

**CITY OF MIDLAND, TEXAS
MASTER DRAINAGE PLAN**

**SECTION 6
INDUSTRIAL CHANNEL MASTER PLAN**

6.1 GENERAL

The Industrial Channel watershed extends from its confluence with Midland Draw, just south of U.S. Highway 80 (Business 20), southwestward to a point approximately 0.5 miles east of Midkiff Road. All of the Industrial Channel watershed is located within the detailed Geographic Information System (GIS) coverage and detailed study area of this Master Drainage Plan. Figure 6-1 illustrates the area of detailed study for the Industrial Channel watershed. The Industrial Channel itself is located south of, and parallel to, the Texas and Pacific Railroad and flows in a northeastward direction.

The Industrial Channel watershed is located completely within the corporate limits of the City of Midland. The watershed is broken into four subareas labeled IN1, IN2, IN3, and IN4. Of the four subareas, only IN3 and IN4 are expected to experience significant development in the future. Subareas IN1 and IN2 are currently at, or near, completely developed conditions, and have no suitable areas available for regional runoff mitigation schemes. Consequently, only improvements to the Industrial Channel from Lamesa Road to the confluence with Midland Draw are recommended.

6.2 HYDROGRAPHS

A single hydrograph was plotted in Figure 6-2 for the watershed location shown on Figure 6-1. The hydrograph plot is for three hydrologic conditions: 1) existing land use hydrologic conditions, 2) future land use hydrologic conditions and assuming zero stormwater runoff mitigation efforts and 3) future land use hydrologic conditions with all recommended drainage improvements installed.

The hydrograph plot shown in Figure 6-2 is for the Industrial Channel just upstream of the Midland Draw confluence and illustrates the three conditions listed above. Note that the hydrographs for each condition have two peaks. The first peak occurs at approximately 13 hours, and the second peak occurs at

approximately 15 hours. It is apparent from the three hydrographs that the future hydrograph which reflects modifications to the Industrial Channel shows a higher peak discharge than the other two hydrograph cases. This higher peak discharge is the result of channel improvements that reduce the storage within the channel at lower flow rates. Although the flow rates increase, the proposed channel improvements result in significant reductions to the existing floodplain along the Industrial Channel because the hydraulic flow capacity of the channel is improved.

6.3 LAND USE

Two land use conditions were analyzed in the development of the Master Drainage Plan: existing conditions as of June 1993 and future conditions based on the City's Year 2020 Land Use Plan. The existing condition analysis provided a base line of comparison for evaluation of the effectiveness for various stormwater runoff mitigation measures.

6.3.1 Existing Land Use

The Industrial Channel watershed consists of approximately one square mile of drainage area. Because the complete area is considered urban, runoff curve numbers were based on an average antecedent moisture condition (referred to as AMC II).

The Industrial Channel watershed subareas and existing condition characteristics are listed in Table 6-1. The times of concentration listed with each subarea were determined using procedures contained in the City of Midland Storm Drainage Design Manual.

6.3.2 Future Land Use

Future land use conditions were based on the City of Midland's Comprehensive Plan and current zoning. The section maps in Figure 6-3 through Figure 6-9 show only the future land use condition.

The future condition characteristics for the Industrial Channel watershed subareas are listed in Table 6-1. Direct comparisons of the curve numbers and times of concentration in Table 6-1 show that Industrial Channel Subareas IN3 and IN4 are expected to experience land use changes in the future that result in an increase in runoff curve numbers. Subarea IN3 is expected to have substantial development in the future resulting in an increase of 22 curve number units. Subarea IN4 is expected to have an increase of 5 curve number units in the future. The other two subareas in the Industrial Channel watershed (IN1 and IN2) are either completely, or near completely, developed and are not expected to experience any significant land use changes. Table 6-2 compares the existing and proposed peak discharges for selected points along the main channel.

6.4 CHANNEL AND ASSOCIATED ROADWAY DRAINAGE IMPROVEMENTS

Recommended improvements to the Industrial Channel and an associated roadway drainage structure are presented in order from the downstream to upstream direction. Table 6-3 and Table 6-4 summarize the proposed improvements. Included in Table 6-3 and Table 6-4 are the table numbers for the detailed preliminary opinions of cost and the figure numbers that correspond to drawings which illustrate channel and drainage structure improvements. It is important to note that right-of-way costs are not included in the opinions of cost because of the fluctuating nature of land prices. Also, the proposed rights-of-way listed in Table 6-3 are the minimum required for channel improvements. Alleys or other easements located within the overbanks adjacent to the channel will require additional right-of-way.

6.4.1 Midland Draw Confluence to Downstream End of Existing Stockyard Channel Improvements

Channel improvements are planned for the Industrial Channel beginning at the channel's confluence with Midland Draw just south of U.S. Highway 80 (Business 20) at Station 0+00. The first reach of improvements extend upstream to the eastern edge of an existing stockyard located south of the channel at Station 18+80. Proposed improvements include excavation of the existing channel to a 10-foot bottom width on a 0.38 percent grade. The minimum right-of-way for these improvements is approximately 65 feet. Careful maintenance in this reach is required because of existing steep side slopes on the north side of the channel, adjacent to the railroad embankment.

6.4.2 Downstream End to Upstream End of Existing Stockyard Channel Improvements

Maintenance and slight shaping of the existing channel is proposed for this reach adjacent to the stockyard located south of the channel. This reach corresponds to channel station's 18+80 to 26+15. The shaping includes flattening the side slopes of the channel where possible to at least 1-foot horizontal to 1-foot vertical, and maintenance of at least a 5-foot bottom width. The channel grade for this reach is approximately 0.15 percent. Minimum right-of-way required for this reach is approximately 35 feet.

6.4.3 Upstream End of Existing Stockyard to Fairgrounds Road Channel Improvements

Excavation of the existing channel is proposed from Station 26+15 to Fairgrounds Road at Station 34+10. The planned channel will have a bottom width of 10 feet and a grade of approximately 0.38 percent. The channel improvements will require a minimum of approximately 70 feet of right-of-way. Maintenance of the existing steep north side slope of the channel will be required.

6.4.4 Fairgrounds Road to Carver Street Channel Improvements

A 12-foot bottom width channel is proposed for the reach from Fairgrounds Road (Station 34+10) to Carver Street (Station 72+90). The channel grade for the proposed improvements is approximately 0.14 percent. The minimum right-of-way required to make the planned improvements is approximately 85 feet. Existing steep side slopes on the north side of the channel will require careful maintenance. In addition to the proposed improvements to the channel, an existing arch structure crossing the channel should be removed in order to improve the flow capacity of the channel.

6.4.5 Carver Street Drainage Structure

A new drainage structure is planned for the channel crossing at Carver Street (Station 72+90). The proposed structure will consist of one 8-foot by 8-foot (span by height) concrete box culvert.

6.4.6 Carver Street to Downstream of Lamesa Road Channel Improvements

Excavation of the existing channel is proposed between Carver Street at Station 72+90 and a point just downstream of Lamesa Road at Station 87+56. The proposed channel will consist of a 10-foot bottom width on a grade of 0.14 percent. Minimum right-of-way requirements for the improvements is approximately 60 feet.

6.5 PLAYA LAKES

The Industrial Channel watershed has no well defined playa lakes that can be used to provide storage for stormwater runoff in the future.

6.6 DETENTION BASINS

No regional detention basins are planned for the Industrial Channel watershed. However, due to existing flooding concerns, on-site detention may be required as future development occurs, especially if it involves a change of land use that could compound the existing flooding problems.

6.7 ZERO MODIFICATION SUBAREAS

Subarea IN1 is the only Industrial Channel watershed subarea considered to be a "Zero Modification Subarea". Because it is near completely developed, improvements are not required to existing facilities, and no significant area is available for use in regional stormwater runoff mitigation schemes. All other subareas in the Industrial Channel watershed have planned improvements or are expected to experience significant land use changes.

END

Table 6-1

**Industrial Channel Master Plan
Watershed Subarea Characteristics**

SUBAREA I.D.	AREA (ACRES)	AREA (SQ. MI.)	EXISTING CONDITION JUNE 1993		FUTURE CONDITION YEAR 2020		NOTES
			CN	Tc HOURS	CN	Tc HOURS	
IN1	271.69	0.42	93	1.50	93	1.50	In detailed study area.
IN2	322.58	0.50	91	2.58	91	2.58	In detailed study area.
IN3	190.66	0.30	68	1.08	90	1.08	In detailed study area.
IN4	137.53	0.21	77	1.05	82	1.05	In detailed study area.

Table 6-2

**Channel Subarea Hydrologic Characteristics
Based on 100-Year 24-Hour Event**

SUBAREA I.D.	DESIGNATED LOCATION	EXISTING DISCHARGE		FUTURE DISCHARGE	
		Peak (cfs)	Peak Time (hrs)	Peak (cfs)	Peak Time (hrs)
IN2	Carver Street	962	14.50	1,080	14.50
IN3	Fairgrounds Road	843	15.25	1,106	14.75
IN4	Prior to Confluence with Midland Draw	857	15.50	1,098	13.00

TABLE 6-3

Planned Channel Improvements Summary

SUBAREA LD.	FIGURE NUMBER	REACH LOCATION	STATION RANGE	PROPOSED RIGHT-OF-WAY (ft)	BOTTOM WIDTH (ft)	SIDE SLOPES (Left Bank, Right Bank)	BOTTOM SLOPE (%)	PRELIMINARY BUDGET OPINION OF COST TABLE NUMBER	OPINION OF COST (TOTALS)
IN4	6-4, 6-11	Confluence with Midland Draw to Downstream End of Stockyard	0+00 to 18+80	65 minimum	10	1:1, 5:1	0.38	6-5	\$79,960
IN4	6-4, 6-12	Downstream End to Upstream End of Stockyard	18+80 to 26+15	35 minimum	5	1:1, 1:1	0.15		
IN4	6-3, 6-4, 6-13	Upstream End of Stockyard to Fairgrounds Road	26+15 to 34+10	70 minimum	10	1:1, 5:1	0.38		
IN3	6-3, 6-6, 6-15	Fairgrounds Road to Carver Street	34+10 to 72+90	85 minimum	12	varies, 5:1	0.14	6-6	\$280,940
IN2	6-6, 6-17	Carver Street to Downstream of Lamesa Road	72+90 to 87+56	60 minimum	10	2:1, 3:1	0.14	6-8	\$107,590

Note: Side slopes for left bank and right bank looking downstream.

TABLE 6-4

Planned Channel Crossing Improvements Summary

STREET CROSSING	FIGURE NUMBER	PROPOSED STRUCTURE	PRELIMINARY BUDGET OPINION OF COST TABLE NUMBER	OPINION OF COST (TOTALS)
Carver Street	6-6, 6-16	1 - 8 ft x 8 ft CBC	6-7	\$72,795

Note: CBC = Concrete Box Culvert. Sizes are span by height for one barrel.

