls has been an issue in the past then the architect should work with a civil engineer to mitigate ponding and ensure proper drainage away from the structure.

I believe this addresses the items that were brought to my attention. Please do not hesitate to contact me with any additional questions or concerns. Thank you!

Sincerely,



EXPIRES: Dec. 31, 2025

Layton B. Asmus, P.E.  
[layton@croweng.com](mailto:layton@croweng.com)  
(928) 708-1665 ext. 108

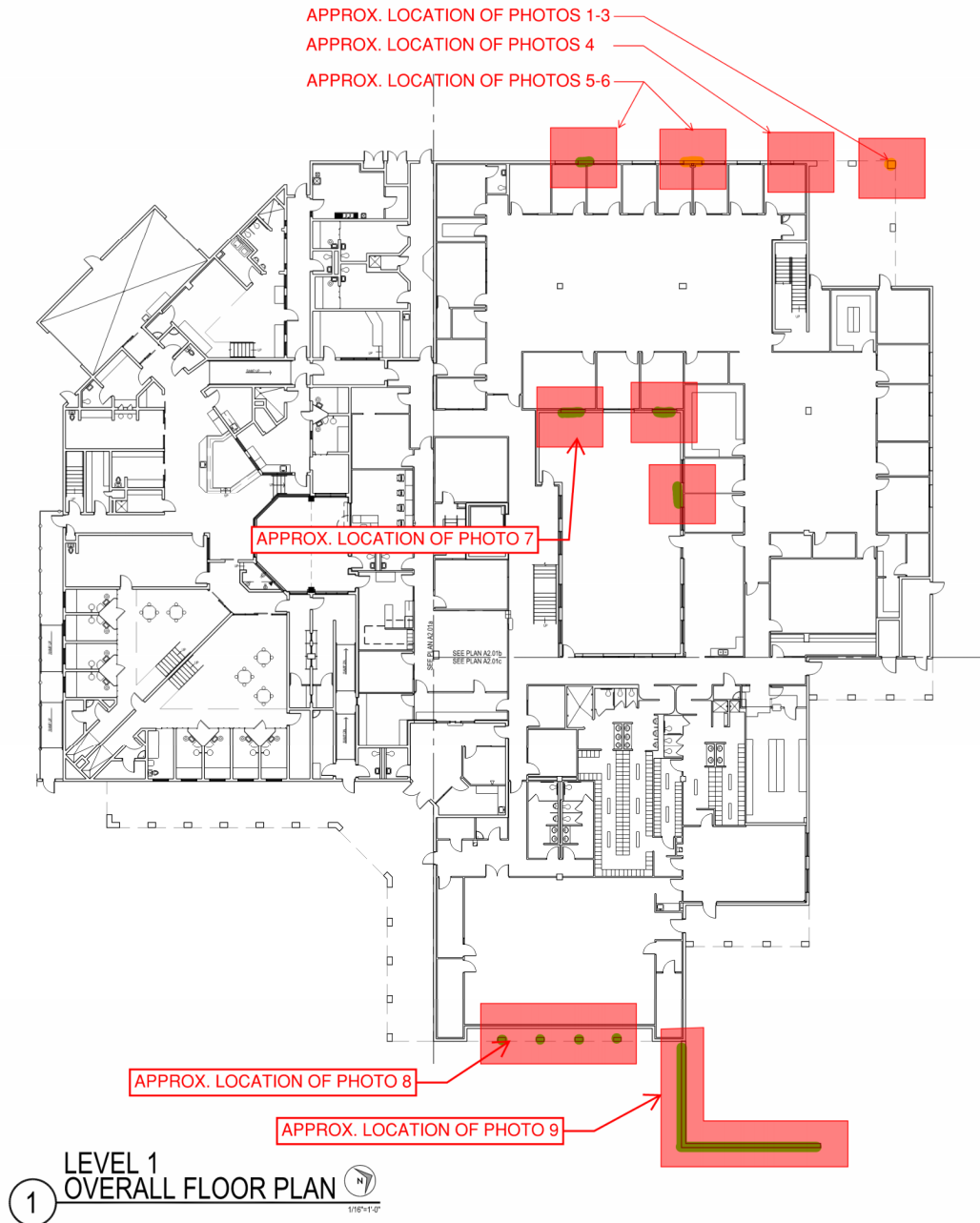


Figure 1: Overall floor plan view



Photo 1: Front Face Exterior Deteriorated Column



Photo 2: Rear faces of exterior deteriorated column





Photo 3: Close-up of exterior deteriorated column



Photo 4: Masonry spalls at wall



Photo 5: Typical masonry wall spalling



Photo 6: Close-up of masonry wall spalling





Photo 7: Close-up of masonry wall spalling & foundation deterioration



Photo 8: Close-up of column cracking



Photo 9: Site wall foundation deterioration



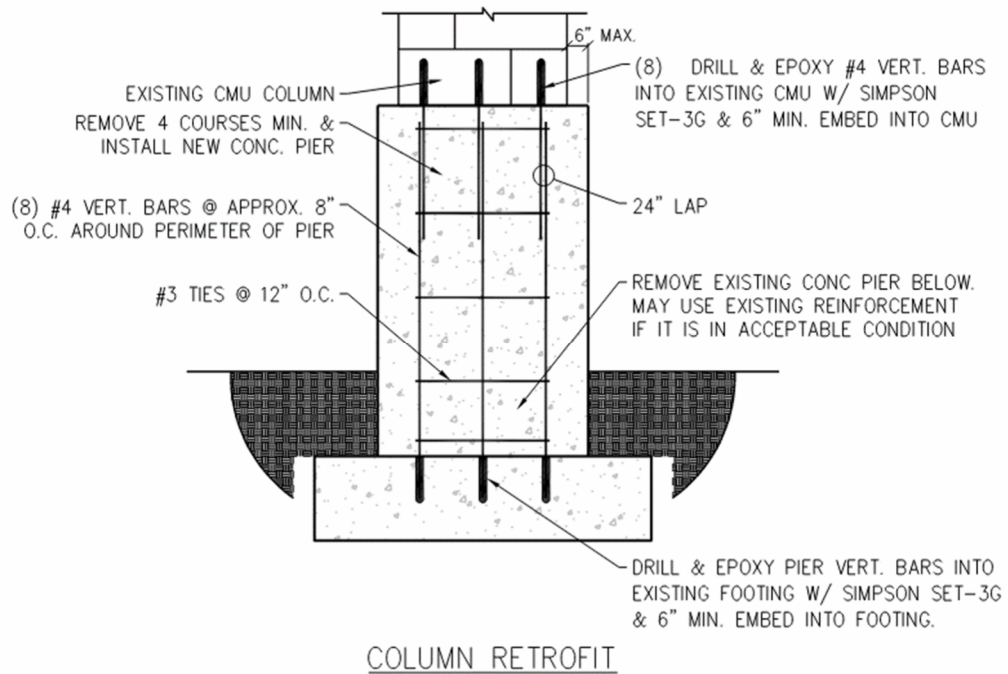
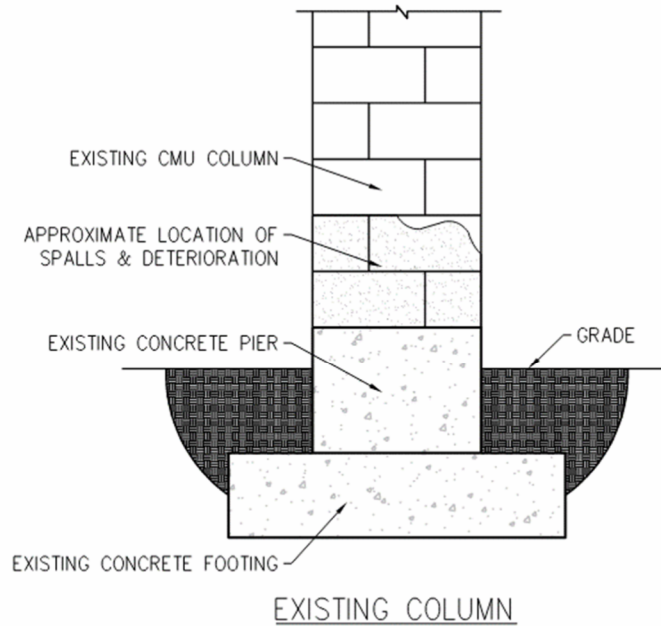


Figure 2: Column Retrofit Structural Requirements

**Lake Havasu Police Department Remodel**  
**Project # 103006**  
**Pre-Bid Meeting Questions- 11/6/2023 - 10 am**

**Questions as noted:**

1. Will contractor's employees be subject to background checks and/or daily security checks?

Answer: 1. Any person working on site will have to pass the LHCPD Vendor Background Check. 2. Daily security checks will be completed, only as needed. These screenings will depend on the area of facility that is accessible to the employee.

2. Will there be new electric – one room calls for new lighting?

Answer: There is a new emergency light in the Trustee's dormitory

3. Will we have to set up dust walls?

Answer: Contractor must provide dust control. Type of dust control will vary, depending on location within the facility.

4. Is there an asbestos & lead based paint report on the facility?

Answer: No, contractor to provide as needed.

5. Foundation of building and Courtyard/Outdoor Patio: Exposed foundation below the CMU block, does this area need to be repaired?

Answer: Yes, the exposed slab/stem wall should be repaired and sealed, see Crowther Engineering report. Dated 10/23/23

6. Plumbing chase between rooms; J-1, J-2, A159, A161, A163 – Are we replacing the cast iron vents within this chase.

Answer: No access available, leave cast iron plumbing vent in place.

7. Trustee's Dorm Shower ceiling; A153. Does the existing tile ceiling need to be impact resistant?

Answer: Existing tile ceiling; tile to be removed/floated/primed & painted, per spec.

8. Is Contractor responsible for new signage within jail/detention areas, specifically signage on Sliding Detention door covers?

Answer: Yes, Contractor to provide Room Identifier # to each Detention door cover after completion of painting.

9. What type of roof is on the existing building? Needed for patching of plumbing vent penetrations.

Answer: Existing roof plan calls "Hypalon Single Ply Roofing System (IRMA)". Our recommendation is to terminate the new PVC 12" below deck and connect it to existing cast iron. The penetration will be addressed in second phase when the roofing is done.

10. "Plumbing as-built" Please provide with Addendum 2.

Answer: Link Sent out with This Reply

11. Evidence bicycle canopy, will contractor need to relocate unit during plumbing work?

Answer: No, LHCPD will relocate evidence and canopy during construction

12. Plumber's sewer line Inspection Report, will this be provided to bidders?

Answer: Yes, this report will be issued with Addendum 2.

13. How much sewer pipe is underneath the slab, total length of pipe requiring epoxy restoration?

Answer: Refer to existing conditions plan to quantify the underground lines. (Link)

14. Report from Structural Engineer, will this be provided?

Answer: Yes, this will be provided with Addendum 2.

15. What type of plumbing clean outs are located just outside of the main lobby; they are in paver walkway?

Answer: Roof drain/Stormwater; Not related to the sewer line restoration work.

16. Breakroom B103 Cabinetry; Replace with new to match new dispatch breakroom B112?

Answer: Keep as is until phase 2

17. Admin and various areas outside of jail/detention unit; What type of drywall repair & painting is required on wall sections that are opened for plumbing work?

Answer: Repair drywall with texture to match existing surface. Prime and paint with

paint, color matched to existing finish.

18. Work hours allowed during construction project?

LHPD; to confirm and/or adjust answer.

Answer: Work hours will be Regular Daytime schedule. Consideration will be made on an as needed basis if Contractor requests for night and weekend scheduling.

19. Detention Facility, sliding hardware mechanisms and locks, Who is providing?

Answer: Section 08 71 63 of Project Manual

Lake Havasu City Department of Public Works

Lake Havasu City Police Station

Sewer Line Inspection October 4<sup>th</sup>, 2023

Report Provided by

The following information documents our findings of the Camara, water jetting and inspection to investigate and determine the condition of the existing sewer that is below grade under the Lake Havasu Police Department Located at 2360 McCulloch Blvd N, Lake Havasu city, AZ 86403.

Location 1.

Starting at the rear of the building where the grease interceptor is located there is a 2-way cleanout leading into the building that has totally collapsed around the connection, causing rock, dirt, and debris to into the main line. This is causing the Kitchen to back up occasionally, this line enters the building and goes down the hallway also having smaller branch lines draining into it from the Jail cells, laundry room Kitchen continuing down the hallway and leads out the other side of the building where the entry gates are for evidence. Outside there are two clean outs in the dirt, this is where it exits into the city sewer system at the point of connection. Findings were a lot of Roughness in cast iron pipe, sections of the pipe are rotting at these locations. We are Recommend further Descaling, Jetting and Epoxy coating of the main line for easy flow conditions. Also Recommend a spot repair just outside the grease interceptor consisting of digging down make a spot repair and add two new cleanouts stopping the rock and debris from entering the system. Also recommend digging up all three locations where the sewer leaves the building, removing the existing clean outs to have better access for heavy cleaning and descaling the heavy build up in this line, then replacing with new cleanouts. Overall condition of pipe was found to be in fair but degrading conditions with light to heavy scaling.

Location 2.

Second location we went up stream from the exit point of where the kitchen comes out and found heavy scale and pipe rotting. Lines look to be all intact with a lot of build up and standing water in some spots mostly where the pipe rotting is that has caused buildup that has stuck to the walls of the pipe and the water is cutting through the grease and the grime which has created pipe rotting through the buildings system. Causing toilet paper, heavy debris to easily clog and get snagged by the narrow pathways. We recommend further Jetting and descaling this area to remove the heavy scale and build up to examine the side wall conditions to verify if there are and cracks or breaks hidden. After descaling you must protect the pipe from further rotting, we recommend Epoxy coating the entire underground system.

