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**STATE OF NEBRASKA
DEPARTMENT OF ROADS
PLANS FOR CONSTRUCTION
E 7th / SEMINOLE,
H St. - PARK Ave.,
McCOOK
RED WILLOW COUNTY**



PROJECT NO.	SHEET NO.
URB-6158(1)	1
▲ CONTROL NO.	71151
▲ CONTROL NO.	71151 1
■ CONTROL NO.	

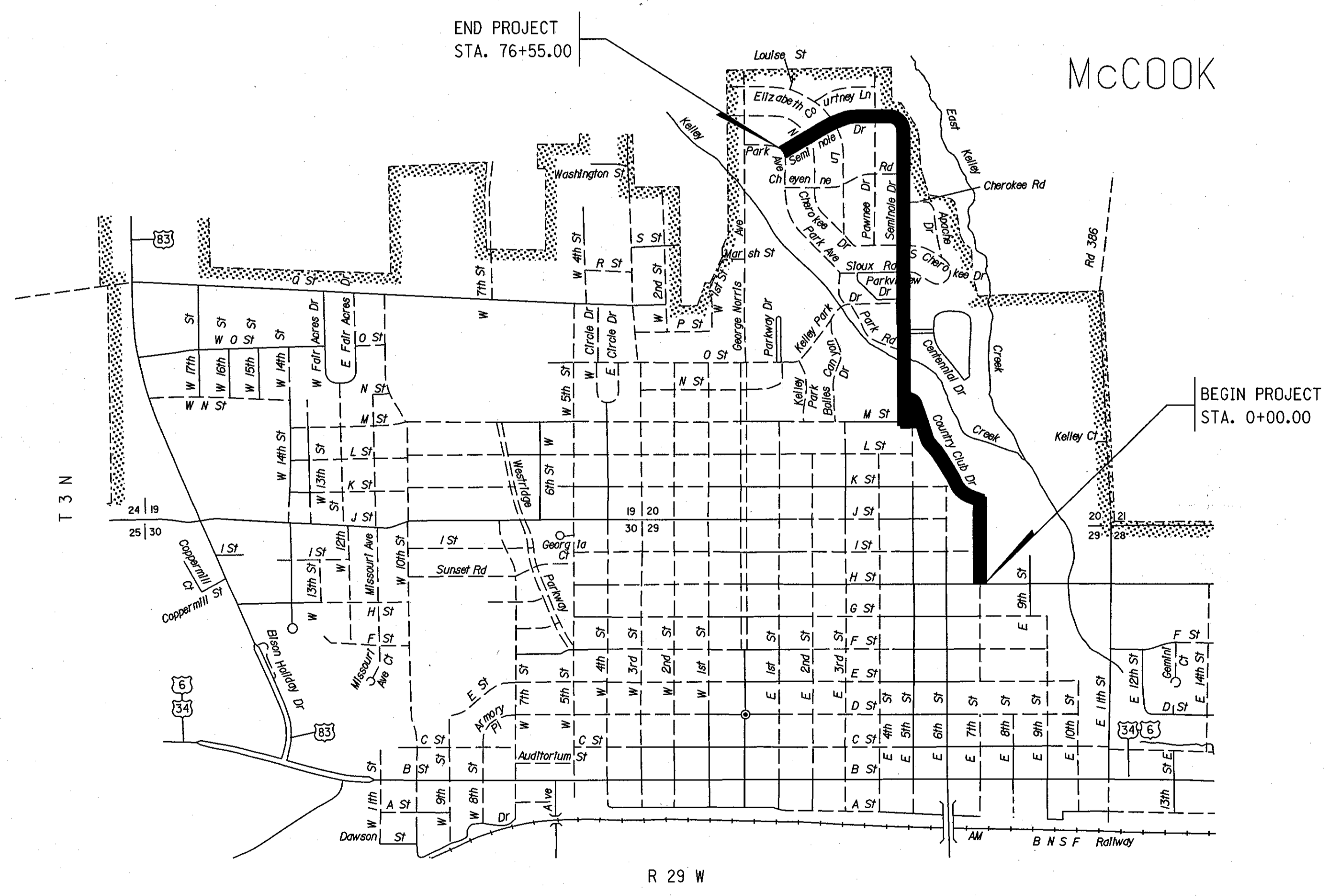
(R1) 6 NOV 2013

THE 2007 EDITION OF THE NEBRASKA STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS APPLY TO THIS PROJECT.

THE WORK ON THIS PROJECT CONSISTS OF GROUPS

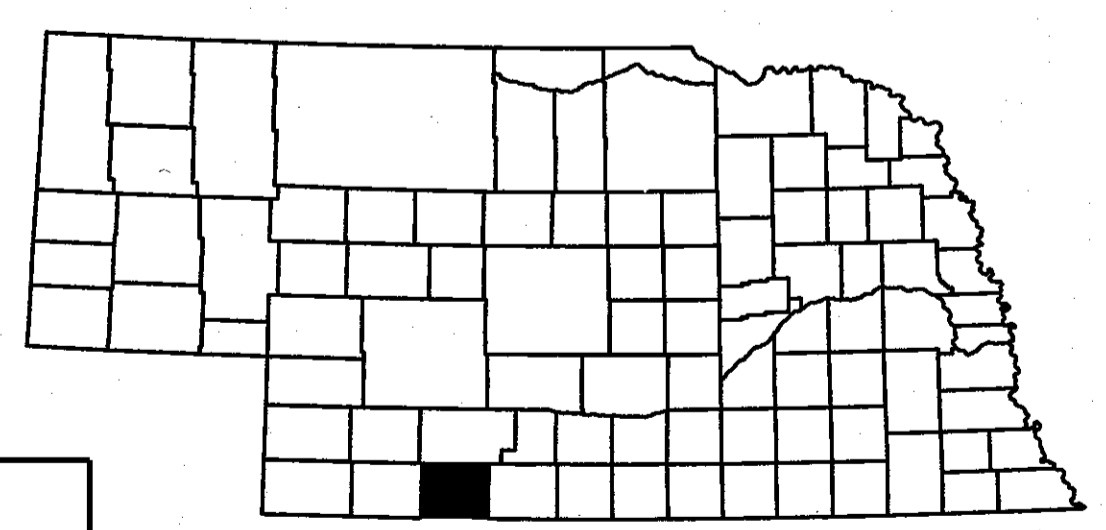
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▲ GROUPS 9 ARE INCLUDED IN THE LETTING OF OCTOBER 24, 2013
▲ GROUPS 9 ARE INCLUDED IN THE LETTING OF DECEMBER 12, 2013
■ GROUPS ARE INCLUDED IN THE LETTING OF

NO BIDS RECEIVED



DESIGN DESIGNATION
LOCAL ROADS AND STREETS
MUNICIPAL
TRAFFIC

YEAR:	2013	2033
ADT:	1,325	1,525
DHV:	159	183
T =	2 %	D = %
N.F.C.	URBAN COLLECTOR	

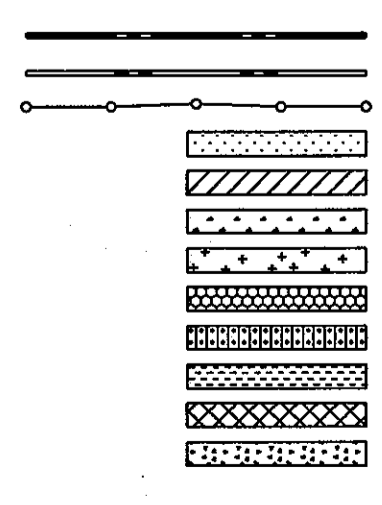


CONVENTIONAL SIGNS

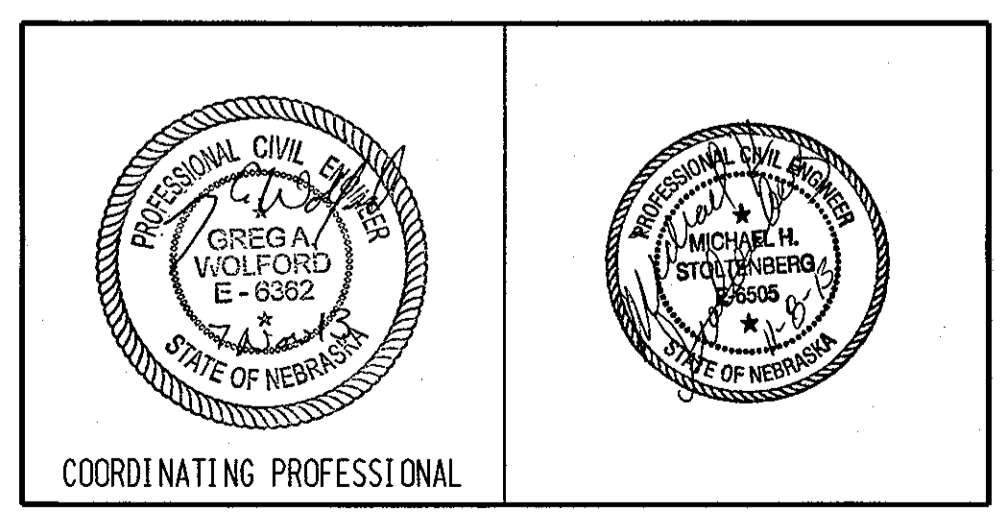
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- GUARDRAIL
- TRAVELED WAY
- DIKE
- CULVERT
- POWER POLE
- TELEPHONE POLE
- MAILBOX
- RAILROAD TRACKS
- MARSH
- TREE - CONIFEROUS
- TREE - DECIDUOUS

R.O.W. LEGEND

- NEW CONTROLLED ACCESS
- PREVIOUS CONTROLLED ACCESS
- LIMITS OF CONSTRUCTION
- PREVIOUS R.O.W.
- NEW R.O.W.
- EXISTING PERMANENT EASEMENT
- TEMPORARY EASEMENT
- EXCESS TAKING
- PERMANENT EASEMENT
- EXISTING RAILROAD EASEMENT
- NEW RAILROAD PERMANENT EASEMENT
- NEW RAILROAD TEMPORARY EASEMENT



REFERENCE POST NO. TO REFERENCE POST NO.
EXCEPTIONS: FROM STA. TO STA.
TOTAL NET LENGTH OF PROJECT: 7,655.00 FEET 1.450 MILES



