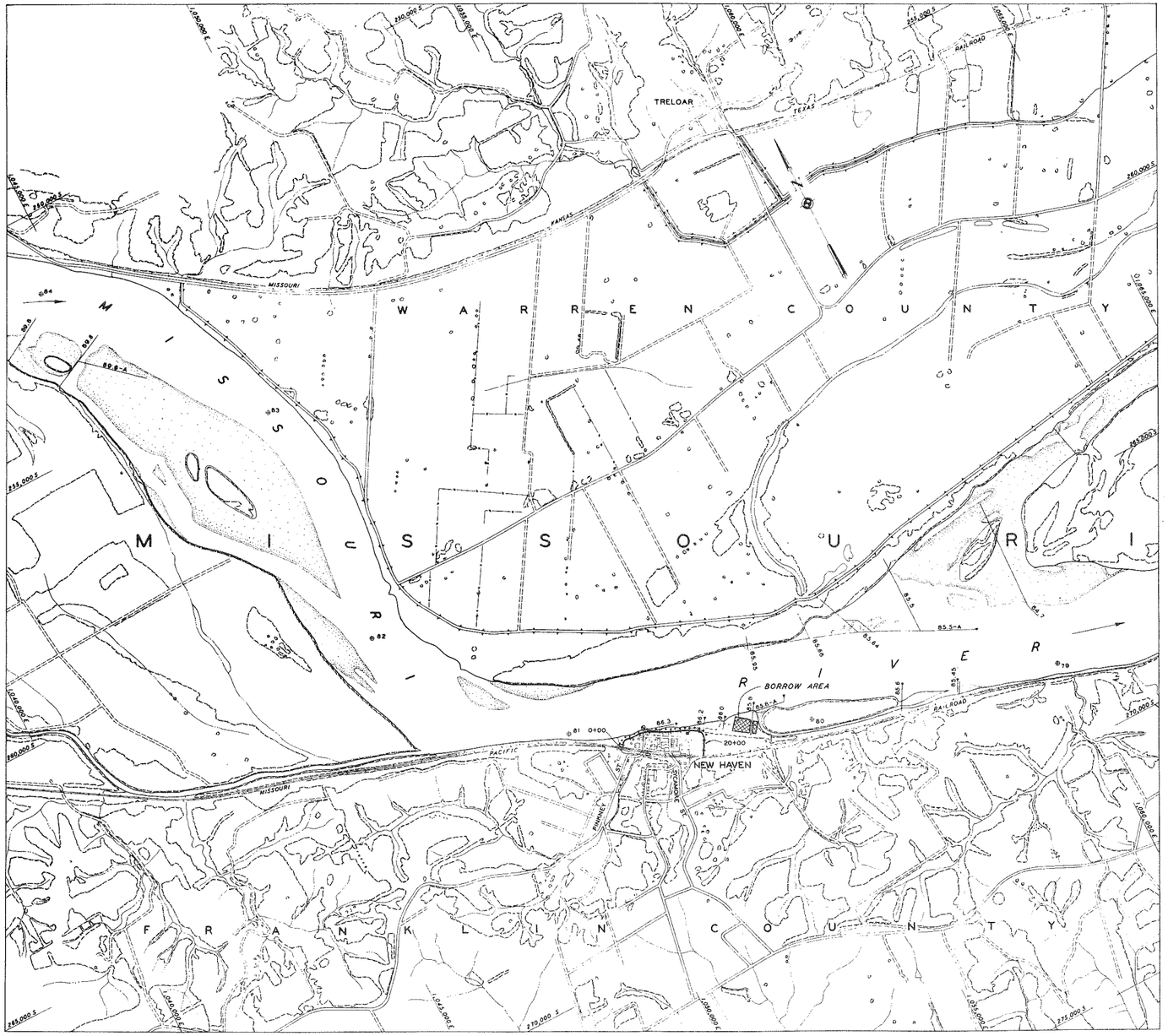
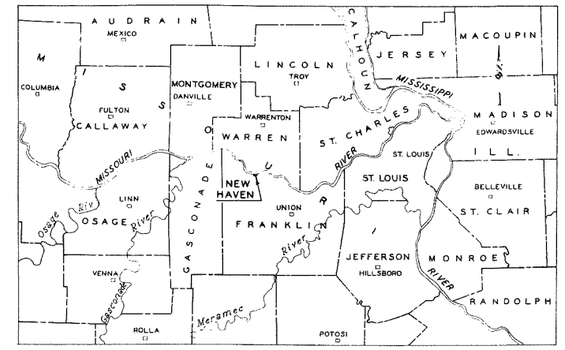


VICINITY

1000 0 1000 2000 3000
SCALE IN FEET



LOCATION

10 0 10 20 30
SCALE IN MILES

LEGEND

- Existing farm levee
- Constructed levee
- Slope protection
- Borrow area
- Constructed pumping plant
- Improved road
- Unimproved road
- Railroad
- Existing dike and No. 85.5
- Wooded areas
- River gage
- River mileage 79

INDEX

FILE NO.	TITLE	SHEET NO.
R-I-2332	Location, Vicinity and Index	1
R-I-2333	Plan, Profile and Typical Sections	2
R-I-2334	Drainage Structures - Sta. 6+51, Sta. 11+54 and Sta. 13+71 Plans, Sections and Details	3
R-I-2335	Drainage Structures - Sta. 15+50 - Plan, Sections and Details	4
R-I-2336	Drainage Structures - Sta. 15+50 - Details	5
R-I-2337	Drainage Structures - Sta. 15+50 - Pumping Plant	6

NO.	DATE	BY	REVISIONS	APP'D.
1	30 June 55	J.M.M.	Revised for "As Built" conditions	

MISSOURI RIVER

NEW HAVEN, MISSOURI

FLOOD PROTECTION PROJECT

LOCATION, VICINITY AND INDEX

RECORD DRAWING
JUNE 1955
CONTRACT NO. DA-23-028-ENG-2188

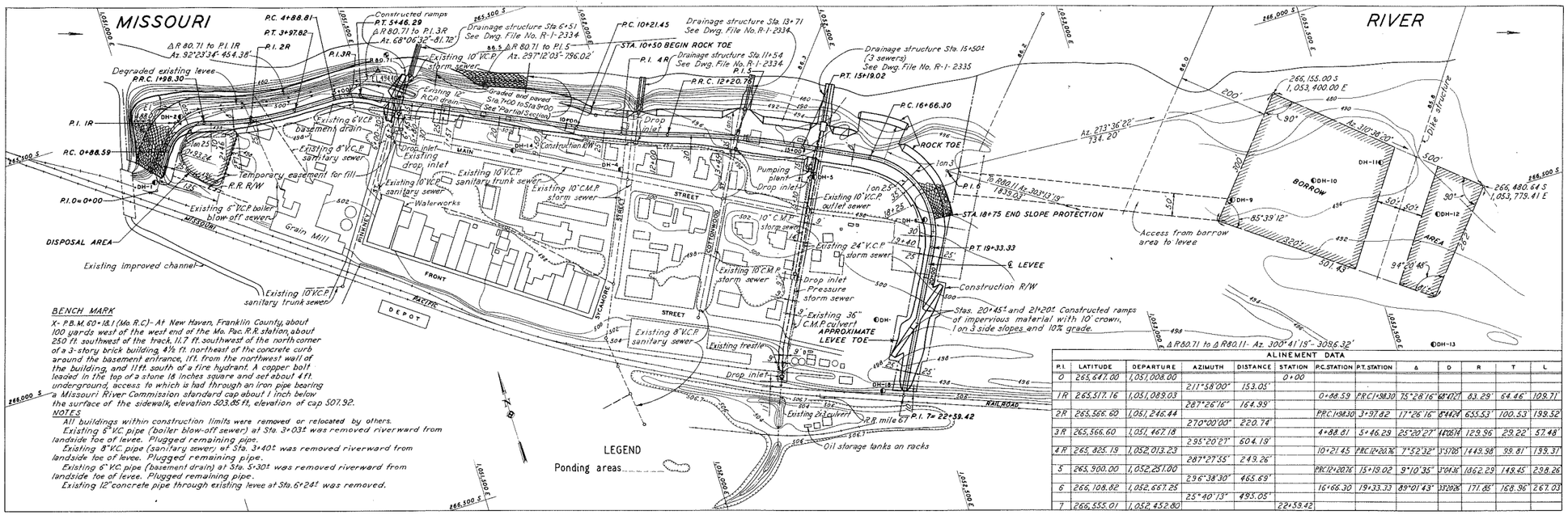
In 6 sheets — Sheet No. 1 — Scale: as shown

OFFICE, DISTRICT ENGINEER
KANSAS CITY DISTRICT
KANSAS CITY, MO.
MAY 1954

Submitted: Chief, Civil Engineering
Recommended: Chief, Engineering Division
Approved: Col, C.E., District Engineer

Drawn by: P.E.M. Traced by: L.B.R. Checked by: J.M.M.

