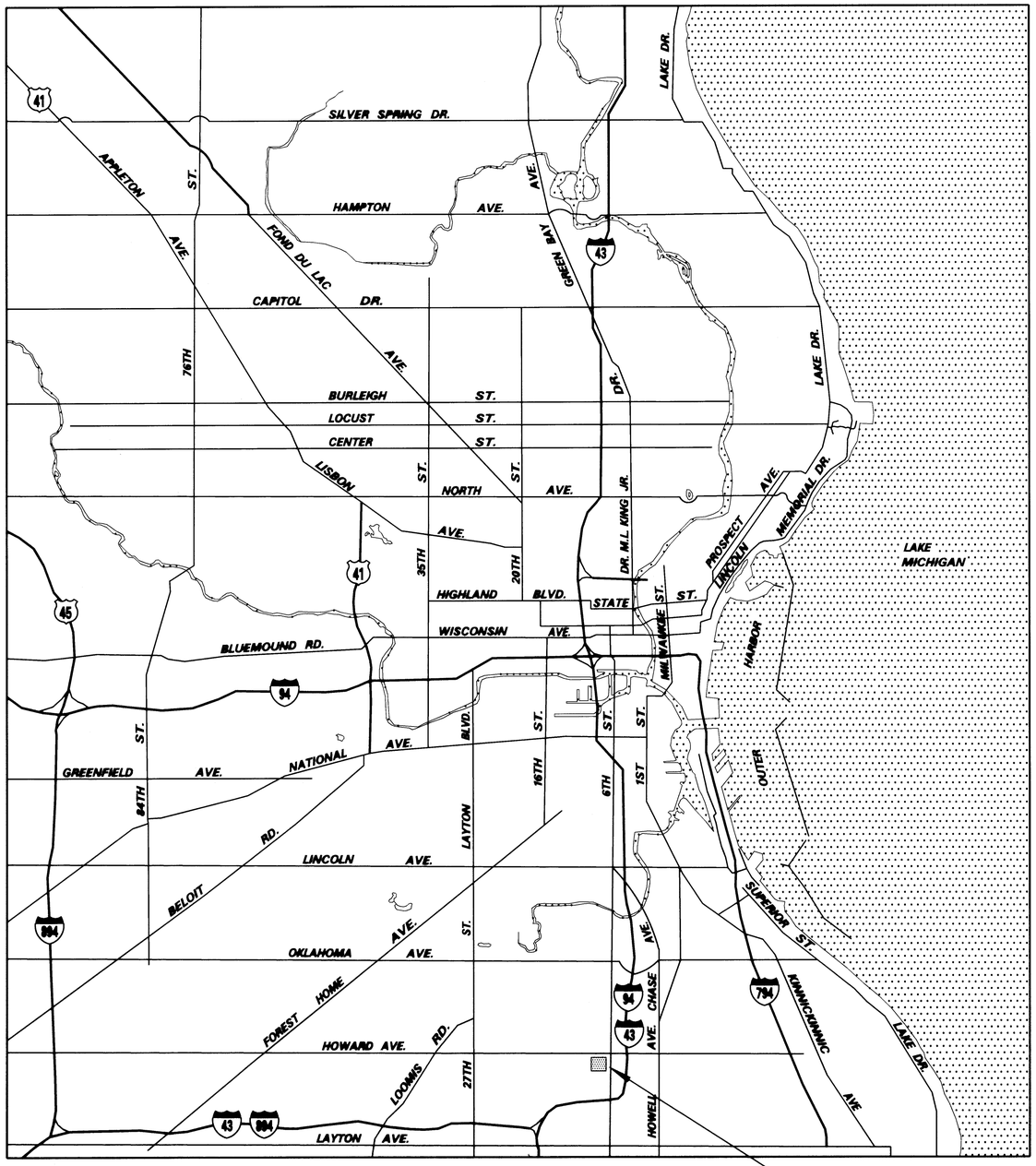
Milwaukee Water Works

HOWARD AVENUE PURIFICATION PLANT

HP-176: ADMINISTRATION BUILDING ROOF REPLACEMENT



MILWAUKEE, WISCONSIN

LOCATION MAP

HOWARD AVENUE PURIFICATION PLANT – PROJECT LOCATION

0 0.5 1.0 1.5

APPROX SCALE IN MILES

DRAWING INDEX

DRAWING NO.	TITLE
CONTRACT DRAWINGS	
HP-176-01	ADMINISTRATION BUILDING ROOF REPLACEMENT – LOCATION MAP & DRAWING INDEX
HP-176-02	ADMINISTRATION BUILDING ROOF REPLACEMENT – CANOPY AND ROOF PLAN
HP-176-03	ADMINISTRATION BUILDING ROOF REPLACEMENT – ROOF DETAILS
REFERENCE DRAWINGS	
HP-2-8	HOWARD AVENUE PURIFICATION PLANT CHEMICAL BUILDING – ROOF PLAN
HP-2-11	HOWARD AVENUE PURIFICATION PLANT CHEMICAL BUILDING – WALL SECTIONS
HP-2-12	HOWARD AVENUE PURIFICATION PLANT CHEMICAL BUILDING – ENTRANCE DETAILS
HP-2-13	HOWARD AVENUE PURIFICATION PLANT CHEMICAL BUILDING – ENTRANCE & MISCELLANEOUS DETAILS
HP-2-14	HOWARD AVENUE PURIFICATION PLANT CHEMICAL BUILDING – STAIR DETAILS C-1
HP-2-15	HOWARD AVENUE PURIFICATION PLANT CHEMICAL BUILDING – STAIR DETAILS C-2
HP-2-16	HOWARD AVENUE PURIFICATION PLANT CHEMICAL BUILDING – STAIR DETAILS C-3
HP-2-34	HOWARD AVENUE PURIFICATION PLANT CHEMICAL BUILDING – SECOND FLOOR STRUCTURAL PLAN
HP-2-35	HOWARD AVENUE PURIFICATION PLANT CHEMICAL BUILDING – ROOF STRUCTURAL PLAN
HP-2-40	HOWARD AVENUE PURIFICATION PLANT CHEMICAL BUILDING – CONCRETE SECTIONS
HP-4-9	HOWARD AVENUE PURIFICATION PLANT FILTER BUILDING – ROOF PLAN
HP-95-1	HOWARD PURIFICATION PLANT – BUILDINGS ROOF PLAN
HP-95-3	HOWARD PURIFICATION PLANT – EXISTING ROOF FLASHING DETAILS
HP-95-4	HOWARD PURIFICATION PLANT – PROPOSED ROOF FLASHING DETAILS

WISCONSIN DINAH G. GANT S-24685 MILWAUKEE, WI 11/3/10 PROFESSIONAL ENGINEER

NO.	BY	REVISION	DATE

Milwaukee Water Works — Water Engineering, Department of Public Works

HOWARD AVENUE PURIFICATION PLANT

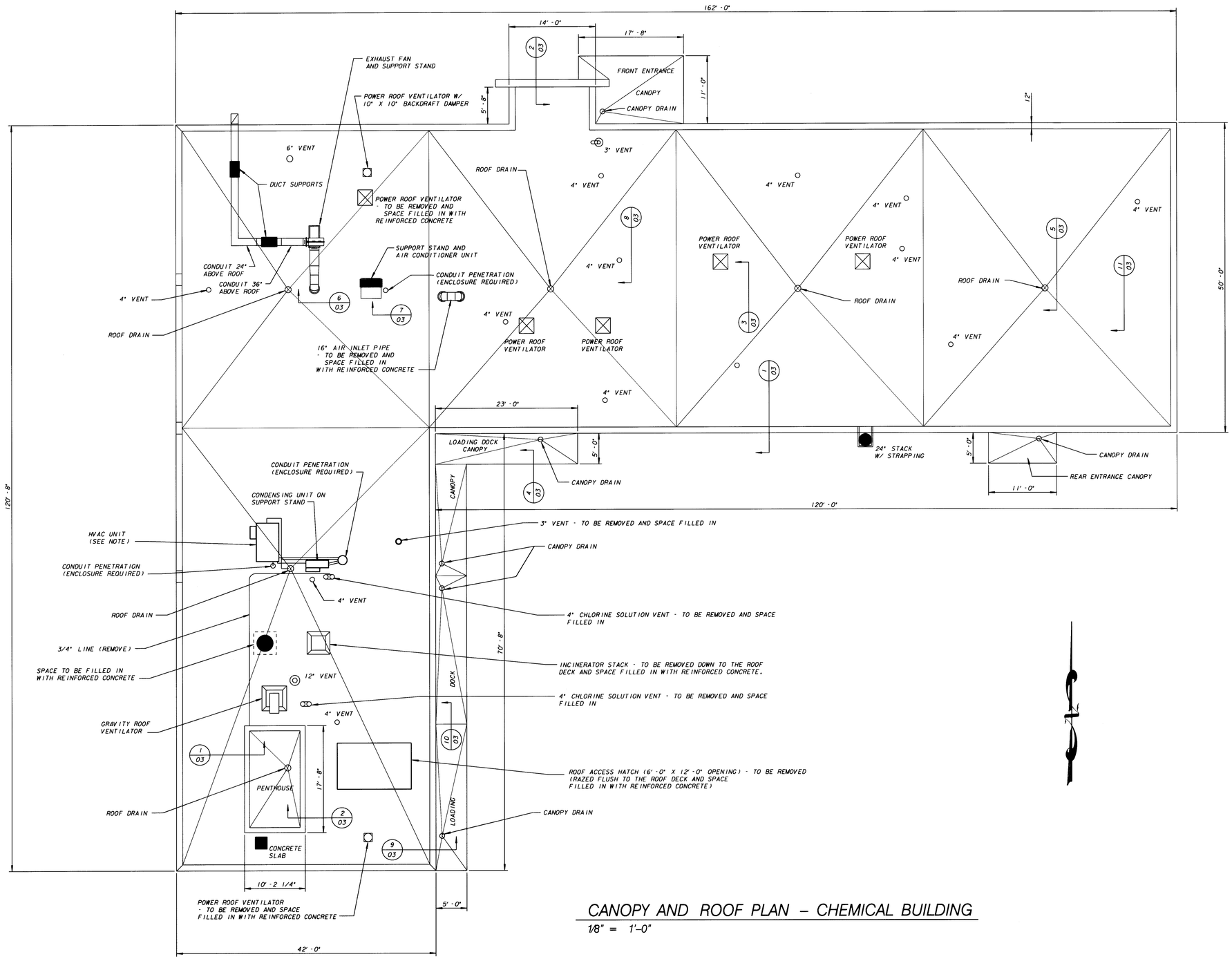
ADMINISTRATION BUILDING ROOF REPLACEMENT

LOCATION MAP & DRAWING INDEX

DESIGNED BY	P.J.G.
DRAWN BY	J.F.S.
CHECKED BY	P.J.G.
DATE	10-27-10
SCALE	AS SHOWN
WORK ORDER	WT460003100
OFFICIAL NOTICE	144-2010
FILE NO.	B-12-2

APPROVED — DATE
PLANTS PROJECT ENGINEER 11/3/10
CHIEF DESIGN ENGINEER 11/3/10
SPECIAL DEPUTY COMMISSIONER OF PUBLIC WORKS 11/3/10

DRAWING NO. HP-176-01



CANOPY AND ROOF PLAN – CHEMICAL BUILDING

1/8" = 1'-0"

NOTES:

1. REMOVE AND DISPOSE OF THE EXISTING EPDM SHEET MEMBRANE AND UNDERLYING BUILT-UP ROOFING SYSTEM, INCLUDING INSULATION, CANT STRIPS, FLASHING ETC.

2. FURNISH AND INSTALL A COMPLETE, HOT APPLIED ASPHALT BUILT-UP ROOFING SYSTEM.

3. PARAPET CAPPING (ROOF AND PENTHOUSE) TO BE REUSED - REMOVE AND REINSTALL.

4. REMOVE AND REPLACE ROOF CURBS FOR ALL ROOF VENTILATOR UNITS (6 TOTAL).

5. ALL ITEMS CALLED OUT TO BE REMOVED MUST BE RAZED FLUSH WITH THE ROOF DECK.

6. ALL DESIGNATED SPACES TO BE FILLED IN SHALL BE COMPLETED USING CONCRETE REINFORCEMENT INTEGRAL TO THE SURROUNDING ROOF DECK.

7. ENCLOSURES, WITH ASSOCIATED PLIES & FLASHING, SHALL BE CONSTRUCTED WHERE CONDUIT PROTRUDES THROUGH ROOF DECK (3 LOCATIONS).

8. HVAC UNIT TO BE LIFTED, IF NECESSARY, TO PROPERLY INSTALL PLIES & FLASHING.

9. REPAIR AND/OR REPLACE ROOF DRAIN AND CANOPY DRAIN PARTS AS NECESSARY.

NO.	BY	REVISION	DATE
△			
△			
△			

Milwaukee Water Works

Water Engineering
Department of Public Works

HOWARD AVENUE PURIFICATION PLANT

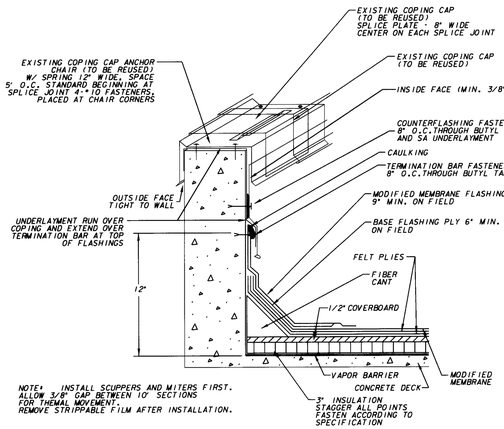
ADMINISTRATION BUILDING ROOF REPLACEMENT

CANOPY AND ROOF PLAN

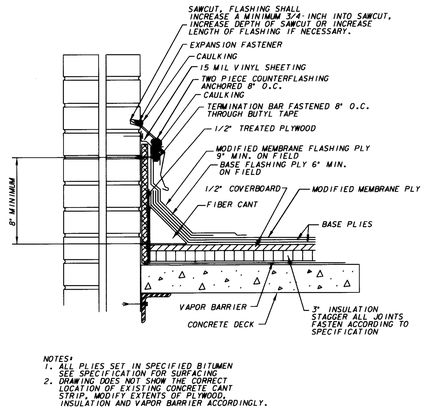
DESIGNED BY	P.J.G.
DRAWN BY	J.F.S.
CHECKED BY	P.J.G.
DATE	10-27-10
SCALE	AS SHOWN
WORK ORDER	WT456093100
OFFICIAL NOTICE	144-2010
FILE NO.	B-12-2

APPROVED — DATE
PLANTS PROJECT ENGINEER — 11/3/10
CHIEF DESIGN ENGINEER — 11/3/10
SPECIAL DEPUTY COMMISSIONER OF PUBLIC WORKS — 11/3/10