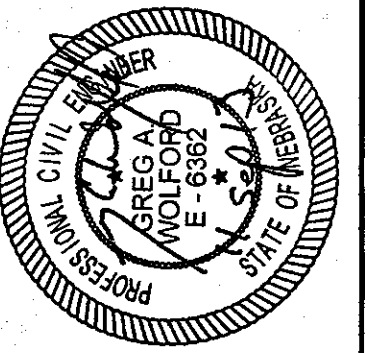
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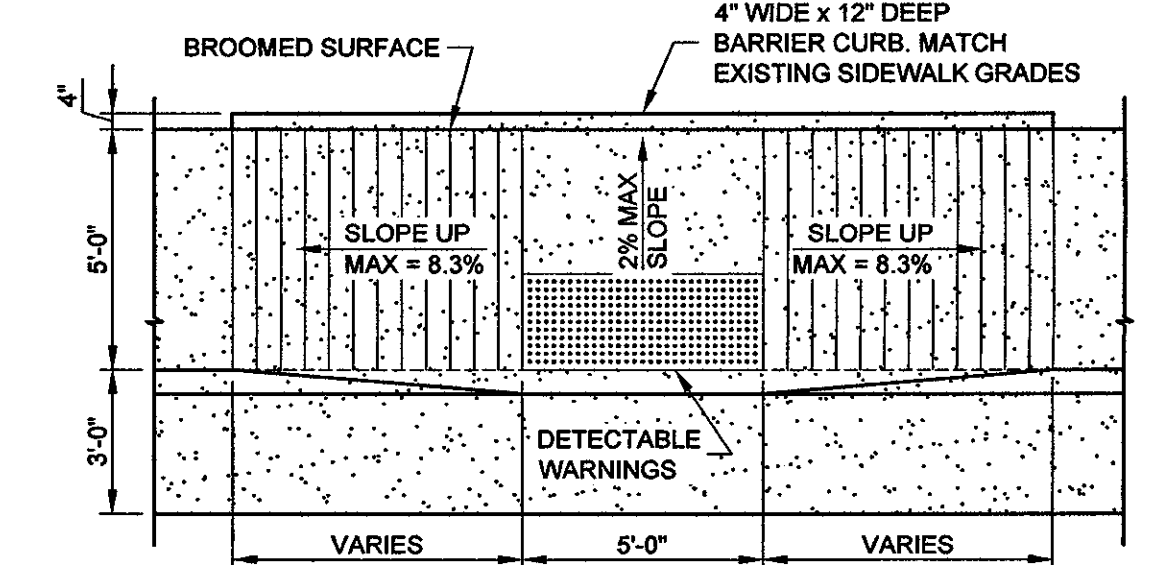
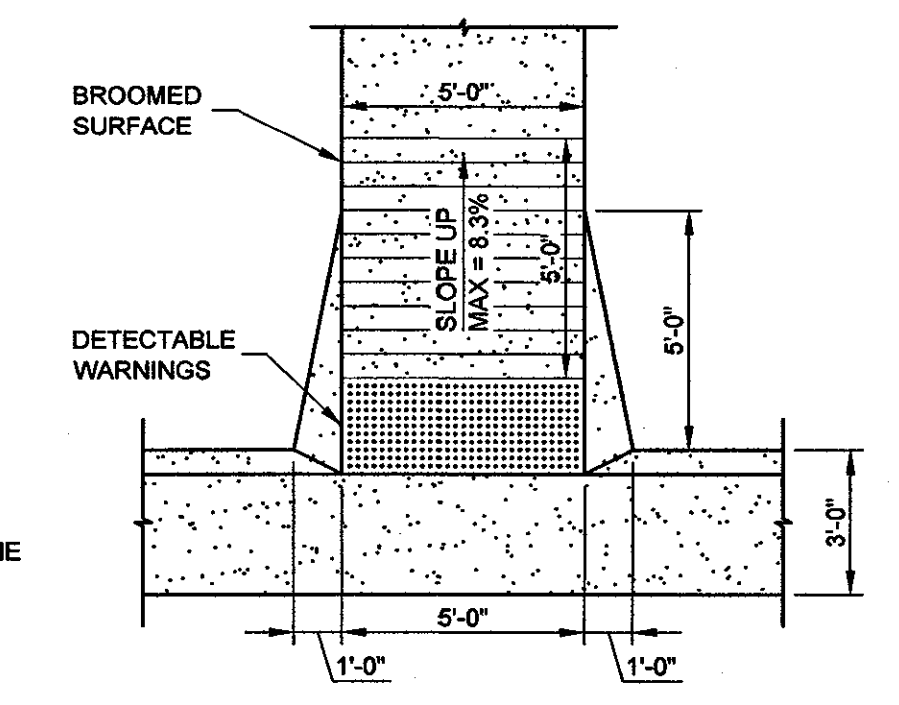
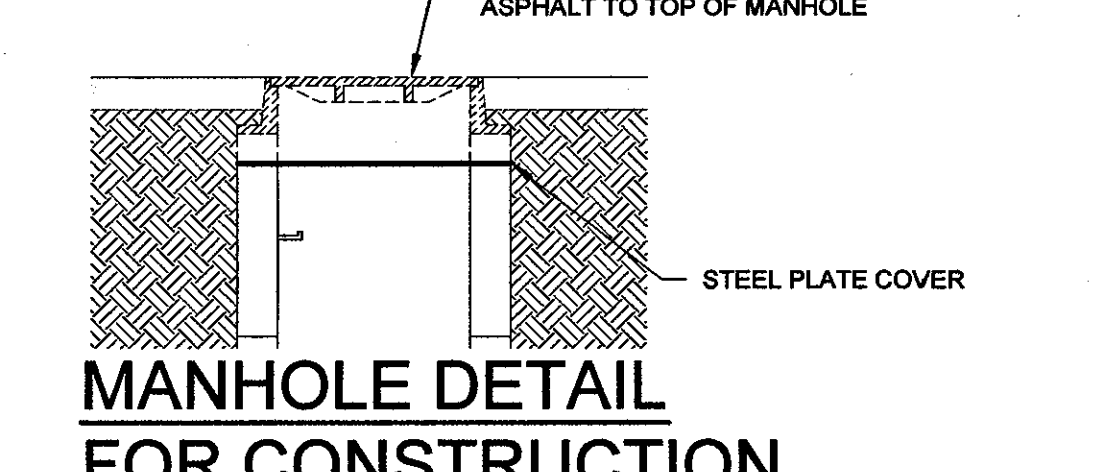
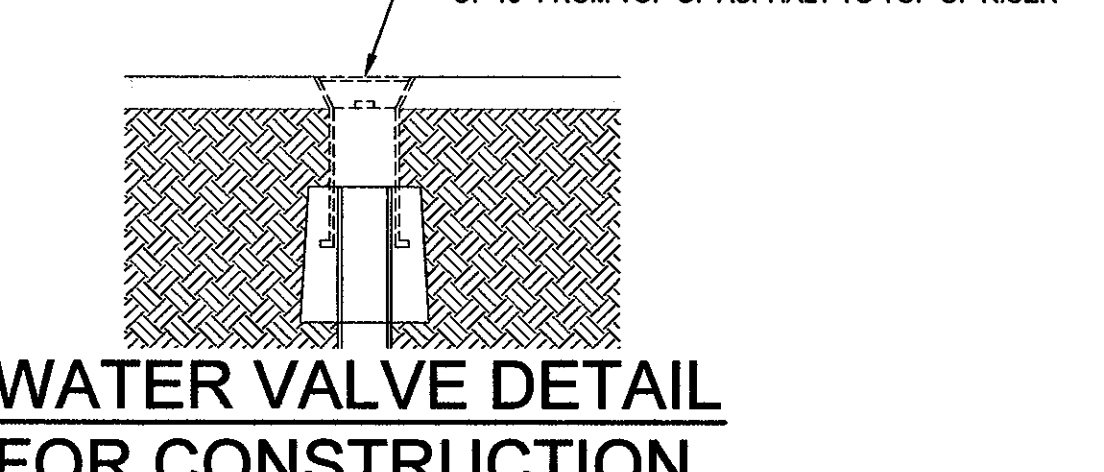
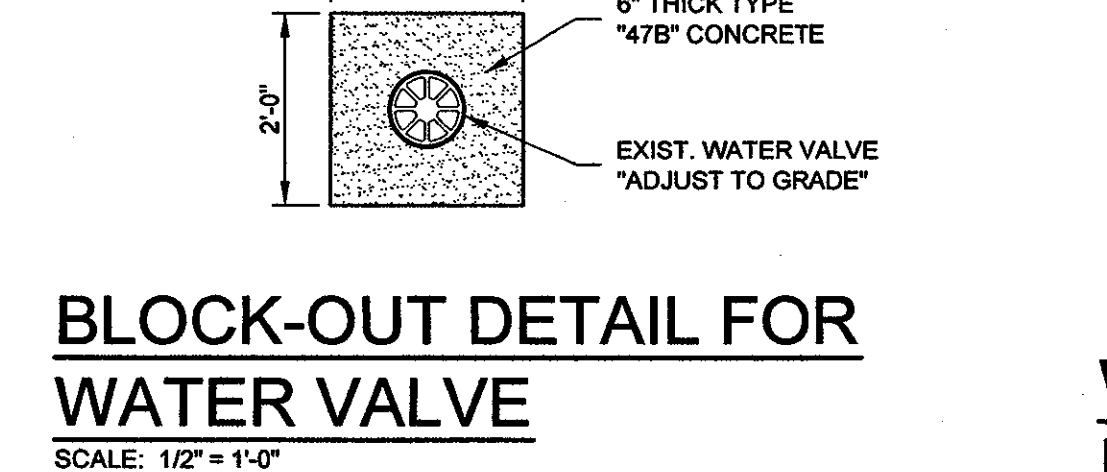
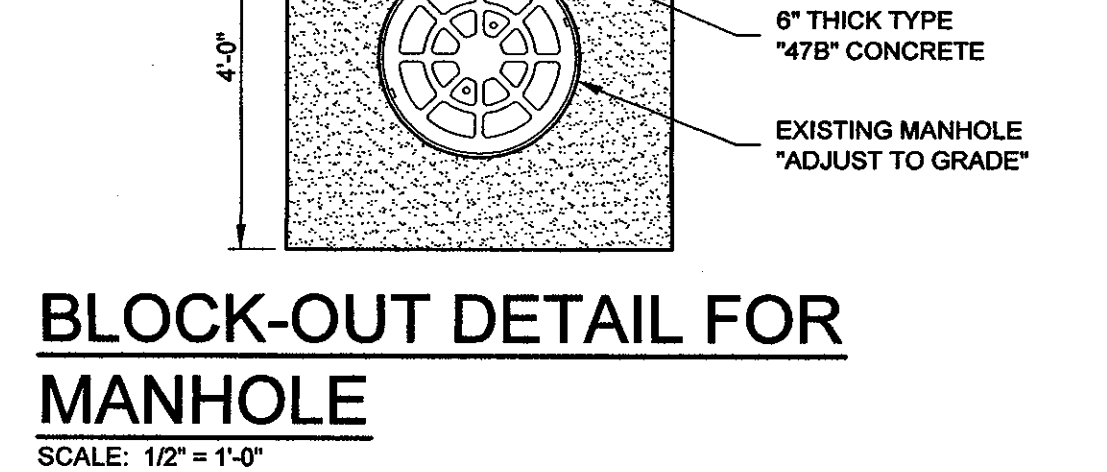
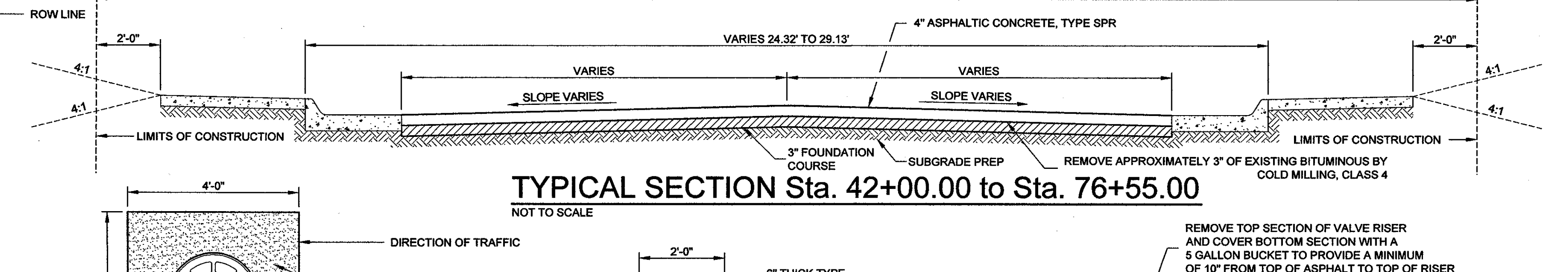
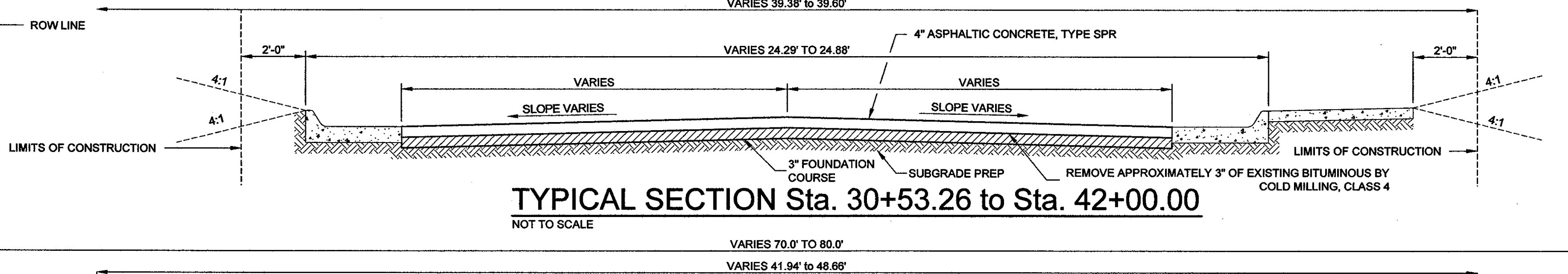
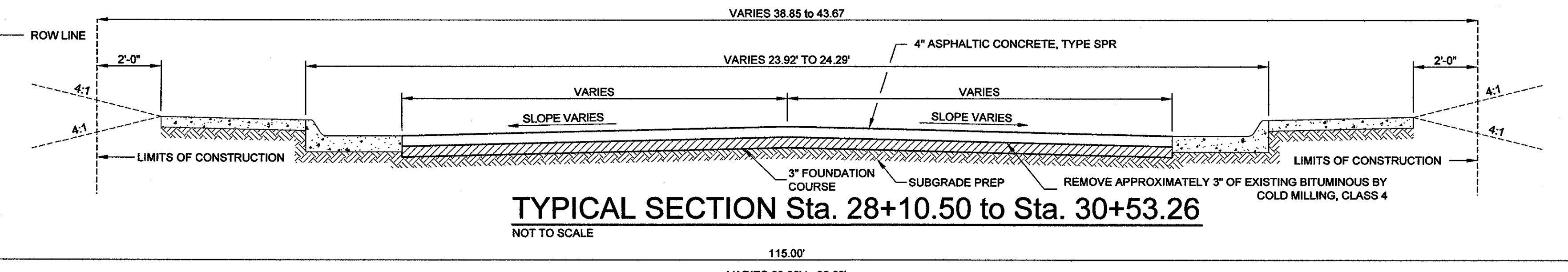
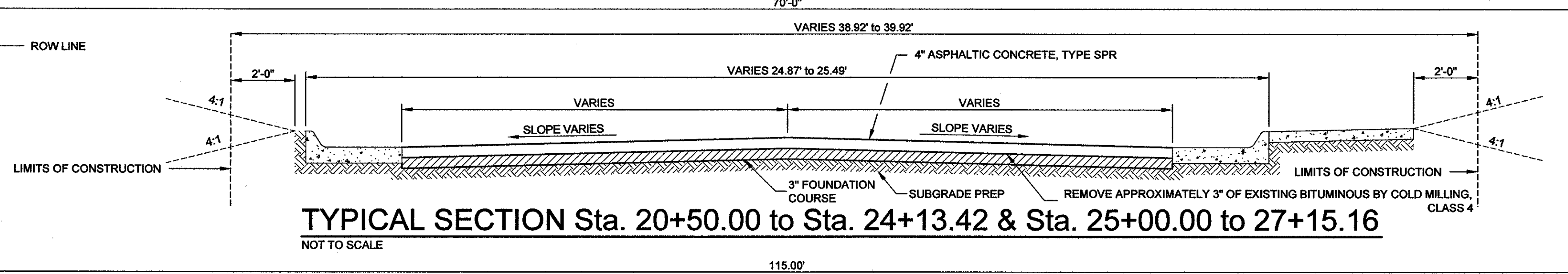
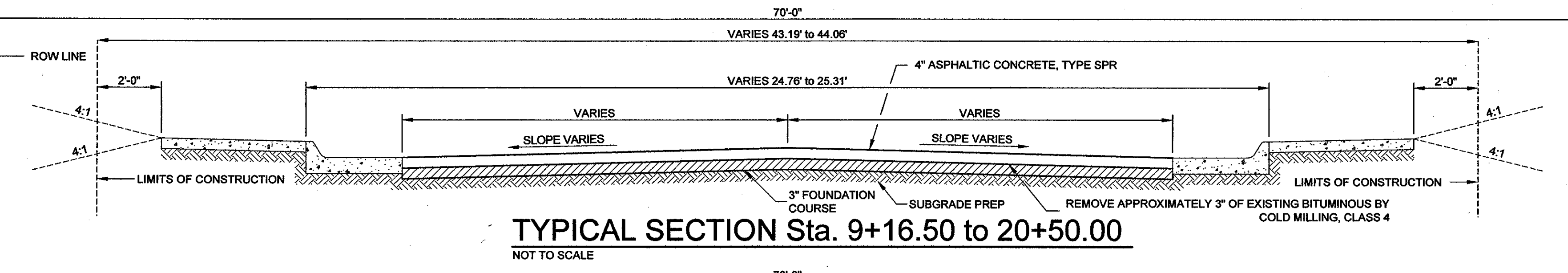
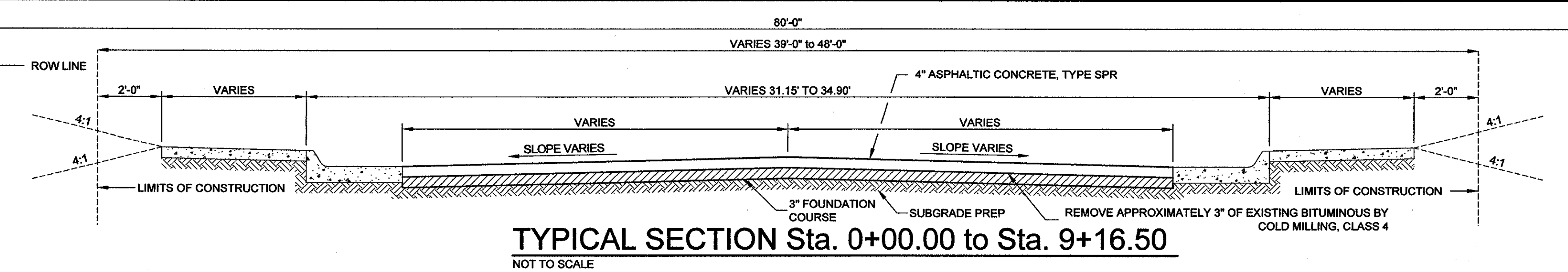
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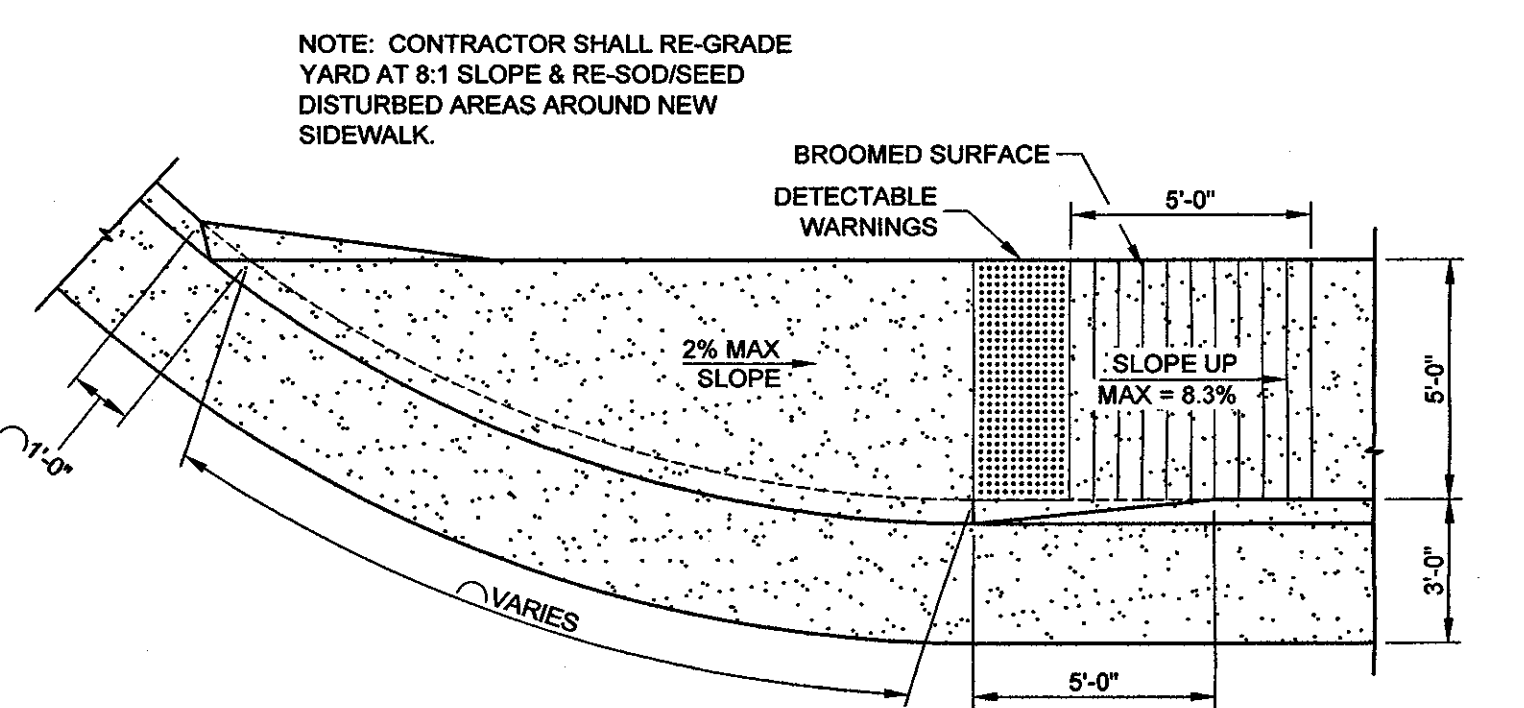
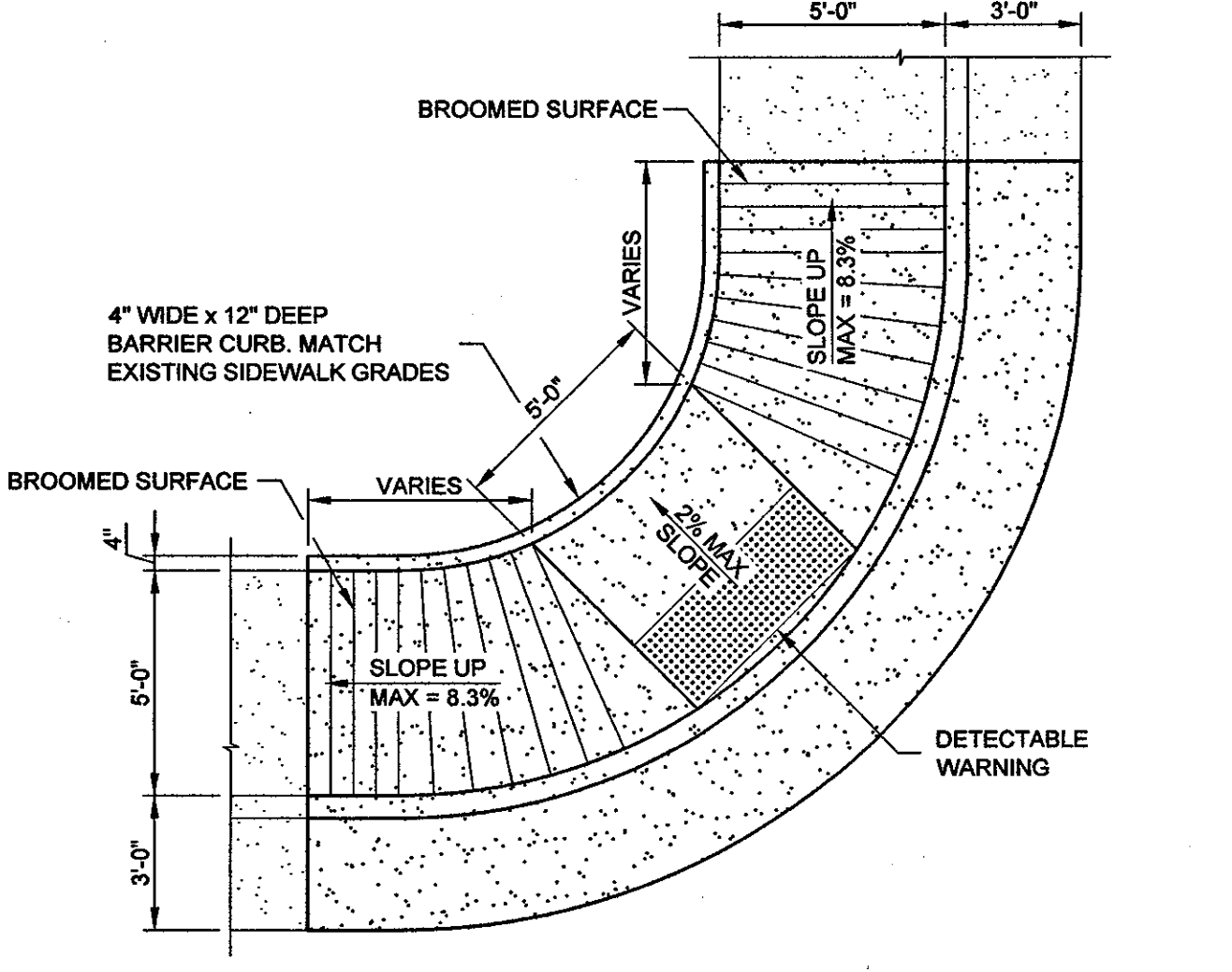
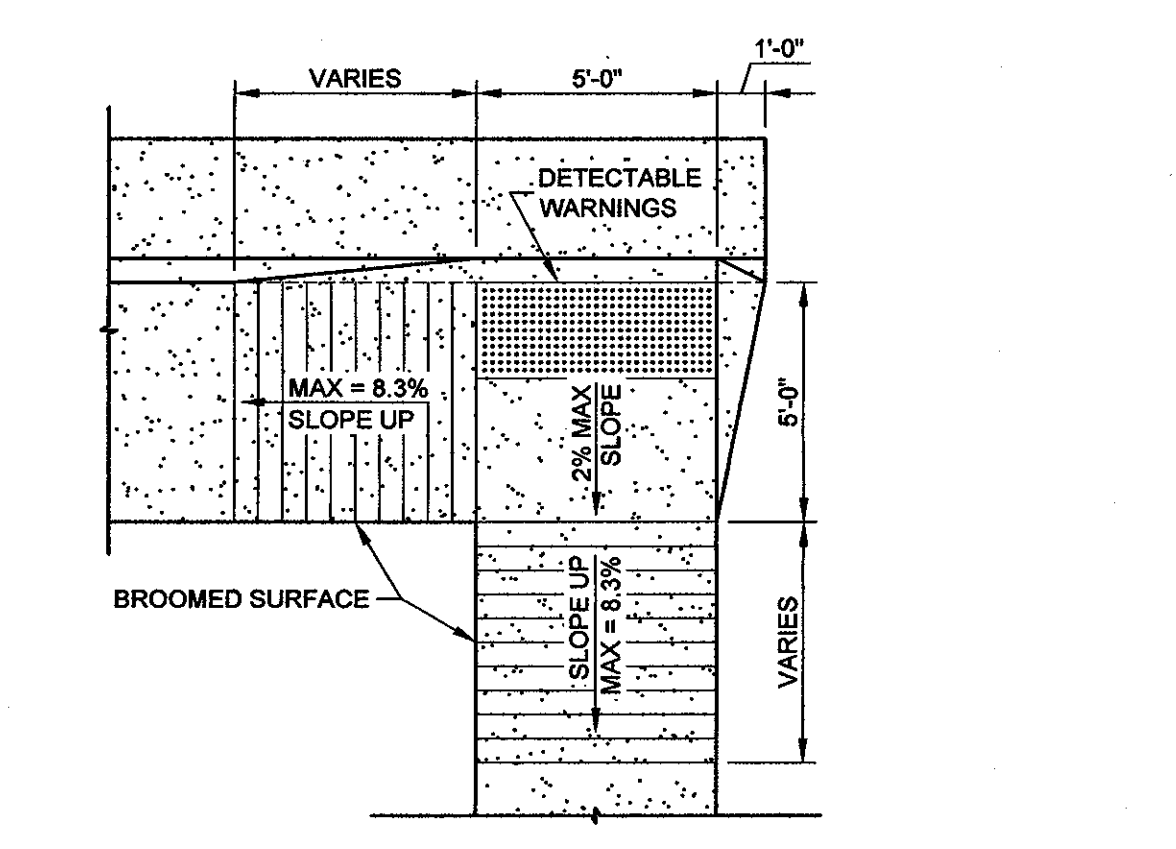


DWG: 842-12.2T
DRAWN: AMP
CHECKED:
REVISIONS:



SHOULD CONSIDER REDUCING MAXIMUM SLOPES TO ACCOMMODATE CONSTRUCTION TOLERANCES SEE NDOR PLAN 303-R1

NOTE:
 - IF AFTER FINAL INSPECTION, CURB RAMP IS DETERMINED TO BE OUT OF COMPLIANCE, THE COST TO RECONSTRUCT SAID CURB RAMP WILL BE THE RESPONSIBILITY OF THE CITY.
 - THE CONTRACTOR WILL NOT BE REQUIRED TO FURNISH BORROW ON THIS PROJECT.
 - THE CONTRACTOR WILL BE REQUIRED TO FURNISH WASTE AREAS FOR EXCESS EXCAVATION ON THIS PROJECT.