File No. R-I-2332



BENCH MARK

X- P.B.M. 60+18.1 (Mo. R.C.)- At New Haven, Franklin County, about 100 yards west of the west end of the Mo. Pac. R.R. station, about 250 ft. southwest of the track, 11.7 ft. southwest of the north corner of a 3-story brick building, 4½ ft. northeast of the concrete curb around the basement entrance, 1 ft. from the northwest wall of the building, and 11 ft. south of a fire hydrant. A copper bolt leaded in the top of a stone 18 inches square and set about 4 ft. underground, access to which is had through an iron pipe bearing a Missouri River Commission standard cap about 1 inch below the surface of the sidewalk, elevation 503.85 ft, elevation of cap 507.92.

NOTES

All buildings within construction limits were removed or relocated by others.

Existing 6" V.C. pipe (boiler blow-off sewer) at Sta. 3+03± was removed riverward from landside toe of levee. Plugged remaining pipe.

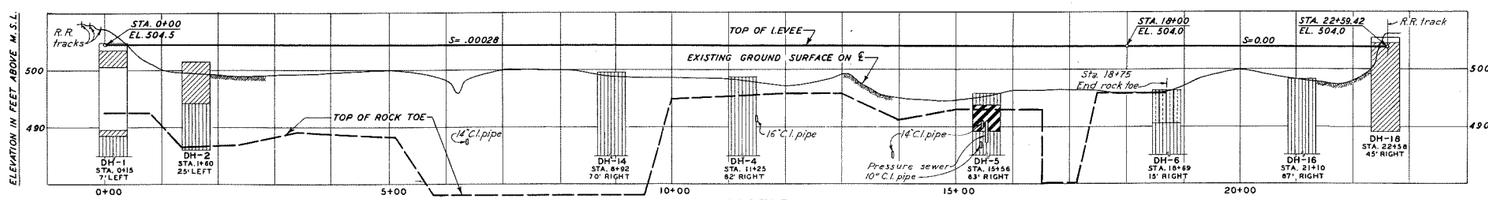
Existing 8" V.C. pipe (sanitary sewer) at Sta. 3+40± was removed riverward from landside toe of levee. Plugged remaining pipe.

Existing 6" V.C. pipe (basement drain) at Sta. 5+30± was removed riverward from landside toe of levee. Plugged remaining pipe.

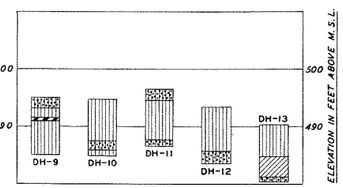
Existing 12" concrete pipe through existing levee at Sta. 6+24± was removed.

ALINEMENT DATA

P.I.	LATITUDE	DEPARTURE	AZIMUTH	DISTANCE	STATION	P.C. STATION	P.T. STATION	Δ	D	R	T	L
0	265,647.00	1,051,008.00			0+00							
			211°58'00"	153.05'								
1R	265,517.16	1,051,089.03				0+88.59	P.R.C. 1+98.30	75°28'16"	8°42'2"	83.29'	64.46'	109.71'
			287°26'16"	164.99'								
2R	265,566.60	1,051,246.44				P.R.C. 1+98.30	3+97.82	17°26'16"	8°42'2"	655.53'	100.53'	199.52'
			270°00'00"	220.74'								
3R	265,566.60	1,051,467.18				4+88.81	5+46.29	25°20'27"	14°08'14"	129.96'	29.22'	57.48'
			295°20'27"	604.19'								
4R	265,825.19	1,052,013.23				10+21.45	P.R.C. 10+20.76	7°52'32"	3°57'06"	1449.98'	99.81'	199.37'
			287°27'55"	249.26'								
5	265,900.00	1,052,251.00				P.R.C. 12+20.76	15+19.02	9°10'35"	3°04'36"	1862.29'	148.45'	298.26'
			296°38'30"	465.69'								
6	266,108.82	1,052,667.25				16+66.30	19+33.33	89°01'43"	33°28'26"	171.85'	168.96'	267.03'
			25°40'13"	495.05'								
7	266,555.01	1,052,452.80			22+59.42							

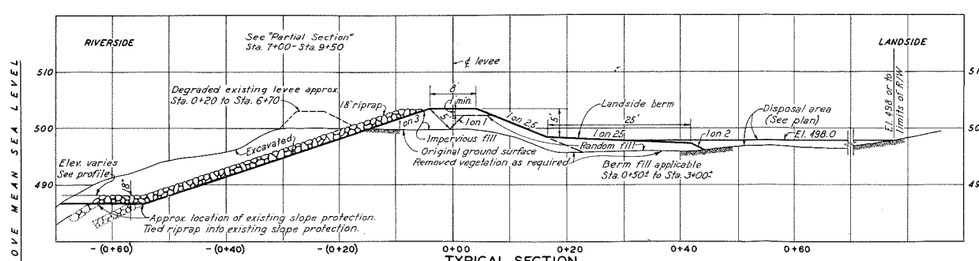


PROFILE



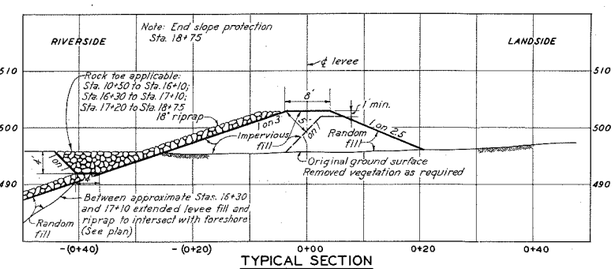
BORROW AREA

GRAPHIC LOGS OF UNDERGROUND EXPLORATIONS



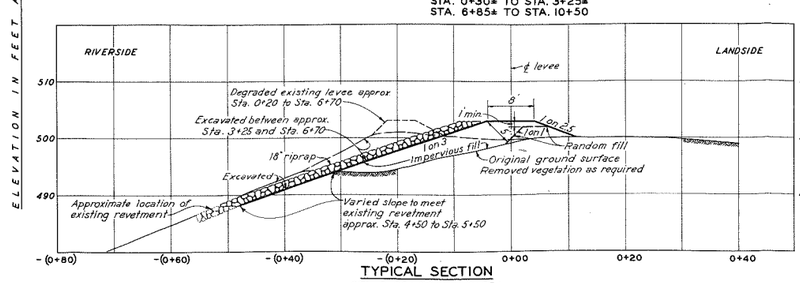
TYPICAL SECTION

STA. 0+30± TO STA. 3+25±
STA. 6+85± TO STA. 10+50



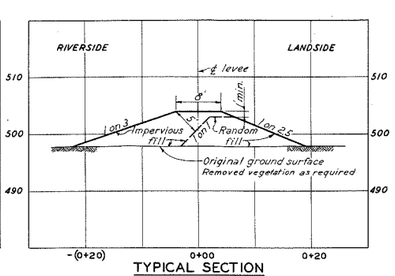
TYPICAL SECTION

STA. 10+50 TO STA. 18+50



TYPICAL SECTION

STA. 3+25± TO STA. 6+85±



TYPICAL SECTION

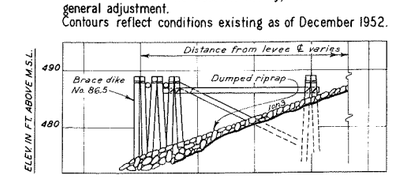
STA. 18+50 TO STA. 22+60±

LEGEND FOR UNDERGROUND EXPLORATIONS

SM	Silty Sand or Silty Gravelly Sand
ML	Silts, Sandy Silts, Gravelly Silts or Diatomaceous Soils
CL	Lean Clays, Sandy Clays or Gravelly Clays
OL	Organic Silts or Lean Organic Clays
CH	Fat Clays

