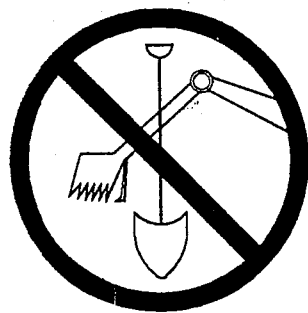


INDEX OF SHEETS

SHEET NO.	TITLE
T1	GENERAL NOTES
T2	TYPICAL SECTIONS
DI-D2	DETAIL SHEETS
D3-D6	SITE STREAM REALIGNMENT
S1	STREAM REALIGNMENT CROSS SECTIONS
S2	WETLAND MITIGATION & EROSION CONTROL PLAN
S3	ALIGNMENT & CONTROL DETAIL
AC1	PAVEMENT GRADES
K1-K2	INTERSECTION LAYOUT
K3-K4	SIGNING & PAVEMENT MARKING PLAN
SPI-SP6	TRAFFIC CONTROL DETECTOR PLAN
TS1	TRAFFIC CONTROL PHASE 1
TC1(1)-TC3(1)	TRAFFIC CONTROL PHASE 2
TC2(2)-TC3(2)	PLAN & PROFILE
PPI-PP5	STANDARD DETAIL DRAWINGS (14)
	SIGN PLATES (4)
	CROSS SECTIONS

TOTAL SHEETS = 72

TO OBTAIN LOCATIONS OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN



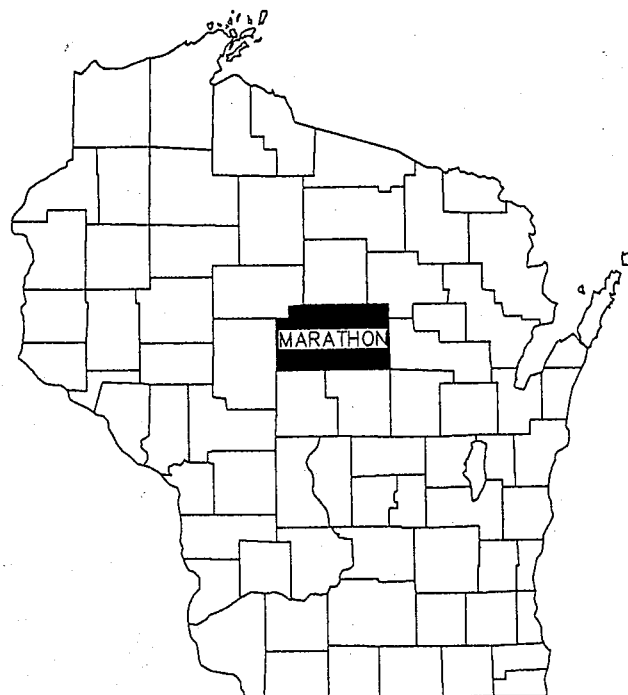
CALL DIGGERS HOTLINE

1-800-242-8511
TOLL FREE

WIS STATUTE 182.0175(1974)
REQUIRES MIN. 3 WORK DAYS
NOTICE BEFORE YOU EXCAVATE

MILW. AREA 259-1181

INFORMATION SHOWN WITH RESPECT TO EXISTING UNDERGROUND FACILITIES IS BASED ON INFORMATION AND DATA FURNISHED BY THE OWNER OF SUCH UNDERGROUND FACILITIES. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXACT LOCATIONS OF ALL UNDERGROUND FACILITIES PRIOR TO COMMENCING ANY WORK. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITY FACILITIES.

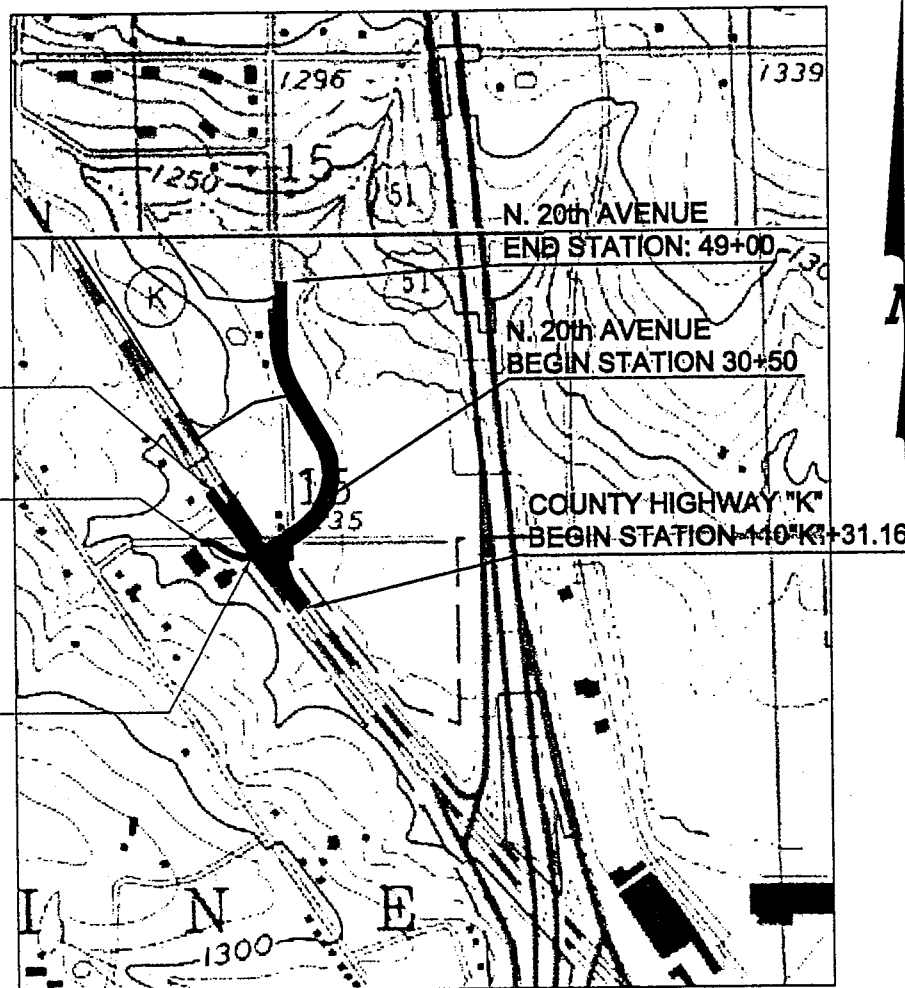


CONSTRUCTION PLANS FOR: 2003 NORTH 20TH AVENUE RECONSTRUCTION & CTH K/CASSIDY DRIVE/NORTH 20TH AVENUE INTERSECTION CITY OF WAUSAU, WISCONSIN

COUNTY HIGHWAY "K"
END STATION 118"K"+38.36

CASSIDY DRIVE
BEGIN STATION 496+22.04

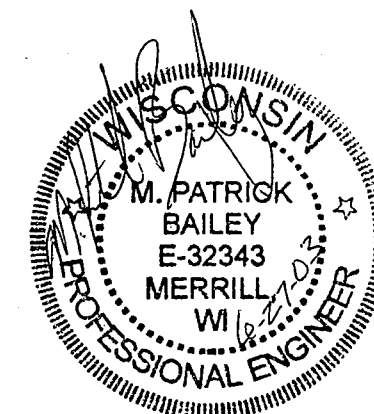
CASSIDY DRIVE
END STATION 499+00.34



NOT TO SCALE

LEGEND

	FOUND IRON PIPE		AREA UNDER PHASE 1 CONSTRUCTION
	EXISTING UTILITY POLE		AREA UNDER PHASE 2 CONSTRUCTION
	EXISTING OVERHEAD UTILITY		CHANNELIZING DRUM REFLECTORIZED
	EXISTING FENCE		CHANNELIZING DRUM WITH TYPE "C" WARNING LIGHT, REFLECTORIZED
	EXISTING GUY WIRE		LANE AND DIRECTION OF FLOW
	EXISTING TREE LINE		TYPE III BARRICADE WITH TYPE "A" WARNING LIGHT
	EXISTING SIGN		TYPE III BARRICADE WITH A SIGN AND TYPE "A" WARNING LIGHT
	EXISTING LIGHTPOLE		POST WITH ATTACHED SIGN IN DRUM
	EXISTING CULVERT PIPE		POST WITH ATTACHED SIGN
	EXISTING FIRE HYDRANT		FLEXIBLE TUBULAR MARKER AND BASE
	EXISTING SPOT ELEVATION		ARROW BOARD
	LOT LINE		REMOVE PAVEMENT MARKING
	SOIL BORING		SAWCUT EXISTING PAVEMENT
	WETLAND BUFFER BOUNDARY		PULL BOX, 18' x 24' LOCATION
	EXISTING WETLANDS		PULL BOX, 24' x 36' LOCATION
	PROPOSED RIPRAP		FUTURE APPROXIMATE SIGNAL BASE LOCATION
	PROPOSED EROSION MAT		
	PROPOSED CONCRETE		
	PROPOSED CURB & GUTTER		
	PROPOSED FIRE HYDRANT		
	PROPOSED CURB STOP		
	PROPOSED GATE VALVE		
	PROPOSED CURB INLET		
	PROPOSED SANITARY MANHOLE		
	PROPOSED STORM SEWER MANHOLE		
	PROPOSED INLET PROTECTION		
	PROPOSED SILT FENCE		
	PROPOSED STORM SEWER		
	PROPOSED SANITARY SEWER		
	PROPOSED WATER SERVICE (BY OTHERS)		
	PROPOSED SANITARY LATERAL (BY OTHERS)		
	INLET		
	OUTFALL		
	UPSTREAM END OF PIPE		
	PROPOSED SLOPE		
	PROPOSED SPOT ELEVATION		
	PROPOSED CONTOUR		
	EXISTING CONTOUR		
	PROPOSED 6x20 LOOP DETECTION IN 1-INCH NONMETALLIC CONDUIT - 3 TURNS		
	PROPOSED 6x6 LOOP DETECTION IN 1-INCH NONMETALLIC CONDUIT - SEE PLAN FOR NUMBER OF TURNS		
	STOP BAR		
	STOP BAR (FUTURE)		
	PROPOSED 2-INCH NONMETALLIC CONDUIT		
	PROPOSED 2-3-INCH NONMETALLIC CONDUITS		



COPY

DATE	REVISION	BY	CHK'D
CIVIL & ENVIRONMENTAL ENGINEERING, SURVEYING 4080 N. 20th AVENUE WAUSAU, WISCONSIN 54401 PHONE: (715) 675-9784 FAX: (715) 675-4060 EMAIL: mail@REIengineering.com			
CONSTRUCTION PLANS FOR 2003 NORTH 20TH AVENUE RECONSTRUCTION CTH K/CASSIDY DRIVE/ NORTH 20TH AVENUE INTERSECTION CITY OF WAUSAU, WISCONSIN			
DESIGNED BY: MPB	CHECKED BY:		
SURVEYED BY: NJW	APPROVED BY:		
DRAWN BY: TAW	DATE: 6/26/03		
SHEET T1	PROJECT No. 2369		

STANDARD DETAIL DRAWINGS

SSD NUMBER	TITLE
8F 1-11	APRON ENDWALLS FOR CULVERT PIPE
9B 2-6	CONDUIT
9B 4-5	PULL BOX
9F 8-2	LOOP DETECTOR PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)
15C 7-60	PAVEMENT MARKING SYMBOLS
15C 8-9a	PAVEMENT MARKING (MAINLINE)
15C 8-9b	PAVEMENT MARKING (INTERSECTIONS)
15C 8-9d	PAVEMENT MARKING (LEFT TURN LANE)
15C 8-10e	PAVEMENT MARKING (ISLAND, STOP LINE, & CROSSWALK)
15C 11-5	FLEXIBLE TUBULAR MARKER POST, ANCHOR AND BASES
15C 18-1	MEDIAN ISLAND MARKING
15D 6-2	TRAFFIC CONTROL, TWO LANE TWO WAY OPERATION
15D 11-3	TRAFFIC CONTROL, SINGLE LANE CROSSOVER
15D 20-1	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

UTILITY INFORMATION

VERIZON:
(TELEPHONE)
521 FOURTH STREET
WAUSAU, WI 54403
(715) 847-1537
ATTN: DALE KANITZ

WISCONSIN PUBLIC SERVICE CORPORATION:
(GAS & ELECTRIC)
1700 SHERMAN STREET
WAUSAU, WI 54402
ATTN: CLAYTON VIRCKS
(715) 848-7317

CHARTER COMMUNICATIONS:
(CABLE TV)
853 MCINTOSH STREET
WAUSAU, WI 54403
(715) 842-3910
ATTN: JEFF KULAF
(715) 574-8241 (CELL)

WAUSAU WATER WORKS:
(WATER & SANITARY SEWER)
407 GRANT STREET
WAUSAU, WI 54403
(715) 261-6530
ATTN: JOE GEHIN

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
5301 RIB MOUNTAIN DRIVE
WAUSAU, WI 54401
(715) 359-4522
ATTN: KEITH PATRICK

DIGGERS HOTLINE
TOLL FREE (800) 242-8511 MILWAUKEE AREA
(414) 259-1181 HEARING IMPAIRED TDD
(800) 542-2289 www.DiggersHOTLINE.COM

OWNERS:
MARATHON COUNTY HIGHWAY DEPARTMENT
1430 WEST STREET
WAUSAU, WI 54401
715-842-2205

WISCONSIN DEPARTMENT OF TRANSPORTATION
1681 2ND AVENUE SOUTH
WISCONSIN RAPIDS, WI 54495-4768
715-421-8321

CITY OF WAUSAU:
407 GRANT STREET
WAUSAU, WI 54403
(715) 261-6740
ATTN: JOHN HESS,
DIRECTOR OF PUBLIC WORKS

TOWN OF MAINE:
6111 NORTH 44TH AVENUE
WAUSAU, WI 54401
(715) 675-5607
ATTN: VERN UTECHT, CHAIRMAN

SURVEYOR:
REI
NATHAN J. WINTCENSEN, RLS (AGENT)
4080 N. 20TH AVENUE
WAUSAU, WI 54401
715-675-9784

ENGINEER:
REI
M. PATRICK BAILEY, P.E.
4080 N. 20TH AVENUE
WAUSAU, WI 54401
715-675-9784

GENERAL NOTES

FACILITY LOCATIONS SHOWN ON THIS MAP ARE BASED ON AVAILABLE INFORMATION AND ARE FOR REFERENCE PURPOSES ONLY AND MUST BE FIELD VERIFIED. RECEIPT OF THIS MAP DOES NOT CONFIRM OR DENY THE LOCATION OF ANY UNDERGROUND FACILITY. LOCATIONS OF ALL FACILITIES MUST BE CONFIRMED BY REQUESTING AN UNDERGROUND LOCATE THROUGH DIGGER'S HOTLINE AT 1-800-242-8511

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

RADIUS DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.

LOCATION OF EXISTING ENTRANCES ARE TO BE MAINTAINED.

MISCELLANEOUS REMOVAL OF ITEMS REQUIRING RESTORATION OF CONCRETE OR ASPHALTIC PAVEMENT (SIDEWALKS, DRIVEWAYS, OR SIDE STREETS) SHALL BE REMOVED TO AN EXISTING JOINT OR SAWED AS DETERMINED BY THE ENGINEER, OR AS SHOWN ON THE PLANS.

CURB AND GUTTER JOINT SPACING SHALL BE THE SAME AS CONTRACTION JOINT SPACING, 15 FEET NORMAL, UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER IN THE FIELD.

EROSION CONTROL IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

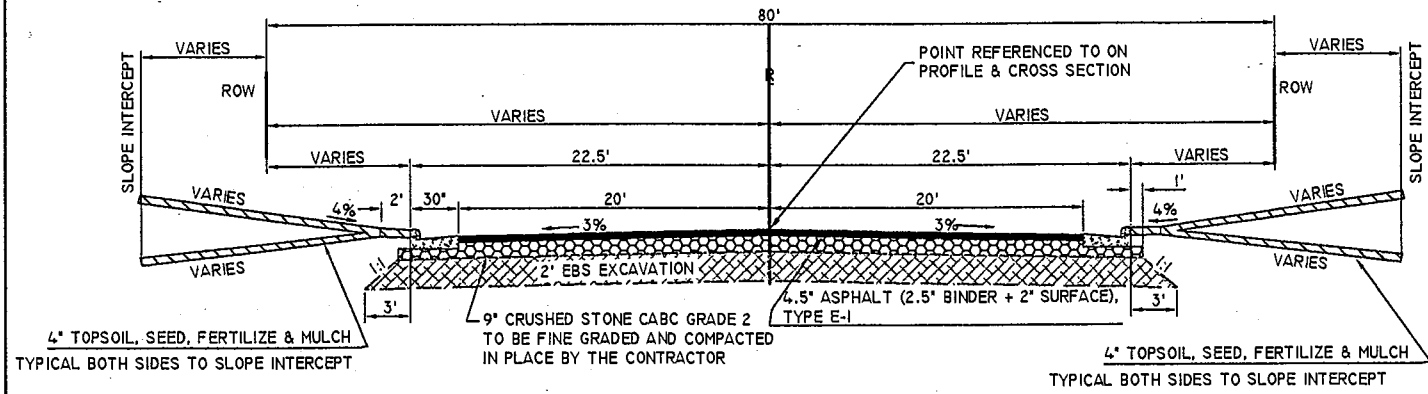
ALL BLENDING OF SLOPES SHALL BE TOP SOILED, FERTILIZED, AND SEEDED UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER IN THE FIELD.

FINAL LOCATION OF PULL BOXES FOR TRAFFIC SIGNAL/STREET LIGHTS INSTALLATION ARE TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

LIST OF STANDARD ABBREVIATIONS

AB	AUGER BORING
ADT	AVERAGE DAILY TRAFFIC
BM	BENCHMARK
CONC.	CONCRETE
(E)	EAST
ELEV.	ELEVATION
M.H.	MANHOLE
(N)	NORTH
(NE)	NORTHEAST
(NW)	NORTHWEST
O.H.	OVERHEAD
RR	RAIL ROAD
(S)	SOUTH
SAN.	SANITARY SEWER
SB	SOIL BORING
(SE)	SOUTHEAST
SS	STORM SEWER
STM	STORM
(SW)	SOUTHWEST
TNH	TOP NUT FIRE HYDRANT
W/ TYP.	WITH TYPICAL
& VAR.	AND VARIES
(W)	WEST

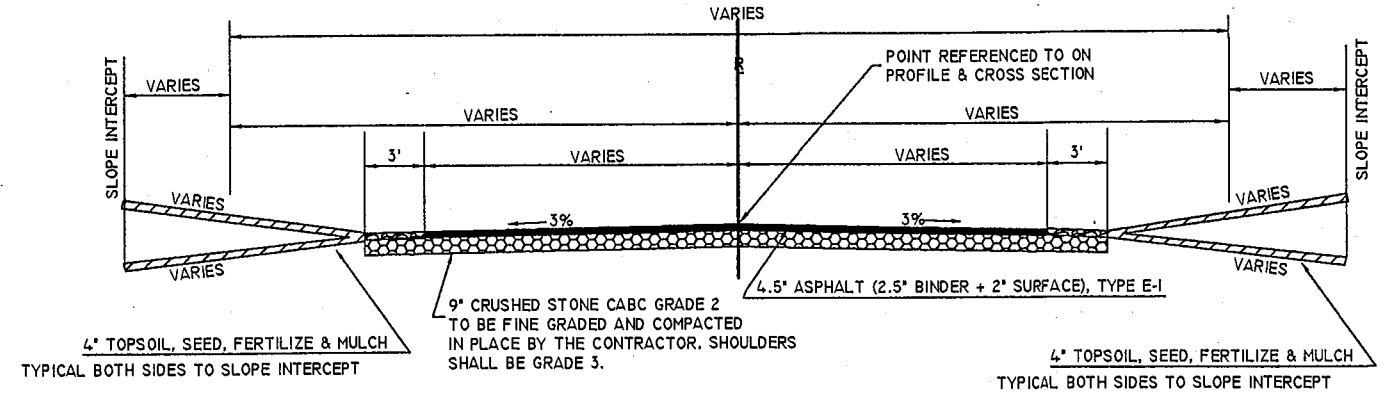
DATE	REVISION	BY	CHK'D
 CIVIL & ENVIRONMENTAL ENGINEERING, SURVEYING 4080 N. 20th AVENUE WAUSAU, WISCONSIN 54401 PHONE: (715) 675-9784 FAX: (715) 675-4060 EMAIL: mail@REIengineering.com			
GENERAL NOTES FOR 2003 NORTH 20TH AVENUE RECONSTRUCTION CTH K/CASSIDY DRIVE/ NORTH 20TH AVENUE INTERSECTION CITY OF WAUSAU, WISCONSIN			
DESIGNED BY: MPB	CHECKED BY:		
SURVEYED BY: NJW	APPROVED BY:		
DRAWN BY: TAW	DATE: 6/25/03		
SHEET	PROJECT No.		
T2	2369		



TYPICAL STREET SECTION - N. 20TH AVE.

WITH 30" CURB & GUTTER

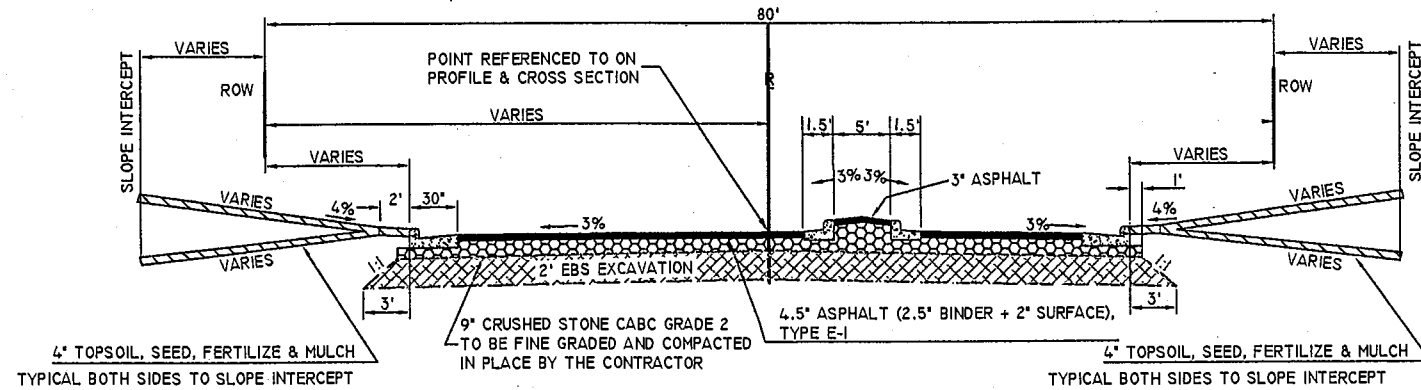
STA: 30+50.00 - 30+72.00, STA: 34+02.52 - 47+18.74
EBS EXCAVATION STA: 32+32.88 - 30+72.00



TYPICAL STREET SECTION - N. 20TH AVENUE

NO CURB & GUTTER

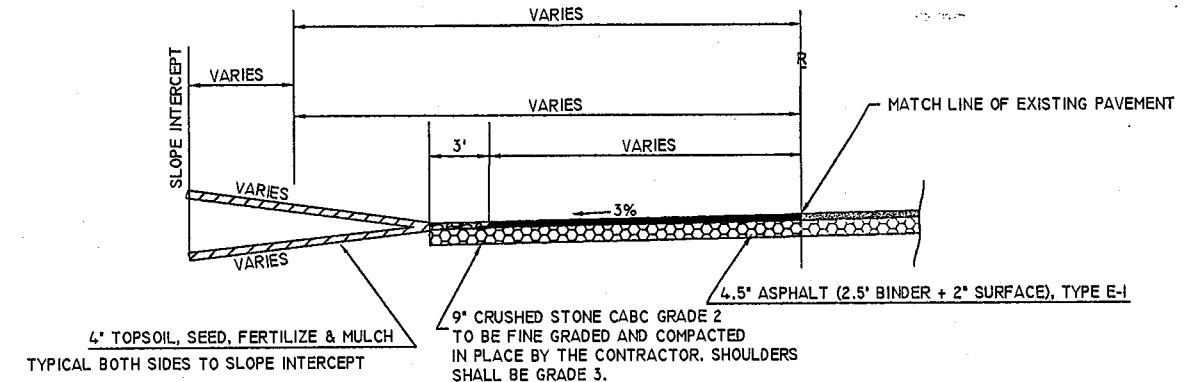
STA: 47+18.75 - 47+71.47



TYPICAL STREET SECTION WITH MEDIAN - N. 20TH AVE.

WITH 30" CURB & GUTTER

STA: 30+72.01 - 34+02.52
EBS EXCAVATION STA: 30+72.01 - 42+73.74

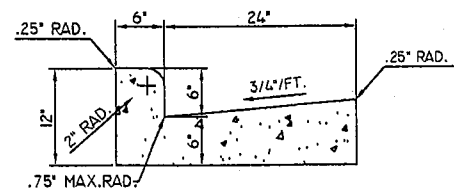


TYPICAL STREET SECTION - N. 20TH AVENUE

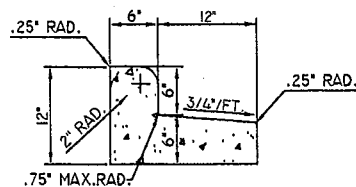
NO CURB & GUTTER

STA: 47+71.48 - 49+00

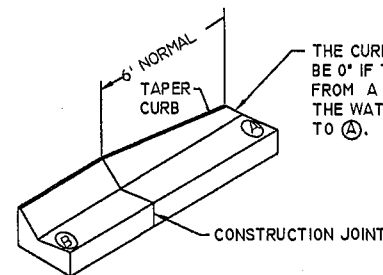
NOTE: NEW PAVEMENT ON LEFT SIDE FROM EDGE OF EXISTING N. 20TH AVE. TO NEW EDGE OF PAVEMENT FOR TAPER.



STANDARD 30" CURB & GUTTER

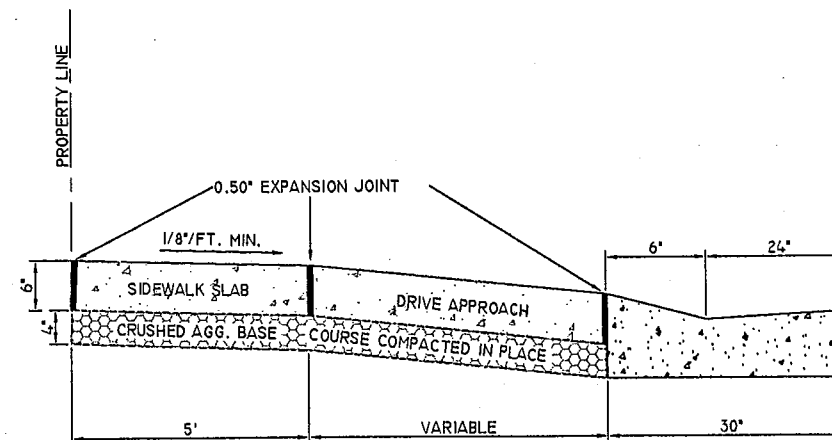


REVERSE SLOPE 18" CURB & GUTTER



STANDARD 30" CURB & GUTTER TERMINI

THE CURB HEIGHT HERE SHALL BE 0" IF THE WATER FLOWS FROM A TO B OR 1-1/2" IF THE WATER FLOWS FROM B TO A.



TYPICAL DRIVEWAY SECTION

NOTE: NOT TO SCALE

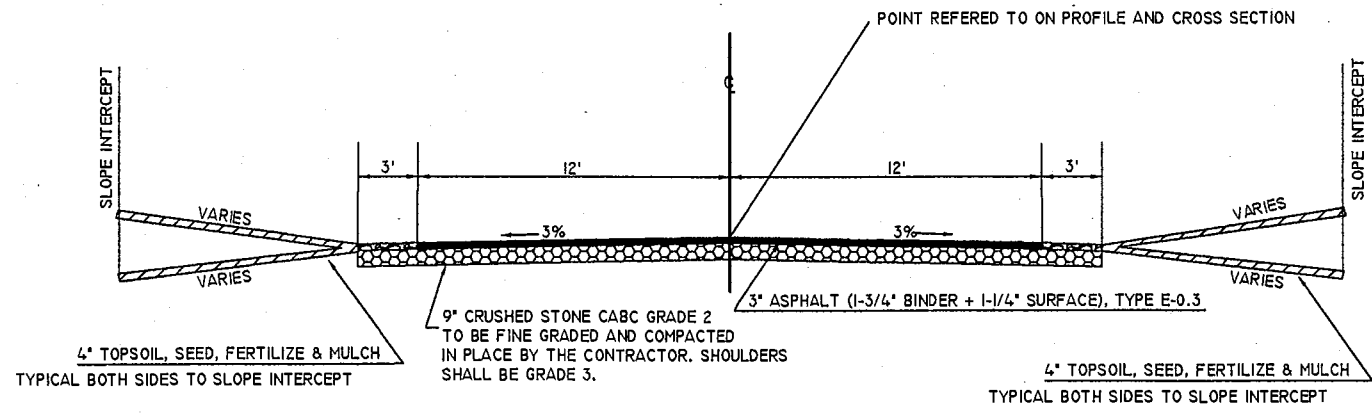
Copyright © 2003 by REI

DATE	REVISION	BY	CHK'D

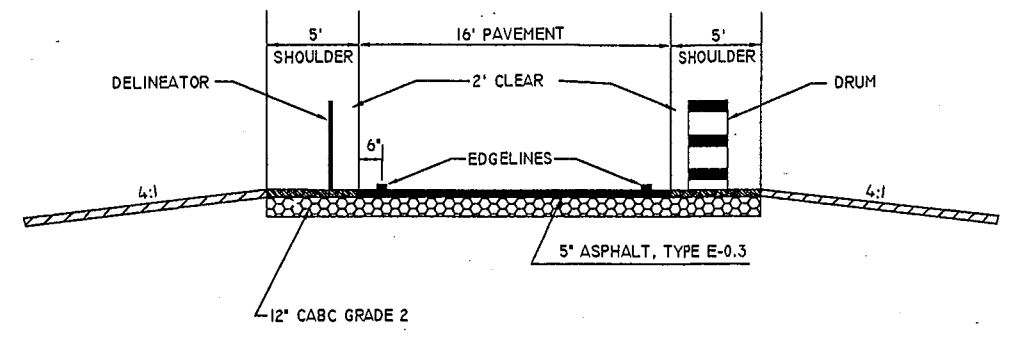
REI
CIVIL & ENVIRONMENTAL
ENGINEERING, SURVEYING
4080 N. 20th AVENUE
WAUSAU, WISCONSIN 54401
PHONE: (715) 675-9784 FAX: (715) 675-4060
EMAIL: mail@REIengineering.com

**TYPICAL SECTIONS
NORTH 20TH AVENUE
WAUSAU, WISCONSIN**

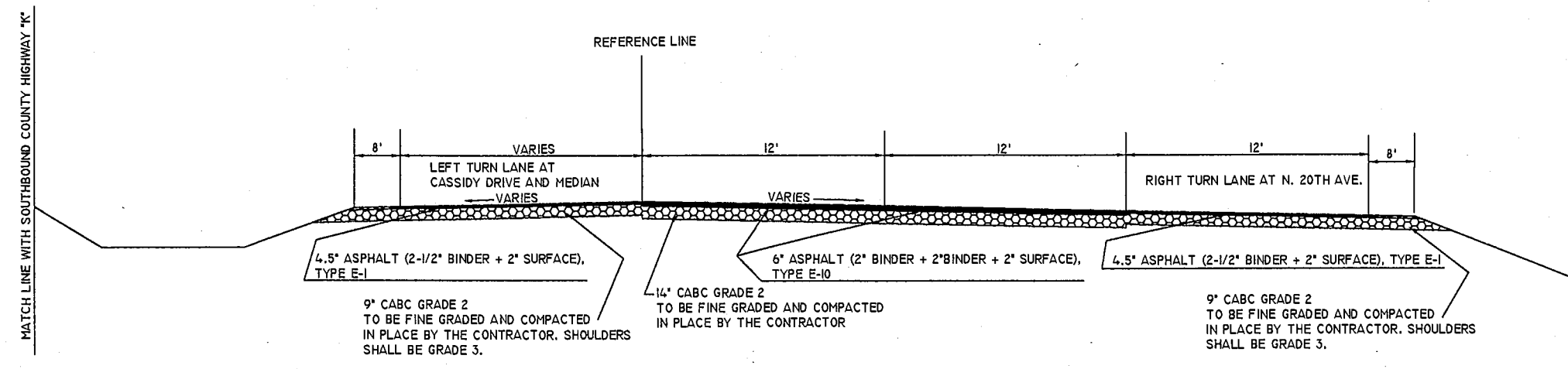
DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY:	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03
SHEET	PROJECT No.
D1	2369



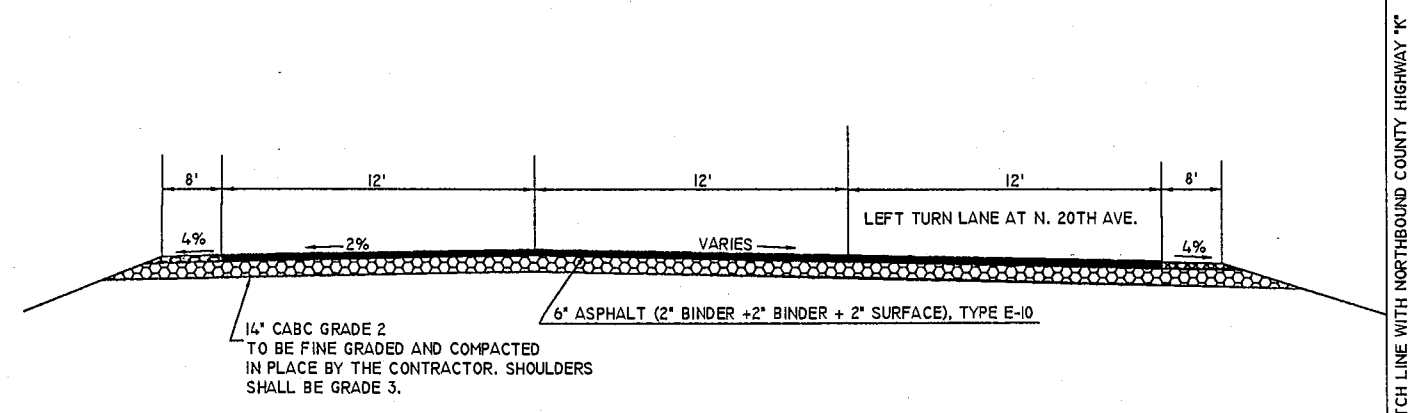
TYPICAL STREET SECTION FOR CASSIDY DRIVE
 STA:496+22.04-499+00.34
 NO CURB & GUTTER



TYPICAL CROSSOVER ROADWAY DIMENSIONS



TYPICAL STREET SECTION FOR COUNTY HIGHWAY "K" NORTHBOUND
 STA:110"K"+31.16-116"K"+20.09
 NO CURB & GUTTER



TYPICAL STREET SECTION FOR COUNTY HIGHWAY "K" SOUTHBOUND
 STA:112"K"+67.32-116"K"+20.09
 NO CURB & GUTTER

DATE	REVISION	BY	CHK'D

REI
 CIVIL & ENVIRONMENTAL
 ENGINEERING, SURVEYING
 4080 N. 20th AVENUE
 WAUSAU, WISCONSIN 54401
 PHONE: (715) 875-9784 FAX: (715) 875-4060
 EMAIL: mail@REIengineering.com

**TYPICAL SECTIONS
 CASSIDY DRIVE &
 COUNTY HIGHWAY "K"
 WAUSAU, WISCONSIN**

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03

SHEET	PROJECT No.
D2	2369

NOTE: NOT TO SCALE

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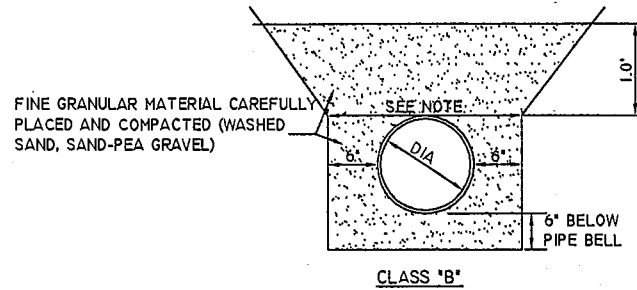
1. DRAFTING: P. 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

NOTE:

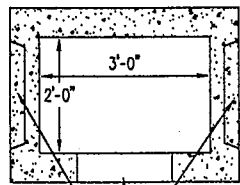
THE TRENCH WIDTH IS TO BE TAKEN AS THE HORIZONTAL DISTANCE AT THE OUTSIDE TOP OF THE PIPE.

THE MAXIMUM ALLOWABLE WIDTH SHALL BE

- 1.) 3.0' GREATER THAN OUTSIDE DIA. FOR 36" OR LARGER PIPE
- 2.) 2.0' GREATER THAN OUTSIDE DIA. FOR PIPES LESS THAN 36" IN DIA.

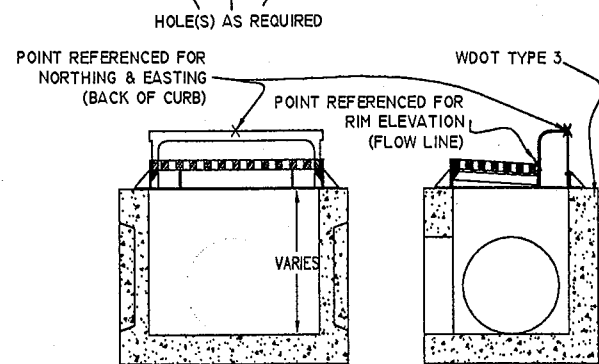


RIGID PIPE BEDDING CLASSIFICATIONS



NOTE:

CURB INLETS ARE INSTALLED WITH EITHER 2'x3' INLET BOX OR A 4' MANHOLE. SEE STORM SEWER TABLE FOR SPECIFIED LOCATIONS.

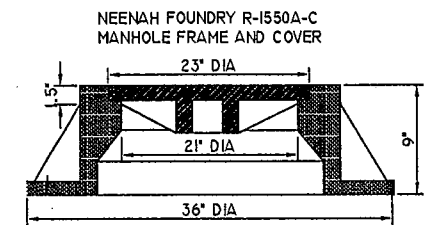
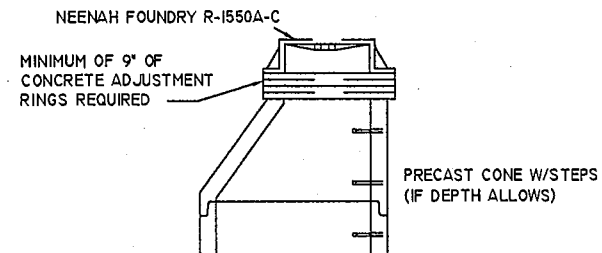
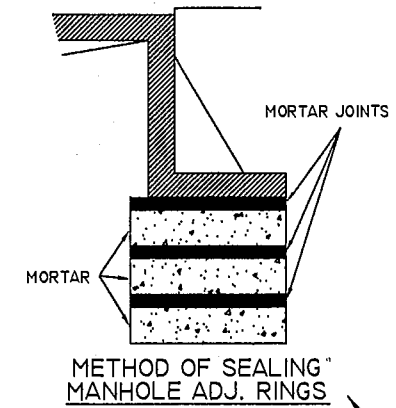


PROFILE SPECIFICATIONS

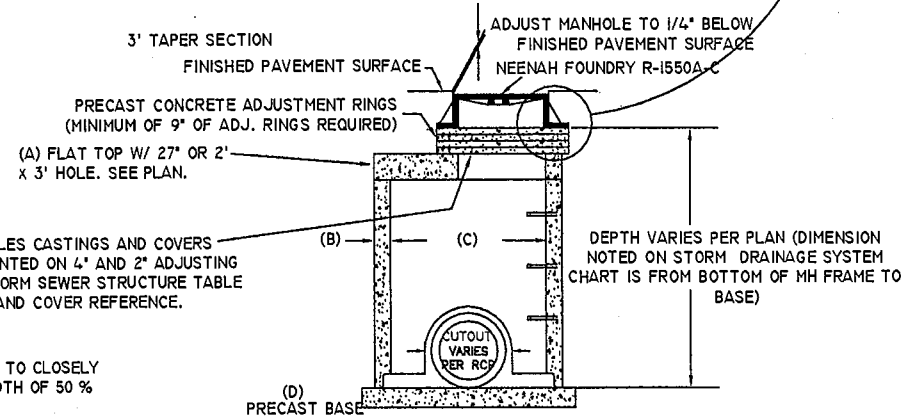
- * MANUFACTURED TO ASTM C-478 SPECIFICATIONS
- * STOCK INLET BOXES AVAILABLE IN 24", 30", 36" HEIGHTS. ORDER WITH HOLE LOCATIONS AND SIZES TO MEET PLAN REQUIREMENTS.
- * W.I. D.O.T. TYPE "H" CASTING FITS OPENING
- * 2'x3'x2" (84") ADJUSTING SQUARES AVAILABLE
- * 2'x3' RISERS AVAILABLE (6", 12", 18" HEIGHTS)
- * 2'x3' RISER = 725LBS/FT, ADD 700LBS FOR MONO BASE

I. FRAME AND GRATE SHALL BE AS PER PLAN SHEET C3.1 AND MANUFACTURED BY NEENAH FOUNDRY OR APPROVED EQUIVALENT

STORM SEWER 2'x3' CURB INLET
NO SCALE



MANHOLE COVER DETAIL
NOTE: COVER TO BE SOLID "NON-ROCKING" TYPE WITH CONCEALED HOLE



TRENCH BOTTOM TO BE SHAPED TO CLOSELY FIT THE PIPE BARREL FOR A WIDTH OF 50 %

WHERE THE ABOVE CONDITIONS ARE NOT SATISFIED, THE CONTRACTOR SHALL PLACE 4" OF GRANULAR BEDDING BENEATH THE PIPE AND EXTEND UP THE SIDE A DISTANCE OF 1/16TH THE O.D. OF THE PIPE

ALL FLOW LINES IN STORM SEWER STRUCTURES SHALL BE POURED CONCRETE.

PRECAST STORM MANHOLE WITH DETAIL OF COVER ADJUSTMENT

	A	B	C	D
48"Ø	58"x8"	5"	48"	65"x8"
60"Ø	72"x8"	6"	60"	80"x8"
72"Ø	86"x8"	7"	72"	94"x8"

NOTE: NOT TO SCALE

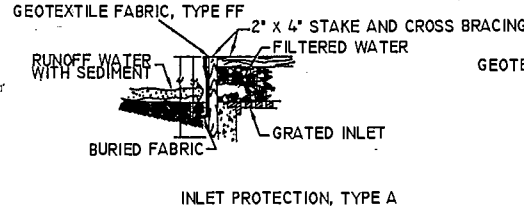
DATE	REVISION	BY	CHK'D

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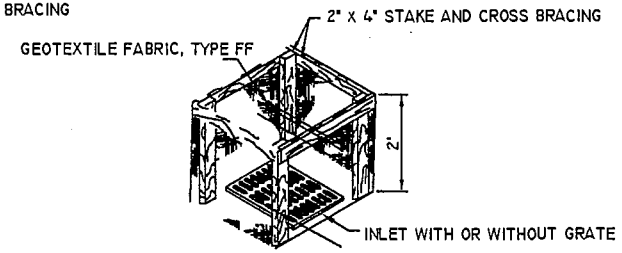
CONSTRUCTION DETAILS
 NORTH 20th AVENUE
 WAUSAU, WISCONSIN

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY:	APPROVED BY:
DRAWN BY: TAW	DATE: 8/9/03
SHEET	PROJECT No.
D3	2369

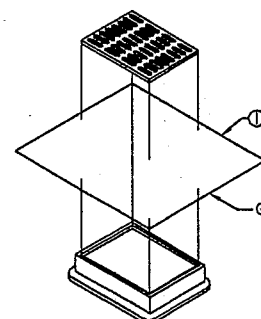
NOTE: ATTACH GEOTEXTILE FABRIC, TYPE FF TO THE TOP OF STAKES AND CROSS BRACINGS.



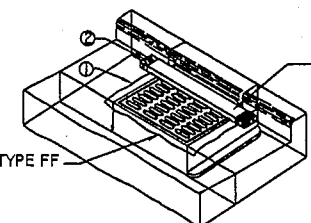
INLET PROTECTION, TYPE A



INLET WITH OR WITHOUT GRATE

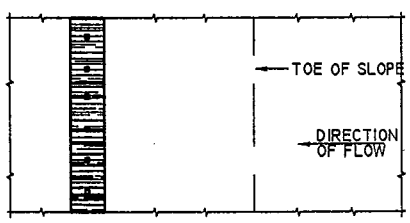


INLET PROTECTION, TYPE B (WITHOUT CURB BOX) (CAN BE INSTALLED ON ANY INLET TYPE)

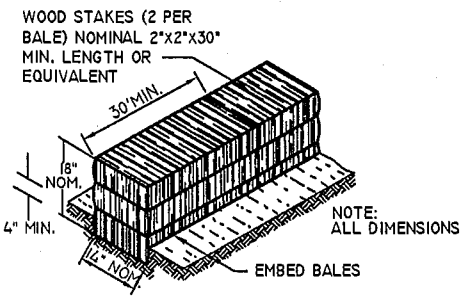


INLET PROTECTION, TYPE C (WITH CURB BOX)

INLET PROTECTION TYPE A, B, AND C

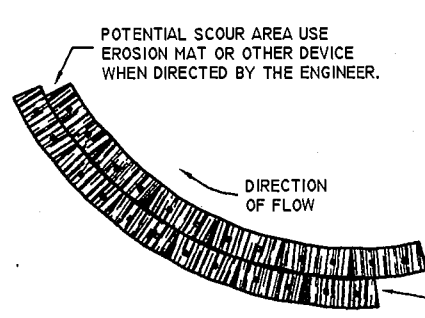


PLAN VIEW

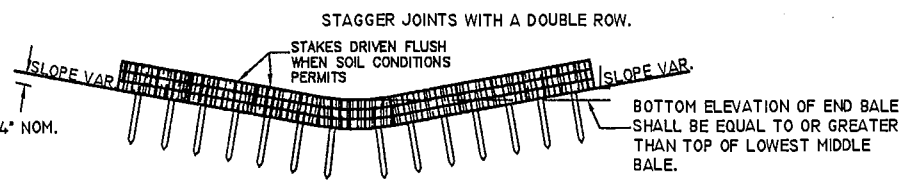


NOTE: ALL DIMENSIONS

POTENTIAL SCOUR AREA USE EROSION MAT OR OTHER DEVICE WHEN DIRECTED BY THE ENGINEER.

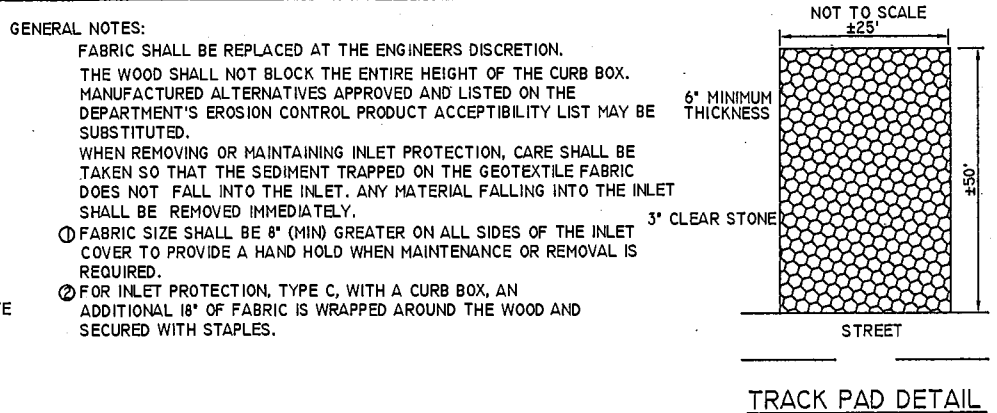


EROSION BALES WHEN ALTERING THE DIRECTION OF FLOW

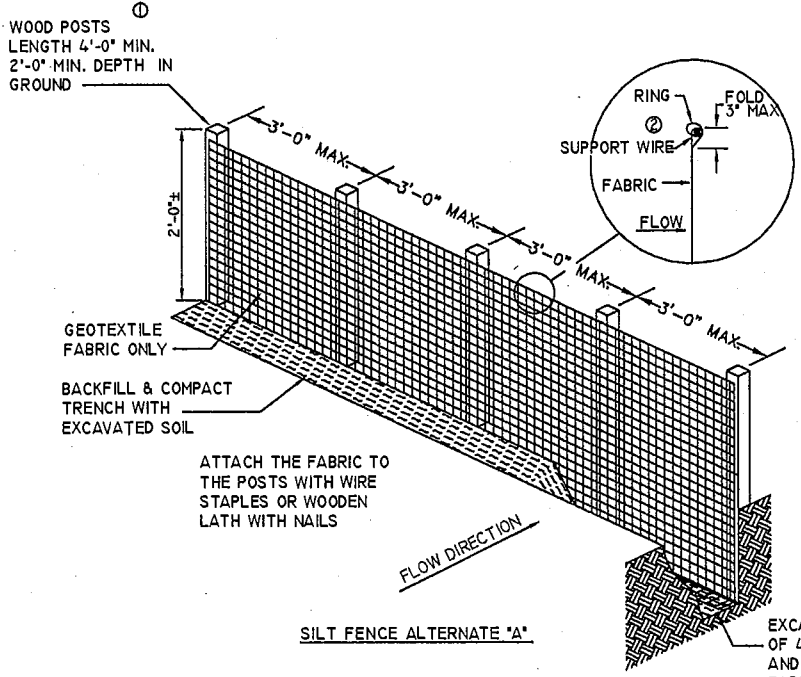


EROSION BALES FOR CHANNEL FLOW

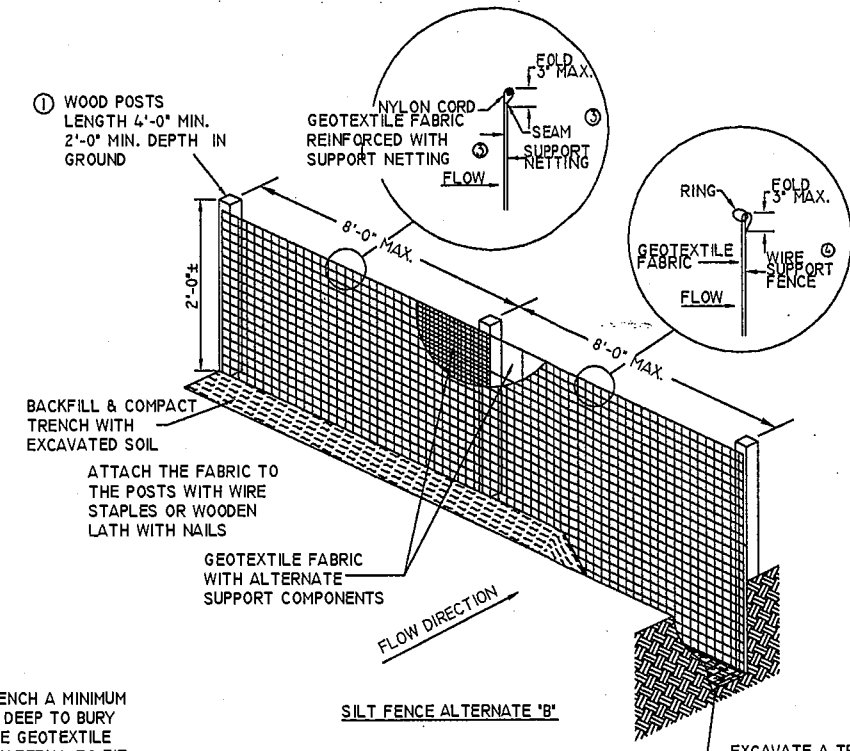
TYPICAL INSTALLATIONS OF EROSION BALES



TRACK PAD DETAIL



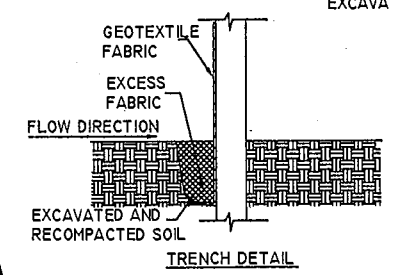
SILT FENCE ALTERNATE 'A'



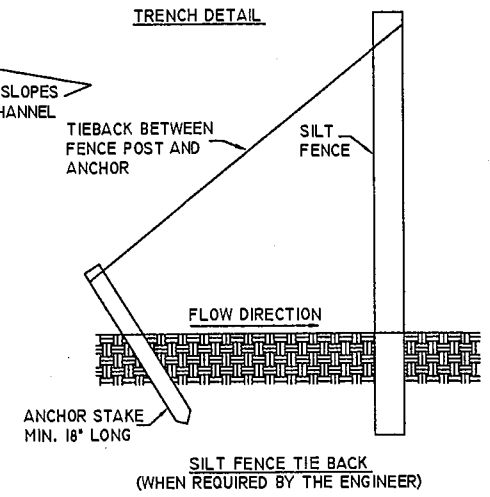
SILT FENCE ALTERNATE 'B'

EXCAVATE A TRENCH A MINIMUM OF 4\"/>

EXCAVATE A TRENCH A MINIMUM OF 4\"/>



TRENCH DETAIL



SILT FENCE TIE BACK (WHEN REQUIRED BY THE ENGINEER)

GENERAL NOTES:

- DETAIL OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.
- WHEN POSSIBLE THE SILT FENCE SHOULD BE CONSTRUCTED IN AN ARC OR HOUSESHOE SHAPE, WITH THE ENDS POINTING UPSLOPE TO MAXIMIZE BOTH STRENGTH AND EFFECTIVENESS.
- ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOIL CONDITIONS.
- ALTERNATES 'A' & 'B' ARE EQUAL AND EITHER MAY BE USED.
- ATTACH THE FABRIC TO THE POSTS WITH WIRE STAPLES OR WOODEN LATH AND NAILS.
- STEEL POSTS SHALL BE A STUDDED 'TEE' OR 'U' TYPE WITH A MINIMUM WEIGHT OF 1.28 LBS/LINEAL FOOT (WITHOUT ANCHOR). FIN ANCHORS SUFFICIENT TO RESIST POST MOVEMENT ARE REQUIRED. WOOD POSTS SHALL BE A MINIMUM SIZE OF 4\"/>
- MINIMUM 1/4 GAGE WIRE REQUIRED, FOLD FABRIC 3\"/>
- GEOTEXTILE FABRIC SHALL BE REINFORCED WITH AN INDUSTRIAL POLYPROPYLENE NETTING WITH A MAXIMUM MESH SPACING OF 3/4\"/>
- WIRE SUPPORT FENCE SHALL BE 1/4 GAGE MINIMUM WOVEN WIRE WITH A MAXIMUM MESH SPACING OF 6\"/>

PRELIMINARY CONSTRUCTION SCHEDULE / PLANNED EROSION CONTROL

- CONTRACTOR SHALL OBTAIN APPLICABLE CONSTRUCTION PERMITS.
- FLAG THE WORK LIMITS AND MARK AREAS TO REMAIN UNDISTURBED.
- HOLD PRECONSTRUCTION CONFERENCE AT LEAST ONE WEEK PRIOR TO STARTING CONSTRUCTION.
- INSTALL SILT FENCE AS INDICATED ON THE EROSION CONTROL PLAN.
- INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT (TRACK PADS).
- COMMENCE TOPSOIL STRIPPING AND STOCKPILING
- INSTALL SILT FENCE AROUND THE PERIMETER OF ANY TOPSOIL STOCKPILES AND SEED WITH ANNUAL RYE WHEN STOCKPILING IS COMPLETED AND/OR LEFT INACTIVE FOR 15 OR MORE DAYS.
- COMPLETE ROUGH GRADING FOR ROADS AND STABILIZE PER SPECIFICATIONS.
- COMPLETE FINAL GRADING OF SITE, RESPREAD TOPSOIL AND PERMANENTLY VEGETATE AS SPECIFIED.
- INSPECT ALL EROSION AND SEDIMENT CONTROL PRACTICES WEEKLY AND AFTER RAINFALL EVENTS. MAKE NEEDED REPAIRS OR ALTERATIONS IMMEDIATELY. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE ADJUSTED TO MEET FIELD CONDITIONS.
- CONTROL DUST BY SPRINKLING.
- AFTER SITE IS STABILIZED, REMOVE ALL TEMPORARY MEASURES. INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.
- ESTIMATED TIME BEFORE FINAL STABILIZATION IS APPROXIMATELY 12 MONTHS.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH 'THE WISCONSIN CONSTRUCTION SITE BEST MANAGEMENT PRACTICE HANDBOOK' DEVELOPED BY THE WISCONSIN DNR.

DATE	REVISION	BY	CHK'D

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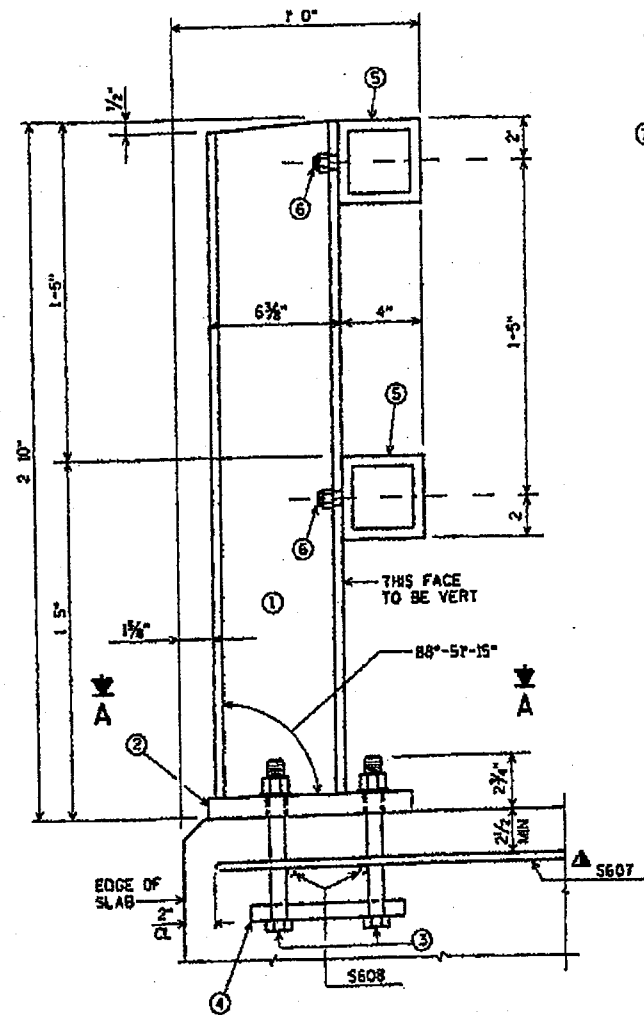
CONSTRUCTION DETAILS
 NORTH 20th AVENUE
 WAUSAU, WISCONSIN

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY:	APPROVED BY:
DRAWN BY: TAW	DATE: 8/28/03

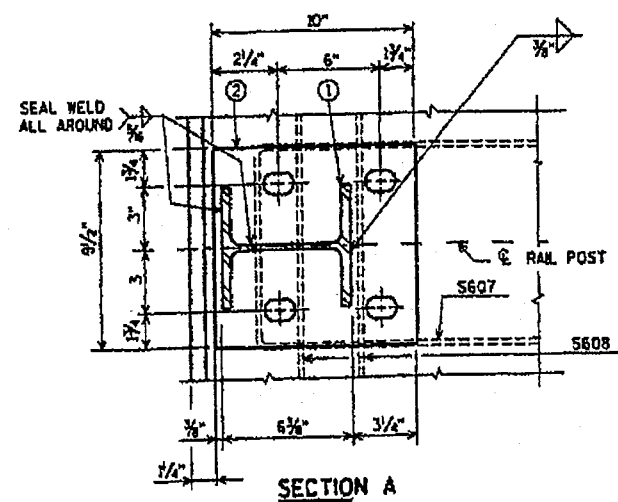
SHEET **D4** PROJECT No. **2369**

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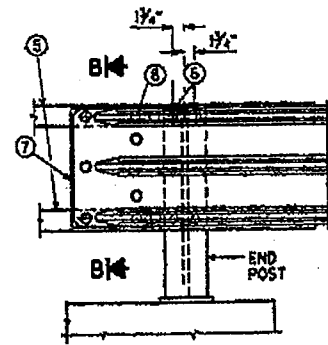
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SECTION THRU RAILING

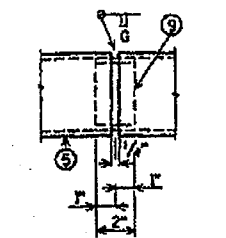


SECTION A

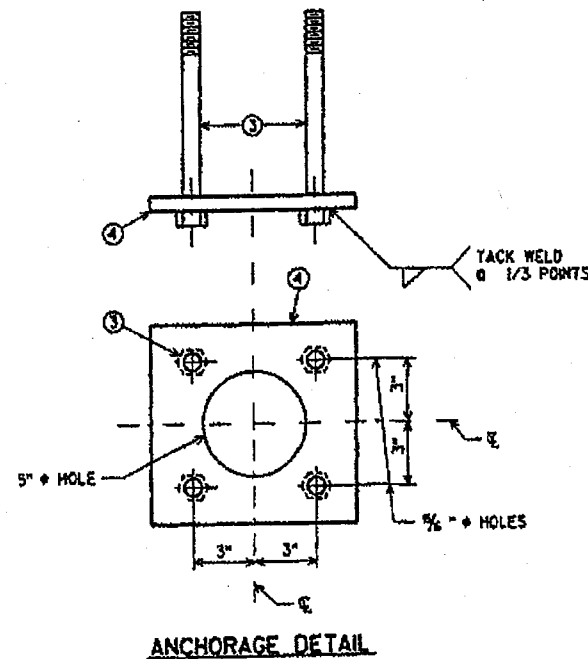


SECTION B

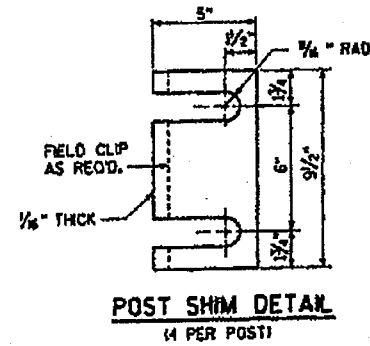
DETAIL AT END POST
(THREE BEAM RAIL ATTACHMENT)



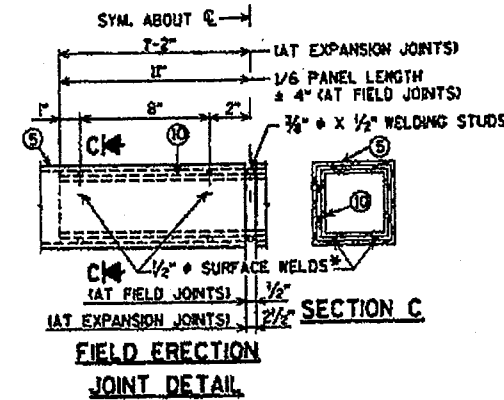
SHOP RAIL
SPLICE DETAIL
(LOCATION MUST BE SHOWN
ON THE SHOP DRAWINGS)



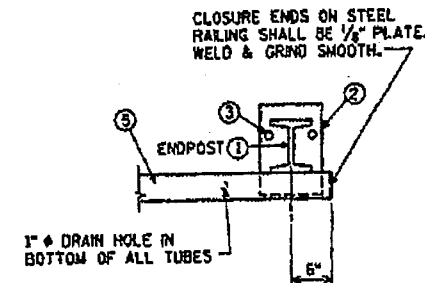
ANCHORAGE DETAIL



POST SHIM DETAIL
(1 PER POST)



FIELD ERECTION
JOINT DETAIL
*MIN. 1/8" FLAT SURFACE DIA
PUNCHINGS OR STUDS MAY
BE USED AS AN ALTERNATE.



