

North-West Engineering Co., Inc.

-Consulting Engineers-
100 West 4th Avenue, 2nd Floor
Gary, IN 46402

Phone: (219)882-6856

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INDIANA DEPARTMENT OF TRANSPORTATION

PROJECT TITLE SHEET

Re: Storm Drain Design Review

DES No.: 0600750

Road: East Ridge Road Improvement Project from Broadway to Mississippi Rd.

Designers: North-west Engineering Company Inc.



John M Doe

East Ridge Road Improvements PROJECT BACKGROUND

PROJECT: STP N 763

ROAD: East Ridge Road Improvements
Broadway (IN 53) to Mississippi Street

CITY: Gary

DESCRIPTION OF IMPROVEMENT:

The City of Gary proposes to reconstruct East Ridge Road from Broadway to Mississippi Street. The project is located in Section 20, 21, 28, & 29, Township 36 North, Range 8 West, and Calumet Township, all in the Lake County, IN. The location of the Project is shown in Attachment No. 2.

	<u>Existing</u>	<u>Proposed</u>
TYPE OF FACILITY:	Urban Arterial	Urban Arterial
DESIGN SPEED:	-	35 MPH
OPERATING SPEED:	30 MPH	30 MPH
RIGHT OF WAY WIDTH:		
PERMANENT:	66' (Broadway to Georgia Street)	66' (Broadway to Georgia Street)
	60' (Georgia Street to Mississippi Street)	60' (Georgia Street to Mississippi Street)
TEMPORARY:	-	-
PAVEMENT WIDTH:	39' - 9"	44'
NUMBER OF LANES:	Four (4) 9.94' Wide Lanes	Four (4) 11' Lanes
SHOULDERS:	6" Curb	2' Curb & Gutter
HORIZONTAL ALIGNMENT:	Tangent	Tangent
VERTICAL ALIGNMENT:	Unlimited	Unlimited
SIDEWALK:	5' to 8'	5'
SURFACE:	Asphalt	Asphalt

East Ridge Road Improvements **PROJECT BACKGROUND**

	<u>Existing</u>	<u>Proposed</u>
PROJECT LENGTH:	5,440'	5,440'
ACCESS CONTROL:	None	None
FUNCTIONAL CLASSIFICATION:	Minor Arterial (Urban)	Minor Arterial (Urban)
MAXIMUM GRADIENT:	2%	2%

SPECIAL DESIGN FEATURES: Other than appropriately located storm water pumping station and force main to transport the storm water to the Little Calumet River, no special design features are anticipated.

TRAFFIC DURING CONSTRUCTION: A detour route will be provided.

NEED FOR IMPROVEMENT: The proposed project is needed to provide motorists and pedestrians with a modern roadway/highway, meeting current AASHTO guidelines.

The existing Ridge Road is a 4 narrow lanes roadway.

The City of Gary wishes to improve the city's Transportation System by reconstructing this narrow roadway with a modern roadway that will comply with AASHTO.

OTHER PROJECTS ALONG CORRIDOR: None

TRAFFIC DATA PER NORTHERN INDIANA REGIONAL PLANNING COMMISSION (NIRPC):
2007 AADT – 30,879 VPD 2030 AADT – 34,184 VPD

ESTIMATED YEAR OF CONSTRUCTION: 2009 – 2010

ALTERNATES AND COSTS: *Denotes preferred Alternate

ALTERNATE 1: (DO NOTHING) Alternate 1 proposes that nothing be done to the existing facility. This would eliminate any cost or environmental impacts due to construction. However, the old, narrow and seriously deteriorated roadway will be retained.

Alternate 1 does not meet the needs of the vehicular traffic and the City of Gary. Therefore, this is not the preferred alternate.

East Ridge Road Improvements PROJECT BACKGROUND

*ALTERNATE 2 (PREFERRED ALTERNATE): Alternate 2 proposed to reconstruct Ridge Road as previously discussed.

- 1) This alternate will not require any acquisition of additional right of way.
- 2) This alternate would have no adverse affect upon abutting real property.
- 3) This alternate will not change the layout or function of Ridge Road.
- 4) This Roadway will not change the horizontal alignment and will be along the centerline of the right of way.

The estimated cost for alternate two (2) is \$10,000,000.00

The new roadway for alternate 2 would meet current AASHTO guidelines. The new facility would also meet the vehicular and pedestrian traffic. Therefore, alternate 2 is the preferred alternative.

DRAINAGE: This project also includes storm sewers including a storm water pumping station for storm water drainage along the Ridge Road. The Storm Water Pump Station to be located at 33rd Avenue and Connecticut Street, from where the storm water will be pumped by force main to the Little Calumet River at approximately 32nd Avenue through the south levee of the river. A permit will be required from the USCOE to penetrate the levee.

The Storm sewer along Connecticut Street is through a residential area.

FLOOD PLAIN ENCROACHMENT: The proposed project will not impact adversely the Federal Emergency Management Agency flood plain. The proposed project is not in a flood plain.

ECOSYSTEM EFFECT: The proposed project will not have any significant impacts on the area's ecosystem.

SOCIAL, ECONOMIC, AND ENVIRONMENTAL:

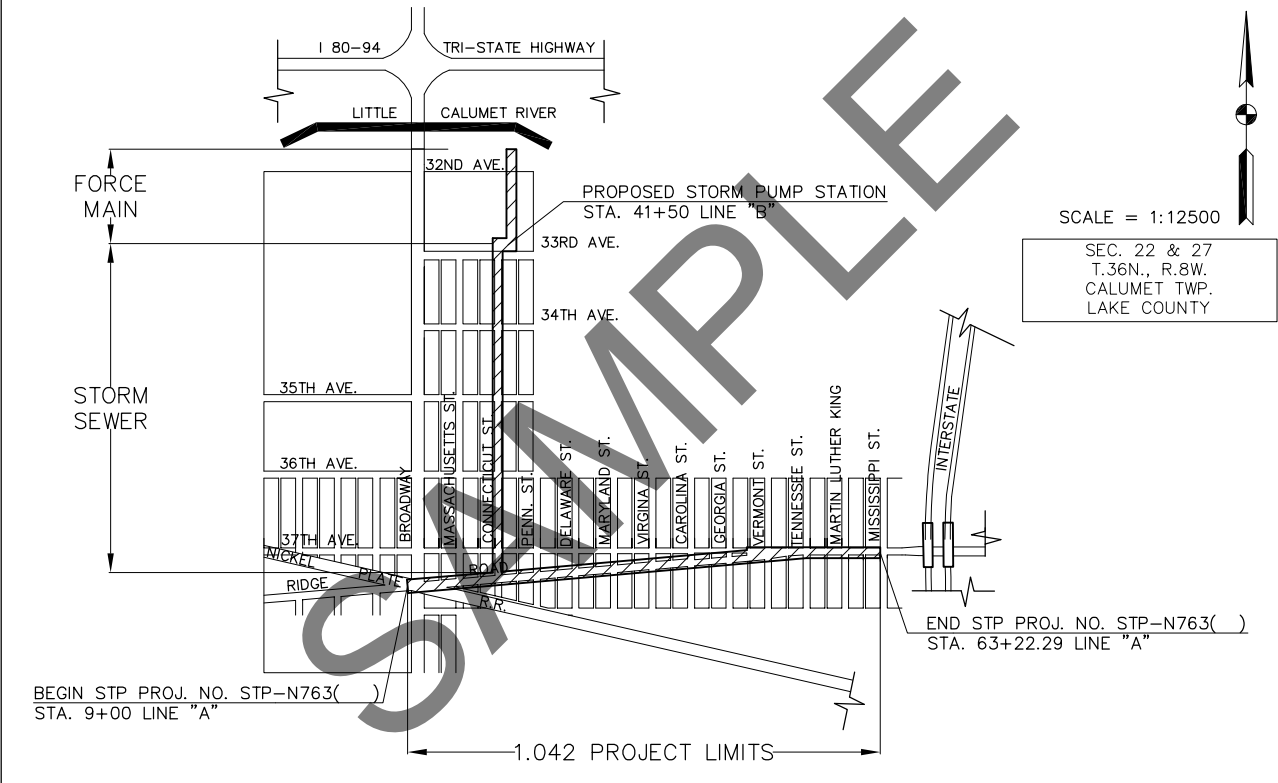
During construction, measures will be taken to prevent erosion. All bare and disturbed areas will be re vegetated at the close of construction with a suitable mixture of grasses and legumes. All necessary safeguards will be implemented to minimize erosion and to prevent pollution. Mitigation measures will include:

1. Temporary erosion and siltation control features will be utilized during the construction period, such as placement of straw bales in open drainage ways, covering exposed areas with burlap, jute matting or straw, and grading areas to retain runoff in basins.
2. All clearing of vegetation will be held to an absolute minimum.
3. All disturbed soil areas will be re vegetated immediately upon project completion.

PROJECT	DESIGNATION
STP - N763()	0600750

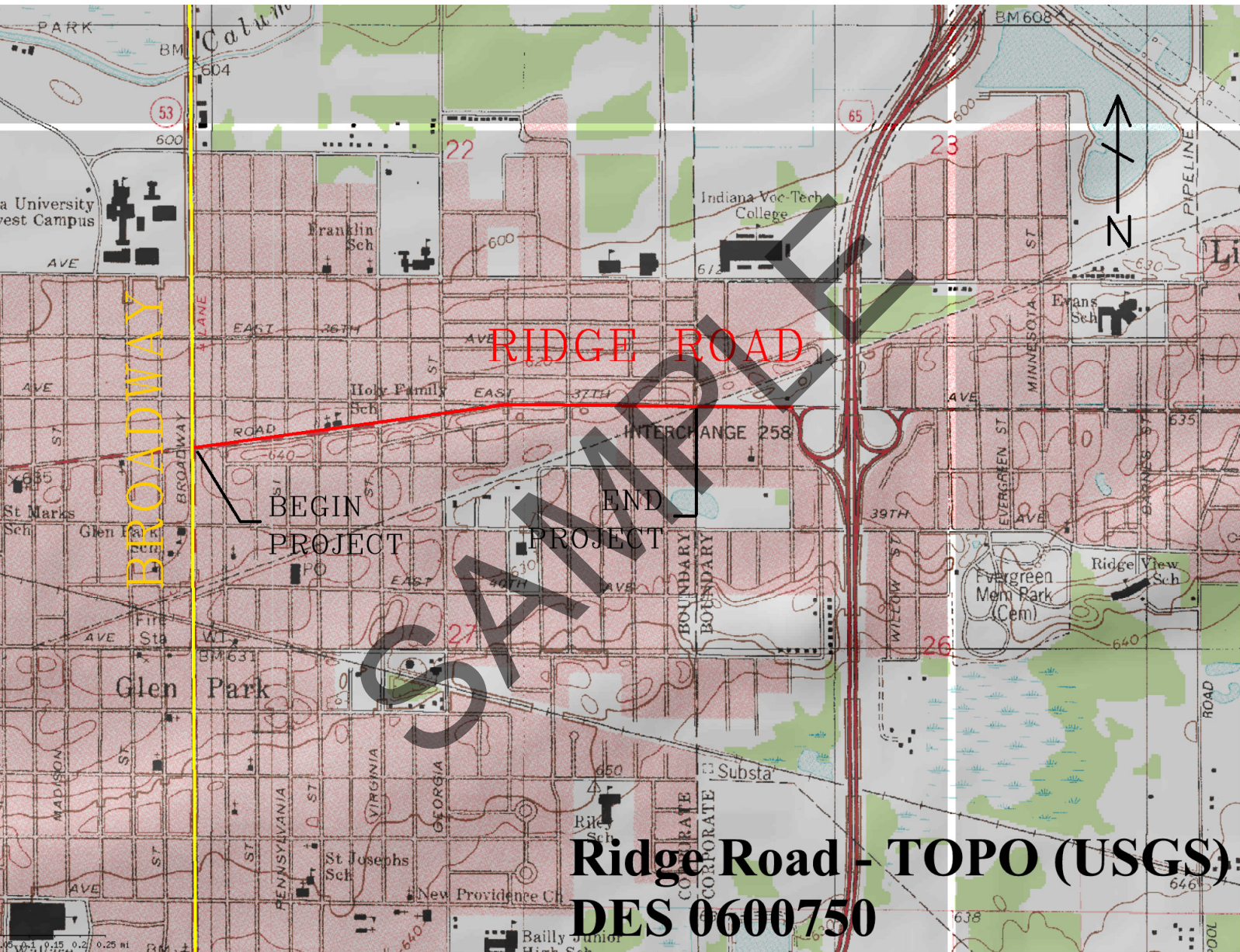
EAST RIDGE ROAD IMPROVEMENT PROJECT
 FROM BROADWAY TO MISSISSIPPI STREET
 GARY, IN 46409

VICINITY MAP



CITY OF GARY





SITE PHOTOS

DES 0600750

SAMPLE



Looking North on Broadway towards Ridge Rd.
Approximately 200' South of Ridge Rd.



Looking East on Ridge Road toward Broadway
Approximately 200' West of Broadway



Looking South on Broadway towards Ridge Rd.
Approximately 200' North of Ridge Rd.



Looking West on Ridge Rd. towards Broadway
Approximately 200' East of Broadway



Looking East on Ridge Rd. towards 37th Ave.
Approximately 150' West of 37th Ave.



Looking West on Ridge Rd. towards 37th Ave.
Approximately 250' East of Ridge Rd.



Looking North on Delaware towards Ridge Rd.
Approximately 100' South of Ridge Rd.



Looking East on Ridge Rd. towards Delaware
Approximately 100' West of Delaware





Looking East on Ridge Rd. towards Georgia
Approximately 150' West of Georgia



Looking South on Georgia towards Ridge Rd.
Approximately 150' North of Ridge Rd.



Looking West on Ridge Rd. towards Georgia
Approximately 150' East of Georgia



Looking North on Connecticut St. towards 33rd Ave.
Approximately 100' South of 33rd Ave.



Looking East on 33rd Ave. towards Connecticut St.
Approximately 100' West of Connecticut St.



Looking South on Connecticut St. Towards 33rd Ave.
Approximately 15' North of 33rd Ave.



Summary of Hydraulic Design & Assumptions

The properties on the south side of Ridge Road, from Station 13+30 to Station 56+15, are at a higher elevation than the street. This causes all flow from the grassy 125-ft strip of land south of the street right-of-way to flow northward onto Ridge Road. We have also used in our calculations all of the Ridge Road R/W, ranging from 60-ft. to 66-ft. to be impervious. The property north of the north R/W of Ridge Road has a lower elevation, and all the flow continues to the north, therefore, we have not considered this area in our drainage calculations.

- The design storm selected for the computation has a 10-year return frequency.
- The time of concentration for the inlet and sewer design computations is five (5) minutes.
- The rainfall intensity was based on a ten (10) year frequency and time of concentration of five (5) minutes is 6.8-inches per hour based upon the rainfall intensity frequency curve for Chicago, Illinois, as shown in Figure 29-8M in the INDOT Part IV- Hydrology Section.
- On the South Side of Ridge Road, from Station 13+30 to Station 56+15, the composite run-off co-efficient value as computed with the run-off co-efficient of 0.284 for the 125-ft. turf on the south side of Ridge Road and 0.90 for the impervious area within the R/W. By using these two coefficients the composite for the entire drainage area came to a **Composite C-Value of 0.41 for the run-off calculations.** (See Attachment # 2).
- Please note on the South Side from Station 9+32 to Station 13+30, and from Station 56+15 to Station 64+00, we have only considered the impervious area within the R/W, as the parcels adjoining the these stations do not drain toward Ridge Road.
- Therefore, the run-off co-efficient C value of **0.41** was used for the inlet computations on the South side of the street, from Station 13+30 to Station 56+15. The run-off co-efficient value of **0.90** was used on the north side of the street, as well as, the south side of the street from Station 9+32 to Station 13+30, and from Station 56+15 to Station 64+00. (See Attachment # 2)
- The inlets are located in the areas where the slope changes from negative to positive along the street (Sag Locations). Also if there is a long continuous slope, inlets are located at intermediate locations along the slope in order to intercept the run-off and not exceed the allotted 7'-0" spread. (See Attachment # 3- Roadway Plans). Please note the lowest point in a sag curve is not always at the center of the curve, this varies as the in gradient and out gradient change. Please refer to the Vertical Curve Data provided.
- Please note there are a few locations where we have exceeded the 7'-0" maximum allowable spread (5.5ft. half lane width + 1.5ft. gutter width = 7.0ft.). This is due to the distance between the structures at intersection or driveway locations. For your information, we have avoided placing structures in drives or at the flow line of intersections, as this is not desirable. In these locations we have placed the inlets and/or catch basin as close together as possible, while still leaving room for ADA accessibility at the corners (handicap ramps). Most of these said locations are minor and exceed the maximum allowable spread by only a few inches. However, there are three locations on the South Side Ridge Road, which exceed the maximum allowable spread by 9 inches, they are located at: Str. No. 411 (Sta. 13+82), Str. No. 431B (Sta. 30+30), and Str. No.

Summary of Hydraulic Design & Assumptions

439B (Sta. 37+05), all of which are at intersections.

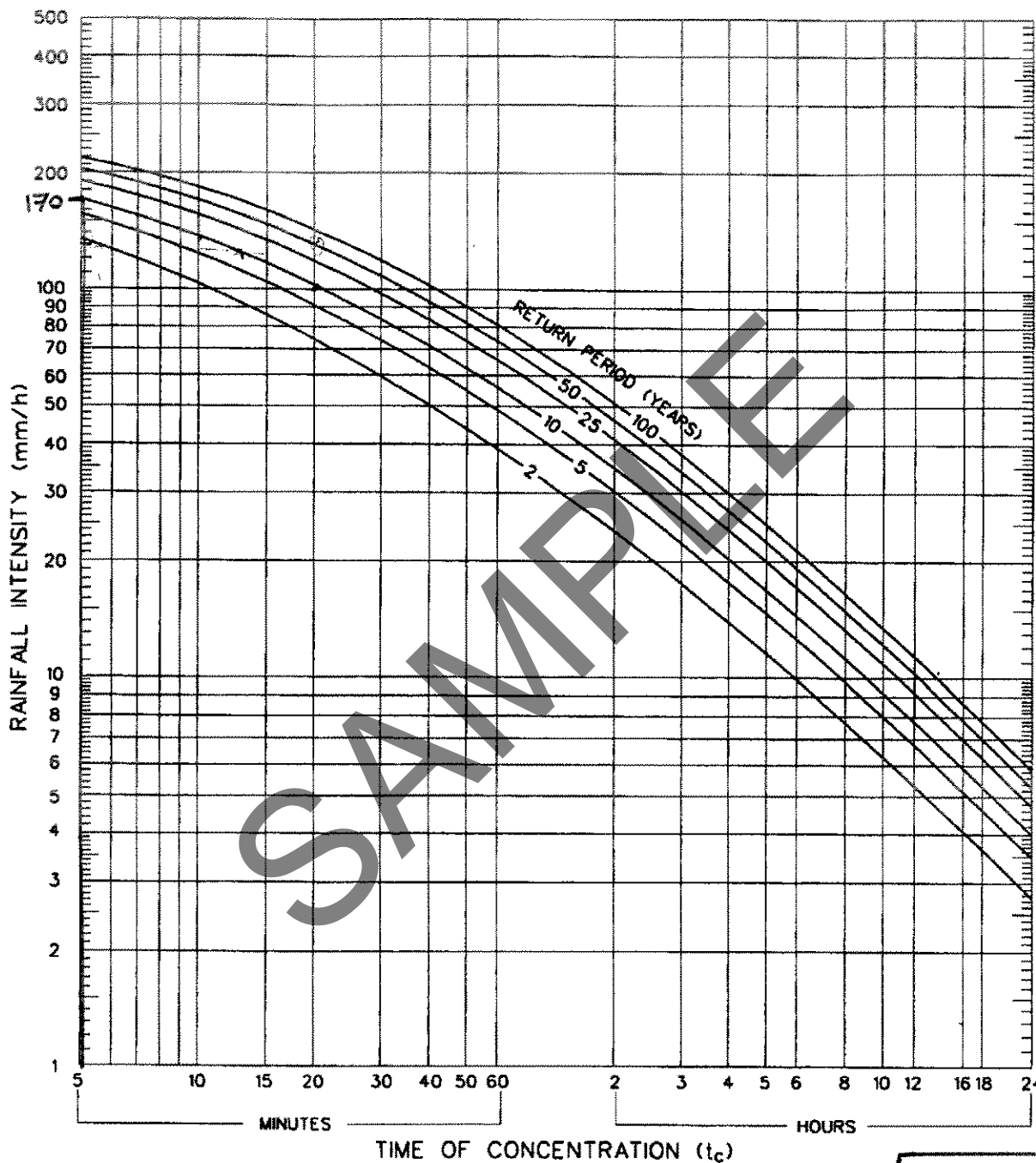
- We are providing you with the Ridge Road Vertical Curve Data for your convenience (See Attachment # 4).
- The storm sewer sizes were designed based upon the drainage area between the adjoining Crest Points and using the composite C value of the drainage area. The flow expected to be carried by the proposed sewers is shown in the Storm Drain Computation Table. (See Attachment # 5)
- The storm sewers and inlet sizing were checked for a hydraulic gradient for a 50-year storm to check that at least the inside lane and half the outside lane would be open at any time in both east and west directions, without any ponding. (See Attachment # 6 & 7)
- Inlet computation sheet showing the flow generated for a 10-year storm at each of the inlet and catch basins and the capacity of the inlet and catch basins to intercept the flow. (See Attachment #8)
- The Flow from the sewer will be pumped via a Pump Station to Little Calumet River The Pump station will be rated for a 50 cfs and will house 4 Storm water pumps each Capable of pumping a flow of 12.5cfs or 5,625 GPM.

Summary Design and Assumptions

29-8(20)

HYDROLOGY

August 1999



RAINFALL INTENSITY - DURATION - FREQUENCY CURVE
(Chicago, Illinois)

Figure 29-8M

10 YR FREQUENCY
 $i = 170 \frac{\text{mm}}{\text{hr}}$
 $\therefore i = 6.8 \frac{\text{inches}}{\text{hr}}$

Attachment 2

RUNOFF COEFFICIENT CALCULATION**1. TYPICAL LOT CALCULATION**

AREA OF TYPICAL LOT (100 X 125 FT)
 12,500 S.F.
 AREA OF TYPICAL HOME 1,500 S.F.
 THE TOTAL UNPAVED AREA IS 11,000 S.F.

RUNOFF COEFFICIENT "C" FOR UNPAVED AREAS = 0.2
 RUNOFF COEFFICIENT "C" FOR PAVED AREAS = 0.9

COMPOSITE RUNOFF "C" VALUE
 $(11,000 \times 0.2 + 1500 \times 0.9) / 12500$

C 0.284

2. TYPICAL PAVEMENT & LOT CALCULATION

AREA OF TYPICAL PAVEMENT 100 X 66 FT

RUNOFF COEFFICIENT "C" FOR TYPICAL LOT = 0.284
 RUNOFF COEFFICIENT "C" FOR PAVED AREAS = 0.9

COMPOSITE RUNOFF "C" VALUE

C 0.50

Runoff Coefficient calculation for composite "C" value for the flow for the drain structure located along the south curb line of Ridge Road.