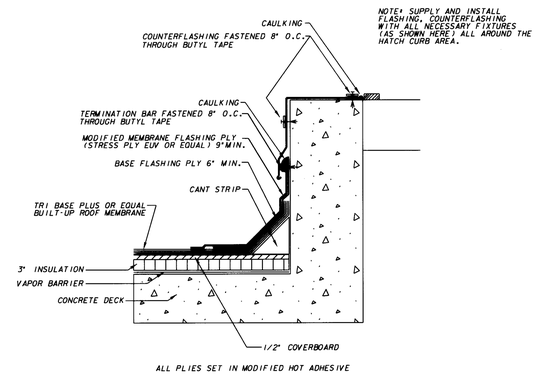
DRAWING NO. **HP-176-02**



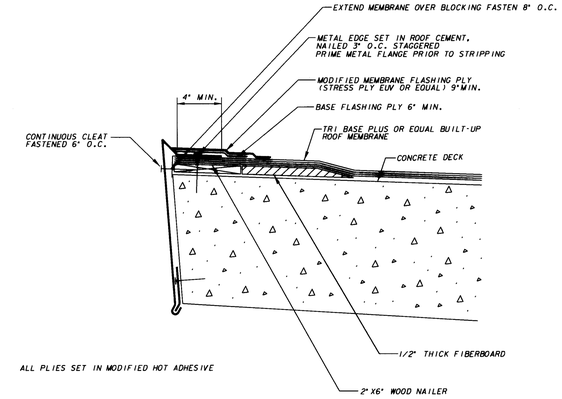
1/02 SNAP-ON COPING CAP W/SURFACE MOUNTED COUNTERFLASHING
NOT TO SCALE



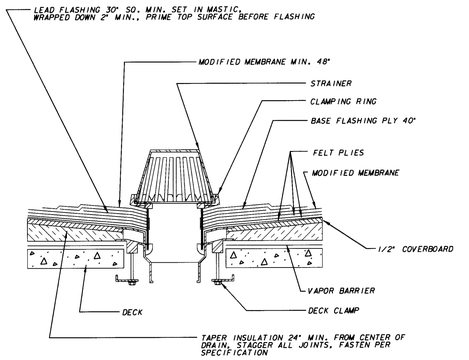
2/02 TWO PIECE REGLET MOUNTED COUNTERFLASHING - ROOF
NOT TO SCALE



3/02 CURB DETAIL
NOT TO SCALE

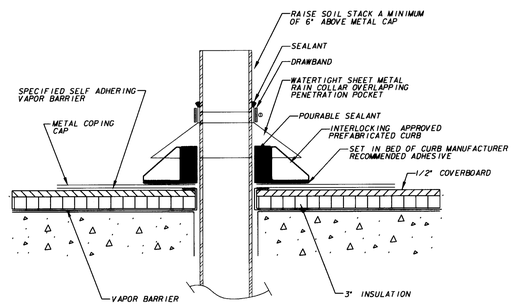


4/02 METAL EDGE SECTION - CANOPY
NOT TO SCALE

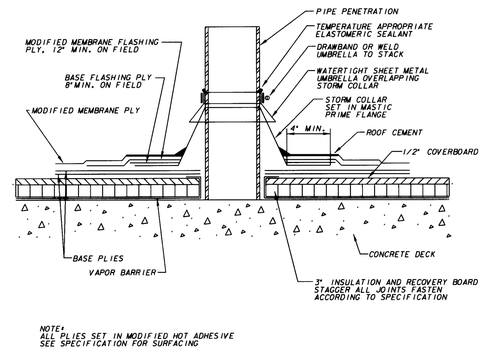


5/02 ROOF DRAIN - TYPICAL
NOT TO SCALE

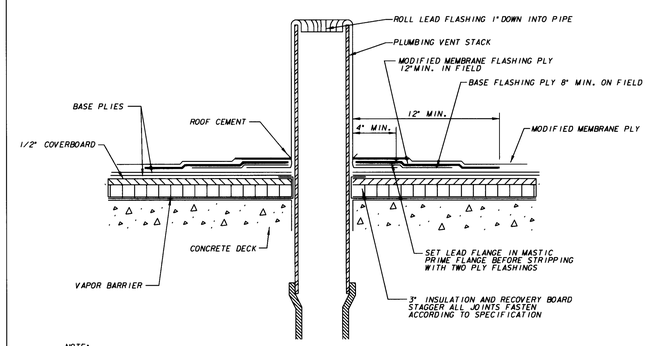
NOTE: REPAIR OR REPLACE DRAIN PARTS, AS NECESSARY.



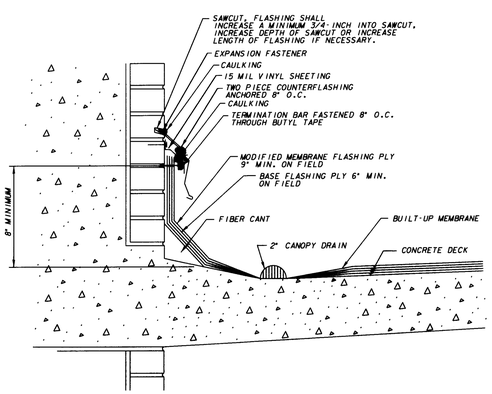
6/02 PITCH POCKET
NOT TO SCALE



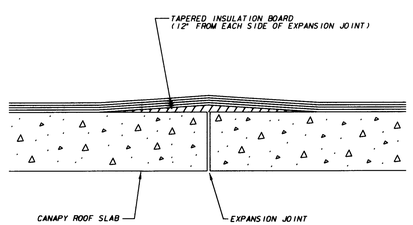
7/02 SUPPORT STAND
NOT TO SCALE



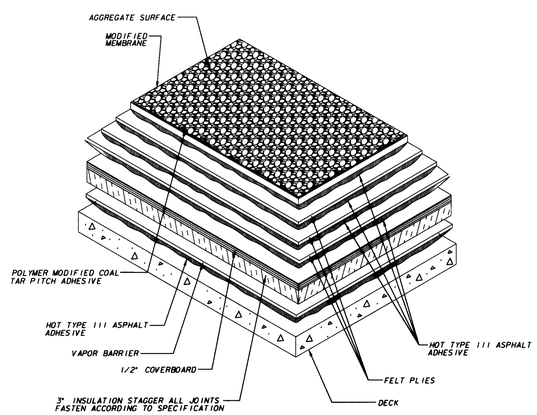
8/02 PLUMBING STACK
NOT TO SCALE



9/02 TWO PIECE REGLET MOUNTED COUNTERFLASHING - CANOPY
NOT TO SCALE



10/02 CANOPY DETAIL - EXPANSION JOINT
NOT TO SCALE



11/02 BUILT-UP ROOF - TYPICAL
NOT TO SCALE

NO.	BY	REVISION	DATE
△			
△			
△			

Milwaukee Water Works

Water Engineering
Department of Public Works

HOWARD AVENUE PURIFICATION PLANT

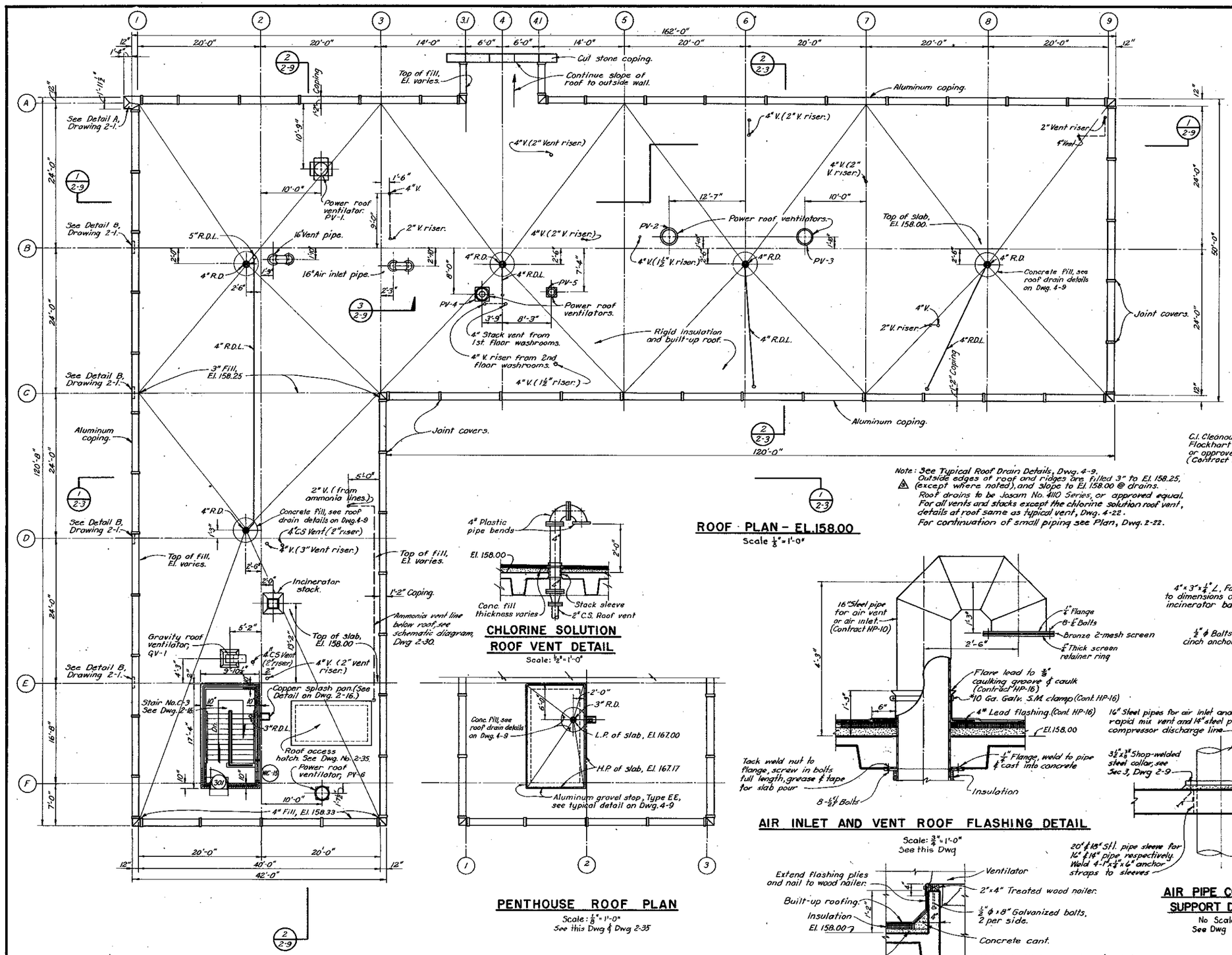
ADMINISTRATION BUILDING ROOF REPLACEMENT

ROOF DETAILS

DESIGNED BY	P.J.G.
DRAWN BY	J.F.S.
CHECKED BY	P.J.G.
DATE	10-27-2010
SCALE	AS SHOWN
WORK ORDER	WT4500093100
OFFICIAL NOTICE	144-2010
FILE NO.	B-12-2

APPROVED / DATE
PLANTS PROJECT ENGINEER 11/3/10
CHIEF DESIGN ENGINEER 11/3/10
SPECIAL DEPUTY COMMISSIONER OF PUBLIC WORKS 11/3/10

DRAWING NO. HP-176-03



ROOF PLAN – EL. 158.00

Scale $\frac{1}{8}$" = 1'-0"

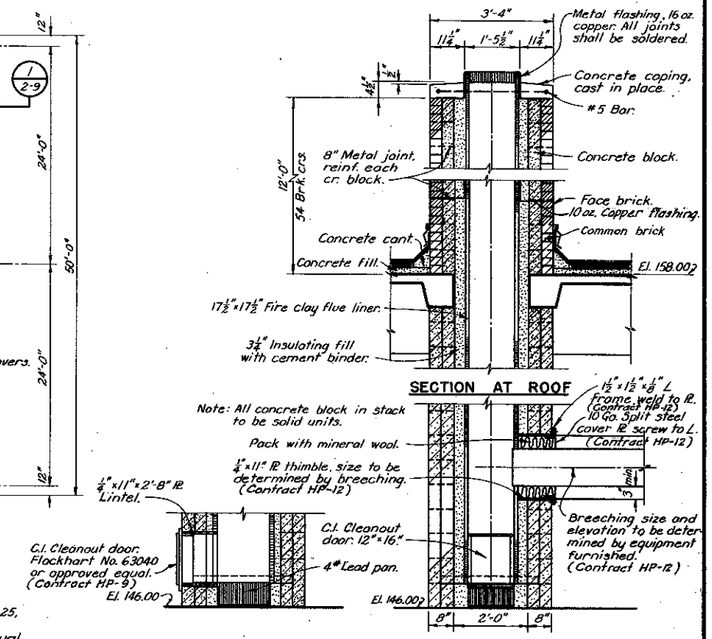
Note: See Typical Roof Drain Details, Dwg. 4-9.
Outside edges of roof and ridges are filled 3" to El. 158.25, (except where noted), and slope to El. 158.00 @ drains.
Roof drains to be Josam No. 4110 Series, or approved equal.
For all vents and stacks except the chlorine solution roof vent, details at roof same as typical vent, Dwg. 4-22.
For continuation of small piping see Plan, Dwg. 2-22.

CHLORINE SOLUTION ROOF VENT DETAIL

Scale: $\frac{1}{2}$" = 1'-0"

PENTHOUSE ROOF PLAN

Scale: $\frac{1}{8}$" = 1'-0"
See this Dwg & Dwg 2-35



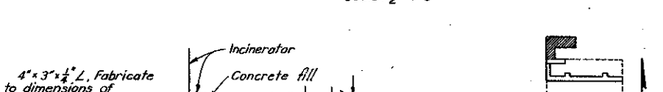
SECTION AT CLEANOUT — SECTION AT 2ND FLOOR

INCINERATOR STACK DETAILS

Scale: $\frac{1}{2}$" = 1'-0"

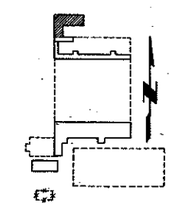
AIR INLET AND VENT ROOF FLASHING DETAIL

Scale: $\frac{3}{4}$" = 1'-0"
See this Dwg

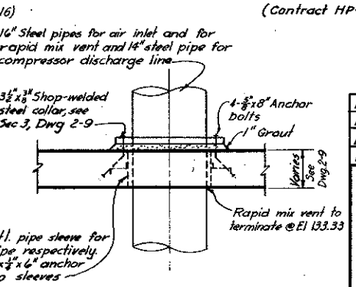


DETAIL OF SETTING BED FOR INCINERATOR

Scale: $\frac{3}{4}$" = 1'-0"
(Contract HP-12)

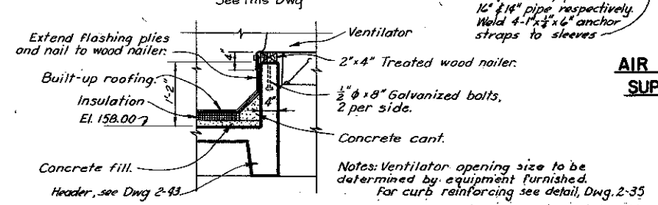


KEY PLAN



AIR PIPE COLLAR SUPPORT DETAIL

No Scale
See Dwg 2-9



ROOF VENTILATOR CURB DETAIL

Scale: $\frac{3}{4}$" = 1'-0"

No.	Date	Revision	By	Chkd
4	6-1-60	Roof drains	L.L.B.	B.N.S.
3	5-4-60	Air inlet & roof vent detail	RUS	BNS
1	3-28-60	General Revisions	L.L.B.	WDS