GENERAL NOTES

Plan projected on Weston Plane Coordinates.
Elevations, referred to mean sea level, are based on the U.S. Coast and Geodetic Survey, 1929 general adjustment.
Contours reflect conditions existing as of December 1952.



PARTIAL SECTION

STA. 7+00 TO STA. 9+50

NO.	DATE	BY	REVISIONS	APP'D.
2	30 June 55	JMM	Revised for "As Built" conditions.	MMJ
1	10 June 54	J.M.M.	Alinement data P.I. No. 5 to P.I. No. 7, limits of Typical Section Sta. 18+50 to Sta. 22+50±, and notes. Minor revisions.	

MISSOURI RIVER

NEW HAVEN, MISSOURI

FLOOD PROTECTION PROJECT

PLAN, PROFILE AND TYPICAL SECTIONS

RECORD DRAWING

JUNE 1955

CONTRACT NO. DA-23-028-ENG-2188

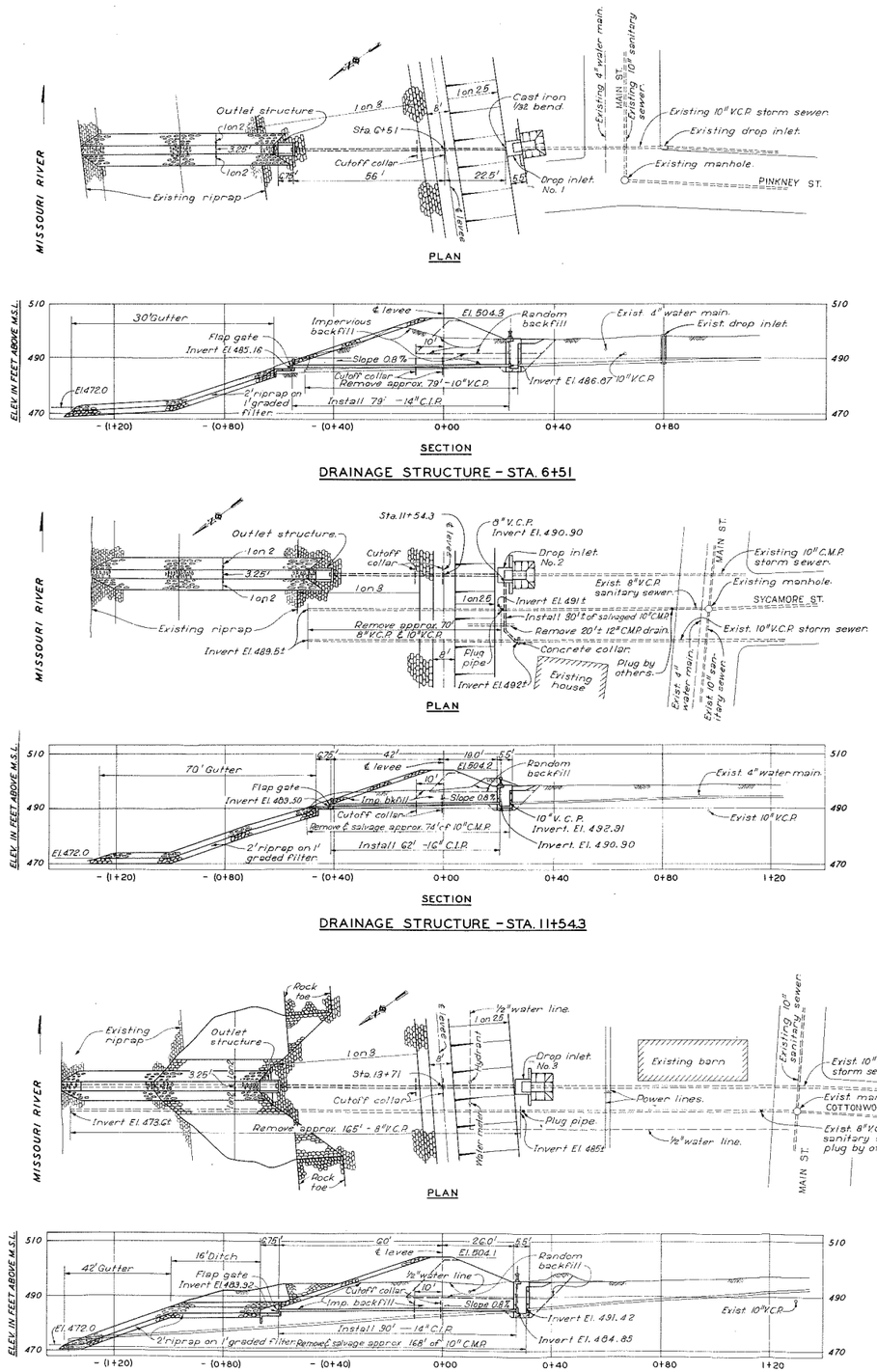
In 6 sheets — Sheet No. 2 — Scale: as shown

OFFICE, DISTRICT ENGINEER
KANSAS CITY DISTRICT
KANSAS CITY, MO.
MAY 1954

Submitted: H. B. Bradford, Chief, Civil Engineering
Recommended: Louis A. Fiske, Chief, Engineering Division
Approved: Keith Barney, Col., C.E., District Engineer

Drawn by: P.E.M. Traced by: J.F.K. Checked by: J.M.M.

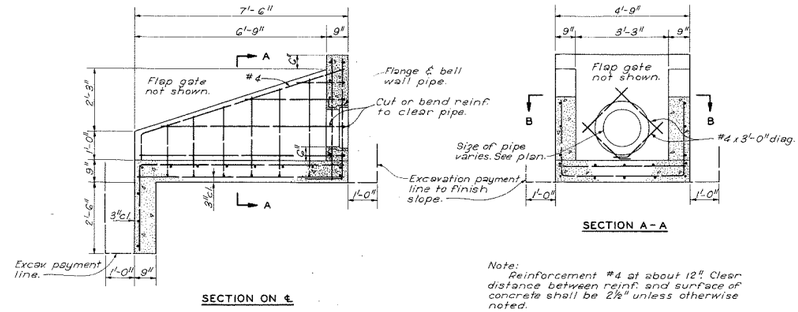
File No. R-1-2333

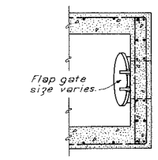


DRAINAGE STRUCTURE - STA. 6+51

DRAINAGE STRUCTURE - STA. 11+54.3

DRAINAGE STRUCTURE - STA. 13+71

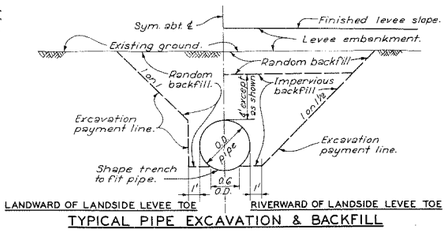




Note:
Reinforcement #4 at about 12" Clear distance between reinf. and surface of concrete shall be 2½" unless otherwise noted.