SUMMARY OF QUANTITIES

(R) 6 NOV 2013

PROJECT NO.	SHEET NO.
URB-6158(1)	2-S

C.N. 71151

BITUMINOUS SURFACING ITEMS GROUP 9

ITEM	QUANTITY	UNITS
BARRICADE, TYPE II	1,350.000	BDAY (R)
BARRICADE, TYPE III	751.000	BDAY
SIGN DAY	1,841.000	EACH (R)
CONTRACTOR FURNISHED SIGN DAY	307.000	EACH
OVERLAY BROKEN LINES	77.000	STA
FLAGGING	54.000	DAY (R)
FIELD OFFICE	1.000	EACH
MOBILIZATION	1.000	LS
EXCAVATION (ESTABLISHED QUANTITY)	2,640.000	CY
REMOVE PAVEMENT	545.264	SY
REMOVE WALK	411.378	SY
REMOVE COMBINATION CURB AND GUTTER	962.512	LF
COMBINATION CONCRETE CLASS 47B-3500 CURB AND GUTTER	977.122	LF
CONCRETE CLASS 47B-3000 SIDEWALKS	482.142	SY
DETECTABLE WARNING PANEL	460.000	SF
8" CONCRETE PAVEMENT, CLASS 47B-3500	221.100	SY
ADJUST MANHOLE TO GRADE	11.000	EACH
HYDRATED LIME FOR ASPHALT MIXTURES	34.000	TON
BITUMINOUS FOUNDATION COURSE	23,752.000	SY
ASPHALTIC CONCRETE, TYPE SPR	5,600.000	TON
PERFORMANCE GRADED BINDER (64-34)	190.400	TON
TACK COAT	4,928.000	GAL
WATER	74.000	MGAL
SUBGRADE PREPARATION	23,752.000	SY
COLD MILLING, CLASS 4	23,752.000	SY
RAP INCENTIVE PAYMENT	9,520.000	EACH
SEEDING, TYPE B	0.003	ACRE
SODDING	69.128	SY
TEMPORARY SILT CHECK	100.000	LF
MULCH	0.007	TON
ADJUST WATER VALVE BOX TO GRADE	21.000	EACH

COMPACTION REQUIREMENTS Class III (See Specifications)

SOIL TYPE	DEPTH BELOW FINISH SUBGRADE	PERCENT DENSITY	MOISTURE REQUIREMENTS	
			MINIMUM	MAXIMUM
Embankment / Roadway Grading, including driveways, to receive concrete pavement	Silt-Clay	Upper 3 feet	98 Min.	Opt. -3%
	Silt-Clay	At depths greater than 3 feet	95 Min.	Opt. -3%
	Granular	All depths	100 Min.	**
Embankment / Roadway Grading, including driveways, to receive flexible pavement	Silt-Clay	Upper 3 feet	100 Min.	Opt. -2%
	Silt-Clay	At depths greater than 3 feet	95 Min.	Opt. -3%
	Granular	All depths	100 Min.	**
Embankment / Roadway Grading not to be surfaced	All	All depths	95 Min.	Opt. -3%
				Opt. +2%
Subgrade Preparation, Shoulder Subgrade Preparation (Concrete Pavement)	Silt-Clay	The upper 6 inches of subgrade soil	98 Min.	Opt. -3%
	Granular	The upper 6 inches of subgrade soil	100 Min.	**
Subgrade Preparation, Shoulder Subgrade Preparation (Flexible Pavement)	Silt-Clay	The upper 6 inches of subgrade soil	100 Min.	Opt. -2%
	Granular	The upper 6 inches of subgrade soil	100 Min.	**
Embankment of driveways which are not to be surfaced	All	All depths	Class I	(See Specifications)
Bituminous Pavement Patching	All	Underlying Material	100 Min.	(See Specifications)
Foundation Course / Subgrade Stabilization	--	--	100 Min.	(See Specifications)
Granular Structural Fill (MSE Walls, Granular Fill for bridges, Culverts, etc)	Granular	All depths	100 Min.	Opt. -3%

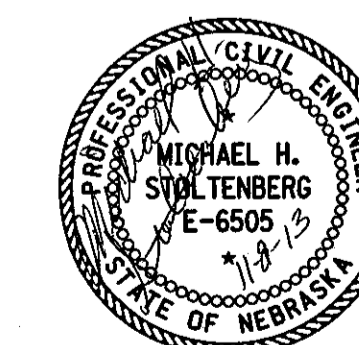
** Moisture as necessary to obtain density.
(A moisture target value at maximum density shall be established in the field by the Contractor during the compaction process. The acceptable moisture content shall be $\pm 2\%$ of the target value.)

TYPES OF ASPHALTIC OIL TO BE USED

TACK COAT: SS-1, SS-1H, CSS-1, OR CSS-1H

PERFORMANCE GRADED BINDER

AASHTO DESIGNATION M320



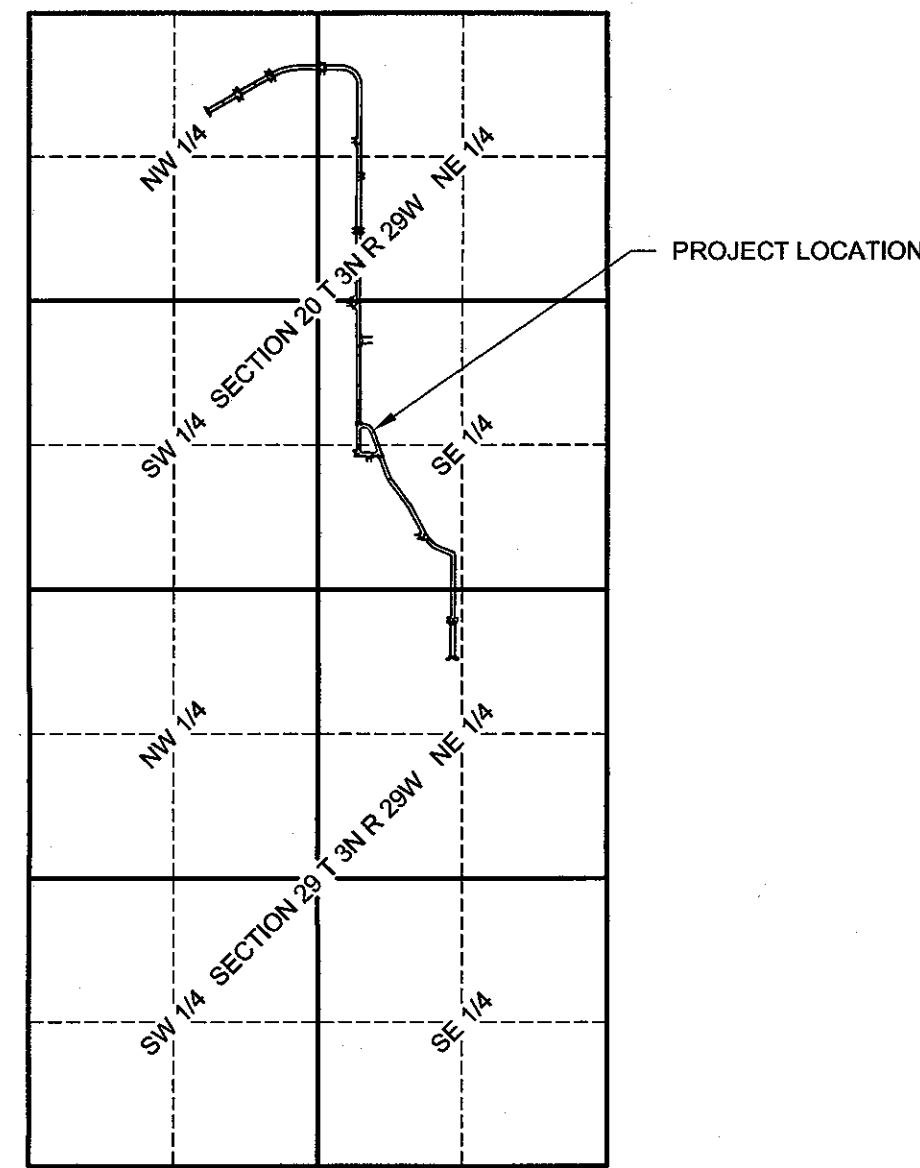
CONSTRUCTION DIVISION

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LOCATION MAP
NO SCALE

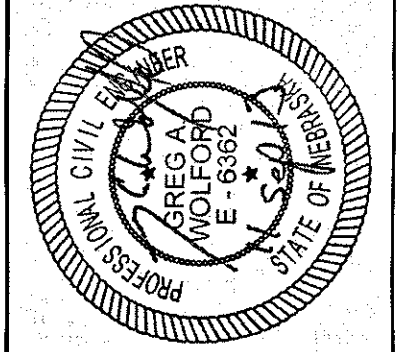


LOCATION MAP
NOT TO SCALE

East 7th and Seminole from H Street to Park Ave.

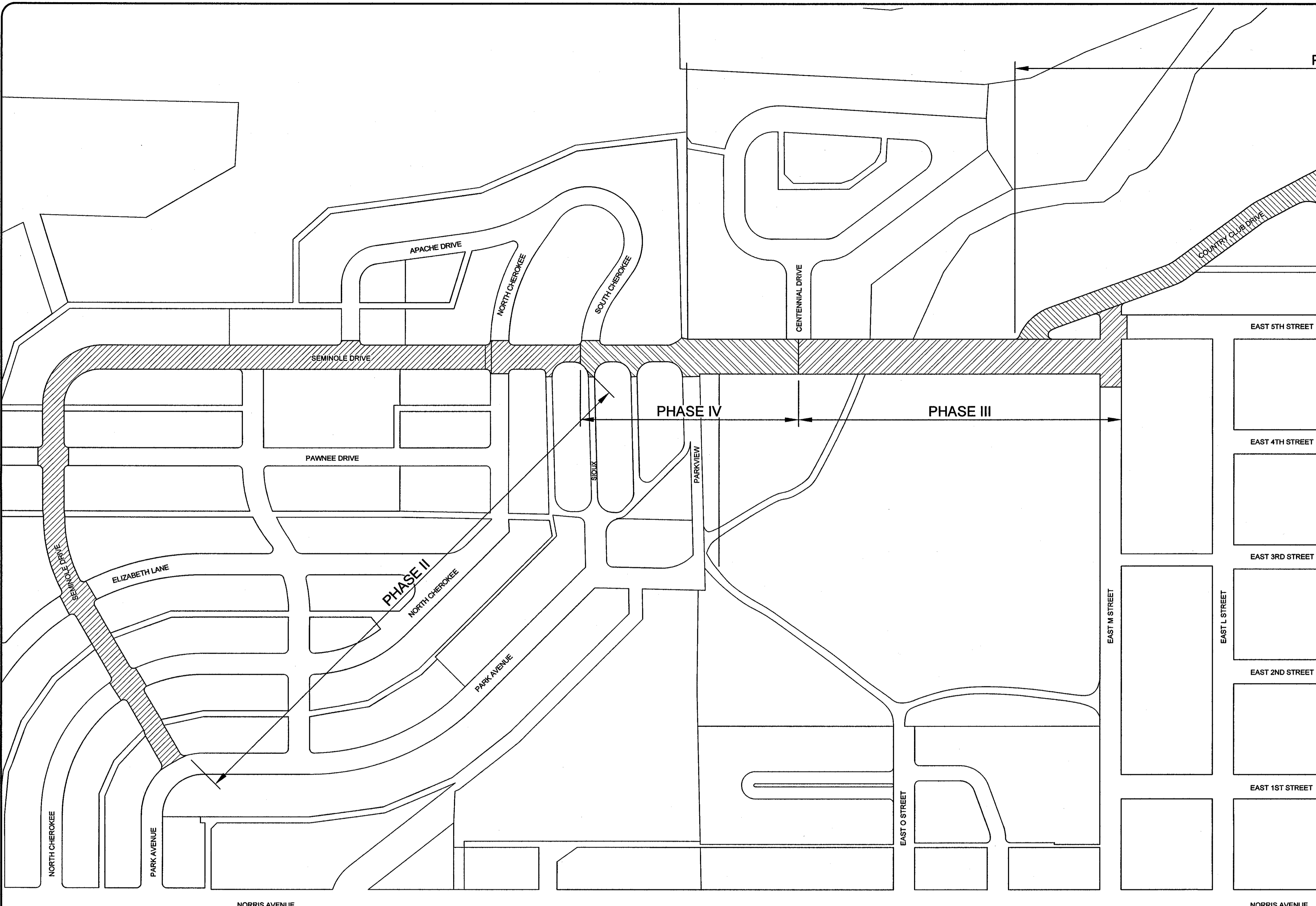
Project No. URB-6158(1)
McCook, NEBRASKA

WDA W DESIGN ASSOCIATES
Consulting Engineers and Architects
McCook, Nebraska 69001
Hastings, Nebraska 68901



DWG: 842-122A
DRAWN: AMP
CHECKED:
REVISIONS:

2-A



PHASING AND ACCESS PLAN

*The Phasing of this project is primarily scheduling the milling, subgrade preparation and placement of the bituminous foundation course so that residents can have access to their homes by driving on millings and having the least disruption possible.

No specific phasing will be laid out for the paving operations, only that the Contractor must maintain access to streets and neighborhoods as described below.

Phase I

Phase I shall be East 7th Street and Country Club Drive. During this phase the street will be closed. The contractor cannot mill M Street or East 5th Street. In addition, the contractor shall provide access to the Republican Valley Event Center between the hours of 5:30 p.m. and 1:00 a.m.

This Phase shall be considered complete when all the millings are back in place and local residents are allowed to travel on the millings with access to their driveways.

*Time Allowance: 5 Working Days ±

Phase II

Phase II shall be Seminole Dr. from the north side of the Sioux Drive/South Cherokee intersection to Park Ave. During this phase the street will be closed. The contractor must maintain access at Parkview Drive and South Cherokee at all times until this phase is complete.

This Phase shall be considered complete when all the millings are back in place and local residents are allowed to travel on the millings with access to their driveways.

This phase can be done concurrent with Phase I, beginning the milling immediately after the milling on Phase I is complete.

*Time Allowance: 6 Working Days ±

Phase III

Phase III shall be all of M Street and East 5th Street from M Street to the center of Centennial Dr. Access to Centennial Drive must be maintained at all times during this phase. During this phase this section of street will be closed.

This Phase shall be considered complete when all the millings are back in place and local residents are allowed to travel on the millings with access to their driveways.

This phase can be completed as soon as Phase I is done.

*Time Allowance: 3 Working Days ±

Phase IV

Phase IV shall be East 5th St. and Seminole Dr. from the north Half of Centennial Dr. through the Parkview/South Cherokee intersection. The Contractor shall maintain access at all times during this phase to Centennial Drive and North Cherokee. During this phase this section of street will be closed.

This Phase shall be considered complete when all the millings are back in place and local residents are allowed to travel on the millings with access to their driveways.

This phase cannot be started until both Phase II and Phase III are complete.

*Time Allowance: 4 Working Days ±

Temporary Access

After the Bituminous Foundation Course is placed and graded, Homeowners shall have access to their homes via a small ramp made of millings and placed at each drive. Immediately prior to paving the contractor shall remove these ramps.

Emergency Access

In the event of emergency vehicles needing access to a residence at any point during the project the contractor shall immediately cease operations and assist the emergency personnel in gaining access to the residence as needed.

Permanent Access

At all times during this project the contractor shall maintain access for residents to Centennial Drive either from the south or the north on East 5th Street through the scheduling of various operations. This will provide access to the residences on Centennial Drive during the project.

At all times during this project the contractor shall maintain access for residents to either the Parkview Drive/South Cherokee intersection on Seminole or the North Cherokee intersection on Seminole through the scheduling of various operations. This will provide access to the residences on Apache, South Cherokee and North Cherokee east of Seminole as well as alley access to residences on the east side of Seminole north of Apache during the project.

Handicap Access Ramps

Handicap Access Ramps are not a part of any specific phasing. The contractor shall complete all ramps shown on the plans in such a manner so as to not disrupt the phasing or traffic during a phase, or traffic on the street if the Contractor chooses to complete this work after the paving is complete.

Asphalt Paving

No specific schedule shall be developed for paving. The contractor may close streets during the day and open them at night for traffic and local resident access. The contractor shall schedule paving so as to maintain the permanent access streets as noted above. The contractor will be expected to provide flaggers during this phase around paving operations as needed.

Concrete Valley Drains

The two concrete valley drains shall not be replaced/installed until the new asphalt is completed and the streets opened to traffic. These valley drains shall then be installed by saw cutting the asphalt full depth, with the contractor carefully protecting the sawn edges of the new asphalt to be used as the form for the new concrete. The Contractor will only close the street at the valley drain and barricade accordingly. There will be no separate phase or working day requirement for completing the two valley drains.