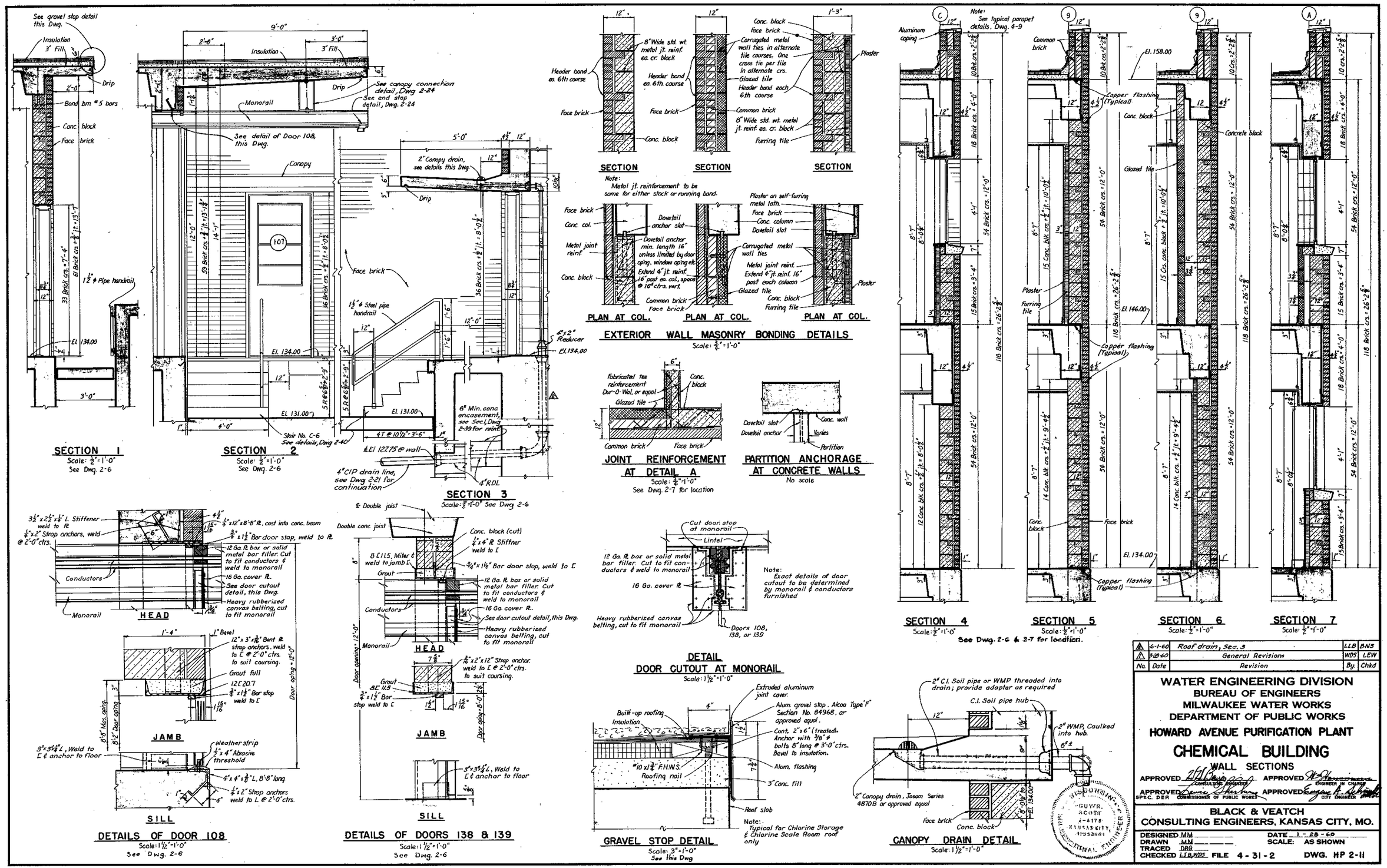
WATER ENGINEERING DIVISION
BUREAU OF ENGINEERS
MILWAUKEE WATER WORKS
DEPARTMENT OF PUBLIC WORKS

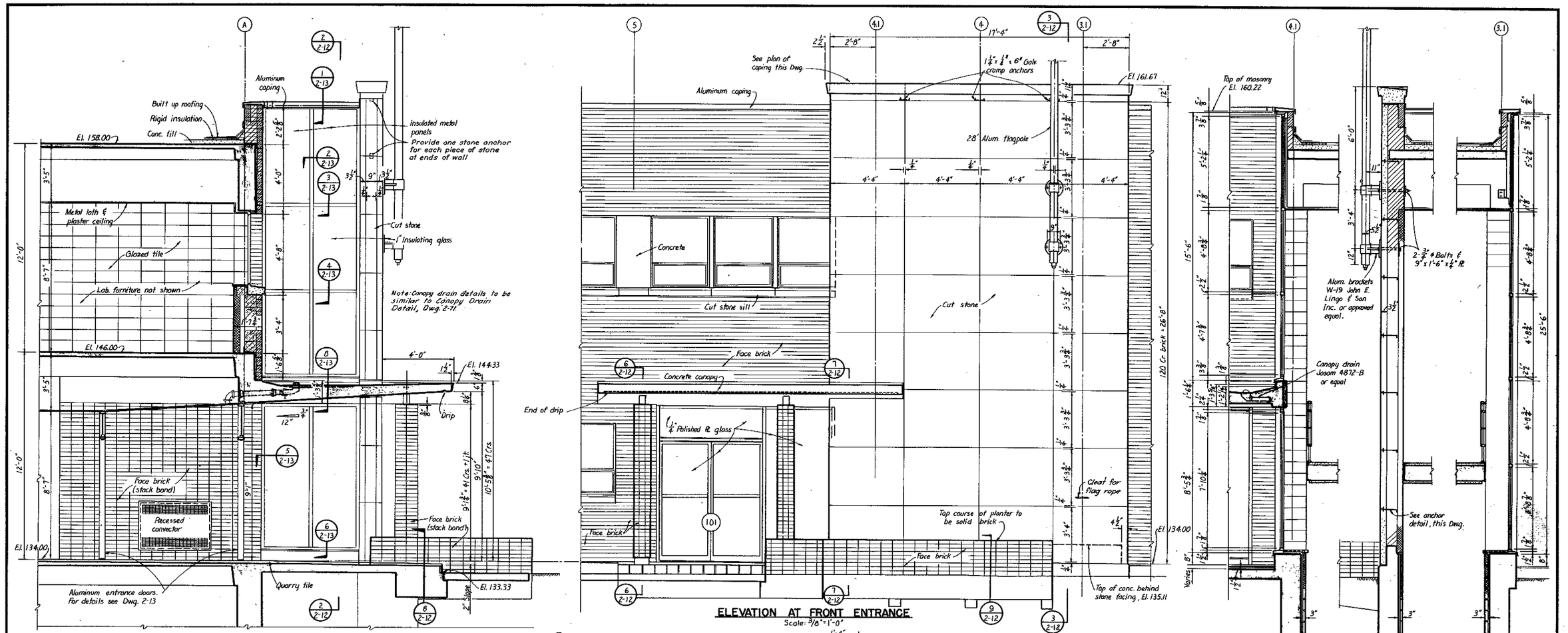
HOWARD AVENUE PURIFICATION PLANT
CHEMICAL BUILDING
ROOF PLAN

APPROVED [signature] CONSULTING ENGINEER — APPROVED [signature] ENGINEER IN CHARGE
APPROVED [signature] SPEC. DEP. COMMISSIONER OF PUBLIC WORKS — APPROVED [signature] CITY ENGINEER

BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.

DESIGNED MM — DATE 11-10-59
DRAWN MM — SCALE: AS SHOWN
TRACED DOV
CHECKED LJB, WDS — FILE 4-31-2 — DWG. HP-2-8


SECTION 1
Scale: 1/2"=1'-0"
See Dwg. 2-6
SECTION 2
Scale: 1/2"=1'-0"
See Dwg. 2-6
SECTION 3
Scale: 1/2"=1'-0" See Dwg 2-6
SECTION
SECTION
SECTION
PLAN AT COL.
PLAN AT COL.
PLAN AT COL.
EXTERIOR WALL MASONRY BONDING DETAILS
Scale: 3/4"=1'-0"
JOINT REINFORCEMENT AT DETAIL A
Scale: 3/4"=1'-0"
See Dwg. 2-7 for location
PARTITION ANCHORAGE AT CONCRETE WALLS
No scale
SECTION 4
Scale: 1/2"=1'-0"
SECTION 5
Scale: 1/2"=1'-0"
SECTION 6
Scale: 1/2"=1'-0"
SECTION 7
Scale: 1/2"=1'-0"
See Dwg. 2-6 & 2-7 for location.
HEAD
JAMB
SILL
DETAILS OF DOOR 108
Scale: 1 1/2"=1'-0"
See Dwg. 2-6
DETAILS OF DOORS 138 & 139
Scale: 1 1/2"=1'-0"
See Dwg. 2-6
DETAIL DOOR CUTOUT AT MONORAIL
Scale: 1 1/2"=1'-0"
GRAVEL STOP DETAIL
Scale: 3"=1'-0"
See this Dwg
CANOPY DRAIN DETAIL
Scale: 1 1/2"=1'-0"
WATER ENGINEERING DIVISION
BUREAU OF ENGINEERS
MILWAUKEE WATER WORKS
DEPARTMENT OF PUBLIC WORKS
HOWARD AVENUE PURIFICATION PLANT
CHEMICAL BUILDING
WALL SECTIONS
BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.
DATE 1-28-60
SCALE: AS SHOWN
DWG. HP 2-11



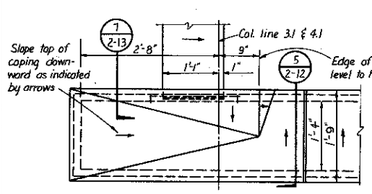
SECTION 1
Scale: 3/8" = 1'-0"
See Dwg. 2-14

ELEVATION AT FRONT ENTRANCE
Scale: 3/8" = 1'-0"

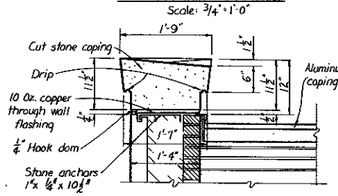
SECTION 2
Scale: 3/8" = 1'-0"
See this Dwg.

SECTION 3
Scale: 3/8" = 1'-0"
See this Dwg.

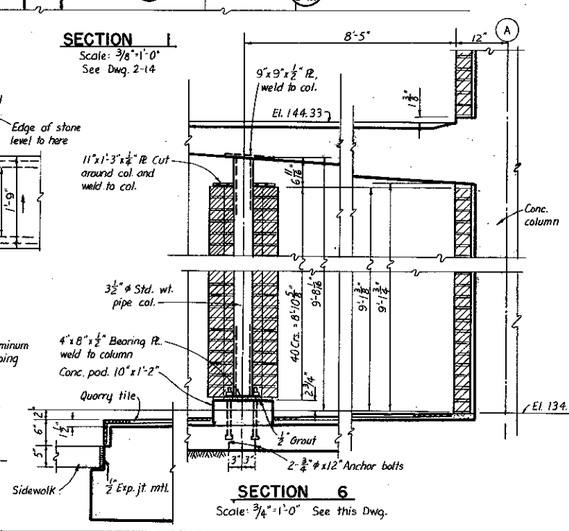
SECTION 4
Scale: 3/8" = 1'-0"
See Dwg. 2-14



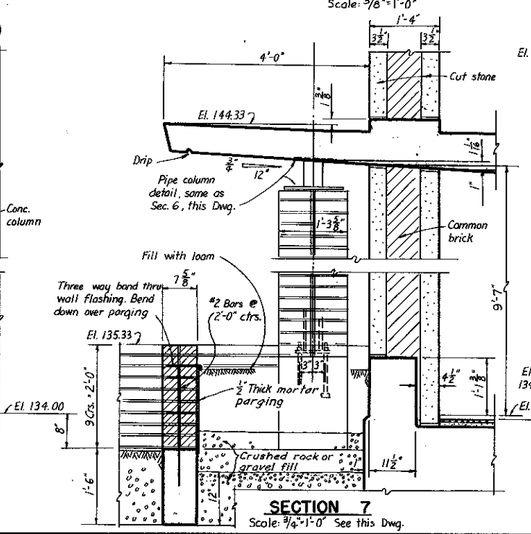
PLAN OF COPING
Scale: 3/4" = 1'-0"



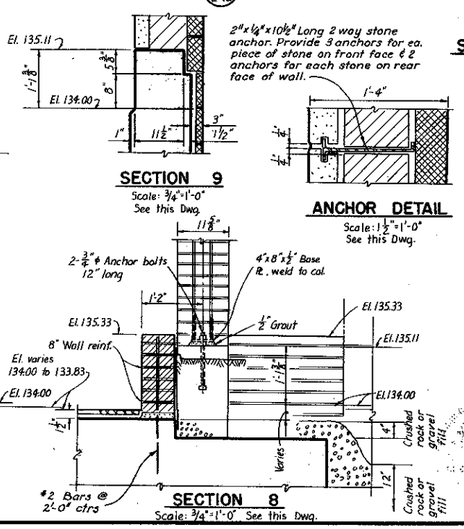
SECTION 5
Scale: 3/4" = 1'-0"
See this Dwg.



SECTION 6
Scale: 3/4" = 1'-0" See this Dwg.



SECTION 7
Scale: 3/4" = 1'-0" See this Dwg.



SECTION 9
Scale: 3/4" = 1'-0"
See this Dwg.

ANCHOR DETAIL
Scale: 1½" = 1'-0"
See this Dwg.

SECTION 8
Scale: 3/4" = 1'-0" See this Dwg.

