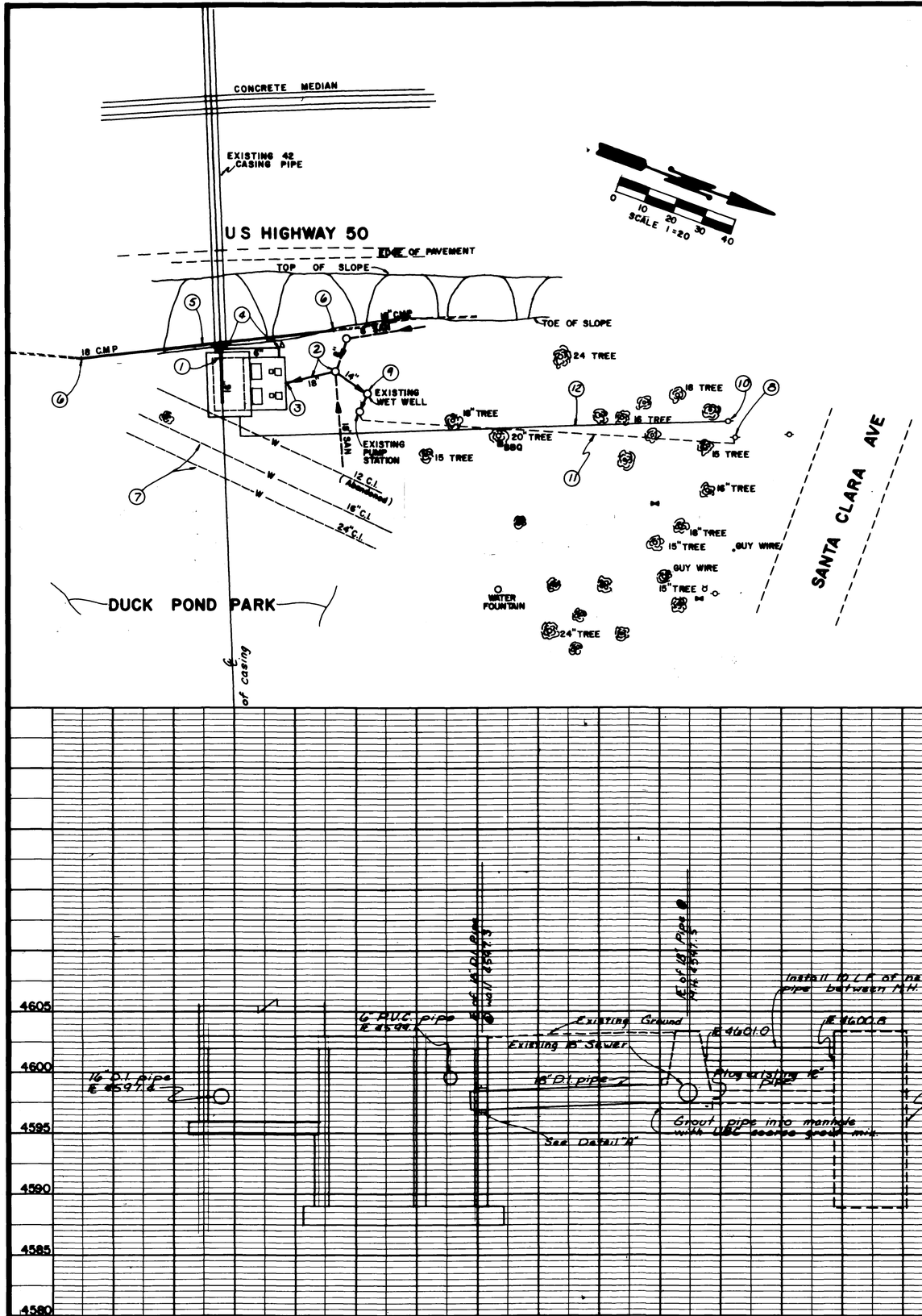
CITY OF GRAND JUNCTION
ORCHARD MESA SEWAGE PUMP STATION

INDEX

DEPARTMENT OF PUBLIC WORKS & UTILITIES

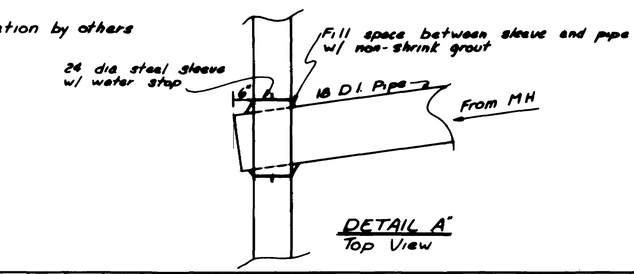
ENGINEERING DIVISION

02036701.tif



General Notes

1. Locate outside face of west wall approx 4' from end of 42" casing pipe
2. Install 17 of 18" ductile iron pipe as shown on profile below Grout pipe into existing manhole and construct overflow into existing wet well as shown on profile
3. Furnish and install 24" dia sleeve for 18 D.I. pipe through wall See Detail A this sheet
4. Extend 16" D.I. pipe and 6" PVC pipe from end of casing to pump station Install 2 90° elbows and thrust blocks on 6" PVC pipe as shown
5. Install 57.3 feet of 18 C.M.P. between ends of existing pipes as shown
6. Connect new pipe to existing w/dimple bands & rubber gaskets
7. Do not damage or expose 16" and 24" water lines
8. Existing power pole with disconnect switch
9. Existing pump station will remain in operation and shall be kept accessible throughout construction
10. Power pole meter & switch for new pump station by others
11. Existing conduit and power line
12. Conduit & power line for new pump station by others



DETAIL A
Top View

The following materials will be furnished by the CITY and shall be installed by the CONTRACTOR