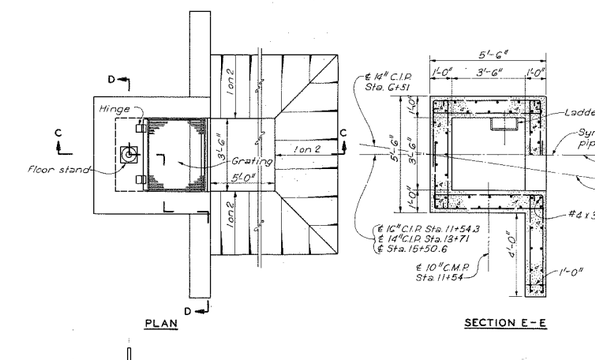
OUTLET STRUCTURE

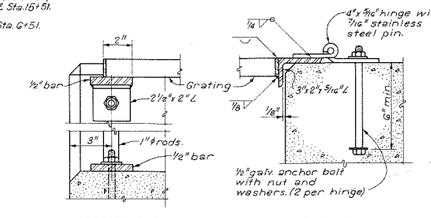
Scale: ½" = 1'-0"

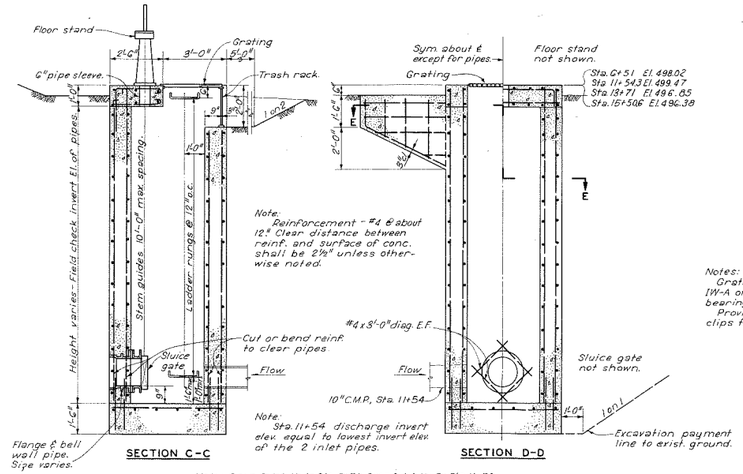


TYPICAL PIPE EXCAVATION & BACKFILL

No Scale



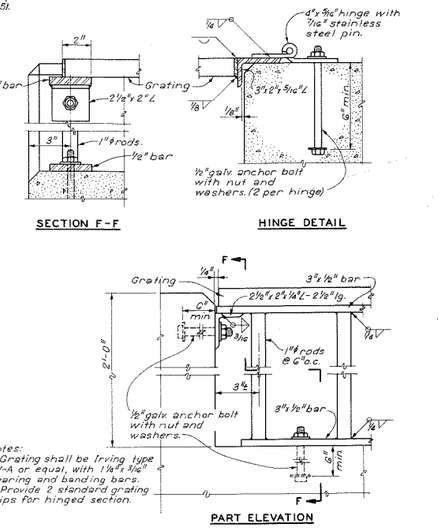




Note: Drop Inlet No. 1 - Sta. 6+51; Drop Inlet No. 2 - Sta. 11+54; Drop Inlet No. 3 - Sta. 13+71; Drop Inlet No. 4 - Sta. 15+50.6.

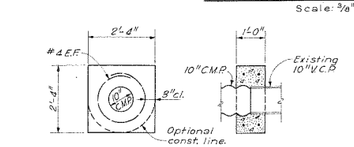
DROP INLETS NOS. 1, 2, 3 AND 4

Scale: ⅜" = 1'-0"



TRASH RACK AND GRATING DETAILS

Scale: 3" = 1'-0"



CONCRETE COLLAR

Scale: ½" = 1'-0"

NOTES:
All exposed edges of concrete shall be chamfered ¾".
For details of ladder rungs see Dwg. File No. R-1-2337.
For details of cutoff collars see Dwg. File No. R-1-2335.
For typical ditch and gutter details see Dwg. File No. R-1-2335.
For details of levee embankment not shown see Typical Sections on Dwg. File No. R-1-2333.

RECORD DRAWING

JUNE 1955

CONTRACT NO. DA-23-028-ENG-2188

NO	DATE	BY	REVISIONS	APP'D.
2	30 June 55	E.B.C.	Revised for "As Built" conditions	R.E.H.
1	10 June 54	E.B.C.	Typical pipe excavation & backfill.	R.E.H.

MISSOURI RIVER

NEW HAVEN, MISSOURI

FLOOD PROTECTION PROJECT

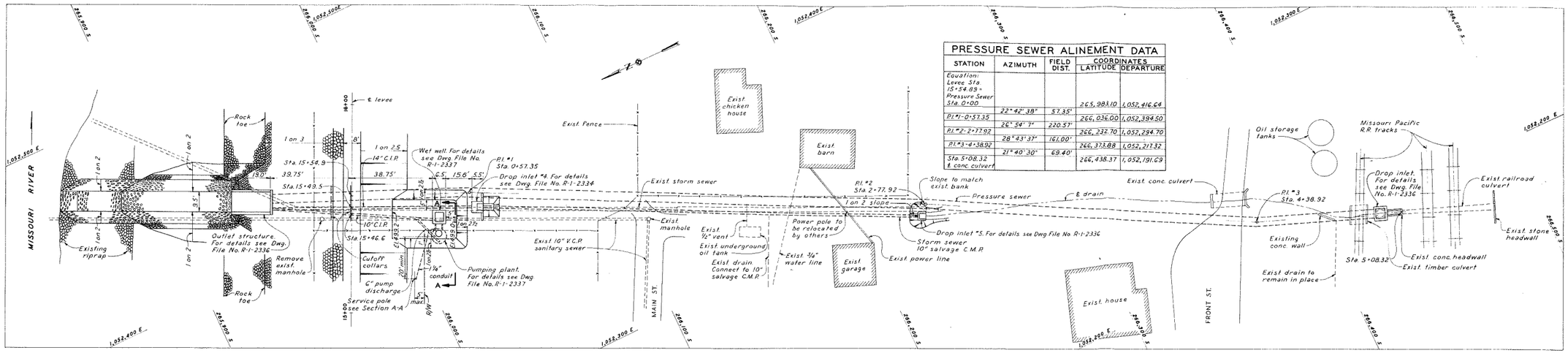
DRAINAGE STRUCTURES
STA. 6+51, STA. 11+54 AND STA. 13+71
PLANS, SECTIONS AND DETAILS

In 6 sheets — Sheet No. 3 — Scale: as shown

OFFICE, DISTRICT ENGINEER
KANSAS CITY DISTRICT
KANSAS CITY, MO.
MAY 1954

Submitted: R. E. Gillis, Chief, Structs. Design
Recommended: Louis E. Fiala, Chief, Engineering Division
Approved: Keith A. Barron, Col, C.E., District Engineer

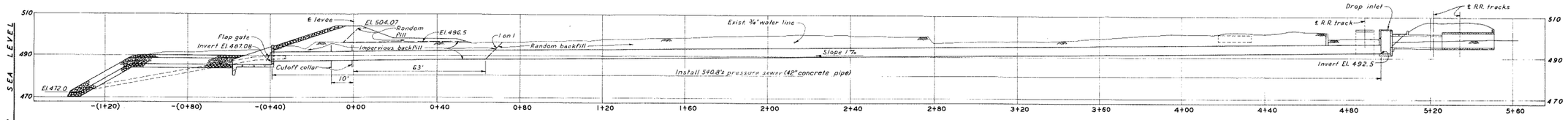
Drawn by: J.W.W. Traced by: C.L.W. Checked by: E.B.C.
File No. R-1-2334