WATER ENGINEERING DIVISION
BUREAU OF ENGINEERS
MILWAUKEE WATER WORKS
DEPARTMENT OF PUBLIC WORKS

HOWARD AVENUE PURIFICATION PLANT

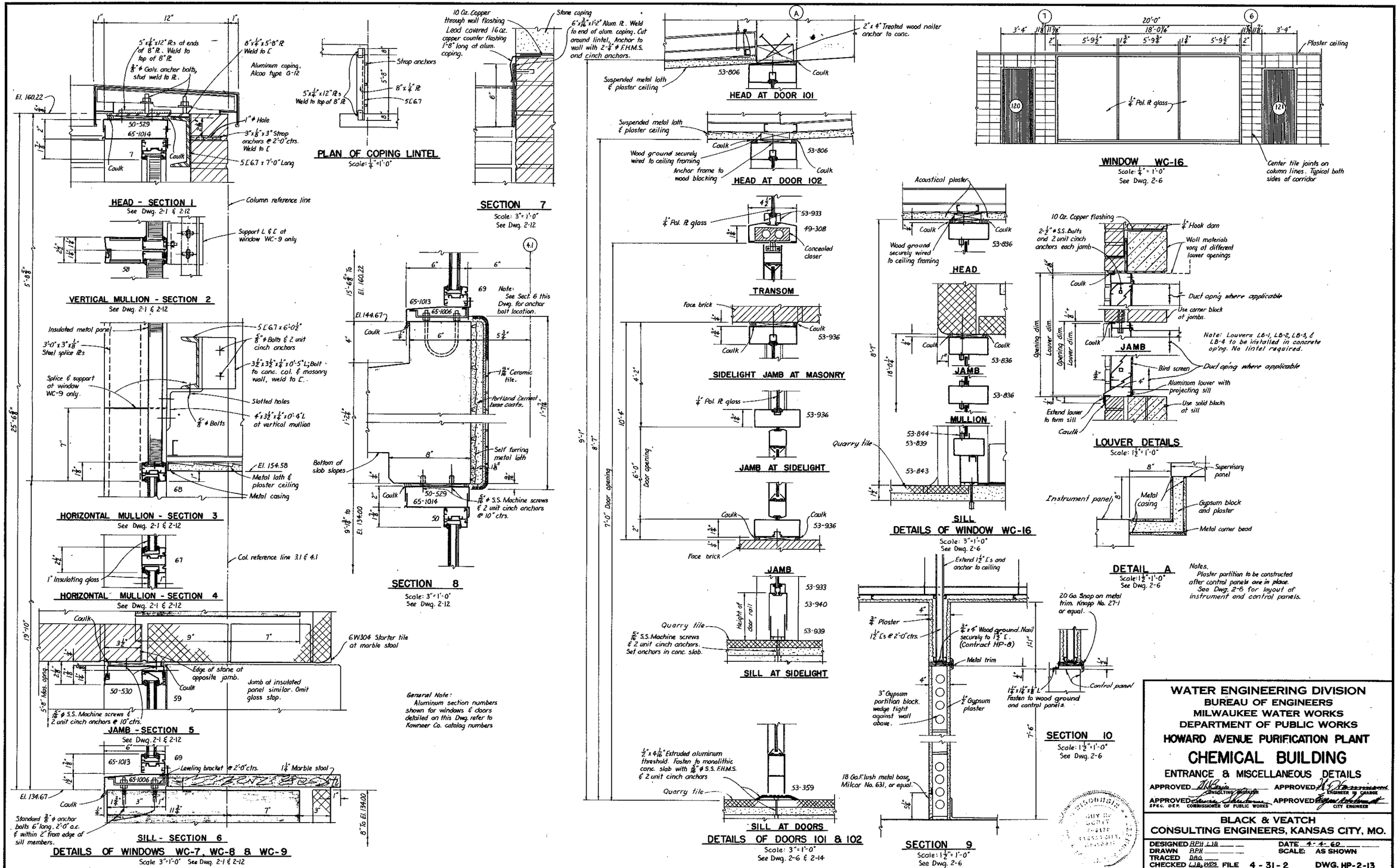
CHEMICAL BUILDING

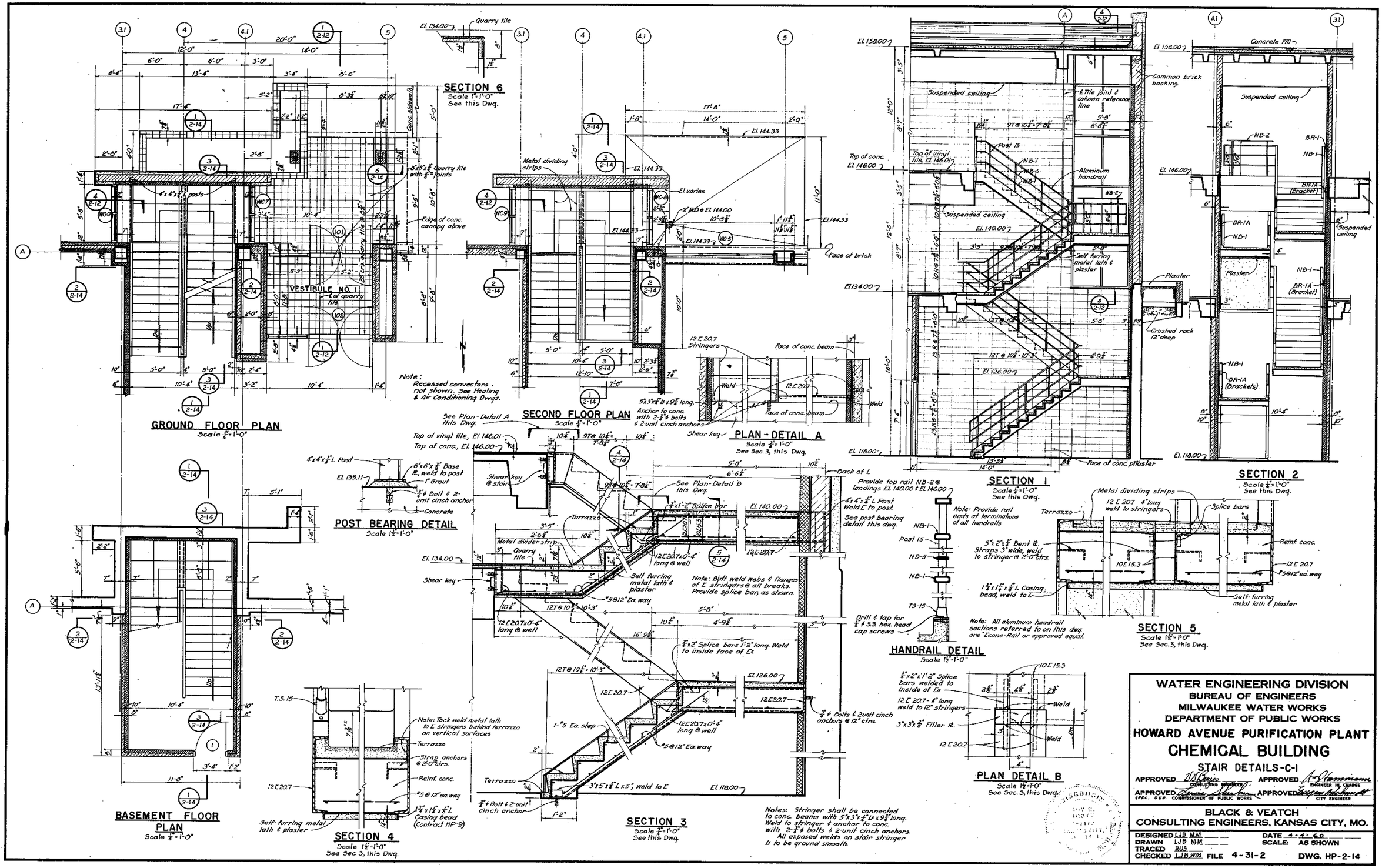
ENTRANCE DETAILS

APPROVED [illegible] CONSULTING ENGINEER — APPROVED [illegible] ENGINEER IN CHARGE
APPROVED [illegible] SPEC. DEP. COMMISSIONER OF PUBLIC WORKS — APPROVED [illegible] CITY ENGINEER

BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.

DESIGNED LJB. RPH. — DATE 4-4-60
DRAWN LJB. RPH. — SCALE: AS SHOWN
TRACED DRG. —
CHECKED LJB. WDS. FILE 4-31-2 — DWG. HP-2-12


HEAD - SECTION 1
See Dwg. 2-1 & 2-12
VERTICAL MULLION - SECTION 2
See Dwg. 2-1 & 2-12
HORIZONTAL MULLION - SECTION 3
See Dwg. 2-1 & 2-12
HORIZONTAL MULLION - SECTION 4
See Dwg. 2-1 & 2-12
JAMB - SECTION 5
See Dwg. 2-1 & 2-12
SILL - SECTION 6
DETAILS OF WINDOWS WC-7, WC-8 & WC-9
Scale 3"=1'-0" See Dwg. 2-1 & 2-12
PLAN OF COPING LINTEL
Scale: 1/4"=1'-0"
SECTION 7
Scale: 3"=1'-0"
See Dwg. 2-12
SECTION 8
Scale: 3"=1'-0"
See Dwg. 2-12
HEAD AT DOOR 101
HEAD AT DOOR 102
TRANSOM
SIDELIGHT JAMB AT MASONRY
JAMB AT SIDELIGHT
JAMB
SILL AT SIDELIGHT
SILL AT DOORS
DETAILS OF DOORS 101 & 102
Scale: 3"=1'-0"
See Dwg. 2-6 & 2-14
HEAD
JAMB
MULLION
SILL
DETAILS OF WINDOW WC-16
Scale: 3"=1'-0"
See Dwg. 2-6
WINDOW WC-16
Scale: 1/4"=1'-0"
See Dwg. 2-6
LOUVER DETAILS
Scale: 1 1/2"=1'-0"
DETAIL A
Scale: 1 1/2"=1'-0"
See Dwg. 2-6
SECTION 9
Scale: 1 1/2"=1'-0"
See Dwg. 2-6
SECTION 10
Scale: 1 1/2"=1'-0"
See Dwg. 2-6
Note: Louvers LB-1, LB-2, LB-3, & LB-4 to be installed in concrete op'ng. No lintel required.
Notes.
Plaster partition to be constructed after control panels are in place.
See Dwg. 2-6 for layout of instrument and control panels.
General Note:
Aluminum section numbers shown for windows & doors detailed on this Dwg. refer to Kawneer Co. catalog numbers
WATER ENGINEERING DIVISION
BUREAU OF ENGINEERS
MILWAUKEE WATER WORKS
DEPARTMENT OF PUBLIC WORKS
HOWARD AVENUE PURIFICATION PLANT
CHEMICAL BUILDING
ENTRANCE & MISCELLANEOUS DETAILS
APPROVED CONSULTING ENGINEER
APPROVED ENGINEER IN CHARGE
APPROVED SPEC. DEP. COMMISSIONER OF PUBLIC WORKS
APPROVED CITY ENGINEER
BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.
DESIGNED RPH LJB
DRAWN RPH
TRACED DRG
CHECKED LJB, WDS
DATE 4-4-60
SCALE: AS SHOWN
FILE 4-31-2
DWG. HP-2-13



WATER ENGINEERING DIVISION
BUREAU OF ENGINEERS
MILWAUKEE WATER WORKS
DEPARTMENT OF PUBLIC WORKS

HOWARD AVENUE PURIFICATION PLANT

CHEMICAL BUILDING

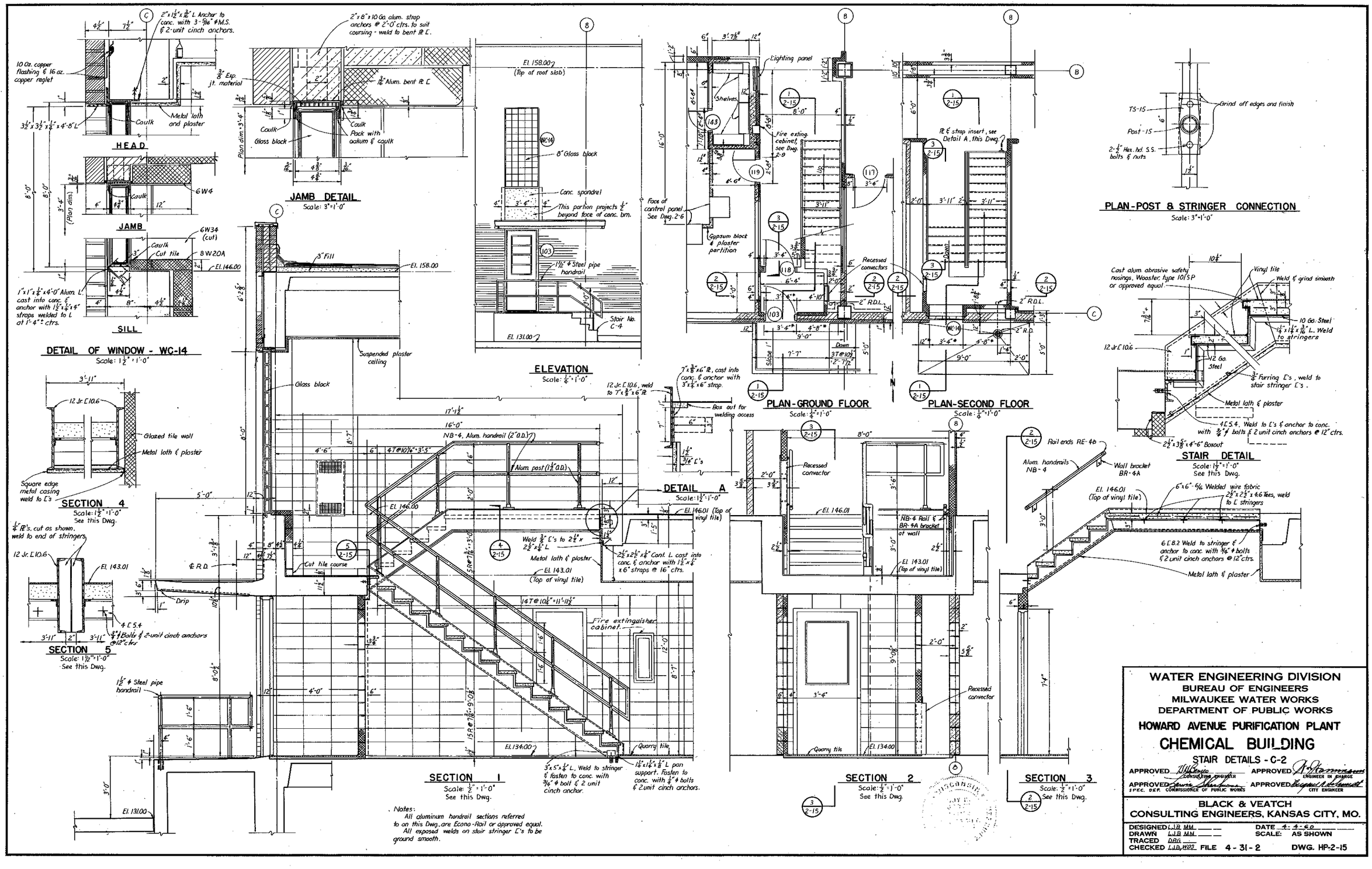
STAIR DETAILS-C-1

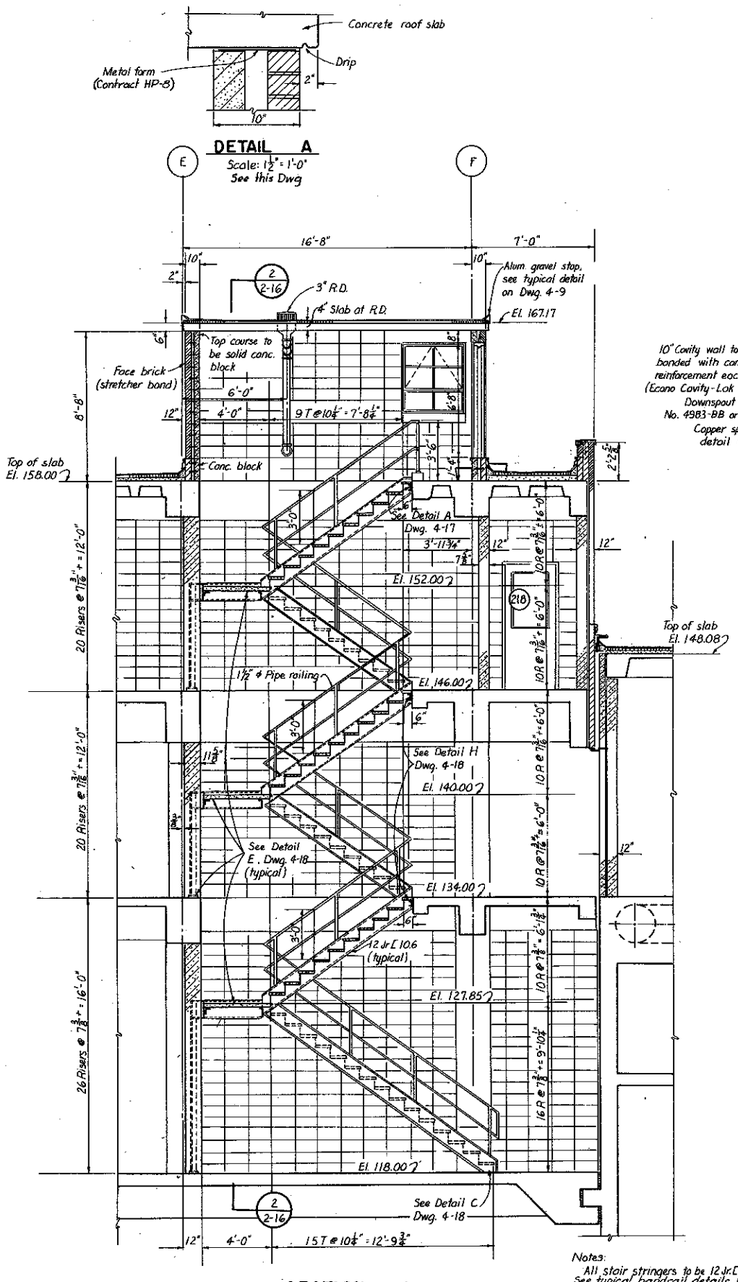
APPROVED [signature] CONSULTING ENGINEER — APPROVED [signature] ENGINEER IN CHARGE

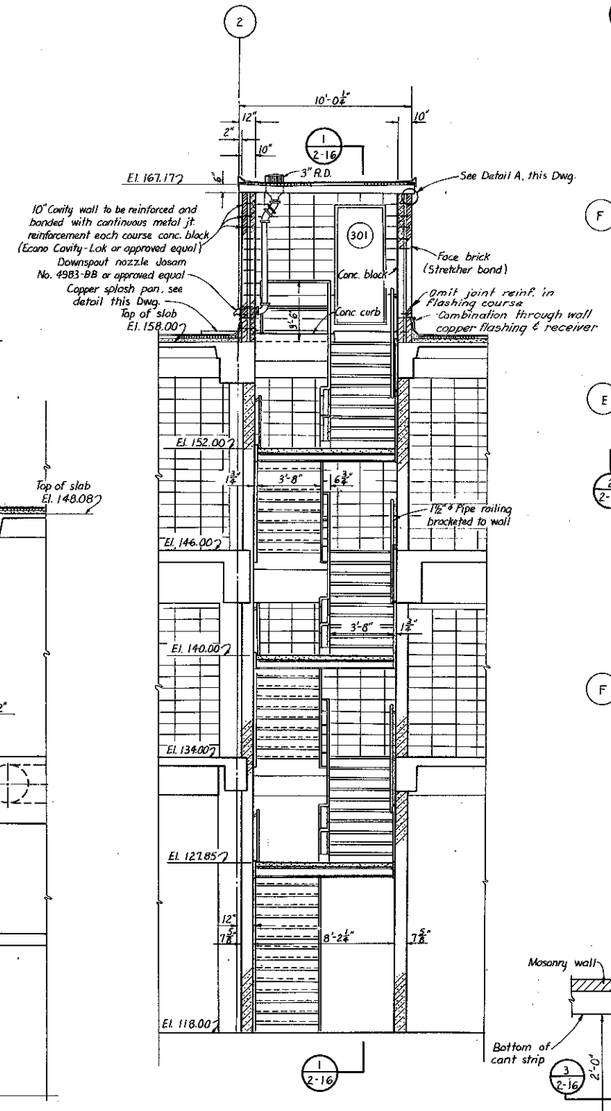
APPROVED [signature] SPEC. DEP. COMMISSIONER OF PUBLIC WORKS — APPROVED [signature] CITY ENGINEER

BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.

