MAIN STORM WATER DRAIN # 8 - PHASE II

WITHIN I-35W R/W ℄ FROM EL. LOT 39, PARKMORE 2nd ADDN. TO HILLSIDE

CITY OF WICHITA, KANSAS

B. E. SMITH CITY ENGINEER

DATE: July ,1970 PROJECT No:

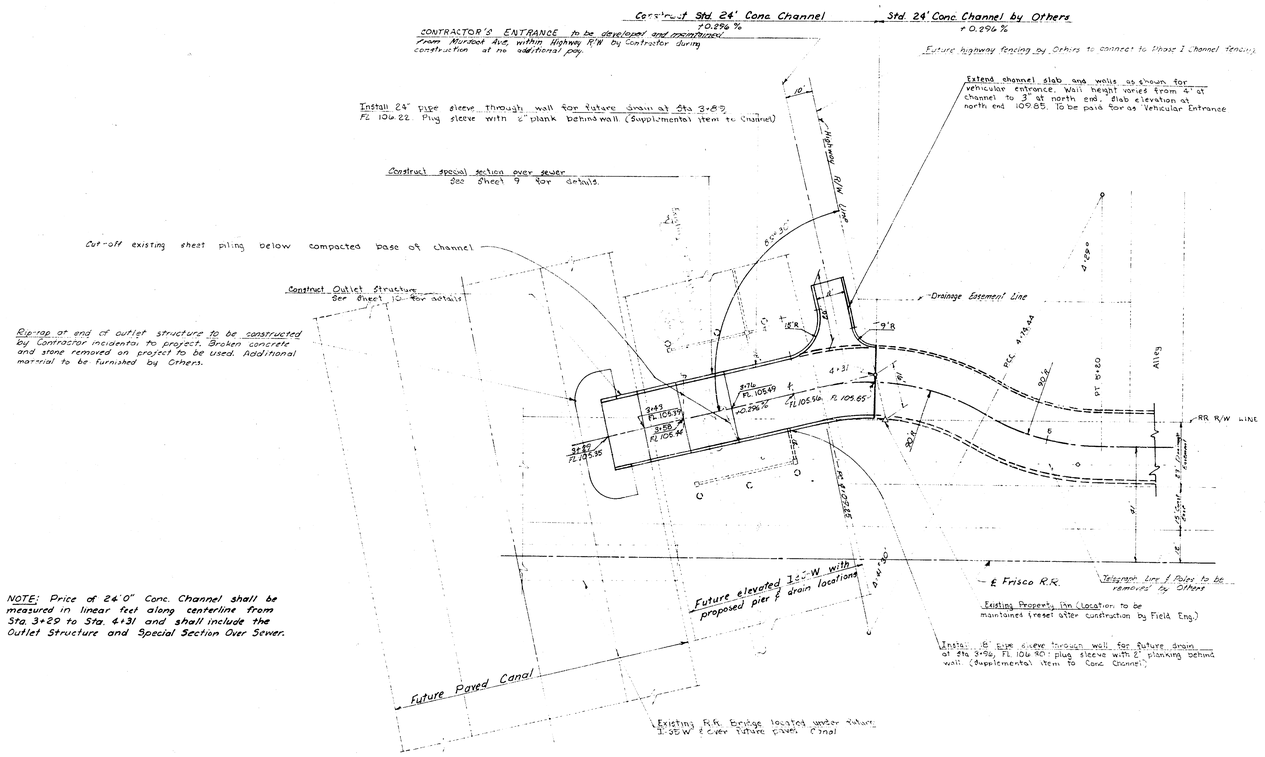
GENERAL NOTES:

1. All elevations refer to City Datum.
2. "Preparation and Clean-up" shall be a lump sum pay item and shall include all required or indicated post, stump, tree, sheeting, foot bridge, manhole and debris removal; removal and replacement of barricade, clothes line and damaged walks and drives as required; and the reshaping and reseeding of disturbed areas to the quality of the original. Any damaged trees shall have damaged areas pruned and wounds coated with prunning paint.
3. Sewer construction shall conform to "Details of Sewer Appurtenances" adopted as std. design by Engineering Division, City of Wichita, 1964. Manholes shall be "Standard Manhole, Type A," 8"-inch sewer construction shall be by "Ordinary Bedding Methods For Clay Pipe", 8-inch sewer concrete encasement shall be "Reinforced Concrete Encasement", and 15-inch pipe (RCP) installation shall be by "Ordinary Bedding Methods for Reinforced Concrete Pipe." Std 2'×5' inlet shall conform to City of Wichita Detail Plan dated Sept. 1965.
4. Street construction shall conform to Std. Section for the City of Wichita.
5. Class A-AE Concrete shall be used for RCB throughout.
6. "8-inch CMP with Flapgate" shall be a pay item and includes a 6" to 9" length of 16-gauge AASHO M-36-60 8" CMP and one ARMCO Model 10C Flapgate or approved equal. The unit shall be factory assembled. The spigot back of gate shall be embedded in the concrete wall, the free pipe end shall be cut flush with wall surface, and concrete forms shall recess wall as required for proper operation of gate link.
7. All Bench Marks damaged or destroyed shall be completely removed and replaced at an adjacent location by the field engineer and so noted on the "as built" plans. The new bench mark will be located so the data of the original Bench Mark could not be mistaken for the new bench mark.
8. Any temporary easement required for construction will be obtained by the Contractor.
9. For fence specifications see sheet 8.