	ITEM	QUANTITY	LOCATION
1.	FLYGT model CP-3152 submersible sewage pumps W/20 HP motors (Pumps will be wired by others)	2 each	City shops motor treatment plant
2.	HYDR-O-MATIC model 3461 submersible sewage pumps W/20 HP motors (Pumps will be wired by others)	2 each	
3.	Pump guide rails, guide rail bracket assembly, cable holder assembly, pump lifting chain, anchor bolts and other pump mounting hardware	6 sets	
4.	Metal frames with access covers for openings to pump chambers, valve chamber and valve vault	6 each	
5.	36"x36" Waterman model G.S-3-3-20-P heavy duty cast iron plate gates complete with frames, stems, guide lifts and assembly hardware	2 each	
6.	W6"x12"x11' long steel mounting beam for control building	1 each	
7.	Lockset for Control building door (Authorized by City Council)	1 each	
8.	PIPE		
	16" dia corrugated aluminum pipe	40 L.F.	
	16" dia ductile iron pipe	15 L.F.	
	16" dia. ductile iron pipe	18 L.F.	
	16" dia. ductile iron pipe	18 L.F.	
	8" dia ductile iron pipe	36 L.F.	Grand Junction Pipe Co.
	6" PVC Pipe	20 L.F.	
	1½" Sch. 40 galv. Steel pipe	20 L.F.	

	ITEM	QUANTITY	LOCATION
9.	FITTINGS		
	6"x8 Reducer sleeve	2 each	Grand Junction Pipe Co.
	8"-90° Flanged elbow	6 each	
	16"-90° Flanged elbow	2 each	
	8"-8" M.J. x Flanged Tee	2 each	
	16"-8" M.J. x Flanged Tee	2 each	
	16" M.J. restraining gland	3 each	
	16" M.J. plug	1 each	
	8" thin flange adapters	20 each	
	16"-90° galv. sheet elbows	12 each	
	16" Galv. sheet ends	2 each	
10.	VALVES		
	8" FLYGT built valves	2 each	City shops Water treatment plant
	8" APCO rubber flapper swing check valves	2 each	
	8" DeZurik eccentric plug valves	2 each	
11.	All pump controls and other electrical equipment will be furnished, installed and wired by others.		
12.	All building materials specified on the plans or in the specifications shall be furnished by the contractor.		
13.	All materials, labor, equipment and tools will be paid for by the contractor with the pump station bid in the bid Schedule.		

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY D.A. DATE 6-81
CHECKED BY DATE
APPROVED BY J.D.H. DATE 6-81
FIELD BOOK NO. 11 PAGE 138-139

SCALE — PLAN HORIZ. 1"=20' — PROFILE HORIZ. 1"=5' VERT. 1"=5'

DEPARTMENT OF PUBLIC WORKS AND UTILITIES
ENGINEERING DIVISION
CITY OF GRAND JUNCTION, COLORADO

ORCHARD MESA SEWAGE PUMP STATION
CONSTRUCTION PLAN & PROFILE

SHEET NO. 2
OF
FILE NO.