DETAIL FOR END POSTS

LEGEND

- ① W6 x 25 WITH 1 1/2" HOLES ON EACH SIDE OF POST FOR STUD NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1" x 9 1/2" x 10", WITH 1 1/4" x 1 1/2" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO 1 AS SHOWN.
- ③ A325 - 1/2" HEX BOLTS (GALVANIZED) WITH A325 NUT AND WASHER, 14" LONG AT END POSTS AND AT POSTS ON CONCRETE SLAB SUPER-STRUCTURES WHERE THE SLAB THICKNESS IS > 18". USE 8" LONG AT ALL OTHER LOCATIONS. 4 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO 2. CHAMFER TOP OF BOLTS BEFORE THREADING.
- ④ 1/4" x 8" x 8" FLAT BAR, WITH 3/4" HOLES FOR ANCHOR BOLTS NO. 3.
- ⑤ TS 4 x 4 x 0.25 STRUCTURAL TUBING, CONFORMING TO A.S.T.M. DESIGNATION A501 OR A500 GRADE B ATTACH TO NO. 1 WITH 2 STUDS NO. 6.
- ⑥ 3/8" x 1 1/2" LONG SHOP WELDED STUDS WITH HEX NUT AND 2" WASHERS. (TWO REQ'D. AT EACH RAIL TO POST LOCATION).
- ⑦ PLATE 3/4" x 7-4" x 7-8" BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THREE BEAM GUARD RAIL ATTACHMENTS ONLY PLACE SYMMETRICALLY ABOUT TUBES NO. 5.
- ⑧ 1" HOLES IN PLATE NO. 1 AND TUBES NO. 5 FOR 3/4" A325 BOLTS WITH HEX NUTS AND WASHERS.
- ⑨ SQUARE SLEEVE FABRICATED FROM 1/2" PLATE. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 3 1/2".
- ⑩ TS 3 x 3 x 0.25 x (2'-4" AT EXPANSION JOINTS) & (1'-10" AT FIELD JOINTS) LONG. PROVIDE 1/2" SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO LD OF NO. 5. PROVIDE 3/8" x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

GENERAL NOTES

- END ITEM SHALL BE "TUBULAR RAILING TYPE F", WHICH INCLUDES ALL ITEMS SHOWN.
- RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.
- POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
- ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 4) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
- FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.
- ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.
- STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

▲ THE TO BOTTOM OF TOP MAT OF STEEL.

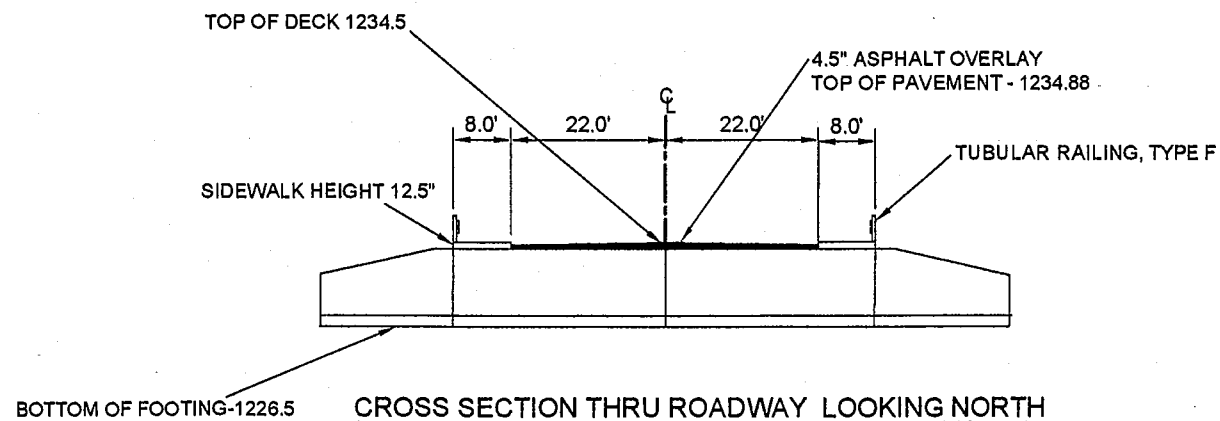
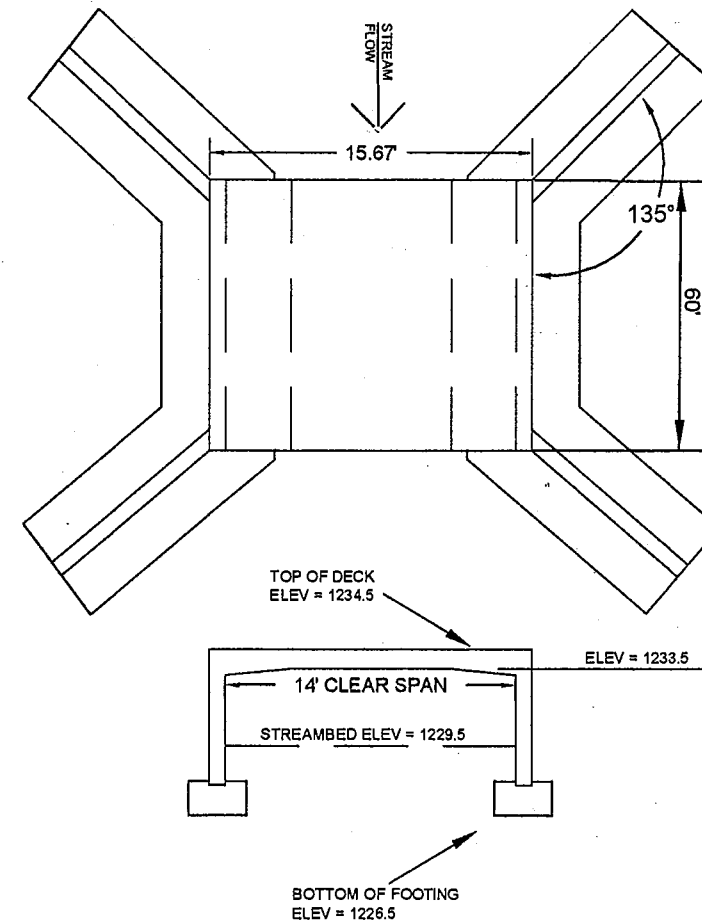
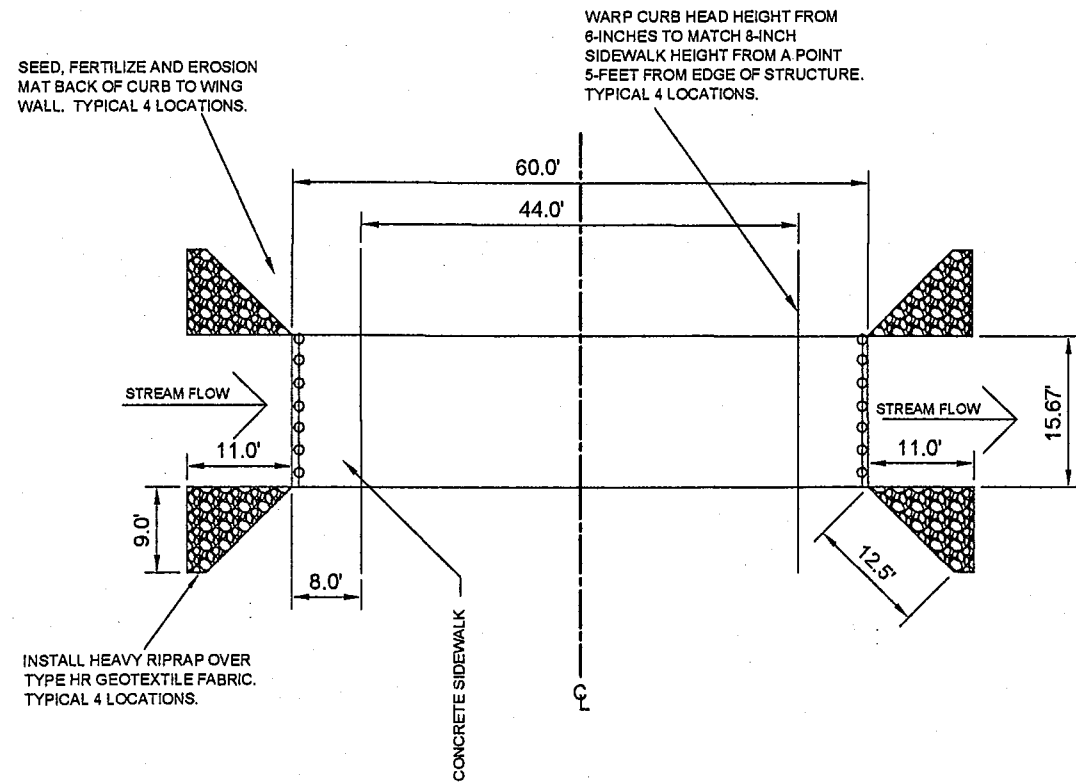
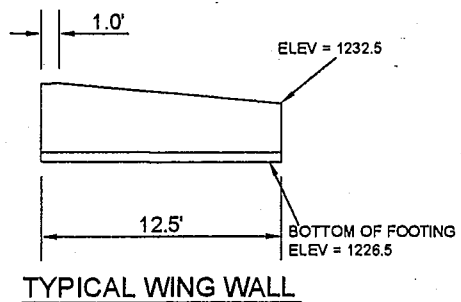
DATE	REVISION	BY	CHK'D

REI
**CIVIL & ENVIRONMENTAL
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 4080 N. 20th AVENUE
 WAUSAU, WISCONSIN 54401
 PHONE: (715) 675-9784 FAX: (715) 675-4060
 EMAIL: mail@REIengineering.com

CONSTRUCTION DETAILS
 NORTH 20TH AVENUE
 WAUSAU, WISCONSIN
 TUBULAR RAILING, TYPE "F"

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY:	APPROVED BY:
DRAWN BY: TJR	DATE: 6/26/03

SHEET D5	PROJECT No. 2369
--------------------	----------------------------



NOT TO SCALE.

DATE	REVISION	BY	CHK'D

REI
**CIVIL & ENVIRONMENTAL
 ENGINEERING, SURVEYING**
 4080 N. 20th AVENUE
 WAUSAU, WISCONSIN 54401
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 EMAIL: mail@REIengineering.com

**CONSTRUCTION DETAILS
 NORTH 20TH AVENUE
 WAUSAU, WISCONSIN**

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY:	APPROVED BY:
DRAWN BY: MFL	DATE: 6/26/03

SHEET D6	PROJECT No. 2369
--------------------	----------------------------

HEC-RAS RIVER STATION 560
 CHANNEL INVERT ELEV. = 1228.3
 2 YR. WATER SURFACE ELEV. = 1228.9
 10 YR. WATER SURFACE ELEV. = 1229.2
 100 YR. WATER SURFACE ELEV. = 1229.5

HEC-RAS RIVER STATION 670
 CHANNEL INVERT ELEV. = 1229.5
 2 YR. WATER SURFACE ELEV. = 1231.3
 10 YR. WATER SURFACE ELEV. = 1232.2
 100 YR. WATER SURFACE ELEV. = 1233.0

HEC-RAS RIVER STATION 740
 CHANNEL INVERT ELEV. = 1229.5
 2 YR. WATER SURFACE ELEV. = 1231.3
 10 YR. WATER SURFACE ELEV. = 1232.2
 100 YR. WATER SURFACE ELEV. = 1233.1

HEC-RAS RIVER STATION 800
 CHANNEL INVERT ELEV. = 1229.5
 2 YR. WATER SURFACE ELEV. = 1231.3
 10 YR. WATER SURFACE ELEV. = 1232.2
 100 YR. WATER SURFACE ELEV. = 1233.1

HEC-RAS RIVER STATION 920
 CHANNEL INVERT ELEV. = 1230.0
 2 YR. WATER SURFACE ELEV. = 1231.5
 10 YR. WATER SURFACE ELEV. = 1232.2
 100 YR. WATER SURFACE ELEV. = 1233.1

HEC-RAS RIVER STATION 980
 CHANNEL INVERT ELEV. = 1230.5
 2 YR. WATER SURFACE ELEV. = 1231.6
 10 YR. WATER SURFACE ELEV. = 1232.2
 100 YR. WATER SURFACE ELEV. = 1233.1

SEQUENCE FOR CONSTRUCTION OF STREAM REALIGNMENT

1. MAINTAIN ALL STREAM FLOW IN EXISTING CULVERTS UNTIL PERMANENT VEGETATION IS ESTABLISHED IN NEW CHANNEL. MAINTAIN DRAINAGE OF 20TH AVENUE DITCHES THROUGH STREAM REALIGNMENT.
2. BEGIN EXCAVATION OF THE NEW CHANNEL 10 FEET WEST OF THE WEST RIGHT-OF-WAY LINE OF THE EXISTING NORTH 20TH AVENUE. THE 10 FEET OF EXISTING SOIL IS TO BE LEFT IN PLACE AS A BERM TO KEEP WATER FROM FLOWING FROM THE EXISTING CULVERTS AND 20TH AVENUE DITCH BACK INTO THE NEW CHANNEL DURING CONSTRUCTION. TO DRAIN THE AREA BEHIND THE BERM, INSTALL A SECTION OF 12-INCH DIAMETER CULVERT THROUGH THE SOUTHERLY PART OF THE BERM. KEEP SUFFICIENT SANDBAGS PRESENT TO CLOSE THE DOWNSTREAM END OF THE 12-INCH CULVERT IN THE EVENT OF SIGNIFICANT FLOW THROUGH THE EXISTING STREAM CULVERTS TO PREVENT BACKFLOW INTO THE NEW EXCAVATED CHANNEL.
3. EXCAVATE THE NEW CHANNEL TO PLAN LINES AND GRADES, EXTENDING THE EXCAVATION WEST TO WITHIN 10 FEET OF THE EXISTING DITCH LINE. THE TEN FEET OF UNEXCAVATED MATERIAL WILL ACT AS A BERM TO PREVENT FLOW FROM THE EXISTING STREAM INTO THE NEW CHANNEL UNTIL PERMANENT VEGETATION IS ESTABLISHED IN THE NEW CHANNEL. STOCKPILE EXCAVATED MATERIAL SOUTH OF THE NEW CHANNEL FOR REUSE IN REPLACING EXCAVATED WETLAND TOPSOIL.
4. PLACE 6 INCHES OF TOPSOIL, SEED, AND EROSION MAT ON THE SIDE SLOPES OF THE NEW CHANNEL.
5. EXCAVATE THE UPPER 6 INCHES OF WETLAND TOPSOIL ONLY FROM THE DESIGNATED SOURCE AND SPREAD IT IN THE BOTTOM OF THE NEWLY EXCAVATED CHANNEL APPROXIMATELY 5 INCHES THICK AND 40 FEET WIDE. **DO NOT SEED.** COVER WITH EROSION MAT. SAVE SUFFICIENT WETLAND TOPSOIL TO PLACE IN THE TWO TEN-FOOT UNEXCAVATED SECTIONS AT EACH END OF THE TRENCH AND IN THE AREA OCCUPIED BY THE EXISTING 20TH AVENUE.
6. PLACE EXCAVATED SUBSOIL TO PLAN ELEVATIONS WHERE THE WETLAND TOPSOIL WAS REMOVED. COVER WITH 4 INCHES OF TOPSOIL; SEED AND MULCH.
7. AFTER VEGETATION HAS BECOME ESTABLISHED IN THE NEW CHANNEL, REMOVE THE DOWNSTREAM BERM AND THEN THE UPSTREAM BERM AND PLACE THE STOCKPILED WETLAND TOPSOIL MATERIAL IN THE CHANNEL AT THE BERM LOCATIONS. **DO NOT SEED.** COVER WITH EROSION MAT. PLACE 6 INCHES OF UPLAND (TYPICAL) TOPSOIL ON THE CHANNEL SLOPES IN THE BERM AREAS; SEED AND PLACE EROSION MAT.
8. CONSTRUCT A BERM OF SANDBAGS ACROSS THE UPSTREAM END OF THE EXISTING 42-INCH CULVERT TO DIVERT WATER INTO THE NEW CHANNEL. REMOVE THE 42-INCH CULVERT AND BACKFILL WITH APPROVED GRANULAR MATERIAL, COMPACTED AS SPECIFIED. COVER WITH TOPSOIL; SEED AND MULCH OR ALTERNATIVELY, DEPENDING UPON USAGE OF THE SITE AT THE TIME OF THE WORK, PLACE CRUSHED STONE SURFACE COURSE.
9. ONLY AFTER THE NEW 20TH AVENUE ALIGNMENT HAS BEEN CONSTRUCTED AND ACCEPTED FOR USE AS A PUBLIC ROADWAY, REMOVE THE EXISTING 20TH AVENUE CULVERT FOR THE UNNAMED STREAM AND THE 20TH AVENUE ROADWAY AND EMBANKMENT TO CONSTRUCT THE PROPOSED CHANNEL. PLACE 6 INCHES OF UPLAND TOPSOIL ON THE CHANNEL SLOPES; SEED AND PLACE EROSION MAT. PLACE THE REMAINING STOCKPILED WETLAND TOPSOIL IN THE CHANNEL BOTTOM, APPROXIMATELY 5 INCHES THICK AND 40 FEET WIDE. **DO NOT SEED.** COVER WITH EROSION MAT.

0 30 60
 SCALE: 1" = 60'

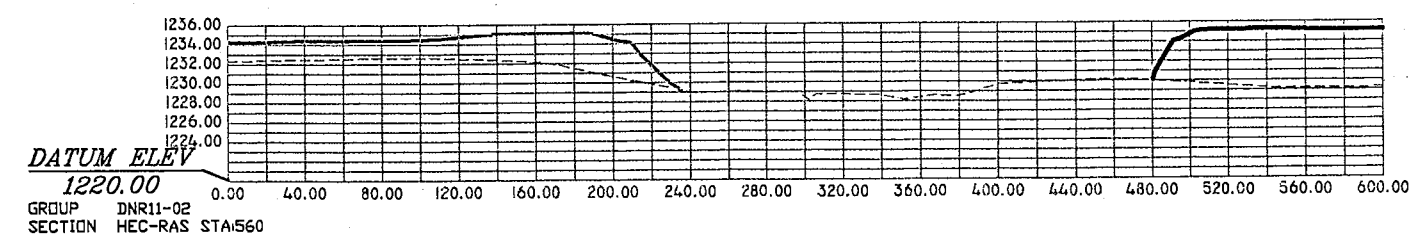
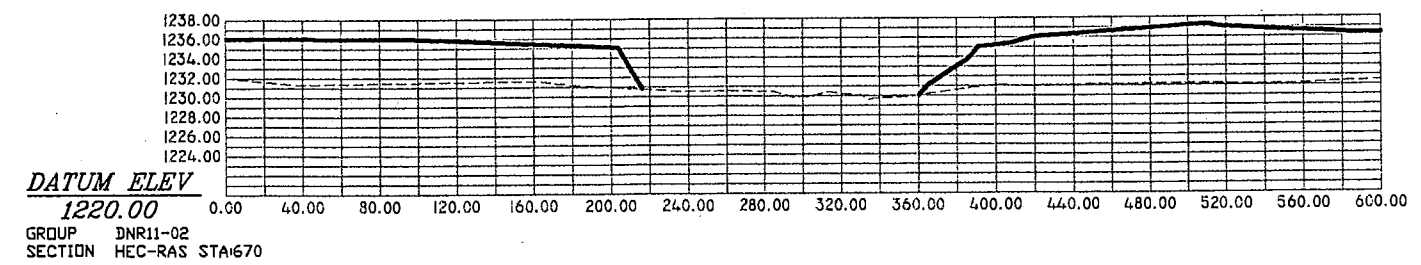
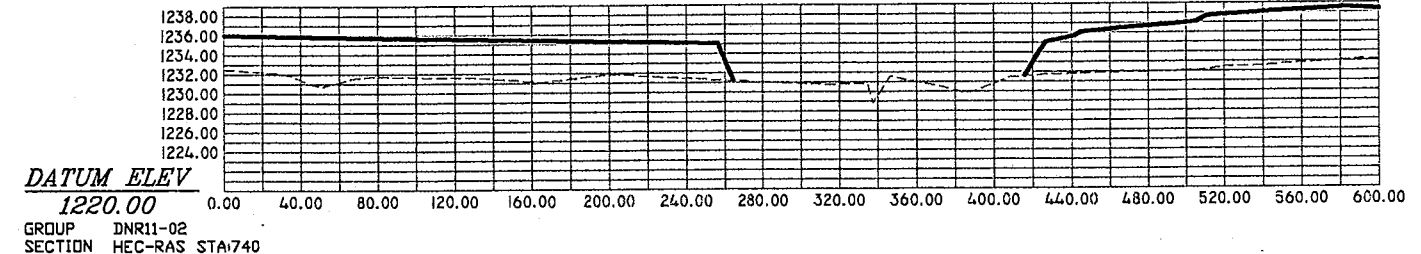
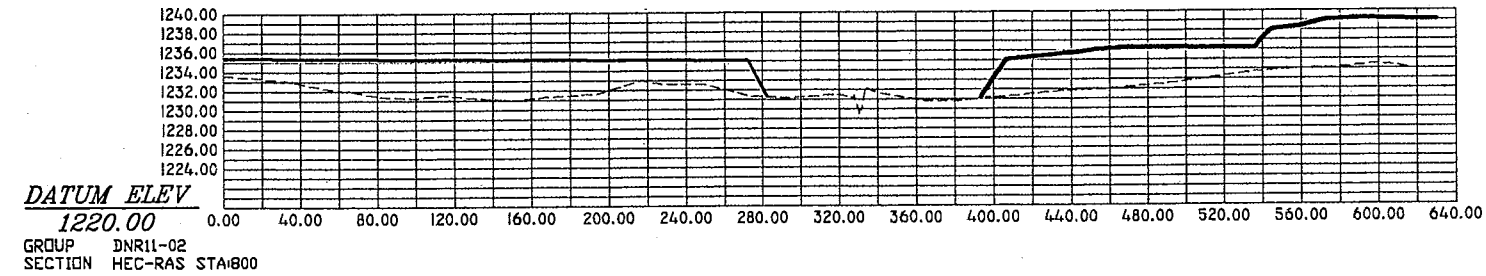
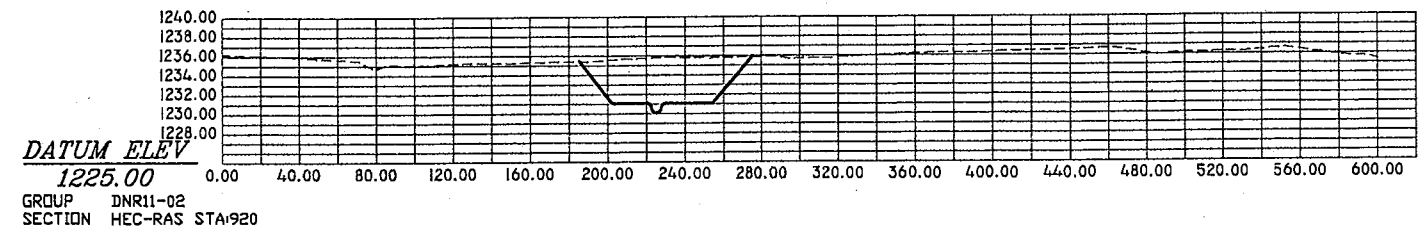
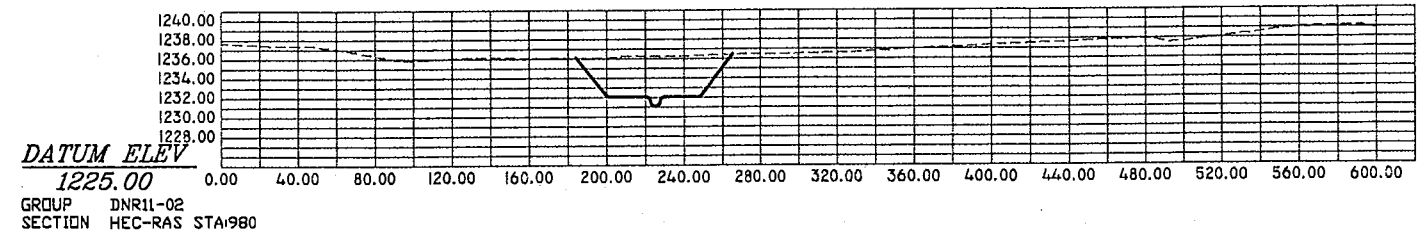
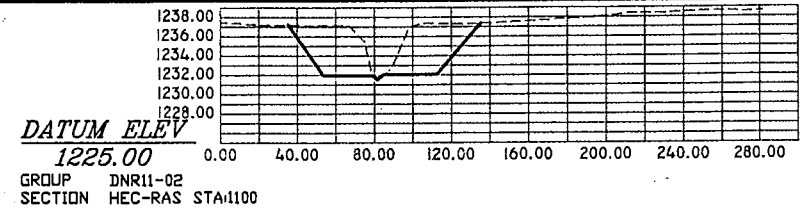
LEGEND

- CENTER OF SECTION
- FOUND IRON PIPE
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITY
- EXISTING FENCE
- EXISTING GUY WIRE
- EXISTING TREE LINE
- EXISTING SIGN
- EXISTING LIGHTPOLE
- WETLANDS
- PROPOSED SILT FENCE
- 1250 — PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED NATIVE WETLAND SHRUBS
- 35 FT. RIPARIAN SETBACK LINE
- PROPOSED SPOT ELEVATION

DATE	REVISION	BY	CHK'D
 CIVIL & ENVIRONMENTAL ENGINEERING, SURVEYING 4080 N. 20th AVENUE WAUSAU, WISCONSIN 54401 PHONE: (715) 675-9784 FAX: (715) 675-4060 EMAIL: mail@REIengineering.com			
SITE STREAM REALIGNMENT N. 20th AVENUE WAUSAU, WISCONSIN			
DESIGNED BY: WJM	CHECKED BY: MPB		
SURVEYED BY: NJW	APPROVED BY:		
DRAWN BY: TAW	DATE: 06/26/03		
SHEET	PROJECT No.		
S1	2369		

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L.M. & LAYOUT=STREAM-REALIGNMENT
 L:\DRAWING\2369\ROSELD\W\3389\PLAN.PRO.dwg 6/26/2003 9:26:41 AM CST



HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 20'

DATE	REVISION	BY	CHK'D

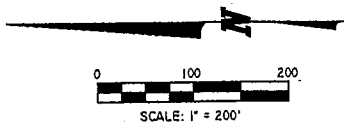
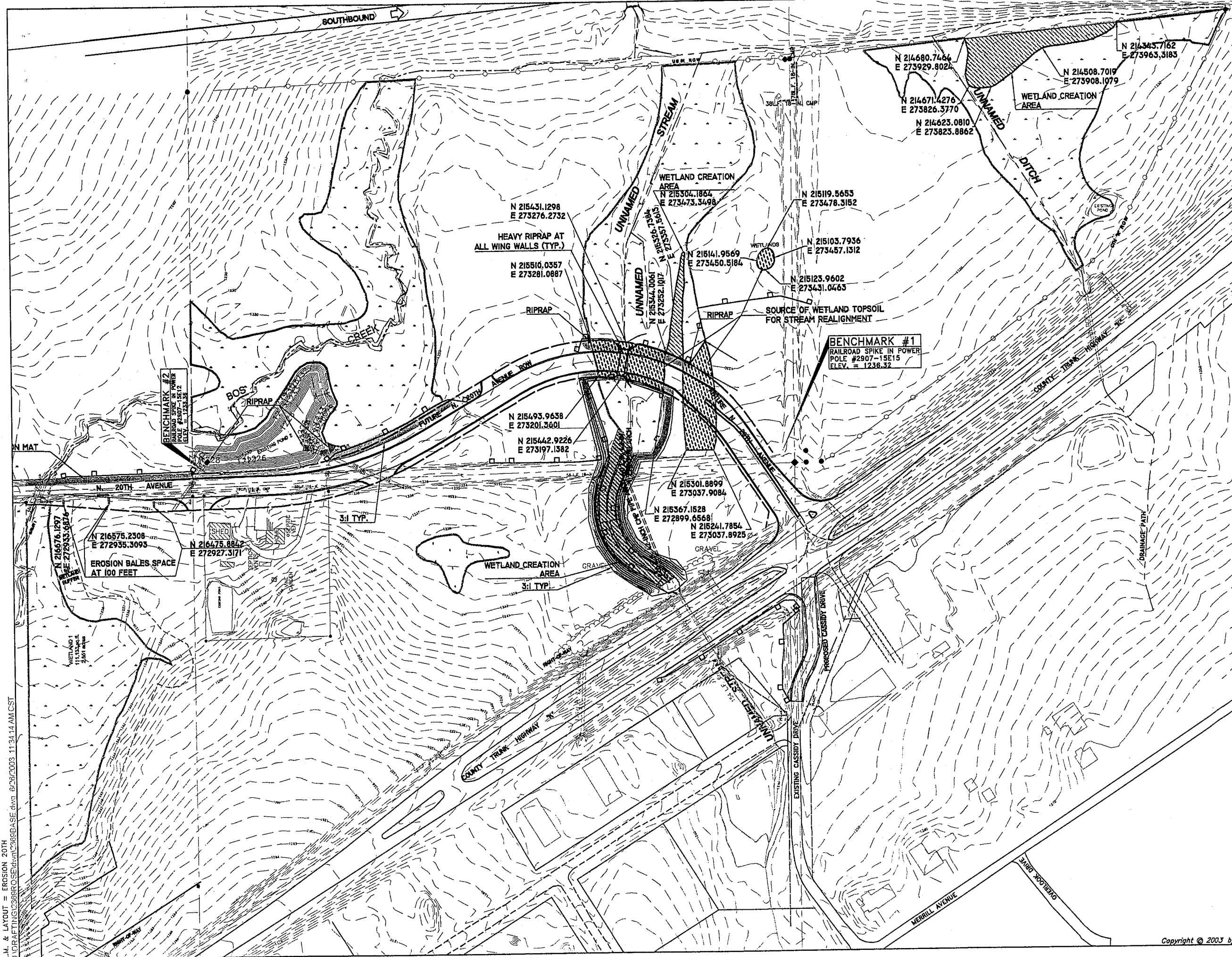
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WAUSAU, WISCONSIN 54401
PHONE: (715) 675-9784 FAX: (715) 675-4060
EMAIL: mail@REIengineering.com

**SITE STREAM
REALIGNMENT SECTIONS
N. 20th AVENUE
WAUSAU, WISCONSIN**

DESIGNED BY: WJM	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 06/26/03

SHEET S2	PROJECT No. 2369
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LAYOUT=STREAM-REALIGNMENT SECTIONS
JNDRAFTING\G22666\PROSE\dwg\2369\PLAN.PRO.dwg 6/25/2003 7:10:18 PM CST



LEGEND	
	CENTER OF SECTION
	FOUND IRON PIPE
	EXISTING UTILITY POLE
	EXISTING OVERHEAD UTILITY
	EXISTING FENCE
	EXISTING GUY WIRE
	EXISTING TREE LINE
	EXISTING SIGN
	EXISTING LIGHTPOLE
	WETLANDS
	PROPOSED EROSION MAT
	PROPOSED CONTOUR -1250-
	EXISTING CONTOUR -1250-
	PROPOSED SILT FENCE
	DESIGNATED WETLAND TOPSOIL SOURCE AREAS. REMOVE 7 TO 8-INCHES EXISTING TOPSOIL FOR REUSE IN WETLAND CREATION AREAS
	WETLAND CREATION AREAS. REMOVE 18-INCHES EXISTING TOPSOIL AND SUBSOIL. PLACE 4 TO 5-INCHES OF TOPSOIL EXCAVATED FROM DESIGNATED EXISTING WETLAND AREAS AND ROUGH GRADE TO APPROXIMATELY LEVEL.

DATE	REVISION	BY	CHK'D

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 EMAIL: mail@REIengineering.com

**WETLAND MITIGATION &
 EROSION CONTROL PLAN
 NORTH 20TH AVENUE
 WAUSAU, WISCONSIN**

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03
SHEET S3	PROJECT No. 2369

L.M. & LAYOUT = EROSION 20TH
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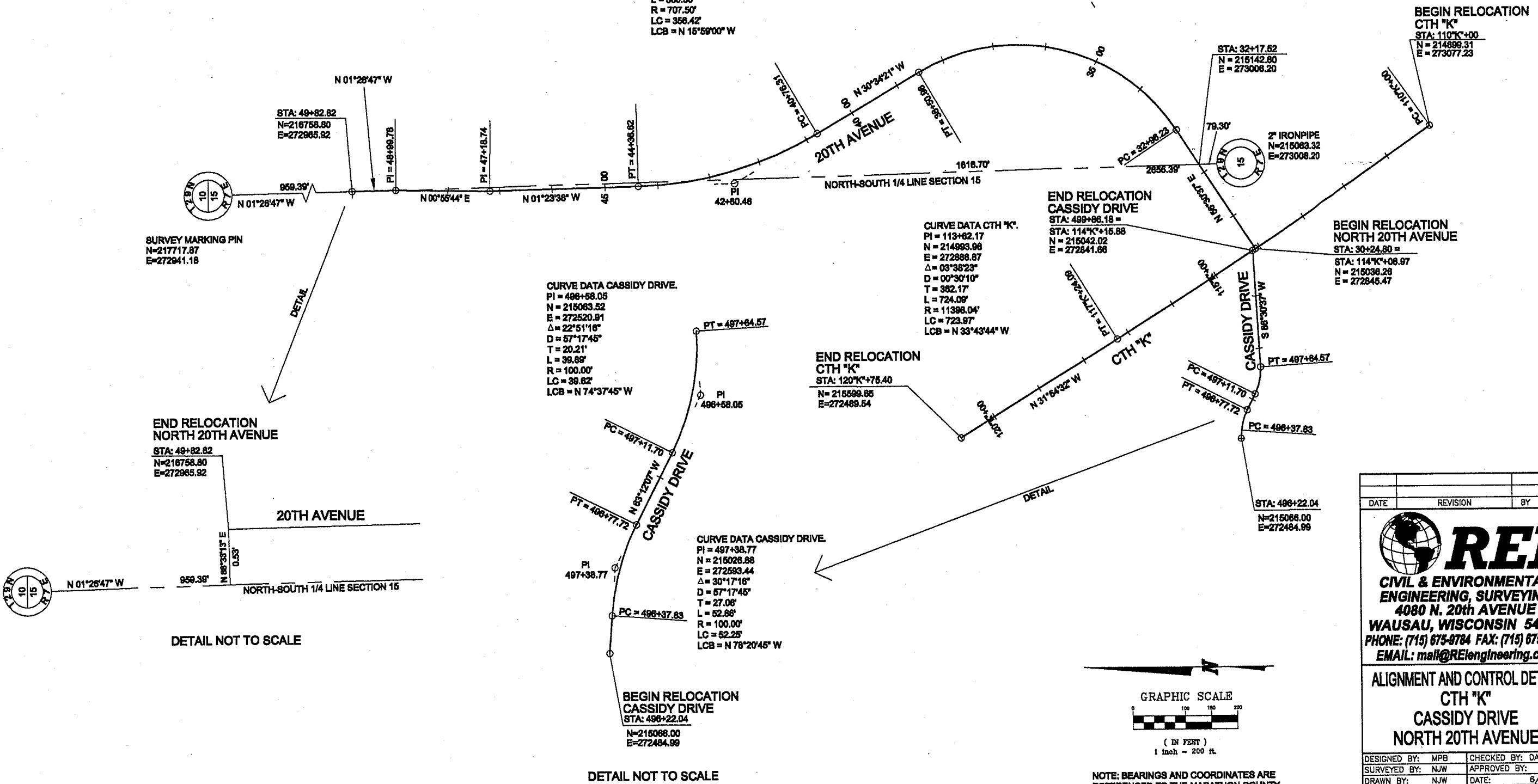
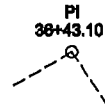
CURVE DATA 20TH AVE.
 PI = 38+43.10
 N = 215377.43
 E = 273361.13
 $\Delta = 87^{\circ}04'58''$
 D = 15'41'51"
 T = 348.87'
 L = 654.78'
 R = 385.00'
 LC = 502.88'
 LCB = N 12'58'08" E

CURVE DATA 20TH AVE.
 PI = 42+80.46
 N = 216028.84
 E = 272978.43
 $\Delta = 29^{\circ}10'43''$
 D = 8'08'54"
 T = 184.15'
 L = 360.30'
 R = 707.50'
 LC = 358.42'
 LCB = N 15'59'00" W

CURVE DATA CASSIDY DRIVE.
 PI = 498+58.05
 N = 215083.52
 E = 272520.81
 $\Delta = 22^{\circ}51'16''$
 D = 57'17'45"
 T = 20.21'
 L = 38.89'
 R = 100.00'
 LC = 39.82'
 LCB = N 74'37'45" W

CURVE DATA CTH "K".
 PI = 113+82.17
 N = 214893.88
 E = 272888.87
 $\Delta = 03^{\circ}38'23''$
 D = 00'30'10"
 T = 382.17'
 L = 724.09'
 R = 11388.04'
 LC = 723.87'
 LCB = N 33'43'44" W

CURVE DATA CASSIDY DRIVE.
 PI = 497+38.77
 N = 215028.88
 E = 272593.44
 $\Delta = 30^{\circ}17'16''$
 D = 57'17'45"
 T = 27.06'
 L = 52.88'
 R = 100.00'
 LC = 52.25'
 LCB = N 78'20'45" W



SURVEY MARKING PIN
 N=217717.87
 E=272941.18

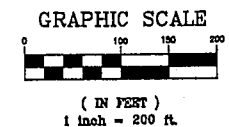
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 NORTH 20TH AVENUE
 STA: 49+82.82
 N=216758.80
 E=272965.82

END RELOCATION
 CASSIDY DRIVE
 STA: 498+86.18
 STA: 114+08.97
 N = 215042.02
 E = 272841.68

BEGIN RELOCATION
 NORTH 20TH AVENUE
 STA: 30+24.80
 STA: 114+08.97
 N = 215038.28
 E = 272845.47


END RELOCATION
 CTH "K"
 STA: 120+76.40
 N = 215599.86
 E = 272489.54

BEGIN RELOCATION
 CASSIDY DRIVE
 STA: 498+22.04
 N=215088.00
 E=272484.99



NOTE: BEARINGS AND COORDINATES ARE REFERENCED TO THE MARATHON COUNTY COORDINATE SYSTEM AS MONUMENTED BY MARATHON COUNTY, NAD83(91) DATUM.

DATE	REVISION	BY	CHK'D


**CIVIL & ENVIRONMENTAL
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 EMAIL: mail@REIengineering.com

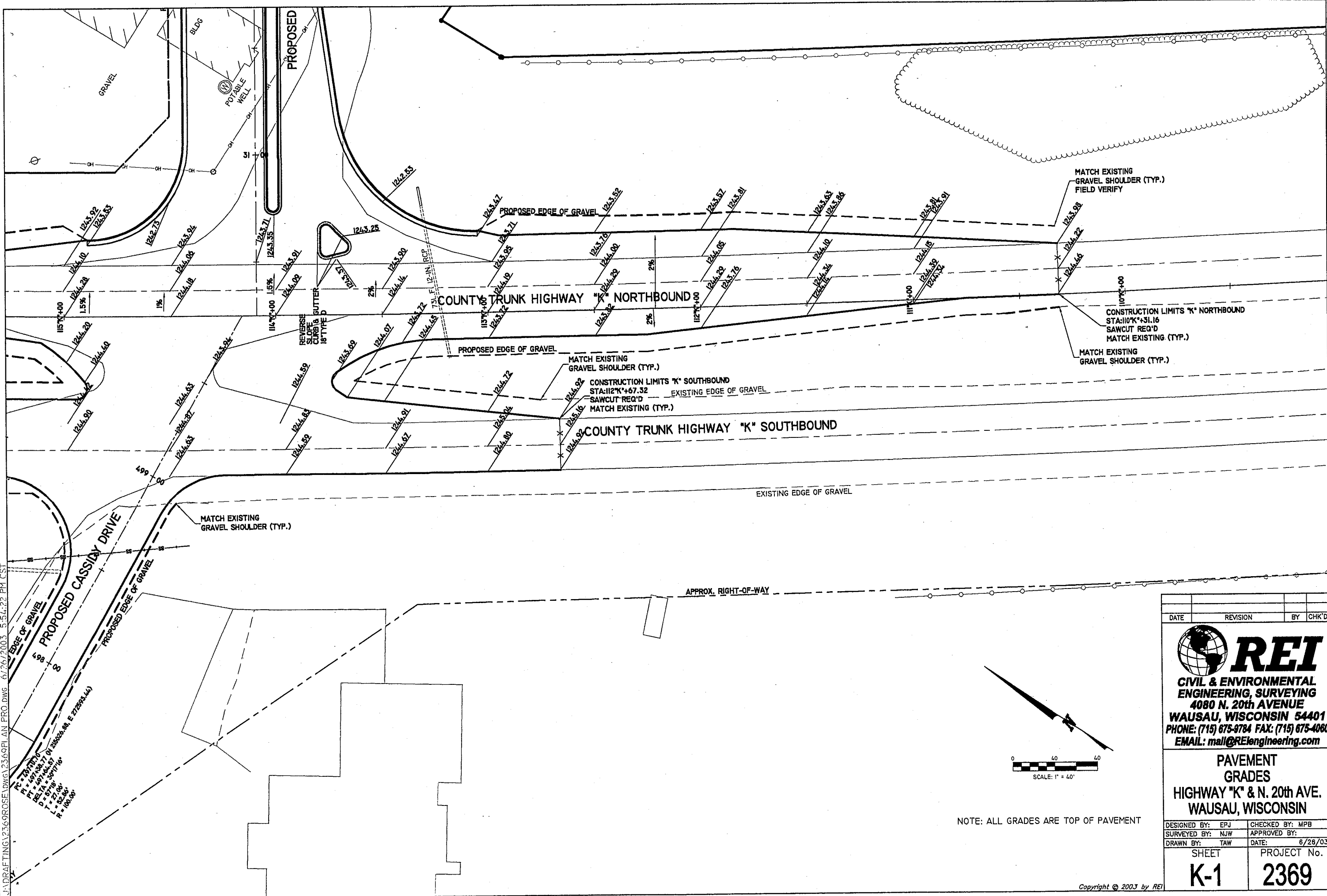
**ALIGNMENT AND CONTROL DETAIL
 CTH "K"
 CASSIDY DRIVE
 NORTH 20TH AVENUE**

DESIGNED BY: MPB	CHECKED BY: DAR
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: NJW	DATE: 6/26/03

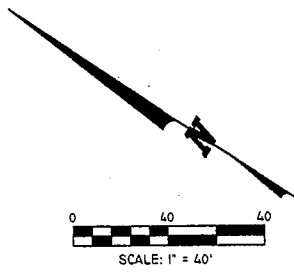
SHEET	PROJECT No.
AC1	2369

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P.C. = 115+00
 P.T. = 115+00
 I.P. = 115+00
 D = 115+00
 L = 115+00
 R = 115+00



NOTE: ALL GRADES ARE TOP OF PAVEMENT

DATE	REVISION	BY	CHK'D


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 4080 N. 20th AVENUE
 WAUSAU, WISCONSIN 54401
 PHONE: (715) 675-9784 FAX: (715) 675-4060
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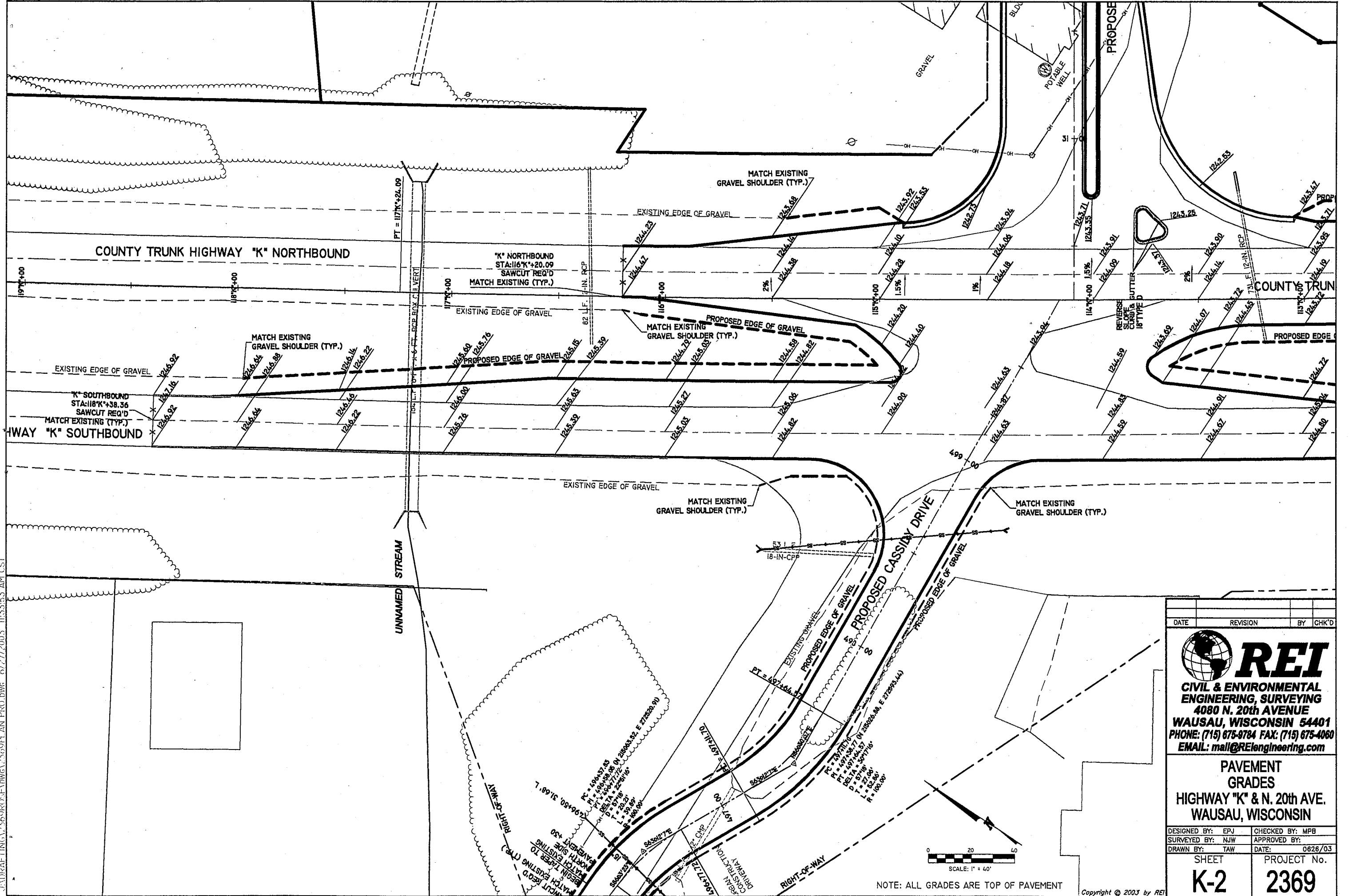
**PAVEMENT
 GRADES**
HIGHWAY "K" & N. 20th AVE.
WAUSAU, WISCONSIN

DESIGNED BY: EPJ	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03

SHEET	PROJECT No.
K-1	2369

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L.M. = K-SPOT LAYOUT = K-SPOT2
 J:\DRAFTING\2366\ROSE\DWG\2366PLAN PRO.DWG 6/27/2003 11:33:53 AM CST



DATE	REVISION	BY	CHK'D


**CIVIL & ENVIRONMENTAL
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 4080 N. 20th AVENUE
 WAUSAU, WISCONSIN 54401
 PHONE: (715) 675-9784 FAX: (715) 675-4060
 EMAIL: mail@REIengineering.com

**PAVEMENT
 GRADES**
 HIGHWAY "K" & N. 20th AVE.
 WAUSAU, WISCONSIN

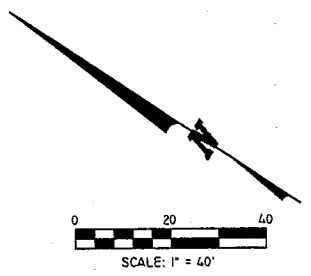
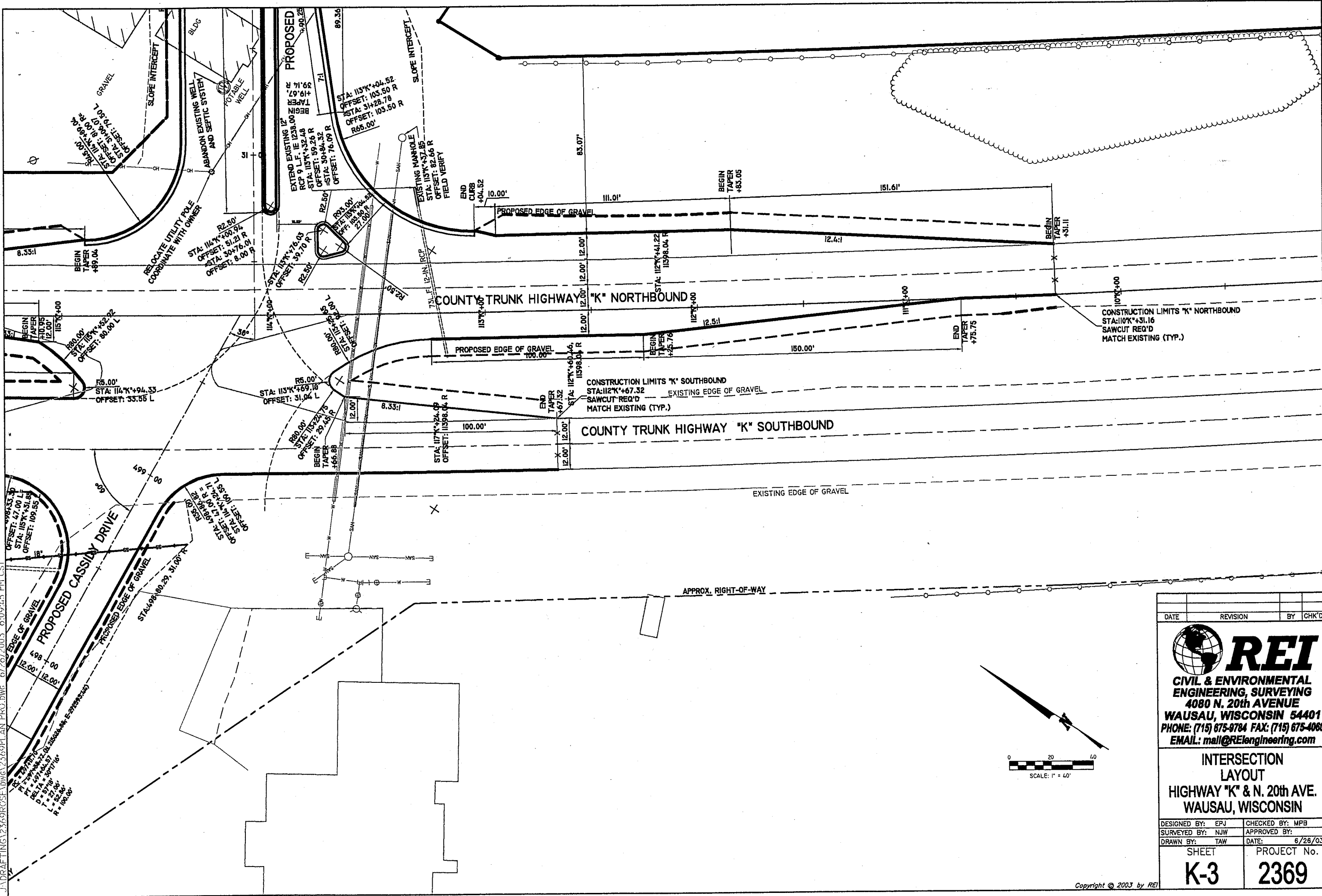
DESIGNED BY: EPU	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 0826/03

SHEET K-2	PROJECT No. 2369
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NOTE: ALL GRADES ARE TOP OF PAVEMENT

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L.M. = K-LAYOUT LAYOUT = K-3
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DATE	REVISION	BY	CHK'D

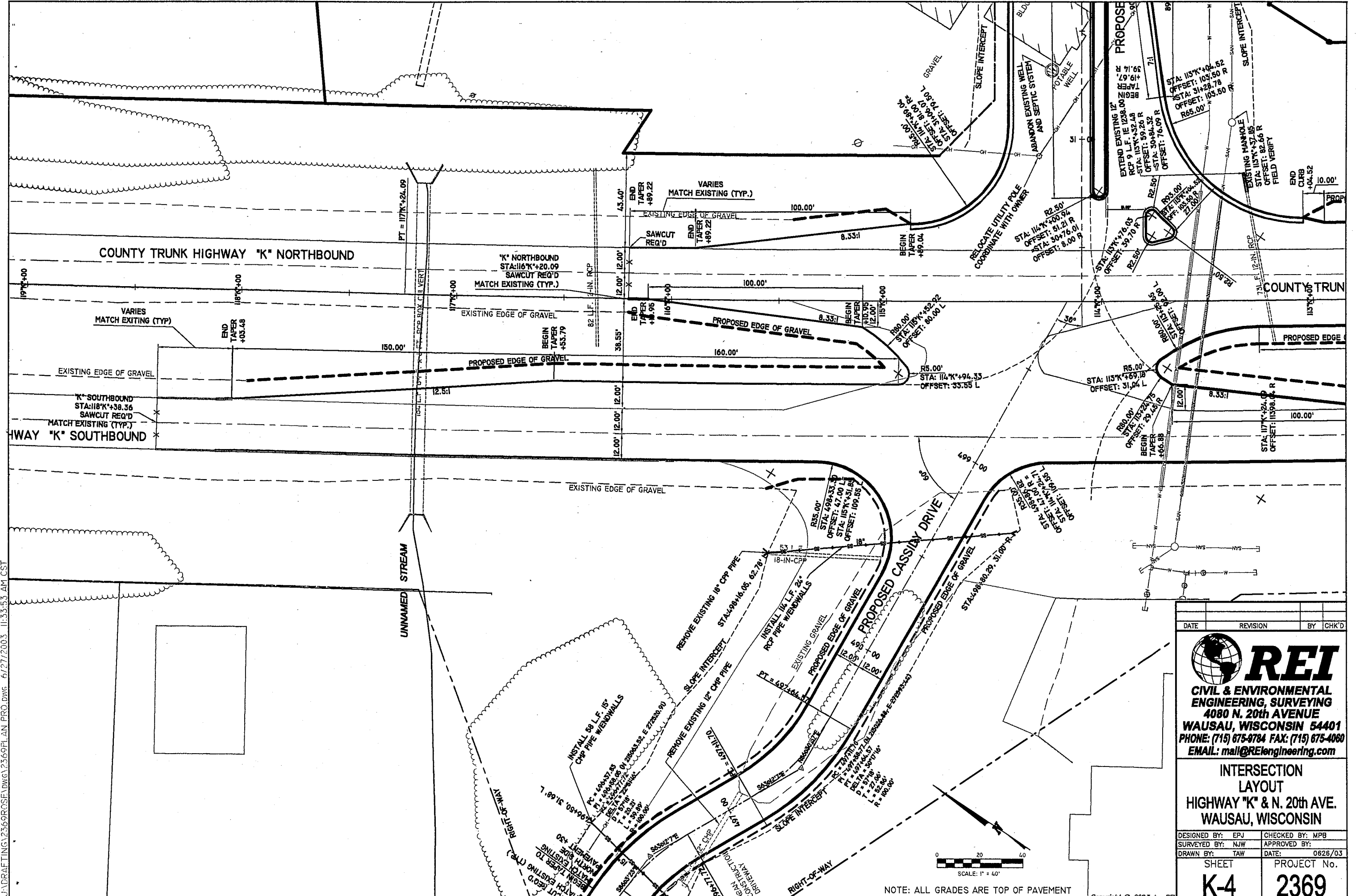
REI
 CIVIL & ENVIRONMENTAL
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 PHONE: (715) 675-9784 FAX: (715) 675-4060
 EMAIL: mail@REIengineering.com

INTERSECTION LAYOUT
HIGHWAY "K" & N. 20th AVE.
WAUSAU, WISCONSIN

DESIGNED BY: EPJ	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03

SHEET	PROJECT No.
K-3	2369

LM = K-SPOT LAYOUT = K-SPOT2
 JADRAFTING 2369ROSE.DWG 6/27/2003 11:33:53 AM CST



DATE	REVISION	BY	CHK'D

REI
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 ENGINEERING, SURVEYING
 4080 N. 20th AVENUE
 WAUSAU, WISCONSIN 54401
 PHONE: (715) 875-9784 FAX: (715) 875-4060
 EMAIL: mail@REIengineering.com

**INTERSECTION
 LAYOUT
 HIGHWAY "K" & N. 20th AVE.
 WAUSAU, WISCONSIN**

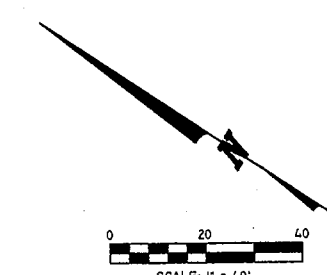
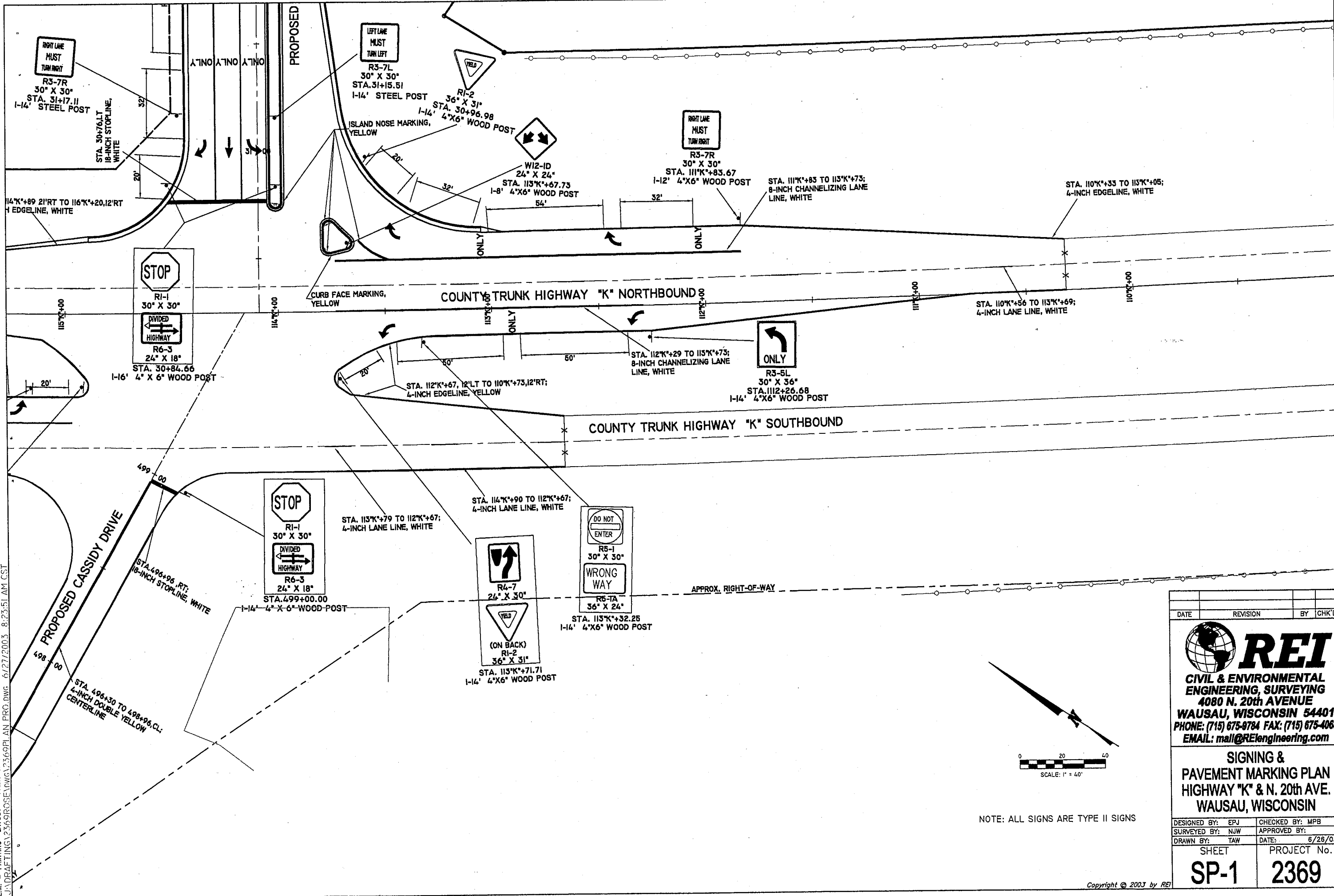
DESIGNED BY: EPJ	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 0626/03

SHEET K-4	PROJECT No. 2369
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NOTE: ALL GRADES ARE TOP OF PAVEMENT

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L.M. = PAINTING LAYOUT = PAINT-K-1
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NOTE: ALL SIGNS ARE TYPE II SIGNS

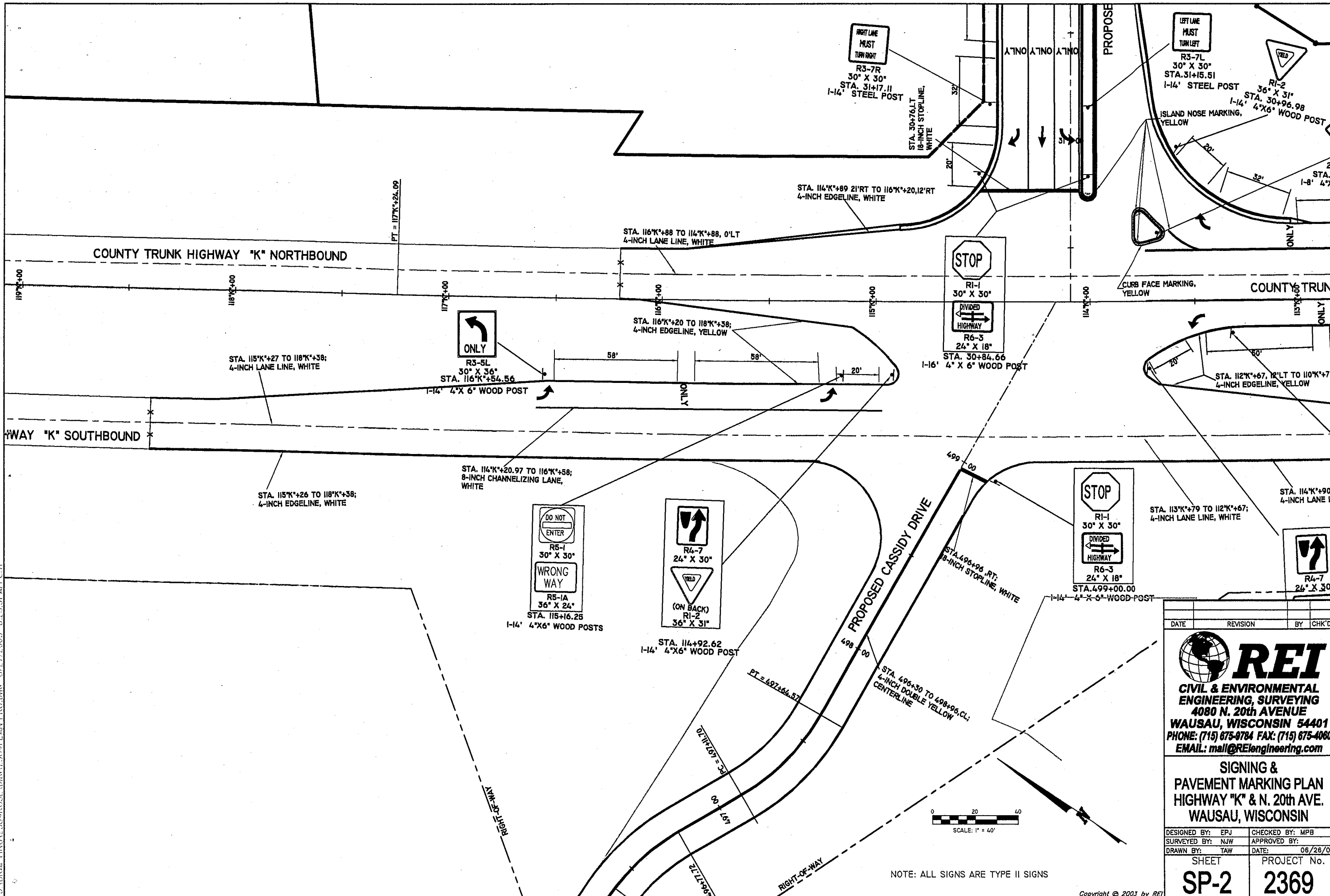
DATE	REVISION	BY	CHK'D

REI
 CIVIL & ENVIRONMENTAL
 ENGINEERING, SURVEYING
 4080 N. 20th AVENUE
 WAUSAU, WISCONSIN 54401
 PHONE: (715) 675-9784 FAX: (715) 675-4060
 EMAIL: mail@REIengineering.com