C Value for the 125' strip of land south of Ridge Road ROW = 0.284

C Value for the 1/2 ROW for Ridge Road = 0.90

$$\text{Composite C} = \frac{33' \times 0.90 + 125' \times 0.284}{(125 + 33)}$$

= 0.41

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STORM DRAIN COMPUTATION SHEET (10YR)

Calc By: TMW Date: 8/5/2008
 Checked By: ASM Date: 8/6/2008

STATION		Manhole Str. No.	LENGTH (ft)	DRAINAGE AREA A (acres)		Runoff Coeff C	A X C		Length Str to Str	Flow Time (min)		Rainfall Intensity I (inch/hr)	Total Runoff CIA=Q (cfs)	Diameter Pipe (inch)	Do FT DIA	AREA OF PIPE	PER OF PIPE	Capacity Pipe (cfs)	Velocity (fps)		Invert Elev		Manhole Invert Drop	Slope of Drain (ft/ft)
FROM	TO			Increment	Total		Increment	Total		To Upper End	In Section								Flowing Full	Design Flow	Upper End	Lower End		
RIDGE ROAD FROM MISSISSIPPI STREET TO CONNECTICUT STREET																								
MH STA																								
64+00	63+00	218	100	0.138	0.14	0.5	0.07	0.07		5.000		6.69												
63+00	59+00	217	400	0.551	0.69	0.5	0.28	0.34	140.00	0.623	5.623	6.57	2.26	18	1.50	1.767	4.712	6.650	3.7	1.53	628.99	628.43	0.50	0.0040
59+00	56+15	216	285	0.393	0.94	0.5	0.20	0.47	260.00	1.349	6.971	6.22	2.93	24	2.00	3.142	6.283	10.137	3.2	1.14	627.93	627.41	0.50	0.0020
56+15	53+00	215	315	1.338	2.28	0.5	0.67	1.14	300.00	1.199	8.170	5.82	6.64	30	2.50	4.909	7.854	20.564	4.2	1.71	626.91	626.16	0.00	0.0025
53+00	52+00	214	100	0.425	2.71	0.5	0.21	1.35	300.00	1.547	9.717	5.59	7.56	30	2.50	4.909	7.854	15.929	3.2	1.92	626.16	625.71	0.50	0.0015
52+00	49+65	213	235	0.998	3.70	0.5	0.50	1.85	300.00	1.186	10.903	5.43	10.06	36	3.00	7.069	9.425	29.927	4.2	1.75	625.21	624.61	0.00	0.0020
49+65	47+00	212	265	1.125	4.83	0.5	0.56	2.41	300.00	1.186	12.089	5.31	12.82	36	3.00	7.069	9.425	29.927	4.2	2.23	624.61	624.01	1.06	0.0020
47+00	44+00	211	300	1.274	6.10	0.5	0.64	3.05	300.00	0.835	12.924	5.11	15.59	36	3.00	7.069	9.425	48.522	6.8	2.77	622.95	621.15	0.00	0.0053
44+00	39+40	210	460	1.954	8.06	0.5	0.98	4.03	342.37	0.489	13.413	4.88	19.66	36	3.00	7.069	9.425	72.590	10.2	3.60	621.15	617.62	0.00	0.0118
39+40	36+00	209	340	1.491	9.55	0.5	0.75	4.77	300.00	0.925	14.338	4.72	22.53	36	3.00	7.069	9.425	44.125	6.2	4.19	616.62	615.12	1.66	0.0043
36+00	32+80	208	320	1.403	10.95	0.5	0.70	5.48	345.00	1.073	15.411	4.44	24.31	42	3.50	9.621	10.996	47.268	4.9	3.40	613.46	612.77	0.00	0.0022
32+80	29+00	207	380	1.666	12.62	0.5	0.83	6.31	315.00	1.488	16.900	4.33	27.32	42	3.50	9.621	10.996	41.122	4.3	3.82	612.77	612.14	0.50	0.0017
29+00	26+10	206	290	1.272	13.89	0.5	0.64	6.94	380.00	1.026	17.925	4.21	29.24	42	3.50	9.621	10.996	53.385	5.5	4.08	611.64	610.69	0.00	0.0028
26+10	22+00	205	410	1.798	15.69	0.5	0.90	7.84	340.00	1.170	19.095	4.13	32.39	42	3.50	9.621	10.996	52.325	5.4	4.48	610.69	609.67	0.00	0.0027
22+00	18+00	204	400	1.754	17.44	0.5	0.88	8.72	380.00	0.837	19.932	3.98	34.71	42	3.50	9.621	10.996	63.895	6.6	4.78	609.67	608.34	0.00	0.0040
18+00	15+00	203	300	1.315	18.76	0.5	0.66	9.38	332.29	0.823	20.755	3.94	36.95	42	3.50	9.621	10.996	63.875	6.6	4.98	608.34	607.01	0.00	0.0040
RIDGE ROAD FROM BROADWAY TO CONNECTICUT STREET																								
MH STA																								
9+40	10+00	200	60	0.263	0.26	0.5	0.13	0.13	250.00	5.000		6.69	0.88	36	3.00	7.069	9.425	21.162	3.0	0.15	612.09	611.84	0.00	0.0010
10+00	13+00	201	300	1.315	1.58	0.5	0.66	0.79	200.00	1.118	6.118	6.49	5.12	36	3.00	7.069	9.425	21.162	3.0	0.87	611.84	611.64	0.00	0.0010
13+00	15+00	202	200	0.877	2.46	0.5	0.44	1.23	267.73	1.497	7.615	6.10	7.49	36	3.00	7.069	9.425	21.162	3.0	1.29	611.64	611.37	0.00	0.0010
		203								1.490	8.990										607.01		4.36	
CONNECTICUT STREET FROM RIDGE ROAD TO PUMP STATION																								
MH STA																								
10+00	13+40	203		0.000	0.00	0.5	0.00	0.00	323.38				44.44	48	4.00	12.566	12.566	123.757	9.8	0.00	607.01	604.63	0.00	0.0074
13+40	17+00	219		0.000	0.00	0.5	0.00	0.00	360.00				44.44	48	4.00	12.566	12.566	136.007	10.8	0.00	604.63	601.43	0.00	0.0089
17+00	20+80	220		0.000	0.00	0.5	0.00	0.00	380.00				44.44	48	4.00	12.566	12.566	136.052	10.8	0.00	601.43	598.05	0.00	0.0089
20+80	24+40	221		0.000	0.00	0.5	0.00	0.00	360.00				44.44	48	4.00	12.566	12.566	82.939	6.6	0.00	591.69	590.50	6.36	0.0033
24+40	27+60	222		0.000	0.00	0.5	0.00	0.00	320.00				44.44	48	4.00	12.566	12.566	82.634	6.5	0.00	590.50	589.45	0.00	0.0033
27+60	31+20	223		0.000	0.00	0.5	0.00	0.00	360.00				44.44	48	4.00	12.566	12.566	102.005	8.1	0.00	588.00	586.20	1.45	0.0050
31+20	34+80	224		0.000	0.00	0.5	0.00	0.00	360.00				44.44	48	4.00	12.566	12.566	102.005	8.1	0.00	586.20	584.40	0.00	0.0050
34+80	38+40	225		0.000	0.00	0.5	0.00	0.00	360.00				44.44	48	4.00	12.566	12.566	102.005	8.1	0.00	584.40	582.60	0.00	0.0050
38+40	40+40	226		0.000	0.00	0.5	0.00	0.00	200.00				44.44	48	4.00	12.566	12.566	102.005	8.1	0.00	582.60	581.60	0.00	0.0050
40+40	41+75	227		0.000	0.00	0.5	0.00	0.00	144.75				44.44	48	4.00	12.566	12.566	101.741	8.1	0.00	579.75	579.03	1.85	0.0050

NOTES:

- 1) The Calculations are based on 10 Yr Storm Frequency (Q10)

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STORM DRAIN COMPUTATION SHEET (50YR)

Calc By: TMW Date: 8/5/2008
 Checked By: ASM Date: 8/6/2008

STATION		Manhole Str. No.	LENGTH (ft)	DRAINAGE AREA A (acres)		Runoff Coeff C	A X C		Length Str to Str	Flow Time (min)		Rainfall Intensity I (inch/hr)	Total Runoff CIA=Q (cfs)	Diameter Pipe (inch)	Do FT DIA	AREA OF PIPE	PER OF PIPE	Capacity Pipe (cfs)	Velocity (fps)		Invert Elev		Manhole Invert Drop	Slope of Drain (ft/ft)
FROM	TO			Increment	Total		Increment	Total		To Upper End	In Section								Flowing Full	Design Flow	Upper End	Lower End		
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63+00	59+00	217	400	0.551	0.69	0.5	0.28	0.34	140.00	0.623	5.623	7.87	2.71	18	1.50	1.767	4.712	6.650	3.7	1.53	628.99	628.43	0.50	0.0040
59+00	56+15	216	285	0.393	0.94	0.5	0.20	0.47	260.00	1.349	6.971	7.56	3.57	24	2.00	3.142	6.283	10.137	3.2	1.14	627.93	627.41	0.50	0.0020
56+15	53+00	215	315	1.338	2.28	0.5	0.67	1.14	300.00	1.199	8.170	7.36	8.40	30	2.50	4.909	7.854	20.564	4.2	1.71	626.91	626.16	0.00	0.0025
53+00	52+00	214	100	0.425	2.71	0.5	0.21	1.35	300.00	1.547	9.717	6.96	9.42	30	2.50	4.909	7.854	15.929	3.2	1.92	626.16	625.71	0.50	0.0015
52+00	49+65	213	235	0.998	3.70	0.5	0.50	1.85	300.00	1.186	10.903	6.69	12.39	36	3.00	7.069	9.425	29.927	4.2	1.75	625.21	624.61	0.00	0.0020
49+65	47+00	212	265	1.125	4.83	0.5	0.56	2.41	300.00	1.186	12.089	6.53	15.77	36	3.00	7.069	9.425	29.927	4.2	2.23	624.61	624.01	1.06	0.0020
47+00	44+00	211	300	1.274	6.10	0.5	0.64	3.05	300.00	0.835	12.924	6.42	19.59	36	3.00	7.069	9.425	48.522	6.8	2.77	622.95	621.15	0.00	0.0053
44+00	39+40	210	460	1.954	8.06	0.5	0.98	4.03	342.37	0.489	13.413	6.32	25.46	36	3.00	7.069	9.425	72.590	10.2	3.60	621.15	617.62	0.00	0.0118
39+40	36+00	209	340	1.491	9.55	0.5	0.75	4.77	300.00	0.925	14.338	6.20	29.60	36	3.00	7.069	9.425	44.125	6.2	4.19	616.62	615.12	1.66	0.0043
36+00	32+80	208	320	1.403	10.95	0.5	0.70	5.48	345.00	1.073	15.411	5.98	32.74	42	3.50	9.621	10.996	47.268	4.9	3.40	613.46	612.77	0.00	0.0022
32+80	29+00	207	380	1.666	12.62	0.5	0.83	6.31	315.00	1.488	16.900	5.83	36.78	42	3.50	9.621	10.996	41.122	4.3	3.82	612.77	612.14	0.50	0.0017
29+00	26+10	206	290	1.272	13.89	0.5	0.64	6.94	380.00	1.026	17.925	5.65	39.24	42	3.50	9.621	10.996	53.385	5.5	4.08	611.64	610.69	0.00	0.0028
26+10	22+00	205	410	1.798	15.69	0.5	0.90	7.84	340.00	1.170	19.095	5.50	43.14	42	3.50	9.621	10.996	52.325	5.4	4.48	610.69	609.67	0.00	0.0027
22+00	18+00	204	400	1.754	17.44	0.5	0.88	8.72	380.00	0.837	19.932	5.27	45.96	42	3.50	9.621	10.996	63.895	6.6	4.78	609.67	608.34	0.00	0.0040
18+00	15+00	203	300	1.315	18.76	0.5	0.66	9.38	332.29	0.823	20.755	5.11	47.92	42	3.50	9.621	10.996	63.875	6.6	4.98	608.34	607.01	0.00	0.0040
RIDGE ROAD FROM BROADWAY TO CONNECTICUT STREET																								
MH STA																								
9+40	10+00	200	60	0.263	0.26	0.5	0.13	0.13	250.00	5.000		7.99	1.05	36	3.00	7.069	9.425	21.162	3.0	0.15	612.09	611.84	0.00	0.0010
10+00	13+00	201	300	1.315	1.58	0.5	0.66	0.79	200.00	1.118	6.118	7.75	6.12	36	3.00	7.069	9.425	21.162	3.0	0.87	611.84	611.64	0.00	0.0010
13+00	15+00	202	200	0.877	2.46	0.5	0.44	1.23	267.73	1.497	7.615	7.44	9.13	36	3.00	7.069	9.425	21.162	3.0	1.29	611.64	611.37	0.00	0.0010
		203								1.490	8.990										607.01		4.36	
CONNECTICUT STREET FROM RIDGE ROAD TO PUMP STATION																								
MH STA																								
10+00	13+40	203		0.000	0.00	0.5	0.00	0.00	323.38				57.06	48	4.00	12.566	12.566	123.757	9.8	0.00	607.01	604.63	0.00	0.0074
13+40	17+00	219		0.000	0.00	0.5	0.00	0.00	360.00				57.06	48	4.00	12.566	12.566	136.007	10.8	0.00	604.63	601.43	0.00	0.0089
17+00	20+80	220		0.000	0.00	0.5	0.00	0.00	380.00				57.06	48	4.00	12.566	12.566	136.052	10.8	0.00	601.43	598.05	0.00	0.0089
20+80	24+40	221		0.000	0.00	0.5	0.00	0.00	360.00				57.06	48	4.00	12.566	12.566	82.939	6.6	0.00	591.69	590.50	6.36	0.0033
24+40	27+60	222		0.000	0.00	0.5	0.00	0.00	320.00				57.06	48	4.00	12.566	12.566	82.634	6.5	0.00	590.50	589.45	0.00	0.0033
27+60	31+20	223		0.000	0.00	0.5	0.00	0.00	360.00				57.06	48	4.00	12.566	12.566	102.005	8.1	0.00	588.00	586.20	1.45	0.0050
31+20	34+80	224		0.000	0.00	0.5	0.00	0.00	360.00				57.06	48	4.00	12.566	12.566	102.005	8.1	0.00	586.20	584.40	0.00	0.0050
34+80	38+40	225		0.000	0.00	0.5	0.00	0.00	360.00				57.06	48	4.00	12.566	12.566	102.005	8.1	0.00	584.40	582.60	0.00	0.0050
38+40	40+40	226		0.000	0.00	0.5	0.00	0.00	200.00				57.06	48	4.00	12.566	12.566	102.005	8.1	0.00	582.60	581.60	0.00	0.0050
40+40	41+75	227		0.000	0.00	0.5	0.00	0.00	144.75				57.06	48	4.00	12.566	12.566	101.741	8.1	0.00	579.75	579.03	1.85	0.0050

NOTES:

- 1) The Calculations are based on 50 Yr Storm Frequency (Q50)

North-West Engineering, Co. Inc.
 100 W. 4th Ave., 2nd Floor
 Gary, IN 46402

HYDRAULIC GRADE LINE COMPUTATION FORM (50YR)

Calc By: TMW Date: 8/5/2008
 Checked By: ASM Date: 8/6/2008

Route: East Ridge Road Imp Project from Broadway to Mississippi Street, Des no: 0600750, STP N-763()

Section: Multi Lane Road, Arterial

County: Lake Co.

LINE	Station	TW	Do	Do	AREA	PER	Qo	Lo	Vo	Vo^2/2g	S	Ho	Sfo	(Sfo)^0.5	Hf	Ko	CD	Cd	CQ	CP	CB	K	K(Vo^2/2g)	EGLo	EGLi	HGL	RIM	
	(1)	(2)	(3)	DIA	PIPE	PIPE	(4)	(5)	(6)	(7)	Slope	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	10+18+19	20-7	(21)	(22)	
CONNECTICUT STREET CALCULATIONS FROM 33RD AVENUE TO RIDGE ROAD																												
B	40+40.00	586.60	48	4.00	12.566	12.566	57.06	200.00	4.54	0.3201	0.0050	0.00000	0.00348	0.05902	0.70	0.16	1.0	1.00	1.00	1.00	1.00	0.16	0.05	586.92	587.67	587.35	594.10	
	38+40.00	588.40	48	4.00	12.566	12.566	57.06	360.00	4.54	0.3201	0.0050	0.00000	0.00348	0.05902	1.25	0.16	1.0	1.00	1.00	1.00	1.00	0.16	0.05	588.72	590.03	589.71	595.51	
	34+80.00	590.20	48	4.00	12.566	12.566	57.06	360.00	4.54	0.3201	0.0050	0.00000	0.00348	0.05902	1.25	0.16	1.0	1.00	1.00	1.00	1.00	0.16	0.05	590.52	591.83	591.51	597.41	
	31+20.00	592.00	48	4.00	12.566	12.566	57.06	360.00	4.54	0.3201	0.0050	0.00000	0.00348	0.05902	1.25	0.16	1.0	1.00	1.00	1.00	1.00	0.16	0.05	592.32	593.63	593.31	599.52	
	27+60.00	594.50	48	4.00	12.566	12.566	57.06	320.00	4.54	0.3201	0.0050	0.00000	0.00348	0.05902	1.11	0.16	1.0	1.00	1.00	1.00	1.00	0.16	0.05	594.82	595.99	595.67	600.94	
	24+40.00	595.69	48	4.00	12.566	12.566	57.06	360.00	4.54	0.3201	0.0033	0.00000	0.00348	0.05902	1.25	0.16	1.0	1.00	1.00	1.00	1.00	0.16	0.05	596.01	597.32	597.00	603.00	
	20+80.00	605.43	48	4.00	12.566	12.566	57.06	380.00	4.54	0.3201	0.0033	0.00000	0.00348	0.05902	1.32	0.16	1.0	1.00	1.00	0.80	1.00	0.13	0.04	605.75	607.12	606.80	610.83	
	17+00.00	608.63	48	4.00	12.566	12.566	57.06	360.00	4.54	0.3201	0.0089	0.00000	0.00348	0.05902	1.25	0.16	1.0	1.00	1.00	1.00	1.00	0.16	0.05	608.95	610.26	609.94	614.83	
	13+40.00	611.01	48	4.00	12.566	12.566	57.06	340.00	4.54	0.3201	0.0089	0.00000	0.00348	0.05902	1.18	0.16	1.0	1.00	1.00	1.00	1.00	0.16	0.05	611.33	612.57	612.25	619.47	
	10+00.00	614.37	48	4.00	12.566	12.566	57.06		4.54	0.3201	0.0074	0.48990	0.00348	0.05902	0.00	1.36	1.5	1.00	1.00	1.00	1.00	2.04	0.65	614.69	615.34	615.02	625.83	
RIDGE ROAD CALCULATIONS FROM MISSISSIPPI STREET TO CONNECTICUT STREET																												
A	16+67.73	611.84	42	3.50	9.6212	10.996	57.06	332.29	5.93	0.5461	0.0040	0.22598	0.00711	0.08431	2.36	0.19	1.0	1.00	1.00	1.00	1.00	0.19	0.10	612.39	614.85	614.30	626.02	
	20+00.00	613.17	42	3.50	9.6212	10.996	47.92	380.00	4.98	0.3852	0.0035	-0.16085	0.00501	0.07081	1.91	0.19	1.0	1.00	1.25	1.00	1.00	0.23	0.09	613.56	615.55	615.17	625.86	
	23+80.00	614.19	42	3.50	9.6212	10.996	45.96	340.00	4.78	0.3543	0.0030	-0.03096	0.00461	0.06791	1.57	0.19	1.0	1.00	1.09	1.00	1.00	0.20	0.07	614.54	616.18	615.83	625.72	
	27+20.00	615.64	42	3.50	9.6212	10.996	43.14	380.00	4.48	0.3122	0.0025	-0.04211	0.00406	0.06374	1.54	0.19	1.0	1.00	1.12	1.00	1.00	0.21	0.07	615.95	617.56	617.25	626.05	
	31+00.00	616.27	42	3.50	9.6212	10.996	39.24	315.00	4.08	0.2582	0.0020	-0.05392	0.00336	0.05798	1.06	0.19	1.0	1.00	1.16	1.00	1.00	0.22	0.06	616.53	617.64	617.38	626.04	
	34+15.00	618.62	42	3.50	9.6212	10.996	36.78	345.00	3.82	0.2269	0.0020	-0.03133	0.00295	0.05435	1.02	0.19	1.0	1.00	1.13	1.00	1.00	0.21	0.05	618.85	619.91	619.69	625.96	
	37+60.00	621.12	42	3.50	9.6212	10.996	32.74	300.00	3.40	0.1799	0.0050	-0.04707	0.00234	0.04838	0.70	0.19	1.0	1.00	1.19	1.00	1.00	0.22	0.04	621.30	622.04	621.86	626.19	
	40+60.00	622.62	36	3.00	7.0686	9.4248	29.60	342.37	4.19	0.2723	0.0103	0.09242	0.00436	0.06601	1.49	0.16	1.6	1.00	1.17	1.00	1.00	0.29	0.08	622.89	624.46	624.19	626.36	
	44+00.00	626.15	36	3.00	7.0686	9.4248	25.46	300.00	3.60	0.2015	0.0060	-0.07081	0.00322	0.05678	0.97	0.45	1.0	1.00	1.13	1.00	1.00	0.51	0.10	626.35	627.42	627.22	629.82	
	47+00.00	627.61	36	3.00	7.0686	9.4248	19.59	300.00	2.77	0.1193	0.0020	-0.08217	0.00191	0.04369	0.57	0.16	1.0	1.00	1.33	1.00	1.00	0.21	0.03	627.73	628.33	628.21	633.75	
	50+00.00	628.71	36	3.00	7.0686	9.4248	15.77	300.00	2.23	0.0773	0.0020	-0.04203	0.00124	0.03516	0.37	0.16	1.0	1.00	1.29	1.00	1.00	0.20	0.02	628.79	629.17	629.10	637.71	
	53+00.00	629.16	36	3.00	7.0686	9.4248	12.39	300.00	1.75	0.0477	0.0015	-0.02956	0.00076	0.02763	0.23	0.16	1.0	1.00	1.31	1.00	1.00	0.21	0.01	629.21	629.45	629.40	639.92	
	56+00.00	629.91	30	2.50	4.9088	7.854	9.42	300.00	1.92	0.0571	0.0025	0.00944	0.00117	0.03417	0.35	0.19	1.7	1.00	1.34	1.00	1.00	0.44	0.03	629.97	630.34	630.29	638.63	
	59+00.00	630.93	30	2.50	4.9088	7.854	8.40	260.00	1.71	0.0454	0.0020	-0.01173	0.00093	0.03046	0.24	0.19	1.0	1.00	1.19	1.00	1.00	0.23	0.01	630.98	631.23	631.18	637.34	
	61+60.00	630.99	24	2.00	3.1416	6.2832	3.57	140.00	1.14	0.0200	0.0040	-0.02541	0.00055	0.02348	0.08	0.20	2.0	1.00	1.66	1.00	1.00	0.65	0.01	631.01	631.10	631.08	636.33	
	63+00.00	630.49	18	1.50	1.7672	4.7124	2.71		1.53	0.0365		0.01651	0.00148	0.03846	0.00	0.27	2.4	1.00	1.34	1.00	1.00	0.85	0.03	630.53	630.56	630.52	636.53	
RIDGE ROAD CALCULATIONS FROM BROADWAY TO CONNECTICUT STREET																												
A	16+67.73	614.64	36	3.00	7.0686	9.4248	9.13	267.73	1.29	0.0259	0.0010	-0.29418	0.00041	0.02037	0.11	0.16	2.4	1.00	1.88	0.90	1.00	0.63	0.02	614.67	614.79	614.77	626.02	
	14+00.00	614.84	36	3.00	7.0686	9.4248	6.12	200.00	0.87	0.0116	0.0010	-0.01430	0.00019	0.01364	0.04	0.16	1.0	1.00	1.44	1.00	1.00	0.23	0.00	614.85	614.89	614.88	626.06	
	12+00.00	615.09	36	3.00	7.0686	9.4248	1.05	250.00	0.15	0.0003	0.0010	-0.01128	0.00001	0.00234	0.00	0.16	1.0	1.00	1.87	1.00	1.00	0.30	0.00	615.09	615.09	615.09	625.67	
	9+50.00	615.09	36	3.00	7.0686	9.4248	1.05		0.15	0.0003		0.00000	0.00001	0.00234	0.00	0.16	1.0	1.00	1.00	1.00	1.00	0.16	0.00	615.09	615.09	615.09	626.05	

NOTES:

- 1) The Calculations are based on 50 Yr Storm Frequency (Q50)
- 2) No benching therefore: CB = 1.00