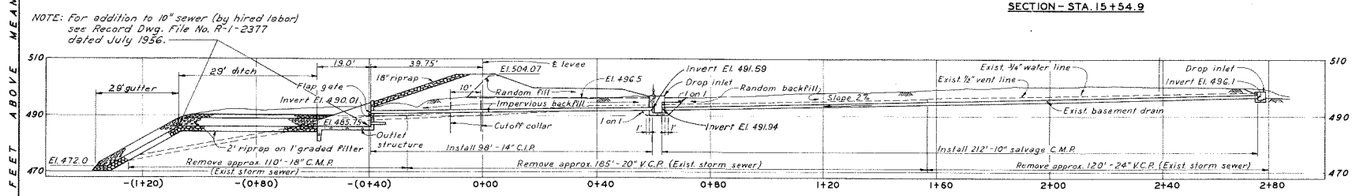
PRESSURE SEWER ALINEMENT DATA

STATION	AZIMUTH	FIELD DIST.	COORDINATES LATITUDE	COORDINATES DEPARTURE
Equation: Levee Sta. 15+54.89 = Pressure Sewer Sta. 0+00			265,983.10	1,052,416.64
	22°42'38"	57.35'		
Pl #1 - 0+57.35			266,036.00	1,052,394.50
	26°54'7"	220.57'		
Pl #2 - 2+77.92			266,232.70	1,052,294.70
	28°43'37"	161.00'		
Pl #3 - 4+38.92			266,373.88	1,052,217.32
	21°40'30"	69.40'		
Sta. 5+08.32 ℄ conc. culvert			266,438.37	1,052,191.69

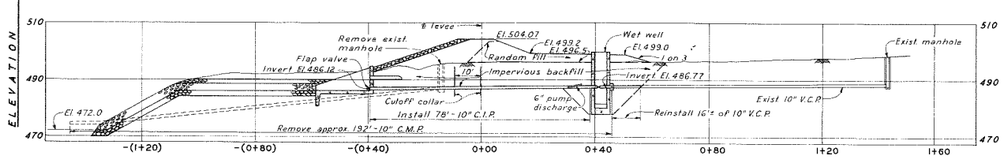
PLAN
Scale: 1" = 20'



SECTION – STA. 15+54.9

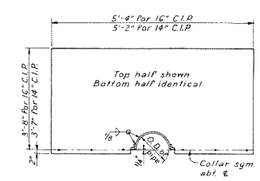


SECTION – STA. 15+50.6



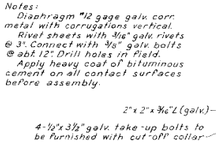
SECTION – STA. 15+45.3

DRAINAGE STRUCTURES – STA. 15+50±



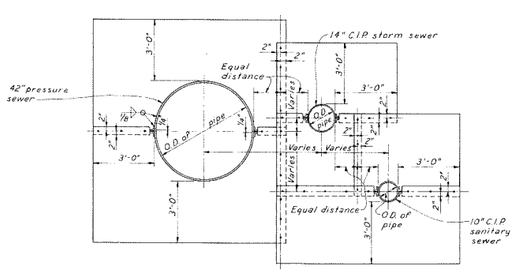
ELEVATION
STA. 6+38 STA. 11+48 AND STA. 13+89

Notes:
Diaphragm #12 gage galv. corr. metal with corrugations vertical.
Rivet sheets with 3/16" galv. rivets @ 3". Connect with 3/8" galv. bolts @ abt. 12". Drill holes in field.
Apply heavy coat of bituminous cement on all contact surfaces before assembly.

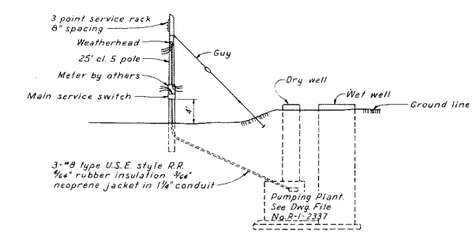


SECTION

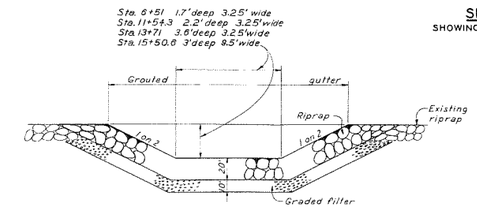
CUTOFF COLLARS
No Scale



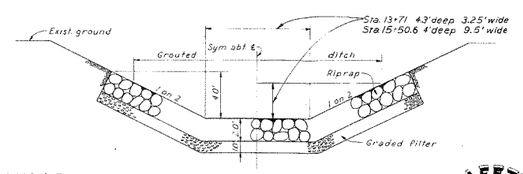
ELEVATION
STA. 15+50±



SECTION A-A
SHOWING ELECTRICAL SERVICE
Scale: 1" = 10'



TYPICAL SECTION THRU GUTTER
No Scale



TYPICAL SECTION THRU DITCH
No Scale

NOTES:
For details of levee embankment not shown, see Typical Sections on Dwg. File No. R-1-2333.
For typical pipe excavation & backfill details see Dwg. File No. R-1-2334.

NO.	DATE	BY	REVISIONS	APP'D.
4	25 Feb. 57	E.B.C.	Note added to Section – Sta. 15+50.6	
3	30 June 55	E.B.C.	Revised for "As Built" conditions	
2	18 June 54	E.B.C.	Section – Sta. 15+54.9	
1	10 June 54	E.B.C.	Section – Sta. 15+54.9; Section – Sta. 15+49.5	

MISSOURI RIVER
NEW HAVEN, MISSOURI
FLOOD PROTECTION PROJECT

DRAINAGE STRUCTURES STA. 15+50±
PLAN, SECTIONS AND DETAILS

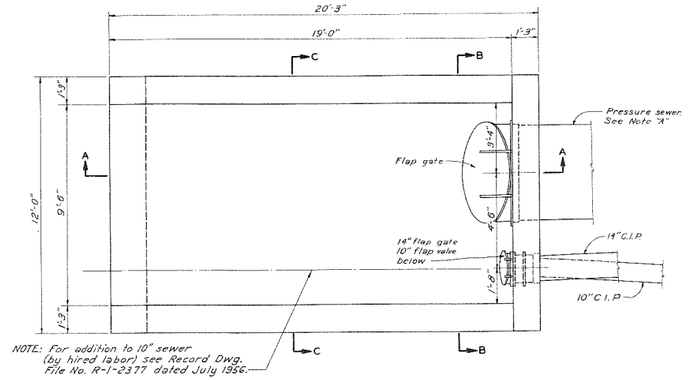
In 6 sheets | Sheet No. 4 | Scale: as shown

OFFICE, DISTRICT ENGINEER
KANSAS CITY DISTRICT
KANSAS CITY, MO.
MAY 1954

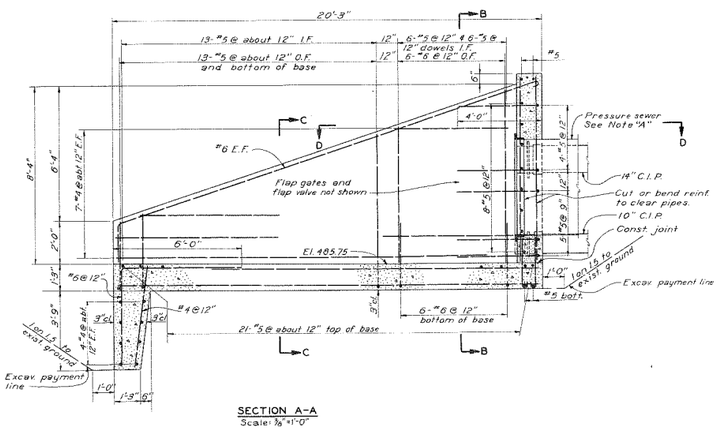
Submitted: R. L. Gillis, Chief, Struct. Design
Recommended: Louis L. Fisher, Chief, Engineering Division
Approved: Kirtlan Brown, Col., C.E., District Engineer

