



## STORMWATER & DRAINAGE REPORT

FRA-270-32.92 PID 113663 – Final Tracings

ODOT District 6

November, 2025



Engineers, Surveyors, Planners, Scientists  
5500 New Albany Rd., Columbus, OH 43054  
p. 614.775.4500 f. 614.775.4800  
emht.com

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## **1.0 INTRODUCTION**

This analysis has been prepared in support of the following plan set, in order to document design and calculations related to roadway drainage and stormwater management:

- FRA-270-32.92 PID 113663

The goal of FRA-270-32.92 is to improve safety and reduce congestion. Extending westbound left turn queue storage on Easton way approaching Stelzer Road by modifying the existing raised median in this area signaling the IR-270 southbound off ramp at Easton Way. By widening the IR-270 southbound off ramp to create a two-lane exit and three approaches lanes to the signalized ramp termini extending the south bound off ramps storage and deceleration. The project includes approximately 5,200 feet of constructing a lane, resurfacing, proposed curb and gutter, proposed drainage, proposed traffic control, and post construction BMPs.

## **2.0 DRAINAGE OUTFALL IDENTIFICATION**

Across this project, tributary areas have been delineated using a combination of topographic field surveys and GIS mapping.

In the proposed condition, the roadway profile is maintained to keep the delineation of the existing tributary areas. Ditches will be utilized to collect and expel drainage to its current, respective outfall.

### **2.1 Outfall 1 (Middle) Sta 1384+60**

On the right side of IR-270 south/Easton entrance ramp beginning east of the project and continuing until it's outfall at Big Walnut Creek, there is an existing 48" storm sewer within the project limits. The existing condition within the project area is mostly sheet flow to the road drainage system of ditches and pipes. The typical divide is 24 feet east of the centerline of IR-270. In the proposed condition the pattern of flow will be maintained. The existing roadside ditches will be maintained at a lower capacity. Existing pipe will be maintained using extension and headwalls. Existing structures needing relocation or replacement will be replaced with manholes. See FRA-270-32.92 (EASTON WAY) Stormwater Management Plan (SWMP) dated March 4, 2024 for analysis of downstream impacts.



## 2.2 Outfall 2 (North) Sta 1372+82

On the right side of IR-270 beginning east of the project and continuing until it's outfall at Big Walnut Creek, there is an existing storm sewer that ranges from 42" to 48" within the project limits. The west trunk line is being maintained and outlet into Big Walnut Creek. The existing condition within the project area is sheet flow divided 24 feet east of the centerline of IR-270. The proposed outlet location is maintained. This maintains the existing drainage pattern which the storm sewer discharges to a ditch which carries the water to the roadside drainage system. The results of the HGL elevation of key locations within the limited site show that there is not a adverse effect to the existing system. See FRA-270-32.92 (EASTON WAY) Stormwater Management Plan (SWMP) dated March 4, 2024 for analysis of downstream impacts.

**Table 6 - Existing vs. Proposed Conditions Headwater Elevations at Key Locations within Limited Site (from May 10, 2023 Easton Way Hydraulic Memo Rev2)**

Location	Top of Casting Elevation (ft)	10-year Existing HGL Elevation (ft)	10-year Proposed HGL Elevation (ft)	25-year Existing HGL Elevation (ft)	25-year Proposed Condition Elevation (ft)
Upstream of Sewer that Passes Under Building	839.0	829.21	829.23	830.01	830.04
Southern Parking Lot CB 6	830.4	822.17	822.37	824.82	824.88

## 2.3 Outfall 3 (South)

On the right side of IR-270 north of the Easton IR-270 south exit ramp and project limits continuing its outfall to the IR-270 truck line. There are existing storm sewers that range from 12" to 15" inside of the project limits to Pond B. Outlet #3 (Pond B) discharges to a roadside ditch along the west side of I270 before it enters a 27" storm sewer that takes the water to the east side of I270 and travels in ODOT's owned and maintained storm sewer that goes south until it reaches the outlet at Big Walnut Creek in ODOT's LA RW. The existing storm sewer is being maintained and outlets to the trunk line in the middle of IR-270. The existing condition within the project area is sheet flow divided 24 feet east of the centerline of connection ramp B. The existing outlet location is maintained. This maintains the existing drainage pattern which the storm sewer discharges to a ditch which carries the water to the roadside drainage system. See FRA-270-32.92 (EASTON WAY) Stormwater Management Plan (SWMP) dated March 4, 2024 for analysis of downstream impacts.

**TABLE 2-1**  
**Existing Subarea Characteristics for the Overall Analysis Area**

**(From FRA-270-32.92 (EASTON WAY) Stormwater Management Plan (SWMP) dated March 4, 2024)**

Subarea Identifier	Tributary Area (acres)	Outfall ID	Land Usage	Runoff Curve Number	% Impervious (%)	Time of Concentration (min)
To Area 1 Post	68.42	Outfall #1	Open Space and Impervious Area	94	83%	12.0
To Subarea 6A	14.35	Outfall #1		94	83%	12.0
To Ex Stelzer Storm	8.77	Outfall #1		90	66%	15.0
To Easton Gateway	45.96	Outfall #1		94	83%	12.0
To 1372+50	17.38	Outfall #1		83	41%	36.0
To ODOT Trib Area 1	11.63	Outfall #1		87	53%	15.0
To Limited Basin 2	15.77	Outfall #1		87	53%	12.9
To Limited Building Crossing	9.64	Outfall #1		83	43%	10.0
To Limited Basin 3	11.71	Outfall #1		94	83%	10.0
To MH7	6.35	Outfall #2		88	59%	5.0
To MH8	14.45	Outfall #2		90	66%	10.0
To 1384+54	2.51	Outfall #2		92	55%	15.0
To 1384+46.68	27.33	Outfall #2		78	19%	30.0
To Aladdin Basin	19.38	Outfall #2		84	57%	15.0
To Basin A	13.99	Outfall #2		79	23%	20.0
To Basin B	11.34	Outfall #3		83	39%	10.0

**TABLE 2-2**  
**Existing Peak Flow Rates at Each Outfall**

**(From FRA-270-32.92 (EASTON WAY) Stormwater Management Plan (SWMP) dated March 4, 2024)**

Storm Event (Recurrence Interval)	Outfall #1 at Junction 1372+81.69 Peak Flow Rates* (cfs)	Outfall #2 at Junction 1384+55.56 Peak Flow Rates** (cfs)	Outfall #3 Peak Flow Rates*** (cfs)	Total Existing Peak Flow Rates [#1 + #2 + #3] (cfs)
1-year	32.99	21.92	7.06	61.97
2-year	40.93	30.87	7.72	79.52
5-year	50.55	44.05	8.45	103.05
10-year	57.05	59.55	8.93	125.53
25-year	63.63	64.84	9.48	137.95
50-year	68.18	67.85	9.87	145.90
100-year	71.85	70.08	17.32	159.25

\*Flow rates were pulled from Link-07 in SSA output

\*\*Flow rates were pulled from Link-03 in SSA output

\*\*\*Flow rates are the summation of Outfall #3a (pipe outflow) and Outfall #3b (spillway) in SSA output

### 3.0 ROADWAY DRAINAGE DESIGN METHODOLOGY

#### 3.1 Ditches

The drainage areas to the proposed inlets are as shown on the Appendix E Storm Sewer Tributary Map.

Ditch design calculations were completed to comply with requirements per ODOT L&D Manual Vol. 2, Section 1102. Per ODOT L&D Manual Vol. 2 Section 1102.3, the design frequency to determine the depth is a 10-year storm with a 5-year storm to determine the shear stress and width of the ditch lining.

The ditches along IR-270 were designed within the right-of-way to have foreslopes ranging between 6:1 and 2:1 and backslopes ranging between 6:1 and 2:1. These ditches allow for maintaining the existing overall drainage patterns. The ditches are paired with a storm sewer system to keep the design year storm within the ditch and off the traveled way. The appropriate ditch lining has been provided based on the shear stress using CDSS.

See Appendix A for attached Ditch Calculations.

### **3.2 Spread**

The drainage areas to the proposed inlets are as shown on the Appendix E Storm Sewer Tributary Map.

Spread calculations were completed to comply with requirements per ODOT L&D Manual Vol. 2, Section 1103. Per ODOT L&D Manual Vol. 2 Section 1103.2, the design frequency to determine the allowable spread is a 5-year storm being 16.84'. 0' within the through lane (35mph, 3 lanes) and 1.0' from the gutter.

See Appendix B for attached Spread Calculations.

### **3.3 Storm Sewer**

The drainage areas to the proposed inlets are as shown on the Appendix E Storm Sewer Tributary Map. Storm Sewer calculations were completed to comply with requirements per ODOT L&D Manual Vol. 2, Section 1104.

After the contributing areas were determined the storm sewer sizing was checked using a 10-year frequency rainfall event. The HGL check was calculated using a 25-year frequency rainfall event.

See Appendix C for attached Storm Sewer Calculations.

### **3.4 Culvert Analysis**

The drainage areas to the proposed Culverts are as shown on the Appendix E Tributary Map. Culvert calculations were completed to comply with requirements per ODOT L&D Manual Vol. 2, Section 1105.

After the contributing areas were determined, the culvert sizing was checked using a 25-year frequency rainfall event. The HGL check was calculated using a 100-year frequency rainfall event.

See Appendix D for attached Culvert Calculations.

### **3.5 BMP**

BMP's were calculated using ODOT Location and Design Manual, Volume 2 – Drainage Design, Section 1111, 1112, and 1113. By ODOT L&D Vol2, only water quality is required. The water quality requirement is being met with the use of vegetated bio filters.

See Appendix F for attached BMP Calculations.

APPENDIX A  
Ditch Calculations (CDSS)



# DITCH ANALYSIS

**PID :** 113663    **Date :** 05/30/2025    **Project :** FRA-270-32.92

**Location :** Easton Mall

**Description :** CD Road 1367+27 to 1372+46

**Designer :** TGW

**Rainfall Area :** C

**Allowable Shears**

	<b>Seed:</b>	0.40	<b>Jute Mat:</b>	0.45	<b>Temporary Mat:</b>	1.00
<b>Permanent Mat</b>	<b>Type 1:</b>	2.00	<b>Type 2:</b>	3.00	<b>Type 3:</b>	5.00
<b>RCP</b>	<b>Type B:</b>	6.00				

(\*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1367+27	1373+22	R	2419.0	4.00	2.00	2.00	0.0067	13.40	13.40	0.57	7.64	Seed	2.04	5	0.030	45.53	3.02	0.37	15.57	0.89	7.57
												Seed	2.26	10	0.040	47.85	2.53	0.46	17.23	1.10	8.39



# DITCH ANALYSIS

**PID :** 113663    **Date :** 05/30/2025    **Project :** FRA-270-32.92

**Location :** Easton Mall

**Description :** CD Road 1373+47 to Ramp A 1384+42

**Designer :** TGW

**Rainfall Area :** C

**Allowable Shears**

	<b>Seed:</b>	0.40	<b>Jute Mat:</b>	0.45	<b>Temporary Mat:</b>	1.00
<b>Permanent Mat</b>	<b>Type 1:</b>	2.00	<b>Type 2:</b>	3.00	<b>Type 3:</b>	5.00
<b>RCP</b>	<b>Type B:</b>	6.00				

(\*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1373+22	1388+48	R	1494.0	4.00	4.00	2.00	0.0056	58.53	58.53	0.47	27.51	Seed	1.92	5	0.030	49.55	3.71	0.56	52.84	1.61	13.68
												Jute Mat	1.88	5	0.040	51.10	2.98	0.64	51.69	1.83	14.97
												Temp. Mat	1.88	5	0.040	51.10	2.98	0.64	51.69	1.83	14.97
												Temp. Mat	2.16	10	0.040	50.82	3.09	0.68	59.52	1.95	15.72



# DITCH ANALYSIS

PID : 113663      Date : 05/30/2025      Project : FRA-270-32.92

Location : Easton Mall

Description : Easton Way 62+70 to Ramp A 1384+42

Designer : TGW

Rainfall Area : C

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(\*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
62+70	1384+42	R	1306.0	4.00	4.00	3.00	0.0059	3.18	3.18	0.71	2.26	Seed	2.47	5	0.030	34.34	1.97	0.18	5.58	0.49	7.46
												Seed	2.72	10	0.040	36.25	1.65	0.22	6.14	0.61	8.25



APPENDIX B

Spread Calculations (CDSS)



# INLET SPACING DESIGN

**PID :** 113663      **Date :** 05/30/2025      **Project :** FRA-270-32.92

**Location :** City of Columbus, Franklin County

**Description :** CD Road RT Sta 1356+00 to 1369+23 RT

**Designer :** RSH

**Rainfall Area:** C

**Storm Frequency (yr.) :** 10

**Total Allow. Spread (ft.) :** 10.00

**Allowable Depth (ft.)** 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
1356+00	Begin																	
1359+25	I-3D	325.00	0.90	0.30	10.00	1.74	11.74	0.0351	0.0400	0.0156	8.00	0.0000	4.99	0.86	0.48	1.35	0.161	4.03
1364+65	I-3D	540.00	0.90	0.46	10.00	2.48	12.48	0.0351	0.0400	0.0156	8.00	0.0000	4.86	1.31	1.19	2.50	0.203	5.08
1367+27	I-3D	262.00	0.90	0.24	10.00	1.23	11.23	0.0351	0.0400	0.0160	10.00	0.0000	5.08	1.23	1.05	2.29	0.197	4.92
1369+06	CB-3A	179.00	0.90	0.20	10.00	0.87	10.87	0.0351	0.0400	0.0271	10.00	0.0000	5.15	1.41	0.57	1.98	0.186	4.66
1369+23	CB-3A	17.00	0.90	0.04	10.00	0.10	10.10	0.0351	0.0400	0.0270	10.00	0.0000	5.30	*****	*****	0.76	0.130	3.26 End



# INLET SPACING DESIGN

**PID :** 113663      **Date :** 05/30/2025      **Project :** FRA-270-32.92

**Location :** City of Columbus, Franklin County

**Description :** Easton Way Median Sta 61+30 to Sta 72+00 LT

**Designer :** RSH

**Rainfall Area:** C

**Storm Frequency (yr.) :** 5

**Total Allow. Spread (ft.) :** 31.00

**Allowable Depth (ft.)** 0.04

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
61+25	Begin																	
61+30	CB-3A	5.00	0.90	0.12	10.00	0.11	10.12	0.0031	0.0208	0.0156	1.00	0.0000	4.80	0.33	0.19	0.52	0.129	7.97
62+50	CB-3A	120.00	0.90	0.08	10.00	2.41	12.41	0.0031	0.0208	0.0208	1.00	0.0000	4.39	0.37	0.14	0.50	0.137	6.60
64+00	CB-3A	150.00	0.90	0.10	10.00	2.98	12.98	0.0031	0.0208	0.0208	1.00	0.0000	4.30	0.38	0.15	0.52	0.139	6.71
65+05	I-2-6	105.00	0.90	0.07	10.00	2.20	12.20	0.0031	0.0208	0.0208	1.00	0.0000	4.42	0.33	0.09	0.42	0.129	6.20
66+24	CB-3	119.00	0.90	0.07	10.00	2.58	12.58	0.0031	0.0208	0.0208	1.00	0.0000	4.36	*****	*****	0.37	0.122	5.87 Sag
72+00	Begin																	
69+25	CB-3A	275.00	0.90	0.07	10.00	3.49	13.49	0.0161	0.0208	0.0208	1.00	0.0000	4.22	0.23	0.04	0.27	0.079	3.82
66+98	CB-3	227.00	0.90	0.08	10.00	4.21	14.21	0.0050	0.0208	0.0208	1.00	0.0000	4.11	0.31	0.02	0.33	0.108	5.18
66+24	CB-3	74.00	0.90	0.04	10.00	1.94	11.94	0.0030	0.0208	0.0208	1.00	0.0000	4.46	*****	*****	0.18	0.094	4.54 End

## SUMP DATA

**Total Flow (cfs) :** 0.55

**Ponded Depth (ft.) :** 0.045

**Spread on Pavement (ft.) :** 3.55

APPENDIX C

Storm Sewer Calculations (CDSS)



# STORM SEWER SYSTEM

**PID :** 113663      **Date :** 05/29/2025      **Project :** FRA-270-32.92

**Location :** City of Columbus, Franklin County

**Description :** Storm Sewer Sta 1369+06 RT

**Designer :** RSH

**Rainfall Area:** C

**Just Full Capacity Frequency (yrs.) :** 10

**Hydraulic Gradient Frequency (yrs.) :** 25

**Minimum Pipe Size :** 15.00

**Tailwater Elevation (ft.):** 843.09

JUNCTION		STATION	ΔAREA	ΔCA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(cfs.) (10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
5	5A	1369+06	0.20	0.18	10.00	5.32	6.00	1.0	1.1	15	6.8	0.0088	859.83	3.27	5.67	0.0004	860.60	864.83	4.23	3.75	CB 3A
	begin	1369+06	0.20	0.18									859.77				860.60	863.02			0.015
5A	5B	1369+06	0.00	0.00	10.03	5.31	6.00	1.0	1.1	15	30.1	0.5665	859.77	14.14	45.33	0.0004	859.91	863.02	3.11	2.00	MH 3
		1369+06	0.20	0.18									842.73				843.56	845.98			0.015
5B	HW5	1369+06	0.00	0.00	10.07	5.31	5.98	1.0	1.1	15	14.0	0.0100	842.73	3.40	6.02	0.0004	843.42	845.98	2.56	2.00	MH 3
	final	1369+06	0.20	0.18									842.59				843.42	843.84			0.015