INDEX:

1. Cover Sheet
2. Plan Sta. 3+29 to Sta. 4+31
3. Plan Sta. 28+04 to Sta. 32+00
4. Plan Sta. 32+00 to Sta. 38+00
5. Plan Sta. 38+00 to Sta. 44+00
6. Plan Sta. 44+00 to Sta. 50+46
7. Plan Sta. 50+46 to Sta. 57+62±
8. Typical Sections, Paved Channel
9. Exp. Joint Detail & Slab Detail at Sewer Crossing
10. Special Outlet Structure
11. Double 8'×4' RCB at Massman
12. Double 8'x5' RCB, Sta. 55+80 to Sta. 57+62 ±
13-22. Cross-Sections, Channel
23-24. Cross-Sections, Chautauqua St.

L. L. Kony Dirk 18
W.S. Kerby Dirk 50
CAS 1-104



BM #1 - Top ½" reinf. rod, SE Wingwall end of Murdock Bridge over canal EL 116.03

BM #2 - Railroad spike south face power pole in alley W. of Minneapolis & N. of N St. EL 110.615

NOTE: Price of 24'0" Conc. Channel shall be measured in linear feet along centerline from Sta. 3+29 to Sta. 4+31 and shall include the Outlet Structure and Special Section Over Sewer.

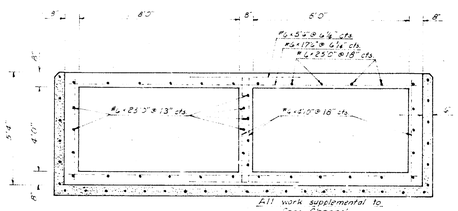
Note to Field Engineer:

Make construction survey from Sta 3+29 to Sta 4+31 at least 1-week before construction starts. For verification of work under this contract to fulfill requirements of future construction, contact Designers of future highway and canal improvements a minimum of 7-days prior to start of construction.

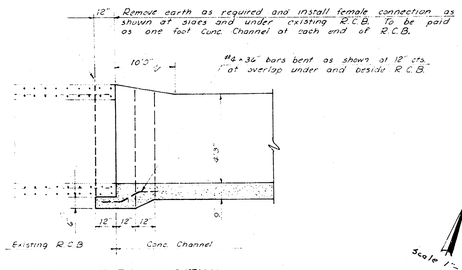
MAIN STORM WATER DRAIN #8 — PHASE II

PROJECT NO. 24/20

Construct 4'8 block-outs for fence posts at outside wall and at center of R.C.B. or install fence corner post at each end of R.C.B



SECTION THRU R.C.B.



SECTION THRU CONNECTION



CONNECTION DETAILS OF CONC CHANNEL TO EXISTING R.C.B. AT GREEN ST.

SCALE: As Noted

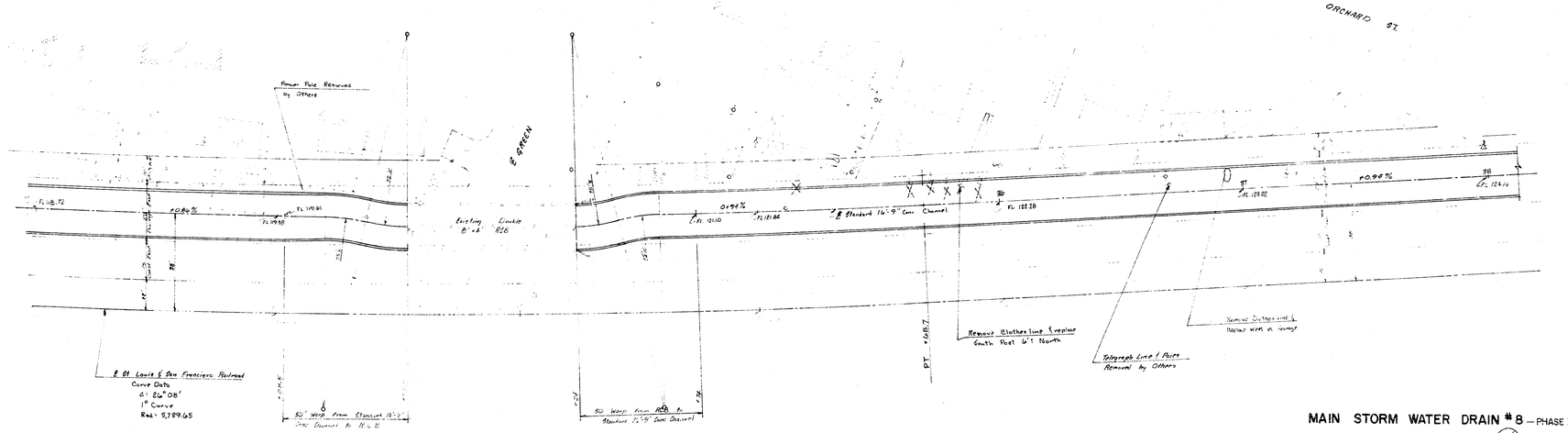
Install 8" C.M.P. with tide gate in north wall

Sta		
32+30	Flowline	121.9
33+00		122.9
33+20		124.0
33+50		124.3
34+00		125.3
34+50		125.3
37+00		126.5
37+50		126.5
38+00		126.0

Install fence along north wall from Sta 32+20 to west end of R.C.B. thence south across R.C.B.
Install fence across east end of R.C.B. thence along north wall to Sta. 38+00.