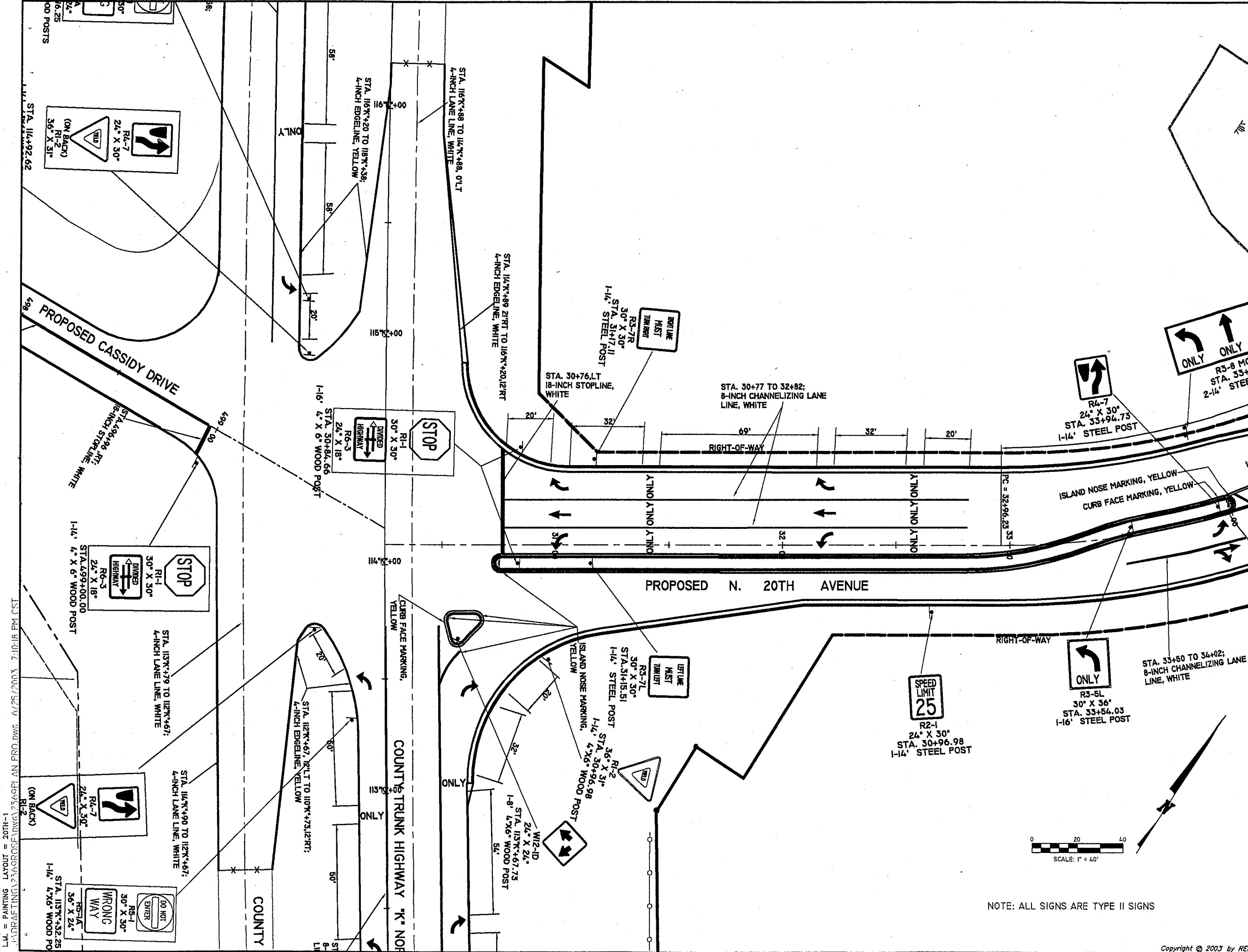
SIGNING & PAVEMENT MARKING PLAN
HIGHWAY "K" & N. 20th AVE.
WAUSAU, WISCONSIN

DESIGNED BY: EPJ	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03
SHEET	PROJECT No.
SP-1	2369

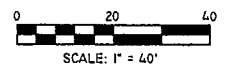
L.L. = PAINTING LAYOUT = PAINT-K-2
 J:\DRAFTING\2369\PROSEY\DWG\2369PLAN PRO.DWG 6/27/2003 8:23:51 AM CST



DATE	REVISION	BY	CHK'D
 CIVIL & ENVIRONMENTAL ENGINEERING, SURVEYING 4080 N. 20th AVENUE WAUSAU, WISCONSIN 54401 PHONE: (715) 675-8784 FAX: (715) 675-4060 EMAIL: mail@REIengineering.com			
SIGNING & PAVEMENT MARKING PLAN HIGHWAY "K" & N. 20th AVE. WAUSAU, WISCONSIN			
DESIGNED BY: EPJ	CHECKED BY: MPB		
SURVEYED BY: NJW	APPROVED BY:		
DRAWN BY: TAW	DATE: 06/26/03		
SHEET	PROJECT No.		
SP-2	2369		



L.M. = PAINTING LAYOUT = 20TH-1
 DRAUGHTING: 7/25/2003 7:10:18 PM CST



NOTE: ALL SIGNS ARE TYPE II SIGNS

DATE	REVISION	BY	CHK'D

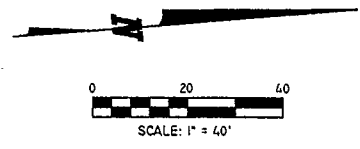
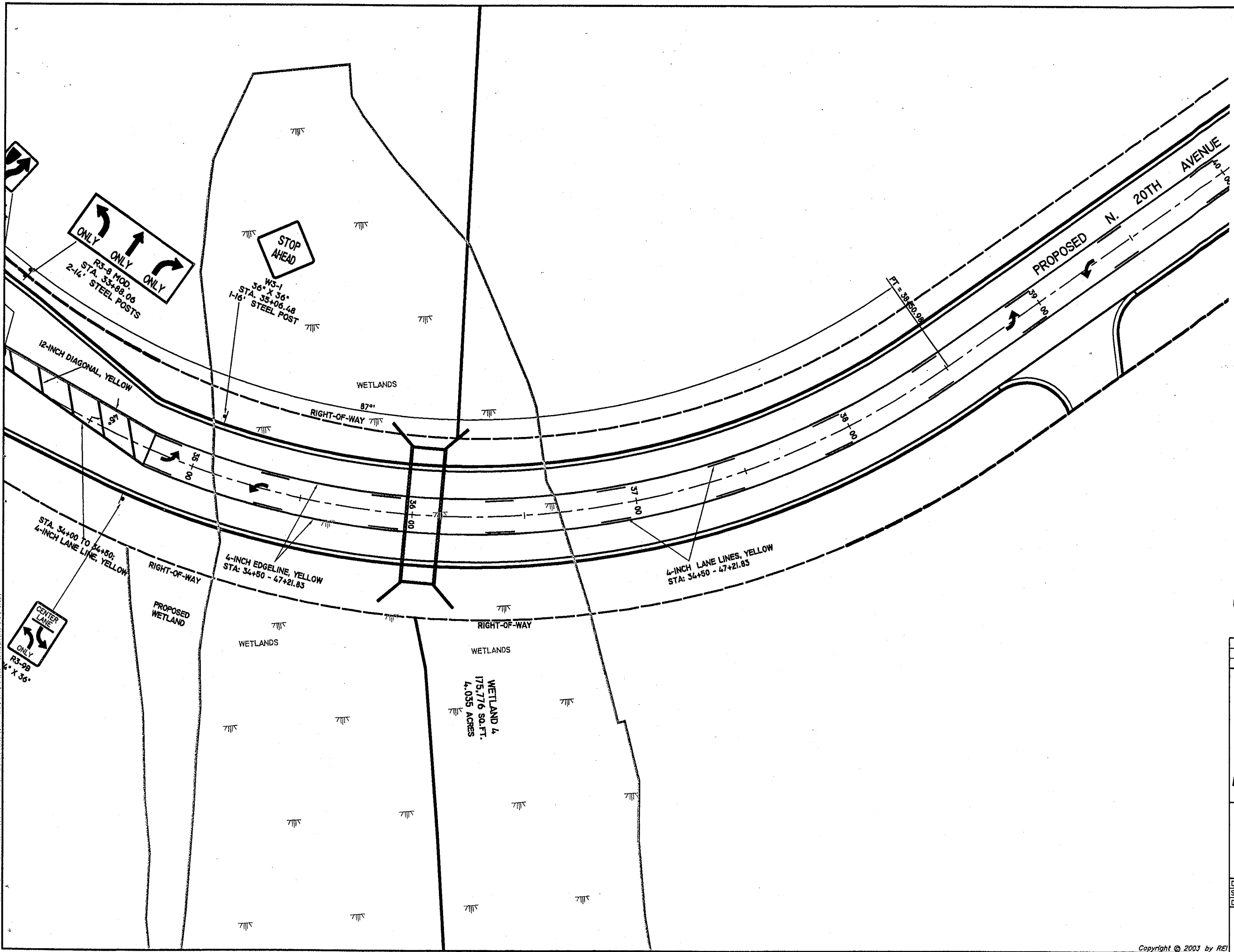
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 4080 N. 20th AVENUE
 WAUSAU, WISCONSIN 54401
 PHONE: (715) 675-9784 FAX: (715) 675-4060
 EMAIL: mail@REIengineering.com

**SIGNING &
 PAVEMENT MARKING PLAN
 HIGHWAY "K" & N. 20th AVE.
 WAUSAU, WISCONSIN**

DESIGNED BY: EPJ	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 06/26/03

SHEET	PROJECT No.
SP-3	2369

L.M. = PAINTING LAYOUT = 20TH-2
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NOTE: ALL SIGNS ARE TYPE II SIGNS

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 EMAIL: mail@REIengineering.com

**PROPOSED SIGNING & PAVEMENT MARKING PLAN
 HIGHWAY "K" & N. 20th AVE.
 WAUSAU, WISCONSIN**

DESIGNED BY: EPJ	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 06/26/03

SHEET SP-4	PROJECT No. 2369
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WETLANDS
11,029 S
0.253

L.M. = PP1 LAYOUT = 20TH-1
J:\DRAFTING\2369\ROSE\DWG\2369PLAN.PRO.DWG 6/25/2003 6:40:08 PM CST

NOTE: ALL SIGNS ARE TYPE II SIGNS

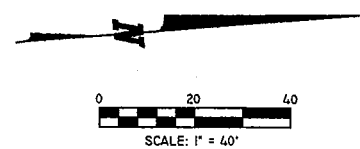
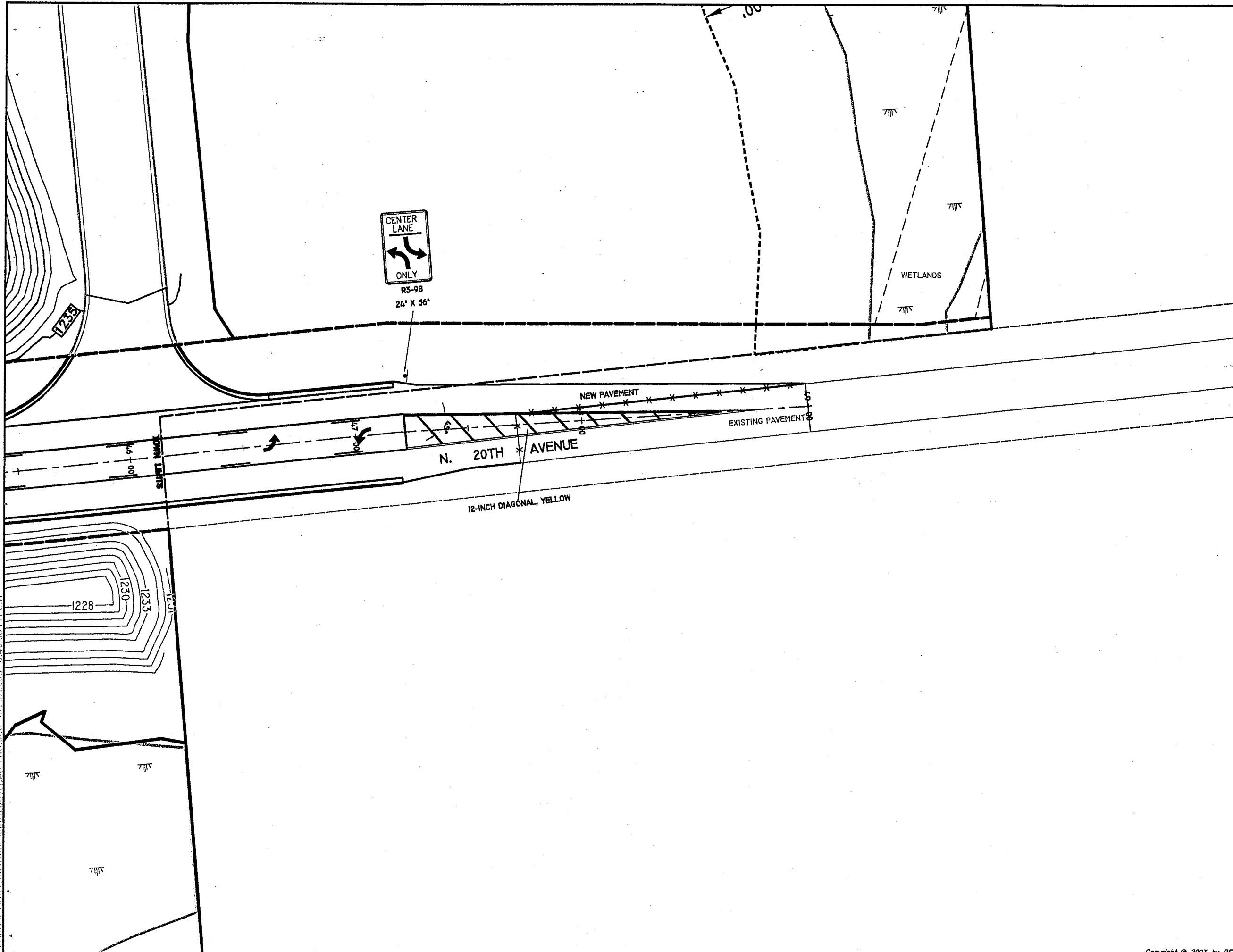
DATE	REVISION	BY	CHK'D

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 EMAIL: mail@REIengineering.com

**PROPOSED SIGNING &
 MARKING PLAN
 HIGHWAY "K" & N. 20th AVE.
 WAUSAU, WISCONSIN**

DESIGNED BY: EPJ	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/28/03
SHEET	PROJECT No.
SP-5	2369

L.M. = PAINTING LAYOUT = 20TH-4
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NOTE: ALL SIGNS ARE TYPE II SIGNS

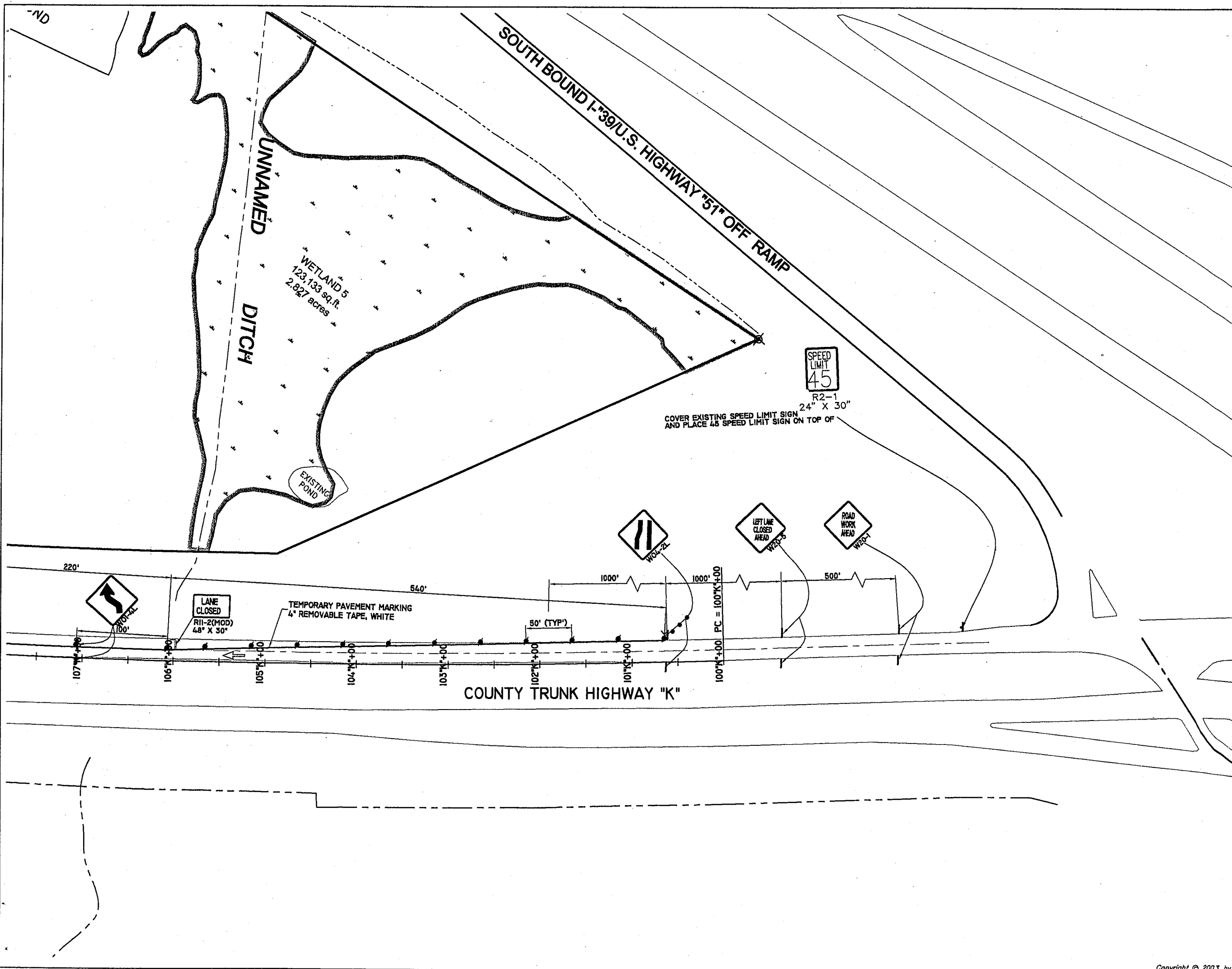
DATE	REVISION	BY	CHK'D

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 EMAIL: mail@REIengineering.com

**SIGNING & PAVEMENT MARKING PLAN
 HIGHWAY "K" & N. 20th AVE.
 WAUSAU, WISCONSIN**

DESIGNED BY: EPJ	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03
SHEET	PROJECT No.
SP-6	2369

J:\DRAFTING\2369ROUSE\dwg\2369TRAFFIC-CONTROL.dwg 6/25/2003 8:29:37 PM CST



- LEGEND**
- AREA UNDER PHASE 1 CONSTRUCTION
 - AREA UNDER PHASE 2 CONSTRUCTION
 - CHANNELIZING DRUM REFLECTORIZED
 - CHANNELIZING DRUM WITH TYPE 'C' WARNING LIGHT, REFLECTORIZED
 - LANE AND DIRECTION OF FLOW
 - TYPE III BARRICADE WITH TYPE 'A' WARNING LIGHT
 - TYPE III BARRICADE WITH A SIGN AND TYPE 'A' WARNING LIGHT
 - POST WITH ATTACHED SIGN IN DRUM
 - POST WITH ATTACHED SIGN
 - FLEXIBLE TUBULAR MARKER AND BASE
 - ARROW BOARD
 - REMOVE PAVEMENT MARKING

GENERAL TRAFFIC CONTROL NOTES
 CHANNELIZING DRUMS USED ON TAPERS SHALL HAVE TYPE 'C' WARNING LIGHTS.

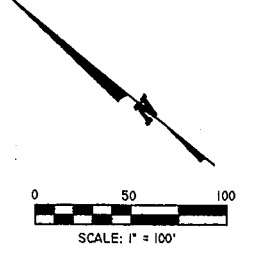
THE EXACT LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ALL SIGNS INAPPROPRIATE TO THE STATUS OF CONTROL ZONE, INCLUDING PRE-EXISTING SIGNING IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

"W0" SIGNS ARE THE SAME AS THE "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

TRAFFIC SINGLE LANE CROSSOVER, SEE S.D.D. 15D 11-3.

TRAFFIC SINGLE LANE CLOSURE, SEE S.D.D. 15D 20-1.



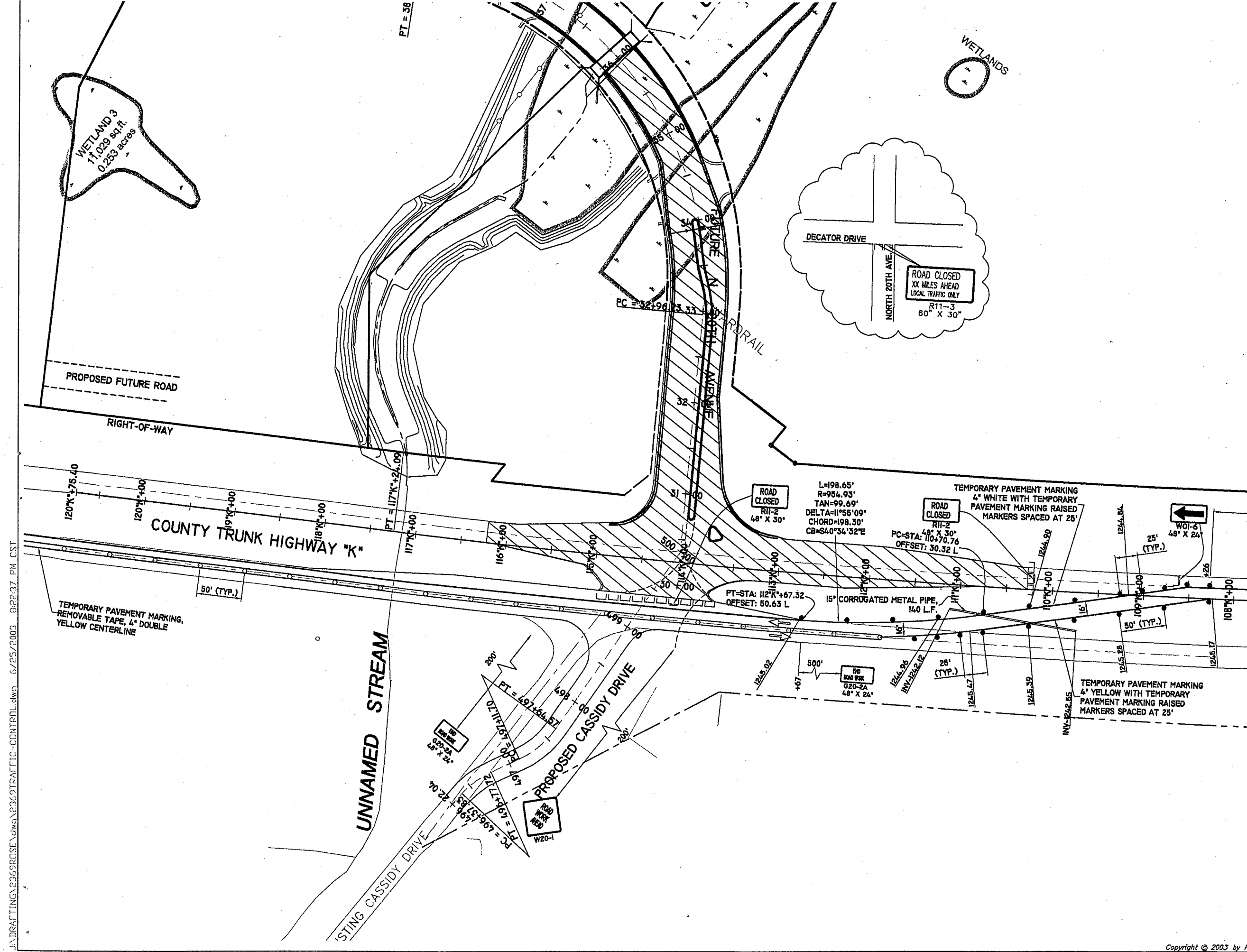
DATE	REVISION	BY	CHK'D

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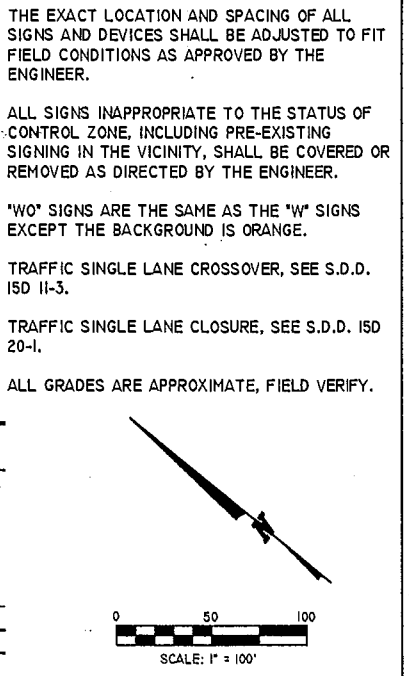
**TRAFFIC CONTROL PLAN
 PHASE 1
 HWY "K" & N. 20th AVENUE
 WAUSAU, WISCONSIN**

DESIGNED BY: EPJ	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03

SHEET	PROJECT No.
TC1(1)	2369



- LEGEND**
- AREA UNDER PHASE 1 CONSTRUCTION
 - AREA UNDER PHASE 2 CONSTRUCTION
 - CHANNELIZING DRUM REFLECTORIZED
 - CHANNELIZING DRUM WITH TYPE 'C' WARNING LIGHT, REFLECTORIZED
 - LANE AND DIRECTION OF FLOW
 - TYPE III BARICADE WITH TYPE 'A' WARNING LIGHT
 - TYPE III BARICADE WITH A SIGN AND TYPE 'A' WARNING LIGHT
 - POST WITH ATTACHED SIGN IN DRUM
 - POST WITH ATTACHED SIGN
 - FLEXIBLE TUBULAR MARKER AND BASE
 - ARROW BOARD
 - REMOVE PAVEMENT MARKING
- GENERAL TRAFFIC CONTROL NOTES**
 CHANNELIZING DRUMS USED ON TAPERS SHALL HAVE TYPE 'C' WARNING LIGHTS.
- THE EXACT LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- ALL SIGNS INAPPROPRIATE TO THE STATUS OF CONTROL ZONE, INCLUDING PRE-EXISTING SIGNING IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.
- 'W0' SIGNS ARE THE SAME AS THE 'W' SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- TRAFFIC SINGLE LANE CROSSOVER, SEE S.D.D. 15D 11-3.
- TRAFFIC SINGLE LANE CLOSURE, SEE S.D.D. 15D 20-1.
- ALL GRADES ARE APPROXIMATE, FIELD VERIFY.



DATE	REVISION	BY	CHK'D

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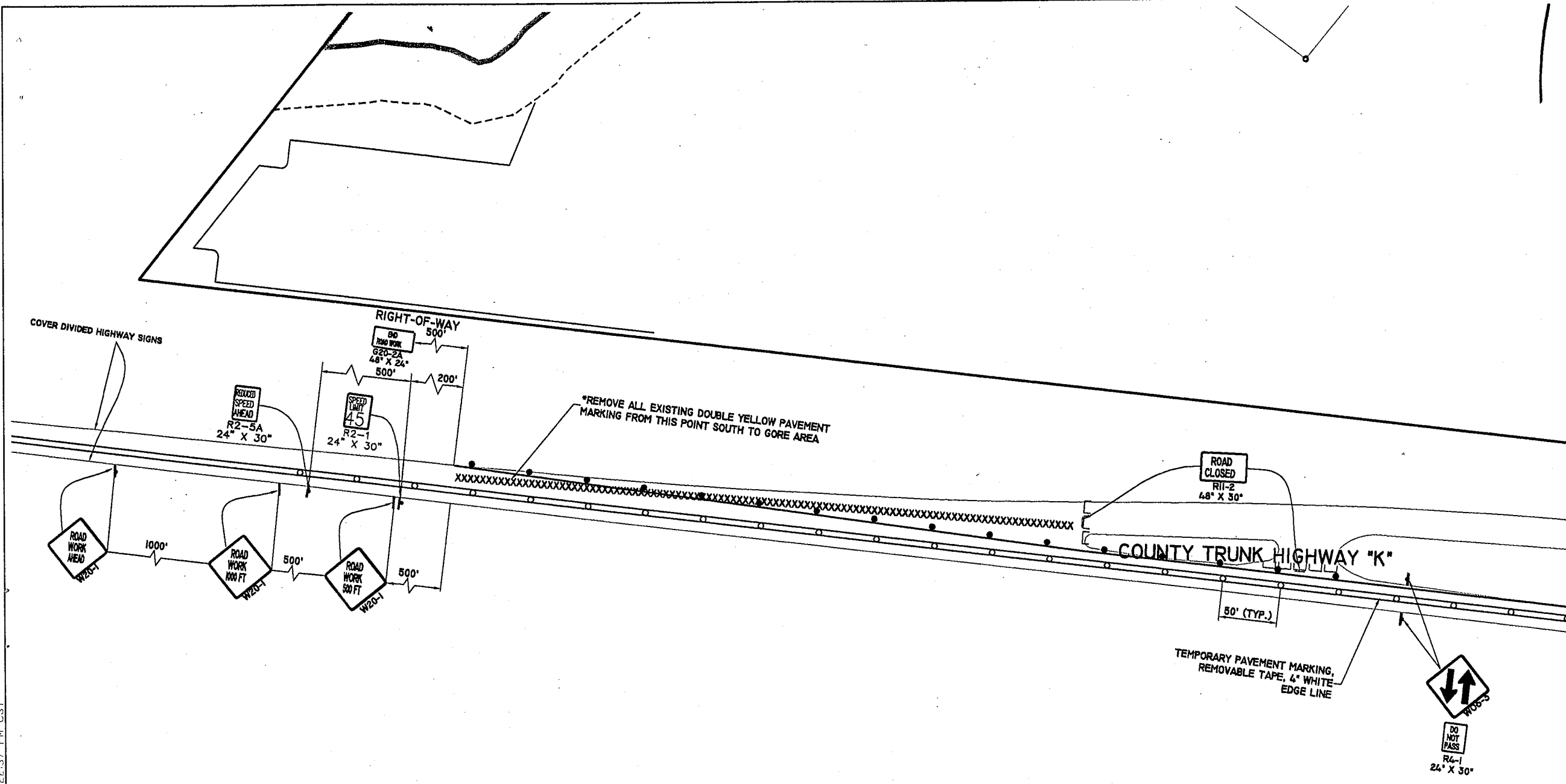
**TRAFFIC CONTROL PLAN
 PHASE 1
 HWY 'K' & N. 20th AVENUE
 WAUSAU, WISCONSIN**

DESIGNED BY: EPJ	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03

SHEET **TC2 (1)** PROJECT No. **2369**

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JA DRAFTING 2369RISE.dwg 2369TRAFFIC-CONTROL.dwg 6/25/2003 8:22:37 PM CST



- LEGEND**
- AREA UNDER PHASE 1 CONSTRUCTION
 - AREA UNDER PHASE 2 CONSTRUCTION
 - CHANNELIZING DRUM REFLECTORIZED
 - CHANNELIZING DRUM WITH TYPE "C" WARNING LIGHT, REFLECTORIZED
 - LANE AND DIRECTION OF FLOW
 - TYPE III BARRICADE WITH TYPE "A" WARNING LIGHT
 - TYPE III BARRICADE WITH A SIGN AND TYPE "A" WARNING LIGHT
 - POST WITH ATTACHED SIGN IN DRUM
 - POST WITH ATTACHED SIGN
 - FLEXIBLE TUBULAR MARKER AND BASE
 - ARROW BOARD
 - XXX REMOVE PAVEMENT MARKING

GENERAL TRAFFIC CONTROL NOTES
 CHANNELIZING DRUMS USED ON TAPERS SHALL HAVE TYPE "C" WARNING LIGHTS.

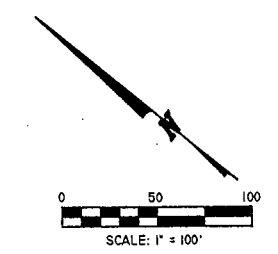
THE EXACT LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ALL SIGNS INAPPROPRIATE TO THE STATUS OF CONTROL ZONE, INCLUDING PRE-EXISTING SIGNING IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

*"WO" SIGNS ARE THE SAME AS THE "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

TRAFFIC SINGLE LANE CROSSOVER, SEE S.D.D. 15D II-3.

TRAFFIC SINGLE LANE CLOSURE, SEE S.D.D. 15D 20-1.



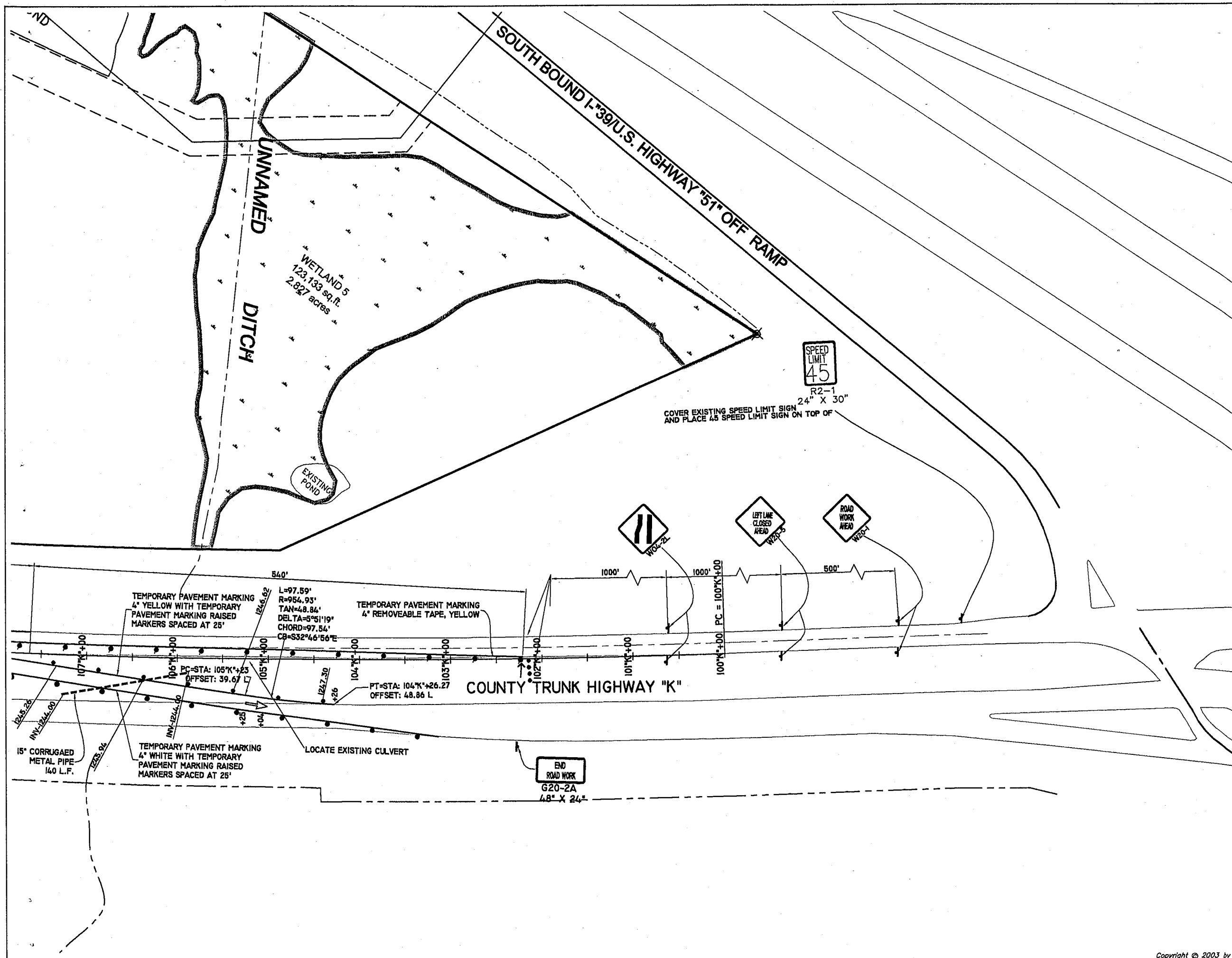
DATE	REVISION	BY	CHK'D

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**TRAFFIC CONTROL PLAN
 PHASE 1
 HWY "K" & N. 20th AVENUE
 WAUSAU, WISCONSIN**

DESIGNED BY: EPJ	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/28/03

SHEET	PROJECT No.
TC3 (1)	2369



- LEGEND**
- AREA UNDER PHASE 1 CONSTRUCTION
 - AREA UNDER PHASE 2 CONSTRUCTION
 - CHANNELIZING DRUM REFLECTORIZED
 - CHANNELIZING DRUM WITH TYPE 'C' WARNING LIGHT, REFLECTORIZED
 - LANE AND DIRECTION OF FLOW
 - TYPE III BARICADE WITH TYPE 'A' WARNING LIGHT
 - TYPE III BARICADE WITH A SIGN AND TYPE 'A' WARNING LIGHT
 - POST WITH ATTACHED SIGN IN DRUM
 - POST WITH ATTACHED SIGN
 - FLEXIBLE TUBULAR MARKER AND BASE
 - ARROW BOARD

XXX REMOVE PAVEMENT MARKING
GENERAL TRAFFIC CONTROL NOTES
 CHANNELIZING DRUMS USED ON TAPERS SHALL HAVE TYPE 'C' WARNING LIGHTS.

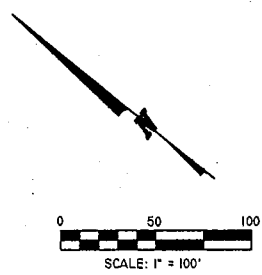
THE EXACT LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

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"WO" SIGNS ARE THE SAME AS THE "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

TRAFFIC SINGLE LANE CROSSOVER, SEE S.D.D. 15D 11-3.

TRAFFIC SINGLE LANE CLOSURE, SEE S.D.D. 15D 20-1.



DATE	REVISION	BY	CHK'D

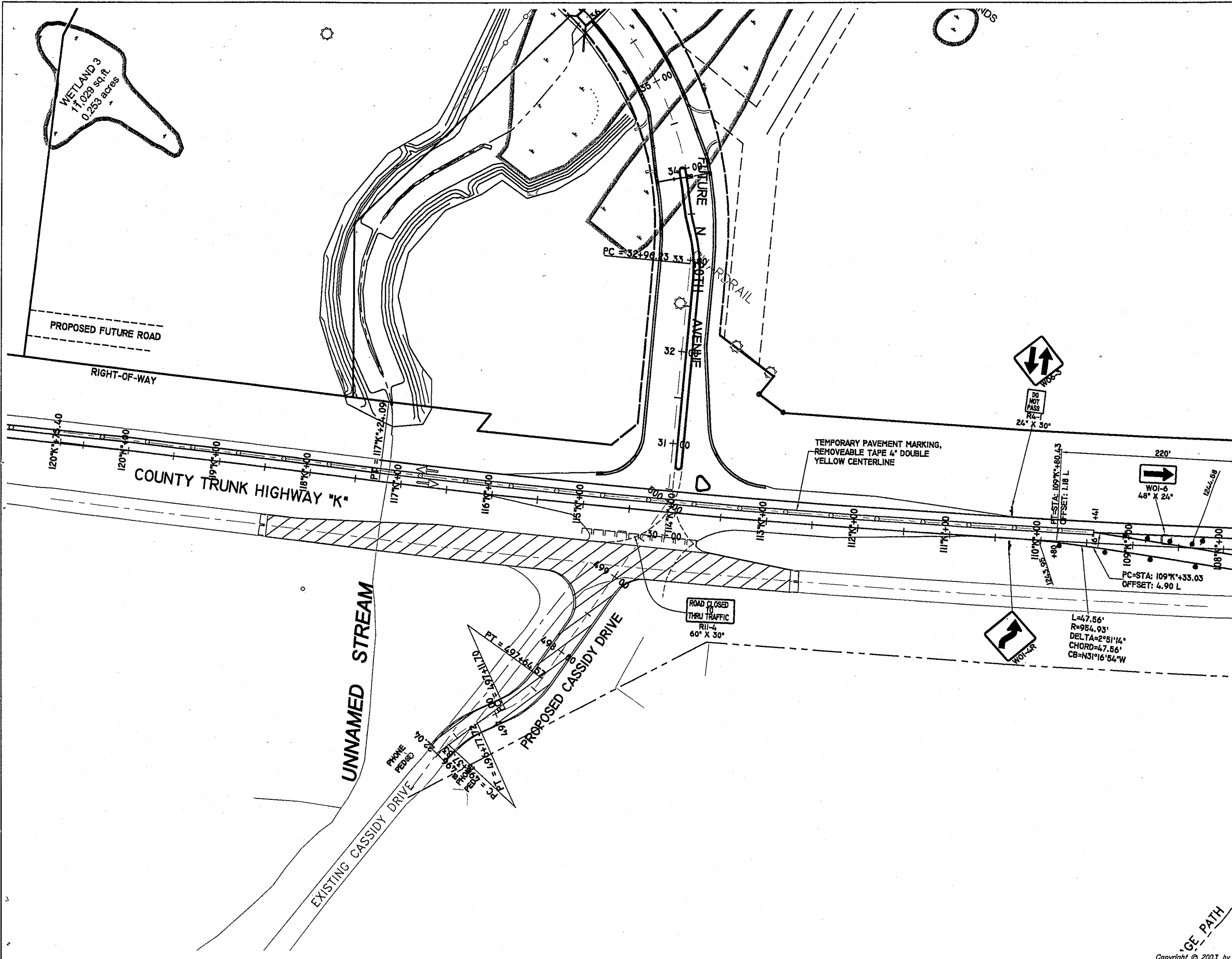
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 EMAIL: mail@REIengineering.com

**TRAFFIC CONTROL PLAN
 PHASE 2
 HWY 'K' & N. 20th AVENUE
 WAUSAU, WISCONSIN**

DESIGNED BY: EPJ	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/28/03

SHEET PROJECT No.
TC1 (2) 2369

J:\DRAFTING\2369ROUSE\dwg\2369TRAFFIC-CONTROL.dwg 6/25/2003 8:22:37 PM CST



- LEGEND**
- AREA UNDER PHASE 1 CONSTRUCTION
 - AREA UNDER PHASE 2 CONSTRUCTION
 - CHANNELIZING DRUM REFLECTORIZED
 - CHANNELIZING DRUM WITH TYPE "C" WARNING LIGHT, REFLECTORIZED
 - LANE AND DIRECTION OF FLOW
 - TYPE III BARRICADE WITH TYPE "A" WARNING LIGHT
 - TYPE III BARRICADE WITH A SIGN AND TYPE "A" WARNING LIGHT
 - POST WITH ATTACHED SIGN IN DRUM
 - POST WITH ATTACHED SIGN
 - FLEXIBLE TUBULAR MARKER AND BASE
 - ARROW BOARD
 - REMOVE PAVEMENT MARKING

GENERAL TRAFFIC CONTROL NOTES
 CHANNELIZING DRUMS USED ON TAPERS SHALL HAVE TYPE "C" WARNING LIGHTS.

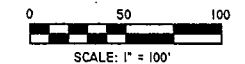
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"WO" SIGNS ARE THE SAME AS THE "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

TRAFFIC SINGLE LANE CROSSOVER, SEE S.D.D. 15D 11-3.

TRAFFIC SINGLE LANE CLOSURE, SEE S.D.D. 15D 20-1.



DATE	REVISION	BY	CHK'D

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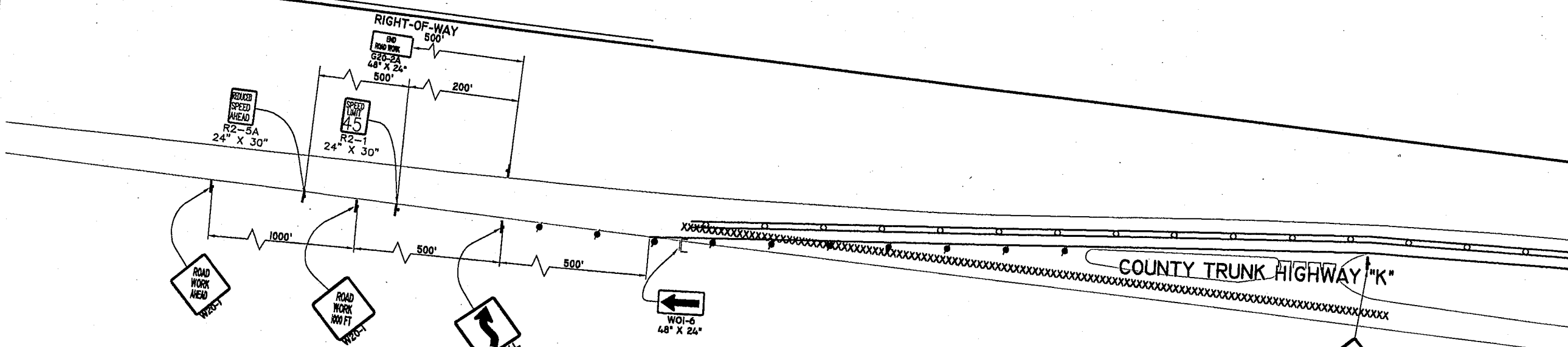
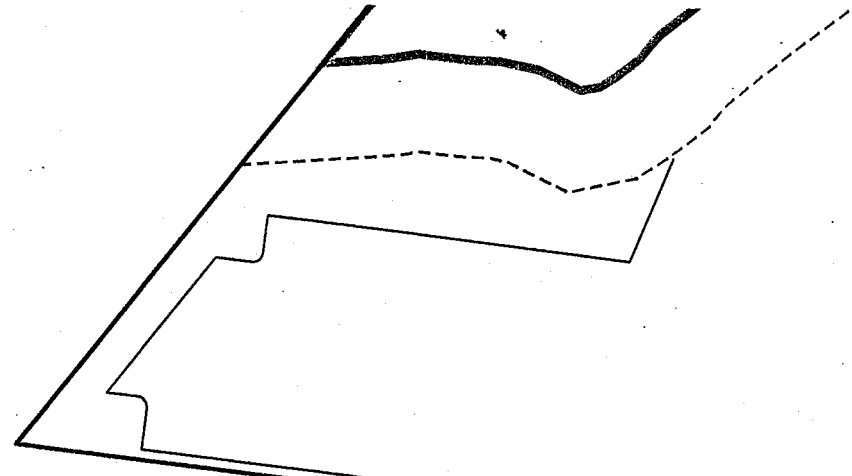
TRAFFIC CONTROL PLAN
PHASE 2
HWY "K" & N. 20th AVENUE
WAUSAU, WISCONSIN

DESIGNED BY: EPJ	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/28/03

SHEET	PROJECT No.
TC2 (2)	2369

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- LEGEND**
- AREA UNDER PHASE 1 CONSTRUCTION
 - AREA UNDER PHASE 2 CONSTRUCTION
 - CHANNELIZING DRUM REFLECTORIZED
 - CHANNELIZING DRUM WITH TYPE "C" WARNING LIGHT, REFLECTORIZED
 - LANE AND DIRECTION OF FLOW
 - TYPE III BARRICADE WITH TYPE "A" WARNING LIGHT
 - TYPE III BARRICADE WITH A SIGN AND TYPE "A" WARNING LIGHT
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 - ARROW BOARD
 - REMOVE PAVEMENT MARKING

GENERAL TRAFFIC CONTROL NOTES
CHANNELIZING DRUMS USED ON TAPERS SHALL HAVE TYPE "C" WARNING LIGHTS.

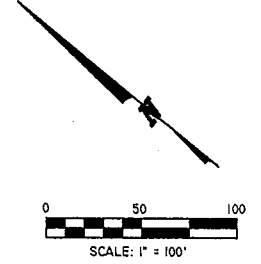
THE EXACT LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

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W0 SIGNS ARE THE SAME AS THE "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

TRAFFIC SINGLE LANE CROSSOVER, SEE S.D.D. 15D 11-3.

TRAFFIC SINGLE LANE CLOSURE, SEE S.D.D. 15D 20-1.



DATE	REVISION	BY	CHK'D

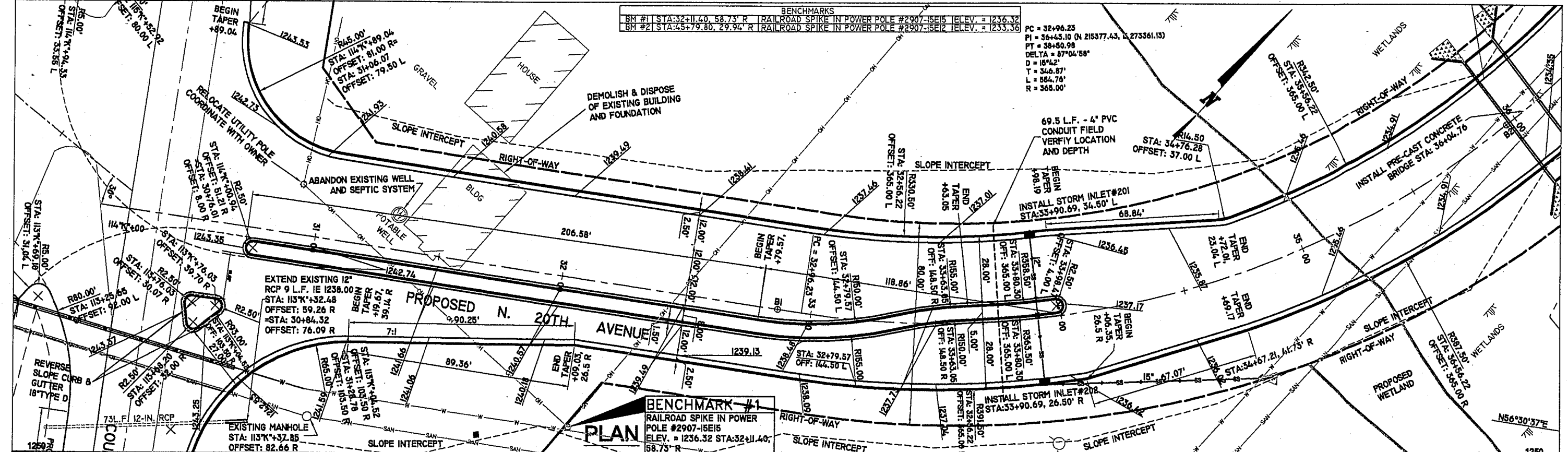


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WAUSAU, WISCONSIN 54401
 PHONE: (715) 675-9784 FAX: (715) 675-4060
 EMAIL: mail@REIengineering.com

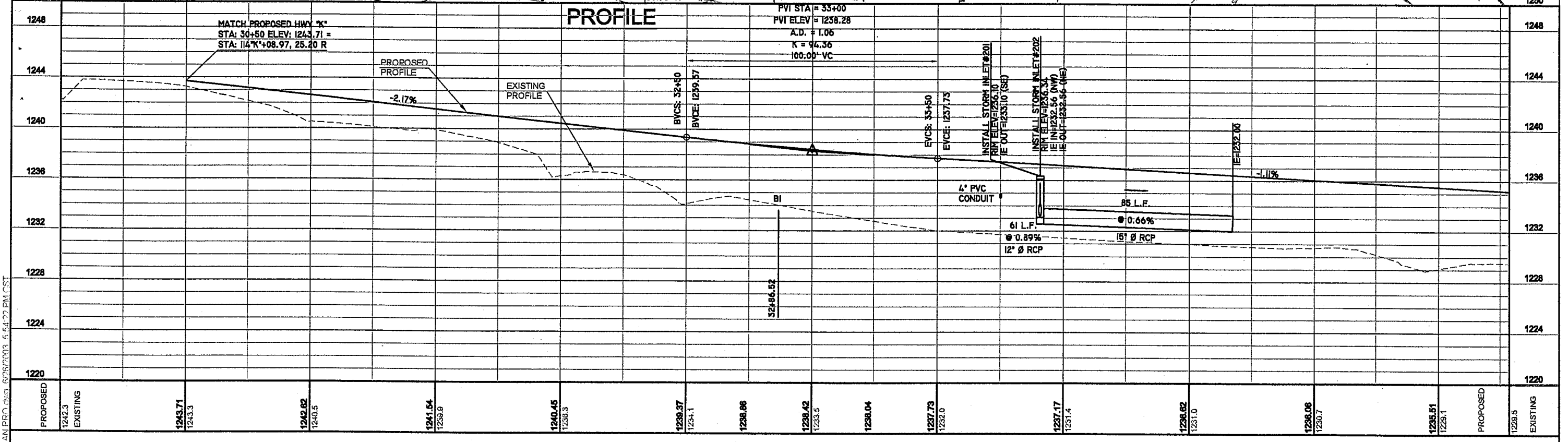
TRAFFIC CONTROL PLAN
PHASE 2
HWY "K" & N. 20th AVENUE
WAUSAU, WISCONSIN

DESIGNED BY: EPJ	CHECKED BY: MPB
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03

SHEET PROJECT No.
TC3 (2) 2369



PROFILE



PROPOSED	1242.3	1243.71	1242.62	1241.54	1240.45	1239.37	1238.42	1238.04	1237.73	1237.17	1236.62	1236.06	1235.51	PROPOSED	1229.5
EXISTING	1243.3	1243.3	1240.5	1239.8	1239.3	1239.1	1238.5	1238.0	1237.4	1236.7	1236.1	1235.1	1234.1	EXISTING	1229.5
	30+00	30+50	31+00	31+50	32+00	32+50	33+00	33+50	34+00	34+50	35+00	35+50	35+79		

**PROPOSED ROAD PROFILE
N. 20th AVENUE
WAUSAU, WISCONSIN**

SURVEYED BY: NJW
 DRAWN BY: TAW
 DESIGNED BY: MPB
 CHECKED BY:
 APPROVED BY:
 DATE: 6/26/03
 HORIZ. SCALE: 1"=40'
 VERT. SCALE: 1"=8'

REI
 4080 N. 20th AVENUE
 WAUSAU, WISCONSIN 54401
 PHONE: (715) 675-9784
 FAX: (715) 675-4060
 E-MAIL: mail@REIengineering.com
 WEB PAGE: www.REIengineering.com

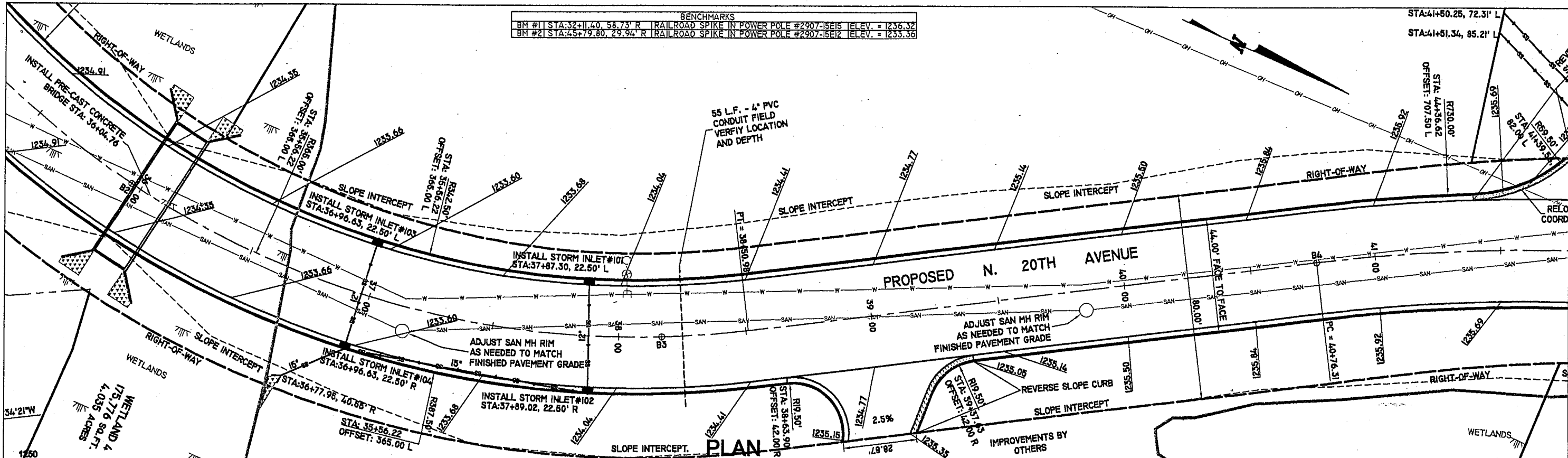


PROJECT No.
2369
 SHEET
PP1

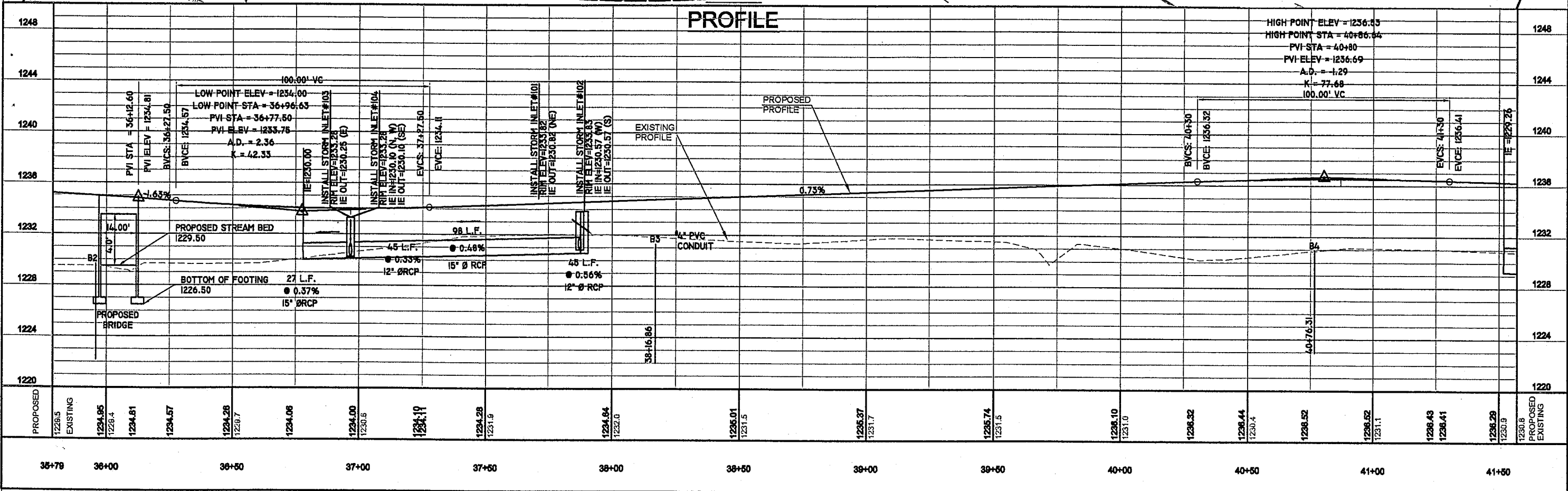
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DATE	REVISION	REV. BY	C'KD	DATE

BENCHMARKS
 BM #1 STA:32+11.40, 58.73' R TRAILROAD SPIKE IN POWER POLE #2907-15E15 ELEV. = 1236.32
 BM #2 STA:45+79.80, 29.94' R TRAILROAD SPIKE IN POWER POLE #2907-15E12 ELEV. = 1235.36



PLAN



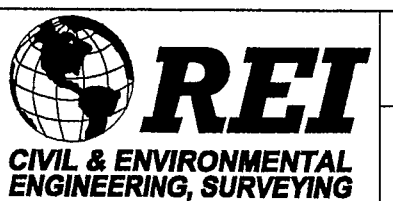
PROFILE

DATE	REVISION	REV. BY	C'KD	DATE

**PROPOSED ROAD PROFILE
 N. 20th AVENUE
 WAUSAU, WISCONSIN**

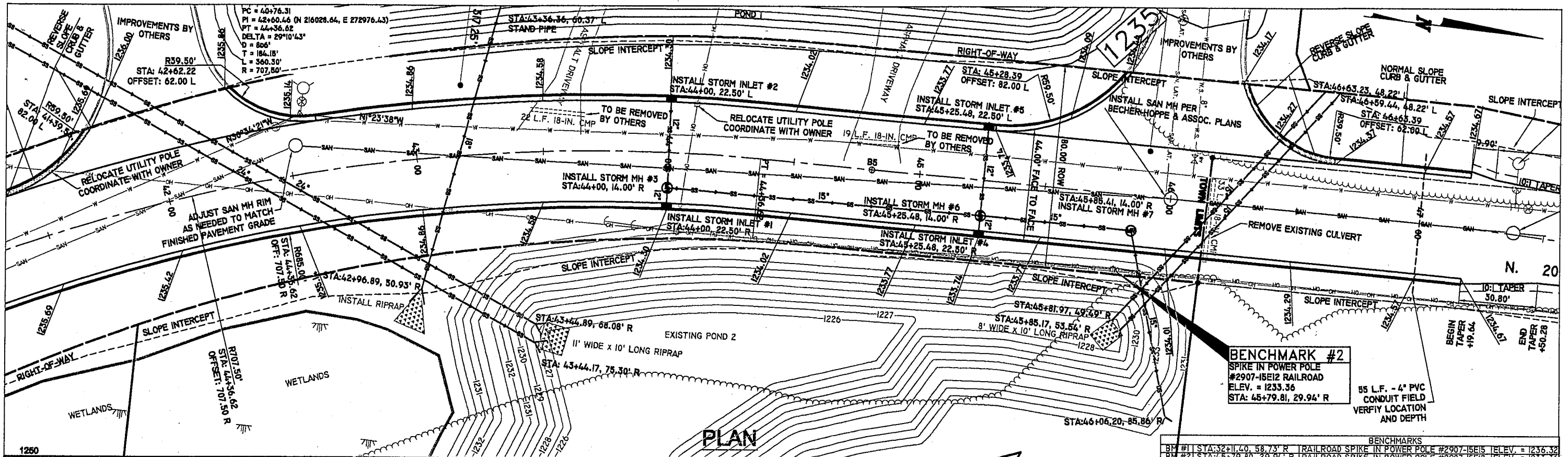
SURVEYED BY: NJW
 DRAWN BY: TAW
 DESIGNED BY: MPB
 CHECKED BY:
 APPROVED BY:
 DATE: 8/26/03
 HORIZ. SCALE: 1"=40'
 VERT. SCALE: 1"=8'