North-West Engineering, Co. Inc.
100 W. 4th Ave., 2nd Floor
Gary, IN 46402

INLET COMPUTATION SHEET

CALCULATIONS FROM BROADWAY STREET TO MISSISSIPPI ST

Calc By: TMW Date: 8/5/2008
Checked By: ASM Date: 8/6/2008

LOCATION			GUTTER DISCHARGE DESIGN FREQUENCY 10					GUTTER DISCHARGE ALLOWABLE SPREAD								INLET DISCHARGE			REMARKS
INLET NO	STATION	LENGTH	DRAIN AREA "A" (acres)	RUNOFF COEFF "C"	TIME OF CONCENTRATION "Tc" (min)	Rain Intensity "I" (in/hr)	Q=CIA (cfs)	GRADE "So" (ft/ft)	CROSS SLOPE "Sx" (ft/ft)	PREV. RUNBY (cfs)	TOTAL GUTTER FLOW (cfs)	DEPTH "d" T/W (ft)	GUTTER WIDTH "W" (ft)	SPREAD "T" (ft)	W/T	INLET TYPE	INTERCEPT "Qi" (cfs)	RUNBY "Qr" (cfs)	
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
NORTHSIDE 2 Lanes	Line "A"																		
STR. NO. 401	9+32.00		0.05	0.90	5.0	6.8	0.315	0.0071	0.02	0.00	0.315	0.092	1.875	4.62	0.406	B-15 IN(MOD.)	2.2525	0.00	
STR. NO. 402	9+40.00	68.00														K-15 CB(MOD.)	2.2525	-4.19	SLOPE
STR. NO. 405	11+81.00	200.00	0.15	0.90	5.0	6.8	0.927	0.0100	0.02	0.00	0.927	0.130	1.875	6.48	0.289	B-15 IN(MOD.)	2.2525	-1.33	
STR. NO. 406	11+89.00	100.00	0.08	0.90	5.0	6.8	0.464	0.0045	0.02	0.00	0.464	0.116	1.875	5.81	0.323	K-15 CB(MOD.)	2.2525	-1.79	SAG
STR. NO. 409	13+82.00	82.00	0.06	0.90	5.0	6.8	0.380	0.0030	0.02	0.00	0.380	0.116	1.875	5.82	0.322	B-15 IN(MOD.)	2.2525	-1.87	
STR. NO. 410	13+90.00	118.00	0.09	0.90	5.0	6.8	0.547	0.0044	0.02	0.00	0.547	0.124	1.875	6.20	0.302	K-15 CB(MOD.)	2.2525	-1.71	SAG
STR. NO. 413A	16+00.00	100.00	0.08	0.90	5.0	6.8	0.464	0.0030	0.02	0.00	0.464	0.125	1.875	6.26	0.299	K-15 CB(MOD.)	2.2525	-1.79	SLOPE
STR. NO. 413	16+57.71	65.00	0.05	0.90	5.0	6.8	0.301	0.0030	0.02	0.00	0.301	0.107	1.875	5.33	0.352	B-15 IN(MOD.)	2.2525	-1.95	
STR. NO. 414	16+85.67	135.00	0.10	0.90	5.0	6.8	0.626	0.0039	0.02	0.00	0.626	0.133	1.875	6.67	0.281	K-15 CB(MOD.)	2.2525	-1.63	SAG
STR. NO. 417A	19+40.00	140.00	0.11	0.90	5.0	6.8	0.649	0.0035	0.02	0.00	0.649	0.138	1.875	6.90	0.272	K-15 CB(MOD.)	2.2525	-1.60	SLOPE
STR. NO. 417	19+88.07	58.00	0.04	0.90	5.0	6.8	0.269	0.0035	0.02	0.00	0.269	0.099	1.875	4.96	0.378	B-15 IN(MOD.)	2.2525	-1.98	
STR. NO. 418	20+17.94	57.00	0.04	0.90	5.0	6.8	0.264	0.0040	0.02	0.00	0.264	0.096	1.875	4.81	0.390	K-15 CB(MOD.)	2.2525	-1.99	SAG
STR. NO. 418A	20+55.00	145.00	0.11	0.90	5.0	6.8	0.672	0.0040	0.02	0.00	0.672	0.136	1.875	6.82	0.275	K-15 CB(MOD.)	2.2525	-1.58	SLOPE
STR. NO. 421	23+87.00	187.00	0.14	0.90	5.0	6.8	0.867	0.0050	0.02	0.00	0.867	0.144	1.875	7.20	0.261	B-15 IN(MOD.)	2.2525	-1.39	
STR. NO. 422	24+00.00	173.00	0.13	0.90	5.0	6.8	0.802	0.0050	0.02	0.00	0.802	0.140	1.875	6.99	0.268	K-15 CB(MOD.)	2.2525	-1.45	SAG
STR. NO. 425	26+30.00	70.00	0.05	0.90	5.0	6.8	0.325	0.0030	0.02	0.00	0.325	0.110	2.875	5.48	0.524	K-15 CB(MOD.)	2.2525	-1.93	SLOPE
STR. NO. 426	27+15.00	135.00	0.10	0.90	5.0	6.8	0.626	0.0030	0.02	0.00	0.626	0.140	1.875	7.01	0.268	K-15 CB(MOD.)	2.2525	-1.63	SAG
STR. NO. 426A	27+65.00	135.00	0.10	0.90	5.0	6.8	0.626	0.0030	0.02	0.00	0.626	0.140	2.875	7.01	0.410	B-15 IN(MOD.)	2.2525	-1.63	SLOPE
STR. NO. 429	30+50.00	150.00	0.11	0.90	5.0	6.8	0.695	0.0030	0.02	0.00	0.695	0.146	1.875	7.29	0.257	B-15 IN(MOD.)	2.2525	-1.56	SLOPE
STR. NO. 430	30+97.00	97.00	0.07	0.90	5.0	6.8	0.450	0.0034	0.02	0.00	0.450	0.121	1.875	6.05	0.310	K-15 CB(MOD.)	2.2525	-1.80	SAG
STR. NO. 430A	31+47.00	133.00	0.10	0.90	5.0	6.8	0.617	0.0034	0.02	0.00	0.617	0.136	2.875	6.81	0.422	B-15 IN(MOD.)	2.2525	-1.64	SLOPE
STR. NO. 433	34+15.00	165.00	0.13	0.90	5.0	6.8	0.765	0.0055	0.02	0.00	0.765	0.135	1.875	6.74	0.278	B-15 IN(MOD.)	2.2525	-1.49	SAG
STR. NO. 434	34+45.00	155.00	0.12	0.90	5.0	6.8	0.719	0.0040	0.02	0.00	0.719	0.140	1.875	6.99	0.268	K-15 CB(MOD.)	2.2525	-1.53	SLOPE
STR. NO. 437	37+25.00	125.00	0.09	0.90	5.0	6.8	0.580	0.0032	0.02	0.00	0.580	0.135	1.875	6.73	0.279	B-15 IN(MOD.)	2.2525	-1.67	
STR. NO. 438	37+50.00	85.00	0.06	0.90	5.0	6.8	0.394	0.0030	0.02	0.00	0.394	0.118	1.875	5.89	0.318	K-15 CB(MOD.)	2.2525	-1.86	SAG
STR. NO. 438A	38+10.00	130.00	0.10	0.90	5.0	6.8	0.603	0.0030	0.02	0.00	0.603	0.138	1.875	6.91	0.271	K-15 CB(MOD.)	2.2525	-1.65	SLOPE
STR. NO. 441	40+30.00	103.00	0.08	0.90	5.0	6.8	0.478	0.0050	0.02	0.00	0.478	0.115	1.875	5.76	0.326	B-15 IN(MOD.)	2.2525	-1.77	
STR. NO. 442	40+34.00	349.00	0.19	0.90	5.0	6.8	1.152	0.0109	0.02	0.00	1.152	0.138	1.875	6.92	0.271	K-15 CB(MOD.)	2.2525	-1.10	SAG
STR. NO. 445	43+92.00		0.21	0.90	5.0	6.8	1.298	0.0132	0.02	0.00	1.298	0.140	1.875	6.98	0.269	B-15 IN(MOD.)	2.2525	0.00	
STR. NO. 446	44+00.00	308.00														K-15 CB(MOD.)	2.2525	-3.21	SLOPE
STR. NO. 449	47+00.00	50.00	0.03	0.90	5.0	6.8	0.211	0.0132	0.02	0.00	0.211	0.071	1.875	3.54	0.530	K-15 CB(MOD.)	2.2525	-2.04	
STR. NO. 450	47+50.00	292.00	0.20	0.90	5.0	6.8	1.231	0.0132	0.02	0.00	1.231	0.137	1.875	6.84	0.274	B-15 IN(MOD.)	2.2525	-1.02	SLOPE
STR. NO. 455	50+42.00		0.11	0.90	5.0	6.8	0.666	0.0132	0.02	0.00	0.666	0.109	1.875	5.44	0.345	K-15 CB(MOD.)	2.2525	0.00	
STR. NO. 456	50+50.00	158.00														B-15 IN(MOD.)	2.2525	-3.84	SLOPE
STR. NO. 457	53+00.00	100.00	0.07	0.90	5.0	6.8	0.421	0.0043	0.02	0.00	0.421	0.113	1.875	5.65	0.332	K-15 CB(MOD.)	2.2525	0.00	
STR. NO. 458	53+75.00	75.00	0.05	0.90	5.0	6.8	0.316	0.0043	0.02	0.00	0.316	0.101	1.875	5.07	0.369	B-15 IN(MOD.)	2.2525	-4.08	SLOPE
STR. NO. 462	55+50.00	175.00	0.12	0.90	5.0	6.8	0.738	0.0043	0.02	0.00	0.738	0.139	1.875	6.97	0.269	B-15 IN(MOD.)	2.2525	-1.51	
STR. NO. 463	56+00.00	50.00	0.03	0.90	5.0	6.8	0.211	0.0043	0.02	0.00	0.211	0.087	1.875	4.36	0.430	K-15 CB(MOD.)	2.2525	-2.04	SLOPE
STR. NO. 463A	56+30.00	30.00	0.02	0.90	5.0	6.8	0.126	0.0043	0.02	0.00	0.126	0.072	1.875	3.60	0.520	B-15 IN(MOD.)	2.2525	-2.13	SLOPE

North-West Engineering, Co. Inc.
100 W. 4th Ave., 2nd Floor
Gary, IN 46402

INLET COMPUTATION SHEET

CALCULATIONS FROM BROADWAY STREET TO MISSISSIPPI ST

Calc By: TMW Date: 8/5/2008
Checked By: ASM Date: 8/6/2008

LOCATION			GUTTER DISCHARGE DESIGN FREQUENCY 10					GUTTER DISCHARGE ALLOWABLE SPREAD								INLET DISCHARGE			REMARKS
INLET NO	STATION	LENGTH	DRAIN AREA "A" (acres)	RUNOFF COEFF "C"	TIME OF CONCENTRATION "Tc" (min)	Rain Intensity "I" (in/hr)	Q=CIA (cfs)	GRADE "So" (ft/ft)	CROSS SLOPE "Sx" (ft/ft)	PREV. RUNBY (cfs)	TOTAL GUTTER FLOW (cfs)	DEPTH "d" T/W (ft)	GUTTER WIDTH "W" (ft)	SPREAD "T" (ft)	W/T	INLET TYPE	INTERCEPT "QI" (cfs)	RUNBY "QR" (cfs)	
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
STR. NO. 465	58+07.00	177.00	0.12	0.90	5.0	6.8	0.746	0.0043	0.02	0.00	0.746	0.140	1.875	7.00	0.268	B-15 IN(MOD.)	2.2525	-1.51	
STR. NO. 466	59+00.00	93.00	0.06	0.90	5.0	6.8	0.392	0.0043	0.02	0.00	0.392	0.110	1.875	5.50	0.341	K-15 CB(MOD.)	2.2525	-1.86	SLOPE
STR. NO. 466A	59+45.00	45.00	0.03	0.90	5.0	6.8	0.190	0.0043	0.02	0.00	0.190	0.084	1.875	4.19	0.447	B-15 IN(MOD.)	2.2525	-2.06	SLOPE
STR. NO. 469A	60+70.00	125.00	0.09	0.90	5.0	6.8	0.527	0.0043	0.02	0.00	0.527	0.123	1.875	6.14	0.305	B-15 IN(MOD.)	2.2525	-1.73	SLOPE
STR. NO. 469	61+35.00	65.00	0.04	0.90	5.0	6.8	0.274	0.0043	0.02	0.00	0.274	0.096	1.875	4.81	0.390	B-15 IN(MOD.)	2.2525	-1.98	SLOPE
STR. NO. 470	61+68.00	115.00	0.08	0.90	5.0	6.8	0.485	0.0022	0.02	0.00	0.485	0.135	1.875	6.75	0.278	K-15 CB(MOD.)	2.2525	-1.77	SAG
STR. NO. 473	62+50.00	50.00	0.03	0.90	5.0	6.8	0.211	0.0022	0.02	0.00	0.211	0.099	1.875	4.94	0.379	B-15 IN(MOD.)	2.2525	-2.04	SLOPE
STR. NO. 474	63+00.00	100.00	0.07	0.90	5.0	6.8	0.421	0.0022	0.02	0.00	0.421	0.128	1.875	6.41	0.293	K-15 CB(MOD.)	2.2525	-1.83	SLOPE
SOUTHSIDE Line "A"																			
2 lanes																			
STR. NO. 403	9+32.00		0.05	0.90	5.0	6.8	0.315	0.0071	0.02	0.00	0.315	0.092	1.875	4.62	0.406	B-15 IN(MOD.)	2.2525	0.00	
STR. NO. 404	9+40.00	68.00														K-15 CB(MOD.)	2.2525	-4.19	SLOPE
STR. NO. 407	11+81.00	200.00	0.15	0.90	5.0	6.8	0.927	0.0100	0.02	0.00	0.927	0.130	1.875	6.48	0.289	B-15 IN(MOD.)	2.2525	-1.33	
STR. NO. 408	11+89.00	100.00	0.08	0.90	5.0	6.8	0.464	0.0045	0.02	0.00	0.464	0.116	1.875	5.81	0.323	K-15 CB(MOD.)	2.2525	-1.79	SAG
STR. NO. 411	13+82.00	82.00	0.30	0.41	5.0	6.8	0.829	0.0030	0.02	0.00	0.829	0.156	1.875	7.79	0.241	B-15 IN(MOD.)	2.2525	-1.42	
STR. NO. 412	13+90.00	68.00	0.25	0.41	5.0	6.8	0.688	0.0044	0.02	0.00	0.688	0.135	1.875	6.76	0.277	K-15 CB(MOD.)	2.2525	-1.56	SAG
STR. NO. 412A	14+50.00	50.00	0.18	0.41	5.0	6.8	0.506	0.0044	0.02	0.00	0.506	0.120	1.875	6.02	0.311	B-15 IN(MOD.)	2.2525	-1.75	SLOPE
STR. NO. 415A	15+60.00	60.00	0.22	0.41	5.0	6.8	0.607	0.0030	0.02	0.00	0.607	0.139	1.875	6.93	0.271	B-15 IN(MOD.)	2.2525	-1.65	SLOPE
STR. NO. 415	16+20.00	60.00	0.22	0.41	5.0	6.8	0.607	0.0030	0.02	0.00	0.607	0.139	1.875	6.93	0.271	B-15 IN(MOD.)	2.2525	-1.65	SLOPE
STR. NO. 416	16+39.37	65.00	0.24	0.41	5.0	6.8	0.657	0.0039	0.02	0.00	0.657	0.136	1.875	6.80	0.276	K-15 CB(MOD.)	2.2525	-1.60	SAG
STR. NO. 416A	16+85.00	55.00	0.20	0.41	5.0	6.8	0.556	0.0039	0.02	0.00	0.556	0.128	1.875	6.38	0.294	B-15 IN(MOD.)	2.2525	-1.70	SLOPE
STR. NO. 416B	17+40.00	60.00	0.22	0.41	5.0	6.8	0.607	0.0039	0.02	0.00	0.607	0.132	1.875	6.60	0.284	B-15 IN(MOD.)	2.2525	-1.65	SLOPE
STR. NO. 419A	18+55.00	55.00	0.20	0.41	5.0	6.8	0.556	0.0035	0.02	0.00	0.556	0.130	1.875	6.51	0.288	B-15 IN(MOD.)	2.2525	-1.70	SLOPE
STR. NO. 419B	19+25.00	70.00	0.25	0.41	5.0	6.8	0.708	0.0035	0.02	0.00	0.708	0.143	1.875	7.13	0.263	B-15 IN(MOD.)	2.2525	-1.54	SLOPE
STR. NO. 419	19+97.00	72.00	0.26	0.41	5.0	6.8	0.728	0.0035	0.02	0.00	0.728	0.144	1.875	7.21	0.260	B-15 IN(MOD.)	2.2525	-1.52	
STR. NO. 420	20+05.00	68.00	0.25	0.41	5.0	6.8	0.688	0.0040	0.02	0.00	0.688	0.138	1.875	6.88	0.273	K-15 CB(MOD.)	2.2525	-1.56	SAG
STR. NO. 420A	20+65.00	62.00	0.22	0.41	5.0	6.8	0.627	0.0040	0.02	0.00	0.627	0.133	1.875	6.65	0.282	B-15 IN(MOD.)	2.2525	-1.63	SLOPE
STR. NO. 420B	21+27.00	73.00	0.26	0.41	5.0	6.8	0.738	0.0040	0.02	0.00	0.738	0.141	1.875	7.06	0.265	B-15 IN(MOD.)	2.2525	-1.51	SLOPE
STR. NO. 423A	22+79.00	79.00	0.29	0.41	5.0	6.8	0.799	0.0050	0.02	0.00	0.799	0.140	1.875	6.98	0.269	B-15 IN(MOD.)	2.2525	-1.45	SLOPE
STR. NO. 423B	23+58.00	79.00	0.29	0.41	5.0	6.8	0.799	0.0050	0.02	0.00	0.799	0.140	1.875	6.98	0.269	B-15 IN(MOD.)	2.2525	-1.45	SLOPE
STR. NO. 423	24+00.00	50.00	0.18	0.41	5.0	6.8	0.506	0.0050	0.02	0.00	0.506	0.118	1.875	5.88	0.319	B-15 IN(MOD.)	2.2525	-1.75	
STR. NO. 424	24+08.00	73.00	0.26	0.41	5.0	6.8	0.738	0.0050	0.02	0.00	0.738	0.136	1.875	6.78	0.277	K-15 CB(MOD.)	2.2525	-1.51	SAG
STR. NO. 424A	24+81.00	79.00	0.29	0.41	5.0	6.8	0.799	0.0050	0.02	0.00	0.799	0.140	1.875	6.98	0.269	B-15 IN(MOD.)	2.2525	-1.45	SLOPE
STR. NO. 427A	26+20.00	60.00	0.22	0.41	5.0	6.8	0.607	0.0030	0.02	0.00	0.607	0.139	1.875	6.93	0.271	B-15 IN(MOD.)	2.2525	-1.65	SLOPE
STR. NO. 427B	26+60.00	40.00	0.15	0.41	5.0	6.8	0.405	0.0030	0.02	0.00	0.405	0.119	1.875	5.95	0.315	B-15 IN(MOD.)	2.2525	-1.85	SLOPE
STR. NO. 427	27+00.00	60.00	0.22	0.41	5.0	6.8	0.607	0.0030	0.02	0.00	0.607	0.139	1.875	6.93	0.271	K-15 CB(MOD.)	2.2525	-1.65	SAG
STR. NO. 428	27+20.00	60.00	0.22	0.41	5.0	6.8	0.607	0.0030	0.02	0.00	0.607	0.139	1.875	6.93	0.271	B-15 IN(MOD.)	2.2525	-1.65	SLOPE
STR. NO. 428A	27+80.00	60.00	0.22	0.41	5.0	6.8	0.607	0.0030	0.02	0.00	0.607	0.139	1.875	6.93	0.271	B-15 IN(MOD.)	2.2525	-1.65	SLOPE
STR. NO. 428B	28+40.00	60.00	0.22	0.41	5.0	6.8	0.607	0.0030	0.02	0.00	0.607	0.139	1.875	6.93	0.271	B-15 IN(MOD.)	2.2525	-1.65	SLOPE
STR. NO. 431A	29+50.00	50.00	0.18	0.41	5.0	6.8	0.506	0.0030	0.02	0.00	0.506	0.129	1.875	6.47	0.290	B-15 IN(MOD.)	2.2525	-1.75	SLOPE

North-West Engineering, Co. Inc.
100 W. 4th Ave., 2nd Floor
Gary, IN 46402

INLET COMPUTATION SHEET

CALCULATIONS FROM BROADWAY STREET TO MISSISSIPPI ST

Calc By: TMW Date: 8/5/2008
Checked By: ASM Date: 8/6/2008

LOCATION			GUTTER DISCHARGE DESIGN FREQUENCY 10					GUTTER DISCHARGE ALLOWABLE SPREAD								INLET DISCHARGE			REMARKS
INLET NO	STATION	LENGTH	DRAIN AREA "A" (acres)	RUNOFF COEFF "C"	TIME OF CONCENTRATION "Tc" (min)	Rain Intensity "I" (in/hr)	Q=CIA (cfs)	GRADE "So" (ft/ft)	CROSS SLOPE "Sx" (ft/ft)	PREV. RUNBY (cfs)	TOTAL GUTTER FLOW (cfs)	DEPTH "d" T/W (ft)	GUTTER WIDTH "W" (ft)	SPREAD "T" (ft)	W/T	INLET TYPE	INTERCEPT "Qi" (cfs)	RUNBY "Qr" (cfs)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	
STR. NO. 431B	30+30.00	80.00	0.29	0.41	5.0	6.8	0.809	0.0030	0.02	0.00	0.809	0.154	1.875	7.71	0.243	B-15 IN(MOD.)	2.2525	-1.44	SLOPE
STR. NO. 431	30+90.00	60.00	0.22	0.41	5.0	6.8	0.607	0.0030	0.02	0.00	0.607	0.139	1.875	6.93	0.271	B-15 IN(MOD.)	2.2525	-1.65	
STR. NO. 432	31+00.00	50.00	0.18	0.41	5.0	6.8	0.506	0.0034	0.02	0.00	0.506	0.126	1.875	6.32	0.297	K-15 CB(MOD.)	2.2525	-1.75	SAG
STR. NO. 432A	31+50.00	55.00	0.20	0.41	5.0	6.8	0.556	0.0034	0.02	0.00	0.556	0.131	1.875	6.55	0.286	B-15 IN(MOD.)	2.2525	-1.70	SLOPE
STR. NO. 432B	32+05.00	75.00	0.27	0.41	5.0	6.8	0.758	0.0034	0.02	0.00	0.758	0.147	1.875	7.36	0.255	B-15 IN(MOD.)	2.2525	-1.49	SLOPE
STR. NO. 435A	33+45.00	65.00	0.24	0.41	5.0	6.8	0.657	0.0055	0.02	0.00	0.657	0.127	1.875	6.37	0.294	B-15 IN(MOD.)	2.2525	-1.60	SLOPE
STR. NO. 435	34+15.00	78.00	0.28	0.41	5.0	6.8	0.789	0.0055	0.02	0.00	0.789	0.136	1.875	6.82	0.275	B-15 IN(MOD.)	2.2525	-1.46	
STR. NO. 436	34+23.00	50.14	0.18	0.41	5.0	6.8	0.507	0.0040	0.02	0.00	0.507	0.123	1.875	6.14	0.305	K-15 CB(MOD.)	2.2525	-1.75	SAG
STR. NO. 436A	34+73.14	56.86	0.21	0.41	5.0	6.8	0.575	0.0040	0.02	0.00	0.575	0.129	1.875	6.43	0.291	B-15 IN(MOD.)	2.2525	-1.68	SLOPE
STR. NO. 436B	35+30.00	70.00	0.25	0.41	5.0	6.8	0.708	0.0040	0.02	0.00	0.708	0.139	1.875	6.95	0.270	B-15 IN(MOD.)	2.2525	-1.54	SLOPE
STR. NO. 439A	36+22.00	22.00	0.08	0.41	5.0	6.8	0.222	0.0032	0.02	0.00	0.222	0.094	1.875	4.70	0.399	B-15 IN(MOD.)	2.2525	-2.03	SLOPE
STR. NO. 439B	37+05.00	83.00	0.30	0.41	5.0	6.8	0.839	0.0032	0.02	0.00	0.839	0.155	1.875	7.73	0.243	B-15 IN(MOD.)	2.2525	-1.41	SLOPE
STR. NO. 439	37+42.00	45.00	0.16	0.41	5.0	6.8	0.455	0.0032	0.02	0.00	0.455	0.123	1.875	6.15	0.305	B-15 IN(MOD.)	2.2525	-1.80	
STR. NO. 440	37+50.00	60.00	0.22	0.41	5.0	6.8	0.607	0.0030	0.02	0.00	0.607	0.139	1.875	6.93	0.271	K-15 CB(MOD.)	2.2525	-1.65	SAG
STR. NO. 440A	38+10.00	65.00	0.24	0.41	5.0	6.8	0.657	0.0030	0.02	0.00	0.657	0.143	1.875	7.14	0.263	B-15 IN(MOD.)	2.2525	-1.60	SLOPE
STR. NO. 440B	38+75.00	65.00	0.24	0.41	5.0	6.8	0.657	0.0030	0.02	0.00	0.657	0.143	1.875	7.14	0.263	B-15 IN(MOD.)	2.2525	-1.60	SLOPE
STR. NO. 443	40+15.00	75.00	0.27	0.41	5.0	6.8	0.758	0.0050	0.02	0.00	0.758	0.137	1.875	6.84	0.274	B-15 IN(MOD.)	2.2525	-1.49	SLOPE
STR. NO. 444	40+38.00	85.00	0.31	0.41	5.0	6.8	0.860	0.0109	0.02	0.00	0.860	0.124	1.875	6.20	0.302	K-15 CB(MOD.)	2.2525	-1.39	SAG
STR. NO. 444A	41+00.00	100.00	0.36	0.41	5.0	6.8	1.011	0.0109	0.02	0.00	1.011	0.132	1.875	6.59	0.285	B-15 IN(MOD.)	2.2525	-1.24	SLOPE
STR. NO. 444B	42+00.00	95.00	0.34	0.41	5.0	6.8	0.961	0.0109	0.02	0.00	0.961	0.129	1.875	6.46	0.290	B-15 IN(MOD.)	2.2525	-1.29	SLOPE
STR. NO. 444C	42+95.00	103.00	0.37	0.41	5.0	6.8	1.042	0.0109	0.02	0.00	1.042	0.133	1.875	6.66	0.281	B-15 IN(MOD.)	2.2525	-1.21	SLOPE
STR. NO. 447	43+98.00	87.00	0.32	0.41	5.0	6.8	0.880	0.0132	0.02	0.00	0.880	0.121	1.875	6.03	0.311	K-15 CB(MOD.)	2.2525	-1.37	SLOPE
STR. NO. 448	44+85.00	85.00	0.31	0.41	5.0	6.8	0.860	0.0132	0.02	0.00	0.860	0.120	1.875	5.98	0.313	B-15 IN(MOD.)	2.2525	-1.39	SLOPE
STR. NO. 448A	45+75.00	125.00	0.45	0.41	5.0	6.8	1.264	0.0132	0.02	0.00	1.264	0.138	1.875	6.91	0.271	B-15 IN(MOD.)	2.2525	-0.99	SLOPE
STR. NO. 451	47+00.00	129.00	0.47	0.41	5.0	6.8	1.305	0.0132	0.02	0.00	1.305	0.140	1.875	6.99	0.268	K-15 CB(MOD.)	2.2525	-0.95	SLOPE
STR. NO. 452	48+29.00	128.00	0.46	0.41	5.0	6.8	1.294	0.0132	0.02	0.00	1.294	0.139	1.875	6.97	0.269	B-15 IN(MOD.)	2.2525	-0.96	SLOPE
STR. NO. 453	49+65.00	114.00	0.41	0.41	5.0	6.8	1.153	0.0132	0.02	0.00	1.153	0.134	1.875	6.68	0.281	K-15 CB(MOD.)	2.2525	-1.10	
STR. NO. 454	50+71.00	129.00	0.47	0.41	5.0	6.8	1.305	0.0132	0.02	0.00	1.305	0.140	1.875	6.99	0.268	B-15 IN(MOD.)	2.2525	-0.95	SLOPE
STR. NO. 459	52+50.00	50.00	0.18	0.41	5.0	6.8	0.506	0.0043	0.02	0.00	0.506	0.121	1.875	6.05	0.310	B-15 IN(MOD.)	2.2525	-1.75	
STR. NO. 460	53+00.00	50.00	0.18	0.41	5.0	6.8	0.506	0.0043	0.02	0.00	0.506	0.121	1.875	6.05	0.310	K-15 CB(MOD.)	2.2525	-1.75	SLOPE
STR. NO. 461A	53+62.00	62.00	0.22	0.41	5.0	6.8	0.627	0.0043	0.02	0.00	0.627	0.131	1.875	6.56	0.286	B-15 IN(MOD.)	2.2525	-1.63	SLOPE
STR. NO. 461B	54+10.00	48.00	0.17	0.41	5.0	6.8	0.485	0.0043	0.02	0.00	0.485	0.119	1.875	5.96	0.315	B-15 IN(MOD.)	2.2525	-1.77	SLOPE
STR. NO. 461C	54+80.00	70.00	0.25	0.41	5.0	6.8	0.708	0.0043	0.02	0.00	0.708	0.137	1.875	6.86	0.273	B-15 IN(MOD.)	2.2525	-1.54	SLOPE
STR. NO. 461	55+45.00	65.00	0.24	0.41	5.0	6.8	0.657	0.0043	0.02	0.00	0.657	0.133	1.875	6.67	0.281	B-15 IN(MOD.)	2.2525	-1.60	
STR. NO. 464	56+15.00	70.00	0.25	0.41	5.0	6.8	0.708	0.0043	0.02	0.00	0.708	0.137	1.875	6.86	0.273	K-15 CB(MOD.)	2.2525	-1.54	SLOPE
STR. NO. 467	57+90.00	175.00	0.12	0.90	5.0	6.8	0.738	0.0043	0.02	0.00	0.738	0.139	1.875	6.97	0.269	B-15 IN(MOD.)	2.2525	-1.51	
STR. NO. 468	59+00.00	110.00	0.08	0.90	5.0	6.8	0.464	0.0043	0.02	0.00	0.464	0.117	1.875	5.86	0.320	K-15 CB(MOD.)	2.2525	-1.79	SLOPE
STR. NO. 471A	60+70.00	170.00	0.12	0.90	5.0	6.8	0.717	0.0043	0.02	0.00	0.717	0.138	1.875	6.89	0.272	B-15 IN(MOD.)	2.2525	-1.54	SLOPE
STR. NO. 471	61+69.00	107.00	0.07	0.90	5.0	6.8	0.451	0.0043	0.02	0.00	0.451	0.116	1.875	5.80	0.323	B-15 IN(MOD.)	2.2525	-1.80	
STR. NO. 472	61+77.00	123.00	0.08	0.90	5.0	6.8	0.518	0.0022	0.02	0.00	0.518	0.138	1.875	6.92	0.271	K-15 CB(MOD.)	2.2525	-1.73	SAG