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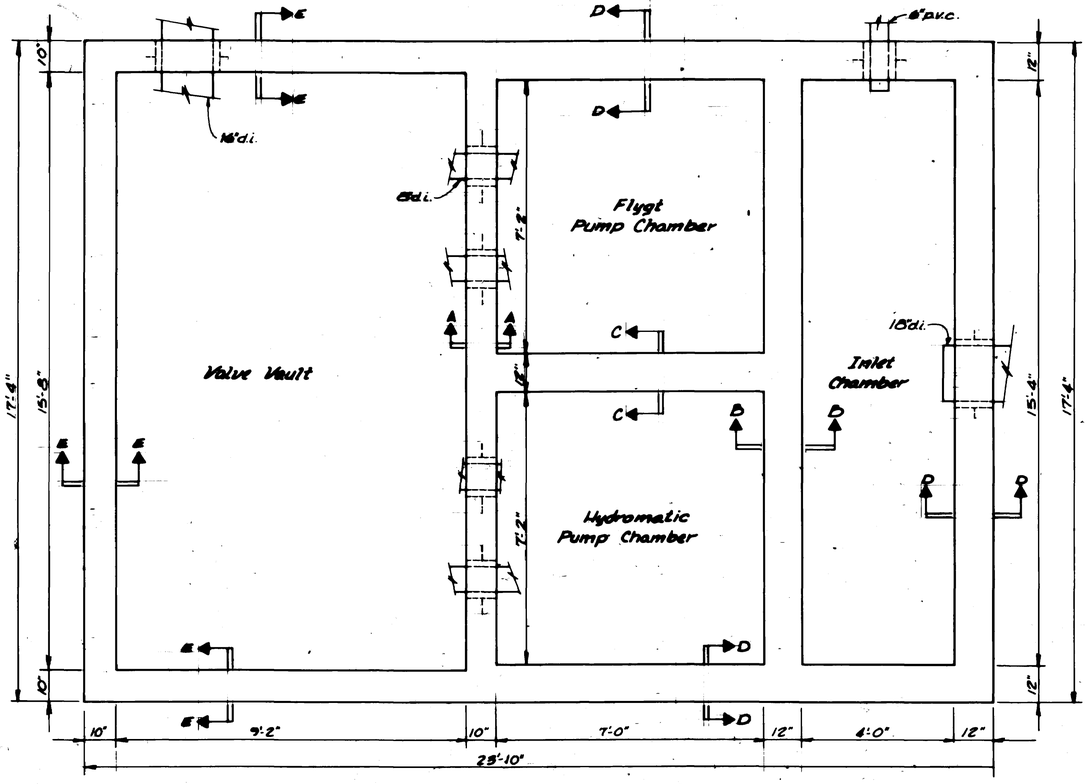
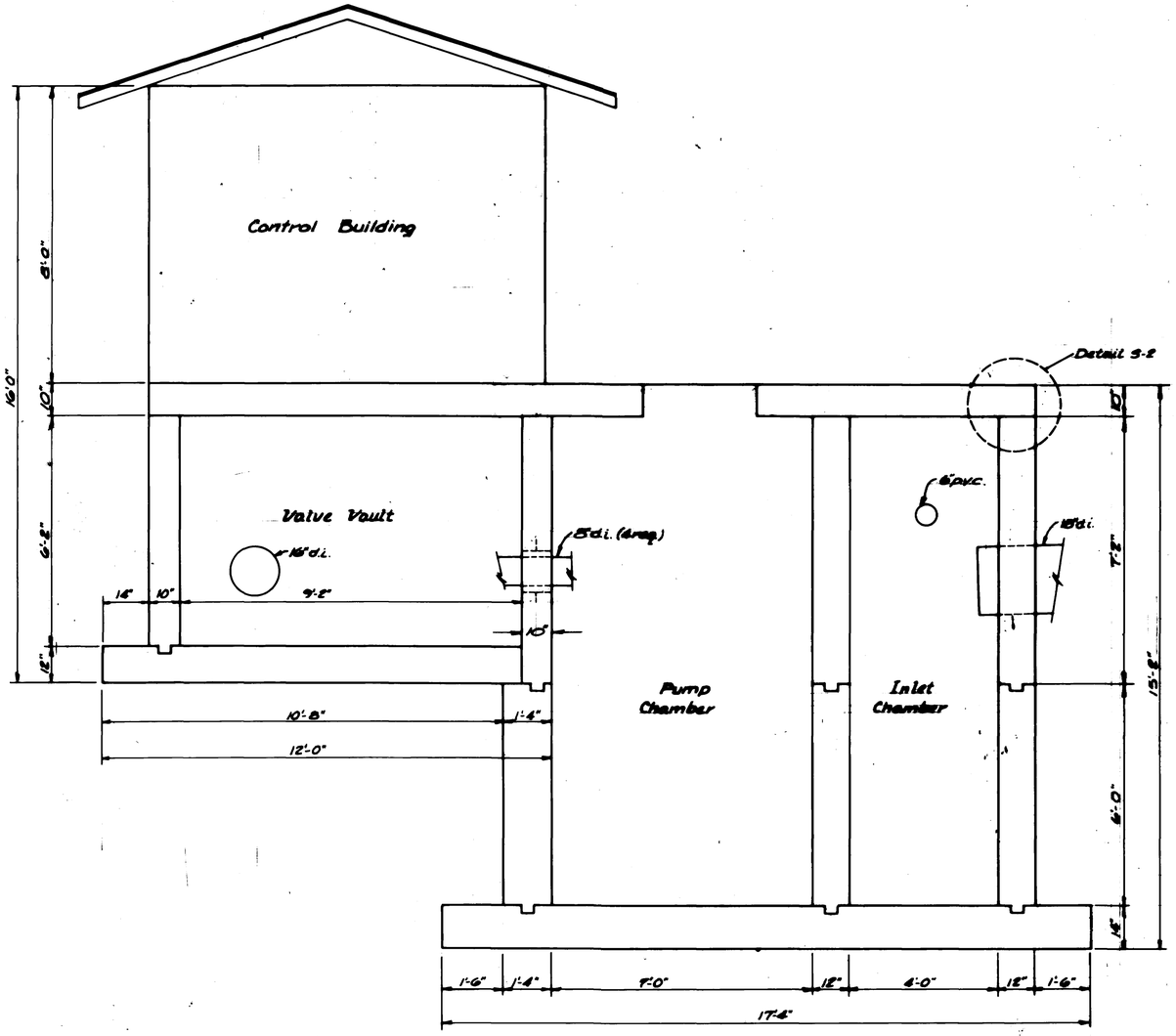
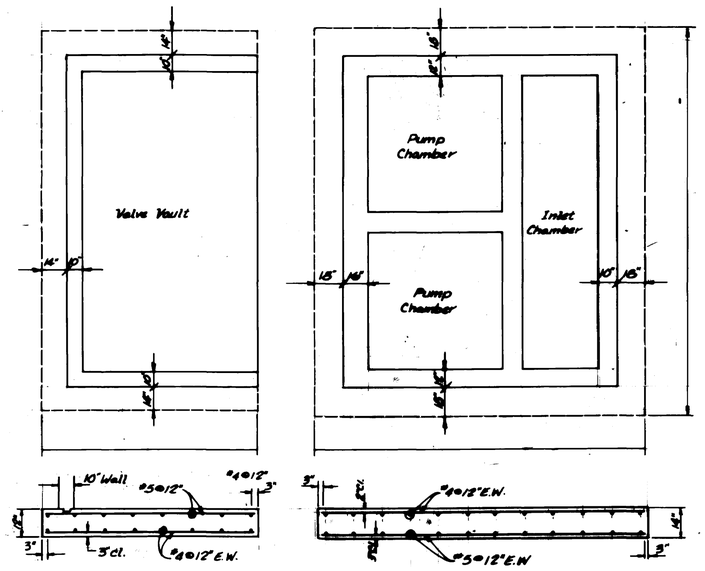


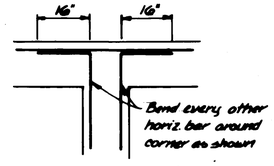




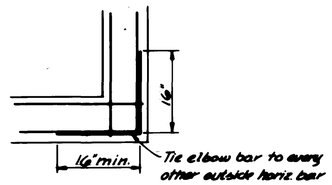
VALVE VAULT SLAB

PUMP STATION SLAB

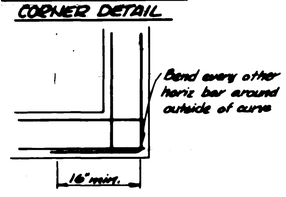
ALTERNATE TEE WALL DETAIL



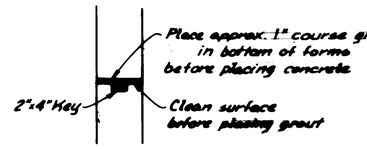
TYPICAL TEE WALL DETAIL



ALTERNATE WALL CORNER DETAIL



TYPICAL WALL CORNER DETAIL



WALL CONSTRUCTION JOINT

CONCRETE

1. Minimum compressive strength of all concrete shall be 4000 p.s.i. in 45 days.
2. Cement shall be Type II or modified Type II Portland Cement with <5% tricalcium aluminate.
3. 4" maximum allowable slump @ concrete delivery.
4. Concrete shall contain 6% air ± 1%.
5. Total estimated concrete quantity ——— 81 cu. yd.