### Location 3.

Our third location was inside the building. Removing a 4 inch clean out cap that was frozen and had to be cut out to gain access to the system just outside the Chiefs office that is receiving waister from above. We recommend replacing the cast iron piping from the floor up through the T-bar ceilings preventing future cracking that is occurring. Also, this section of piping below ground has very heavy scaling build up and has pipe rot due to this build up approx. 30 feet long. Recommending heavy descaling, jetting and Epoxy coating.

### Location 4.

The fourth location was outside the evidence room in the outside cage. There are two clean outs going both ways we ran the jetting line up the line 80 feet finding a lot of soap scum and build up. The lines seem to be in good condition as far as being intact and there are no major holes or separations. They did have a little build up at a few fittings that was hard to get through due to the buildup. There are six tie-in locations on this line that get choked down due to the build up of cast iron debris and scaling. Recommend descaling and jetting and Epoxy coating. This would repair the issue properly.

Further Recommendations would be calculating the entire building to get a more accurate amount of footage needing to be epoxy coated throughout the entire building. We also would recommend locating any floor drains, floor sinks, or mop sinks throughout the building. These would need to be sawcut and removed to gain access and remove the P-Traps underground to access the lines properly for epoxy coating, and then replacing them with PVC after the process has been completed. This would include thoroughly cleaning and descaling the entire system. Then utilizing an epoxy coated system would reseal and smooth the inside of the pipe to be better than new condition. At this time said underground plumbing does not have to be replaced yet. But if left untreated the pipe may rapidly degenerate over the next 5 to 7 years. If treated with epoxy the pipe can be guaranteed for the next 25 years and potentially last much longer than that. At this time if all cast iron pipes were maintained and epoxy coated, we see no need to replace the current underground system.





Police Department Rehabilitation Project  
Pre-Bid Meeting Agenda  
November 6, 2023, 10:00 am

- 1.) Round table Introduction and Sign-In Sheet.
- 2.) Project Plans and Specifications are available on the City's website at [www.lhcaz.gov](http://www.lhcaz.gov) or on DemandStar at [www.demandstar.com](http://www.demandstar.com).
- 3.) The scope of work includes, in general terms, the following:

This project consists of restoration of footings at an exterior column and perimeter walls, bullet resistant window installation and jail door hardware replacement, jail carpet, LVT flooring, wall base, paint, wall and floor tile replacement in bathrooms, upper and lower cabinet replacement, plumbing fixture replacement, sewer system repair and any electrical work required to complete any of the mentioned work.

- 4.) Preparation and Submission of Bids:

- a. Found in section 00300.

- 5.) Contract Time:

- a. There are **150 Calendar days** allotted for the completion of the project.
- b. Questions due November 13, 2023
- c. Bid Opening Date: November 21, 2023
- d. Anticipated Award Date: December 12, 2023
- e. Anticipated Contract Signing Date: December 22, 2023
- f. Anticipated Issuing Notice to Proceed: January 8, 2024
- g. Anticipated Construction begin date: January 18, 2024

- 6.) General questions?



PROJECT NAME: Lake Havasu City Police Department Rehabilitation Project

PROJECT NO.: PN 103006

DATE: Monday November 6 2023

PLEASE PRINT

NAME	COMPANY	EMAIL ADDRESS	PHONE
Phil Porter	LHC	PorterPELHCAZ.GOV	928 490 0330
Rob Sampson	SAI	Rob@selbergassociatesinc.com	928 855 6544
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Stacy Showalter	TSG Constructors	stacy@tsgconstructors.com	623 742 0164
Brett Wilcoxson	C.A.G. PLUMBING	B.wilcoxson@cmgplumb.net	909 208 7010
Cheryl Sneed	DK Constr.	csneed210@yahoo.com	
Susie Fox	LHC	foxs@lhcazgov	









PROJECT NAME

**LAKE HAVASU CITY POLICE HEADQUARTERS**  
 LAKE HAVASU CITY, ARIZONA

DATE	01/11
ISSUED FOR	DATE
1. PERMITS	4-8-92

SHEET TITLE  
**SECOND FLOOR PLUMBING PLAN**

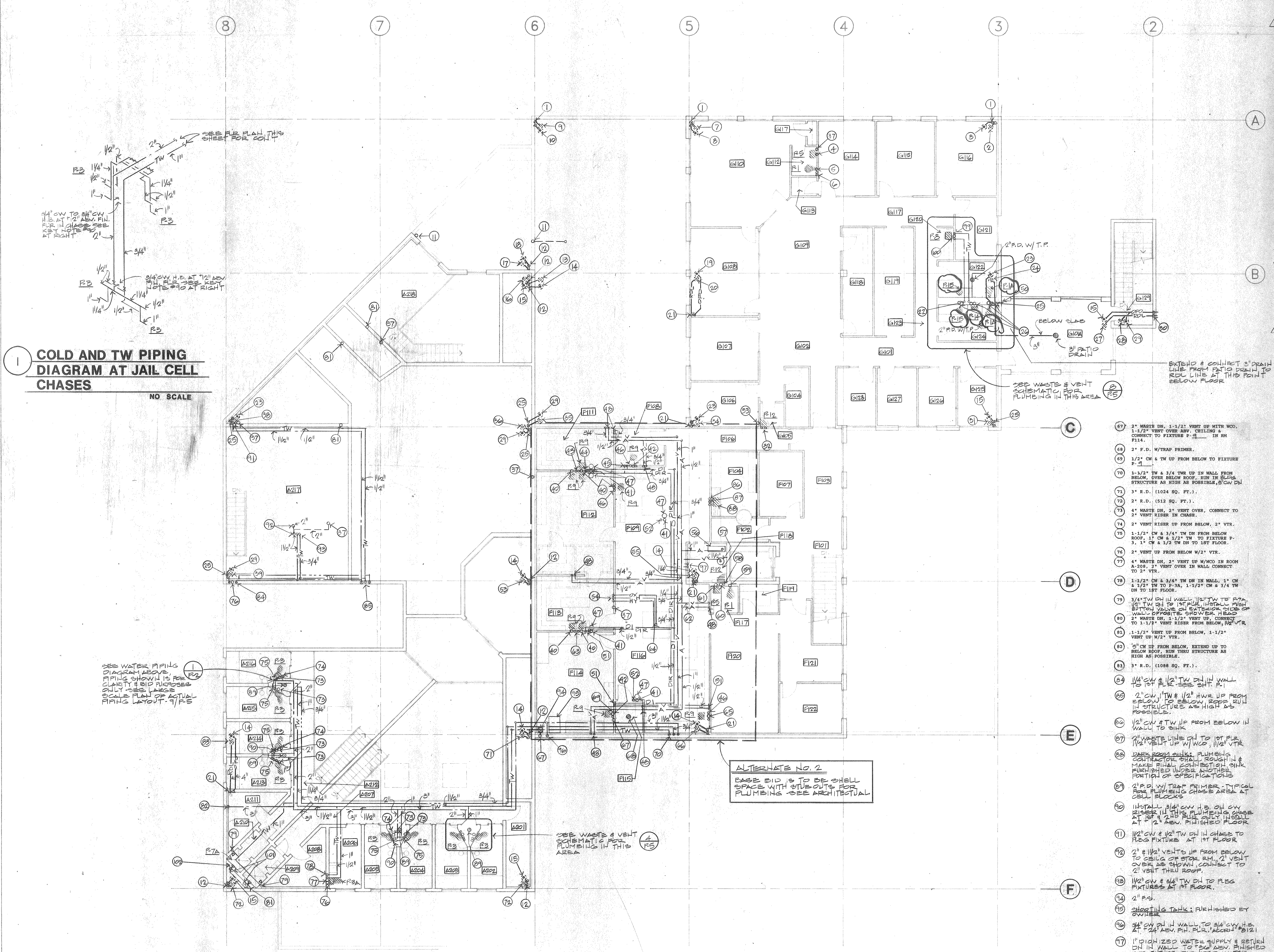
SHEET NO.