BM # 12 - "X" Top NE Cor. RCB on Green, N of Frisco, S of Murdock EL. 129.28

BM # 13 - SE Corner Conc. Porch on House # 2626 Orchard EL. 128.68



MAIN STORM WATER DRAIN # 8 — PHASE II

PROJECT NO. 4/24

BM #10 - "O" cut in NW Corn of West headwall RCB. on Grove, N of Frisco, S of Murdock El 122.27

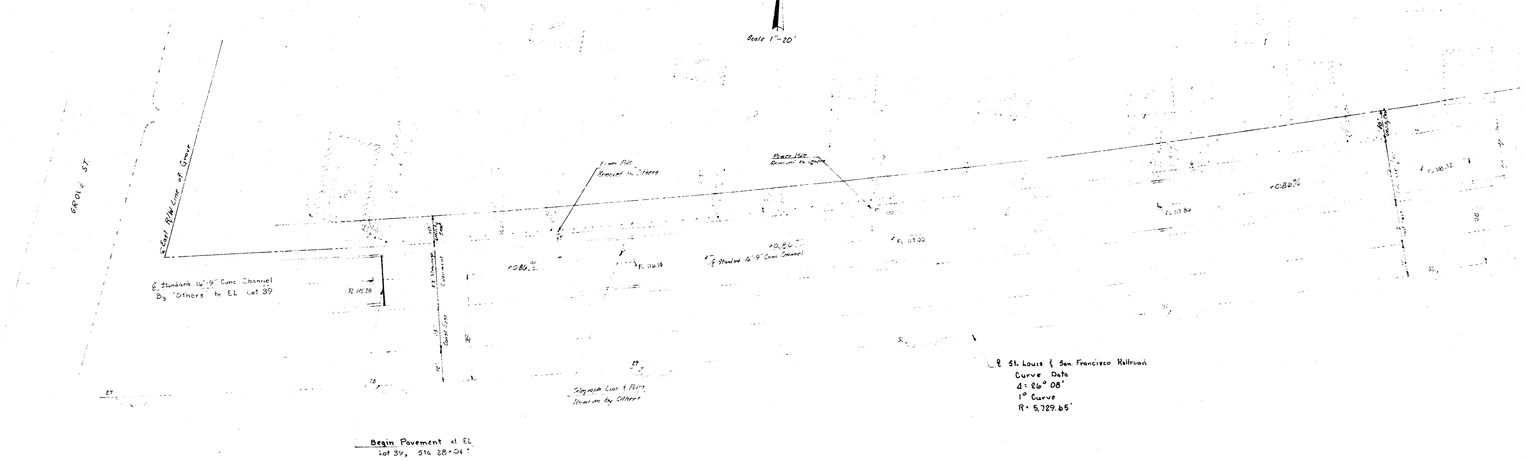
BM #11A - 60 penny spike, S face P.P., N of Frisco on W.L. Poplar El 121.22

Install 6' C.M.P. worn flap gate in north wall:

Sta.	EP + 30.	Flowline	119.3
	30 + 00.		120.3
	30 + 50		120.5
	31 + 00		120.5
	31 + 30		120.3
	32 + 00		121.2

Install fence along north wall Sta. 28+04 to Sta 32+00. (Connect fence at Sta. 28+04 to fence installed in Phase I).

Scale 1"=20'



MAIN STORM WATER DRAIN #8 – PHASE II

PROJECT NO. 3/24



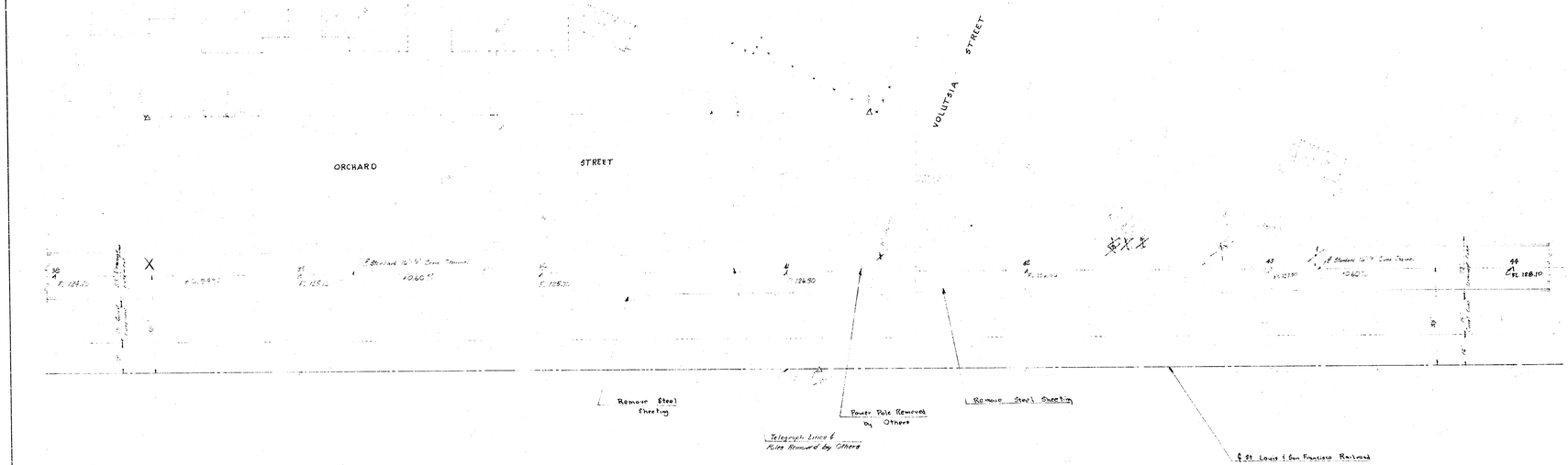
Install 8' C.M.P. with flap gate in north wall:

Sta.		
38+50	Flowline	127.0
39+00		126.5
39+50		127.0
40+00		127.3
40+50		128.2
41+00		128.5
41+50		128.9

Install fence along north wall Sta. 38+00 to Sta. 44+00.