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY Leslie DATE 6-81
CHECKED BY ____ DATE ____
APPROVED BY J.D.N DATE 6-81
FIELD BOOK NO. ____ PAGE ____

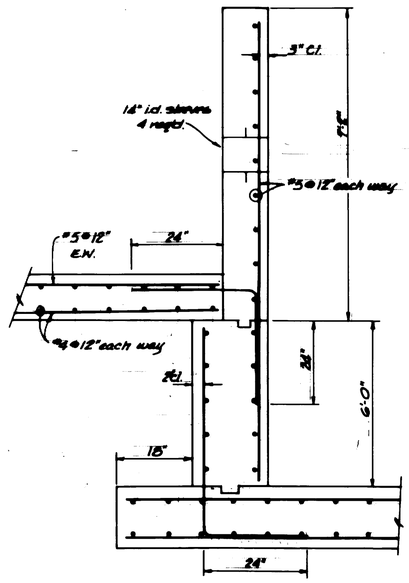
SCALE
PLAN HORIZ. 1/8"=1'
PROFILE HORIZ. ____ VERT. ____

DEPARTMENT OF PUBLIC WORKS AND UTILITIES
ENGINEERING DIVISION
CITY OF GRAND JUNCTION, COLORADO

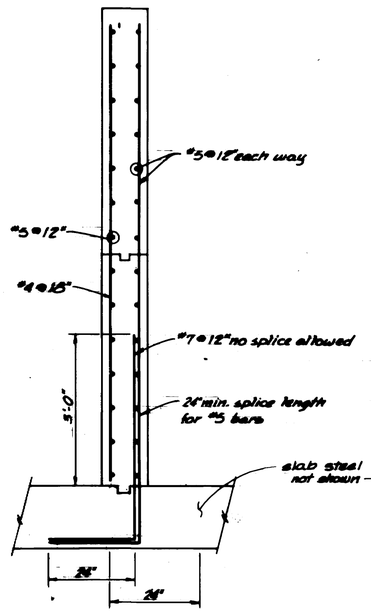
ORCHARD MESA SEWAGE PUMP STATION
REINFORCED CONCRETE DETAILS

SHEET NO. 3
OF ____
FILE NO.

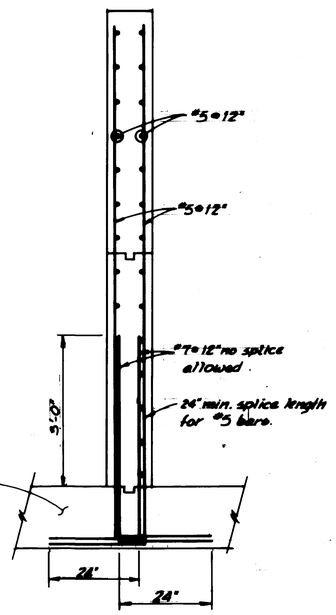
02036703.tif



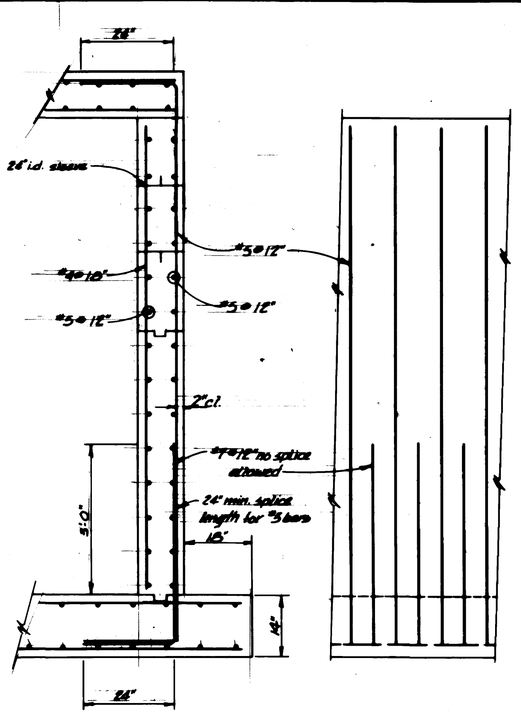
SECTION A-A



SECTION B-B



SECTION C-C

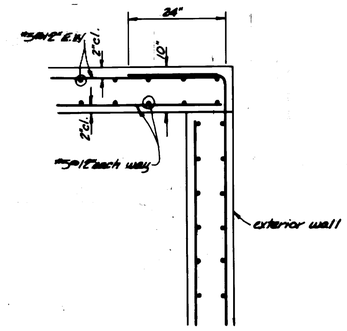


SECTION D-D

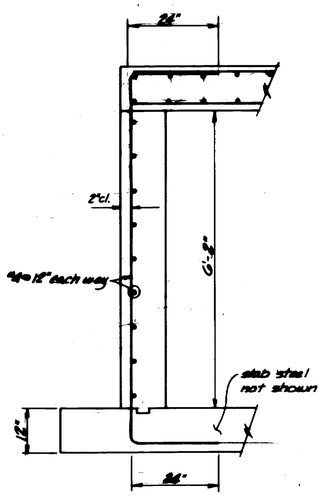
REINFORCING STEEL

Reinforcement Location	Minimum Lap Splice Lengths #4 and #5 bars
Horizontal steel in walls	16"
All other reinforcement	24"

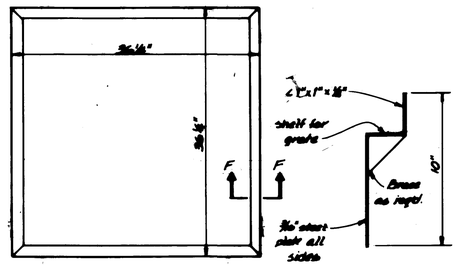
1. Location of all lap splice shall be approved by the engineer.
2. Lap splices in slabs shall be staggered every other bar.
3. All reinforcing steel shall be properly placed and securely tied to prevent movement when concrete is placed.
4. All reinforcing steel shall be Grade 60 (f_y = 60,000 p.s.i.) conforming to AASHTO M-31.
5. Provide 2" concrete cover for all reinforcing steel except that bottom steel in foundation slabs shall have 3".