**TABLE 6-5
INDUSTRIAL CHANNEL
PRELIMINARY BUDGET OPINION OF COST
CITY OF MIDLAND, TEXAS**

**DRAINAGE IMPROVEMENTS FROM
CONFLUENCE WITH MIDLAND DRAW TO FAIRGROUNDS ROAD**

ITEM	UNIT	UNIT PRICE	QUANTITY	TOTAL
1 CHANNEL EXCAVATION	C.Y.	\$4.00	13,900	\$55,600
2 SOIL PREPARATION, SEEDING & FERTILIZING	ACRE	\$1,200.00	5	\$6,000
3 CONSTRUCTION CONTINGENCIES	L.S.	10%	1	\$6,160
4 ENGINEERING				\$4,700
5 SURVEYING, TESTING & RPR				\$7,500
TOTAL IMPROVEMENTS FROM CONFLUENCE WITH MIDLAND DRAW TO FAIRGROUNDS ROAD				\$79,960

**TABLE 6-6
INDUSTRIAL CHANNEL
PRELIMINARY BUDGET OPINION OF COST
CITY OF MIDLAND, TEXAS**

**DRAINAGE IMPROVEMENTS FROM
FAIRGROUNDS ROAD TO CARVER STREET**

ITEM	UNIT	UNIT PRICE	QUANTITY	TOTAL
1 CHANNEL EXCAVATION	C.Y.	\$4.00	49,000	\$196,000
2 SOIL PREPARATION, SEEDING & FERTILIZING	ACRE	\$1,200.00	7	\$8,400
3 REMOVE EXISTING ARCH STRUCTURE	L.S.	\$12,000.00	1	\$12,000
4 CONSTRUCTION CONTINGENCIES	L.S.	10%	1	\$21,640
5 ENGINEERING				\$16,700
6 SURVEYING, TESTING & RPR				\$26,200
TOTAL IMPROVEMENTS FROM FAIRGROUNDS ROAD TO CARVER STREET				\$280,940

**TABLE 6-7
INDUSTRIAL CHANNEL
PRELIMINARY BUDGET OPINION OF COST
CITY OF MIDLAND, TEXAS**

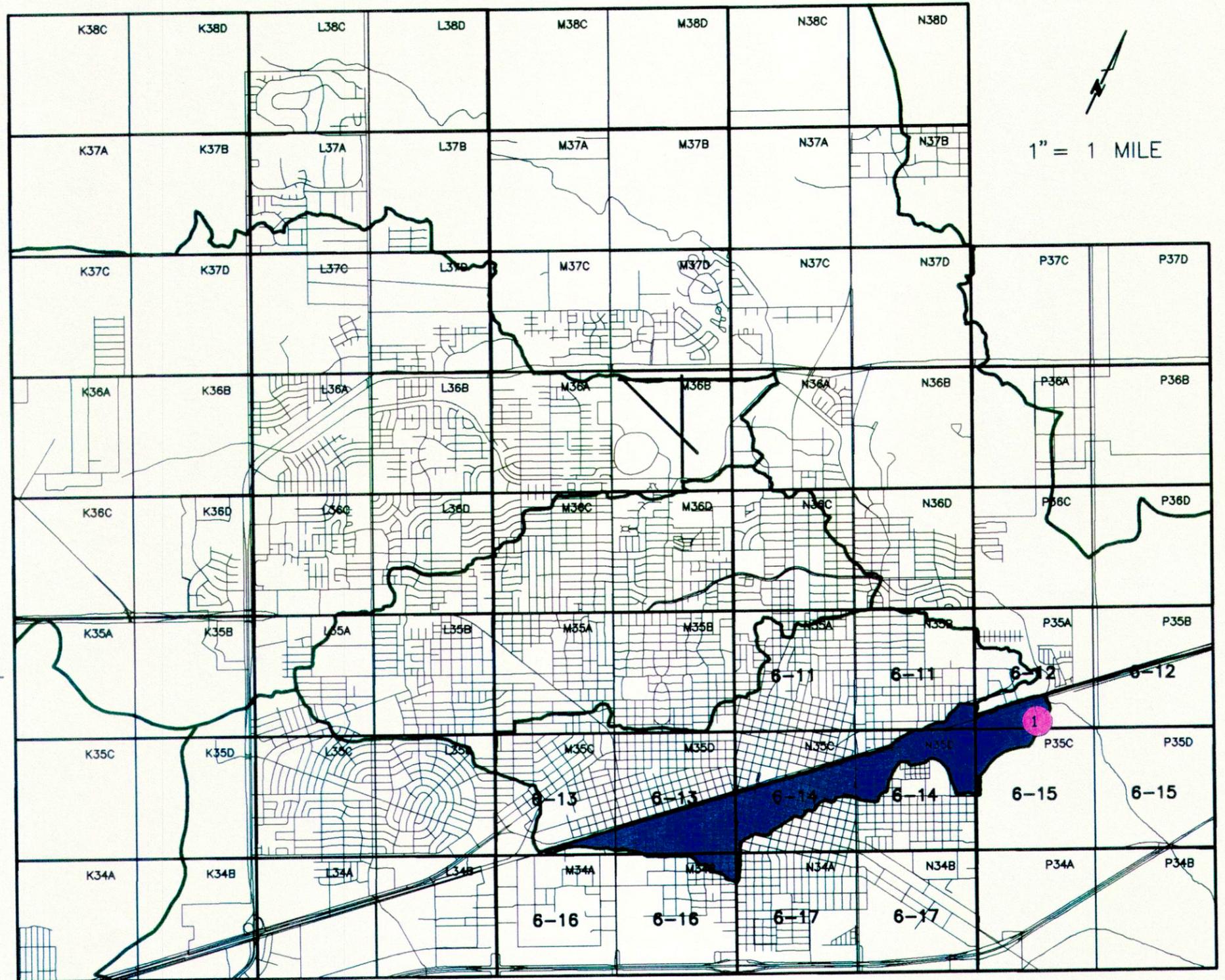
CARVER STREET CROSSING

ITEM	UNIT	UNIT PRICE	QUANTITY	TOTAL
1 ROADWAY GRADING & SUBGRADE PREPARATION	S.Y.	\$4.00	450	\$1,800
2 8" FLEXIBLE BASE	S.Y.	\$3.00	450	\$1,350
3 PRIME COAT	S.Y.	\$0.30	450	\$135
4 1-3/4" ASPHALTIC CONCRETE PAVEMENT	S.Y.	\$3.00	450	\$1,350
5 24" CURB AND GUTTER	L.F.	\$6.50	100	\$650
6 STRUCTURAL CONCRETE	C.Y.	\$350.00	90	\$31,500
7 MISCELLANEOUS CONCRETE	S.Y.	\$30.00	110	\$3,300
8 PEDESTRIAN AND MBGF RAILING	L.F.	\$100.00	100	\$10,000
9 REMOVE EXISTING STRUCTURE	L.S.	\$3,000.00	1	\$3,000
10 TRAFFIC CONTROL	L.S.	\$3,000.00	1	\$3,000
11 CONSTRUCTION CONTINGENCIES	L.S.	10%	1	\$5,610
12 ENGINEERING				\$4,300
13 SURVEYING, TESTING & RPR				\$6,800
TOTAL FOR CARVER STREET CROSSING				\$72,795

**TABLE 6-8
INDUSTRIAL CHANNEL
PRELIMINARY BUDGET OPINION OF COST
CITY OF MIDLAND, TEXAS**

**DRAINAGE IMPROVEMENTS FROM
CARVER STREET TO DOWNSTREAM OF LAMESA ROAD**

ITEM	UNIT	UNIT PRICE	QUANTITY	TOTAL
1 CHANNEL EXCAVATION	C.Y.	\$4.00	17,500	\$70,000
2 SOIL PREPARATION, SEEDING & FERTILIZING	ACRE	\$1,200.00	7	\$8,400
3 CHANNEL CONCRETE AND INLET DEMOLITION	L.S.	\$4,500.00	1	\$4,500
4 CONSTRUCTION CONTINGENCIES	L.S.	10%	1	\$8,290
5 ENGINEERING				\$6,400
6 SURVEYING, TESTING & RPR				\$10,000
TOTAL IMPROVEMENTS FROM CARVER STREET TO DOWNSTREAM OF LAMESA ROAD				\$107,590



LEGEND

- 1 INDUSTRIAL CHANNEL PRIOR TO CONFLUENCE WITH MIDLAND DRAW

PAGE

6-10

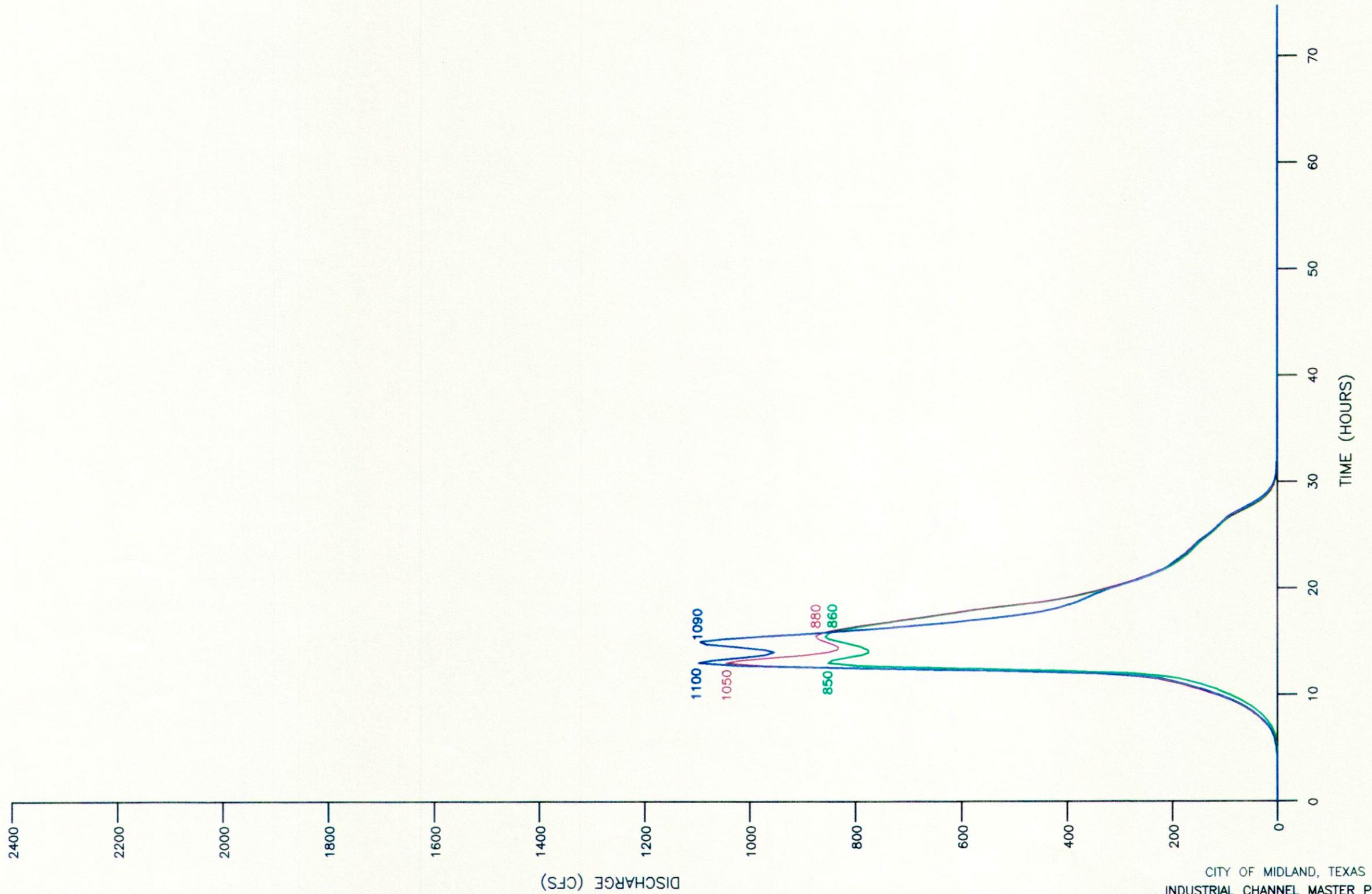
INDUSTRIAL CHANNEL WATERSHED, INDEX TO SECTION MAPS