BM #14 RR. Spike E. side TP approx. 30' N. of PM approx. 130' E. of Hester + 12" Sycamore EL. 130.49

BM #15 "S" in Globe E. return TP for Valve EL. 130.78



MAIN STORM WATER DRAIN #8
PHASE II PROJECT NO. 5024

Curve ①
PI Sta 48+74.1 (38' Lt Sta 28+74.1 & 30' Lt Sta 49+16.8)
PC Sta 48+11.7 FL 120.97
PT Sta 49+23.2 FL 121.24
Δ = 63°54', R = 100', T = 62.31', L = 111.53

Curve ②
PI Sta 50+12.3 (30' Lt Sta 50+67 & 60')
PC Sta 49+90.5 FL 131.04
PT Sta 50+33.0 FL 131.90
Δ = 32°30', R = 75', T = 21.86', L = 42.54'

BM #16 - Step bearing, SE face PP Near SE Cor of Lot EL. 135.42

BM #17 - RR Spike in W face PP, NW of K&LE Manhole Section EL. 4' Lt

Mossman

Chuckanut Ave

Extend Concrete Slope Wall as shown - Height of Wall as shown - Wall height varies from 3' at Inconel to 8' at north end
Est. Elevation at North end 134.5 To be adj. as per to Vehicular Entrance