North-West Engineering, Co. Inc.
 100 W. 4th Ave., 2nd Floor
 Gary, IN 46402

INLET COMPUTATION SHEET

CALCULATIONS FROM BROADWAY STREET TO MISSISSIPPI ST

Calc By: TMW Date: 8/5/2008
 Checked By: ASM Date: 8/6/2008

LOCATION			GUTTER DISCHARGE DESIGN FREQUENCY 10					GUTTER DISCHARGE ALLOWABLE SPREAD							INLET DISCHARGE			REMARKS	
INLET NO	STATION	LENGTH	DRAIN AREA "A" (acres)	RUNOFF COEFF "C"	TIME OF CONCENTRATION "Tc" (min)	Rain Intensity "I" (in/hr)	Q=CIA (cfs)	GRADE "So" (ft/ft)	CROSS SLOPE "Sx" (ft/ft)	PREV. RUNBY (cfs)	TOTAL GUTTER FLOW (cfs)	DEPTH "d" T/W (ft)	GUTTER WIDTH "W" (ft)	SPREAD "T" (ft)	W/T	INLET TYPE	INTERCEPT "QI" (cfs)	RUNBY "QR" (cfs)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	
STR. NO. 475	63+00.00	100.00	0.07	0.90	5.0	6.8	0.421	0.0022	0.02	0.00	0.421	0.128	1.875	6.41	0.293	K-15 CB(MOD.)	2.2525	-1.83	SLOPE

NOTE:

- 1) The properties on the south side of Ridge Road, from Station 13+30 to Station 56+15, are at a higher elevation than the street. This causes all flow from the grassy 125-ft strip of land south of the street right-of-way to flow northward onto Ridge Road. We have also used in our calculations all of the Ridge Road R/W, ranging from 60-ft. to 66-ft. to be impervious. The property north of the north R/W of Ridge Road has a lower elevation, and all the flow continues to the north, therefore, we have not considered this area in our drainage calculations.
- 2) Inlet Efficiency assumed to be 85%.
- 3) The time of concentration for the inlet and sewer design computations is five (5) minutes.
- 4) The rainfall intensity was based on a ten (10) year frequency and time of concentration of five (5) minutes is 6.8-inches per hour based upon the rainfall intensity frequency curve for Chicago, Illinois, as shown in Figure 29-8M in the INDOT Part IV- Hydrology Section.
- 5) On the South Side of Ridge Road, from Station 13+30 to Station 56+15, the composite run-off co-efficient value as computed with the run-off co-efficient of 0.284 for the 125-ft. turf on the south side of Ridge Road and 0.90 for the impervious area within the R/W. By using these two coefficients the composite for the entire drainage area came to a Composite C-Value of 0.41 for the run-off calculations.
- 6) Please note on the South Side from Station 9+32 to Station 13+30, and from Station 56+15 to Station 64+00, we have only considered the impervious area within the R/W, as the parcels adjoining the these stations do not drain toward Ridge Road.
- 7) Therefore, the run-off co-efficient C value of 0.41 was used for the inlet computations on the South side of the street, from Station 13+30 to Station 56+15. The run-off co-efficient value of 0.90 was used on the north side of the street, as well as, the south side of the street from Station 9+32 to Station 13+30, and from Station 56+15 to Station 64+00.
- 8) The inlets are located in the areas where the slope changes from negative to positive along the street (Sag Locations). Also if there is a long continuous slope, inlets are located at intermediate locations along the slope in order to intercept the run-off and not exceed the allotted 7'-0" spread.
- 9) Please note there are a few locations where we have exceeded the 7'-0" maximum allowable spread (5.5ft. half lane width + 1.5ft. gutter width = 7.0ft.). This is due to the distance between the structures at intersection or driveway locations. For your information, we have avoided placing structures in drives or at the flow line of intersections, as this is not desirable. In these locations we have placed the inlets and/or catch basin as close together as possible, while still leaving room for ADA accessibility at the corners (handicap ramps). Most of these said locations are minor and exceed the maximum allowable spread by only a few inches. However, there are two locations on the South Side Ridge Road, which exceed the maximum allowable spread by 9 inches, they are located at: Str. No. 431B (Sta. 30+30) and Str. No. 439B (Sta. 37+05), both of which are at intersections.

PROJECT	DESIGNATION
STP - N763()	0600750
CONTRACT	BRIDGE FILE

**INDIANA
DEPARTMENT OF TRANSPORTATION**

**PLAN AND PROFILE OF PROPOSED
STP PROJECT NO. STP-N763() (1)P.E.
STATE HIGHWAY () CONST.
() UTIL.**

APPROVED BY: CITY OF GARY
BOARD OF PUBLIC WORKS AND SAFETY

PRESIDENT	DATE
MEMBER	DATE
MEMBER	DATE

TRAFFIC DATA	
A.A.D.T. (2007)	30,879 V.P.D.
A.A.D.T. (2030)	34,184 V.P.D.
D.H.V. (2030)	3,418 V.P.H.
DIRECTIONAL DISTRIBUTION	50:50 %
TRUCKS	20 % D.H.V.
TRUCKS	20 % A.A.D.T.
DESIGN DATA	
DESIGN SPEED	35 MPH
PROJECT DESGN. CRITERIA	RECONSTRUCTION (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION	PRINCIPAL ARTERIAL
RURAL/URBAN	URBAN (BUILT-UP)
TERRAIN	LEVEL
ACCESS CONTROL	NONE

DESCRIPTION

RIDGE ROAD ROADWAY PROJECT

THE RIDGE ROAD IMPROVEMENT PROJECT IS A ROADWAY RESORATION PROJECT WHICH COVERS THE AREA FROM THE INTERSECTION OF RIDGE ROAD AND BROADWAY AND EASTERLY A DISTANCE OF 1.042 MILES MEASURED ALONG THE CENTERLINE OF RIDGE ROAD ALL IN THE CITY OF GARY, LAKE COUNTY, INDIANA, RANGE 8W., TOWNSHIP 36N.

GROSS LENGTH:- 1.042 miles
NET LENGTH- 1.042 miles

SCALES:
PLAN TRANS. = 1:200 PROFILE HORZ. = 1:200
LONG = 1:200 VERT. = 1:50

LOCATION MAP



PROJECT LOCATION SHOWN BY →

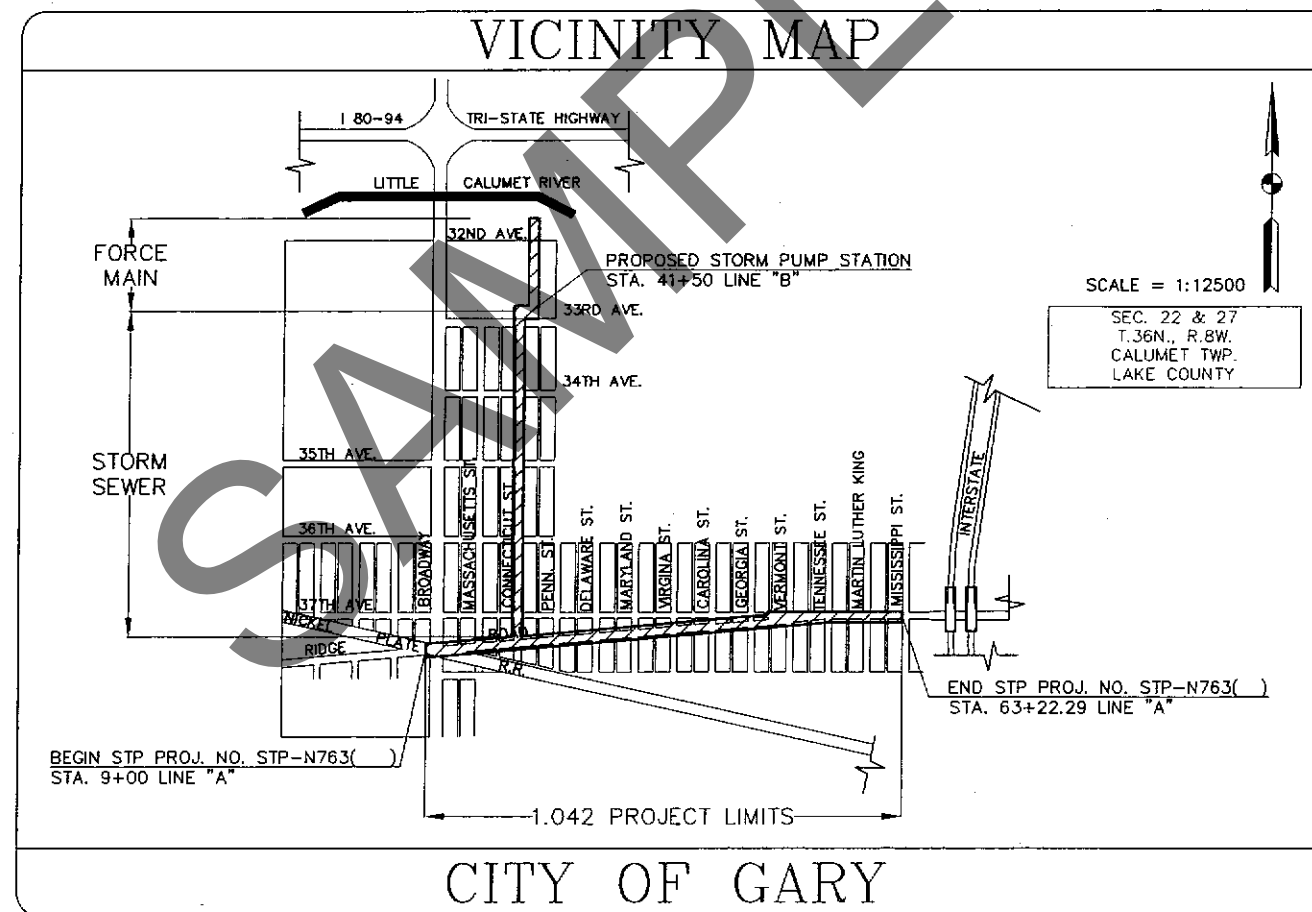
ROADWAY LENGTH : 1.042 MILES
TOTAL LENGTH : 1.042 MILES

[INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 1999
TO BE USED WITH THESE PLANS]

PLANS PREPARED BY:
NORTH-WEST ENG. CO., INC.
100 WEST 4TH AVENUE, 2ND FLR.
GARY, IN 46402
TEL (219) 882-6856 FAX: (219) 882-6867

CERTIFIED BY: _____
ARAVIND S. MUZUMDAR
INDIANA REG. NO.15445

APPROVED FOR LETTING: _____
CHIEF, DIVISION OF DESIGN



REVISIONS	
DATE	SHEET NO.

PLANS PREPARED BY:	(219) 882-6856 PHONE NUMBER
CERTIFIED BY:	DATE
APPROVED FOR LETTING:	DATE
CHIEF, DIVISION OF DESIGN	

BRIDGE FILE
DESIGNATION
0600750
SHEETS
01 of 34
CONTRACT
PROJECT
STP - N763()

FEDERAL ROAD REGION NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND	STP-N763()	2007	02	34

LEGEND

--- R/O---	RIGHT-OF-WAY	(A)	ASPHALT PAVEMENT TO BE DESIGNED
--- W ---	WATER MAIN	(C)	DRIVE, CONCRETE, 8" THICK ON 6" COMPACTED AGGREGATE NO. 53
--- G ---	GAS MAIN	(F)	SIDEWALK, CONCRETE, 5" ON 4" OF COMPACTED AGGREGATE TYPE, O, 53
---	GUARDRAIL	(15)	CURB & GUTTER, CONCRETE, MODIFIED
---	BARBED WIRE FENCE	(26)	SODDING
---	CHAIN LINK FENCE	(28)	4" OF TOPSOIL (AS REQ'D)
---	WOOD FENCE	(O)	SUBBASE & SUBGRADE TREATMENT TO BE DESIGNED
---	GAS MAIN	(34)	LINE, THERMOPLASTIC, SOLID, WHITE, 4"
---	WATER MAIN	(34C)	LINE, THERMOPLASTIC, BROKEN, WHITE, 4"
(tree)	TREE	(35)	LINE, THERMOPLASTIC, SOLID, YELLOW, 4"
(bush)	BUSH	(35C)	LINE, THERMOPLASTIC, BROKEN, YELLOW, 4"
(fire hydrant)	FIRE HYDRANT	(Rx)	TYPE "X" RAMP, "X" DESIGNATES RAMP TYPE
(public phone)	PUBLIC TELEPHONE		
(valve)	WATER VALVE		
(nail)	PK NAIL SET		
(dot)	BENCH MARK		
(pole)	POWER POLE W/ LIGHT		
(pole)	POWER POLE		
(light pole)	LIGHT POLE		
(manhole)	MANHOLE		
(handhole)	HANDHOLE		
(catch basin)	CATCH BASIN		
(inlet)	INLET		
(guy wire)	GUY WIRE		
(sheet sign)	SHEET SIGN		
(box)	TRAFFIC CONTROL BOX		
(pole)	TRAFFIC SIGNAL POLE		
(pole)	R/R SIGNAL POLE		
(gate)	R/R GATE		
(text)	EXISTING TEXT		
(box)	EXISTING TRAFFIC CONTROL BOX		
(hatched)	SURFACE MILLING, 50mm		
(spot)	EXISTING SPOT ELEVATION		
(foundation)	ABANDONED FOUNDATION		
(well)	MONITORING WELL		

NOTE:
LEGEND FOR USE WITH DRAWINGS, UNLESS LEGEND PROVIDED.

GENERAL NOTES

GENERAL NOTES:

- 1) THE CONSTRUCTION LIMITS ARE THE R/W LINES ALONG THE NORTH AND SOUTH SIDES OF RIDGE ROAD.
- 2) THE CONTRACTOR SHALL REMOVE ALL CONCRETE SIDEWALK, CURB & GUTTER, DRIVEWAYS, & FOUNDATIONS, ETC... WITHIN THE CONSTRUCTION LIMITS, IN ORDER TO CONSTRUCT THE PROPOSED. THE REMOVAL OF SUCH MATERIAL SHALL BE PAID UNDER RESPECTIVE PAY ITEMS.
- 3) THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL SIGNS, PARKING TIES, PLANTERS, ETC. FROM WITHIN THE R/W, IF IT IS IN CONFLICT WITH THE NEW CONSTRUCTION. IF IT IS NOT CLEARLY MARKED ON THE DRAWINGS FOR REMOVAL, THEN THE FIELD ENGINEER SHALL BE NOTIFIED PRIOR TO REMOVAL OF SUCH ITEMS. THE COST FOR THE SAID WORK SHALL BE INCLUDED IN THE COST FOR CLEARING OF R/W. NO ADDITIONAL COMPENSATION WILL BE GIVEN FOR SUCH WORK. THE BUSINESS SIGNS AND OTHER SALVAGEABLE ITEMS OWNED BY THE PROPERTY OWNERS WILL BE RETURNED BACK TO THE RIGHTFUL OWNER, THE COST OF THIS SHALL INCLUDED IN THE COST FOR CLEARING OF R/W.

- 4) THE CONTRACTOR WILL RECEIVE NO ADDITIONAL COMPENSATION FOR CORING THROUGH CONCRETE STRUCTURES IN ORDER TO CONNECT CATCH BASINS AND INLETS TO THE MANHOLES. THIS COST SHALL BE INCLUDED IN RESPECTIVE PAY ITEMS.
- 5) CONTRACTOR IS RESPONSIBLE TO REMOVE FROM THE CONSTRUCTION AREA THE EXCESS EXCAVATION MATERIAL INCLUDING MATERIAL REMOVED FROM EXISTING STREETS, ALL THE BROKEN CURBS AND SIDEWALKS, AND DISPOSE OF SAME AT HIS OWN COST. THE OWNER RESERVES THE RIGHT TO INSTRUCT THE CONTRACTOR TO DEPOSIT ANY OR ALL OF THE EXCAVATED MATERIAL IN THE PROJECT AREA AT THE DIRECTION OF THE PROJECT ENGINEER. COST OF THE MATERIAL TO BE REMOVED SHALL BE INCLUDED IN THE BID PRICE OF RESPECTIVE PAY ITEMS SUCH AS CONCRETE SIDEWALK REMOVAL, CONCRETE CURB & GUTTER REMOVAL, FOUNDATION REMOVAL, CONCRETE DRIVEWAY REMOVAL, COMMON EXCAVATION, ETC...
- 6) CARE SHALL BE TAKEN TO SAVE ANY TREES, SHRUBS, AND BUSINESS SIGNS IN THE AREAS DESIGNATED FOR SODDING AND THE SURROUNDING ADJACENT PARKING LOTS UNLESS IT IS NOTED FOR REMOVAL.

LINES AND LEVELS:

- 1) THE CONTRACTOR SHALL ESTABLISH THE RIGHT OF WAY LINES. THIS SHALL BE PERFORMED BY A REGISTERED LAND SURVEYOR, IN THE STATE OF INDIANA, PRIOR TO ANY AND ALL CONSTRUCTION. THE COST OF THIS SURVEY SHALL BE CONSIDERED INCIDENTAL TO AND A PART OF THE CONTRACTOR BID FOR CONSTRUCTION ENGINEERING, AND THE CONTRACTOR SHALL RECEIVE NO EXTRA COMPENSATION FOR THE SAID SURVEY. THE CONTRACTOR SHALL PROVIDE THE FIELD ENGINEER WITH THE LOCATION OF CONTROL POINTS WITH RESPECT TO THE RIGHT OF WAY LINES.

- 2) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY FIELD SURVEYS NEEDED DURING CONSTRUCTION. THE COST OF SAID FIELD SURVEYS SHALL BE CONSIDERED INCIDENTAL TO AND A PART OF THE CONTRACTOR BID FOR CONSTRUCTION ENGINEERING, AND THE CONTRACTOR SHALL RECEIVE NO EXTRA COMPENSATION FOR SAID FIELD SURVEYS. THE CONTRACTOR SHALL PROVIDE THE FIELD ENGINEER WITH THE LOCATION OF CONTROL POINTS RELATIVE TO THE CONSTRUCTION SURVEY LINE AND GRADE, WITH RESPECT TO LINE "A" AS PER THE PLAN AND PROFILES.

- 3) THE CONTRACTOR SHALL SAW CUT EXISTING CURB, SIDEWALK, AND ADJOINING ROADWAY TO ACCOMMODATE THE NEW CONSTRUCTION. THE NEW CONSTRUCTION SHALL MATCH EXISTING GRADES AND ELEVATIONS AT ALL SIDE STREETS AND/OR ALLEYS. THIS COST FOR SAW CUTTING SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR RESPECTIVE ITEMS. THE COST FOR REMOVAL OF SUCH ITEMS SHALL BE PAID UNDER RESPECTIVE PAY ITEMS.

- 4) OFFSET DISTANCES FOR THE STORM WATER STRUCTURES, LIGHT POLES, AND TRAFFIC POLES ARE TO THE CENTERLINE OF THE STRUCTURE FROM LINE "A" AS PER THE PLAN & PROFILES.

UTILITIES AND PIPELINES:

- 1) THE FOLLOWING LIST OF UTILITIES, RAILROAD, AND PIPELINE COMPANIES (BUT NOT LIMITED TO) SERVING THE PROJECT AREA IS PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY. UTILITIES OTHER THAN THOSE OF THE COMPANIES LISTED MAY EXIST. THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITY COMPANY THE FIELD VERIFICATION OF ALL UTILITIES WITHIN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL COORDINATE THE RAISING OR LOWERING OF ANY VALVE BOXES WITH RESPECTIVE UTILITY COMPANIES.

GAS & ELECTRIC:
NORTHERN IN. PUBLIC SERVICE CO.
1460 EAST 15TH ST.
GARY, IN 46402
(800) 382-5544

WATER:
NORTHWEST INDIANA WATER CO.
650 MADISON ST.
GARY, IN 46401
(219) 886-3770

TELEPHONE:
SBC/AMERITECH
302 S. EAST STREET CROWN POINT, IN 46307
(219) 662-4400

CABLE:
COMCAST
925 KENTUCKEY STREET
GARY, IN 46402
(219) 882-9700

INDEX

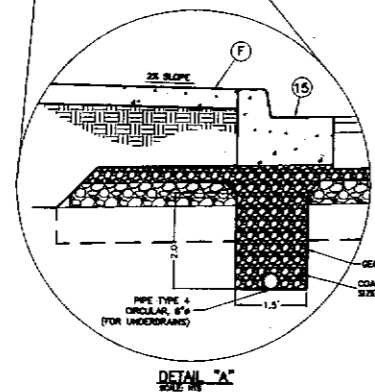
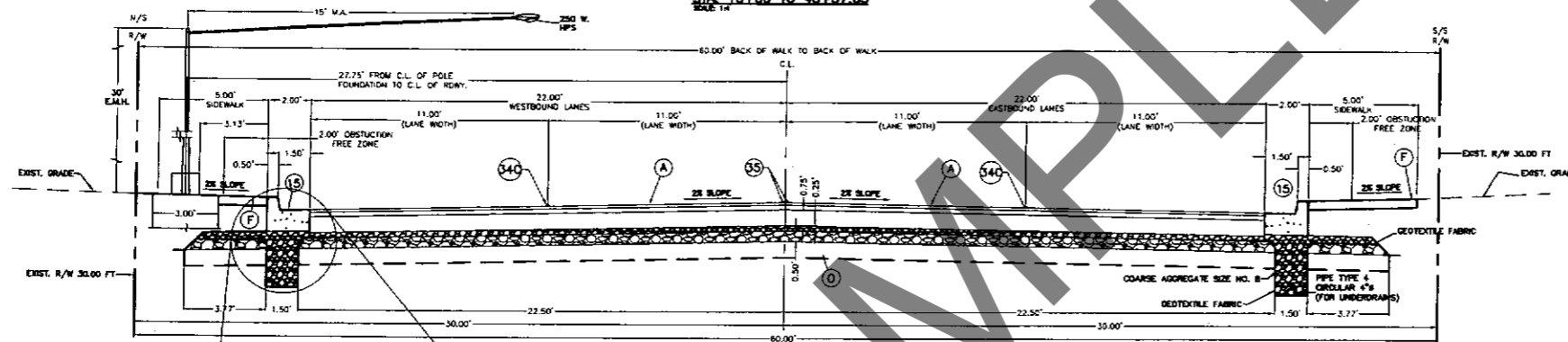
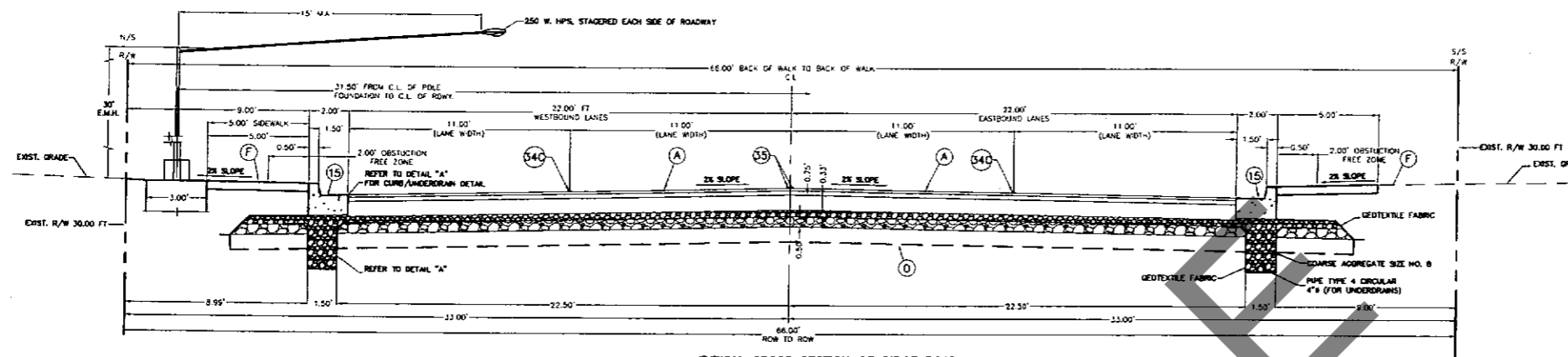
SHEET NO.	SHEET DESIGNATION
1	TITLE SHEET
2	INDEX AND GENERAL NOTES
3	TYPICAL CROSS-SECTION
4-10	PLAT PLAN
11-22	PLAN & PROFILES RIDGE ROAD (LINE "A")
23-30	PLAN & PROFILES CONNECTICUT STREET (LINE "B")
31-34	LIGHTING PLANS

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____	INDIANA DEPARTMENT OF TRANSPORTATION		HORIZONTAL SCALE N/A	BRIDGE FILE N/A
DESIGNED: <u>TMW</u>	DRAWN: <u>TMW</u>	CHECKED: <u>ASM</u>			CHECKED: <u>ASM</u>	VERTICAL SCALE N/A
GENERAL NOTES AND INDEX			GENERAL NOTES AND INDEX		SURVEY BOOK _____	SHEETS 02 of 34
					CONTRACT NO. _____	PROJECT STP - N763()

FEDERAL ROAD REGION NUMBER	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	STP-N763()	2007	03	34