# STORM SEWER SYSTEM

**PID :** 113663      **Date :** 05/27/2025      **Project :** FRA-270-32.92

**Location :** Franklin County, City of Columbus

**Description :** Easton Way Sta 64+00 to 74+17 Median LT

**Designer :** TGW

**Rainfall Area:** C

**Just Full Capacity Frequency (yrs.) :** 10

**Hydraulic Gradient Frequency (yrs.) :** 25

**Minimum Pipe Size :** 12.00

**Tailwater Elevation (ft.):** 0.00

JUNCTION From	STATION To	From To	ΔAREA Σ AREA (acres)	ΔCA Σ CA	BEGIN TIME (min.)	RAINFALL		DISCHARGE		PIPE			F/L PIPE IN / OUT (ft.)	MEAN VEL (fps.)	JUST FULL CAPACITY (cfs.)	FRICT SLOPE (ft./ft.)	HYGR EL. IN / OUT (ft.)	COVER IN / OUT (ft.)	COVER MINUS HY GR	COVER MINUS CROWN	INLET TYPE MANNING'S 'n'
						(10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)									
ECB7	CB4	64+00	0.10	0.09	10.00	5.32	5.88	0.5	0.5	12	103.6	0.0101	845.38	2.88	3.34	0.0003	845.66	849.46	3.80	3.08	CB 3A
	begin	65+05	0.10	0.09									844.33				844.98	848.66			0.015
CB4	EMH1	65+05	0.07	0.06	10.60	5.20	5.86	0.8	0.9	12	22.9	0.0100	844.33	3.29	3.33	0.0008	844.82	848.66	3.84	3.33	1 2A
		65+26	0.17	0.15									844.10				844.80	849.66			0.015
EMH1	EMH2	65+26	0.00	0.00	10.72	5.18	5.75	0.8	0.9	12	98.0	0.0080	843.82	3.02	2.96	0.0008	844.21	849.66	5.45	4.84	MH 3
		66+24	0.17	0.15									843.04				843.74	849.62			0.015
CB2	CB3	66+98	0.08	0.07	10.00	5.32	5.94	0.4	0.4	12	73.9	0.0212	844.94	3.52	4.84	0.0002	845.15	848.35	3.20	2.41	CB 3A
	begin	66+24	0.25	0.23									843.37				844.01	848.10			0.015
CB3	EMH2	66+24	0.04	0.04	10.35	5.25	5.93	0.6	0.6	12	4.9	0.0713	843.37	6.06	8.87	0.0004	843.69	848.10	4.41	3.73	CB 3
		66+24	0.29	0.26									843.02				843.69	849.62			0.015
EMH2	EMH3	66+24	0.00	0.00	11.26	5.08	5.46	1.3	1.4	12	296.7	0.0063	843.00	3.18	2.64	0.0021	843.55	849.62	6.07	5.62	MH 3
		69+25	0.29	0.26									841.13				841.88	852.40			0.015
CB1	EMH3	69+25	0.07	0.06	10.00	5.32	6.00	0.3	0.4	12	8.0	0.0275	847.02	3.70	5.51	0.0001	847.43	851.52	4.09	3.50	CB 3A
	begin	69+25	0.36	0.32									846.80				847.43	852.40			0.015
EMH3	EMH4	69+25	0.00	0.00	12.81	4.81	5.42	1.6	1.8	12	47.8	0.0063	841.13	3.30	2.63	0.0032	841.77	852.40	10.63	10.27	MH 3
	final	69+50	0.36	0.32									840.83				841.61	852.31			0.015

APPENDIX D

Culvert Calculations (CDSS)

## Culvert Dischagre Calculations

Design Storm 25 year	
a	95.736
b	14
c	0.871

Design Storm 100 year	
a	80.436
b	11.5
c	0.794

### Existing 42" Culvert Discharge Calculations

42" Culvert drainage Area 25 year storm		
Q	76.18	cfs
C	0.46	
i	2.83	
Area #1	58.53	Acres
Tc	43.00	Minutes

42" Culvert drainage Area 100 year storm		
Q	90.55	cfs
C	0.46	
i	3.36	
Area #1	58.53	Acres
Tc	43.00	Minutes

### Proposed 42" Culvert Discharge Calculations

42" Culvert drainage Area 25 year storm		
Q	77.84	cfs
C	0.47	
i	2.83	
Area #1	58.53	Acres
Tc	43.00	Minutes

42" Culvert drainage Area 100 year storm		
Q	92.52	cfs
C	0.47	
i	3.36	
Area #1	58.53	Acres
Tc	43.00	Minutes

### Existing 24" Culvert Discharge Calculations

24" Culvert drainage Area 25 year storm		
Q	7.74	cfs
C	0.68	
i	3.55	
Area #1	3.21	Acres
Tc	30.00	Minutes

24" Culvert drainage Area 100 year storm		
Q	9.11	cfs
C	0.68	
i	4.18	
Area #1	3.21	Acres
Tc	30.00	Minutes

### Proposed 24" Culvert Discharge Calculations

24" Culvert drainage Area 25 year storm		
Q	8.31	cfs
C	0.73	
i	3.55	
Area #1	3.21	Acres
Tc	30.00	Minutes

24" Culvert drainage Area 100 year storm		
Q	9.78	cfs
C	0.73	
i	4.18	
Area #1	3.21	Acres
Tc	30.00	Minutes

### Existing 48" Culvert Discharge Calculations

48" Culvert drainage Area 25 year storm		
Q	24.22	cfs
C	0.55	
i	3.29	
Area #1	13.40	Acres
Tc	34.00	Minutes

48" Culvert drainage Area 100 year storm		
Q	28.61	cfs
C	0.55	
i	3.88	
Area #1	13.40	Acres
Tc	34.00	Minutes

### Proposed 48" Culvert Discharge Calculations

48" Culvert drainage Area 25 year storm		
Q	25.10	cfs
C	0.57	
i	3.29	
Area #1	13.40	Acres
Tc	34.00	Minutes

48" Culvert drainage Area 100 year storm		
Q	29.65	cfs
C	0.57	
i	3.88	
Area #1	13.40	Acres
Tc	34.00	Minutes





# CULVERT ANALYSIS

**PID :** 113663      **Date :** 05/30/2025      **Project :** FRA-270-32.92

**Location :** City of Columbus, Franklin County

**Description :** 48" 707.12 CD Road Sta 1372+46 RT - Replace HHHW with FHHW

**Designer :** TGW

**HEADWATER CONTROL CODES:**      INLET - Inlet Control.  
OUTLET - Outlet Control.  
OUTLET\* - Outlet Control with backwater curve used to compute headwater. See Figure III - 7E in HDS 5 for type flow.  
OUTLET\*\* - Outlet Control - See Figure III - 7D in HDS 5 for type flow.  
N/A - Flow is supercritical with low headwater and low tailwater. Control Section is at the inlet.

**Pipe Number :** 1

**Use HW :** 0

**Inlet Invert Elevation (ft.) :** 840.90

**Outlet Invert Elevation (ft.) :** 839.90

**Pipe Quantity :** 1

**Culvert Type :** Circular Corrugated

**Pipe Length (ft.) :** 32.90

**Culvert Slope (ft./ft.) :** 0.0304

**Corrugation Type :** Corrugated Metal Pipe (3 x 1 in. corrugations)

**Pipe Size :** 48 in.

**Design Manning 'n' :** (default)

**Entrance Type :** No Headwall

**Loss Coef. Ke :** 0.9000

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
25.10	0.49	843.13	N/A	1 - C	7.47	1.25	1.48	0.0275	INLET	0.00	839.90
25.60	0.50	843.15	N/A	1 - C	7.52	1.26	1.50	0.0275	INLET	0.00	839.90
26.10	0.52	843.18	N/A	1 - C	7.56	1.28	1.51	0.0275	INLET	0.00	839.90
26.60	0.54	843.20	N/A	1 - C	7.61	1.29	1.53	0.0275	INLET	0.00	839.90
27.10	0.55	843.23	N/A	1 - C	7.64	1.30	1.54	0.0275	INLET	0.00	839.90
27.60	0.57	843.25	N/A	1 - C	7.68	1.31	1.56	0.0275	INLET	0.00	839.90
28.10	0.59	843.27	N/A	1 - C	7.71	1.33	1.57	0.0275	INLET	0.00	839.90
28.60	0.61	843.30	N/A	1 - C	7.76	1.34	1.58	0.0275	INLET	0.00	839.90



# CULVERT ANALYSIS

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
29.10	0.62	843.32	N/A	1 - C	7.80	1.35	1.60	0.0275	INLET	0.00	839.90
29.60	0.64	843.35	N/A	1 - C	7.84	1.36	1.61	0.0275	INLET	0.00	839.90
30.10	0.66	843.37	N/A	1 - C	7.86	1.38	1.63	0.0275	INLET	0.00	839.90



# CULVERT ANALYSIS

**PID :** 113663      **Date :** 05/30/2025      **Project :** FRA-270-32.92

**Location :** Easton Mall

**Description :** EX 42" 707.12 Culvert Extension Ramp A Sta 1384+42 RT

**Designer :** TGW

**HEADWATER CONTROL CODES:** INLET - Inlet Control.  
 OUTLET - Outlet Control.  
 OUTLET\* - Outlet Control with backwater curve used to compute headwater. See Figure III - 7E in HDS 5 for type flow.  
 OUTLET\*\* - Outlet Control - See Figure III - 7D in HDS 5 for type flow.  
 N/A - Flow is supercritical with low headwater and low tailwater. Control Section is at the inlet.

<b>Pipe Number :</b> 1	<b>Use HW :</b> 1	<b>Inlet Invert Elevation (ft.) :</b> 835.41	<b>Outlet Invert Elevation (ft.) :</b> 834.55
<b>Pipe Quantity :</b> 1			
<b>Culvert Type :</b> Circular Corrugated		<b>Pipe Length (ft.) :</b> 85.60	<b>Culvert Slope (ft./ft.) :</b> 0.0100
<b>Corrugation Type :</b> Corrugated Metal Pipe (3 x 1 in. corrugations)			
<b>Pipe Size :</b> 42 in.			
<b>Design Manning 'n' :</b> (default)	<b>Buried Manning 'n' :</b> N/A		
<b>Entrance Type :</b> Headwall		<b>Loss Coef. Ke :</b> 0.2500	<b>K :</b> 0.0083
		<b>CD :</b> 0.6405	<b>c :</b> 0.0379
		<b>M :</b> 2.00	<b>Max. Q :</b> 3.30
		<b>Y :</b> 0.6900	<b>Min. Q :</b> 3.80

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
77.84	3.60	840.29	841.28	2 - F	9.57	3.50	2.76	0.0278	OUTLET**	0.00	834.55
78.84	3.69	840.35	841.38	2 - F	9.64	3.50	2.77	0.0278	OUTLET**	0.00	834.55
79.84	3.79	840.42	841.48	2 - F	9.70	3.50	2.79	0.0278	OUTLET**	0.00	834.55
80.84	3.88	840.48	841.59	2 - F	9.77	3.50	2.81	0.0278	OUTLET**	0.00	834.55
81.84	3.98	840.55	841.69	2 - F	9.84	3.50	2.82	0.0278	OUTLET**	0.00	834.55
82.84	4.08	840.62	841.80	2 - F	9.91	3.50	2.84	0.0278	OUTLET**	0.00	834.55
83.84	4.18	840.69	841.90	2 - F	9.98	3.50	2.85	0.0278	OUTLET**	0.00	834.55
84.84	4.28	840.75	842.01	2 - F	10.05	3.50	2.87	0.0278	OUTLET**	0.00	834.55



# CULVERT ANALYSIS

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
85.84	4.38	840.82	842.12	2 - F	10.12	3.50	2.88	0.0278	OUTLET**	0.00	834.55
86.84	4.48	840.90	842.23	2 - F	10.19	3.50	2.90	0.0278	OUTLET**	0.00	834.55
87.84	4.59	840.97	842.34	2 - F	10.26	3.50	2.91	0.0278	OUTLET**	0.00	834.55
88.84	4.69	841.04	842.45	2 - F	10.34	3.50	2.93	0.0278	OUTLET**	0.00	834.55
89.84	4.80	841.11	842.57	2 - F	10.41	3.50	2.94	0.0278	OUTLET**	0.00	834.55
90.84	4.90	841.19	842.68	2 - F	10.49	3.50	2.95	0.0278	OUTLET**	0.00	834.55
91.84	5.01	841.26	842.80	2 - F	10.56	3.50	2.97	0.0278	OUTLET**	0.00	834.55
92.84	5.12	841.34	842.91	2 - F	10.63	3.50	2.98	0.0278	OUTLET**	0.00	834.55



# CULVERT ANALYSIS

PID : 113663 Date : 05/30/2025 Project : FRA-270-32.92

Location : Easton Mall

Description : Ex 24" 707.12 Ramp A Sta 1388+42 -Extension

Designer : TGW

**HEADWATER CONTROL CODES:** INLET - Inlet Control.  
OUTLET - Outlet Control.  
OUTLET\* - Outlet Control with backwater curve used to compute headwater. See Figure III - 7E in HDS 5 for type flow.  
OUTLET\*\* - Outlet Control - See Figure III - 7D in HDS 5 for type flow.  
N/A - Flow is supercritical with low headwater and low tailwater. Control Section is at the inlet.

Pipe Number : 1

Use HW : 0

Inlet Invert Elevation (ft.) : 843.33

Outlet Invert Elevation (ft.) : 839.18

Pipe Quantity : 1

Culvert Type : Circular Corrugated

Pipe Length (ft.) : 132.00

Culvert Slope (ft./ft.) : 0.0314

Corrugation Type : Corrugated Metal Pipe (2 2/3 x 1/2 in. corrugations)

Pipe Size : 24 in.

Design Manning 'n' : (default)

Buried Manning 'n' : N/A

Entrance Type : Headwall

Loss Coef. Ke : 0.2500

K : 0.0083

M : 2.00

Max. Q : 3.30

CD : 0.6405

c : 0.0379

Y : 0.6900

Min. Q : 3.80

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
8.31	4.10	844.79	N/A	1 - C	6.32	0.87	1.03	0.0247	INLET	0.00	839.18
8.51	4.11	844.81	N/A	1 - C	6.36	0.88	1.04	0.0247	INLET	0.00	839.18
8.71	4.13	844.83	N/A	1 - C	6.39	0.90	1.05	0.0247	INLET	0.00	839.18
8.91	4.14	844.86	N/A	1 - C	6.43	0.91	1.07	0.0247	INLET	0.00	839.18
9.11	4.16	844.88	N/A	1 - C	6.47	0.92	1.08	0.0247	INLET	0.00	839.18
9.31	4.18	844.90	N/A	1 - C	6.50	0.93	1.09	0.0247	INLET	0.00	839.18
9.51	4.19	844.92	N/A	1 - C	6.55	0.94	1.10	0.0247	INLET	0.00	839.18
9.71	4.21	844.94	N/A	1 - C	6.58	0.95	1.11	0.0247	INLET	0.00	839.18



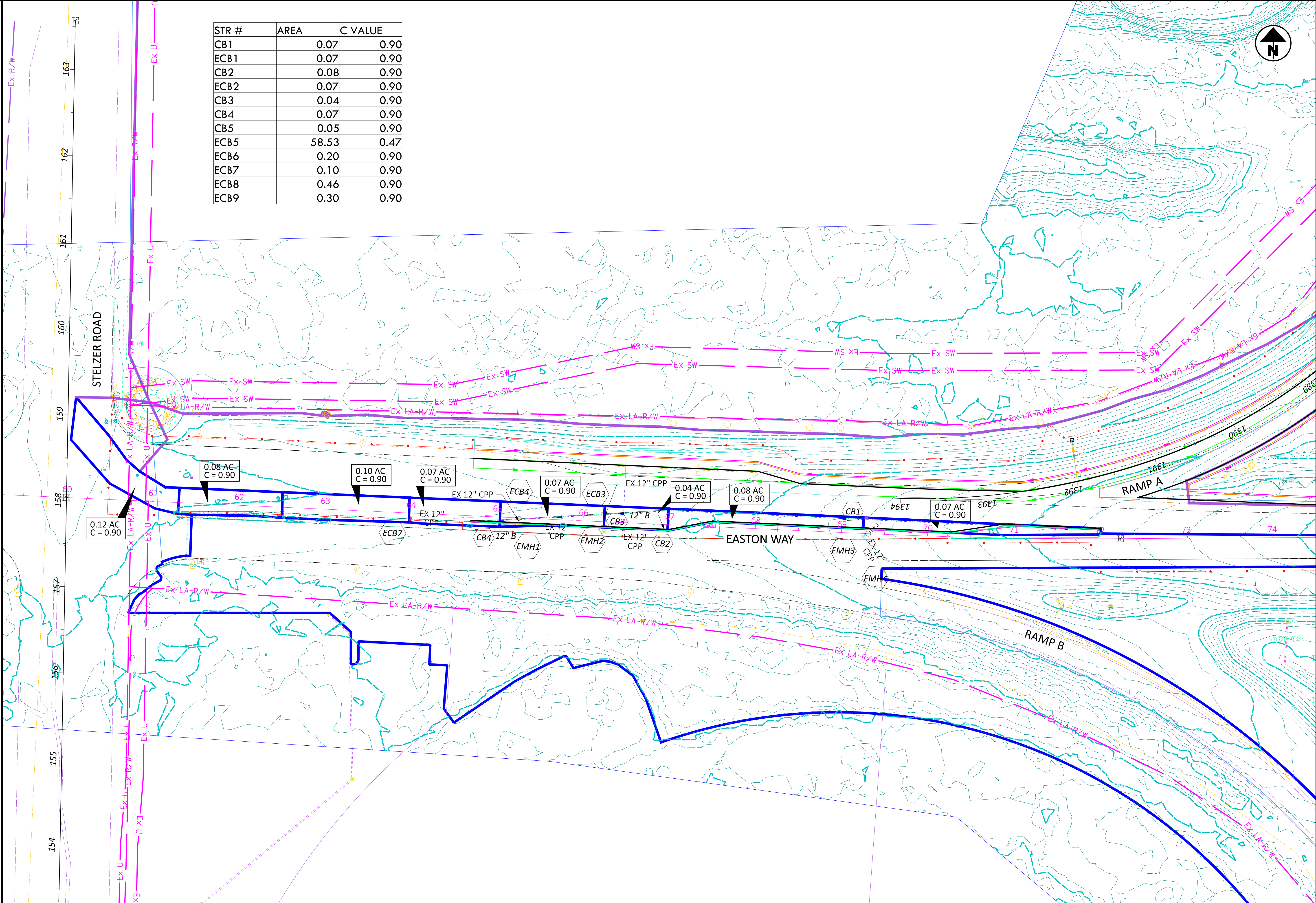
# CULVERT ANALYSIS

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
9.91	4.22	844.97	N/A	1 - C	6.61	0.96	1.13	0.0247	INLET	0.00	839.18

## APPENDIX E

### Storm Sewer Tributary Map





STR #	AREA	C VALUE
CB1	0.07	0.90
ECB1	0.07	0.90
CB2	0.08	0.90
ECB2	0.07	0.90
CB3	0.04	0.90
CB4	0.07	0.90
CB5	0.05	0.90
ECB5	58.53	0.47
ECB6	0.20	0.90
ECB7	0.10	0.90
ECB8	0.46	0.90
ECB9	0.30	0.90