Street

Grant Street N/W

10.60 %

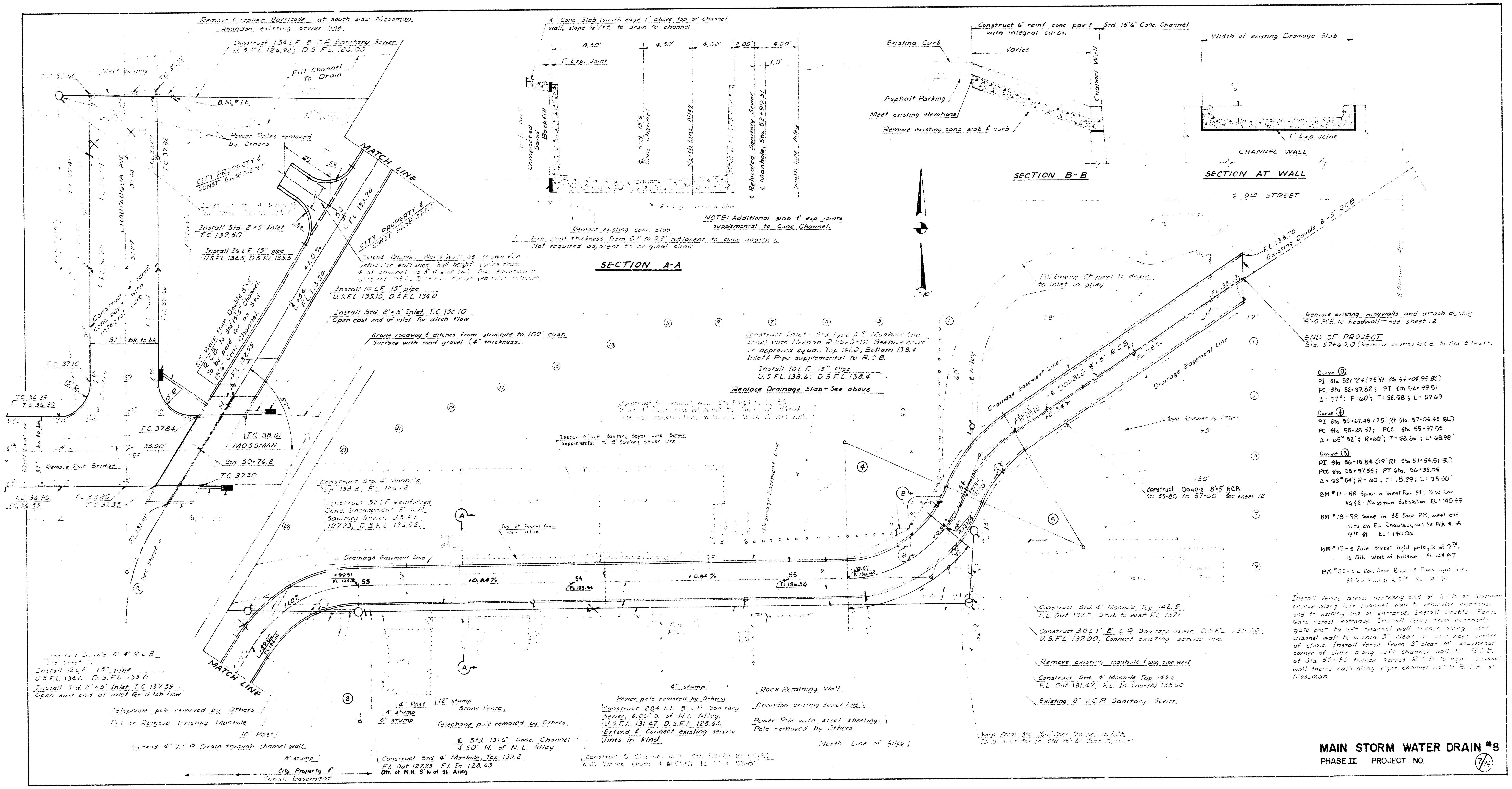
10.6%

10%

Fill to Grade

Remove Fence Existing

MAIN STORM WATER DRAIN #8
PHASE II PROJECT NO. 6/


Remove & replace Barricade at south side Mossman.
Abandon existing sewer line.
Construct 154 L.F. 8" C.P. Sanitary Sewer
U.S. F.L. 126.92; D.S. F.L. 126.00
Fill Channel To Drain
B.M. #16
T.C. 37.60
T.C. 37.92
Power Poles removed by Others
CITY PROPERTY & CONST. EASEMENT
MATCH LINE
F.L. 133.70
CHAUTAUQUA AVE.
T.C. 37.82
Install Std. 2'x5' Inlet T.C. 137.50
Install 26 L.F. 15" pipe U.S.F.L. 134.5, D.S.F.L. 133.5
+1.0%
+54 F.L. 133.24
Construct 6" reinf. conc. pav't with integral curb
20' Warp from Double 8'x4' R.C.B. to Std. 15'6" Channel. To be paid for as Std. 15'6" Conc. Channel.
F.L. 132.75
31' bk. to bk.
T.C. 37.10
15' R.
T.C. 36.29
T.C. 36.80
T.C. 37.84
T.C. 38.01
MOSSMAN
35.00'
Sta. 50+76.2
Remove Foot Bridge
T.C. 37.50
T.C. 36.90
T.C. 36.55
T.C. 37.20
T.C. 37.35
F.L. 131.99
See Sheet 6
57°
Extend Channel Slab & Walls as shown for vehicular entrance, wall height varies from 4' at channel to 3" at west end.
Install 10 L.F. 15" pipe U.S.F.L. 135.10, D.S.F.L. 134.0
Install Std. 2'x5' Inlet, T.C. 136.10
Open east end of inlet for ditch flow
Grade roadway & ditches from structure to 100' east.
Surface with road gravel (4" thickness).
4" Conc. Slab (south edge 1" above top of channel wall, slope 1/8"/ft. to drain to channel
8.50'
4.50'
4.00'
2.00'
4.00'
1.0'
1" Exp. Joint
Compacted Sand Backfill
Std. 15'6" Conc. Channel
North Line Alley
Relocated Sanitary Sewer
Manhole, Sta. 52+99.51
South Line Alley
Remove existing conc. slab
NOTE: Additional slab & exp. joints supplemental to Conc. Channel.
Exp. Joint thickness from 0.1' to 0.2' adjacent to clinic addition.
Not required adjacent to original clinic
SECTION A-A
Construct 6" reinf. conc. pav't with integral curbs.
Std. 15'6" Conc. Channel
Existing Curb
Varies
Channel Wall
Asphalt Parking
Meet existing elevations
Remove existing conc. slab & curb
SECTION B-B
Width of existing Drainage Slab
1" Exp. Joint
CHANNEL WALL
SECTION AT WALL
E. 9TH STREET
F.L. 138.70
Existing Double 8'x5' RCB
F.L. 138.32
Fill Existing Channel to drain to inlet in alley
Remove existing wingwalls and attach double 8'x5' R.C.B. to headwall — see sheet 12
END OF PROJECT
Sta. 57+60.0
Construct Inlet - Std. Type A-2 Manhole (no cone) with Neenah R-2560-D1 Beehive cover or approved equal. Top 141.0; Bottom 138.4
Inlet & Pipe supplemental to R.C.B.
Install 10 L.F. 15" Pipe
U.S.F.L. 138.6; D.S.F.L. 138.4
Replace Drainage Slab - See above
Install 4" C.P. Sanitary Sewer Line Service Supplemental to 8" Sanitary Sewer Line
Drainage Easement Line
DOUBLE 8'x5' R.C.B.
+0.84%
Signs removed by Others
Construct Double 8'x5' RCB.
Sta. 55+80 to 57+60 See sheet 12
Construct Std. 4' Manhole
Top 138.8, F.L. 126.92
Construct 50 L.F. Reinforced Conc. Encasement 8" C.P. Sanitary Sewer. U.S.F.L. 127.23, D.S.F.L. 126.92
Drainage Easement Line
+99.51
F.L. 134.10
53
+1.0%
+0.84%
54
F.L. 135.64
+0.84%
55
F.L. 136.38
+28.57
F.L. 136.62
56
Top of Poured Conc. Wall 144.22
Curve (3)
PI Sta 52+72.4 (7.5' Rt Sta 54+04.95 BL)
PC Sta 52+39.82; PT Sta 52+99.51
Δ = 57°; R=60'; T=32.58'; L=59.69'
Curve (4)
PI Sta 55+67.48 (7.5' Rt Sta 57+05.45 BL)
PC Sta 55+28.57; PCC Sta 55+97.55
Δ = 65°52'; R=60'; T=38.86'; L=68.98'
Curve (5)
PI Sta 56+15.84 (19' Rt. Sta 57+54.51 BL)
PCC Sta 55+97.55; PT Sta. 56+33.05
Δ = 33°54'; R=60'; T=18.29'; L=35.50'
BM #17 - RR Spike in West Face PP, NW Cor. KG&E - Mossman Substation EL = 140.49
BM #18 - RR Spike in SE Face PP, west end alley on EL Chautauqua; 1/2 Blk S of 9th St. EL = 140.06
BM #19 - S Face Street light pole, N of 9th, 1/2 Blk West of Hillside EL 144.87
Construct Double 8'x4' R.C.B.
Install 12 L.F. 15" pipe
U.S.F.L. 134.0, D.S.F.L. 133.0
Install Std. 2'x5' Inlet, T.C. 137.59
Open east end of inlet for ditch flow
Telephone pole removed by Others
Fill or Remove Existing Manhole
10" Post
Extend 4" V.C.P. Drain through channel wall
8" stump
City Property & Const. Easement
4" Post
8" stump
4" stump
12" stump
Stone Fence
Telephone pole removed by Others
℄ Std. 15'-6" Conc. Channel 4.50' N. of N.L. Alley
Construct Std. 4' Manhole, Top 139.2
F.L. Out 127.23 F.L. In 128.63
Ctr. of M.H. 3' N of S.L. Alley
4" stump
Power pole removed by Others
Construct 284 L.F. 8" C.P. Sanitary Sewer, 6.00' S. of N.L. Alley.
U.S.F.L. 131.47, D.S.F.L. 128.63.
Extend & Connect existing service lines in kind.
Rock Retaining Wall
Abandon existing sewer line
Power Pole with steel sheeting; Pole removed by Others
North Line of Alley
Construct Std. 4' Manhole, Top 142.5
F.L. Out 137.0, Stub to east F.L. 137.1
Construct 30 L.F. 8" C.P. Sanitary Sewer
U.S.F.L. 137.00, Connect existing service line.
Remove existing manhole & plug pipe west
Construct Std. 4' Manhole, Top 145.6
F.L. Out 131.47, F.L. In (north) 135.60
Existing 8" V.C.P. Sanitary Sewer
of clinic. Install fence from 3" clear of southeast corner of clinic along left channel wall to R.C.B. at Sta. 55+80 thence across R.C.B. to right channel wall thence back along right channel wall to R.C.B. at Mossman.
MAIN STORM WATER DRAIN #8
PHASE II PROJECT NO.
7/24