**P-2**

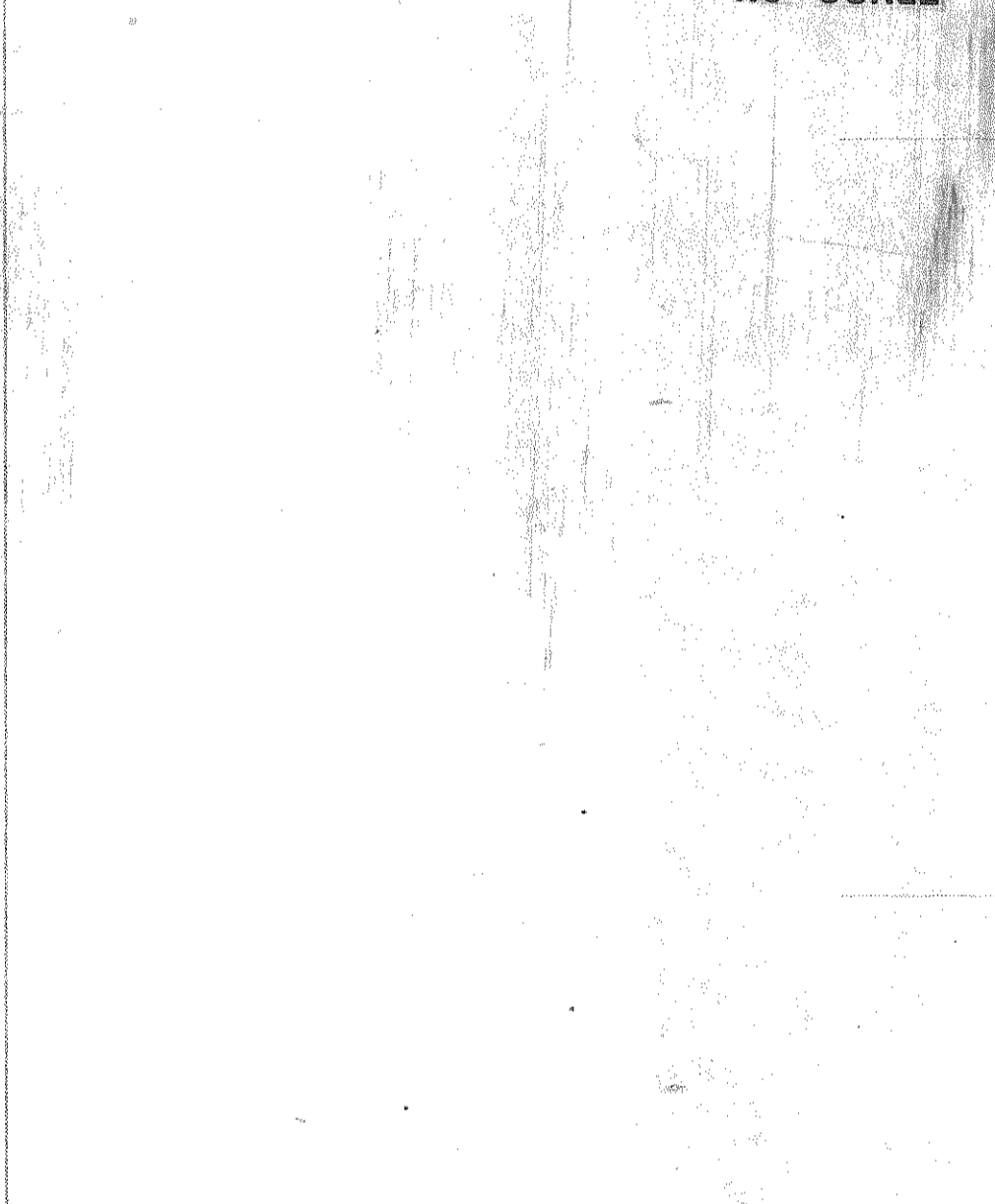
R/DA PROJECT NO  
**91006**

**KEY NOTES**

- 1 3" R.D. & QFD LINES OVER IN NEXT TO WALL IN PURSUED SPACE BOTH ON - SEE SHEET P-1 FOR CONT.
- 2 2" R.D. (561 SQ. FT.).
- 3 2" OFD.
- 4 WASTE DN. 1-1/2" VENT OVER IN WALL. CONNECT TO VENT RISER FROM WATER CLOSET. SEE SHEET P-1 FOR CONT.
- 5 WASTE DN. 2" VENT UP W/WOOD. 2" VTR. SEE SHEET P-1 FOR CONT.
- 6 1/2" CW & 1/2" TW UP FROM BELOW. 1" CW TO P-1. 1/2" CW & TW TO P-1.
- 7 2" R.D. (561 SQ. FT.).
- 8 2" OFD.
- 9 2" R.D. (544 SQ. FT.).
- 10 2" VTR.
- 11 3" R.D. & QFD LINES OVER IN NEXT TO WALL. SEE SHEET P-1 FOR CONT.
- 12 3" R.D. (1024 SQ. FT.).
- 13 3" OFD.
- 14 2" OFD.
- 15 2" OFD.
- 16 2" OFD.
- 17 2" OFD.
- 18 2" OFD.
- 19 2" OFD.
- 20 2" OFD.
- 21 4" R.D. & QFD LINES OVER IN NEXT TO WALL. SEE SHEET P-1 FOR CONT.
- 22 2" CW & 3/4" TW UP FROM BELOW IN WALL. 1" CW OVER TO EACH LOWER ROOF. P-4. 1/2" CW & TW TO EACH P-6. 1/2" CW DN TO BELOW FLOOR FROM EACH FLOOR & 1/2" CW LINE TO EACH FLOOR DRAIN.
- 23 3" OFD.
- 24 3" R.D. (1056 SQ. FT.).
- 25 3" R.D. & QFD LINES DN. SEE SHEET P-1 FOR CONT.
- 26 4" & 2" WASTE LINES DN. SEE SHEET P-1 FOR CONT.
- 27 2" R.D. (504 SQ. FT.).
- 28 2" R.D. (230 SQ. FT.).
- 29 2" OFD.
- 30 3" R.D. & QFD LINES DN IN WALL & 1/4" CW OVER TO EACH LOWER ROOF.
- 31 2" R.D. (528 SQ. FT.).
- 32 1/2" CW & TW UP FROM BELOW IN WALL TO P-12.
- 33 3" WASTE DN. 1-1/2" VENT UP W/WOOD. 1-1/2" VTR.
- 34 3" R.D. (1520 SQ. FT.).
- 35 2" R.D. (560 SQ. FT.).
- 36 2" R.D. (560 SQ. FT.).
- 37 2" VENT UP FROM BELOW W/2" VTR.
- 38 3" R.D. (1040 SQ. FT.).
- 39 2" R.D. (544 SQ. FT.).
- 40 2" WASTE DN. 1-1/2" VENT UP W/WOOD OVER IN WALL. 1-1/2" VENT UP TO ANY CEILING & OVER TO VENT RISER FROM SIDE IN RM 204.
- 41 2" WASTE DN. 1-1/2" VENT UP TO ANY CEILING & OVER. CONNECT TO VENT RISER FROM ANY CEILING AT FEATURE P-12.
- 42 2" WASTE DN. 1-1/2" VENT UP W/WOOD. 1-1/2" VTR.
- 43 1-1/2" CW & 1" TW UP FROM BELOW. 1-1/4" CW OVER TO EACH LOWER ROOF. HYDRASHOWER. 1/2" CW & TW TO EACH P-9.
- 44 3/4" DIONIZED WATER DN IN WALL. 1/2" TO EACH P-4. DIONIZED WATER FAUCET.
- 45 1/2" DIONIZED WATER DN IN WALL TO P-9. DIONIZED WATER FAUCET.
- 46 1/2" CW & TW UP FROM BELOW IN WALL TO P-1.
- 47 EMERGENCY EYEWASH/SHOWERS: "HANS" MODEL #100 WITH 1/2" HDPE PLASTIC SHOWER HEAD. STAY OPEN SHOWER VALVE. STAINLESS STEEL EYEWASH BOWL WITH 3/8" N COVERED ABS PLASTIC HOPT-PLD ANTI-SURGE HEAD PROVIDER WITH #5100 DUST COVER ASSEMBLY.
- 48 1/2" CW & 3/4" TW LINES DN IN WALL TO FINE ROOM. VERIFY EXACT LOCATION & NUMBER OF CONNECTIONS WITH EQUIPMENT SUPPLIER PRIOR TO INSTALLATION.
- 49 1/2" TW & CW UP FROM BELOW TO P-9.
- 50 2" CW & TW UP TO 3/4" CW RECESSED HOSE BIBS WITH LOCKABLE COVER.
- 51 2" DIONIZED WATER DN IN WALL TO GORGEON VACUITY NEXT TO SINK IN COUNTER - TYPICAL. VERIFY EXACT LOCATION OF FAUCET WITH ARCHITECT IN FIELD.
- 52 1-1/4" CW UP FROM BELOW IN WALL TO EMERGENCY EYEWASH/SHOWER. TYPICAL FOR EACH.
- 53 3" R.D. (1130 SQ. FT.).
- 54 1/4" OXYGEN, HYDROGEN & NITROGEN LINES UP FROM BELOW TO ANY CEILING & OVER AS SHOWN.
- 55 3" R.D. (1080 SQ. FT.).
- 56 AIR COMPRESSOR (N.I.C.) STUB OUT PIPING, VALVE & CAP FOR FUTURE.
- 57 VACUUM PUMP (N.I.C.) STUB OUT PIPING, VALVE & CAP FOR FUTURE.
- 58 1-1/2" CW & 3/4" TW UP FROM BELOW IN WALL. 1" CW OVER TO P-1. 1/2" CW & TW TO P-5 & P-12.
- 59 4" WASTE DN. 2" VENT UP W/WOOD. 2" VTR.
- 60 3" WASTE DN. 1-1/2" VENT OVER IN WALL & CONNECT TO VENT RISER FROM P-1.
- 61 2" WASTE DN. 1-1/2" VENT OVER IN WALL & CONNECT TO VENT RISER FROM P-1.
- 62 1/2" AIR & VACUUM LINES ANY CEILING - TYPICAL TO EACH FINE ROOM.
- 63 1-1/2" CW & 3/4" TW UP FROM BELOW IN WALL. 1-1/4" CW TO EMERGENCY EYEWASH/SHOWER. 1/2" CW & TW TO EACH P-9.
- 64 1/4" OXYGEN, HYDROGEN & NITROGEN DN IN FINE ROOM. VERIFY EXACT LOCATION IN FIELD PRIOR TO INSTALLATION.
- 65 2" WASTE DN. 1-1/2" VENT UP W/WOOD. 1-1/2" VTR. VENT OVER ANY CEILING & CONNECT TO VENT RISER AT TOILET RM F117.
- 66 3" R.D. (1105 SQ. FT.).



**COLD AND TW PIPING DIAGRAM AT JAIL CELL CHASES**  
 NO SCALE

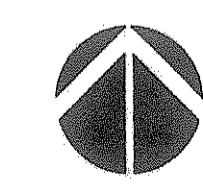


SEE WATER PIPING DIAGRAM ABOVE. PIPING SHOWS IS FOR CLARITY & BID PURPOSES ONLY. SEE LARGE SCALE PLAN OF ACTUAL PIPING LAYOUT. 7/8\"/>

SEE WASTE & VENT SCHEMATIC FOR PLUMBING IN THIS AREA.

ALTERNATE NO. 2  
 BASE BID IS TO BE SHELL SPACE WITH STUBOUTS FOR PLUMBING - SEE ARCHITECTURAL

**SECOND FLOOR PLAN - PLUMBING**  
 SCALE 1/8"=1'-0"



DATE: 01/11



T-90138

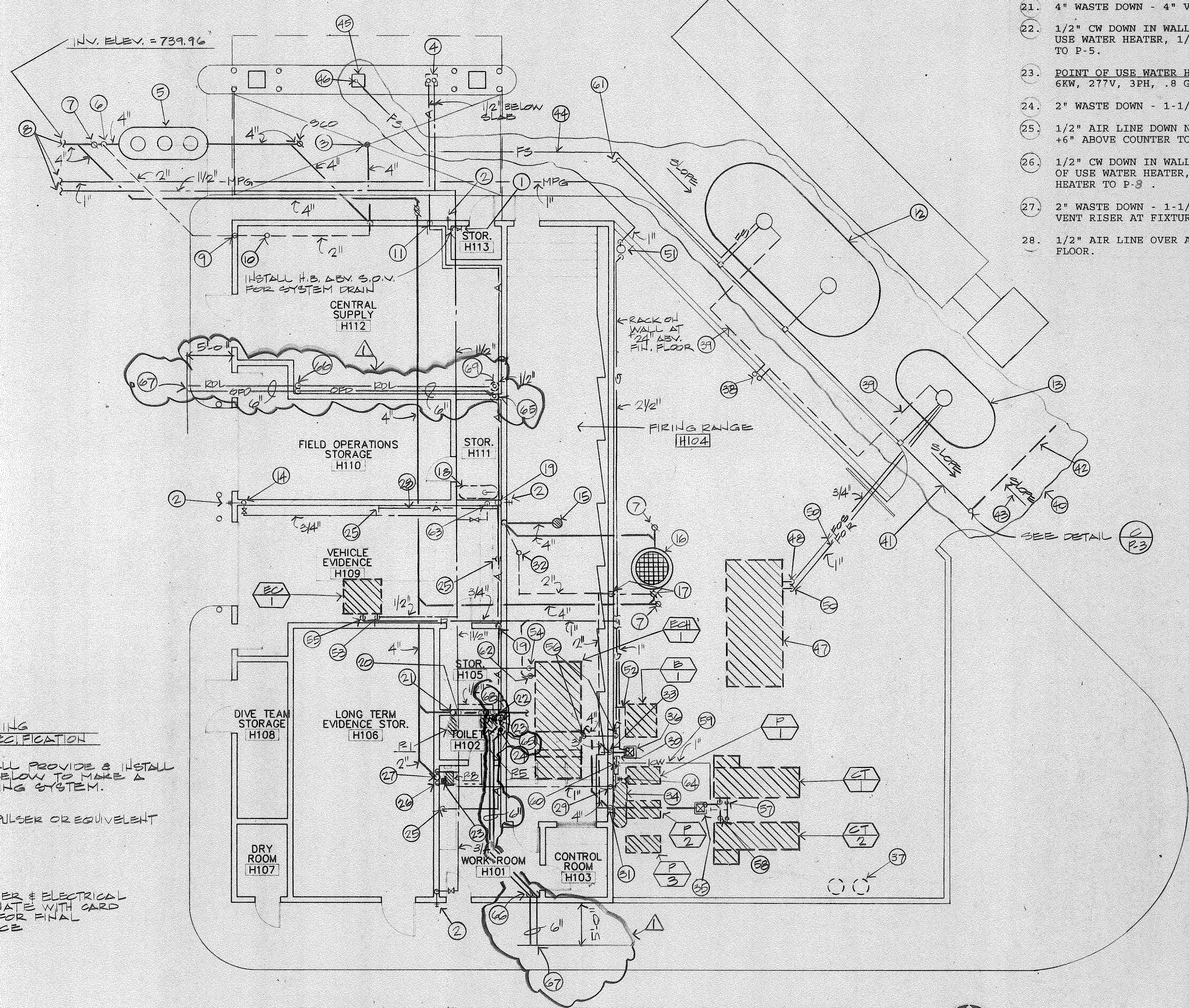


KEYED NOTES  
(SUPPORT BUILDING)

1. 1-1/2" CW BUILDING S.O.V. AT +12" ABOVE FINISHED FLOOR.
2. 3/4" CW H.B. IN RECESSED BOX WITH LOCKABLE DOOR.
3. 4" AREA DRAIN WITH SEDIMENT BUCKET.
4. HOSE REEL: SPECIFIED IN OTHER SECTION OF SPECIFICATIONS, RUGH IN 12" CW & 2" DIA. VERIFY EXACT LOCATION WITH ARCHITECT. PLUMBING CONTRACTOR TO FURNISH & INSTALL.
5. INDUSTRIAL WASTE INTERCEPTOR: "SMITH PRECAST" MODEL 750 GALLON INTERCEPTOR WITH TRAFFIC RING AND COVER SET 1" ABOVE FINISHED GRADE. RING & COVER TO BE HEAVY DUTY TYPE.
6. 2" VENT LINE UP OFF TOP OF LINE AT 45' OVER BELOW GRADE AS SHOWN.
7. 4" SCO.
8. SEE CIVIL DRAWINGS FOR CONTINUATION OF 4" WASTE, 1-1/2" CW & 1" MEDIUM PRESSURE GAS MAIN.
9. 2" VENT LINE UP IN WALL FROM BELOW SLAB TO ABOVE CEILING & OVER AS SHOWN.
10. 2" VENT THROUGH ROOF.
11. 1/2" AIR LINE DOWN IN WALL TO BELOW GRADE & OVER TO HOSE REEL.
12. 12,000 GALLON UNDERGROUND FUEL STORAGE TANK: SEE SPECIFICATION THIS SHEET.
13. 2,500 GALLON UNDERGROUND DIESEL FUEL STORAGE TANK: SEE SPECIFICATIONS THIS SHEET.
14. 3/4" CW DOWN IN WALL AND OUT TO 3/4" CW H.B. AT +18" ABOVE FINISHED GRADE. TYPICAL WHERE SHOWN.
15. 4" F.D. WITH SEDIMENT BUCKET.
16. OIL INTERCEPTOR: "J.R. SMITH" MODEL SPGT-350 INTERCEPTOR, PROVIDE TRAFFIC RING AND COVER AT +2" ABOVE FINISHED GRADE. PROVIDE RISER RINGS IF NECESSARY.
17. 4" SCO WITH 2" VENT LINE EXTENDED OVER BELOW GRADE UP IN WALL TO BELOW ROOF, RUN VENT LINE AS HIGH AS POSSIBLE.
18. AIR COMPRESSOR: "CHAMPION" MODEL R-10C, UNIT MODEL HRT-3, 30 GALLON TANK CAP, 1-1/2" H.P., 542 RPM, 450 V 3PH, 10.5 CFM FREE AIR AT 125 PSI. INSTALL ON FLOOR.
19. 1/2" AIR LINE UP IN WALL TO BELOW ROOF, RUN AS HIGH AS POSSIBLE.
20. 1" CW DOWN IN WALL TO P-1.
21. 4" WASTE DOWN - 4" VENT UP WITH WCO - 4" VTR.
22. 1/2" CW DOWN IN WALL, 1/2" CW TO P-5, 1/2" CW TO POINT OF USE WATER HEATER, 1/2" HW FROM POINT OF USE WATER HEATER TO P-5.
23. POINT OF USE WATER HEATER: "ITS" MODEL MDT-6000-208, 6KW, 277V, 3PH, .8 GPM AT 50" RISE.
24. 2" WASTE DOWN - 1-1/2" VENT OVER IN WALL.
25. 1/2" AIR LINE DOWN NEXT TO WALL TO QUICK DISCONNECT AT +6" ABOVE COUNTER TOP.
26. 1/2" CW DOWN IN WALL, 1/2" CW TO P-8, 1/2" CW TO POINT OF USE WATER HEATER, 1/2" HW FROM POINT OF USE WATER HEATER TO P-8.
27. 2" WASTE DOWN - 1-1/2" VENT UP, OVER ABOVE CEILING TO VENT RISER AT FIXTURE P-1.
28. 1/2" AIR LINE OVER ALONG WALL AT +36" ABOVE FINISHED FLOOR.