NOTES

- 1) MINIMUM GRADE FOR UNDERDRAINS SHALL BE 0.20%



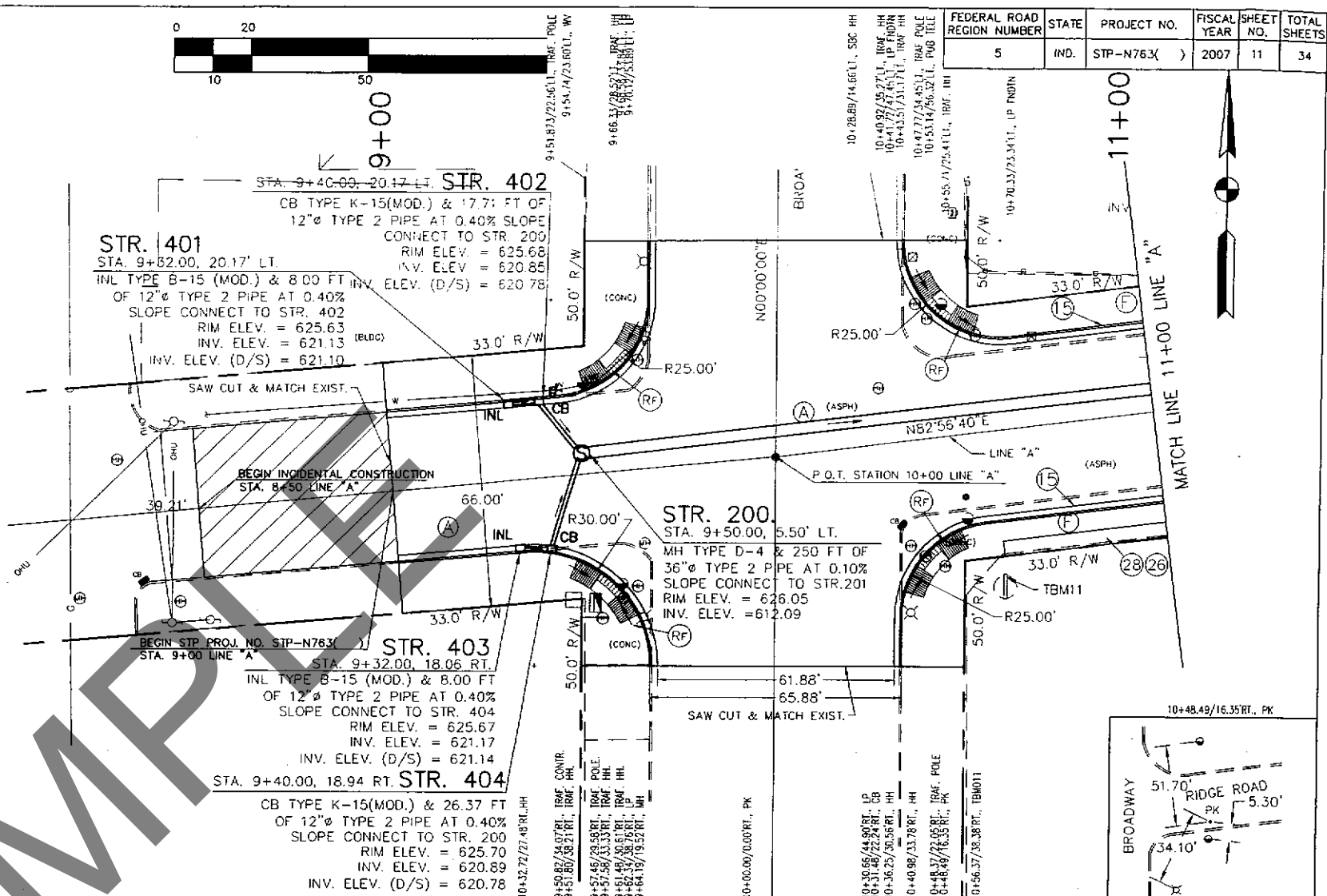
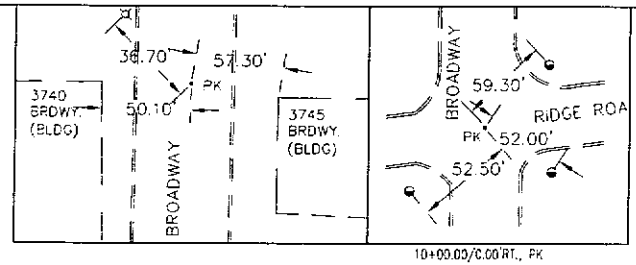
LEGEND

- (A) ASPHALT PAVEMENT TO BE DESIGNED
- (C) DRIVE, CONCRETE, 8" THICK ON 6" COMPACTED AGGREGATE NO. 53
- (F) SIDEWALK, CONCRETE, 5" ON 4" OF COMPACTED AGGREGATE TYPE, O, 53
- (15) CURB & GUTTER, CONCRETE, MODIFIED
- (26) SODDING
- (28) 4" OF TOPSOIL (AS REQ'D)
- (O) SUBBASE & SUBGRADE TREATMENT TO BE DESIGNED
- (34) LINE, THERMOPLASTIC, SOLID, WHITE, 4"
- (340) LINE, THERMOPLASTIC, BROKEN, WHITE, 4"
- (35) LINE, THERMOPLASTIC, SOLID, YELLOW, 4"
- (350) LINE, THERMOPLASTIC, BROKEN, YELLOW, 4"

RECOMMENDED FOR APPROVAL		DESIGN ENGINEER		DATE	INDIANA DEPARTMENT OF TRANSPORTATION		HORIZONTAL SCALE	BRIDGE FILE
DESIGNED: TMW		DRAWN: SRW					1:4	N/A
CHECKED: ASM		CHECKED: TMW			PLAN - PROFILE		VERTICAL SCALE	DESIGNATION
					LINE "A" 10+00 TO 63+33.43		1:4	0600750
							SURVEY BOOK	SHEET
								03 of 34
							CONTRACT	PROJECT
								STP-N763()

PLAN	DATE
SURVEYED BY	BY
NOTE BOOK NO.	PLOTTED BY
	ALIGNMENTS CHECKED
	RT. OF WAY CHECKED

PROFILE	DATE
SURVEYED BY	BY
NOTE BOOK NO.	PLOTTED BY
	GRADES CHECKED
	B. M.'S NOTED
	STRUCTURE NOTATIONS CHECKED

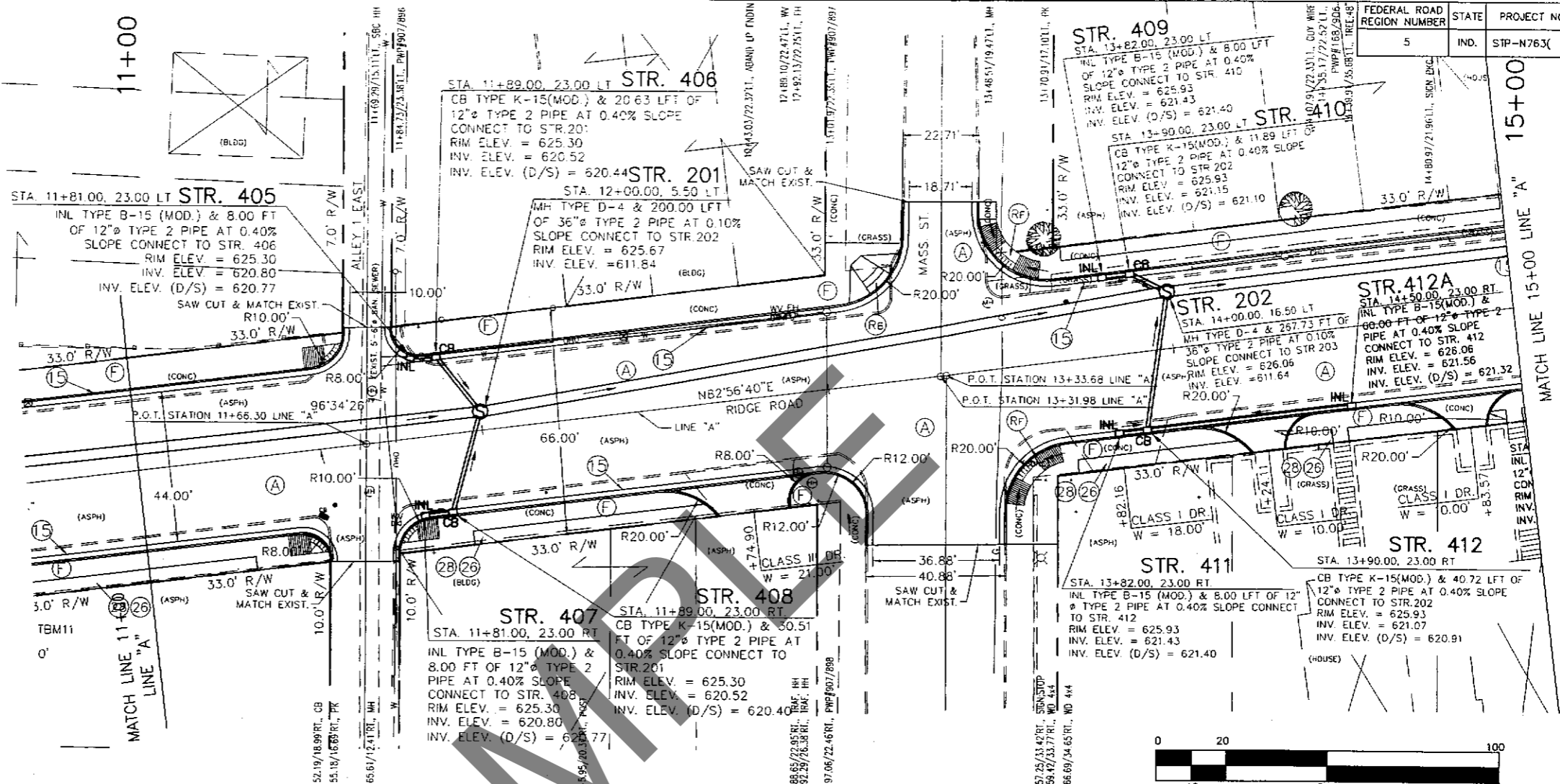
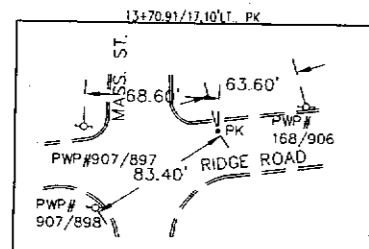


630	BEGIN INCIDENTAL CONSTRUCTION STA: 8+50.00	MATCH EXIST. CROWN OF BROADWAY ALONG LINE "A", STA: 10+00.00	TBM11: CUT CROSS ON N/S OF BUSINESS SIGN (FAMILY DOLLAR) ON THE SEC OF BROADWAY & RIDGE ROAD ELEV. = 627.15	630
625		+0.71% SLOPE	-0.45% SLOPE	625
620	BEGIN PROJECT MATCH EXISTING STA: 9+00.00		EXIST. S	620
615				615
610		250.00 FT. OF 36" SEWER @ 0.10% SLOPE		610
605		STR. NO. 200 INV. ELEV. = 612.09		605

RECOMMENDED FOR APPROVAL		DESIGN ENGINEER		DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE
DESIGNED: TMW		DRAWN: TMW				1:20	N/A
CHECKED: ASM		CHECKED: ASM			PLAN - PROFILE LINE "A" 9+00 TO 11+00	VERTICAL SCALE	DESIGNATION
						1:5	0600750
						SURVEY BOOK	SHEET
							11 of 34
						CONTRACT	PROJECT
						R-30938	STP-N763()

PLAN	SURVEYED BY	DATE
NOTE BOOK	PLOTTED BY	
NO.	ALIGNMENTS CHECKED	
	RT. OF WAY CHECKED	

PROFILE	BY	DATE
NOTE BOOK		
GRADES CHECKED		
B. M.'S NOTED		
STRUCTURE NOTATIONS CHECKED		



TBM11: CUT CROSS ON N/S OF BUSINESS SIGN (FAMILY DOLLAR) ON THE SEC OF BROADWAY & RIDGE ROAD ELEV. = 627.15

Station	Profile Grade	Structure	Notes
11+00	626.05		
11+50	625.83		
12+00	625.78	STR. NO. 201 INV. ELEV. = 611.84	100.00' V.C. STATION 12+00 ELEV. = 625.60'
12+50	626.10		
13+00	626.24		100.00' V.C. STATION 13+00 ELEV. = 626.60'
13+50	626.44		
14+00	626.30		
14+50	626.45		
15+00	626.57	STR. NO. 202 INV. ELEV. = 611.64	100.00' V.C. STATION 14+00 ELEV. = 626.30'
15+00	626.65		100.00' V.C. STATION 15+00 ELEV. = 626.74'

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE _____

DESIGNED: TMW DRAWN: TMW

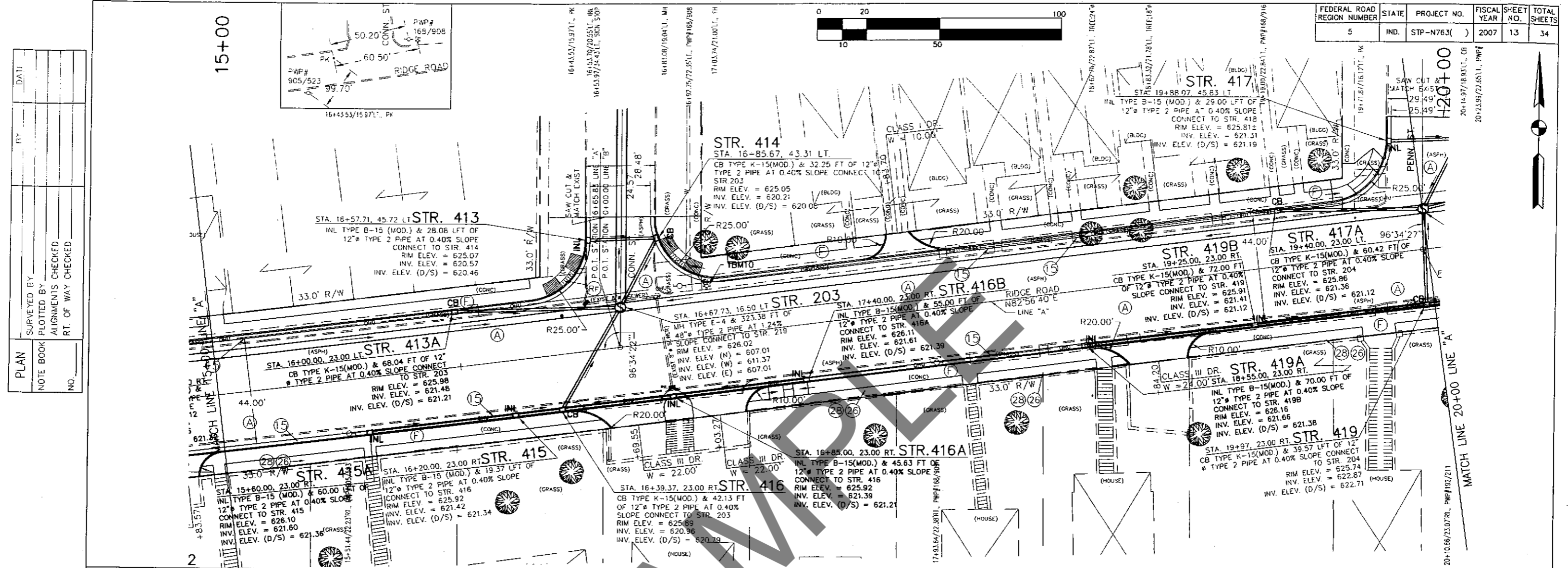
CHECKED: ASM CHECKED: ASM

INDIANA DEPARTMENT OF TRANSPORTATION

PLAN - PROFILE

LINE "A" 11+00 TO 15+00

HORIZONTAL SCALE	BRIDGE FILE
1:20	N/A
VERTICAL SCALE	DESIGNATION
1:5	0600750
SURVEY BOOK	SHEET
	12 of 34
CONTRACT	PROJECT
R-30938	STP-N763()



STATION	ELEVATION	DESCRIPTION	STATION	ELEVATION	DESCRIPTION	STATION	ELEVATION	DESCRIPTION	STATION	ELEVATION	DESCRIPTION
15+00	626.57	STATION 15+00	16+00	626.26	STATION 16+00	17+00	626.81	STATION 17+00	18+00	626.10	STATION 18+00
15+00	626.55	EXIST. PROFILE GRADE ALONG LINE "A"	16+00	626.26	PROPOSED PROFILE GRADE ALONG LINE "A"	17+00	626.81	PROPOSED PROFILE GRADE ALONG LINE "A"	18+00	626.10	PROPOSED PROFILE GRADE ALONG LINE "A"
15+00	626.59		16+00	626.26		17+00	626.81		18+00	626.10	
15+00	626.38	267.73 LFT OF 36" SEWER @ 0.10% SLOPE	16+00	626.44	332.29 LFT OF 42" SEWER @ 0.40% SLOPE	17+00	626.41	STR. NO. 203 INV. ELEV. (E & N) = 607.01	18+00	626.34	STR. NO. 204 INV. ELEV. = 608.34
15+00	626.41		16+00	626.44		17+00	626.41		18+00	626.34	

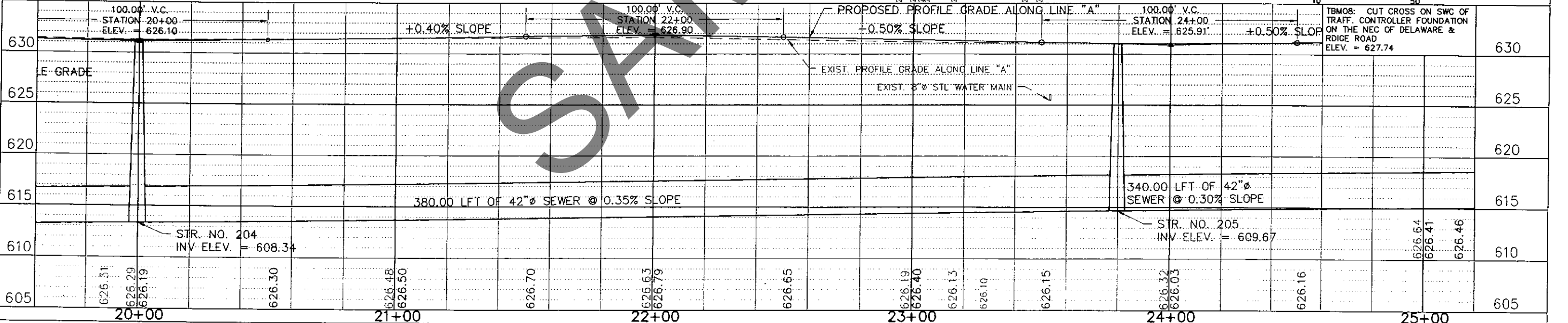
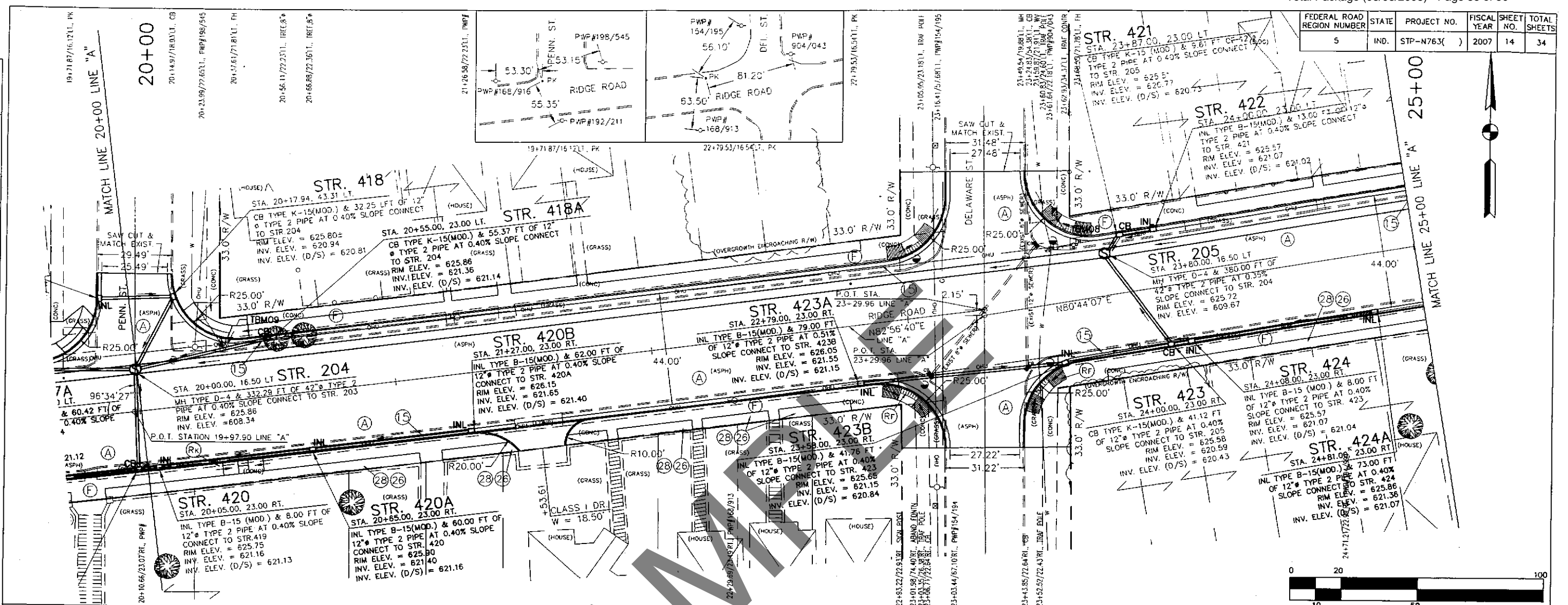
SURVEYED BY: _____ PLOTTED BY: _____ GRADES CHECKED: _____ B. M.'S NOTED: _____ STRUCTURE NOTATIONS CHECKED: _____	RECOMMENDED FOR APPROVAL: _____ DESIGN ENGINEER: _____ DATE: _____	INDIANA DEPARTMENT OF TRANSPORTATION PLAN - PROFILE LINE "A" 15+00 TO 20+00	HORIZONTAL SCALE: 1:20 BRIDGE FILE: N/A VERTICAL SCALE: 1:5 DESIGNATION: 0600750 SURVEY BOOK: _____ SHEET: 13 of 34 CONTRACT: R-30938 PROJECT: STP-N763()
--	---	---	---

PLAN	SURVEYED BY	DATE
NOTE BOOK	PLOTTED BY	
NO.	ALIGNMENTS CHECKED	
	RT. OF WAY CHECKED	

PROFILE	SURVEYED BY	DATE
NOTE BOOK	PLOTTED BY	
NO.	GRADES CHECKED	
	B. M.'S NOTED	
	STRUCTURE NOTATIONS CHECKED	

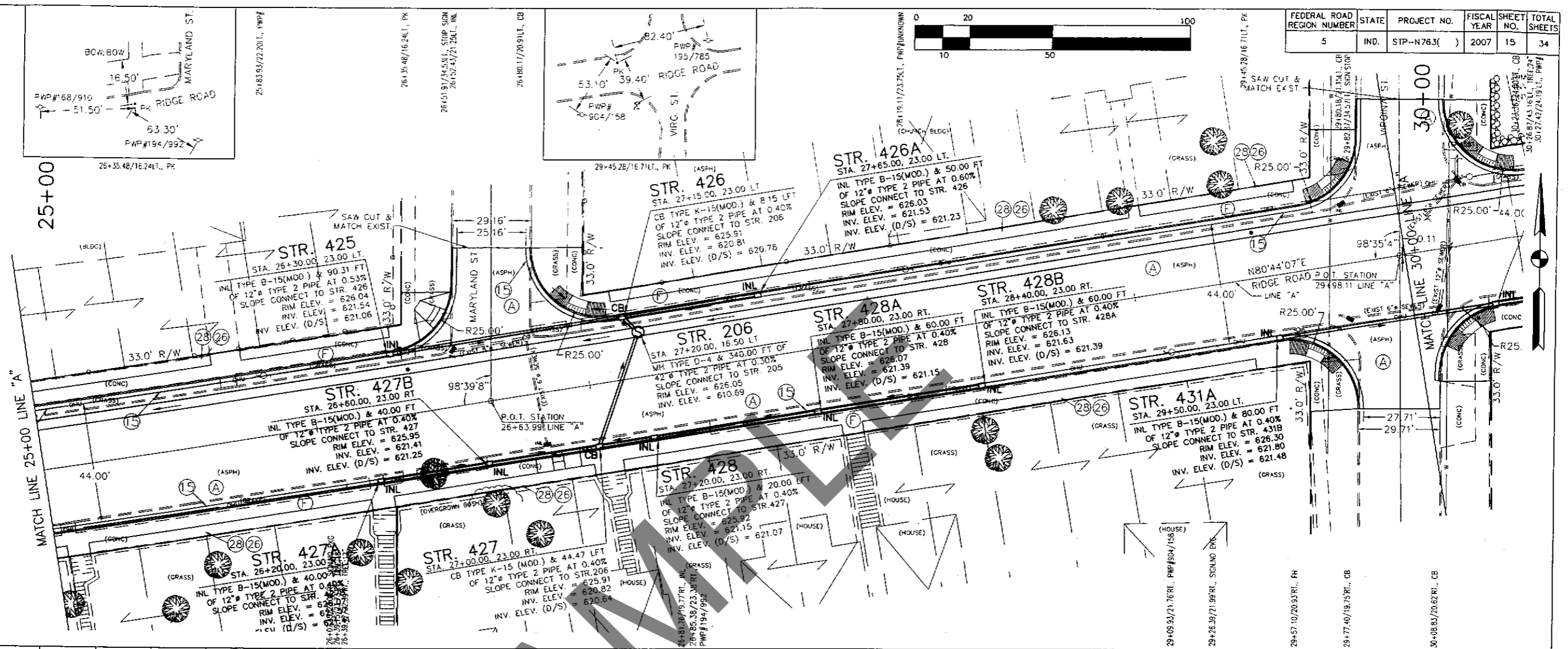
PLAN	SURVEYED BY	DATE
NOTE BOOK	BY	
NO.		

PROFILE	SURVEYED BY	DATE
NOTE BOOK	BY	
NO.		