EAST 5TH STREET

EAST 4TH STREET

EAST 3RD STREET

EAST 2ND STREET

EAST 1ST STREET

EAST M STREET

EAST L STREET

EAST K STREET

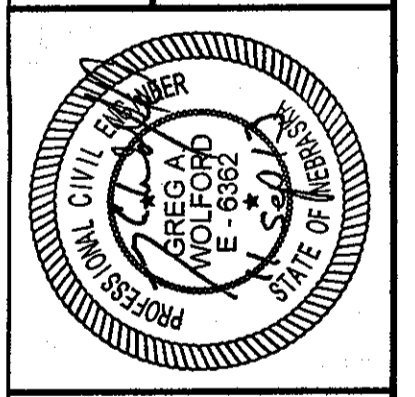
NORRIS AVENUE

NORRIS AVENUE



East 7th and Seminole from H Street to Park Ave.
 Project No. URB-6158(1)
 McCook, NEBRASKA

WDA W DESIGN ASSOCIATES
 Consulting Engineers and Architects
 McCook, Nebraska 68001
 Hastings, Nebraska 68001



DWG:	842-12 2P
DRAWN:	AMP
CHECKED:	
REVISIONS:	

2-P
 DATE: MARCH 2013

(INFORMATION ONLY)

Build 4" Asphaltic Concrete, Type SPR		
Station to Station	Side	Area Sq.Yds.
0+00.000 to 5+50.000	Lt. & Rt.	1820

Build 8" Concrete Pavement, Plan 329-R9		
Station to Station	Side	Area Yd ²
3+09.110 to 3+29.110	Lt. & Rt.	115.193
3+32.380 to 3+34.380	Rt.	0.444
3+36.190 to 3+38.190	Lt.	0.444

Build 36" Comb. Concrete Curb and Gutter - Plan 301R-10		
Station to Station	Side	Lin. Ft.
2+93.410 to 3+08.840	Lt.	15.530
2+93.520 to 3+08.720	Rt.	15.290
3+19.580 to 3+19.740	Lt.	14.990
3+47.950 to 3+47.980	Lt.	15.000

Build 4" Concrete Sidewalk - 5'-0" Wide, Plan 301-R10		
Station to Station	Side	Area Yd ²
2+93.410 to 3+08.350	Lt.	7.963
2+93.520 to 3+08.53	Rt.	7.174
3+13.370 to 3+18.270	Lt.	8.841
3+49.220 to 3+54.220	Lt.	8.889

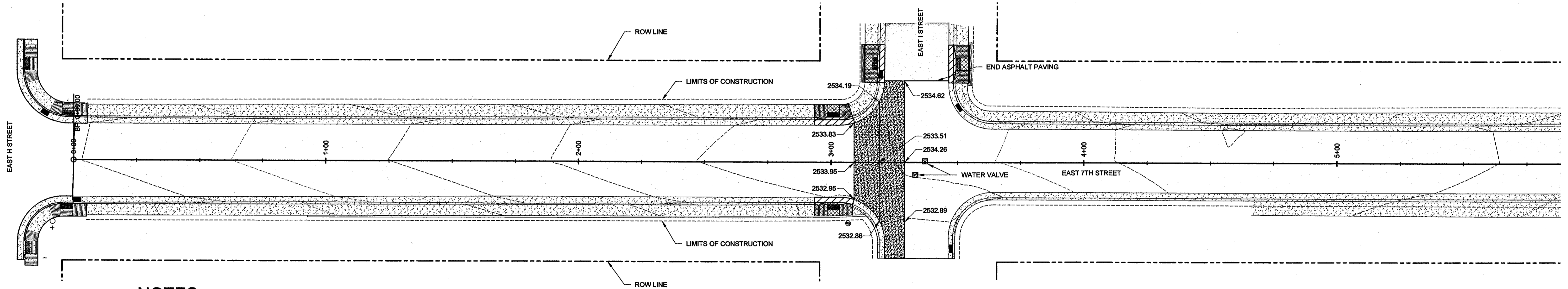
Build Curb Ramp, See Sheet 2-T			
Station	Side	Type	Detectable Warning (Sq.Ft.)
2+98.390 to 3+03.390	Lt.	2	10
2+98.530 to 3+03.530	Rt.	2	10
3+16.290 to 3+18.290	Lt.	2	10
3+49.240 to 3+51.240	Lt.	2	10

Seeding & Sod			
Station to Station	Side	Seeding Yd ²	Sod Yd ²
3+12.000 to 3+13.000	Lt.	0.000	1.665
3+54.190 to 3+55.550	Lt.	0.000	2.001

Saw Cut Pavement		
Station to Station	Side	Lin. Ft.
3+33.78	Lt.	25.400

Adjust Water Valve to Grade, See Sheet 2-T		
Station	Side	Each
3+33.36	Rt.	1
3+37.19	Lt.	1

PROJECT NO. URB-6158(1)
SHEET NO. 3
C.N. 71151

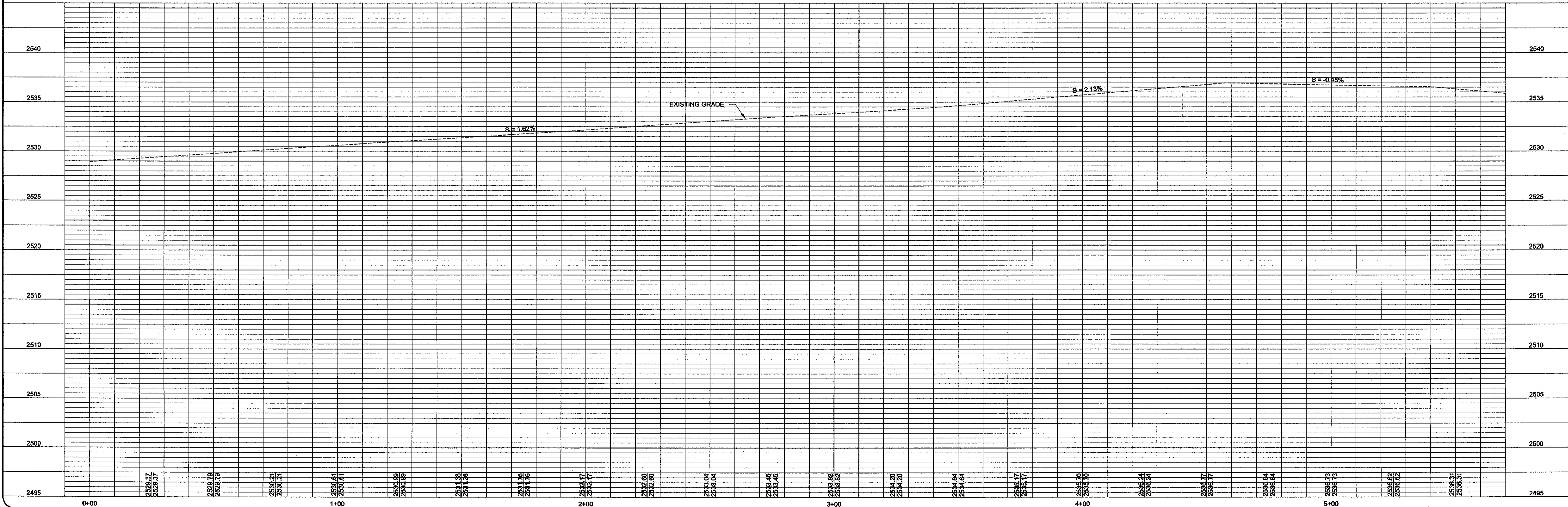


NOTES:

- CONTRACTOR TO LOCATE AND PROTECT ALL UNDERGROUND AND OVERHEAD UTILITIES.
- THE CONTRACTOR SHALL CONFINE ALL WORK TO INSIDE THE ROW. ANY WORK NEAR THE ROW LINES SHALL BE PLANNED OR PHASED TO KEEP FORMS, EQUIPMENT AND PERSONNEL WITHIN THE ROW.

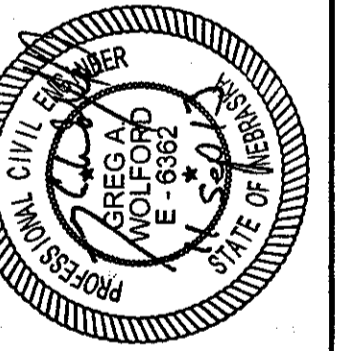
NOTE: CONTRACTOR TO PAVE THROUGH INTERSECTION AND SAW CUT ASPHALT LATER TO INSTALL CONCRETE VALLEY.

HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 5'-0"



East 7th and Seminole from H Street to Park Ave.
Project No. URB-6158(1)
McCook, NEBRASKA

WDA W DESIGN ASSOCIATES
Consulting Engineers and Architects
McCook, Nebraska 69001
Hastings, Nebraska 68901



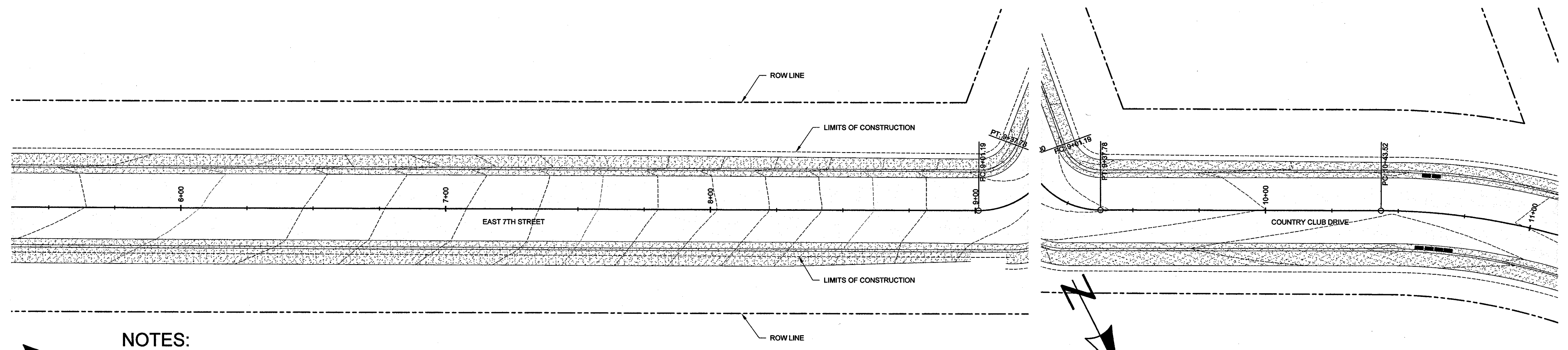
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DRAWN: AMP
CHECKED:
REVISIONS:

3
DATE: MARCH 2013

(INFORMATION ONLY)

Build 4" Asphaltic Concrete, Type SPR		
Station to Station	Side	Area Sq. Yds.
5+50.000 to 9+20.000	Lt. & Rt.	1031
9+20.000 to 11+00.000	Lt. & Rt.	504

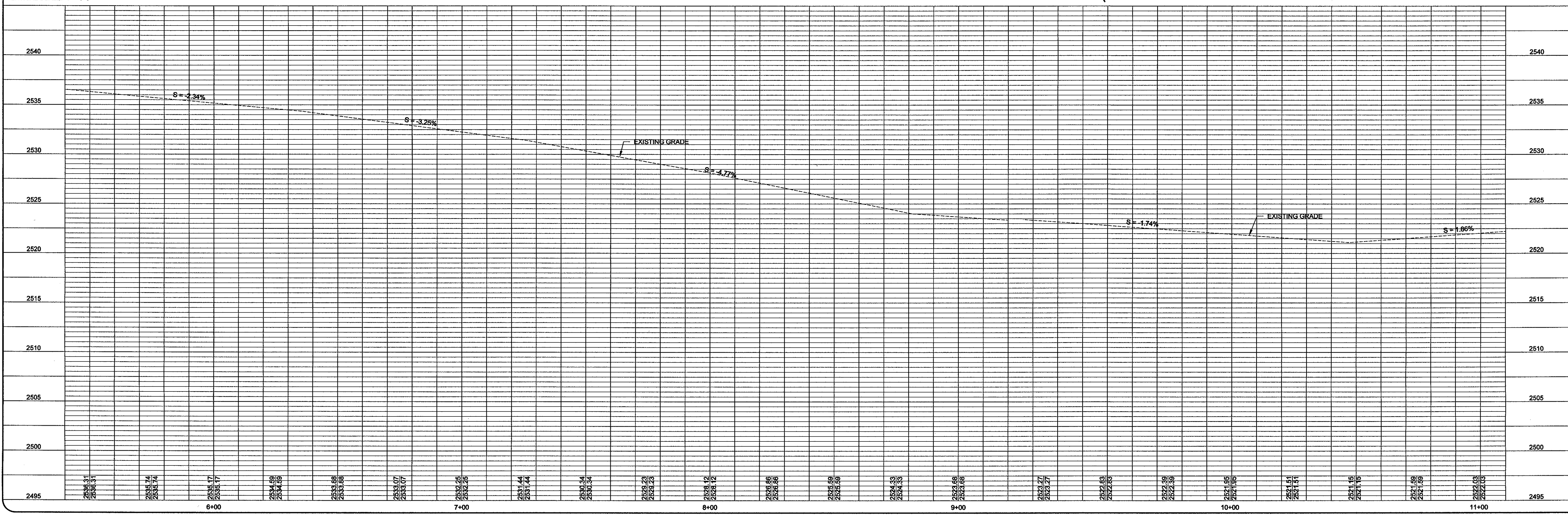
PROJECT NO. URB-6158(1) C.N. 71151	SHEET NO. 4
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NOTES:

1. CONTRACTOR TO LOCATE AND PROTECT ALL UNDERGROUND AND OVERHEAD UTILITIES.
2. THE CONTRACTOR SHALL CONFINE ALL WORK TO INSIDE THE ROW. ANY WORK NEAR THE ROW LINES SHALL BE PLANNED OR PHASED TO KEEP FORMS, EQUIPMENT AND PERSONNEL WITHIN THE ROW.

HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 5'-0"



WDA ASSOCIATES
 Consulting Engineers and Architects
 McCook, Nebraska 68001
 Hastings, Nebraska 68901

PROJECT NO. URB-6158(1)
McCOOK, NEBRASKA

East 7th and Seminole from H Street to Park Ave.

DWG: 842-12NP CONST.
 DRAWN: AMP
 CHECKED:
 REVISIONS

DATE: MARCH 2013

(INFORMATION ONLY)

Build 4" Asphaltic Concrete, Type SPR		
Station to Station	Side	Area Sq.Yds.
11+00.000 to 16+50.000	LL & RL	1713

Build 8" Concrete Pavement, Plan 329-R9		
Station to Station	Side	Area Yd ²
11+30.340 to 11+34.340	Rt.	1.778
11+81.590 to 11+85.590	LL & RL	1.778
12+29.910 to 12+33.910	Lt.	1.778
12+36.480 to 12+38.480	Lt.	0.444
12+40.220 to 12+42.220	Lt.	0.444

Saw Cut Pavement		
Station to Station	Side	Lin. Ft.
12+41.54	Lt.	32.500

Build 36" Comb. Concrete Curb and Gutter - Plan 301-R10			
Station to Station	Side	Lin. Ft.	
11+78.19 to 11+96.85	Rt.	17.610	
11+79.37 to 11+95.82	Lt.	17.410	
12+91.48 to 13+09.00	Rt.	17.500	
12+91.53 to 13+09.03	Lt.	17.500	

Adjust Manhole to Grade			
Station	Side	Each	
11+32.340	Rt.	1	
11+83.590	Lt. & Rt.	1	
12+31.910	Lt.	1	

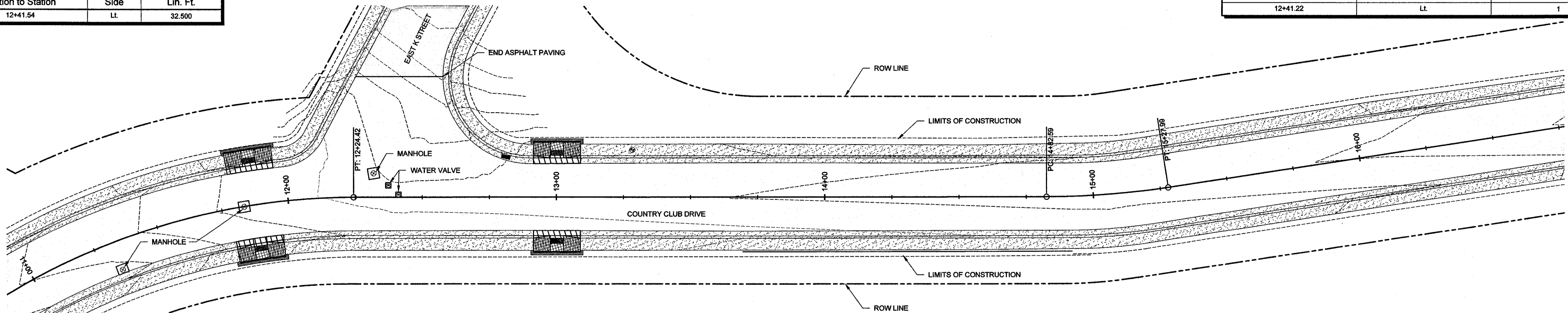
Build 4" Concrete Sidewalk - 5'-0" Wide, Plan 301-R10			
Station to Station	Side	Area Yd ²	
11+78.18 to 11+96.840	Rt.	10.237	
11+79.36 to 11+95.81	Lt.	10.526	
12+91.49 to 13+09.00	Rt.	10.370	
12+91.53 to 13+09.03	Lt.	10.370	

Seeding & Sod				
Station to Station	Side	Seeding Yd ²	Sod Yd ²	
11+77.070 to 11+97.930	Rt.	0.000	2.266	
11+78.430 to 11+96.720	Lt.	0.000	2.406	
12+90.490 to 13+10.000	Rt.	0.000	2.340	
12+90.530 to 13+10.030	Lt.	0.000	2.396	

Build Curb Ramp, See Sheet 2-T				
Station	Side	Type	Detectable Warning (Sq.Ft.)	
11+84.830 to 11+90.200	Rt.	2	10	
11+85.280 to 11+89.920	Lt.	2	10	
12+97.750 to 13+02.750	Rt.	2	10	
12+97.780 to 13+02.780	Lt.	2	10	

Adjust Water Valve to Grade, See Sheet 2-T			
Station	Side	Each	
12+37.48	Lt.	1	
12+41.22	Lt.	1	

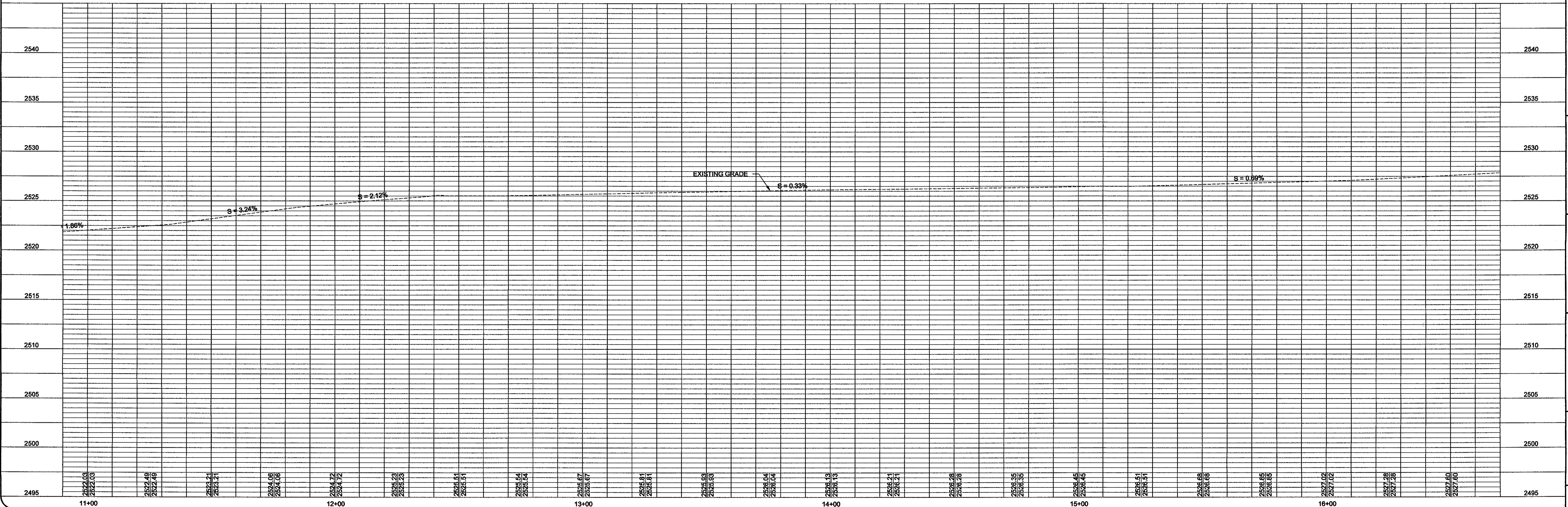
PROJECT NO. URB-6158(1)
SHEET NO. 5
C.N. 71151



NOTES:

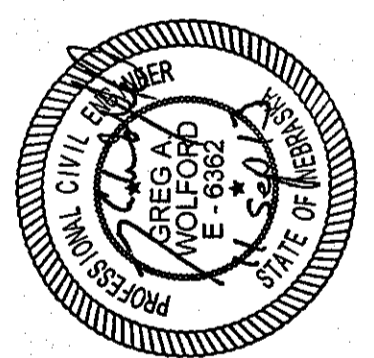
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- THE CONTRACTOR SHALL CONFINE ALL WORK TO INSIDE THE ROW. ANY WORK NEAR THE ROW LINES SHALL BE PLANNED OR PHASED TO KEEP FORMS, EQUIPMENT AND PERSONNEL WITHIN THE ROW.

HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 5'-0"



East 7th and Seminole from H Street to Park Ave.
Project No. URB-6158(1)
MCCOOK, NEBRASKA

WDA ASSOCIATES
Consulting Engineers and Architects
McCook, Nebraska 69001
Hastings, Nebraska 68901



DWG: 842-12RNP CONSTR
DRAWN: AMP
CHECKED:
REVISIONS:

5

DATE: MARCH 2013

(INFORMATION ONLY)

Build 4" Asphaltic Concrete, Type SPR		
Station to Station	Side	Area Sq. Yds.
16+50.000 to 22+00.000	LL & Rt.	1538

Build 8" Concrete Pavement, Plan 329-R9		
Station to Station	Side	Area Yd ²
18+26.840 to 18+28.840	Rt.	0.444
20+39.940 to 20+43.940	Lt.	1.778

Seeding & Sod			
Station to Station	Side	Seeding Yd ²	Sod Yd ²
20+18.540 to 20+38.040	Lt.	2.373	0.000
20+18.750 to 20+38.270	Rt.	0.000	2.465

Build 36" Comb. Concrete Curb and Gutter - Plan 301-R10			
Station to Station	Side	Lin. Ft.	
20+19.56 to 20+37.08	Lt.	17.500	
20+19.73 to 20+37.23	Rt.	17.500	

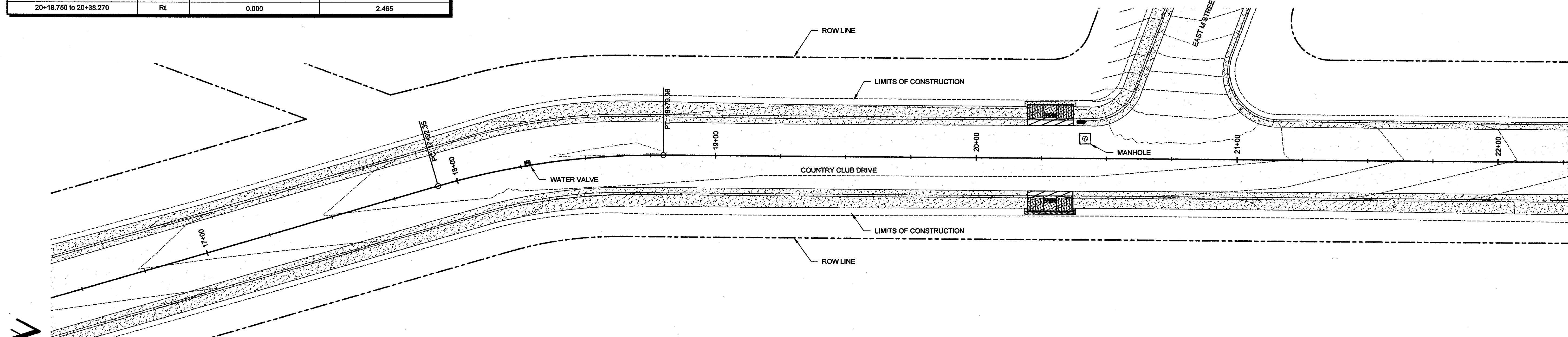
Build 4" Concrete Sidewalk - 5'-0" Wide, Plan 301-R10			
Station to Station	Side	Area Yd ²	
20+19.56 to 20+37.07	Lt.	10.371	
20+19.73 to 20+37.36	Rt.	10.371	

PROJECT NO.	SHEET NO.
URB-6158(1)	6
C.N. 71151	

Build Curb Ramp, See Sheet 2-T			
Station	Side	Type	Detectable Warning (Sq. Ft.)
20+25.820 to 20+30.820	Lt.	2	10
20+25.990 to 20+30.990	Rt.	2	10

Adjust Manhole to Grade, See Sheet 2-T			
Station	Side	Each	
20+41.940	Lt.	1	

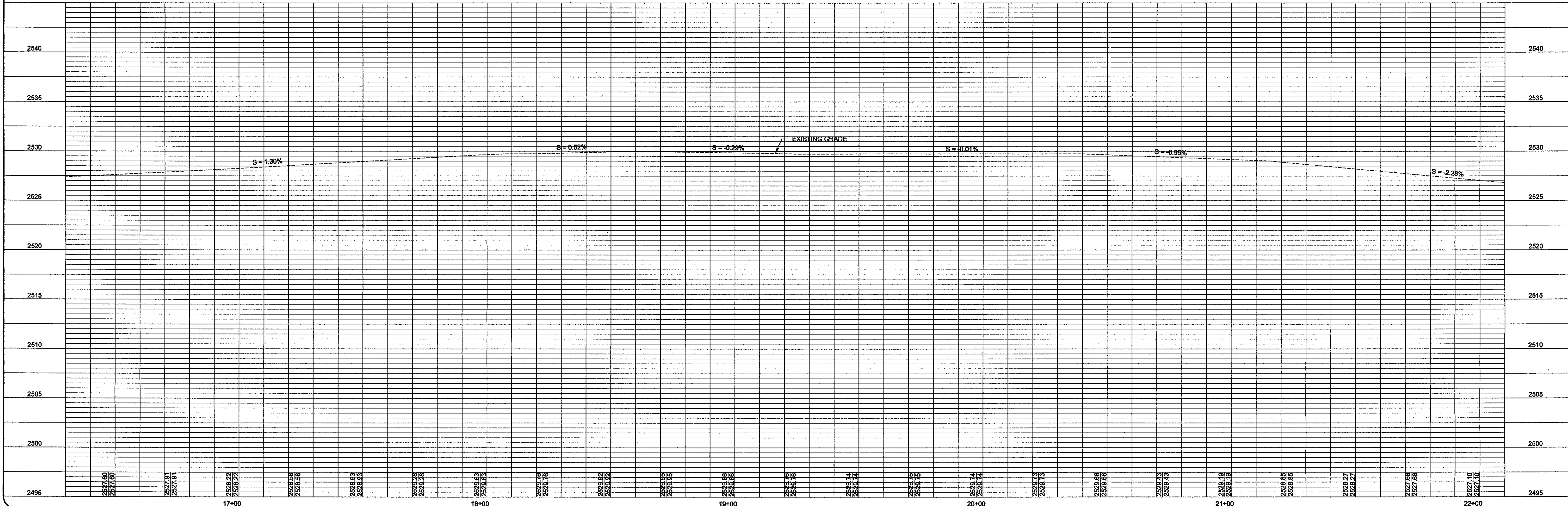
Adjust Water Valve to Grade, See Sheet 2-T			
Station	Side	Each	
18+27.840	Lt.	1	



NOTES:

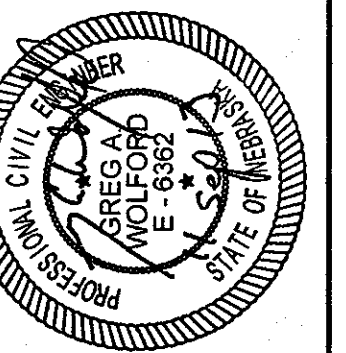
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HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 5'-0"



East 7th and Seminole from H Street to Park Ave.
Project No. URB-6158(1)
MCCOOK, NEBRASKA

WDA ASSOCIATES
Consulting Engineers and Architects
McCook, Nebraska 69001
Hastings, Nebraska 68901



DWG: 842-12PMP CONSTR.
DRAWN: AMP
CHECKED:
REVISIONS

DATE: MARCH 2013

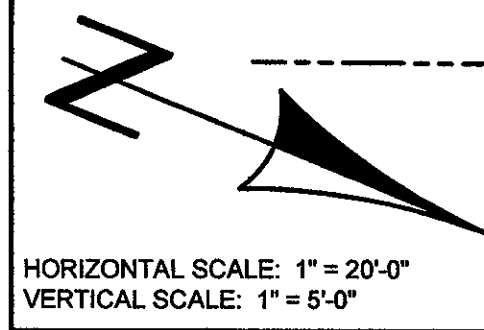
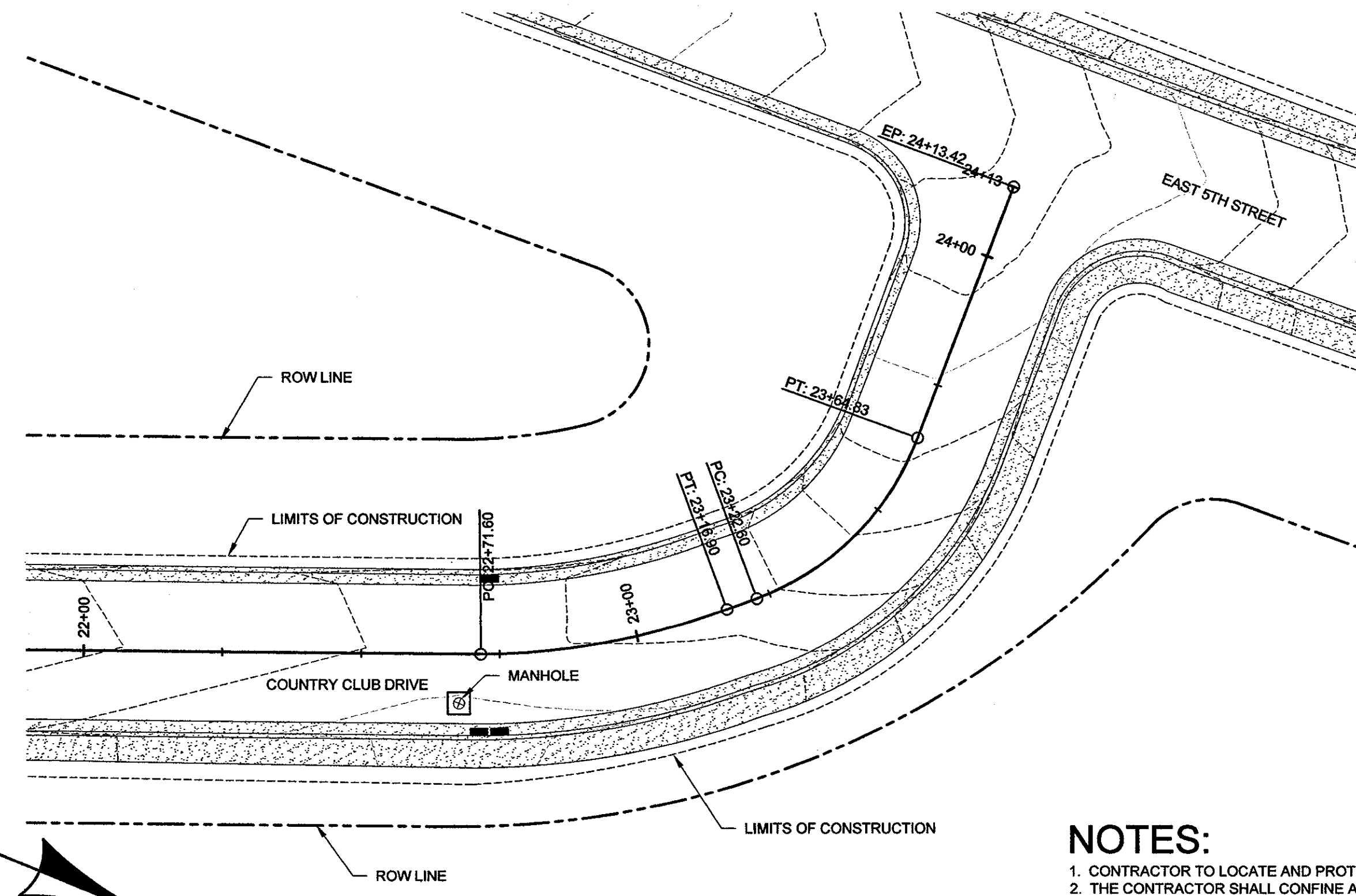
(INFORMATION ONLY)

Build 4" Asphaltic Concrete, Type SPR		
Station to Station	Side	Area Sq.Yds.
22+00.000 to 24+13.690	Ll. & Rt.	613

Build 8" Concrete Pavement, Plan 329-R9		
Station to Station	Side	Area Yd ²
22+66.010 to 22+70.010	Rt.	1.778

Adjust Manhole to Grade, See Sheet 2-T		
Station	Side	Each
22+68.010	Rt.	1

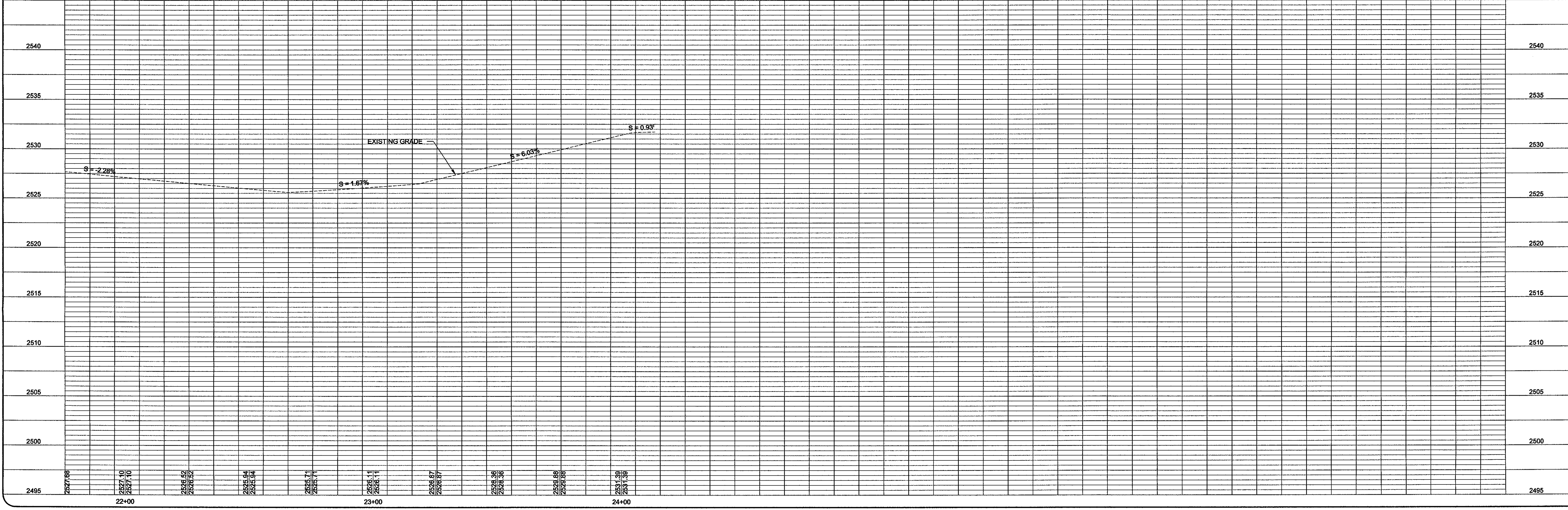
PROJECT NO.	SHEET NO.
URB-6158(1)	7
C.N. 71151	



NOTES:

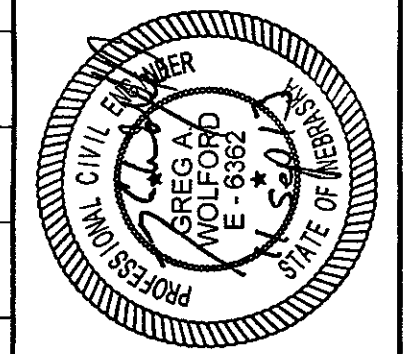
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HORIZONTAL SCALE: 1" = 20'-0"
 VERTICAL SCALE: 1" = 5'-0"



East 7th and Seminole from H Street to Park Ave.
 Project No. URB-6158(1)
 McCook, NEBRASKA

WDA ASSOCIATES
 Consulting Engineers and Architects
 McCook, Nebraska 69001
 Hastings, Nebraska 68901



DWG: 842-122NP CONST.
DRAWN: AMP
CHECKED:
REVISIONS

DATE: MARCH 2013

(INFORMATION ONLY)

Build 4" Asphaltic Concrete, Type SPR		
Station to Station	Side	Area Sq. Yds.
25+00.000 to 27+15.160	Lt. & Rt.	750

Build 36" Comb. Concrete Curb and Gutter - Plan 301-R10			
Station to Station	Side	Lin. Ft.	
25+05.70 to 25+18.86	Lt.	21.317	
25+07.32 to 25+24.71	Rt.	17.400	
26+13.25 to 26+13.25	Rt.	17.500	
26+44.98 to 26+44.98	Rt.	17.500	

Build 4" Concrete Sidewalk - 5'-0" Wide, Plan 301-R10			
Station to Station	Side	Area Yd ²	
25+05.70 to 25+18.86	Lt.	12.275	
25+07.38 to 25+24.76	Rt.	10.328	
26+06.78 to 26+11.78	Rt.	10.370	
26+46.43 to 26+51.43	Rt.	10.370	