FIGURE 6-1

CITY OF MIDLAND, TEXAS
 INDUSTRIAL CHANNEL MASTER PLAN
 WATERSHED MAP INDEX



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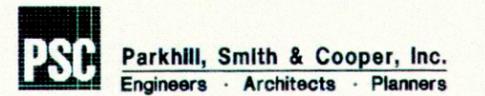
INDUSTRIAL CHANNEL PRIOR TO CONFLUENCE WITH MIDLAND DRAW

LEGEND

- 100-YEAR EXISTING, JUNE 1993 CONDITIONS —
- 100-YEAR FUTURE, YEAR 2020 NO MODIFICATIONS —
- 100-YEAR FUTURE, YEAR 2020 WITH MODIFICATIONS —

FIGURE 6-2

CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
HYDROGRAPH



JOINS SECTION M36D

JOINS SECTION N36C

JOINS SECTION N36D

JOINS SECTION P36C

JOINS SECTION M35B

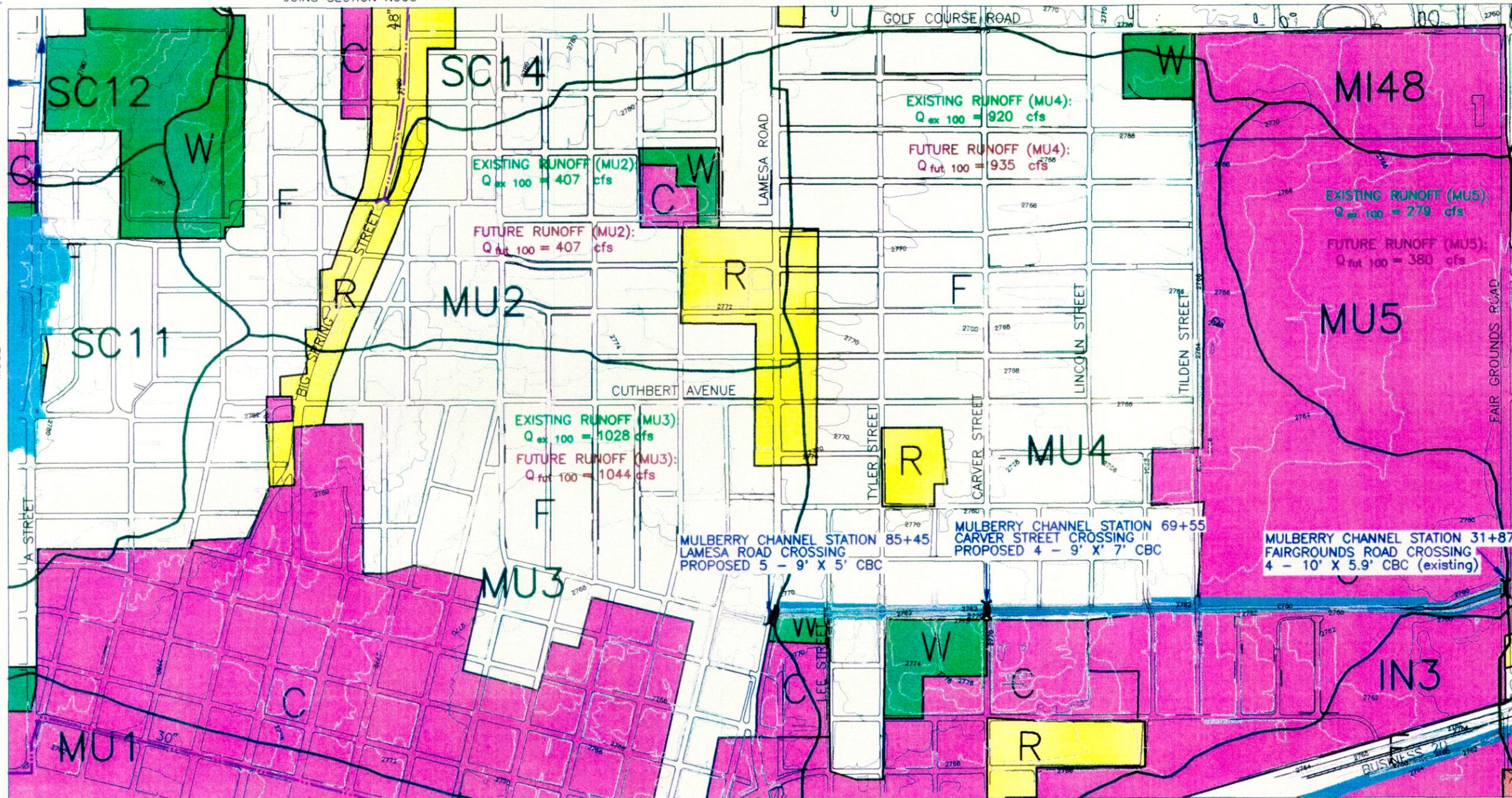
JOINS SECTION P35A

JOINS SECTION M35D

JOINS SECTION N35C

JOINS SECTION N35D

JOINS SECTION P35C



SECTION N35A

SECTION N35B



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CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
SECTION MAP

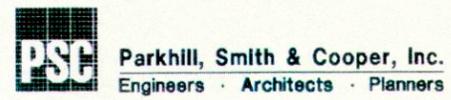


FIGURE 6-3

N35AB 3/8/96 RSK

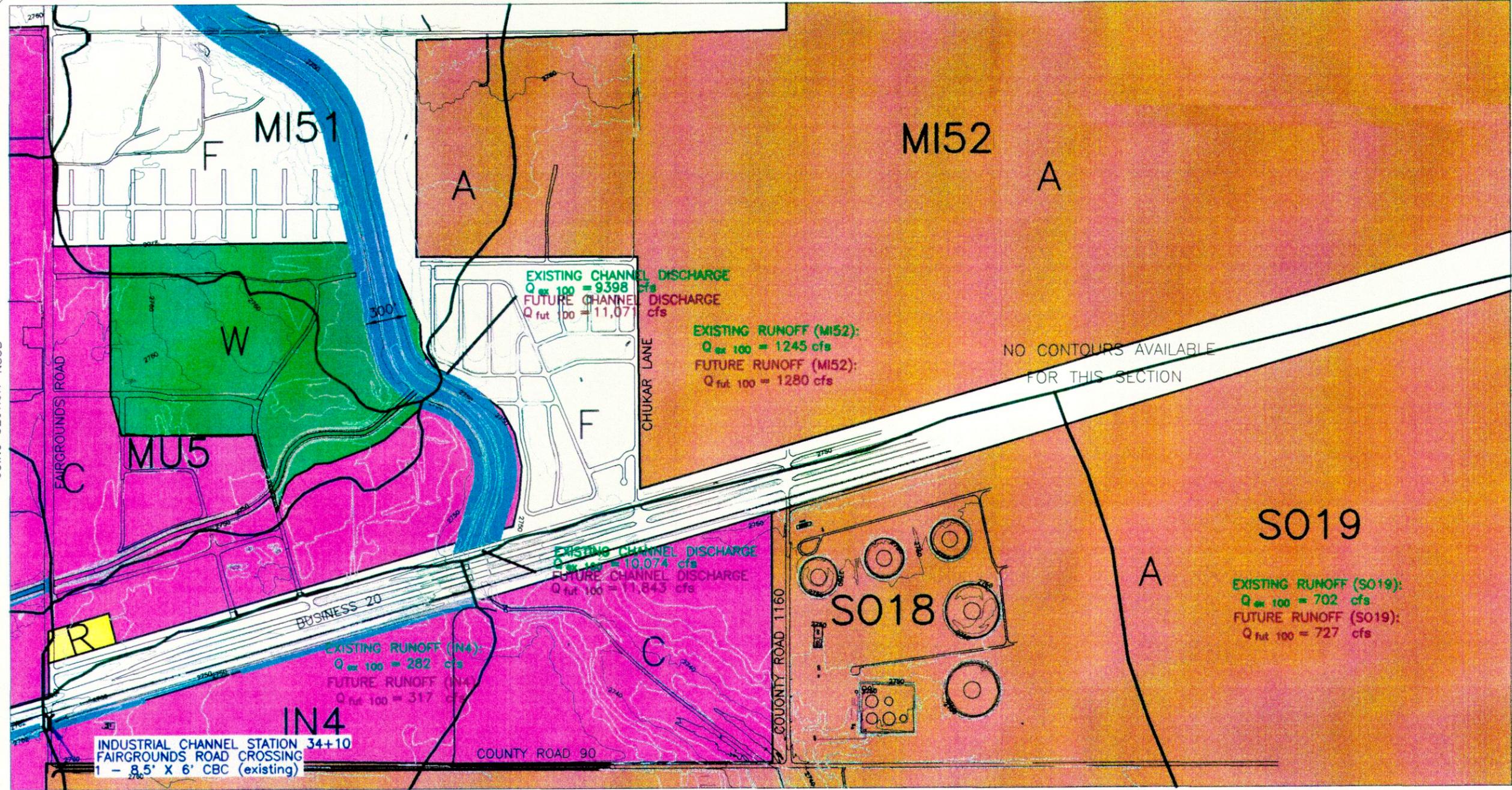
JOINS SECTION N36C

JOINS SECTION P36C

JOINS SECTION P36D

JOINS SECTION N35B

EASTERN EXTENT OF MAPS



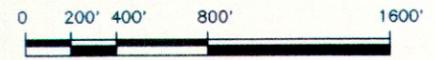
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JOINS SECTION P35C

JOINS SECTION P35D

SECTION P35A

SECTION P35B



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CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
SECTION MAP