RECOMMENDED FOR APPROVAL	DESIGNED: <u>TMW</u>	DRAWN: <u>TMW</u>	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE
DESIGN ENGINEER	DATE			1:20	N/A
CHECKED: <u>ASM</u>	CHECKED: <u>ASM</u>		PLAN - PROFILE	VERTICAL SCALE	DESIGNATION
			LINE "A" 20+00 TO 25+00	1:5	0600750
				SURVEY BOOK	SHEET
				R-30938	14 of 34
				CONTRACT	PROJECT
					STP-N763()

DATE	
BY	
SURVEYED BY	
PLOTTED BY	
NOTE BOOK	
GRADES CHECKED	
B. M.'S NOTED	
STRUCTURE NOTATIONS CHECKED	
ALIGNMENTS CHECKED	
RT. OF WAY CHECKED	
PLAN	
NO.	



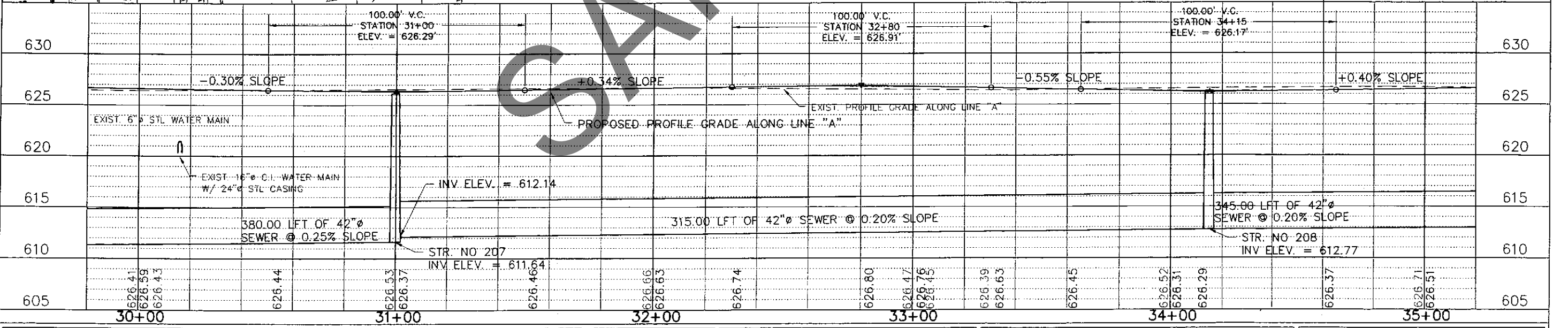
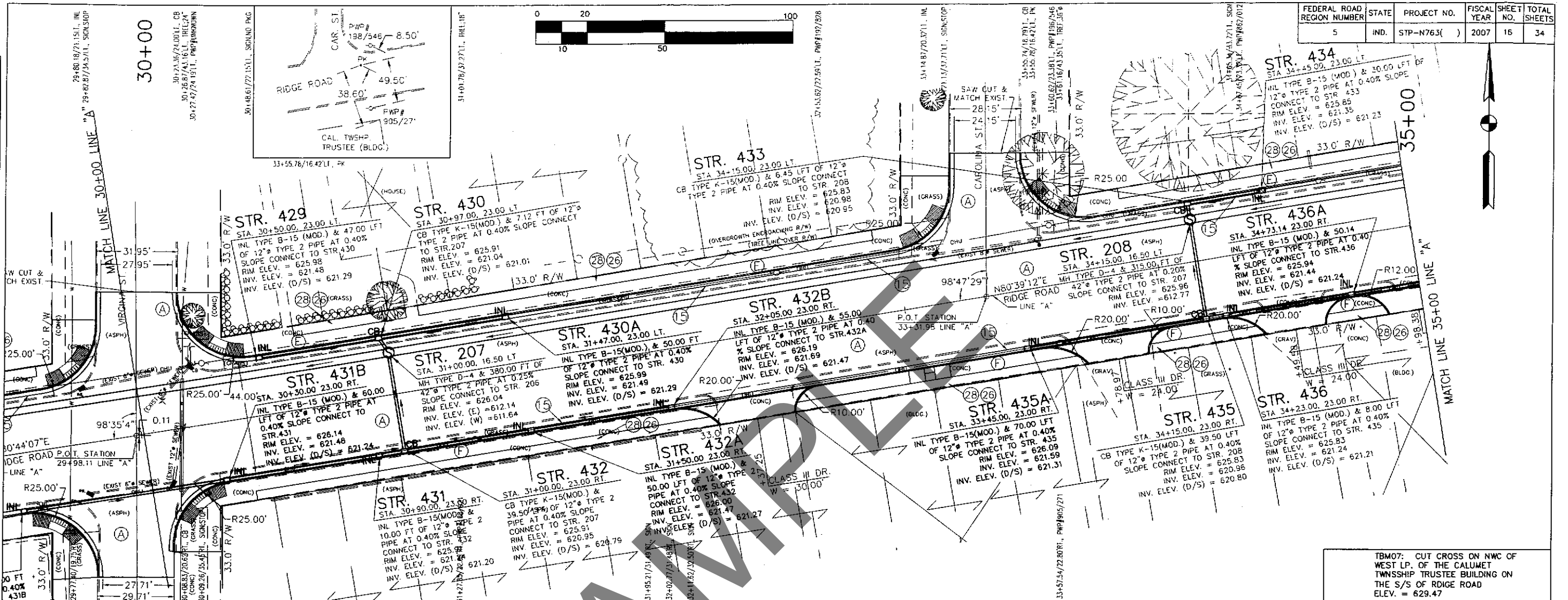
PROFILE	DATE	BY	STATION	ELEVATION	DESCRIPTION	STATION	ELEVATION	DESCRIPTION	STATION	ELEVATION	DESCRIPTION	STATION	ELEVATION	DESCRIPTION	STATION	ELEVATION	DESCRIPTION
630			25+00	626.71	100.00' V.C. STATION	27+00	626.29	100.00' V.C. STATION	29+00	626.89	100.00' V.C. STATION	30+00	629.47	TBM07: CUT CROSS ON NWC OF WEST LP. OF THE CALUMET TOWNSHIP TRUSTEE BUILDING ON THE S/S OF RIDGE ROAD	630		
625					+0.50% SLOPE			-0.30% SLOPE									
620																	
615																	
610																	
605																	

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE
DESIGNED: <u>TMW</u>	DRAWN: <u>TMW</u>			1:20	N/A
CHECKED: <u>ASM</u>	CHECKED: <u>ASM</u>		PLAN - PROFILE	VERTICAL SCALE	DESIGNATION
			LINE "A" 25+00 TO 30+00	1:5	0600750
				SURVEY BOOK	SHEET
				R-30938	15 of 34
				CONTRACT	PROJECT
					STP-N763()

FEDERAL ROAD REGION NUMBER	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	STP-N763()	2007	16	34

PLAN	SURVEYED BY	DATE
	NOTE BOOK	
	ALIGNMENTS CHECKED	
	R.T. OF WAY CHECKED	

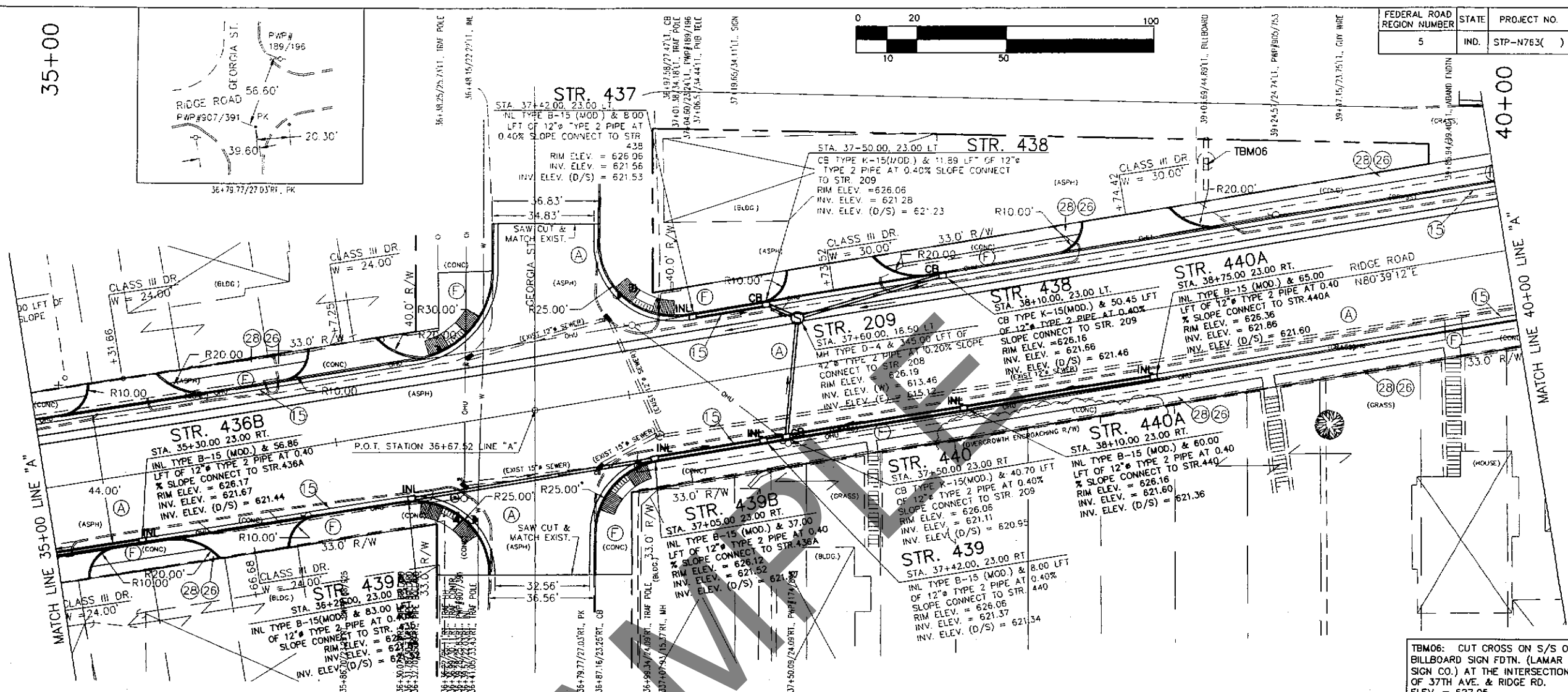
PROFILE	SURVEYED BY	DATE
	NOTE BOOK	
	GRADES CHECKED	
	B. M.'S NOTED	
	STRUCTURE NOTATIONS CHECKED	



RECOMMENDED FOR APPROVAL	DESIGNED: TMW	DRAWN: TMW	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE: 1:20	BRIDGE FILE: N/A
DESIGN ENGINEER	CHECKED: ASM	CHECKED: ASM	PLAN - PROFILE	VERTICAL SCALE: 1:5	DESIGNATION: 0600750
DATE			LINE "A" 30+00 TO 35+00	SURVEY BOOK: R-30938	SHEET: 16 of 34
				CONTRACT: R-30938	PROJECT: STP-N763()

FEDERAL ROAD REGION NUMBER	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	STP-N763()	2007	17	34

PLAN	SURVEYED BY	DATE
	NOTE BOOK	
	ALIGNMENTS CHECKED	
	RT. OF WAY CHECKED	
	NO.	



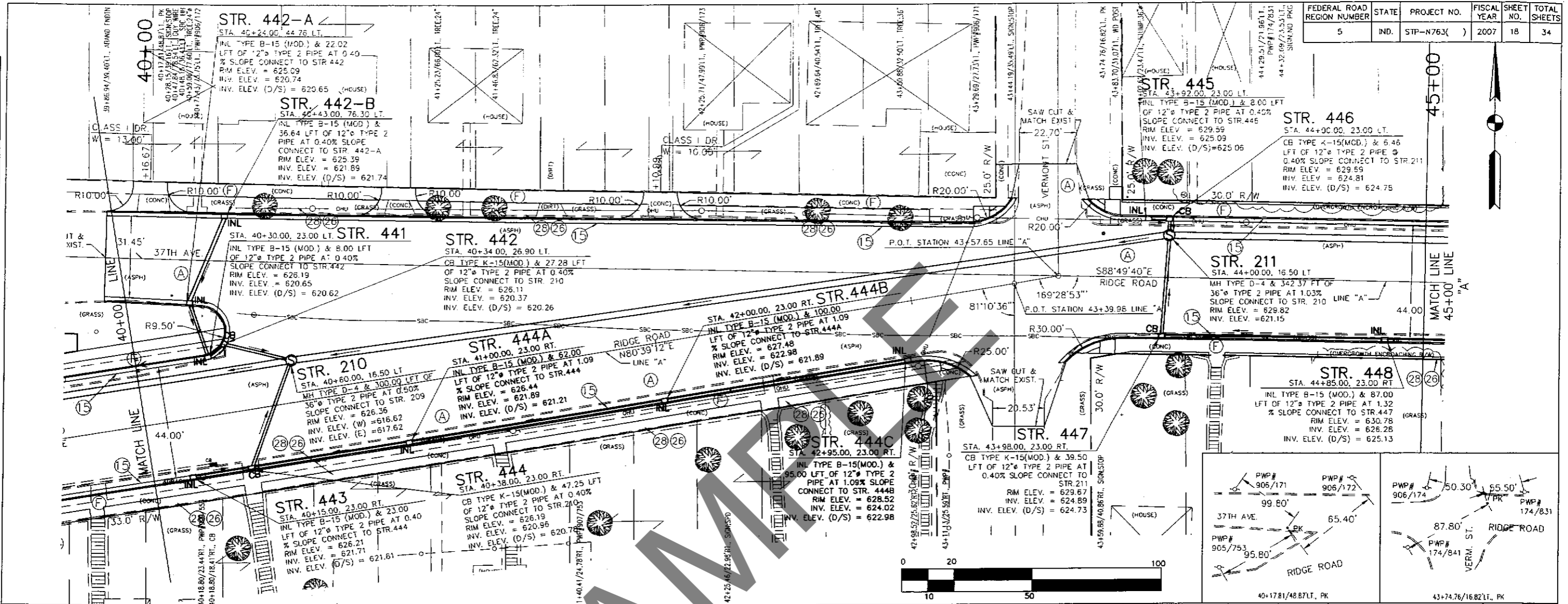
TBM06: CUT CROSS ON S/S OF BILLBOARD SIGN FDTN. (LAMAR SIGN CO.) AT THE INTERSECTION OF 37TH AVE. & RIDGE RD. ELEV. = 627.05

630		100.00' V.C. STATION 36+00. ELEV. = 626.91'		100.00' V.C. STATION 37+48. ELEV. = 626.44'		100.00' V.C. STATION 39+40. ELEV. = 627.01'		630								
625	% SLOPE	+0.40% SLOPE		-0.32% SLOPE		+0.30% SLOPE		-0.50% SLOPE	625							
620	PROPOSED PROFILE GRADE ALONG LINE "A"								620							
615		345.00 LFT. OF 42" SEWER @ 0.20% SLOPE		EXIST. 36" D.I. WATER MAIN		300.00 LFT OF 36" SEWER @ 0.50% SLOPE		300.00 SEWER	615							
610		626.71	626.45	626.82	626.366	626.75	626.29	626.32	626.60	626.70	626.59	626.91	626.76	626.53	626.72	610
605		626.51	626.71	626.82	626.366	626.75	626.29	626.32	626.60	626.70	626.59	626.91	626.76	626.53	626.72	605

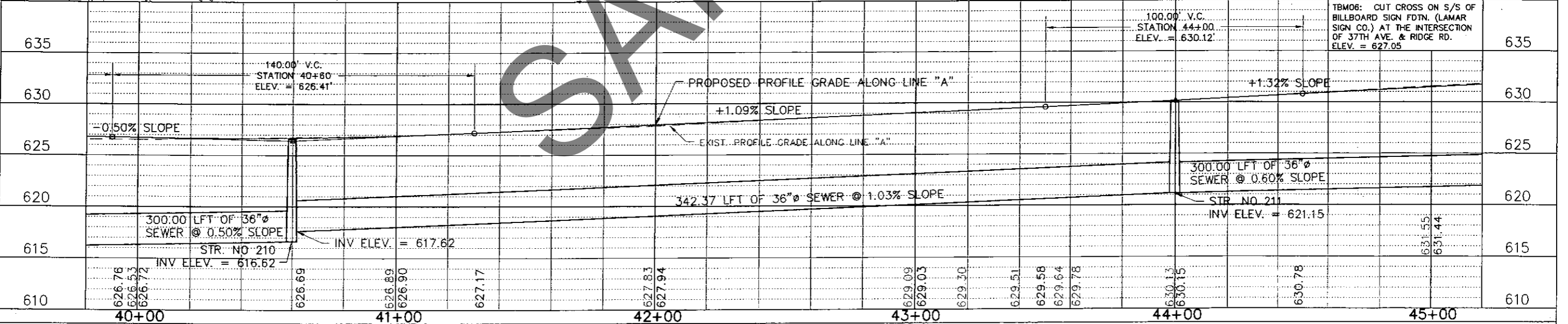
SURVEYED BY PLOTTED BY GRADES CHECKED B. M.'S NOTED STRUCTURE NOTATIONS CHECKED	RECOMMENDED FOR APPROVAL DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION PLAN - PROFILE LINE "A" 35+00 TO 40+00	HORIZONTAL SCALE 1:20 BRIDGE FILE N/A
VERTICAL SCALE 1:5	DESIGNATION 0600750	SURVEY BOOK 17 of 34	SHEET 17 of 34
CONTRACT R-30938	PROJECT STP-N763()		

FEDERAL ROAD REGION NUMBER	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	STP-N763()	2007	18	34

DATE: _____
 BY: _____
 SURVEYED BY: _____
 PLOTTED BY: _____
 ALIGNMENTS CHECKED: _____
 RT. OF WAY CHECKED: _____
 PLAN NO. _____



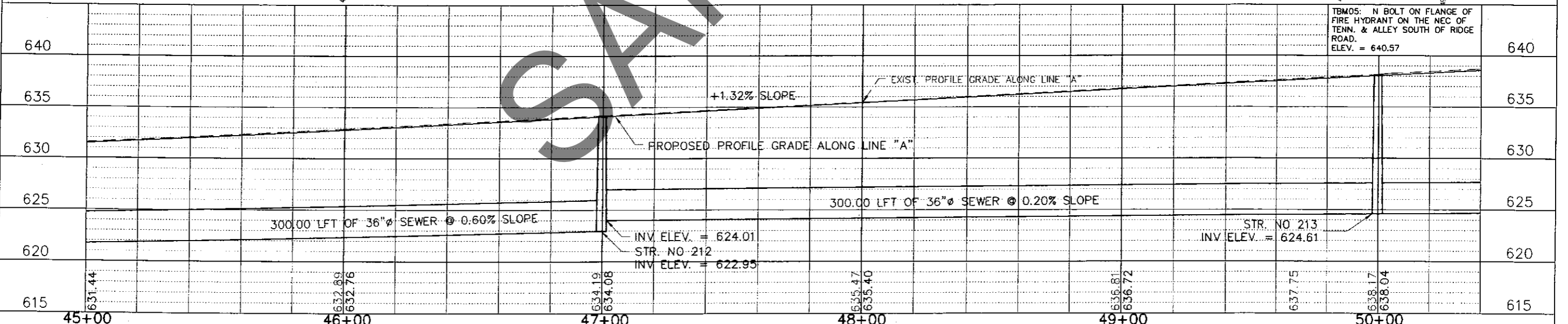
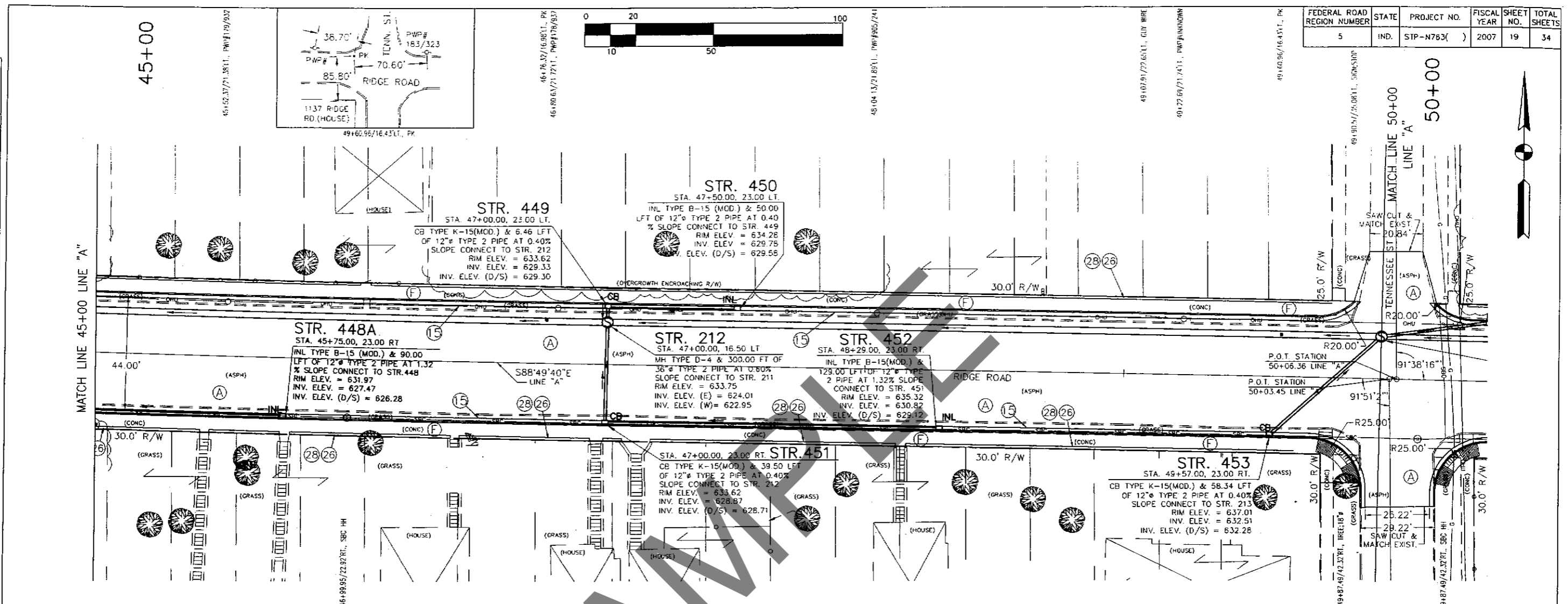
DATE: _____
 BY: _____
 SURVEYED BY: _____
 PLOTTED BY: _____
 GRADES CHECKED: _____
 B.M.'S NOTED: _____
 STRUCTURE NOTATIONS CHECKED: _____
 PROFILE NO. _____



RECOMMENDED FOR APPROVAL	DESIGNED: TMW	DRAWN: TMW	CHECKED: ASM	DATE	CHECKED: ASM
INDIANA DEPARTMENT OF TRANSPORTATION			PLAN - PROFILE LINE "A" 40+00 TO 45+00		
HORIZONTAL SCALE 1:20		VERTICAL SCALE 1:5		BRIDGE FILE N/A	
DESIGNATION 0600750		SURVEY BOOK R-30938		SHEET 18 of 34	
PROJECT STP-N763()					

PLAN	SURVEYED BY	DATE
NOTE BOOK	PLOTTED BY	
NO.	ALIGNMENTS CHECKED	
	RT. OF WAY CHECKED	

PROFILE	SURVEYED BY	DATE
NOTE BOOK	GRADES CHECKED	
NO.	R. M.'S NOTED	
	STRUCTURE NOTATIONS CHECKED	

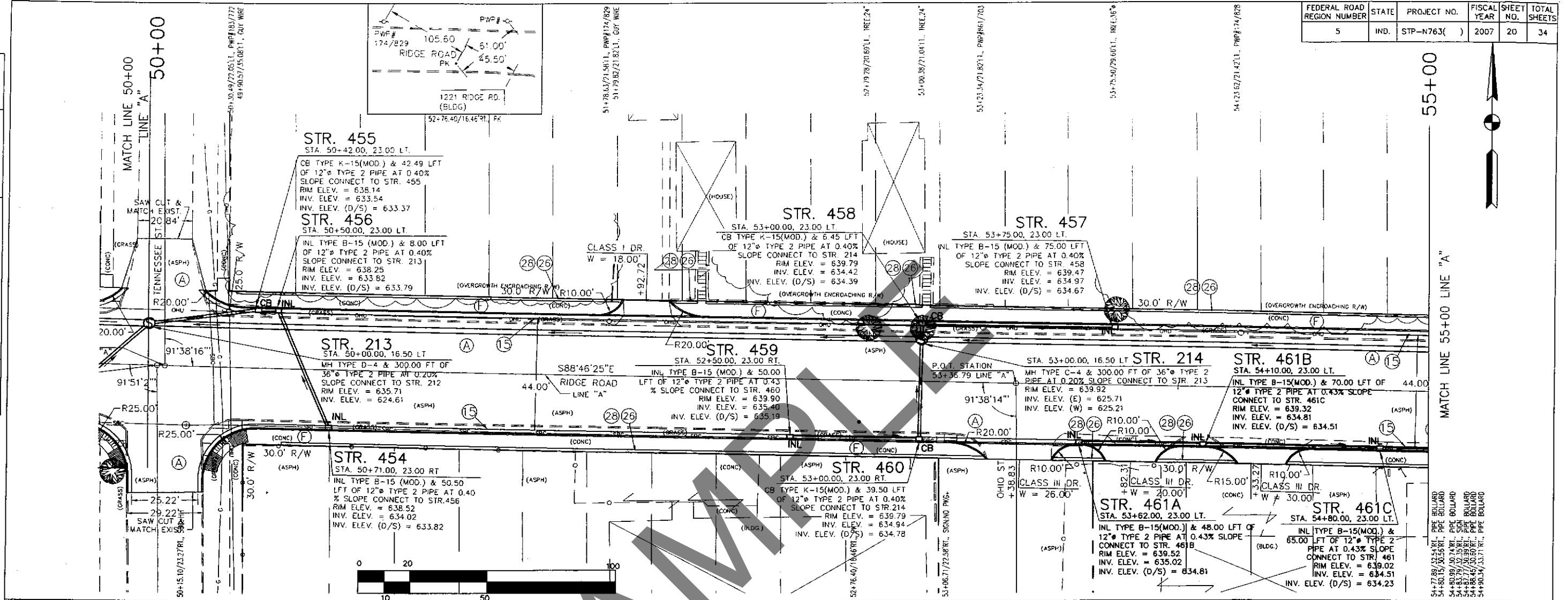


RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE
DESIGNED: TMW	DRAWN: TMW			1:20	N/A
CHECKED: ASM	CHECKED: ASM		PLAN - PROFILE	VERTICAL SCALE	DESIGNATION
			LINE "A" 45+00 TO 50+00	1:5	0600750
				SURVEY BOOK	SHEET
				R-30938	19 of 34
				CONTRACT	PROJECT
				R-30938	STP-N763()