DETAIL 3-2

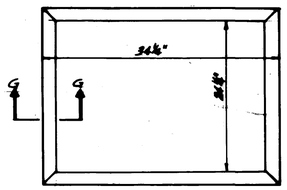


SECTION E-E

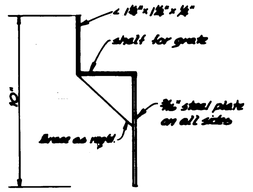


VALVE VAULT OPENINGS (2 REQ)

SECTION F-F

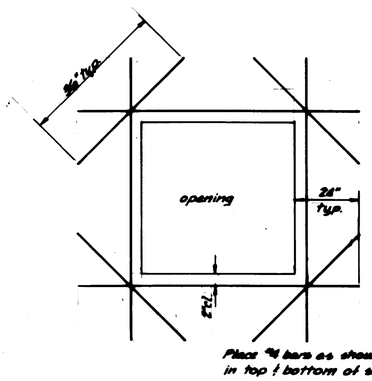


OPENINGS TO INLET CHAMBER (2 REQ)



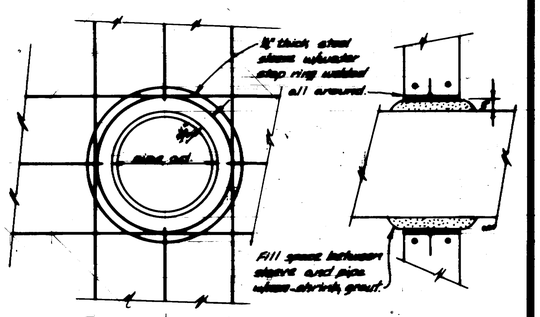
SECTION G-G

STEEL FRAMES FOR FLOOR GRATES FURNISHED BY CITY

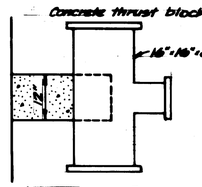


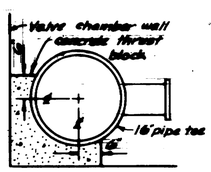
Place #4 bars as shown in top & bottom of slab

TYPICAL OPENING IN SLAB

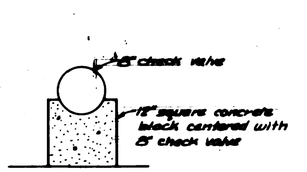


WALL SLEEVE & REINFORCEMENT DETAIL





SUPPORT & THRUST BLOCK FOR 16"x16"x6" TEES



CHECK VALVE SUPPORT BLOCK

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY Lawley DATE 6-81
CHECKED BY DATE
APPROVED BY JDA DATE 6-81
FIELD BOOK NO. PAGE

SCALE: PLAN HORIZ. NONE VERT. PROFILE HORIZ. VERT.

DEPARTMENT OF PUBLIC WORKS AND UTILITIES
ENGINEERING DIVISION
CITY OF GRAND JUNCTION, COLORADO

ORCHARD MESA SEWAGE PUMP STATION
REINFORCED CONCRETE DETAILS

SHEET NO. 4 OF FILE NO.

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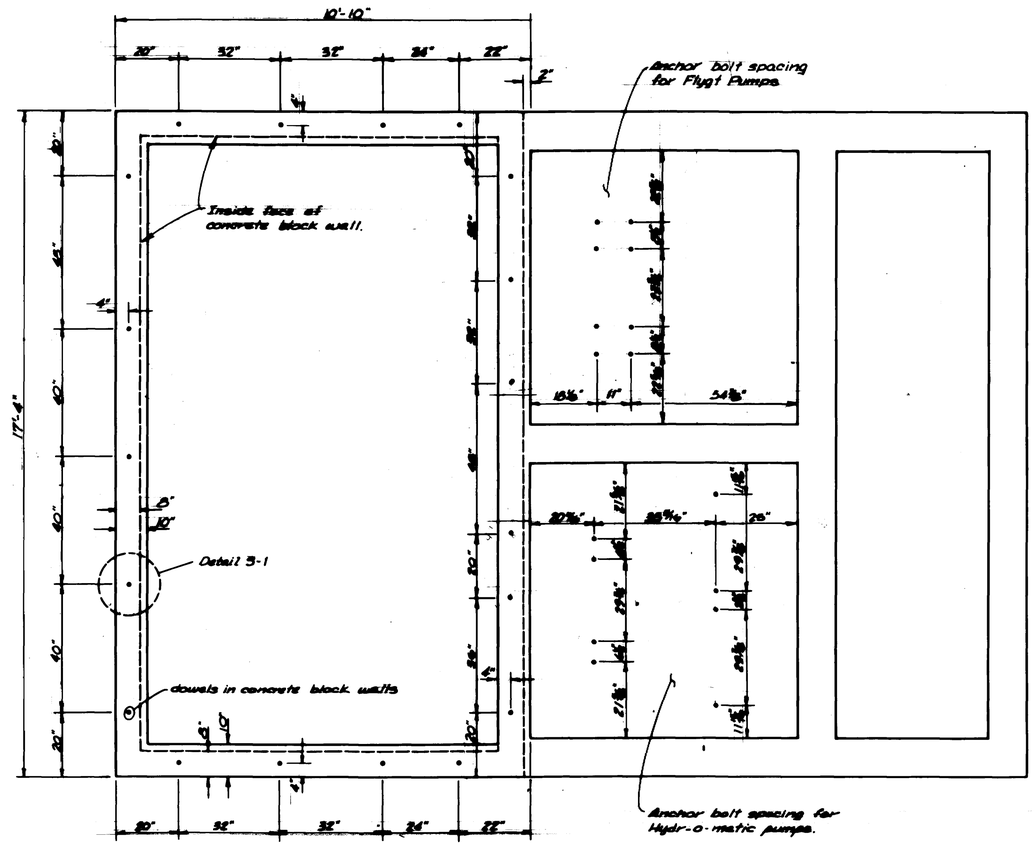
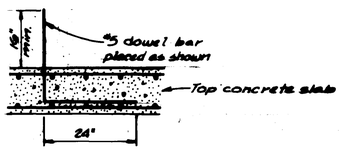
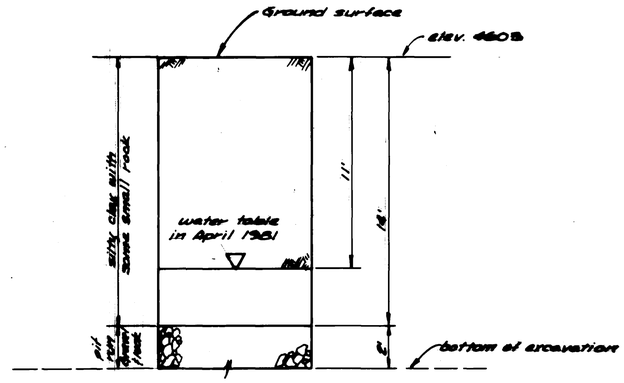