CORNER, PULL, OR GATE POSTS OF THE SAME SIZE AS END POSTS SHALL BE INSTALLED AT CORNERS, AT 500' MAXIMUM CENTERS, AT PC AND PT OF CURVES AND AT INTERSECTION OF CHANNEL WALL AND VEHICULAR ENTRANCE WALL. FABRIC FOR FENCE LOCATED WITHIN RAILROAD CURVE, CHANNEL CURVE OR VEHICULAR ENTRANCE SHALL BE INSTALLED OUTSIDE OF THE CURVES SO FABRIC WILL PULL TOWARD POSTS RATHER THAN AWAY FROM POSTS. THE DOUBLE FENCE GATE TO HAVE FRAME AND FABRIC SAME AS FENCE AND SHALL COME COMPLETE WITH HINGES, BRACE ROD, TRUSS ROD AND LATCH ASSEMBLY. FRAME TO BE 1-5/8" O.D. TUBULAR MATERIAL. TOTAL CLEAR OPENING OF GATES TO BE 11-FOOT OR AS REQUIRED WITH GATE POSTS AT ENTRANCE WALL.

15'-6"
16'-9"
(5'-0" where noted on plans)

16'-8"
(5'-0" where noted on plan)

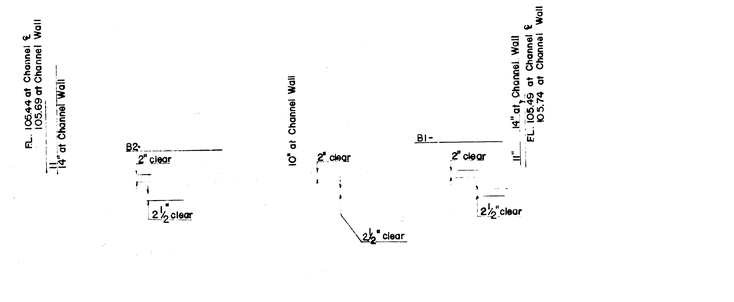
E IS ON A 5,691.65' RADIUS
CURVE. CURVE SEGMENTS TO BE 50' MAXIMUM.

AT GREEN ST.

MAIN STORM :R DRAIN #8 - PHASE II
PROJEC. .IO. C

NOTE: Special section over sewer to include all costs for constructing complete 18-foot special section including walls. Bid price shall be Lin.Ft. of 24'-0" Conc. Channel Measured on Center Line.

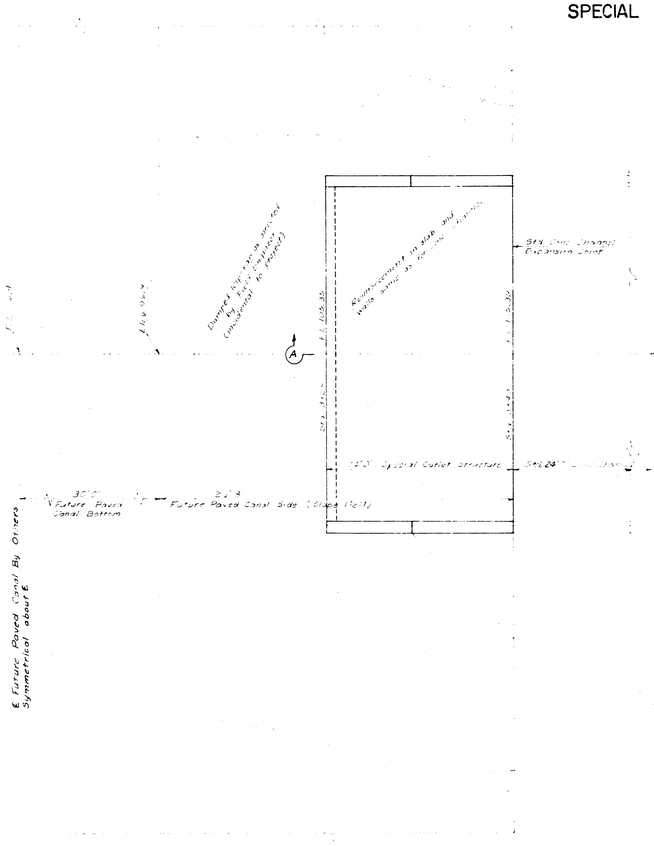
Note:
For Channel Walls see Typical Section on sheet 6. Provide Compacted Base for typical channel section except for 6' strip over existing sewer where such an operation may damage said sewer.