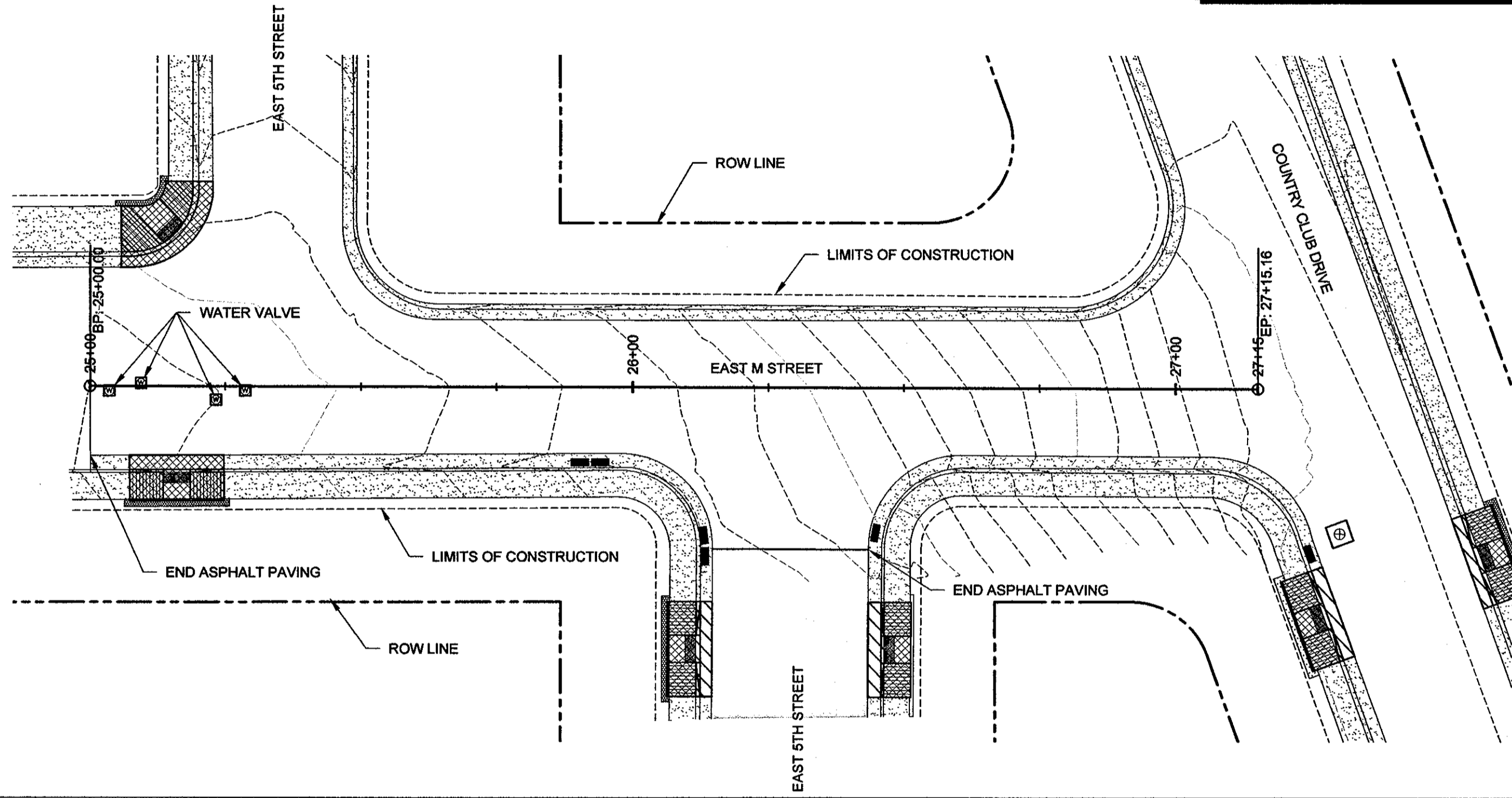
Build Curb Ramp, See Sheet 2-T			
Station	Side	Type	Detectable Warning (Sq. Ft.)
25+12.110 to 25+17.070	Lt.	4	10
25+13.530 to 25+18.530	Rt.	2	10
26+06.770 to 26+11.770	Rt.	2	10
26+46.430 to 26+51.430	Rt.	2	10

Seeding & Sod			
Station to Station	Side	Seeding Yd ²	Sod Yd ²
25+04.700 to 25+14.360	Lt.	0.000	1.390
25+06.360 to 25+25.780	Rt.	0.000	2.230
26+05.450 to 26+06.880	Rt.	0.000	2.268

Saw Cut Pavement		
Station to Station	Side	Lin. Ft.
26+29.22	Rt.	28.800

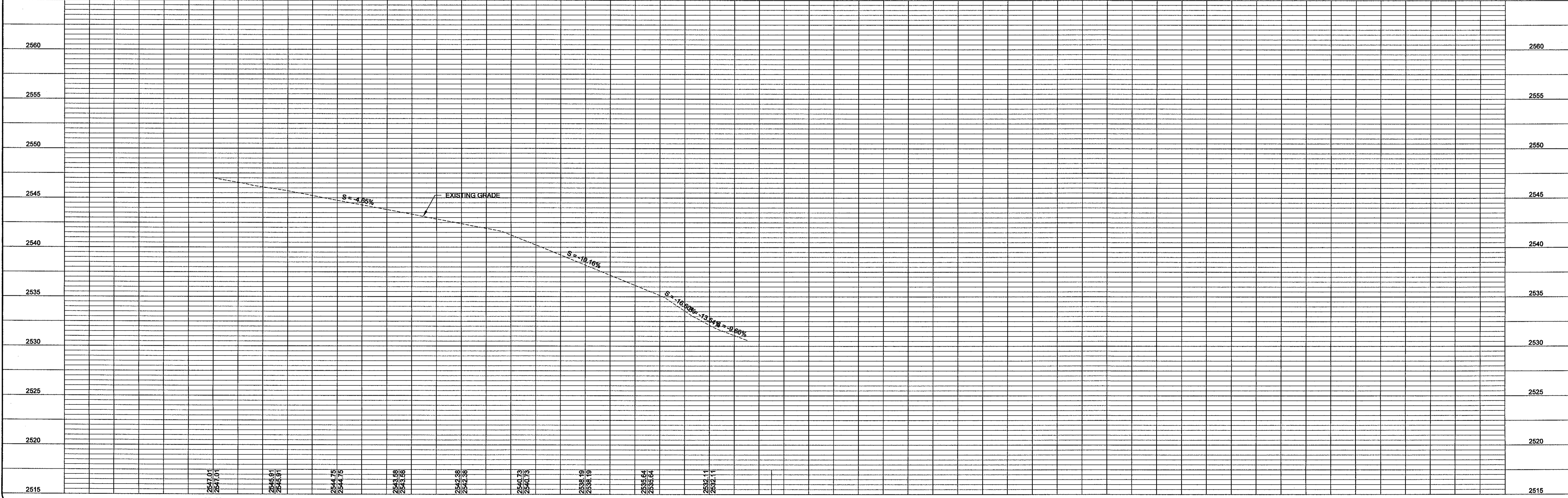
Adjust Water Valve to Grade			
Station	Side	Each	
25+03.53	Rt.	1	
25+09.43	Lt.	1	
25+23.34	Rt.	1	
25+28.70	Rt.	1	

Build 8" Concrete Pavement, Plan 329-R9		
Station to Station	Side	Area Yd ²
25+02.530 to 25+04.530	Rt.	0.444
25+08.430 to 25+10.430	Lt.	0.444
25+22.340 to 25+24.340	Rt.	0.444
25+27.700 to 25+29.700	Rt.	0.444



NOTES:
 1. CONTRACTOR TO LOCATE AND PROTECT ALL UNDERGROUND AND OVERHEAD UTILITIES.
 2. THE CONTRACTOR SHALL CONFINE ALL WORK TO INSIDE THE ROW. ANY WORK NEAR THE ROW LINES SHALL BE PLANNED OR PHASED TO KEEP FORMS, EQUIPMENT AND PERSONNEL WITHIN THE ROW.

HORIZONTAL SCALE: 1" = 20'-0"
 VERTICAL SCALE: 1" = 5'-0"



PROJECT NO. URB-6158(1)
 SHEET NO. 8
 C.N. 71151

East 7th and Seminole from H Street to Park Ave.
 Project No. URB-6158(1)
 MCCOOK, NEBRASKA

WDA ASSOCIATES
 Consulting Engineers and Architects
 McCook, Nebraska 68001
 Hastings, Nebraska 68901

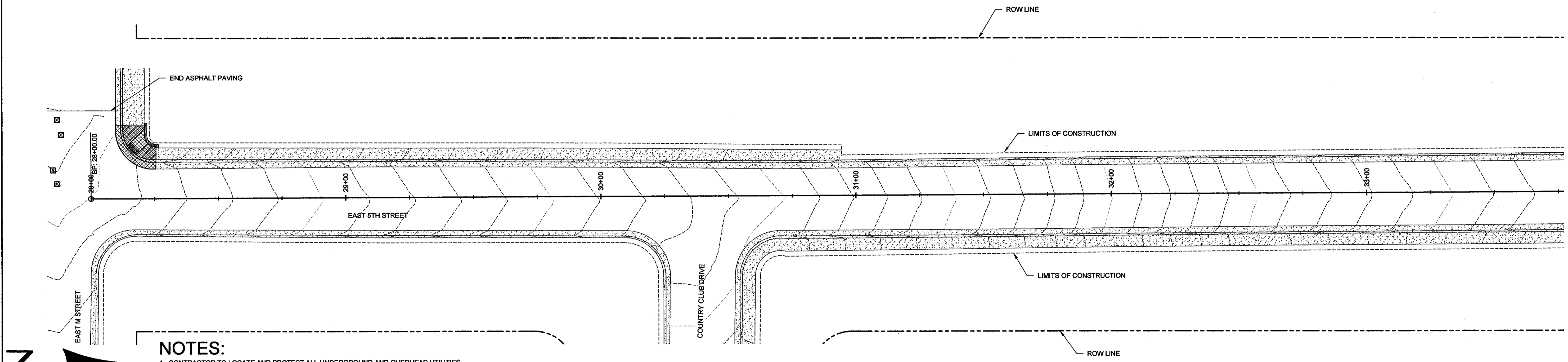
DWG: 84-122NP-CONSTR
 DRAWN: AMP
 CHECKED:
 REVISIONS

DATE: MARCH 2013

(INFORMATION ONLY)

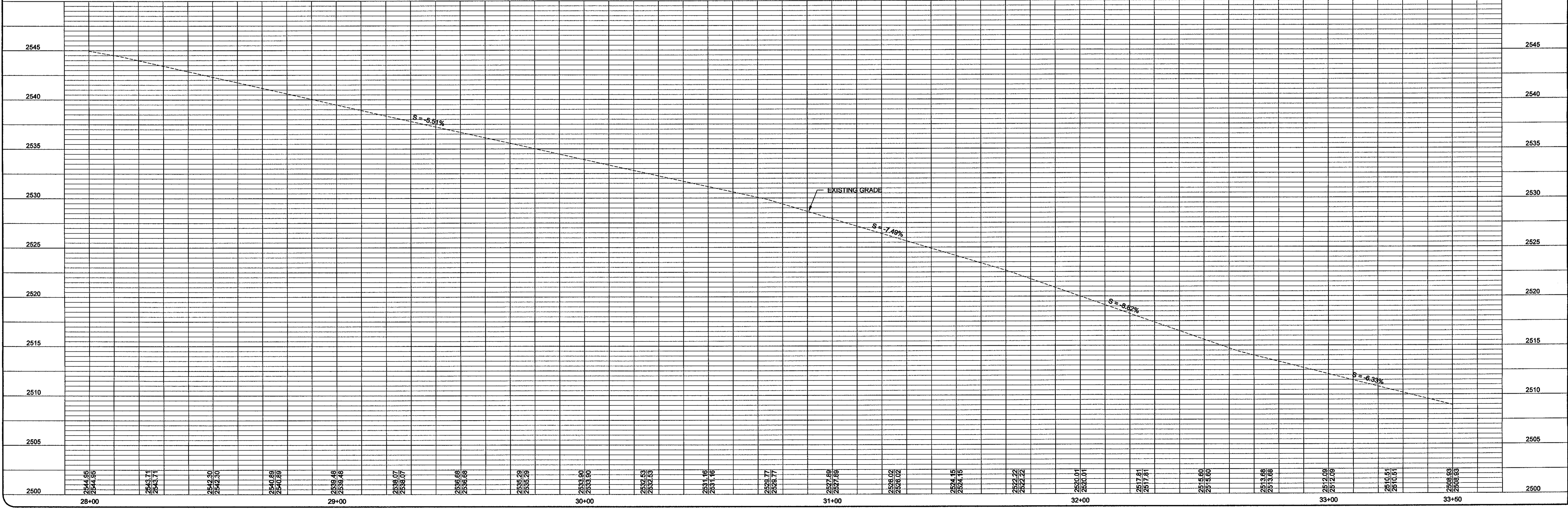
Build 4" Asphaltic Concrete, Type SPR		
Station to Station	Side	Area Sq.Yds.
28+09.660 to 33+50.000	Lt. & Rt.	1490

PROJECT NO.	SHEET NO.
URB-6158(1)	9
C.N. 71151	



- NOTES:**
1. CONTRACTOR TO LOCATE AND PROTECT ALL UNDERGROUND AND OVERHEAD UTILITIES.
 2. THE CONTRACTOR SHALL CONFINE ALL WORK TO INSIDE THE ROW. ANY WORK NEAR THE ROW LINES SHALL BE PLANNED OR PHASED TO KEEP FORMS, EQUIPMENT AND PERSONNEL WITHIN THE ROW.

N
 HORIZONTAL SCALE: 1" = 20'-0"
 VERTICAL SCALE: 1" = 5'-0"



WDA ASSOCIATES
 W DESIGN
 Consulting Engineers and Architects
 McCook, Nebraska 68001
 Hastings, Nebraska 68901

9
 DATE: MARCH 2013

DWG: 842-12PMP CONSTR
 DRAWN: AMP
 CHECKED:
 REVISIONS

East 7th and Seminole from H Street to Park Ave.
 Project No. URB-6158(1)
 MCCOOK, NEBRASKA

(INFORMATION ONLY)

Build 4" Asphaltic Concrete, Type SPR		
Station to Station	Side	Area Sq.Yds.
33+50.000 to 39+00.000	Lt. & Rt.	1516

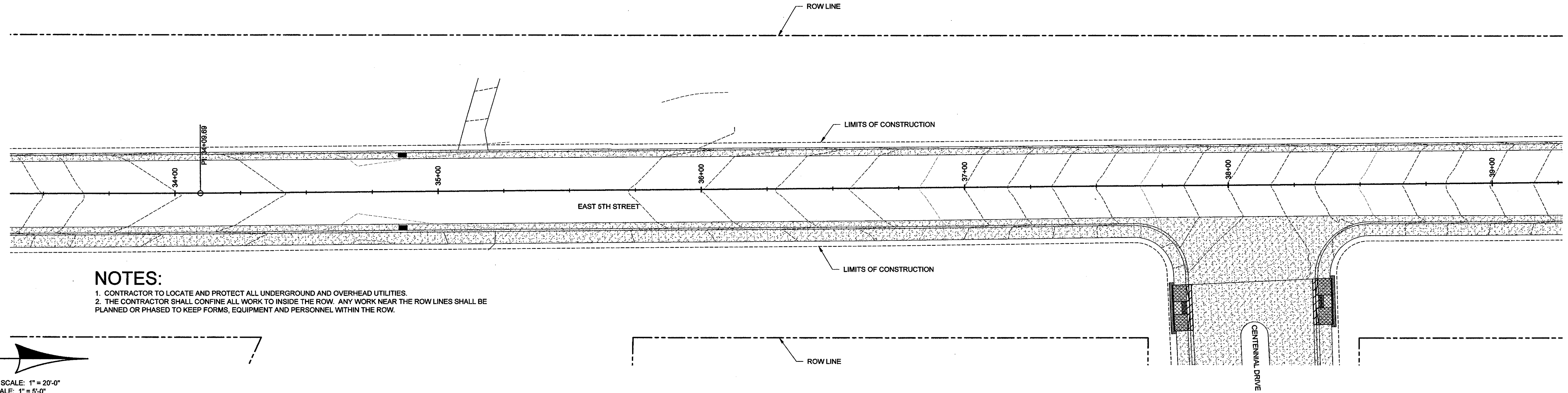
Build 36" Comb. Concrete Curb and Gutter - Plan 301-R10		
Station to Station	Side	Lin. Ft.
37+84.70 to 37+85.36	Rt.	17.500
38+32.67 to 38+33.06	Rt.	17.500

Build 4" Concrete Sidewalk - 5'-0" Wide, Plan 301-R10		
Station to Station	Side	Area Yd ²
37+78.70 to 37+83.70	Rt.	10.370
38+33.67 to 38+38.67	Rt.	10.370

PROJECT NO. URB-6158(1)	SHEET NO. 10
C.N. 71151	

Seeding & Sod			
Station to Station	Side	Seeding Yd ²	Sod Yd ²
37+77.730 to 37+79.940	Rt.	0.000	2,359
38+38.820 to 38+40.420	Rt.	0.000	2,311

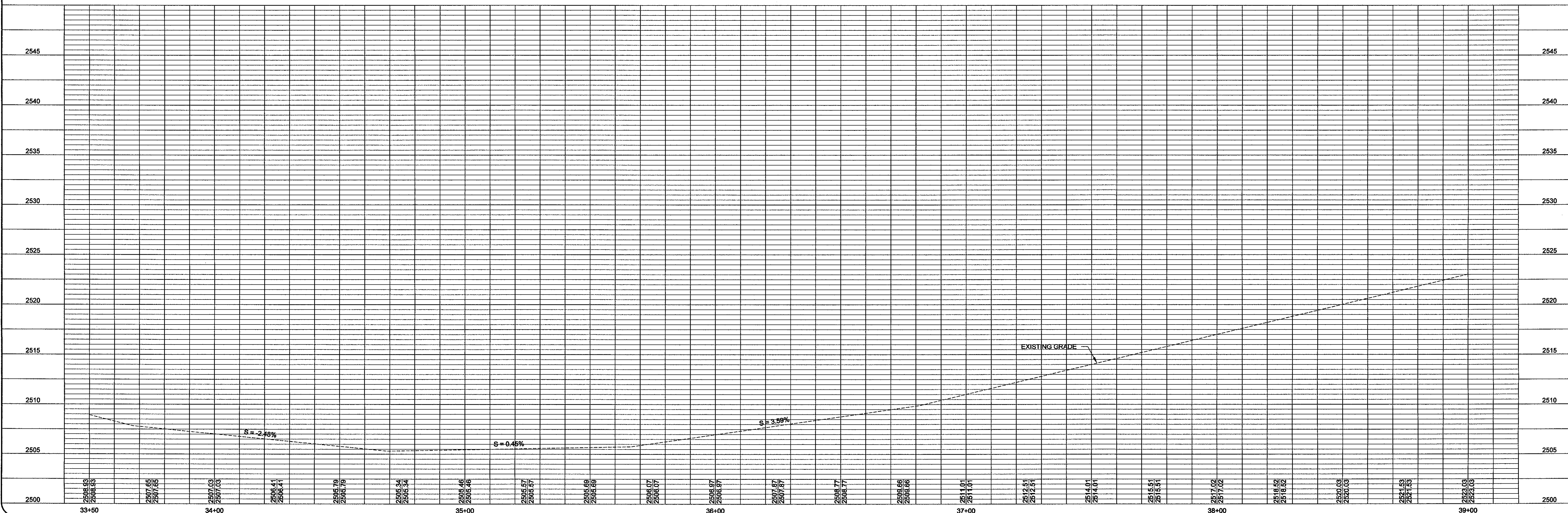
Build Curb Ramp, See Sheet 2-T			
Station	Side	Type	Detectable Warning (Sq.Ft.)
37+78.940 to 37+83.940	Rt.	2	10
38+33.810 to 38+38.810	Rt.	2	10



NOTES:

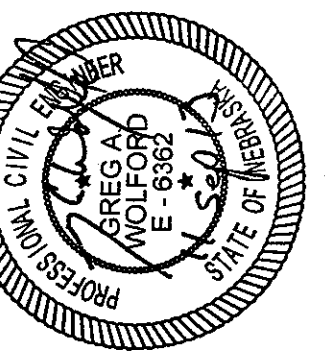
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N
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 VERTICAL SCALE: 1" = 5'-0"



East 7th and Seminole from H Street to Park Ave.