DOWEL & ANCHOR BOLT PLACEMENT DETAIL



DETAIL S-1



TEST HOLE EXCAVATED AT PROPOSED PUMP STATION LOCATION IN APRIL, 1981
(for information only)

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY Lesley DATE 6-81
CHECKED BY ____ DATE ____
APPROVED BY JDN DATE 6-81
FIELD BOOK NO. ____ PAGE ____

SCALE
PLAN HORIZ. NONE
PROFILE HORIZ. ____ VERT. ____

DEPARTMENT OF PUBLIC WORKS AND UTILITIES
ENGINEERING DIVISION
CITY OF GRAND JUNCTION, COLORADO

ORCHARD MESA SEWAGE PUMP STATION
ANCHOR BOLTS, DOWELS & SOIL TEST HOLE

SHEET NO. 6
OF ____
FILE NO.

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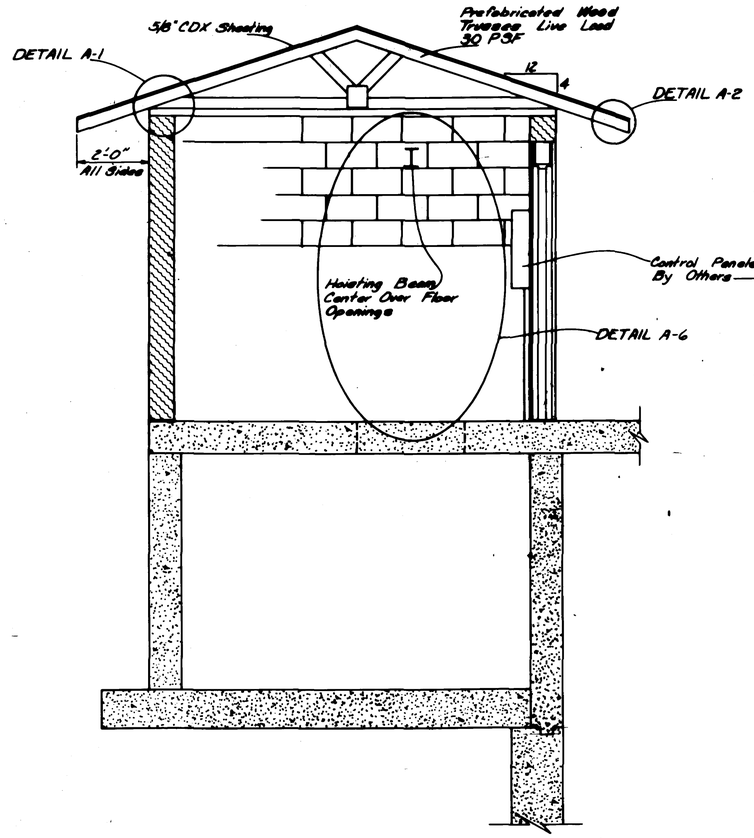
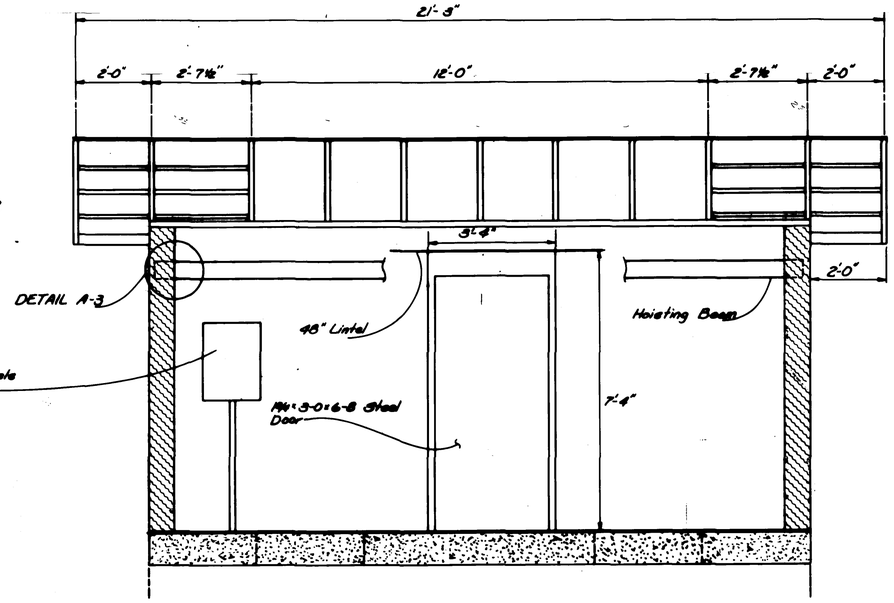
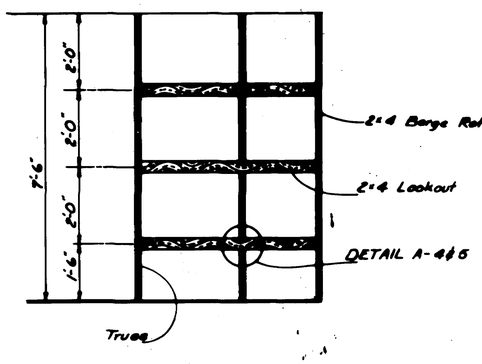


