

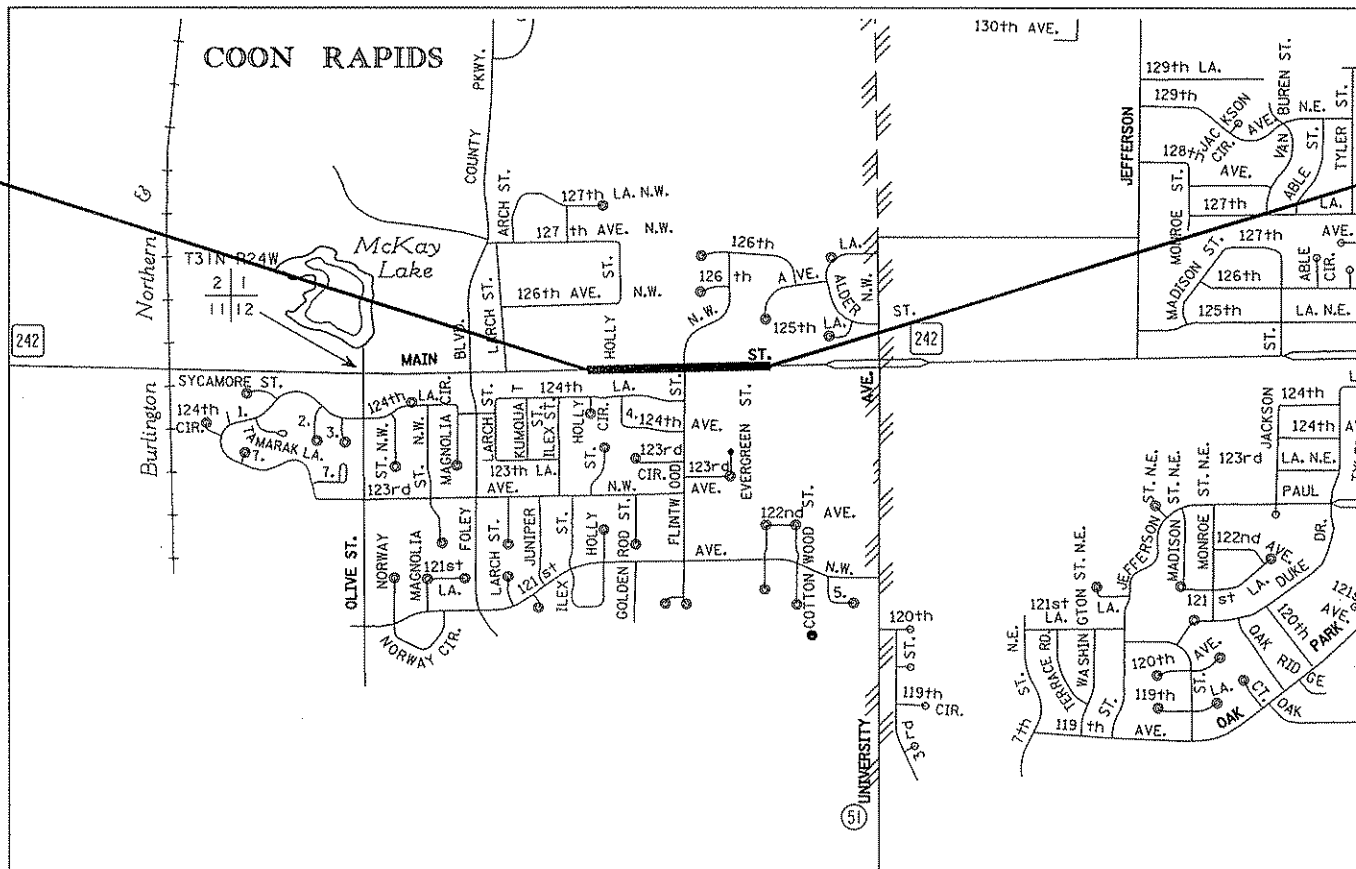
# MINNESOTA DEPARTMENT OF TRANSPORTATION COON RAPIDS, MINNESOTA T.H. 242 AT FLINTWOOD STREET

CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE, BITUMINOUS SURFACE, STORM SEWER, CURB & GUTTER  
LOCATED ON T.H. 242 (MAIN STREET) FROM 875 FEET WEST OF FLINTWOOD STREET TO 1060 FEET EAST OF FLINTWOOD STREET

STATE PROJ. NO. 0212-46, CITY PROJ. NO. 03-31

GROSS LENGTH 1935.00 FEET 0.366 MILES  
BRIDGES-LENGTH NA FEET NA MILES  
EXCEPTIONS-LENGTH NA FEET NA MILES  
NET LENGTH 1935.00 FEET 0.366 MILES  
REF. POINT 005+00.684 TO REF. POINT 006+00.050  
LENGTH AND DESCRIPTION BASED UPON E.B. T.H. 242

AGREEMENT NUMBER 86811  
CITY OF COON RAPIDS  
S.P. 0212-46 (TH242=242)  
STATE FUNDS  
METRO DISTRICT



BEGIN S.P. 0212-46  
ROAD STA. 162+65

END S.P. 0212-46  
ROAD STA. 182+00



PROJECT LOCATION  
COUNTY : ANOKA  
DISTRICT :

### DESIGN DESIGNATION FOR:

R-VALUE	60
ADT (Current Year) 2004 =	20,000
ADT (Future Year) 2024 =	33,000
PAVEMENT DESIGN	10 TON
FUNCTIONAL CLASSIFICATION	HIGH DENSITY ARTERIAL
NO. OF TRAFFIC LANES	2
NO. OF PARKING LANES	0
ESALS (20)	5,600,000
Design Speed	55 MPH
Based on Sight Distance	STOPPING
Height of eye / Height of Object	3.5' / 0.5'
Design Speed not achieved at:	NA

### SCALES

INDEX MAP	1000'
GENERAL LAYOUT	100'
PLAN	50'
PROFILE	5' HORIZ. 5' VERT.
X-SECTION	10' HORIZ. 10' VERT.

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

I HEREBY CERTIFY THAT THE FINAL FIELD CHANGES, IF ANY, OF THIS PLAN WERE MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE \_\_\_\_\_  
DATE \_\_\_\_\_ LIC. NO. \_\_\_\_\_ PRINT NAME \_\_\_\_\_

THIS PLAN AND/OR SPECIFICATION WAS PREPARED SPECIFICALLY FOR THIS PROJECT, AND ANY RE-USE OF DETAILS OR SPECIFICATIONS ON OTHER PROJECTS IS NOT INTENDED OR AUTHORIZED BY THE DESIGNER. LIABILITY FOR ANY RE-USE ON OTHER PROJECTS IS THE RESPONSIBILITY OF THE PERSON, AGENCY, OR CORPORATION USING PLAN OR SPECIFICATION DATA FROM THIS PROJECT.

S.A.P. 114-010-15  
S.P. NO. 0212-46 (TH242=242)

### STATE FUNDS

### GOVERNING SPECIFICATIONS

THE 2000 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

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## RECORD DRAWING

CONTRACTOR:  
HARDRIVES, INC.  
14475 QUIRAM DRIVE  
ROGERS, MN 55374

THIS PLAN CONTAINS 41 SHEETS

**SRF** CONSULTING GROUP, INC.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE Nathen A. Will  
DATE 7/27/04 LIC. NO. 26391 PRINT NAME NATHEN A. WILL

APPROVED Douglas J. Vianon DATE 7-28-04  
CITY OF COON RAPIDS ENGINEER

RECOMMENDED FOR APPROVAL John W. Water DATE 7-28-04  
DISTRICT TRANSPORTATION ENGINEER

RECOMMENDED FOR APPROVAL William S. Rube DATE 04  
DISTRICT MATERIALS ENGINEER

RECOMMENDED FOR APPROVAL Bruce A. Ovid DATE 2004  
DISTRICT WATER RESOURCES ENGINEER

RECOMMENDED FOR APPROVAL Ann Jahr DATE 8/3 2004  
DISTRICT TRAFFIC ENGINEER

RECOMMENDED FOR APPROVAL Tim R. Swanson DATE 2004  
STATE PRE-LETTING ENGINEER

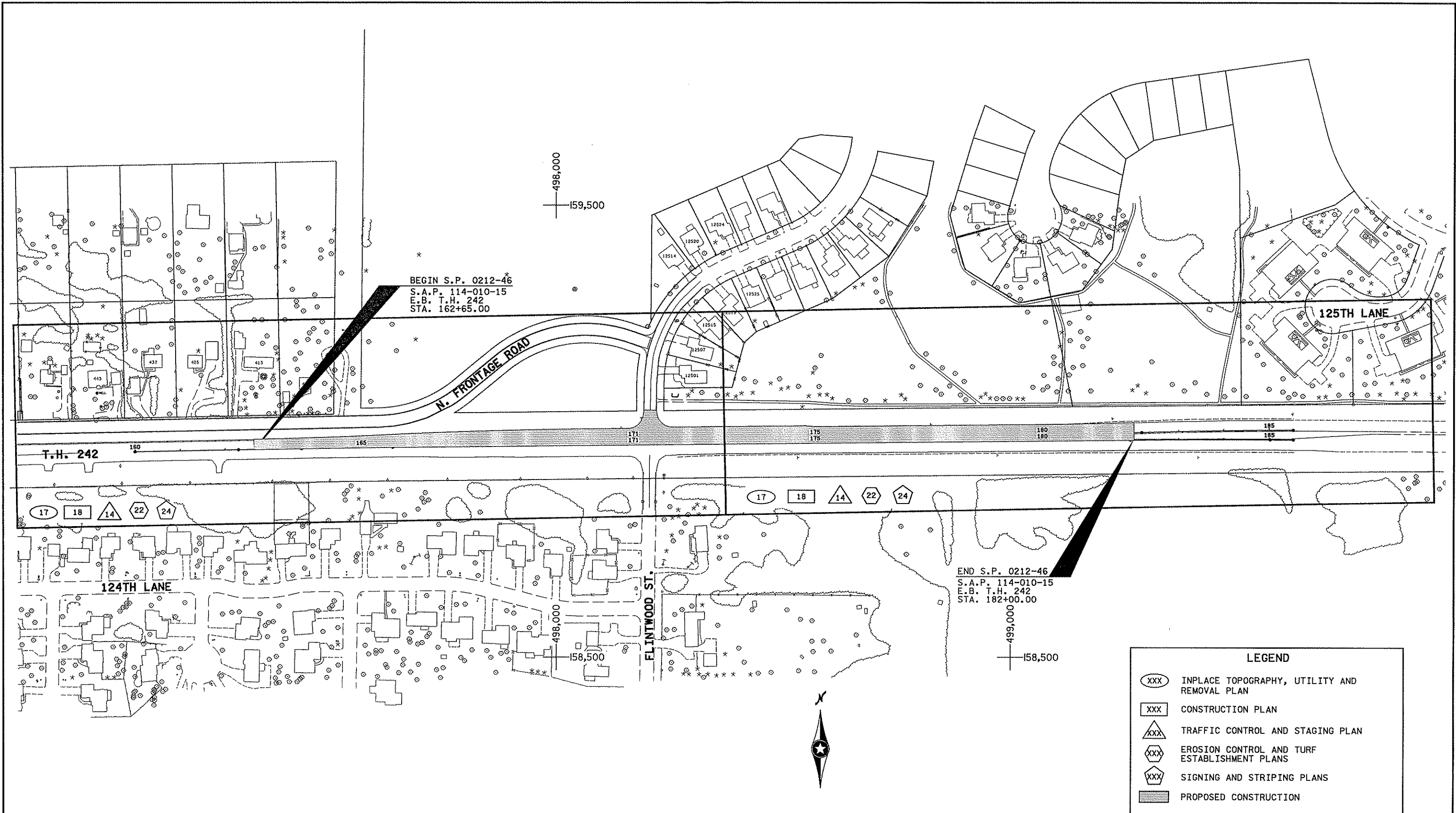
OFFICE OF LAND MANAGEMENT APPROVAL Blaise V. Voth DATE 04  
DIRECTOR, LAND MANAGEMENT

APPROVED M. Lakus DATE Aug 5 2004  
STATE DESIGN ENGINEER

APPROVED D. J. ... DATE 7/27/04  
DISTRICT STATE AID ENGINEER REVIEWED FOR COMPLIANCE WITH STATE AND FEDERAL AID RULES/POLICY

APPROVED FOR STATE AND FEDERAL AID FUNDING: STATE AID ENGINEER

SHEET NO. 1 OF 41 SHEETS



BEGIN S.P. 0212-46  
 S.A.P. 114-010-15  
 E.B. T.H. 242  
 STA. 162+65.00

END S.P. 0212-46  
 S.A.P. 114-010-15  
 E.B. T.H. 242  
 STA. 182+00.00

LEGEND	
XXX	INPLACE TOPOGRAPHY, UTILITY AND REMOVAL PLAN
XXX	CONSTRUCTION PLAN
XXX	TRAFFIC CONTROL AND STAGING PLAN
XXX	EROSION CONTROL AND TURF ESTABLISHMENT PLANS
XXX	SIGNING AND STRIPING PLANS
XXX	PROPOSED CONSTRUCTION



CONTRACTOR:  
 HARDRIVES, INC.  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374

NO	DATE	BY	CHKD	APPR	REVISION
1	2/24/06	JLS			RECORD DRAWING

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: NATHEN A. WILL  
 Date: 2/23/06 License # 26391

STATE AID PROJECT NO. 114-010-15  
 STATE PROJECT NO. S.P. 0212-46 (TH242)  
 CITY PROJECT NO. 03-31  
 DRAWN BY D. FITCHORN  
 DESIGNED BY G. STANLEY  
 CHECKED BY N. WILL  
 COMM. NO. 0045017



CITY OF COON RAPIDS  
 GENERAL LAYOUT  
 T.H. 242 AT FLINTWOOD STREET

SHEET 2 OF 41

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STATEMENT OF ESTIMATED QUANTITIES

TAB	NOTES	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	S.P. 0212-46 TH 242 (6)	
						S.A.P. 114-010-15	
						ROADWAY QUANTITIES	STORM SEWER QUANTITIES
		2021.501	MOBILIZATION	LUMP SUM	1	1	
(H)		2102.502	PAVEMENT MARKING REMOVAL	LIN FT	3770	3770	
(D)		2104.501	REMOVE DRAINAGE STRUCTURE	EACH	2		2
(D)		2104.501	REMOVE PIPE SEWERS	LIN FT	16		16
(D)		2104.501	REMOVE CURB AND GUTTER	LIN FT	491	491	
(D)		2104.503	REMOVE CONCRETE MEDIAN	SQ FT	649	649	
(D)		2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	1798	1798	
(D)		2104.509	REMOVE CONCRETE APRON	EACH	1	1	
(D)		2104.509	REMOVE SIGN	EACH	4	4	
(D)		2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	1700	1700	
(D)		2104.523	SALVAGE CASTING	EACH	2		2
(C)		2104.523	SALVAGE SIGN TYPE C	EACH	4	4	
(B)		2104.523	SALVAGE SIGN TYPE D	EACH	1	1	
(L)	(5)	2105.501	COMMON EXCAVATION	(P) CU YD	4584	4584	
(L)		2105.505	MUCK EXCAVATION	CU YD	943	943	
(L)		2105.522	SELECT GRANULAR BORROW (CV)	CU YD	1671	1671	
(N)		2211.503	AGGREGATE BASE (CV) CLASS 5	CU YD	1900	1900	
(D)		2232.501	MILL BITUMINOUS SURFACE (1.5")	SQ YD	1849	1849	
(N)		2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	686	686	
(N)	(9)	2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,C)	TON	1143	1143	
(N)	(9)	2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (4,B)	TON	844	844	
(G)		2501.511	30" RC PIPE CULVERT	LIN FT	22	22	
(G)		2501.569	30" RC SAFETY APRON	EACH	1	1	
(G)		2503.602	CONNECT TO EXISTING STORM SEWER	EACH	1		1
	(4)	2504.602	ADJUST GATE VALVE AND BOX	EACH	1	1	
(G)		2506.501	CONST DRAINAGE STRUCTURE DESIGN H	LIN FT	7.6		7.6
(G)		2506.521	INSTALL CASTING	EACH	2		2
(G)	(4)	2506.522	ADJUST FRAME AND RING CASTING	EACH	1		1
(G)		2511.501	RANDOM RIPRAP CL II	CU YD	11.2		11.2
(G)		2511.515	GEOTEXTILE FILTER, TYPE III	SQ YD	40		40
(I)		2531.501	CONCRETE CURB & GUTTER DESIGN B612	LIN FT	25	25	
(I)		2531.501	CONCRETE CURB & GUTTER DESIGN B424	LIN FT	453	453	
(I)	(7)	2531.503	CONCRETE MEDIAN	SQ YD	1340	1340	
(G)		2554.509	GUIDE POSTS TYPE B	EACH	1	1	
(J)		2563.601	TRAFFIC CONTROL	LUMP SUM	1	1	
(F)		2564.531	SIGN PANELS TYPE C	SQ FT	37.6	37.6	
		2564.535	SIGN PANEL OVERLAY TYPE D	SQ FT	4.2	4.2	
(C)		2564.536	INSTALL SIGN TYPE C	EACH	4	4	
(B)		2564.536	INSTALL SIGN TYPE D	EACH	1	1	
(F)		2564.552	HAZARD MARKER X4-2	EACH	1	1	
(H)		2564.602	PAVEMENT MESSAGE (RIGHT ARROW) EPOXY	EACH	2	2	
(H)		2564.603	24" SOLID LINE YELLOW-EPOXY	LIN FT	290	290	
(H)		2564.603	4" DOUBLE SOLID LINE YELLOW-EPOXY	LIN FT	1760	1760	
(E)		2564.603	4" DOUBLE SOLID LINE YELLOW-PAINT	LIN FT	2300	2300	
(H)		2564.603	4" SOLID LINE WHITE-EPOXY	LIN FT	4365	4365	
(E)		2564.603	4" SOLID LINE WHITE-PAINT	LIN FT	1600	1600	
(H)		2564.603	4" SOLID LINE YELLOW-EPOXY	LIN FT	2860	2860	
(E)		2564.603	4" SOLID LINE YELLOW-PAINT	LIN FT	2500	2500	

STATEMENT OF ESTIMATED QUANTITIES

TAB	NOTES	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	S.P. 0212-46 TH 242 (6)	
						S.A.P. 114-010-15	
						ROADWAY QUANTITIES	STORM SEWER QUANTITIES
(M)		2573.502	SILT FENCE TYPE MACHINE SLICED	LIN FT	110	110	
(M)		2573.512	TEMPORARY DITCH CHECK TYPE 3	LIN FT	260	260	
(M)		2573.530	INLET PROTECTION TYPE C	EACH	2	2	
(M)	(8)	2573.530	INLET PROTECTION TYPE D	EACH	2	2	
		2573.601	EROSION CONTROL SUPERVISOR	LUMP SUM	1	1	
(M)		2575.501	SEEDING	ACRE	1	1	
(M)	(1)	2575.502	SEED MIXTURE 250	POUND	70	70	
(M)	(2)	2575.511	MULCH MATERIAL TYPE 1	TON	2	2	
(M)		2575.519	DISK ANCHORING	ACRE	1	1	
(M)		2575.523	EROSION CONTROL BLANKET CATEGORY 3	SQ YD	1560	1560	
(M)	(3)	2575.532	COMMERCIAL FERT ANALYSIS 22-5-10	POUND	200	200	
(E)		2581.501	REMOVABLE PREFORMED PLASTIC MARKING	LIN FT	2760	2760	

NOTES:

- (1) APPLY AT RATE OF 70 POUNDS PER ACRE.
- (2) APPLY AT RATE OF 2 TONS PER ACRE.
- (3) SLOW RELEASE TYPE. APPLY AT RATE OF 200 POUNDS PER ACRE.
- (4) LOCATED ON FLINTWOOD STREET (SEE SHEET 17).
- (5) COMMON EXCAVATION INCLUDES REMOVAL OF UNSUITABLE MATERIAL.
- (6) STATE FUNDS, LUMP SUM.
- (7) QUANTITY FOR MONOLITHIC CONCRETE MEDIAN ON TH 242.
- (8) QUANTITY FOR USE AT CULVERT INLETS.
- (9) BITUMINOUS PAVEMENT CALCULATED USING 113 LBS/(SY \* IN).
- (P) PLAN QUANTITY

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CONTRACTOR:  
HARDRIVES, INC.  
14475 QUIRAM DRIVE  
ROGERS, MN 55374

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NO	DATE	BY	CHKD	APPR	REVISION
3	2/24/06	JLS			RECORD DRAWING
2	8-11-04	NW	NW		REVISED ITEMS AND QUANTITIES PER CHANGES IN TABS.
1	8-2-04	NW	NW		REVISED ITEMS AND QUANTITIES FOR APRONS AND PAVEMENT MARKINGS.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: NATHEN A. WILL  
*Nathen A. Will*  
Date: 2/24/06 License #: 26391

STATE AID PROJECT NO. 114-010-15  
STATE PROJECT NO. S.P. 0212-46 (TH242)  
CITY PROJECT NO. 03-31

DRAWN BY D.FITCHORN  
DESIGNED BY G.STANLEY  
CHECKED BY N.WILL  
COMM. NO. 0045017



CITY OF COON RAPIDS  
STATEMENT OF ESTIMATED QUANTITIES  
T.H. 242 AT FLINTWOOD STREET  
SHEET 3 OF 41

CONSTRUCTION /SOILS NOTES

GRADING, BASE AND SURFACE

- 1 TOP OF THE GRADING SUBGRADE IS DEFINED AS THE BOTTOM OF THE CLASS 5 AGGREGATE BASE.
- 2 SUITABLE GRADING MATERIAL ON THIS PROJECT, SHALL CONSIST OF ALL SOILS EXCEPT TOPSOIL, DEBRIS, PEAT, MUCK AND ORGANIC OR OTHER UNSTABLE MATERIAL.
- 3 UNSUITABLE MATERIALS ARE TOPSOILS, DEBRIS, PEAT, MUCK AND ORGANIC OR OTHER UNSTABLE SOILS.
- 4 GRANULAR MATERIAL IS DEFINED AS MATERIAL MEETING THE REQUIREMENTS OF SPEC. 3149.2B1. SELECT GRANULAR MATERIAL IS DEFINED AS MATERIAL MEETING THE REQUIREMENTS OF SPEC. 3149.2B2.
- 5 STRIP SOD AND TOPSOIL FROM AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. FOR ESTIMATING PURPOSES, THE DEPTH OF TOPSOIL AVAILABLE IS CONSIDERED TO BE 6".
- 6 ALL TOPSOIL STRIPPING WILL BE CONSIDERED TO BE COMMON EXCAVATION.
- 7 EXCESS TOPSOIL AND MUCK MATERIAL SHALL BE USED THROUGHOUT THE PROJECT AND AS DIRECTED BY THE ENGINEER.
- 8 IN FILL SECTIONS, TOPSOIL AND OTHER UNSUITABLE MATERIALS SHALL BE ELIMINATED FROM THE UPPER 4 FEET OF THE "GRADING GRADE" BENEATH THE ROADWAY, WITHIN THE LIMITS SHOWN ON THE TYPICAL SECTIONS.
- 9 OBTAIN COMPACTION ON THE GRADING PORTIONS OF PERMANENT CONSTRUCTION IN ACCORDANCE WITH THE "SPECIFIED DENSITY METHOD" REQUIREMENTS.
- 10 COMPACTION OF THE AGGREGATE BASE LAYER SHALL BE OBTAINED IN ACCORDANCE WITH THE PENETRATION INDEX METHOD. THE TEST SHALL BE PERFORMED IN ACCORDANCE WITH SECTION C4 AND C4A OF THE (2211) AGGREGATE BASE SPECIFICATION, INCLUDED IN THE SPECIAL PROVISIONS. THIS WOULD INCLUDE ANY AREAS WHERE CRUSHED CONCRETE OR SALVAGED ASPHALT MAY BE USED FOR AGGREGATE BASE.
- 11 TEST ROLLING SHALL BE REQUIRED ON THIS PROJECT.
- 12 THE BOTTOM OF ALL SUBCUTS SHALL BE SHAPED AND COMPACTED BY THE "QUALITY COMPACTION METHOD". THE CONTRACTOR SHALL USE A MINIMUM OF 4 PASSES OF AN APPROVED COMPACTION DEVICE.
- 13 AS A PRECAUTIONARY MEASURE FROM A SOILS STANDPOINT, TRAFFIC LANES TO BE USED DURING CONSTRUCTION MUST BE DELINEATED TO KEEP VEHICLES A SAFE DISTANCE AWAY FROM THE ADJACENT EXCAVATION. THE DELINEATION SHOULD COINCIDE WITH POINTS ESTABLISHED BY PROJECTING A 1(V):2(H) OR GREATER (FLATTER) SLOPE BETWEEN THE EDGE OF THE TRAFFIC SURFACE AND THE BOTTOM OF THE EXCAVATION.
- 14 WHERE CONNECTING TO THE INPLACE ROADWAYS AT THE TERMINI OF PROPOSED CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING, WHICHEVER IS DEEPER, THEN 1V:20H TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION, UNLESS OTHERWISE NOTED.
- 15 PROVIDE 1V:20H LONGITUDINAL TAPERS BETWEEN CHANGES IN SUBGRADE AND SUBCUT DEPTHS.
- 16 DITCH BOTTOMS, TOE OF FILL, CUT RUNOUTS AND THE TOP EDGE OF THE BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.
- 17 PROVIDE FOR A UNIFORM BITUMINOUS TACK COAT BETWEEN ALL BITUMINOUS COURSES. THE TACK COAT SHALL BE IN ACCORDANCE WITH MN/DOT SPECIFICATION 2357 WITH THE FOLLOWING MODIFICATIONS:
  1. THE TACK COAT SHALL CONSIST OF EMULSIFIED ASPHALT (CSS-1 OR CSS-1H) AND SHALL BE APPLIED BETWEEN ALL BITUMINOUS COURSES.
  2. THE TACK COAT SHALL BE APPLIED AT A UNIFORM RATE OF 0.03 TO 0.05 GAL/SY BETWEEN BITUMINOUS LAYERS AND 0.07 TO 0.10 GAL/SY ON MILLED BITUMINOUS SURFACES PRIOR TO BEING OVERLAID.
- 18 STABILIZING AGGREGATE SHALL BE INCORPORATED INTO THE SUBGRADE TO ACHIEVE SATISFACTORY SURFACE STABILITY AT LOCATIONS DEEMED NECESSARY BY THE ENGINEER, IN ACCORDANCE WITH THE PROVISIONS OF SPEC. 2105.3G. GRANULAR MATERIAL WHICH IS FURNISHED BY THE CONTRACTOR SHALL BE STABILIZED, IF NECESSARY, AT THE CONTRACTOR'S EXPENSE. WHERE STABILIZING AGGREGATE IS DEEMED NECESSARY, IT SHALL BE APPLIED AT A RATE OF APPROXIMATELY 200 LBS/SY.
- 19 PROVIDE A SAWCUT WHERE PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT.

CONSTRUCTION /SOILS NOTES

REMOVALS

- 20 PROVIDE FOR THE REMOVAL AND DISPOSAL OF ANY INPLACE SURFACING, GUARDRAIL, OTHER STRUCTURES OR DEBRIS THAT WOULD INTERFERE WITH CONSTRUCTION. ALL SUCH MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED TO THE EXTENT ALLOWED OR DISPOSED OF OFF THE RIGHT OF WAY IN ACCORDANCE WITH SPEC. 2104.03.C. PROVIDE FOR SAW CUTTING AS DEEMED NECESSARY BY THE ENGINEER.
- 21 THE EXISTING PAVEMENT THICKNESSES ARE ASSUMED TO BE AS FOLLOWS:
  - T.H. 242 - 7" BITUMINOUS (MAIN LINE AND TURN LANES)
  - 4" TO 7" BITUMINOUS (SHOULDERS)
 THE CONTRACTOR SHALL INVESTIGATE AND MAKE HIS OWN DETERMINATION.  
  
 (INFORMATION TAKEN FROM THE PROJECT SOIL BORINGS AND RECORD DRAWINGS).

TURF ESTABLISHMENT

- 22 PLACE A MINIMUM OF 6 INCHES OF TOPSOIL ON ALL AREAS SCHEDULED FOR PERMANENT TURF ESTABLISHMENT.
- 23 SEEDING REQUIREMENTS ON THIS PROJECT ARE AS FOLLOWS:
  - A. ON PERMANENT SLOPES FLATTER THAN 1:3 USE SEED MIXTURE 250 AND TYPE 1 MULCH WITH DISK ANCHOR. SEE EROSION CONTROL AND TURF ESTABLISHMENT PLANS FOR SEED TYPE LOCATIONS.
  - B. ON PERMANENT SLOPES 1:3 OR STEEPER USE SEED MIXTURE 250 AND EROSION CONTROL BLANKET CATEGORY 3. DO NOT DISK ANCHOR.
  - D. PROVIDE COMMERCIAL FERTILIZER, ANALYSIS 22-5-10, SLOW RELEASE TYPE, OR EQUIVALENT ON ALL AREAS TO BE SEEDED OR SODDED.
  - E. PERMANENT TURF ESTABLISHMENT AND EROSION CONTROL MEASURES SHALL BE CONSTRUCTED WITHIN 14 DAYS OF ROUGH GRADING IN ALL AREAS AS CONSTRUCTION IS COMPLETED.

MISCELLANEOUS

- 24 WHERE SEDIMENT DEPOSITS IN WATERS OF THE STATE, THE MATERIAL MUST BE REMOVED IN 7 DAYS.
- 25 ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MMUTCD) AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- 26 THE CONTRACTOR IS RESPONSIBLE UNDER STATE LAW TO CONTACT ALL UTILITIES THAT MAY HAVE FACILITIES IN THE AREA. CONTACT MUST BE MADE THROUGH GOPHER STATE ONE-CALL.
- 27 WHENEVER THE WORD "INCIDENTAL" IS USED IN THIS PLAN, IT SHALL MEAN NO DIRECT COMPENSATION WILL BE MADE.