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 PHONE: (715) 675-9784
 FAX: (715) 675-4060
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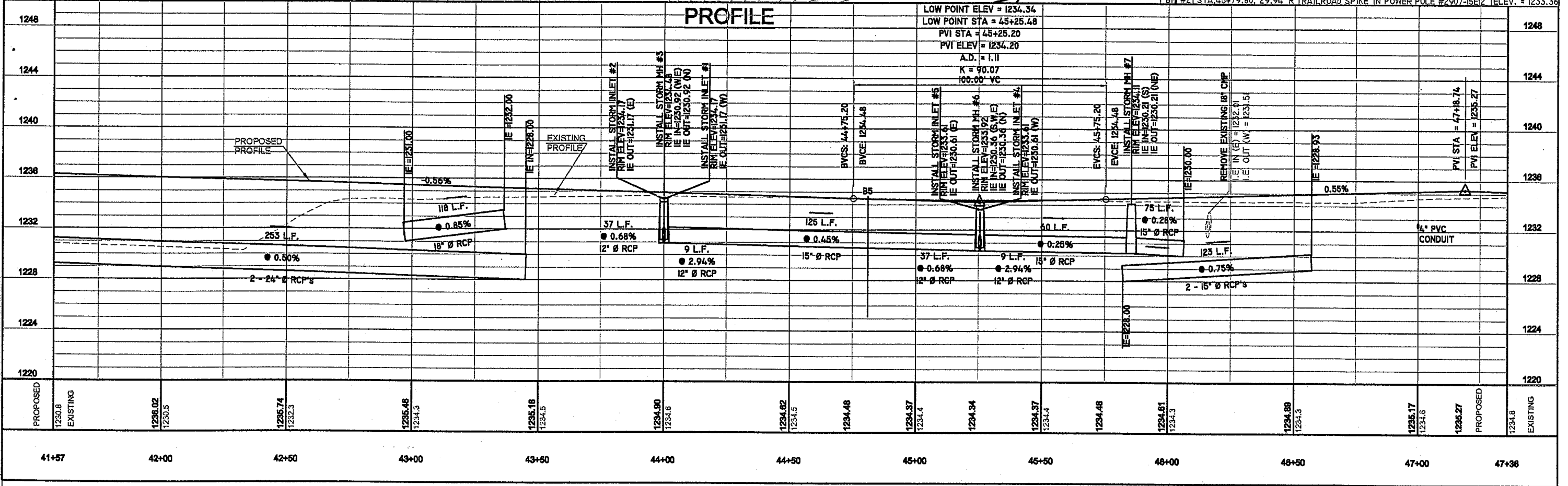


PROJECT No.
2369
 SHEET
PP2

J:\DRAWING\2369\PROPOSED\PLAN.PRO.dwg 8/27/2003 1:06:50 PM CST



PROFILE



**PROPOSED ROAD PROFILE
 N. 20th AVENUE
 WAUSAU, WISCONSIN**

SURVEYED BY: NJW
 DRAWN BY: TAW
 DESIGNED BY: MPB
 CHECKED BY:
 APPROVED BY:
 DATE: 6/26/03
 HORIZ. SCALE: 1"=40'
 VERT. SCALE: 1"=8'

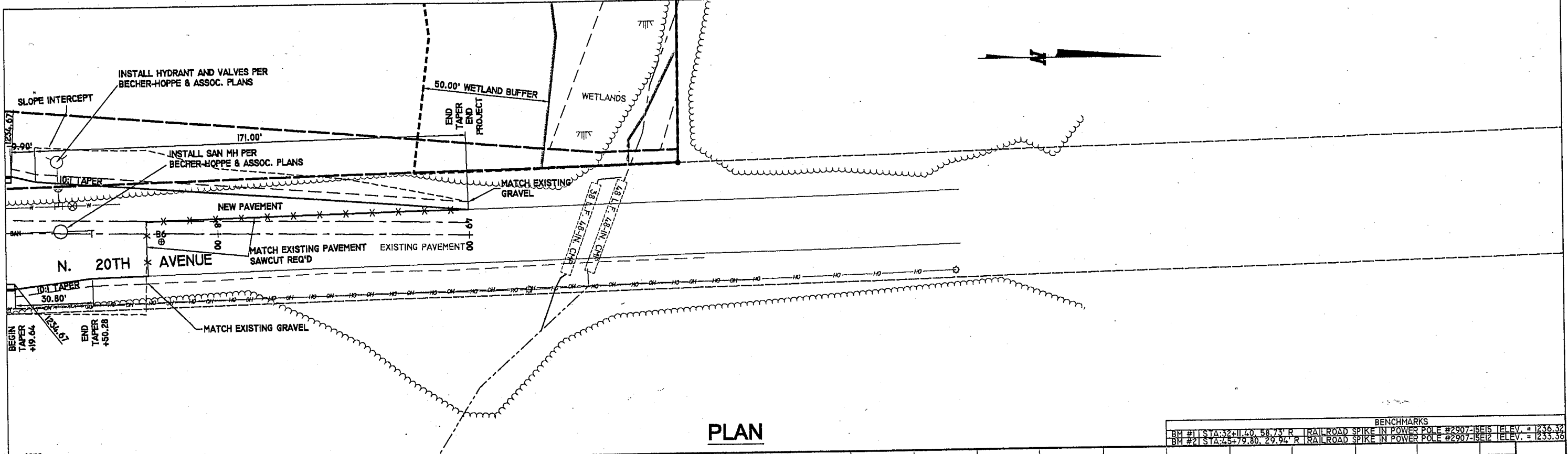
REI
 4080 N. 20th AVENUE
 WAUSAU, WISCONSIN 54401
 PHONE: (715) 675-9784
 FAX: (715) 675-4060
 E-MAIL: mail@REIengineering.com
 WEB PAGE: www.REIengineering.com



PROJECT No.
2369
 SHEET
PP3

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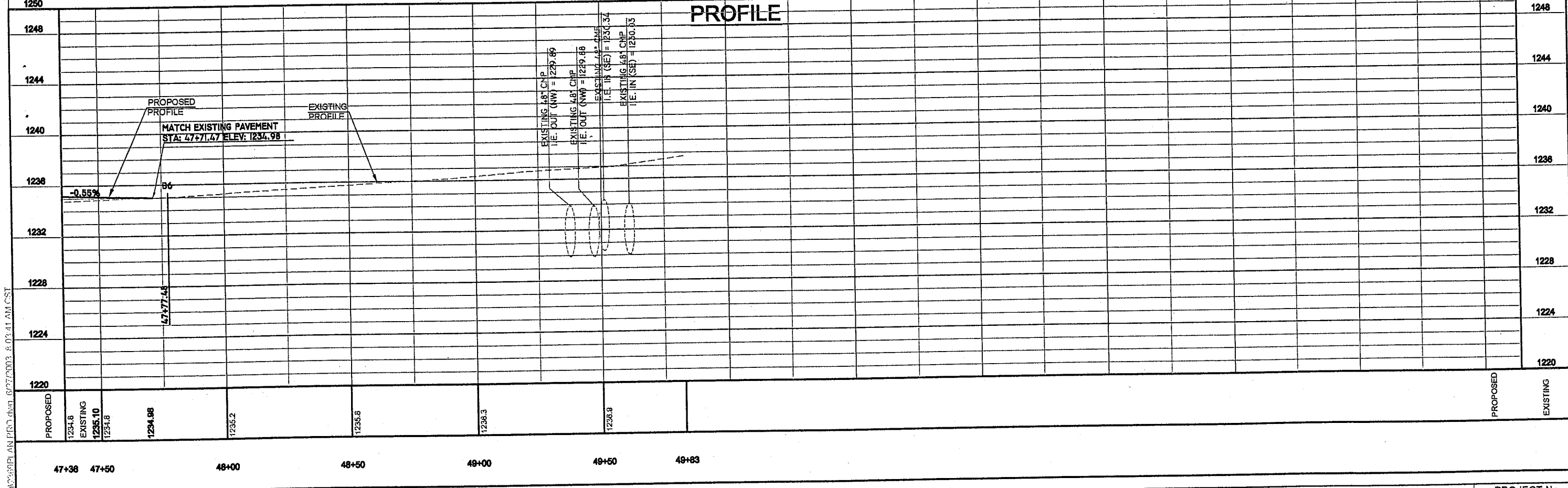
DATE	REVISION	REV. BY	C'KD	DATE



PLAN

BENCHMARKS	
BM #1 STA: 32+11.40 56.73' R	RAILROAD SPIKE IN POWER POLE #2907-ISE15 ELEV. = 1235.32
BM #2 STA: 45+79.80 29.94' R	RAILROAD SPIKE IN POWER POLE #2907-ISE12 ELEV. = 1235.36

PROFILE



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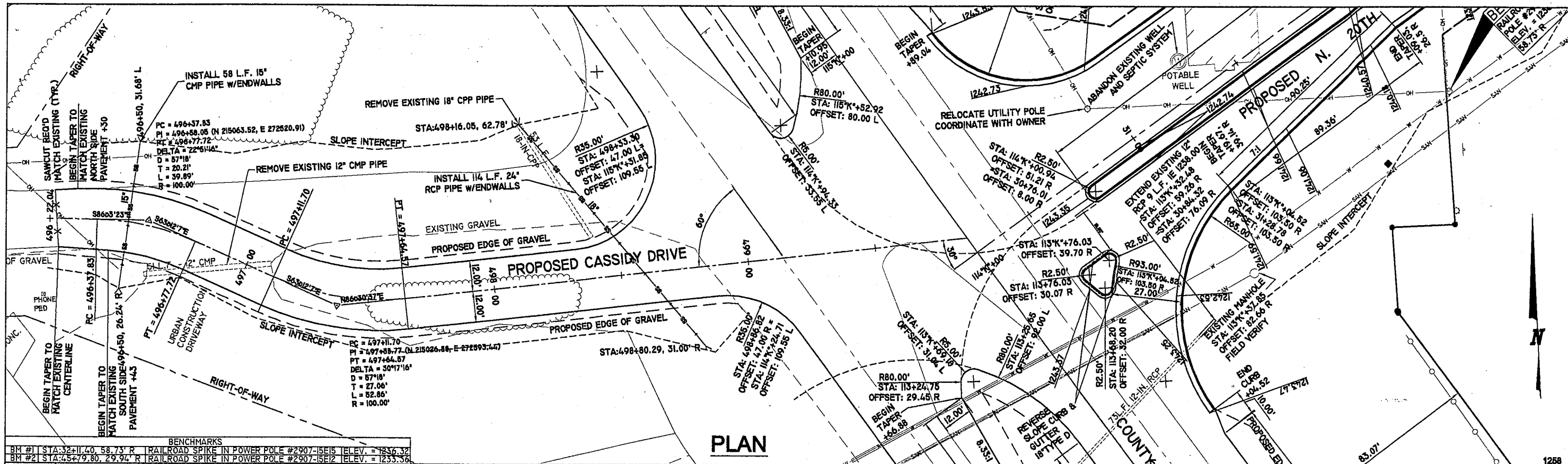
**PROPOSED ROAD PROFILE
N. 20th AVENUE
WAUSAU, WISCONSIN**

SURVEYED BY: NJW	REI
DRAWN BY: TAW	4080 N. 20th AVENUE
DESIGNED BY: MPB	WAUSAU, WISCONSIN 54401
CHECKED BY:	PHONE: (715) 675-9784
APPROVED BY:	FAX: (715) 675-4060
DATE: 6/26/03	E-MAIL: mail@REIengineering.com
HORIZ. SCALE: 1"=40'	WEB PAGE: www.REIengineering.com
VERT. SCALE: 1"=8'	



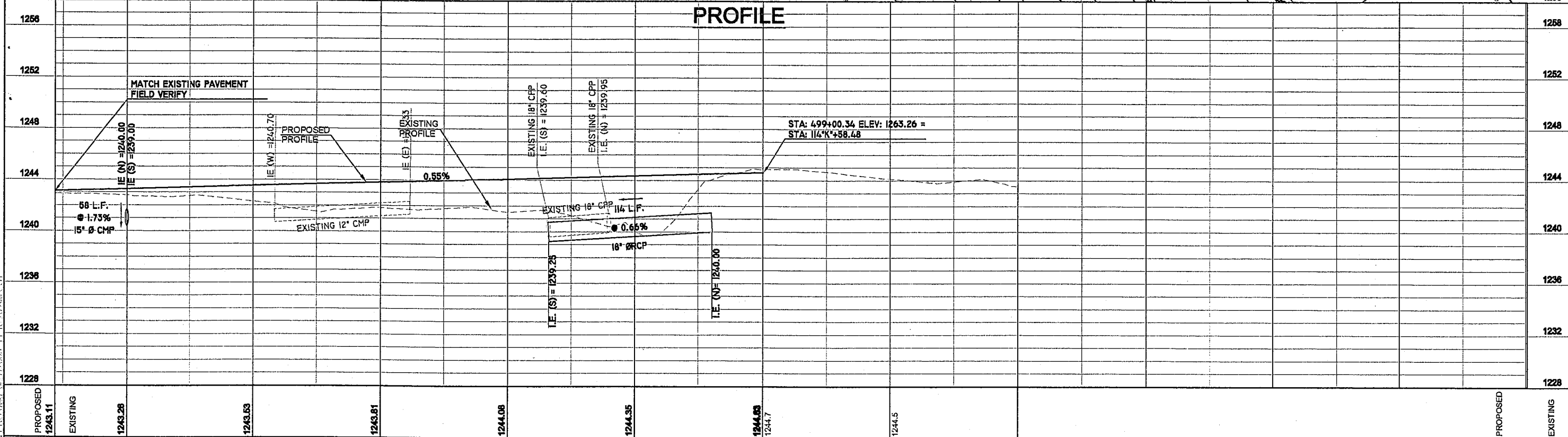
PROJECT No.
2369
SHEET
PP4

DATE	REVISION	REV. BY	C'KD	DATE



PLAN

BENCHMARKS
 BM #1 STA: 32+11.40, 58.73' R RAILROAD SPIKE IN POWER POLE #2907-15E15 ELEV. = 1236.32
 BM #2 STA: 45+79.80, 29.94' R RAILROAD SPIKE IN POWER POLE #2907-15E12 ELEV. = 1235.58



PROPOSED ROAD PROFILE
 CASSIDY DRIVE
 WAUSAU, WISCONSIN

SURVEYED BY:	NJW
DRAWN BY:	TAW
DESIGNED BY:	MPB
CHECKED BY:	
APPROVED BY:	
DATE:	8/26/03
HORIZ. SCALE:	1"=40'
VERT. SCALE:	1"=8'

REI
 4080 N. 20th AVENUE
 WAUSAU, WISCONSIN 54401
 PHONE: (715) 675-9784
 FAX: (715) 675-4080
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 WEB PAGE: www.REIengineering.com



PROJECT No.
 2369
 SHEET
 PP5

\\IDRAFTING\2369\PROJECT\2369\PLAN.PRO.dwg 6/27/2003 11:18:26 AM CST

REVISION DATE: 9-7-94

PLOT NAME: SDFHIA

PLOT SCALE: 1/4"

FILE NAME: SDFHIOO

ORIGINATOR: MEL ZEMLICKA 5-2782
LEVELS: 01-1 5

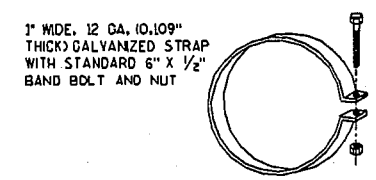
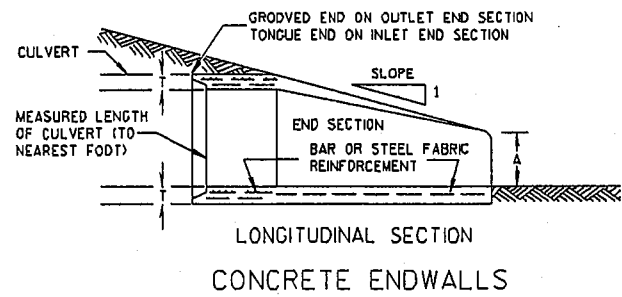
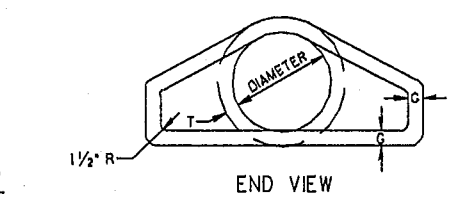
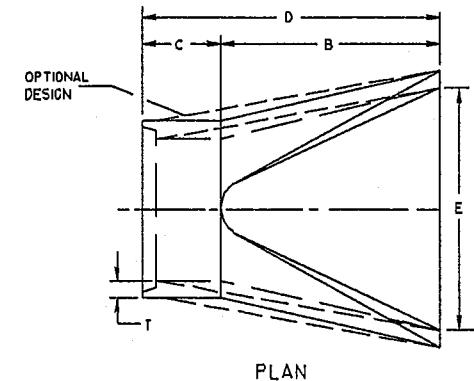
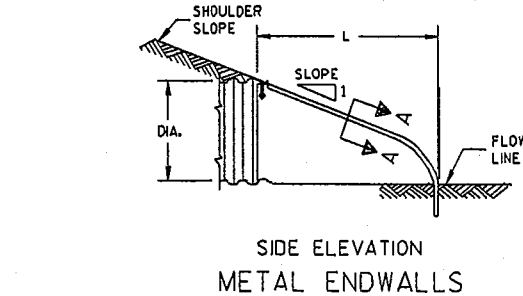
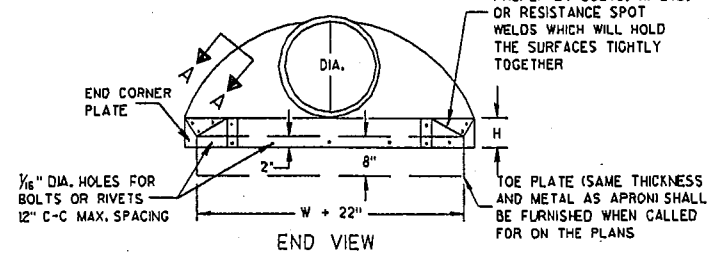
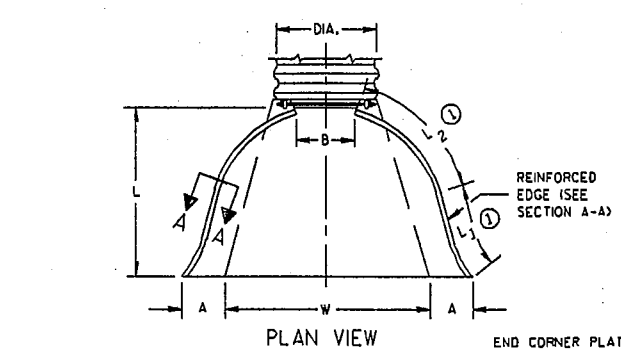
S.D.D. 8 F 1-11

METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)	DIMENSIONS (Inches)							APPROX. SLOPE	BODY	
		A	B (MAX.)	H	L	L1	L2	W			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 1/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 3/4	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 1/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 1/4	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/2 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/2 to 1	3 Pc.
60	.109	.105	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109	.105	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109	.105	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109	.105	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109	.105	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109	.105	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109	.105	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

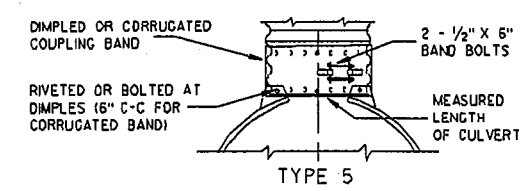
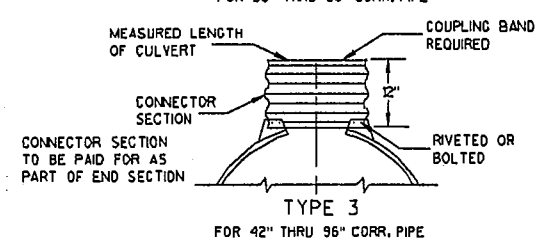
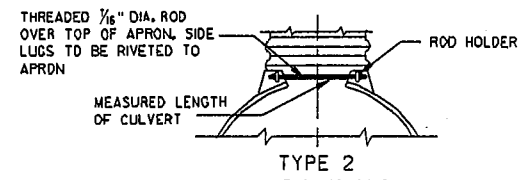
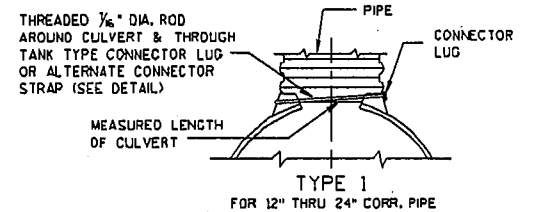
* EXCEPT CENTER PANEL SEE GENERAL NOTES

REINFORCED CONCRETE APRON ENDWALLS											
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE			
	T	A	B	C	D	E	G				
12	2	4	24	48 1/4	72 1/4	24	2	3 to 1			
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1			
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1			
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1			
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1			
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1			
30	3 1/2	12	54	19 1/4	73 1/2	60	3 1/2	3 to 1			
36	4	15	63	34 1/4	97 1/4	72	4	3 to 1			
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1			
48	5	24	72	25	98	84	5	3 to 1			
54	5 1/2	27	65	33 1/4-35	98 1/4-100	90	5 1/2	2 3/4 to 1			
60	6	30-35	60	39	99	96	5	2 to 1			
66	6 1/2	30-35	72-78	21-27	99	102	5 1/2	2 to 1			
72	7	24-36	78	21	99	108	6	2 to 1			
78	7 1/2	24-36	78	21	99	114	6 1/2	2 to 1			
84	8	35	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1			
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1			

* MINIMUM
** MAXIMUM



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



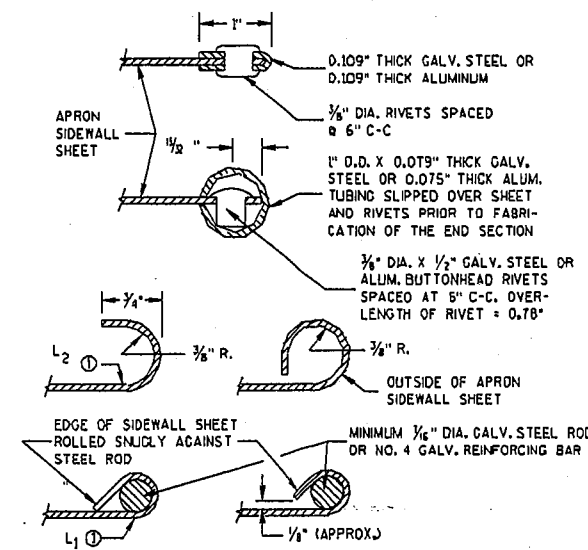
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VICE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

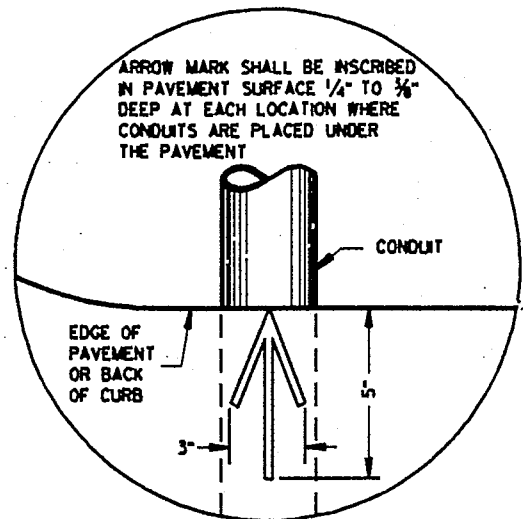
LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

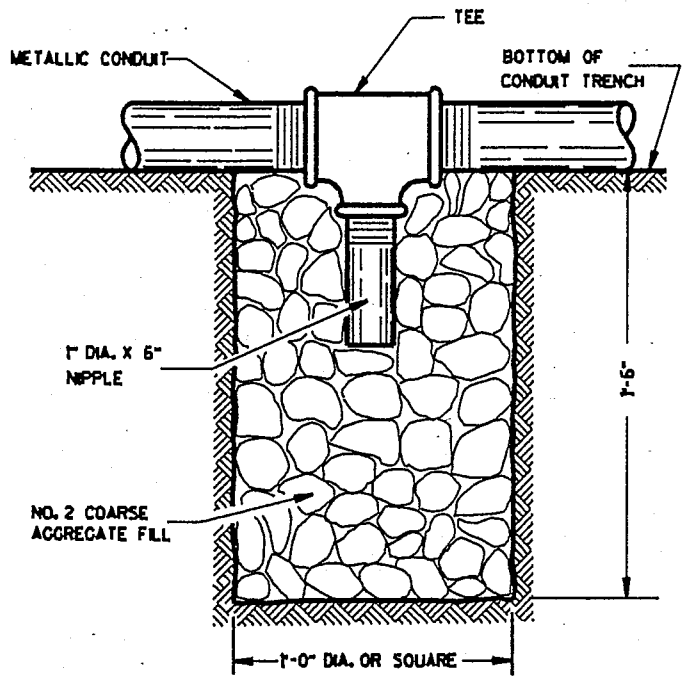
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
DATE	CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

S.D.D. 8 F 1-11

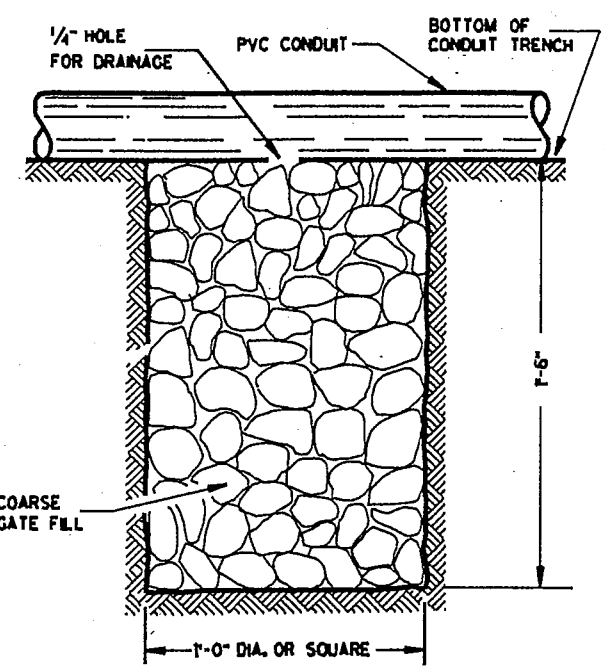


PLAN VIEW
ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT



NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

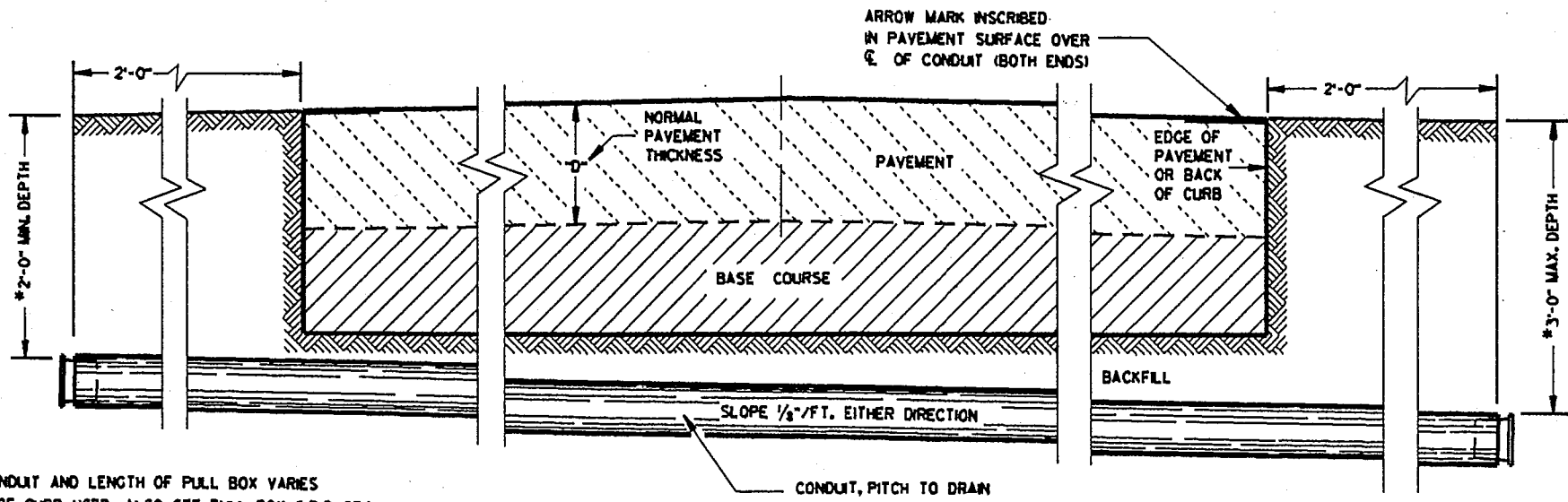
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

POLY ROPE OR A PULL WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS UNLESS OTHERWISE APPROVED BY THE PROJECT ENGINEER.



*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 984

SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
DATE	STATE ELECTRICAL ENGINEER FOR HIGHWAYS

S.D.D. 9 B 2-6

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

DIMENSION IN INCHES	TYPE OF PIPE										
	CORRUGATED STEEL									POLYETHYLENE SDR 32.5	
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24	12
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48	24
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.4
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4	10 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2	14 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	8 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2	11 1/2
WEIGHT IN POUNDS *											
FRAME AND COVER		60	60	60	110	110	110	155	155	155	60

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE. THE MECHANICAL CONNECTION (INSIDE AND OUTSIDE) TO THE PULL BOX, SHALL BE TOTALLY AND PERMANENTLY SEALED WITH A SILICONE OR RUBBERIZED CAULKING COMPOUND AS APPROVED BY THE ENGINEER.

GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

DRAIN DUCT SHALL BE MEASURED AND PAID FOR SEPARATELY.

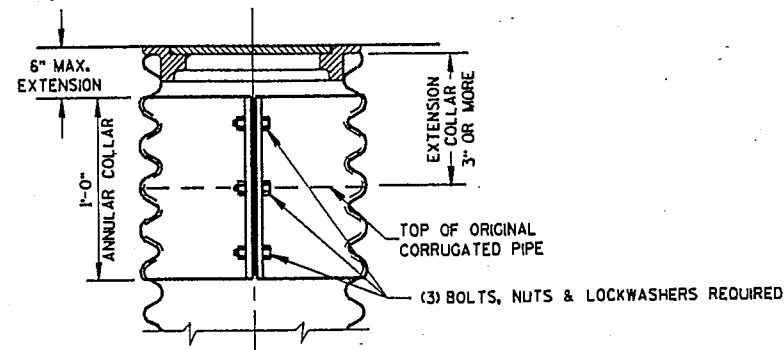
RODENT WIRE SCREEN SHALL BE 1/4" STAINLESS STEEL MESH AND BE INSTALLED WITH A STAINLESS STEEL HOSE CLAMP OF SUFFICIENT SIZE.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

S.D.D. 9B2, "CONDUIT", APPLIES TO THIS DRAWING.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

IF PULL BOX EQUIPMENT GROUNDING IS REQUIRED USING AN EQUIPMENT GROUNDING ELECTRODE IN EACH PULL BOX, THE EQUIPMENT GROUNDING ELECTRODE SHALL BE 3/8" X 8'-0", COPPERCLAD AND BE EXOTHERMICALLY WELDED TO A #4 AWG, COPPER, STRANDED WIRE (BARE OR GREEN INSULATED). THE #4 AWG WIRE SHALL BE 4 FEET IN LENGTH, NEATLY COILED, TAPED AND AVAILABLE FOR USE WHEN REQUIRED.



CORRUGATED PIPE EXTENDER

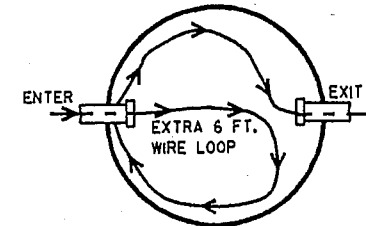
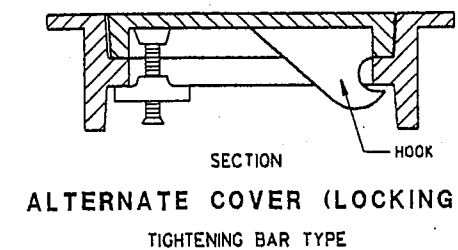
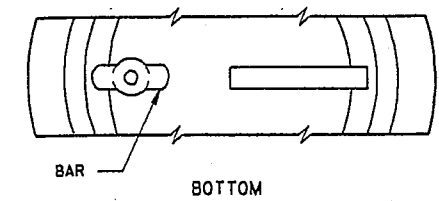
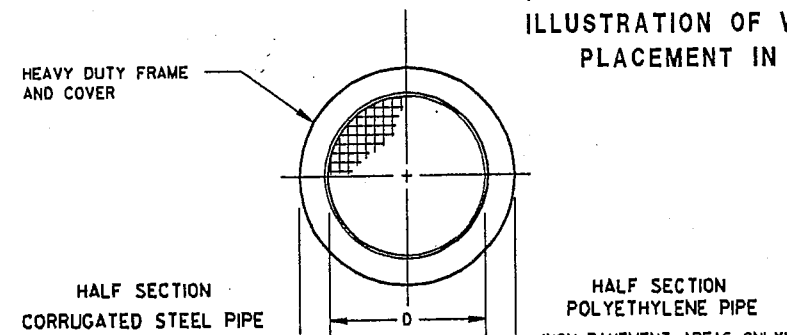


ILLUSTRATION OF WIRE/CABLE PLACEMENT IN PULL BOX



ALTERNATE COVER (LOCKING)

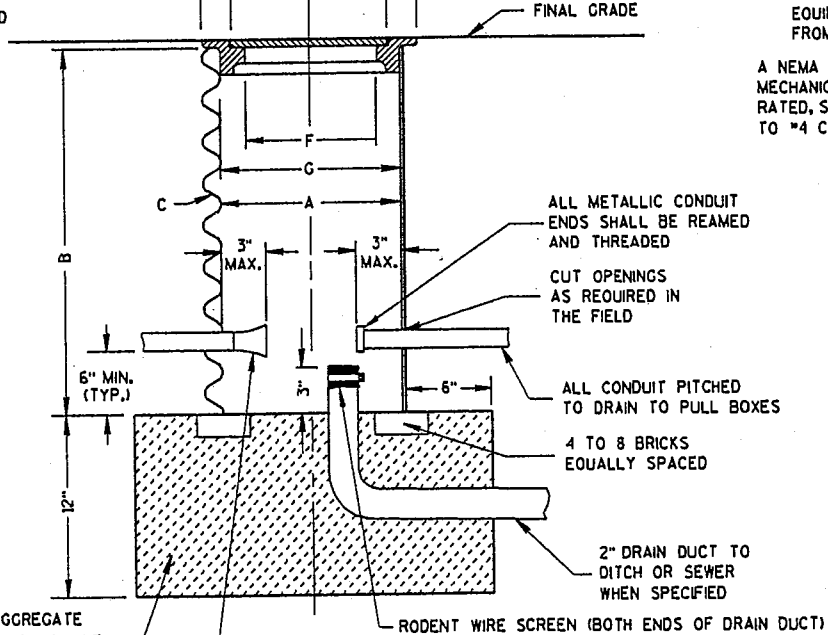
TIGHTENING BAR TYPE



HALF SECTION CORRUGATED STEEL PIPE

HALF SECTION POLYETHYLENE PIPE (NON PAVEMENT AREAS ONLY)

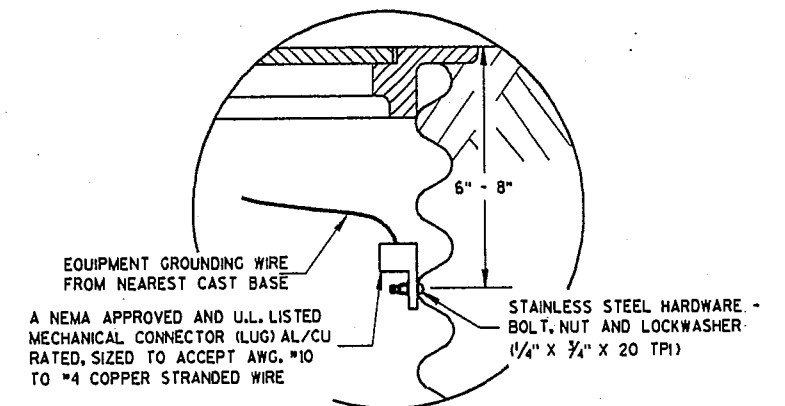
WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE



NO. 2 COARSE AGGREGATE (SEE SUBSECTION 501.3.6.4.5 OF THE STANDARD SPECIFICATIONS)

INSTALL END BELLS (U.L. LISTED FOR ELECTRICAL USE) ON ALL NONMETALLIC CONDUIT BEFORE INSTALLATION OF WIRE AND/OR CABLE.

PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

DATE STATE ELECTRICAL ENGINEER FOR HIGHWAYS

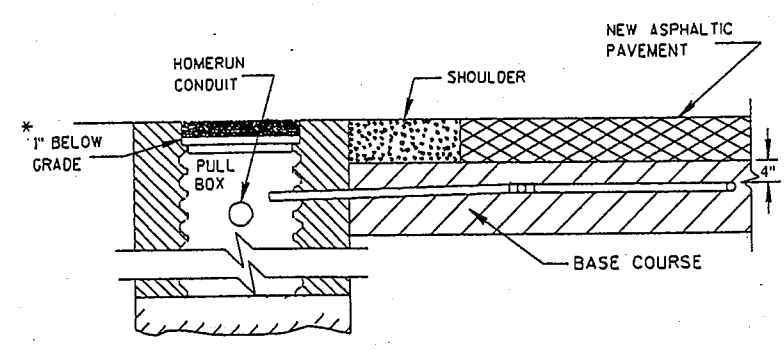
REVISION DATE: 3-24-93
 PLOT NAME: S9F801
 FILE NAME: S9F801
 PLOT SCALE: 1
 ORIGINATOR: MEL ZENLICKA 6-2782
 LEVELS ON - 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63

APPROVED
 STATE DESIGN ENGINEER FOR HWYS
 DATE _____

APPROVED
 STATE MAT'L'S ENGINEER FOR HWYS
 DATE _____

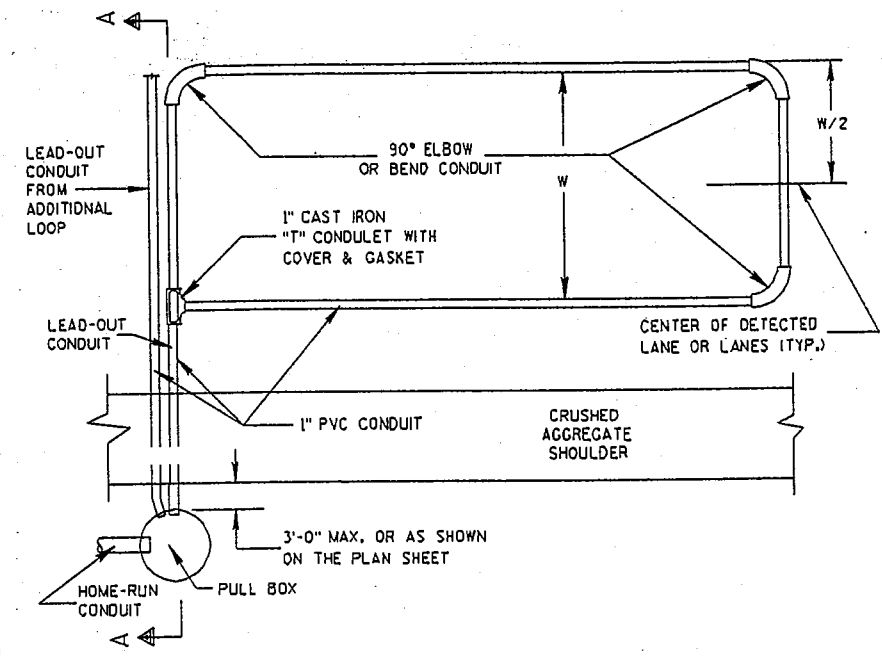
APPROVED
 STATE CONST. ENGINEER FOR HWYS
 DATE _____

S.D.D. 9 F 8-2



**SECTION A-A
 NO CURB & GUTTER
 DETECTOR LOOP INSTALLATION DETAIL**

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.



TYPICAL PLAN OF LOOP DETECTOR

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD-OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS SUCH AS 3M TYPE 82A1 OR APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

THE GROUND RESISTANCE READING OF THE LOOP SHALL READ "INFINITY" TO GROUND ON AN OHMMETER USING A MULTIPLIER SCALE OF 1 MEGOHM AND AN INPUT RESISTANCE OF 11 MEGOHMS MINIMUM BEFORE SPLICING THE LOOP TO THE LEAD-IN CABLE.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

ANTI-SIEZE LUBRICATING MATERIAL SHALL BE USED ON ALL THREADS OF THREADED ASSEMBLIES BEFORE INSTALLATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

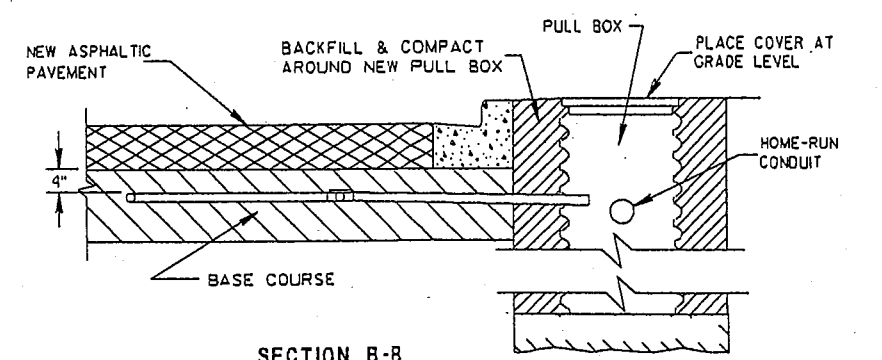
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP DUCT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED, CONTINUOUS LENGTH.

PROTECTION OF THE CONDUIT AND CONDULET SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE THE ASPHALTIC PAVEMENT IS PLACED.

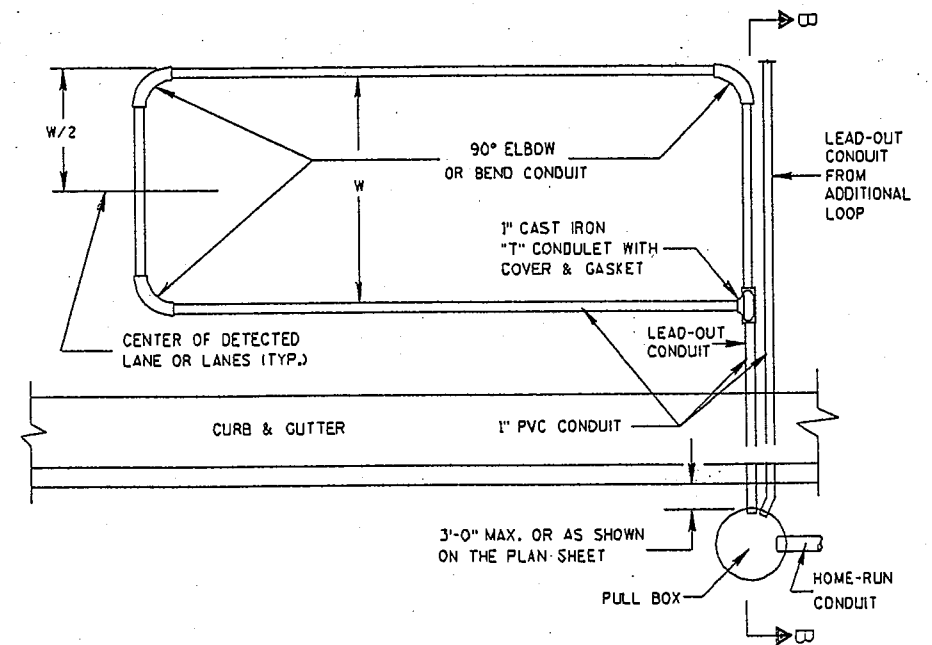
WHEN MULTIPLE LAYERS OF ASPHALTIC PAVEMENT ARE TO BE PLACED, LOOPS MAY BE INSTALLED BY SAWING A TWO INCH WIDE SLOT IN THE FIRST LAYER, DIG OUT THE ASPHALTIC MATERIAL AND BASE COURSE, PLACE THE LOOP, FILL THE SLOT WITH BASE COURSE MATERIAL AND NEW ASPHALTIC MATERIAL AND TAMP THE ASPHALTIC MATERIAL IN PLACE.

SHOULD TRAFFIC BE ALLOWED TO USE THE AREA OF ROADWAY WITH THE NEWLY INSTALLED LOOP BEFORE THE PLACEMENT OF THE NEXT LAYER OF ASPHALTIC PAVEMENT, THE SLOT/PAVEMENT OPENING SHALL BE SEALED WITH HOT POURED ELASTIC TYPE MATERIAL CONFORMING TO THE REQUIREMENTS OF THE "SPECIFICATION FOR JOINT SEALANTS, HOT POURED, FOR CONCRETE AND ASPHALT PAVEMENTS, ASTM DESIGNATION: D3405".

DRIVE A 1 1/2" MAX. PK NAIL INTO THE NEW ASPHALTIC PAVEMENT AND DIRECTLY ABOVE THE CONDULET AFTER THE FINAL LAYER OF NEW ASPHALTIC PAVEMENT IS COMPLETELY INSTALLED, IF REQUIRED BY THE DISTRICT TRAFFIC SECTION.



**SECTION B-B
 CURB & GUTTER
 LOOP DETECTOR INSTALLATION DETAIL**



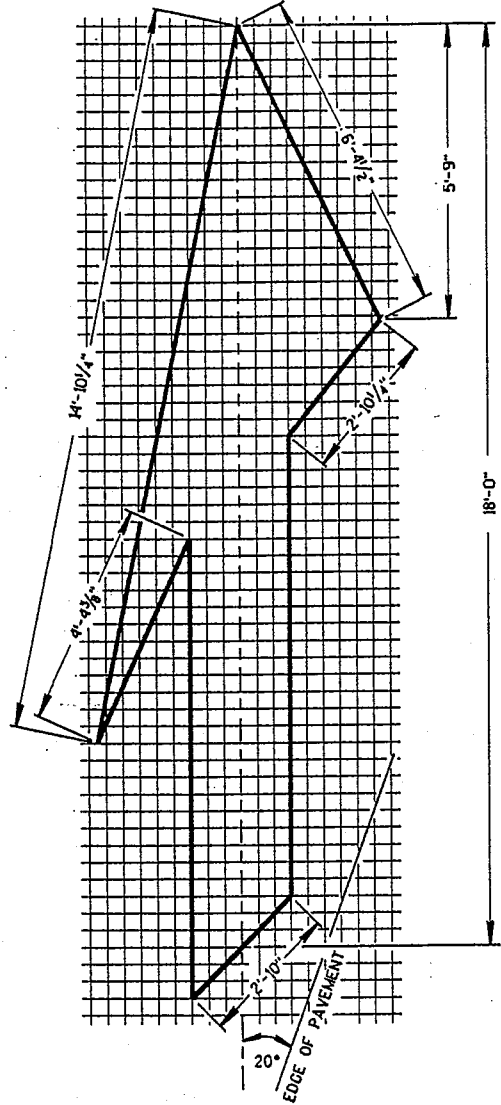
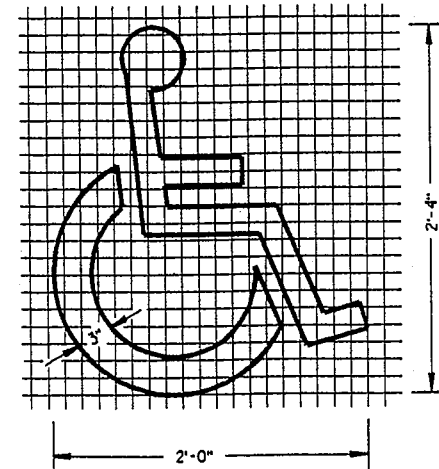
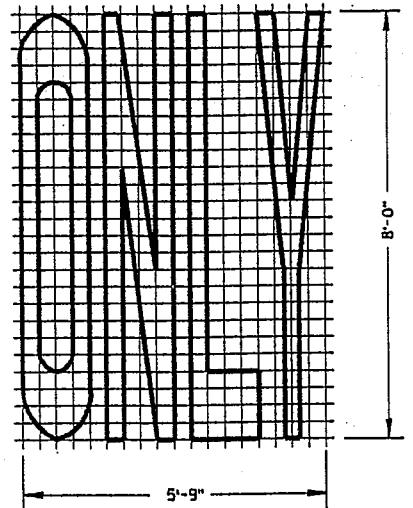
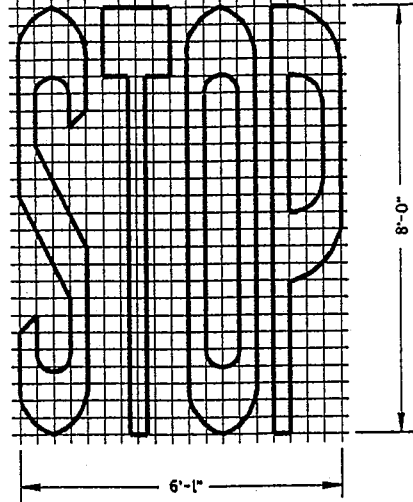
TYPICAL PLAN OF LOOP DETECTOR

LOOP DETECTOR PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)

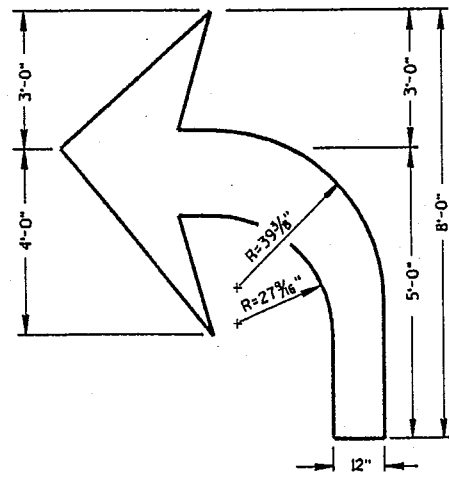
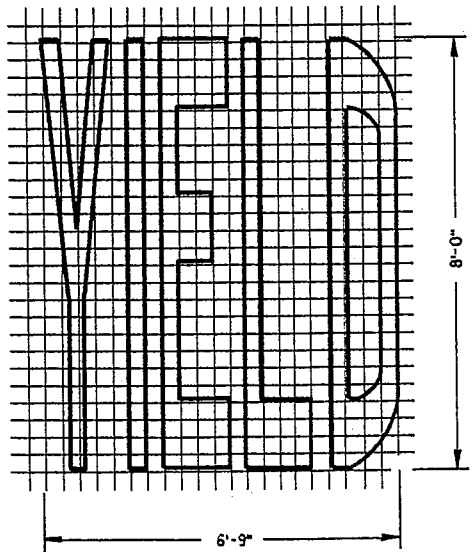
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 DATE _____
 STATE ELECTRICAL ENGINEER FOR HIGHWAYS

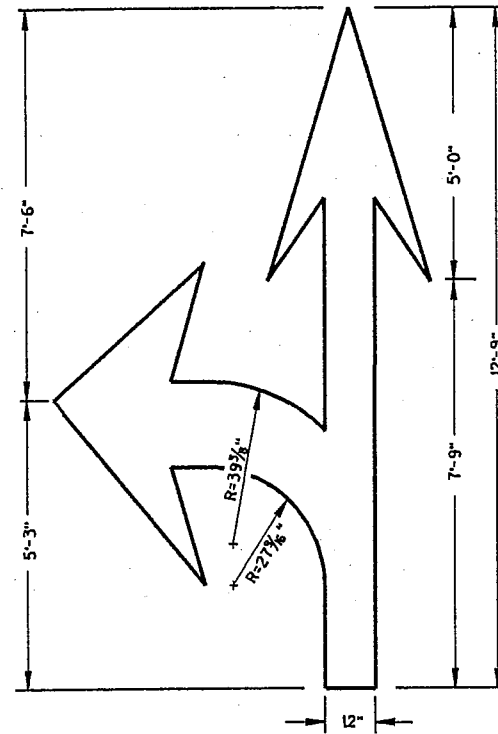
S.D.D. 9 F 8-2



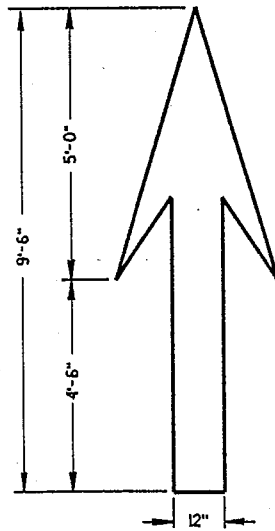
TYPE 5 LANE DROP ARROW



TYPE 2



TYPE 3



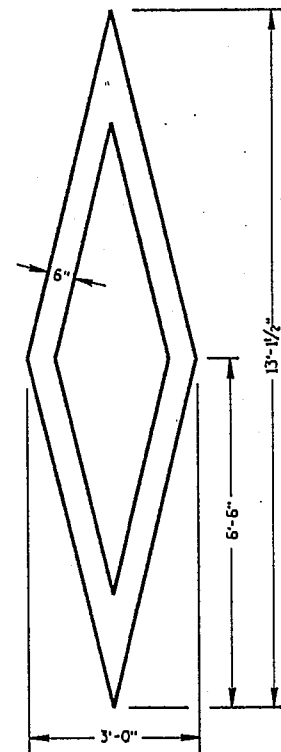
TYPE 1

GENERAL NOTES

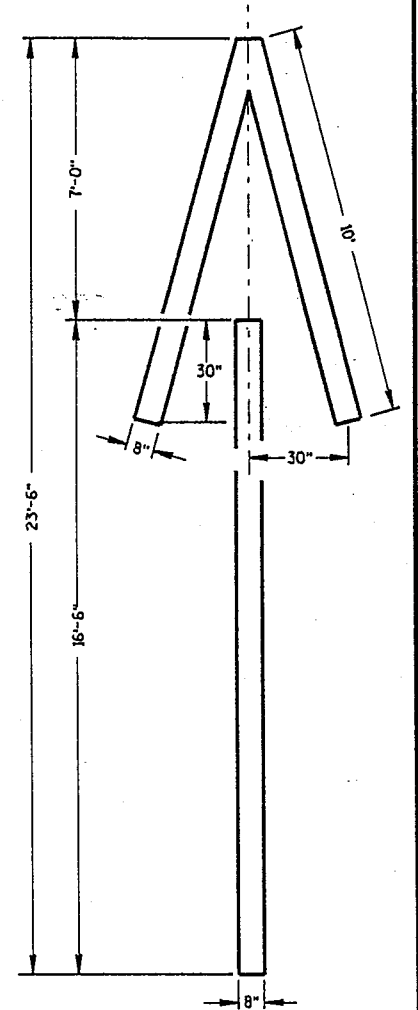
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

ALL LETTERS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED.

A DETAILED DRAWING OF THE HANDICAPPED PARKING SYMBOL IS ILLUSTRATED IN THE "STANDARD HIGHWAY SIGNS MANUAL" BY THE FEDERAL HIGHWAY ADMINISTRATION.