HORIZONTAL SCALE IN FEET

0

25

50

100

DRAINAGE TRIB MAP

EASTON WAY

DESIGN AGENCY

DESIGNER

REVIEWER

PROJECT ID

SHEET

TOTAL

RSH

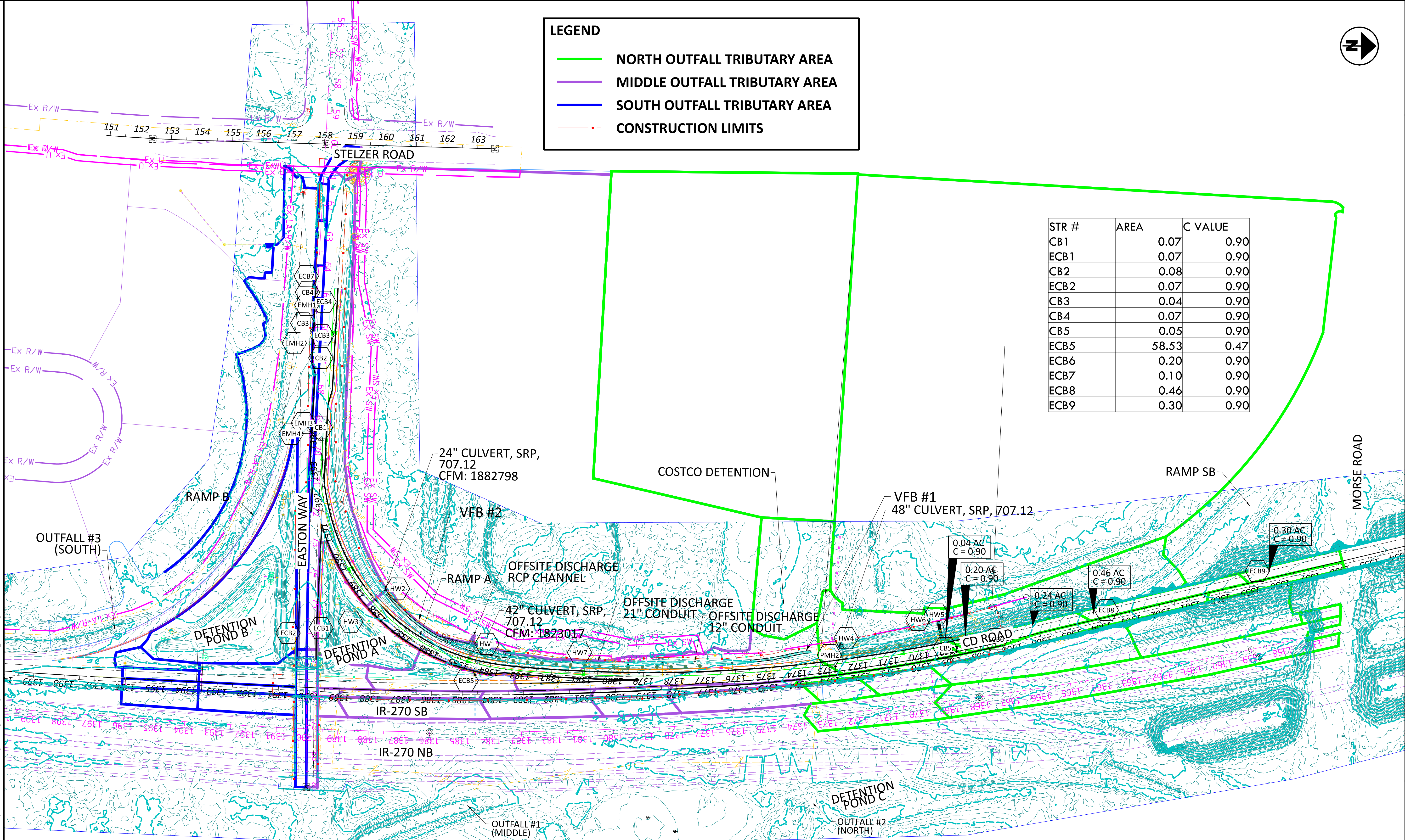
HRB 11-14-25

113663

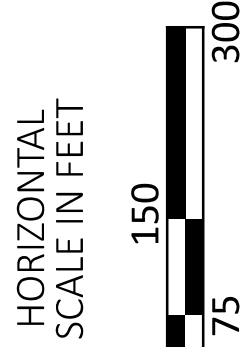
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STR #	AREA	C VALUE
CB1	0.07	0.90
ECB1	0.07	0.90
CB2	0.08	0.90
ECB2	0.07	0.90
CB3	0.04	0.90
CB4	0.07	0.90
CB5	0.05	0.90
ECB5	58.53	0.47
ECB6	0.20	0.90
ECB7	0.10	0.90
ECB8	0.46	0.90
ECB9	0.30	0.90



DRAINAGE TRIB MAP  
270 CD ROAD AND RAMP A CULVERTS AND STORM

DESIGN AGENCY

DESIGNER

RSH

REVIEWER

HRB 11-14-25

PROJECT ID

113663

SHEET

1

TOTAL

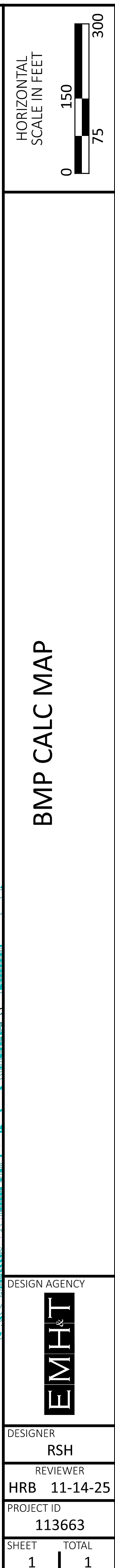
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## APPENDIX F

### BMP Calculation (ODOT Spreadsheet)









## Post Construction - Project Summary

## Project Data

Project EDA	5.84	Units acres
Is the Project Routine Maintenance per L&D Vol. 2, Sec. 1112.2	No	
BMPs Required?	BMPs Required	NA
Ain (New Impervious Area in New Permanent R/W	0	acres
Does Entire Site Drain to Large River (>100 sq. miles)?	No	
Water Quality Treatment Required	Yes	
Water Quantity Treatment Required	No	

## Treatment Percent and Treatment Requirement

Aix (Project EDA that is inside the existing right-of-way)	5.84	acres
Ain (New Impervious Area in New Permanent R/W)	0	acres
T% (Treatment Percent)	20.00	%
Treatment Requirement	1.17	acres

## BMPs Provided

BMP Name	BMP Type	Contributing Drainage Area (acres)	Contributing Drainage Area in ODOT R/W (acres)
VBFI	Vegetated Biofilter	0.96	0.66
VBFI	Vegetated Biofilter	0.83	0.62

## Treatment Provided

Total Area with ODOT R/W Treated (acres)	1.28
Treatment Requirements (acres)	1.17
Treatment Check	Good

## BMP Submittal Requirements (Per L&amp;D, Vol. 2, Sec. 1116.2)

1. Estimated Project Earth Disturbed Area	Yes	Good
2. Treatment Percent Calculation	Yes	Good
3. BMP Selected for use	Yes	Good
4. Drainage area mapping for post-construction BMPs that show the total contributing drainage area and the amount of contributing area within ODOT right-of-way	Yes	Good
5. Plan sheets showing locations of post-construction BMP	Yes	Good
6. Calculations for each BMP	Yes	Good
7. Explanation for any area that is not treated	Yes	Good

Water Quality Flow Rate (WQ<sub>F</sub>)

Drainage Area VBF #1	Area (acres)	Coefficient of Runoff (C)
Tributary Area within Existing R/W	0.37	0.9
Impervious Trib. Area Outside Existing R/W	0.29	0.9
Tributary Area Land Use #3	0.30	0.5
Tributary Area Land Use #4		0.3
Total Tributary Area	0.96	0.775
BMP Type	Vegetated Biofilter	
Time of Concentration (minutes)	NA	
Intensity, i (in/hr)	0.65	
Water Quality Flow (WQ <sub>F</sub> )	0.484	cfs

Drainage Area VBF #2	Area (acres)	Coefficient of Runoff (C)
Tributary Area within Existing R/W	0.29	0.9
Impervious Trib. Area Outside Existing R/W	0.33	0.9
Tributary Area Land Use #3	0.21	0.5
Tributary Area Land Use #4		
Total Tributary Area	0.83	0.799
BMP Type	Vegetated Biofilter	
Time of Concentration (minutes)	NA	
Intensity, i (in/hr)	0.65	
Water Quality Flow (WQ <sub>F</sub> )	0.430	cfs

Drainage Area #3	Area (acres)	Coefficient of Runoff (C)
Tributary Area within Existing R/W		0.9
Impervious Trib. Area Outside Existing R/W		0.9
Tributary Area Land Use #3		
Tributary Area Land Use #4		
Total Tributary Area	0.00	
BMP Type		
Time of Concentration (minutes)		
Intensity, i (in/hr)		
Water Quality Flow (WQ <sub>F</sub> )		cfs

Drainage Area #4	Area (acres)	Coefficient of Runoff (C)
Tributary Area within Existing R/W		0.9
Impervious Trib. Area Outside Existing R/W		0.9
Tributary Area Land Use #3		
Tributary Area Land Use #4		
Total Tributary Area	0.00	
BMP Type		
Time of Concentration (minutes)		
Intensity, i (in/hr)		
Water Quality Flow (WQ <sub>F</sub> )		cfs



**Ohio Department of Transportation - Office of Hydraulic Engineering**  
**Post-Construction BMP Calculation Spreadsheet**

**Vegetated Biofilter**

Location Information					Hydrology			Channel Characteristics					Analysis Results			
VBF	Route	Begin Station	End Station	Side	Total Drainage Area (acres)	EDA Treatment Credit (acres) <sup>1</sup>	WQ <sub>F</sub> (cfs)	VBF Bottom Width (ft) <sup>note2</sup>	VBF Fore Slope (z:1)	VBF Back Slope (z:1)	VBF Longitudinal Slope (ft/ft)	Manning's Roughness Coefficient <sup>3</sup>	Depth of Runoff at WQ <sub>F</sub> (inches) <sup>4</sup>	Velocity of Runoff at WQ <sub>F</sub> (ft/sec) <sup>4</sup>	Standard Ditch Width (feet) <sup>5</sup>	Required Ditch Width (feet)
VBF#1	RAMP A	1373+50	1375+50	RT	0.96	0.66	0.484	4	4	2	0.010	0.15	3.19	0.36	4	4
VBF#2	RAMP A	1386+00	1388+25	RT	0.83	0.62	0.430	4	4	2	0.009	0.15	3.08	0.33	4	4
												0.15				
												0.15				
												0.15				
												0.15				
												0.15				
												0.15				
												0.15				
												0.15				

**Total Treatment Credit Earned from VBFs (within R/W):** 1.28 acres  
 (Treatment is for quality only, not quantity)

Yellow: Requires Input (See instructions tab)

**BMP Design Considerations**

1	Do the VBF characteristics match the calculated flow and velocity checks using Manning's Equation above?	Yes	Good
2	Is the VBF a trapezoidal ditch with a flat bottom, not a radius ditch?	Yes	Good
3	Is the VBF width at least 4 feet?	Yes	Good
4	Is the depth of runoff for the WQ <sub>F</sub> for each VBF less than or equal to 4 inches?	Yes	Good
5	Is the velocity of runoff for the WQ <sub>F</sub> for each VBF less than or equal to 1.0 ft/sec?	Yes	Good
6	Does the "Total Drainage Area" include all onsite and off-site drainage to the VBF?	Yes	Good
7	Does each VBF include 4" of Item 659 Topsoil on the vegetated portion of the shoulder and foreslope?	Yes	Good
8	Does each VBF include Item 670, Ditch Erosion Protection?	Yes	Good
9	Are the station ranges and locations of the VBFs labeled on the Project Site Plan drawing?	Yes	Good

## APPENDIX G

### Outfall Map (Stormwater Tributary Area Map)





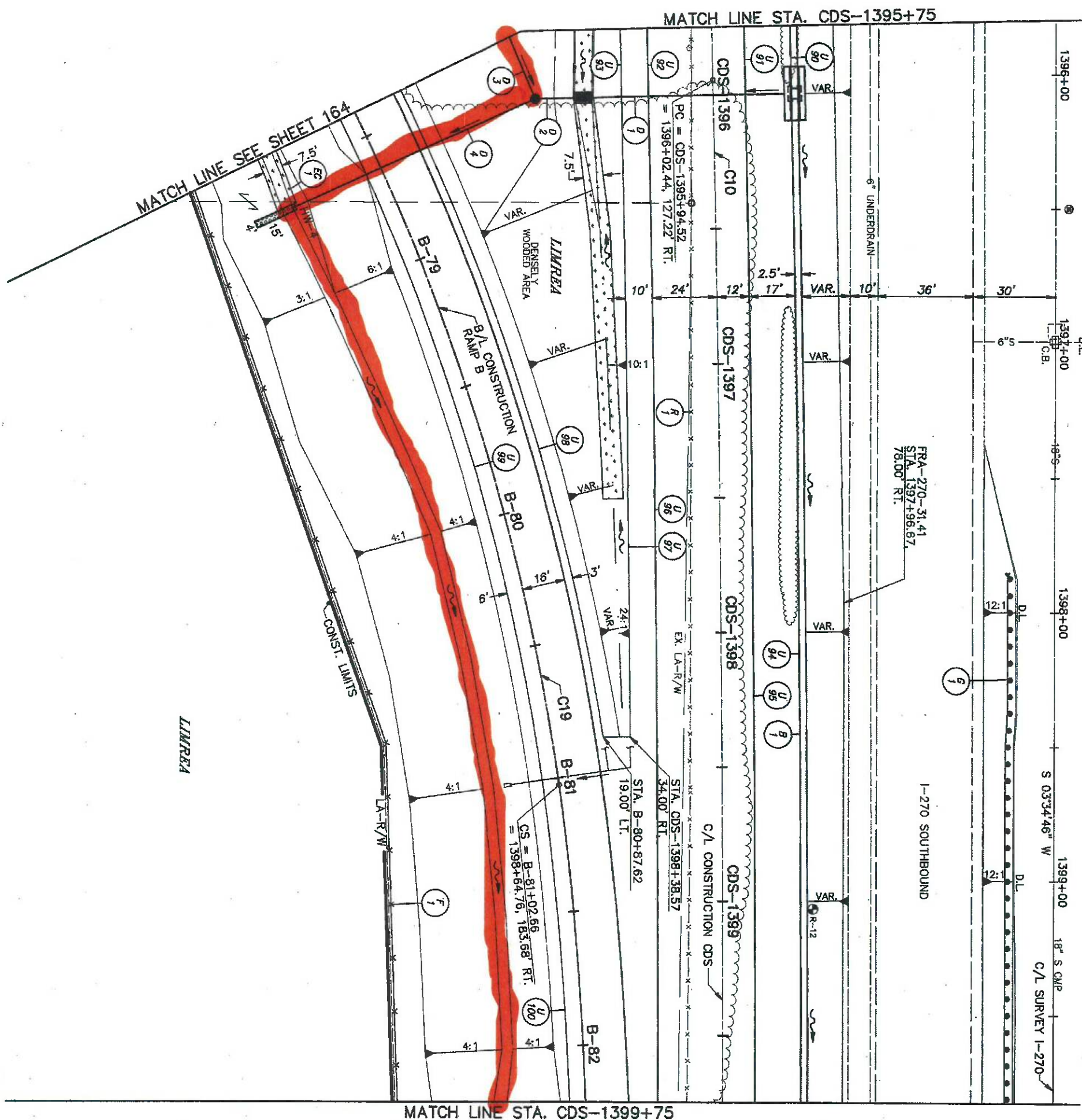


## APPENDIX H

### Outfall 3 (South) ODOT Construction Plans







CROSS REFERENCES						
SHEET NO.	DESCRIPTION	CURVE INFO.				
4	C10, C19					
132	ROADWAY PROFILE					
67	(4) UNDERDRAIN DATA 1 AND QUANTITIES					
362	● LIGHTING PLAN					

REFERENCE No.		STATION TO STATION		SIDE									
* STATIONING REFERS TO RAMP B ALIGNMENT				L.F.	E.A.								
B1	1395+75 ~ 1399+75	L.T.	380										
F1	* 78+40 ~ 82+21	R.T.		353									
R1	1395+75 ~ 1399+75	R.T.			400								
D1	1396+00	L-R				1	78						
G1	1397+80.96 ~ 1399+79.73	L.T.						175		1			
<b>SHEET TOTALS</b>			380	353	400	1	78	175		1			

REFERENCE No.		STATION TO STATION		SIDE									
* STATIONING REFERS TO RAMP B ALIGNMENT				L.F.	E.A.								
D2	1395+00	R.T.	1										
D3	1395+83 ~ 1396+00	L.T.		18									
D4	* 78+63	L-R			1				99	0.46	3.33		
E1	* 78+40 ~ 78+63	L.T.										18	
<b>SHEET TOTALS</b>			1	1	42	99	0.46	3.33				164	