WDA W DESIGN ASSOCIATES



DWG: 642-12PH CONSTR
DRAWN: AMP
CHECKED:
REVISIONS:

10
 DATE: MARCH 2013

Project No. URB-6158(1)
 MCCOOK, NEBRASKA

Consulting Engineers and Architects
 McCook, Nebraska 69001
 Hastings, Nebraska 68901

(INFORMATION ONLY)

Station to Station	Side	Area Sq. Yds.
39+00.000 to 44+50.000	Lt. & Rt.	1817

Station to Station	Side	Area Yd ²
41+31.200 to 41+33.200	Lt.	0.444
41+33.330 to 41+35.330	Lt.	0.444
41+33.470 to 41+35.470	Lt.	0.444

Station to Station	Side	Lin. Ft.
41+29.21	Lt.	22.100
41+72.88	Rt.	170.423

Station to Station	Side	Lin. Ft.
41+07.77 to 41+11.74	Lt.	8.280
41+41.31 to 41+72.30	Lt.	40.222
42+19.88 to 42+46.54	Lt.	26.660

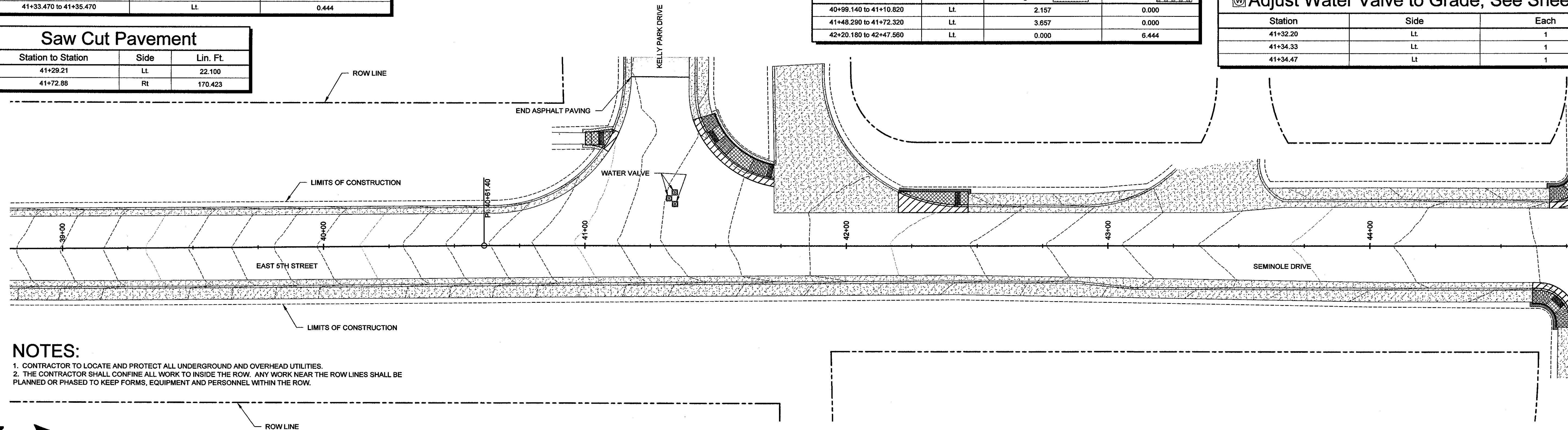
Station to Station	Side	Area Yd ²
41+00.15 to 41+10.38	Lt.	5.383
41+44.36 to 41+72.32	Lt.	20.904
42+20.17 to 42+46.54	Lt.	10.169

Station to Station	Side	Seeding Yd ²	Sod Yd ²
40+98.140 to 41+10.820	Lt.	2.157	0.000
41+48.290 to 41+72.320	Lt.	3.657	0.000
42+20.180 to 42+47.560	Lt.	0.000	6.444

Station	Side	Type	Detectable Warning (Sq. Ft.)
41+02.490 to 41+08.090	Lt.	1	10
41+46.970 to 41+48.720	Lt.	4	10
41+69.240 to 41+72.310	Lt.	1	10
42+41.550 to 42+46.560	Lt.	5	10

Station	Side	Each
41+32.20	Lt.	1
41+34.33	Lt.	1
41+34.47	Lt.	1

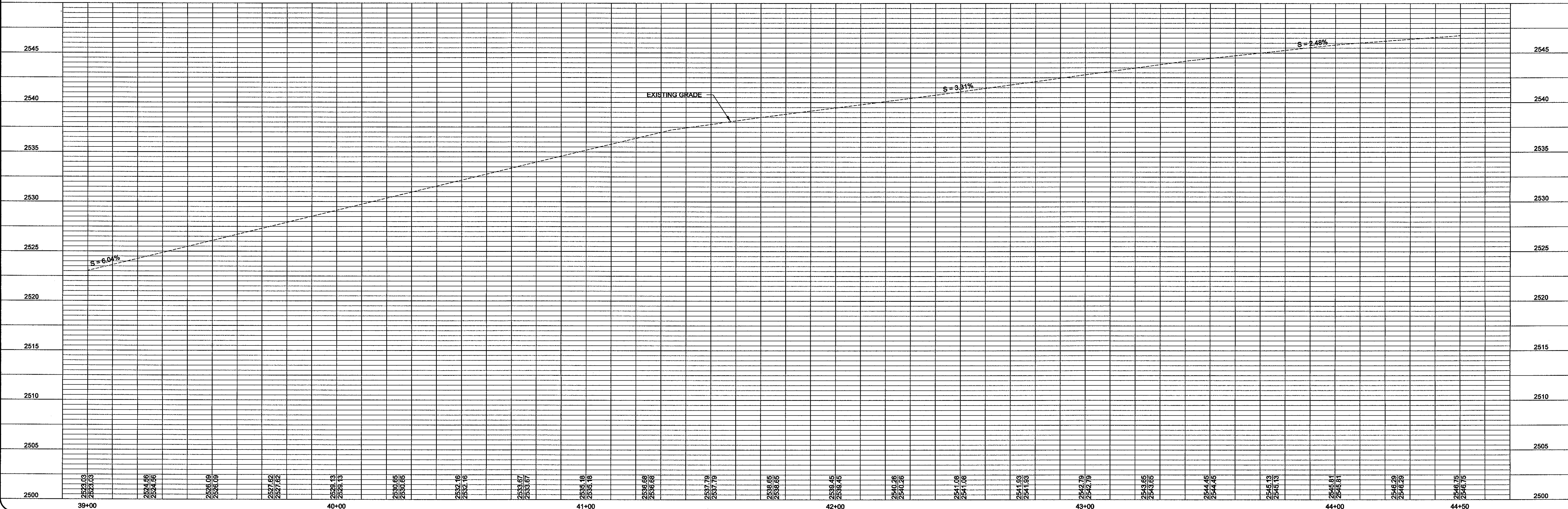
PROJECT NO. URB-6158(1) SHEET NO. 11
C.N. 71151



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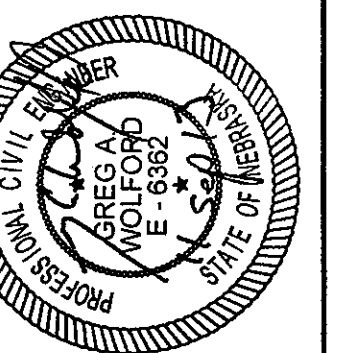
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HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 5'-0"



East 7th and Seminole from H Street to Park Ave.
Project No. URB-6158(1)
MCCOOK, NEBRASKA

WDA W DESIGN ASSOCIATES
Consulting Engineers and Architects
McCook, Nebraska 69001
Hastings, Nebraska 68901



DWG: 842-12NIP CONSTR
DRAWN: AMP
CHECKED: REVISIONS

11
DATE: MARCH 2013

(INFORMATION ONLY)

Build 4" Asphaltic Concrete, Type SPR		
Station to Station	Side	Area Sq.Yds.
44+50.000 to 48+07.500	Lt. & Rt.	1312
48+24.250 to 50+00.000	Lt. & Rt.	566

Build 36" Comb. Concrete Curb and Gutter - Plan 301-R10		
Station to Station	Side	Lin. Ft.
44+62.120 to 44+77.440	Rt.	25.540
44+68.550 to 44+83.740	Lt.	25.590
45+00.800 to 45+16.660	Lt.	25.370
45+09.530 to 45+24.980	Rt.	25.420
42+67.270 to 44+77.980	Lt.	25.510
47+63.310 to 47+78.290	Rt.	25.580
48+10.010 to 48+25.580	Lt.	25.500
48+09.980 to 48+26.240	Rt.	25.400

Build 8" Concrete Pavement, Plan 329-R9		
Station to Station	Side	Area Yd ²
44+72.230 to 44+88.020	Lt.	6.729
44+97.000 to 44+99.000	Rt.	0.444
44+97.190 to 44+99.190	Lt.	0.444
44+98.780 to 45+11.290	Lt.	6.510
47+93.030 to 47+95.030	Lt.	0.444
47+93.120 to 47+95.120	Rt.	0.444
47+96.850 to 47+98.850	Rt.	0.444
48+08.010 to 48+19.880	Lt. & Rt.	63.778

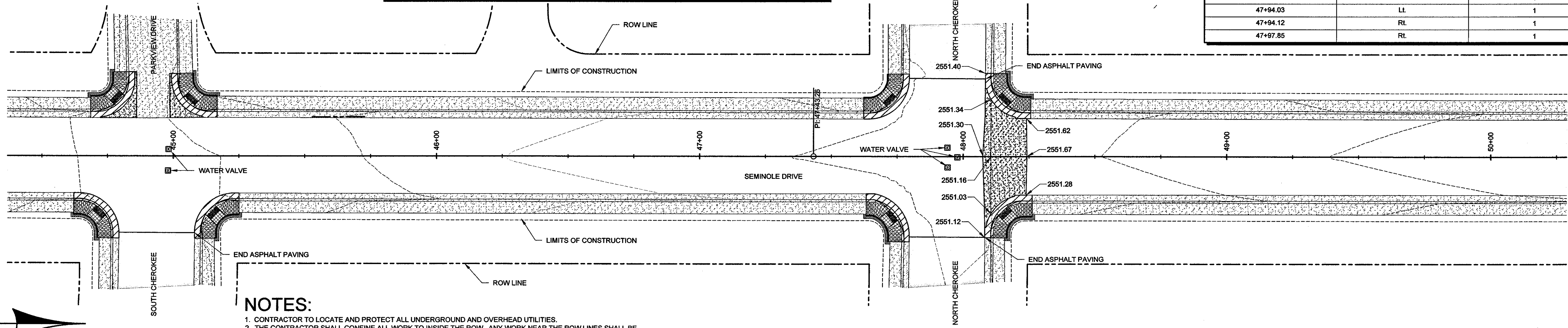
Seeding & Sod			
Station to Station	Side	Seeding Yd ²	Sod Yd ²
44+61.120 to 44+71.840	Rt.	0.000	1.959
44+67.580 to 44+77.680	Lt.	0.000	1.950
45+07.270 to 45+17.680	Lt.	0.000	1.843
45+15.500 to 45+25.960	Rt.	0.000	1.987
47+62.320 to 47+72.340	Rt.	0.000	1.948
48+15.820 to 48+26.590	Rt.	0.000	1.999
48+15.990 to 48+26.590	Lt.	0.000	1.959

Build Curb Ramp			
Station	Side	Type	Detectable Warning (Sq.Ft.)
44+67.070 to 44+74.240	Rt.	4	10
44+74.540 to 44+80.820	Lt.	4	10
45+03.970 to 45+11.700	Lt.	4	10
45+12.820 to 45+20.010	Rt.	4	10
47+67.220 to 47+74.520	Lt.	4	10
47+68.180 to 47+75.300	Rt.	4	10
48+13.410 to 48+20.630	Lt.	4	10
48+13.650 to 48+20.860	Rt.	4	10

Build 4" Concrete Sidewalk - 5'-0" Wide, Plan 301-R10		
Station to Station	Side	Area Yd ²
44+62.120 to 44+76.240	Rt.	11.230
44+68.580 to 44+82.250	Lt.	11.225
45+02.290 to 45+16.680	Lt.	11.276
45+11.030 to 45+24.960	Rt.	11.184
47+62.270 to 47+76.480	Lt.	11.282
47+63.330 to 47+76.800	Rt.	11.236
48+11.480 to 48+25.250	Rt.	11.198
48+11.510 to 48+25.590	Lt.	11.209

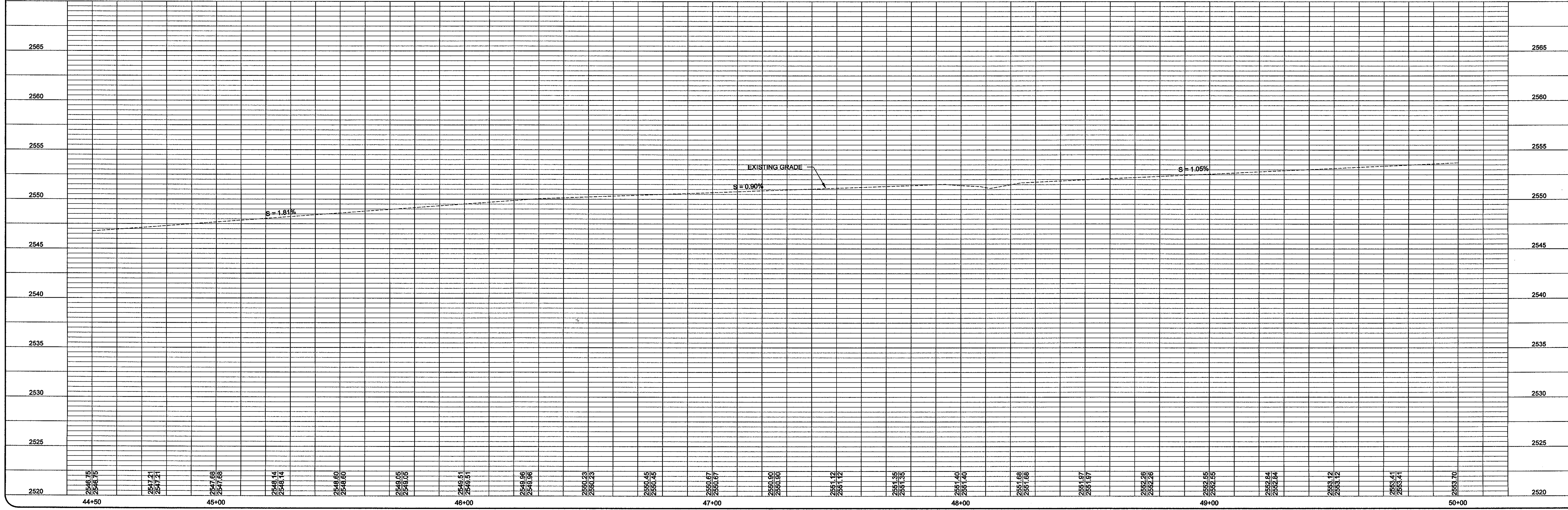
Adjust Water Valve to Grade		
Station	Side	Each
44+98.00	Rt.	1
44+98.19	Lt.	1
47+94.03	Lt.	1
47+94.12	Rt.	1
47+97.85	Rt.	1

Saw Cut Pavement		
Station to Station	Side	Lin. Ft.
44+93.13	Rt.	28.700
47+94.00	Lt.	28.900
47+94.20	Rt.	28.600



NOTES:
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N
 HORIZONTAL SCALE: 1" = 20'-0"
 VERTICAL SCALE: 1" = 5'-0"



PROJECT NO. URB-6158(1) SHEET NO. 12
 C.N. 71151

WDA ASSOCIATES
 Consulting Engineers and Architects
 McCook, Nebraska 69001
 Hastings, Nebraska 68901

Professional Engineer Seal: W. D. Anderson, No. 0000000000, State of Nebraska

DWG: 842-1818P CONSTR
 DRAWN: AMP
 CHECKED: REVISIONS

12

DATE: MARCH 2013

East 7th and Seminole from H Street to Park Ave.
 Project No. URB-6158(1)
 MCCOOK, NEBRASKA

(INFORMATION ONLY)

Build 4" Asphaltic Concrete, Type SPR		
Station to Station	Side	Area Sq. Yds.
55+50.000 to 61+00.000	Lt. & Rt.	1833

Build 8" Concrete Pavement, Plan 329-R9		
Station to Station	Side	Area Yd ²
55+74.440 to 55+76.440	Lt.	0.444

Seeding & Sod			
Station to Station	Side	Seeding Yd ²	Sod Yd ²
55+77.440 to 55+87.970	Lt.	2.436	0.000
56+28.180 to 56+39.970	Lt.	0.000	1.998

Build 36" Comb. Concrete Curb and Gutter - Plan 301-R10		
Station to Station	Side	Lin. Ft.
55+87.680 to 55+90.080	Lt.	12.023
56+22.370 to 56+38.020	Lt.	23.700

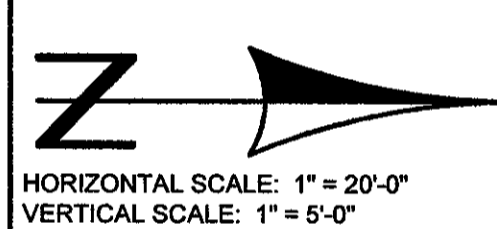
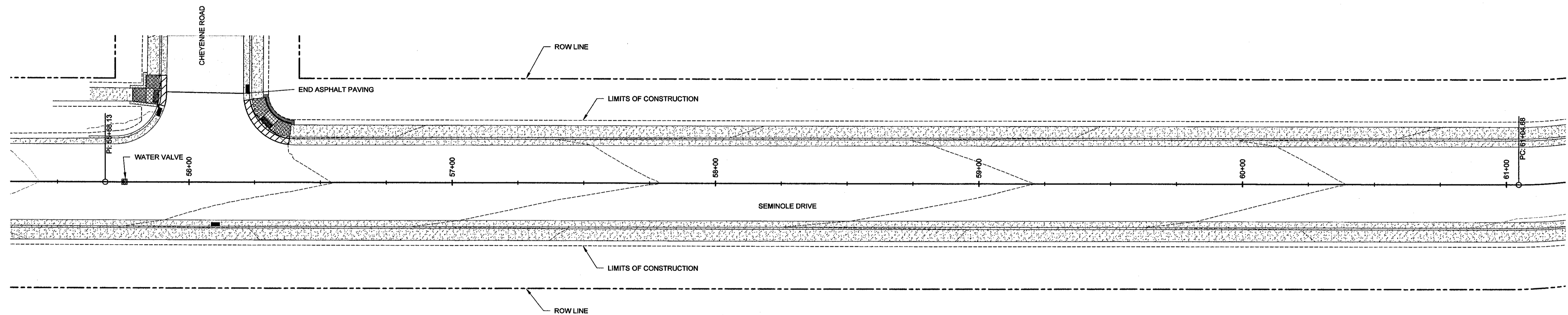
Saw Cut Pavement		
Station to Station	Side	Lin. Ft.
56+06.020	Rt.	29.300