Drawn by: J.W.W. Traced by: D.E.J. Checked by: E.B.C.
File No. R-1-2335

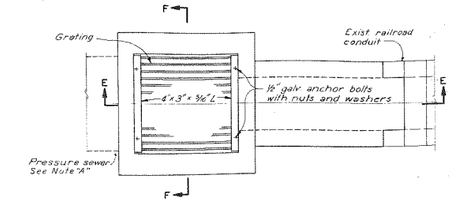
RECORD DRAWING
JUNE 1955
CONTRACT NO. DA-23-028-ENG-2188



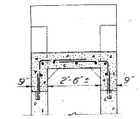
PLAN
Scale: 3/8"=1'-0"



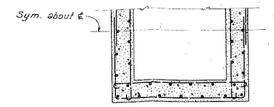
SECTION A-A
Scale: 3/8"=1'-0"



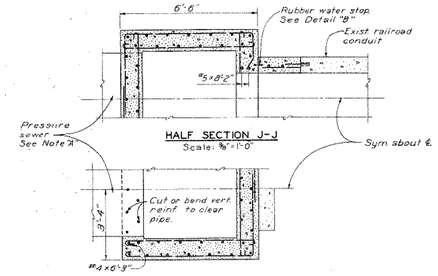
PLAN
Scale: 3/8"=1'-0"



SECTION L-L
Scale: 3/8"=1'-0"

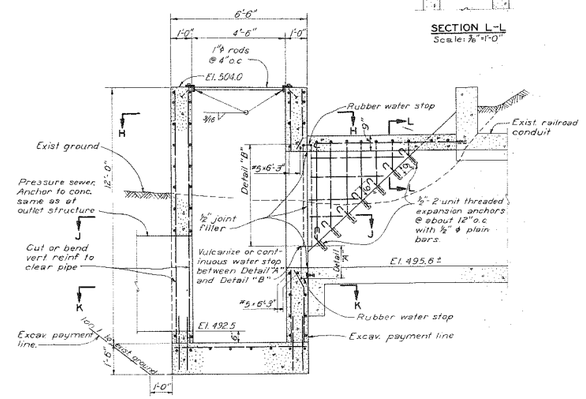


HALF SECTION H-H
Scale: 3/8"=1'-0"

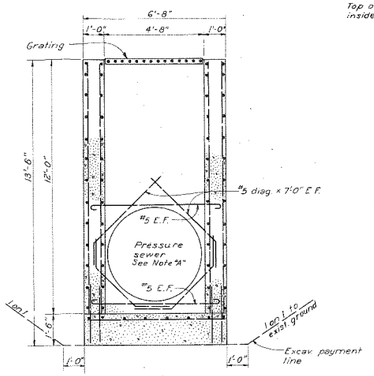


HALF SECTION J-J
Scale: 3/8"=1'-0"

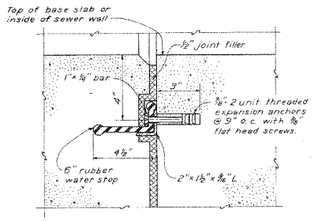
HALF SECTION K-K
Scale: 3/8"=1'-0"



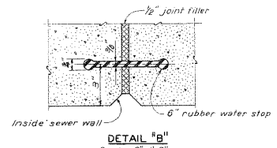
SECTION E-E
Scale: 3/8"=1'-0"



SECTION F-F
Scale: 3/8"=1'-0"



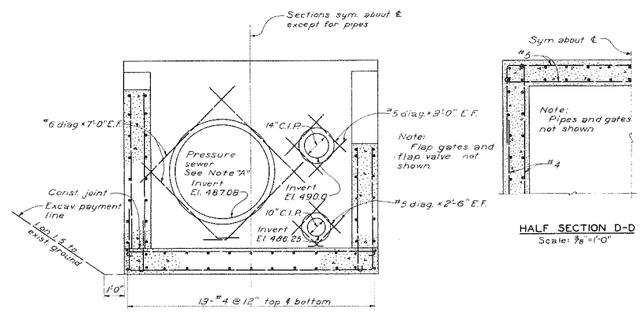
DETAIL "A"
Scale: 3"=1'-0"



DETAIL "B"
Scale: 3"=1'-0"

Note:
Reinforcement - #4 @ about 12" unless otherwise noted.
Grating shall be galvanized after fabrication.

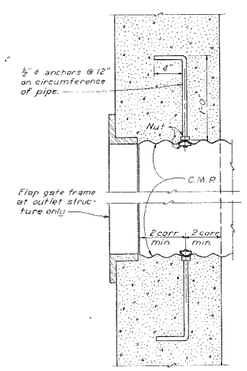
DROP INLET ON PRESSURE SEWER



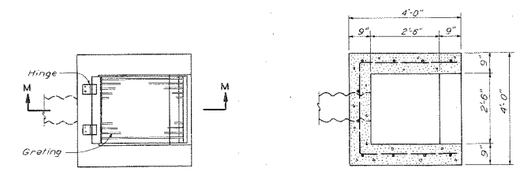
HALF SECTION B-B HALF SECTION C-C
Scale: 3/8"=1'-0"

HALF SECTION D-D
Scale: 3/8"=1'-0"

OUTLET STRUCTURE

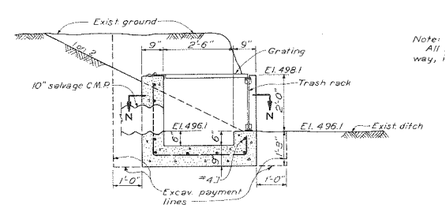


TYPICAL ANCHORAGE FOR C.M. PIPE PRESSURE SEWER
Scale: 1 1/2"=1'-0"



PLAN

SECTION N-N



SECTION M-M

Note:
All reinf. #4 @ about 12" each way, in center of walls and base.

DROP INLET NO. 5
Scale: 1/2"=1'-0"

NOTES:
For plan and section of pressure sewer see Dwg. File No. R-1-2393.
For typical pipe excavation and backfill see Dwg. File No. R-1-2394.
All exposed concrete edges shall be chamfered 3/4".
For trash rack and grating details see Dwg. File No. R-1-2394.
Clear distance of reinf. from surface of concrete shall be 2 1/2" unless otherwise noted.
Clear distance from reinf. to rubber water stop shall be 2" min.

Note "A"
Pressure sewer shall be 42" concrete pipe.