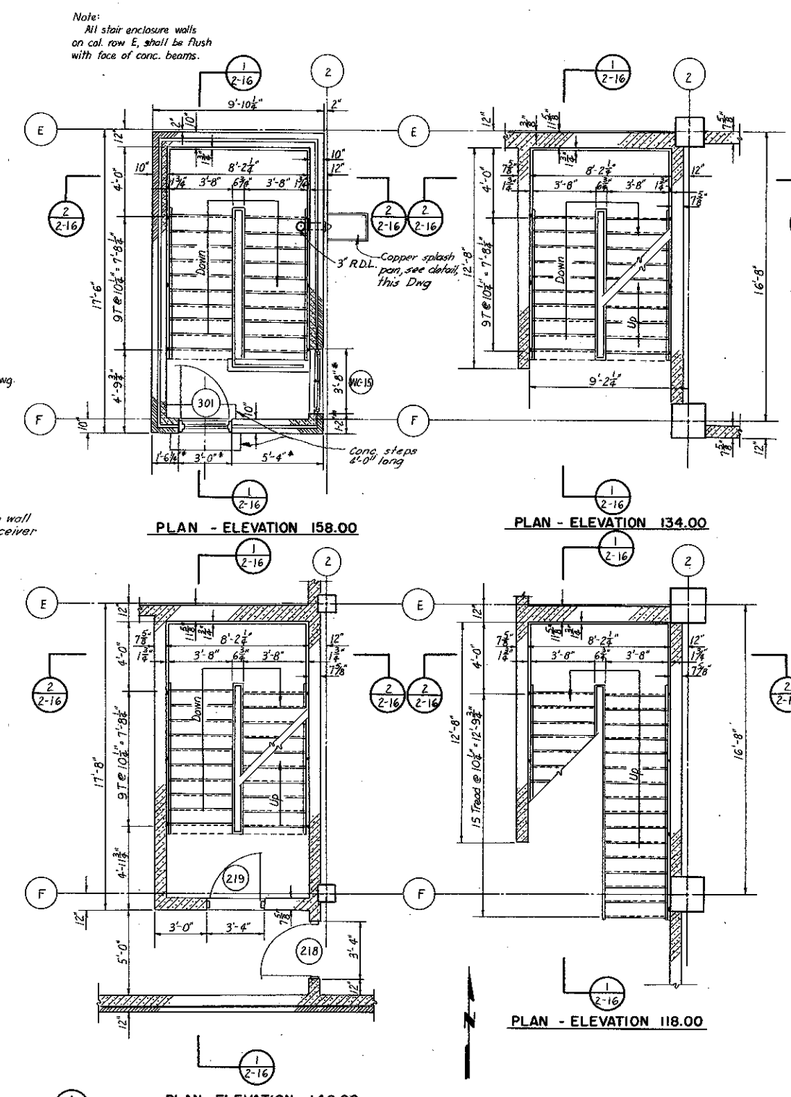
DESIGNED LJB MM — DATE 4-4-60
DRAWN LJB MM — SCALE: AS SHOWN
TRACED RUS
CHECKED LJB, WOS — FILE 4-31-2 — DWG. HP-2-14


HEAD
JAMB
SILL
DETAIL OF WINDOW - WC-14
Scale: 1½" = 1'-0"
JAMB DETAIL
Scale: 3" = 1'-0"
ELEVATION
Scale: ¼" = 1'-0"
PLAN-GROUND FLOOR
Scale: ¼" = 1'-0"
PLAN-SECOND FLOOR
Scale: ¼" = 1'-0"
PLAN-POST & STRINGER CONNECTION
Scale: 3" = 1'-0"
STAIR DETAIL
Scale: 1½" = 1'-0"
See this Dwg.
SECTION 4
Scale: 1½" = 1'-0"
See this Dwg.
SECTION 5
Scale: 1½" = 1'-0"
See this Dwg.
DETAIL A
Scale: 1½" = 1'-0"
SECTION 1
Scale: ½" = 1'-0"
See this Dwg.
SECTION 2
Scale: ½" = 1'-0"
See this Dwg.
SECTION 3
Scale: ½" = 1'-0"
See this Dwg.
Notes:
All aluminum handrail sections referred to on this Dwg., are Econa-Rail or approved equal.
All exposed welds on stair stringer C's to be ground smooth.
WATER ENGINEERING DIVISION
BUREAU OF ENGINEERS
MILWAUKEE WATER WORKS
DEPARTMENT OF PUBLIC WORKS
HOWARD AVENUE PURIFICATION PLANT
CHEMICAL BUILDING
STAIR DETAILS - C-2
APPROVED CONSULTING ENGINEER
APPROVED ENGINEER IN CHARGE
APPROVED SPEC. DEP. COMMISSIONER OF PUBLIC WORKS
APPROVED CITY ENGINEER
BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.
DESIGNED LJB MM
DRAWN LJB MM
TRACED DRG
CHECKED LJB, WDZ
DATE 4-4-60
SCALE: AS SHOWN
FILE 4-31-2
DWG. HP-2-15

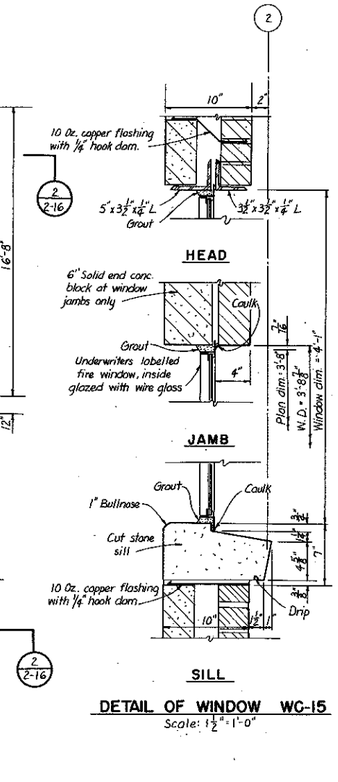




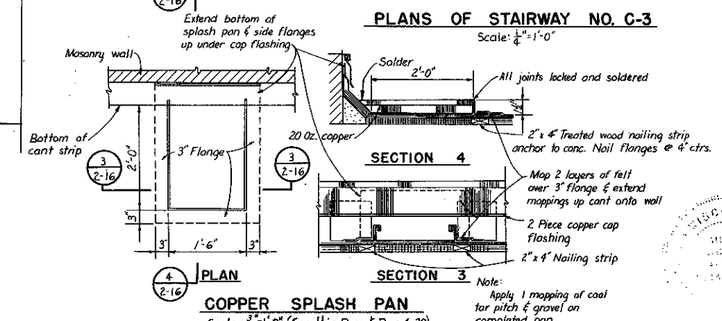
Notes:
All stair stringers to be 12 Jr C 10.6.
See typical handrail details, Dwg. 5-1
Provide cast alum. abrasive safety nosings on all treads. See detail on Dwg. 2-15
All stairs along walls to have handrails bracketed from walls.



PLANS OF STAIRWAY NO. C-3
Scale: ¼" = 1'-0"



DETAIL OF WINDOW WC-15
Scale: 1½" = 1'-0"



COPPER SPLASH PAN
Scale: ¾" = 1'-0" (See this Dwg & Dwg 4-20)

WATER ENGINEERING DIVISION
BUREAU OF ENGINEERS
MILWAUKEE WATER WORKS
DEPARTMENT OF PUBLIC WORKS

HOWARD AVENUE PURIFICATION PLANT

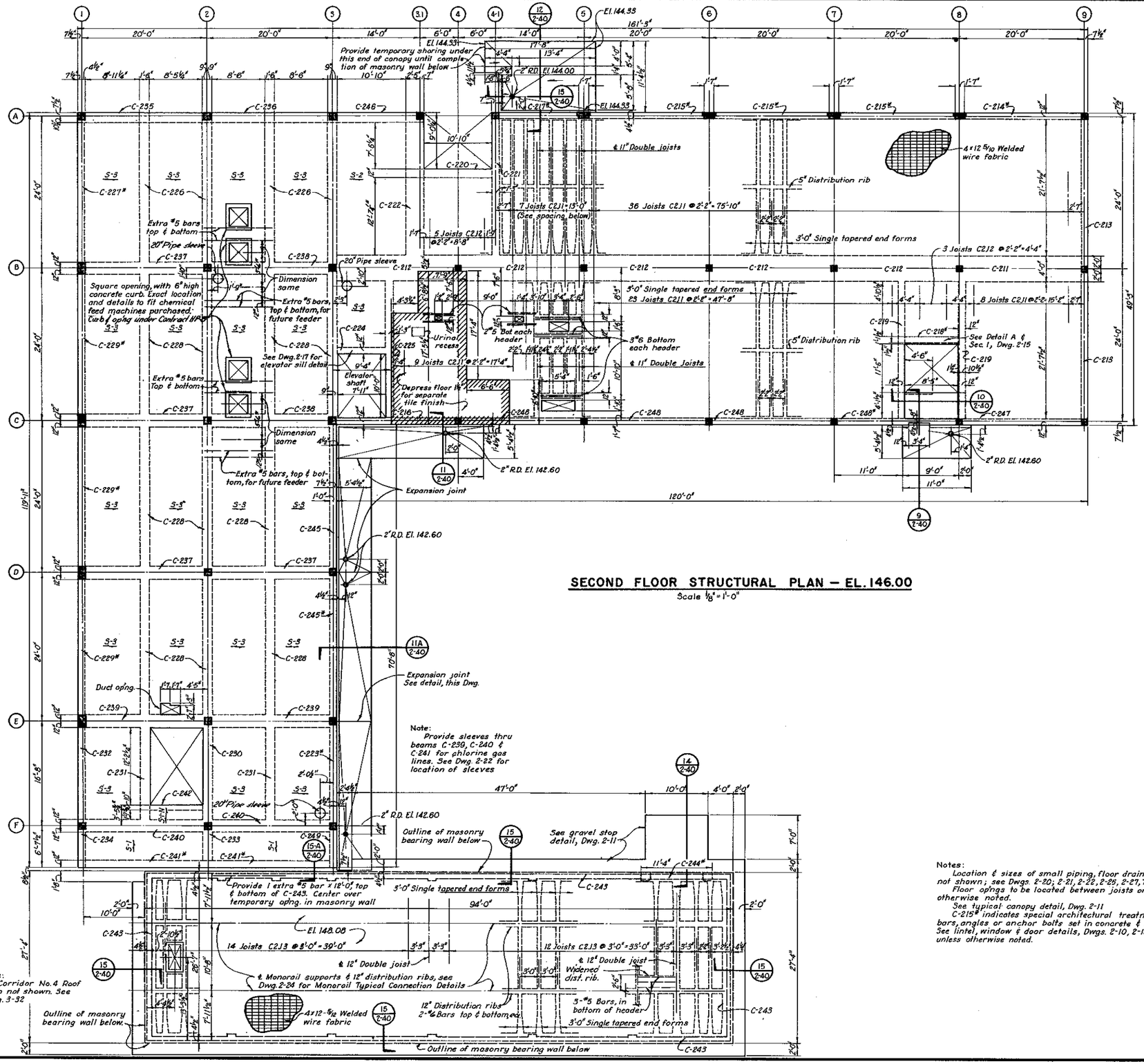
CHEMICAL BUILDING

STAIR DETAILS - C-3

APPROVED _____ CONSULTING ENGINEER
APPROVED _____ ENGINEER IN CHARGE
APPROVED _____ SPEC. DEP. COMMISSIONER OF PUBLIC WORKS
APPROVED _____ CITY ENGINEER

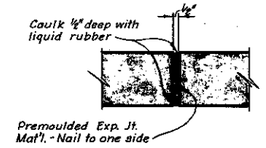
BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.

DESIGNED M.M. RPH
DRAWN M.M. RPH
TRACED DRG.
CHECKED LJB, WDS
DATE 4-4-60
SCALE: AS SHOWN
FILE 4-31-3
DWG. HR-2-16



SECOND FLOOR STRUCTURAL PLAN — EL. 146.00

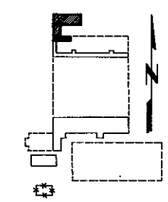
Scale 1/8" = 1'-0"



Note:
Liquid rubber caulking to be continuous around the outer edge face of the canopy

DETAIL OF CANOPY EXPANSION JOINT

Scale: 1½" = 1'-0"
See this Dwg.



KEY PLAN

Notes:
Location & sizes of small piping, floor drains, & conduits not shown; see Dwgs. 2-20; 2-21, 2-22, 2-25, 2-27, 7-9, 8-22 & 8-25
Floor opings to be located between joists or beams unless otherwise noted.
See typical canopy detail, Dwg. 2-11
C-215# indicates special architectural treatment, such as bars, angles or anchor bolts set in concrete & boxouts. See lintel, window & door details, Dwgs. 2-10, 2-18, & 2-28, unless otherwise noted.