FEDERAL ROAD REGION NUMBER	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	STP-N763()	2007	20	34

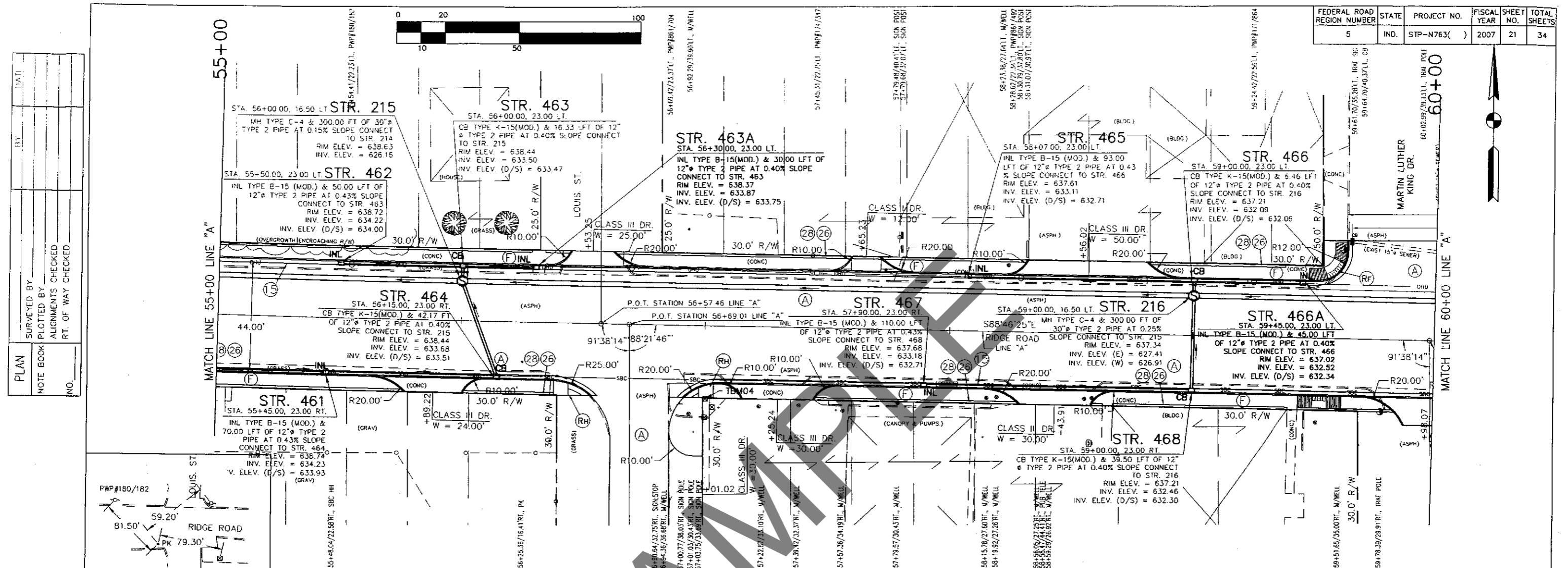
PLAN
 SURVEYED BY _____
 PLOTTED BY _____
 NOTE BOOK NO. _____
 ALIGNMENTS CHECKED _____
 RT. OF WAY CHECKED _____

PROFILE
 SURVEYED BY _____
 PLOTTED BY _____
 NOTE BOOK NO. _____
 GRADES CHECKED _____
 B. M.'S NOTED _____
 STRUCTURE NOTATIONS CHECKED _____



STATION	ELEVATION	DESCRIPTION	STATION	ELEVATION	DESCRIPTION
640	640.68	+1.32% SLOPE	640	640.68	-0.43% SLOPE
635		PROPOSED PROFILE GRADE ALONG LINE "A"	635		EXIST. PROFILE GRADE ALONG LINE "A"
630			630		
625		300.00' LFT OF 36" SEWER @ 0.20% SLOPE	625		300.00' LFT OF 30" SEWER @ 0.15% SLOPE
620	624.61	STR. NO. 213 INV. ELEV. = 624.61	620	625.21	STR. NO. 214 INV. ELEV. = 625.21
615	638.04		615	639.32	

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE
DESIGNED: TMW	DRAWN: TMW			1:20	N/A
CHECKED: ASM	CHECKED: ASM		PLAN - PROFILE	VERTICAL SCALE	DESIGNATION
			LINE "A" 50+00 TO 55+00	1:5	0600750
				SURVEY BOOK	SHEET
				R-30938	20 of 34
					PROJECT
					STP-N763()



PLAN	SURVEYED BY	DATE
	NOTE BOOK PLOTTED BY	
	ALIGNMENTS CHECKED	
	RT. OF WAY CHECKED	
	NO.	

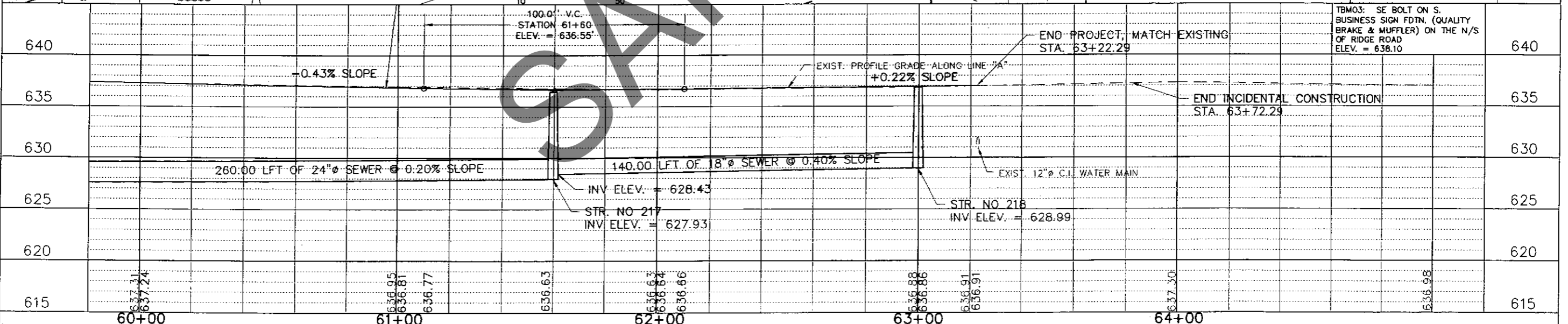
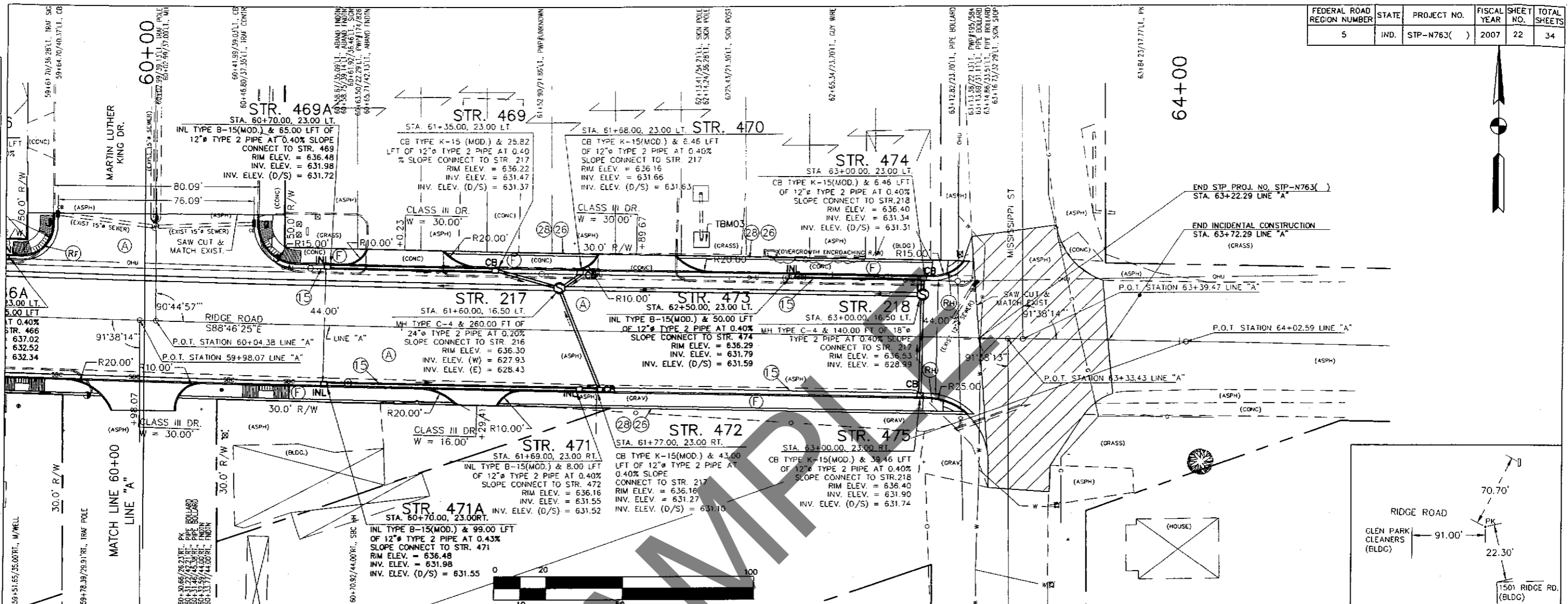
PROFILE	DATE	BY	STRUCTURE NOTATIONS CHECKED	GRADES CHECKED	B. M.'S NOTED
640					
635					
630					
625					
620					
615					

RECOMMENDED FOR APPROVAL DESIGN ENGINEER _____ DATE _____ DESIGNED: <u>TMW</u> DRAWN: <u>TMW</u> CHECKED: <u>ASM</u> CHECKED: <u>ASM</u>	INDIANA DEPARTMENT OF TRANSPORTATION PLAN - PROFILE LINE "A" 55+00 TO 60+00	HORIZONTAL SCALE: 1:20 BRIDGE FILE: N/A VERTICAL SCALE: 1:5 DESIGNATION: 0600750 SURVEY BOOK: _____ SHEET: 21 of 34 CONTRACT: R-30938 PROJECT: STP-N763()
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FEDERAL ROAD REGION NUMBER	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	STP-N763()	2007	22	34

PLAN	SURVEYED BY	DATE
	BY	
	DATE	
	NO.	

PROFILE	SURVEYED BY	DATE
	BY	
	DATE	
	NO.	



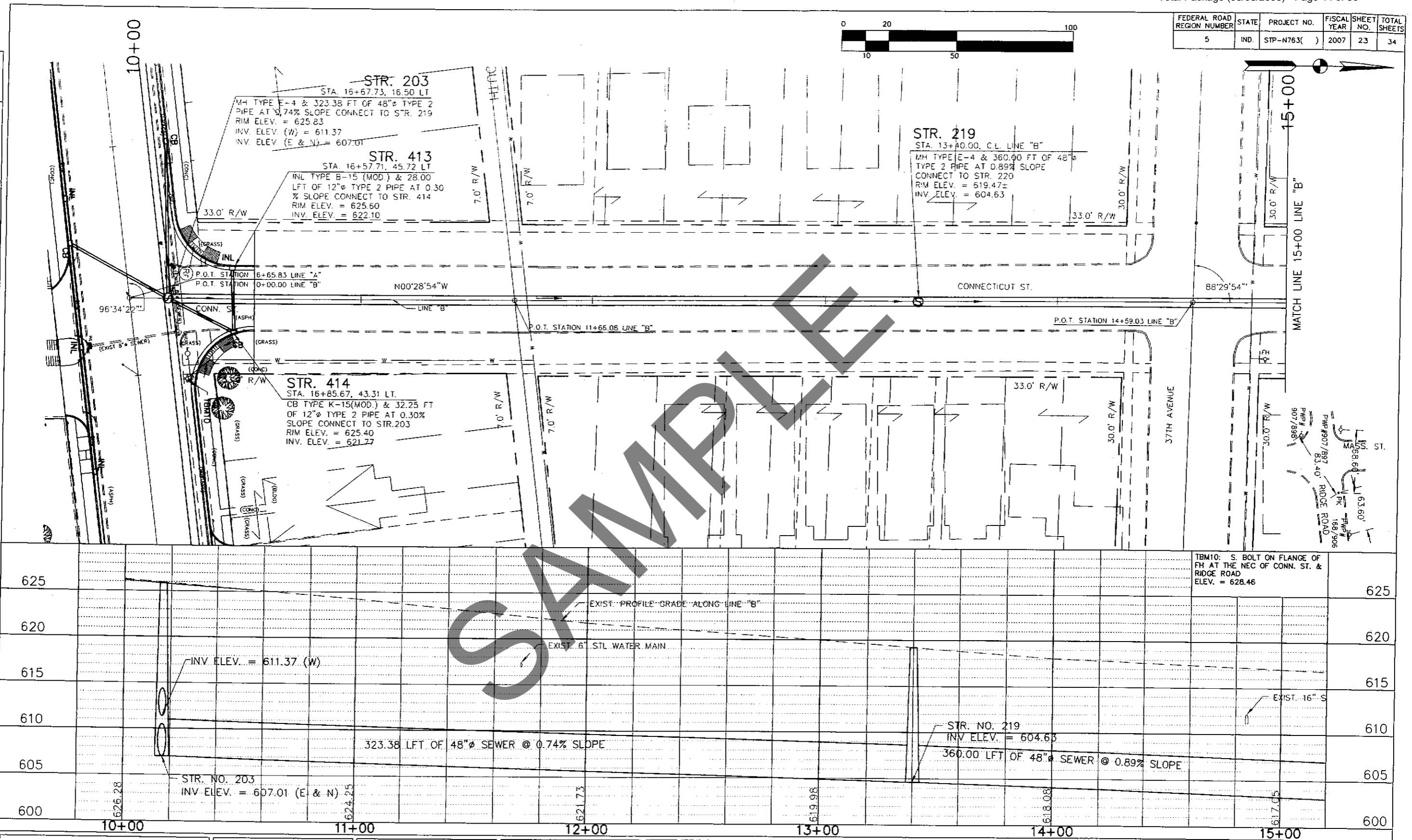
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE
DESIGNED: TMW	DRAWN: TMW			1:20	N/A
CHECKED: ASM	CHECKED: ASM		PLAN - PROFILE LINE "A" 60+00 TO 64+00	VERTICAL SCALE	DESIGNATION
				1:5	0600750
				SURVEY BOOK	SHEET
				R-30938	22 of 34
				CONTRACT	PROJECT
				R-30938	STP-N763()

FEDERAL ROAD REGION NUMBER	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	STP-N763()	2007	23	34



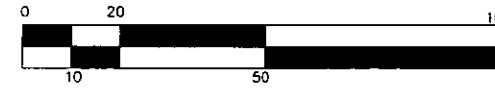
PLAN	SURVEYED BY	DATE
NOTE BOOK NO.	BY	
	PLOTTED BY	
	ALIGNMENTS CHECKED	
	RT. OF WAY CHECKED	

PROFILE	SURVEYED BY	DATE
NOTE BOOK NO.	BY	
	PLOTTED BY	
	GRADES CHECKED	
	B. M.'S NOTED	
	STRUCTURE NOTATIONS CHECKED	

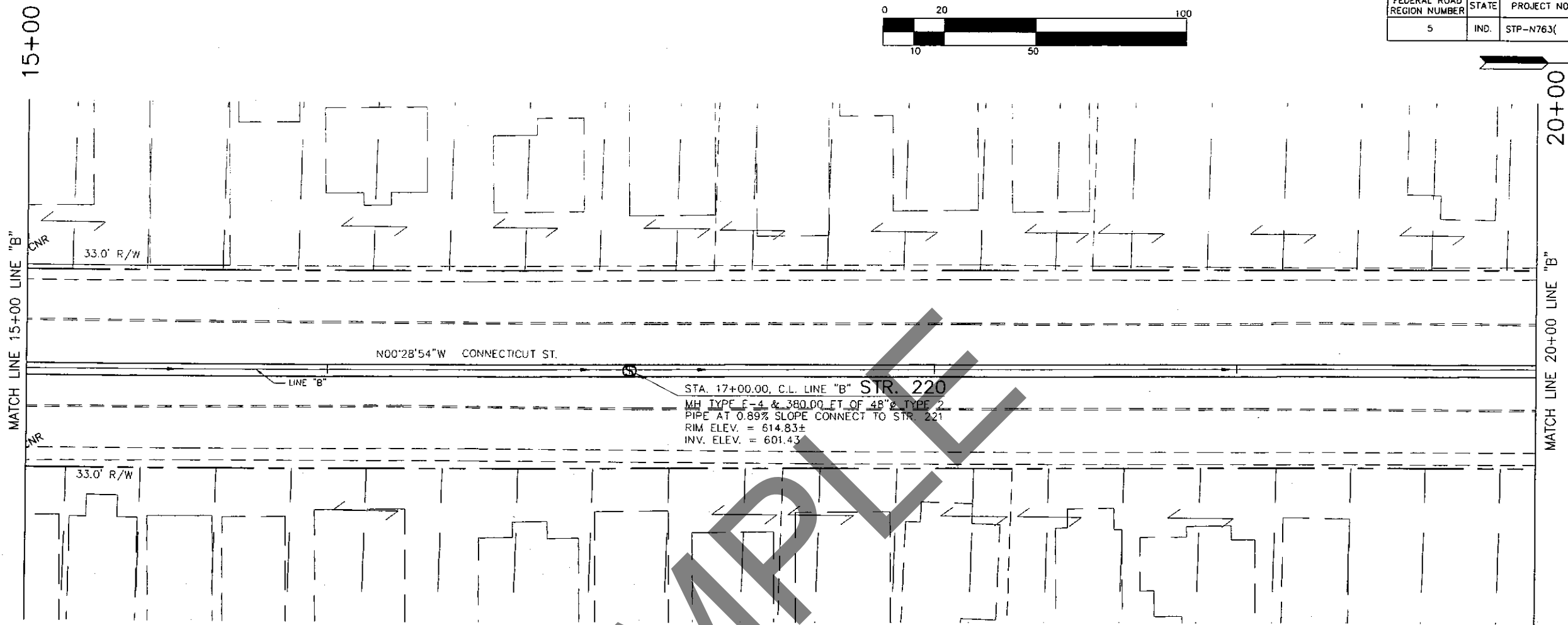


RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE
DESIGNED: TMW	DRAWN: TMW			1:20	N/A
CHECKED: ASM	CHECKED: ASM		PLAN - PROFILE	VERTICAL SCALE	DESIGNATION
			LINE "B" 10+00 TO 15+00	1:5	0600750
				SURVEY BOOK	SHEET
				23	of 34
				CONTRACT	PROJECT
				R-30938	STP-N763()

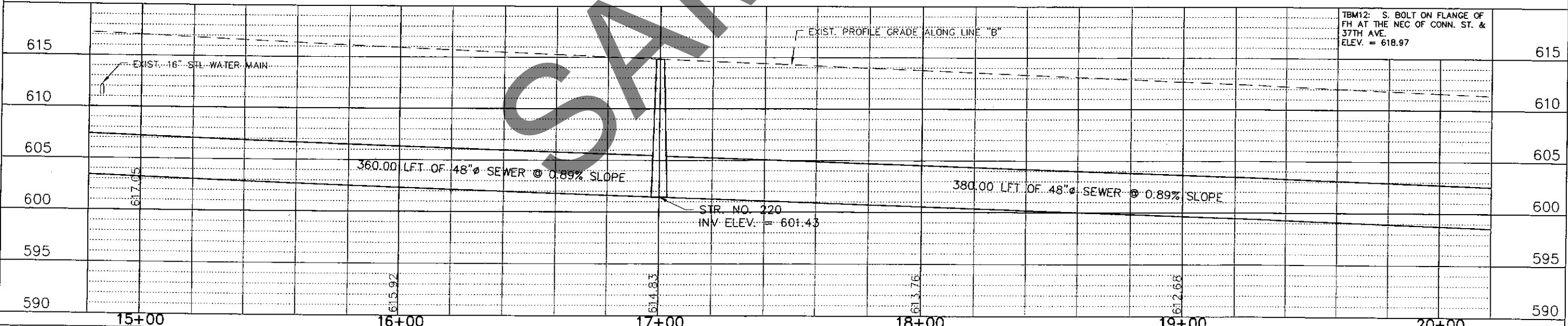
FEDERAL ROAD REGION NUMBER	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	STP-N763()	2007	24	34



PLAN	NO.	DATE
SURVEYED BY	BY	
PLOTTED BY		
ALIGNMENTS CHECKED		
RT. OF WAY CHECKED		

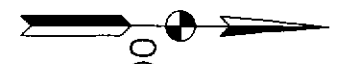
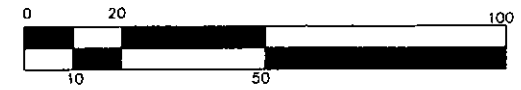


PROFILE	NO.	DATE
SURVEYED BY	BY	
PLOTTED BY		
GRADES CHECKED		
B. M.'S NOTED		
STRUCTURE NOTATIONS CHECKED		

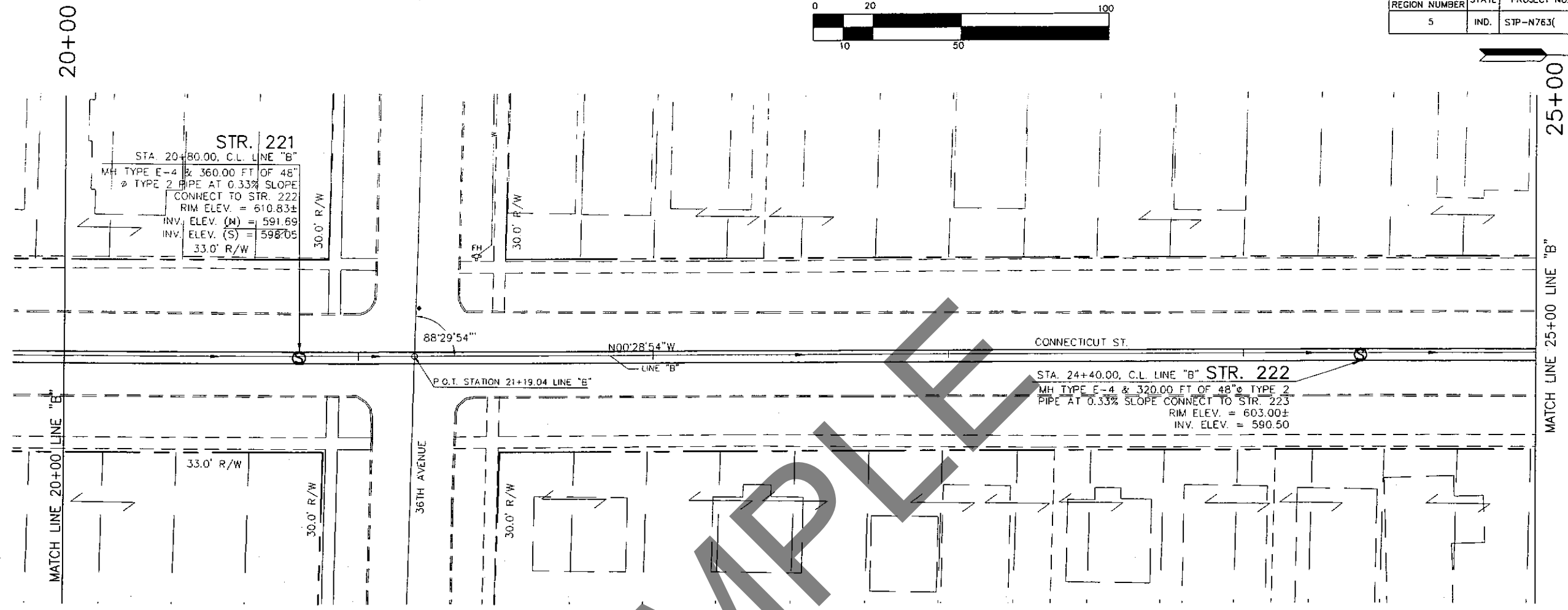


RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE	INDIANA DEPARTMENT OF TRANSPORTATION PLAN - PROFILE LINE "B" 15+00 TO 20+00	HORIZONTAL SCALE	BRIDGE FILE
DESIGNED: <u>TMW</u>	DRAWN: <u>TMW</u>			1:20	N/A
CHECKED: <u>ASM</u>	CHECKED: <u>ASM</u>			VERTICAL SCALE	DESIGNATION
				1:5	0600750
			SURVEY BOOK	SHEET	
			CONTRACT	24 of 34	
			R-30938	PROJECT	STP-N763()

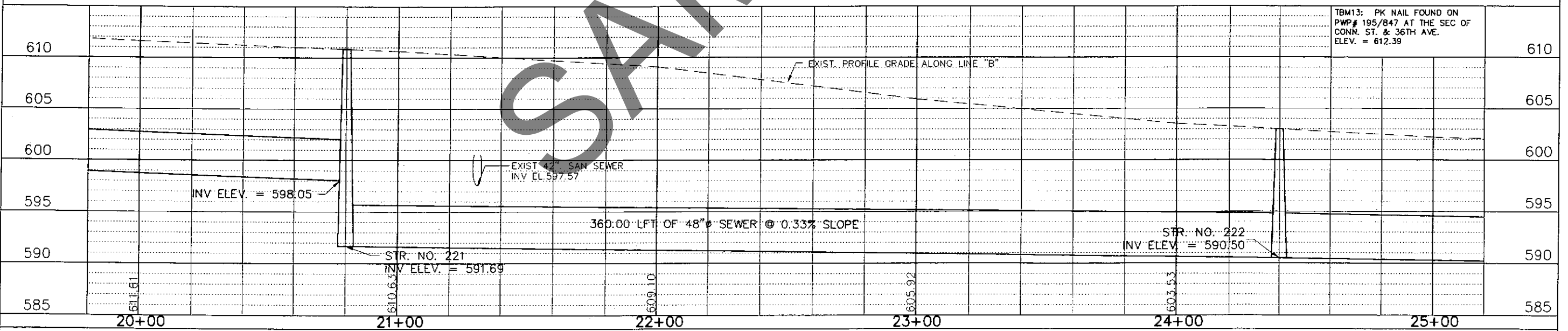
FEDERAL ROAD REGION NUMBER	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	STP-N763()		25	34