THE FOLLOWING STANDARD PLATES APPROVED BY THE DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

STANDARD PLATES	
PLATE NO.	DESCRIPTION
3000 L	REINFORCED CONCRETE PIPE
3006 G	GASKET JOINT FOR R.C. PIPE
3022 C	PRECAST CONCRETE SAFETY APRON
3133 C	RIPRAP AT RCP OUTLETS
3145 F	CONCRETE PIPE TIES
4006 L	MANHOLE OR CATCH BASIN
4010 H	CONCRETE SHORT CONE & ADJUSTING RING
4011 E	PRECAST CONCRETE BASE
4108 F	ADJUSTING RINGS
4132 F	CATCH BASIN FRAME CASTING
4154 B	CATCH BASIN GRATE CASTING
7102 I	CONCRETE CURB & GUTTER
7105 C	CONCRETE MEDIAN
7109 C	MEDIAN NOSE AND ISLAND (UNDIVIDED TO DIVIDED ROADWAY)
7111 J	INSTALLATION OF CATCH BASIN CASTINGS
8000 I	STANDARD BARRICADES
8150 C	INSTALLATION OF CULVERT MARKERS
9102 D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)

CONTRACTOR:  
 HARDRIVES, INC.  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374

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NO	DATE	BY	CHKD	APPR	REVISION
2	2/24/06	JLS			RECORD DRAWING
1	8-2-04	NW	NW		ADDED NOTE 23 E AND REVISED STANDARD PLATES LIST.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: NATHEN A. WILL  
 Date: 2/24/06 License #: 26391

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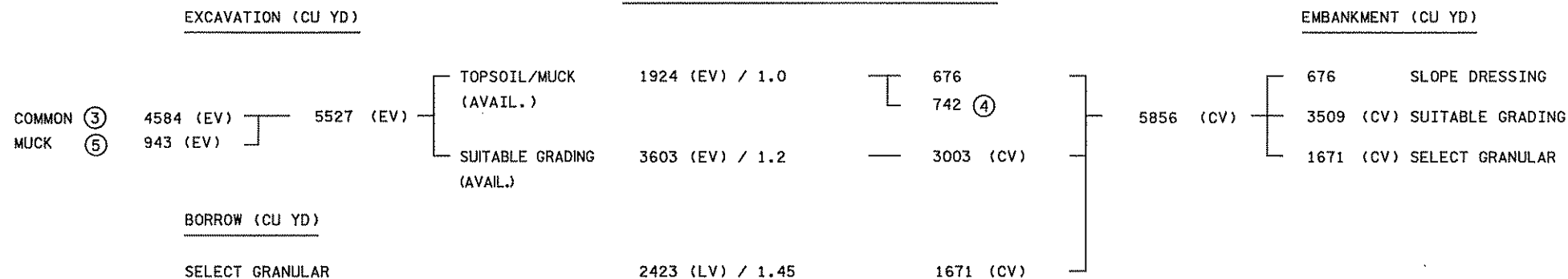
CITY OF COON RAPIDS  
 CONSTRUCTION/SOILS NOTES AND STANDARD PLATES  
 T.H. 242 AT FLINTWOOD STREET

(L) EARTHWORK TABULATION					
STATION	EXCAVATION TOTALS (EV)		EMBANKMENT TOTALS (CV)		
	COMMON	MUCK	SLOPE DRESSING	SUITABLE GRADING MATERIAL	SELECT GRANULAR
	(CU. YD.)	(CU. YD.)	(CU. YD.)	(CU. YD.)	(CU. YD.)
162+65.05					
163+00.00	44		2	1	15
163+50.00	65		2	2	22
164+00.00	72		4	2	23
164+50.00	80		4	3	25
165+00.00	84		3	2	28
165+50.00	88		2	2	30
166+00.00	91		3	2	33
166+50.00	96		4	3	36
167+00.00	101		5	4	38
167+50.00	97		7	6	41
168+00.00	96		13	5	51
168+50.00	95		16	17	61
169+00.00	90		16	39	62
169+50.00	92		18	55	63
170+00.00	99		19	58	62
170+50.00	128	31	19	85	62
171+00.00	138	31	11	59	57
171+50.00	61		2		25
172+00.00	71	31	13	70	20
172+50.00	149	63	27	175	41
173+00.00	159	63	30	219	41
173+50.00	170	63	33	255	43
174+00.00	176	63	30	274	45
174+50.00	185	63	26	261	46
175+00.00	183	63	29	268	46
175+50.00	167	63	32	283	46
176+00.00	165	63	30	275	47
176+50.00	161	63	29	249	47
177+00.00	171	63	31	222	53
177+50.00	187	63	32	194	58
178+00.00	183	63	31	172	58
178+50.00	168	63	27	146	58
179+00.00	130	31	27	77	55
179+50.00	107		28	16	49
180+00.00	107		23	3	47
180+50.00	102		20	3	44
181+00.00	95		16	2	41
181+50.00	75		8		31
182+00.00	56		4		21
<b>TOTAL</b>	<b>4584</b>	<b>943</b>	<b>676</b>	<b>3509</b>	<b>1671</b>

NOTES:

- ① SEE CONSTRUCTION/SOIL NOTES FOR MATERIAL DEFINITIONS AND ADDITIONAL INFORMATION.
- ② 120% SHRINKAGE FACTOR USED FROM EXCAVATED VOLUME (EV) TO COMPACTED VOLUME (CV), EXCEPT FOR TOPSOIL. 145% SHRINKAGE FACTOR USED FROM EXCAVATED VOLUME (LV) TO COMPACTED VOLUME (CV), EXCEPT FOR TOPSOIL. SHRINKAGE FACTORS ARE ASSUMED VALUES, USED ONLY FOR THE PURPOSE OF ESTIMATED QUANTITIES. IT SHALL BE UNDERSTOOD THAT NO WARRANTY IS MADE OR IMPLIED AS TO THE ACCURACY, SUFFICIENCY, OR RELIABILITY OF THE SHRINKAGE FACTOR.
- ③ QUANTITY INCLUDES 981 CU.YD. (EV) OF TOPSOIL STRIPPING (ESTIMATED TO BE 6" THICK).
- ④ EXCESS MATERIAL SHALL BE BECOME THE PROPERTY OF THE CONTRACTOR AND BE REMOVED FROM THE PROJECT LIMITS.
- ⑤ SEE CROSS SECTIONS FOR MUCK EXCAVATION AREAS. FINAL MUCK EXCAVATION LIMITS SHALL BE AS DETERMINED AND DIRECTED BY THE ENGINEER IN THE FIELD. UNSUITABLE MATERIAL ENCOUNTERED SHALL BE DISPOSED OUTSIDE OF 1:3 SLOPE AS SHOWN IN THE TYPICAL SECTIONS. EXCESS UNSUITABLE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE REMOVED FROM THE PROJECT LIMITS.

(O) EARTHWORK BALANCE ① ②



CONTRACTOR:  
**HARDRIVES, INC.**  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374

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2 2/24/06 JLS RECORD DRAWING 1 8-11-04 DCF NAW NAW REVISED UNITS PER Mn/DOT COMMENTS 8-11-04. NO DATE BY CKD APPR REVISION				I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: <b>NATHEN A. WILL</b> Date: <i>2/24/06</i> License # <b>26391</b>		STATE AID PROJECT NO. 114-010-15 STATE PROJECT NO. S.P. 0212-46 (TH242) CITY PROJECT NO. 03-31		DRAWN BY D.FITCHORN DESIGNED BY G.STANLEY CHECKED BY N.WILL COMM. NO. 0045017		<b>CITY OF COON RAPIDS</b> EARTHWORK SUMMARY, BALANCE T.H. 242 AT FLINTWOOD STREET		SHEET 5 OF 41
--	--	--	--	---	--	--	--	--	--	--	--	---------------



(A)			EXISTING PRIVATE UTILITIES						
ALIGNMENT	STATION TO	STATION	OFFSET		IN PLACE UTILITY	LEAVE AS IS	ADJUST UTILITY	RELOCATE UTILITY	UTILITY OWNER
			LEFT (FT)	RIGHT (FT)					
EASTBOUND TH 242	160+00	185+00		32.9-36.8	TELEPHONE BURIED	X			QWEST
EASTBOUND TH 242	160+00	164+40	74.0-74.1		BURIED 4" STEEL GAS	X			CENTERPOINT ENERGY (MINNEGASCO)
EASTBOUND TH 242	164+40	165+00	74.1-86.4		BURIED 4" STEEL GAS	X			CENTERPOINT ENERGY (MINNEGASCO)
EASTBOUND TH 242	165+00	165+40	86.4-86.6		BURIED 4" STEEL GAS	X			CENTERPOINT ENERGY (MINNEGASCO)
EASTBOUND TH 242	165+40	166+62	86.6-117.23		BURIED 4" STEEL GAS	X			CENTERPOINT ENERGY (MINNEGASCO)
EASTBOUND TH 242	166+62	166+94	117.23-45.9		BURIED 4" STEEL GAS	X			CENTERPOINT ENERGY (MINNEGASCO)
EASTBOUND TH 242	166+94	171+28	45.9-45.4		BURIED 4" STEEL GAS	X			CENTERPOINT ENERGY (MINNEGASCO)
EASTBOUND TH 242	171+28	171+53	45.4-64.5		BURIED 4" STEEL GAS	X			CENTERPOINT ENERGY (MINNEGASCO)
EASTBOUND TH 242	171+53	175+50	64.5-66.1		BURIED 4" STEEL GAS	X			CENTERPOINT ENERGY (MINNEGASCO)
EASTBOUND TH 242	172+10	172+14	66.0-100.0		BURIED 4" STEEL GAS	X			CENTERPOINT ENERGY (MINNEGASCO)
EASTBOUND TH 242	175+50	177+00	100.0-39.0		BURIED 4" STEEL GAS	X			CENTERPOINT ENERGY (MINNEGASCO)
EASTBOUND TH 242	177+00	179+00	39.0-57.8		BURIED 4" STEEL GAS			X	CENTERPOINT ENERGY (MINNEGASCO)
EASTBOUND TH 242	171+17	171+13	45.4	110.3	BURIED 2" STEEL GAS	X			CENTERPOINT ENERGY (MINNEGASCO)
EASTBOUND TH 242	164+53	165+30	52.6-52.7		POWER BURIED	X			CONNEXUS ENERGY
EASTBOUND TH 242	165+30	165+60	52.7	71.0	POWER BURIED	X			CONNEXUS ENERGY
EASTBOUND TH 242	174+40	177+38	86.0	70.3	POWER BURIED	X			CONNEXUS ENERGY
EASTBOUND TH 242	174+39	174+40	91.5-86.0		POWER BURIED	X			CONNEXUS ENERGY
EASTBOUND TH 242	171+48	174+40		70.3-72.4	OH POWER	X			CONNEXUS ENERGY
EASTBOUND TH 242	174+40			72.4	POWER POLE	X			CONNEXUS ENERGY
EASTBOUND TH 242	177+38	180+46		72.4-72.9	OH POWER	X			CONNEXUS ENERGY
EASTBOUND TH 242	177+38			72.4	POWER POLE	X			CONNEXUS ENERGY
EASTBOUND TH 242	180+46			72.9	POWER POLE	X			CONNEXUS ENERGY
EASTBOUND TH 242	183+45			72.0	POWER POLE	X			CONNEXUS ENERGY
EASTBOUND TH 242	171+59	171+66	30.5-89.4		BURIED TELEVISION	X			COMCAST (CABLE)
EASTBOUND TH 242	171+66	173+16	89.4-89.7		BURIED TELEVISION	X			COMCAST (CABLE)

NOTES:

THE CONTRACTOR SHALL DETERMINE THE ACTUAL LOCATION OF ALL UTILITIES IN THE FIELD.

ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS UNLESS NOTED.

UTILITY OWNER CONTACTS

- CENTERPOINT ENERGY
- CONNEXUS ENERGY
- COMCAST (CABLE)
- QWEST

CONTRACTOR:  
 HARDRIVES, INC.  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374

NO	DATE	BY	CKD	APPR	REVISION
1	2/24/08	JLS			RECORD DRAWING

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 PrInt Name: NATHEN A. WILL  
 Date 2/23/08 License # 26391

STATE AID PROJECT NO. 114-010-15  
 STATE PROJECT NO. S.P. 0212-46 (TH242)  
 CITY PROJECT NO. 03-31  
 DRAWN BY D.FITCHORN  
 DESIGNED BY G.STANLEY  
 CHECKED BY N.WILL  
 COMM. NO. 0045017



CITY OF COON RAPIDS  
 PRIVATE UTILITY TABULATIONS  
 T.H. 242 AT FLINTWOOD STREET

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(M) TURF ESTABLISHMENT / EROSION CONTROL												
ALIGNMENT	STATION TO STATION		SEEDING (ACRE)	SEED MIXTURE (1)	MULCH MATERIAL (1)	TEMPORARY DITCH CHECK TYPE 3 (LIN. FT.)	INLET PROTECTION TYPE C (EACH)	INLET PROTECTION TYPE D (EACH)	SILT FENCE MACHINE SLICED (LIN. FT.)	DISK ANCHOR, (ACRE)	EROSION CONTROL BLANKET CATEGORY 3 (SQ. YD.)	(1)(2) COMM. FERT. 22-5-10 (TON)
				250 (LB)	TYPE 1 (TON)							
WESTBOUND TH 242	162+65	171+23	0.2	14	0.4	80	2	1		0.2	597	40
WESTBOUND TH 242	171+54	173+73	0.2	14	0.4	60				0.2	180	40
WESTBOUND TH 242	173+73	174+24	0.1	7	0.2	20		1		0.1	287	20
WESTBOUND TH 242	174+24	182+00	0.5	35	1.0	100			110	0.5	496	100
<b>PROJECT TOTALS</b>			<b>1</b>	<b>70</b>	<b>2</b>	<b>260</b>	<b>2</b>	<b>2</b>	<b>110</b>	<b>1</b>	<b>1560</b>	<b>200</b>

- (1) QUANTITIES ARE BASED ON THE FOLLOWING BASIS:  
 SEED MIXTURE 250 - 70 LB/ACRE  
 MULCH TYPE 1 - 2 TON/ACRE  
 COMM. FERT. 22-5-10 - 200 LB/ACRE  
 (2) COMMERCIAL FERTILIZER SHALL BE THE SLOW RELEASE TYPE.

(N) AGGREGATE AND BITUMINOUS SUMMARY						
ALIGNMENT	STATION TO STATION		AGGREGATE	BITUMINOUS		TACK (GAL.)
			BASE	2360 TYPE SP 12.5 NON WEAR (SPNWB430B)	2360 TYPE SP 12.5 WEAR (SPWEB430C)	
			(CU. YD.)	(TON)	(TON)	
WESTBOUND TH 242	162+65	182+00	1900	844	1143	686
<b>PROJECT TOTALS</b>			<b>1900</b>	<b>844</b>	<b>1143</b>	<b>686</b>

(B) SALVAGE AND INSTALL SIGN TYPE D								
SIGN NO.	QUANTITY	POSTS			(1) MTG. HEIGHT (MIN.) (FT)	PANEL	PANEL LEGEND	NOTES
		NO. & TYPE	KNEE BRACE QUANT.	LENGTH (FT)		SIZE (IN)		
D-100	1	2U-2A	2	13.5	7	96 X 36	FLINTWOOD ST.	(4)
<b>PROJECT TOTAL</b>		<b>1</b>						

- NOTES:  
 (3) MOUNTING HEIGHT IS MINIMUM, SHEET SHEET 26 FOR TYPICAL MOUNTING.  
 (4) F&I SIGN PANEL OVERLAY TYPE D. SEE SHEET 30 FOR DETAILS.

(J) TRAFFIC CONTROL SIGN TABULATION					
SIGN LEGEND	SIGN DESIGNATION	SIZE (ENGLISH)	SIGN COLOR	STAGE 1 QUANTITY	STAGE 2 QUANTITY
	G20-2A	48"X24"	BLACK ON ORANGE	2	2
	W20-1	48"X48"	BLACK ON ORANGE	4	4
	W20-X17	48"X48"	BLACK ON ORANGE	2	2
	R3-2	24"X24"	BLACK ON WHITE	0	2
	TYPE III	6" MIN.	ORANGE ON WHITE	2	0
	TYPE III	6" MIN.	ORANGE ON WHITE	0	8
	R3-X1	30"X30"	BLACK ON WHITE	1	0
	DRUM	18"X36" MIN.	WHITE ON ORANGE	45	99
	M4-10R	48"X18"	BLACK ON ORANGE	0	2
	W1-6L	48"X24"	BLACK ON ORANGE	2	0
	R4-7	24"X30"	BLACK ON WHITE	0	2
	R3-6L	30"X36"	BLACK ON WHITE	0	2
	R5-1	30"X30"	RED ON WHITE	0	2
	W21-X1	48"X48"	BLACK ON ORANGE	1	1
	TYPE "A"	FLASHER	AMBER	6	5

CONTRACTOR:  
 HARDRIVES, INC.  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374

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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: <u>NATHAN A. WILL</u> Date: <u>3/15/06</u> License # <u>26391</u>				STATE AID PROJECT NO. 114-010-15 STATE PROJECT NO. S.P. 0212-46 (TH242) CITY PROJECT NO. 03-31	DRAWN BY D. FITCHORN DESIGNED BY G. STANLEY CHECKED BY N. WILL COMM. NO. 0045017	CITY OF COON RAPIDS TABULATIONS T.H. 242 AT FLINTWOOD STREET	SHEET 7 OF 41
2 2/24/06 JLS RECORD DRAWING 1 8-11-04 DCF NAW NAW REVISED PAY ITEMS PER Mn/DOT COMMENTS 8-11-04. NO DATE BY CKD APPR REVISION		SRF CONSULTING GROUP, INC.					

(D) REMOVALS, SAWING AND MILLING												
ALIGNMENT	STATION TO STATION	REMOVE							SALVAGE CASTING (EACH)	(A), (B) SAWING BITUMINOUS PAVEMENT (LIN FT)	(B) MILLING BITUMINOUS SURFACE (1.5") (SQ YD)	NOTES
		CURB & GUTTER (LIN FT)	CONCRETE MEDIAN (SQ FT)	DRAINAGE STRUCTURE (EACH)	BIT. PAVEMENT (SQ YD)	PIPE SEWERS (LIN FT)	CONCRETE APRON (EACH)	SIGN TYPE C (EACH)				
EB TH 242	162+65	167+20	453		2			16		2		
EB TH 242		172+20	17									
EB TH 242		172+50	21									
EB TH 242	181+00	182+00										
EB TH 242	162+65	171+25					1010			928		
EB TH 242		171+50								27		
EB TH 242	174+80	182+00					788			745		
EB TH 242	169+80	182+00						1			1849	
EB TH 242		181+40							1		(C)	
EB TH 242		181+40							1		(D)	
EB TH 242		170+76							1		(D)	
EB TH 242		181+50							1			
EB TH 242	181+33	182+00		649								
PROJECT TOTAL			491	649	2	1798	16	1	4	2	1700	1849

- NOTES:  
 (A) ALL BITUMINOUS PAVEMENT SAWING IS FULL DEPTH.  
 (B) REFER TO REMOVAL PLANS FOR EXACT LOCATIONS.  
 (C) QUANTITY INCLUDES REMOVAL OF HAZARD MARKER. SEE SIGNING & STRIPING PLAN SHEET 24.  
 (D) QUANTITY INCLUDES REMOVAL OF TYPE C SIGN. SEE SIGNING & STRIPING PLAN SHEET 24.

(F) SIGN PANELS TYPE C											
SIGN NO.	QUANTITY	POSTS			(E) MTG. HEIGHT (MIN.) (FT)	PANEL			CODE NO.	PANEL LEGEND	NOTES
		NO. & TYPE	KNEE BRACE QUANT.	LENGTH (FT)		SIZE (IN)	AREA (SF)	TOTAL AREA (SF)			
C-1	1	2-U			7	24 X 30	5.0	5.0	R4-7	KEEP RIGHT	
					4				X4-2	HAZARD MARKER	(H)
C-2	1	2-U		12	7	36 X 12	3.0	6.0	R6-1R	ONE WAY (RIGHT)	(F)
						24 X 24	4.0	8.0	R3-2	NO LEFT TURN	(F)
C-3	2	2-U			7	30 X 30	6.3	12.6	R5-1	DO NOT ENTER	
C-4	2	2-U	1	15	7	36 X 12	3.0	6.0	R6-1R	ONE WAY (RIGHT)	(G)
C-5	1				7	24 X 24	4.0	4.0	R3-4	NO U TURN	(I)
PROJECT TOTAL									41.6		

- GENERAL NOTES:  
 - POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.  
 - SEE SHEETS 25 -27 FOR STRUCTURAL DETAILS.  
 - SEE STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAIL DRAWINGS OF TYPE C SIGN PANELS.
- NOTES:  
 (E) MOUNTING HEIGHT IS MINIMUM, SEE SHEET 26 FOR TYPICAL MOUNTING.  
 (F) MOUNT BACK-TO-BACK SEE SHEET 24.  
 (G) ONE WAY SIGN TO BE INSTALLED ABOVE A SALVAGED "STOP" SIGN C-200, AND AN INPLACE STOP SIGN.  
 (H) PAID FOR SEPERATELY BY THE "EACH".  
 (I) MOVED TO THE BACK OF C-1.

(I) CURB & GUTTER AND MEDIAN				
ALIGNMENT	STATION TO STATION	B612 CURB	B424 CURB	CONCRETE MEDIAN
		(LIN FT)	(LIN FT)	(SQ YD)
EASTBOUND TH 242	162+65	167+18		453
EASTBOUND TH 242	170+00	182+00	25	1340
PROJECT TOTALS		25	453	1340

FLOWS FROM STR. OR APRON INLET POINT NO.	STRUCTURE LOCATION				TOP OF CASTING (O) FT	PIPE SIZE INCH	INV ELEV FROM FT	PIPE SLOPE FT/FT	(G) DRAINAGE TABULATION								
	ALIGNMENT NAME	STATION (K)	OFFSET (K) FT	L/R					STRUCTURE CONSTRUCTION			30" RC PIPE CULVERT LIN FT	ADJUST FRAME & RING CASTING (EACH)	GEOTEXTILE FILTER TYPE III (SQ YD)	RANDOM RIPRAP CL II (N) (CU YD)	GUIDE POSTS TYPE B EACH	FOOTNOTES
									DESIGN	PAY HEIGHT LIN FT	INSTALL CASTING (L) TYPE						
100	WB242	165+00.6	21.0	L	899.74	15	896.21	0.056	H	3.5	B-9						
101	WB242	166+88.6	21.0	L	897.45	15	893.4	0.022	H	4.1	B-9						
103	WB242	174+00	49.5	L		30	888.88	0.002	30" APRON			22			1	(M) (P)	
EX MANHOLE	WB242	171+35	46	L									1				
EX APRONS	WB242	171+90	55	L									30		8.4		
EX APRON	WB242	175+30	50	L									10		2.8		
PROJECT TOTALS										7.6		22	1	40	11.2	1	

- NOTES:  
 (K) STATION AND OFFSET TO CENTER OF CASTING.  
 (L) INSTALL SALVAGED CASTINGS.  
 (M) CONNECT TO EXISTING STORM SEWER.  
 (N) GEOTEXTILE FILTER TYPE III, SPEC. 3733 SHALL BE USED IN LIEU OF GRANULAR FILTER BLANKET MATERIAL.  
 (O) SUMP DEPTH IS 0.10' FOR CASTING ASSEMBLIES.  
 (P) RC SAFETY APRON. SEE STD. PL. 3022.

(H) PERMANENT PAVEMENT MARKINGS							
ALIGNMENT	STATION TO STATION	PAVEMENT MESSAGE RIGHT ARROW (EACH)	SOLID LINE			DOUBLE SOLID LINE 4" YELLOW (LF)	PERMANENT MARKING REMOVAL (LF)
			4" WHITE (LF)	4" YELLOW (LF)	24" YELLOW (LF)		
EASTBOUND TH 242	162+00 TO 183+00	2	4365	2860	290	1760	3770
PROJECT TOTALS		2	4365	2860	290	1760	3770

- GENERAL NOTES:  
 - ALL PERMANENT PAVEMENT MARKINGS SHALL BE EPOXY UNLESS OTHERWISE NOTED.

(E) TEMPORARY PAVEMENT MARKINGS						
STAGE	REMOVABLE (I), (J)		SOLID LINE - PAINT			
	4" SOLID WHITE (LIN FT)	4" SOLID YELLOW (LIN FT)	4" SOLID WHITE (LIN FT)	4" SOLID YELLOW (LIN FT)	4" DOUBLE SOLID YELLOW (LIN FT)	
STAGE 1	260		950		2300	
STAGE 2		2500	650	2500		
PROJECT TOTALS		260	2500	1600	2500	2300

- NOTES:  
 (I) PAID FOR UNDER ITEM 2581 - REMOVABLE PREFORMED PLASTIC MARKING.  
 (J) PAID FOR BY THE LINEAL FOOT OF TAPE INSTALLED.

(C) SALVAGE AND INSTALL SIGN TYPE C								
SIGN NO.	QUANTITY	POSTS			(E) MTG. HEIGHT (MIN.) (FT)	PANEL SIZE (IN)	PANEL LEGEND	NOTES
		NO. & TYPE	KNEE BRACE QUANT.	LENGTH (FT)				
C-200	1	2-U		13.0	7	30 X 30	STOP	
C-201	1	1-U		11.0	7	24 X 6	MAIN ST NW TH 242	
C-202	1	2-U		13.0	7	24 X 6	FLINTWOOD ST NW	
X4-5	1					30 X 30	RIGHT TURN LANE	
							SNOWFLOW MARKER	
PROJECT TOTAL		4						

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NO	DATE	BY	CHKD	APPR	REVISION
3	2/24/06	JLS			RECORD DRAWING
2	8-11-04	DCF	NAW	NAW	REVISED PLACEMENT OF NOTE (C) IN TAB (D) AND PAY ITEMS IN TABS (G) AND (E).
1	8-2-04	NW	NW		REVISED TABS D, G, AND H.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: NATHEN A. WILL  
 Date: 3/2/06 License # 26391

STATE AID PROJECT NO. 114-010-15  
 STATE PROJECT NO. S.P. 0212-46 (TH242)  
 CITY PROJECT NO. 03-31  
 DRAWN BY D.FITCHORN  
 DESIGNED BY G.STANLEY  
 CHECKED BY N.WILL  
 COMM. NO. 0045017

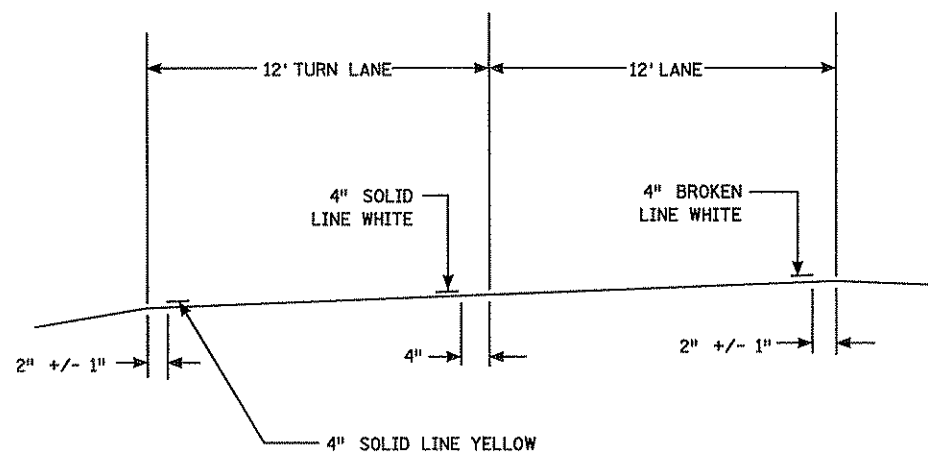


CITY OF COON RAPIDS  
 TABULATIONS  
 T.H. 242 AT FLINTWOOD STREET  
 SHEET 8 OF 41

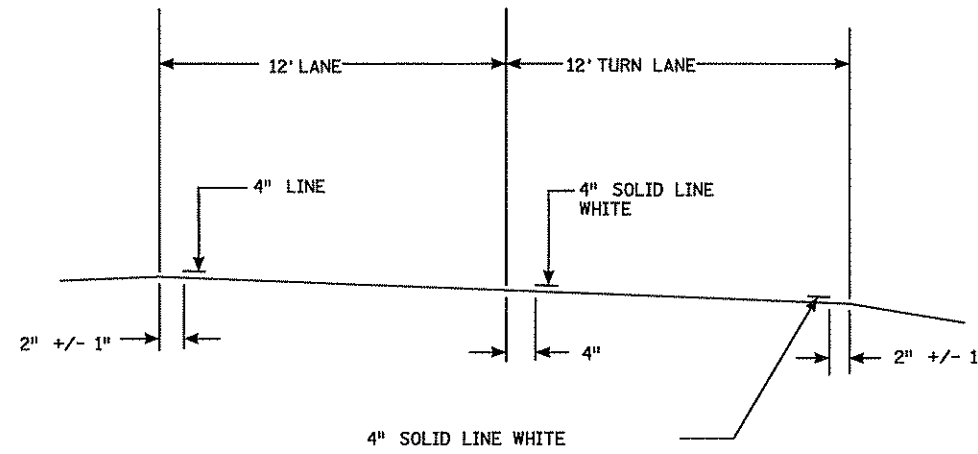
CONTRACTOR:  
 HARDRIVES, INC.  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374