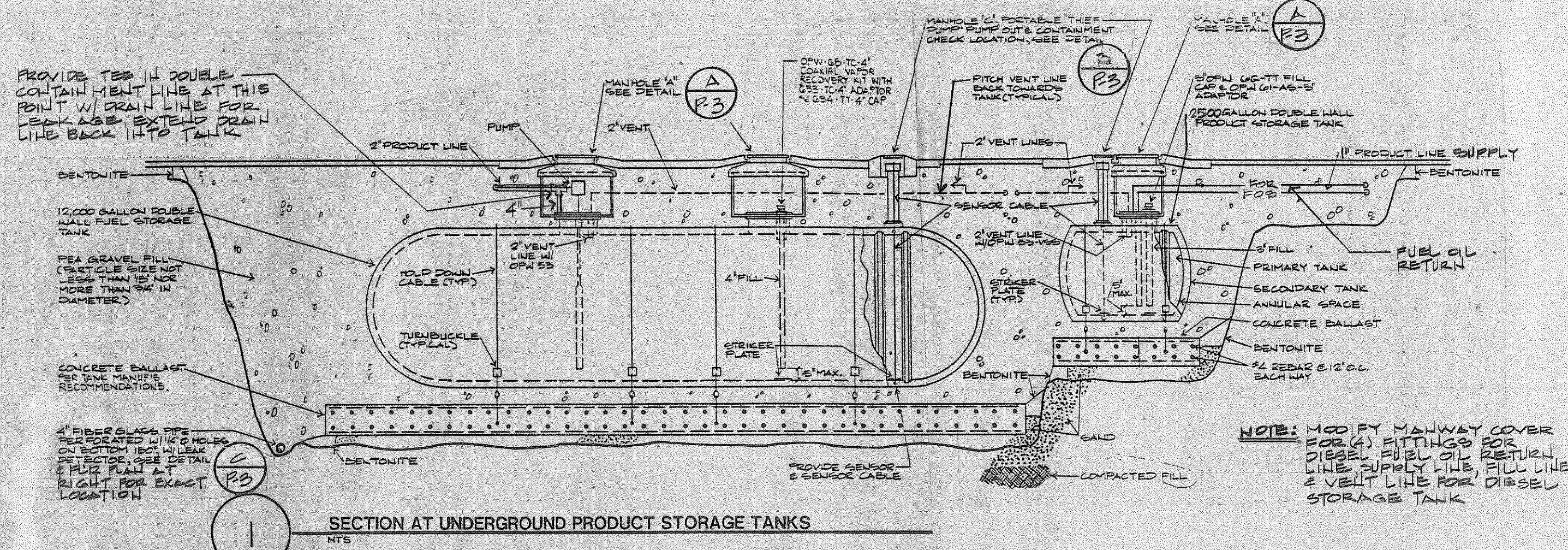
29. 1" CW DOWN IN WALL AND OUT TO BACKFLOW PREVENTOR.
30. REDUCED PRESSURE BACKFLOW PREVENTOR: "WATTS" MODEL #900 REDUCED PRESSURE BACKFLOW PREVENTOR, 3/4" SIZE, RUN VENT DRAIN LINE TO NEAREST FLOOR SINK, AND INSTALL AT A +48" A.F.P. OF EQUIPMENT YARD.
31. 4" WASTE DOWN, 2" VENT UP WITH WCO, AND 2" VENT OVER ABOVE CEILING AS SHOWN.
32. 2" VTR.
33. 3" WASTE DOWN, 1-1/2" VENT UP WITH WCO, AND 1-1/2" VENT OVER ABOVE CEILING AS SHOWN.
34. MECHANICAL EXPANSION TANK: SEE MECHANICAL DRAWINGS.
35. 4" FLOOR SINK, INSTALL IN CONCRETE PAD SET AT +2" ABOVE FINISHED FLOOR OF EQUIPMENT YARD.
36. 3" FLOOR SINK, INSTALL IN CONCRETE PAD SET AT +2" ABOVE FINISHED FLOOR OF EQUIPMENT YARD.
37. CHEMICAL TREATMENT: SEE MECHANICAL DRAWINGS.
38. (2) 2" VENTS UP FROM BELOW GRADE TO +12" ABOVE TOP OF WALL WITH #23 OPV VENT CAPS.
39. 2" VENT LINES EXTENDED OVER BELOW GRADE.
40. INDICATORS TERTIARY LINER.
41. LEAK DETECTION CABLE IN CONDUIT.
42. 4" DIAMETER PERFORATED FIBERGLASS PIPE WITH 1/4" HOLES ON BOTTOM 180° FOR LEAK DETECTION.
43. SLOPE LINER TOWARDS PERFORATED PIPE (TYPICAL).
44. 2" DOUBLE CONTAINMENT FUEL SUPPLY LINE OVER BELOW GRADE.
45. FUEL DISPENSER: SEE SPECIFICATIONS.
46. 2" FUEL SUPPLY LINE UP FROM BELOW GRADE TO FUEL DISPENSER.
47. EMERGENCY GENERATOR: SEE ELECTRICAL DRAWINGS FOR EXACT LOCATION.
48. 3/2" DIESEL OIL SUPPLY LINE UP FROM BELOW SLAB TO EMERGENCY GENERATOR WITH S.O.V.
49. 3/4" P.S. & F.O.R. LINES TO & FROM GENERATOR DAY TANK. VERIFY EXACT LOCATION IN FIELD.
50. F.O.S. & F.O.R. LINES BELOW GRADE.

51. GAS PRESSURE REGULATOR: "FISHER" MODEL S100 OR S200. REGULATOR SIZED FOR 5 PSI INLET PRESSURE AND 7" W.C. OUTLET PRESSURE, REGULATOR SIZED FOR 1850 CFH.
52. 2" GAS LINE TO BOILER WITH LUBRICATED PLUG VALVE - (1050 CFH).
53. 1/2" CW UP TO EVAPORATIVE COOLER ON ROOF WITH S.O.V. FLASH LINE WATERTIGHT THROUGH ROOF.
54. 1/2" CW UP TO ECH #1 ON ROOF WITH S.O.V., FLASH LINE WATERTIGHT THROUGH ROOF.
55. 3/4" DRAIN LINE UP TO EVAPORATIVE COOLER ON ROOF, EXTEND OVER ABOVE CEILING DOWN ON EXTERIOR WALL AS SHOWN ON EQUIPMENT YARD. BACK ON WALL WITH ONE LINE, EXTEND OVER AND SPILL INTO F.S. AS SHOWN. FLASH LINE WATERTIGHT THROUGH ROOF.
56. 2" GAS UP ALONG WALL TO MEN. CELL SPACE INSIDE BLDG., OVER & UP TO ECH ON ROOF W/ LUBRICATED PLUG VALVE. (800 CFH)
57. 1" CW UP FROM BELOW GRADE W/ S.O.V. FOR MECHANICAL MAKE-UP WATER FOR COOLING TOWER - TYP. FOR 2
58. 2" DRAIN & 3" OVERFLOW LINES FROM COOLING TOWER CONNECTED TOGETHER W/ 3" DRAIN LINE DN OVER TO & SPILL INTO F.S. TYPICAL FOR BOTH TOWERS
59. 1" CW LINE BELOW GRADE.
60. 1" CW DN NEXT TO WALL TO BELOW GRADE & OVER AS SHOWN.
61. EXTEND CONDUIT W/ LEAK DETECTION CABLE BACK TO LEAK DETECTION ALARM PANEL IN DISPATCH ROOM AREA. VERIFY EXACT LOCATION IN FIELD WITH ARCHITECT PRIOR TO INSTALLATION.
62. 1" DRAIN LINE UP TO ECH #1 ON ROOF, FLASH LINE WATERTIGHT THRU ROOF.
63. 3/4" CW DN IN WALL & OUT TO 3/4" CW H.B. AT 12' ABV. FINISHED FLOOR.
64. 3/4" CW DN NEXT TO WALL TO 3/4" CW H.B. AT 18" ABV. FINISHED GRADE.
65. 4" O.F.D.
66. 4" RDL & OFD LEADERS DN NEXT TO WALL & OUT AS SHOWN BELOW GRADE.
67. SEE CIVIL DRAWINGS FOR CONT.
68. 4" R.D. (1760#)
69. 4" R.D. (1804#)

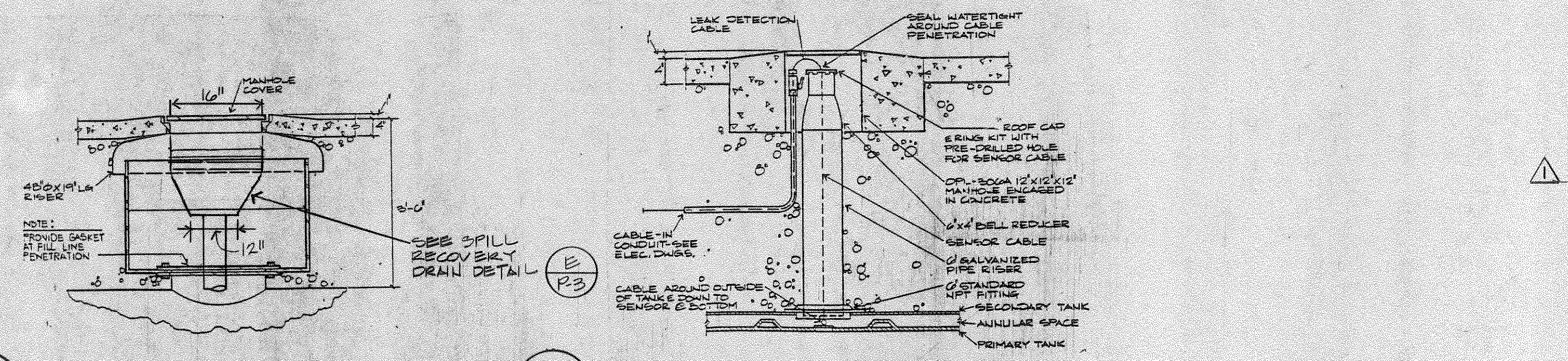


PLUMBING FLOOR PLAN - SUPPORT BUILDING  
SCALE 1/8"=1'-0"

- SPECIFICATION: (UNDERGROUND STORAGE TANKS)
1. 12,000 GALLON UNLEADED FUEL TANK: PROVIDE & INSTALL RECESSED DIESEL STORAGE TANK 24" DIA. DIA. X 10'-5 1/2" H. TANK HAS REINFORCED PLASTIC WITH ALL FITTINGS & UL LISTED. INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS. SEE DETAIL THIS SHEET.
  2. 2,500 GALLON DIESEL FUEL TANK: PROVIDE & INSTALL RECESSED DIESEL STORAGE TANK 30" X 6" X 48" H. TANK HAS REINFORCED PLASTIC WITH ALL FITTINGS & UL LISTED. INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS. SEE DETAIL THIS SHEET.

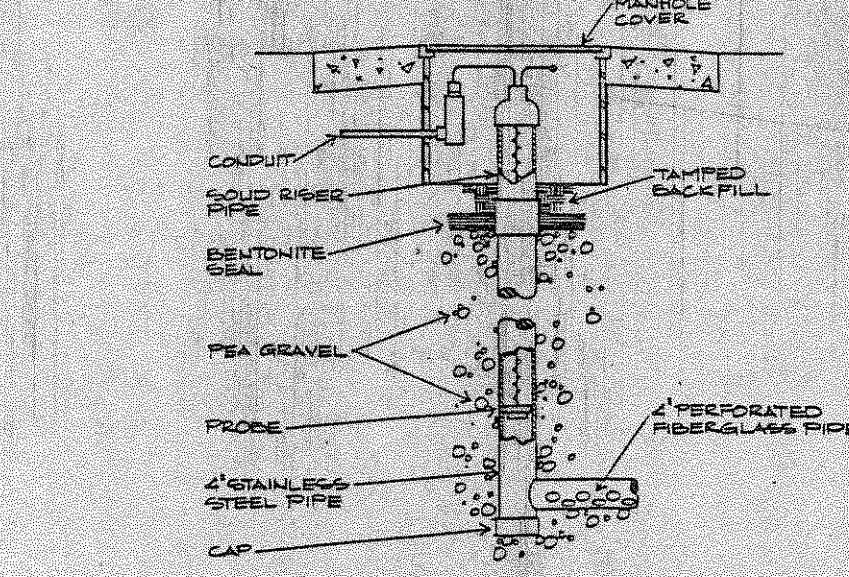


NOTE: PROVIDE 8" METALL "KEYES" MODEL "D" TYPE 30"Ø MAINWAY COVER WITH INLINE FITTINGS

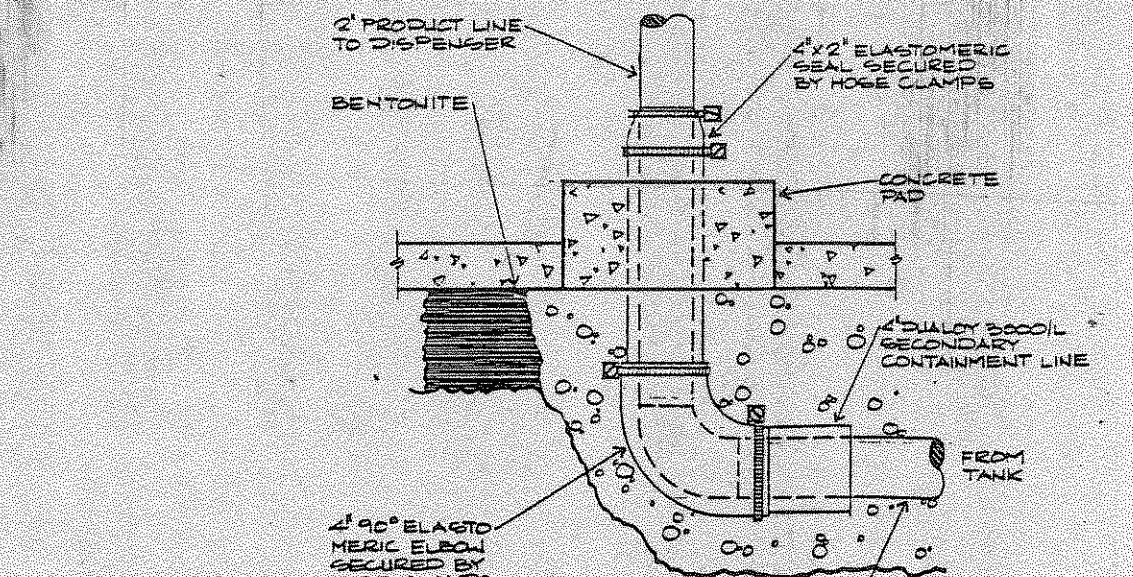


MANHOLE "A" DETAIL

MANHOLE "C" DETAIL



UNDERGROUND PROBE DETAIL



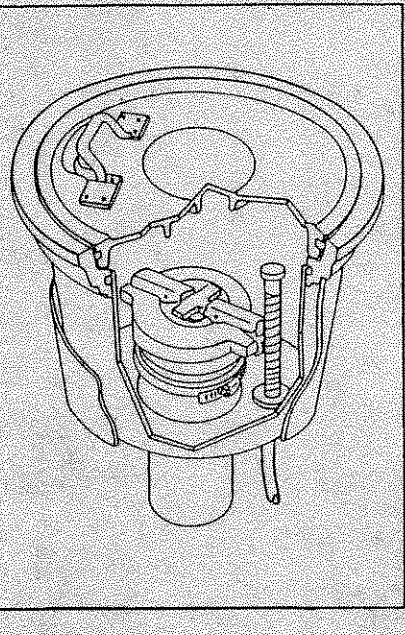
PIPE THRU GRADE DETAIL (PIPING PRODUCT)

OPW 84 D with Drain Valve

The OPW 84-D is furnished complete with an integral emergency shut-off valve and a 1/2" drain valve. The valve is a high flow design for rapid draining and provides a flexible exterior that will not interfere with the hose. The cover, and the entire assembly are made of heavy duty materials. The OPW 84-D is furnished with a 3/4" hose and a 1/2" pipe section to adapt to various installation conditions. (Refer to installation instructions H-1581-PA for recommended arrangement).