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FIGURE 6-4

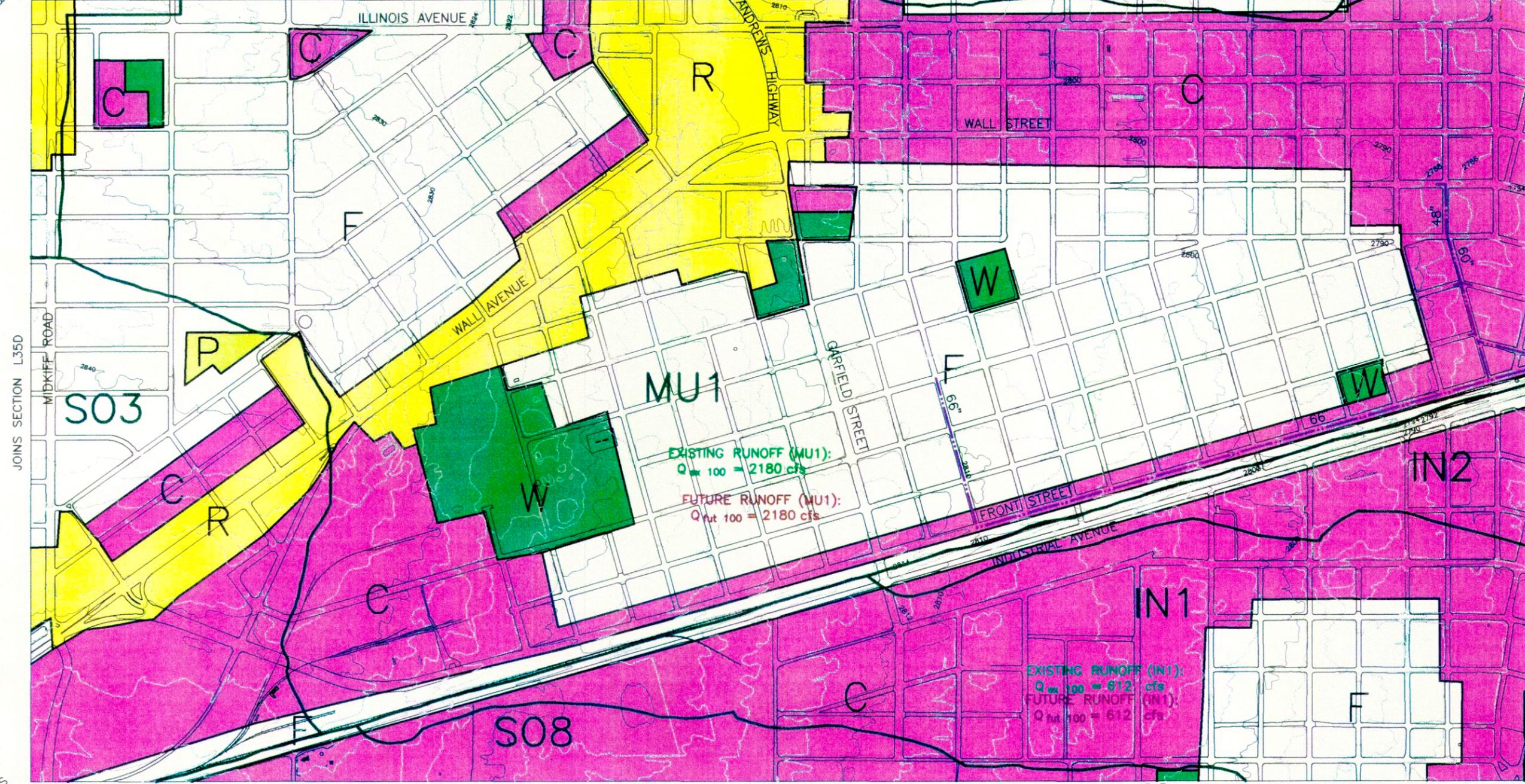
P35AB 3/8/96 RSK

JOINS SECTION L35B

JOINS SECTION M35A

JOINS SECTION M35B

JOINS SECTION N35A



JOINS SECTION L35D

JOINS SECTION N35C

JOINS SECTION L34B

JOINS SECTION M34A

JOINS SECTION M34B

JOINS SECTION N34A

SECTION M35C

SECTION M35D



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CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
SECTION MAP

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FIGURE 6-5

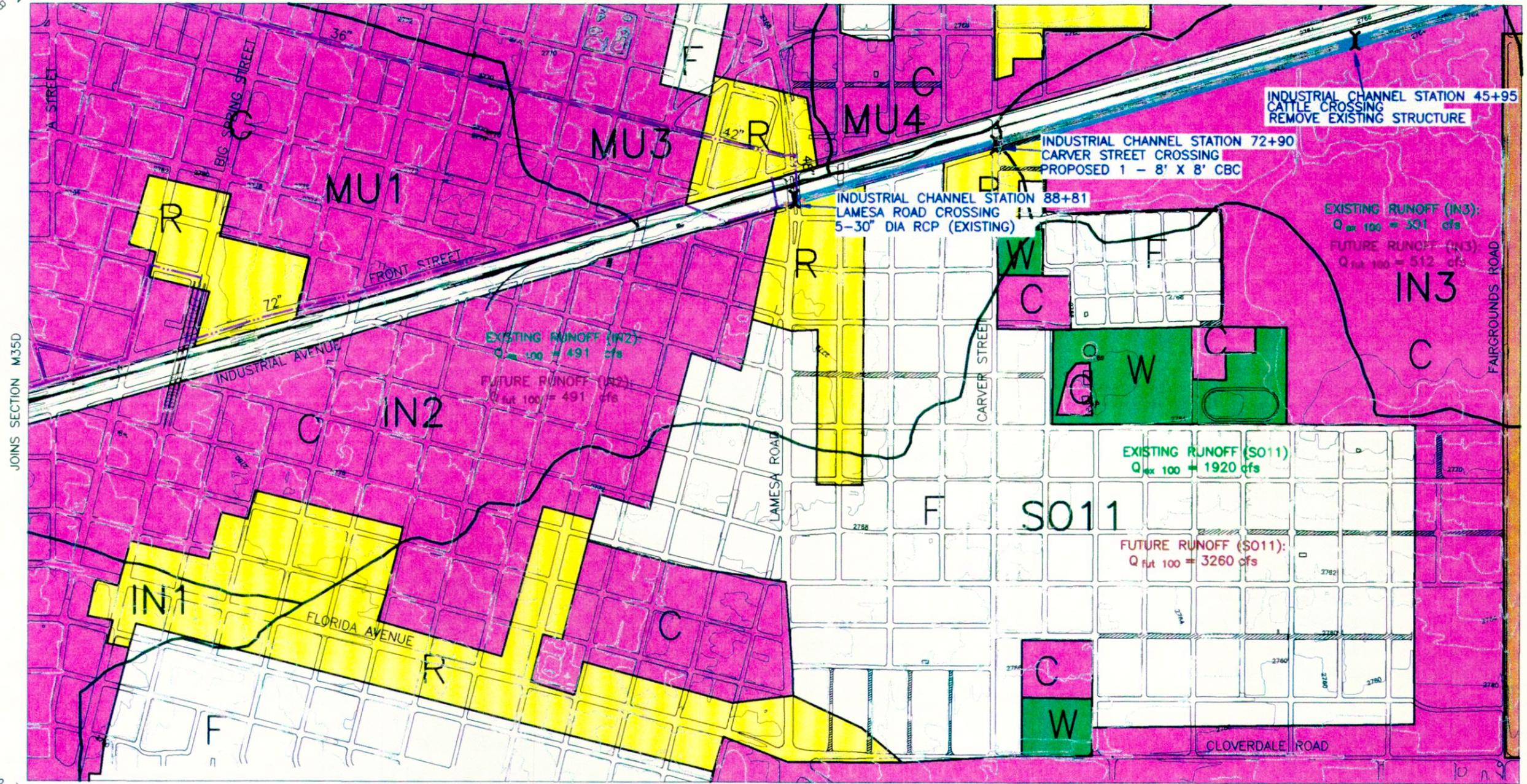
M35CD 3/8/96 RSK

JOINS SECTION M35B

JOINS SECTION N35A

JOINS SECTION N35B

JOINS SECTION P35A



JOINS SECTION M35D

JOINS SECTION P35C

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JOINS SECTION N34A

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SECTION N35C

SECTION N35D



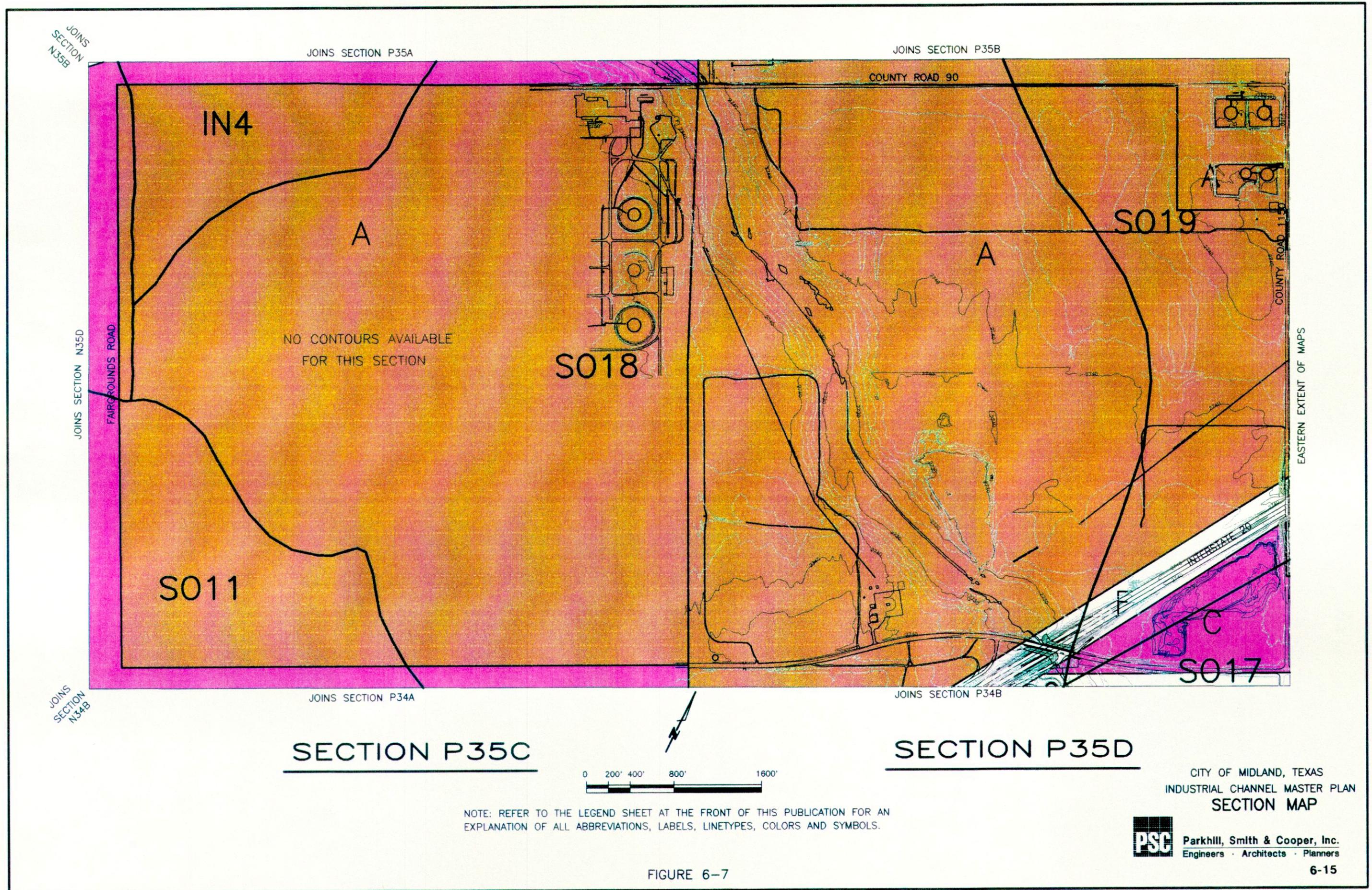
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CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
SECTION MAP