No.	Date	Revision	By	Chkd
1	5-28-60	General Revisions	WDS	LEW

WATER ENGINEERING DIVISION
BUREAU OF ENGINEERS
MILWAUKEE WATER WORKS
DEPARTMENT OF PUBLIC WORKS

HOWARD AVENUE PURIFICATION PLANT

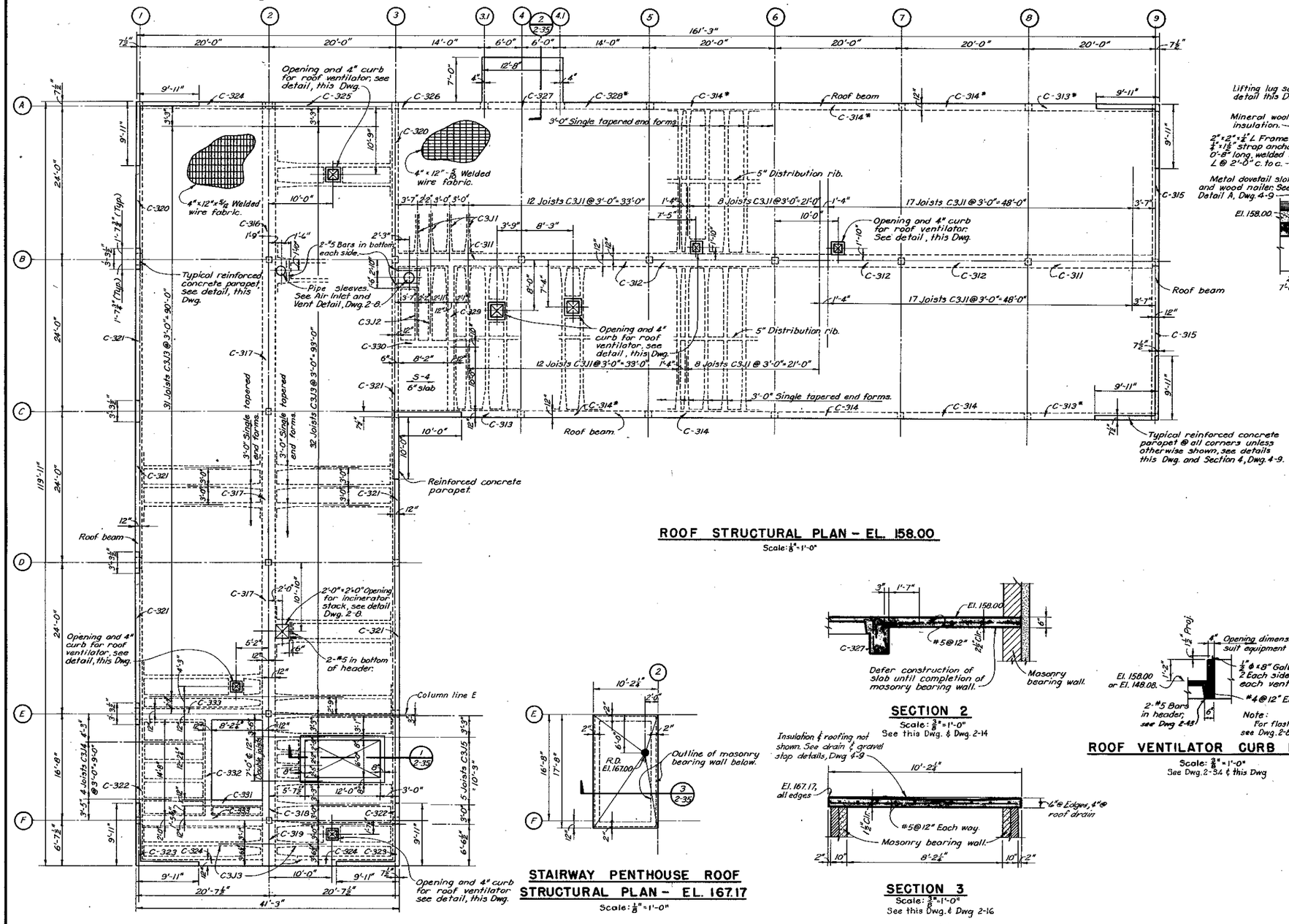
CHEMICAL BUILDING

SECOND FLOOR STRUCTURAL PLAN

APPROVED (CONSULTING ENGINEER) — APPROVED (ENGINEER IN CHARGE)
APPROVED (SPEC. DEP. COMMISSIONER OF PUBLIC WORKS) — APPROVED (CITY ENGINEER)

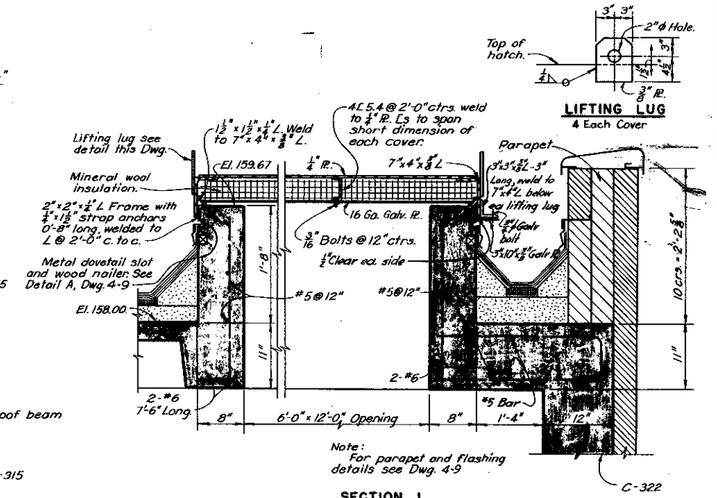
BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.

DESIGNED WEK
DRAWN ACW
TRACED ACW
CHECKED LEW, RS, WDS
FILE 4-31-5
DATE 1-28-60
SCALE: AS SHOWN
DWG. HP-2-34



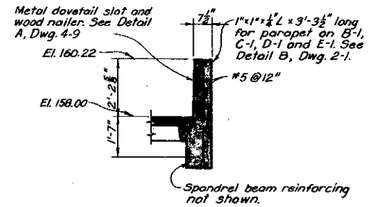
ROOF STRUCTURAL PLAN – EL. 158.00

Scale: 1/8" = 1'-0"



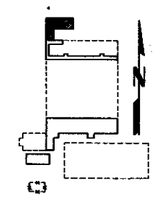
SECTION 1
Scale: 1" = 1'-0"
See this Dwg.

ROOF ACCESS HATCH DETAILS



TYPICAL PARAPET DETAIL

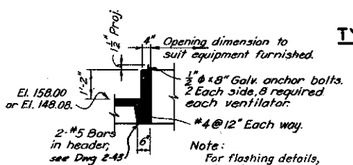
Scale: 3/8" = 1'-0"
See this Dwg.



KEY PLAN

SECTION 2

Scale: 3/8" = 1'-0"
See this Dwg. & Dwg. 2-14



ROOF VENTILATOR CURB DETAIL

Scale: 3/8" = 1'-0"
See Dwg. 2-34 & this Dwg

STAIRWAY PENTHOUSE ROOF STRUCTURAL PLAN – EL. 167.17

Scale: 1/8" = 1'-0"

SECTION 3

Scale: 3/8" = 1'-0"
See this Dwg. & Dwg 2-16

Notes:
C-314* indicates special architectural treatment, such as, bars, angles, or anchor bolts set in concrete, and boxouts. See lintel, window, and door details, Dwgs. 2-10, 2-18 and 2-28 unless otherwise noted.
Miscellaneous roof opnigs to be located between joist unless otherwise noted

WATER ENGINEERING DIVISION
BUREAU OF ENGINEERS
MILWAUKEE WATER WORKS
DEPARTMENT OF PUBLIC WORKS
HOWARD AVENUE PURIFICATION PLANT

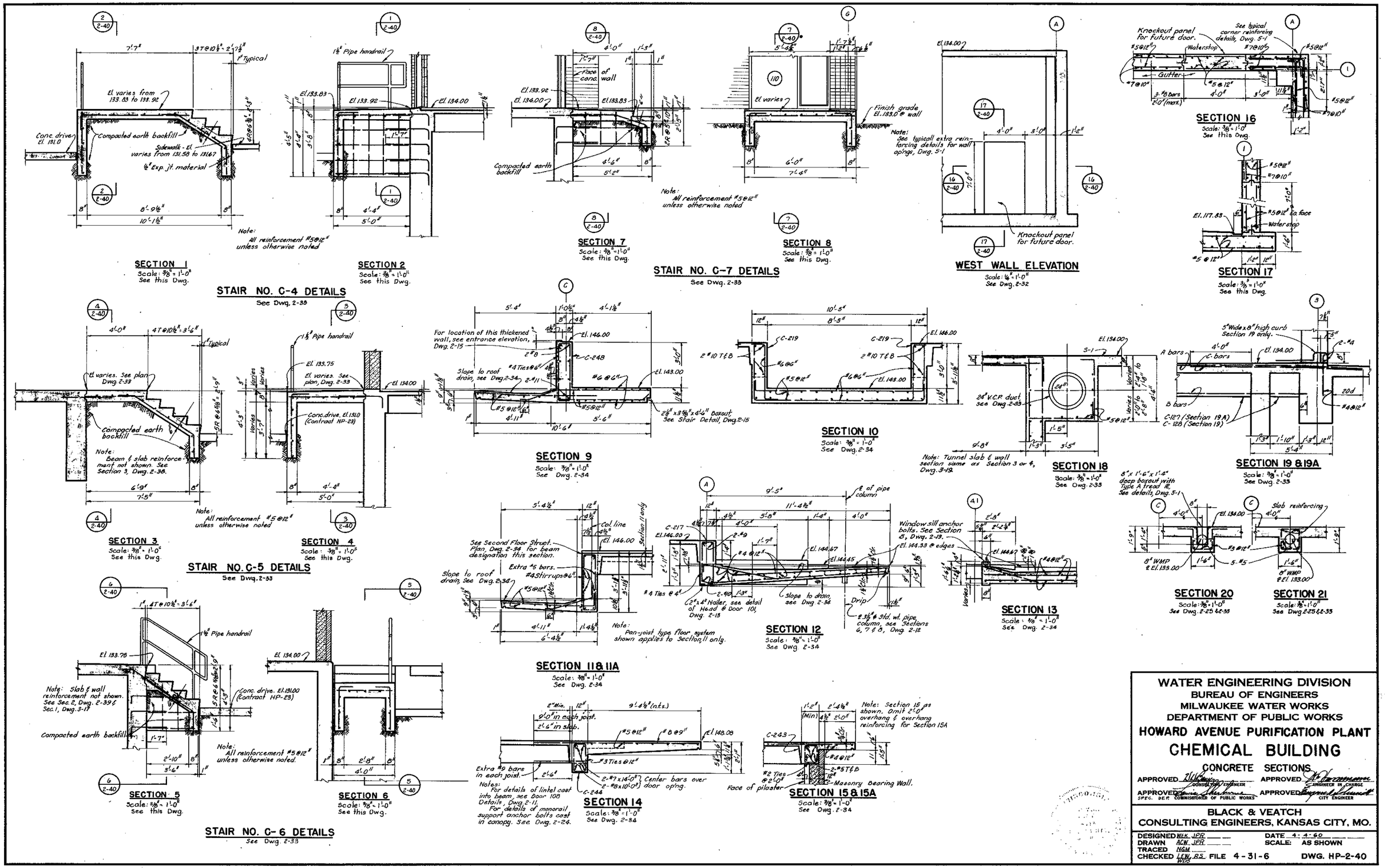
CHEMICAL BUILDING

ROOF STRUCTURAL PLAN

APPROVED _____ CONSULTING ENGINEER — APPROVED _____ ENGINEER IN CHARGE
APPROVED _____ SPEC. DEP. COMMISSIONER OF PUBLIC WORKS — APPROVED _____ CITY ENGINEER

BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.

DESIGNED WEK — DATE 4-4-60
DRAWN NM ACN JPR — SCALE: AS SHOWN
TRACED DOY
CHECKED JCS LEW WDS — FILE 4-31-5 — DWG. HP-2-35



WATER ENGINEERING DIVISION
BUREAU OF ENGINEERS
MILWAUKEE WATER WORKS
DEPARTMENT OF PUBLIC WORKS

HOWARD AVENUE PURIFICATION PLANT

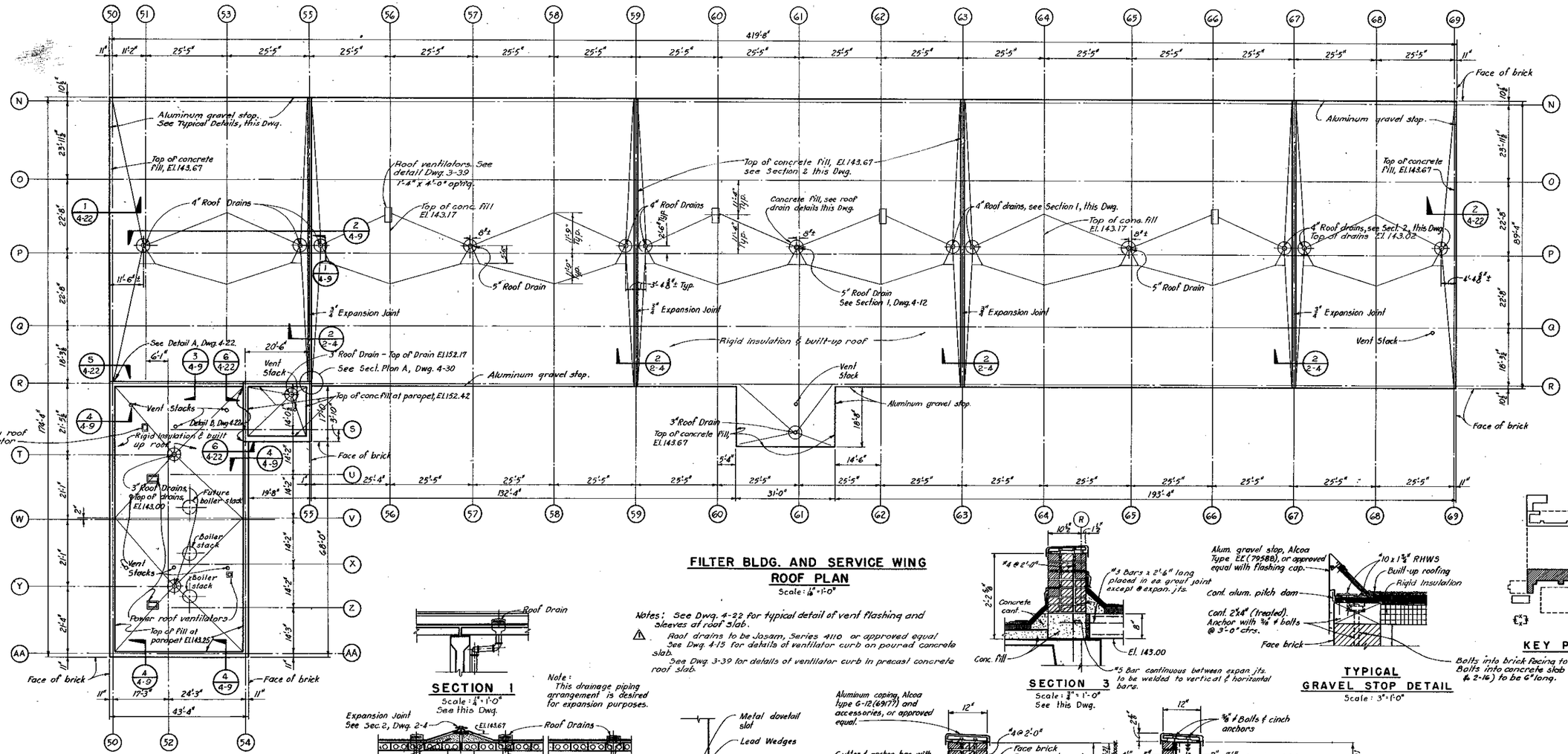
CHEMICAL BUILDING

CONCRETE SECTIONS

APPROVED _____ CONSULTING ENGINEER
APPROVED _____ ENGINEER IN CHARGE
APPROVED _____ SPEC. DEP. COMMISSIONER OF PUBLIC WORKS
APPROVED _____ CITY ENGINEER

BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.