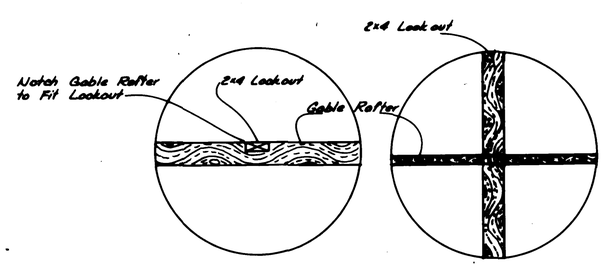




ROOF END FRAMING

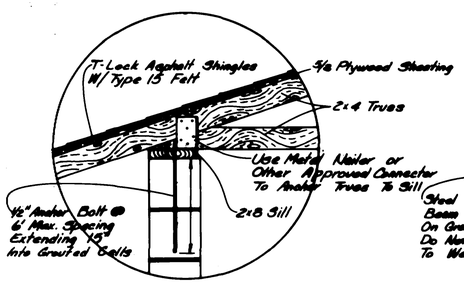
NOTE:

All Building Materials Shall Be Of The Highest Quality Available



DETAIL A-4

DETAIL A-5



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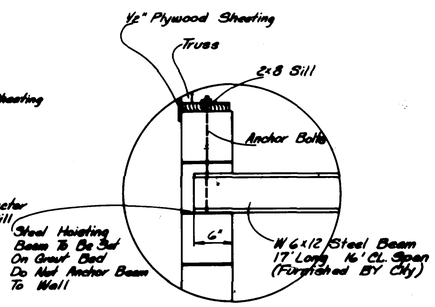

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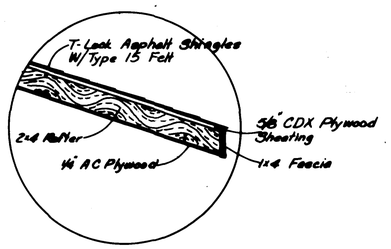

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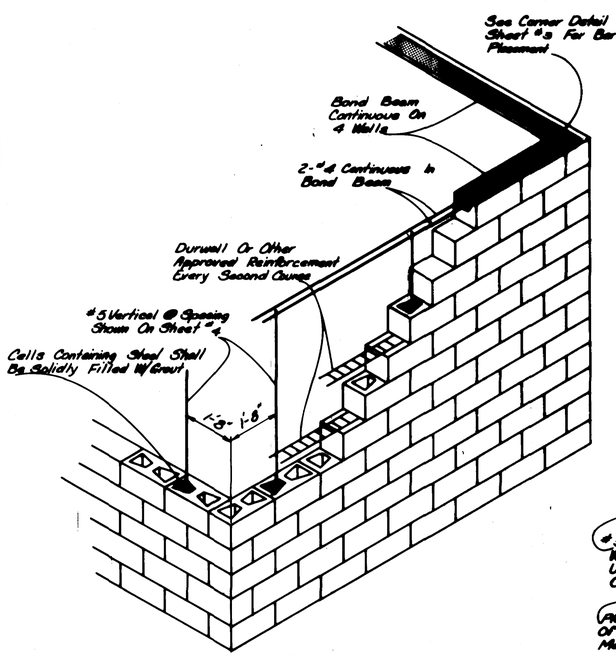
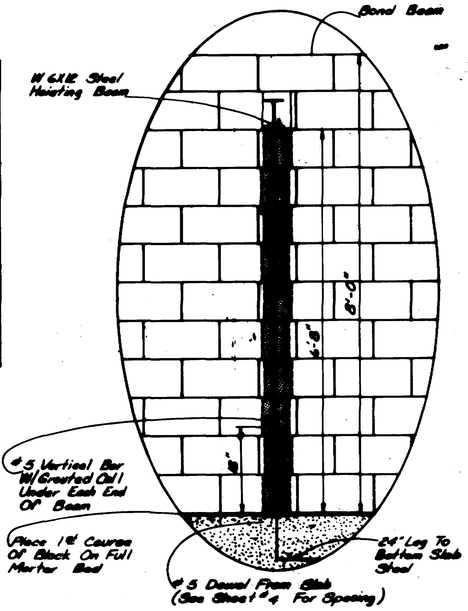


BLOCK REINFORCEMENT



DETAIL A-6

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY Luther Martin DATE 6-81
CHECKED BY _____ DATE _____
APPROVED BY J.D.H. DATE 6-81
FIELD BOOK NO. _____ PAGE _____

SCALE
PLAN HORIZ. _____
PROFILE HORIZ. _____ VERT. _____

DEPARTMENT OF PUBLIC WORKS AND UTILITIES
ENGINEERING DIVISION
CITY OF GRAND JUNCTION, COLORADO

ORCHARD MESA SEWAGE PUMP STATION
CONTROL BUILDING DETAILS

SHEET NO. 4
OF _____
FILE NO.

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16" Force Main Pipe To West Side Highway 50

To 42" Casing Pipe

Concrete Thrust Block

6" PVC Pipe

8" HDL Ball Check Valves

FLYGT PUMPS

8" De Zurik Plug Valves 4 Each

3/4" Ø Threaded Rod w/ Turnbuckle Every Other Hole (6 Req'd. NOT FURNISHED)

8" APCO Check Valves

HYDR O-MATIC PUMPS

SLOPE

SLOPE

To MH.