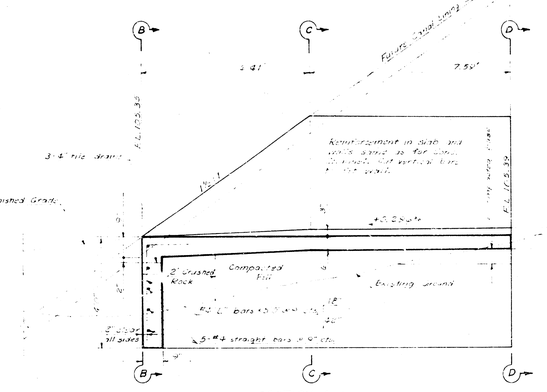
Bottom steel in slab.

Top steel in slab.

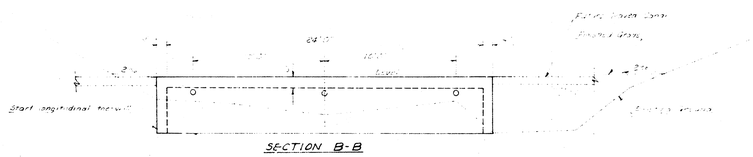
SPECIAL OUTFALL STRUCTURE



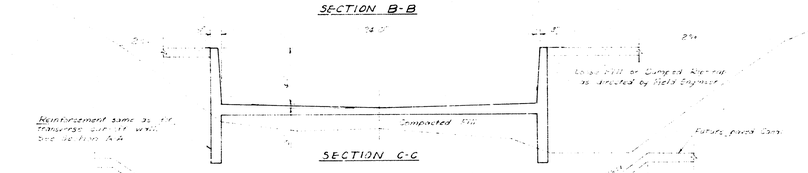
PLAN
Scale 1"=10'-0"



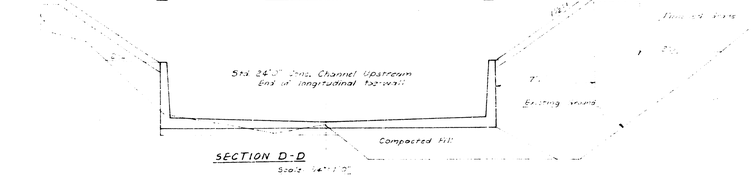
SECTION A-A
Scale 3/8"=1'-0"



SECTION B-B



SECTION C-C



SECTION D-D
Scale 1/4"=1'-0"

Note:

Price of Special Outfall Structure to be paid for as 140 L.F. of 24'0" Conc. Channel

Main Storm Water Drain #8 - PHASE II

PROJECT No.

BAR SCHEDULE

Mark	Size	Length	No.	Location	Shape	Spacing	Weight
a	#5	21'-0"	114	Box		12"	3982.8 LF
a1	#5	21'-7"	112			12"	3912.321
a2	#5	19'-6"	114			12"	3548.471
b	#4	29'-7"	120			12"	3702.235
b1	#4	31'-0"	12			-	24.368
b2	#4	30'-0"	12			-	24.189
c	#5	6'-7"	196			12"	774.863
c1	#4	5'-9"	98			12"	376.493
c2	#3	3'-2"	98	Wing	2	12"	232.344

Note: # bars in brackets are included in total Lbs. in Bill of Materials

"Bend Diagram"

"30'-0" Conc. Roll Crown"

"ELEVATION"

"SECTION" @ Hubguard

"SECTION" scale: 3/8" = 1'-0"

"KEY JOINT DETAIL"

"LOCATION MAP"

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

Vary channel wall height from normal height to top of hubguard in 10'

Measurements from top of R.C. to top of roll vary due to c.o. in I.D.

Cast 4" dia. Sleeve - cut to fit 3/4" I.D. conduit - Joint

Cast 4" dia. Sleeve - cut to fit 3/4" I.D. conduit - Joint

Cast 4" dia. Sleeve - cut to fit 3/4" I.D. conduit - Joint

Cast 4" dia. Sleeve - cut to fit 3/4" I.D. conduit - Joint

Pavement Joint

Expansion Joint

Construction Joint

Weep Hole

Key joint detail

Hubguard

Wing

Channel

Location

Note: Sleeves 3'-0" in opposite edges of R.C. Box at angle to match channel, unless otherwise noted.

- OPTION -
Note: Contractor may install 3/4" dia. holes at 30'-0" time of R.C.B. if Contractor so desires, to be as located by channel contractor.

Cast 4" dia. sleeve - cut to fit 3/4" I.D. conduit

Cast 4" dia. Sleeve - cut to fit 3/4" I.D. conduit

(A) Spacing for "a" bars - measure perpendicular to N. edge of R.C.B.C., 21'-9" c to c.

(AA) Spacing for "b" bars - measure perpendicular to N. edge of R.C.B.C., 21'-9" c to c.

(B) Lump Sum Bid Items of Culvert.