DESIGNED	WEK. JPR.	DATE	4-4-60
DRAWN	ACW. JPR.	SCALE:	AS SHOWN
TRACED	NGM.		
CHECKED	LEW. RS. JPR.	FILE 4-31-6	DWG. HP-2-40



FILTER BLDG. AND SERVICE WING ROOF PLAN

Scale: 1/8" = 1'-0"

Notes: See Dwg. 4-22 for typical detail of vent flashing and sleeves of roof slab.

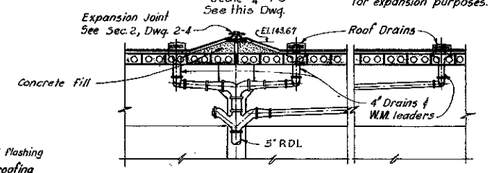
⚠ Roof drains to be Josam, Series 4110 or approved equal. See Dwg. 4-15 for details of ventilator curb on poured concrete slab.

See Dwg. 3-39 for details of ventilator curb in precast concrete roof slab.

SECTION 1

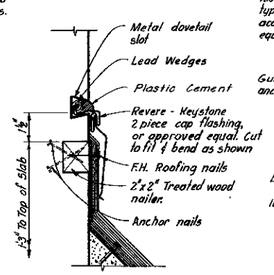
Scale: 1/4" = 1'-0"
See this Dwg.

Note: This drainage piping arrangement is desired for expansion purposes.



SECTION 2

Scale: 1/4" = 1'-0"
See this Dwg.



DETAIL A

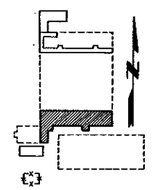
Scale: 3" = 1'-0"
See Sec. 4, this Dwg.

SECTION 3

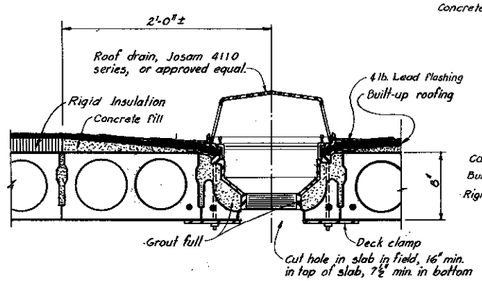
Scale: 3/4" = 1'-0"
See this Dwg.

TYPICAL GRAVEL STOP DETAIL

Scale: 3" = 1'-0"

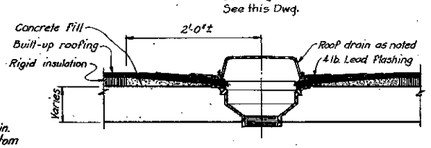


KEY PLAN



PRECAST ROOF DECK

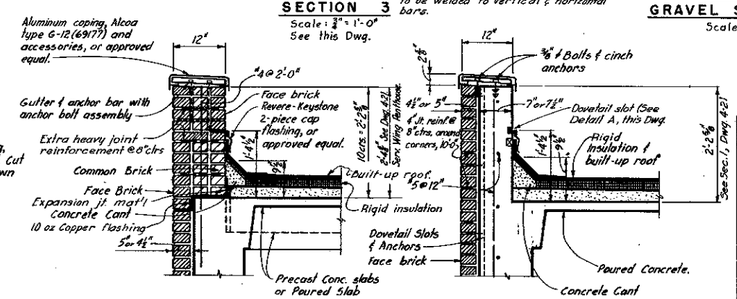
Scale: 1 1/2" = 1'-0"



POURED ROOF SLAB

Scale: 1" = 1'-0"

TYPICAL ROOF DRAIN DETAILS



TYPICAL

SECTION 4

See this Dwg. & Dwg. 4-30
Note: This section is typical at corners only. See Dwg. 4-30 & 2-35

PARAPET & FLASHING DETAILS

Scale: 3/4" = 1'-0"
Note: Header bond not shown

WISCONSIN GUY R. SCOTT E-6178 KANSAS CITY, MISSOURI PROFESSIONAL ENGINEER

No.	Date	Revision	By	Chkd.
⚠	6-1-60	Roof vent note revised.	LLB	BNS

WATER ENGINEERING DIVISION
BUREAU OF ENGINEERS
MILWAUKEE WATER WORKS
DEPARTMENT OF PUBLIC WORKS

HOWARD AVENUE PURIFICATION PLANT

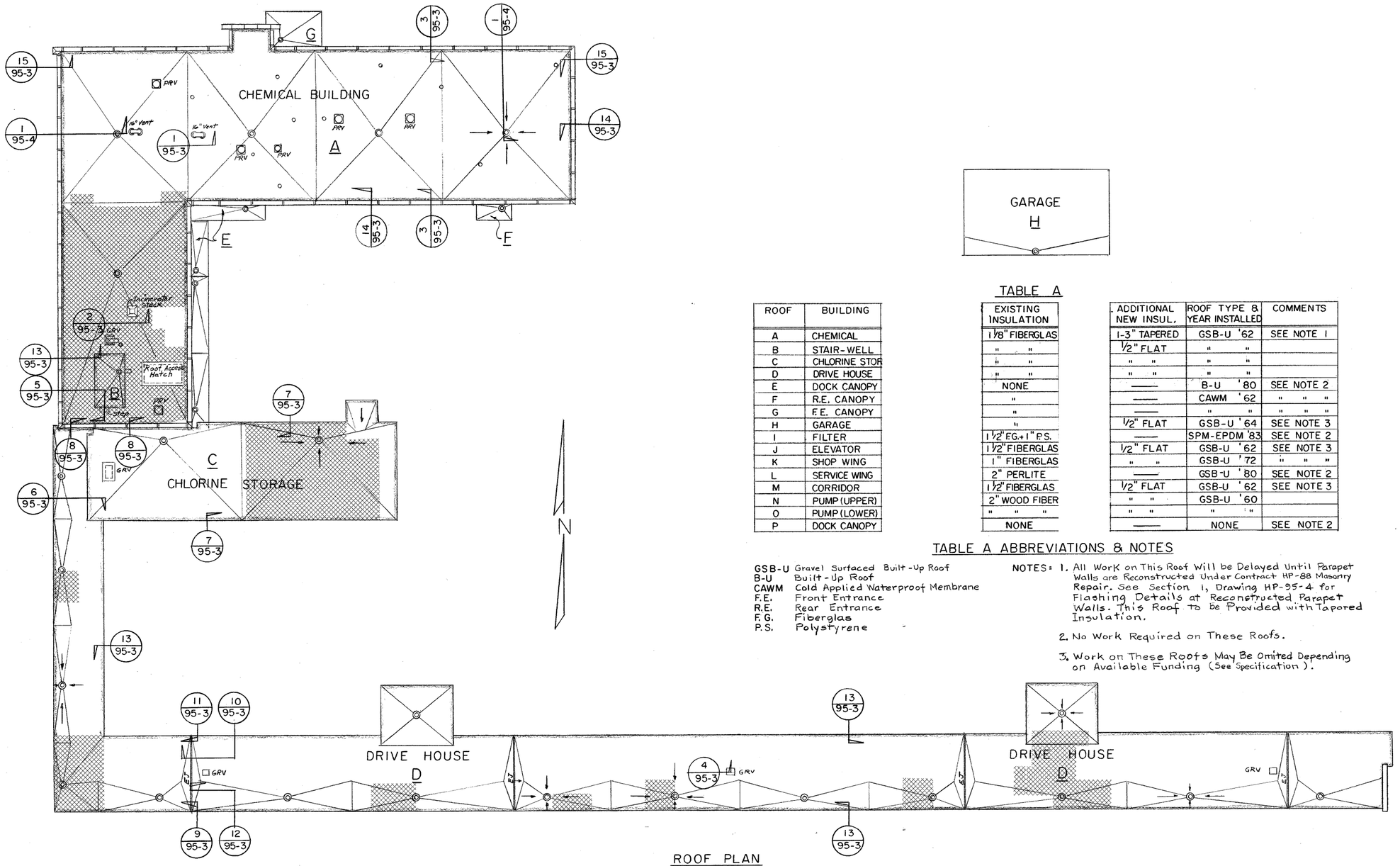
FILTER BUILDING

ROOF PLAN

APPROVED [signature] CONSULTING ENGINEER — APPROVED [signature] ENGINEER IN CHARGE
APPROVED [signature] SPEC. PEP. COMMISSIONER OF PUBLIC WORKS — APPROVED [signature] CITY ENGINEER

BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.

DESIGNED DHM JLJ — DATE 4-4-60
DRAWN DHM JLJ — SCALE: AS SHOWN
TRACED FRC
CHECKED WRPEPES. LEW — FILE 4-31-12 — DWG. HP-4-9



ROOF PLAN

Scale: 1/16" = 1'-0"

Note: This Roof Plan and Table A Include the Results of an Infra-Red Roof Survey Conducted in 1984. See the Removals Section of the Specifications for Details.

ROOF	BUILDING
A	CHEMICAL
B	STAIR-WELL
C	CHLORINE STOR
D	DRIVE HOUSE
E	DOCK CANOPY
F	R.E. CANOPY
G	F.E. CANOPY
H	GARAGE
I	FILTER
J	ELEVATOR
K	SHOP WING
L	SERVICE WING
M	CORRIDOR
N	PUMP (UPPER)
O	PUMP (LOWER)
P	DOCK CANOPY

TABLE A

EXISTING INSULATION	ADDITIONAL NEW INSUL.	ROOF TYPE & YEAR INSTALLED	COMMENTS
1 1/8" FIBERGLAS	1-3" TAPERED	GSB-U '62	SEE NOTE 1
" "	1/2" FLAT	" "	
" "	" "	" "	
" "	" "	" "	
NONE	——	B-U '80	SEE NOTE 2
"	——	CAWM '62	" " "
"	——	" "	" " "
"	1/2" FLAT	GSB-U '64	SEE NOTE 3
1 1/2" FG. + 1" P.S.	——	SPM-EPDM '83	SEE NOTE 2
1 1/2" FIBERGLAS	1/2" FLAT	GSB-U '62	SEE NOTE 3
1" FIBERGLAS	" "	GSB-U '72	" " "
2" PERLITE	——	GSB-U '80	SEE NOTE 2
1 1/2" FIBERGLAS	1/2" FLAT	GSB-U '62	SEE NOTE 3
2" WOOD FIBER	" "	GSB-U '60	
" " "	" "	" "	
NONE	——	NONE	SEE NOTE 2

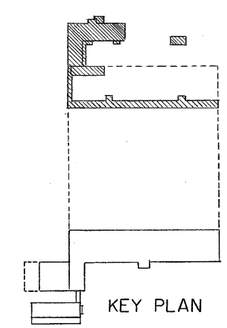
TABLE A ABBREVIATIONS & NOTES

GSB-U Gravel Surfaced Built-Up Roof
B-U Built-Up Roof
CAWM Cold Applied Waterproof Membrane
F.E. Front Entrance
R.E. Rear Entrance
F.G. Fiberglas
P.S. Polystyrene

NOTES:
1. All Work on This Roof Will be Delayed Until Parapet Walls are Reconstructed Under Contract HP-88 Masonry Repair. See Section 1, Drawing HP-95-4 for Flashing Details at Reconstructed Parapet Walls. This Roof to be Provided with Tapered Insulation.
2. No Work Required on These Roofs.
3. Work on These Roofs May Be Omited Depending on Available Funding (See Specification).

LEGEND

- ◎ Roof Drain
- ○ Vent Riser
- PRV Power Roof Ventilator
- GRV Gravity Roof Ventilator
- EJ Expansion Joint
- Wet Insulation (Estimate)
- ← Pitch



KEY PLAN

NO.	DATE	REVISION	BY	CHKD.
△				
△				

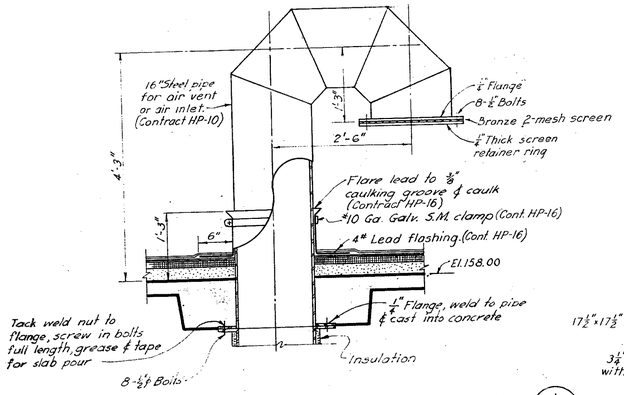
WATER ENGINEERING DIVISION
BUREAU OF ENGINEERS
MILWAUKEE WATER WORKS
DEPARTMENT OF PUBLIC WORKS

HOWARD PURIFICATION PLANT
BUILDINGS ROOF PLAN

WISCONSIN WALTER E. POWERS E-8180 MILWAUKEE, WI PROFESSIONAL ENGINEER

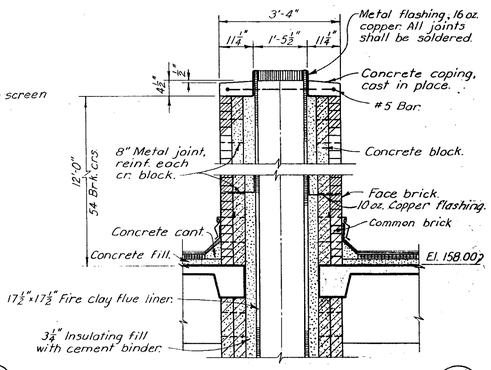
APPROVED A V Simeone 5/3/88 PLANT DESIGN ENGINEER
APPROVED Walter E. Powers 5/3/88 ENGINEER IN CHARGE
APPROVED Robert P. Mills 5-6-88 SPEC. DEPUTY COMMISSIONER OF PUBLIC WORKS
APPROVED John R. Friesen 5-5-88 CITY ENGINEER

DESIGNED BY DGF
DRAWN BY DGF
TRACED BY
CHECKED BY AVS
DATE 3-25-88
SCALE As Shown
FILE 4-31-40 DRWG. HP-95-1



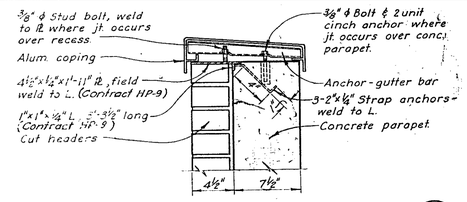
AIR INLET AND VENT ROOF FLASHING DETAIL (1 / 95-1)

Scale: 3/4" = 1'-0"



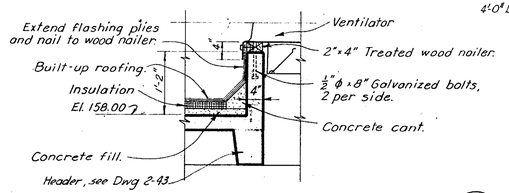
INCINERATOR STACK FLASHING DETAIL (2 / 95-1)

Scale: 1/2" = 1'-0"



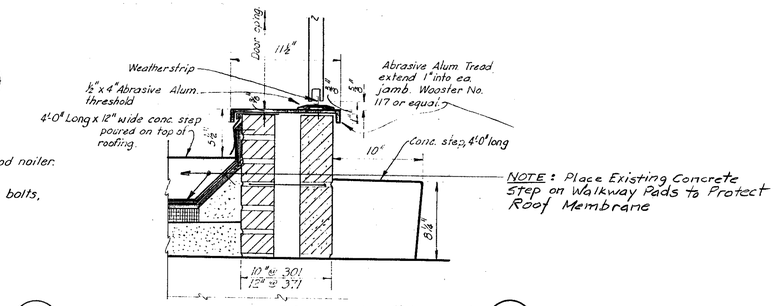
TYPICAL ALUMINUM COPING (3 / 95-1)

Scale: 1 1/2" = 1'-0"



TYPICAL ROOF VENTILATOR CURB DETAIL (4 / 95-1, 95-2)

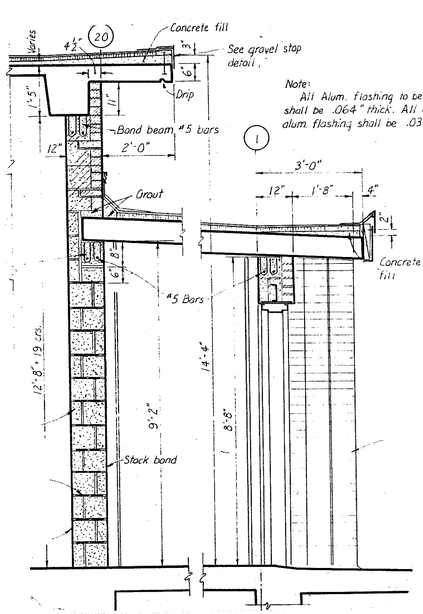
Scale: 3/4" = 1'-0"



NOTE: Place Existing Concrete Step on Walkway Pads to Protect Roof Membrane

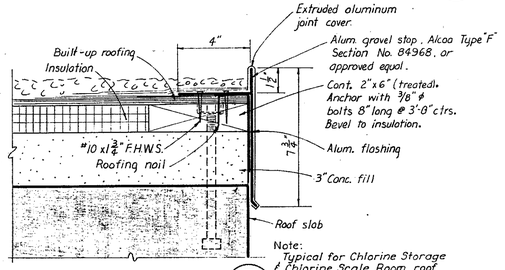
ROOF ACCESS DOOR FLASHING (5 / 95-1)

Scale: 1 1/2" = 1'-0"



Note: All Alum. flashing to be welded shall be .064" thick. All other alum. flashing shall be .032" thick.