RECORD DRAWING

JUNE 1955

CONTRACT NO. DA-23-028-ENG-2188

NO.	DATE	BY	REVISIONS	APP'D.
3	25 Feb 57	E.B.C.	Note added to Outlet Structure Plan	[illegible]
2	30 June 55	E.B.C.	Revised for "As Built" conditions	[illegible]
1	18 June 54	E.B.C.	Drop inlet on pressure sewer	[illegible]

MISSOURI RIVER

NEW HAVEN, MISSOURI

FLOOD PROTECTION PROJECT

DRAINAGE STRUCTURES - STA. 15+50 ±

DETAILS

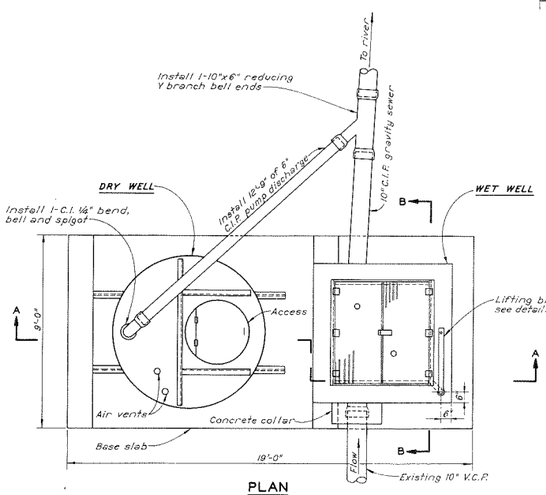
In 6 sheets — Sheet No. 5 — Scale: as shown

OFFICE, DISTRICT ENGINEER
KANSAS CITY DISTRICT
KANSAS CITY, MO.
MAY 1954

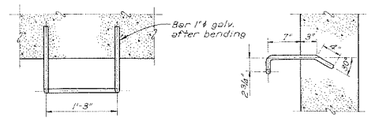
Submitted: [illegible] Chief, Structs. Design
Recommended: [illegible] Chief, Engineering Division
Approved: [illegible] Col., C.E., District Engineer

Drawn by: J.W.W. Traced by: J.M.C. Checked by: E.B.C.

File No. R-1-2336

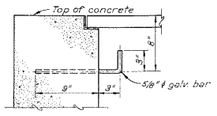


PLAN
Scale: 3/8" = 1'-0"

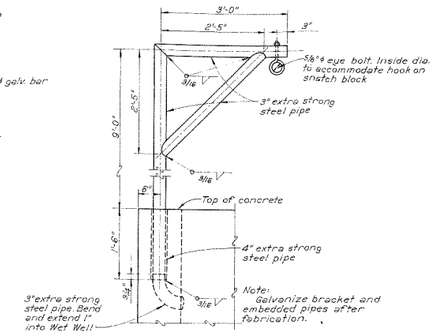


PLAN ELEVATION

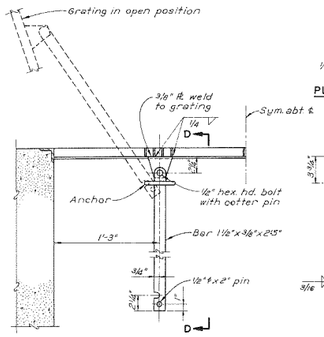
LADDER RUNG DETAIL
Scale: 1" = 1'-0"



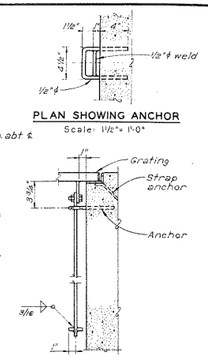
CHAIN HOOK DETAIL
Scale: 1 1/2" = 1'-0"



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

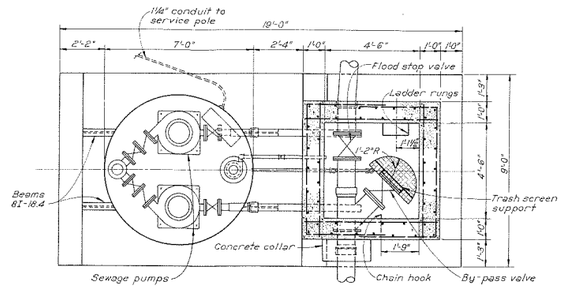


ELEVATION OF GRATING SUPPORT
Scale: 1 1/2" = 1'-0"
2 REQUIRED

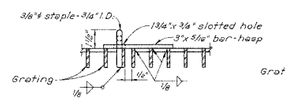


PLAN SHOWING ANCHOR
Scale: 1 1/2" = 1'-0"

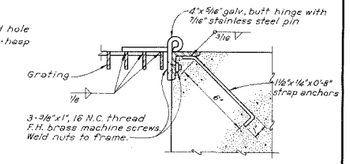
SECTION D-D
Scale: 1 1/2" = 1'-0"



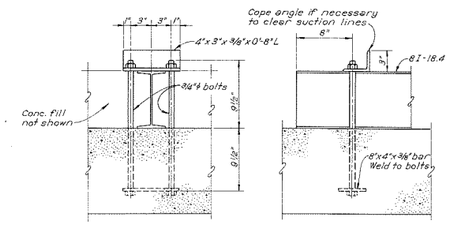
SECTION C-C
Scale: 3/8" = 1'-0"



HASP DETAIL
Scale: 3" = 1'-0"

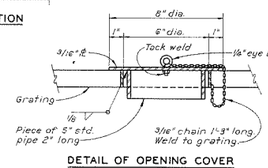


HINGE AND ANCHOR DETAIL
Scale: 3" = 1'-0"

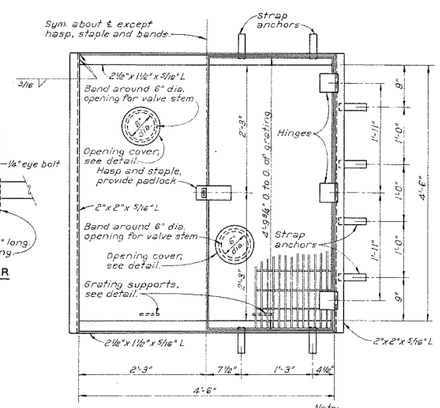


END ELEVATION SIDE ELEVATION

DRY WELL BEAM ANCHORAGE
Scale: 1 1/2" = 1'-0"
4 REQUIRED



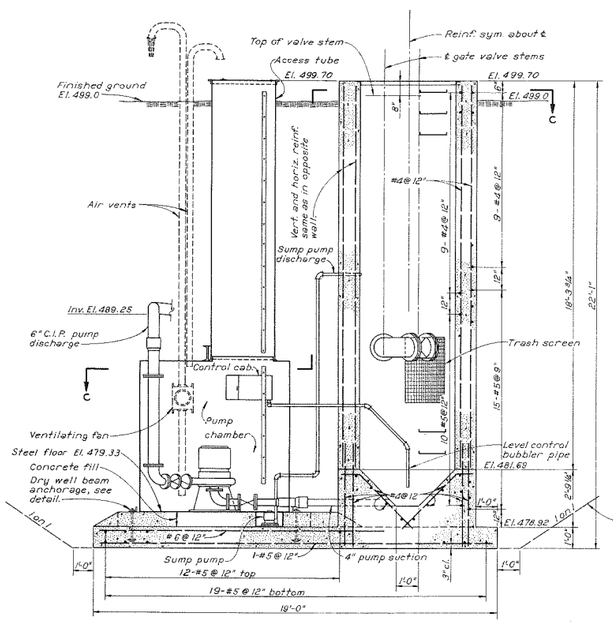
DETAIL OF OPENING COVER
Scale: 3" = 1'-0"



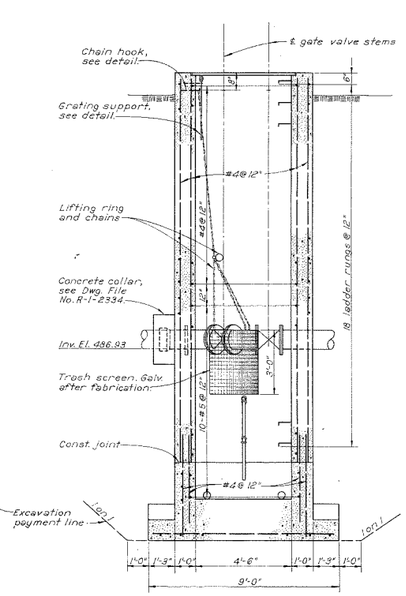
PLAN
Scale: 1" = 1'-0"

Note:
Grating shall be Irving type IW-A or equal, with 1 1/4"x 3/16" bearing and bending bars.
Grating, frame and fittings shall be galvanized after fabrication.