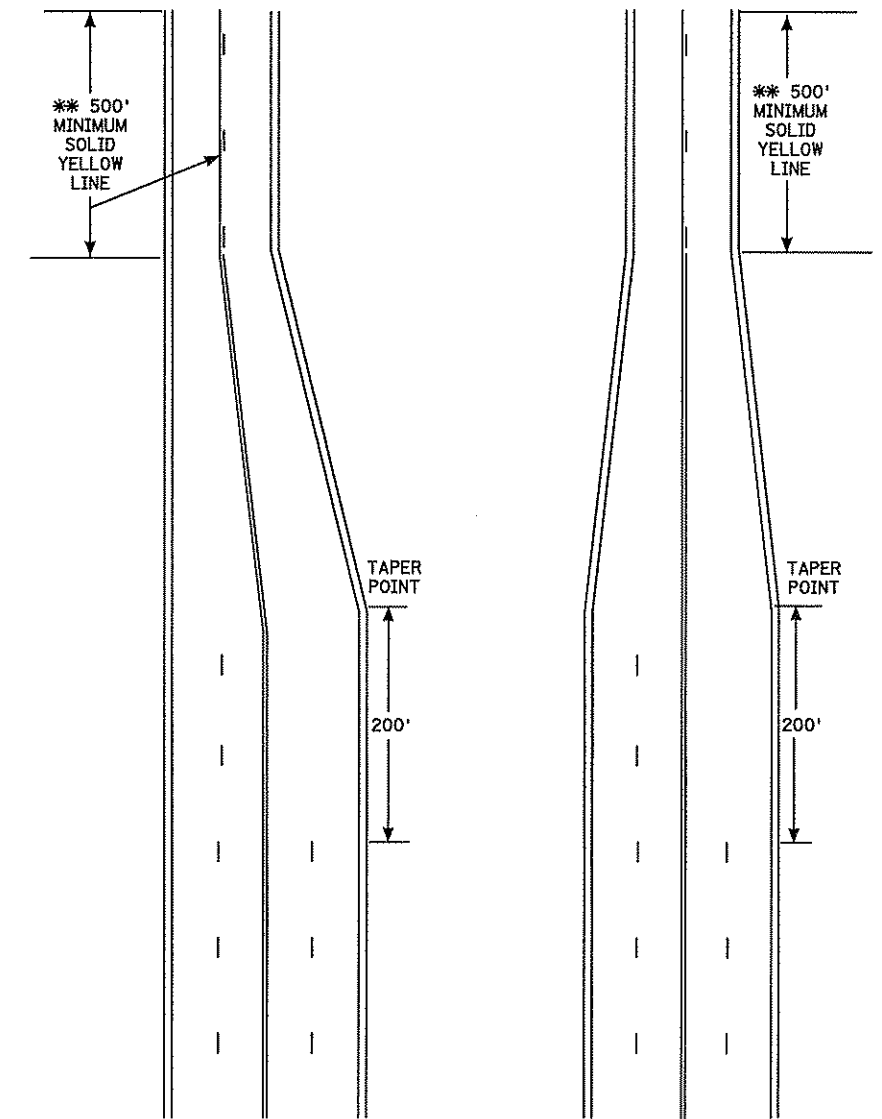
**TYPICAL LEFT TURN LANE**



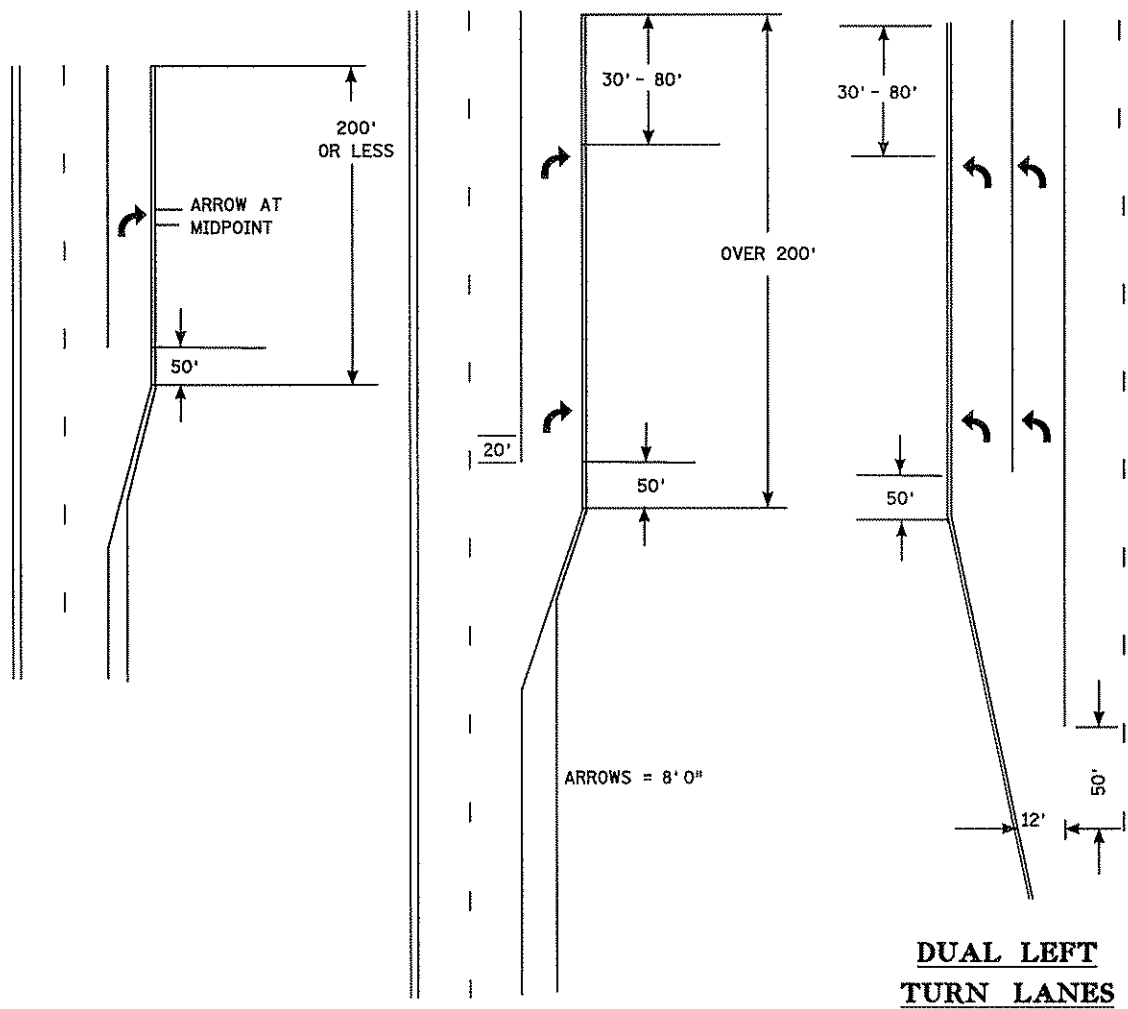
**TYPICAL RIGHT TURN LANE**



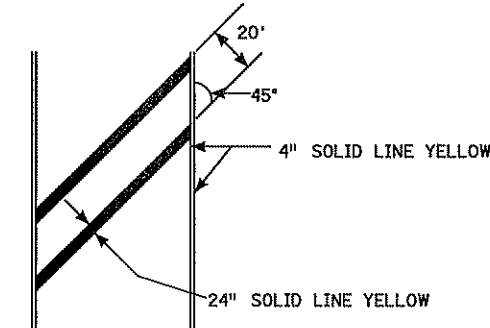
**TYPICAL LANE REDUCTION TRANSITION**



**TYPICAL MESSAGE PLACEMENT FOR TURN LANES**



**TYPICAL MARKINGS FOR LEFT TURN ISLANDS**



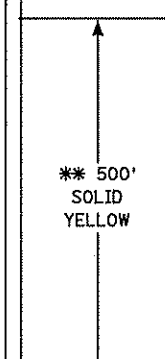
AT SPEEDS LESS THAN 40 MPH THE WIDTH OF THE CROSSHATCH LINE MAY BE REDUCED TO 12".

AT SPEEDS OVER 40 MPH THE SPACING MAY BE INCREASED TO 30' BETWEEN CROSSHATCH LINES.

- \* SEE "TYPICAL MESSAGE PLACEMENT FOR TURN LANES" FOR NUMBER OF ARROWS.
- \*\* IF THE DISTANCE BETWEEN THE BEGINNING OF THE SOLID LINE YELLOW IS LESS THAN THE DISTANCES IN THE CHART BELOW FROM THE END OF A PRECEDING SOLID LINE YELLOW IN THE SAME LANE, THE SOLID LINE SHALL BE EXTENDED BETWEEN THEM.

35 MPH SPEED LIMIT OR LESS..... 500'  
 40-50 MPH SPEED LIMIT..... 650'  
 55 MPH SPEED LIMIT..... 800'

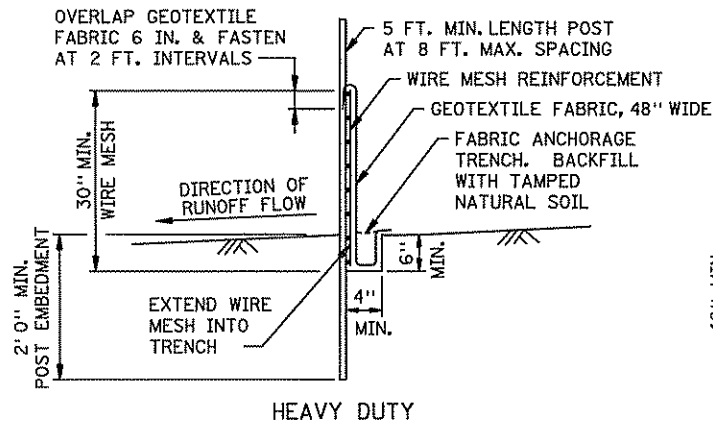
**DUAL LEFT TURN LANES**



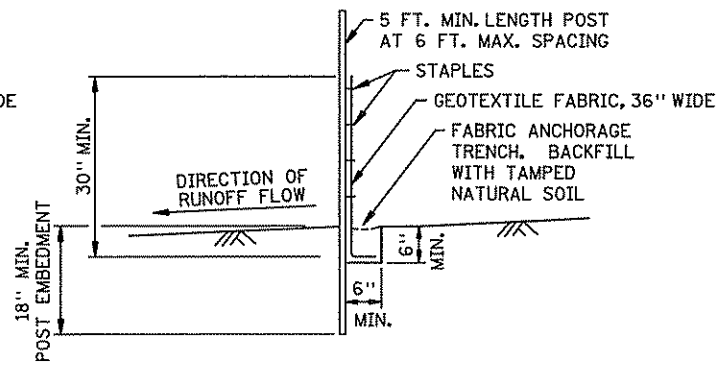
RECORD DRAWING

CONTRACTOR:  
 HARDRIVES, INC.  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374

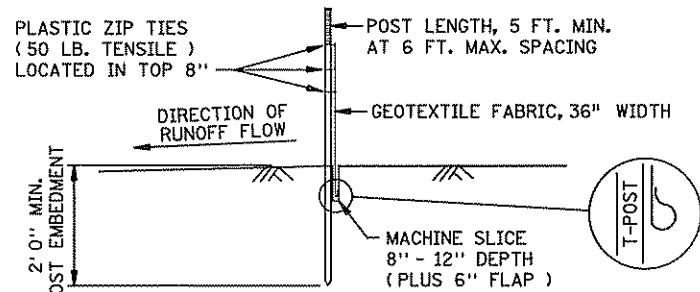
PERMANENT PAVEMENT MARKING SHEET NO 1	TITLE: PAVEMENT MARKING DETAILS TYPICAL
STATE PROJ NO 0212-46 (TH 242=242)	SHEET NO 9 OF 41 SHEETS



HEAVY DUTY



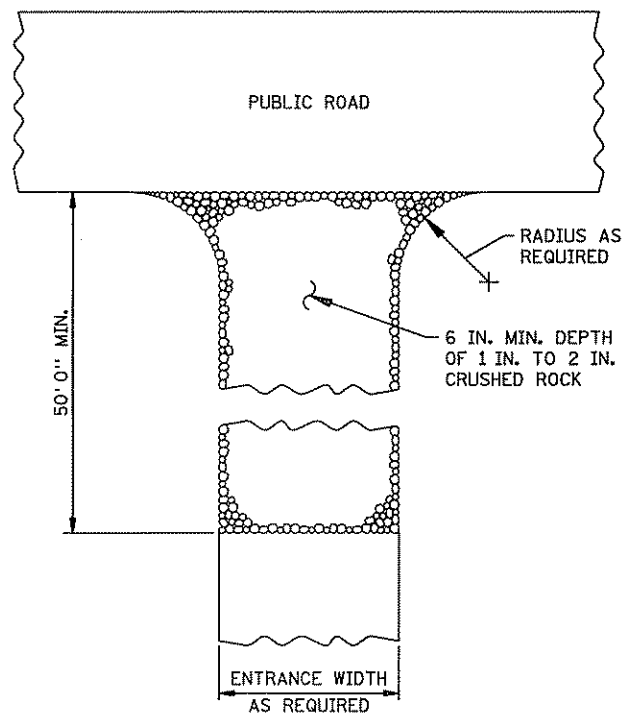
PREASSEMBLED



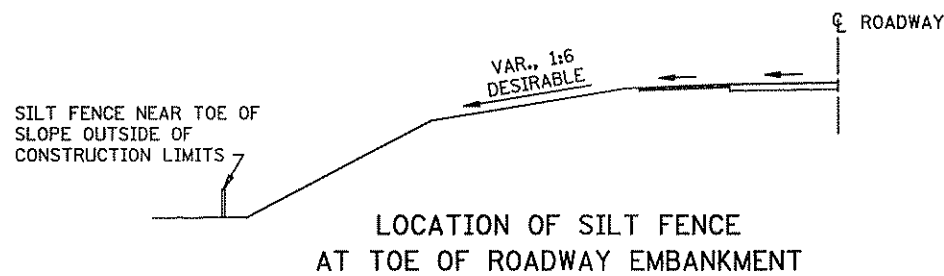
STANDARD MACHINE SLICED

**SILT FENCE DETAILS**  
TO PROTECT AREAS FROM SHEET FLOW  
(SEE SPEC. 3886)

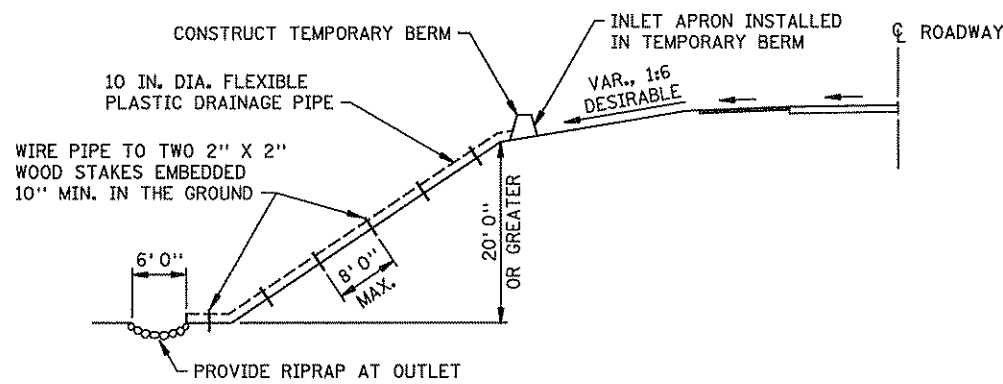
DESIGN GUIDELINES:  
MAXIMUM CONTRIBUTING AREA: 3 ACRES



ROCK CONSTRUCTION ENTRANCE ①

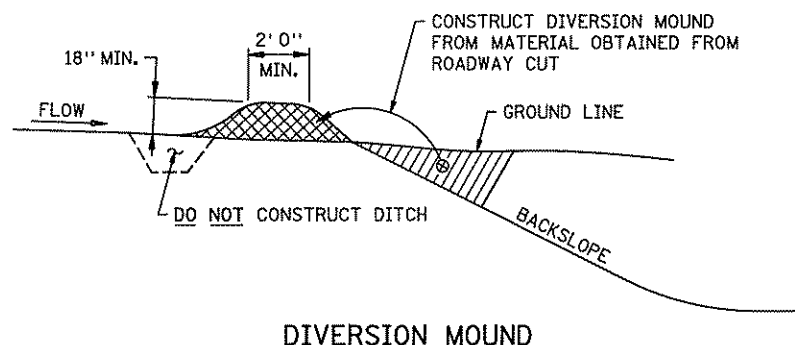


LOCATION OF SILT FENCE  
AT TOE OF ROADWAY EMBANKMENT



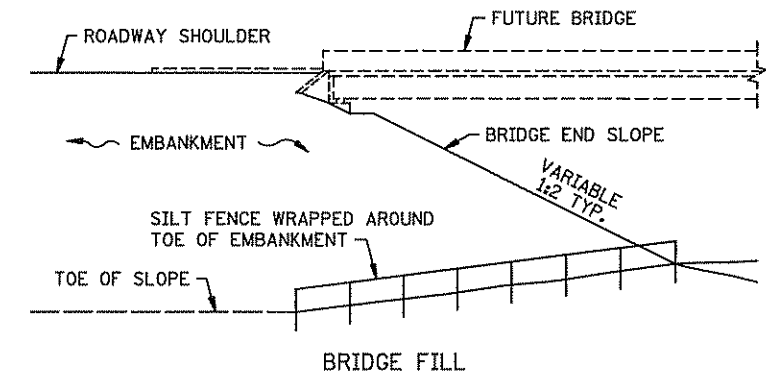
TEMPORARY DRAIN ON FILL SLOPE

DESIGN GUIDELINES:  
STORM FREQUENCY: 2 YEAR - 24 HOUR  
MAXIMUM DRAINAGE AREA: 3 ACRES



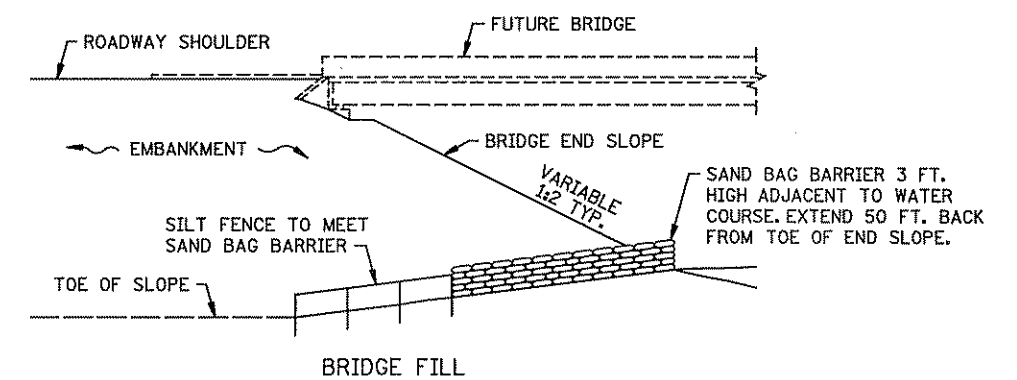
DIVERSION MOUND

DESIGN GUIDELINES:  
STORM FREQUENCY: 10 YEAR - 24 HOUR  
MAXIMUM DRAINAGE AREA: 5 ACRES  
MAXIMUM DIVERSION: GRADE 5%



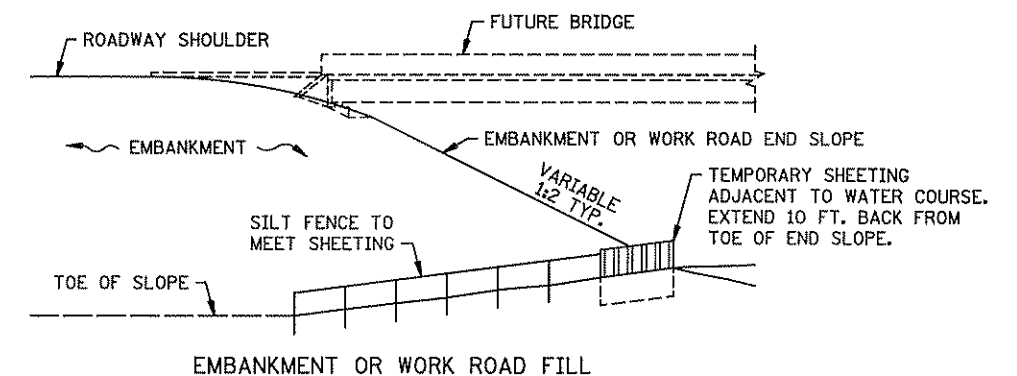
BRIDGE FILL

DESIGN GUIDELINES:  
WATER COURSE FLOW VELOCITY: STAGNANT  
CONTRIBUTING SLOPE AREA: 1/2 ACRE



BRIDGE FILL

DESIGN GUIDELINES:  
MAX. WATER COURSE FLOW VELOCITY: 7 FT./SEC.  
CONTRIBUTING SLOPE AREA: 1 ACRE



EMBANKMENT OR WORK ROAD FILL

DESIGN GUIDELINES:  
MAX. WATER COURSE FLOW VELOCITY: 15 FT./SEC.  
CONTRIBUTING SLOPE AREA: 3 ACRES

SILT FENCE AT BRIDGE EMBANKMENT

NOTES:  
SEE SPECS. 2573 & 3886.

① ROCKS AT ENTRANCE CLEAN WORKSITE MUD OFF OF TRUCK TIRES BEFORE DRIVING ON MAIN ROAD. THIS WILL PREVENT AUTO DAMAGE. WE NEED TO KEEP CONSTRUCTION SEDIMENT OUT OF DRAINAGE SYSTEMS AND WETLANDS.

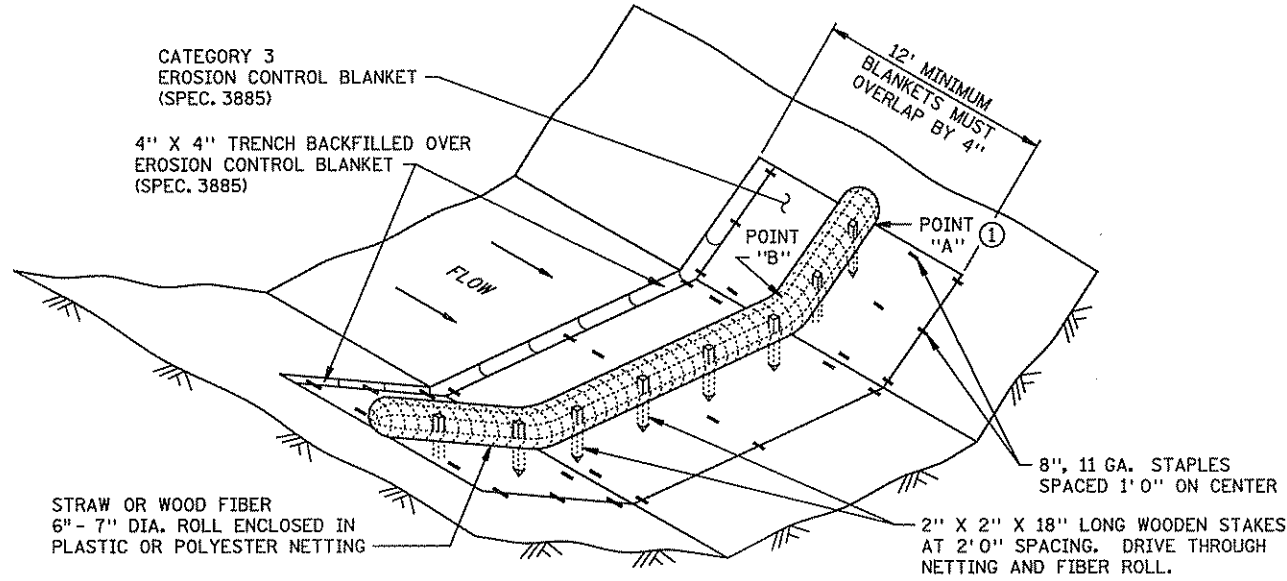
RECORD DRAWING

CONTRACTOR:  
HARDRIVES, INC.  
14475 QUIRAM DRIVE  
ROGERS, MN 55374

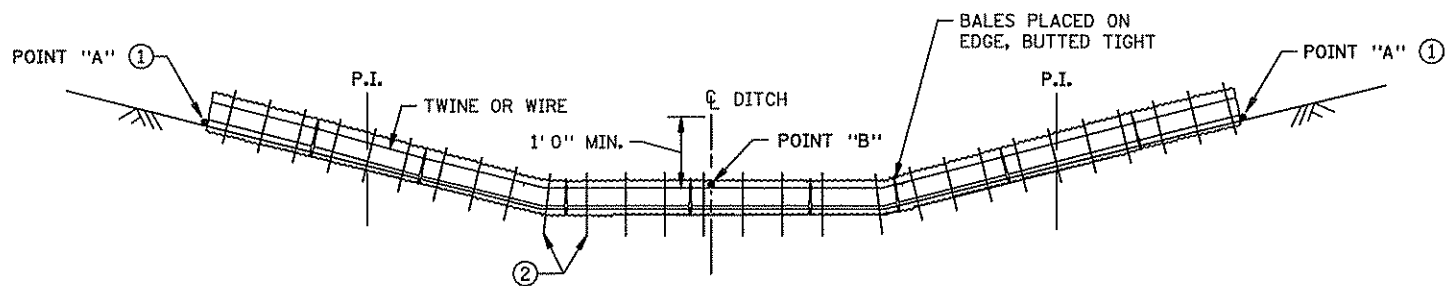
STANDARD SHEET NO.  
5-297.405 ( 2 OF 4 )  
STANDARD APPROVED:  
JULY 30, 2001

TITLE:  
TEMPORARY EROSION CONTROL

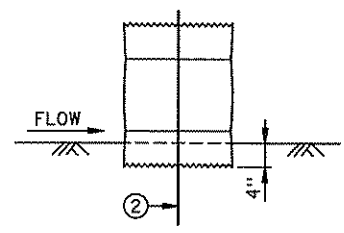
STATE PROJ. NO. 0212-46 (TH 242=242) SHEET NO. 10 OF 41 SHEETS



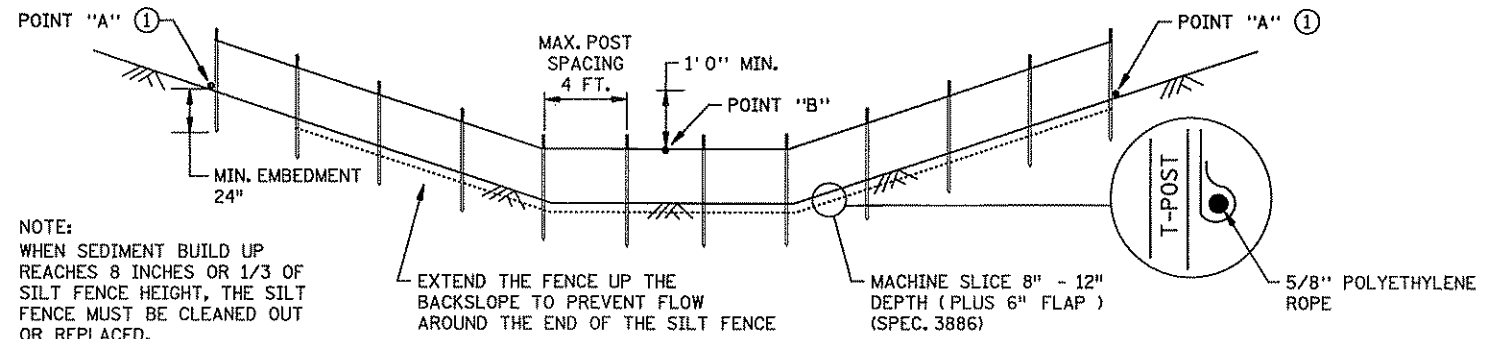
**BIOROLL BLANKET SYSTEM**  
(TYPE 3 SPEC. 3889)



**BALE DITCH CHECK**  
(USED ON ROUGH GRADED SOIL. REMOVE AFTER ROUGH GRADING IS COMPLETED. CAN BE USED AT WETLAND PERIMETERS ANYTIME)

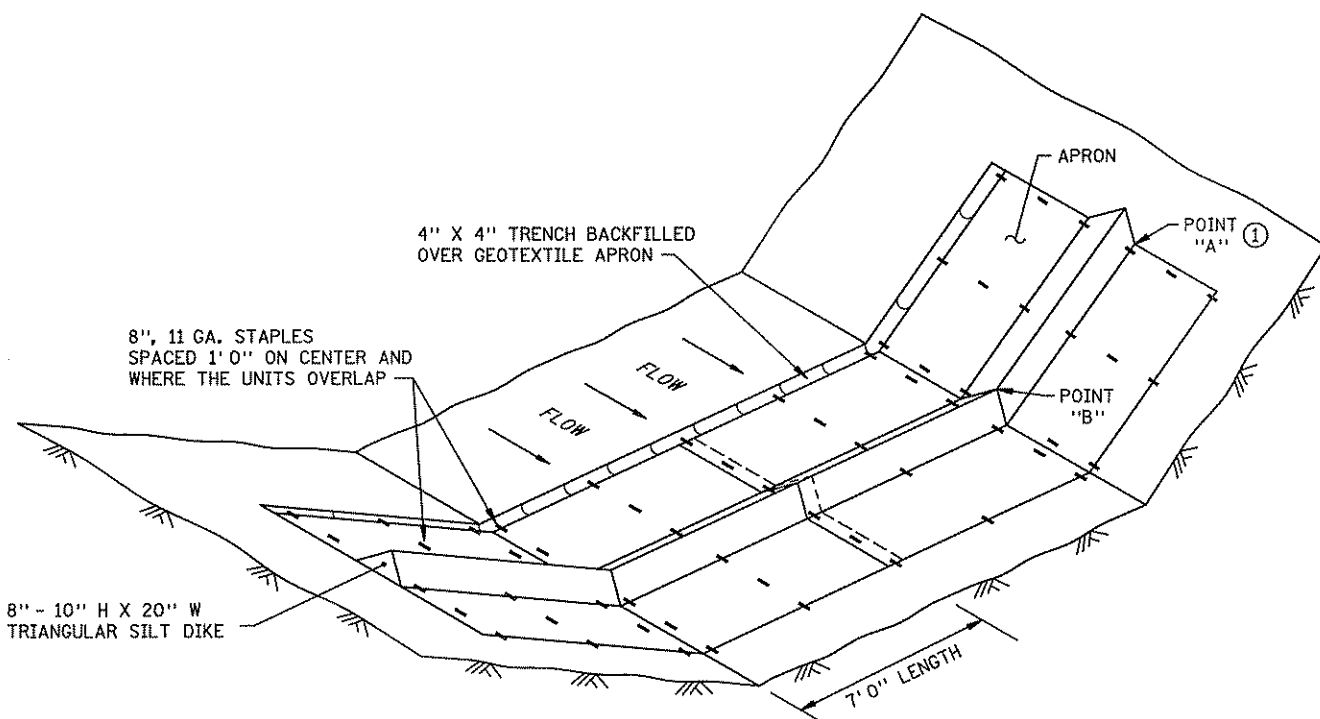


**EMBEDMENT METHOD BALE CHECK DETAIL**

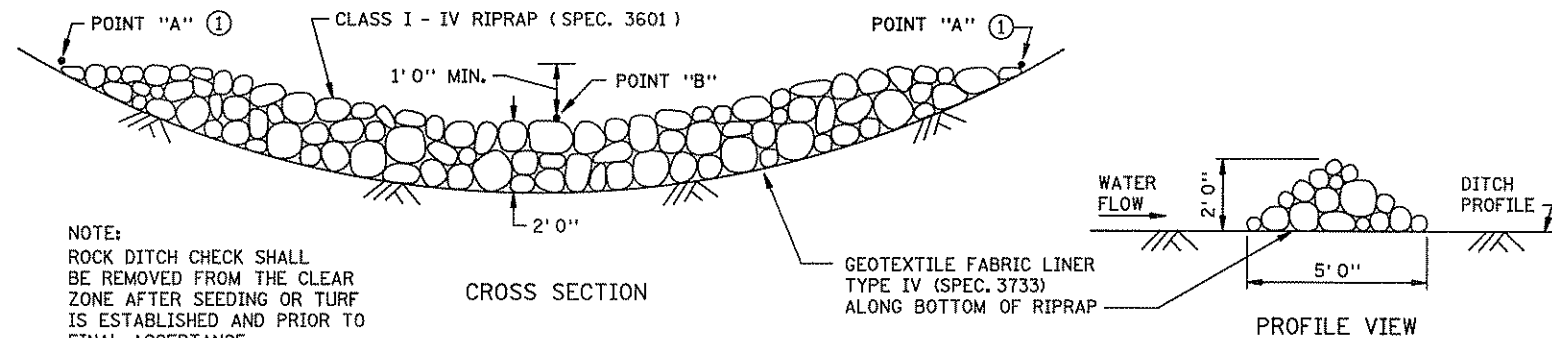


NOTE:  
WHEN SEDIMENT BUILD UP REACHES 8 INCHES OR 1/3 OF SILT FENCE HEIGHT, THE SILT FENCE MUST BE CLEANED OUT OR REPLACED.