PREFERENTIAL LANE SYMBOL



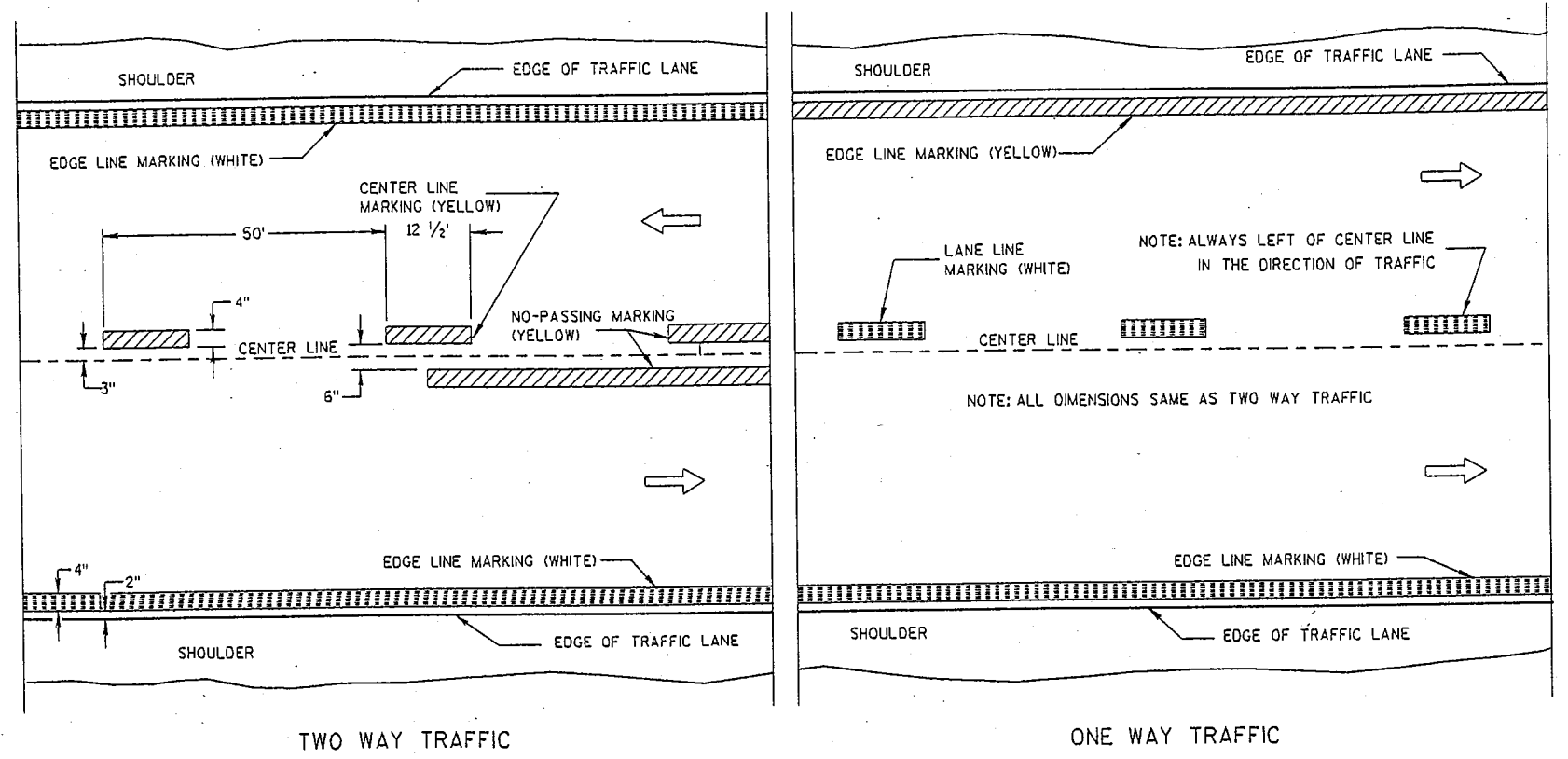
TYPE 4

PAVEMENT MARKING SYMBOLS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

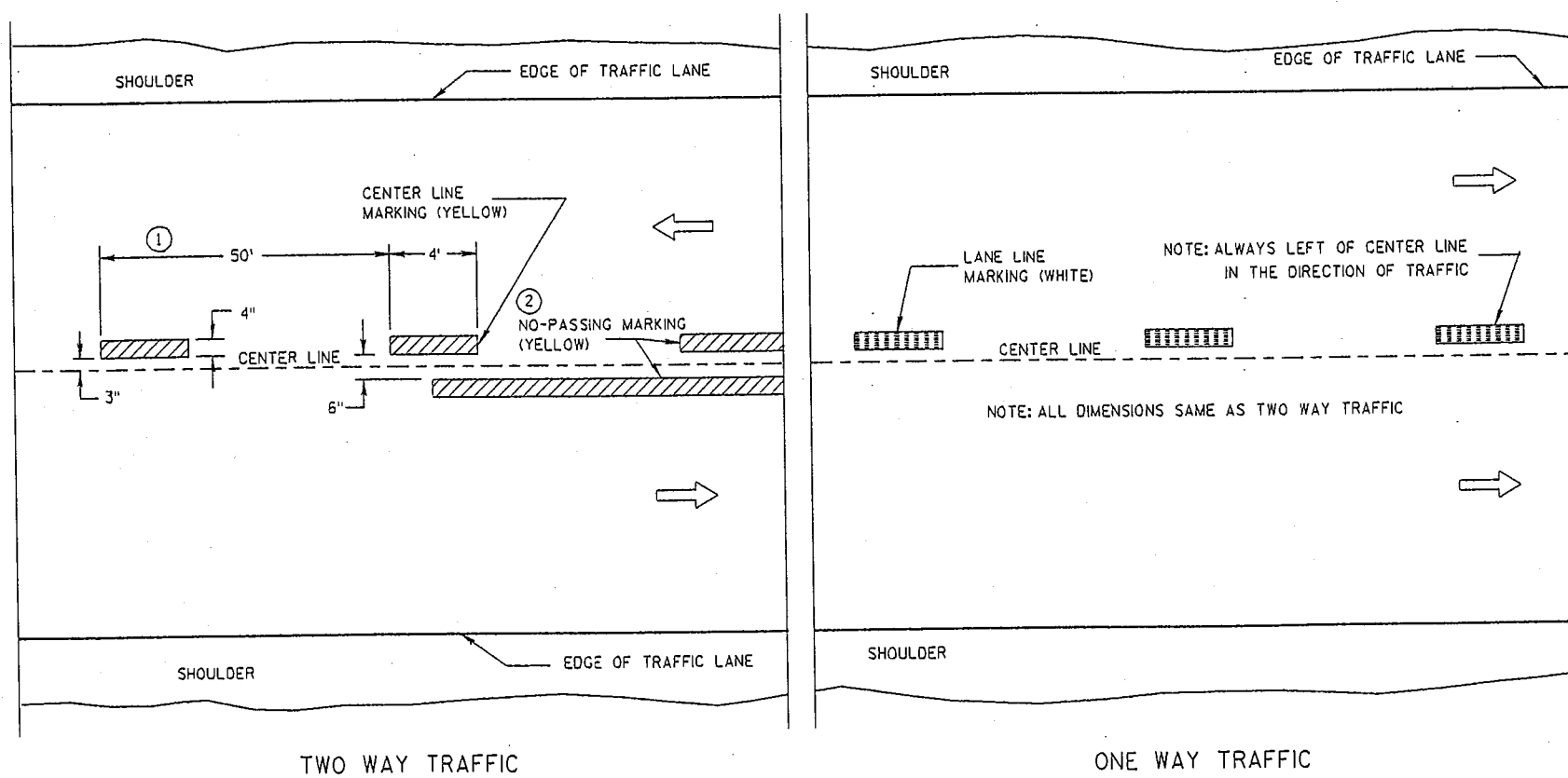
APPROVED

DATE _____ CHIEF SIGNS AND MARKING ENGINEER
FHWA



TWO WAY TRAFFIC ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING
(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- ① HALF CYCLE LENGTHS (25'±) WITH 2" MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
- ② NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

S.D.D. 15 C 8-9d

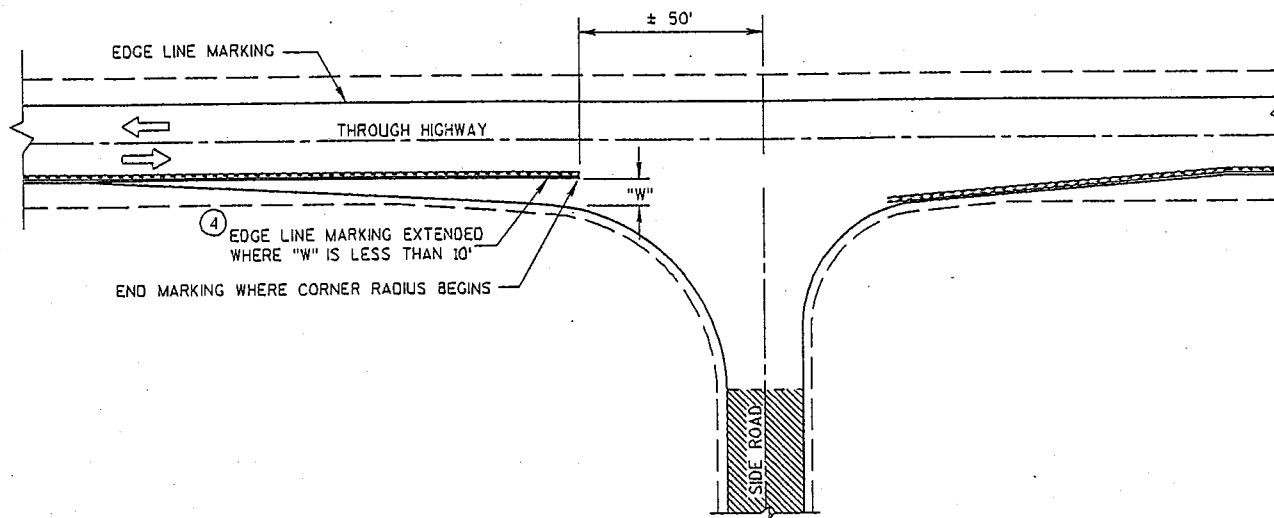
PAVEMENT MARKING (MAINLINE)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
DATE	CHIEF SIGNS AND MARKING ENGINEER
FHWA	

S.D.D. 15 C 8-9d

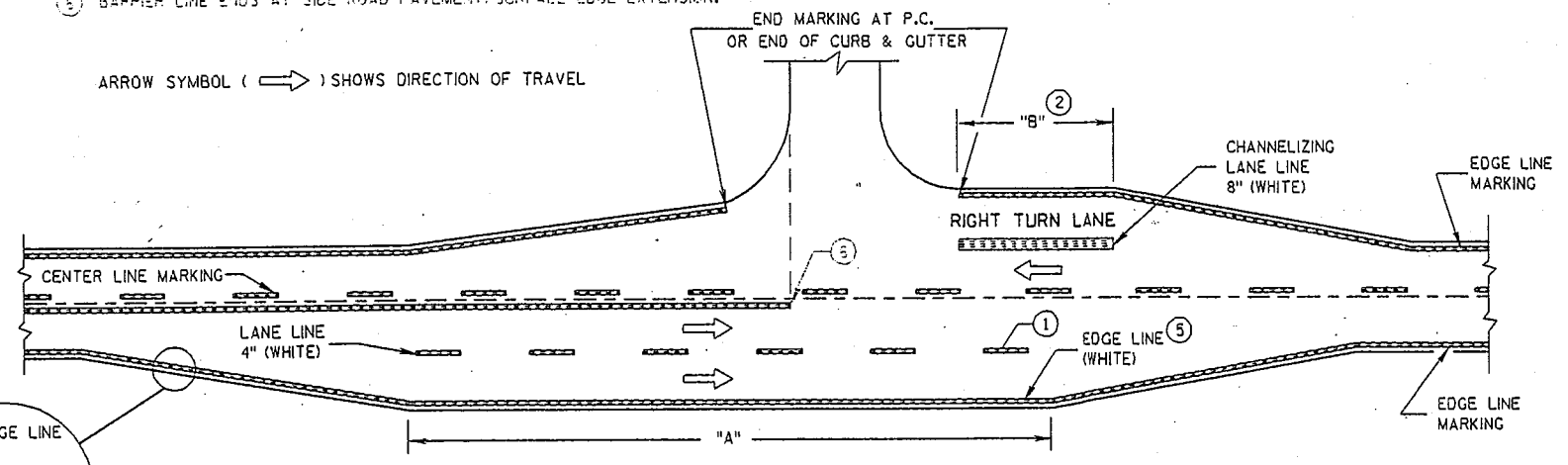
NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

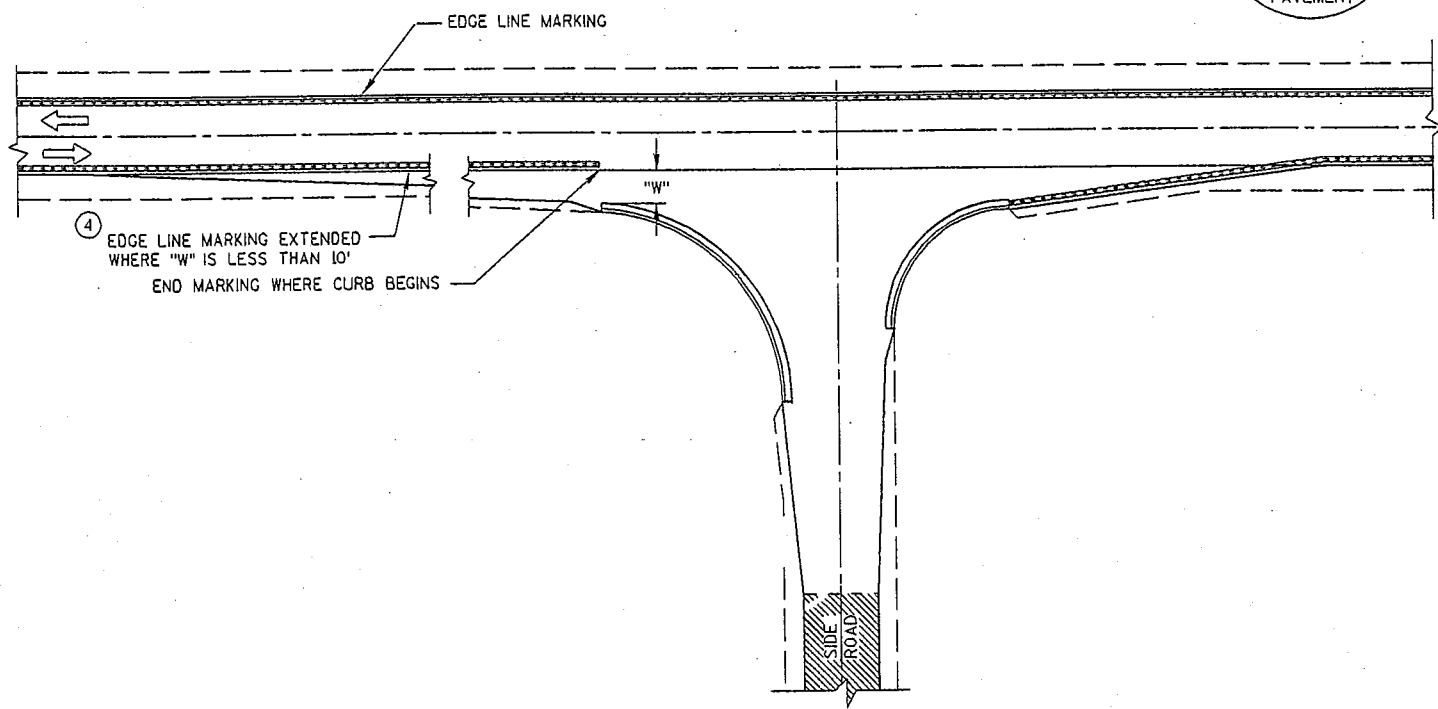
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.
- ④ LOCATE THE EDGE LINE ALONG THE TAPER WHERE "W" IS 10' OR MORE.
- ⑤ THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.
- ⑥ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.



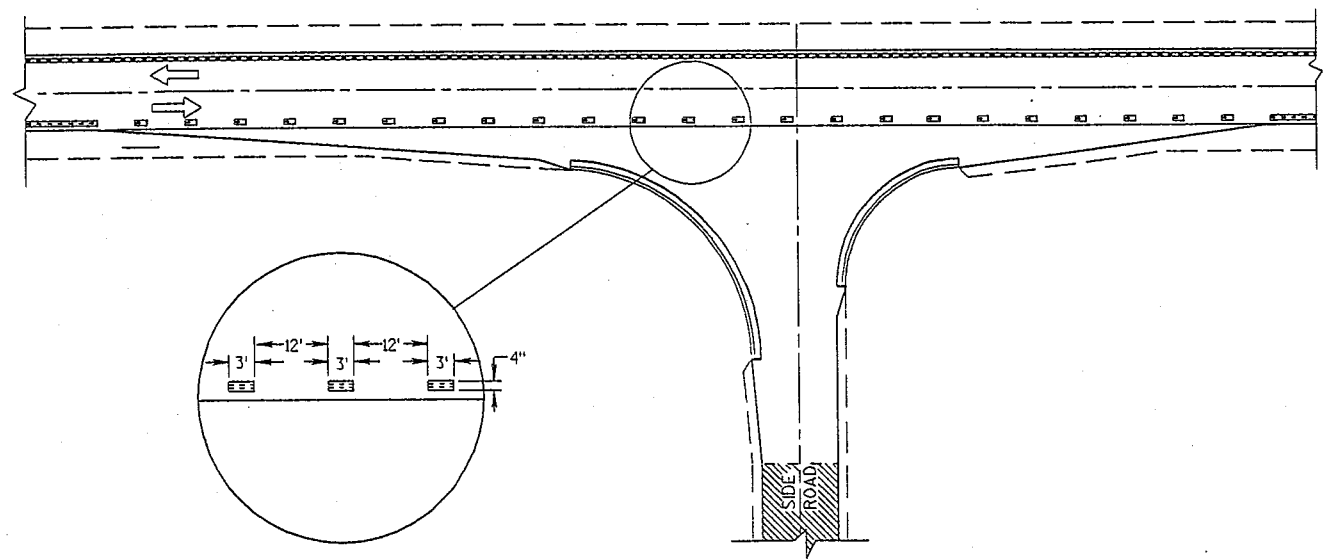
MINOR INTERSECTION WITHOUT CURBS



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



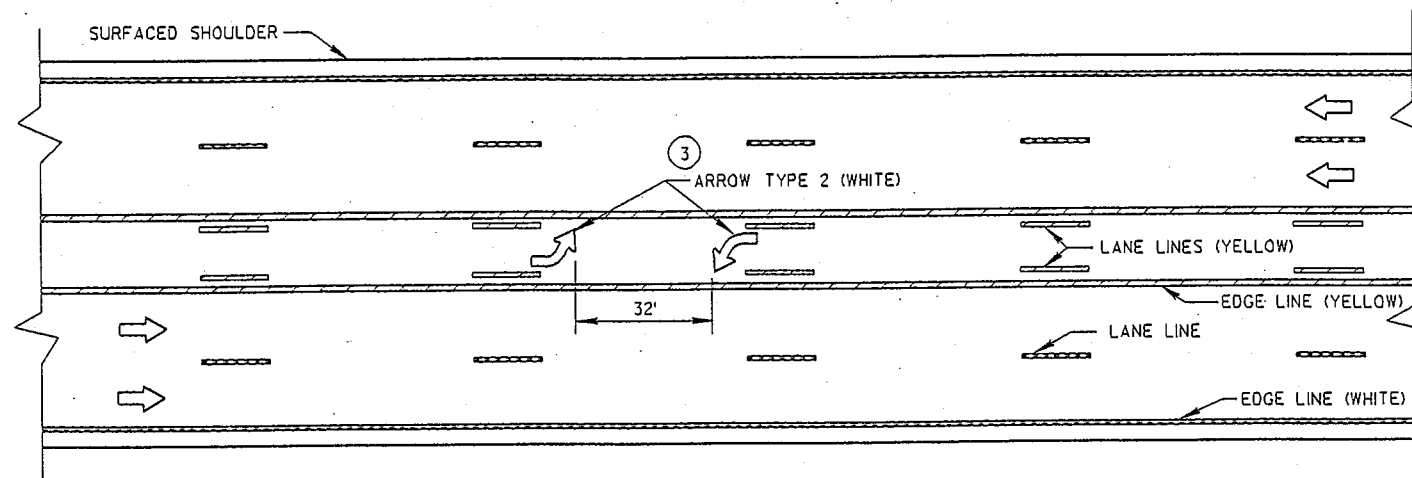
MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS
③ (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING (INTERSECTIONS)
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

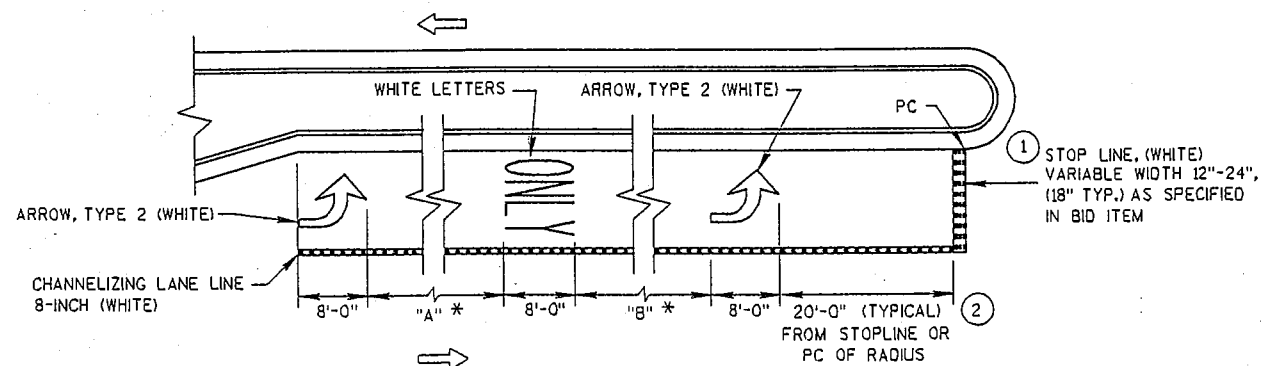
NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL



TWO WAY LEFT TURN LANE

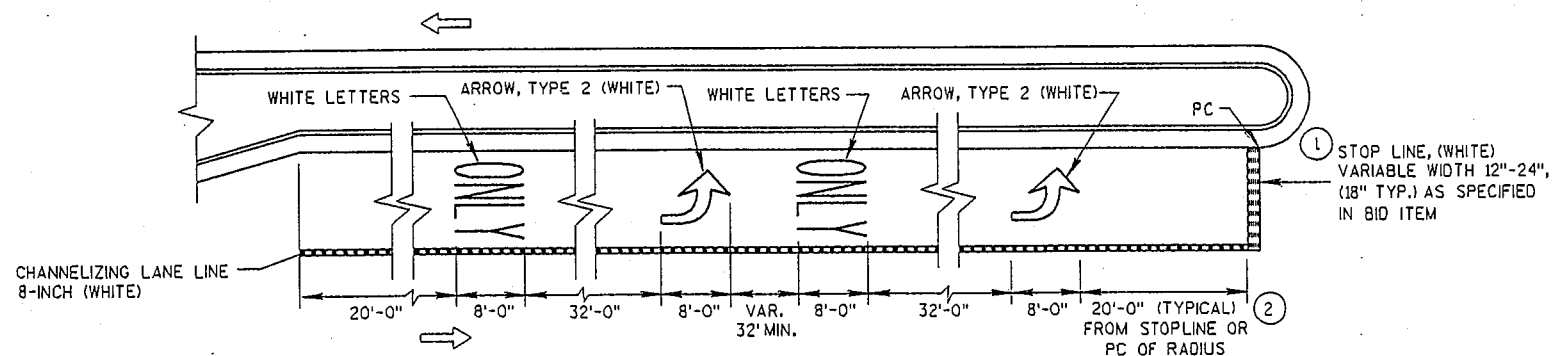
NOTES:

- ① STOP BAR IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
- ② DISTANCE MAY BE ADJUSTED TO ACCOMMODATE SHORT LEFT TURN LANES. AS APPROVED BY THE ENGINEER.
- ③ A SET OF ARROWS IS REQUIRED EVERY 400' OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.

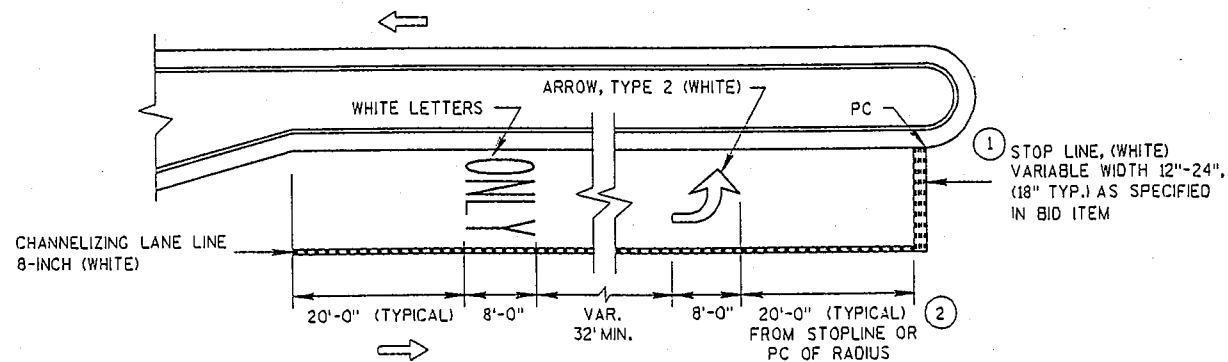


*VARIABLE, 32' MIN.
"A" = "B" (TYPICAL)

LEFT TURN LANE
(LENGTH 108' TO 167')



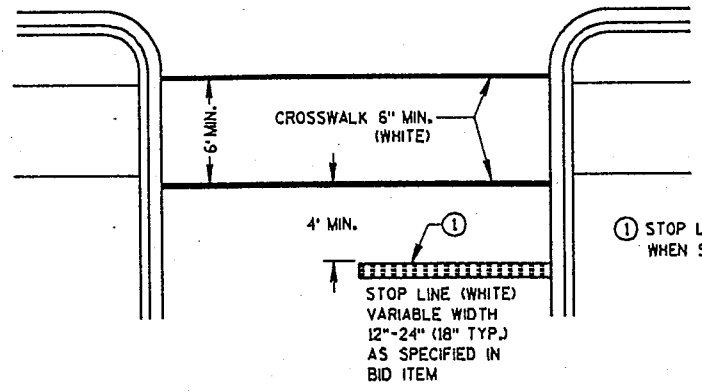
LEFT TURN LANE
(LENGTH OVER 167')



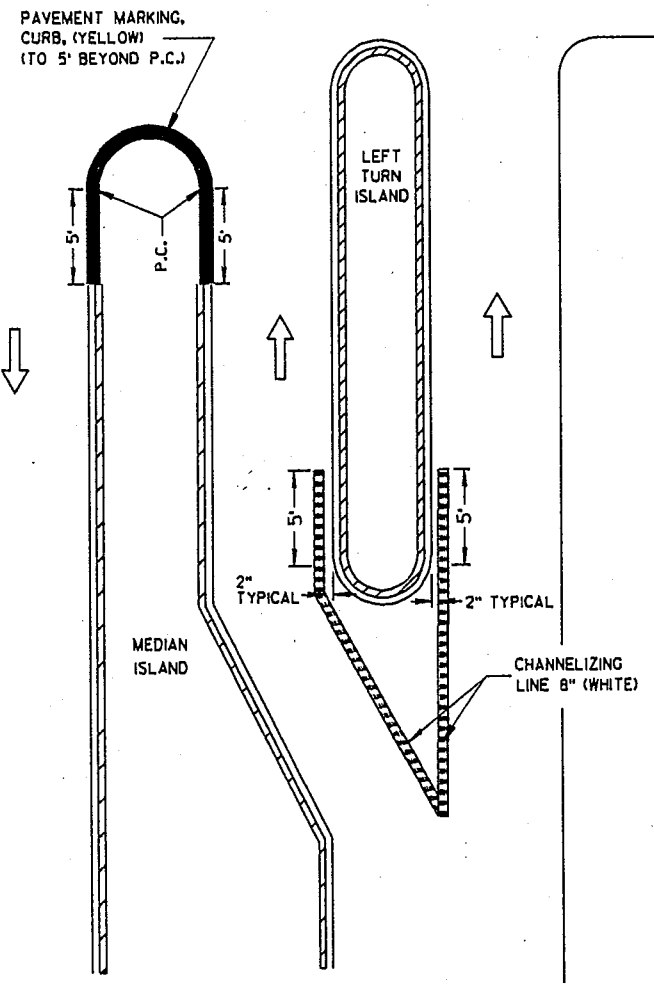
LEFT TURN LANE
(LENGTH UNDER 108')

PAVEMENT MARKING
(LEFT TURN LANE)

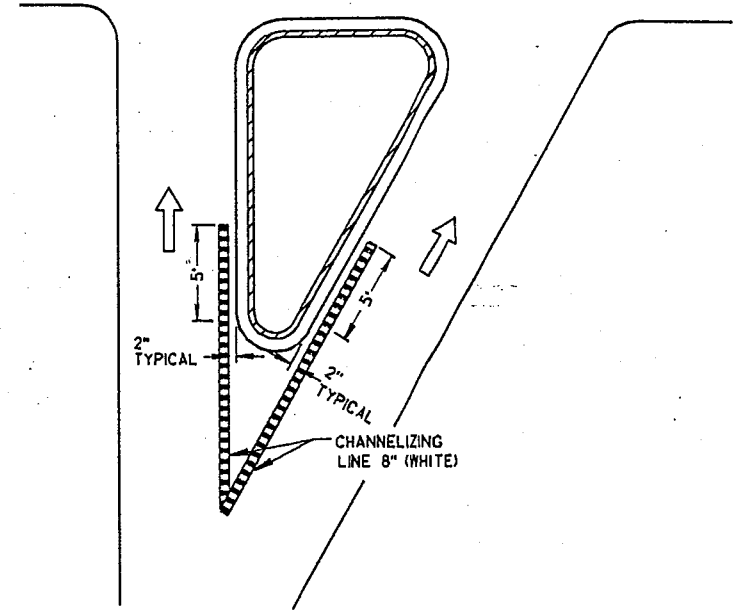
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



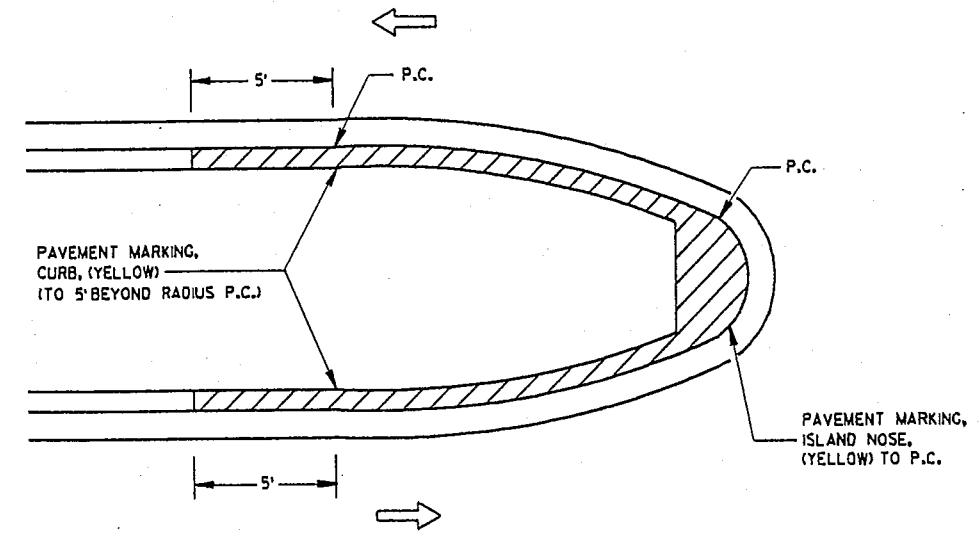
STOP LINE AND CROSSWALK



LEFT TURN & MEDIAN ISLAND



RIGHT TURN ISLAND



MEDIAN ISLAND WITH SLOPED NOSE

NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL

PAVEMENT MARKING (ISLANDS, STOP LINE & CROSS WALK)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
DATE	CHIEF SIGNS AND MARKING ENGINEER
FHWA	

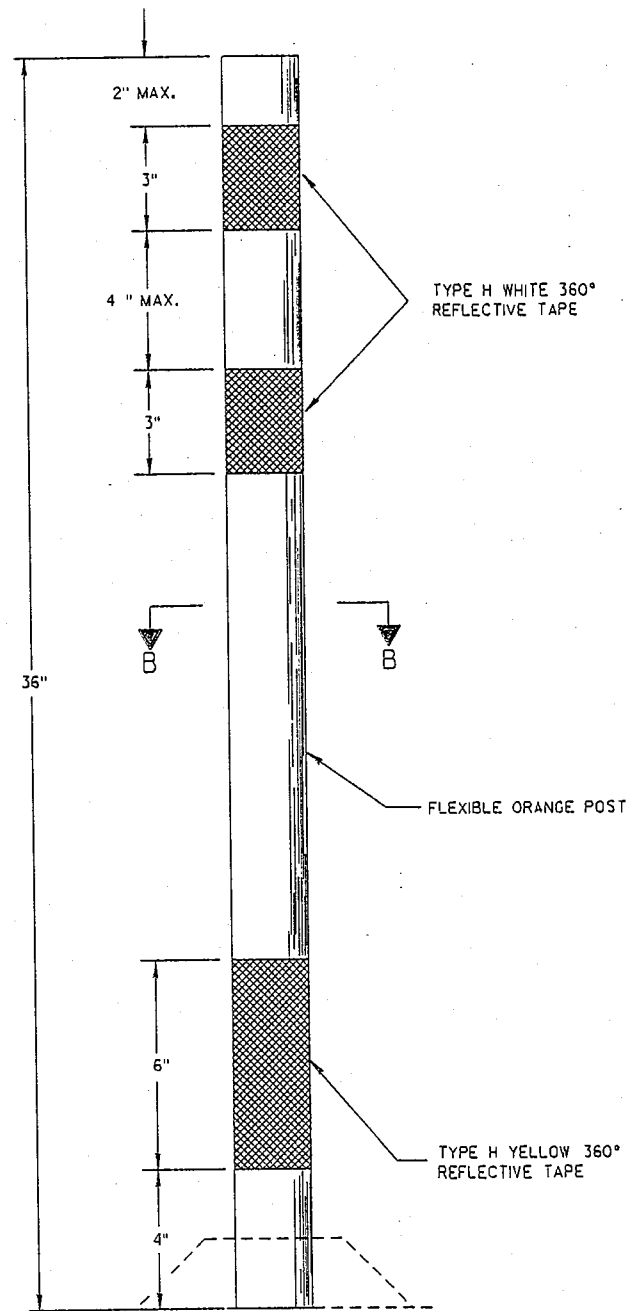
REVISION DATE: 8/1/89

PLOT NAME:

PLOT SCALE: 0:2:1667

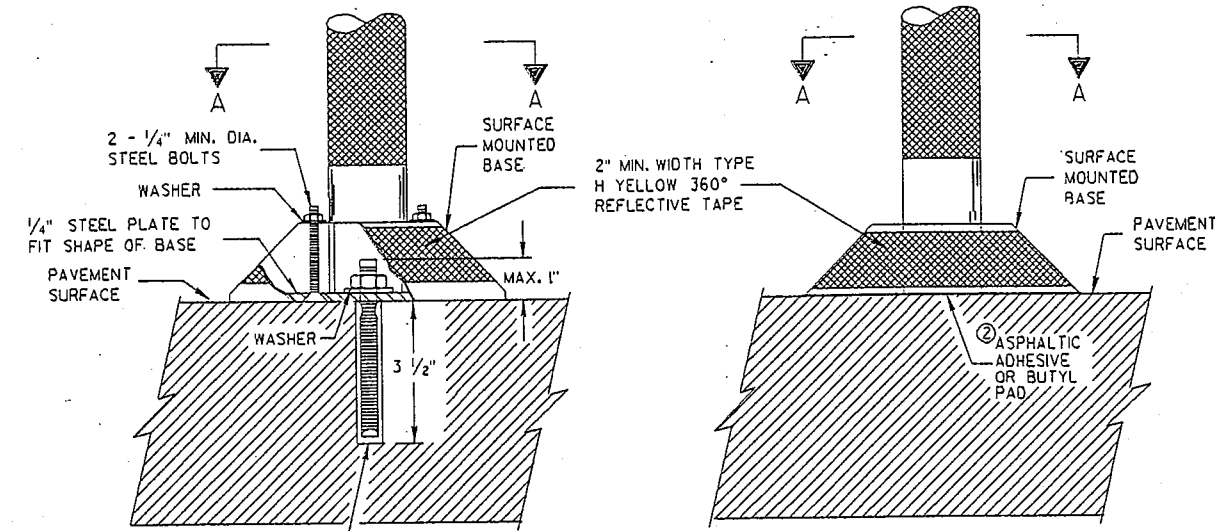
FILE NAME: SISCH4

ORIGINATOR: DENNIS HDAGLAND ROOM 651 DESIGN
LEVELS ON - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63



FLEXIBLE TUBULAR MARKER POST

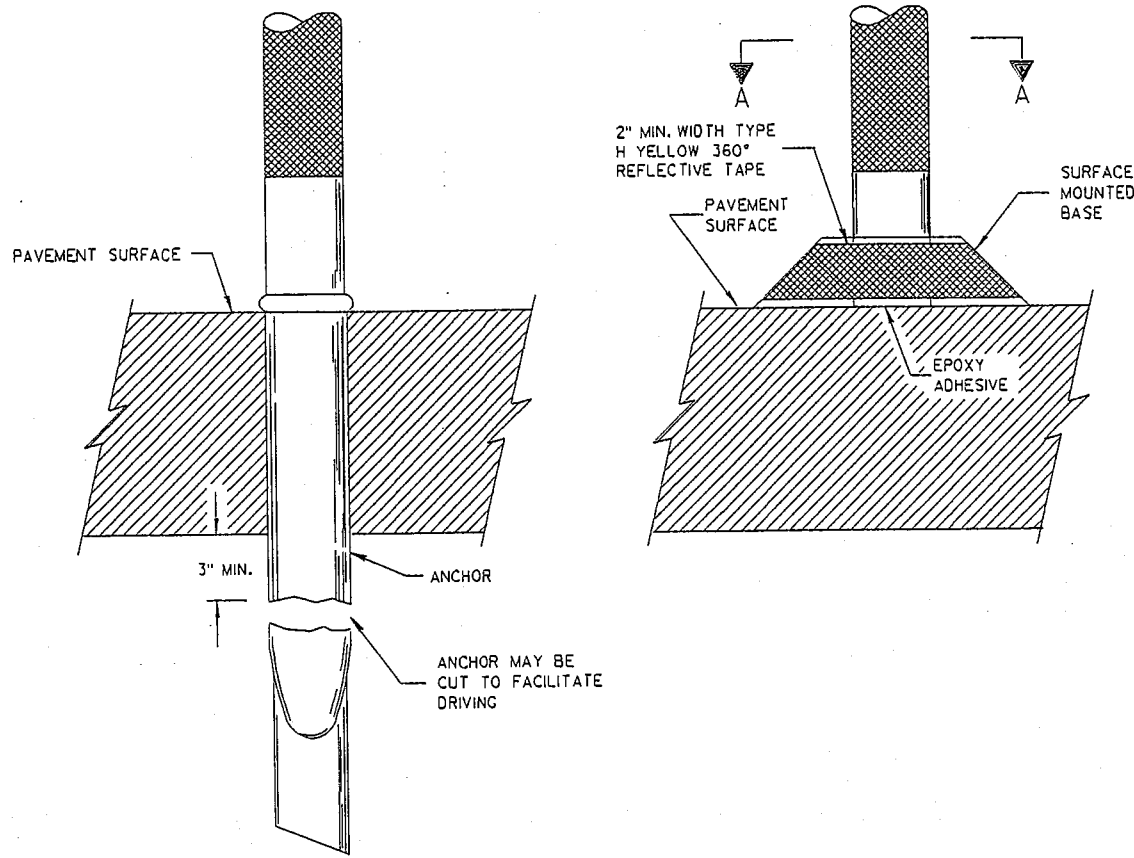
S.D.D. 15 C 11-5



PARTIAL SECTION TO SHOW BOLTS

POST BASES ON NEW OR EXISTING PAVEMENT

① 3/8" DIA. X 4 1/2" THREADED ROD *
AND ADHESIVE IN 1/16" DIA.
DRILL HOLE



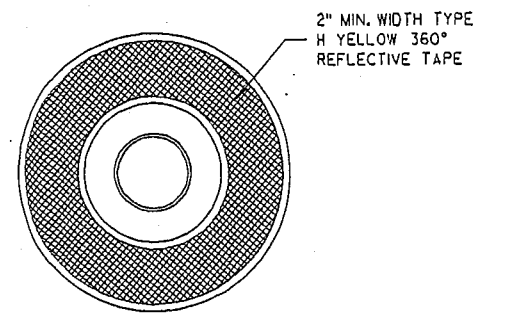
POST ANCHOR AND BASE ON PAVEMENT WHICH WILL BE REMOVED

GENERAL NOTES

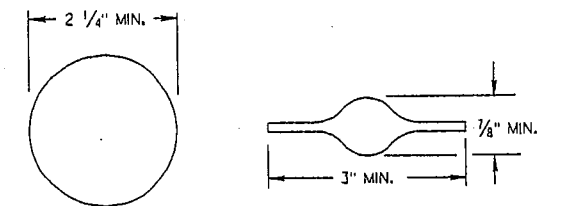
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

- ① THREADED ROD SHALL BE MACHINED DOWN TO 0.280 INCH DIA. 1/4" INCHES FROM THE TOP.
- ② THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.



SECTION A-A
SURFACE MOUNTED BASE



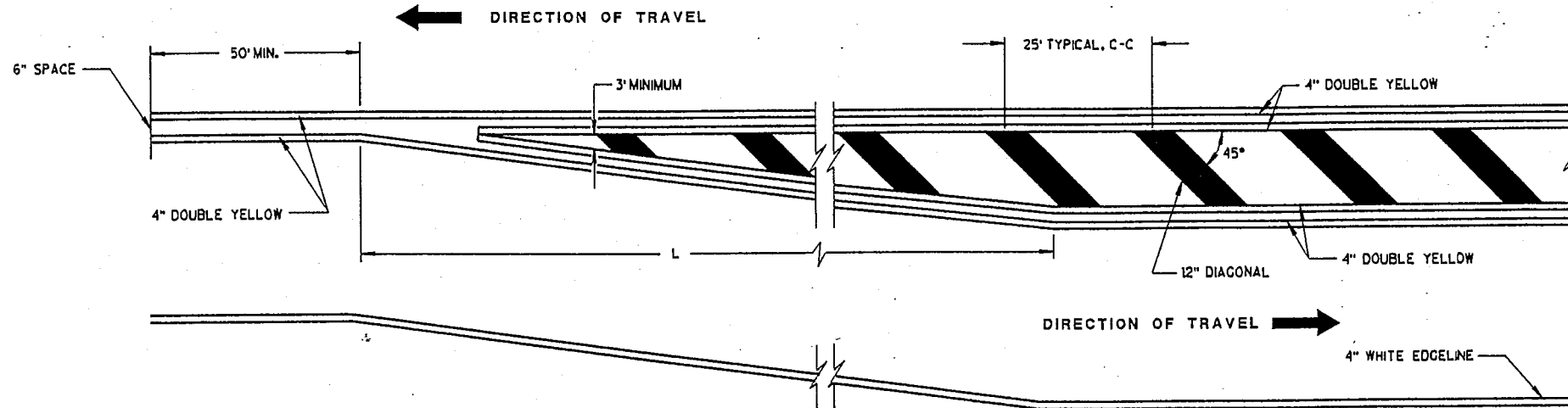
SECTION B-B
ALTERNATIVE SHAPES

FLEXIBLE TUBULAR MARKER POST, ANCHOR & BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED _____
DATE _____ STATE TRAFFIC ENGINEER FOR HWYS
PHWA

S.D.D. 15 C 11-5



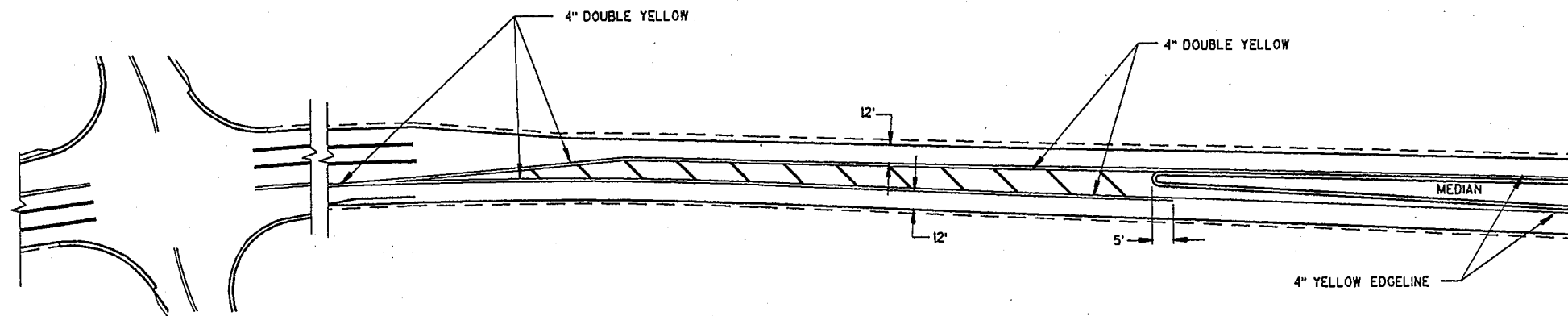
MEDIAN ISLAND DETAIL

GENERAL NOTE

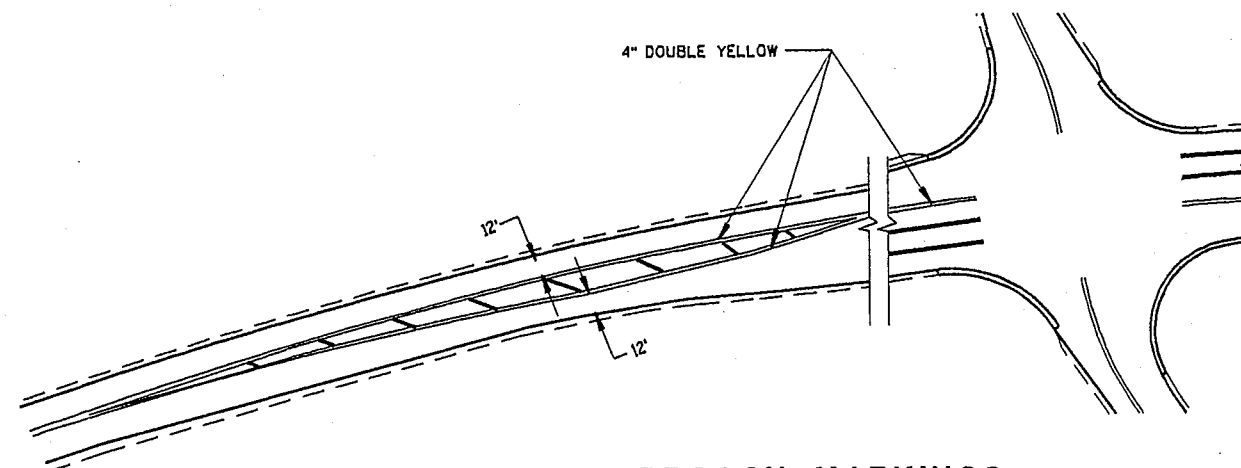
DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT WIDEST POINT.

MINIMUM SHIFTING TAPER LENGTH TABLE

POSTED SPEED (S)	TAPER LENGTH (L)
25	100'
30	100'
35	125'
40	165'
45	270'
50	300'
55	330'
65	390'



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON APPROACH MARKINGS

MEDIAN ISLAND MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

DATE _____ CHIEF SIGNS AND MARKING ENGINEER
FHWA

REVISION DATE: 7-7-95

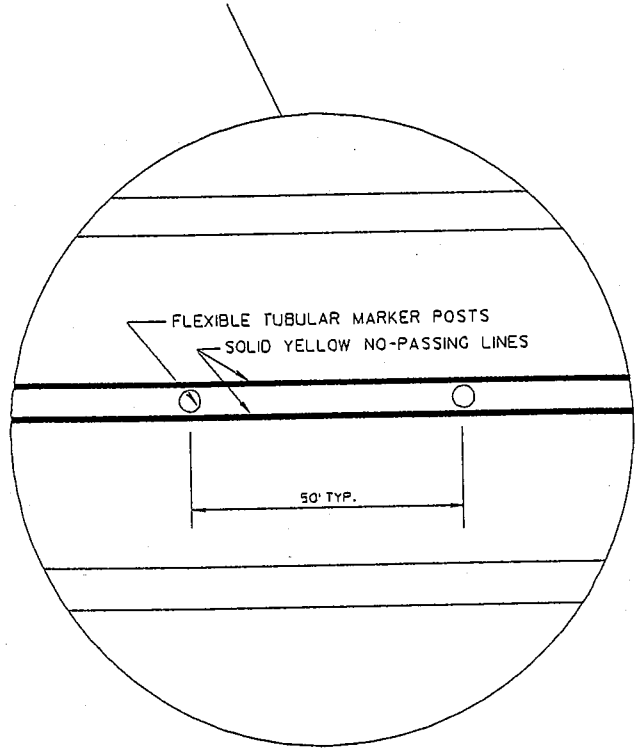
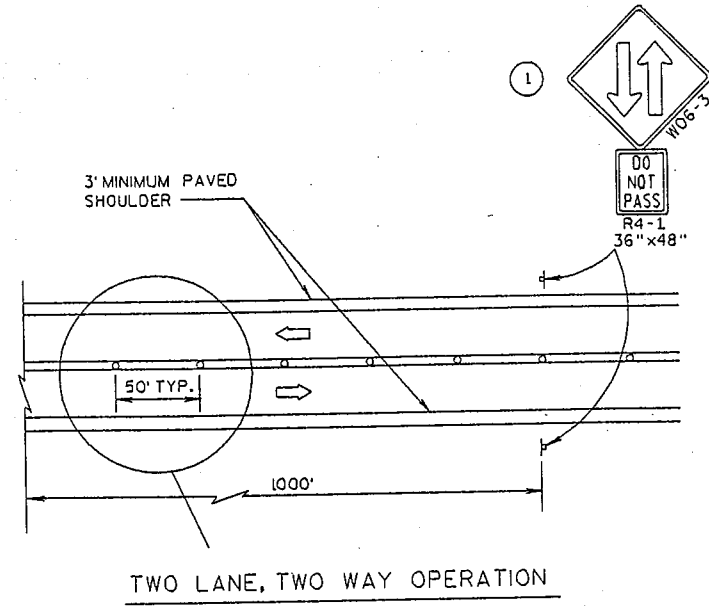
PLOT NAME:

PLOT SCALE:

FILE NAME:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63

ORIGINATOR: S.D.D. 15 D 6-2



GENERAL NOTES :

ALL SIGNS ARE 48"x48" UNLESS OTHERS NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.

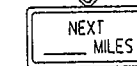
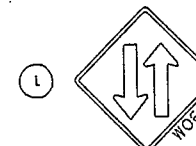
A SINGLE ROW OF FLEXIBLE TUBULAR MARKERS ON CENTERLINE EXTEND FOR THE ENTIRE LENGTH OF TWO-WAY TRAFFIC @ 50' SPACING.

COVER EXISTING CENTERLINE STRIPE WITH TEMPORARY PAVEMENT MARKING, 4-INCH DOUBLE YELLOW.

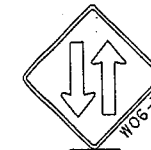


R2-1
48"x60"
(BLACK AND WHITE)

IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES.



W057-51
48"x24"



R4-1
36"x48"

THE W06-3 WITH THE W057-51 SHALL BE LOCATED 200' BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP AND/OR 500' BEYOND ANY SIDEROAD. THE W06-3 WITH THE R4-1 SHALL BE LOCATED 1000' BEYOND THE W06-3 AND THE W057-51 AND THE SIGNS SHALL BE ALTERNATED WITH ONE MILE INTERVALS BETWEEN W06-3 SIGNS.

LEGEND

- ⊣ POST WITH ATTACHED SIGN
- FLEXIBLE TUBULAR MARKER AND BASE
- ⇨ DIRECTION OF TRAFFIC

TRAFFIC CONTROL, TWO LANE TWO WAY OPERATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
DATE	DIRECTOR, OFFICE OF TRAFFIC
FHWA	

S.D.D. 15 D 6-2

REVISION DATE: 7-11-95

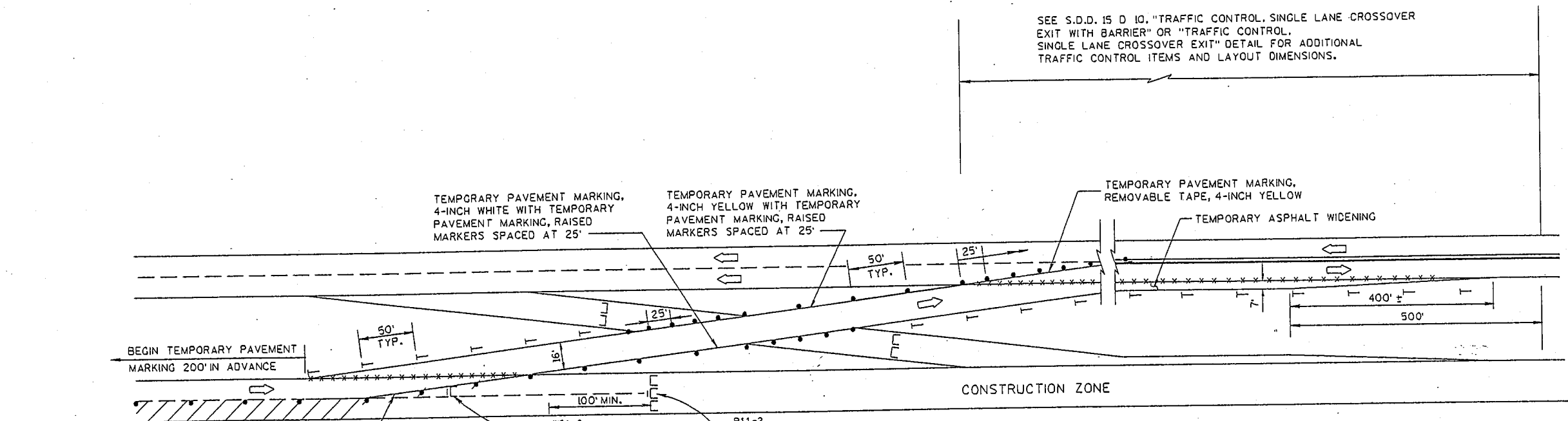
PLDT NAME:

PLDT SCALE:

FILE NAME:

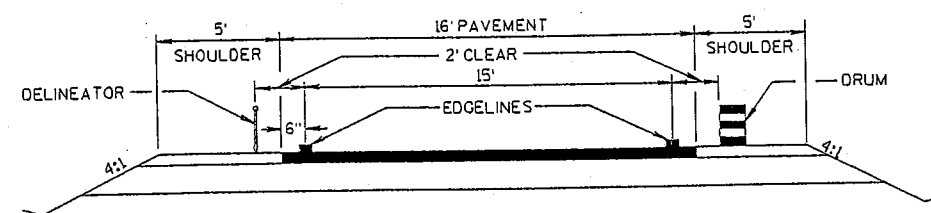
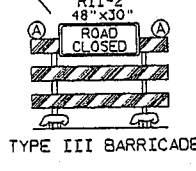
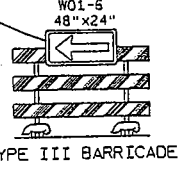
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S.D.D. 15 D 11-3



RIGHT LANE CLOSED FOR A MINIMUM OF 500', 800' DESIRABLE, SEE "TRAFFIC CONTROL, LANE CLOSURE" FOR TRAFFIC CONTROL ITEMS.

TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE, 4-INCH WHITE



LEGEND

- /□ 8' TYPE III BARRICADE WITHOUT/WITH ATTACHED SIGN
- DRUM WITH WARNING LIGHTS, TYPE C
- DRUM
- ┆ TEMPORARY DELINEATOR (STEEL POST W/SINGLE DELINEATOR) COLOR OF DELINEATOR SHALL MATCH THE COLOR OF THE RESPECTIVE EDGELINE PAINT
- ⊙ WARNING LIGHT, TYPE A
- REMOVING PAVEMENT MARKINGS
- ┆ TEMPORARY DELINEATOR (DOUBLE SIDED)
- FLEXIBLE TUBULAR MARKER AND BASE
- ➡ DIRECTION OF TRAFFIC

GENERAL NOTES :

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN PROPOSED SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.

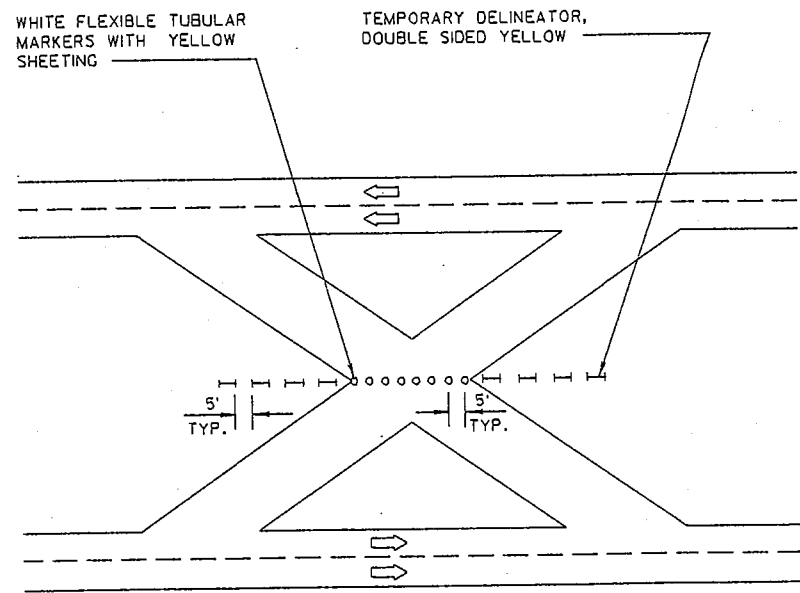
TEMPORARY PAVEMENT MARKING REMOVABLE TAPE SHALL BE USED WHEN CROSSING PERMANENT ROADWAY SURFACES THAT WILL REMAIN AFTER USE OF CROSSOVER AND TEMPORARY PAVEMENT MARKING WHERE USED.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

REVERSE DEVICES WHEN OTHER LEG OF CROSSOVER IS IN USE.



TRAFFIC CONTROL, SINGLE LANE CROSSOVER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	DATE
STATE TRAFFIC ENGINEER	
FHWA	

GENERAL NOTES

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE. FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

W20-1, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

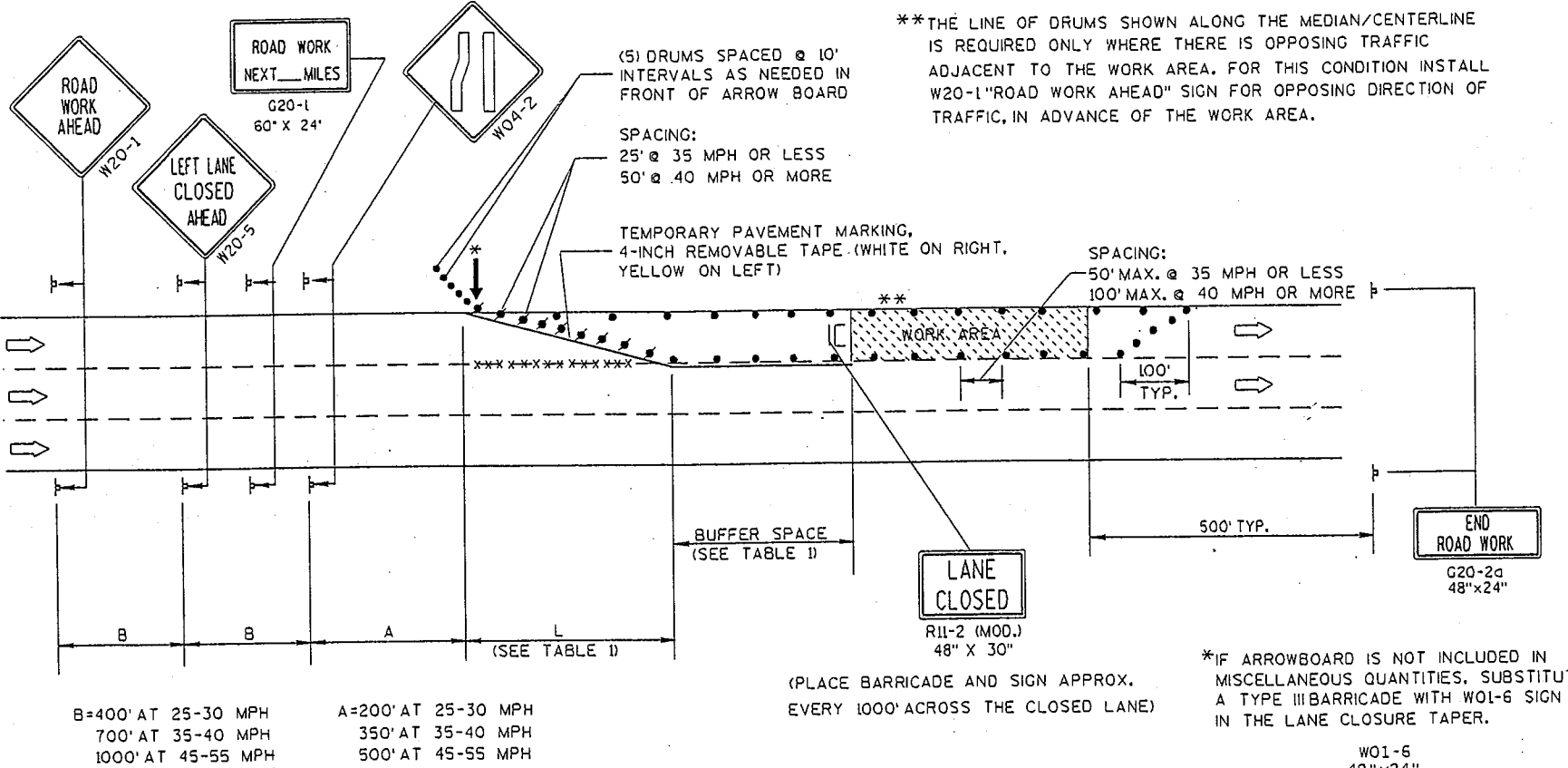
CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.



**THE LINE OF DRUMS SHOWN ALONG THE MEDIAN/CENTERLINE IS REQUIRED ONLY WHERE THERE IS OPPOSING TRAFFIC ADJACENT TO THE WORK AREA. FOR THIS CONDITION INSTALL W20-1 "ROAD WORK AHEAD" SIGN FOR OPPOSING DIRECTION OF TRAFFIC, IN ADVANCE OF THE WORK AREA.

(S) DRUMS SPACED @ 10' INTERVALS AS NEEDED IN FRONT OF ARROW BOARD

SPACING:
25' @ 35 MPH OR LESS
50' @ 40 MPH OR MORE

TEMPORARY PAVEMENT MARKING, 4-INCH REMOVABLE TAPE (WHITE ON RIGHT, YELLOW ON LEFT)

SPACING:
50' MAX. @ 35 MPH OR LESS
100' MAX. @ 40 MPH OR MORE

B=400' AT 25-30 MPH
700' AT 35-40 MPH
1000' AT 45-55 MPH

A=200' AT 25-30 MPH
350' AT 35-40 MPH
500' AT 45-55 MPH

(PLACE BARRICADE AND SIGN APPROX. EVERY 1000' ACROSS THE CLOSED LANE)

*IF ARROWBOARD IS NOT INCLUDED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE A TYPE III BARRICADE WITH W01-6 SIGN IN THE LANE CLOSURE TAPER.

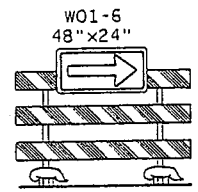


TABLE 1
TAPER AND BUFFER SPACE FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	650'	335'

FOR LANE WIDTH OTHER THAN 12':
 L = WS AT 45 MPH OR GREATER
 $L = \frac{WS^2}{60}$ AT 40 MPH OR LESS
 L = TAPER LENGTH IN FEET
 S = NON-CONSTRUCTION SPEED LIMIT (MPH)
 W = WIDTH OF LANE CLOSURE

LEGEND

- ⊘ DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- ⊥ POST MOUNTED SIGN
- ↑ ARROW BOARD
- IC/C TYPE III BARRICADE (8' EQUIVALENT) AND WARNING LIGHTS, TYPE A (FLASHING) WITH/WITHOUT SIGN
- DIRECTION OF TRAFFIC FLOW
- xxxx REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)

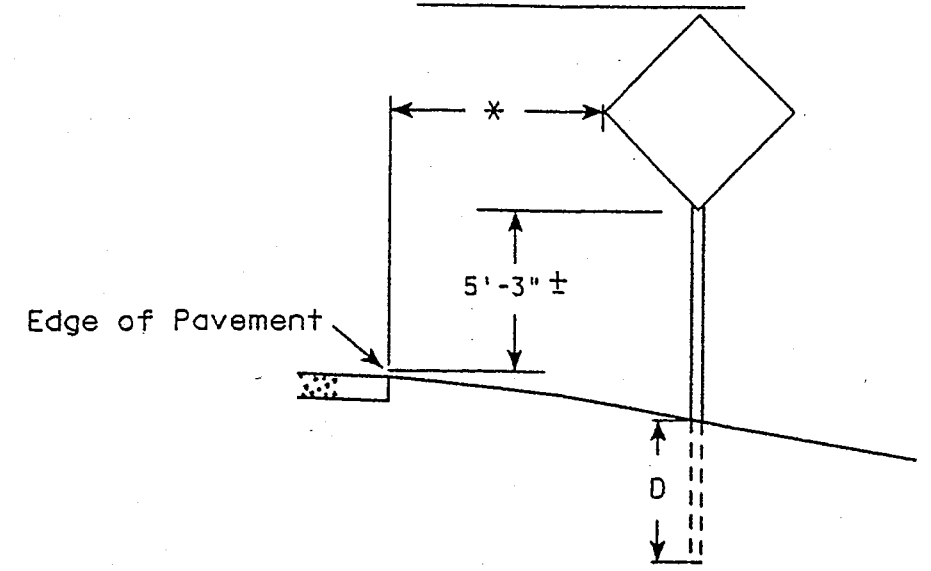
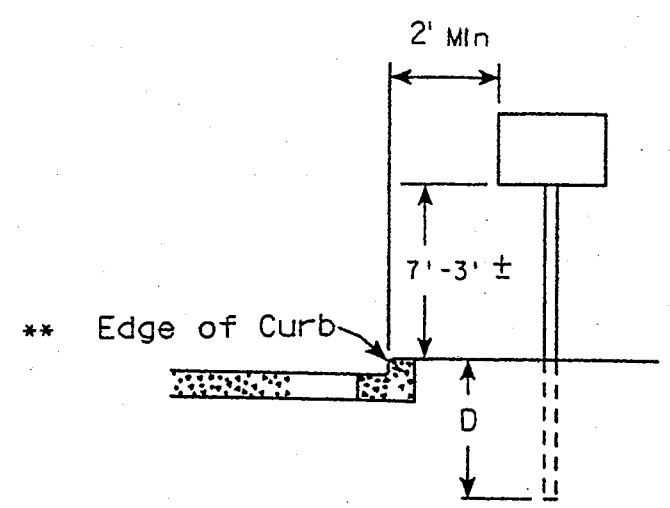
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
DATE	CHIEF SIGNS AND MARKING ENGINEER
FHWA	

S.D.D. 15 D 20-1

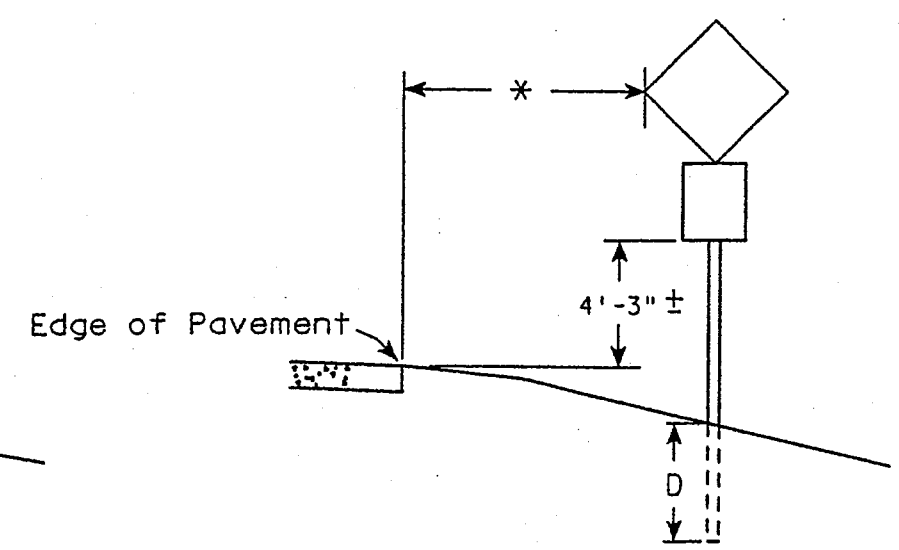
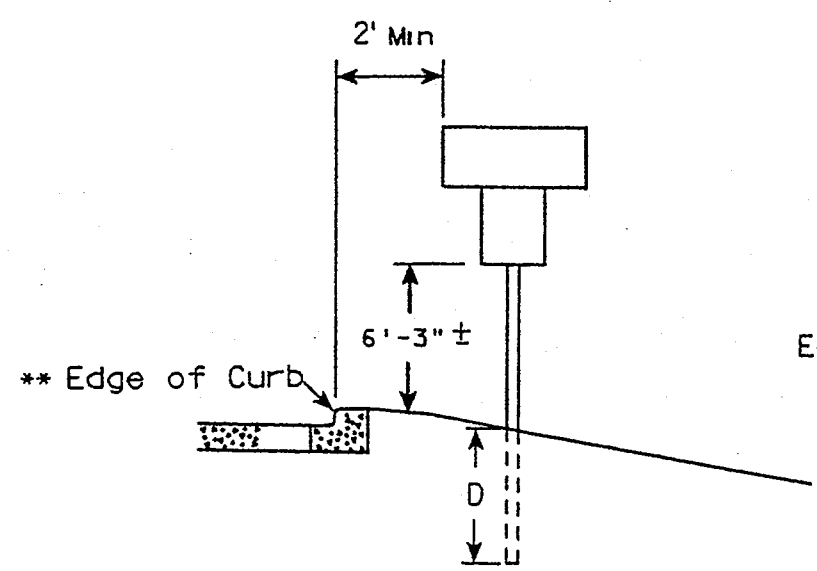
URBAN AREA

RURAL AREA (See Note 2)

GENERAL NOTES



1. Sign assemblies wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. See plate A4-4 for typical installations.
2. For expressway and freeways installations, the minimum mounting height is 7'-3" ± or 6'-3" ± depending upon the existence of a sub-sign.
3. For Route Marker assemblies or J panels, the minimum mounting height is 7'-3" ± or 5'-3" ± depending upon urban/rural area.
4. The (±) tolerance for the mounting height is 3 inches.



POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically where there is sidewalk adjacent to the roadway or parking is permitted.

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edgeline location), whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Chester J. Spang*
for State Traffic Engineer

DATE 05/12/98 PLATE NO A4-3.11

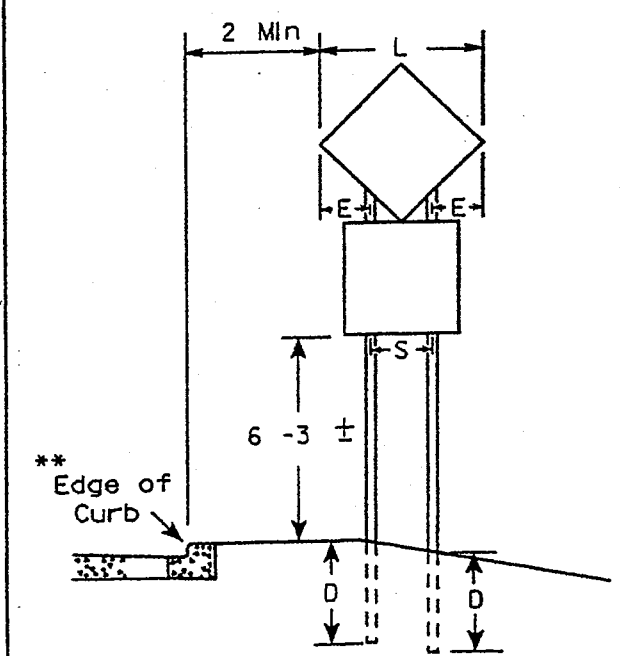
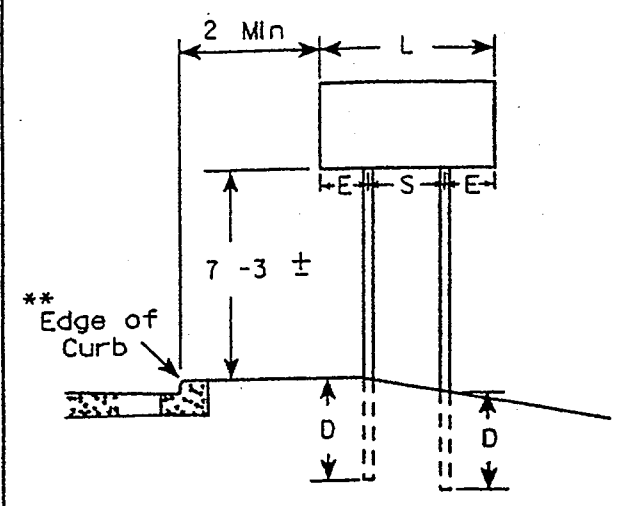
GENERAL NOTES

1. For 3 post installations, post spacing is $S/2$ and S must be greater than 7'-0".
2. For 4 post installations, post spacing is $S/3$ and S must be greater than 10'-6".
3. For expressway and freeways installations, the minimum mounting height is 7'-3"± or 6'-3"± depending upon the existence of a sub-sign.
4. The (±) tolerance for the mounting height is 3 inches.

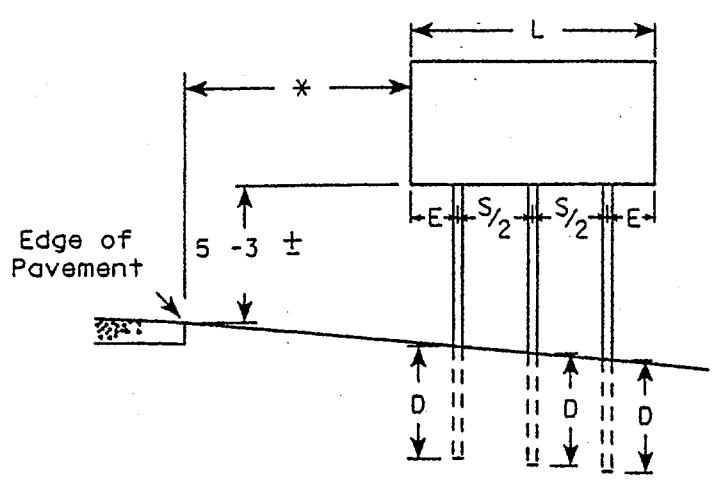
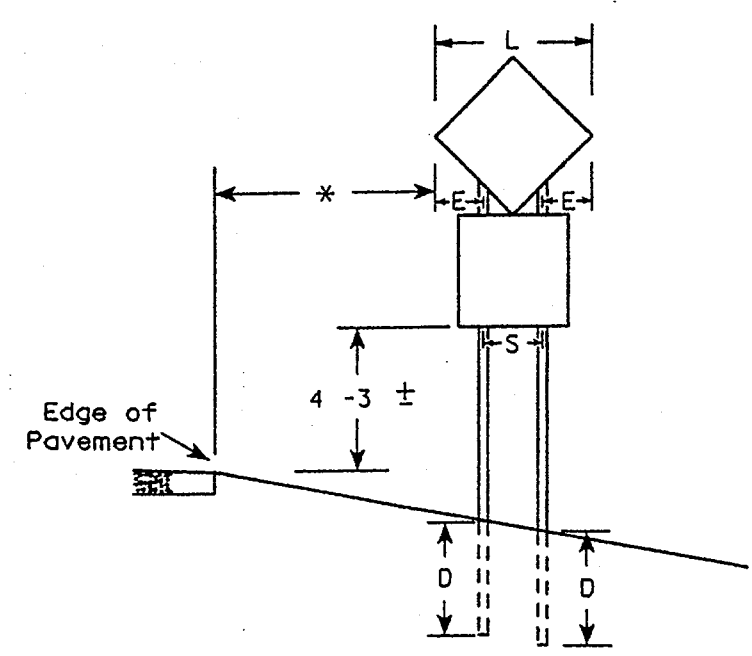
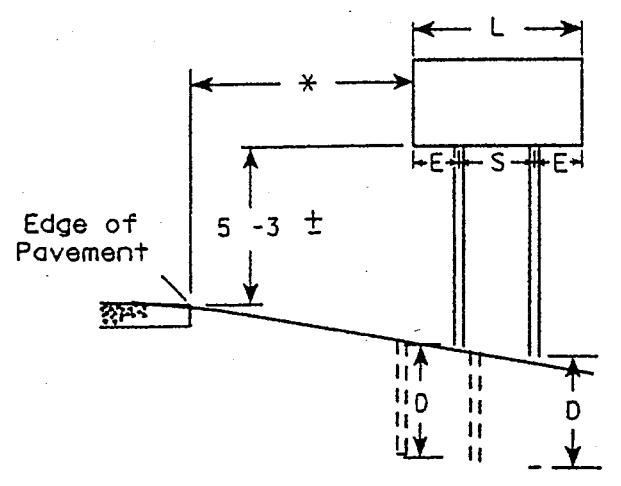
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edgeline location), whichever is greater unless directed by project engineer.

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically where there is sidewalk adjacent to the roadway or parking is permitted.

URBAN AREA



RURAL AREA (See Note 3)



DIAMOND SHAPED SIGNS

L	S	E
Less than 60"	20"	L/2 - 10
60"--72'	32"	L/2 - 16
Greater than 72'	3 L/5	L/5

SIGN SHAPE OTHER THAN DIAMOND (Two Post Installations)

L	S	E
Less than 60	L-24	12"
60' or more	3 L/5	L/5

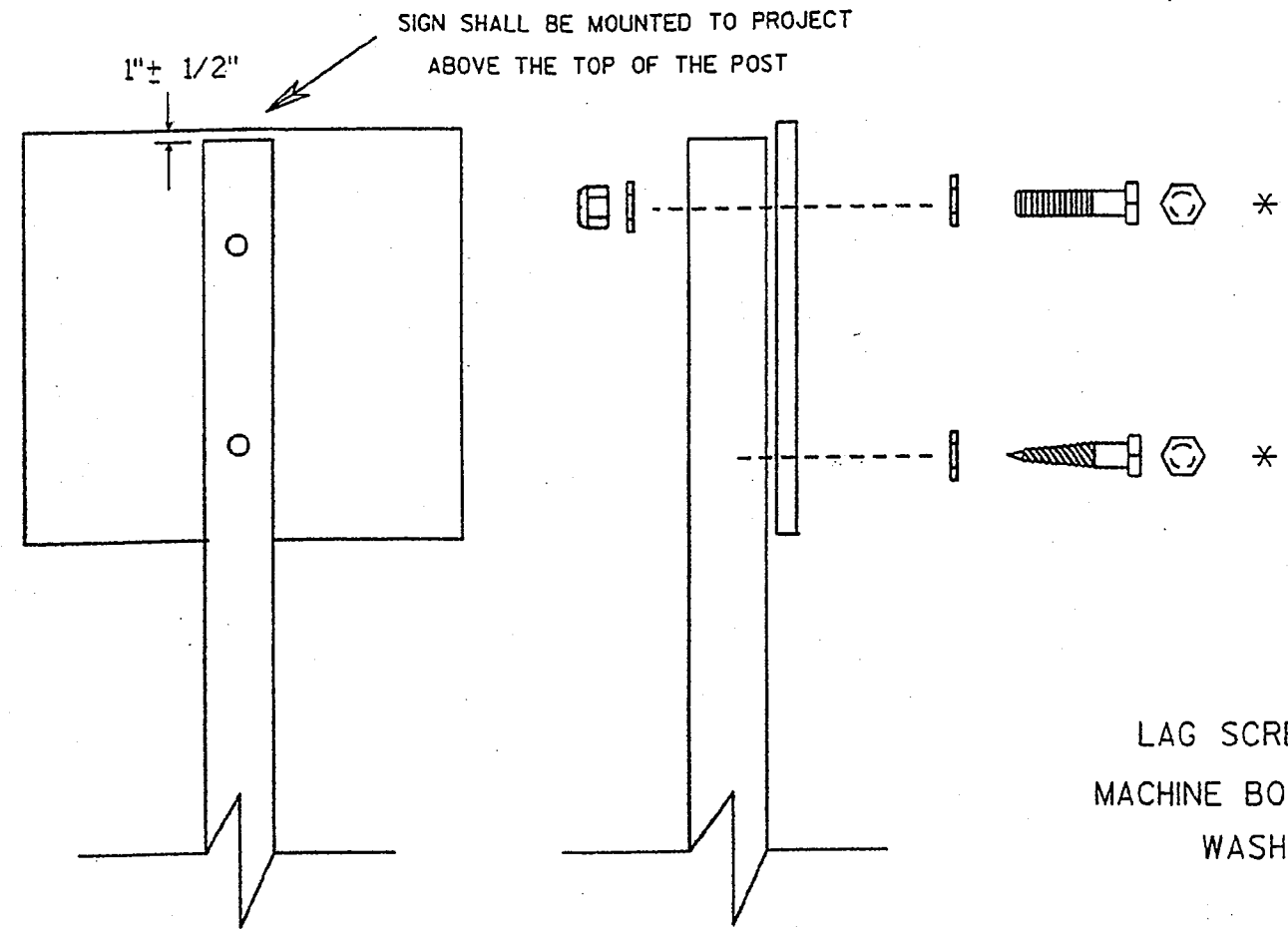
POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION
 APPROVED *Christa J. Spivey*
 for State Traffic Engineer
 DATE 11/13/96 PLATE NO A4-4.5

54.59



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

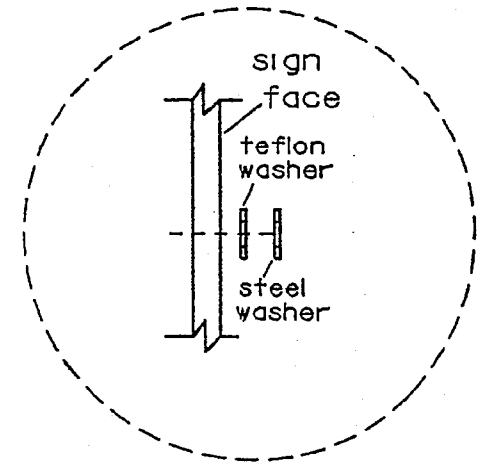
- Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
- Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
- Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- LAG SCREWS - 3/8" X 3"
- MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- WASHERS - 1" O.D. X 3/8" I.D. X 1/16" STEEL for signs 24x24 and smaller.
 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL for signs 24x30 to 36x48.
 1-1/2" O.D. X 7/16" I.D. X 1/16" STEEL for signs 48x48 and larger.
 1-1/4" O.D. X 3/8" I.D. X .080 TEFLON for all Type H signs.

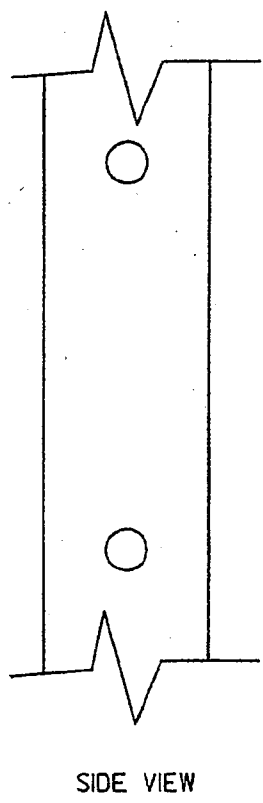
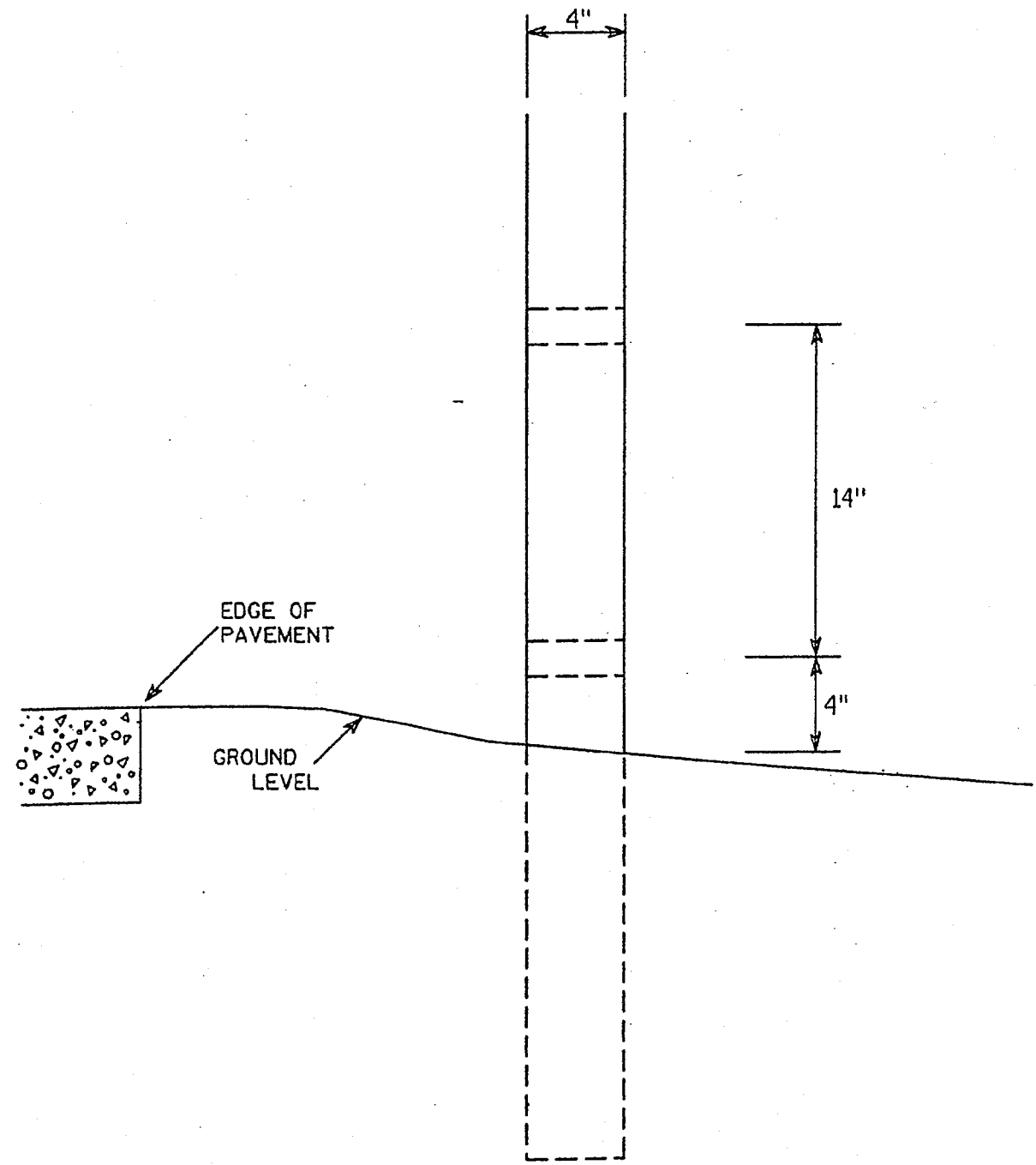
* Two different fastening systems are shown for illustration purposes only. On any individual sign, either one or the other system shall be used unless otherwise indicated in the special provisions.

LEVELS ON - &



Washer Placement when Sign Has Type H Face

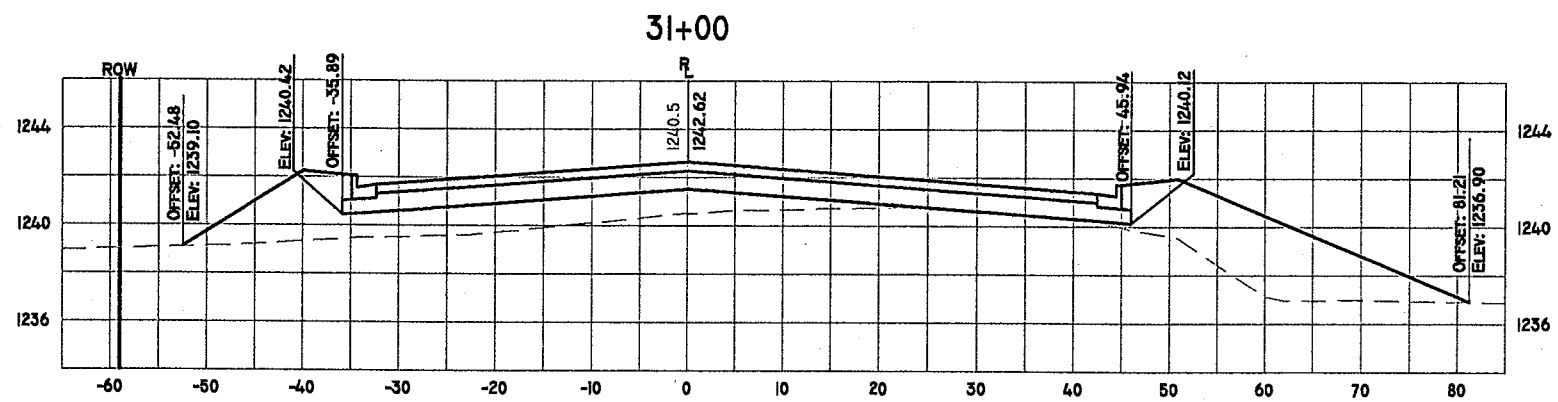
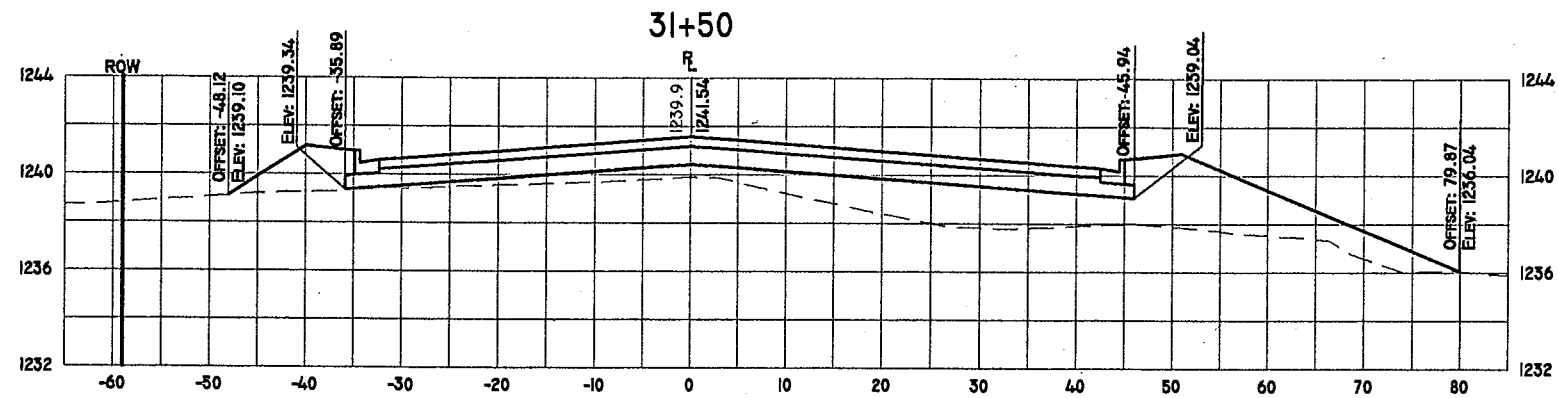
ATTACHMENT OF SIGNS TO WOOD POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Christa J. Spang</i> for State Traffic Engineer
DATE 4/3/96	PLATE NO. A4-8.3



GENERAL NOTES


1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" diameter holes drilled perpendicular to the roadway centerline.

4 X 6 WOOD POST MODIFICATIONS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Christie J. Spang</i> for State Traffic Engineer
DATE 3/27/97	PLATE NO. A4-11.2



HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 8'

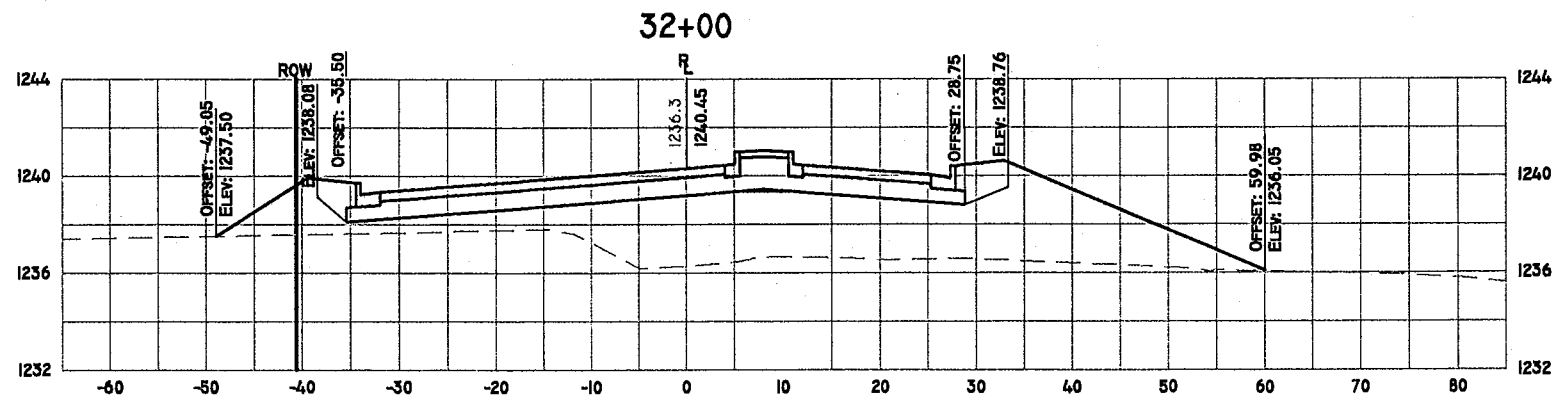
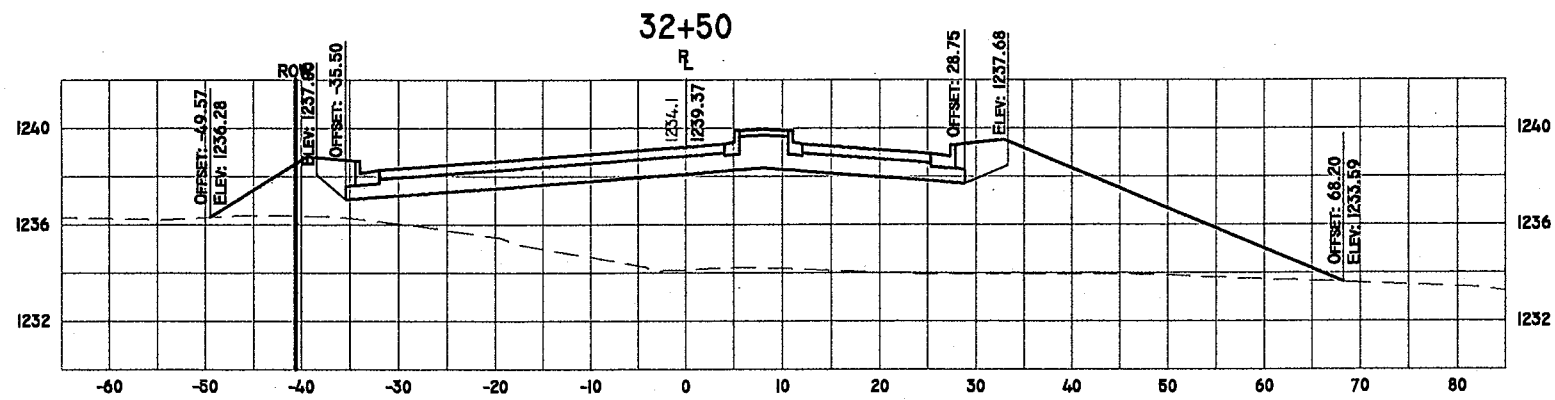
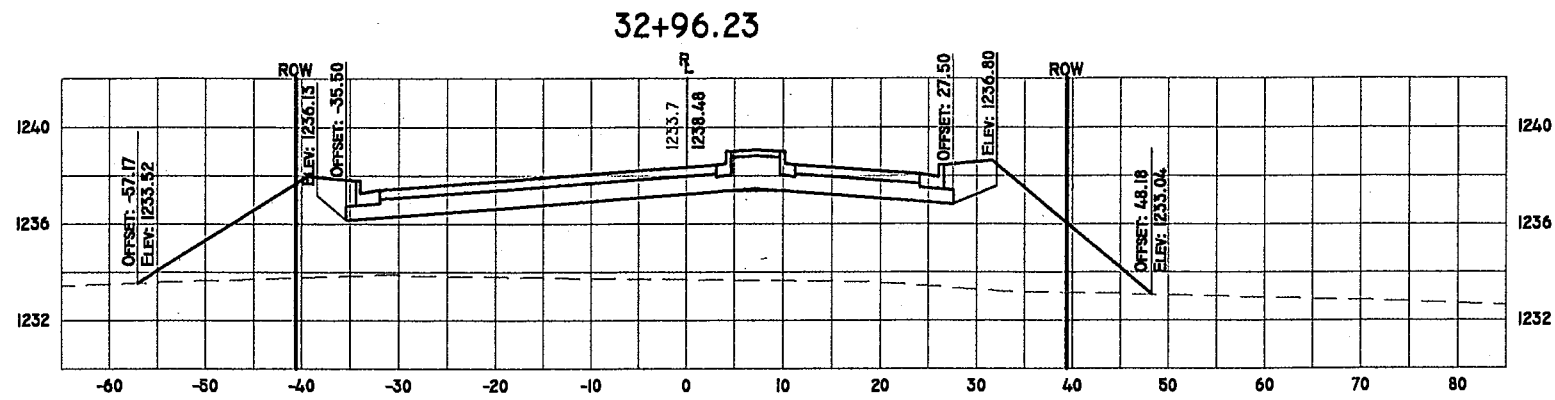
DATE	REVISION	BY	CHK'D


**CIVIL & ENVIRONMENTAL
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 4080 N. 20th AVENUE
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 EMAIL: mail@REIengineering.com

**CROSS SECTIONS
NORTH 20th
AVENUE
WAUSAU, WISCONSIN**

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03

SHEET	PROJECT No.
XS1	2369



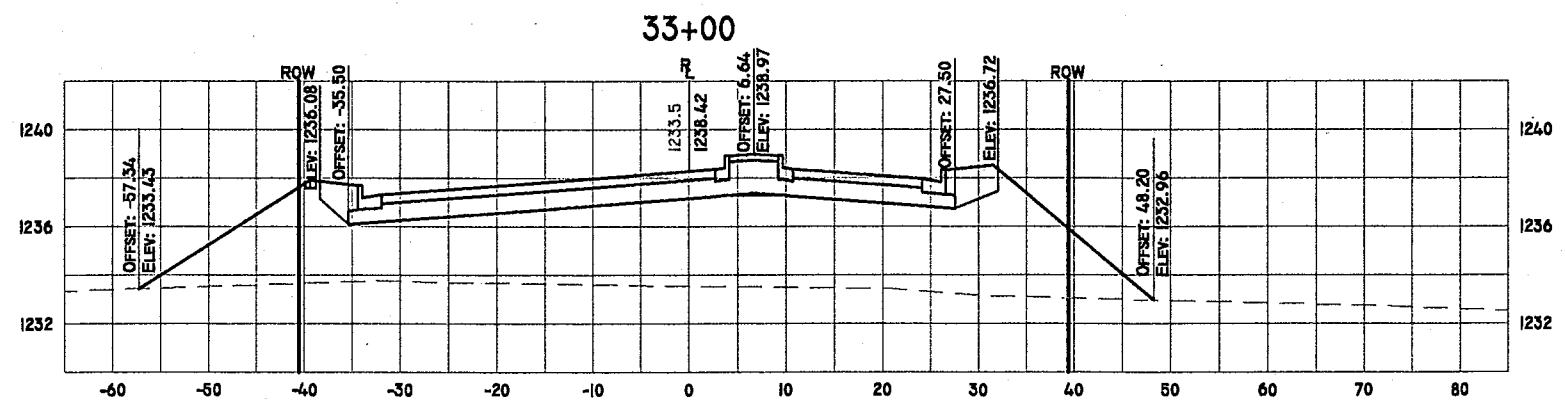
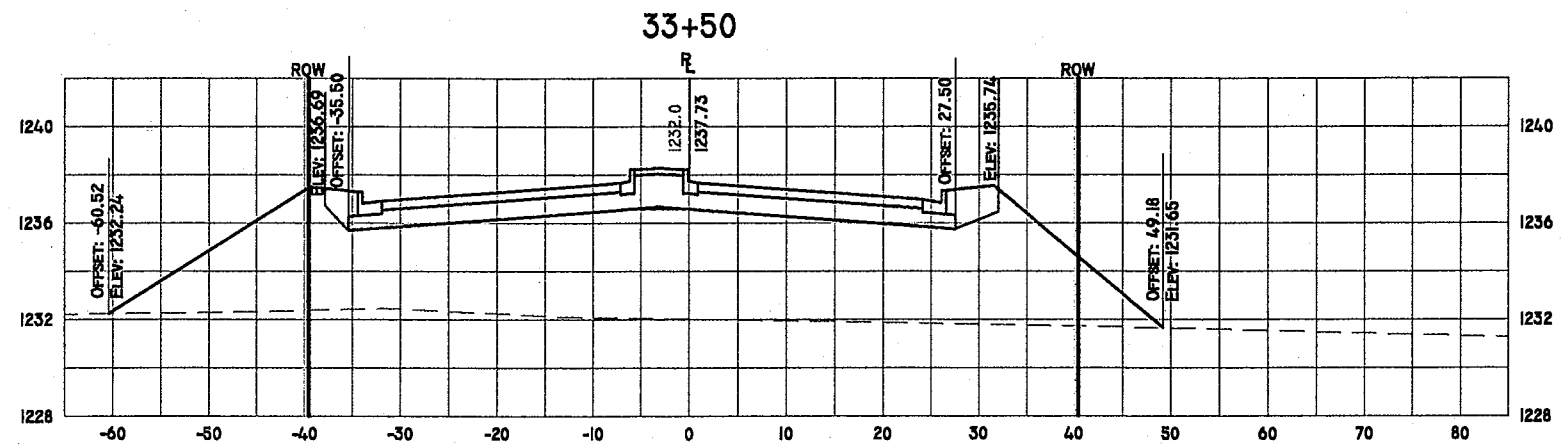
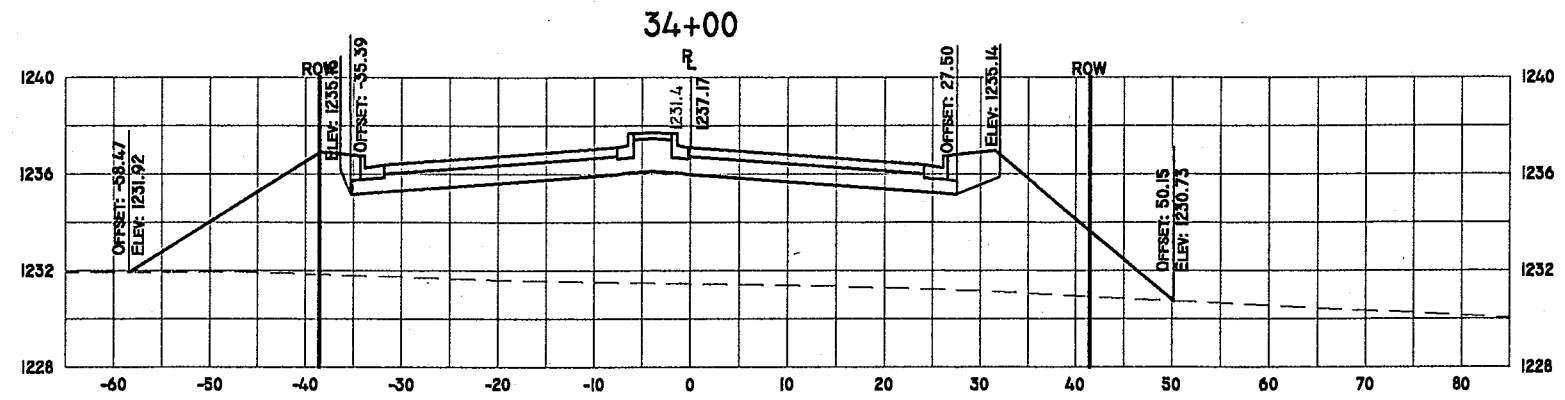
HORZ. SCALE: 1" = 20'
 VERT. SCALE: 1" = 8'

DATE	REVISION	BY	CHK'D

REI
 CIVIL & ENVIRONMENTAL
 ENGINEERING, SURVEYING
 4080 N. 20th AVENUE
 WAUSAU, WISCONSIN 54401
 PHONE: (715) 675-9784 FAX: (715) 675-4060
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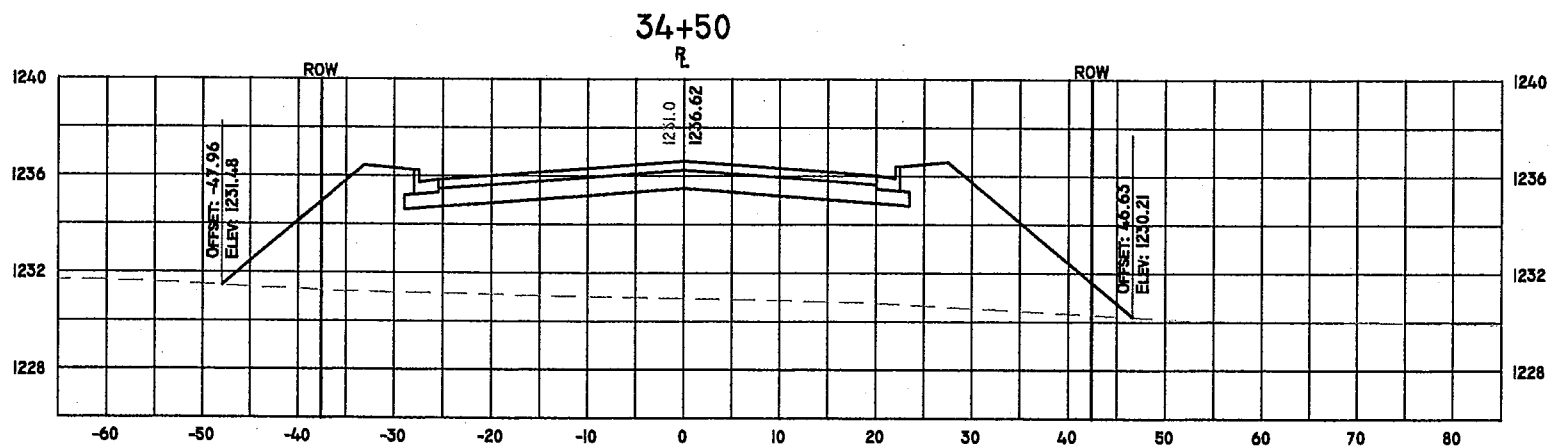
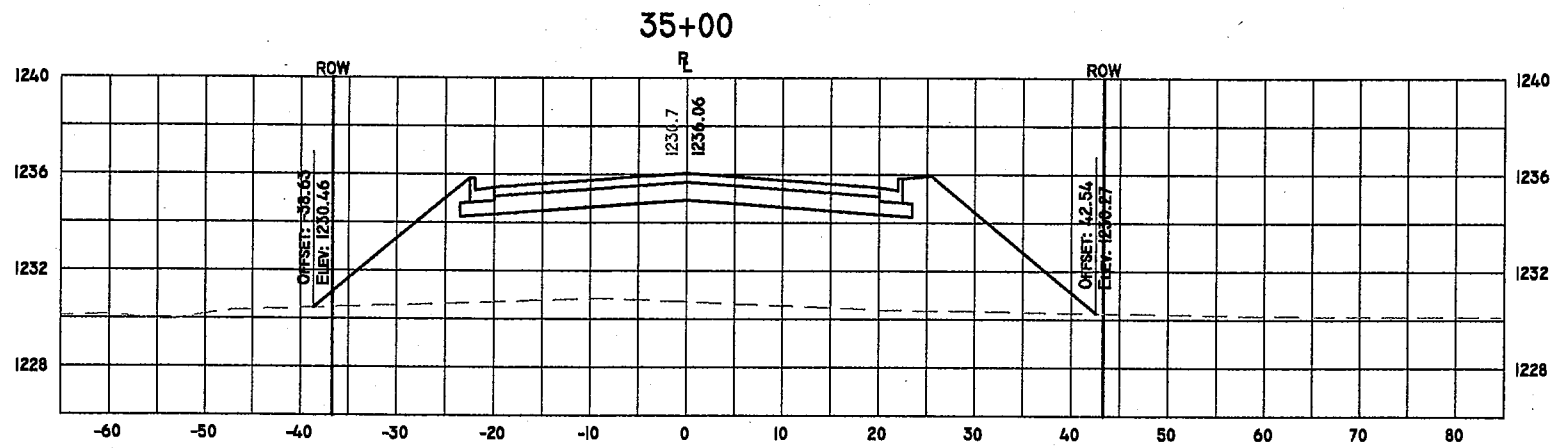
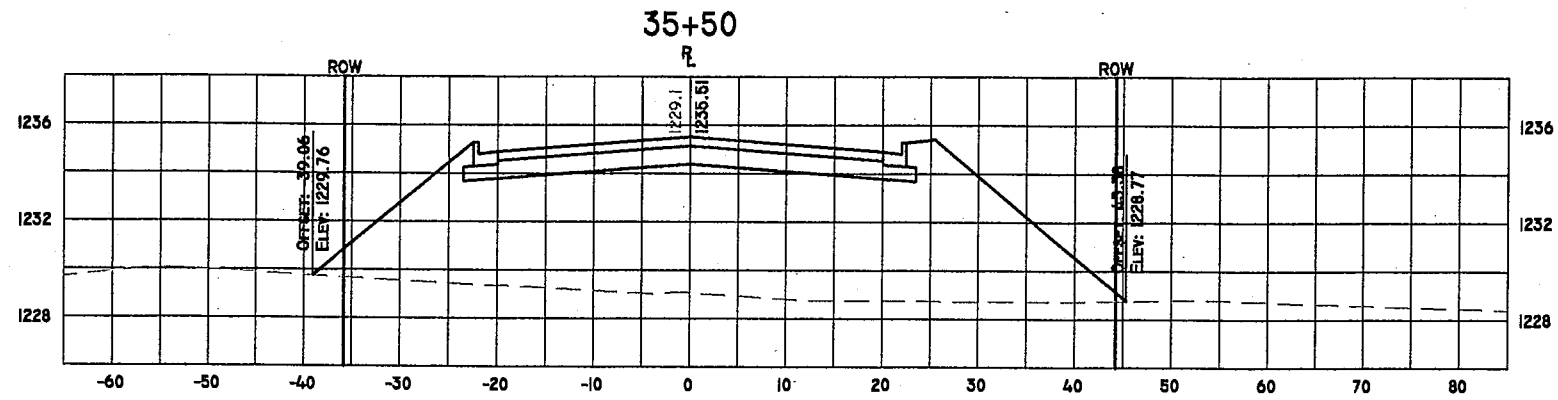
**CROSS SECTIONS
 NORTH 20th
 AVENUE
 WAUSAU, WISCONSIN**

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03
SHEET	PROJECT No.
XS2	2369



HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 8'

DATE	REVISION	BY	CHK'D
<p>CIVIL & ENVIRONMENTAL ENGINEERING, SURVEYING 4080 N. 20th AVENUE WAUSAU, WISCONSIN 54401 PHONE: (715) 675-9784 FAX: (715) 675-4060 EMAIL: mail@REIengineering.com</p>			
<p>CROSS SECTIONS NORTH 20th AVENUE WAUSAU, WISCONSIN</p>			
DESIGNED BY: MPB	CHECKED BY:		
SURVEYED BY: NJW	APPROVED BY:		
DRAWN BY: TAW	DATE: 6/21/03		
SHEET	PROJECT No.		
XS3	2369		



HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 8'

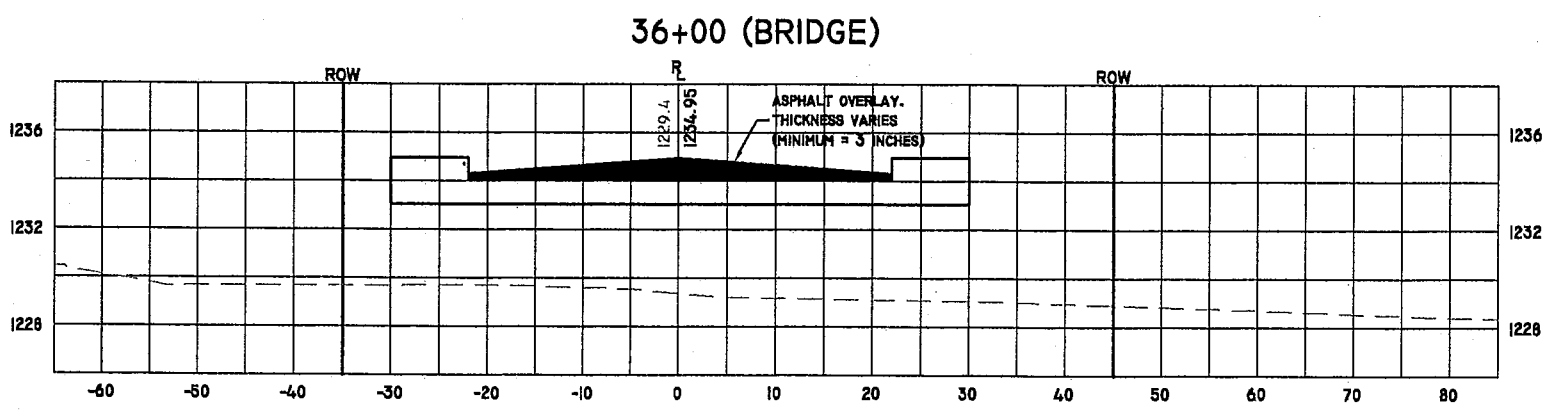
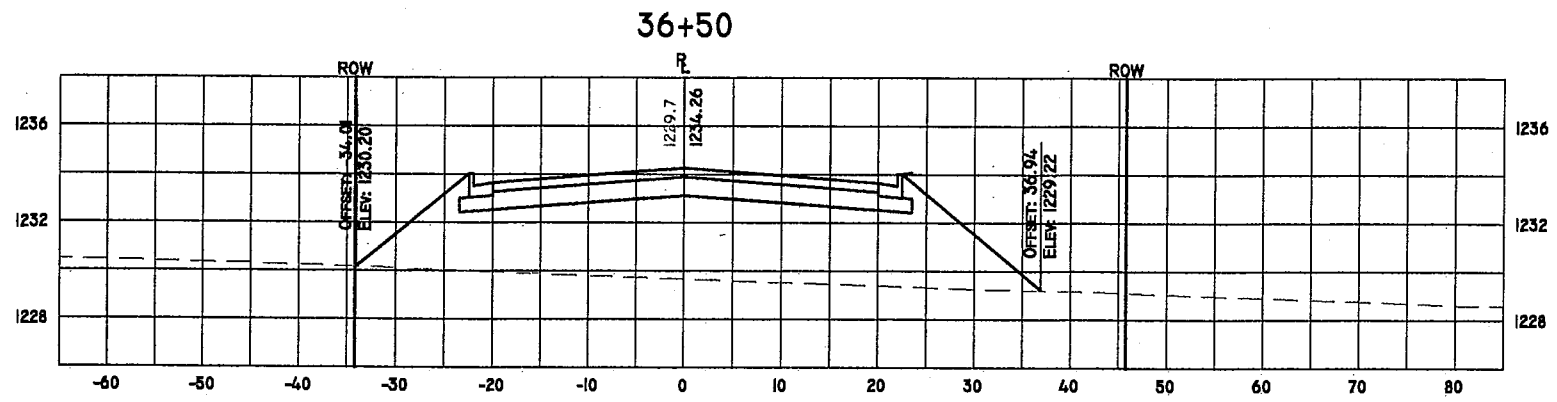
DATE	REVISION	BY	CHK'D

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CROSS SECTIONS
NORTH 20th
AVENUE
WAUSAU, WISCONSIN


DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/28/03

SHEET	PROJECT No.
XS4	2369



HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 8'

DATE	REVISION	BY	CHK'D

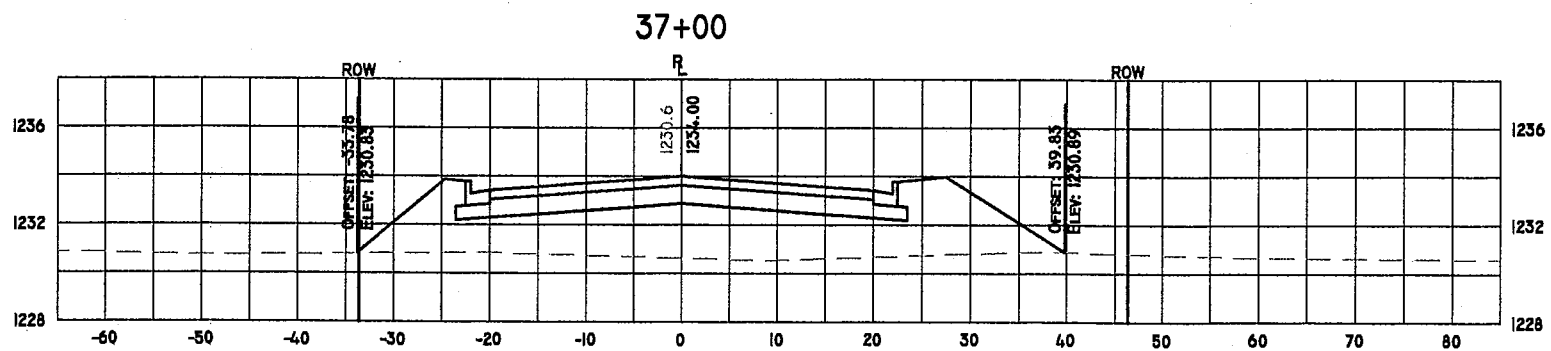
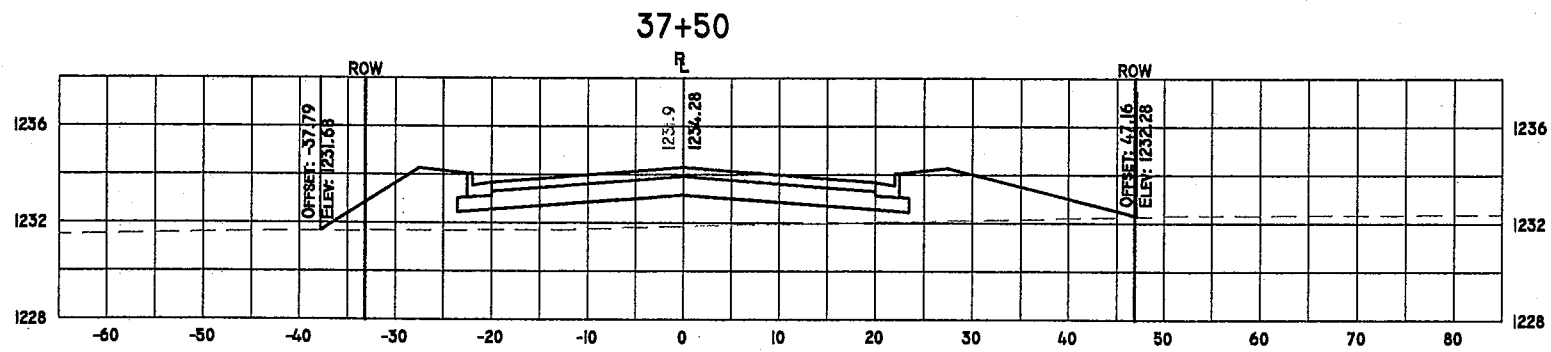
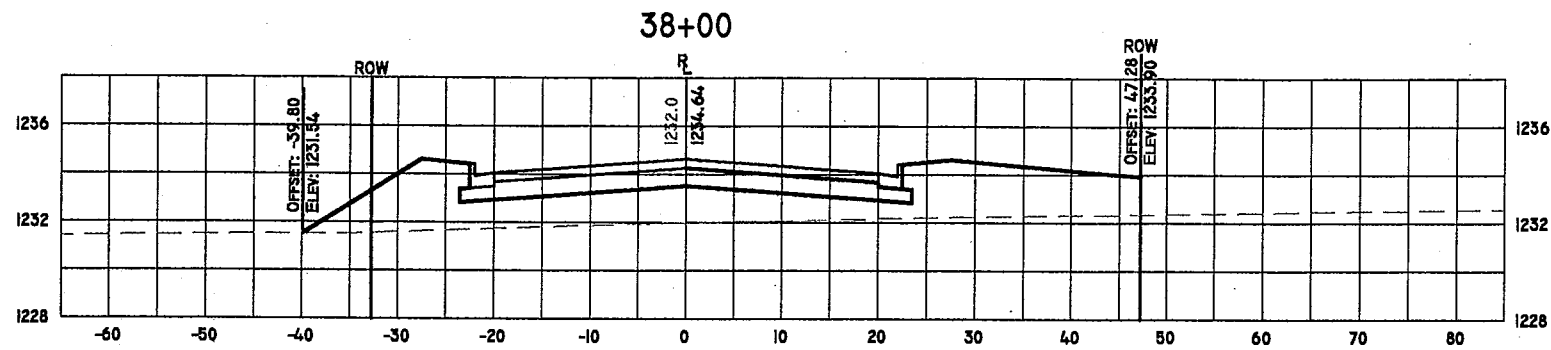


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**CROSS SECTIONS
NORTH 20th
AVENUE
WAUSAU, WISCONSIN**

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/28/03

SHEET XS5	PROJECT No. 2369
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HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 8'

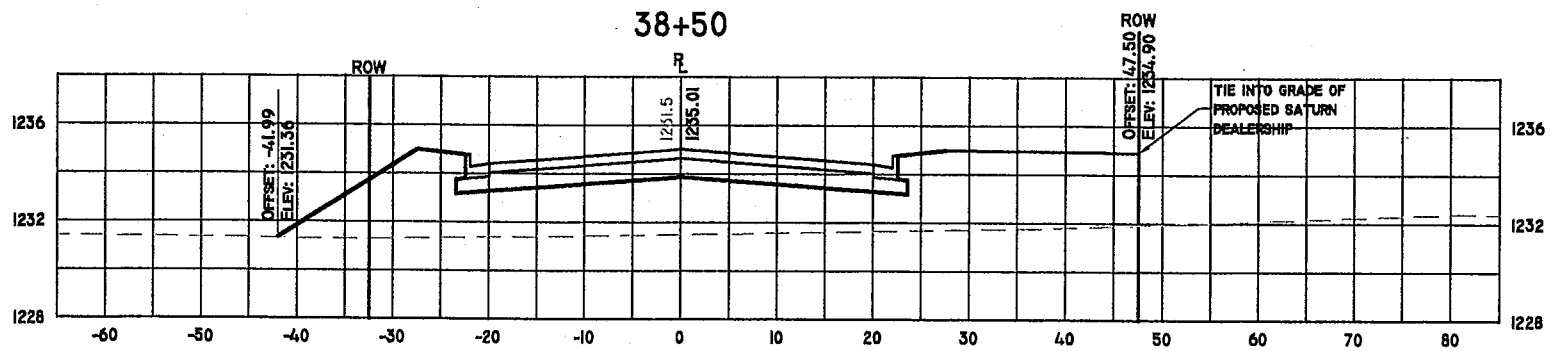
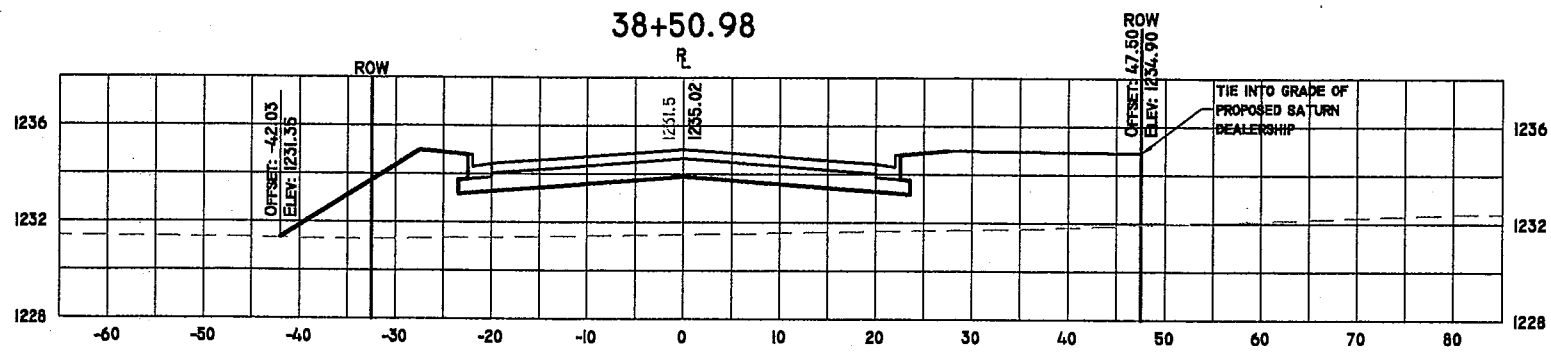
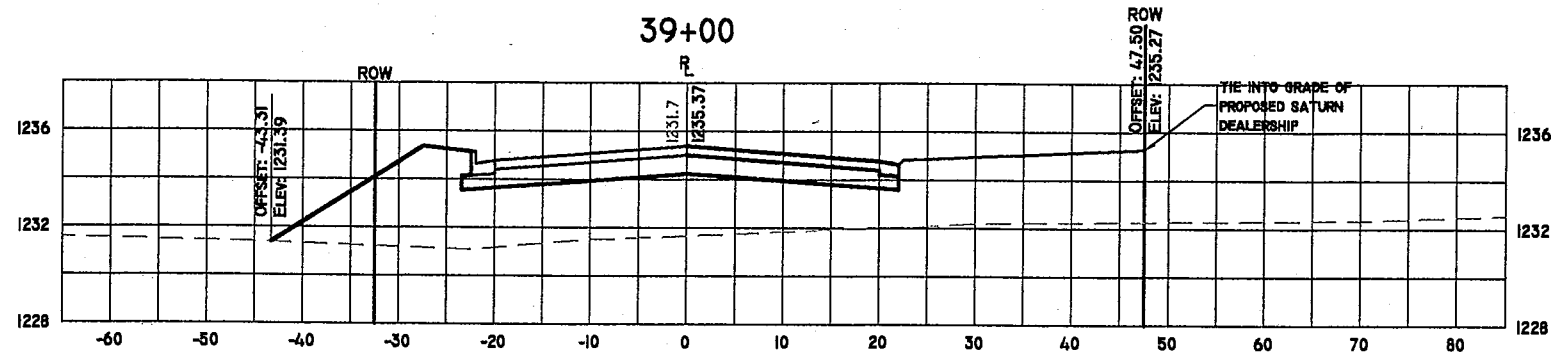
DATE	REVISION	BY	CHK'D

REI
CIVIL & ENVIRONMENTAL
ENGINEERING, SURVEYING
4080 N. 20th AVENUE
WAUSAU, WISCONSIN 54401
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CROSS SECTIONS
NORTH. 20th
AVENUE
WAUSAU, WISCONSIN

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03

SHEET XS6	PROJECT No. 2369
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HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 8'

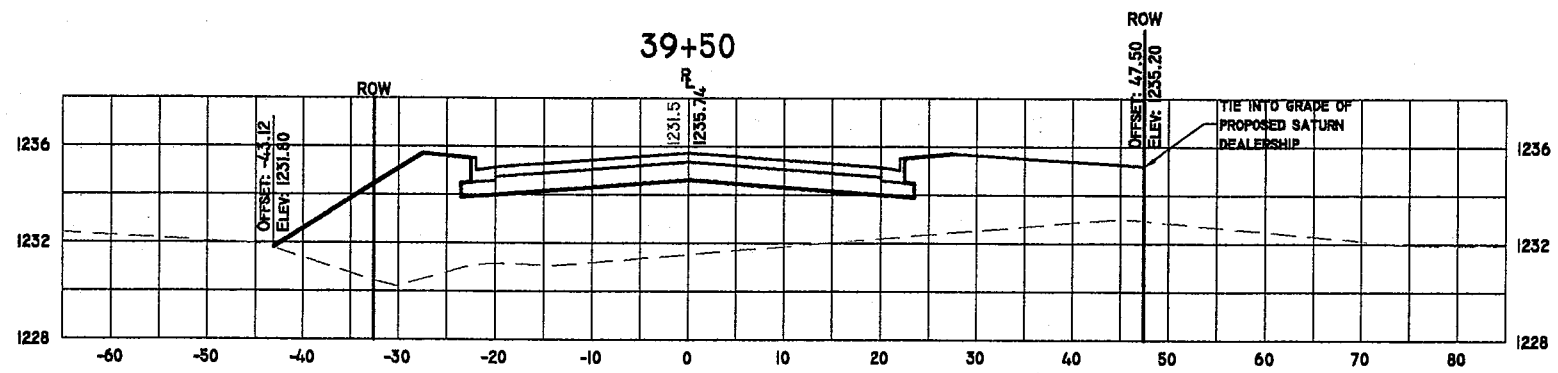
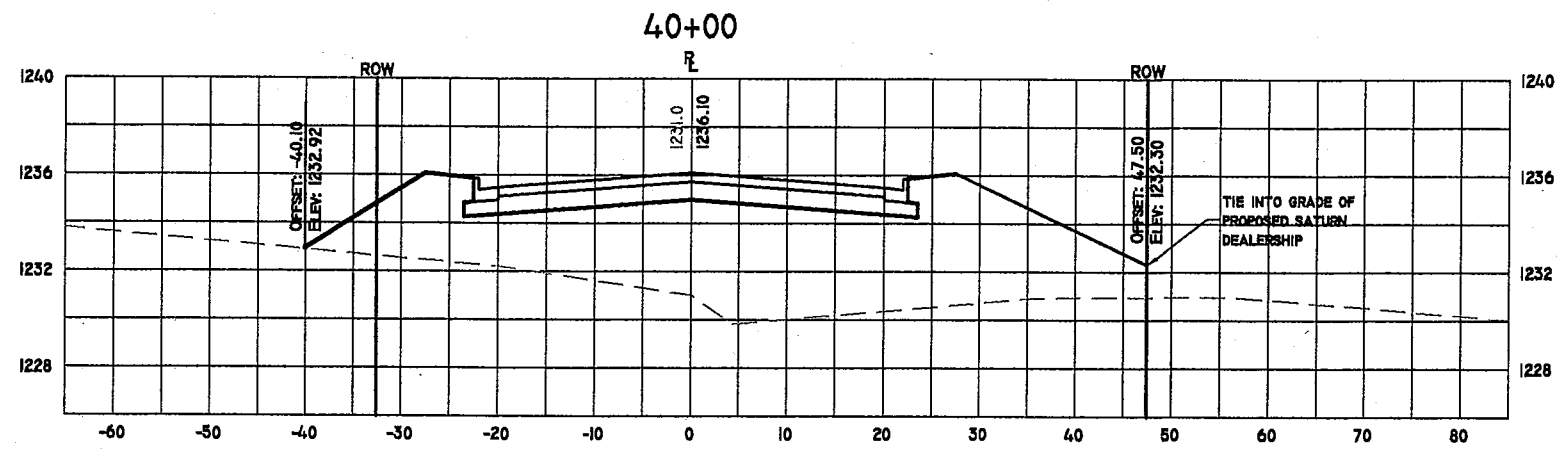
DATE	REVISION	BY	CHK'D

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 4080 N. 20th AVENUE
 WAUSAU, WISCONSIN 54401
 PHONE: (715) 675-9784 FAX: (715) 675-4060
 EMAIL: mail@REIengineering.com

**CROSS SECTIONS
 NORTH 20th
 AVENUE
 WAUSAU, WISCONSIN**

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03

SHEET **XS7** PROJECT No. **2369**



HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 8'