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FIGURE 6-6

N35C0 3/8/96 RSK



SECTION P35C

SECTION P35D



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SECTION MAP

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FIGURE 6-7

P35CD 3/8/96 RSK

JOINS
SECTION
L35D

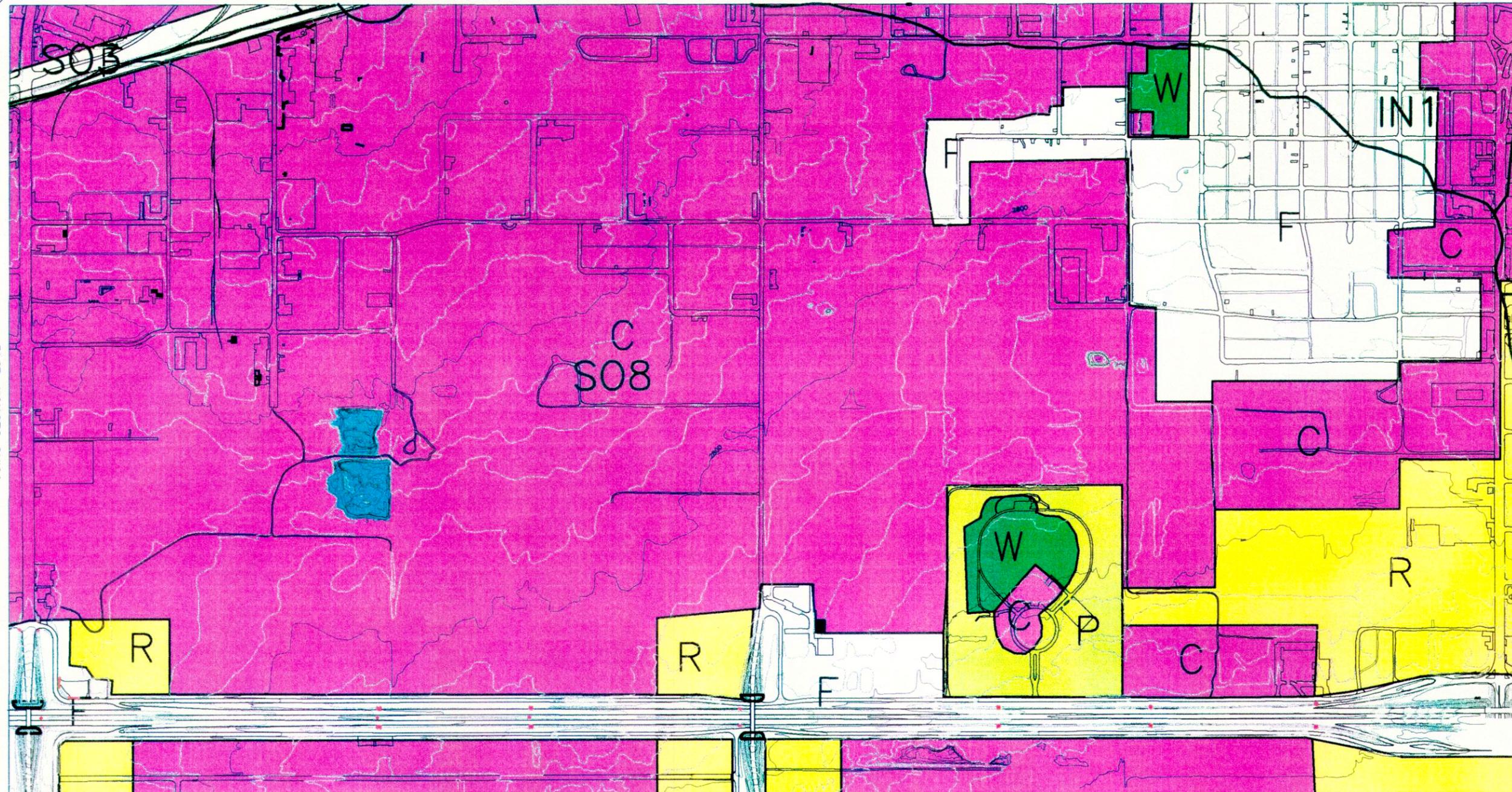
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JOINS SECTION M35D

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SECTION
N35C

JOINS SECTION L34B

JOINS SECTION N34A



SOUTHERN EXTENT OF MAP

SOUTHERN EXTENT OF MAP

SECTION M34A

SECTION M34B



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CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
SECTION MAP

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FIGURE 6-8

M34AB 3/8/96 RSK

JOINS SECTION M35D

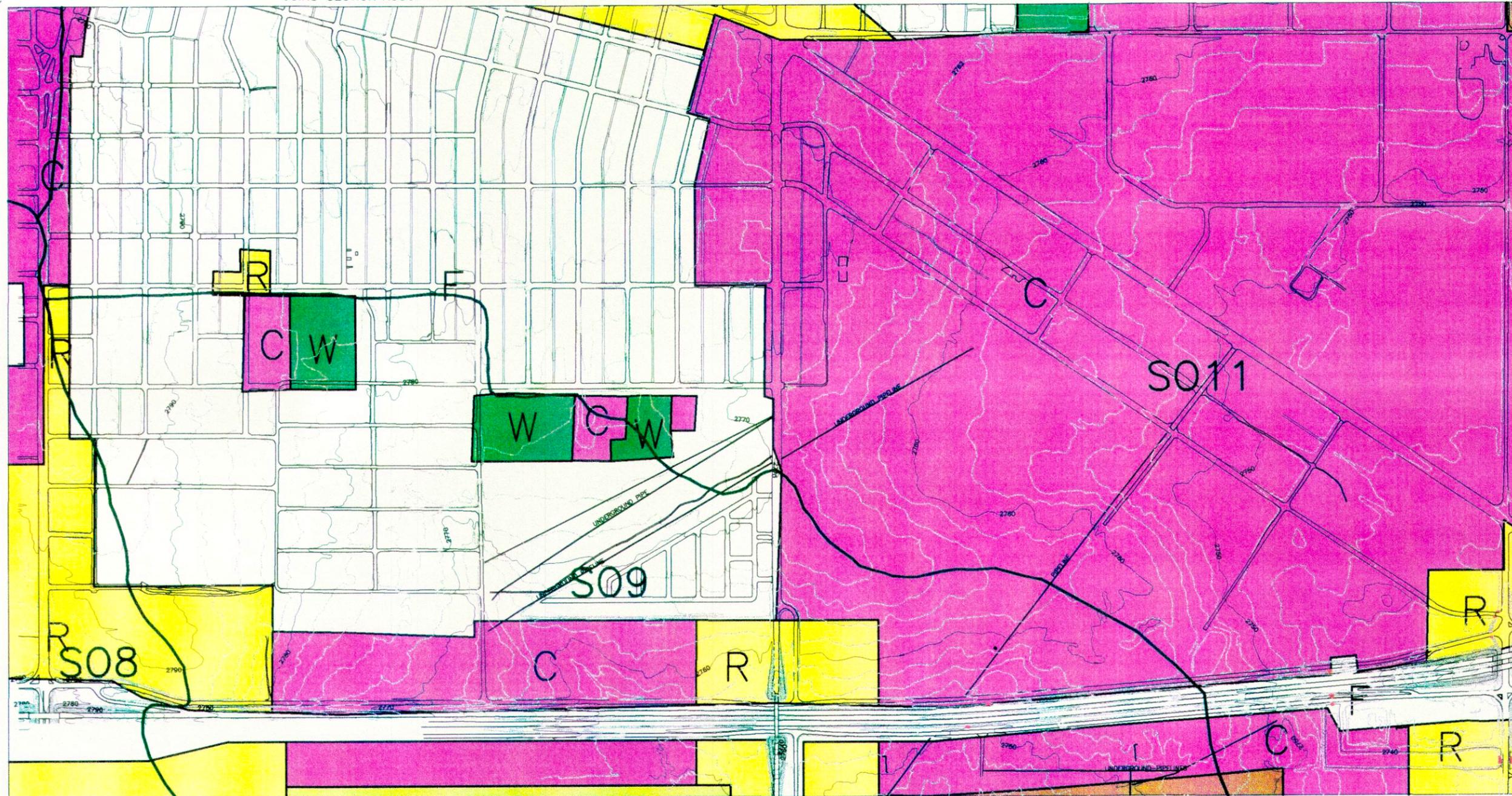
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JOINS SECTION P35C

JOINS SECTION M34B

JOINS SECTION P34A

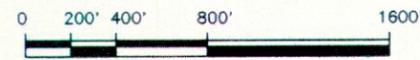


SOUTHERN EXTENT OF MAP

SOUTHERN EXTENT OF MAP

SECTION N34A

SECTION N34B



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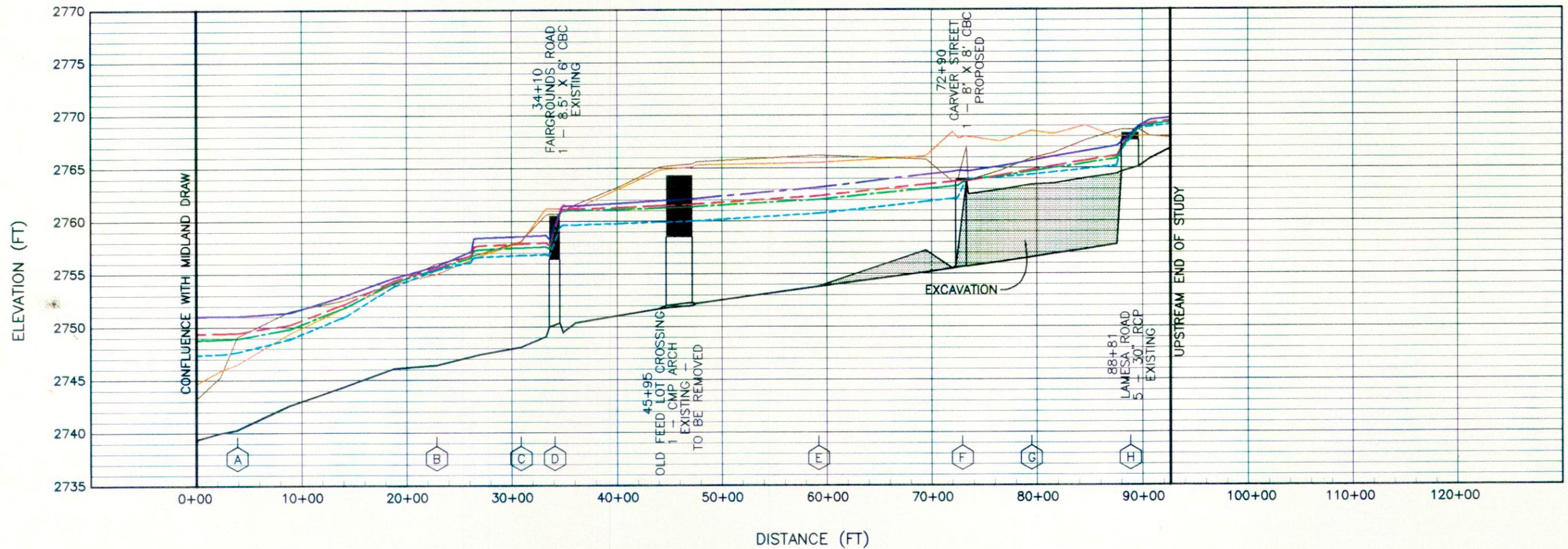
CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
SECTION MAP