**MACHINE SLICED SILT FENCE**  
(TYPE 1 SPEC. 3889)



**GEOTEXTILE TRIANGULAR DIKE**  
(TYPE 6 SPEC. 3889)



NOTE:  
ROCK DITCH CHECK SHALL BE REMOVED FROM THE CLEAR ZONE AFTER SEEDING OR TURF IS ESTABLISHED AND PRIOR TO FINAL ACCEPTANCE.

**ROCK CHECK**  
(TYPE 7 SPEC. 3889)

NOTES:  
SEE SPECS. 2573, 3882, 3885, 3886 & 3889.  
SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM SPACING FORMULA:  
SPACING OF DITCH CHECKS (FT) =  $\frac{(\text{HEIGHT OF DITCH CHECK (FT)} \times 100)}{\text{DITCH GRADE IN PERCENT}}$

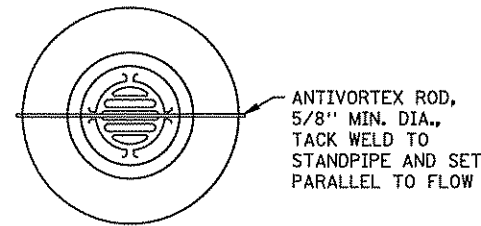
- ① POINT A MUST BE 1' 0" MIN. HIGHER THAN POINT B TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.
- ② TWO 2 IN. X 2 IN. WOOD STAKES OR REINFORCING BARS IN EACH BALE AND EMBEDDED IN THE GROUND 10 IN. MINIMUM.

RECORD DRAWING

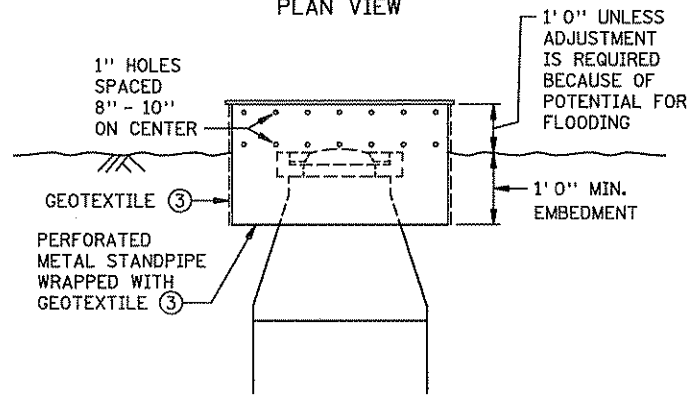
CONTRACTOR:  
HARDRIVES, INC.  
14475 QUIRAM DRIVE  
ROGERS, MN 55374

STANDARD SHEET NO. 5-297.405 (3 OF 4)	TITLE: TEMPORARY EROSION CONTROL DITCH CHECKS
STANDARD APPROVED: NOVEMBER 5, 2002	
STATE PROJ. NO. 0212-46 (TH 242=242) SHEET NO. 11 OF 41 SHEETS	

FILE NAME 5017.MSC

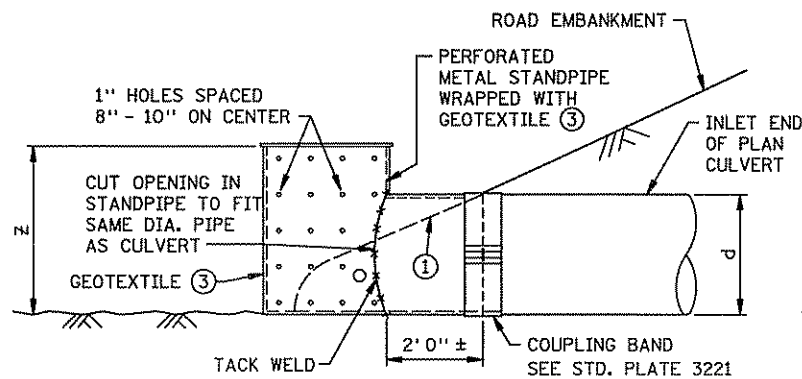
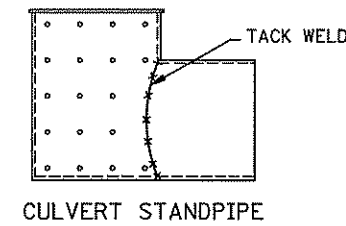
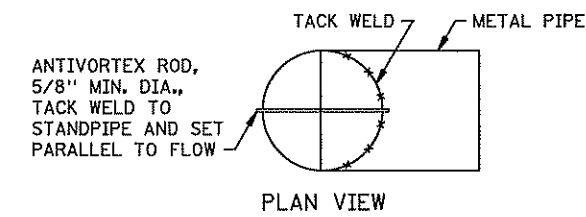


PLAN VIEW

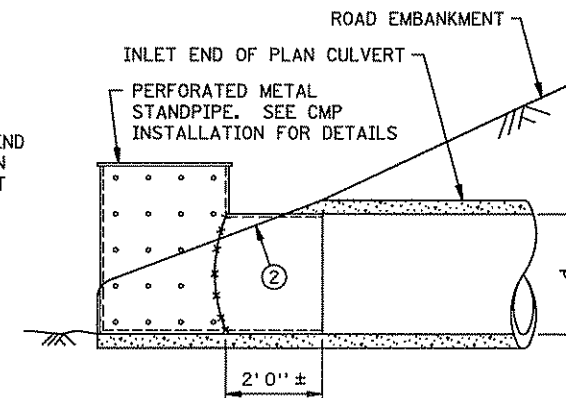


ELEVATION

RISER STANDPIPE TO PROTECT DROP INLET



ELEVATION OF CSP INSTALLATION



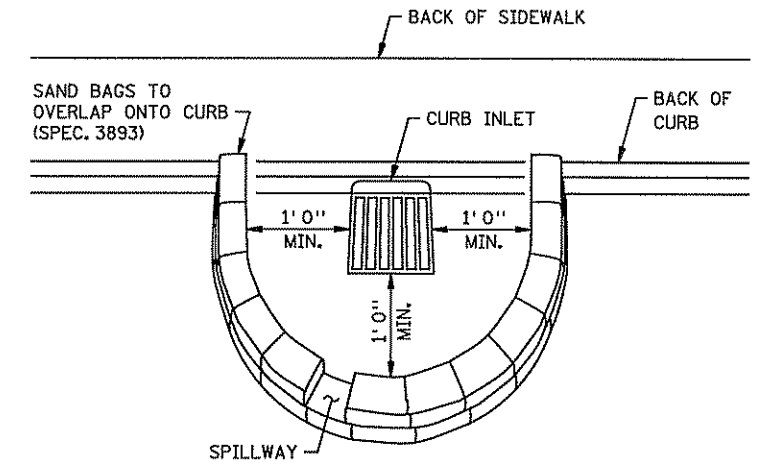
ELEVATION OF RCP INSTALLATION

CULVERT STANDPIPE PROTECTION

FOR SEDIMENT CONTROL ON CULVERT INLET (TYPE D SPEC. 3891)

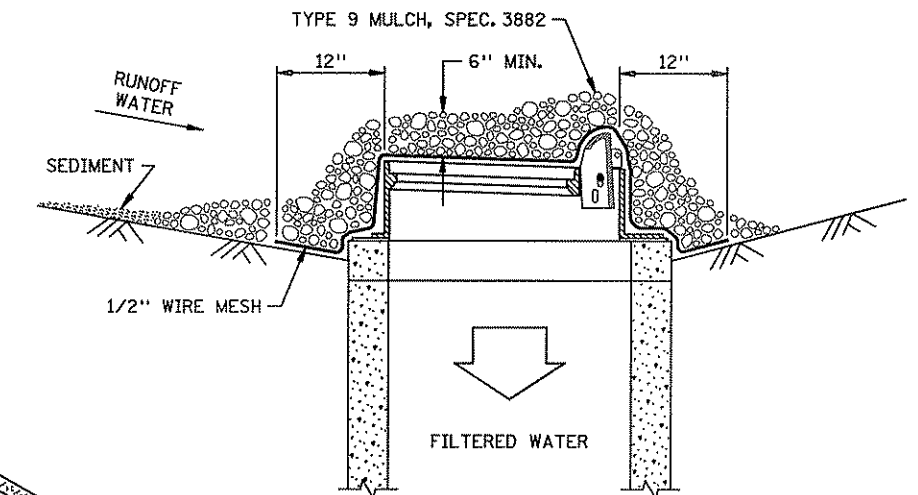
CULVERT SIZE: 12" - 36"

d = DIA. OF STANDPIPE EQUAL TO DIA. OF PLAN CULVERT  
z = LENGTH OF PERFORATED STANDPIPE (d + 12")



SANDBAG BARRIER AT STREET INLET

THIS INLET PROTECTION IS USED DURING ROUGH GRADING ONLY. USE BEFORE ROAD IS OPEN TO TRAFFIC OR IS PAVED. (SPEC. 3893)

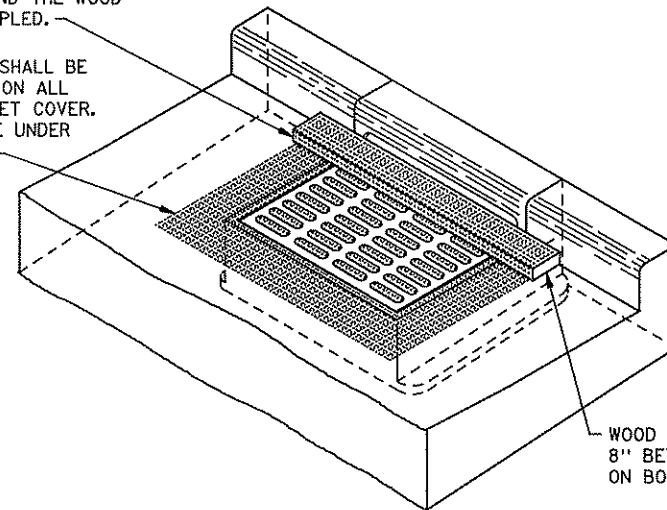


AGGREGATE FILTER AT CURB INLET

(TYPE B WITHOUT CURB SPEC. 3891)  
(TYPE C WITH CURB SPEC. 3891)

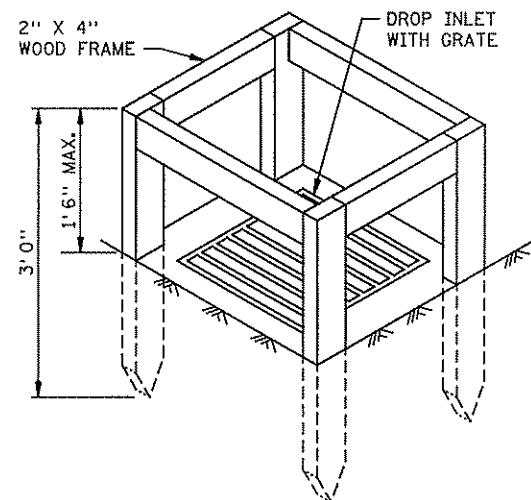
AN ADDITIONAL 18" OF GEOTEXTILE IS WRAPPED AROUND THE WOOD 2" X 4" AND STAPLED.

GEOTEXTILE SIZE SHALL BE 8" MIN. GREATER ON ALL SIDES OF THE INLET COVER. PLACE GEOTEXTILE UNDER INLET COVER. ③



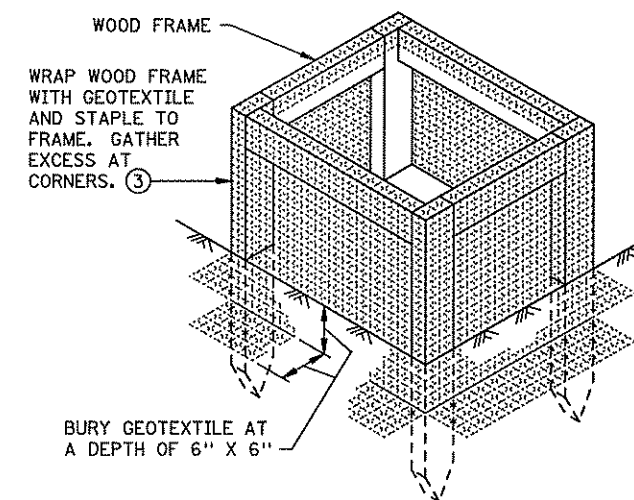
GEOTEXTILE FILTER AT STREET INLET WITH CURB BOX

TYPE C SPEC. 3891



SILT FENCE BOX TO PROTECT DROP INLETS

USE WHERE INLET DRAINS AN AREA WITH SLOPES AT 1:3 OR LESS (TYPE A SPEC. 3891)



NOTES:

SEE SPECS. 2573, 3891 & 3893.

MANUFACTURED ALTERNATIVES LISTED ON Mn/DOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED.

① FOR CSP, REMOVE TEMPORARY STANDPIPE AND INSTALL CULVERT APRON AFTER VEGETATION IS ESTABLISHED.

② FOR RCP, INSTALL CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO RCP. AFTER VEGETATION IS ESTABLISHED REMOVE TEMPORARY STANDPIPE.

③ ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886 FOR MACHINE SLICED.

RECORD DRAWING

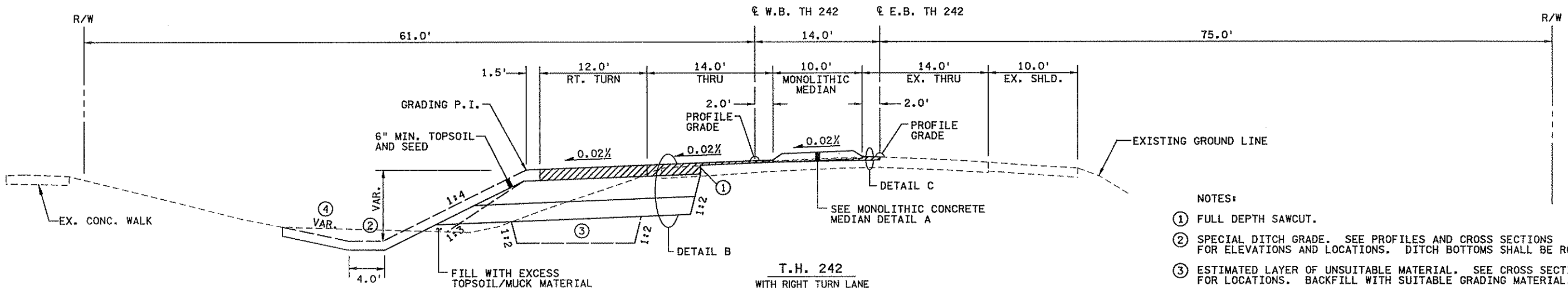
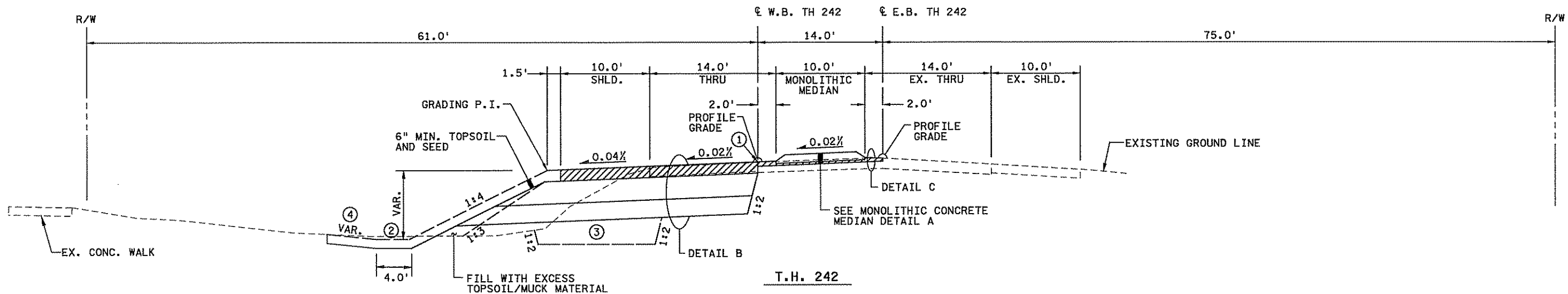
CONTRACTOR:  
HARDRIVES, INC.  
14475 QUIRAM DRIVE  
ROGERS, MN 55374

STANDARD SHEET NO.  
5-297.405 (4 OF 4)  
STANDARD APPROVED:  
NOVEMBER 5, 2002

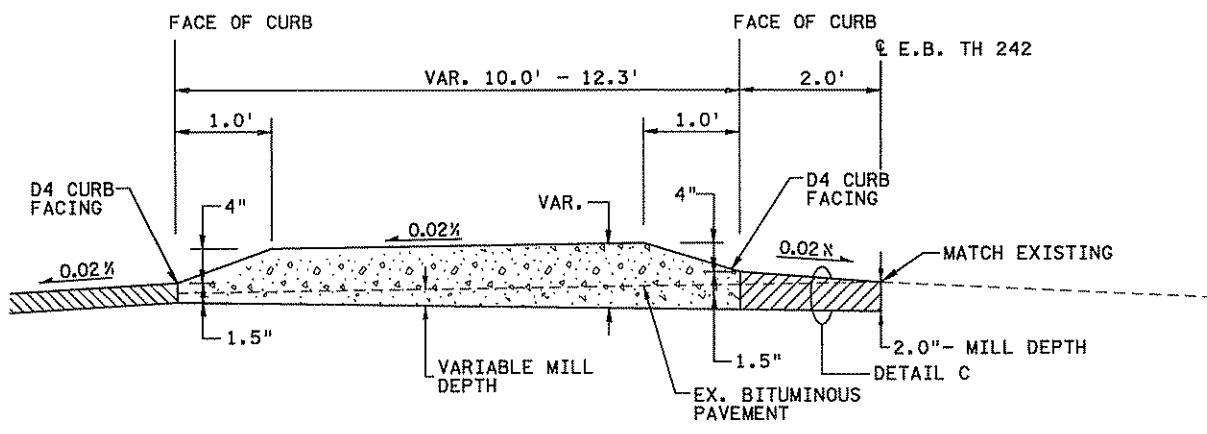
TITLE:

TEMPORARY EROSION CONTROL  
TEMPORARY INLET PROTECTION

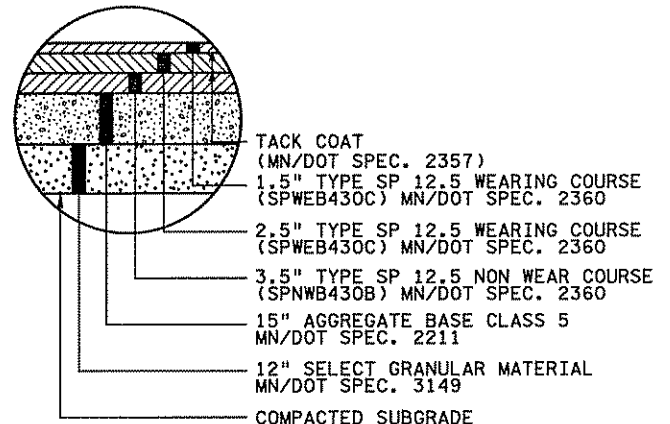
STATE PROJ. NO. 0212-46 (TH 242=242) SHEET NO. 12 OF 41 SHEETS



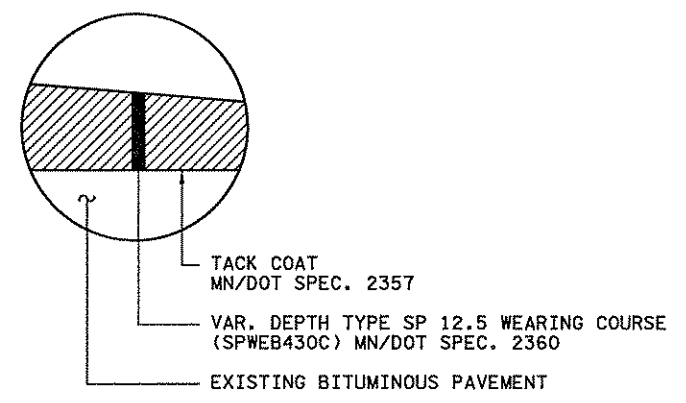
- NOTES:
- ① FULL DEPTH SAWCUT.
  - ② SPECIAL DITCH GRADE. SEE PROFILES AND CROSS SECTIONS FOR ELEVATIONS AND LOCATIONS. DITCH BOTTOMS SHALL BE ROUNDED.
  - ③ ESTIMATED LAYER OF UNSUITABLE MATERIAL. SEE CROSS SECTIONS FOR LOCATIONS. BACKFILL WITH SUITABLE GRADING MATERIAL.
  - ④ VARIABLE BACK SLOPE 1:3 MAX. SEE CROSS SECTIONS.



DETAIL A  
MONOLITHIC CONCRETE MEDIAN



DETAIL B



DETAIL C

CONTRACTOR:  
HARDRIVES, INC.  
14475 QUIRAM DRIVE  
ROGERS, MN 55374

NO	DATE	BY	CHKD	APPR	REVISION
2	2/24/06	JLS			RECORD DRAWING
1	8-11-04	DCF	NAW	NAW	REVISED PER MN/DOT COMMENTS 8-11-04.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: **NATHEN A. WILL**  
Date: *2/24/06* License # **26391**

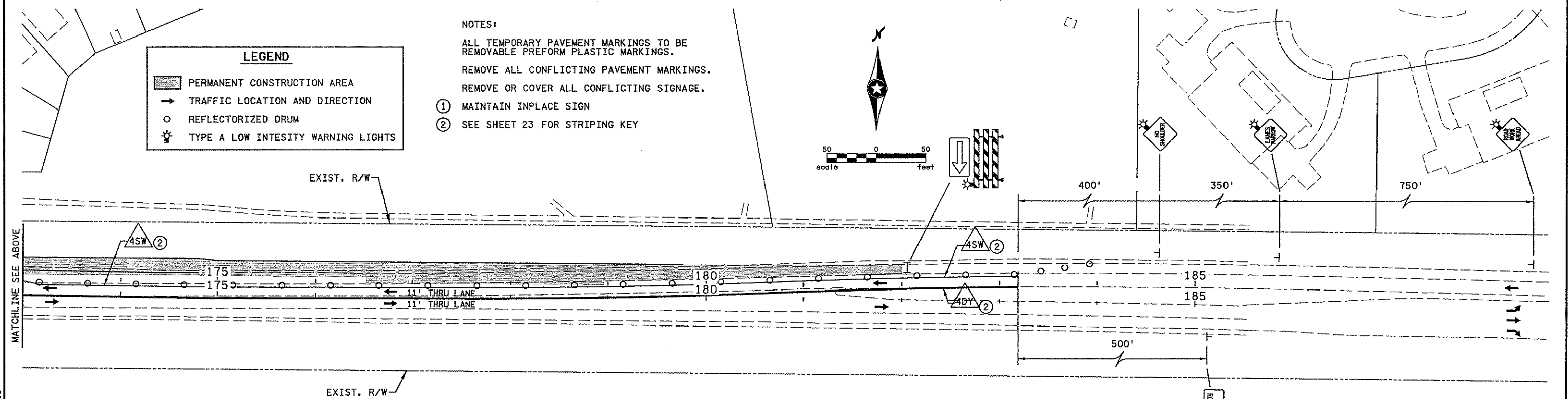
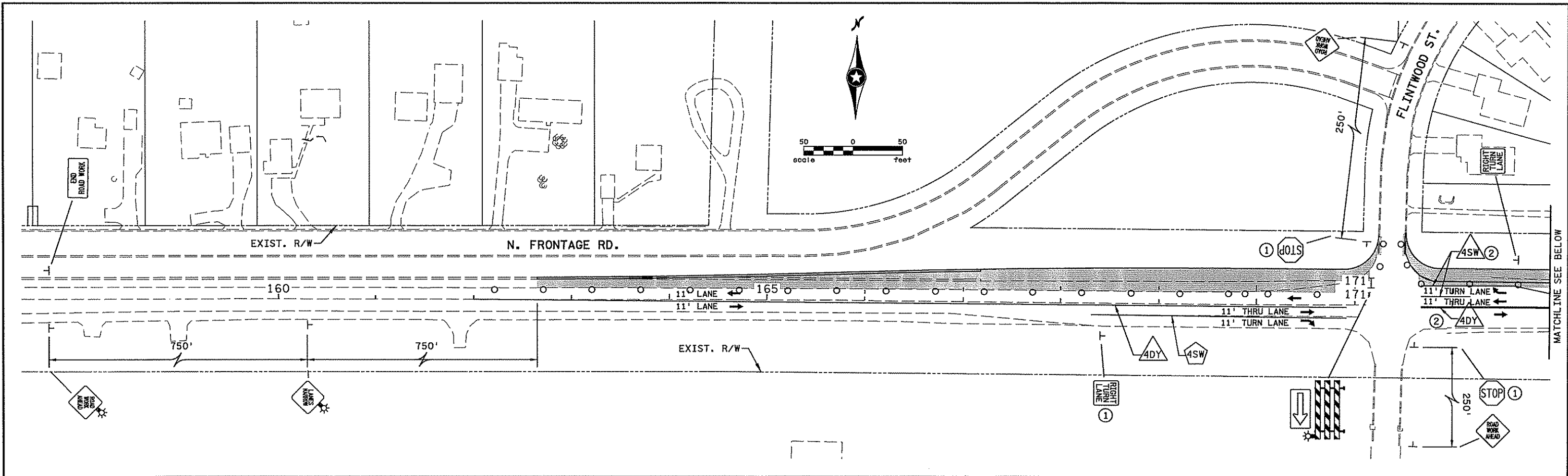
STATE AID PROJECT NO. 114-010-15  
STATE PROJECT NO. S.P. 0212-46 (TH242)  
CITY PROJECT NO. 03-31  
DRAWN BY D. FITCHORN  
DESIGNED BY G. STANLEY  
CHECKED BY N. WILL  
COMM. NO. 0045017



CITY OF COON RAPIDS  
T.H. 242 AT FLINTWOOD STREET

SHEET 13 OF 41

4:03:03 PM 2/24/06 n:\projects\5017\asbt\plan\5017.dwg



**LEGEND**

- PERMANENT CONSTRUCTION AREA
- TRAFFIC LOCATION AND DIRECTION
- REFLECTORIZED DRUM
- TYPE A LOW INTENSITY WARNING LIGHTS

**NOTES:**  
 ALL TEMPORARY PAVEMENT MARKINGS TO BE REMOVABLE PREFORM PLASTIC MARKINGS.  
 REMOVE ALL CONFLICTING PAVEMENT MARKINGS.  
 REMOVE OR COVER ALL CONFLICTING SIGNAGE.  
 ① MAINTAIN INPLACE SIGN  
 ② SEE SHEET 23 FOR STRIPING KEY

CONTRACTOR:  
 HARDRIVES, INC.  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374

NO	DATE	BY	CHKD	APPR	REVISION
2	2/24/06	JLS			RECORD DRAWING
1	8-11-04	DCF	NAW	NAW	CHANGED TAPE TO PAINT.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: **NATHEN A. WILL**  
 Date: *2/24/06* License # 26391

STATE AID PROJECT NO. 114-010-15  
 STATE PROJECT NO. S.P. 0212-46 (TH242)  
 CITY PROJECT NO. 03-31  
 DRAWN BY D. FITCHORN  
 DESIGNED BY G. STANLEY  
 CHECKED BY N. WILL  
 COMM. NO. 0045017

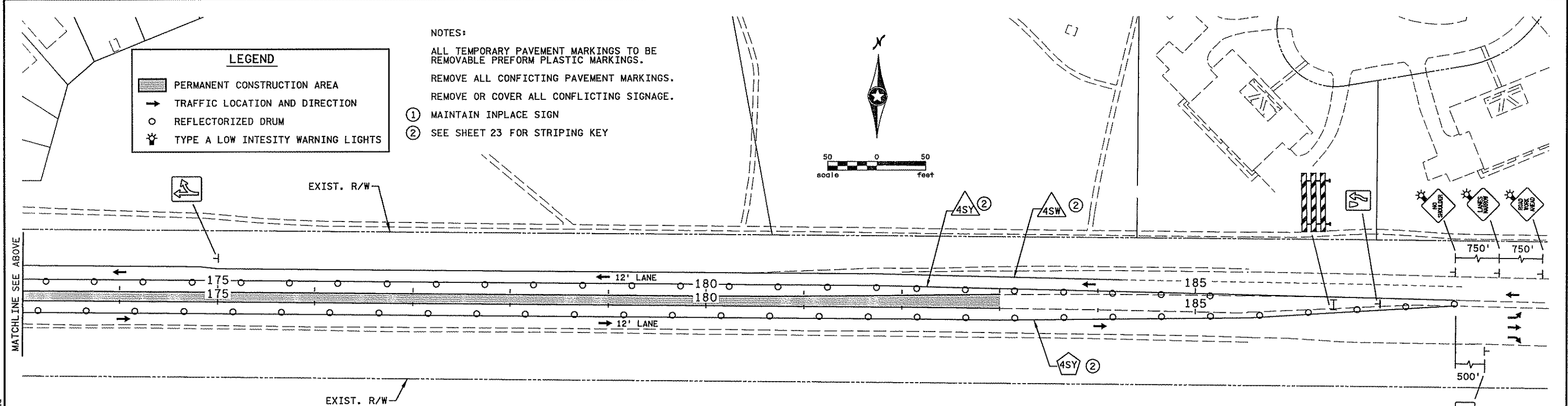
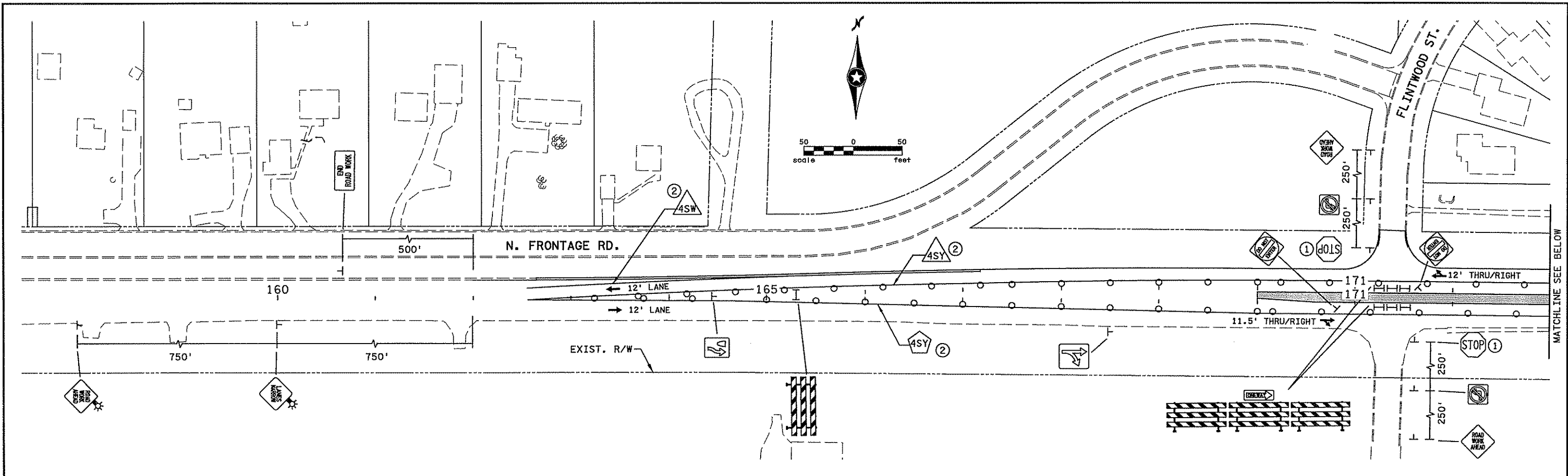