BILL OF MATERIALS

ITEM	Quan.	Unit	
Class A-AE Concrete	90.10	C.Y.	*
Class A Concrete	9.07	C.Y.	
Reinf. Steel	11610.07	Lbs.	*
Y.C.P. R.C.B.	20.3	L.F.	
Reinf. Rail Cb.	43.5	L.F.	*

General Notes:

1. Class "A" Conc. shall be used throughout project. All reinforcing steel shall conform to A.S.T.M. Specs.
2. Earthwork - Earthwork to be done by Channel Contractor.
3. Backfill - Backfill to be compacted Backfill to be done by Channel Contractor.
4. Weepholes - Coarse aggregate shall be deposited behind weepholes to occupy a space of 1 cu. ft. in all directions above weep hole flowline. This work to be incidental to the each unit in which.
5. Seal Course - A seal course consisting of 1 (6) class A conc. shall be constructed only where "specified on plans & when directed" by Engineer if conditions at proj. site merits seal course. Jointly.
   Seal Course to be satisfactory plan quantity of class (A) conc. cubic yards.
6. Bidding of Culvert - The Culvert shall be bid as a "Lump Sum Bid," except for Class A Conc., 4" S.C.P. The quantities shown in the Bill of M.T.L. are in the Lump Sum Bid of the Culvert are for information only. The contractor must satisfy himself to the quantities. The Engineer assumes no responsibility for their accuracy. The contractor will have full responsibility for providing all materials shown on detailed plans necessary to complete this project.

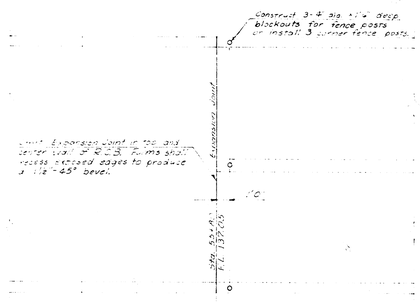
2-8'x4' Reinforced Concrete Box Culvert

in connection with Main Storm Water Drain No. 8

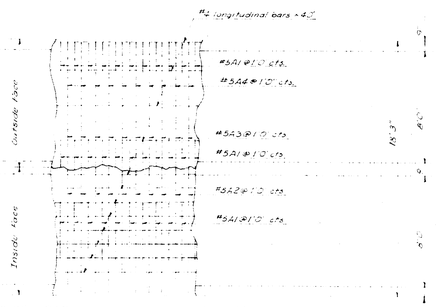
Proj. No.

DOUBLE 8'×5' R.C.B. DETAIL

SCALE: ¼"=1'0"

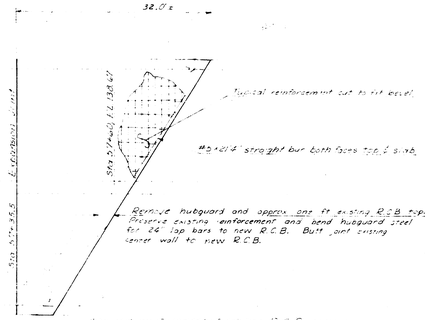


Limit Expansion joint at toe and center wall of R.C.B. Forms shall recess screed edges to produce a 1/2"-45° bevel.



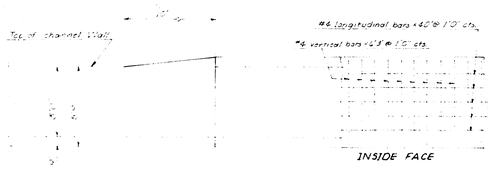
NOTE: When R.C.B. is within a curve, space A1, A2, A3 bars each at 1'0" cts. at centerline of R.C.B. and space A4 bar at 1'0" cts. at outside walls of R.C.B. Longitudinal bars to be tied to follow curve. Curve segments to be 10' maximum.

Remove existing wingwalls and apron. Uncover existing reinforcement into R.C.B. for 24" lap bars to new R.C.B.

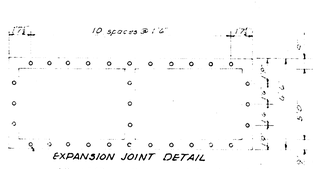


Slope and reinforcement of existing R.C.B. same as proposed R.C.B. except transverse steel is parallel to skewed walls rather than transverse to centerline.

Top of channel wall



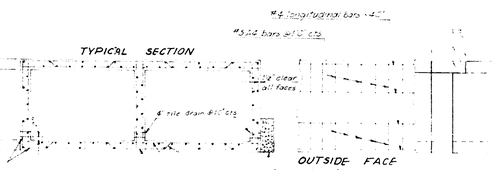
INSIDE FACE



EXPANSION JOINT DETAIL

#6 × 2'4" smooth bars coated with hard grease and capped on one end. Centerline of bar must be parallel line & grade of R.C.B.

Expansion Joint Material shall be either Redwood Board ¾" in thickness or preformed Asphaltic Material ¾" in thickness.



TYPICAL SECTION



All vertical bars are #4 × 3' straight bars @ 1'0 cts. Alternate with #6 bars in outside walls. Alternate faces in center wall.

All longitudinal bars are #4 × 40' straight bars @ 1'0 cts. or as shown.

Length of R.C.B. @ ℄: 181 L.F.
Concrete: 1.431 C.Y. per foot.
Re-bars: 121.32 lbs. per foot (does not include lap bars nor header bars at existing R.C.B.)

Price of Double 8'×5' R.C.B. shall be measured in linear foot along centerline and shall include removal of and attaching to existing structure, concrete, reinforcement bars, paving joints, alley inlet & pipe, and all appurtenances necessary to complete facility as shown within the plans. Earthwork is a separate pay item.

Main Storm Water Drain # 8 - PHASE II

PROJECT No.

NINTH STREET

CHAUTAUQUA AVE.

HILLSIDE AVE.

FRISCO AVENUE

33 31 29 27 25 23 21 19 17 15 13 11 9 7 5 3

Temporary Construction Easement

Drainage Easement

Temp Const Easement

Temporary Construction Easement

10' ALLEY

10' ALLEY

10' ALLEY

ADDITION

Drainage Easement

1 3 5 7

N

1" = 20'

DRAINAGE EASEMENTS
FOR
MAIN STORM WATER DRAIN NO. 8
PHASE II