Slope Floor As Shown Adjacent Profile

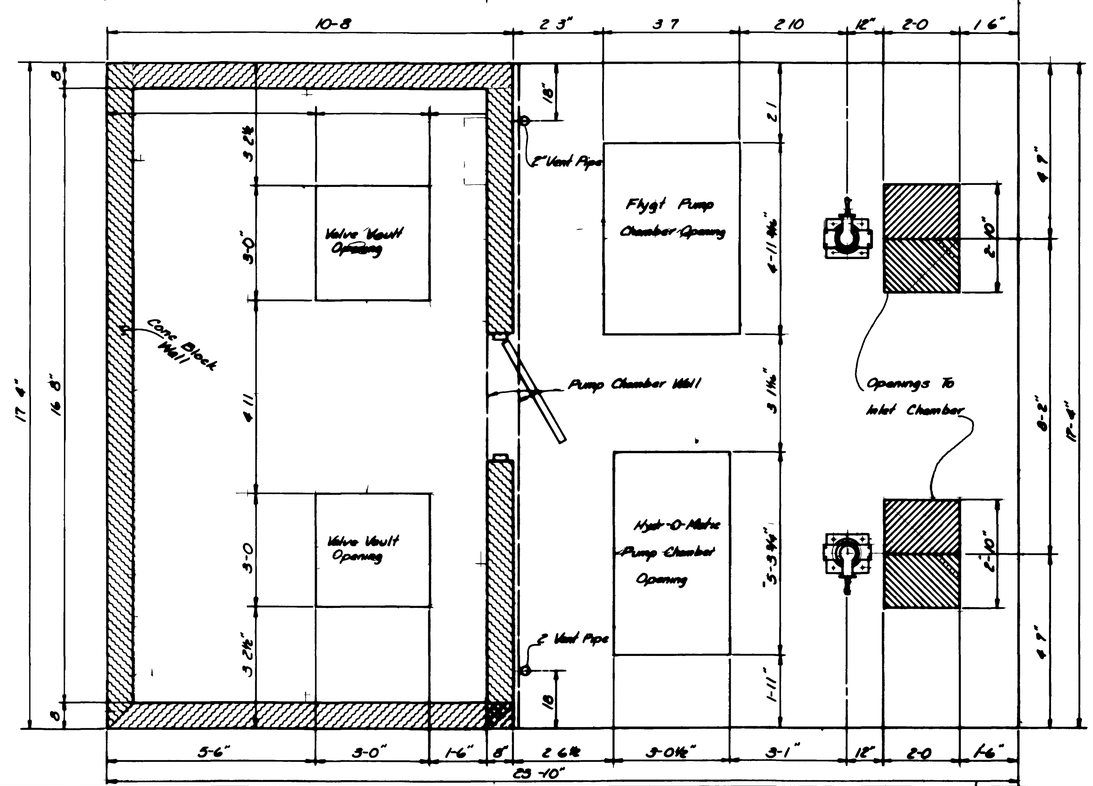
16" MJ Plug

16" MJ x FL Tee

16" x 16" x 8" MJ x FL Tee

16" Spool

16" x 16" x 8" MJ x FL Tee



12:18 Attic Vent, 1 In Each End

2" I.D. Galvanized Steel Vent Pipe

Control Building

Pipe Support Bracket

Plastic Stem Cover

Waterman Sluice Gate Lift 2 Each

Top ELEV. 4603.

2½" Stem Sleeve

8"x16" Vent W/ Manual Louvers 4 Req'd.

14" Union

14" Galv. Steel Discharge Piping Anchor To Walls & Ceiling W/ 1"Ø x 2" Steel Straps @ 3 Max Spacing

Check Valves (4 Each)

Steel Sleeves W/"Link Seal"

8"-8 Elbow (4 Each)

6" PVC Pipe IE 4592.1

18" D.I. Pipe

Adjustable Stem Guides

14" Union

2" Slope

14" Union

12

6 Min.

1'-0 Dia. Or Square Sump

14"

20"

20

IE. of 18" Pipe 4591.50

1½ Stem

Pump Lifting Chain (4 Each)

6"-8 Reducer (2 Each)

36"x36" Waterman Sluice Gate 2 Each

16" (TYP)

12" (TYP)

Top of Foundation ELEV. 4589

Discharge Elbow 4 Each

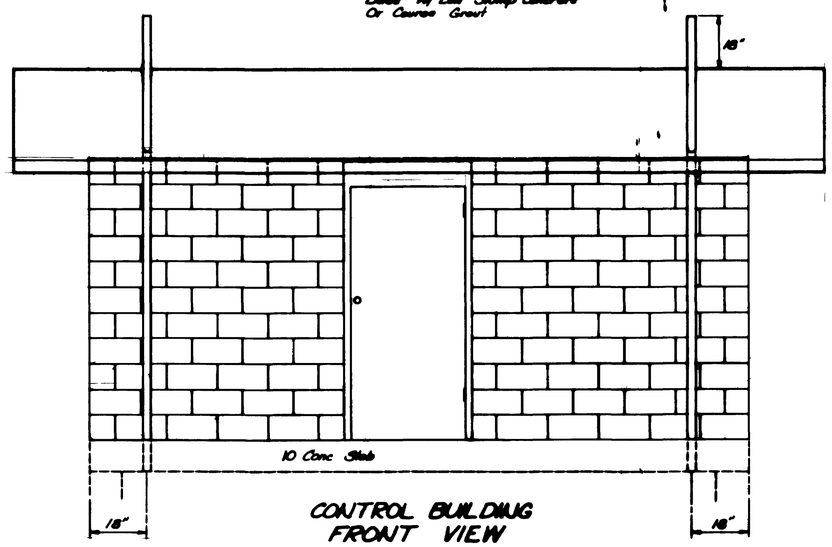
Leveling Course 4" AASHTO M- 147 A66

Slope All Sides To Pump Base W/ Low Slump Concrete Or Course Grout

Bottom of Excavation 4587.5

NOTES

1. See Sheet "E" For List Of City Furnished Materials
2. All Equipment Shall Be Installed In Accordance With The Manufacturers Instructions
3. Place Support Block Under Each 16"x16"x8" Tee And Check Valve (See Sheet "3" For Details)



CONTROL BUILDING FRONT VIEW

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY Luther Martin DATE 6-81
CHECKED BY _____ DATE _____
APPROVED BY J.D.N. DATE 6-81
FIELD BOOK NO _____ PAGE _____

SCALE
PLAN HORIZ 1/2"=1'
PROFILE HORIZ _____ VERT _____

DEPARTMENT OF PUBLIC WORKS AND UTILITIES
ENGINEERING DIVISION
CITY OF GRAND JUNCTION, COLORADO

ORCHARD MESA SEWAGE PUMP STATION
MECHANICAL DETAILS

SHEET NO. 7
OF _____
FILE NO. _____

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