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FIGURE 6-9

INDUSTRL 3/11/10 RSK



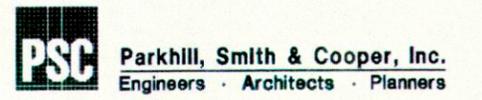
LEGEND

INVERT		10-YEAR	
LEFT BANK		50-YEAR	
RIGHT BANK		100-YEAR	
CROSS SECTION LOCATION		500-YEAR	

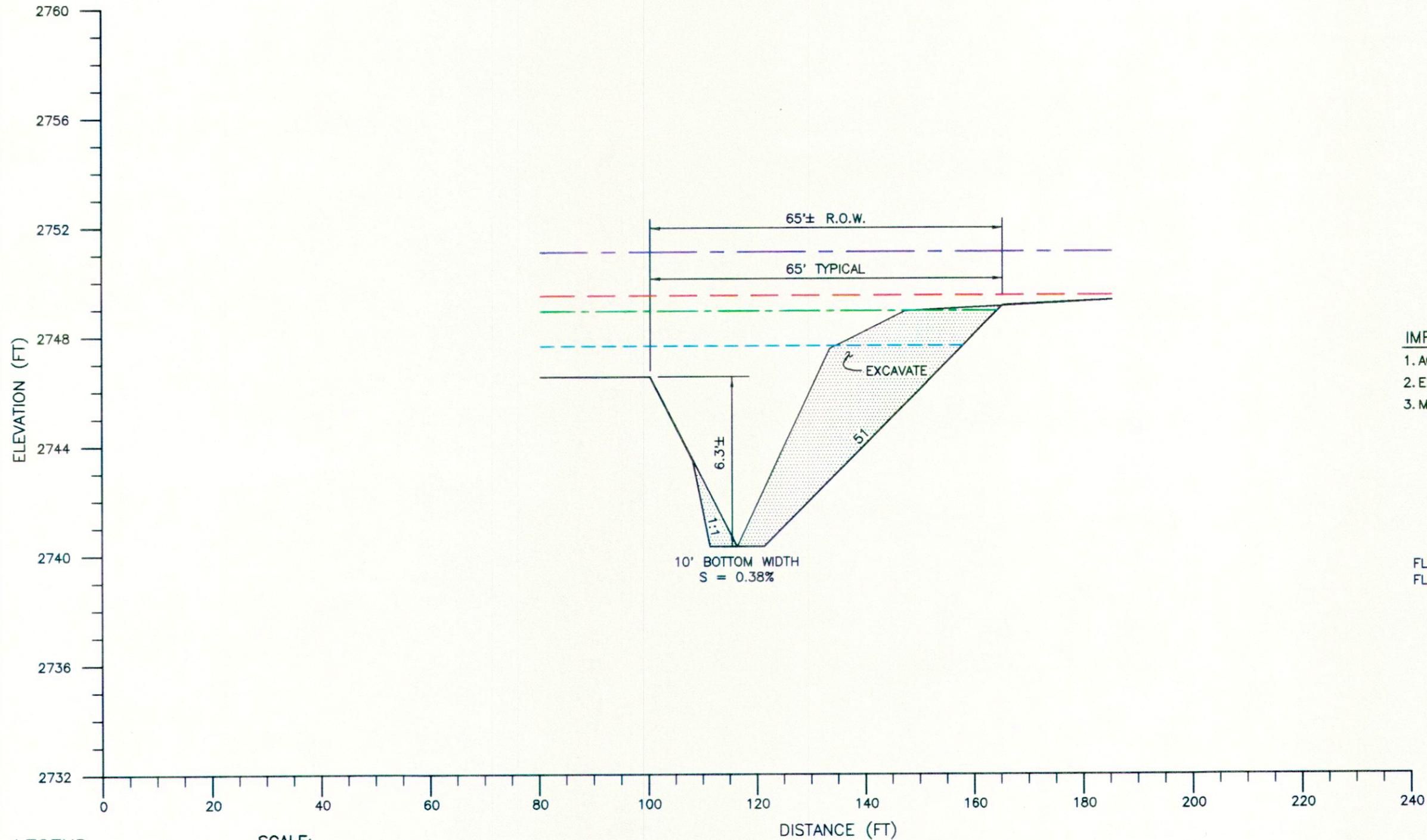
INDUSTRIAL CHANNEL
STATION 0+00 TO STATION 92+60
FIGURE 6-10

SCALE:
V: 1" = 10'
H: 1" = 1000'

CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
PROFILE



CROSS SECTION A
STATION 3+90



IMPROVEMENTS RECOMMENDED

1. ACQUIRE RIGHT-OF-WAY
2. EXCAVATE CHANNEL
3. MAINTAIN SIDE SLOPES

FL ELEVATION AT 00+00 = 2739.00
FL ELEVATION AT 18+80 = 2746.10

LEGEND

- INVERT —————
- 10-YEAR - - - - -
- 50-YEAR - - - - -
- 100-YEAR - - - - -
- 500-YEAR - - - - -

SCALE:

V: 1" = 4'
H: 1" = 20'

CONFLUENCE WITH MIDLAND DRAW TO D/S OF EXISTING STOCKYARD
STATION 0+00 TO STATION 18+00

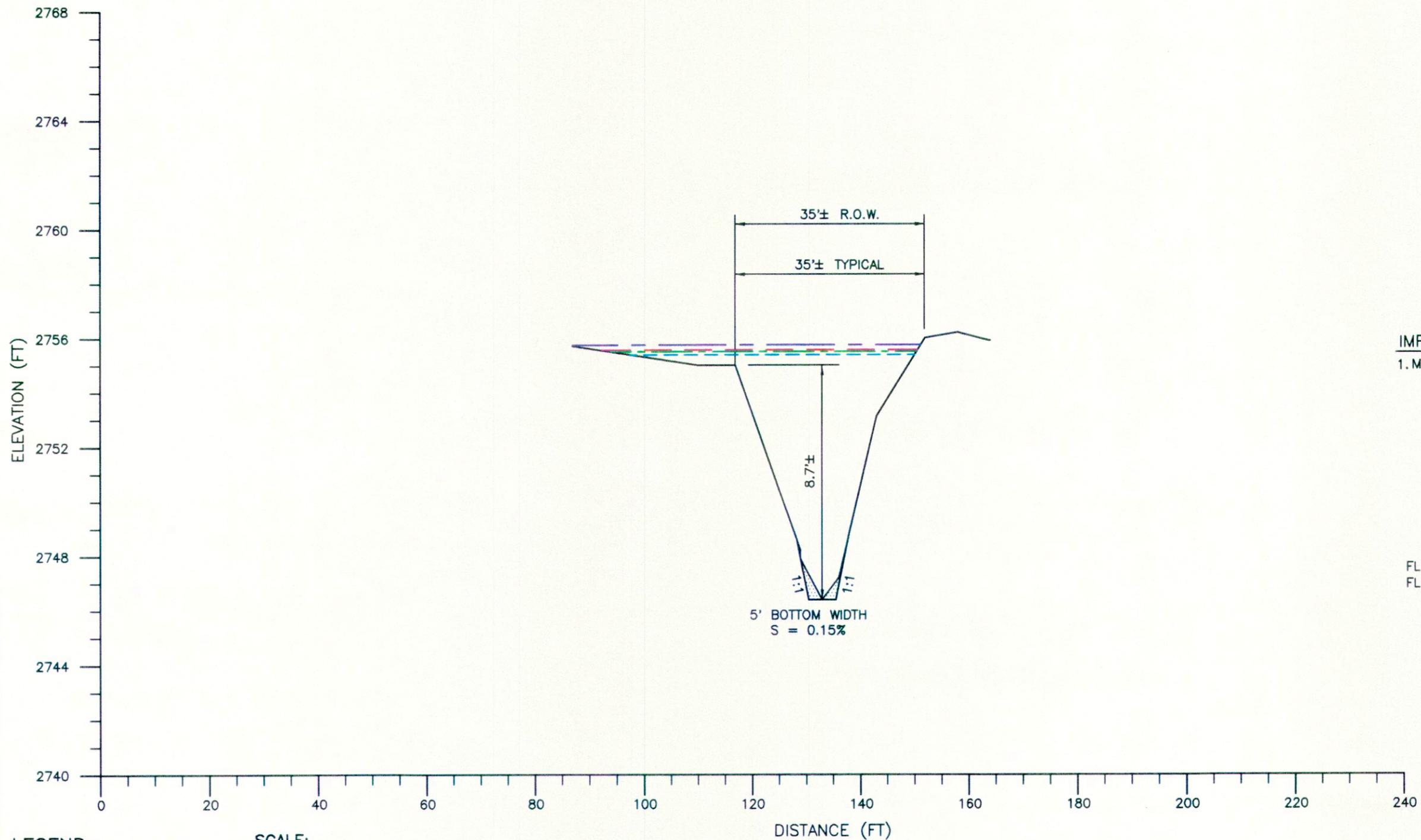
FIGURE 6-11

CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
TYPICAL CROSS SECTION



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CROSS SECTION B
STATION 22+85



IMPROVEMENTS RECOMMENDED
1. MAINTAIN SIDE SLOPES

FL ELEVATION AT 18+80 = 2746.10
FL ELEVATION AT 26+15 = 2747.20

LEGEND

- INVERT —————
- 10-YEAR - - - - -
- 50-YEAR - - - - -
- 100-YEAR - - - - -
- 500-YEAR - - - - -

SCALE:

V: 1" = 4'
H: 1" = 20'

DOWNSTREAM END TO UPSTREAM END OF EXISTING STOCKYARD
STATION 18+80 TO STATION 26+15

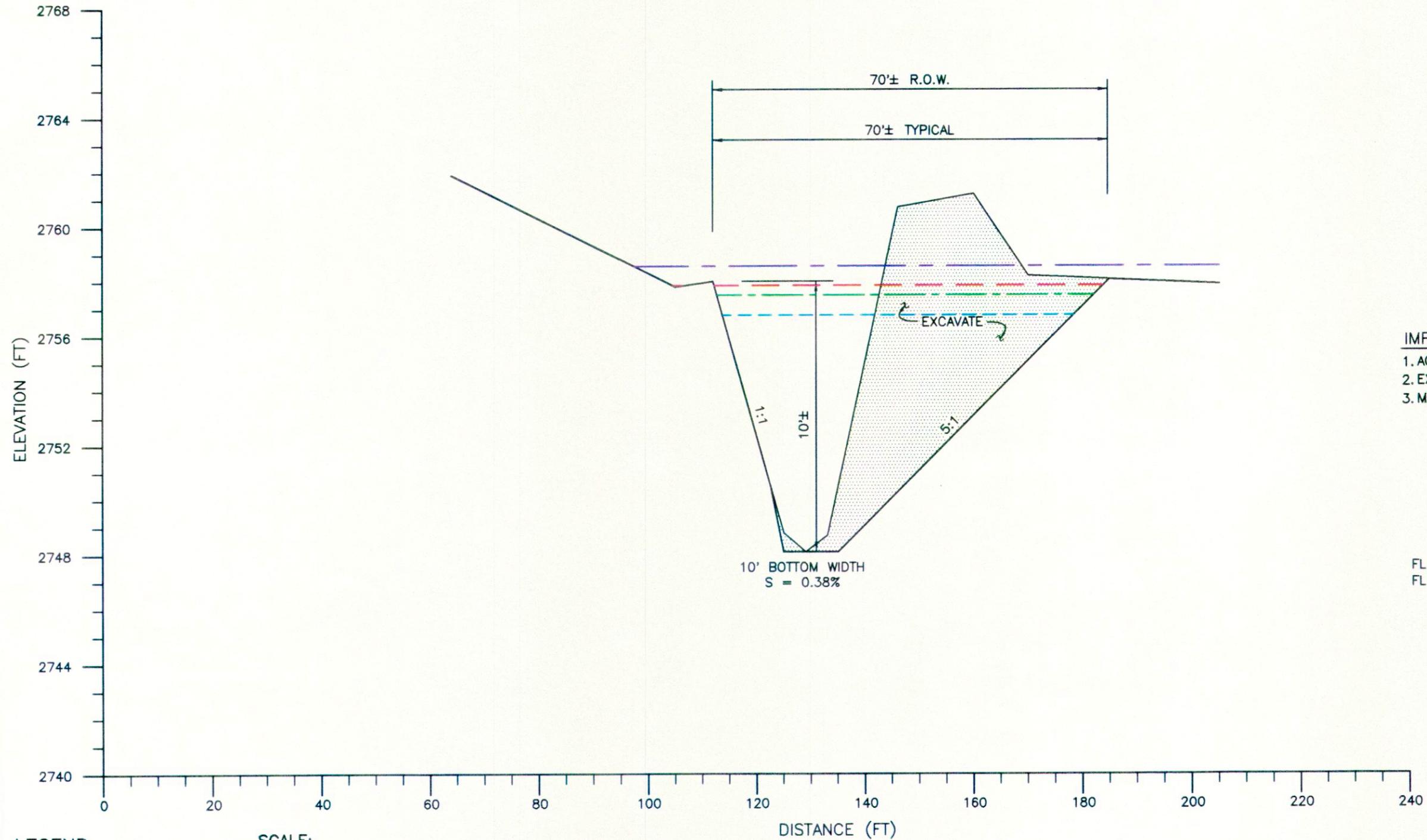
FIGURE 6-12

CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
TYPICAL CROSS SECTION



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CROSS SECTION C
STATION 30+90