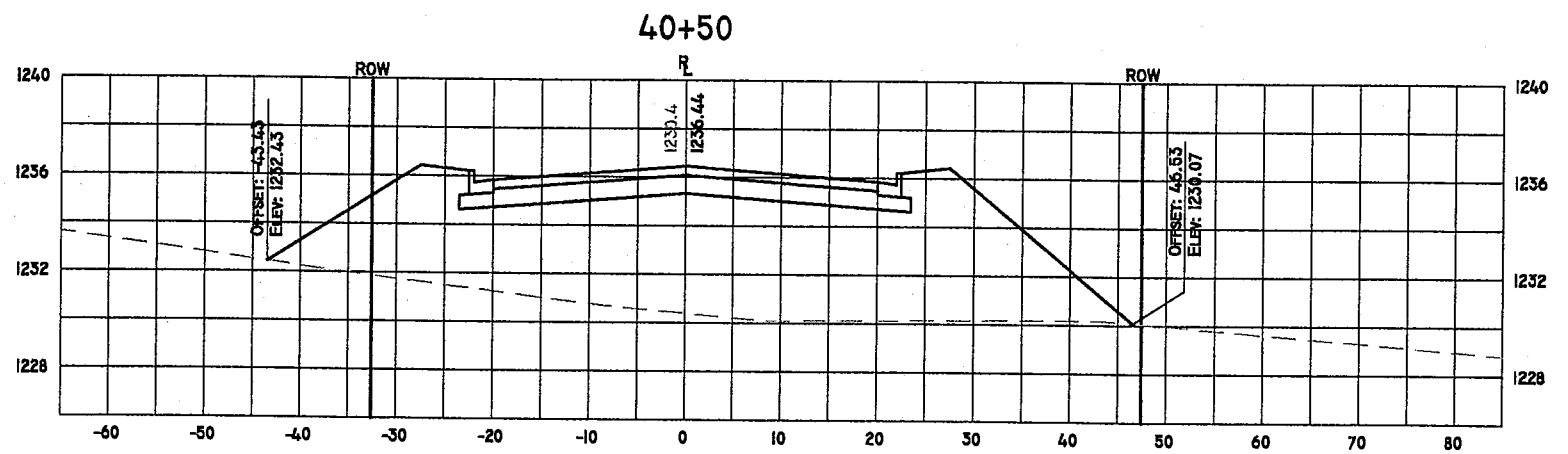
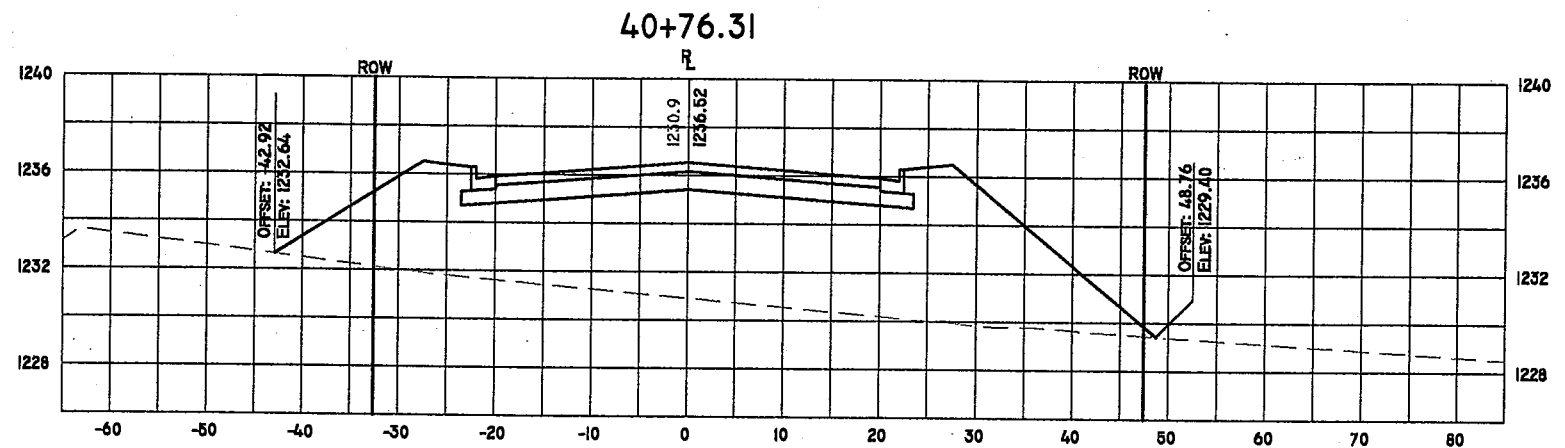
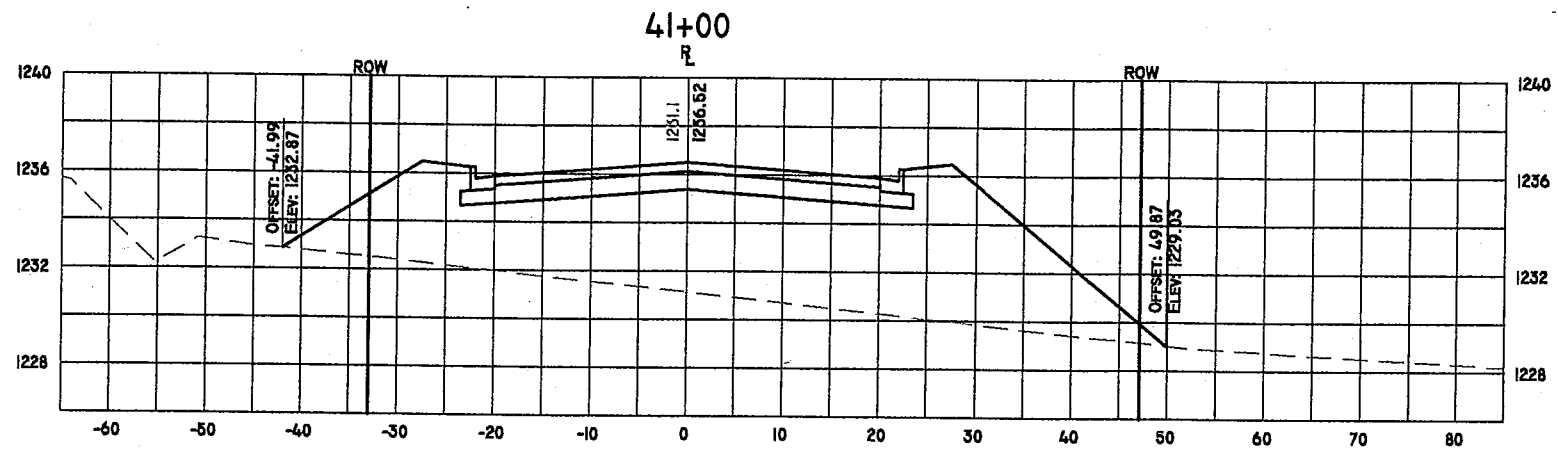
DATE	REVISION	BY	CHK'D


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EMAIL: mail@REIengineering.com

CROSS SECTIONS
NORTH 20th
AVENUE
WAUSAU, WISCONSIN

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/28/03

SHEET	PROJECT No.
XS8	2369



HORZ. SCALE: 1" = 20'
 VERT. SCALE: 1" = 8'

DATE	REVISION	BY	CHK'D

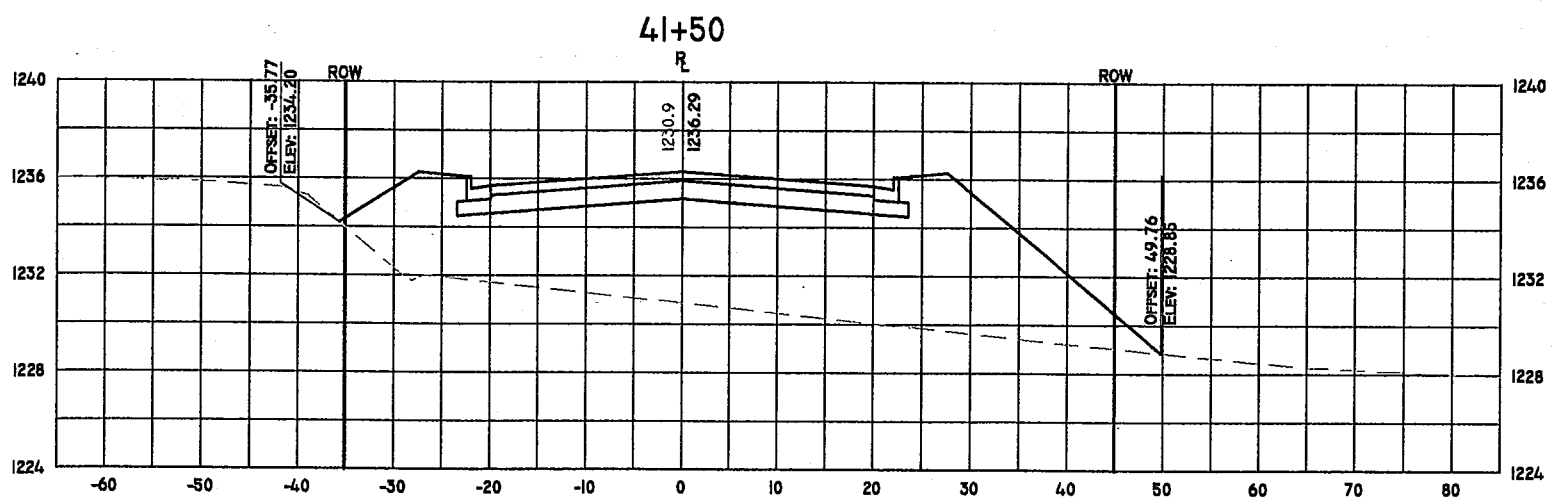
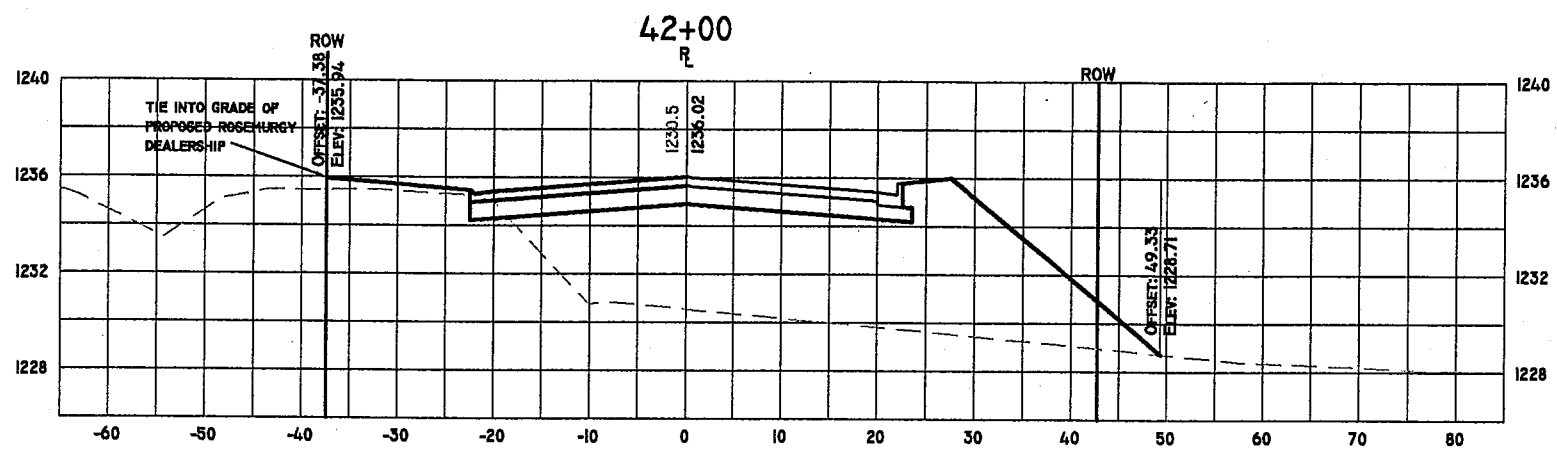
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 EMAIL: mal@REIengineering.com

**CROSS SECTIONS
 NORTH 20th
 AVENUE
 WAUSAU, WISCONSIN**

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03

SHEET XS9	PROJECT No. 2369
---------------------	----------------------------

J:\DRAFTING\12366ROSE\dwg\1236601.PLT PRO dwg 06/25/03 08:53:18 PM CDT



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VERT. SCALE: 1" = 8'

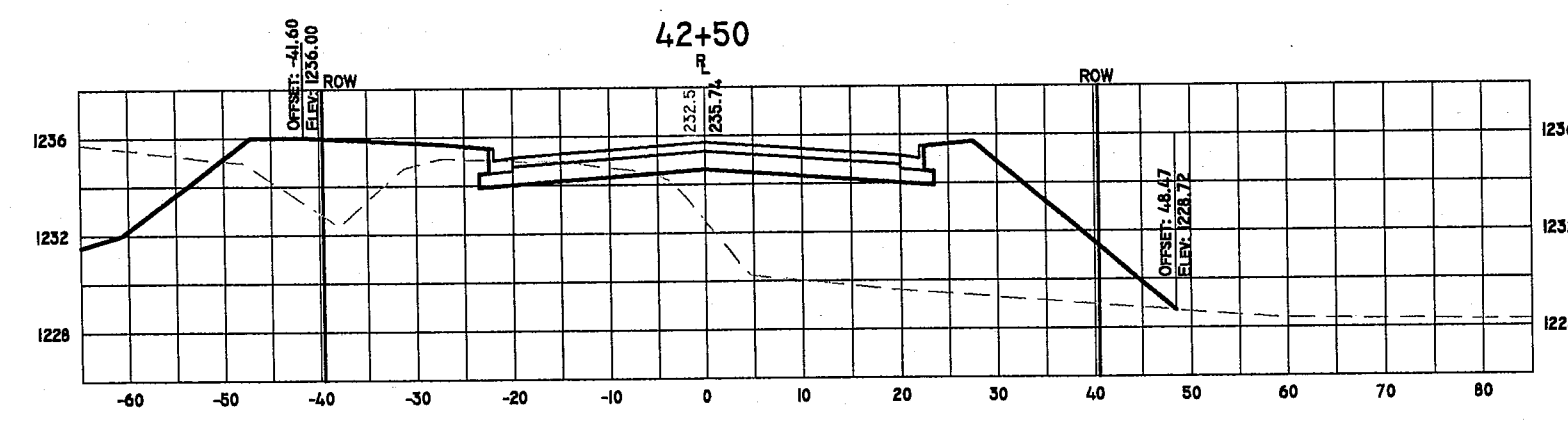
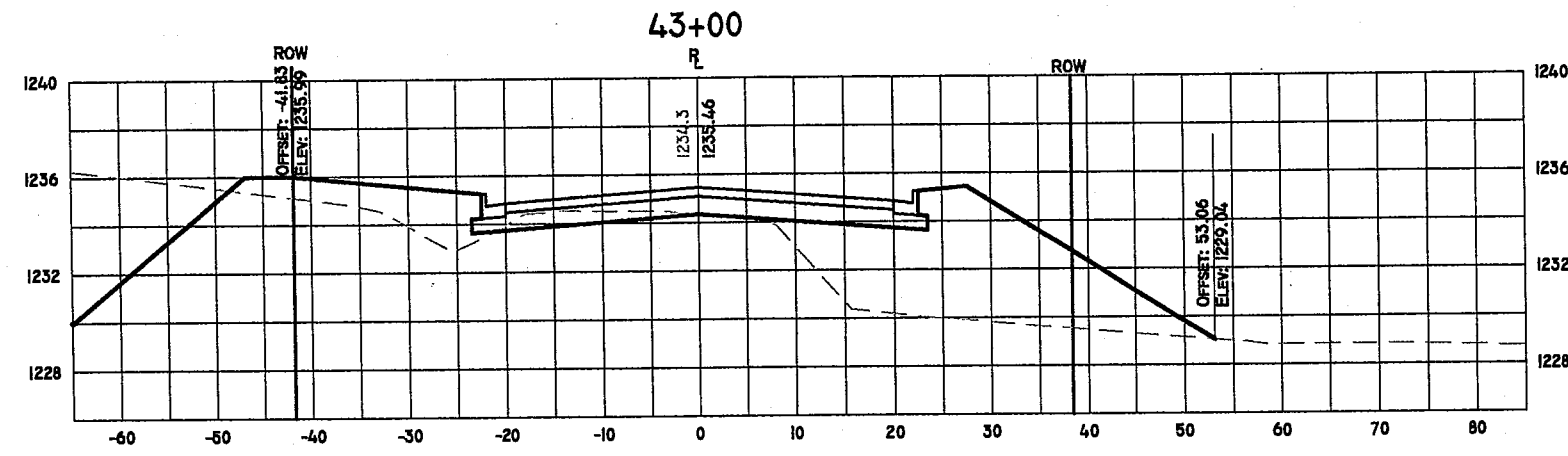
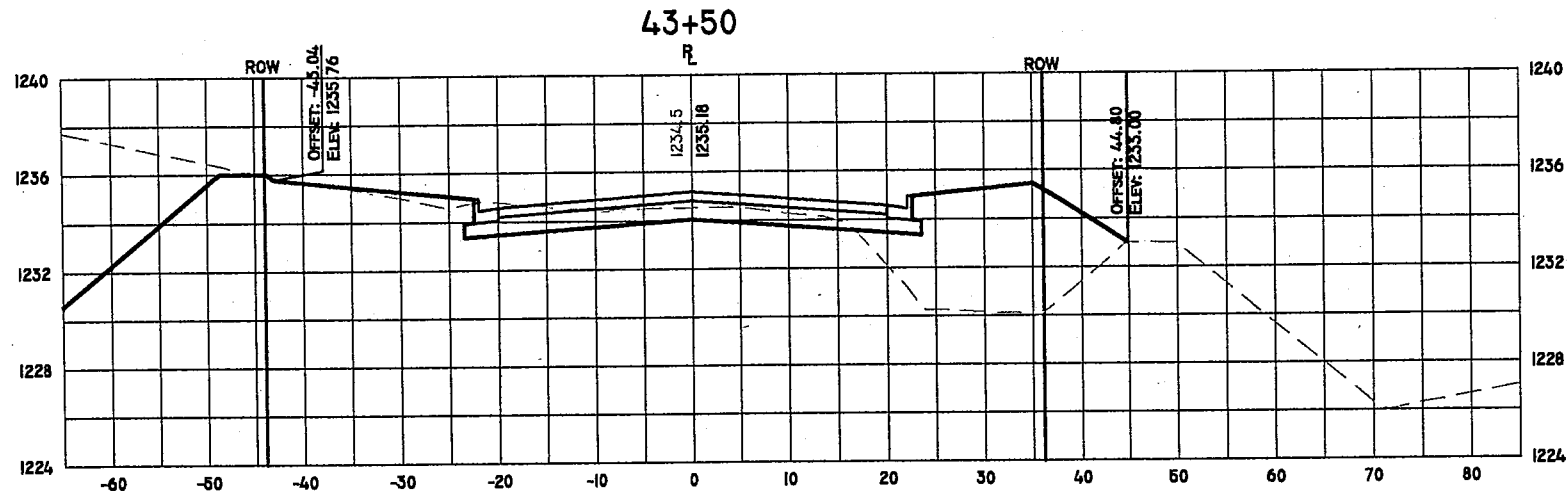
DATE	REVISION	BY	CHK'D

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CROSS SECTIONS
NORTH 20th
AVENUE
WAUSAU, WISCONSIN

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03

SHEET PROJECT No.
XS10 2369



HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 8'

DATE	REVISION	BY	CHK'D

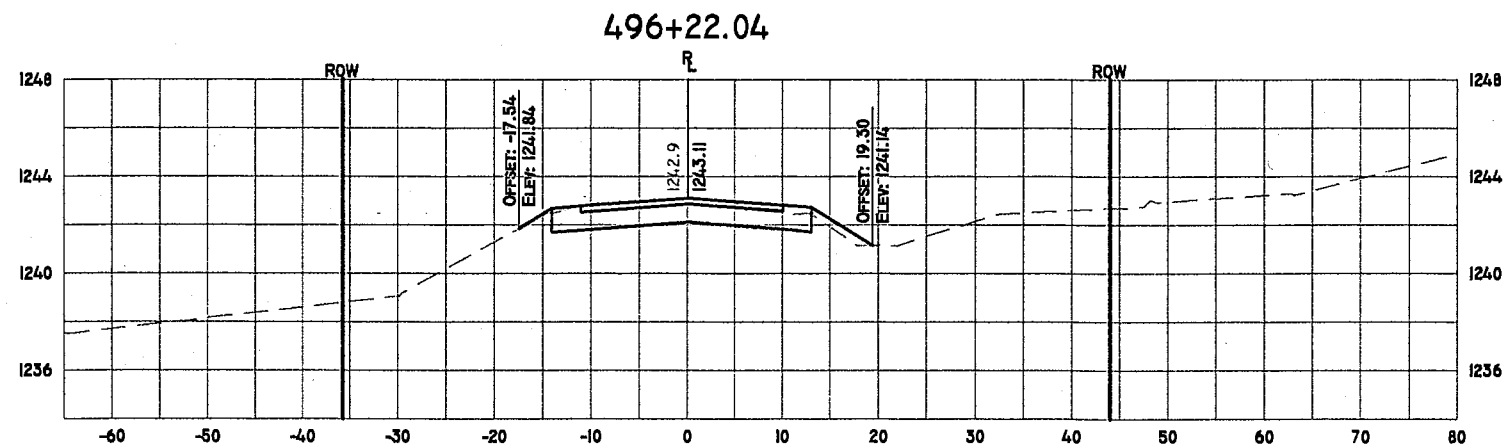
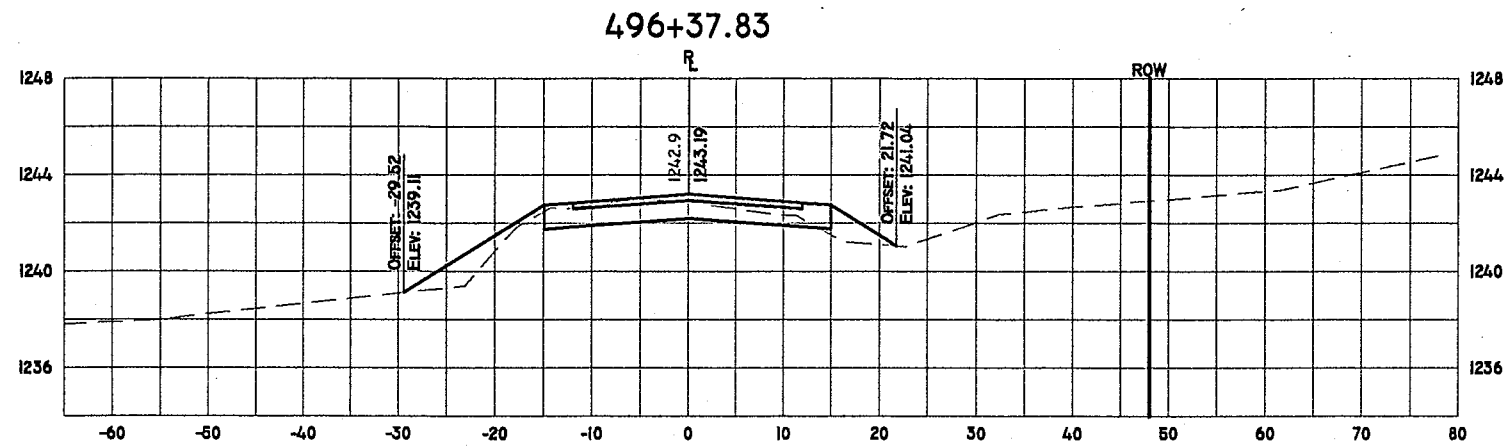
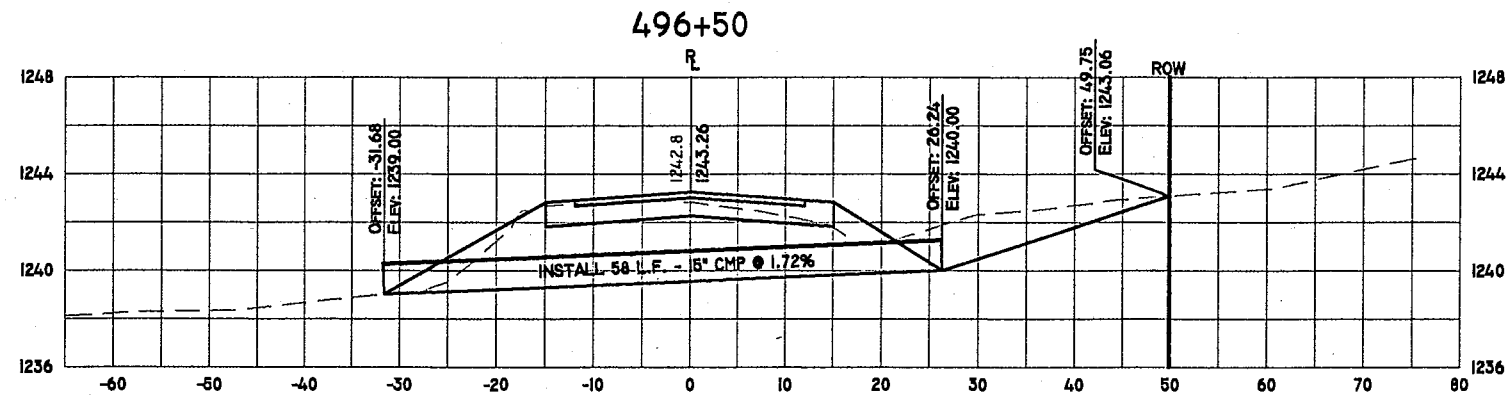
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CROSS SECTIONS
NORTH 20th
AVENUE
WAUSAU, WISCONSIN

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03

SHEET	PROJECT No.
XS11	2369

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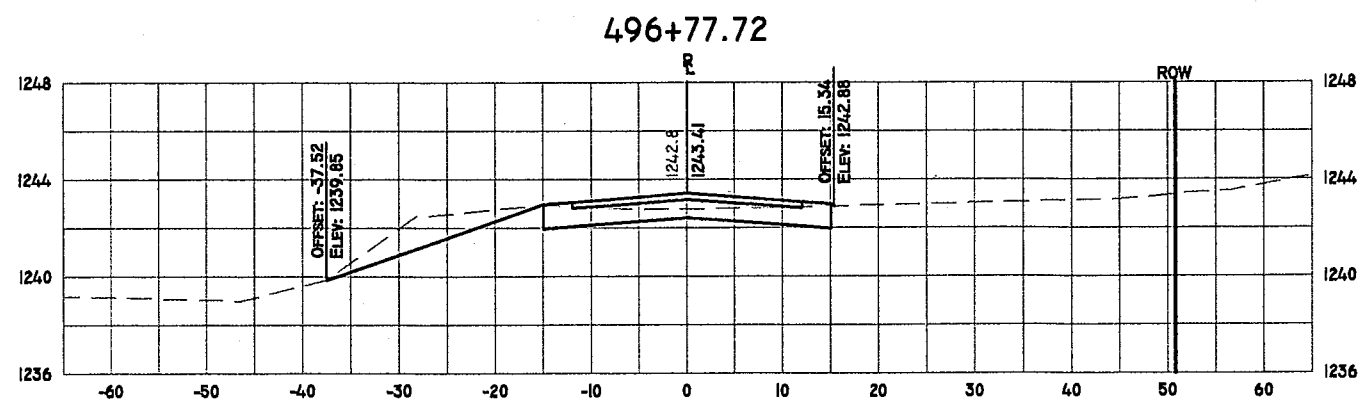
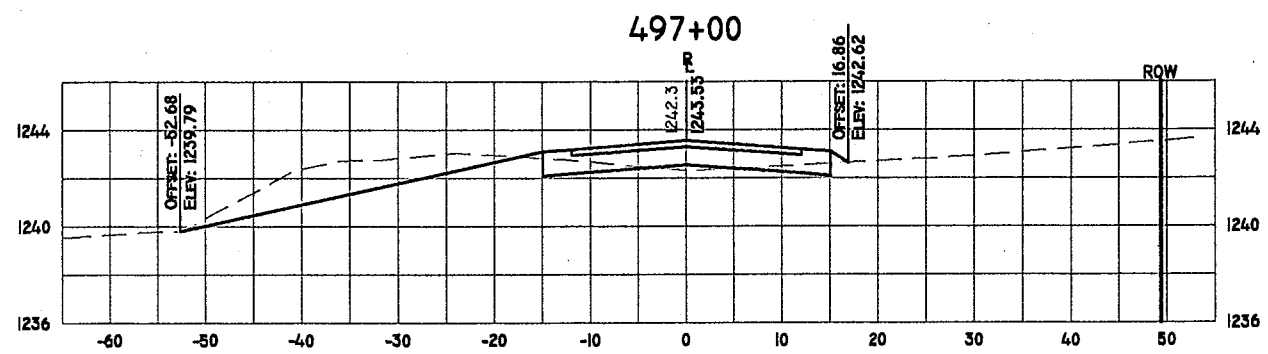
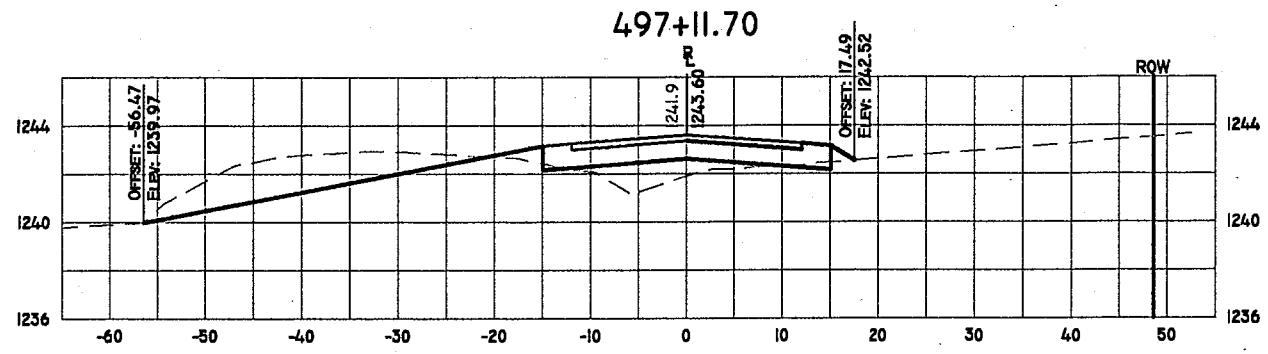
HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 8'

DATE	REVISION	BY	CHK'D

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CROSS SECTIONS
CASSIDY DRIVE
WAUSAU, WISCONSIN

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 8/29/03
SHEET	PROJECT No.
XS17	2369



HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 8'

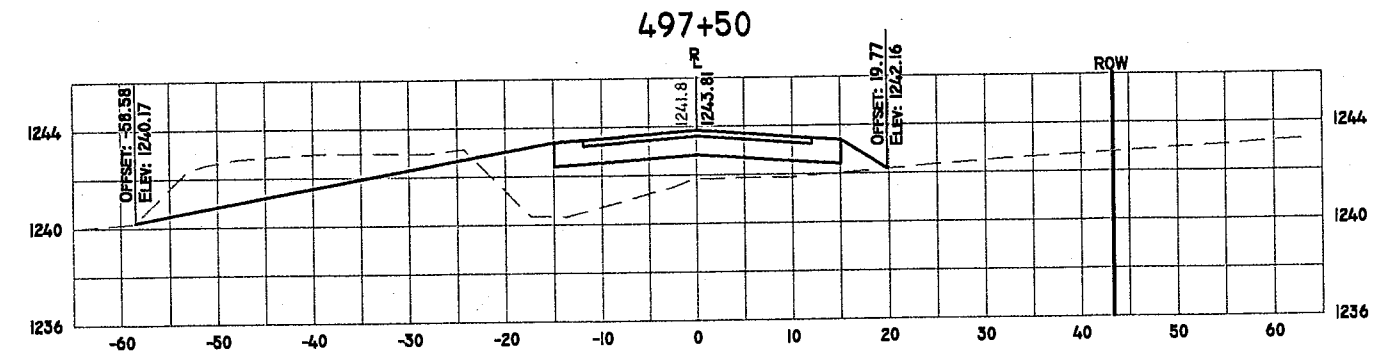
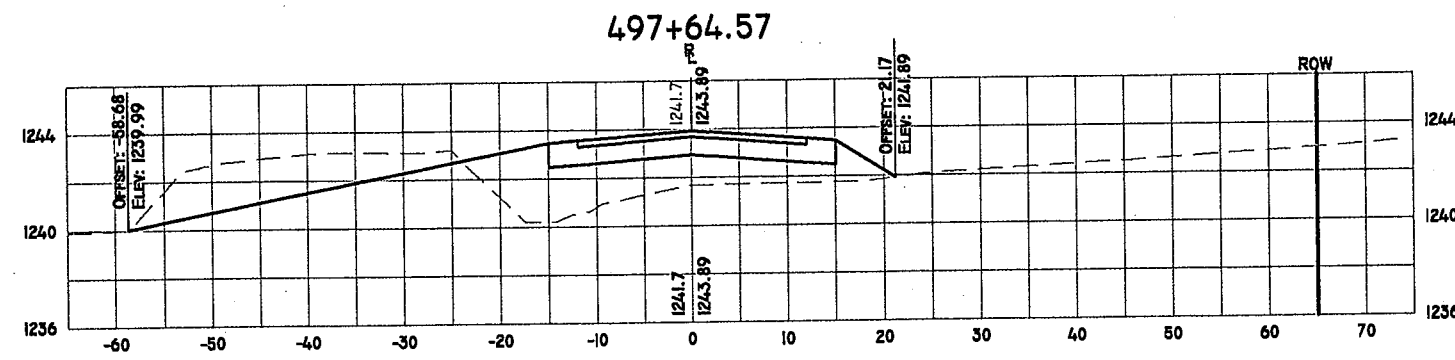
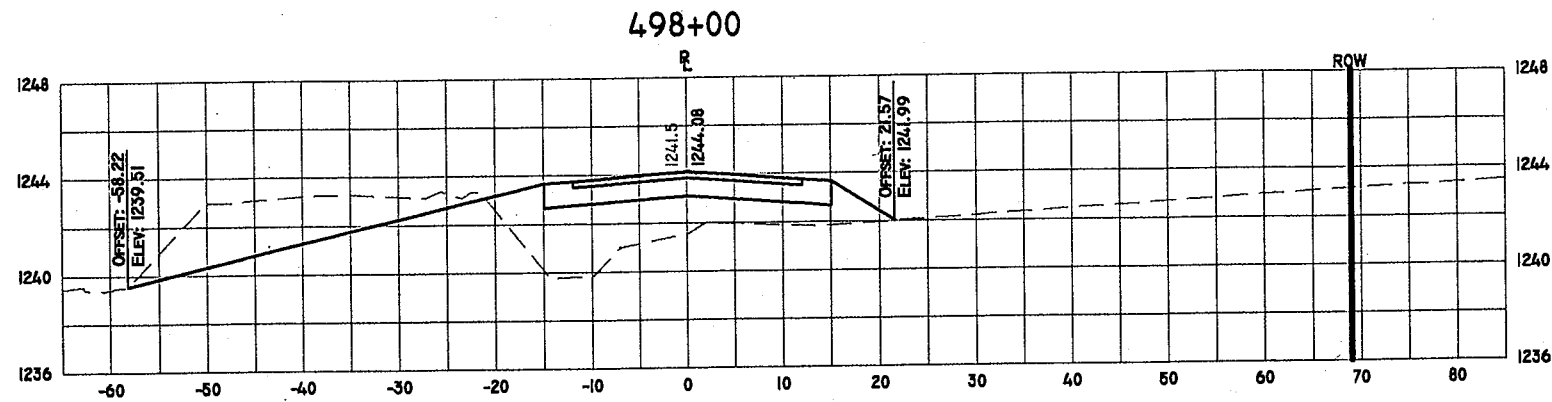
DATE	REVISION	BY	CHK'D

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**CROSS SECTIONS
 CASSIDY DRIVE
 WAUSAU, WISCONSIN**

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/28/03

SHEET	PROJECT No.
XS18	2369



HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 8'

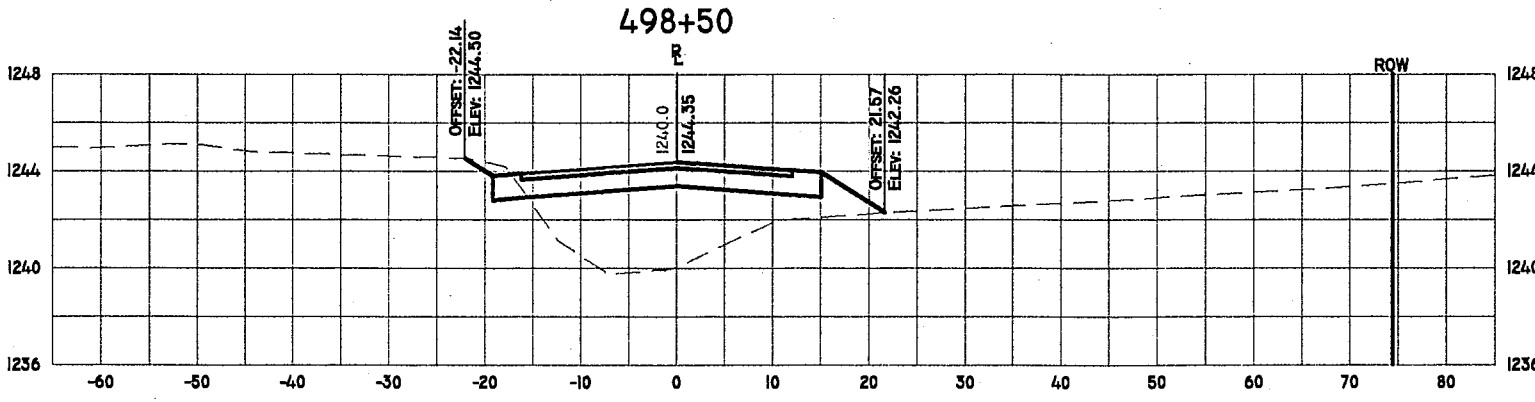
DATE	REVISION	BY	CHK'D

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**CROSS SECTIONS
 CASSIDY DRIVE
 WAUSAU, WISCONSIN**

DESIGNED BY: MPB	CHECKED BY:
SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03
SHEET	PROJECT No.
XS19	2369

HORZ. SCALE: 1" = 20'
 VERT. SCALE: 1" = 8'



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 EMAIL: mail@REIengineering.com

**CROSS SECTIONS
 CASSIDY DRIVE
 WAUSAU, WISCONSIN**

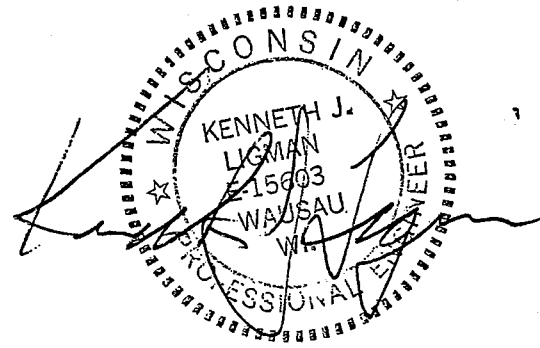
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SURVEYED BY: NJW	APPROVED BY:
DRAWN BY: TAW	DATE: 6/26/03

SHEET	PROJECT No.
XS20	2369

C.T.H. K & NORTH 20TH AVENUE SEWER & WATER EXTENSIONS WAUSAU WATER WORKS MARATHON COUNTY, WISCONSIN

PROJECT NO. 2001.151

JUNE 2003

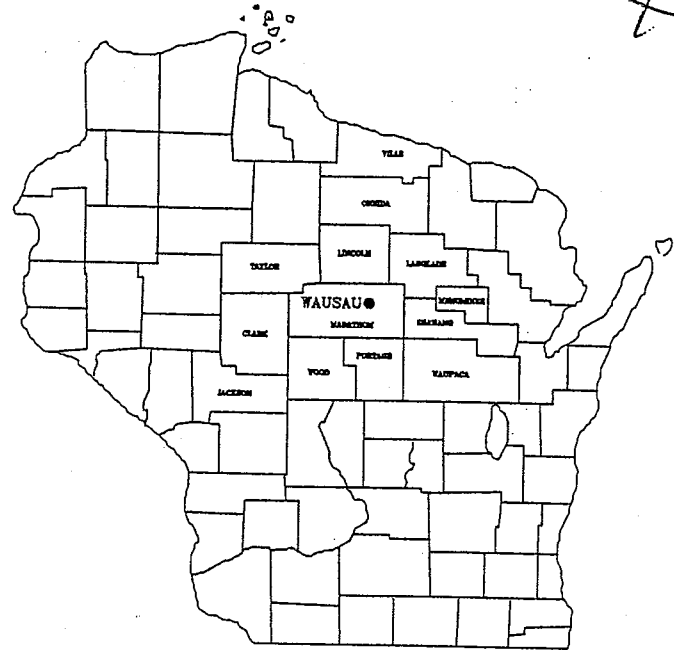


prepared for
WAUSAU WATER WORKS
CITY OF WAUSAU
407 GRANT STREET
WAUSAU, WI 54402

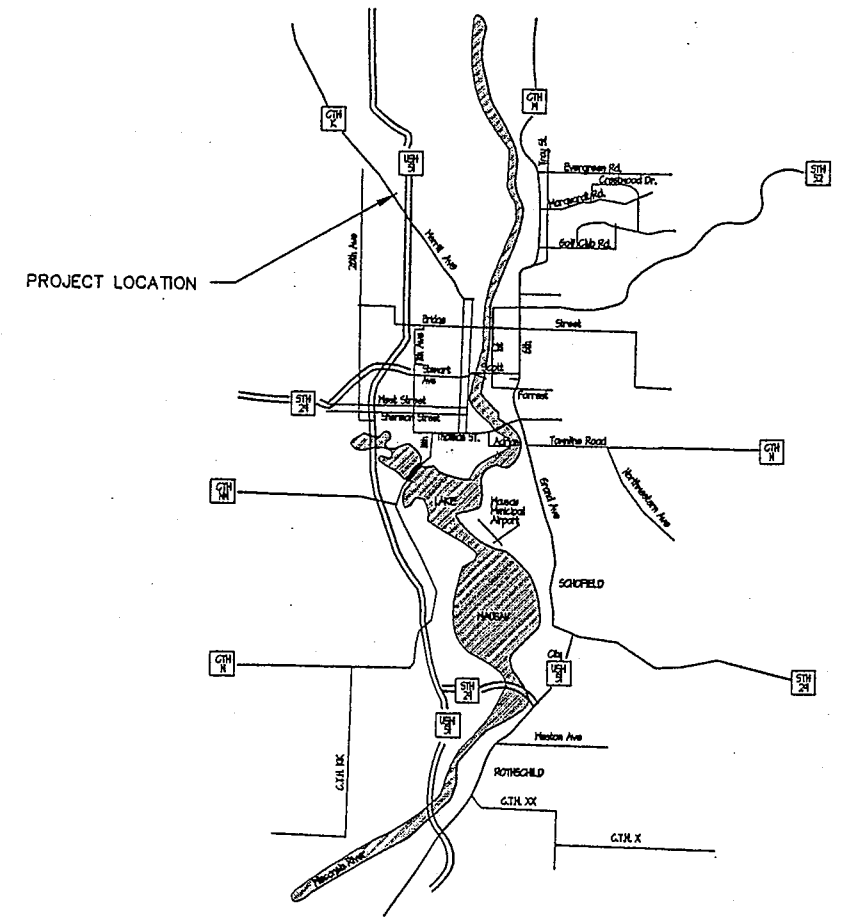
MAYOR: LINDA LAWRENCE

WATER UTILITY COMMISSION: MAYOR LINDA LAWRENCE
ROGER OTTO
ED GALE
KONRAD TUCHSCHERER
STEVE AGNOLI

CITY OF WAUSAU COMMON COUNCIL: JIM ROSENBERG
CRAIG KNAPP
JEAN RADTKE
KATHLEEN ANDERSON
MARTIN W. WELLES
GARY KLINGBEIL
GARY J. SIEWERT
ED GALE
KAREN KELLBACH
CHRISTINE VAN DE YACHT
YA YANG
AARON C. BAUMGARDT



LOCATION MAP
SCALE: NONE



VICINITY MAP
SCALE: NONE

ALIGNMENT:

SNAPSHOT:

XREFS:

LAYOUT: Layout1
FILE NAME: P:\BIA Projects\2001\2001-151\dwg\Plan-Mod-6-20-03\11511TL.dwg 06/24/03 04:41:16 PM CDT

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DRAWN BY: JGD
CHECKED BY: KJL
DATE: 6/24/03

PROJECT NO.: 2001.151
REV. DATES:

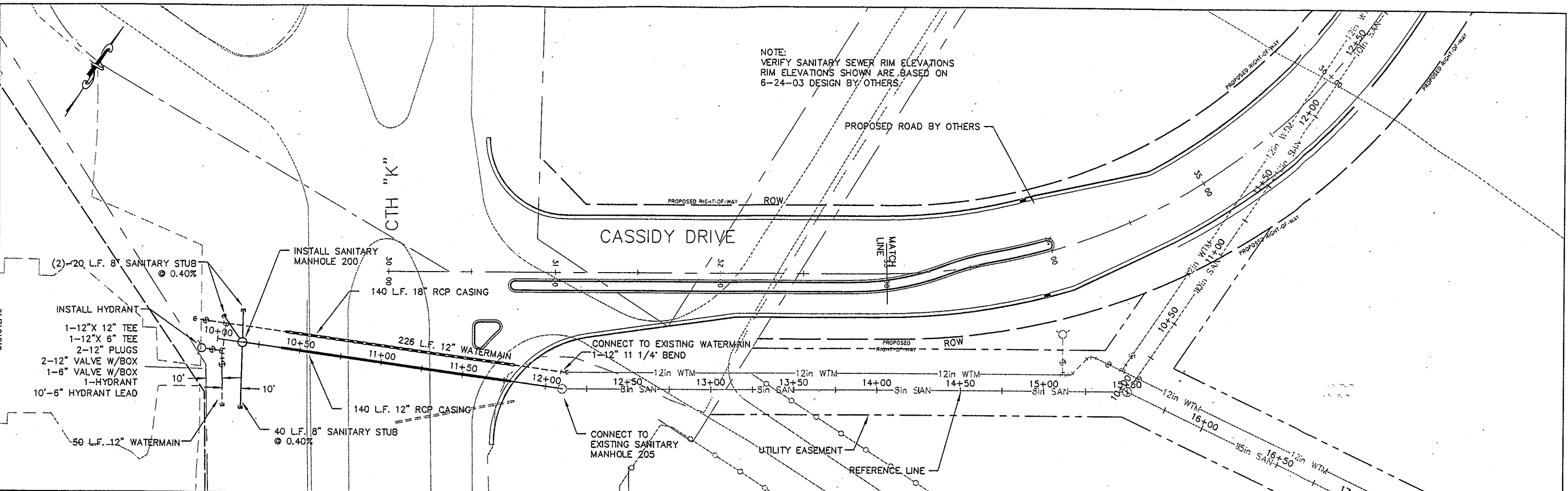
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PROJECT: HIGHWAY K SEWER & WATER EXTENSIONS
OWNER: WAUSAU WATER WORKS

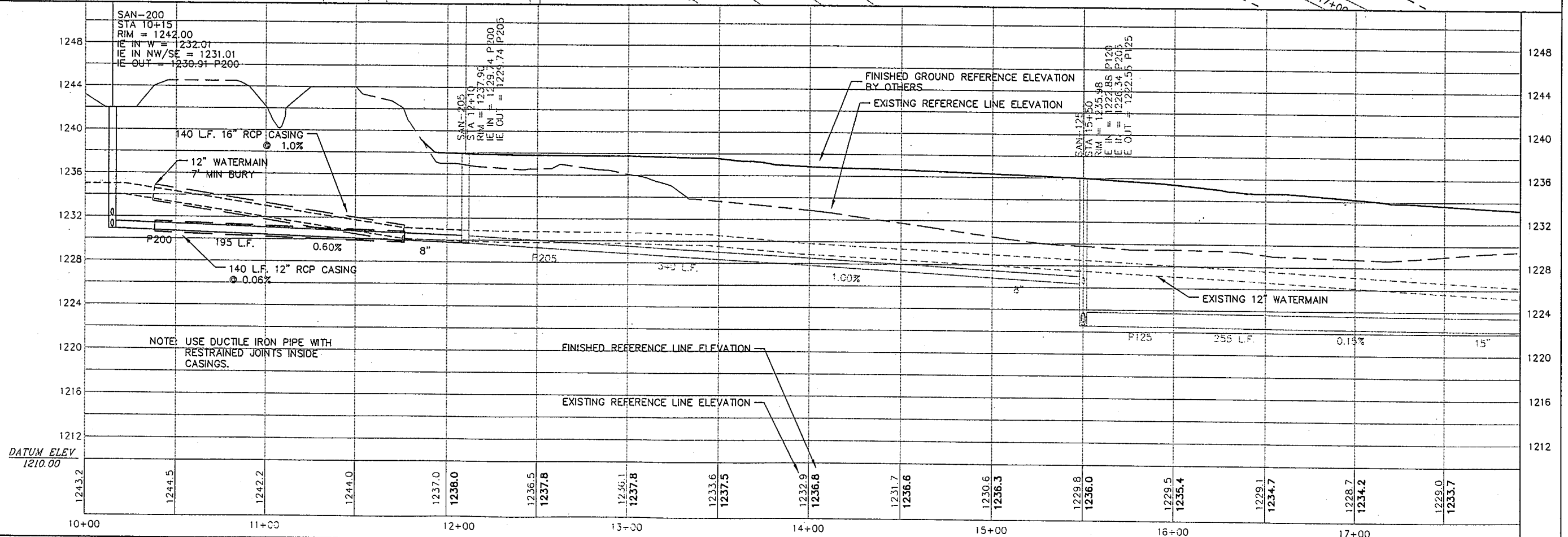
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TITLE SHEET

SHEET
1.1

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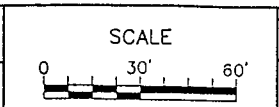
NOTE:
 VERIFY SANITARY SEWER RIM ELEVATIONS
 RIM ELEVATIONS SHOWN ARE BASED ON
 6-24-03 DESIGN BY OTHERS



NOTE: USE DUCTILE IRON PIPE WITH
 RESTRAINED JOINTS INSIDE
 CASINGS.

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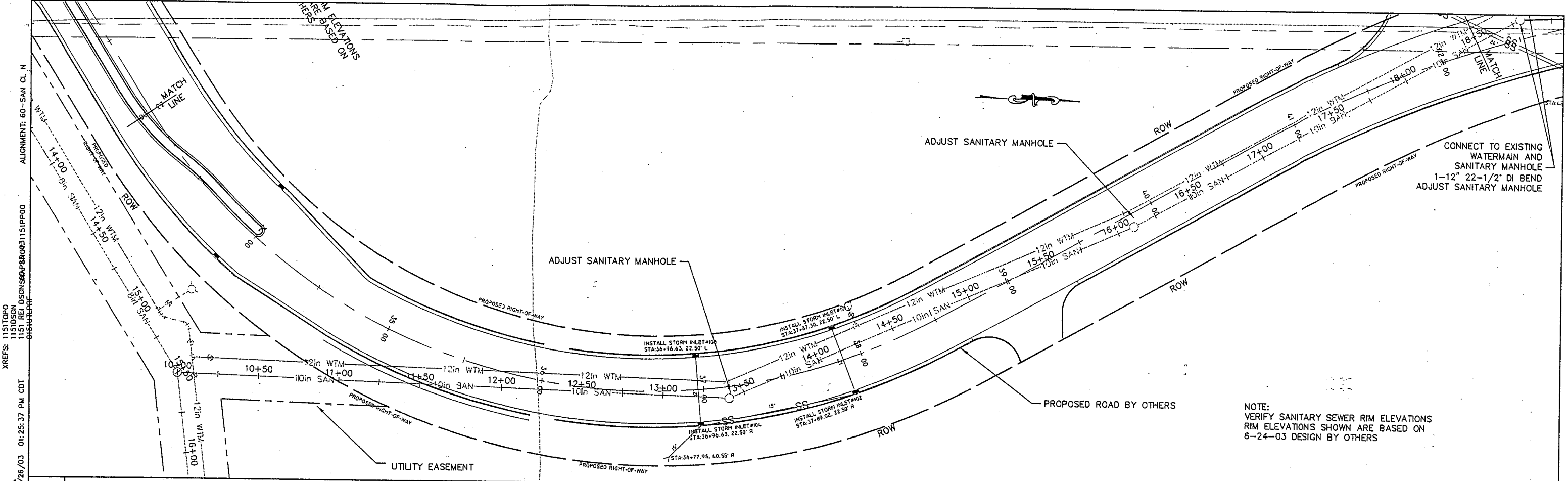
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 PROJECT NO.: 2001.151
 DATE: 2-19-02
 REV. DATES: 5-02-03
 6-24-03



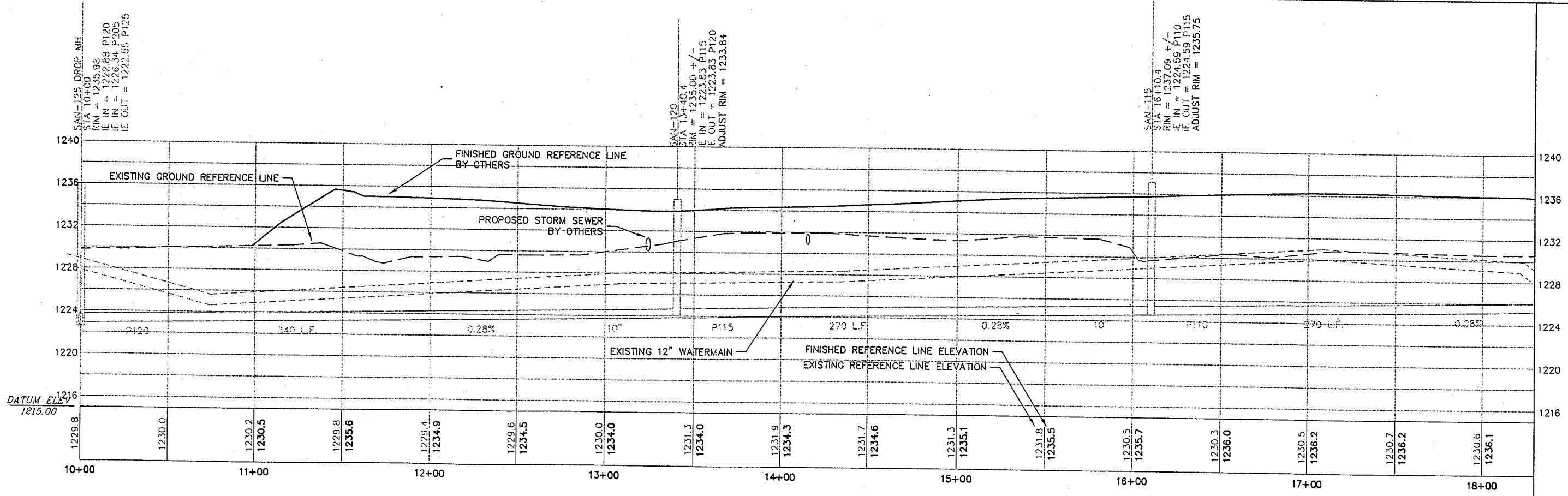
PROJECT: CTH K SEWER AND WATERMAIN EXTENSIONS
 OWNER: WAUSAU WATER WORKS

SHEET TITLE:
 CTH K PLAN & PROFILE

SHEET
 2.1



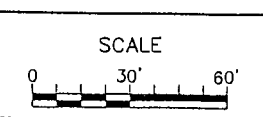
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VERIFY SANITARY SEWER RIM ELEVATIONS
RIM ELEVATIONS SHOWN ARE BASED ON
6-24-03 DESIGN BY OTHERS



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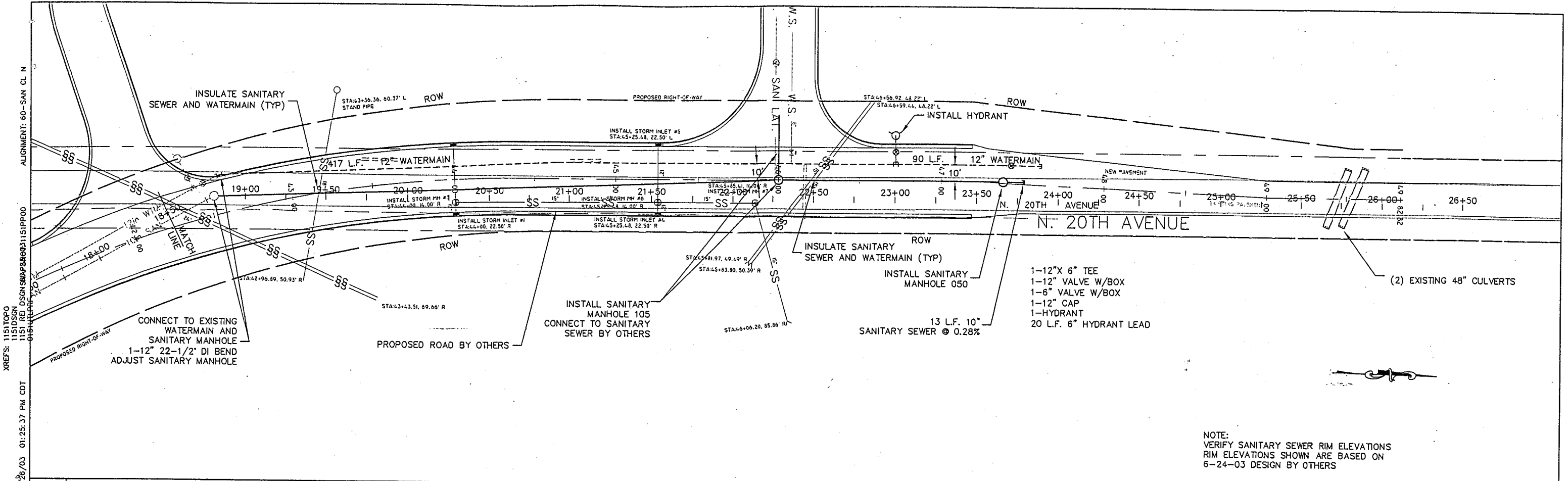
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 CHECKED BY: KUL
 PROJECT NO.: 2001.151
 DATE: 2-19-02
 REV. DATES: 5/02/03
 6-25-03



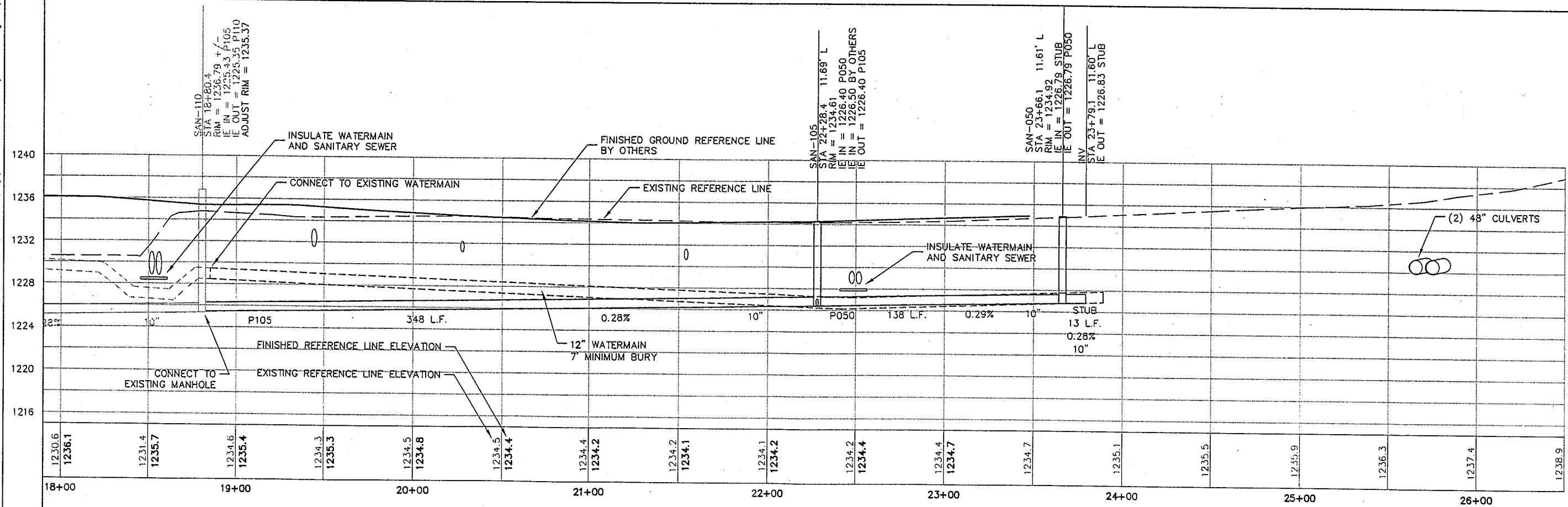
PROJECT: CTH K SEWER AND WATERMAIN EXTENSIONS
 OWNER: WAUSAU WATER WORKS

SHEET TITLE:
 NORTH 20TH AVENUE PLAN & PROFILE

SHEET
 2.2



NOTE:
 VERIFY SANITARY SEWER RIM ELEVATIONS
 RIM ELEVATIONS SHOWN ARE BASED ON
 6-24-03 DESIGN BY OTHERS

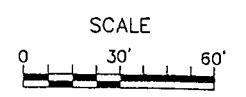


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 CHECKED BY: KJL
 DATE: 2-19-02

PROJECT NO.: 2001.151
 REV. DATES: 5/2/03
 6-24-03



PROJECT: CTH K SEWER AND WATERMAIN EXTENSIONS
 OWNER: WAUSAU WATER WORKS

SHEET TITLE:
 NORTH 20TH AVENUE PLAN & PROFILE

SHEET
 2.3

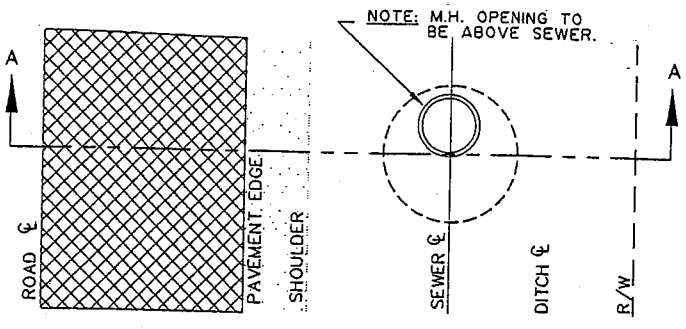
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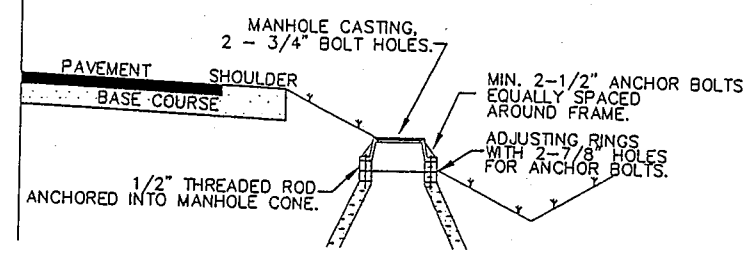
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PLAN VIEW

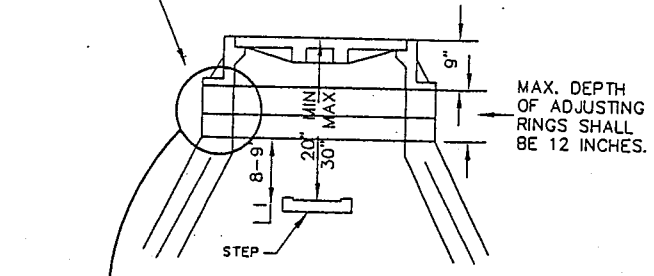


SECTION A-A

TYPICAL DETAIL FOR OFF PAVEMENT MANHOLE LOCATION AND ANCHORED MANHOLE FRAME

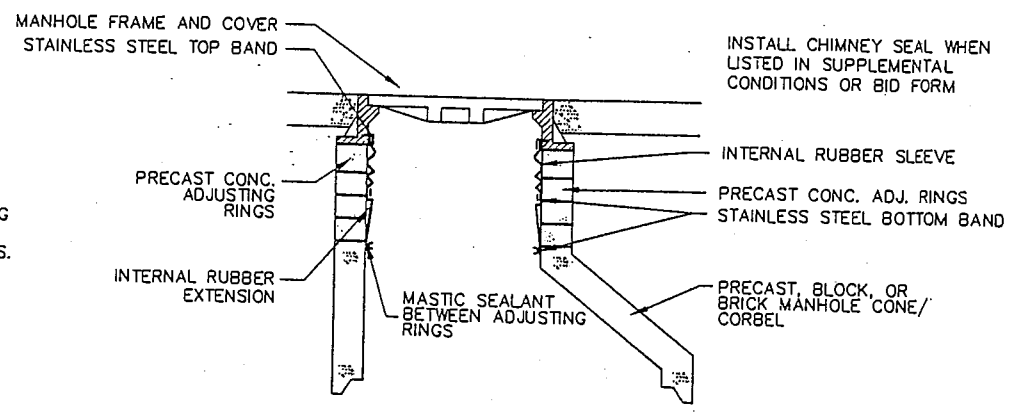
NOT TO SCALE

USE SUFFICIENT RINGS TO MEET THE DIMENSIONS FOR THE FIRST STEP AS SHOWN.