Materials:

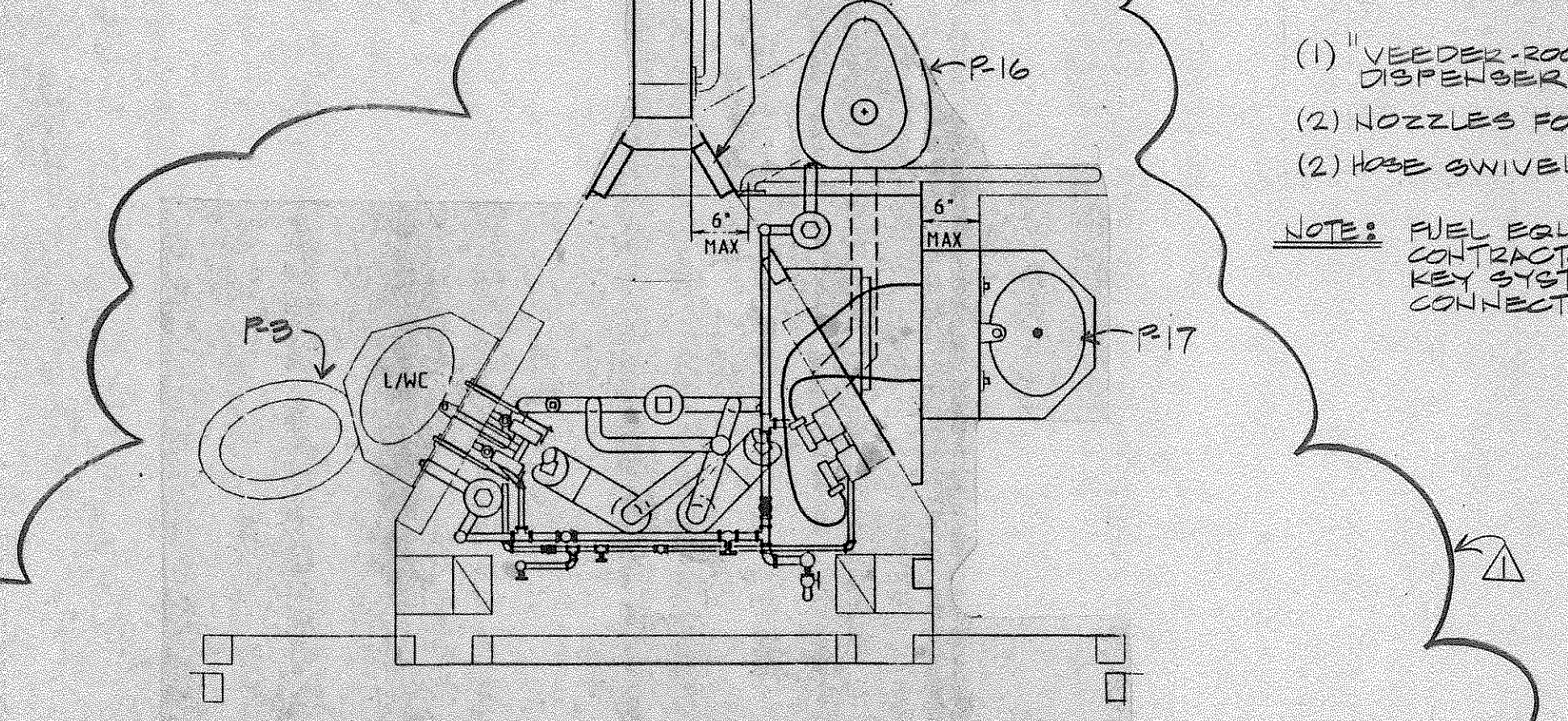
- Cover: Lightweight, corrosion resistant material
- Seat: Low wear butyl-N
- Body Ring: Cast iron, specially coated for lubrication
- Connector: High impact strength, high density polyethylene
- Liquid Capacity: 5 Gallons, max
- Shipping Wt.: 84-36 lbs. 84-40 lbs. (84) (84)



Dimensions

SPILL RECOVERY DRAIN DETAIL

SPILL RECOVERY DRAIN DETAIL



GROUND FLOOR HANDICAPPED CELL PLAN - PLUMBING  
NO SCALE

- NOTE: 1. THIS AREA IS TYPICAL FOR CELLS #A-111 & #A-120. SEE SHEET P-1 FOR LOCATION.
2. PLUMBING CONTRACTOR SHALL COORDINATE PLUMBING PIPING WITH MECHANICAL & ELEC. CONTRACTORS PRIOR TO INSTALLING ANY PIPING IN PLUMBING CHASE.

FUEL DISPENSING EQUIPMENT SPECIFICATION

PLUMBING CONTRACTOR SHALL PROVIDE 8" METALL ALL EQUIPMENT LISTED BELOW TO MAKE A COMPLETE FUEL DISPENSING SYSTEM.

- (1) "VEEDES-ROOF" MODEL 1871 FULSER OR EQUIVALENT DISPENSER
- (2) NOZZLES FOR DISPENSER
- (2) HOSE SWIVELS

NOTE: FUEL EQUIPMENT SUPPLIER & ELECTRICAL CONTRACTOR TO COORDINATE WITH CARD KEY SYSTEM SUPPLIER FOR FINAL CONNECTION & INTERFACE





GENERAL NOTES

- EXACT LOCATION OF PLUMBING FIXTURES SHALL BE DETERMINED FROM ARCHITECTURAL DRAWINGS.
- BEFORE SUBMITTING BID, THE PLUMBING CONTRACTOR SHALL REVIEW THE ARCHITECTURAL DRAWINGS AND INCLUDE IN HIS BID AN AMOUNT TO FURNISH AND INSTALL ANY FIXTURES WHICH ARE SHOWN IN ADDITION TO FIXTURES SHOWN ON THE PLUMBING DRAWINGS.
- CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF SEWERS TO WHICH NEW WASTE LINES ARE TO BE CONNECTED BEFORE MAKING UP OR INSTALLATION OF NEW WASTE SYSTEM.
- CONTRACTOR SHALL VERIFY AND COORDINATE LOCATION OF ALL PLUMBING LINES WITH DUCTWORK AND ELECTRICAL SERVICES.
- THE INSTALLATION OF ALL VALVES, UNIONS, THERMOMETERS, GAUGES, OR OTHER INDICATING OR RECORDING EQUIPMENT, OR SPECIALTIES REQUIRING FREQUENT READING, REPAIRS, OR ADJUSTMENT, INSPECTION, REMOVAL OR REPLACEMENT SHALL BE CONVENIENTLY AND ACCESSIBLY LOCATED WITH REFERENCE TO THE FINISHED BUILDING.
- ALL VENTS THROUGH ROOF SHALL BE 10'-0" REMOVED FROM ALL AIR INTAKES, EVAPORATOR COOLERS, ETC.
- WHERE POSSIBLE, TIE VENTS TOGETHER SO THAT A MINIMUM NUMBER TERMINATE THROUGH THE ROOF.
- WATER CLOSETS IN PUBLIC TOILET ROOMS SHALL CENTER ON THE FINAL LAYOUT OF TOILET PARTITIONS.
- CONTRACTOR SHALL NOT CUT HOLES IN STRUCTURAL MEMBERS WITHOUT FIRST SECURING WRITTEN APPROVAL FROM THE ARCHITECT.
- CONTRACTOR SHALL INSTALL DIELECTRIC UNIONS AT CONNECTIONS OF DISSIMILAR METALS.
- CONTRACTOR SHALL ROUGH-IN ALL WASTES AND SUPPLIES TO SPECIAL EQUIPMENT ACCORDING TO MANUFACTURERS SHOP DRAWINGS AND MAKE FINAL CONNECTIONS. ALL SUPPLIES SHALL BE VALVED.
- NO PIPING OR EQUIPMENT SHALL BE INSTALLED ABOVE ELECTRICAL EQUIPMENT OR INSTALLED IN ELECTRICAL ROOMS.

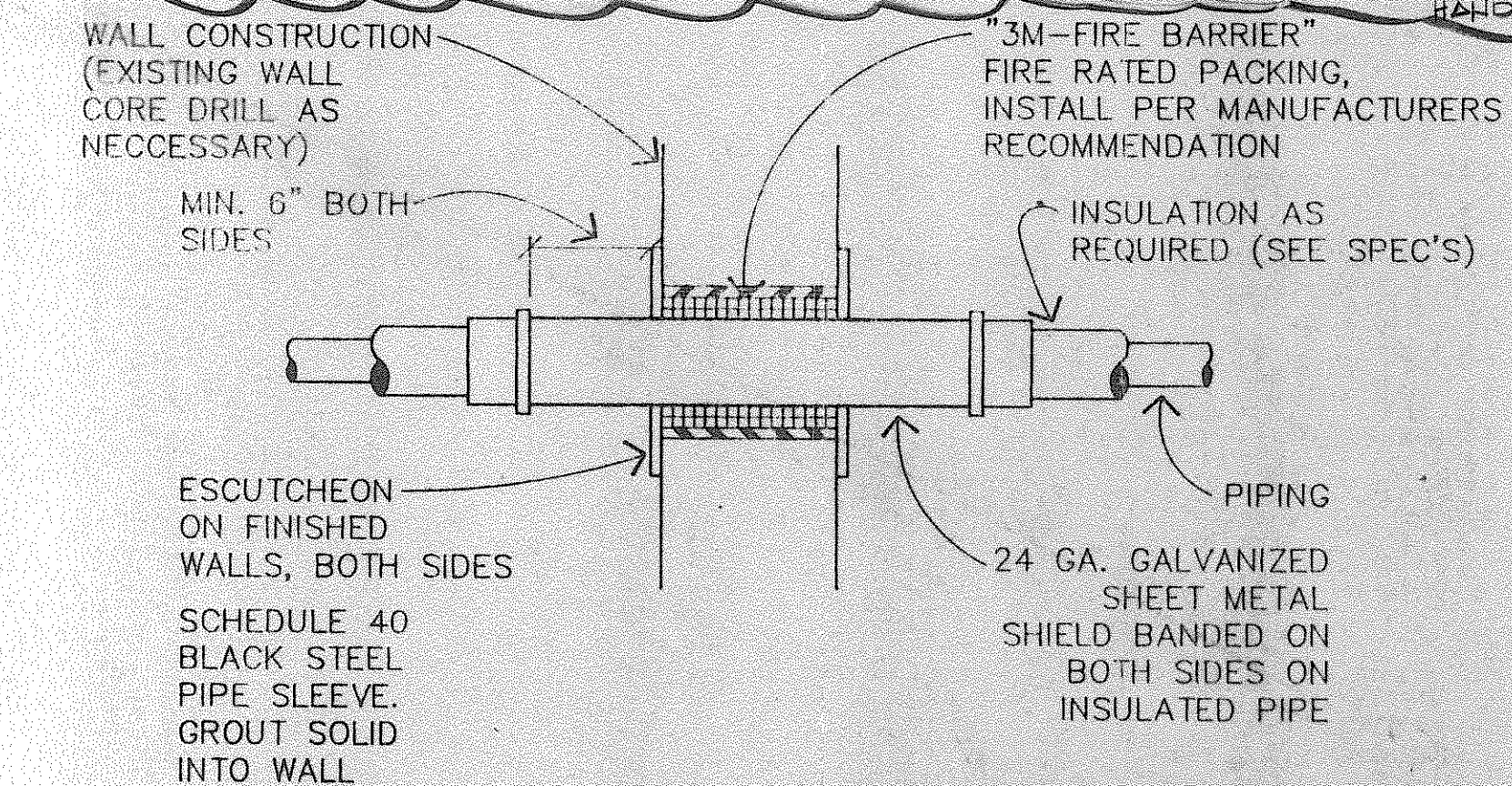
PLUMBING SYMBOL LIST

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
---	SOIL WASTE LINE (W)	---	SHUT OFF VALVE (GATE)
---	VENT LINE (V)	---	CHECK VALVE
---	COLD WATER (C.W.)	---	UNION
---	HOT WATER (H.W.)	---	LUBRICATED PLUG VALVE
---	HOT WATER RETURN	---	HOSE BIBB (H.B.)
G	GAS LINE	---	BRANCH RISE OFF MAIN
TW	TEMPERED WATER	---	SURFACE CLEANOUT
D	DRAIN LINE	---	FLOOR CLEANOUT
---	BUILDING SEWER	---	GLOBE VALVE
⊙	FLOOR DRAIN (F.D.)	---	BALL VALVE
⊙	FLOOR SINK (F.S.)	---	ROOF DRAIN LEADER
⊙	ROOF DRAIN (R.D.)	---	OVERFLOW DRAIN LEADER
⊙	OVERFLOW DRAIN	---	CONDENSATE DRAIN LINE
---		---	INDUSTRIAL COLD WATER