SECTION (6 / 95-1)

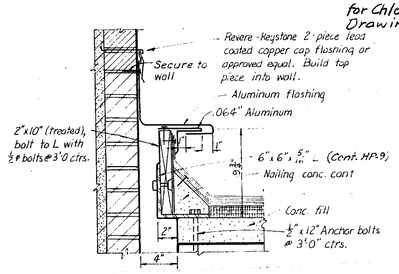


Note: Typical for Chlorine Storage & Chlorine Scale Room roof only

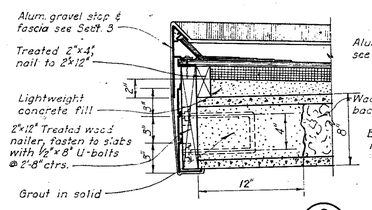
GRAVEL STOP DETAIL (7 / 95-1)

Scale: 3" = 1'-0"

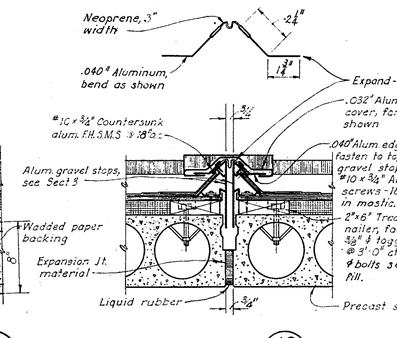
NOTE: Remove Existing Gravel Stop and old Flashing Complete. See Proposed Gravel Stop Detail for Chlorine Storage Building on Drawing HP-95-4.



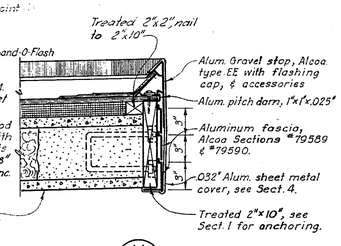
SECTION (8 / 95-1, 95-2)



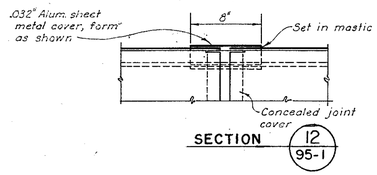
SECTION (9 / 95-1)



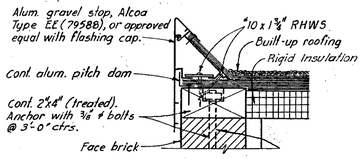
SECTION (10 / 95-1)



SECTION (11 / 95-1)

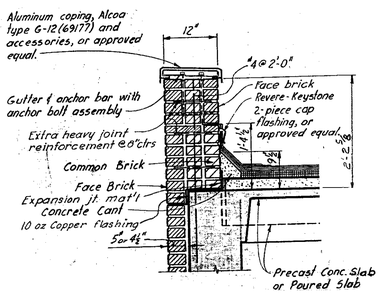


SECTION (12 / 95-1)



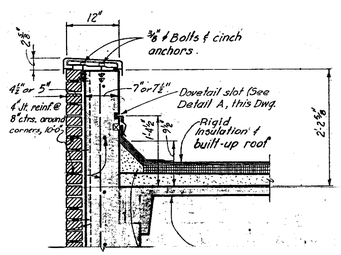
TYPICAL GRAVEL STOP DETAIL (13 / 95-1, 95-2)

Scale: 3" = 1'-0"



TYPICAL PARAPET & FLASHING (14 / 95-1, 95-2)

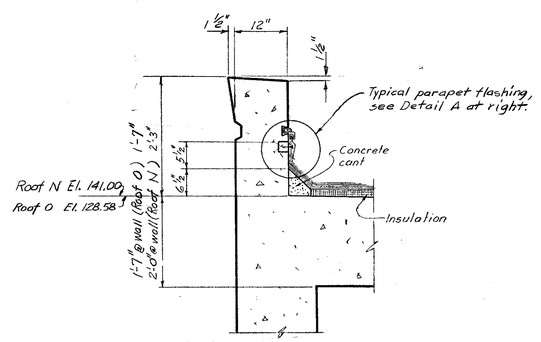
Scale: 3/4" = 1'-0"



Note: This section is typical at corners and support columns only.

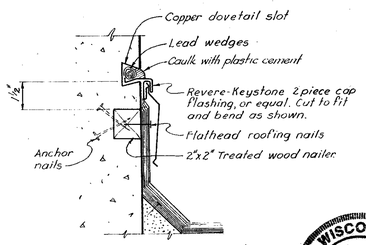
REINFORCED PARAPET & FLASHING (15 / 95-1)

Scale: 3/4" = 1'-0"



CONCRETE PARAPET & FLASHING (16 / 95-2)

Scale: 3/4" = 1'-0"



DETAIL A

Scale: 3" = 1'-0"

WISCONSIN WALTER E. POWERS E-8180 MILWAUKEE, WI PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY	CHKD.
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WATER ENGINEERING DIVISION
BUREAU OF ENGINEERS
MILWAUKEE WATER WORKS
DEPARTMENT OF PUBLIC WORKS

HOWARD PURIFICATION PLANT

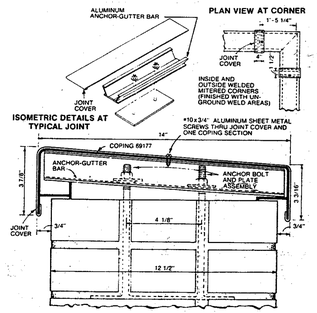
EXISTING ROOF FLASHING DETAILS

APPROVED A. V. Simons 5/3/88 (PLANT DESIGN ENGINEER) APPROVED Walter E. Powers 5/3/88 (ENGINEER IN CHARGE)

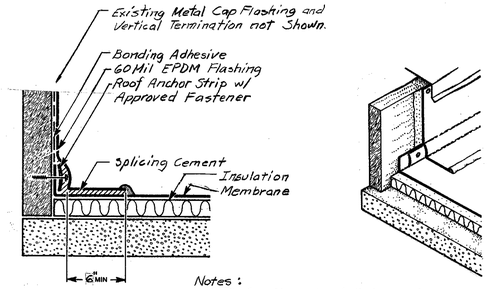
APPROVED Robert P. Miller 5-5-88 (SPEC. DEPUTY COMMISSIONER OF PUBLIC WORKS) APPROVED John A. Gridzen 5-5-88 (CITY ENGINEER)

DESIGNED BY [illegible] DATE 4-15-88
DRAWN BY [illegible] SCALE As Shown
TRACED BY [illegible]
CHECKED BY AVS FILE 4-31-40 DRWG. HP-95-3

MICROFILMED _____

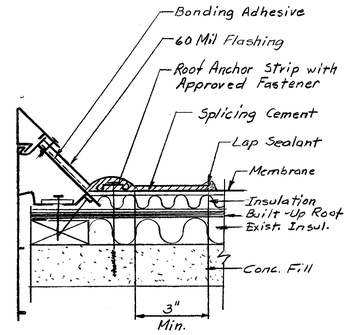


ALUMINUM COPING
(CHEMICAL BUILDING)

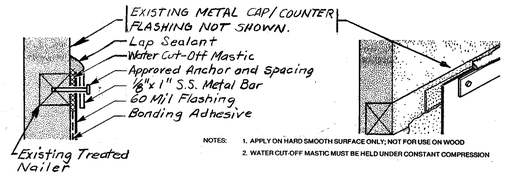


Notes:
1. R.F.S. Can Also be Used Horizontally
2. R.F.S Fastener Pattern as Recommended by Manuf. and as Approved.

TYPICAL FLASHING (NO CANT OR CANT UNEXPOSED)

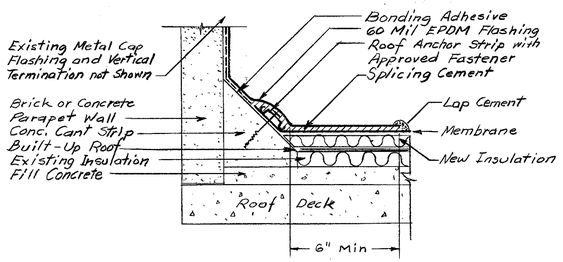


TYPICAL GRAVEL STOP

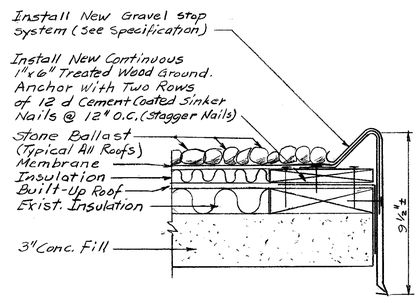


NOTES:
1. APPLY ON HARD SMOOTH SURFACE ONLY; NOT FOR USE ON WOOD
2. WATER CUT-OFF MASTIC MUST BE HELD UNDER CONSTANT COMPRESSION

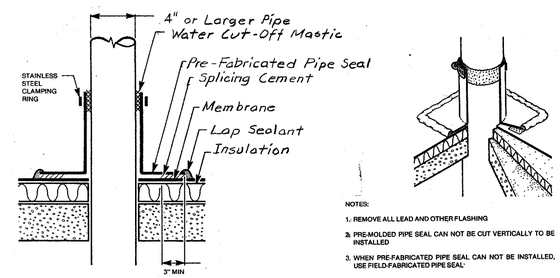
TYPICAL VERTICAL TERMINATION



TYPICAL FLASHING (CANT EXPOSED)

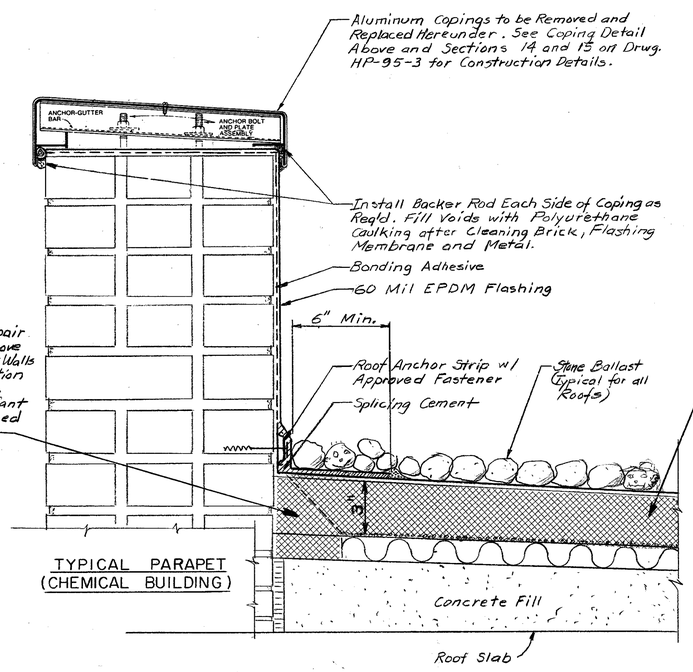


GRAVEL STOP
(CHLORINE STORAGE BLDG. ONLY)
AND SHOP WING



NOTES:
1. REMOVE ALL LEAD AND OTHER FLASHING
2. PRE-MOLDED PIPE SEAL CAN NOT BE CUT VERTICALLY TO BE INSTALLED
3. WHEN PRE-FABRICATED PIPE SEAL CAN NOT BE INSTALLED, USE FIELD-FABRICATED PIPE SEAL

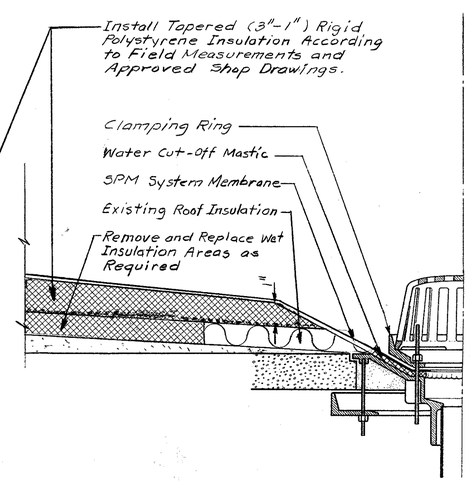
TYPICAL VENT PIPE FLASHING

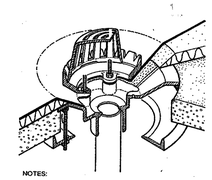


NOTE: Masonry Repair Contractor will Remove and Replace Parapet Walls Prior to Roof Installation on the Chemical Bldg. Existing Concrete Cant Strips will be Removed with Parapet Walls

TYPICAL PARAPET
(CHEMICAL BUILDING)

SECTION 1/95-1





NOTES:
1. REMOVE ALL LEAD AND OTHER FLASHING
2. ALL BOLTS OR CLAMPS MUST BE IN PLACE TO PROVIDE CONSTANT COMPRESSION ON WATER CUT-OFF MASTIC
3. HOLE IN MEMBRANE MUST EXCEED SIZE OF DRAIN PIPE
4. INSULATION TAPER SHALL NOT BE STEEPER THAN 1" (VERTICAL) IN 2" (HORIZONTAL)

TYPICAL ROOF DRAIN

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WATER ENGINEERING DIVISION
BUREAU OF ENGINEERS
MILWAUKEE WATER WORKS
DEPARTMENT OF PUBLIC WORKS

HOWARD PURIFICATION PLANT

PROPOSED ROOF FLASHING DETAILS

APPROVED A.V. Jimenez 5/13/88 (PLANT DESIGN ENGINEER) APPROVED Walter E. Powers 5/13/88 (ENGINEER IN CHARGE)
APPROVED [illegible] 5-13-88 (SPEC. DEPUTY COMMISSIONER OF PUBLIC WORKS) APPROVED John A. G. Wilson 5-13-88 (CITY ENGINEER)

DESIGNED BY AVJ
DRAWN BY NAB
TRACED BY
CHECKED BY AVJ
DATE 4-21-88
SCALE NTS
FILE 4-31-40 DRWG. HP-95-4

WISCONSIN WALTER E. POWERS E-8180 MILWAUKEE, WI PROFESSIONAL ENGINEER

MICROFILMED