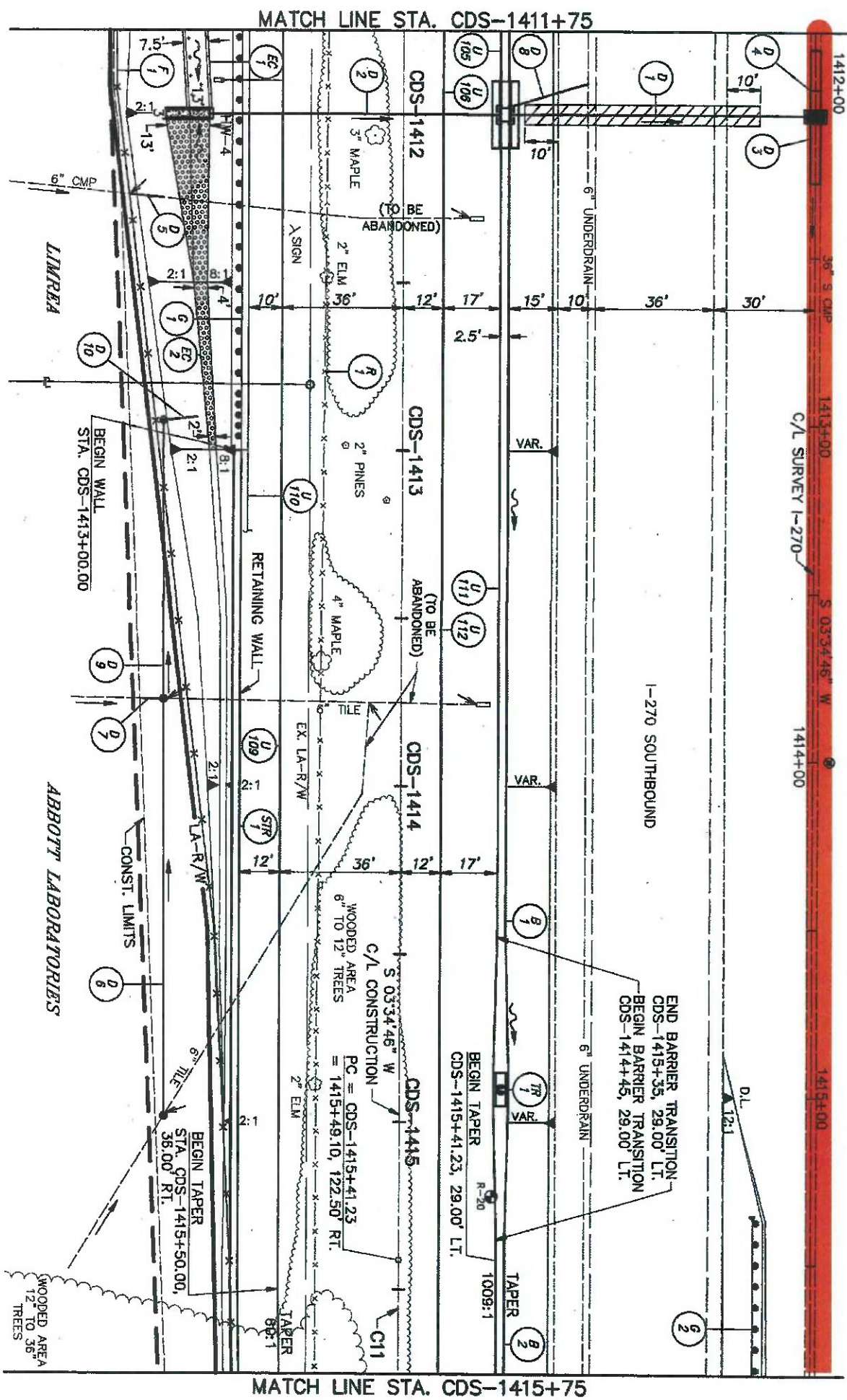












850	845	840	835	830	825
837.64				841.0 837.51	
				+29.52 6" TILE INV. 838.54	
837.53				841.0 837.38	
837.42				840.7 837.25	EX. GRND. EX. EOP
837.31				840.1 837.13	
				+75.07, 6" TILE INV. 837.57	
837.20				840.1 837.00	
837.09				840.5 836.89	
836.98				840.3 836.77	
836.87				840.1 836.63	
850	845	840	835	830	825

CROSS REFERENCES					
SHEET NO.	DESCRIPTION	SHEET NO.	DESCRIPTION		
4	C11 CURVE INFO.	362	LIGHTING PLAN		
67	UNDERDRAIN DATA AND QUANTITIES	315	DRAINAGE PROFILE		
524	RETAINING WALL				
342	TRAFFIC CONTROL PLAN				

REFERENCE No.							
STATION TO STATION		SIDE					
ALL STATIONING REFERS TO CDS ALIGNMENT	B1	1411+75 ~ 1414+85	L.T.	280	CONCRETE BARRIER, TYPE B	622	607
	B2	1414+95 ~ 1415+75		80	FENCE, TYPE CL	607	607
	G1	1411+70.85 ~ 1413+00	R.T.		FENCE, TYPE CL AS PER PLAN	606	606
	G2	1415+28.62 ~ 1415+79.80	L.T.		GUARDRAIL, TYPE 5	606	606
	F1	1411+75 ~ 1415+75	R.T.	377	BRIDGE TERMINAL ASSEMBLY, TYPE 1	202	202
	R1	1411+75 ~ 1415+75	R.T.		FENCE REMOVED	606	606
					ANCHOR ASSEMBLY, TYPE E		
<b>SHEET TOTALS</b>				370	377	26	137.5

REFERENCE No.							
STATION TO STATION		SIDE					
ALL STATIONING REFERS TO CDS ALIGNMENT	D1	1412+00 ~ 1412+10	L.T.	1	INLET, NO. 3D	604	603
	D2	1412+00 ~ 1412+00	L-R		CONDUIT, BORED OR JACKED, 21", TYPE B	603	603
					18" CONDUIT, TYPE B	603	603
					21" CONDUIT, TYPE B	602	601
					CONCRETE MASONRY	601	601
					RIPRAP USING 6" REIN. CONCRETE SLAB		
<b>SHEET TOTALS</b>				1	70	88	22

REFERENCE No.							
STATION TO STATION		SIDE					
ALL STATIONING REFERS TO CDS ALIGNMENT	D3	1412+00 ~ 1412+10	L.T.	1	CATCH BASIN, NO. 4A AS PER PLAN	604	603
	D4	1413+80 ~ 1412+00	L.T.		8" CONDUIT, TYPE F	603	603
	D5	1412+25 ~ 1412+00	R.T.		36" CONDUIT, TYPE C 707.13	603	603
	D6	1413+74 ~ 1415+00	R.T.	124	DITCH EROSION PROTECTION	601	601
	D7	1413+74 ~ 1413+00	R.T.	6	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER, T = 18"	604	604
	D8	1411+90 ~ 1412+00	L.T.		INSPECTION WELL	604	603
	D9	1412+91 ~ 1413+74	R.T.	83	6" CONDUIT, TYPE B, 707.17		
	D10	1412+90 ~ 1412+91	R.T.	10			
	E1	1411+75 ~ 1412+00	R.T.				
<b>SHEET TOTALS</b>				1	233	40	21

**PLAN & PROFILE**

**STA CDS-1411+75 TO STA. CDS-1415+75**

SCALE: G.W.J.W.  
DATE: 2/2/84  
B.M.F.U.  
DATE: 12/5/84

HORIZONTAL SCALE IN FEET

FRA-270-32.46

(138)  
593

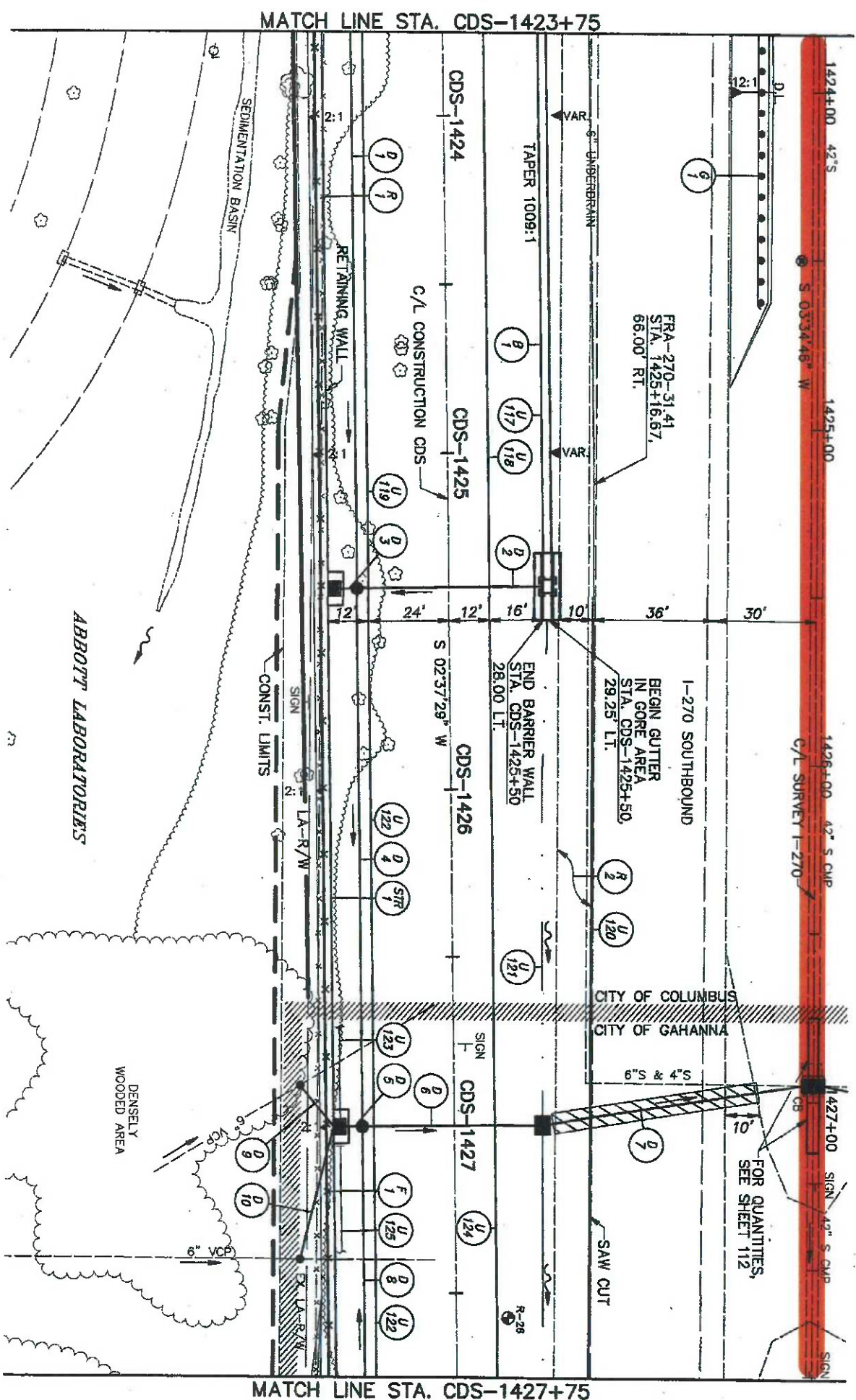
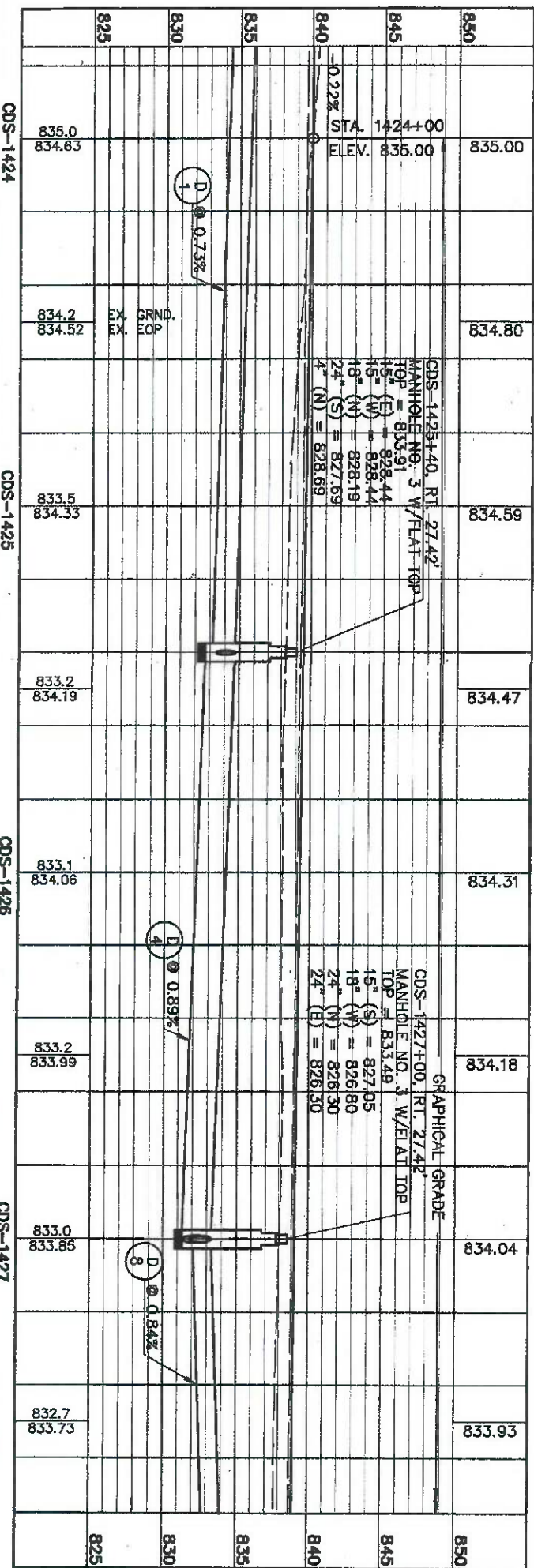












REFERENCE No.		STATION TO STATION		SIDE	
D9	1426+86 ~ 1427+00	RT.	16	L.F.	EA.
D10	1427+00 ~ 1427+40	RT.	42	L.F.	EA.
SHEET TOTALS			58	2	

REFERENCE No.		STATION TO STATION		SIDE	
D2	1425+40	L-R	1	EA.	EA.
D3	1425+40	RT.	1	EA.	EA.
D4	1425+40 ~ 1427+00	RT.	8	L.F.	L.F.
D5	1427+00	RT.	1	EA.	EA.
D6	1427+00	L-R	1	EA.	EA.
D7	1426+87 ~ 1427+00	L.T.	1	EA.	EA.
D8	1427+00 ~ 1427+75	RT.	75	L.F.	L.F.
SHEET TOTALS			1	2	235

REFERENCE No.		STATION TO STATION		SIDE	
B1	1423+75 ~ 1425+50	L.T.	155	L.F.	L.F.
F1	1423+75 ~ 1427+75	RT.	400	L.F.	L.F.
R1	1423+75 ~ 1427+75	RT.	400	L.F.	L.F.
R2	1425+50 ~ 1427+75	RT.	250	L.F.	L.F.
G1	1423+81.27 ~ 1424+50.28	L.T.	62.5	L.F.	L.F.
D1	1423+75 ~ 1425+40	RT.	165	L.F.	L.F.
SHEET TOTALS			155	400	62.5

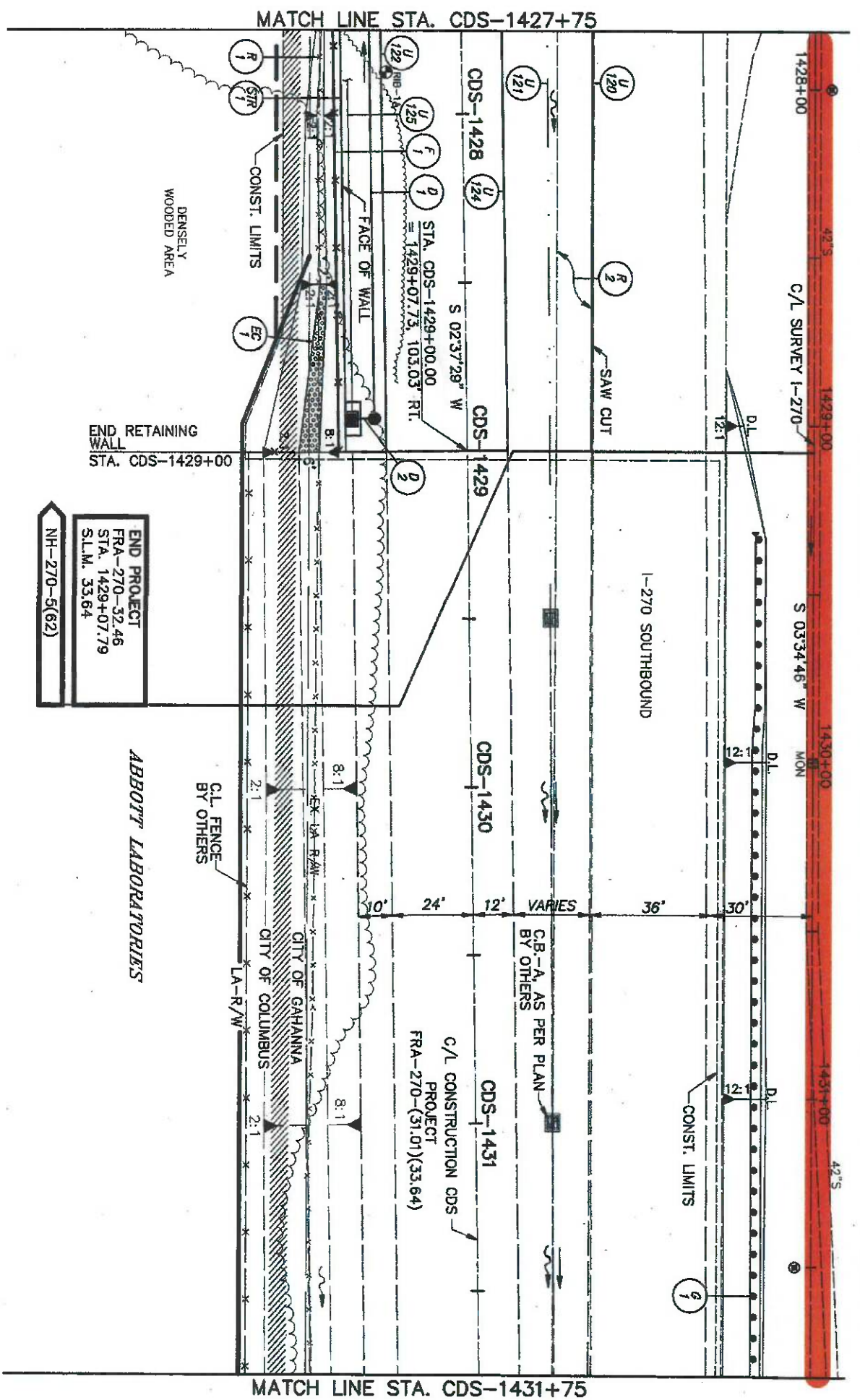
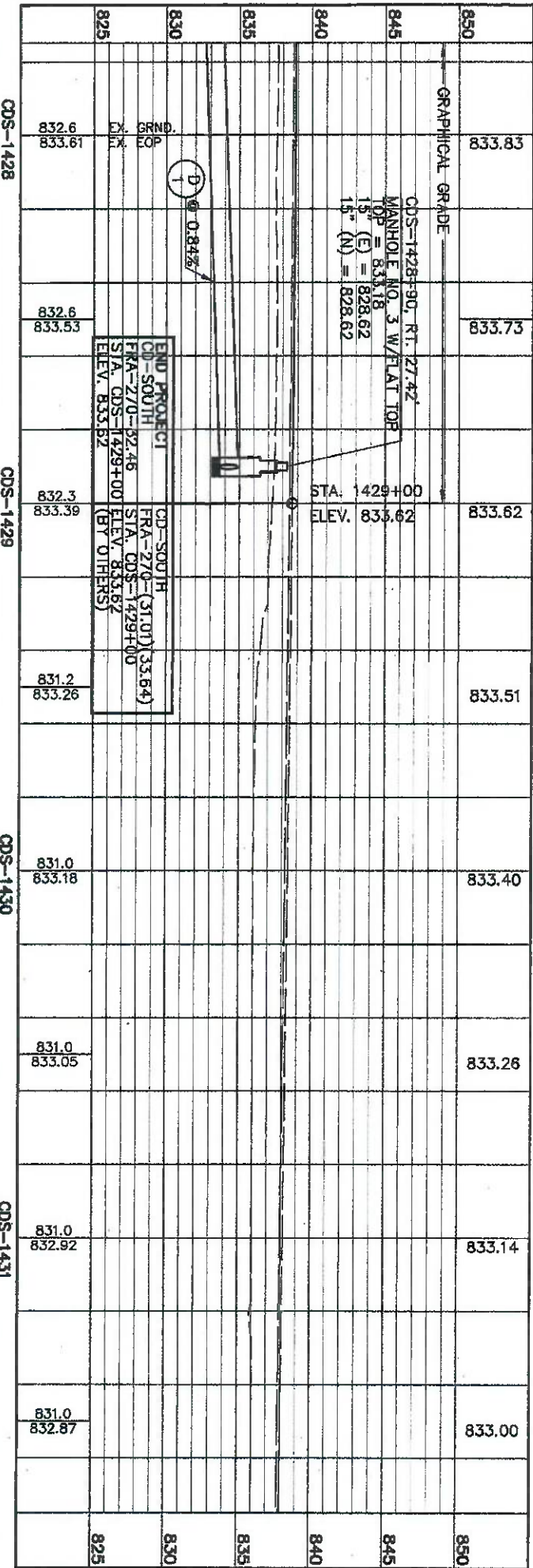
REFERENCE No.		STATION TO STATION		SIDE	
B2	1423+75 ~ 1425+50	L.T.	155	L.F.	L.F.
F2	1423+75 ~ 1427+75	RT.	400	L.F.	L.F.
R2	1425+50 ~ 1427+75	RT.	250	L.F.	L.F.
G2	1423+81.27 ~ 1424+50.28	L.T.	62.5	L.F.	L.F.
D2	1423+75 ~ 1425+40	RT.	165	L.F.	L.F.
SHEET TOTALS			155	400	62.5