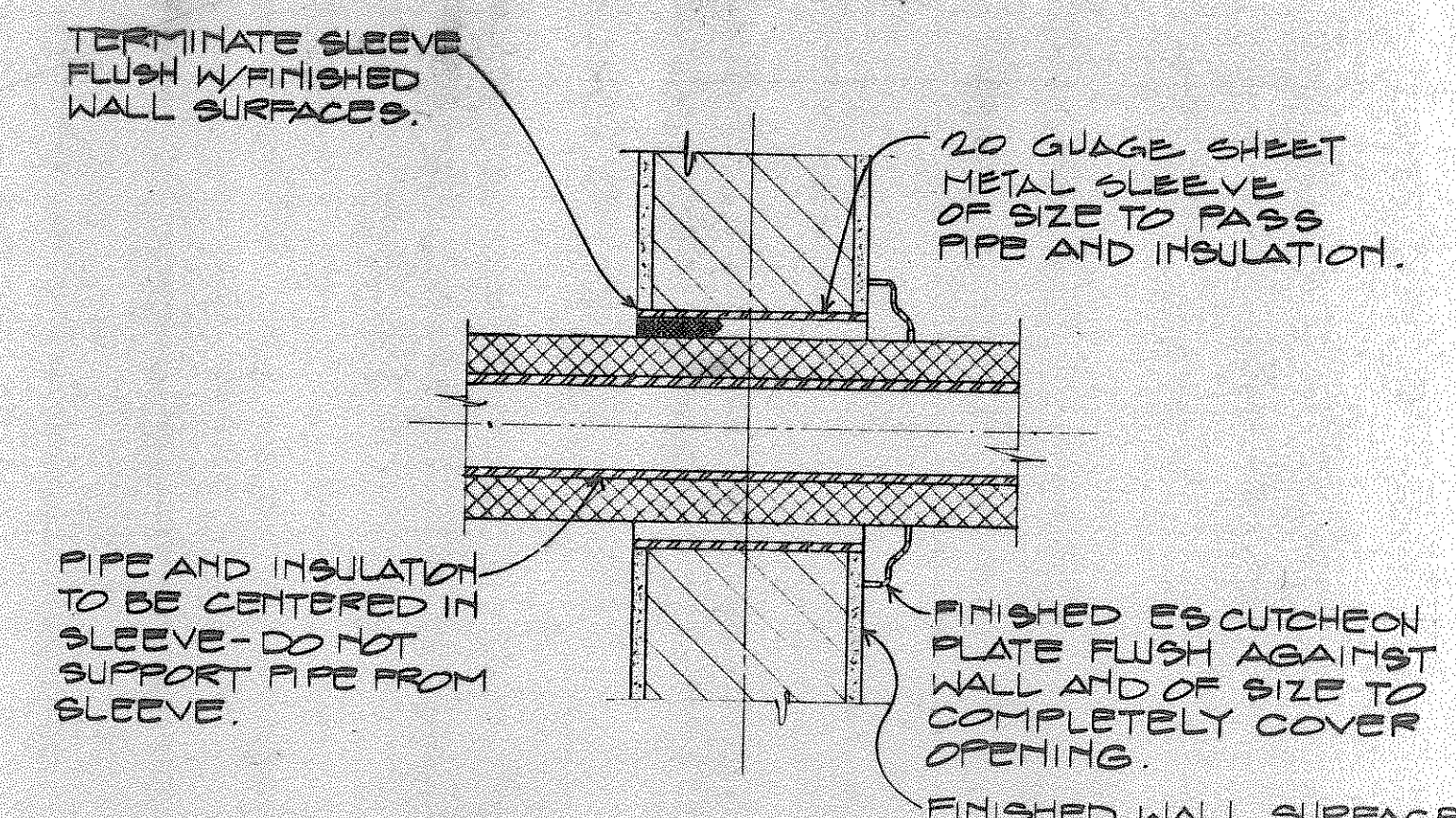
NOTE ONLY THOSE SYMBOLS SHOWN ON THE DRAWINGS APPLY!

PLUMBING FIXTURE CONNECTION SCHEDULE

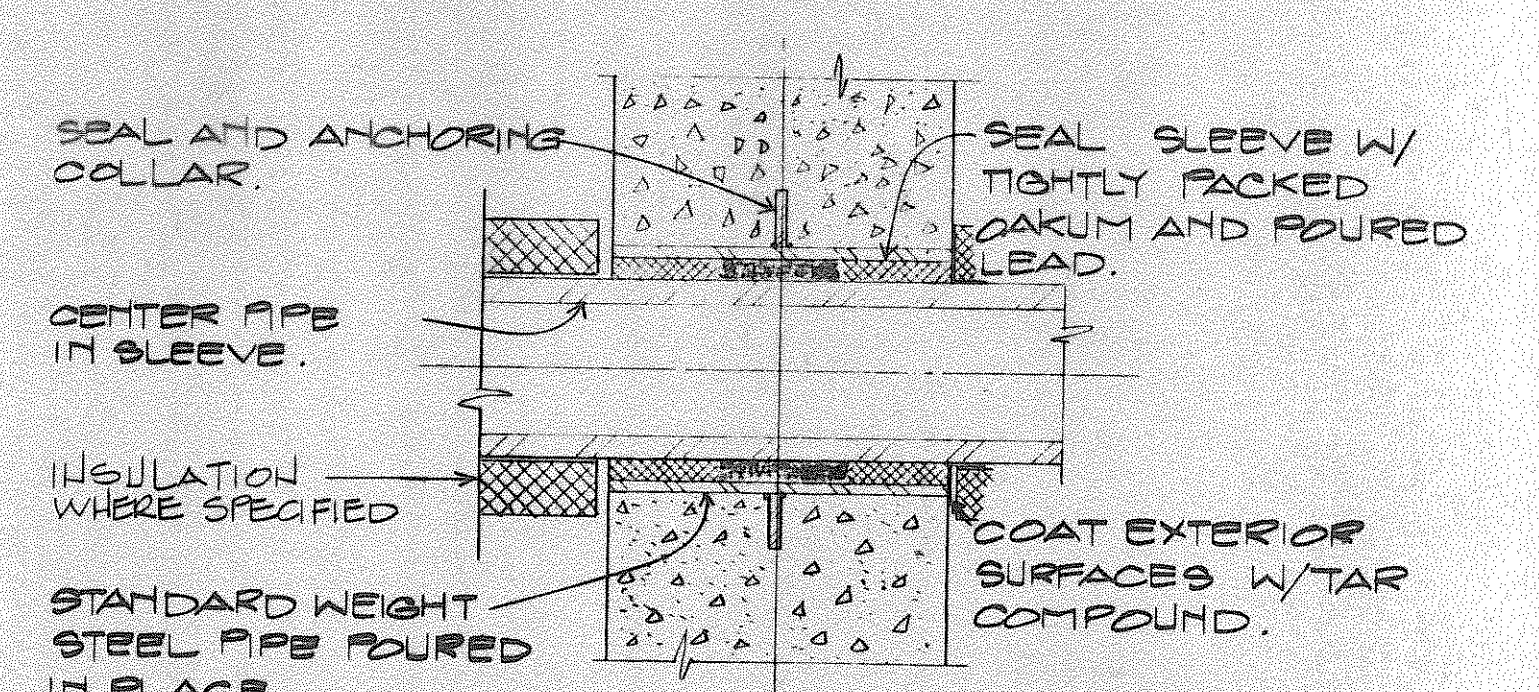
MARK	DESCRIPTION	W.	V.	C.W.	H.W.	REMARKS
P1	WATER CLOSET	4"	2"			PL VALVE WALL HUNG
P1A	WATER CLOSET	4"	2"	1"		PL VALVE HAND CAPPED
P2	WATER CLOSET	4"	2"	1"		PL VALVE FLR MOUNTED
P3	WATER CLOSET/LAV.	4"x2"	2"	1 1/2"	1/2"	PL VALVE WALL HUNG
P3A	WATER CLOSET/LAV.	4"x2"	2"	1 1/2"	1/2"	PL VALVE WALL HUNG
P4	URINAL	2"	1 1/2"	3/4"		PL VALVE WALL HUNG
P5	LAVATORY	2"	1 1/2"	1/2"	1/2"	WALL HUNG
P5A	LAVATORY	2"	1 1/2"	1/2"	1/2"	WALL HUNG - HANDIC.
P6	LAVATORY	2"	1 1/2"	1/2"	1/2"	COUNTERTOP ROUND
P7	SHOWER	2"x3"	1/2"	1/2"	1/2"	FIELD BUILT
P7A	SHOWER	2"	1 1/2"	1/2"	1/2"	FIELD BUILT
P8	SINK	2"	1 1/2"	1/2"	1/2"	STAINLESS STEEL
P9	SINK	2"	1 1/2"	1/2"	1/2"	STAINLESS STEEL
P9A	SINK - 2-COMPT	2"	1 1/2"	1/2"	1/2"	STAINLESS STEEL
P10	BEST DRINK FOUNTAIN	2"	1 1/2"	1/2"		BRN - RECESSED
P11	BEST DRINK FOUNTAIN	2"	1 1/2"	1/2"		WALL HUNG HANDIC.
P12	SERVICE SINK	3"	1 1/2"	1/2"	1/2"	FLOOR MOUNTED
P13	WATER CLOSET	4"	2"			PL VALVE FLR MTD
P14	URINAL	2"	1 1/2"	3/4"		PL VALVE WALL HUNG
P15	LAVATORY	2"	1 1/2"	1/2"	1/2"	COUNTERTOP HANDIC.
P16	WATER CLOSET	4"	2"	1"		FURNISH COMPLETE
P17	LAVATORY	2"	1 1/2"	1/2"	1/2"	FURNISH COMPLETE



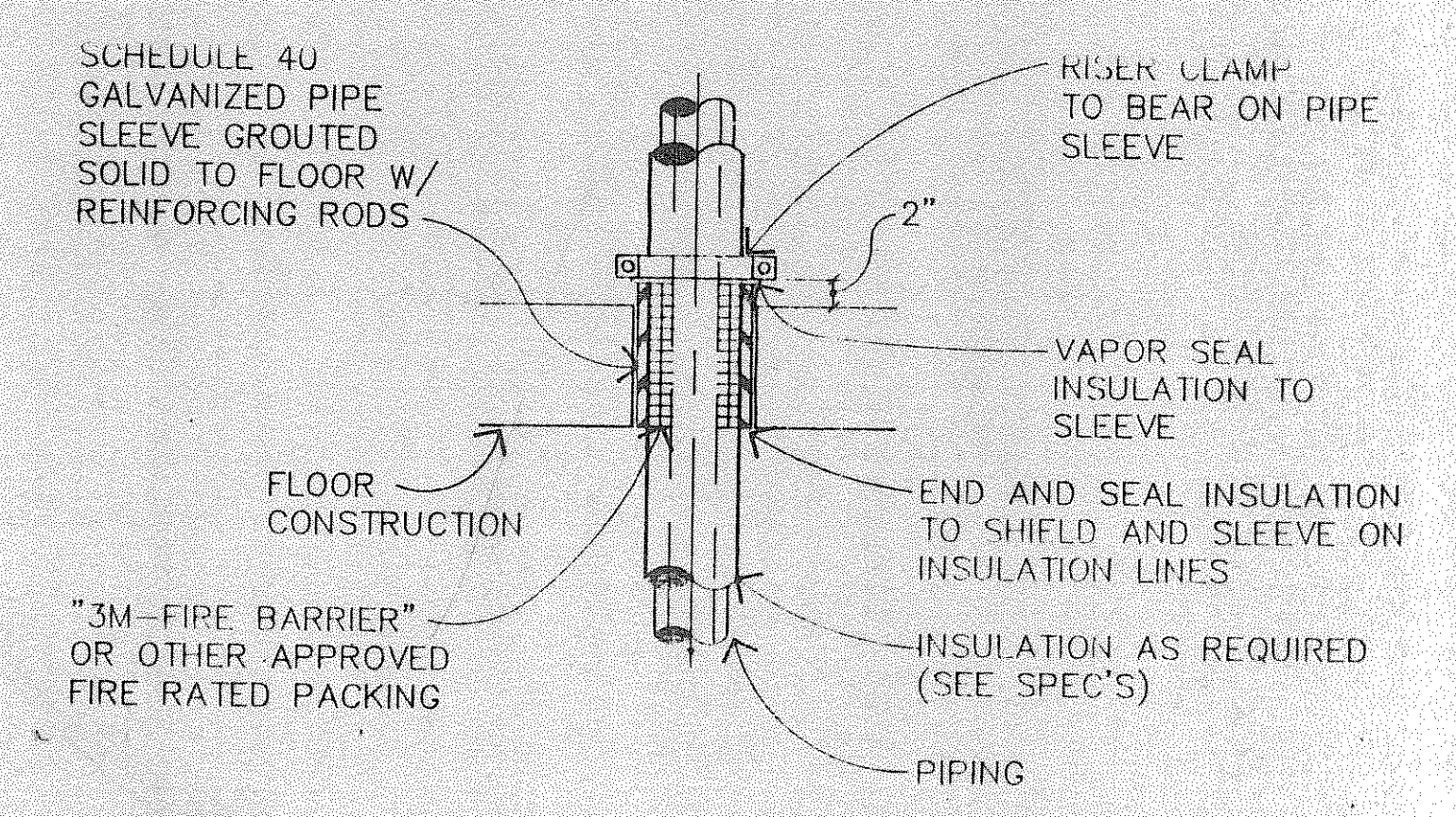
1 PIPE THRU WALL (FIRE-RATED WALL) NO SCALE