PLAN	NO.	SURVEYED BY	DATE
NOTE BOOK		BY	
ALIGNMENTS CHECKED			
RT. OF WAY CHECKED			

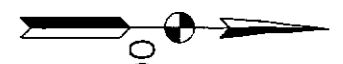
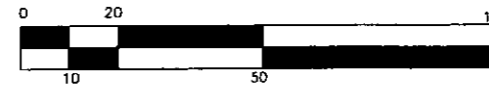


PROFILE	NO.	SURVEYED BY	DATE
NOTE BOOK		BY	
GRADES CHECKED			
B. M.'S NOTED			
STRUCTURE NOTATIONS CHECKED			

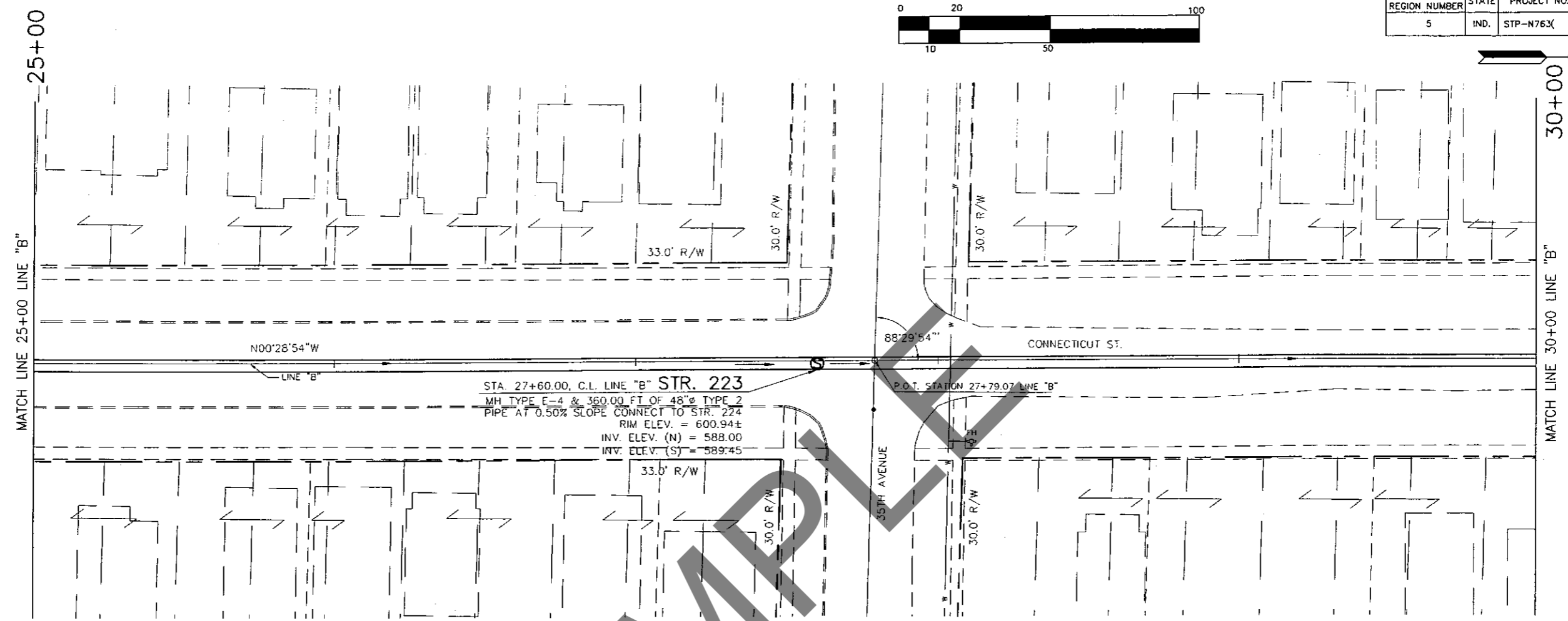


RECOMMENDED FOR APPROVAL		INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE 1:20	BRIDGE FILE
DESIGNED: <u>TMW</u>	DATE		VERTICAL SCALE 1:5	DESIGNATION 0600750
CHECKED: <u>ASM</u>	CHECKED: <u>ASM</u>	PLAN - PROFILE LINE "B" 20+00 TO 25+00	SURVEY BOOK	SHEET 25 of 34
			CONTRACT R-30938	PROJECT STP-N763()

FEDERAL ROAD REGION NUMBER	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	STP-N763()	2007	26	34

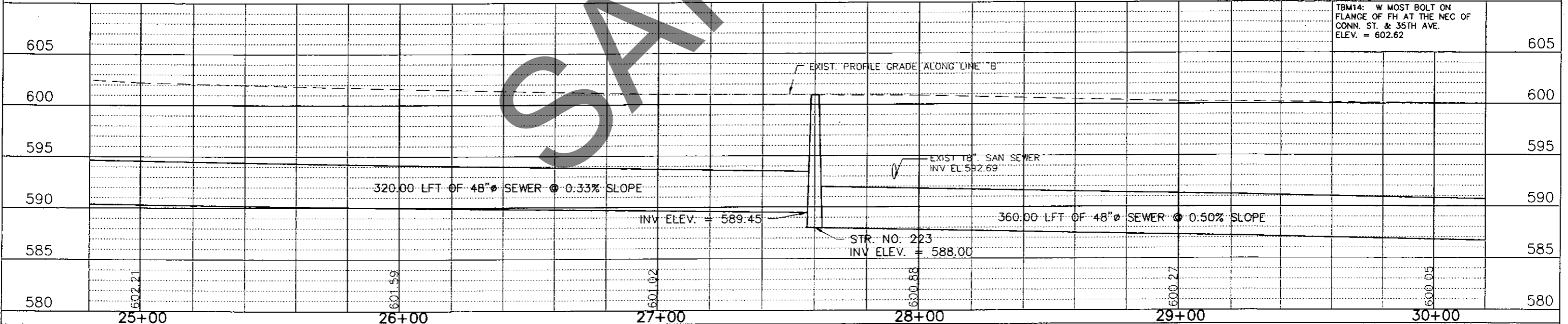


PLAN	SURVEYED BY	BY	DATE
NOTE BOOK NO.	PLOTTED BY		
	ALIGNMENTS CHECKED		
	RT. OF WAY CHECKED		



STA 27+60.00, C.L. LINE "B" STR. 223
 MH TYPE E-4 & 360.00 FT. OF 48" TYPE 2
 PIPE AT 0.50% SLOPE CONNECT TO STR. 224
 RIM ELEV. = 600.94±
 INV. ELEV. (N) = 588.00
 INV. ELEV. (S) = 589.45

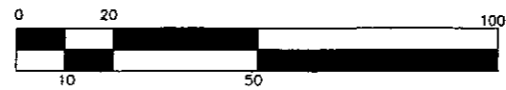
PROFILE	SURVEYED BY	BY	DATE
NOTE BOOK NO.	PLOTTED BY		
	GRADES CHECKED		
	B. M.'S NOTED		
	STRUCTURE NOTATIONS CHECKED		



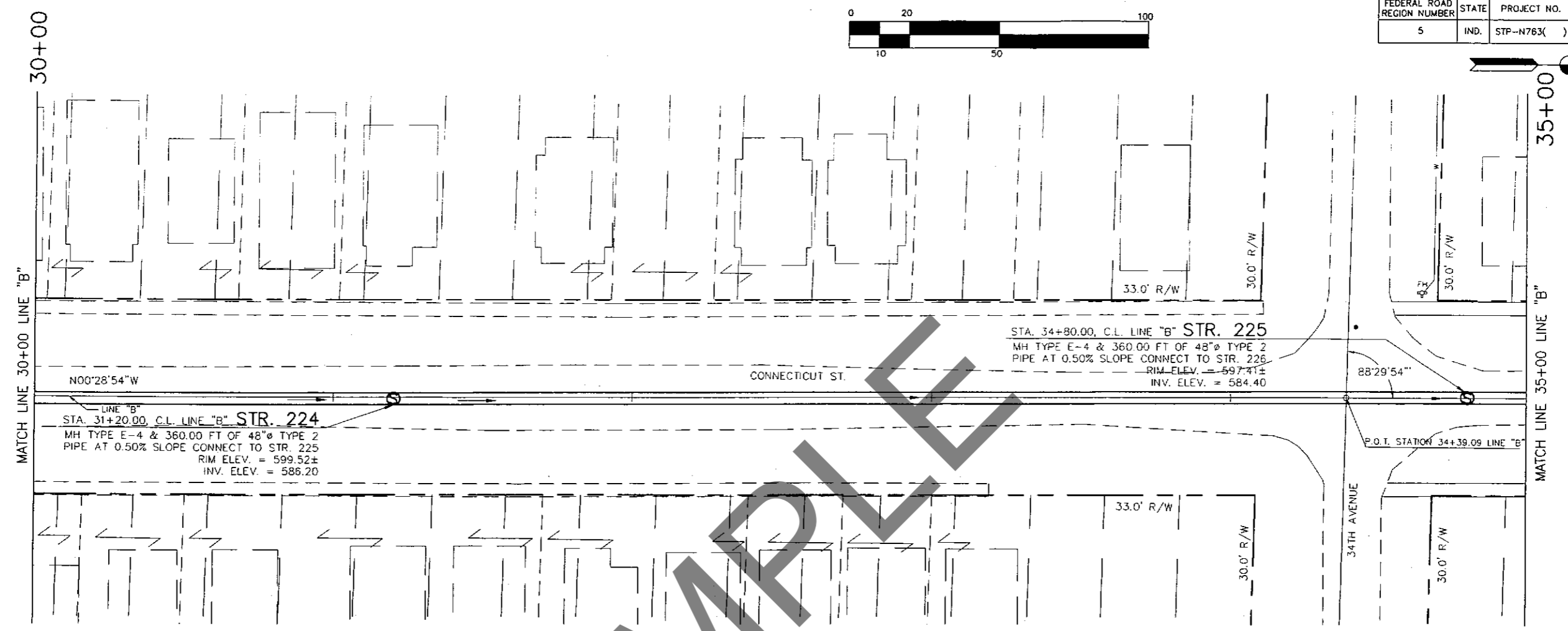
TBM14: W MOST BOLT ON
 FLANGE OF FH AT THE NEC OF
 CONN. ST. & 35TH AVE.
 ELEV. = 602.62

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE
DESIGNED: TMW	DRAWN: TMW			1:20	N/A
CHECKED: ASM	CHECKED: ASM		PLAN - PROFILE	VERTICAL SCALE	DESIGNATION
			LINE "B" 25+00 TO 30+00	1:5	0600750
				SURVEY BOOK	SHEET
				R-30938	26 of 34
					PROJECT
					STP-N763()

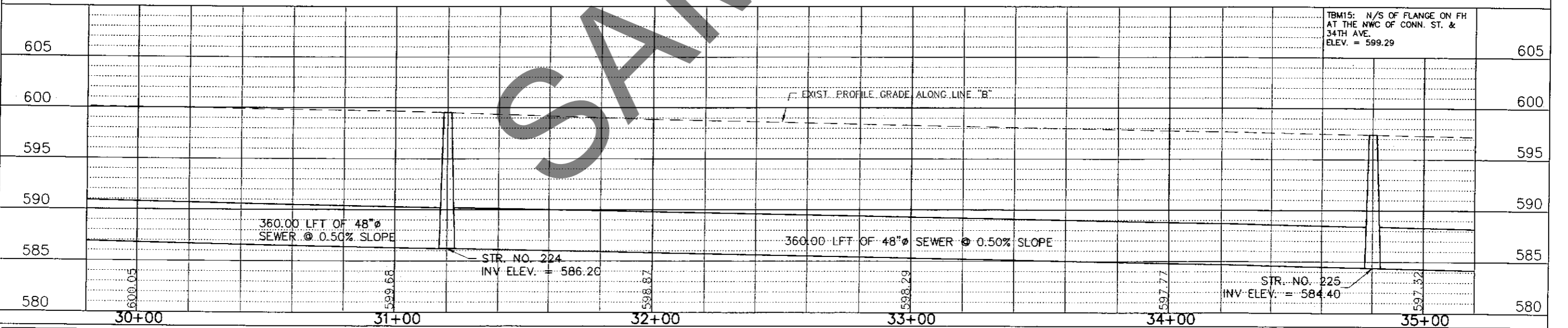
FEDERAL ROAD REGION NUMBER	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	STP-N763()	2007	27	34



PLAN	SURVEYED BY	DATE
NOTE BOOK NO.	PLOTTED BY	
	ALIGNMENTS CHECKED	
	RT. OF WAY CHECKED	



PROFILE	SURVEYED BY	DATE
NOTE BOOK NO.	PLOTTED BY	
	GRADES CHECKED	
	B. M.'S NOTED	
	STRUCTURE NOTATIONS CHECKED	



TBM15: N/S OF FLANGE ON FH AT THE NWC OF CONN. ST. & 34TH AVE. ELEV. = 599.29

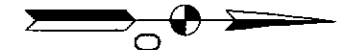
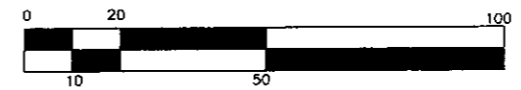
RECOMMENDED FOR APPROVAL	
DESIGN ENGINEER	DATE
DESIGNED: TMW	DRAWN: TMW
CHECKED: ASM	CHECKED: ASM

INDIANA DEPARTMENT OF TRANSPORTATION

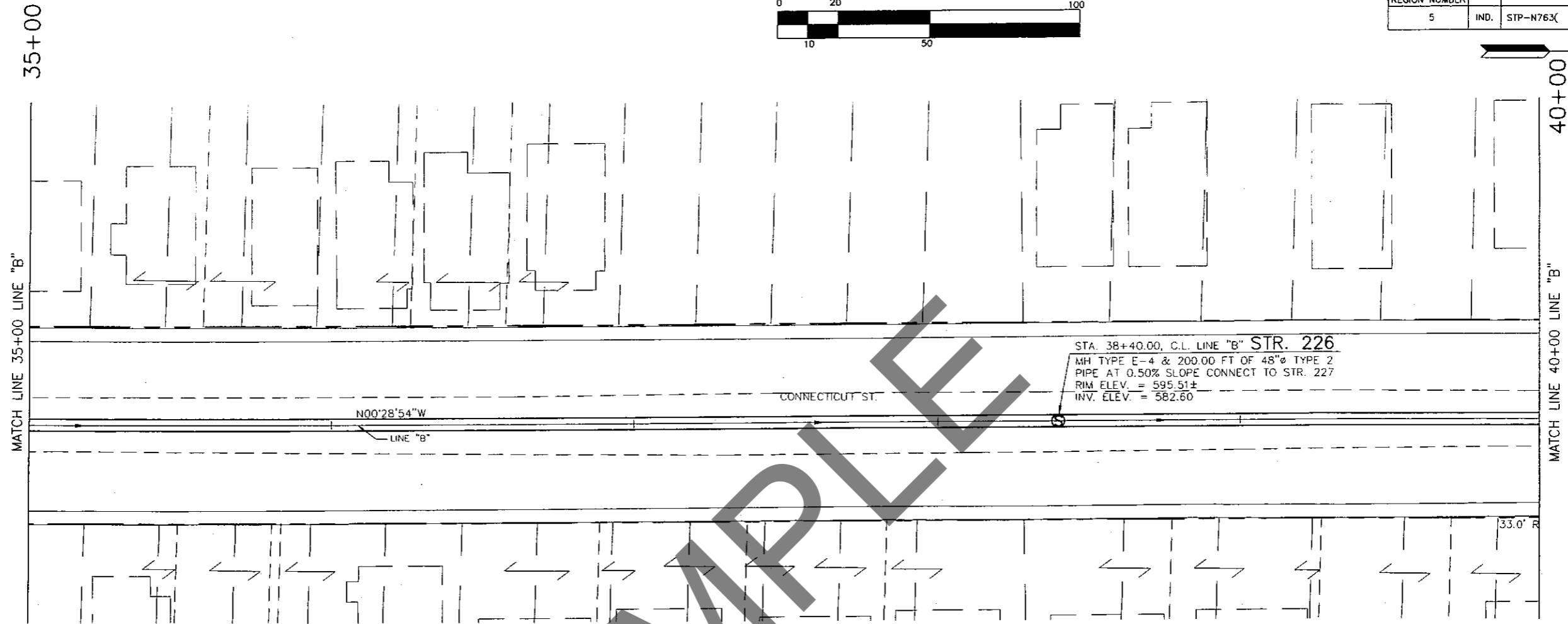
PLAN - PROFILE
LINE "B" 30+00 TO 35+00

HORIZONTAL SCALE	BRIDGE FILE
1:20	N/A
VERTICAL SCALE	DESIGNATION
1:5	0600750
SURVEY BOOK	SHEET
	27 of 34
CONTRACT	PROJECT
R-30938	STP-N763()

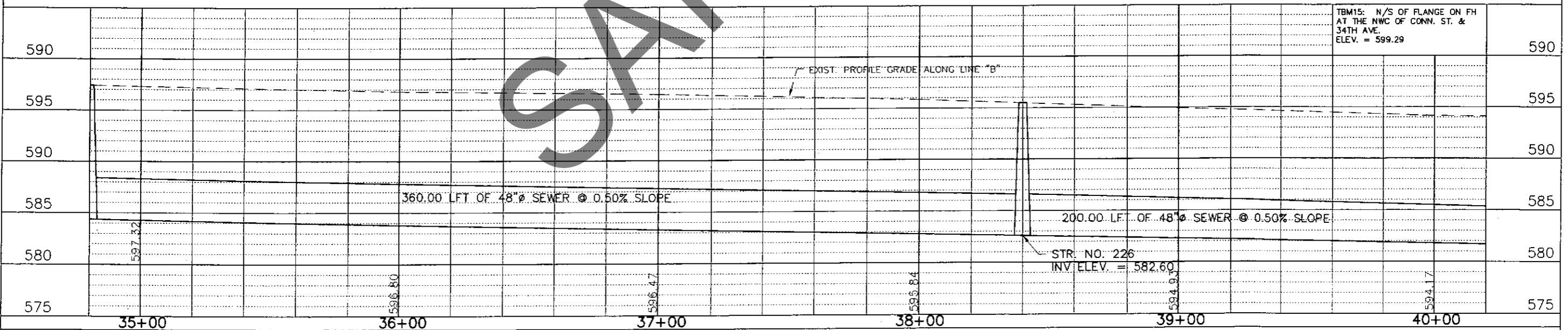
FEDERAL ROAD REGION NUMBER	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	STP-N763()	2007	28	34



PLAN	SURVEYED BY	BY	DATE
NOTE BOOK NO.	PLOTTED BY		
	ALIGNMENTS CHECKED		
	RT. OF WAY CHECKED		



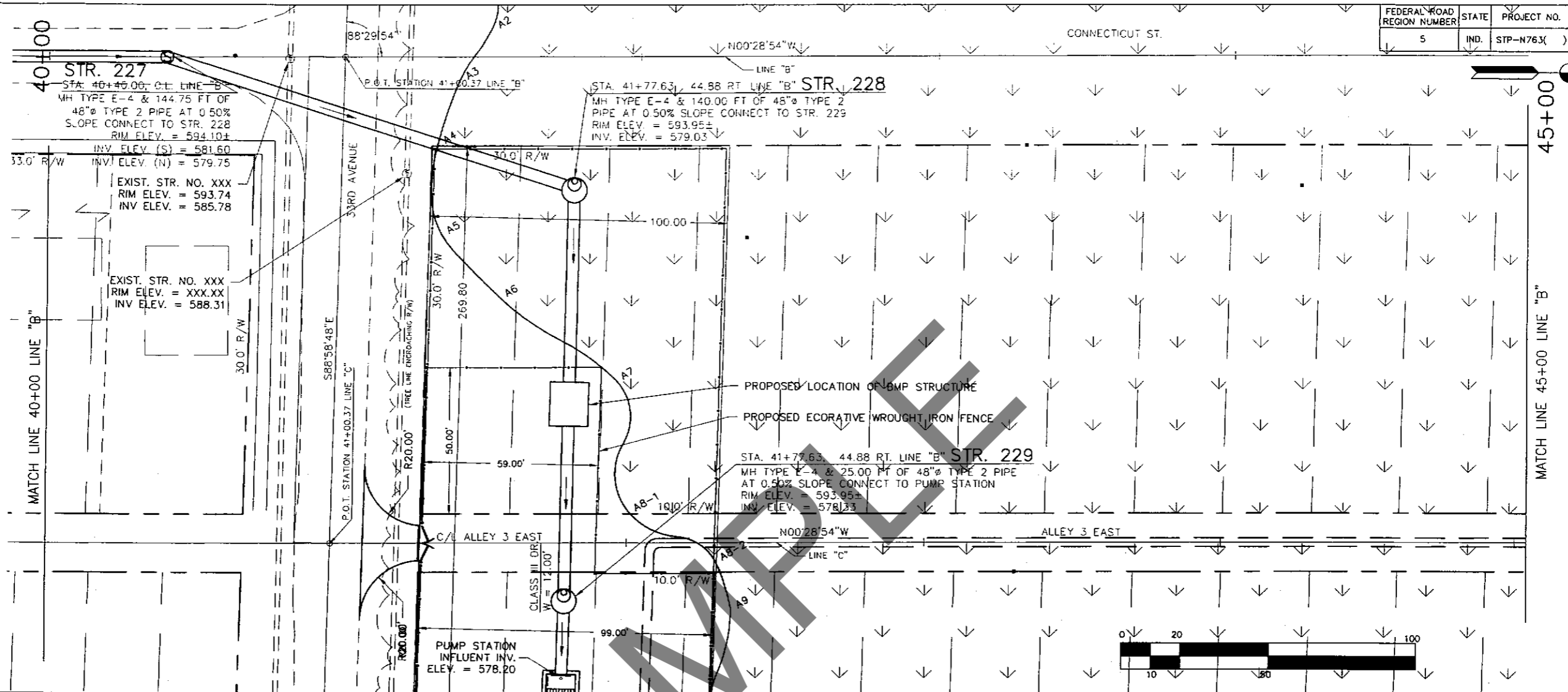
PROFILE	SURVEYED BY	BY	DATE
NOTE BOOK NO.	PLOTTED BY		
	GRADES CHECKED		
	B. M.'S NOTED		
	STRUCTURE NOTATIONS CHECKED		



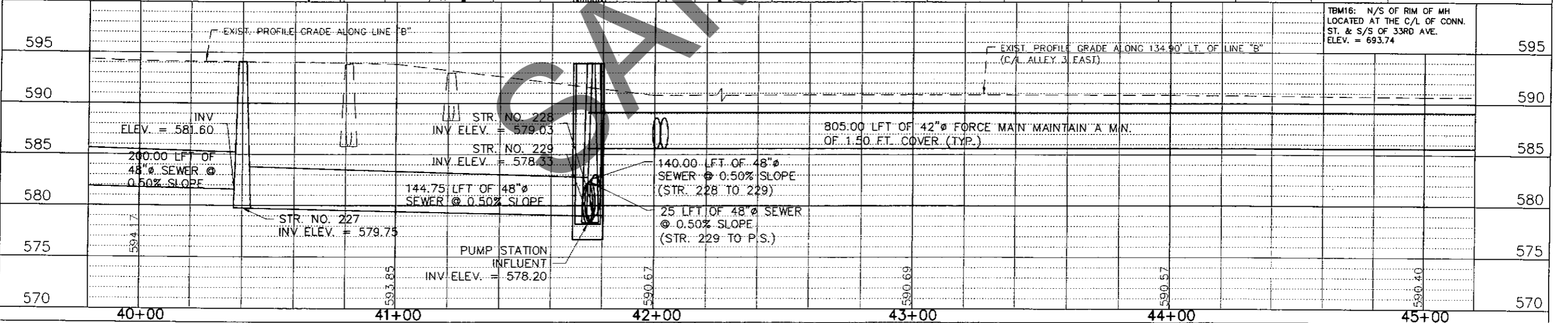
RECOMMENDED FOR APPROVAL		DESIGN ENGINEER		DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE	
DESIGNED: TMW		DRAWN: TMW				1:20	N/A	
CHECKED: ASM		CHECKED: ASM				VERTICAL SCALE	DESIGNATION	
						1:5	0600750	
					PLAN - PROFILE	SURVEY BOOK		SHEET
					LINE "B" 35+00 TO 40+00	28		of 34
						CONTRACT	PROJECT	
						R-30938	STP-N763()	

FEDERAL ROAD REGION NUMBER	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	STP-N763()	2007	29	34

PLAN	NO.	DATE
SURVEYED BY _____		
PLOTTED BY _____		
ALIGNMENTS CHECKED _____		
RT. OF WAY CHECKED _____		



PROFILE	NO.	DATE
SURVEYED BY _____		
PLOTTED BY _____		
GRADES CHECKED _____		
B. M.'S NOTED _____		
STRUCTURE NOTATIONS CHECKED _____		



RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE	INDIANA DEPARTMENT OF TRANSPORTATION PLAN - PROFILE LINE "B" 40+00 TO 45+00	HORIZONTAL SCALE	BRIDGE FILE
DESIGNED: <u>TMW</u>	DRAWN: <u>TMW</u>			1:20	N/A
CHECKED: <u>ASM</u>	CHECKED: <u>ASM</u>			VERTICAL SCALE	DESIGNATION
				1:5	0600750
				SURVEY BOOK	SHEET
					29 of 34
				CONTRACT	PROJECT
				R-30938	STP-N763()