CITY OF COON RAPIDS  
 STAGING AND TRAFFIC CONTROL PLAN  
 T.H. 242 AT FLINTWOOD STREET  
 STAGE 1

SHEET 14 OF 41

4:03:06 PM 3/13/2006  
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**LEGEND**

	PERMANENT CONSTRUCTION AREA
	TRAFFIC LOCATION AND DIRECTION
	REFLECTORIZED DRUM
	TYPE A LOW INTENSITY WARNING LIGHTS

- NOTES:**
- ALL TEMPORARY PAVEMENT MARKINGS TO BE REMOVABLE PREFORM PLASTIC MARKINGS.
  - REMOVE ALL CONFLICTING PAVEMENT MARKINGS.
  - REMOVE OR COVER ALL CONFLICTING SIGNAGE.
  - ① MAINTAIN INPLACE SIGN
  - ② SEE SHEET 23 FOR STRIPING KEY

CONTRACTOR:  
**HARDRIVES, INC.**  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374

NO	DATE	BY	CHKD	APPR	REVISION
2	2/24/06	JLS			RECORD DRAWING
1	8-11-04	DCF	NAW	NAW	CHANGED TAPE TO PAINT.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: **NATHEN A. WILL**  
 Date: *2/24/06* License # **26391**

STATE AID PROJECT NO.  
114-010-15  
 STATE PROJECT NO.  
S.P. 0212-46 (TH242)  
 CITY PROJECT NO. 03-31

DRAWN BY  
**D. FITCHORN**  
 DESIGNED BY  
**G. STANLEY**  
 CHECKED BY  
**N. WILL**  
 COMM. NO. 0045017



CITY OF COON RAPIDS  
 STAGING AND TRAFFIC CONTROL PLAN  
 T.H. 242 AT FLINTWOOD STREET  
 STAGE 2

SHEET  
15  
OF  
41

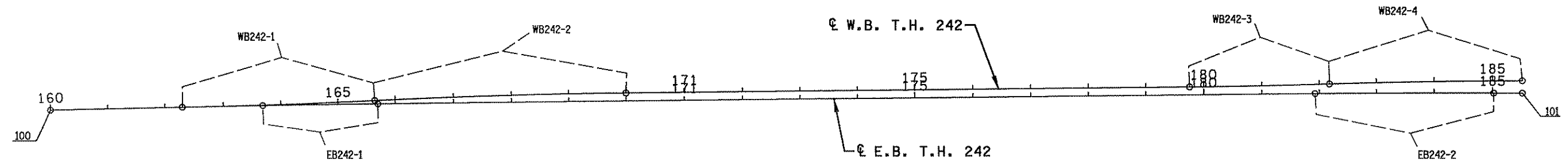
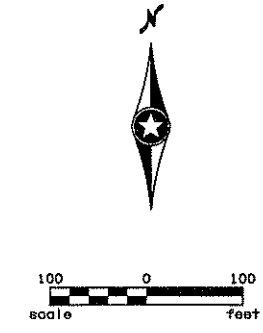
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PT. NO.	POINT	STATION	CURVE DATA					COORDINATES		AZIMUTH
			Δ	D	R	T	L	X	Y	
<b>☉ E.B. T.H. 242</b>										
100	POT	160+00.000						497,070.9651	158,955.0696	88° 55' 20.35"
	PC	163+68.530						497,439.4300	158,962.0009	88° 55' 20.35"
EB242-1	PI	164+69.188	0° 30' 11.83" RT	0° 15' 00.00"	22,918.312'	100.658'	201.314'	497,540.0699	158,963.8941	PI
	CC							497,870.4768	136,047.7430	
	PT	165+69.844						497,640.7226	158,964.9032	89° 25' 32.18"
	PC	181+92.515						499,263.3118	158,981.1703	89° 25' 32.18"
EB242-2	PI	183+47.345	0° 46' 26.90" RT	0° 15' 00.00"	22,918.312'	154.830'	309.656'	499,418.1343	158,982.7225	PI
	CC							499,493.0661	136,064.0102	
	PT	185+02.171						499,572.9637	158,982.1827	90° 11' 59.08"
101	POT	185+51.984						499,622.7766	158,982.0091	
<b>☉ W.B. T.H. 242</b>										
	PC	162+29.817						497,300.9408	158,959.3958	88° 55' 20.36"
WB242-1	PI	163+97.210	1° 40' 25.74" LT	0° 30' 00.00"	11,459.156'	167.394'	334.763'	497,468.3048	158,962.5441	PI
	CC							497,085.4179	170,416.5247	
	PRC	165+64.580						497,635.5054	158,970.5797	87° 14' 54.62"
	PRC	165+64.580						497,635.5054	158,970.5797	87° 14' 54.62"
WB242-2	PI	167+82.317	2° 10' 37.56" RT	0° 30' 00.00"	11,459.189'	217.737'	435.421'	497,852.9912	158,981.0320	PI
	CC							498,185.5945	147,524.6016	
	PT	170+00.001						498,070.7170	158,983.2148	89° 25' 32.18"
	PC	179+75.796						499,046.4625	158,992.9970	89° 25' 32.18"
WB242-3	PI	180+96.804	1° 12' 36.15" LT	0° 30' 00.00"	11,459.156'	121.009'	242.008'	499,167.4651	158,994.2101	PI
	CC							498,931.5854	170,451.5771	
	PRC	182+17.804						499,288.4150	158,997.9782	88° 12' 56.03"
	PRC	182+17.804						499,288.4150	158,997.9782	88° 12' 56.03"
WB242-4	PI	183+85.025	1° 40' 19.53" RT	0° 30' 00.00"	11,459.156'	167.221'	334.418'	499,455.5548	159,003.1854	PI
	CC							499,645.2445	147,544.3795	
	PT	185+52.222						499,622.7754	159,003.5133	89° 53' 15.56"

**LEGEND**

100 ALIGNMENT POINT NO.  
(SEE ALIGNMENT TABULATION)

HORIZONTAL CONTROL IS BASED ON ANOKA COUNTY COORDINATES



CONTRACTOR:  
HARDRIVES, INC.  
14475 QUIRAM DRIVE  
ROGERS, MN 55374

1	2/24/06	JLS		RECORD DRAWING
NO	DATE	BY	CHKD	APPR
				REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: NATHAN A. WILL  
Date: 2/24/06 License # 26391

STATE AID PROJECT NO. 114-010-15  
STATE PROJECT NO. S.P. 0212-46 (TH242)  
CITY PROJECT NO. 03-31

DRAWN BY D. FITCHORN  
DESIGNED BY G. STANLEY  
CHECKED BY N. WILL  
COMM. NO. 0045017

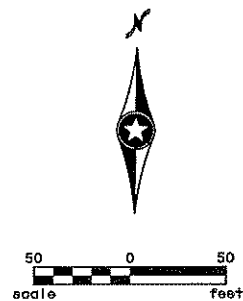


CITY OF COON RAPIDS  
ALIGNMENT PLAN AND TABULATION  
T.H. 242 AT FLINTWOOD STREET

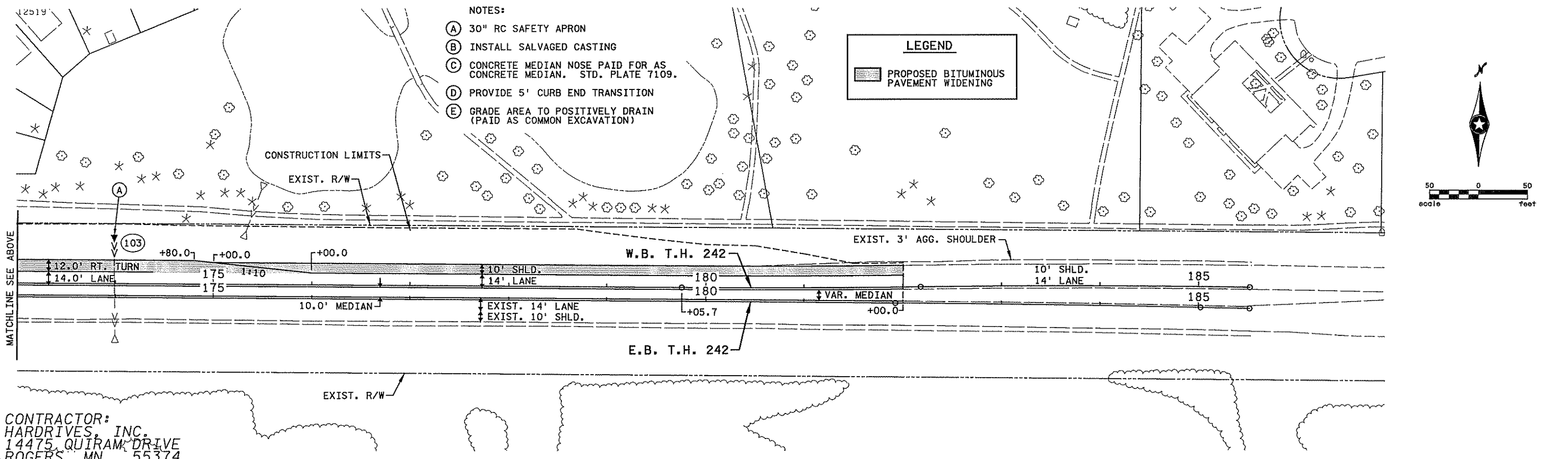
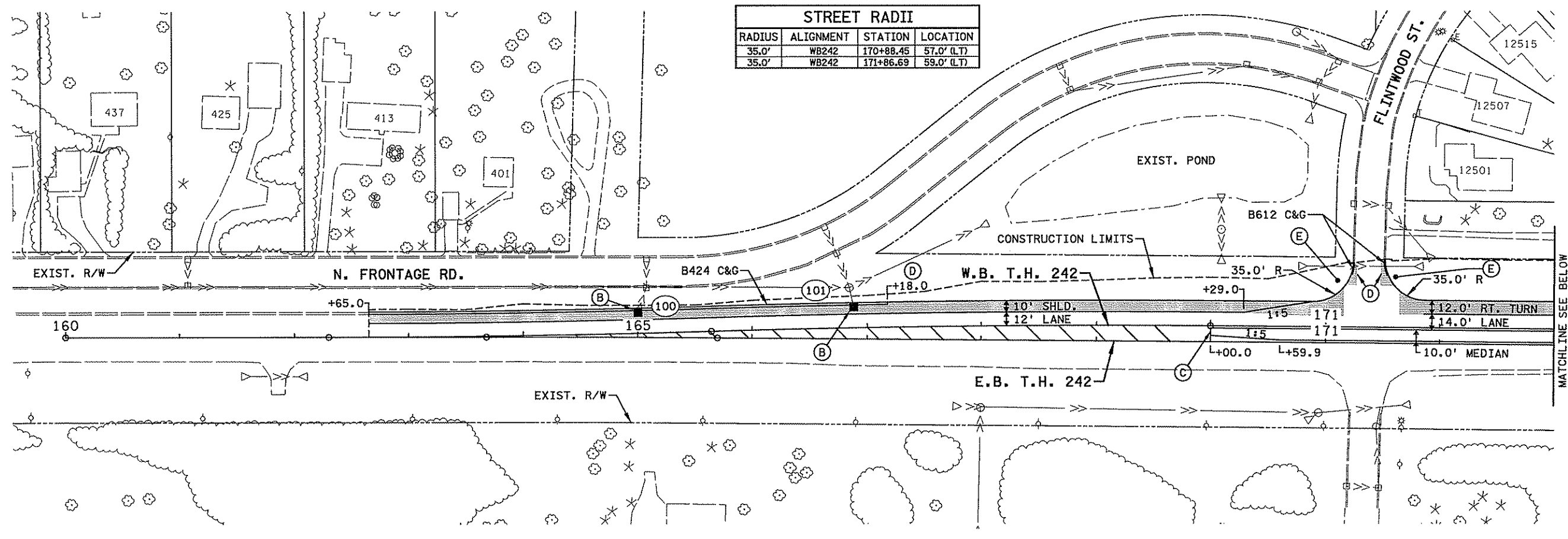
SHEET 16 OF 41

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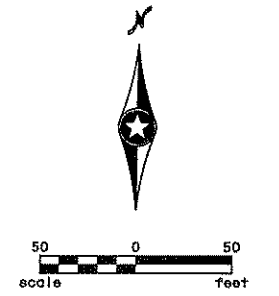


STREET RADII			
RADIUS	ALIGNMENT	STATION	LOCATION
35.0'	WB242	170+88.45	57.0' (L.T)
35.0'	WB242	171+86.69	59.0' (L.T)



- NOTES:
- (A) 30" RC SAFETY APRON
  - (B) INSTALL SALVAGED CASTING
  - (C) CONCRETE MEDIAN NOSE PAID FOR AS CONCRETE MEDIAN. STD. PLATE 7109.
  - (D) PROVIDE 5' CURB END TRANSITION
  - (E) GRADE AREA TO POSITIVELY DRAIN (PAID AS COMMON EXCAVATION)

**LEGEND**  
 PROPOSED BITUMINOUS PAVEMENT WIDENING



CONTRACTOR:  
**HARDRIVES, INC.**  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374

NO	DATE	BY	CHKD	APPR	REVISION
2	2/24/06	JLS			RECORD DRAWING
1	8-2-04	NW	NW		ADDED 30" CENTERLINE PIPE AND REVISED NOTE A.

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 Print Name: **NATHEN A. WILL**  
 Date: *2/24/06* License # **26391**

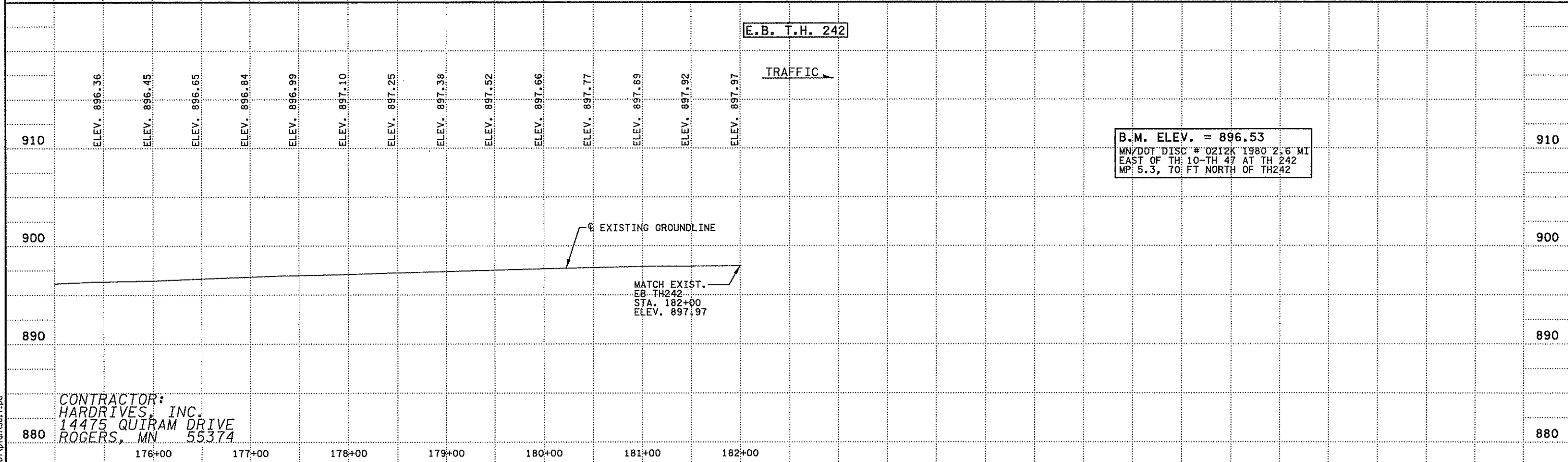
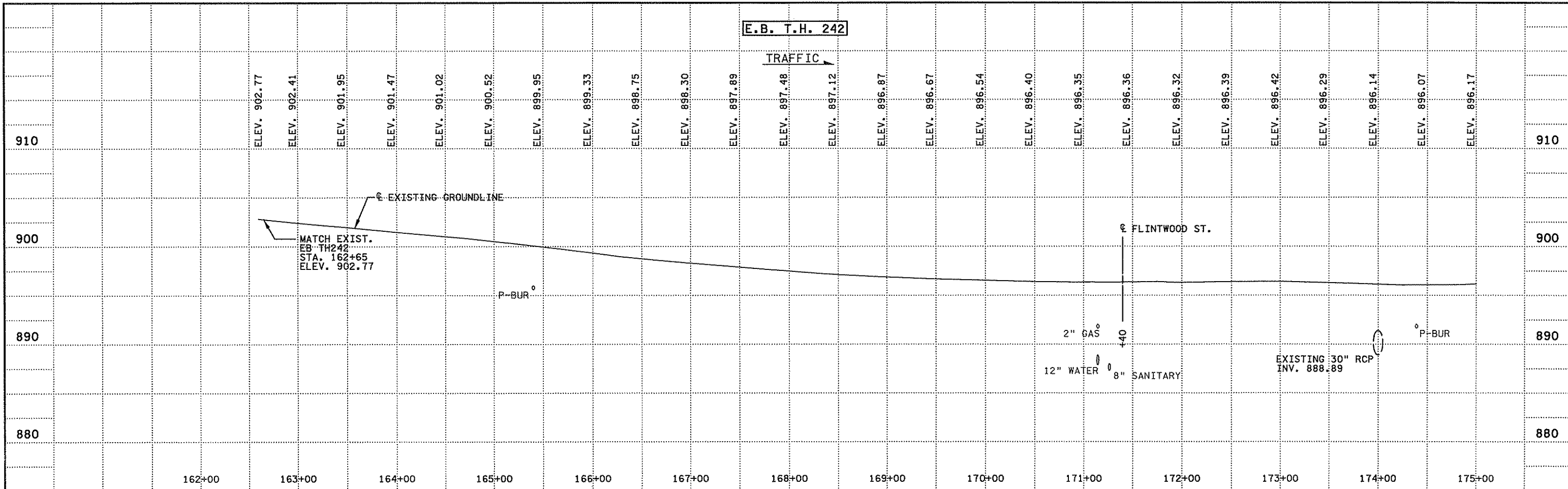
STATE AID PROJECT NO. 114-010-15  
 STATE PROJECT NO. S.P. 0212-46 (TH242)  
 CITY PROJECT NO. 03-31  
 DRAWN BY D. FITCHORN  
 DESIGNED BY G. STANLEY  
 CHECKED BY N. WILL  
 COMM. NO. 0045017



CITY OF COON RAPIDS  
 CONSTRUCTION PLAN  
 T.H. 242 AT FLINTWOOD STREET

SHEET 18 OF 41

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 2/24/06  
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CONTRACTOR:  
**HARDRIVES, INC.**  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374

NO	DATE	BY	CHKD	APPR	REVISION
2	2/24/06	JLS			RECORD DRAWING
1	8-2-04	NW	NW		INCLUDED INPLACE UTILITIES.

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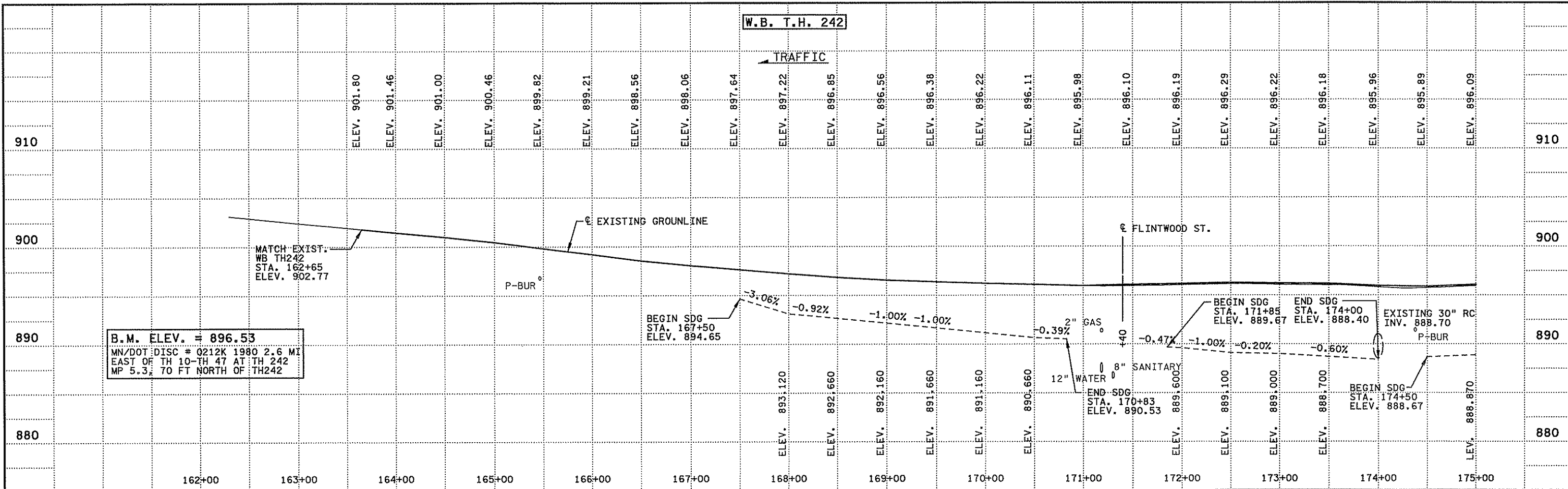


CITY OF COON RAPIDS  
 PROFILES  
 T.H. 242 AT FLINTWOOD STREET  
 E.B. T.H. 242  
 SHEET 19 OF 41

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 2/13/2006  
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W.B. T.H. 242

TRAFFIC



B.M. ELEV. = 896.53  
 MN/DOT DISC # 0212K 1980 2.6 MI  
 EAST OF TH 10-TH 47 AT TH 242  
 MP 5.3, 70 FT NORTH OF TH242

MATCH EXIST.  
 WB TH242  
 STA. 162+65  
 ELEV. 902.77

BEGIN SDG  
 STA. 167+50  
 ELEV. 894.65

2" GAS  
 8" SANITARY  
 12" WATER  
 END SDG  
 STA. 170+83  
 ELEV. 890.53

BEGIN SDG  
 STA. 171+85  
 ELEV. 889.67

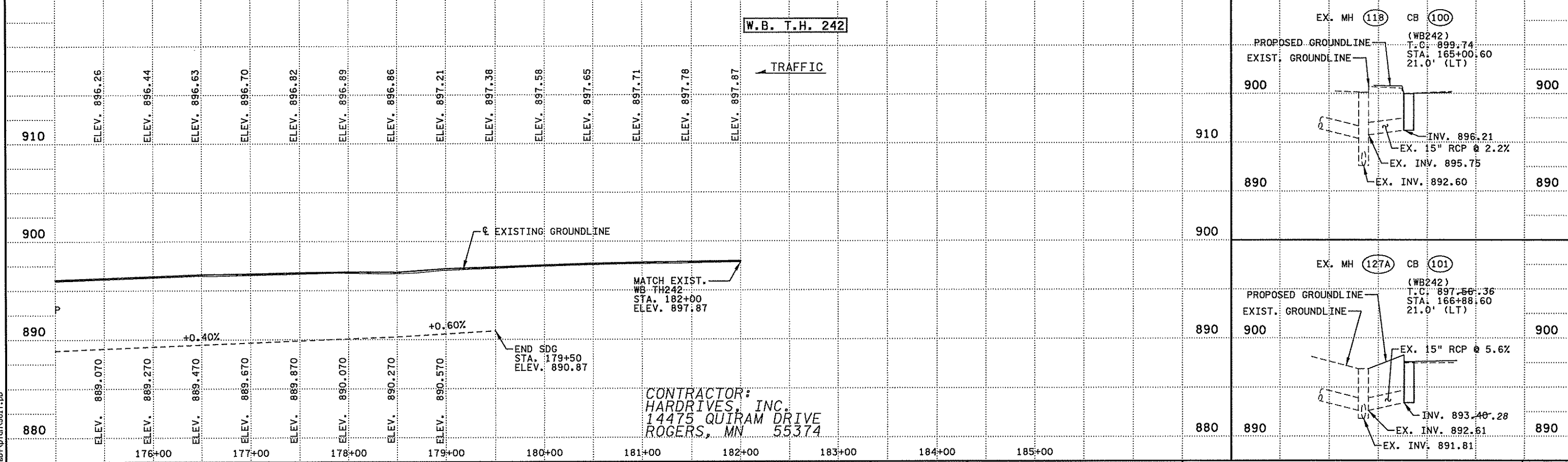
END SDG  
 STA. 174+00  
 ELEV. 888.40

EXISTING 30" RC  
 INV. 888.70  
 P-BUR

BEGIN SDG  
 STA. 174+50  
 ELEV. 888.67

W.B. T.H. 242

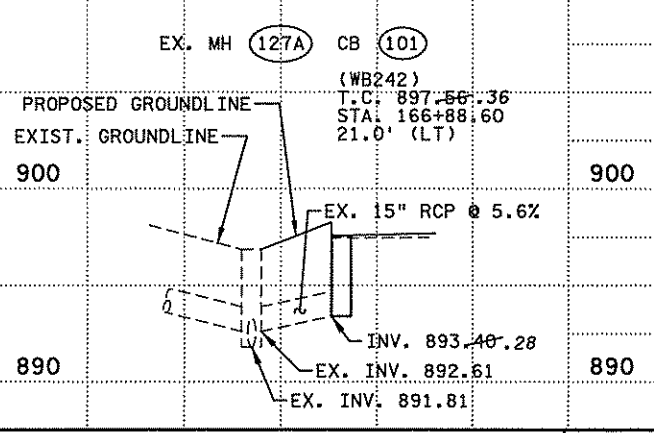
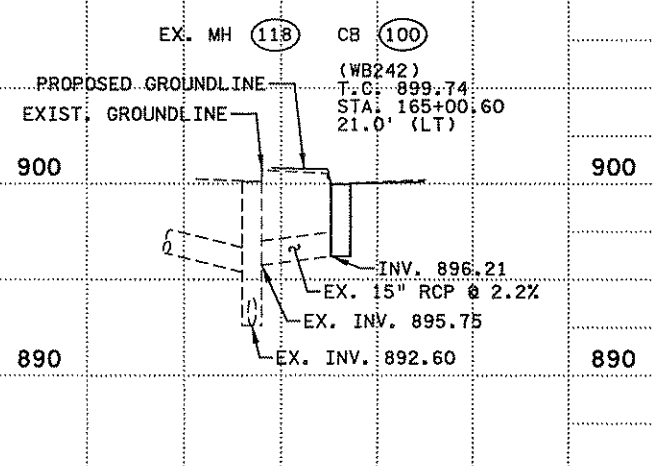
TRAFFIC



MATCH EXIST.  
 WB TH242  
 STA. 182+00  
 ELEV. 897.87

END SDG  
 STA. 179+50  
 ELEV. 890.87

CONTRACTOR:  
 HARDRIVES, INC.  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374



NO	DATE	BY	CHKD	APPR	REVISION
2	2/24/06	JLS			RECORD DRAWING
1	8-2-04	NW	NW		INCLUDED INPLACE UTILITIES.