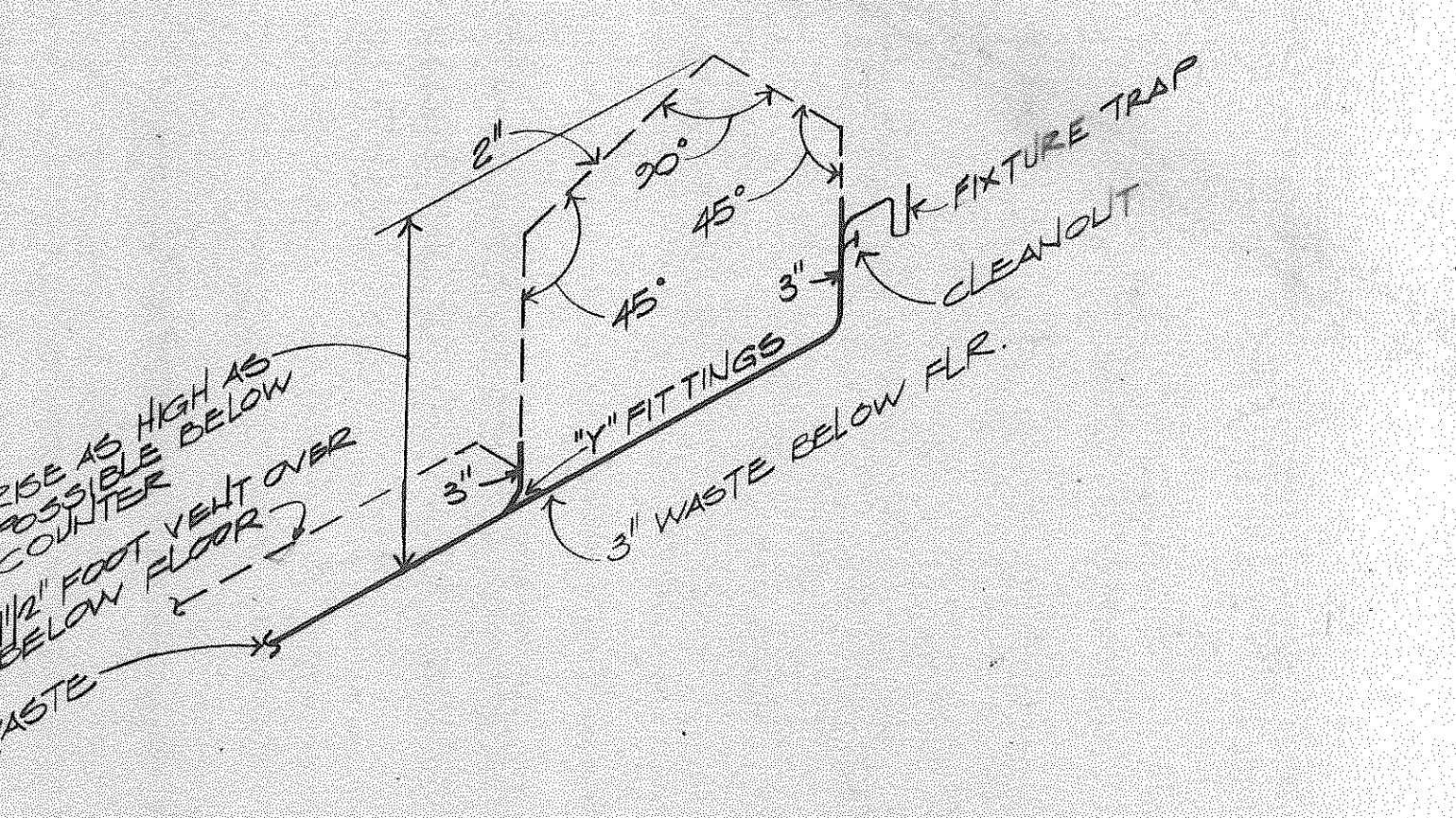
2 PIPE SLEEVE THRU WALL INTERIOR WALL NO SCALE



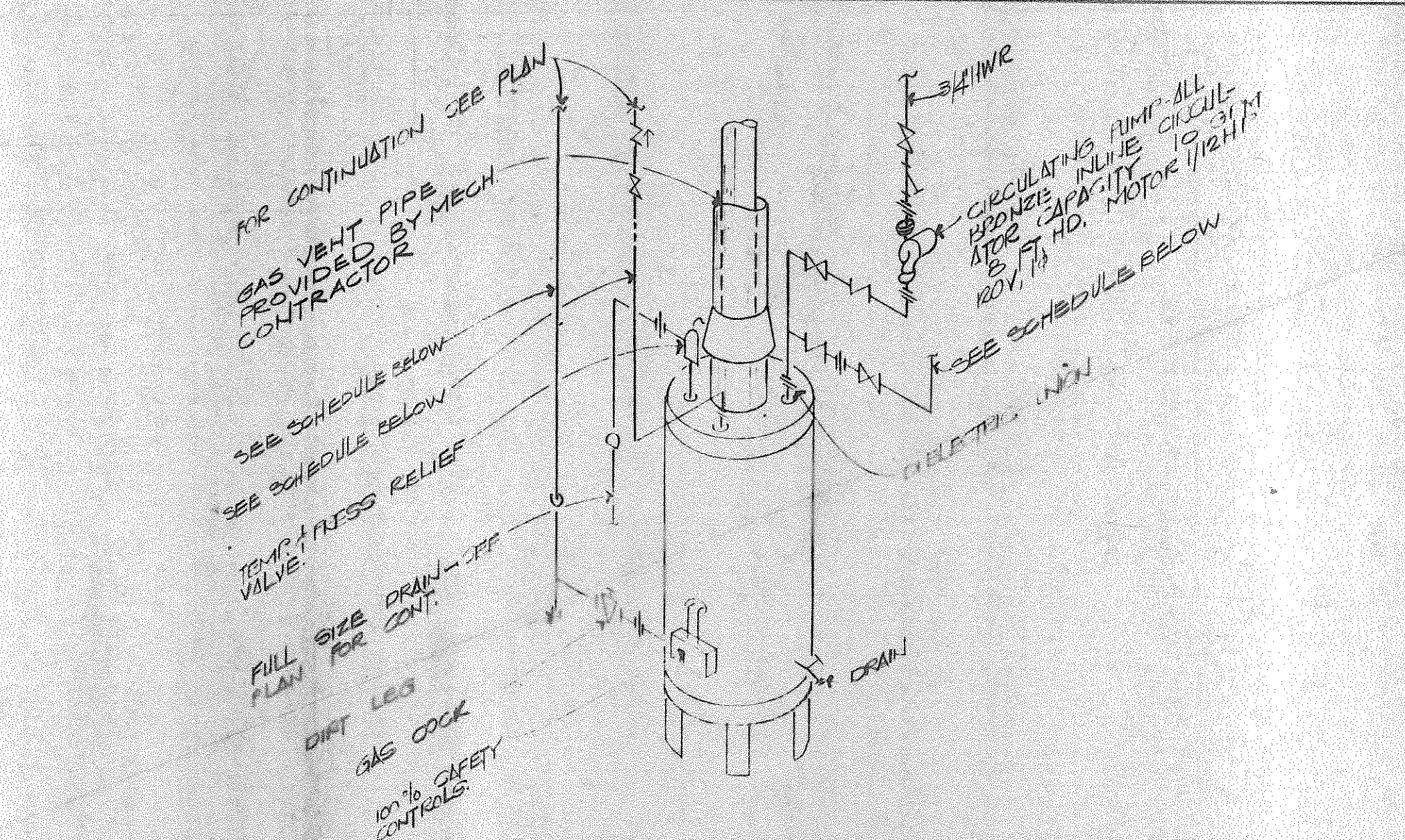
3 PIPE SLEEVE THRU WALL EXTERIOR WALL NO SCALE