IMPROVEMENTS RECOMMENDED

1. ACQUIRE RIGHT-OF-WAY
2. EXCAVATE CHANNEL
3. MAINTAIN SIDE SLOPES

FL ELEVATION AT 26+15 = 2747.20
FL ELEVATION AT 34+10 = 2750.20

LEGEND

- INVERT ————
- 10-YEAR - - - - -
- 50-YEAR - - - - -
- 100-YEAR - - - - -
- 500-YEAR - - - - -

SCALE:

V: 1" = 4'
H: 1" = 20'

U/S OF EXISTING STOCKYARDS TO FAIRGROUNDS ROAD
STATION 26+15 TO STATION 34+10

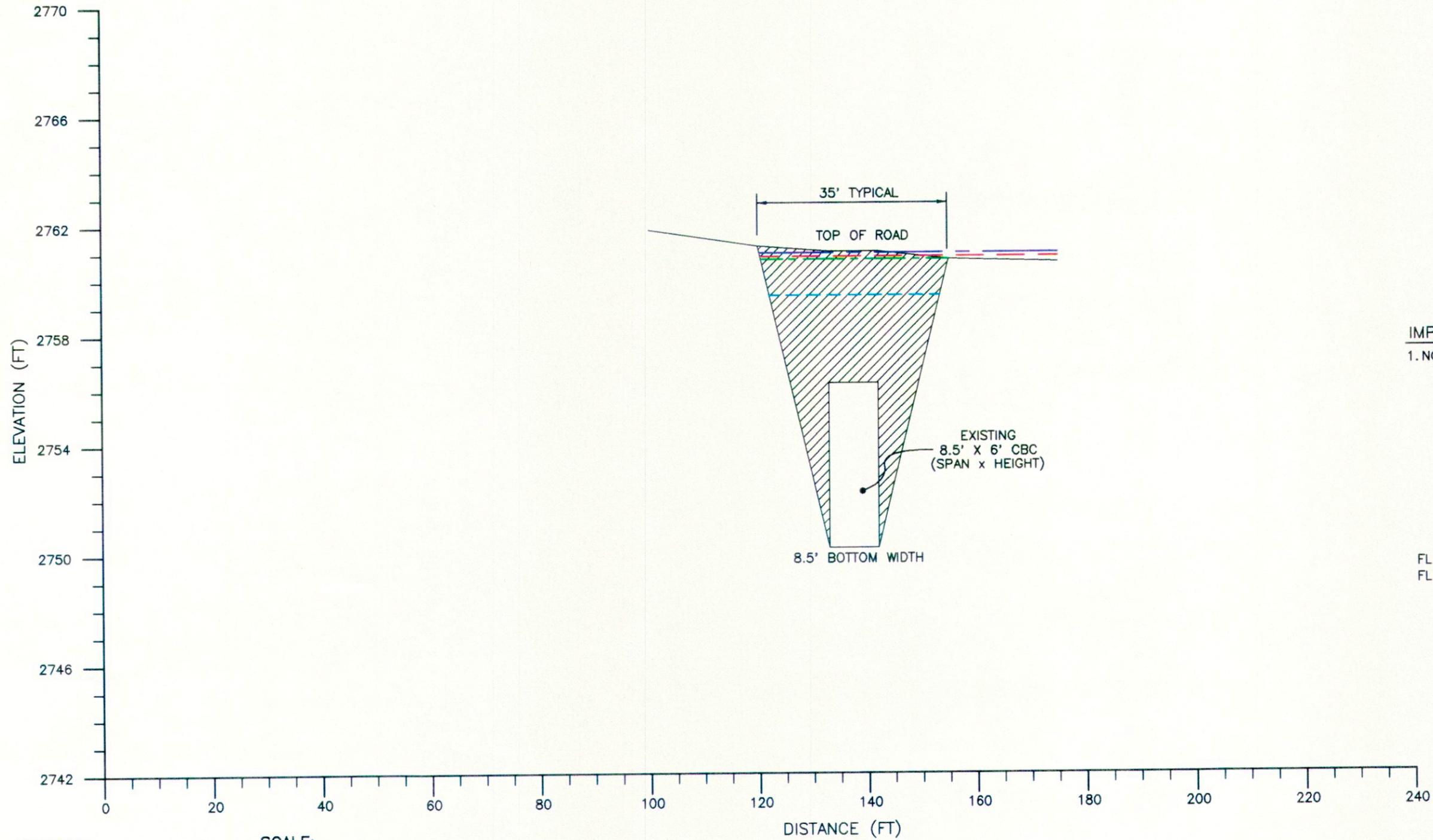
FIGURE 6-13

CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
TYPICAL CROSS SECTION



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Engineers · Architects · Planners

CROSS SECTION D
STATION 34+10



IMPROVEMENTS RECOMMENDED
1. NONE

FL ELEVATION AT 33+60 = 2750.00
FL ELEVATION AT 34+60 = 2750.40

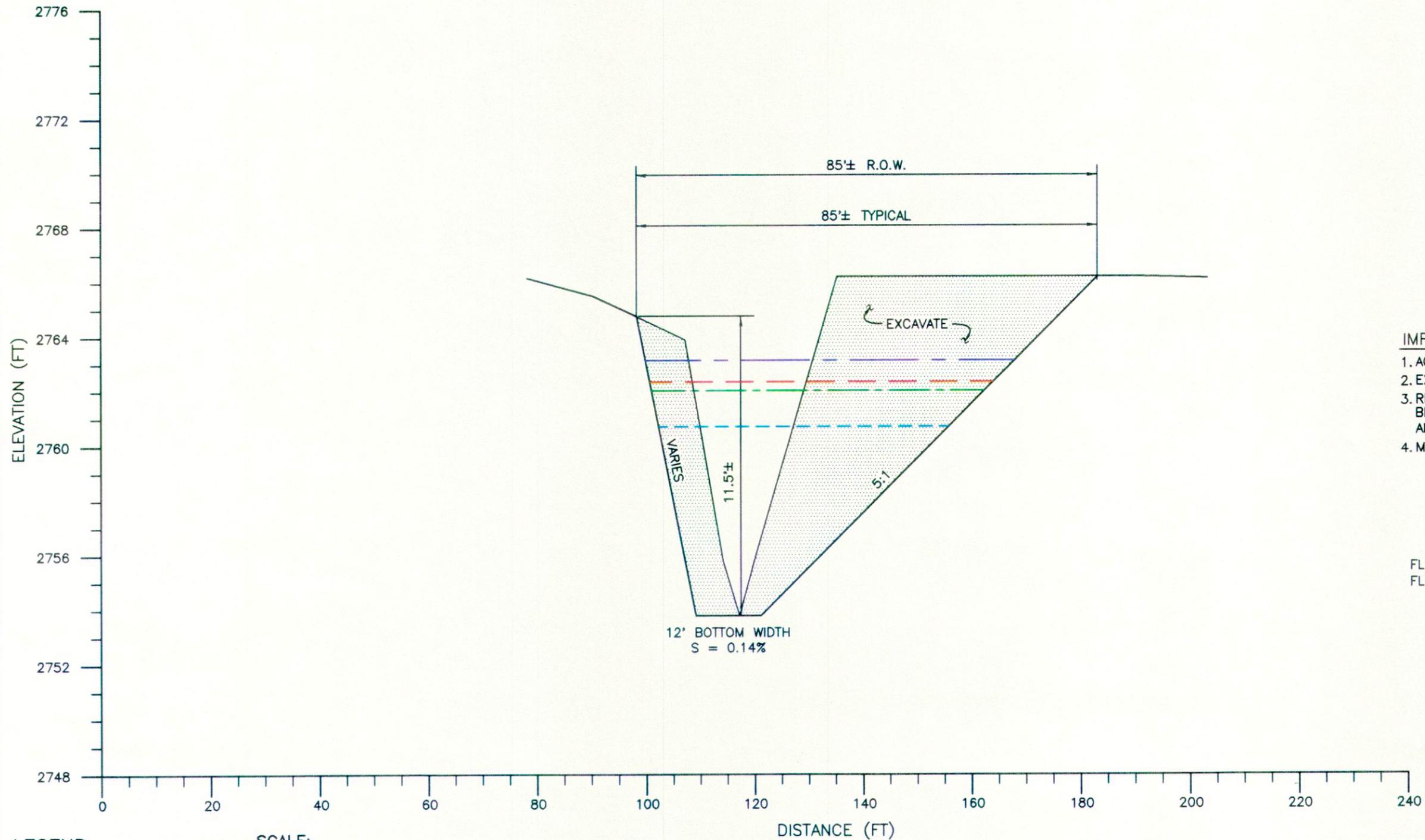
FAIRGROUNDS ROAD CROSSING

FIGURE 6-14

CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
TYPICAL CROSS SECTION

PSC Parkhill, Smith & Cooper, Inc.
Engineers · Architects · Planners

CROSS SECTION E
STATION 59+20



IMPROVEMENTS RECOMMENDED

1. ACQUIRE RIGHT-OF-WAY
2. EXCAVATE CHANNEL
3. REMOVE CATTLE CROSSING BETWEEN STATION 44+70 AND STATION 47+20
4. MAINTAIN SIDE SLOPES

FL ELEVATION AT 34+10 = 2750.20
FL ELEVATION AT 72+90 = 2755.65

LEGEND

- INVERT —————
- 10-YEAR - - - - -
- 50-YEAR - - - - -
- 100-YEAR - - - - -
- 500-YEAR - - - - -

SCALE:

V: 1" = 4'
H: 1" = 20'