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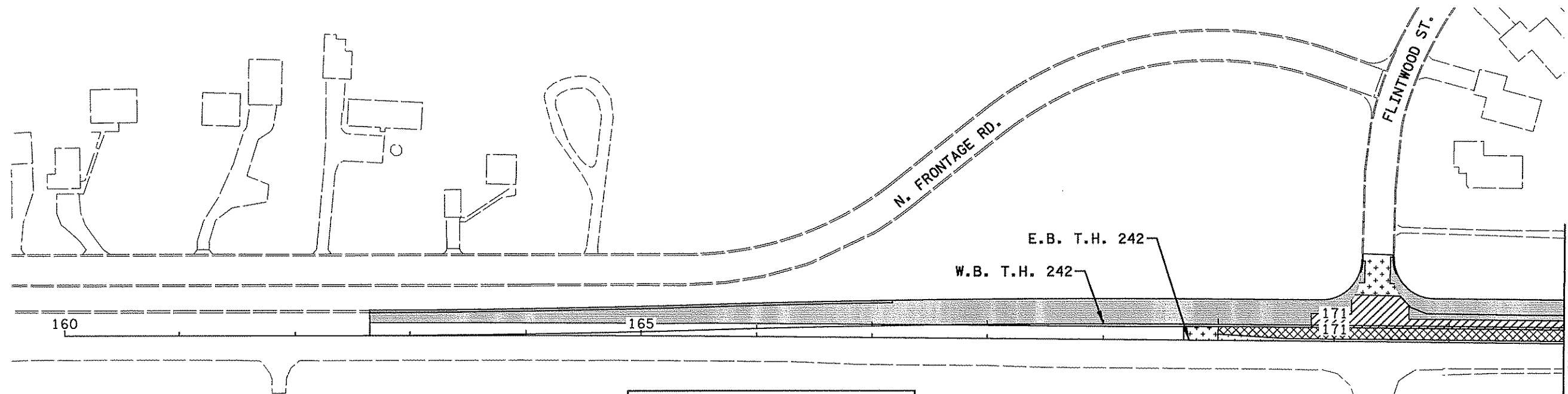
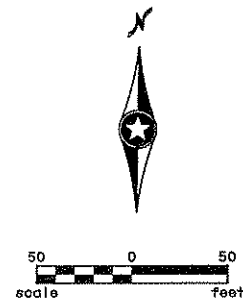
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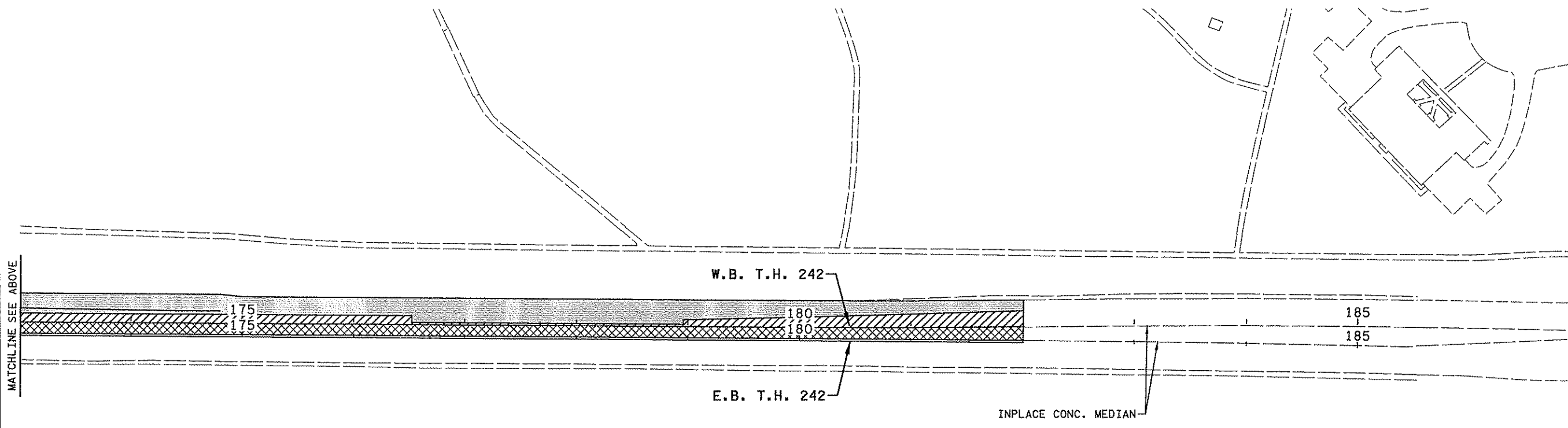
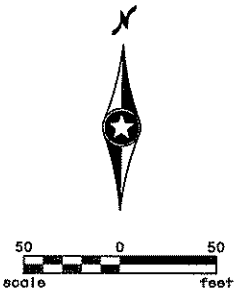
CITY OF COON RAPIDS  
 PROFILES  
 T.H. 242 AT FLINTWOOD STREET  
 W.B. T.H. 242  
 SHEET 20 OF 41





**LEGEND**

- 1 1/2" MILL AND OVERLAY
- OVERLAY
- BITUMINOUS WIDENING (FULL DEPTH)
- 1 1/2" AND VAR. MILL FOR CONCRETE MEDIAN



CONTRACTOR:  
**HARDRIVES, INC.**  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374

NO	DATE	BY	CHKD	APPR	REVISION
1	2/24/06	JLS			RECORD DRAWING

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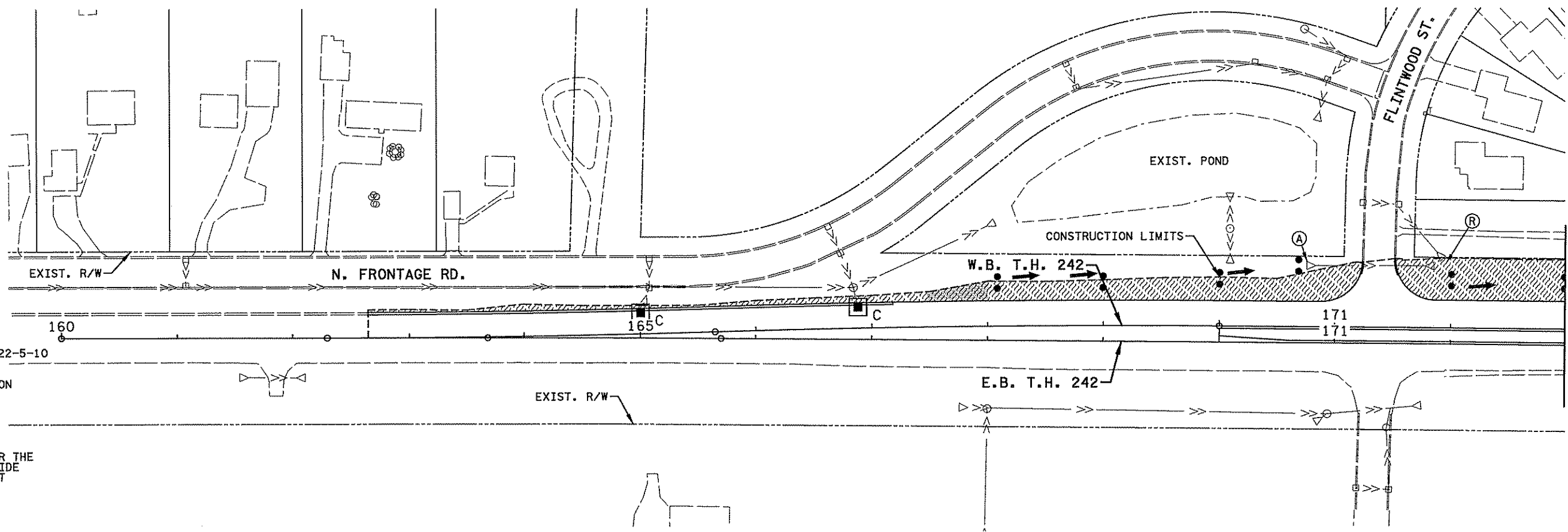
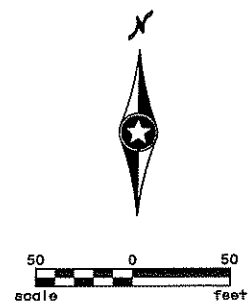
STATE AID PROJECT NO. 114-010-15  
 STATE PROJECT NO. S.P. 0212-46 (TH242)  
 CITY PROJECT NO. 03-31  
 DRAWN BY D. FITCHORN  
 DESIGNED BY G. STANLEY  
 CHECKED BY N. WILL  
 COMM. NO. 0045017



CITY OF COON RAPIDS  
 MILL AND OVERLAY PLAN  
 T.H. 242 AT FLINTWOOD STREET

SHEET 21 OF 41

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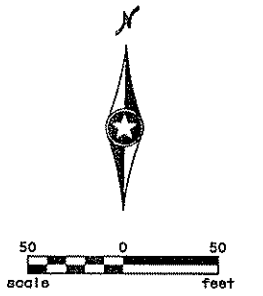
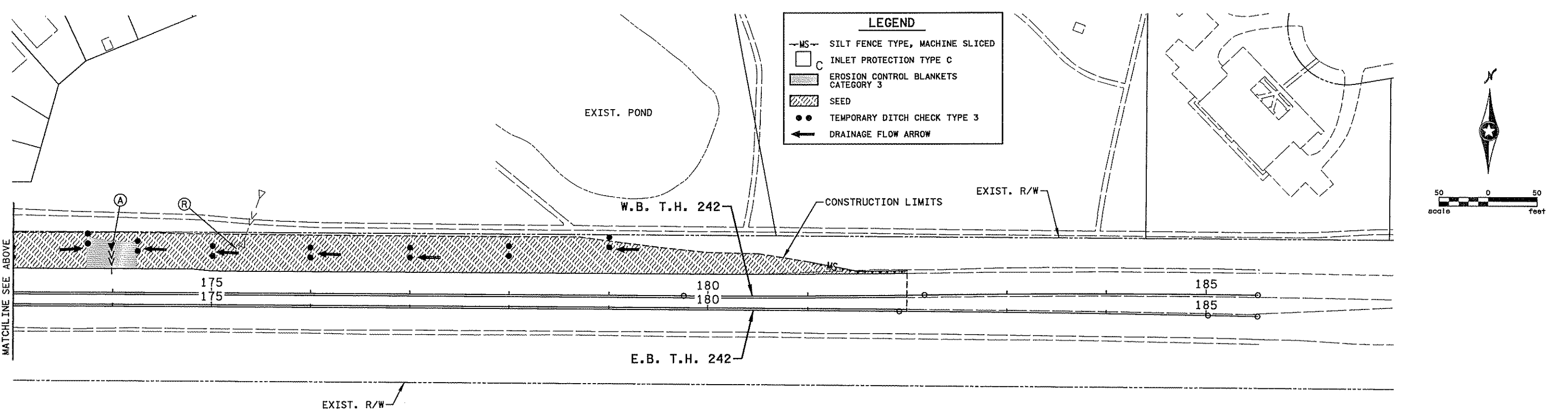


NOTES:  
 SEED MIXTURE 250 AT 70 LB/ACRE.  
 COMMERCIAL FERTILIZER ANALYSIS 22-5-10  
 APPLICATION RATE 200 LB/ACRE.  
 MULCH MATERIAL TYPE 1 APPLICATION  
 RATE 2 TON/ACRE.  
 INLET PROTECTION SHALL  
 BE USED ON ALL CB'S BEFORE  
 THE ROAD IS PAVED.  
 AT THE DIRECTION OF THE ENGINEER THE  
 CONTRACTOR SHALL INSTALL A 4' WIDE  
 EROSION CONTROL BLANKET ADJACENT  
 TO SHOULDER.

- (A) INLET PROTECTION TYPE D
- (R) RANDOM RIPRAP CL. II

**LEGEND**

- MS- SILT FENCE TYPE, MACHINE SLICED
- C INLET PROTECTION TYPE C
- EROSION CONTROL BLANKETS CATEGORY 3
- SEED
- TEMPORARY DITCH CHECK TYPE 3
- DRAINAGE FLOW ARROW



CONTRACTOR:  
 HARDRIVES, INC.  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374

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 CITY PROJECT NO. 03-31  
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CITY OF COON RAPIDS  
 TURF ESTABLISHMENT AND EROSION CONTROL PLAN  
 T.H. 242 AT FLINTWOOD STREET

SHEET 22 OF 41

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NO	DATE	BY	CHKD	APPR	REVISION
2	2/24/06	JLS			RECORD DRAWING
1	8-11-04	DCF	NAW	NAW	REVISED PER MN/DOT COMMENTS 8-11-04.

**PAVEMENT MARKING NOTES & GUIDELINES**

**GENERAL INFORMATION:**

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. THE CONTRACTOR WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

**EPOXY:**

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENTS AND/OR LAITANCE. ON LOW SPEED (SPEED LIMIT 35 OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS, SANDBLAST CLEANING SHALL BE USED FOR ALL EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES F° OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

**PAINT:**

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50°F OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OF DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

**POLY PREFORM INLAY APPLICATION:**

MAT TEMPERATURE SHALL BE CHECKED USING A THERMOMETER TO MAKE SURE THE INLAY IS BEING DONE IN THE PROPER TEMPERATURE RANGE. THE TEMPERATURE SHOULD MEASURE BETWEEN 150° F (ASPHALT FIRM ENOUGH TO WALK ON) AND 120° F. APPLICATION BELOW 120° F MAY NOT GET A PROPER INLAY. INLAYS ARE NOT RECOMMENDED AFTER SEPTEMBER 15th AS THE ASPHALT COOLS TOO FAST AT THIS TIME OF THE YEAR.



NO PRIMERS ARE USED FOR INLAY APPLICATION. DO NOT INSTALL LANE LINES ON AN ASPHALT SEAM. ROLLING OF ALL THE MARKINGS SHOULD BE LENGTHWISE IN THE DIRECTION THEY WERE LAID. FOR CROSSWALKS AND STOP BARS, INITIAL TAMPING WITH THE TAMPING CART IS RECOMMENDED USING ONLY 100 LBS. OF WEIGHT.

USE COMPACTION ROLLER TO EMBED (INLAY) MARKINGS INTO PAVEMENT SURFACE. USE MINIMUM SPEED AND WATER ON ROLLER. DO NOT USE VIBRATOR. IF MARKING BUCKLES OR DISTORTS SEVERELY IN FRONT OF ROLLER, MAT TEMPERATURE OR ROLLER SPEED MAY BE TOO HIGH.





**POLY PREFORM GROOVED APPLICATION:**

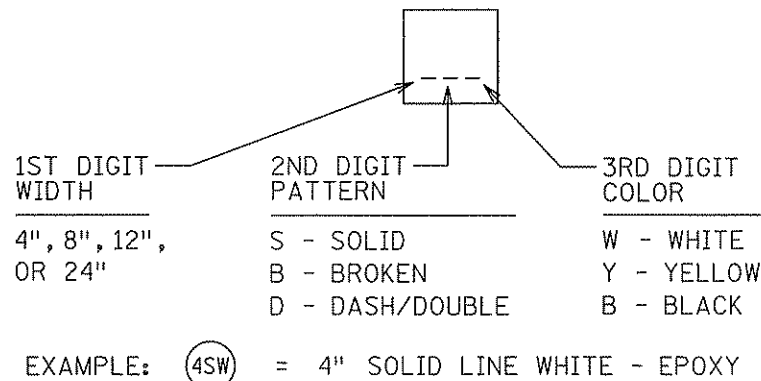
CONCRETE PAVEMENT SURFACES AND BITUMINOUS PAVEMENT SURFACES WHERE PAVEMENT MARKINGS CANNOT BE INLAID IN THE HOT MAT, SHALL BE GROOVED FOR THE INSTALLATION OF DURABLE REFLECTORIZED PAVEMENT MARKINGS. SEE SPECIAL PROVISIONS.

**SYMBOLS & MATERIALS LEGEND**

-  CROSSWALK BLOCK WHITE-EPOXY
-  PAVEMENT MESSAGE (RIGHT ARROW) EPOXY

**STRIPING KEY**

-  CIRCLE - EPOXY
-  SQUARE - PATTERNED PREFORMED POLY
-  TRIANGLE - PAINT
-  PENTAGON - REMOVEABLE PREFORMED PLASTIC MARKING



**SIGNING NOTES:**

- ① SALVAGED SIGN PANELS THAT ARE TO BE REINSTALLED SHALL BE INSTALLED USING NEW SIGN POSTS.
- ② CONTRACTOR SHALL SALVAGE SIGNS AND SIGN POSTS AND STORE THEM IN ONE LOCATION. SIGNS AND SIGN POSTS THAT WILL NOT BE REINSTALLED WILL BE PICKED UP BY THE CITY OF COON RAPIDS.
- ③ CONTRACTOR SHALL MAINTAIN STOP SIGNS, SPEED LIMIT SIGNS, AND STREET NAME SIGNS AT ALL TIMES DURING CONSTRUCTION.

**STREET NAME SIGN NOTES:**

- ① STREET NAME SIGNS SHALL BE ON 9" BLADES. MAXIMUM LENGTH SHALL BE 48".
- ② SIGNS SHALL HAVE A VIP GRADE MATERIAL SHEETING.
- ③ TEXT SHALL BE 6" UPPER CASE AND 4.5" LOWER CASE. TEXT FONT SHALL BE C SERIES LETTERING. STANDARD SPACING IS 56% OF C SERIES SPACING. DECREASE SPACING APPROPRIATELY TO ACCOMODATE LONGER STREET NAMES TEXT.
- ④ USE WHITE LETTERING ON GREEN BACKGROUND. NEITHER MARGINS NOR BORDER IS ESSENTIAL.
- ⑤ BACK TO BACK STREET NAME SIGNS SHALL BE BOLTED TOGETHER BY MINIMUM OF TWO BOLTS FOR ADDED STABILITY.
- ⑥ BRACKETING SHALL CONFORM TO U-CHANNEL POSTS.

CONTRACTOR:  
 HARDRIVES, INC.  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374

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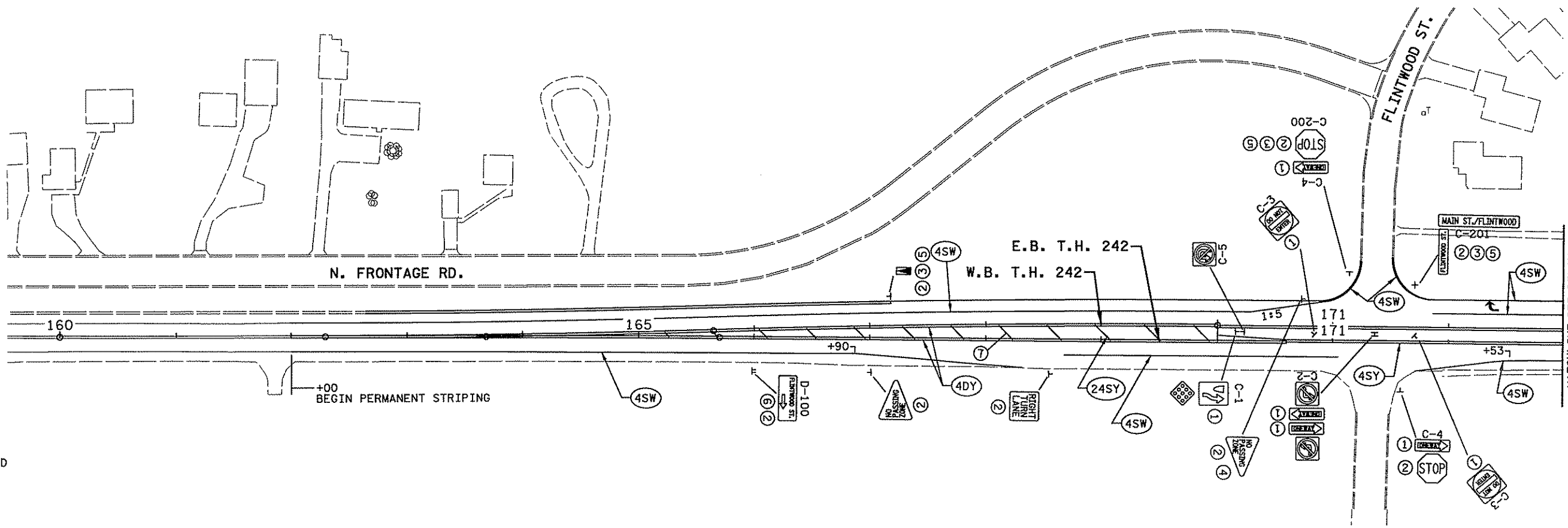
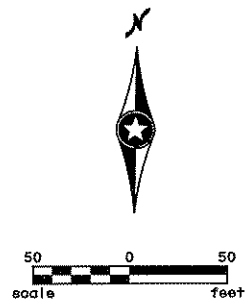
NO	DATE	BY	CHKD	APPR	REVISION
1	2/24/06	JLS			RECORD DRAWING

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 DESIGNED BY G. STANLEY  
 CHECKED BY N. WILL  
 COMM. NO. 0045017

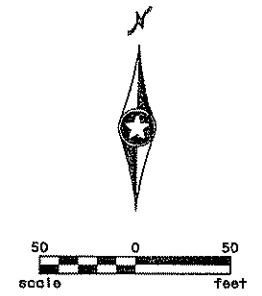
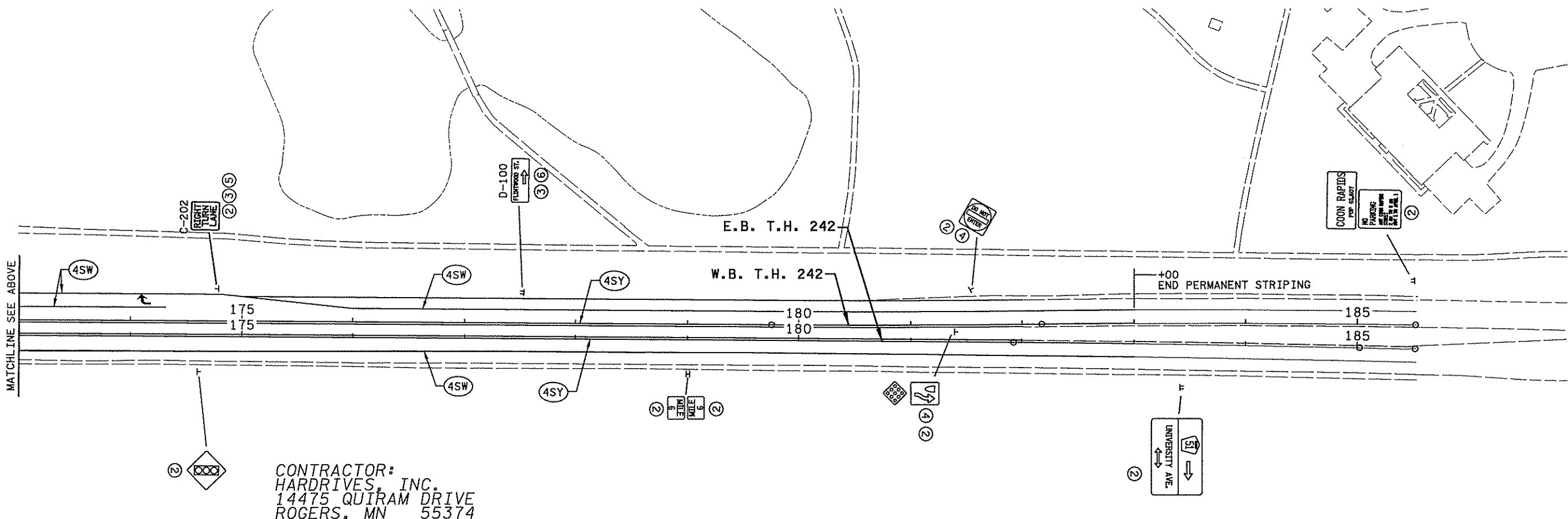
**SRF CONSULTING GROUP, INC.**

CITY OF COON RAPIDS		SHEET
SIGNING AND STRIPING NOTES AND LEGEND		23
T.H. 242 AT FLINTWOOD STREET		OF
		41



- NOTES:
- ① F & I
  - ② INPLACE
  - ③ SALVAGE
  - ④ REMOVE SIGN TYPE C
  - ⑤ INSTALL SALVAGED SIGN
  - ⑥ SIGN PANEL OVERLAY TYPE D
  - ⑦ 45° AT 30' SPACING

MATCHLINE SEE BELOW



MATCHLINE SEE ABOVE

CONTRACTOR:  
**HARDRIVES, INC.**  
 14475 QUIRAM DRIVE  
 ROGERS, MN 55374

NO	DATE	BY	CHKD	APPR	REVISION
3	2/24/06	JLS			RECORD DRAWING
2	8-11-04	DCF	NAW	NAW	PER MN/DOT COMMENTS 8-11-04.
1	8-2-04	NW	NW		ADDED NOTES TO STRIPE EB EDGLINE PER Mn/DOT.

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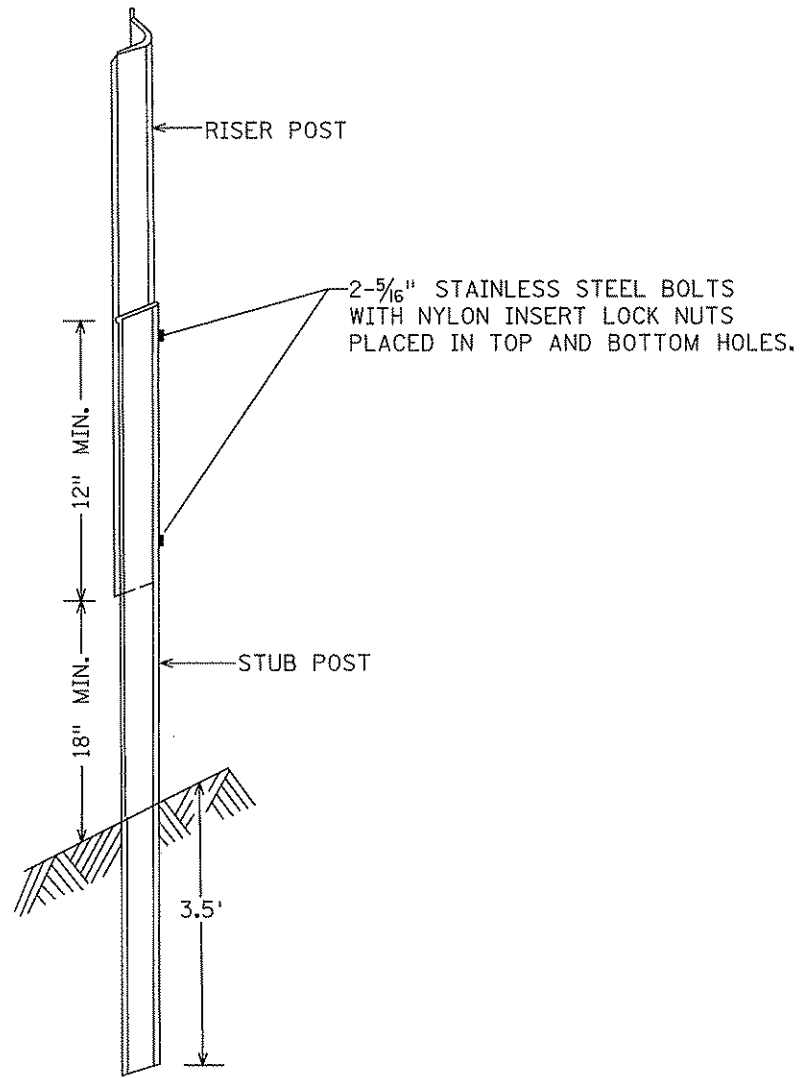


CITY OF COON RAPIDS  
 SIGNING AND STRIPING PLAN  
 T.H. 242 AT FLINTWOOD STREET

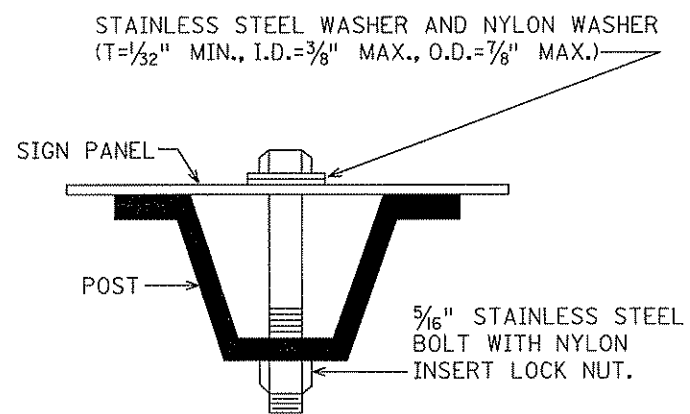
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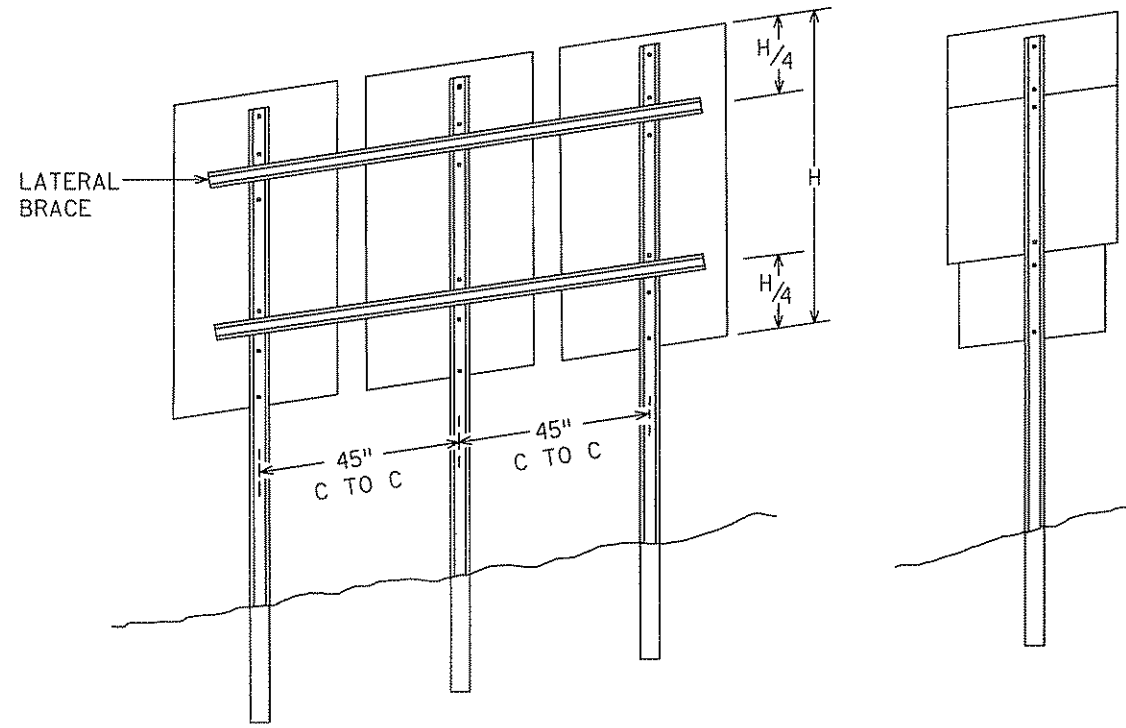
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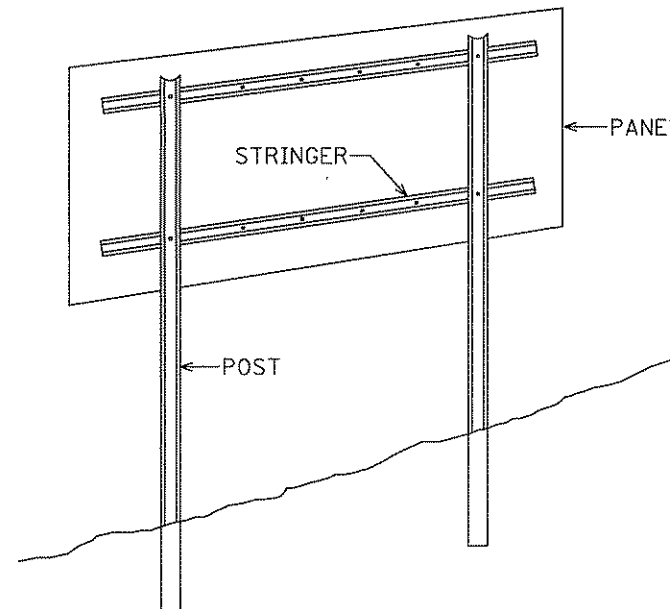
"U POST" SPLICE



"U POST" MOUNTING  
TYPE "C" SIGNS



TYPICAL TYPE "C" INSTALLATIONS



TYPICAL TYPE "D" INSTALLATION

NOTES:

1. USE 3# STUB POSTS, RISER POSTS, STRINGERS, KNEE BRACES, LATERAL BRACES AND KNEE BRACE STUB POSTS. ALL SHALL CONFORM TO MN/DOT 3401.
2. FOR TYPE "D" SIGN POSTS LENGTHS AND SPACINGS, SEE SIGN DATA SHEET.
3. TYPE "D" SIGN PANELS SHALL BE BOLTED TO STRINGERS AT 24" MAXIMUM INTERVALS IN ACCORDANCE WITH TYPE "D" STRINGER AND PANEL-JOINT DETAIL (SEE STANDARD SIGNS MANUAL).
4. MOUNTING (PUNCHING CODE) FOR TYPE "C" SIGN PANELS SHALL BE AS INDICATED IN THE STANDARD SIGNS MANUAL UNLESS OTHERWISE SPECIFIED.
5. ALL RISER (VERTICAL) "U POSTS" SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG.
6. USE STAINLESS STEEL 5/16" BOLTS, WASHERS, AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
7. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
8. BRACING STUBS SHALL BE NO MORE THAN 4" ABOVE GROUND AND EMBEDDED AT LEAST 3 1/2'.
9. A-FRAME BRACKET SHALL BE STEEL CONFORMING TO MN/DOT 3306 AND GALVANIZED IN ACCORDANCE WITH MN/DOT 3394.
10. COLLARS SHALL BE USED TO SHIM OVERLAYS AND DEMOUNTABLE LEGEND AWAY FROM PANEL WHERE INTERFERENCE WITH BOLT HEADS IS ENCOUNTERED. MN/DOT 3352.2A5.
11. 2 AND 3 POST TYPE "C" SIGNS SHALL BE REINFORCED WITH AT LEAST ONE LATERAL BRACE. INSTALLATIONS WHERE THE TOTAL PANEL HEIGHT IS 60" OR MORE SHALL HAVE TWO LATERAL BRACES LOCATED APPROXIMATELY AT THE QUARTER POINTS.
12. WHERE 2 OR MORE SINGLE POST SIGNS (TYPE "C") ARE MOUNTED SIDE BY SIDE, THEY SHALL BE REINFORCED Laterally BY AT LEAST 2 POST SECTIONS, BOLTED AT EACH POST AND LOCATED APPROXIMATELY AT THE QUARTER POINTS AS SHOWN IN SKETCH.