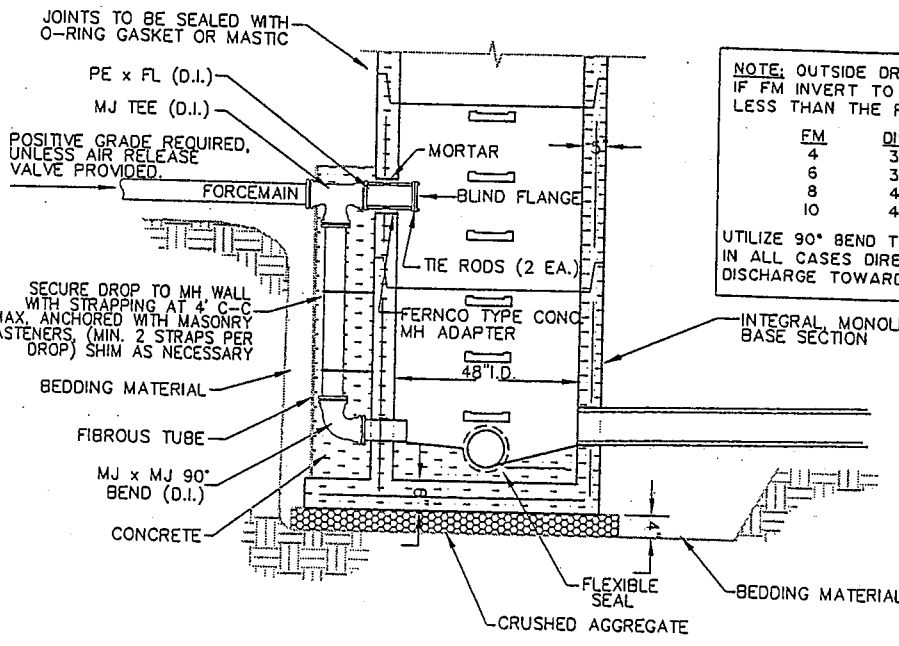
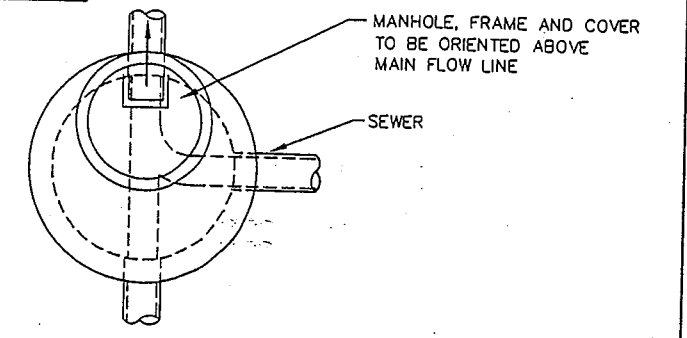
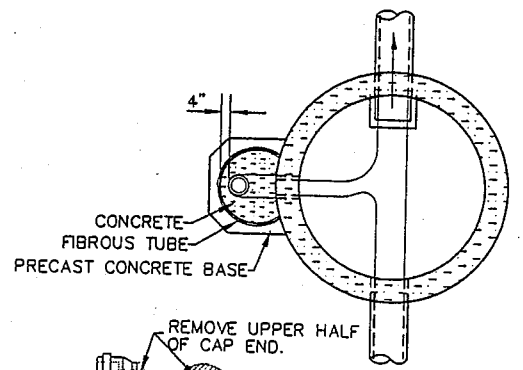
METHOD OF SEALING MANHOLE ADJUSTING RINGS

NOT TO SCALE



INTERNAL MANHOLE FRAME - CHIMNEY SEAL AND EXTENSION(S)

NOT TO SCALE



SECTION C-B

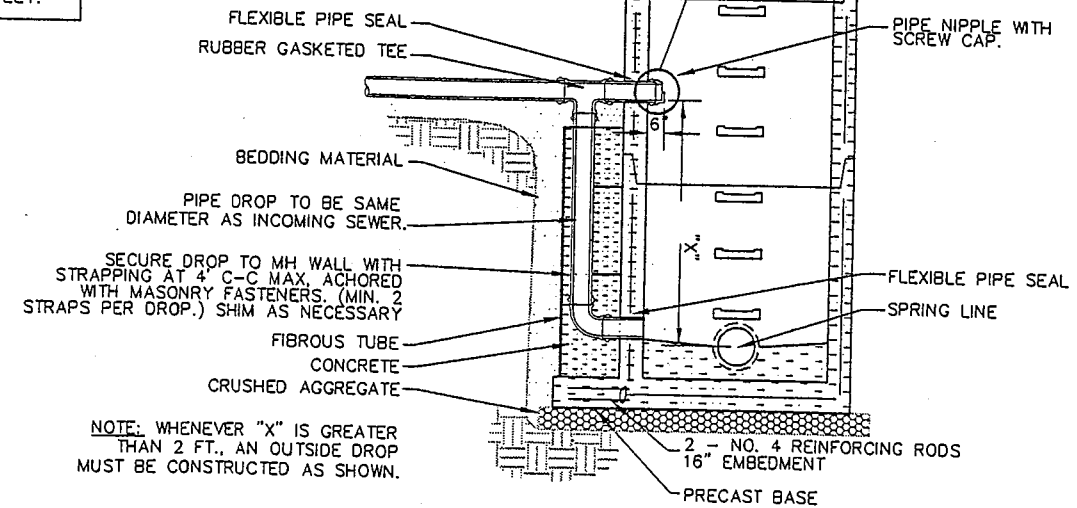
TYPICAL PRECAST MANHOLE WITH VENT AND/OR FORCEMAIN DISCHARGE

NOT TO SCALE

NOTE: OUTSIDE DROP NOT REQUIRED IF FM INVERT TO MH INVERT IS LESS THAN THE FOLLOWING:

FM	DIST.
4	30"
6	36"
8	42"
10	48"

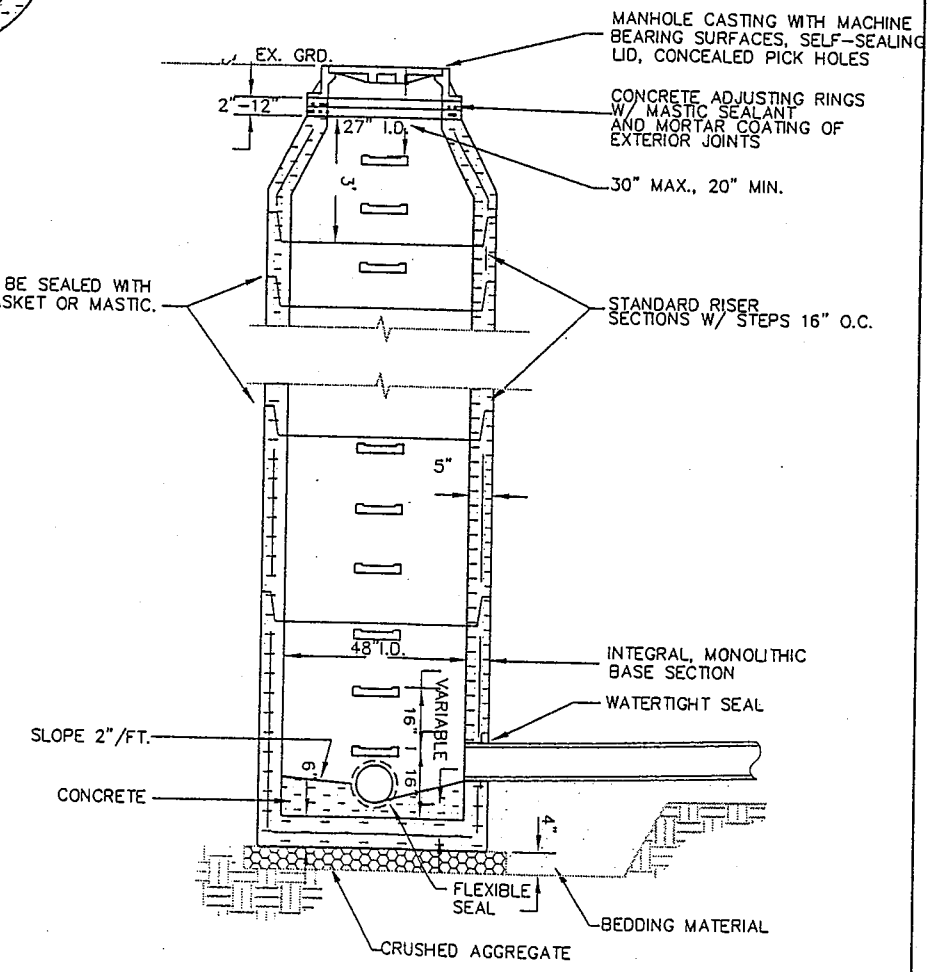
UTILIZE 90° BEND TO DIRECT FM DOWN. IN ALL CASES DIRECT FM DISCHARGE TOWARDS MH OUTLET.



OUTSIDE DROP PRECAST MANHOLE

NOT TO SCALE

ALL JOINTS TO BE SEALED WITH O-RING GASKET OR MASTIC.



TYPICAL PRECAST MANHOLE

NOT TO SCALE

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DRAWN BY: JGD	PROJECT NO.: 2001-151
CHECKED BY: SRT	SCALE: NONE
DATE: 6/24/03	REV. DATES:

PROJECT: C.T.H. K & NORTH 20TH AVE. SEWER & WATER EXTENSIONS
 OWNER: WAUSAU WATER WORKS

SHEET TITLE: SANITARY MANHOLE DETAILS

TABLE OF MINIMUM
LOW PRESSURE AIR TEST TIME
(MANHOLE TO MANHOLE)

Specification time (Min:Sec) required for loss of 1.0 psig air pressure for size and length of pipe indicated.											
Pipe Diameter (in.)	Length for Minimum Time (min:sec)	Time for Minimum Time (ft)	Longer Length (sec)	Specification time (Min:Sec) for length shown							
				100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft
4	3:46	597	.390L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	398	.854L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	298	1.520L	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24
10	9:26	239	2.374L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	199	3.418L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	159	5.342L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	133	7.692L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41
21	19:50	114	10.470L	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31
24	22:40	99	13.674L	22:47	34:11	45:54	56:58	68:22	79:46	91:10	102:23
27	25:30	88	17.306L	28:51	43:16	57:41	72:07	86:32	100:57	115:22	129:48
30	28:20	80	21.366L	35:47	53:25	71:13	89:02	106:50	124:38	142:26	160:15
33	31:10	72	25.852L	43:05	64:38	86:10	107:43	129:16	150:43	172:21	193:53
36	34:00	66	30.768L	51:17	76:55	102:34	128:12	153:50	179:29	205:07	230:46

SEWER LOW PRESSURE AIR TEST TIME

LEAKAGE SHALL NOT EXCEED THE NUMBER OF GALLONS PER HOUR AS DETERMINED BY THE FOLLOWING EQUATION:

$$L = \frac{SD \times (P)^{1/2}}{133,200}$$

- L= ALLOWABLE LEAKAGE IN GALLONS PER HOUR
- S= LENGTH OF PIPELINE TESTED IN FEET
- D= NOMINAL DIAMETER OF PIPE IN INCHES
- P= TEST PRESSURE IN PSIG

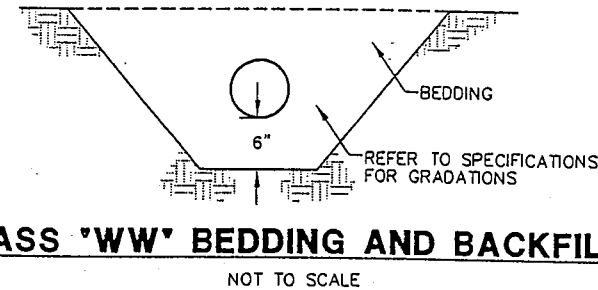
BASED ON 11.65 GPD PER MILE OF PIPE PER INCH OF NOMINAL DIAMETER AT 150 PSI.

THE ALLOWABLE LEAKAGE PER 1,000 FEET OF PIPELINE IS AS FOLLOWS:

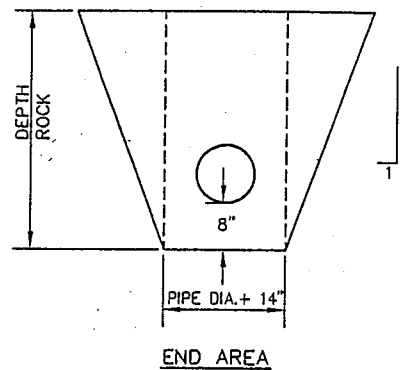
PIPE SIZE (INCHES)	ALLOWABLE LEAKAGE (GPH)
4	0.37
6	0.55
8	0.74
10	0.92
12	1.10
14	1.29
16	1.66

WATERMAIN LEAKAGE TEST

CLASS 'WW' BEDDING AND BACKFILL



ROCK EXCAVATION VOLUME = (MEASURED LENGTH) X (CALCULATED END AREA)



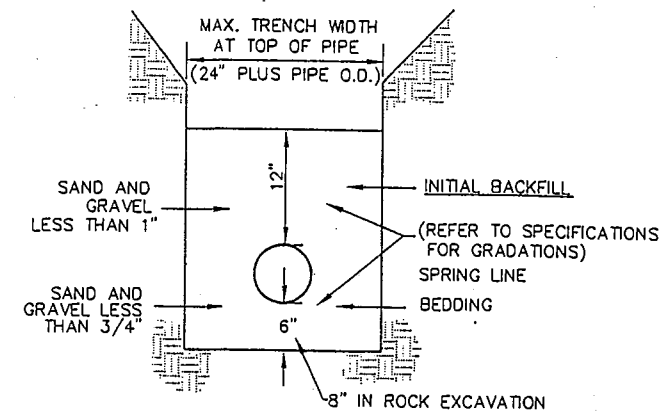
$$\text{END AREA (SQUARE FEET)} = \frac{[\text{PIPE DIAMETER (IN.) PLUS 14 (IN.)}] \times [\text{DEPTH (FT.)} + 2 (1/2 \times \text{DEPTH (FT.)} \times \text{DEPTH (FT.)}]}{12 \text{ INCHES} \times 5}$$

$$\text{END AREA (CUBIC YARDS)} = \frac{\text{END AREA (Sq. ft.)} \times \text{LENGTH (ft.)}{27 \text{ C.F./C.Y.}}$$

ROCK EXCAVATION VOLUME CALCULATION

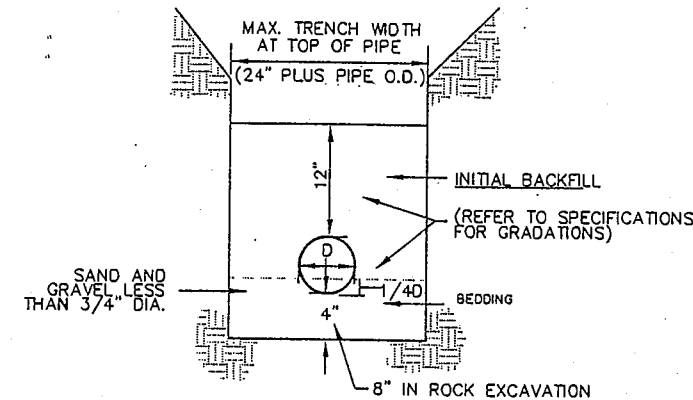
NOT TO SCALE

CLASS 'B' BEDDING AND INITIAL BACKFILL



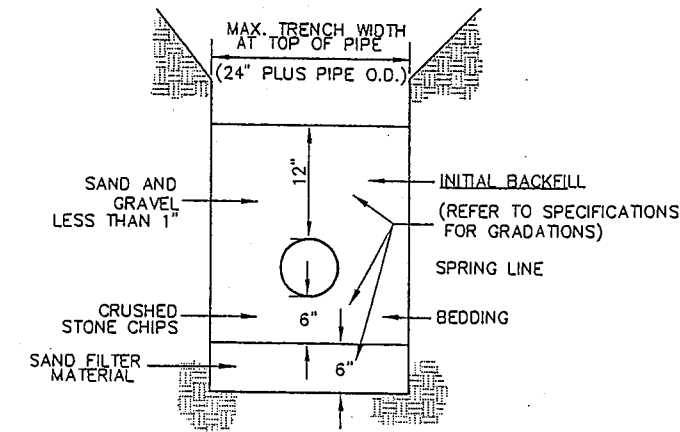
NOT TO SCALE

CLASS 'C' BEDDING AND INITIAL BACKFILL



NOT TO SCALE

CLASS 'MB' (MODIFIED) BEDDING AND INITIAL BACKFILL



NOT TO SCALE

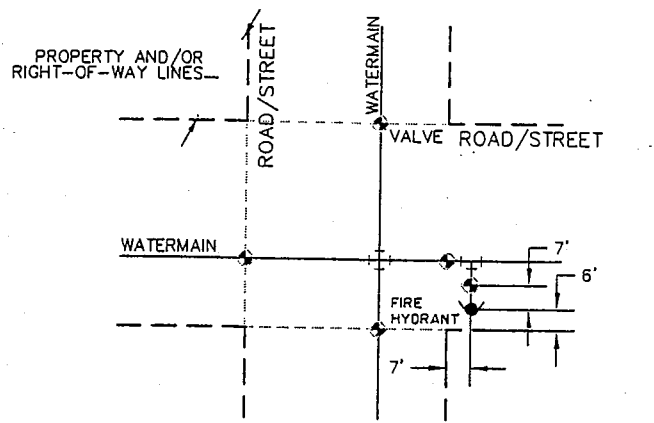
ALIGNMENT:

SNAPSHOT:

VPREFS 22 x 34 Border

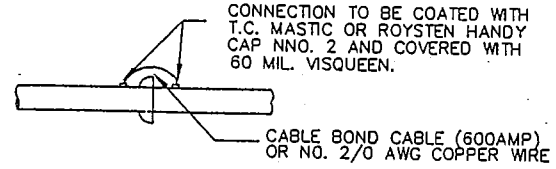
LAYOUT: 3.2 FILE NAME: P:\BHA Projects\2001\2001-151\dwg\Plans-Nord-6-20-03\151D11.dwg 06/24/03 04:47:13 PM CDT

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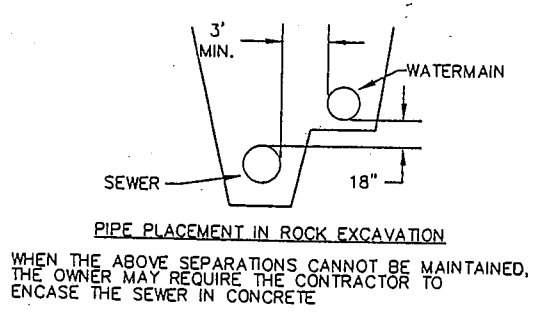
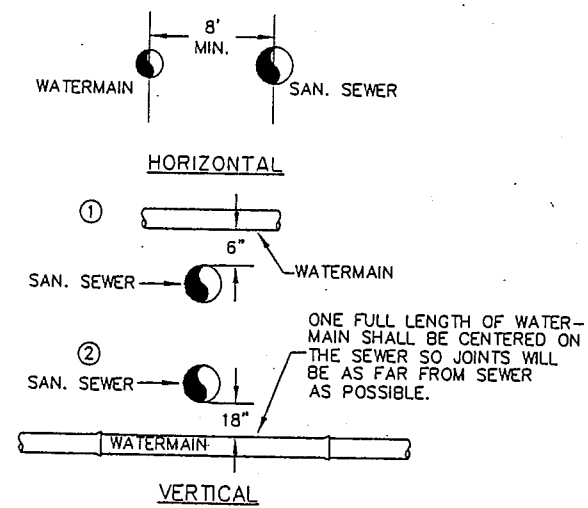


TYPICAL HYDRANT/VALVE AND WATERMAIN VALVE LOCATION DETAIL
NOT TO SCALE

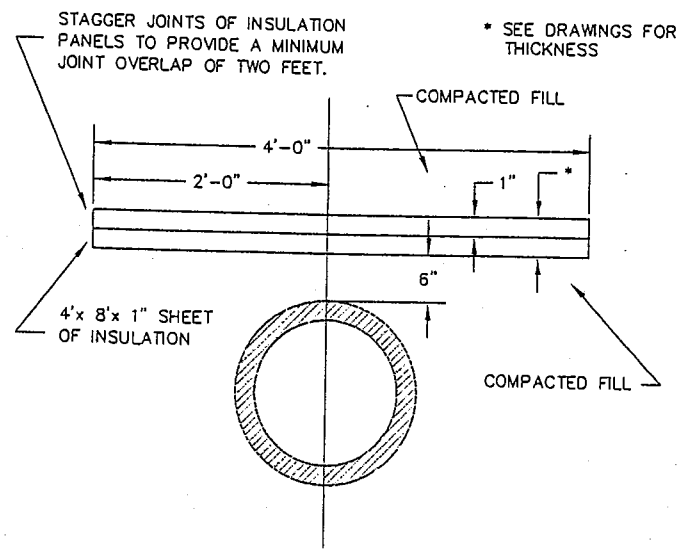
NOTE: WHERE PERMITTED BY THE OWNER, GASKETS WITH CONTINUITY CLIPS MAY BE USED IN LIEU OF THE CABLE BOND.



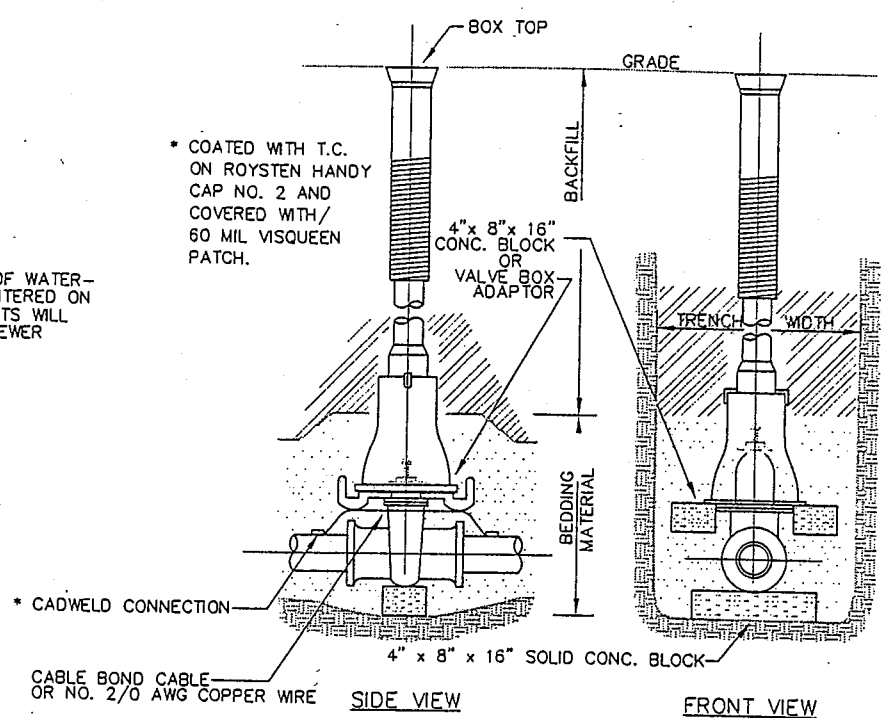
D.I. ELECTRICAL CONTINUITY CONNECTION PIPE/PIPE JOINT OR PIPE FITTING JOINT
NOT TO SCALE



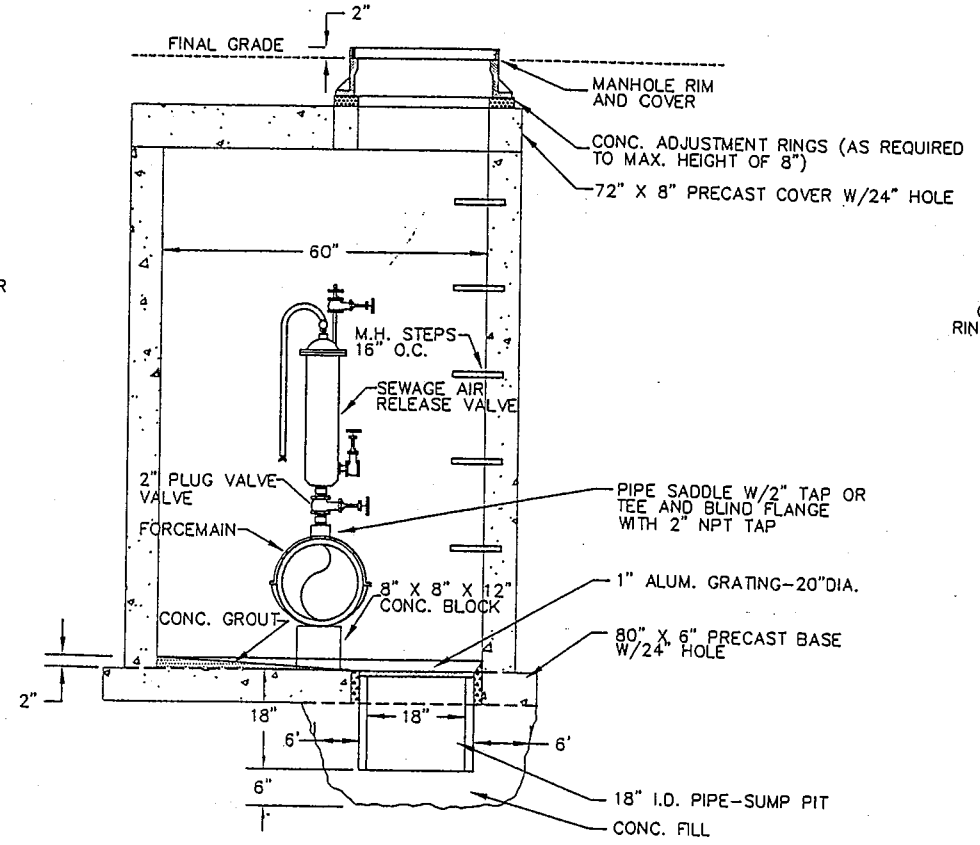
SEWER/WATERMAIN MIN. SEPERATION DISTANCE
NOT TO SCALE



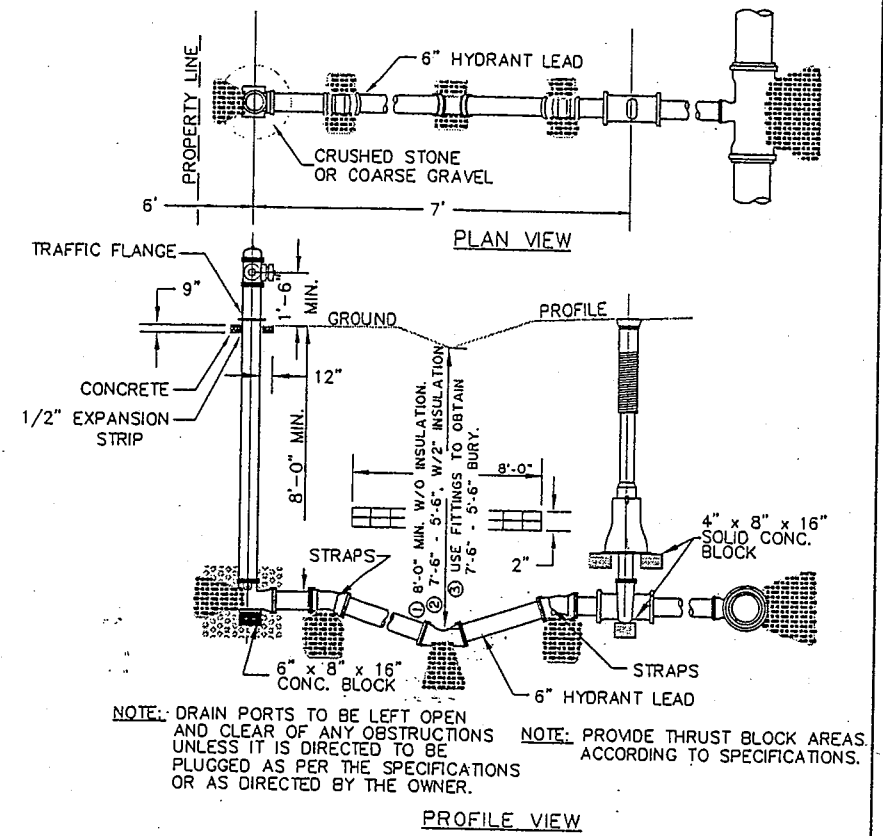
PIPELINE INSULATION DETAIL
NOT TO SCALE



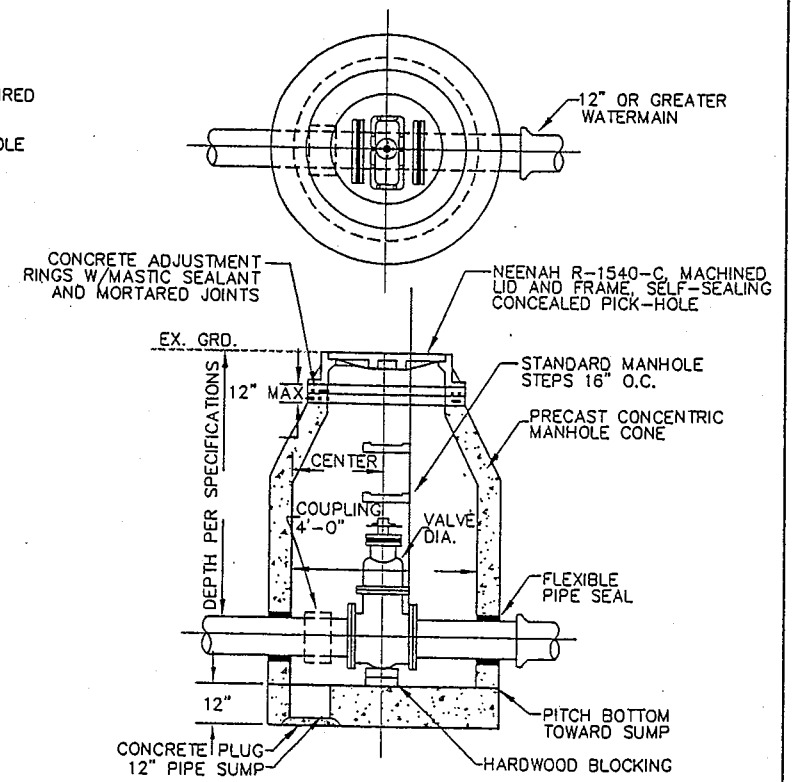
GATE VALVE BOX SETTING
NOT TO SCALE



TYPICAL AIR RELEASE MANHOLE DETAIL
NOT TO SCALE



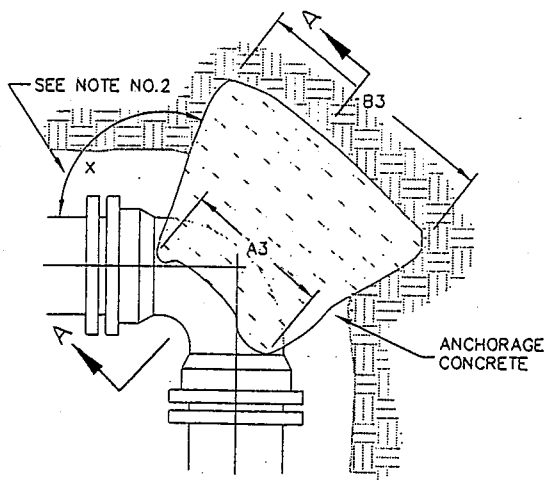
TYPICAL HYDRANT INSTALLATION
NOT TO SCALE



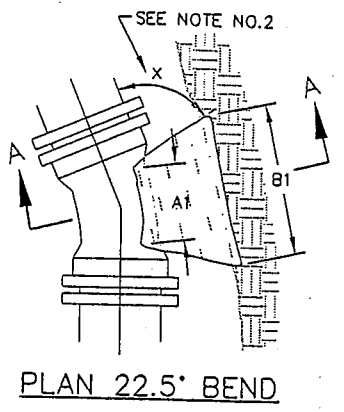
VALVE MANHOLE FOR VALVES 14' DIAMETER OR GREATER
NOT TO SCALE

XREFS: 22, 24, 34, Border
 LAYOUT: 3.3
 FILE NAME: P:\BHA Projects\2001\2001-151\dwg\Plans-Hor-6-20-03\151D1L.dwg
 06/24/03 04:47:13 PM CDT
 Copyright 2003 Becher-Hoppe Assoc. Inc.

XREFS: 22 x 34 Border
 LAYOUT: 3.4
 FILE NAME: P:\BHA Projects\2001-151\dwg\Plans-Not-6-20-03\115105.dwg 06/24/03 04:47:13 PM CDT
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PLAN 90° BEND

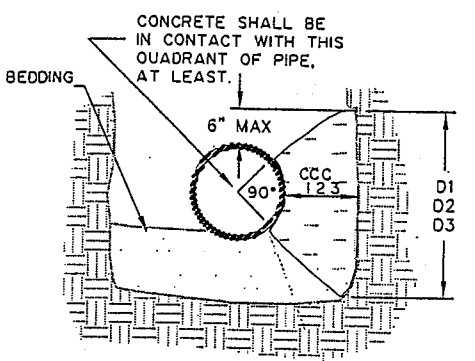


PLAN 22.5° BEND

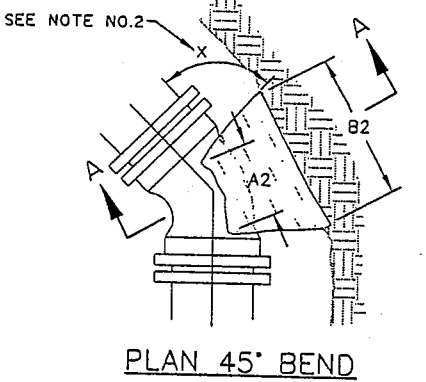
BUTTRUSS DIMENSIONS						
DIA.	22.5° BENDS		45° BENDS		90° BENDS	
	B ₁	D ₁	B ₂	D ₂	B ₃	D ₃
6"	1'-0"	1'-0"	1'-0"	1'-0"	1'-4"	1'-2"
8"	1'-0"	1'-0"	1'-4"	1'-2"	1'-10"	1'-6"
10"	1'-2"	1'-2"	1'-7"	1'-6"	2'-3"	1'-10"
12"	1'-4"	1'-4"	1'-10"	1'-10"	2'-8"	2'-3"
16"	1'-10"	1'-8"	2'-6"	2'-4"	3'-10"	2'-10"
20"	2'-4"	2'-0"	3'-3"	2'-10"	5'-0"	3'-4"
24"	2'-10"	2'-4"	4'-0"	3'-3"	6'-4"	3'-10"
30"	3'-6"	3'-0"	5'-4"	3'-10"	8'-0"	4'-8"

NOTES:

1. DIMENSIONS IN TABLE ARE BASED ON A WATER PRESSURE OF 150 PSI AND ON EARTH RESISTANCE OF TWO TONS PER SQ. FT.
2. DIMENSION C₁, C₂, C₃ SHOULD BE LARGE ENOUGH TO MAKE ANGLE "X" EQUAL TO OR LARGER THAN 45°.
3. DIMENSION A₁, A₂, A₃ SHOULD BE AS LARGE AS POSSIBLE WITHOUT INTERFERING WITH M.J. BOLTS.
4. SHAPE OF BACK OF BUTTRUSS MAY VARY AS LONG AS POUR IS AGAINST FIRM UNDISTURBED SOIL.



SECTION A-A

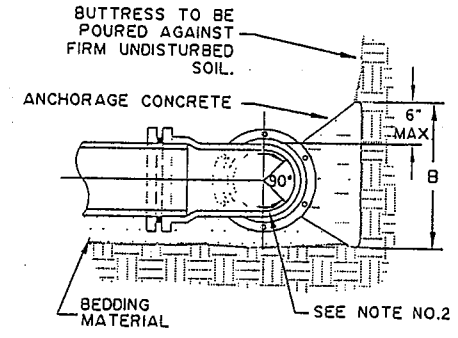


PLAN 45° BEND

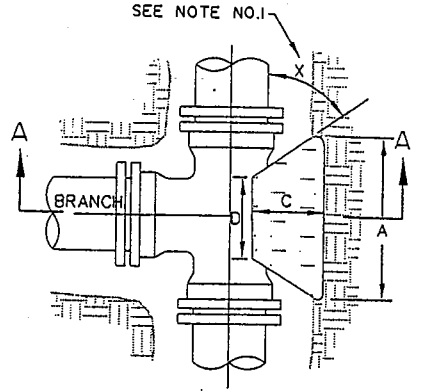
NOTES:

1. DIMENSION "C" SHOULD BE LARGE ENOUGH TO MAKE ANGLE "X" EQUAL TO OR LARGER THAN 45°.
2. CONCRETE SHOULD BEAR ON THIS QUADRANT AS A MINIMUM.
3. DIMENSION "D" SHOULD BE AS LARGE AS POSSIBLE BUT CONCRETE SHOULD NOT INTERFERE WITH MECHANICAL JOINTS.
4. BUTTRUSS DIMENSIONS ARE BASED ON A SOIL RESISTANCE OF TWO TONS PER SQ. FT. AND A WATER PRESSURE OF 150 PSI.

BUTTRUSS DIMENSIONS				
B.D.	A	B	C	D
6"	1'-3"	1'-0"		
8"	1'-6"	1'-4"		
10"	1'-10"	1'-8"	SEE NOTE NO.1	SEE NOTE NO.3
12"	2'-3"	2'-0"		
16"	3'-2"	2'-6"		
20"	4'-0"	3'-0"		
24"	5'-3"	3'-4"		
30"	6'-3"	4'-3"		



SECTION A-A



PLAN

REACTION BACKING FOR TEES

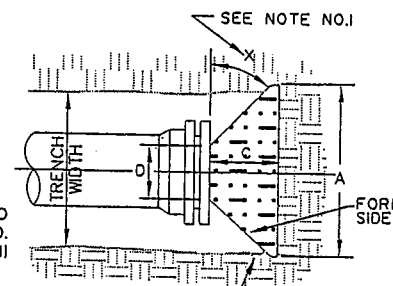
NOT TO SCALE

REACTION BACKING FOR BENDS

NOT TO SCALE

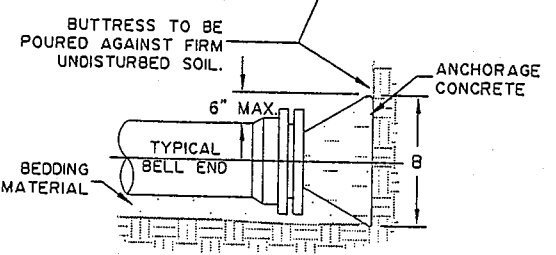
NOTES:

1. DIMENSION "C" SHOULD BE LARGE ENOUGH TO MAKE ANGLE "X" EQUAL TO OR LARGER THAN 45°.
2. DIMENSION "D" EQUALS APPROX. I.D. OF PIPE LESS 2". AN EFFORT SHOULD BE MADE TO PREVENT THE CONCRETE FROM COVERING THE M.J. BOLTS.
3. WHERE BUTTRASSES ARE NOT POSSIBLE BECAUSE OF POOR SOIL CONDITIONS OR LACK OF ROOM, STRAPPING SHALL BE PERMITTED.
4. BUTTRUSS DIMENSIONS ARE BASED ON A SOIL RESISTANCE OF TWO TONS PER SQ. FT. AND A WATER PRESSURE OF 150 PSI.



PLAN

CAP ON SPIGOT END PLUG ON BELL END. (PLUG SHOWN)

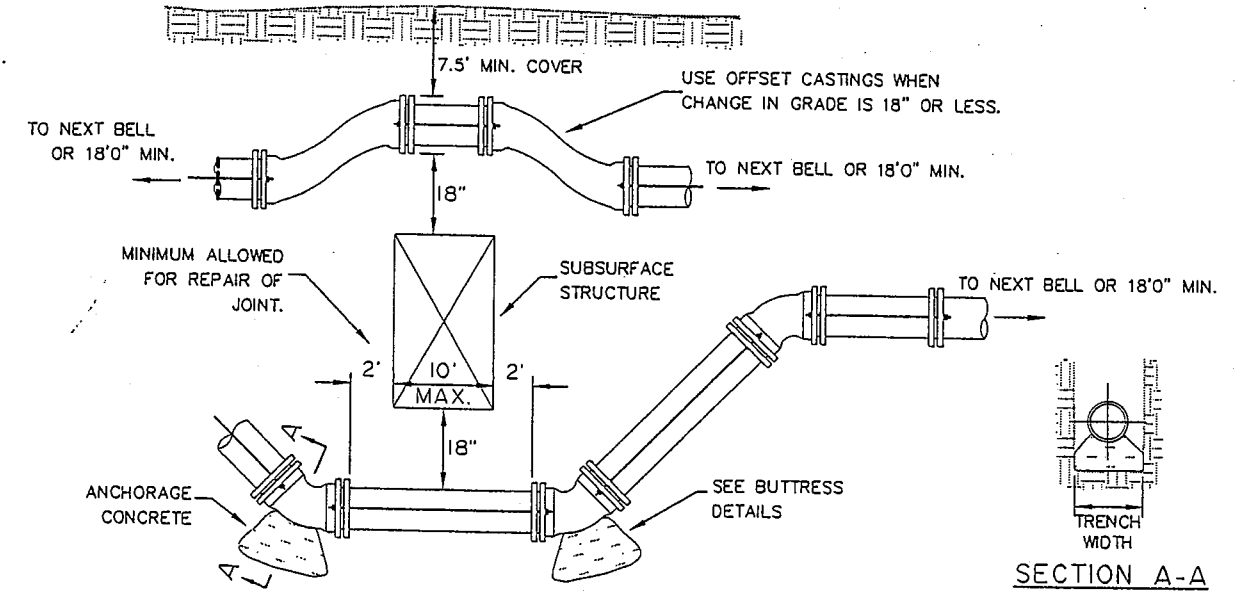


ELEVATION

BUTTRUSS DIMENSIONS				
DIA.	A	B	C	D
6"	1'-6"	1'-2"		
8"	2'-0"	1'-4"		
10"	2'-2"	1'-7"	SEE NOTE NO.1	SEE NOTE NO.2
12"	2'-5"	1'-10"		
16"	3'-4"	2'-4"		
20"	4'-3"	2'-10"		
24"	5'-2"	3'-4"		
30"	6'-9"	4'-0"		

REACTION BACKING FOR DEAD ENDS

NOT TO SCALE



SECTION A-A

RODS AND WASHERS TO BE A.S.T.M. A-575 MERCHANT QUALITY .17-.24 CARBON. NUTS TO BE AM. STD. HEAVY HOT PRESSED. TIE RODS, BOLTS, NUTS, BANDS, AND WASHERS TO BE FURNISHED AND APPLIED BY CONTRACTOR. ALL STEEL MATERIAL TO BE THOROUGHLY COATED WITH BITUMASTIC EQUAL TO KOPPERS NO. 505.

STRAPPING MATERIAL						
PIPE SIZE	D	RODS		STRAP	BOLT DIA.	WASHER
		NO.	DIA.			
6	7.10	2	1	1/2x2	3/4	1/2x3x5
8	9.30	2	1	1/2x2	3/4	1/2x3x5
10	11.40	2	1 1/4	1/2x2 1/2	1	1/2x3x5
12	13.50	2	1 1/4	1/2x2 1/2	1	1/2x3x5
16	17.80	2	1 1/4	1/2x3	1	1/2x3x5

STRAPPING WATERMAIN OFFSETS 6" THRU 16"

NOT TO SCALE

BHA BECHER-HOPPE ASSOCIATES, INC.
 ENGINEERS ARCHITECTS SCIENTISTS SURVEYORS
 330 Fourth Street • P.O. Box 8000 • Wausau, WI • 54402-8000
 Tel 715-845-8000 • Fax 715-845-8008 • www.bhassoc.com

DRAWN BY: JGD CHECKED BY: SRT	PROJECT NO.: 2001-151	SCALE NONE
DATE: 6/24/03	REV. DATES:	

PROJECT: C.T.H. K & NORTH 20TH AVE. SEWER & WATER EXTENSIONS
 OWNER: WAUSAU WATER WORKS

SHEET TITLE:
REACTION BACKING & STRAPPING DETAILS
 SHEET 3.4

XREFS:
22 x 34 Border

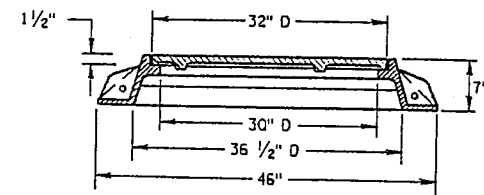
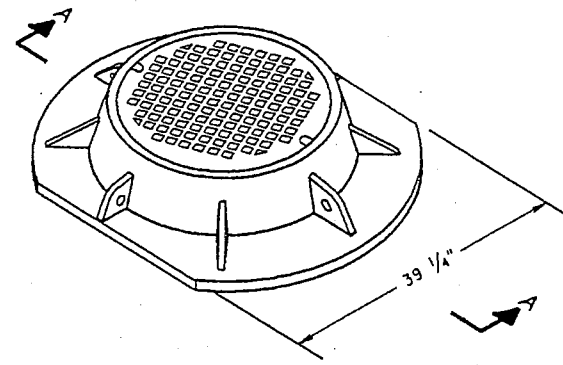
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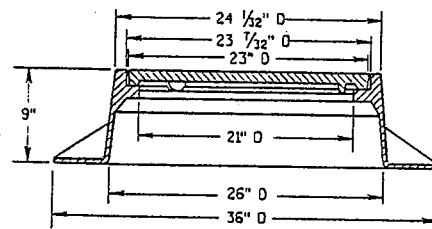
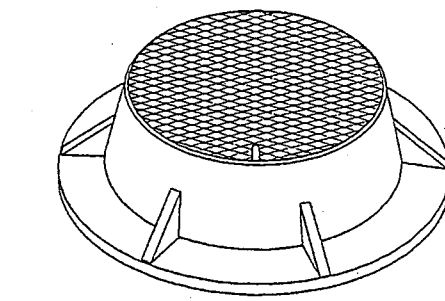
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SNAPSHOT:

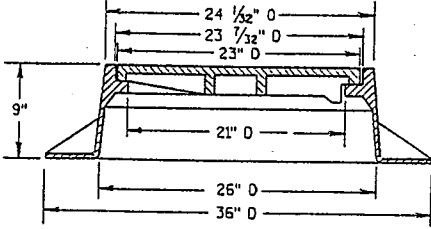
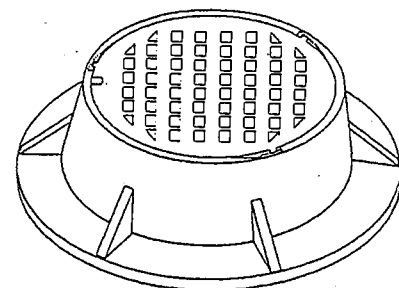
S.D.D. 8 A 5-15d



**SECTION A-A
TYPE "K"**
(APPROXIMATE WEIGHT 415 LBS.)
FRAME.....210 LBS.
LID.....205 LBS.



TYPE "J"
(APPROXIMATE WEIGHT 250 LBS.)
FRAME.....135 LBS.
LID.....115 LBS.



TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(APPROXIMATE WEIGHT 245 LBS.)
FRAME.....145 LBS.
LID.....100 LBS.
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

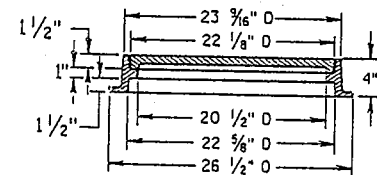
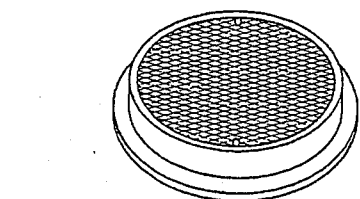
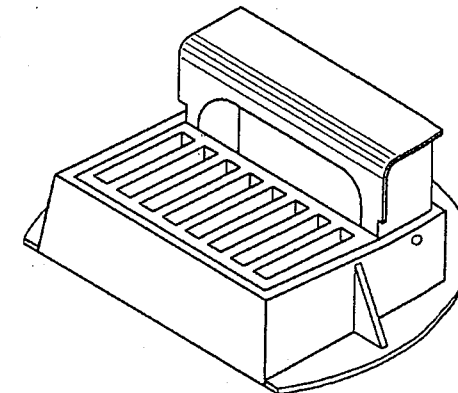
GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

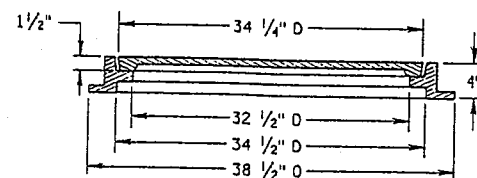
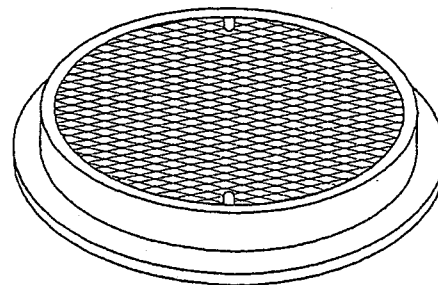
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

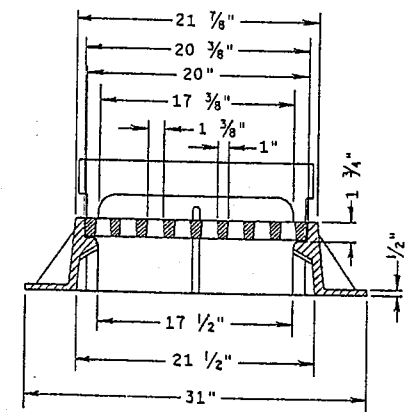
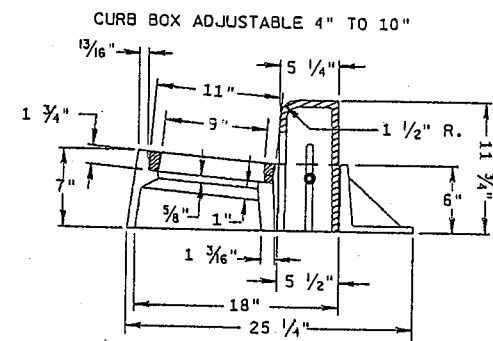
THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.



TYPE "L"
(APPROXIMATE WEIGHT 145 LBS.)
FRAME.....75"
LID.....70"



TYPE "M"
(APPROXIMATE WEIGHT 385 LBS.)
FRAME.....125"
LID.....260"



INLET COVER TYPE "Z"
(APPROXIMATE WEIGHT 340 LBS.)
FRAME.....198 LBS.
GRATE.....50 LBS.
CURB BOX.....92 LBS.

**INLET COVER, TYPE Z
MANHOLE COVERS, TYPE
K, J, J-S, L & M**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE _____ CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

S.D.D. 8 A 5-15d

GENERAL NOTES:

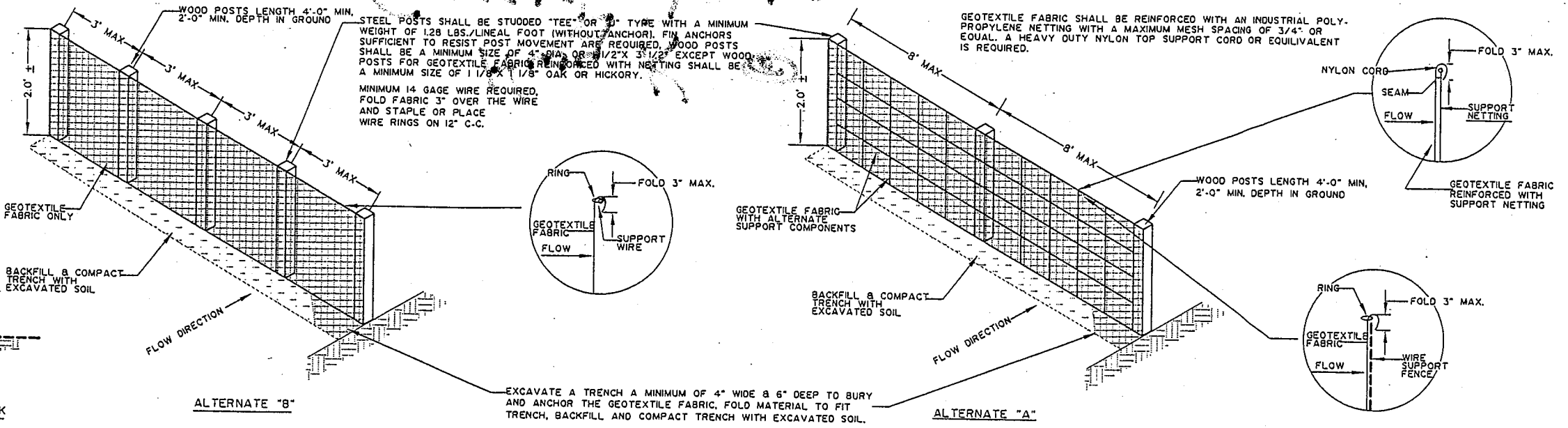
DETAIL OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

WHEN POSSIBLE THE SILT FENCE SHOULD BE CONSTRUCTED IN AN ARC OR HORSESHOE SHAPE WITH THE ENDS POINTING UPSLOPE TO MAXIMIZE BOTH STRENGTH AND EFFECTIVENESS.

ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOIL CONDITIONS.

ALTERNATES A & B ARE EQUAL AND EITHER MAY BE USED.

ATTACH THE FABRIC TO THE POSTS WITH WIRE STAPLES OR WOODEN LATH AND NAILS.



SILT FENCE DETAIL
NOT TO SCALE

GENERAL NOTES:

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE PROVISIONS.

VARIATIONS IN THE DIMENSIONS OR MATERIALS SHOWN HEREON SHALL BE PERMITTED IF THEY PROVIDE EQUIVALENT PROTECTION AND MATERIAL STRENGTH AND IF PRIOR APPROVAL OF THE ENGINEER IS OBTAINED.

LAP JOINTS SHALL NOT BE PLACED IN THE BOTTOM OF V-SHAPED DITCHES.

JUNCTION SLOTS ON ADJACENT STRIPS OF MATTING SHALL BE STAGGERED A MINIMUM OF 4 FEET (1.219 M) APART.

EDGES OF THE EROSION MAT SHALL BE IMPRESSED IN THE SOIL.

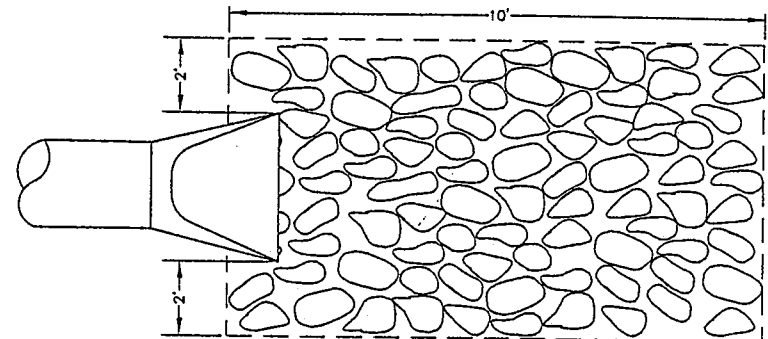
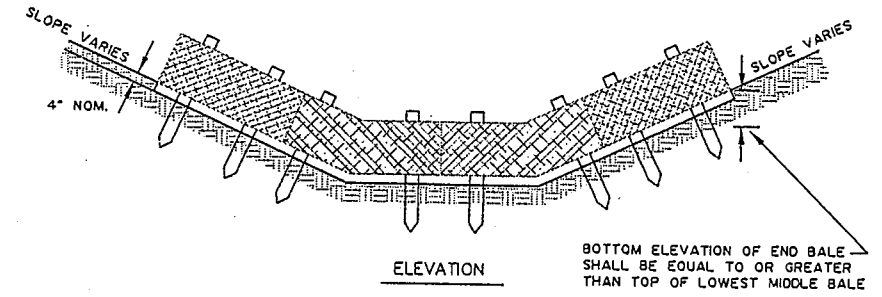
EROSION MAT SHALL BE MEASURED AND PAID FOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

EROSION MAT OVER SOD:

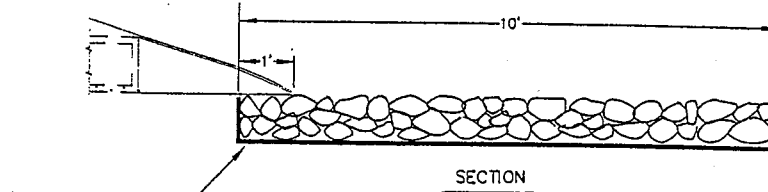
- ONLY JUTE FABRIC WILL BE OMITTED BY THE ENGINEER.
- WOOD STAKES FOR THE SOD MAY BE OMITTED BY THE ENGINEER IF THE EXISTING SLOPE AND SOIL CONDITIONS SO WARRANT.
- THE WIDTH OF EROSION MAT SHALL ALWAYS EQUAL THE SOD WIDTH.
- SOD STRIPS MAY BE PLACED EITHER LONGITUDINALLY OR TRANSVERSELY TO THE FLOW LINE OF THE DITCH.

EROSION MAT OVER SEEDING:

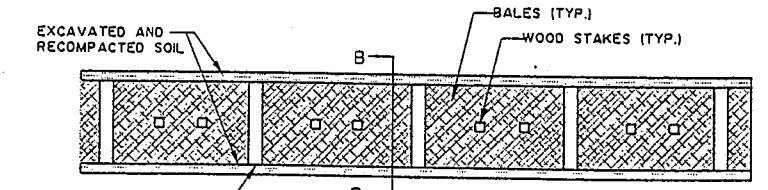
JUNCTION OR ANCHOR SLOTS SHALL BE AT MINIMUM INTERVALS OF 100 FEET (30.48M) ON GRADES UP TO AND INCLUDING 3 PERCENT AND 50 FEET (15.24M) ON GRADES EXCEEDING 3 PERCENT.



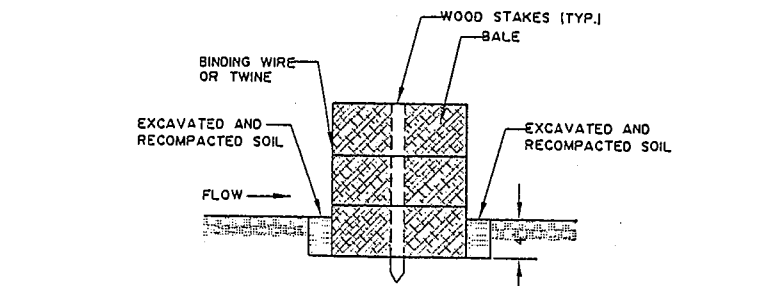
NOTE: PLACE MEDIUM RANDOM RIP RAP ON GEOTEXTILE FABRIC TYPE R, 1" THICK.



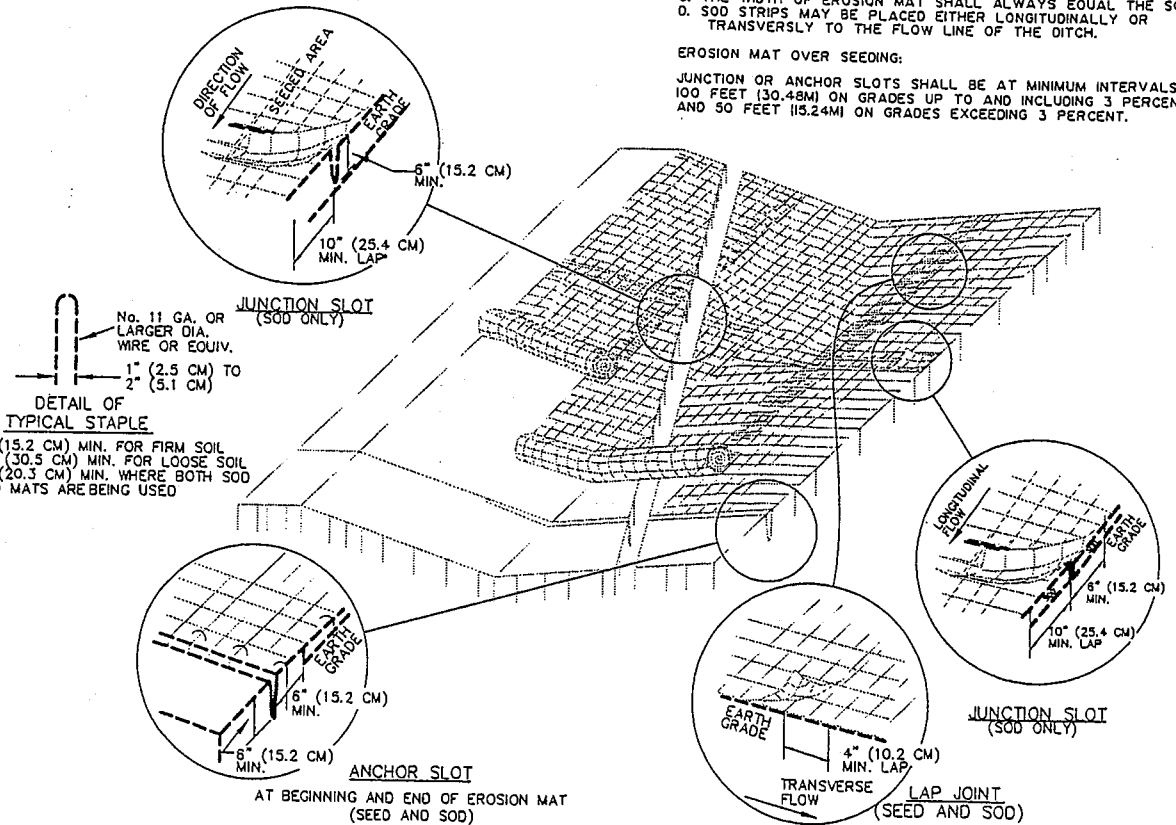
RIPRAP DISCHARGE APRON
NOT TO SCALE



WEDGE LOOSE STRAW BETWEEN BALES



EROSION BALE FENCE DETAIL
NOT TO SCALE



SOIL REINFORCEMENT MATTING
NOT TO SCALE

XREFS: 22 x 34 Border
 LAYOUT: 3.6
 FILE NAME: P:\BHA Projects\2001-151\dwg\Plans-Mod-6-20-03\115105.dwg 06/24/03 04:47:13 PM CDT
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DRAWN BY: JGD CHECKED BY: SRT	PROJECT NO.: 2001-151	SCALE NONE
DATE: 6/24/03	REV. DATES:	

PROJECT: C.T.H. K & NORTH 20TH AVE. SEWER & WATER EXTENSIONS	OWNER: WAUSAU WATER WORKS
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SHEET TITLE: EROSION CONTROL DETAILS	SHEET 3.6
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