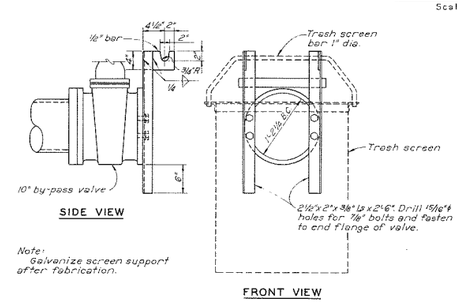
GRATING AND FRAME



SECTION A-A
Scale: 3/8" = 1'-0"



SECTION B-B
Scale: 3/8" = 1'-0"



SIDE VIEW FRONT VIEW

Note:
Galvanize screen support after fabrication.

TRASH SCREEN SUPPORT
Scale: 1" = 1'-0"

NOTES:
Underground Dry Well portion, including supporting beams shall be prefabricated as mfg. by Smith & Loveless, Inc. or equal.
Clear distance of reinf. from surface of concrete shall be 2 1/2" unless otherwise noted.
All exposed edges of concrete shall be chamfered 3/4".
For plan and section, see Dwg. File No. R-1-2335.

RECORD DRAWING
JUNE 1955
CONTRACT NO. DA-23-028-ENG-2188

NO.	DATE	BY	REVISIONS	APP'D.
1	30 June 55	E.B.C.	Revised for As Built conditions.	

MISSOURI RIVER
NEW HAVEN, MISSOURI
FLOOD PROTECTION PROJECT

DRAINAGE STRUCTURES - STA. 15+50±
PUMPING PLANT

In 6 sheets — Sheet No. 6 — Scale: as shown

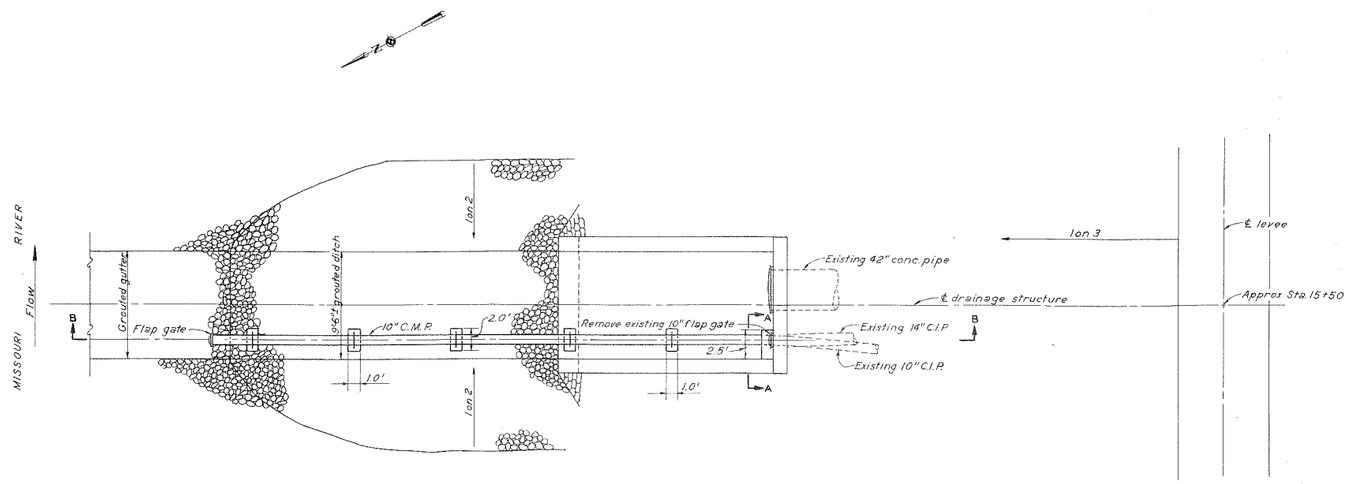
OFFICE, DISTRICT ENGINEER
KANSAS CITY DISTRICT
KANSAS CITY, MO.
MAY 1954

Submitted: Chief, Structs. Design
Recommended: Chief, Engineering Division
Approved: Col, C.E., District Engineer

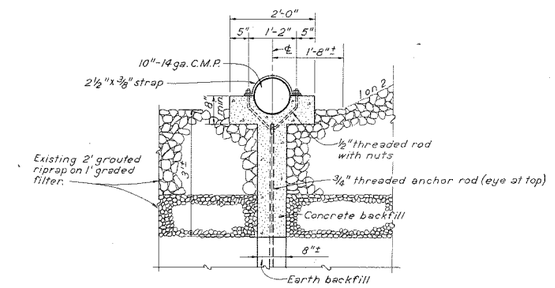
Drawn by: R.D.S. Traced by: G.R.P. Checked by: E.B.C.

File No. R-1-2337

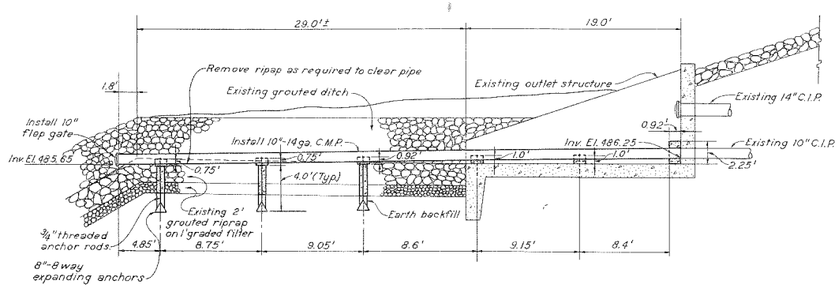
INCLOSURE 2 PLATE NO. 6



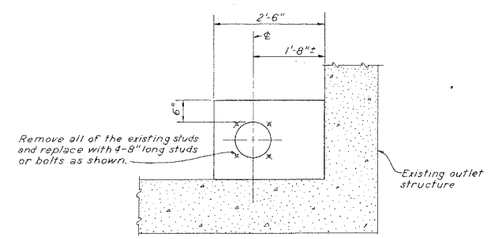
PLAN
Scale: 1"=5'



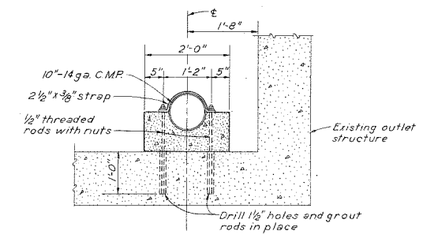
TYPICAL ANCHOR AND CONCRETE PAD IN GROUTED RIPRAP
Scale: ¾"=1'-0"



SECTION B-B
Scale: 1"=5'



SECTION A-A
Scale: ¾"=1'-0"



TYPICAL ANCHOR AND CONCRETE PAD IN CONCRETE SECTION
Scale: ¾"=1'-0"

NOTES:
For location and vicinity of this drainage structure see New Haven Record Drawings dated June, 1955 File Nos. R-1-2332 & R-1-2333
For details of this drainage structure see New Haven Record Drawings dated June, 1955 File Nos. R-1-2335 and R-1-2336.

RECORD DRAWING

JULY 1956
HIRED LABOR

NO.	DATE	BY	REVISIONS	APP'D.
1	25 Feb 57	E.B.C.	Minor revisions for "as built" as of 23 July '56	

MISSOURI RIVER
NEW HAVEN, MISSOURI
FLOOD PROTECTION PROJECT

DRAINAGE STRUCTURE - STA. 15+50±
ADDITION TO 10" SEWER

In 1 sheet — Sheet No. 1 — Scale: as shown

OFFICE, DISTRICT ENGINEER
KANSAS CITY DISTRICT
KANSAS CITY, MO
MAY 1956

Submitted: Chief, Strucs. Design
Recommended: Chief, Engineering Division
Approved: Col. C.E. District Engineer

Drawn by: R.D.S. Traced by: H.O.I. Checked by: E.B.C.
File No. R-1-2377