TYPE C & D SIGN  
STRUCTURAL DETAILS

Sheet 1 of 3

RECORD DRAWING

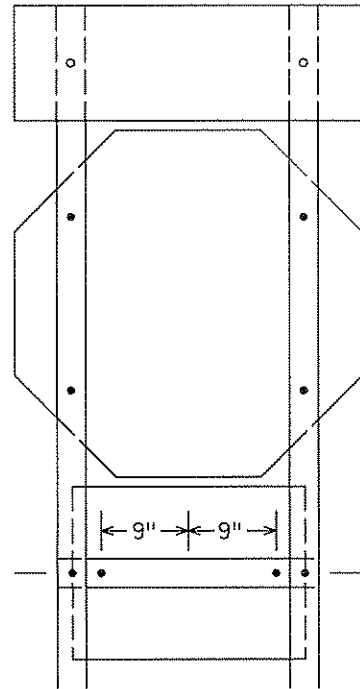
CONTRACTOR:  
HARDRIVES, INC.  
14475 QUIRAM DRIVE  
ROGERS, MN 55374

State Proj. No. 0212-46 (TH 242)

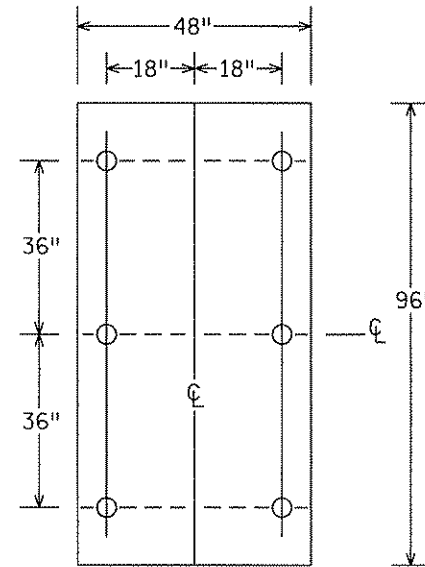
Sheet No. 25 of 41 Sheets



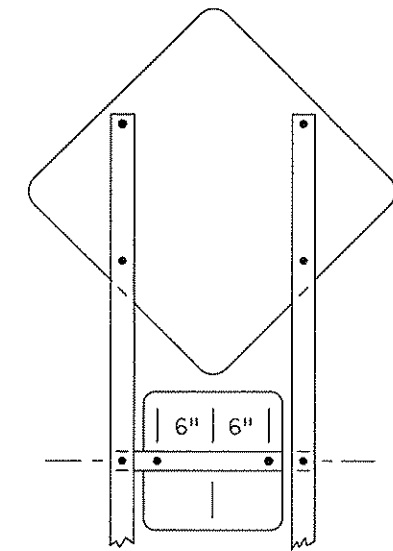




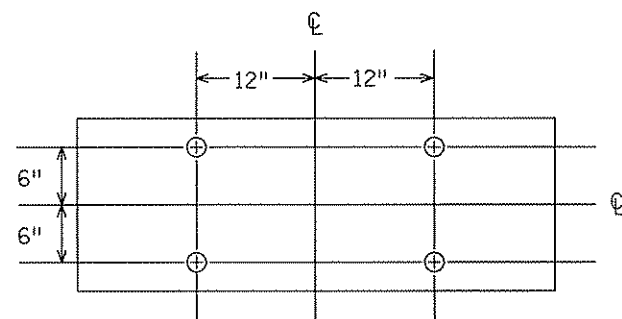
R6-1, R1-1 & (R6-3 OR R6-3a)  
MOUNTING



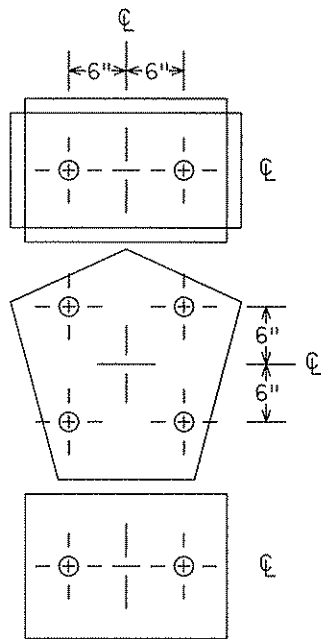
PUNCHING FOR R2-4b  
SPEED LIMIT



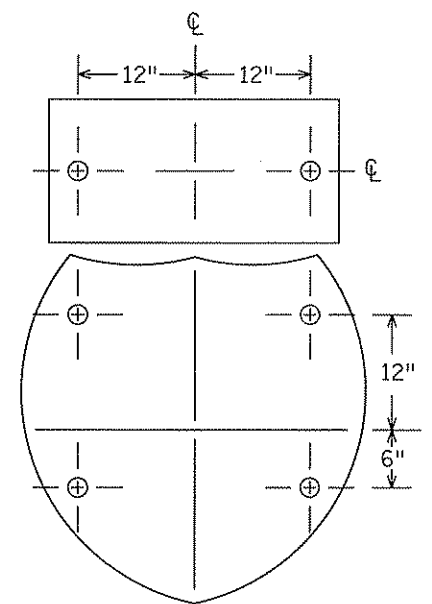
(W1-1, W1-2, W1-3, W1-4 OR W1-5) & W13-1  
MOUNTING



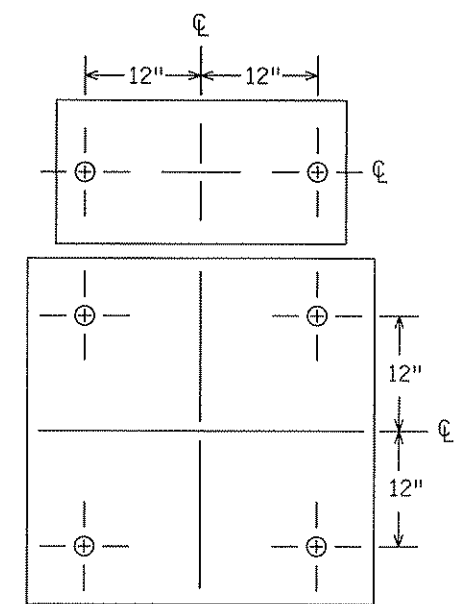
PUNCHING FOR R6-1(48" x 18")



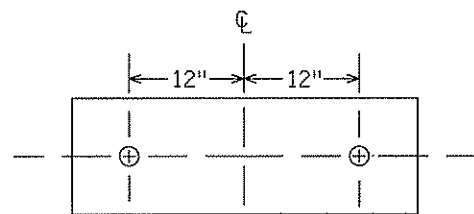
M2-1A [21" x 15"] OR  
(M3-1A, M3-2A, M3-3A OR M3-4A) [24" x 12"] AND  
M1-6 [24" x 24"] AND  
(M5-1A, M5-2A, M6-1A, M6-2A, M6-3A M6-4A, M6-5A OR M6-6A) [21" x 15"]  
PUNCHING



(M3-1A, M3-2A, M3-3A OR M3-4A) [30" x 15"] AND  
M1-1 [45" x 36" OR 36" x 36"]  
PUNCHING



(M3-1, M3-1A, M3-2, M3-2A, M3-3, M3-3A M3-4 OR  
M3-4A) [30" x 15"] AND (M1-4 OR M1-5A) [36" x 36"]  
PUNCHING



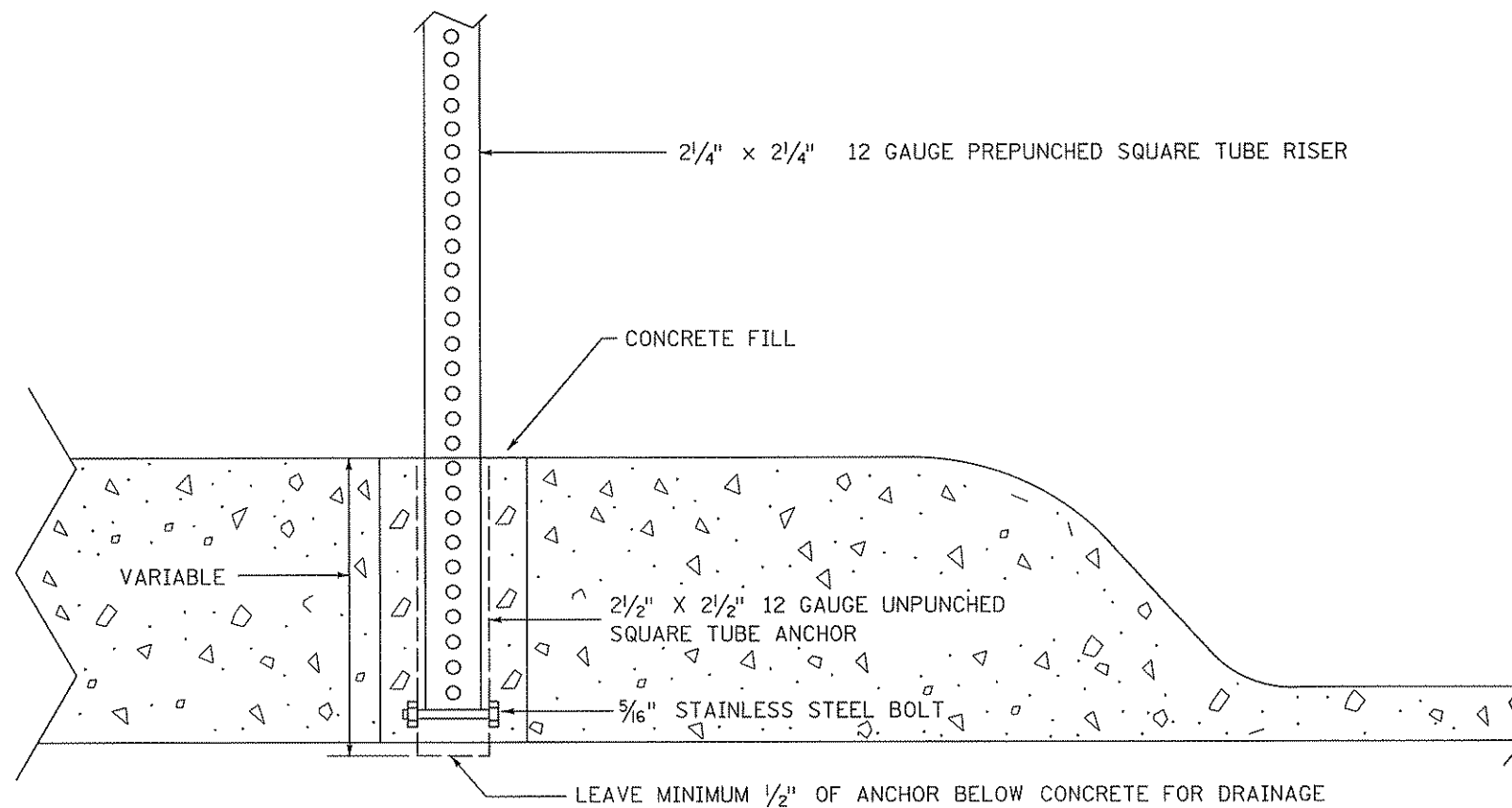
PUNCHING FOR R6-1(36" x 12")

RECORD DRAWING

CONTRACTOR:  
HARDRIVES, INC.  
14475 QUIRAM DRIVE  
ROGERS, MN 55374

TYPE C & D SIGN  
STRUCTURAL DETAILS

Sheet 3 of 3



NOTES;

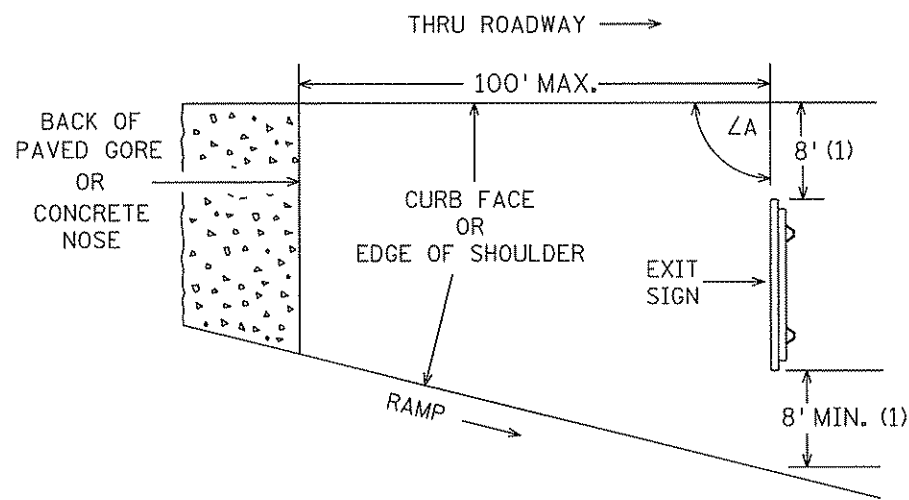
1. DRILL A 6" DIAMETER HOLE THE FULL DEPTH OF THE CONCRETE ISLAND.
2. DRILL 3/8" HOLES ON OPPOSITE SIDES OF THE UNPUNCHED SQUARE TUBE ANCHOR APPROX. 1" FROM THE BOTTOM OF THE ANCHOR. INSERT A 5/16" STAINLESS STEEL BOLT THROUGH THE HOLES AND SECURE WITH A STAINLESS STEEL LOCK NUT WITH NYLON INSERT. THE PREPUNCHED SQUARE TUBE RISER (TO BE INSERTED INSIDE THE UNPUNCHED SQUARE TUBE ANCHOR) WILL REST ON BOLT.
3. INSERT THE ANCHOR IN THE PRE DRILLED HOLE IN THE CONCRETE ISLAND.
4. AFTER INSTALLATION OF THE UNPUNCHED SQUARE TUBE ANCHOR, FILL THE HOLE WITH A CONCRETE MIX APPROVED BY THE ENGINEER AND LEVEL OFF THE TOP OF CONCRETE.

TYPE C SIGNS, DELINEATORS & MARKERS IN CONCRETE

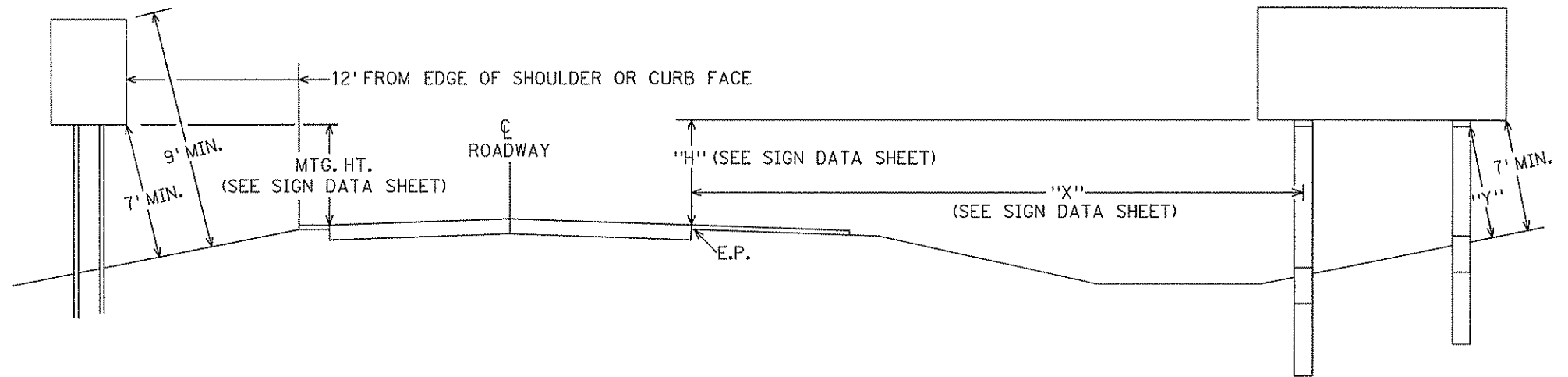
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ROGERS, MN 55374

GORE PLACEMENT

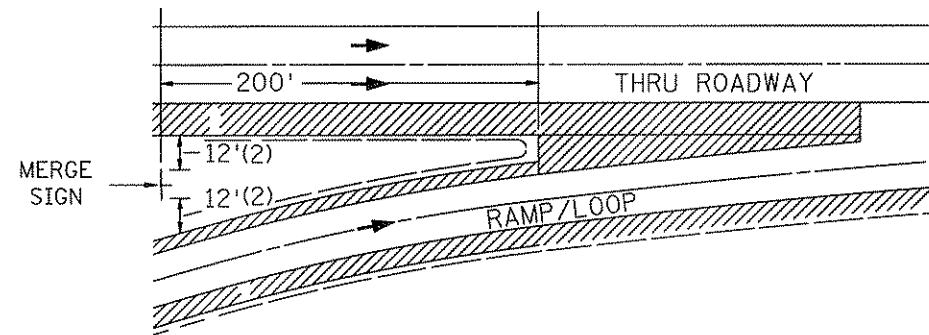


ROADSIDE PLACEMENT



ROUTE MARKER, REGULATORY & WARNING SIGNS - TYPE C  
MINOR GUIDE SIGNS - TYPE D

MAJOR GUIDE SIGN - TYPE A



SPECIFIC NOTES:

(1) EXIT SIGNS

IF THESE OFFSETS CANNOT BE ATTAINED WITHIN 100 FEET OF THE PAVED GORE, A 4 FOOT OFFSET IS ACCEPTABLE. IF THE 4 FOOT OFFSETS CANNOT BE ATTAINED WITHIN 100 FEET OF THE PAVED GORE, CONTACT THE OTSO SIGNING UNIT.

(2) MERGE SIGNS

IF THESE OFFSETS CANNOT BE ATTAINED WITHIN 200 FEET OF THE PAVED GORE, A 4 FOOT OFFSET IS ACCEPTABLE. IF THE 4 FOOT OFFSETS CANNOT BE ATTAINED WITHIN 200 FEET OF THE PAVED GORE, CONTACT THE OTSO SIGNING UNIT.

NOTES:

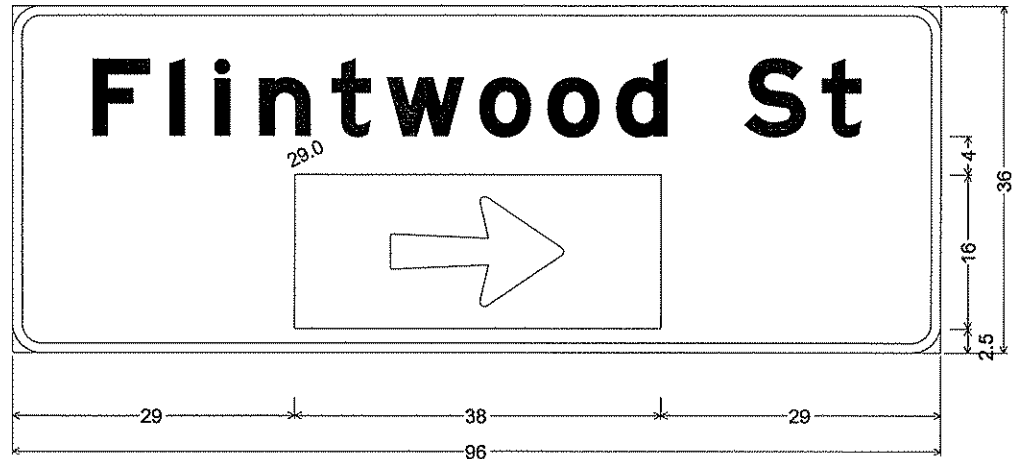
1. IF A SECONDARY SIGN IS MOUNTED BELOW A MAJOR SIGN, THE MAJOR SIGN SHALL BE AT LEAST 8' ABOVE THE PAVEMENT EDGE AND THE SECONDARY SIGN AT LEAST 5'.
2. ALL ROUTE MARKERS, WARNING AND REGULATORY SIGNS SHALL BE AT LEAST 6' ABOVE PAVEMENT EDGE EXCEPT WHERE HEAVY PEDESTRIAN TRAFFIC IS ENCOUNTERED THEY SHALL BE 7'.
3. SIGN FACES SHALL BE VERTICAL.
4. OVERHEAD SIGNS SHALL BE POSITIONED AT RIGHT ANGLES TO THE THRU ROADWAY UNLESS OTHERWISE NOTED.
5. TO AVOID SPECULAR GLARE, ZA SHALL BE APPROXIMATELY 93° FOR SIGNS LOCATED LESS THAN 30' FROM THE EDGE OF PAVEMENT AND APPROXIMATELY 92° FOR SIGNS LOCATED 30' OR MORE FROM EDGE OF PAVEMENT. THIS APPLIES TO SIGNS TYPE A, C, & D AND INCLUDES SIGNS IN THE GORE.
6. "Y" IS THE PERPENDICULAR DISTANCE FROM THE GROUND LINE TO THE FRICTION FUSE ON THE POST. THIS DISTANCE SHALL BE AT LEAST 7'.
7. WHERE "X" IS LESS THAN 30', "H" SHALL, BE 7' ±6". WHERE "X" IS 30' OR GREATER, MINIMUM AND PREFERRED "H" IS 5'.
8. LATERAL CLEARANCES GIVEN APPLY TO RIGHT AND OR LEFT SIDE INSTALLATION.
9. WHEN A TYPE A SIGN IS INSTALLED DIRECTLY BEHIND TRAFFIC BARRIER, THE LEFT EDGE OF THE SIGN PANEL SHALL BE LOCATED A MINIMUM OF 4 FEET BEHIND THE FACE OF THE TRAFFIC BARRIER.

RECORD DRAWING

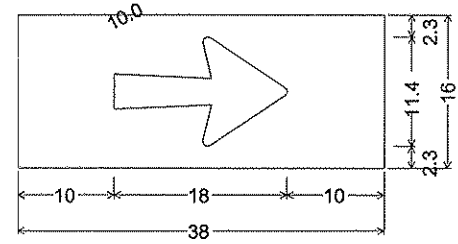
CONTRACTOR:  
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14475 QUIRAM DRIVE  
ROGERS, MN 55374

SIGN PLACEMENT

SIGN PLACEMENT (SHT. 29) 11-01-01 3017.S02



D-1; 3.0" Radius, 1.0" Border, White on Green;  
[Flintwood St] E Mod;



Overlay; Green;  
Arrow 14 - 18.0" 0° White;

**NOTE:**  
1) THE CONTRACTOR SHALL ENSURE THAT THE OVERLAY PANEL COVERS THE DOUBLE HEADED ARROW ON EXISTING SIGN PANEL.

TYPE D SIGN  
PANEL OVERLAY

CONTRACTOR:  
HARDRIVES, INC.  
14475 QUIRAM DRIVE  
ROGERS, MN 55374

NO	DATE	BY	CHKD	APPR	REVISION
1	2/24/06	JLS			RECORD DRAWING

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: NATHAN A. WILL  
*Nathan A. Will*  
Date 2/23/06 License # 26391

STATE AID PROJECT NO. 114-010-15  
STATE PROJECT NO. S.P. 0212-46 (TH242)  
CITY PROJECT NO. 03-31  
DRAWN BY M.BRESSLER  
DESIGNED BY M.BRESSLER  
CHECKED BY G.STUEMPFIG  
COMM. NO. Q045017