4 PIPE THRU FLOOR (RATED FLOOR) NO SCALE

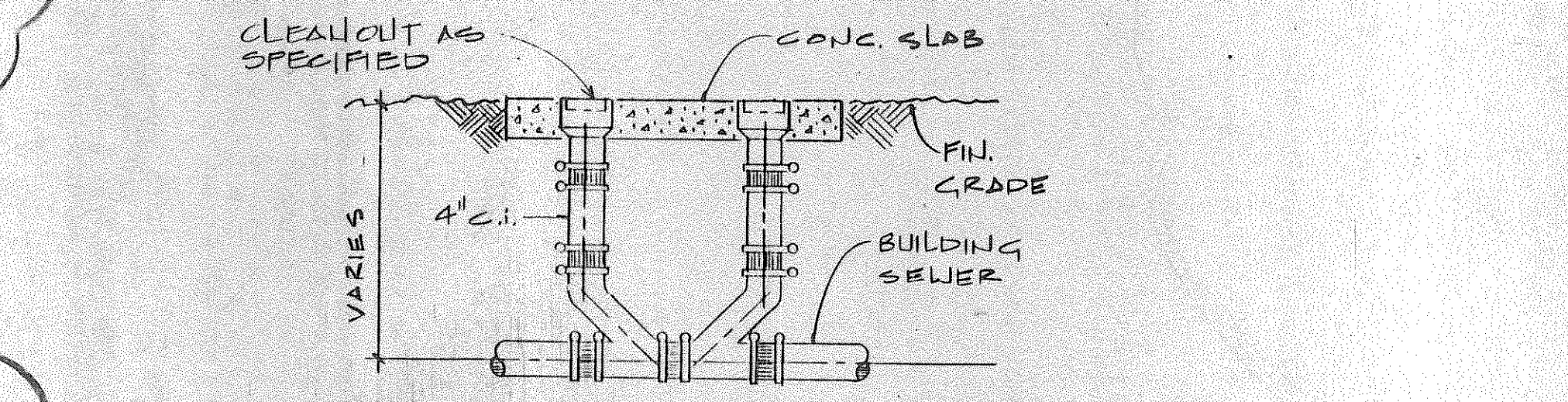


5 ISLAND VENT DETAIL NO SCALE

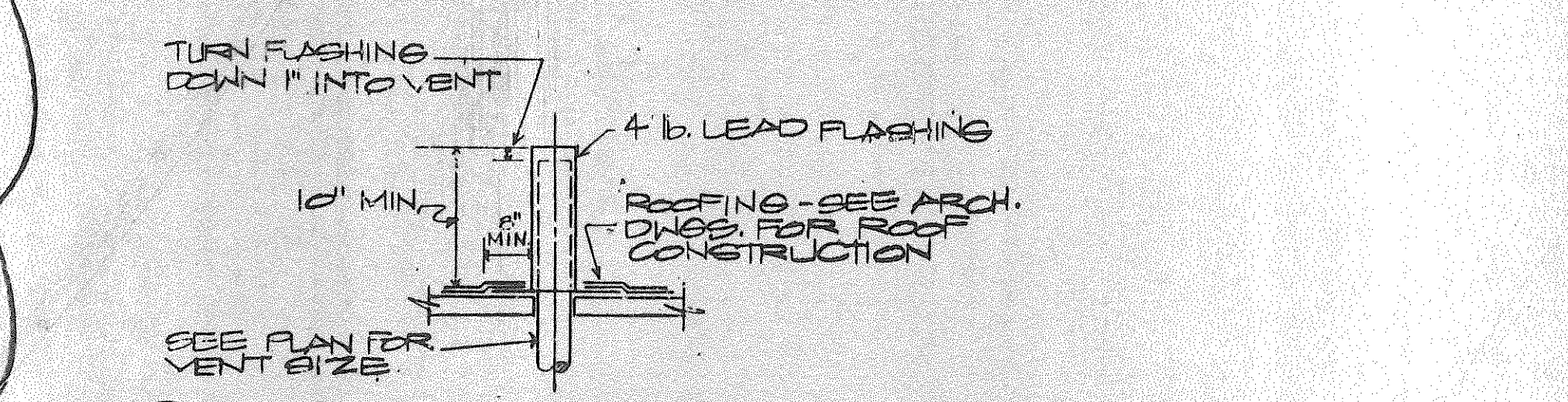


6 TYPICAL WATER HEATER DETAIL NO SCALE

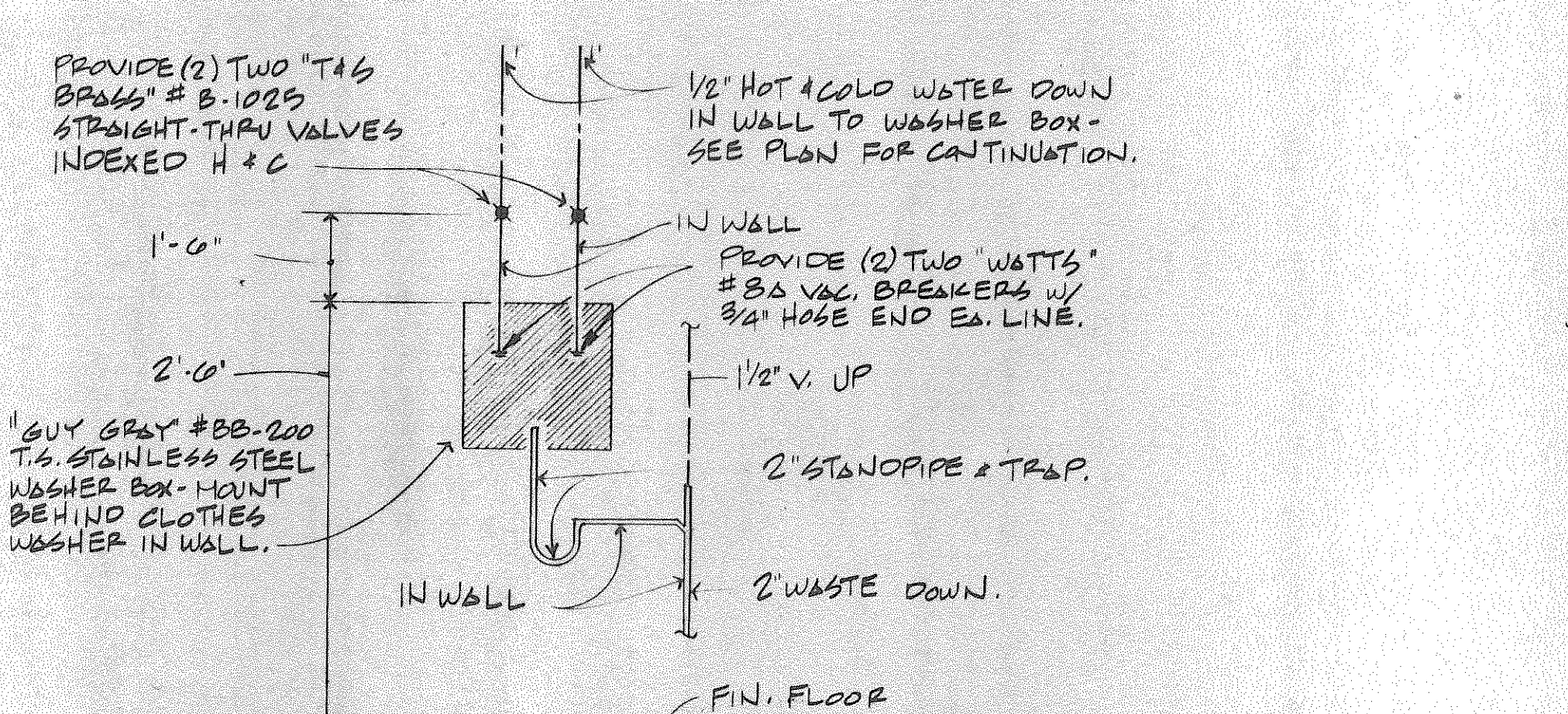
GAS WATER HEATER SCHEDULE									
MARK	MAKE	MODEL	STORAGE CAP. GAL.	FUEL GAS	C.F.H. INPUT	GAL. PER HR. REG. AT 100' F. T. R.	VENT PIPE SIZE	PIPE SIZES	REMARKS
#1	PV1	27P 250A	250	NAT	270	226	7"	2" 2" 1/4"	
#2	PV1	20F 125A	125	NAT	199	167	6"	2" 2" 1"	



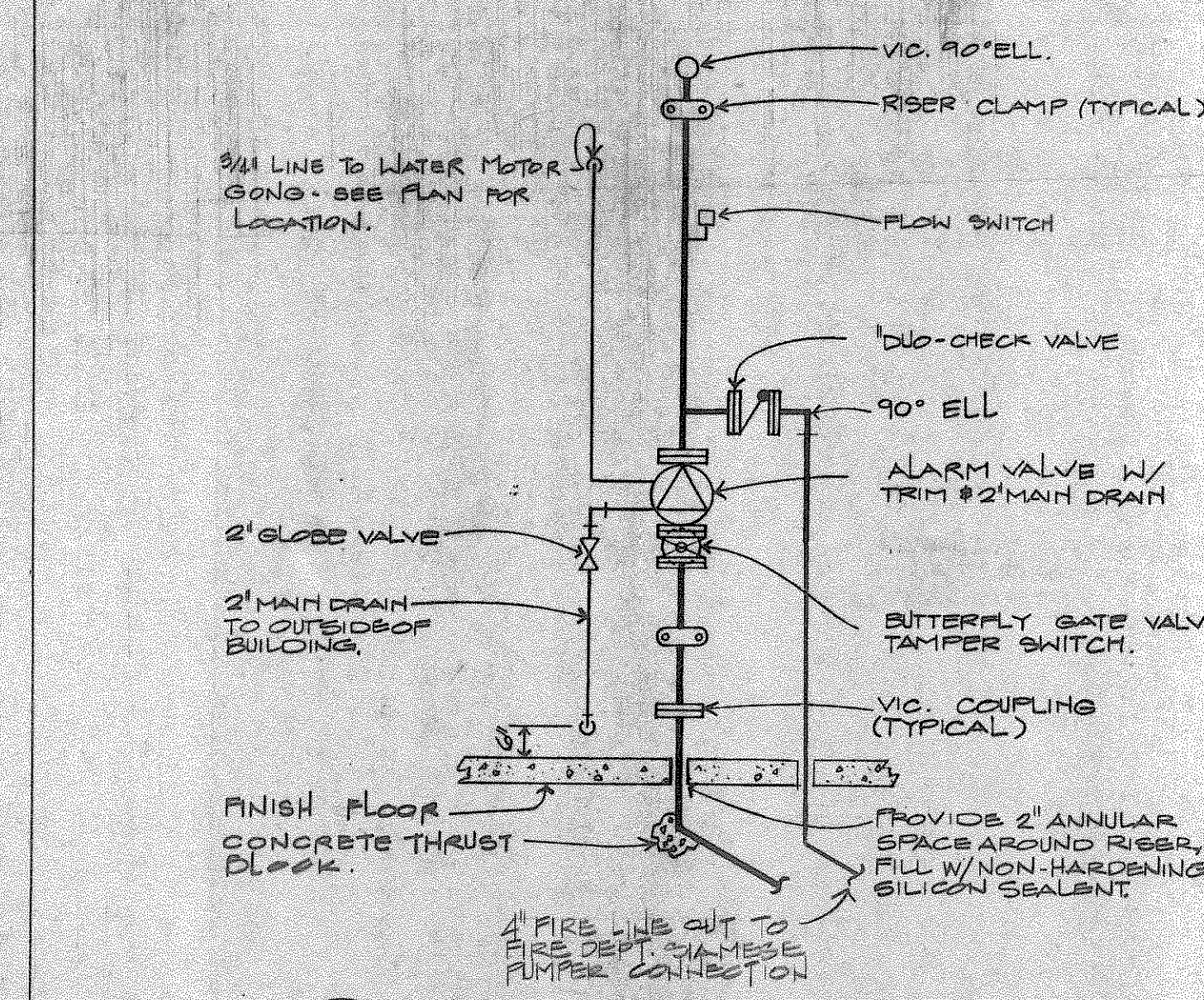
7 2-WAY SURFACE CLEANOUT NO SCALE



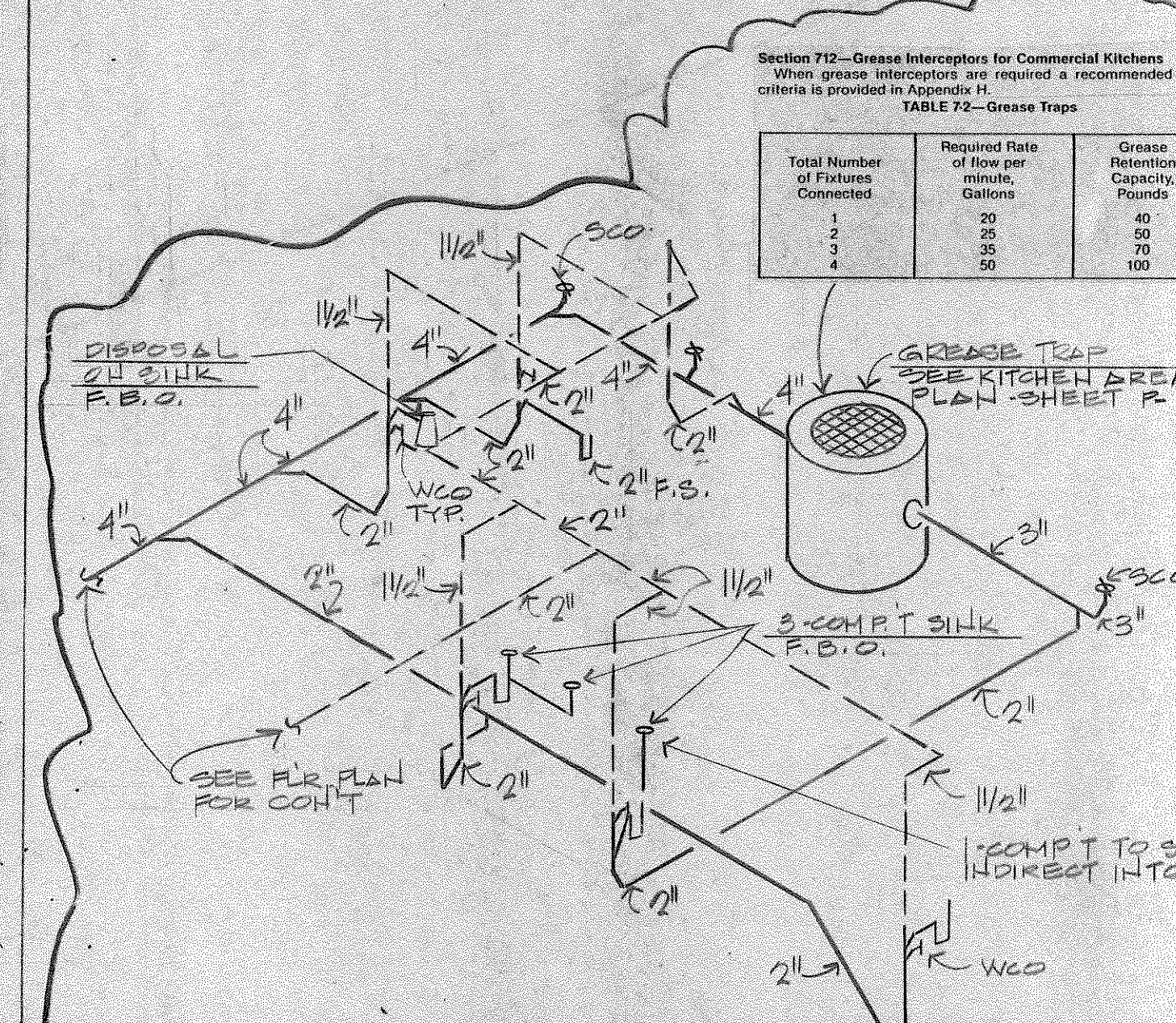
8 VENT FLASHING NO SCALE



9 CLOTHES WASHER CONN. DETAIL NO SCALE



10 FIRE RISER NO SCALE



11 WASTE AND VENT SCHEMATIC KITCHEN AREA NO SCALE

WATER CALCULATIONS FOR LAKE HAVASU POLICE HEADQUARTERS BUILDING (SUPPORT BUILDING)  
UTILITY COMPANY: CITY OF LAKE HAVASU  
LOCATION: MCCULLOUGH DRIVE AND INLET DRIVE  
STATIC PRESSURE: 75 PSI

75.00 PSI PRESSURE IN MAIN  
20.00 PSI PRESSURE REQUIRED AT FURTHEST FIXTURE  
55.00 PSI SUBTOTAL  
2.00 PSI PRESSURE DROP THRU METER (3" WATER METER SHOWN ON CIVIL DRAWINGS)

48.00 PSI SUBTOTAL  
19.35 PSI DROP FOR ELEVATION  
28.65 PSI ALLOWABLE FOR PIPE FRICTION  
TOTAL DEVELOPED LENGTH OF C.W. SYSTEM = 565'  
EQUIVALENT FEET OF PIPE ALLOWED FOR TEES, ELBOW, FITTINGS, ETC. = 180'

TOTAL LENGTH OF WATER SYSTEM = 753'  
ALLOWABLE FRICTION LOSS (28.65 / 2865) = 0.01 PSI LOSS PER 100'

24 WATER CLOSETS (FV)	X 10 F.U.	= 240 F.U.
24 WATER CLOSETS/LAV (FV)	X 10 F.U.	= 240 F.U.
8 URINALS	X 5 F.U.	= 40 F.U.
30 LAVATORIES	X 2 F.U.	= 60 F.U.
17 SINKS	X 4 F.U.	= 68 F.U.
15 SHOWERS	X 2 F.U.	= 30 F.U.
4 DRINKING FOUNTAINS (ELECTRIC)	X 2 F.U.	= 8 F.U.
7 SERVICE SINKS	X 4 F.U.	= 28 F.U.
1 3-COMPT SINK	X 4 F.U.	= 4 F.U.
1 PRE-RINSE	X 2 F.U.	= 2 F.U.
1 ICE MAKER	X 1 F.U.	= 1 F.U.
1 COFFEE URN	X 1 F.U.	= 1 F.U.
1 CLOTHES WASHER	X 2 F.U.	= 2 F.U.
14 HOSE BIBBS	X 5 F.U.	= 70 F.U.
		777 F.U. = 180 GPM

WATER CALCULATIONS FOR LAKE HAVASU POLICE HEADQUARTERS BUILDING (SUPPORT BUILDING)  
UTILITY COMPANY: CITY OF LAKE HAVASU  
LOCATION: MCCULLOUGH DRIVE AND INLET DRIVE  
STATIC PRESSURE: 75 PSI

75.00 PSI PRESSURE IN MAIN  
20.00 PSI PRESSURE REQUIRED AT FURTHEST FIXTURE  
55.00 PSI SUBTOTAL  
2.00 PSI PRESSURE DROP THRU METER (2" WATER METER SHOWN ON CIVIL DRAWINGS)

52.10 PSI SUBTOTAL  
6.50 PSI DROP FOR ELEVATION  
45.60 PSI ALLOWABLE FOR PIPE FRICTION  
TOTAL DEVELOPED LENGTH OF C.W. SYSTEM = 317'  
EQUIVALENT FEET OF PIPE ALLOWED FOR TEES, ELBOW, FITTINGS, ETC. = 106'

TOTAL LENGTH OF WATER SYSTEM = 423'  
ALLOWABLE FRICTION LOSS (45.60 / 423) = 0.107 PSI LOSS PER 100'

1 WATER CLOSET (FV)	X 10 F.U.	= 10 F.U.
1 LAVATORY	X 2 F.U.	= 2 F.U.
1 SINK	X 4 F.U.	= 4 F.U.
5 HOSE BIBBS	X 5 F.U.	= 25 F.U.
1 HOSE REEL	X 2 F.U.	= 2 F.U.
MECH. MAKE-UP CONNECTIONS		= 14 F.U.
TOTAL		57 F.U. = 54 GPM