FRA-270-32.46

PLAN & PROFILE  
STA CDS-1423+75 TO STA. CDS-1427+75







CROSS REFERENCES			
SHEET NO.	DESCRIPTION	STATION	REFERENCE No.
67	UNDERDRAIN DATA AND QUANTITIES	1427+75 ~ 1429+00	RT.
524	RETAINING WALL	1427+75 ~ 1429+00	RT.
362	LIGHTING PLAN	1427+75 ~ 1429+00	RT.
607	FENCE, TYPE C1	1427+75 ~ 1429+00	RT.
607	FENCE, TYPE C1 AS PER PLAN	1427+75 ~ 1429+00	RT.
604	INLET, NO. 3E	1427+75 ~ 1429+00	RT.
604	MANHOLE, NO. 3 WITH FLAT TOP	1427+75 ~ 1429+00	RT.
603	15" CONDUIT, TYPE B	1427+75 ~ 1429+00	RT.
202	FENCE REMOVED	1427+75 ~ 1429+00	RT.
601	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER, T = 18"	1427+75 ~ 1429+00	RT.
SHEET TOTALS			
27	125	1	123
125	1	1	125
11			

REFERENCE No.			
STATION TO STATION	SIDE	REFERENCE No.	STATION TO STATION
1427+75 ~ 1429+00	RT.	606	GUARDRAIL, TYPE 5
1427+75 ~ 1429+00	RT.	606	ANCHOR ASSEMBLY, TYPE E
1427+75 ~ 1429+00	RT.	202	PAVEMENT REMOVED
SHEET TOTALS			
27	125	1	139
125	1	1	139
11			

REFERENCE No.			
STATION TO STATION	SIDE	REFERENCE No.	STATION TO STATION
1427+75 ~ 1429+00	RT.	606	GUARDRAIL, TYPE 5
1427+75 ~ 1429+00	RT.	606	ANCHOR ASSEMBLY, TYPE E
1427+75 ~ 1429+00	RT.	202	PAVEMENT REMOVED
SHEET TOTALS			
27	125	1	139
125	1	1	139
11			

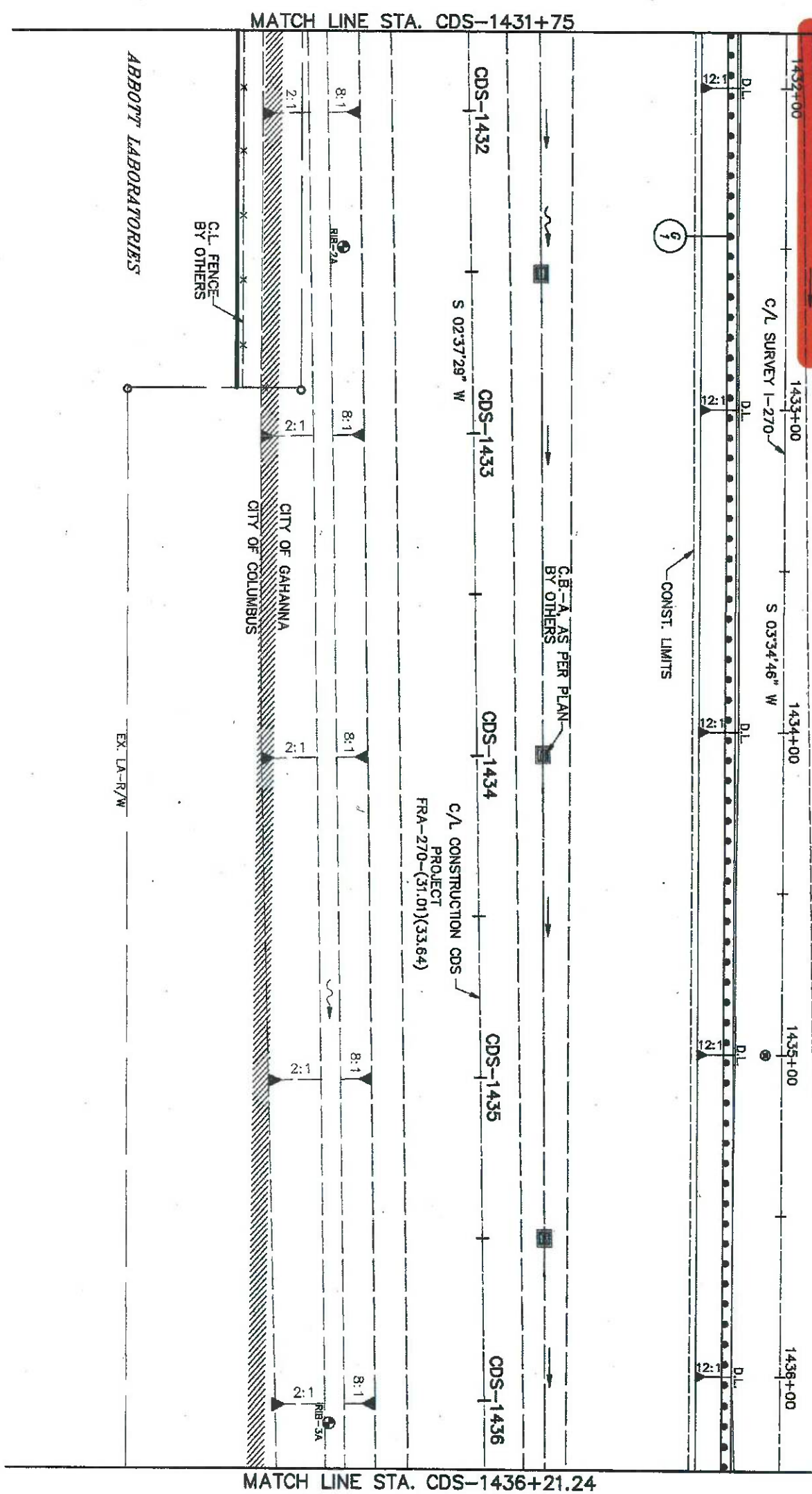
FRA-270-32.46

PLAN & PROFILE  
STA CDS-1427+75 TO STA. CDS-1429+00

CALC. BY: GJW  
DATE: 2/2/94  
CHKD. BY: MFCJ  
DATE: 12/5/94

0 20 40  
10 HORIZONTAL  
SCALE IN FEET



[illegible]













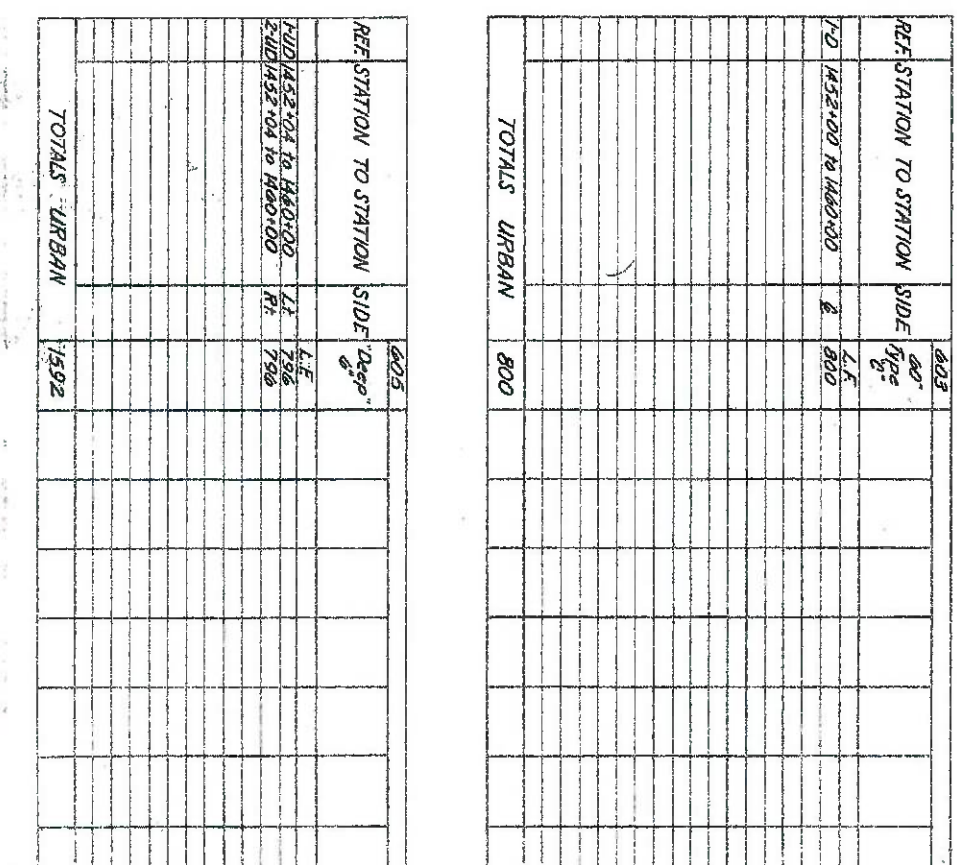
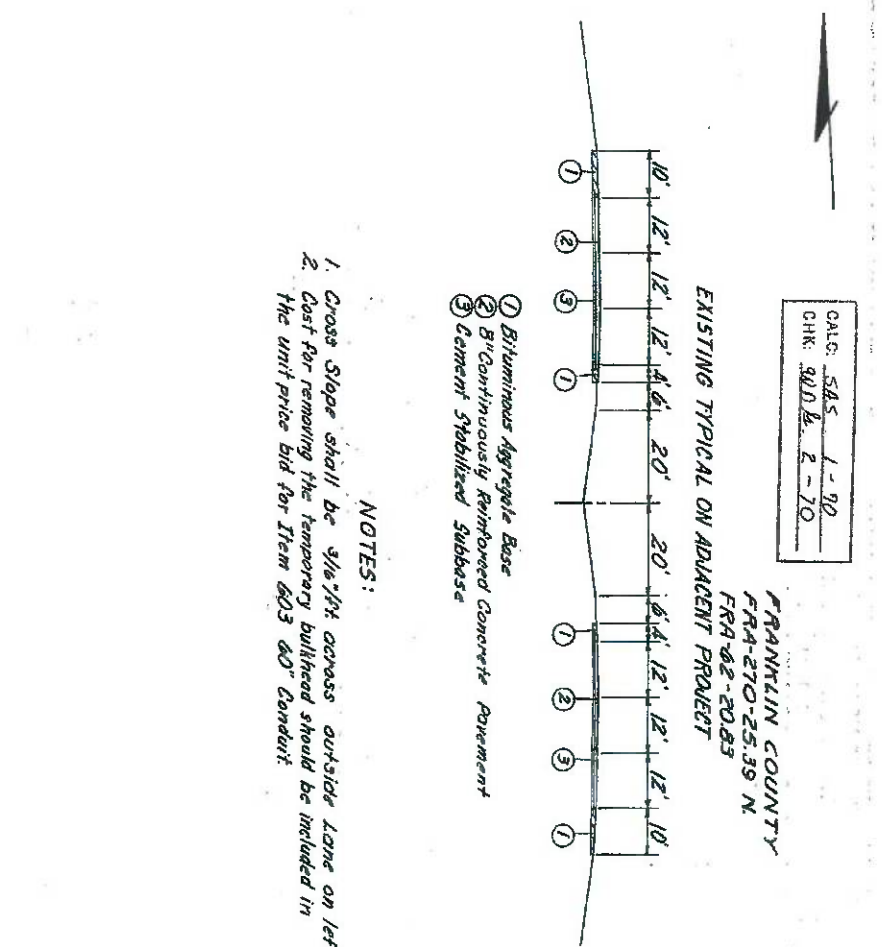
2	OHIO		
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\* With 1/8" Grate

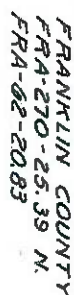
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ST 1450508 TA 2742144000

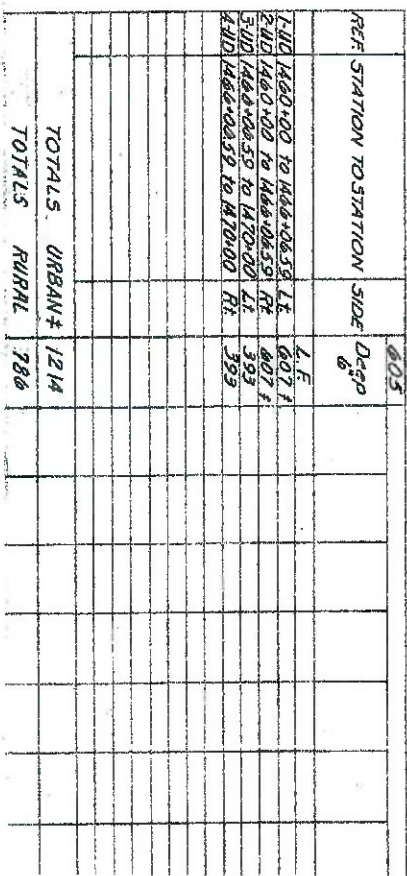






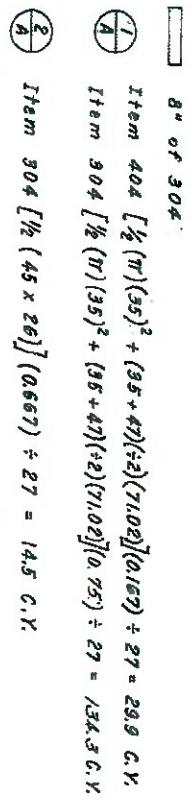
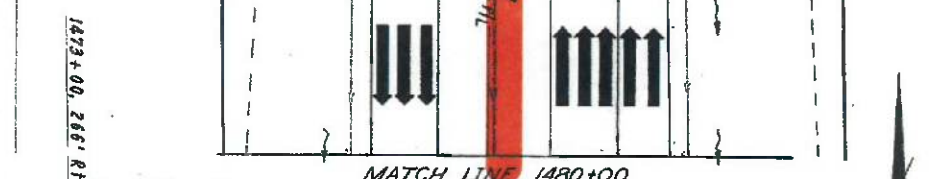


1. Cross Slope of the left shall be maintained across left lane.



STA. 1460+00 TO STA. 1470+00





CALC: SAS 1-70  
OWE: W.D.H 2-70

[illegible]

STATION TO STATION	SIDE	304	401	603		605	Bends & Branches	Under drain Ditch
		gale- Bore	Apophyt Control (35-60)	6" Type	6" Type	6" Deep		
0+00 to 112+71	Lt	21Y	CY	L.F	L.F	L.F	5'	
0+00 to 147+25	Rt			76	10	283	1	B
2+79 to 1480+00	Lt					275		D
2+79 to 1480+00	Rt					721		
3+28	Rt	135	30					
4+85	Rt	13						
TOTALS RURAL		150	30	76	10	2000		



VILLAGE OF GAHANNA  
MIFLIN TOWNSHIP

HELEN L. CAUDILL

LAWRENCE D. THOMPSON  
JOHN A. GALLAGHER JR.  
ANGELA F. GALLAGHER

Work Limits 2

MATCH LINE  
SEE SHEET NO. 90

L.R. 270 E. 1485+00.00, 106.44 =  
R.C. D. 1485+00.00  
D-1486  
D-1487  
D-1488  
D-1489

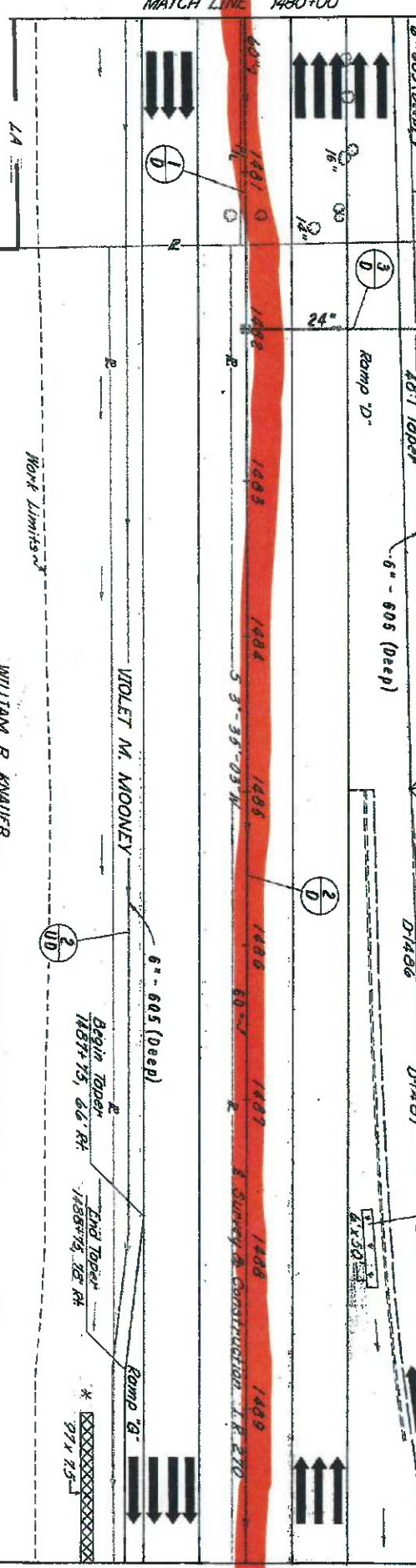
4  
D  
1486 10.71  
1487 8.00  
1488 14.88  
1489 14.89

FRANKLIN COUNTY  
FRA-270-2639 N  
FRA-62-2083

CALC: 545 1-70  
CHK: 34 D.B. 2-70

MATCH LINE 1480+00

MATCH LINE 1490+00



PETE FREGOMAS &  
MARY R. FREGOMAS

EDWARD W. KNAUER

B.M. 31 Elev. 835.16  
Sta. 1481+47 324' L.R.  
R.R. Spike in 21' Ash

EMCAK 98,540 CY  
EMB. 0 CY  
SEEDING 23,009 SX

Profile Grade



840

840

835

835

830

830

825

825

820

820

815

815

1480

1481

1482

1483

1484

1485

1486

1487

1488

1489

1490

NOTES:

1. For Ramp "D" Plan See Sheet No. 60-91.
2. For Ramp "D" Profile See Sheet No. 98.
3. For Ramp "D" & I.R. 270 Pavement Details, See Sheet No. 1.
4. For Ramp "G" & I.R. 270 Pavement Details, See Sheet No. 1.