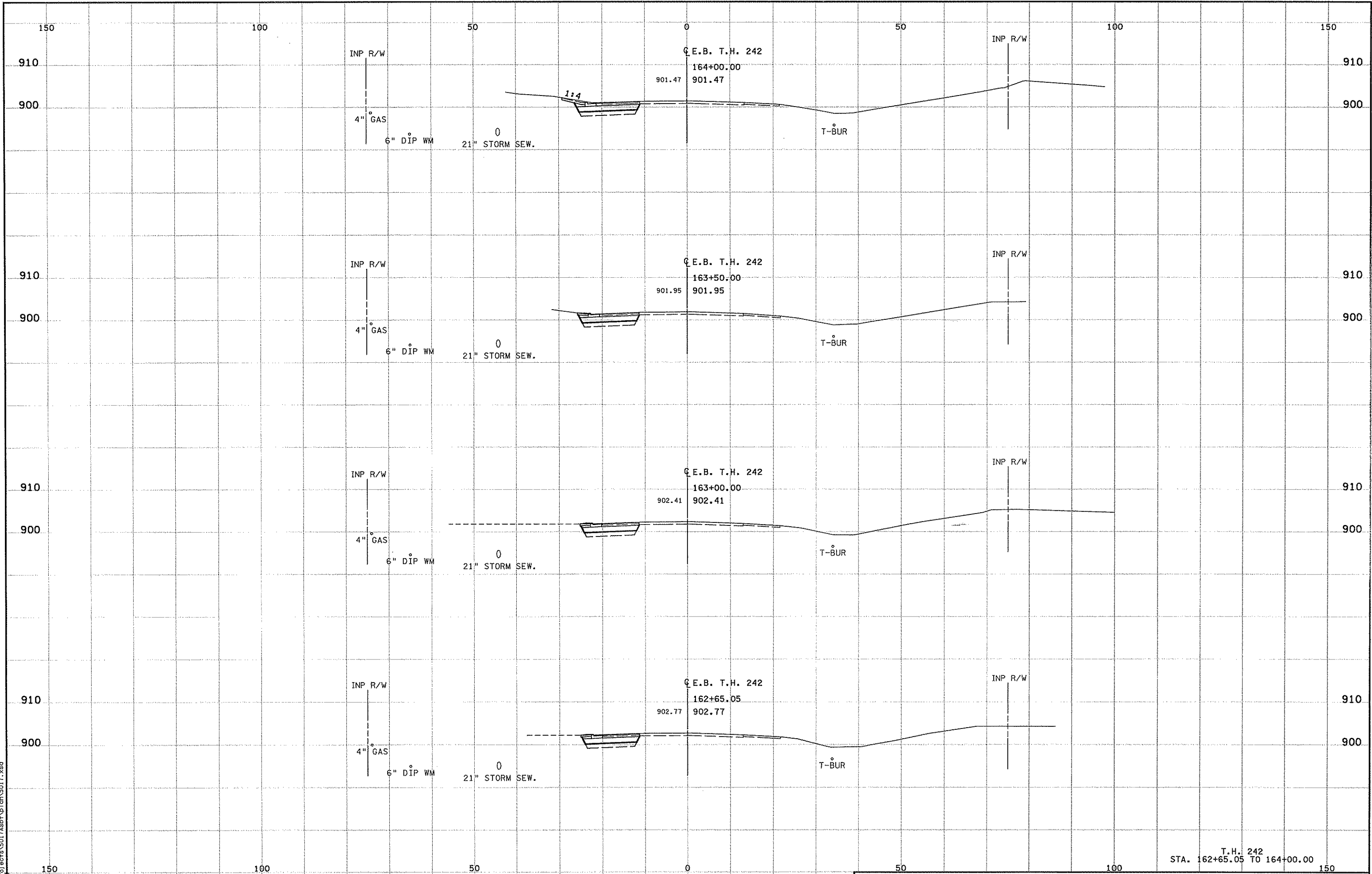


CITY OF COON RAPIDS  
SIGN PANEL DETAILS  
T.H. 242 AT FLINTWOOD STREET

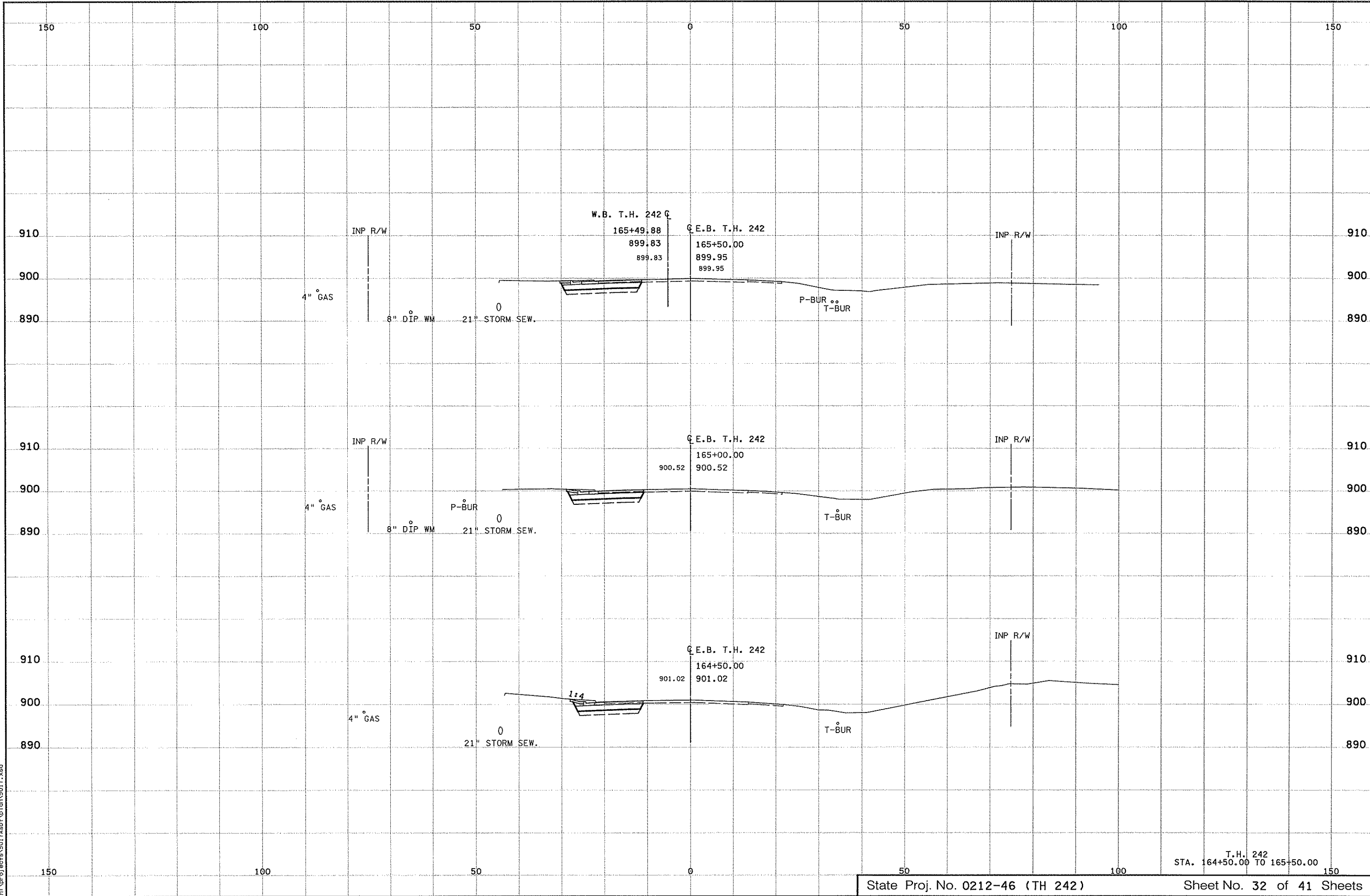
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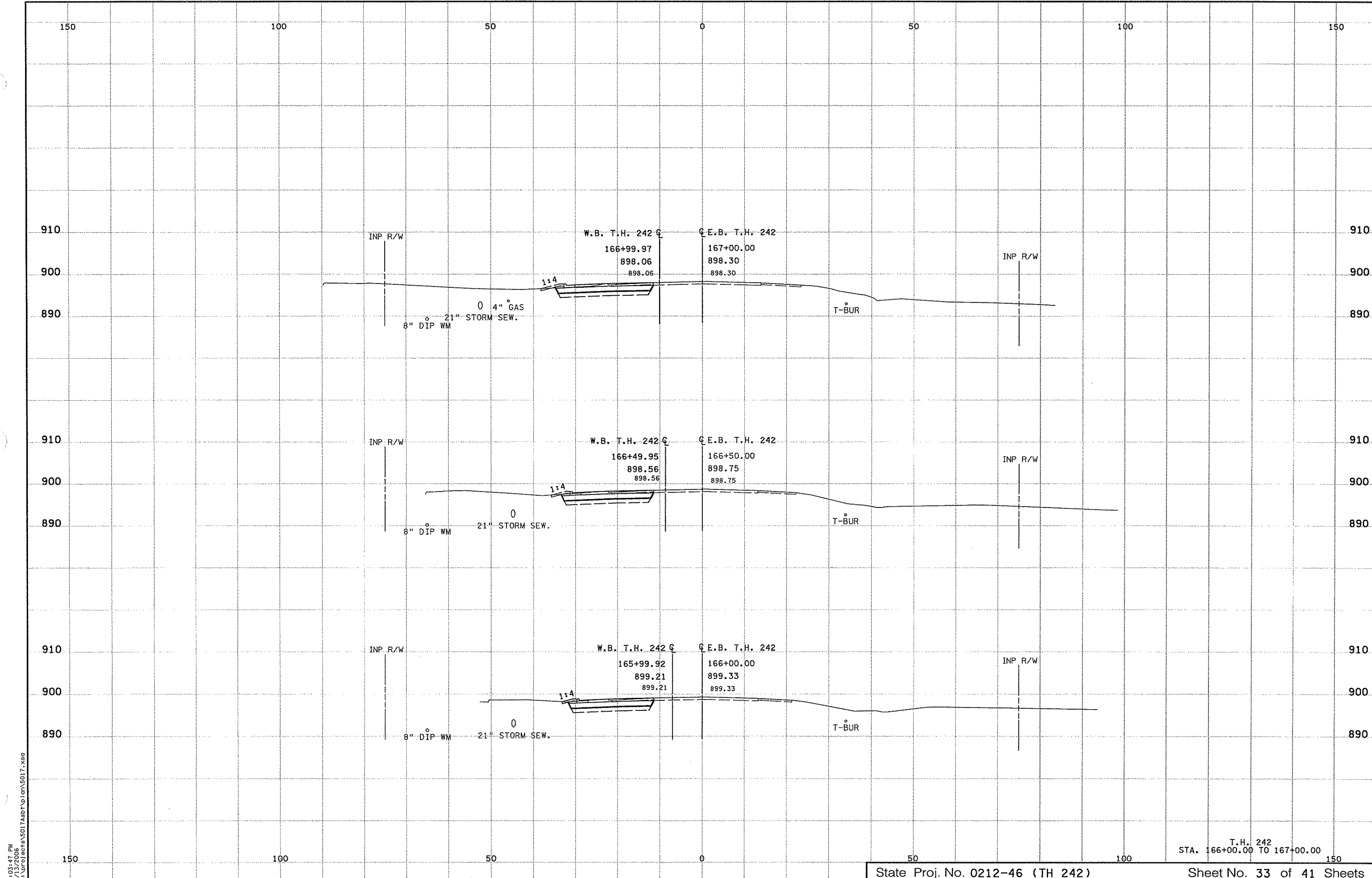
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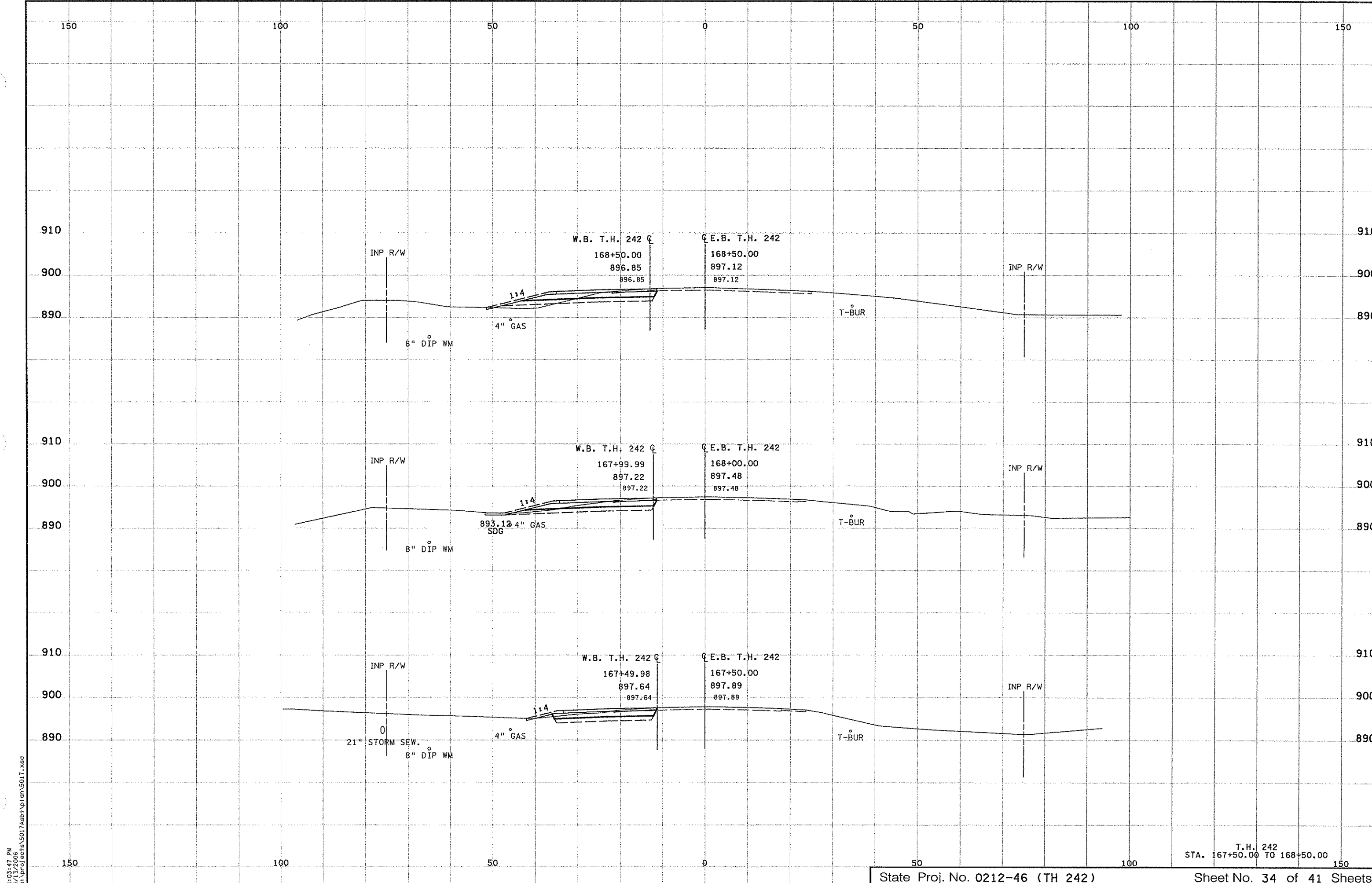






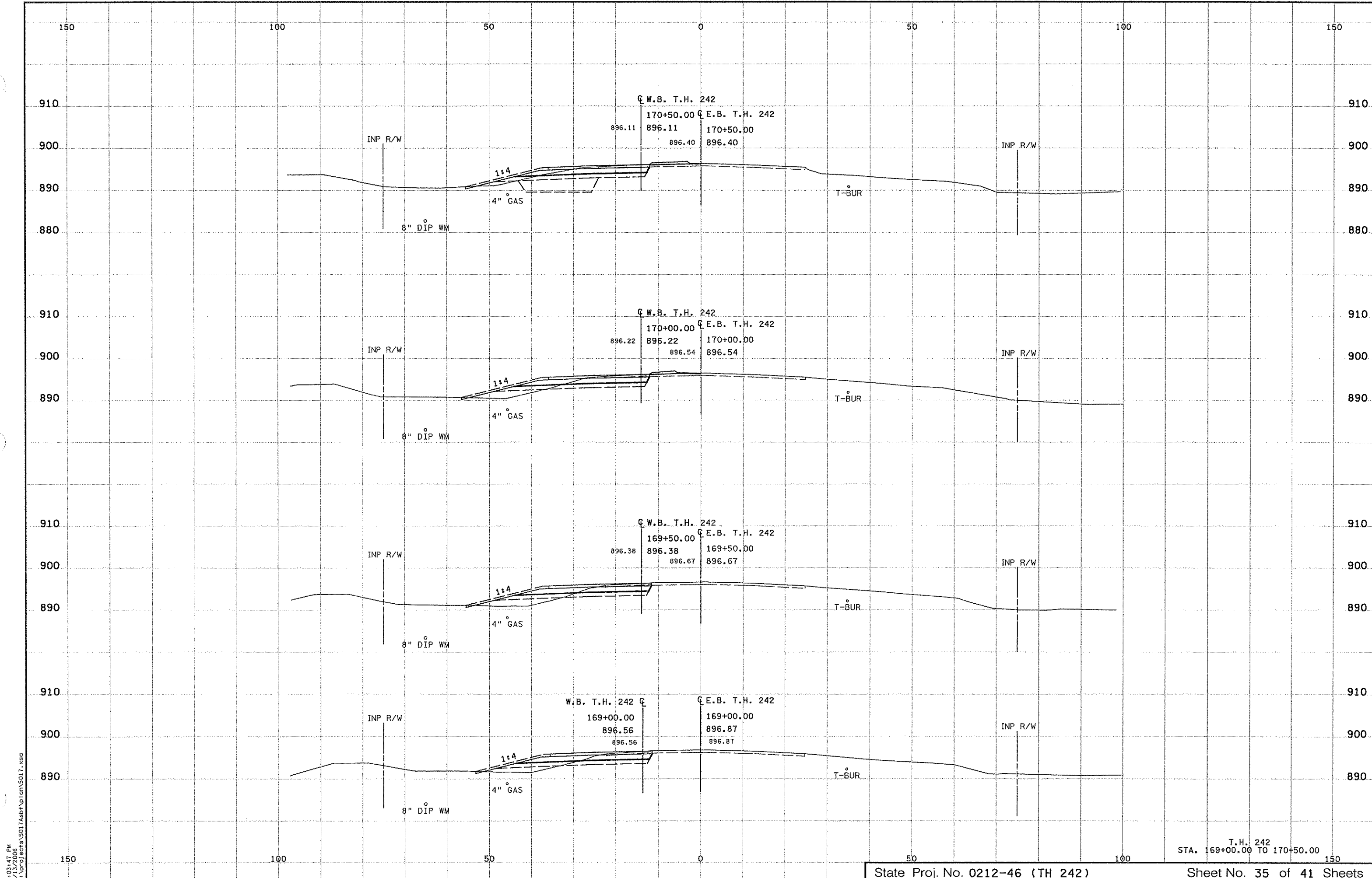
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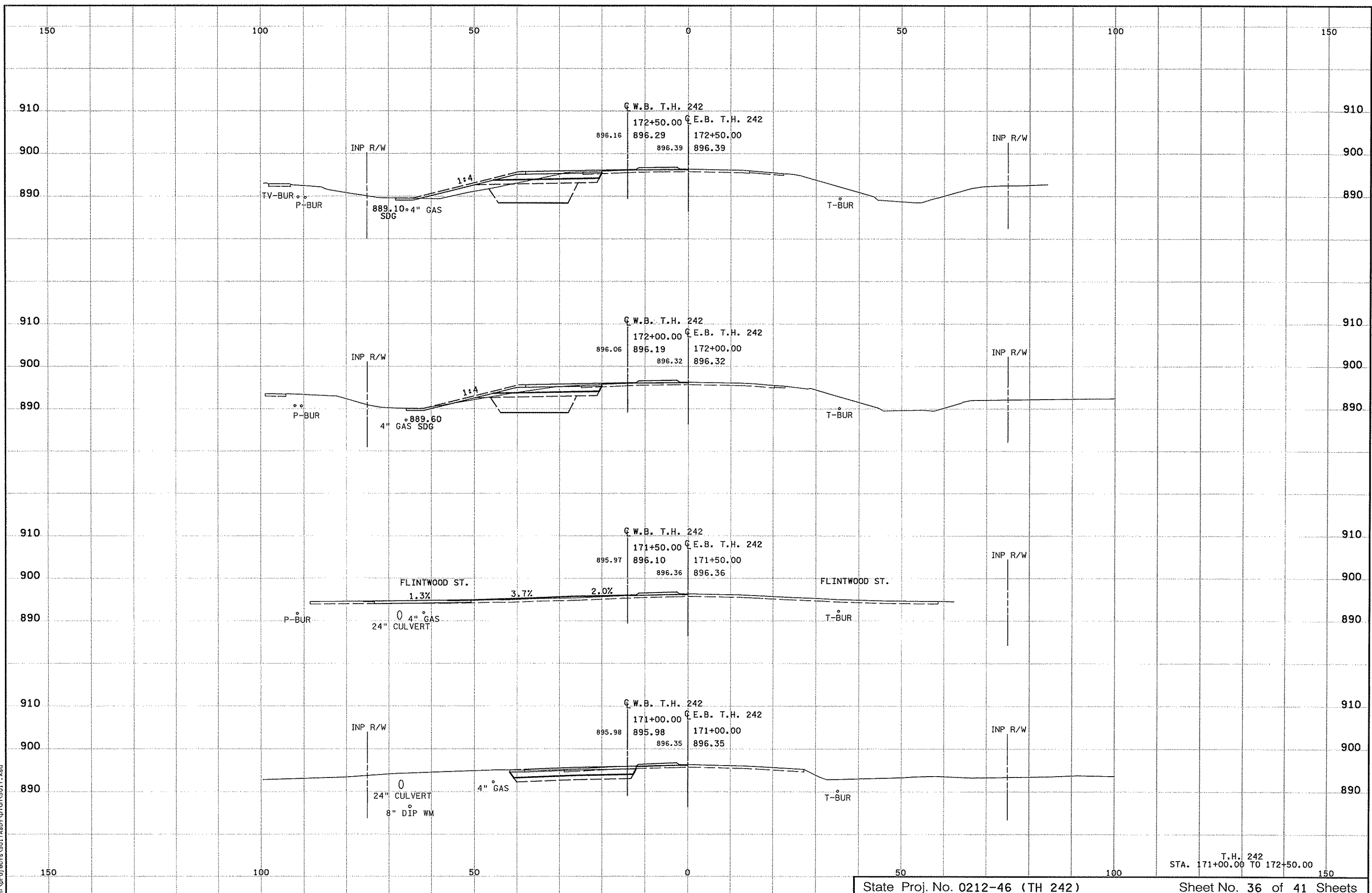
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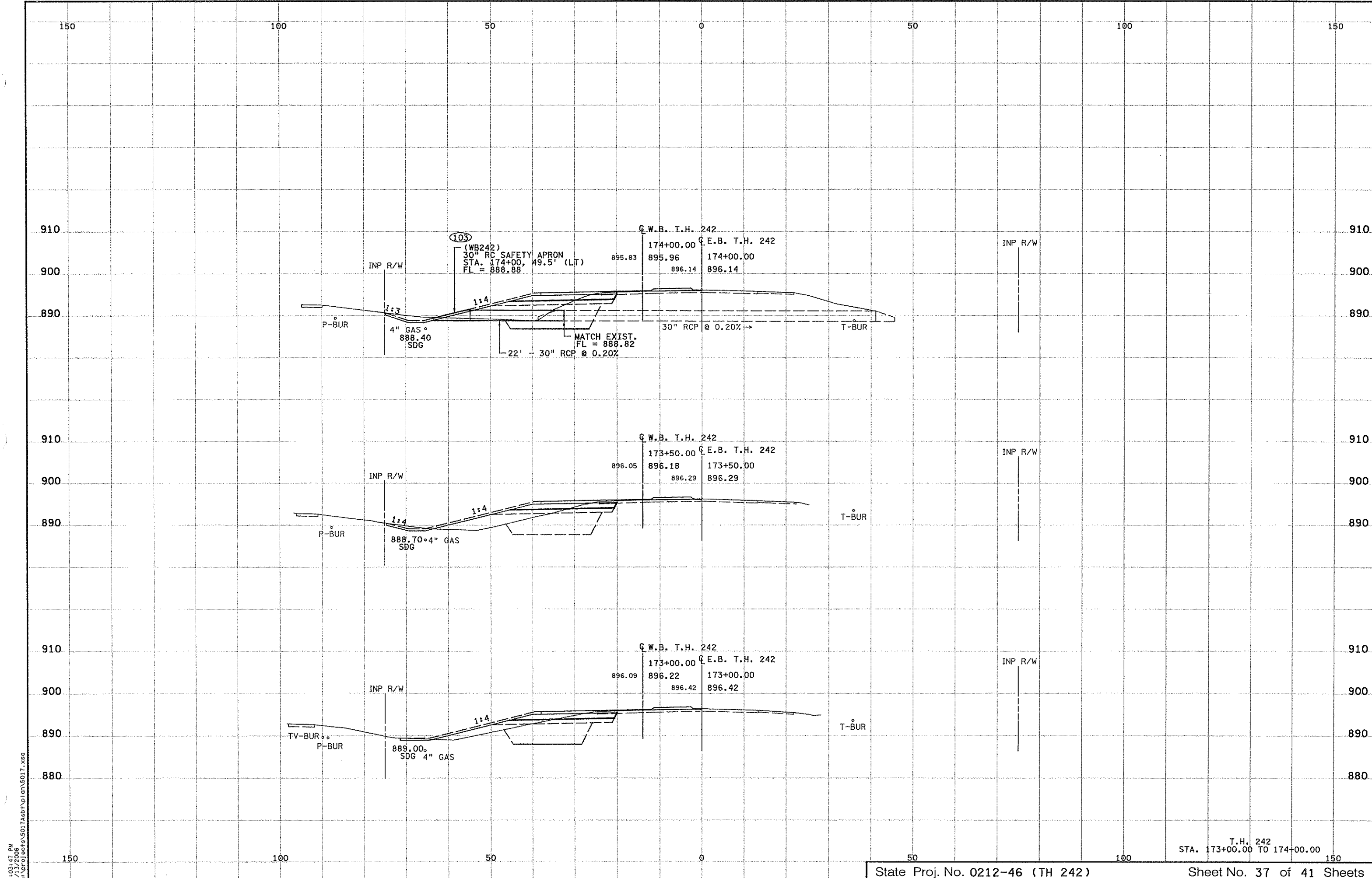


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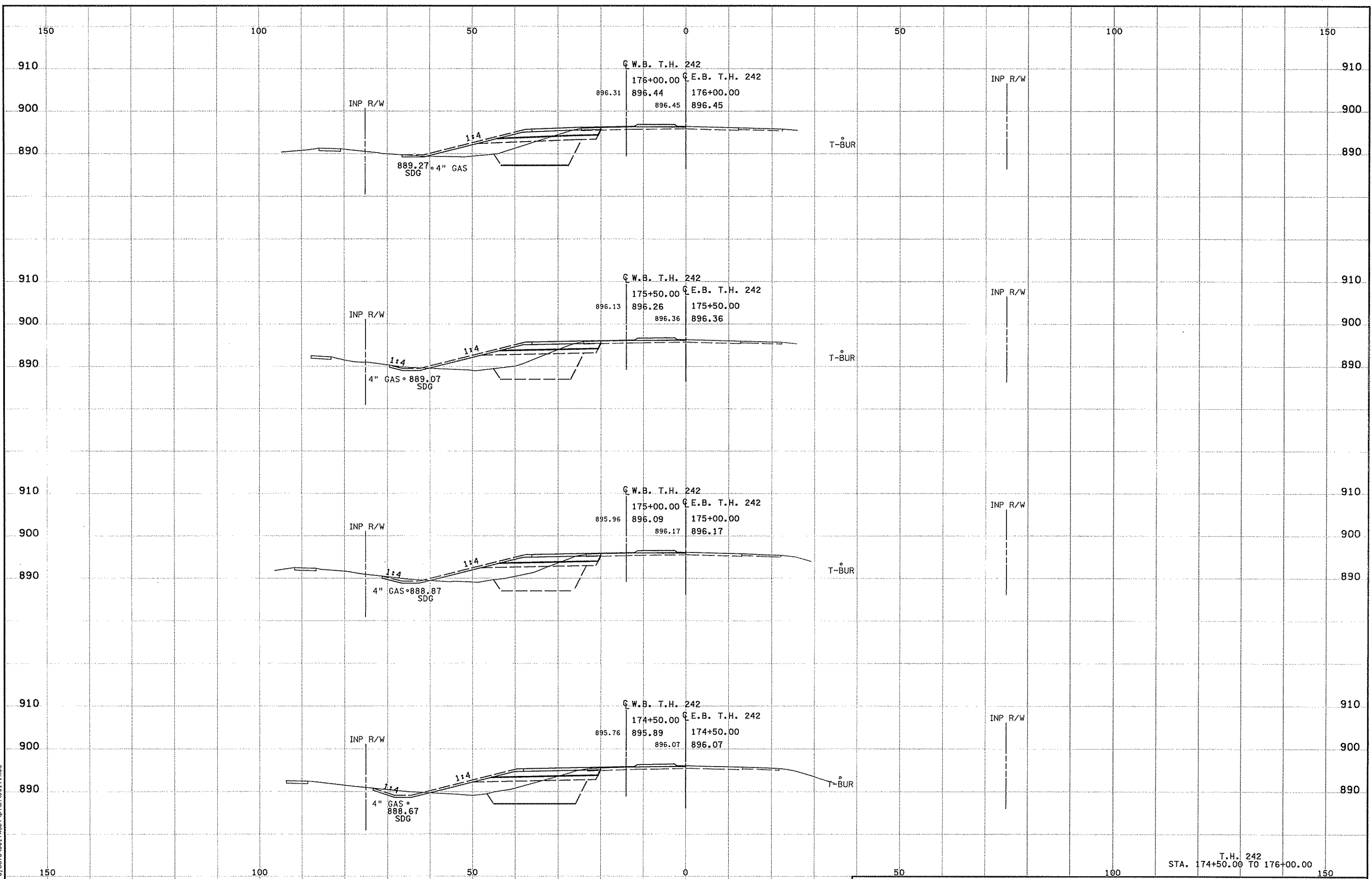




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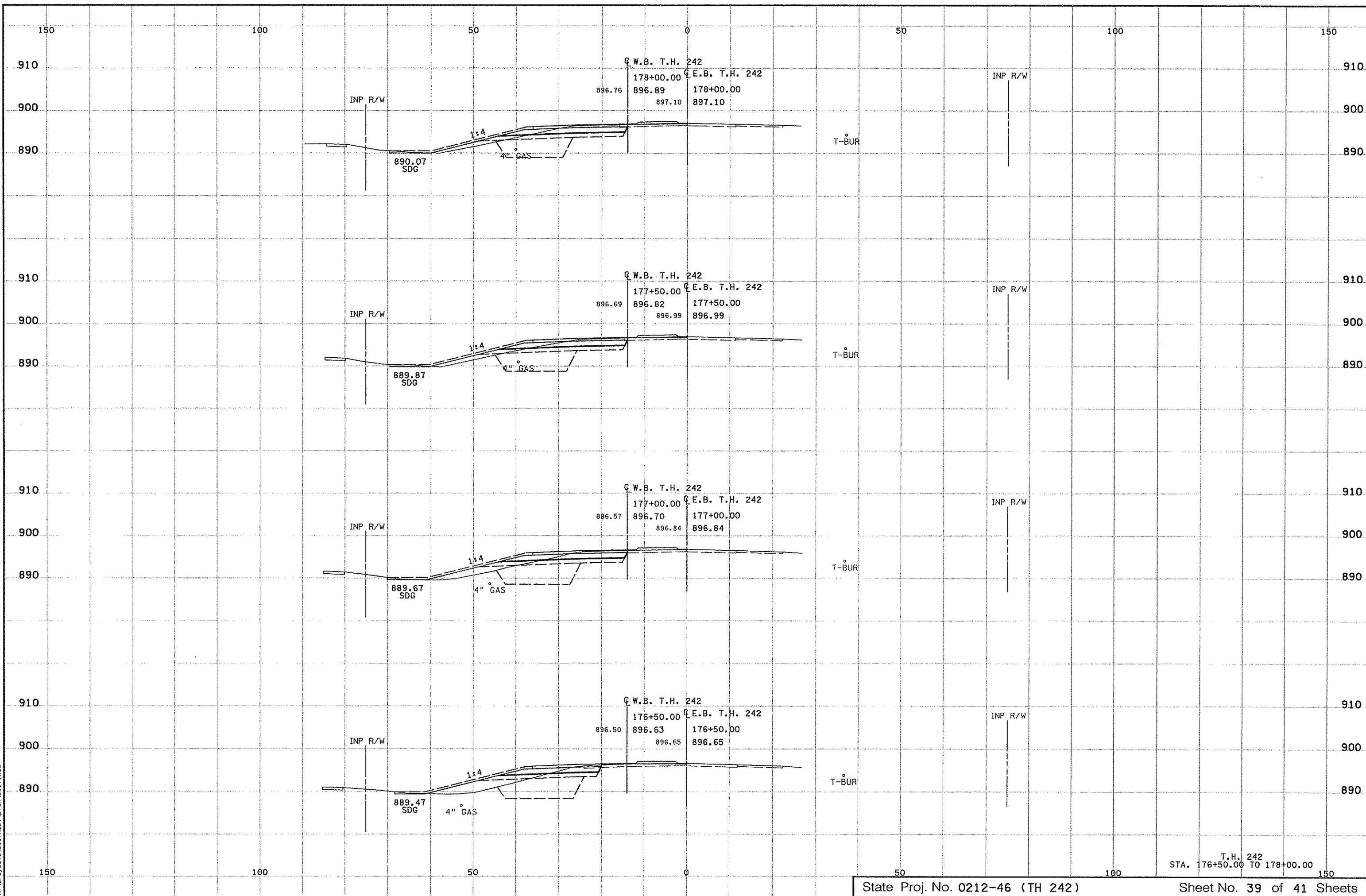
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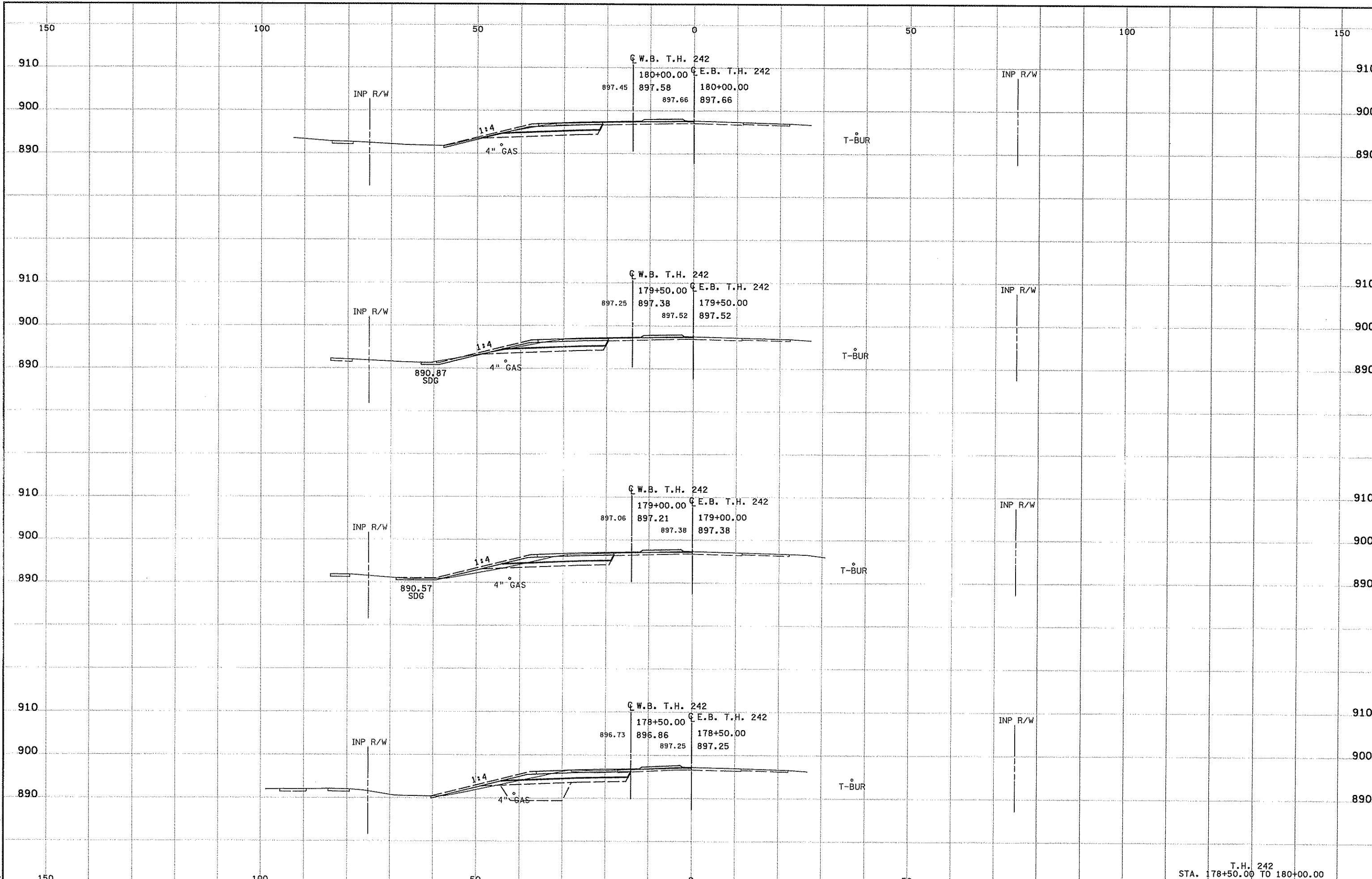


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