FAIRGROUNDS ROAD TO CARVER STREET
STATION 34+10 TO STATION 72+90

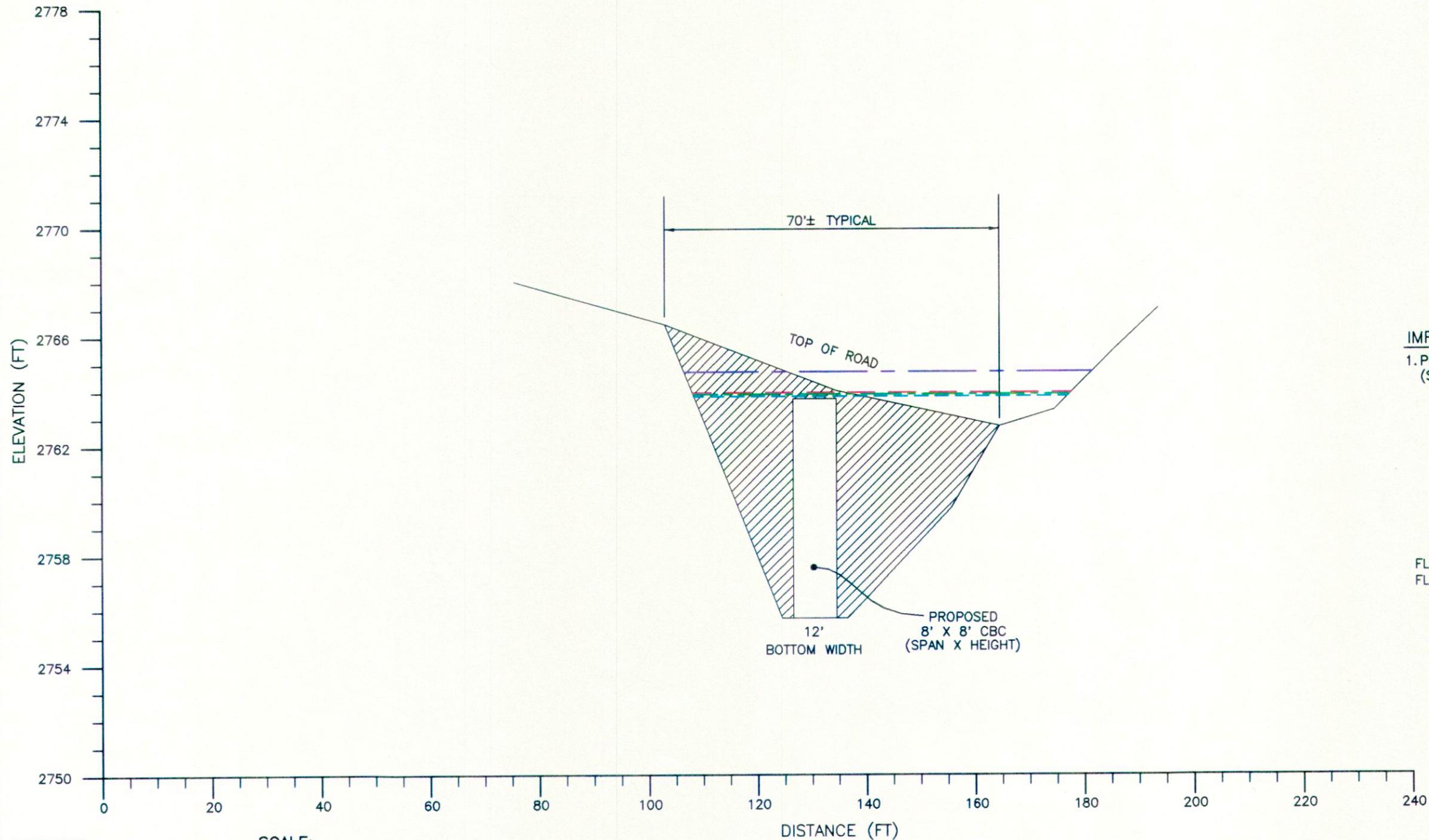
FIGURE 6-15

CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
TYPICAL CROSS SECTION



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CROSS SECTION F
STATION 72+90



IMPROVEMENTS RECOMMENDED
1. PROPOSED 1 - 8' X 8' CBC
(SPAN X HEIGHT)

FL ELEVATION AT 72+50 = 2755.60
FL ELEVATION AT 73+30 = 2755.70

LEGEND

- INVERT —————
- 10-YEAR - - - - -
- 50-YEAR - - - - -
- 100-YEAR - - - - -
- 500-YEAR - - - - -

SCALE:

V: 1" = 4'
H: 1" = 20'

CARVER STREET CROSSING

FIGURE 6-16

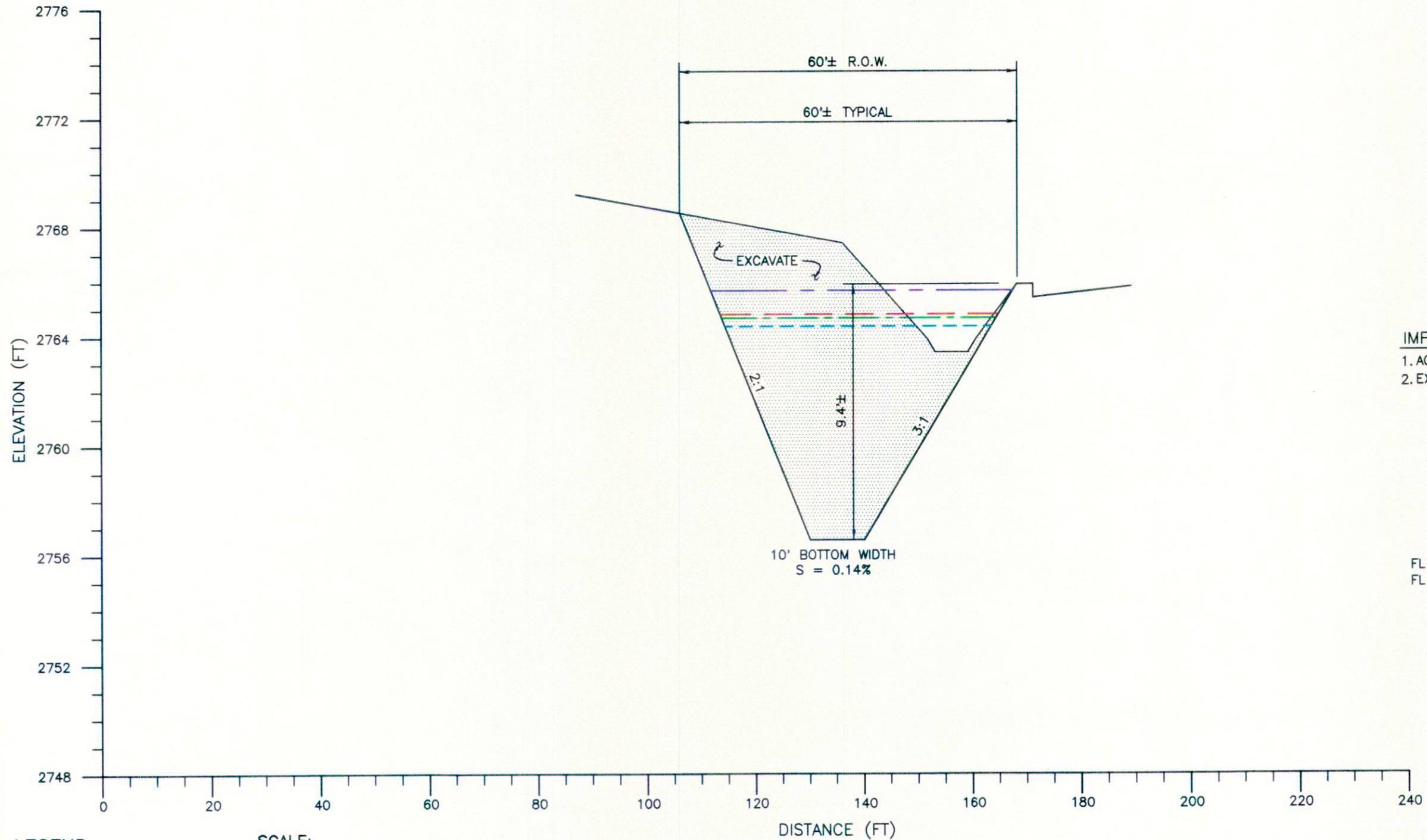
CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
TYPICAL CROSS SECTION



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7290 3/11/83 11.15 RSK

CROSS SECTION G
STATION 79+46



IMPROVEMENTS RECOMMENDED

1. ACQUIRE RIGHT-OF-WAY
2. EXCAVATE CHANNEL

FL ELEVATION AT 72+90 = 2755.65
FL ELEVATION AT 87+56 = 2757.77

LEGEND

- INVERT ———
- 10-YEAR - - - - -
- 50-YEAR - - - - -
- 100-YEAR - - - - -
- 500-YEAR - - - - -

SCALE:

V: 1" = 4'
H: 1" = 20'

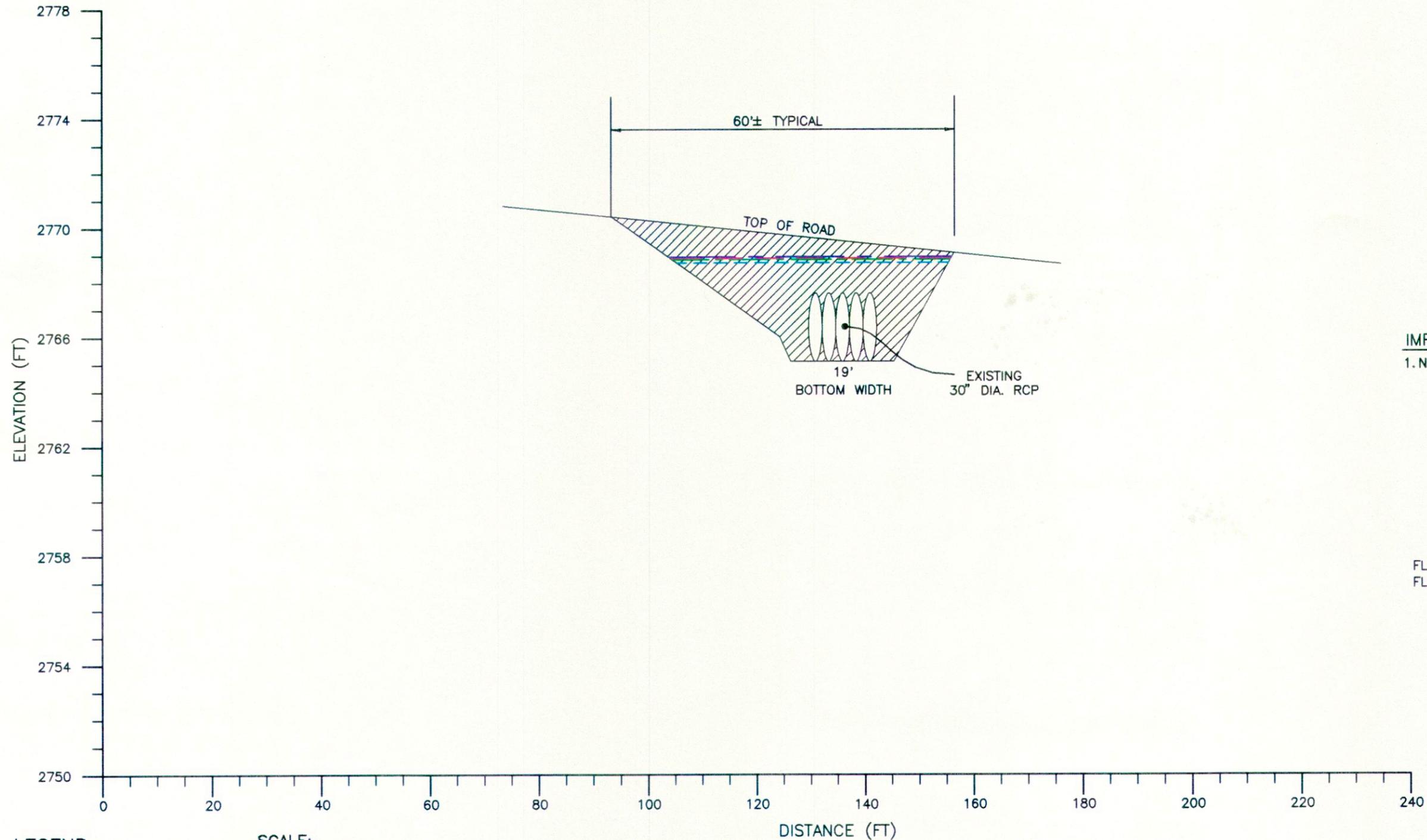
CARVER STREET TO D/S OF LAMESA ROAD
STATION 72+90 TO STATION 87+56

FIGURE 6-17

CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
TYPICAL CROSS SECTION

PSC Parkhill, Smith & Cooper, Inc.
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CROSS SECTION H
STATION 88+81



IMPROVEMENTS RECOMMENDED
1. NONE

FL ELEVATION AT 87+98 = 2764.63
FL ELEVATION AT 89+63 = 2765.12

LEGEND

INVERT	—————
10-YEAR	- - - - -
50-YEAR	- · - · -
100-YEAR	- · - · -
500-YEAR	- · - · -

SCALE:
V: 1" = 4'
H: 1" = 20'

LAMESA ROAD CROSSING

FIGURE 6-18

CITY OF MIDLAND, TEXAS
INDUSTRIAL CHANNEL MASTER PLAN
TYPICAL CROSS SECTION

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