\* Quantities Computed on Next Sheet

REF. STATION TO STATION	SIDE			24" TYPE "B"	60" TYPE "C"	No. 4A C.B.	No. 5 C.B.	bedding	Jute Matting	For Details See Sheet No.
1-0 1480+00 to 1482+00	L.F.				200	1				71
2-0 1482+00 to 1490+00	L.F.			124	800		1		125	71
3-0 1490+00 to 1492+00	L.F.							34		
4-0 1492+00 to 1494+00	L.F.									
5-0 1494+00 to 1496+00	L.F.									
6-0 1496+00 to 1498+00	L.F.									
7-0 1498+00 to 1500+00	L.F.									
8-0 1500+00 to 1502+00	L.F.									
9-0 1502+00 to 1504+00	L.F.									
10-0 1504+00 to 1506+00	L.F.									
11-0 1506+00 to 1508+00	L.F.									
12-0 1508+00 to 1510+00	L.F.									
13-0 1510+00 to 1512+00	L.F.									
14-0 1512+00 to 1514+00	L.F.									
15-0 1514+00 to 1516+00	L.F.									
16-0 1516+00 to 1518+00	L.F.									
17-0 1518+00 to 1520+00	L.F.									
18-0 1520+00 to 1522+00	L.F.									
19-0 1522+00 to 1524+00	L.F.									
20-0 1524+00 to 1526+00	L.F.									
21-0 1526+00 to 1528+00	L.F.									
22-0 1528+00 to 1530+00	L.F.									
23-0 1530+00 to 1532+00	L.F.									
24-0 1532+00 to 1534+00	L.F.									
25-0 1534+00 to 1536+00	L.F.									
26-0 1536+00 to 1538+00	L.F.									
27-0 1538+00 to 1540+00	L.F.									
28-0 1540+00 to 1542+00	L.F.									
29-0 1542+00 to 1544+00	L.F.									
30-0 1544+00 to 1546+00	L.F.									
31-0 1546+00 to 1548+00	L.F.									
32-0 1548+00 to 1550+00	L.F.									
33-0 1550+00 to 1552+00	L.F.									
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35-0 1554+00 to 1556+00	L.F.									
36-0 1556+00 to 1558+00	L.F.									
37-0 1558+00 to 1560+00	L.F.									
38-0 1560+00 to 1562+00	L.F.									
39-0 1562+00 to 1564+00	L.F.									
40-0 1564+00 to 1566+00	L.F.									
41-0 1566+00 to 1568+00	L.F.									
42-0 1568+00 to 1570+00	L.F.									
43-0 1570+00 to 1572+00	L.F.									
44-0 1572+00 to 1574+00	L.F.									
45-0 1574+00 to 1576+00	L.F.									
46-0 1576+00 to 1578+00	L.F.									
47-0 1578+00 to 1580+00	L.F.									
48-0 1580+00 to 1582+00	L.F.									
49-0 1582+00 to 1584+00	L.F.									
50-0 1584+00 to 1586+00	L.F.									
51-0 1586+00 to 1588+00	L.F.									
52-0 1588+00 to 1590+00	L.F.									
53-0 1590+00 to 1592+00	L.F.									
54-0 1592+00 to 1594+00	L.F.									
55-0 1594+00 to 1596+00	L.F.									
56-0 1596+00 to 1598+00	L.F.									
57-0 1598+00 to 1600+00	L.F.									
58-0 1600+00 to 1602+00	L.F.									
59-0 1602+00 to 1604+00	L.F.									
60-0 1604+00 to 1606+00	L.F.									
61-0 1606+00 to 1608+00	L.F.									
62-0 1608+00 to 1610+00	L.F.									
63-0 1610+00 to 1612+00	L.F.									
64-0 1612+00 to 1614+00	L.F.									
65-0 1614+00 to 1616+00	L.F.									
66-0 1616+00 to 1618+00	L.F.									
67-0 1618+00 to 1620+00	L.F.									
68-0 1620+00 to 1622+00	L.F.									
69-0 1622+00 to 1624+00	L.F.									
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71-0 1626+00 to 1628+00	L.F.									
72-0 1628+00 to 1630+00	L.F.									
73-0 1630+00 to 1632+00	L.F.									
74-0 1632+00 to 1634+00	L.F.									
75-0 1634+00 to 1636+00	L.F.									
76-0 1636+00 to 1638+00	L.F.									
77-0 1638+00 to 1640+00	L.F.									
78-0 1640+00 to 1642+00	L.F.									
79-0 1642+00 to 1644+00	L.F.									
80-0 1644+00 to 1646+00	L.F.									
81-0 1646+00 to 1648+00	L.F.									
82-0 1648+00 to 1650+00	L.F.									
83-0 1650+00 to 1652+00	L.F.									
84-0 1652+00 to 1654+00	L.F.									
85-0 1654+00 to 1656+00	L.F.									
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89-0 1662+00 to 1664+00	L.F.									
90-0 1664+00 to 1666+00	L.F.									
91-0 1666+00 to 1668+00	L.F.									
92-0 1668+00 to 1670+00	L.F.									
93-0 1670+00 to 1672+00	L.F.									
94-0 1672+00 to 1674+00	L.F.									
95-0 1674+00 to 1676+00	L.F.									
96-0 1676+00 to 1678+00	L.F.									
97-0 1678+00 to 1680+00	L.F.									
98-0 1680+00 to 1682+00	L.F.									
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105-0 1694+00 to 1696+00	L.F.									
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110-0 1704+00 to 1706+00	L.F.									
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112-0 1708+00 to 1710+00	L.F.									
113-0 1710+00 to 1712+00	L.F.									
114-0 1712+00 to 1714+00	L.F.									
115-0 1714+00 to 1716+00	L.F.									
116-0 1716+00 to 1718+00	L.F.									
117-0 1718+00 to 1720+00	L.F.									
118-0 1720+00 to 1722+00	L.F.									
119-0 1722+00 to 1724+00	L.F.									
120-0 1724+00 to 1726+00	L.F.									
121-0 1726+00 to 1728+00	L.F.									
122-0 1728+00 to 1730+00	L.F.									
123-0 1730+00 to 1732+00	L.F.									
124-0 1732+00 to 1734+00	L.F.									
125-0 1734+00 to 1736+00	L.F.									
126-0 1736+00 to 1738+00	L.F.									
127-0 1738+00 to 1740+00	L.F.									
128-0 1740+00 to 1742+00	L.F.									
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131-0 1746+00 to 1748+00	L.F.									
132-0 1748+00 to 1750+00	L.F.									
133-0 1750+00 to 1752+00	L.F.									
134-0 1752+00 to 1754+00	L.F.									
135-0 1754+00 to 1756+00	L.F.									
136-0 1756+00 to 1758+00	L.F.									
137-0 1758+00 to 1760+00	L.F.									
138-0 1760+00 to 1762+00	L.F.									
139-0 1762+00 to 1764+00	L.F.									
140-0 1764+00 to 1766+00	L.F.									
141-0 1766+00 to 1768+00	L.F.									
142-0 1768+00 to 1770+00	L.F.									
143-0 1770+00 to 1772+00	L.F.									
144-0 1772+00 to 1774+00	L.F.									
145-0 1774+00 to 1776+00	L.F.									
146-0 1776+00 to 1778+00	L.F.									
147-0 1778+00 to 1780+00	L.F.									
148-0 1780+00 to 1782+00	L.F.									
149-0 1782+00 to 1784+00	L.F.									
150-0 1784+00 to 1786+00	L.F.									
151-0 1786+00 to 1788+00	L.F.									
152-0 1788+00 to 1790+00	L.F.									
153-0 1790+00 to 1792+00	L.F.									
154-0 1792+00 to 1794+00	L.F.									
155-0 1794+00 to 1796+00	L.F.									
156-0 1796+00 to 1798+00	L.F.									
157-0 1798+00 to 1800+00	L.F.									
158-0 1800+00 to 1802+00	L.F.									
159-0 1802+00 to 1804+00	L.F.									
160-0 1804+00 to 1806+00	L.F.									
161-0 1806+00 to 1808+00	L.F.									
162-0 1808+00 to 1810+00	L.F.									
163-0 1810+00 to 1812+00	L.F.									
164-0 1812+00 to 1814+00	L.F.									
165-0 1814+00 to 1816+00	L.F.									
166-0 1816+00 to 1818+00	L.F.									
167-0 1818+00 to 1820+00	L.F.									
168-0 1820+00 to 1822+00	L.F.									
169-0 1822+00 to 1824+00	L.F.									
170-0 1824+00 to 1826+00										

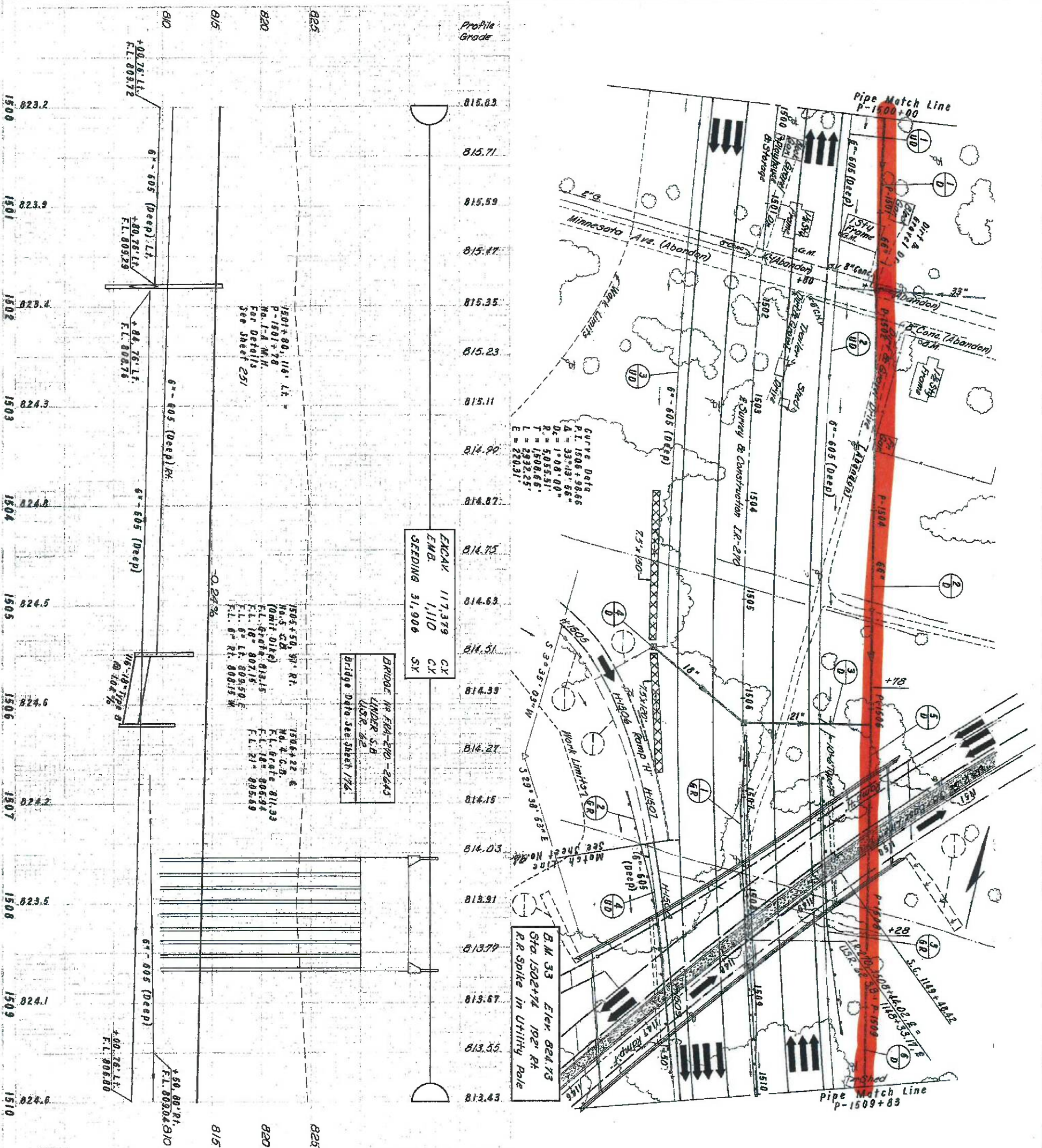


1. For Ramp "D" Plan, See Sheet No. 90-91
2. For Ramp "D" Profile, See Sheet No. 98
3. For Ramp "G" Plan, See Sheet No. 94
4. For Ramp "G" Profile, See Sheet No. 101
5. For Ramp "G" & R 210 Reinforcement Details, See Sheet No. 151
6. For Aquifer "B" Profile, See Sheet No. 234, 235 & 2
7. For Storm Sewer Profile, See Sheet No. 251-252
8. For Interchange Geometrics See Sheet 82, 83 & 84

ACRES	STATION TO STATION	SIDE	202	603	605	660	830	Special	Bands & Und dr Branches Den g"
			Ex. With Remov. & "f"	g" Type	g" Deeg	Sodding	Excelsior Hortling	Cleaning privy Vaults	
			3 f.	L. F.	L. F.	S. Y.	S. Y.	Fo.	
1-R	1494+44	Rt.						1	
2-R	1497+15	Rt.						1	
3-R	1497+15	Lt.							
4-R	1495+15	Rt.	90						
7-D	1491+90 to 1492+35	Rt.							
8-D	1492+92 to 1493+32	Rt.					220		
9-D	1493+32 to 1494+42	Rt.				34.	253		
1-D	1490+00 to 1490+56	Rt.		10	68				1
2-D	1490+56 to 6-1497+93	Rt.		20	757				
3-D	1490+56 to 1500+00	Lt.		10	340				
4-D	1499+00 to 1500+00	Rt.			100				
			90	40	1265	34	473	3	
RURAL TOTAL									







1. For Storm Sewer Profile, See Sheet No. 251-252
2. For U.S.R. 662 S.B. Plot and Profile, See Sheet No. 176-177
3. For Ramp "H" Plan, See Sheet No. 94
4. For Ramp "H" Profile, See Sheet No. 102
5. For Ramp "H" and I.R.-270 Pavement Details, See Sheet No. 15
6. For Interchange Geometrics, See Sheet No. 85, 85-B, 85-B1

* 706.02 Class III or 707.13										
REF.	STATION TO STATION	SIDE	603			604			607	Bends & Branches 66'
			66° Type C.	18° Type B.	21° Type D.	No. 1-A Man- hole	No. 4 C.B.	No. 5 C.B.		
1-0	P-1800+00 to P-1501+70	Lt.	Lt.							
2-0	P-1501+70 to P-1505+70	Lt.								
3-0	1506+22	Lt.								
4-0	1505+50 to 1508+22	Rt.		118			1		225	76
5-0	P-1505+20 to P-1508+20	Lt.	230							72
6-0	P-1508+20 to P-1509+43	Lt.	155							1
RURAL TOTALS			983	116	120	1	1	1	225	

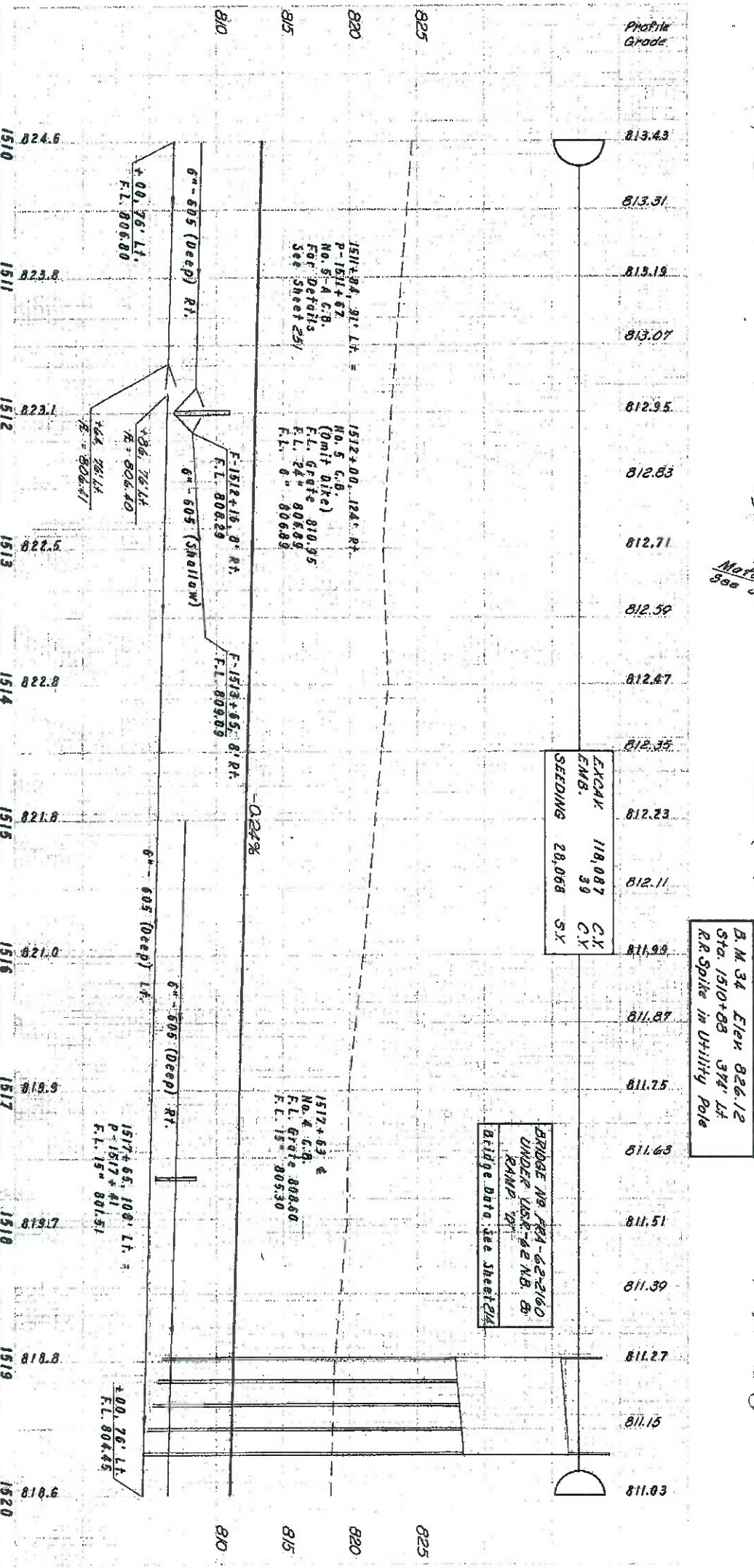
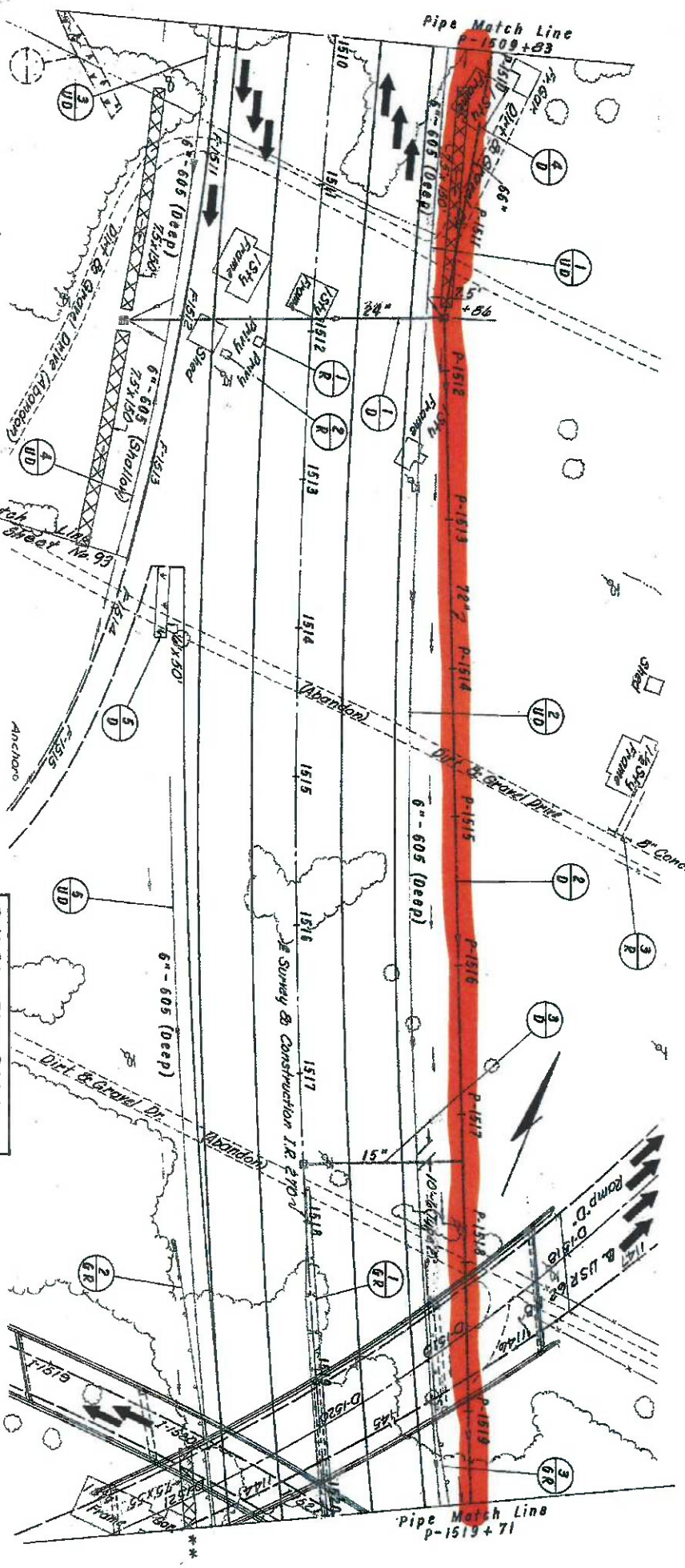
[illegible]



CD 54.5  
CN 40.0  
L-70  
2-70

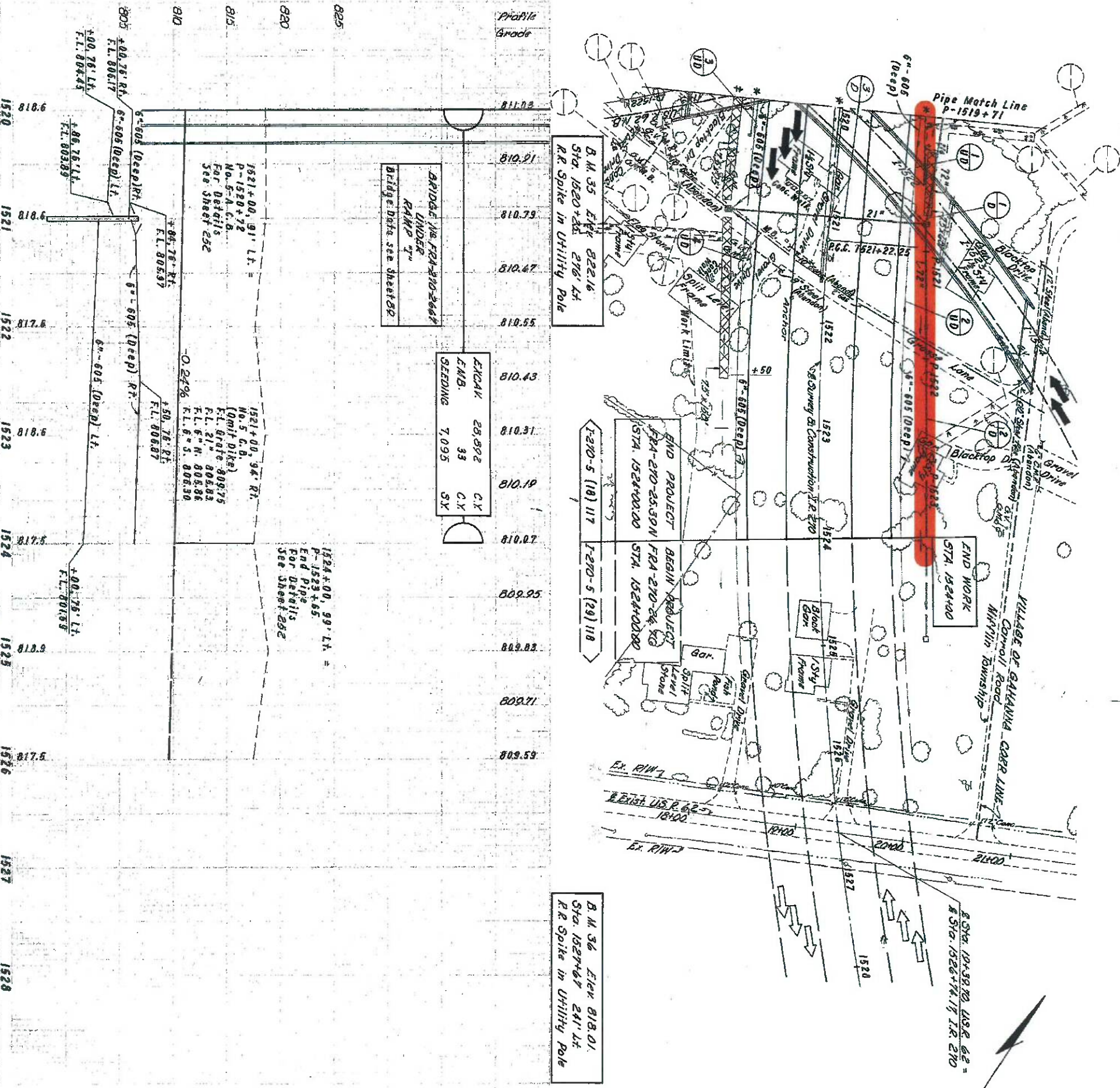
NOTES:

1. For USR-62 N.B. Plan & Profile, See Sheet No. 214
2. For Ramp "F" Plan, See Sheet No. 93
3. For Ramp "F" Profile, See Sheet No. 100
4. For Ramp "F" & I.R. 270 Pavement Details, See Sheet No. 153
5. For Ramp "I" Plan, See Sheet No. 89 & 93
6. For Ramp "I" Profile, See Sheet No. 103
7. \*\* Jute Matting carried to next sheet
8. For Interchange Geometrics, See Sheet No. 82, 83 & 84



REF. STATION TO STATION		SIDE		* 706.02 CL III or 707.13		603		604		606		607		Bends & Branches		For Details See Sheet	
						15° 24' 68" 72"		No. 4		No. 5		No. 6		No. 7		No. 8	
						No. 1		No. 2		No. 3		No. 4		No. 5		No. 6	
						No. 7		No. 8		No. 9		No. 10		No. 11		No. 12	
						No. 13		No. 14		No. 15		No. 16		No. 17		No. 18	
						No. 19		No. 20		No. 21		No. 22		No. 23		No. 24	
						No. 25		No. 26		No. 27		No. 28		No. 29		No. 30	
						No. 31		No. 32		No. 33		No. 34		No. 35		No. 36	
						No. 37		No. 38		No. 39		No. 40		No. 41		No. 42	
						No. 43		No. 44		No. 45		No. 46		No. 47		No. 48	
						No. 49		No. 50		No. 51		No. 52		No. 53		No. 54	
						No. 55		No. 56		No. 57		No. 58		No. 59		No. 60	
						No. 61		No. 62		No. 63		No. 64		No. 65		No. 66	
						No. 67		No. 68		No. 69		No. 70		No. 71		No. 72	
						No. 73		No. 74		No. 75		No. 76		No. 77		No. 78	
						No. 79		No. 80		No. 81		No. 82		No. 83		No. 84	
						No. 85		No. 86		No. 87		No. 88		No. 89		No. 90	
						No. 91		No. 92		No. 93		No. 94		No. 95		No. 96	
						No. 97		No. 98		No. 99		No. 100		No. 101		No. 102	
						No. 103		No. 104		No. 105		No. 106		No. 107		No. 108	
						No. 109		No. 110		No. 111		No. 112		No. 113		No. 114	
						No. 115		No. 116		No. 117		No. 118		No. 119		No. 120	
						No. 121		No. 122		No. 123		No. 124		No. 125		No. 126	
						No. 127		No. 128		No. 129		No. 130		No. 131		No. 132	
						No. 133		No. 134		No. 135		No. 136		No. 137		No. 138	
						No. 139		No. 140		No. 141		No. 142		No. 143		No. 144	
						No. 145		No. 146		No. 147		No. 148		No. 149		No. 150	
						No. 151		No. 152		No. 153		No. 154		No. 155		No. 156	
						No. 157		No. 158		No. 159		No. 160		No. 161		No. 162	
						No. 163		No. 164		No. 165		No. 166		No. 167		No. 168	
						No. 169		No. 170		No. 171		No. 172		No. 173		No. 174	
						No. 175		No. 176		No. 177		No. 178		No. 179		No. 180	
						No. 181		No. 182		No. 183		No. 184		No. 185		No. 186	
						No. 187		No. 188		No. 189		No. 190		No. 191		No. 192	
						No. 193		No. 194		No. 195		No. 196		No. 197		No. 198	
						No. 199		No. 200		No. 201		No. 202		No. 203		No. 204	
						No. 205		No. 206		No. 207		No. 208		No. 209		No. 210	
						No. 211		No. 212		No. 213		No. 214		No. 215		No. 216	
						No. 217		No. 218		No. 219		No. 220		No. 221		No. 222	
						No. 223		No. 224		No. 225		No. 226		No. 227		No. 228	
						No. 229		No. 230		No. 231		No. 232		No. 233		No. 234	
						No. 235		No. 236		No. 237		No. 238		No. 239		No. 240	
						No. 241		No. 242		No. 243		No. 244		No. 245		No. 246	
						No. 247		No. 248		No. 249		No. 250		No. 251		No. 252	
						No. 253		No. 254		No. 255		No. 256		No. 257		No. 258	
						No. 259		No. 260		No. 261		No. 262		No. 263		No. 264	
						No. 265		No. 266		No. 267		No. 268		No. 269		No. 270	
						No. 271		No. 272		No. 273		No. 274		No. 275		No. 276	
						No. 277		No. 278		No. 279		No. 280		No. 281		No. 282	
						No. 283		No. 284		No. 285		No. 286		No. 287		No. 288	
						No. 289		No. 290		No. 291		No. 292		No. 293		No. 294	
						No. 295		No. 296		No. 297		No. 298		No. 299		No. 300	
						No. 301		No. 302		No. 303		No. 304		No. 305		No. 306	
						No. 307		No. 308		No. 309		No. 310		No. 311		No. 312	
						No. 313		No. 314		No. 315		No. 316		No. 317		No. 318	
						No. 319		No. 320		No. 321		No. 322		No. 323		No. 324	
						No. 325		No. 326		No. 327		No. 328		No. 329		No. 330	
						No. 331		No. 332		No. 333		No. 334		No. 335		No. 336	
						No. 337		No. 338		No. 339		No. 340		No. 341		No. 342	
						No. 343		No. 344		No. 345		No. 346		No. 347		No. 348	
						No. 349		No. 350		No. 351		No. 352		No. 353		No. 354	
						No. 355		No. 356		No. 357		No. 358		No. 359		No. 360	
						No. 361		No. 362		No. 363		No. 364		No. 365		No. 366	
						No. 367		No. 368		No. 369		No. 370		No. 371		No. 372	
						No. 373		No. 374		No. 375		No. 376		No. 377		No. 378	
						No. 379		No. 380		No. 381		No. 382		No. 383		No. 384	
						No. 385		No. 386		No. 387		No. 388		No. 389		No. 390	
						No. 391		No. 392		No. 393		No. 394		No. 395		No. 396	
						No. 397		No. 398		No. 399		No. 400		No. 401		No. 402	
						No. 403		No. 404		No. 405		No. 406		No. 407		No. 408	
						No. 409		No. 410		No. 411		No. 412		No. 413		No. 414	
						No. 415		No. 416		No. 417		No. 418		No. 419		No. 420	
						No. 421		No. 422		No. 423		No. 424		No. 425		No. 426	
						No. 427		No. 428		No. 429		No. 430		No. 431		No. 432	
						No. 433		No. 434		No. 435		No. 436		No. 437		No. 438	
						No. 439		No. 440		No. 441		No. 442		No. 443		No. 444	
						No. 445		No. 446		No. 447		No. 448		No. 449		No. 450	
						No. 451		No. 452		No. 453		No. 454		No. 455		No. 456	
						No. 457		No. 458		No. 459		No. 460		No. 461		No. 462	
						No. 463		No. 464		No. 465		No. 466		No. 467		No. 468	
						No. 469		No. 470		No. 471		No. 472		No. 473		No. 474	
						No. 475		No. 476		No. 477		No. 478		No. 479		No. 480	
						No. 481		No. 482		No. 483		No. 484		No. 485		No. 486	
						No. 487		No. 488		No. 489		No. 490		No. 491		No. 492	
						No. 493		No. 494		No. 495		No. 496		No. 497		No. 498	
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						No. 511		No. 512		No. 513		No. 514		No. 515		No. 516	
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						No. 553		No. 554		No. 555		No. 556		No. 557		No. 558	
						No. 559		No. 560		No. 561		No. 562		No. 563		No. 564	
						No. 565		No. 566		No. 567		No. 568		No. 569		No. 570	
						No. 571		No. 572		No. 573		No. 574		No. 575		No. 576	
						No. 577		No. 578		No. 579		No. 580		No. 581		No. 582	
						No. 583		No. 584		No. 585		No. 586		No. 587		No. 588	
						No. 589		No. 590		No. 591		No. 592		No. 593		No. 594	
						No. 595		No. 596		No. 597		No. 598		No. 599		No. 600	
						No. 601		No. 602		No. 603		No. 604		No. 605		No. 606	
						No. 607		No. 608		No. 609		No. 610		No. 611		No. 612	
						No. 613		No. 614		No. 615		No. 616		No. 617		No. 618	
						No. 619		No. 620		No. 621		No. 622		No. 623		No. 624	
						No. 625		No. 626		No. 627		No. 628		No. 629		No. 630	
						No. 631		No. 632		No. 633		No. 634		No. 635		No. 636	
						No. 637		No. 638		No. 639		No. 640		No. 641		No. 642	
						No. 643		No. 644		No. 645		No. 646		No. 647		No. 648	
						No. 649		No. 650		No. 651		No. 652		No. 653		No. 654	
						No. 655		No. 656		No. 657		No. 658		No. 659		No. 660	
						No. 661		No. 662		No. 663		No. 664		No. 665		No. 666	
						No. 667		No. 668		No. 669		No. 670		No. 671		No. 672	
						No. 673		No. 674									





CURVE DATA  
P.T. 1524+51.89  
D=50'-07'-25"  
Dc=200'-00"  
R=264.79'  
T=133.64'  
L=250.619'  
E=297.75'

B.M. 36 Elev 818.01  
Sta. 1524+67 241' L.H.  
R.R. Spike in Utility Pole

BRIDGE No. FRA-270-2667  
UNDER  
RAILROAD  
RAILROAD  
Bridge Data see sheet 262

EXCAV 28,592 C.Y.  
EMB. 33 C.Y.  
SEEDING 7,095 S.Y.

1524+00, 99' L.H. =  
P-1523+55  
End Pipe  
For Details  
See Sheet 262

LEGEND  
Existing Concrete Walk removed under  
Item 203 Excavation

NOTES:

1. For Ramp 1" Plan, See Sheet No. 80 & 83
  2. For Ramp 1" Profile, See Sheet No. 103 & 104
  3. For USR & NB, Plan & Profile, See Sheet No. 214
  4. For Storm Sewer, Profile See Sheet No. 251 & 252
  5. Typical Section on adjacent Project will be similar to FRA-270-2539 N
  6. For Interchange Geometrics, See Sheet No. 82, 83 & 84
- \* Jute Matting carried from previous sheet.  
\* Guard Rail carried on previous sheet.

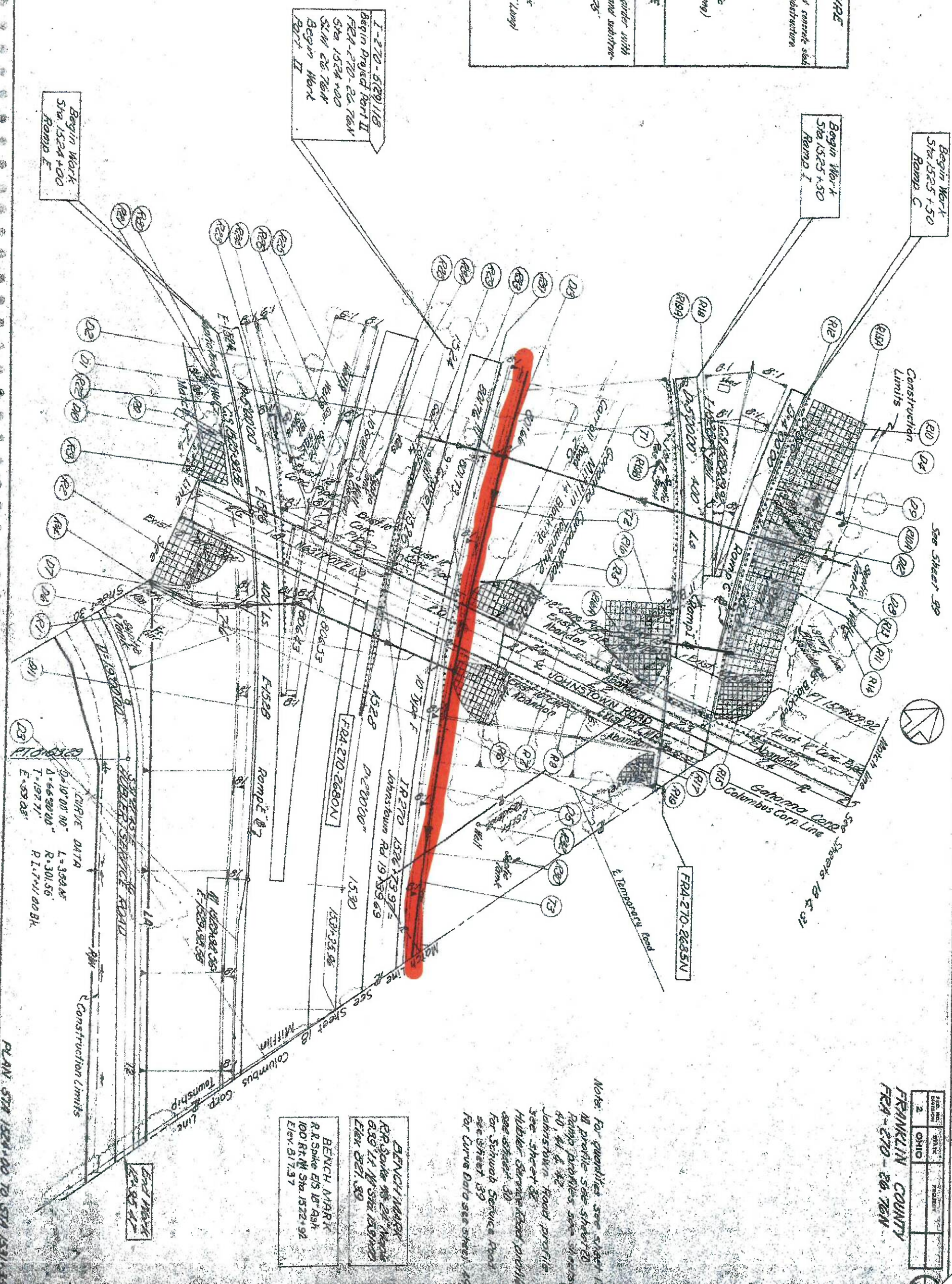
FRANKLIN COUNTY  
FRA-270-2539 N  
FRA-02-20.83

REF	STATION TO STATION	SIDE	603	604	605	606	607
1-D	P-1519+71 to P-1520+72	L.H.	100	100	100	100	100
2-D	P-1520+72 to P-1524+00	L.H.	320	1	1	1	1
3-D	1521+00	L.H.	184	1	1	1	1
RURAL TOTALS			184	428	1	1	300

REF	STATION TO STATION	SIDE	603	605	606	607
1-D	1520+00 to 1520+96	L.H.	10	107	107	107
2-D	1521+00 to 1524+00	L.H.	10	107	107	107
3-D	1521+00 to 1524+00	R.H.	10	307	307	307
RURAL TOTALS			30	817	817	817



<b>PROPOSED STRUCTURE</b>	
<b>FRA-270-2685N</b>	
TYPE: 3 span continuous reinforced concrete slab with reinforced concrete substructure	
SPANS: 43.0', 51.75', 43.0'	
LOADING: HS20-44	
SKEW: 18°13'37" L.R.	
WEARING SURFACE: 1" Monolithic	
APPROACH SLAB: 45'-1'-67" (23' long)	
ALIGNMENT: Left spiral	
SUPERELEVATION: None	
<b>PROPOSED STRUCTURE</b>	
<b>FRA-270-2680N</b>	
TYPE: 4 span continuous steel girder with reinforced concrete deck and substructure	
SPANS: 75'-0", 115'-0", 84'-25", 54'-25"	
LOADING: HS 20-44	
ROADWAY: 44'-0" to parapets	
SKEW: 13°57'46" R.F.	
WEARING SURFACE: 1" Monolithic	
APPROACH SLAB: 80'-4'-7' (25' long)	
ALIGNMENT: Tangent	
SUPERELEVATION: None	



FRANKLIN COUNTY  
FRA-270-2676N

NO.	DATE	BY	PROJECT
2	OHIO		

Note: For quantities see sheet 15. All profile sheet 15. Ramp profiles see sheets 40, 41 & 42. Johnston Road profile see sheet 39. Hubler Service Road profile see sheet 39. For Schwab Service Road see sheet 39. For Curve Data see sheet 40.

<b>BENCH MARK</b> R.R. Spike #8 23' High 6.89' 1/4" W. Side (ASPH) Elev. 621.30	<b>BENCH MARK</b> R.R. Spike #5 15' Ash 100' Rt. N. Sta. 1522+92 Elev. 617.57
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PLAN STA 1524+00 TO STA 1534+00





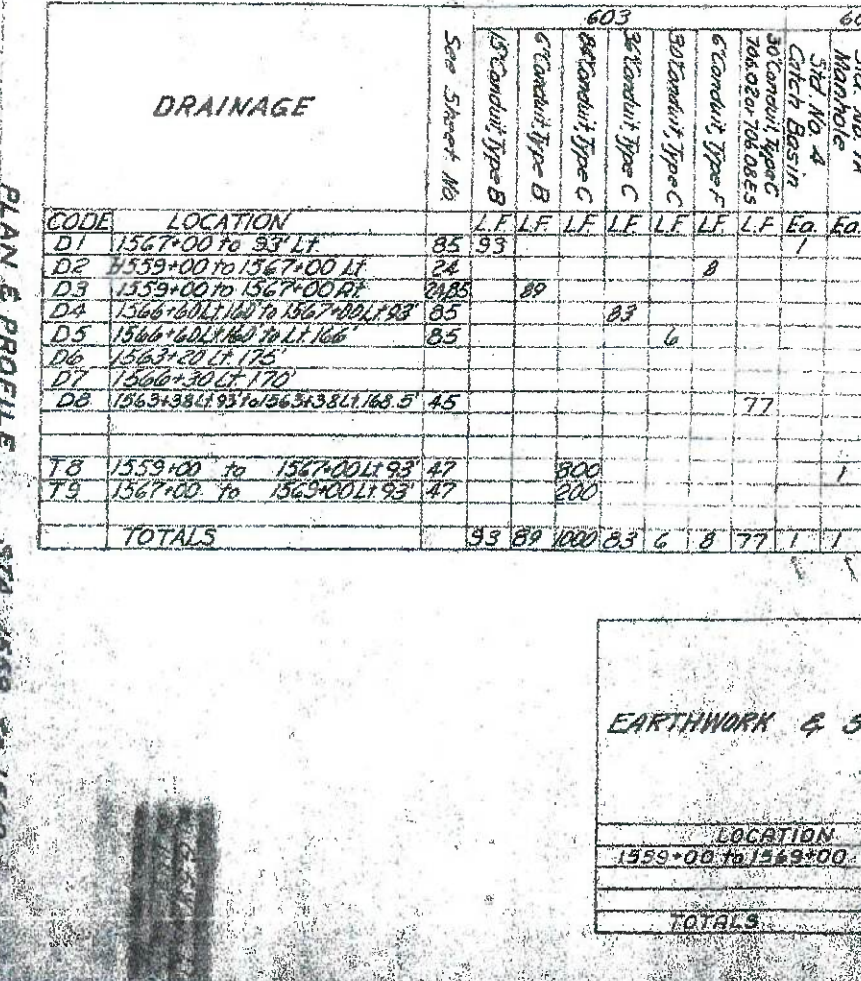
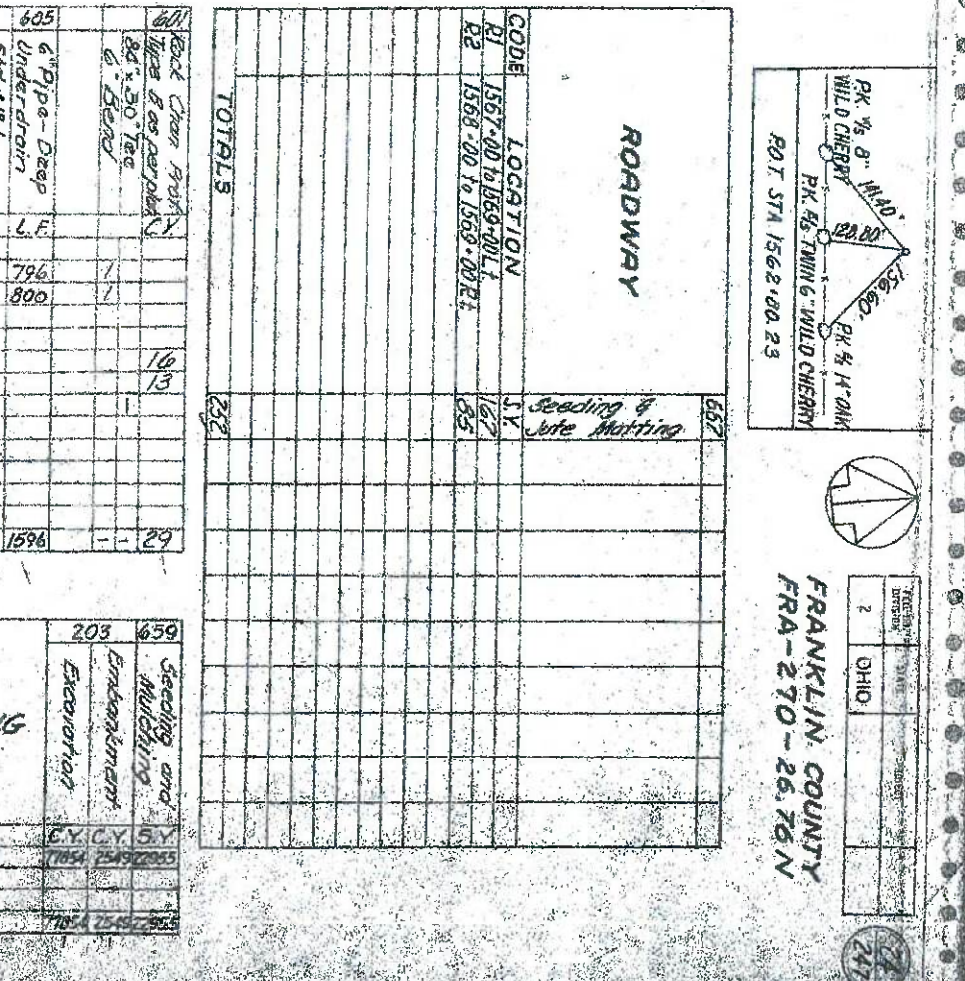












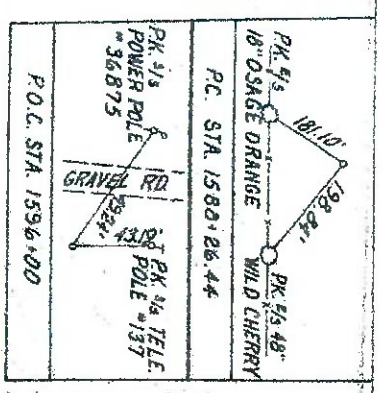
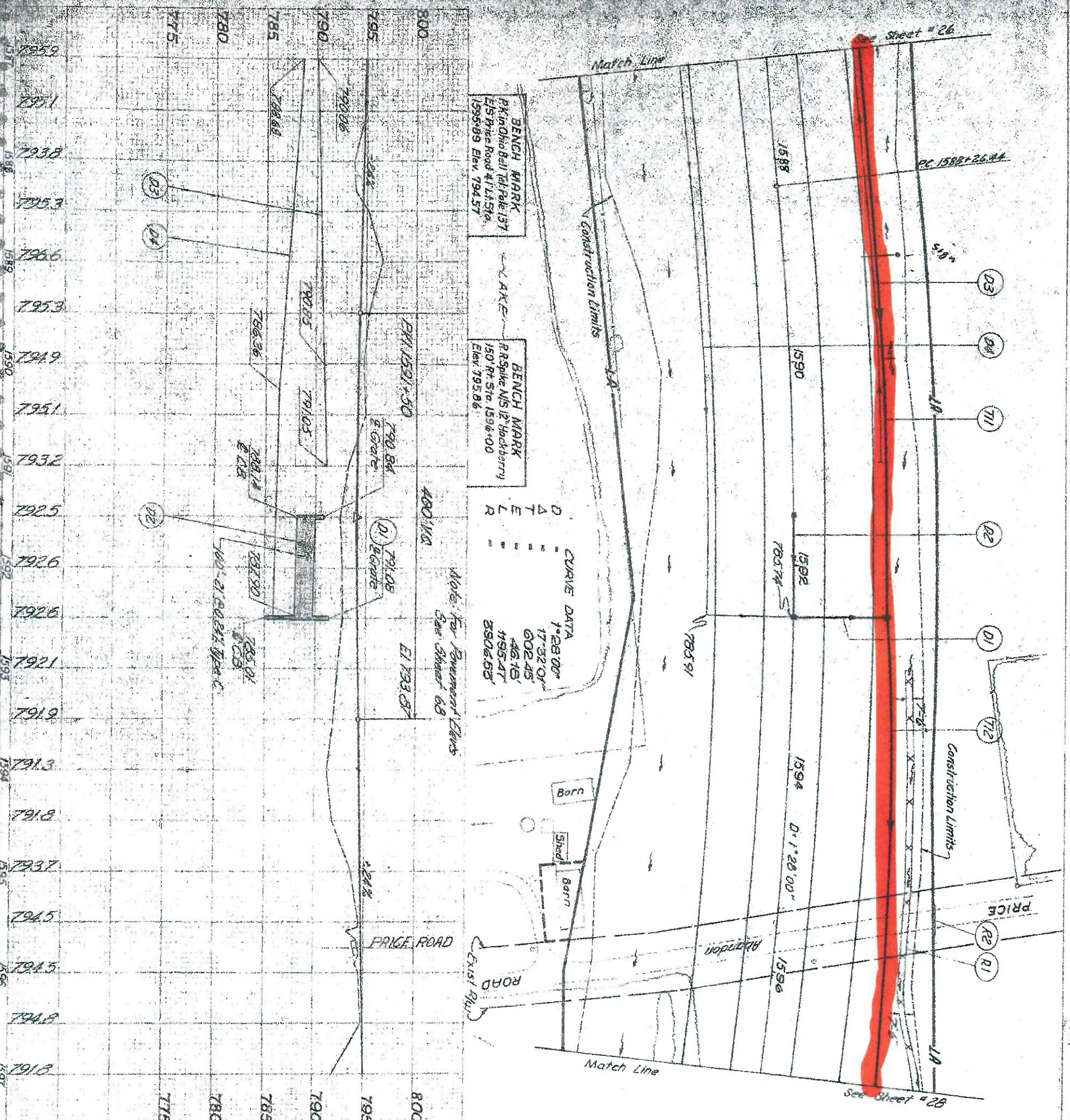












FRANKLIN COUNTY		FRA-270-26.76N	
EARTHWORK & SEEDING		TOTALS	
LOCATION	Excavation	Embankment	Seeding & Mulching
1587+00 to 1597+00	1581.6919/213	1581.6919/213	1581.6919/213
TOTALS	1581.6919/213	1581.6919/213	1581.6919/213

ROADWAY		TOTALS	
CODE	LOCATION	Excavation	Embankment
R1	1593+00 to 1597+00	347.2512	347.2512
R2	1590+37.01 to 1597+00	347.2512	347.2512
TOTALS		347.2512	347.2512

DRAINAGE		TOTALS	
CODE	LOCATION	Excavation	Embankment
D1	1592+50 to 93.11	89.93	89.93
D2	1591+50 to 1592+50	27	27
D3	1587+00 to 1591+00	27	27
D4	1587+00 to 1592+50	89	89
TOTALS		153	153

NY Trunk Sewer		Table of Offsets	
Station	Distance	Left of &	Right of &
1592+50	93	97	105
1593+00	97	105	110
1594+00	105	110	115
1595+00	110	115	120
1597+00	115	120	125