Build 4" Concrete Sidewalk - 5'-0" Wide, Plan 301-R10		
Station to Station	Side	Area Yd ²
55+78.460 to 55+88.580	Lt.	8.850
56+23.850 to 56+38.820	Rt.	10.834

Build Curb Ramp, See Sheet 2-T			
Station	Side	Type	Detectable Warning (Sq. Ft.)
55+86.080 to 55+88.510	Lt.	3	10
56+26.980 to 56+34.100	Lt.	4	10

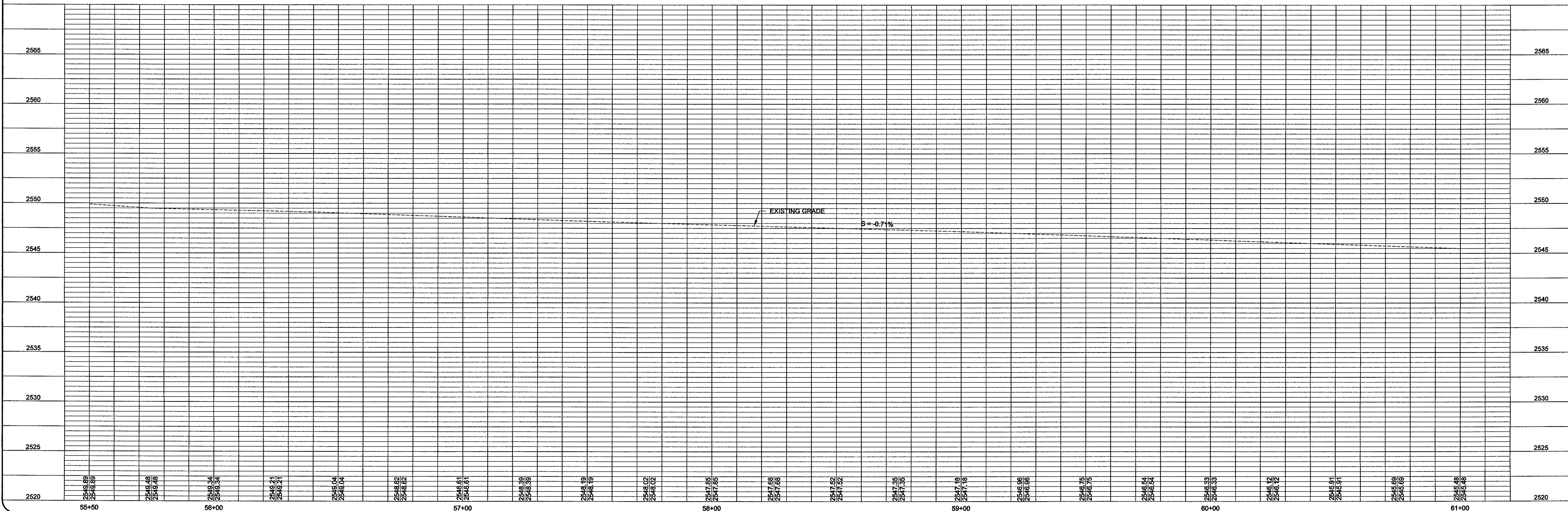
Adjust Water Valve to Grade, See Sheet 2-T		
Station	Side	Each
55+75.44	Lt.	1

PROJECT NO. URB-6158(1) C.N. 71151	SHEET NO. 14
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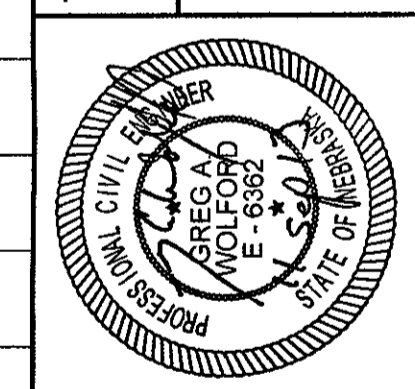
NOTES:

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East 7th and Seminole from H Street to Park Ave.
 Project No. URB-6158(1)
 MCCOOK, NEBRASKA

WDA W DESIGN ASSOCIATES
 Consulting Engineers and Architects
 McCook, Nebraska 69001
 Hastings, Nebraska 68901



DWG: 842-12RIP CONSTR
DRAWN: AMP
CHECKED:
REVISIONS

14

DATE: MARCH 2013

(INFORMATION ONLY)

Build 4" Asphaltic Concrete, Type SPR		
Station to Station	Side	Area Sq. Yds.
61+00.000 to 66+50.000	Lt. & Rt.	1882

Build 8" Concrete Pavement, Plan 329-R9		
Station to Station	Side	Area Yd ²
65+07.270 to 65+11.270	Rt.	1.778

Build 36" Comb. Concrete Curb and Gutter - Plan 301-R10		
Station to Station	Side	Lin. Ft.
64+94.160 to 65+09.430	Rt.	25.510
64+94.160 to 65+09.430	Lt.	25.510
65+41.000 to 65+56.790	Lt.	25.470
65+41.390 to 65+57.190	Rt.	25.520

Build 4" Concrete Sidewalk - 5'-0" Wide, Plan 301-R10		
Station to Station	Side	Area Yd ²
64+94.140 to 65+08.060	Lt.	11.281
64+94.160 to 65+07.940	Rt.	11.258
65+42.510 to 65+56.800	Lt.	11.208
65+42.890 to 65+57.170	Rt.	11.222

Build Curb Ramp			
Station	Side	Type	Detectable Warning (Sq.Ft.)
64+99.090 to 65+06.340	Lt.	4	10
64+99.130 to 65+06.390	Rt.	4	10
65+44.710 to 65+51.900	Lt.	4	10
65+45.030 to 65+52.230	Rt.	4	10

Seeding & Sod			
Station to Station	Side	Seeding Yd ²	Sod Yd ²
64+93.130 to 65+03.500	Lt.	0.000	1.946
64+93.170 to 65+03.480	Rt.	1.971	0.000
65+47.360 to 65+58.160	Rt.	0.000	1.959
65+47.430 to 65+57.800	Lt.	1.851	0.000

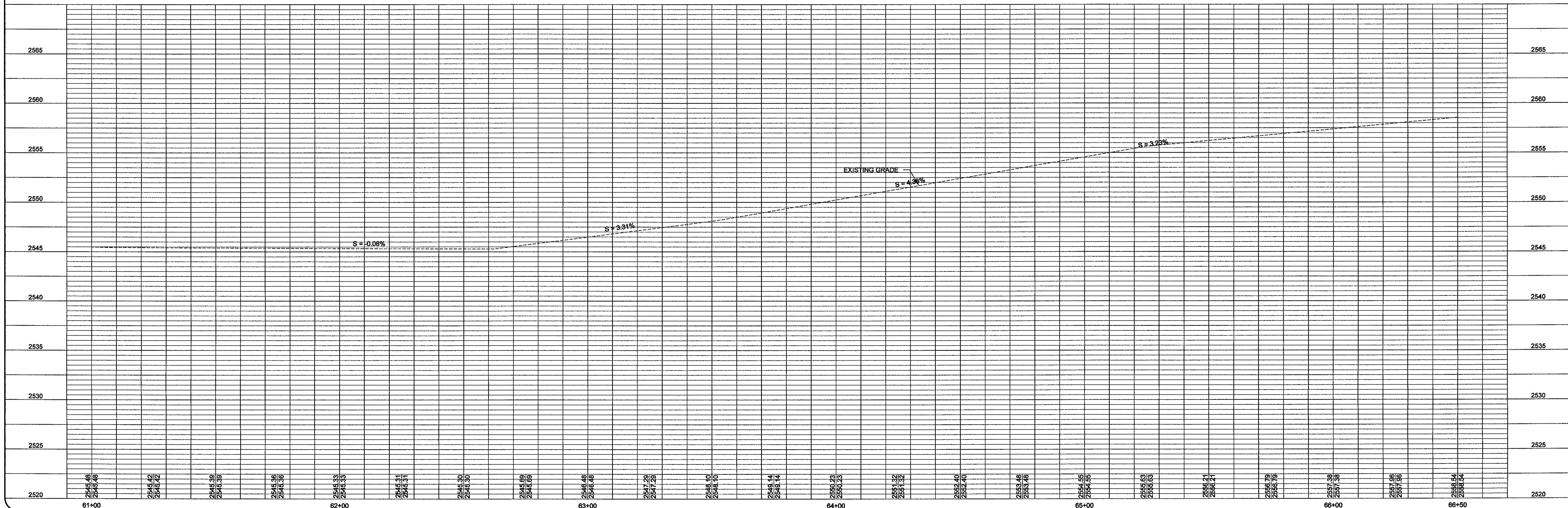
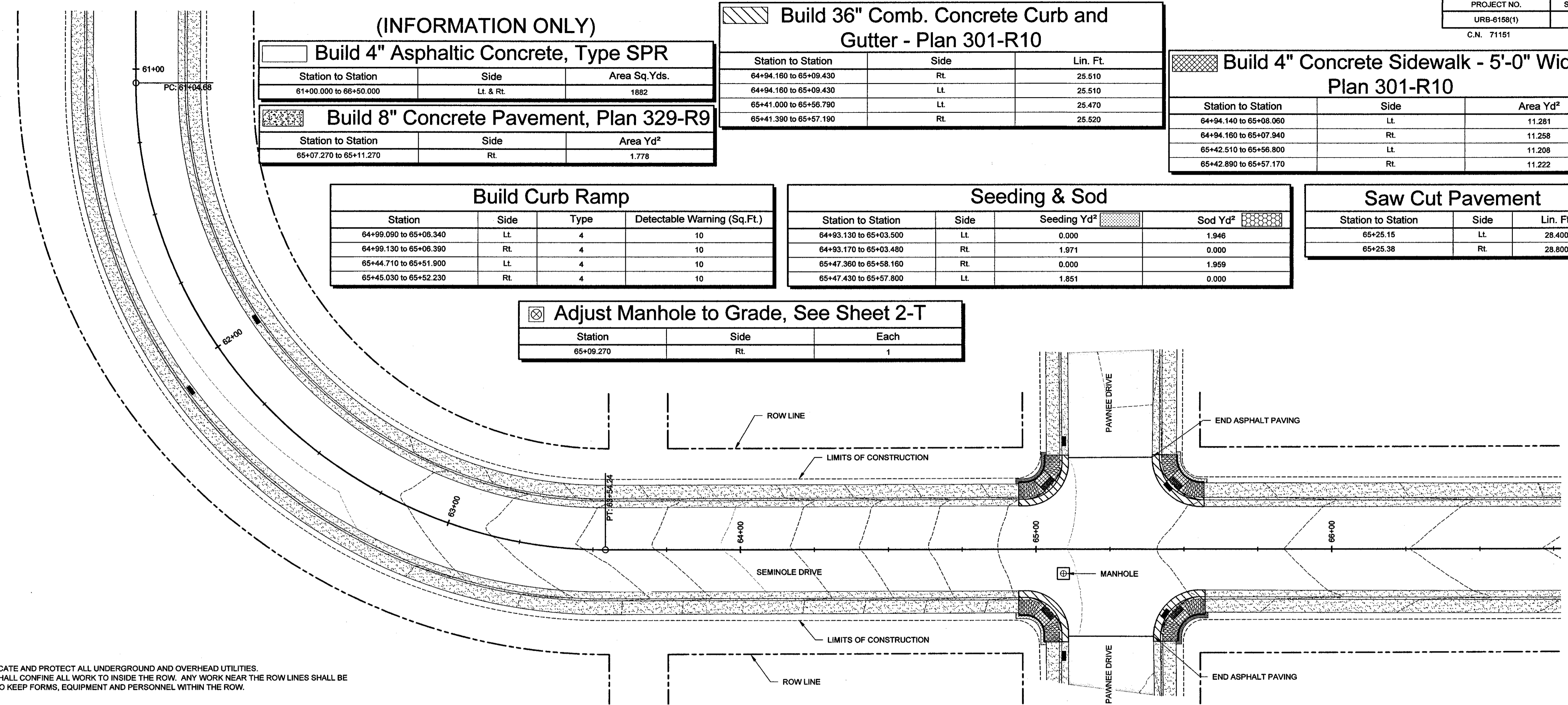
Saw Cut Pavement		
Station to Station	Side	Lin. Ft.
65+25.15	Lt.	28.400
65+25.38	Rt.	28.800

Adjust Manhole to Grade, See Sheet 2-T		
Station	Side	Each
65+09.270	Rt.	1

NOTES:

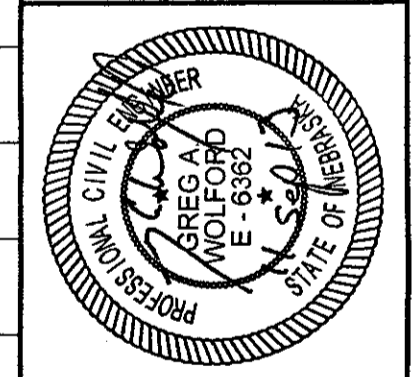
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HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 5'-0"



East 7th and Seminoe from H Street to Park Ave.
Project No. URB-6158(1)
MCCOOK, NEBRASKA

WDA W DESIGN ASSOCIATES
Consulting Engineers and Architects
McCook, Nebraska 68901
Hastings, Nebraska 68901



DWG: 842-12PMP CONST
DRAWN: AMP
CHECKED:
REVISIONS

(INFORMATION ONLY)

Build 4" Asphaltic Concrete, Type SPR		
Station to Station	Side	Area Sq. Yds.
66+50.000 to 72+00.000	Lt. & Rt.	1907

Build 36" Comb. Concrete Curb and Gutter - Plan 301-R10			
Station to Station	Side	Lin. Ft.	
69+73.600 to 69+90.070	Lt.	22.890	
69+75.290 to 69+90.130	Rt.	23.310	
70+22.230 to 70+37.140	Lt.	23.220	
70+22.230 to 70+36.720	Rt.	22.370	

Build 4" Concrete Sidewalk - 5'-0" Wide, Plan 301-R10			
Station to Station	Side	Area Yd ²	
69+72.660 to 69+88.620	Lt.	10.773	
69+74.260 to 69+88.640	Rt.	10.743	
70+23.600 to 70+38.360	Rt.	10.486	
70+23.720 to 70+38.360	Lt.	10.680	

Build 8" Concrete Pavement, Plan 329-R9			
Station to Station	Side	Area Yd ²	
70+01.510 to 70+03.510	Lt.	0.444	
70+01.510 to 70+14.930	Rt.	1.778	
71+65.150 to 71+69.150	Lt.	1.778	

Seeding & Sod				
Station to Station	Side	Seeding Yd ²	Sod Yd ²	
69+71.510 to 69+83.950	Lt.	1.871	0.000	
69+73.090 to 69+84.260	Rt.	0.000	2.025	
70+27.460 to 70+39.390	Lt.	0.000	2.146	
70+27.770 to 70+39.660	Rt.	0.000	2.024	

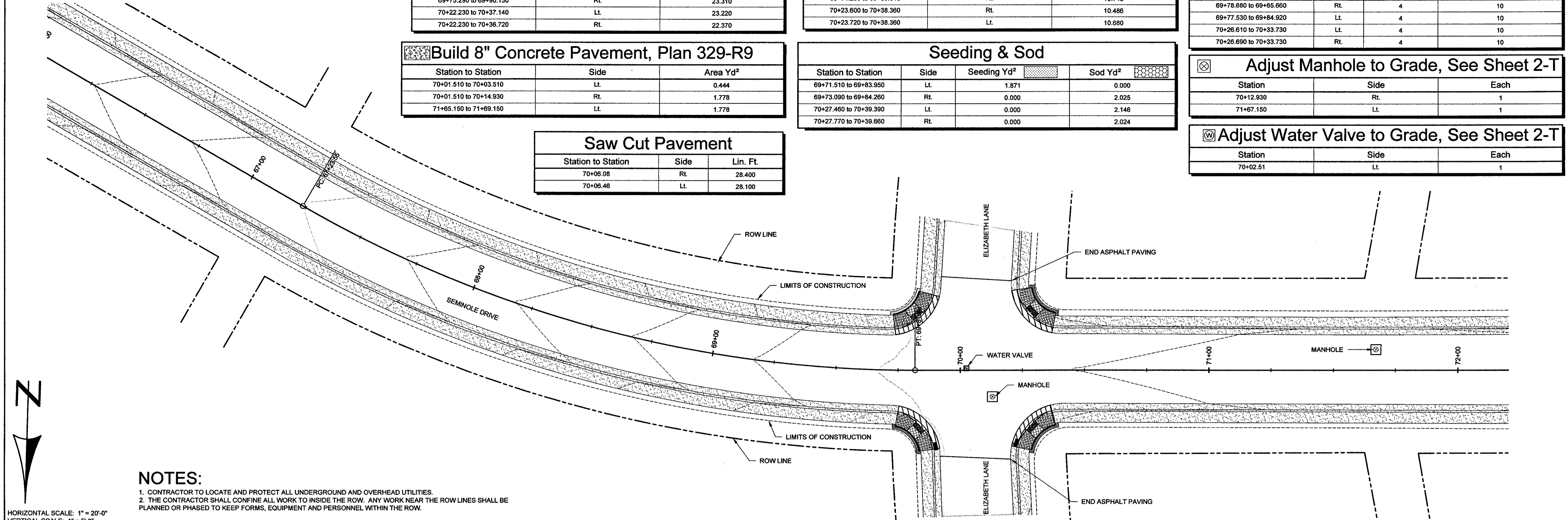
Saw Cut Pavement			
Station to Station	Side	Lin. Ft.	
70+06.08	Rt.	28.400	
70+06.46	Lt.	28.100	

Build Curb Ramp, See Sheet 2-T				
Station	Side	Type	Detectable Warning (Sq. Ft.)	
69+78.680 to 69+85.660	Rt.	4	4	10
69+77.530 to 69+84.920	Lt.	4	4	10
70+26.610 to 70+33.730	Lt.	4	4	10
70+26.690 to 70+33.730	Rt.	4	4	10

Adjust Manhole to Grade, See Sheet 2-T			
Station	Side	Each	
70+12.930	Rt.	1	
71+67.150	Lt.	1	

Adjust Water Valve to Grade, See Sheet 2-T			
Station	Side	Each	
70+02.51	Lt.	1	

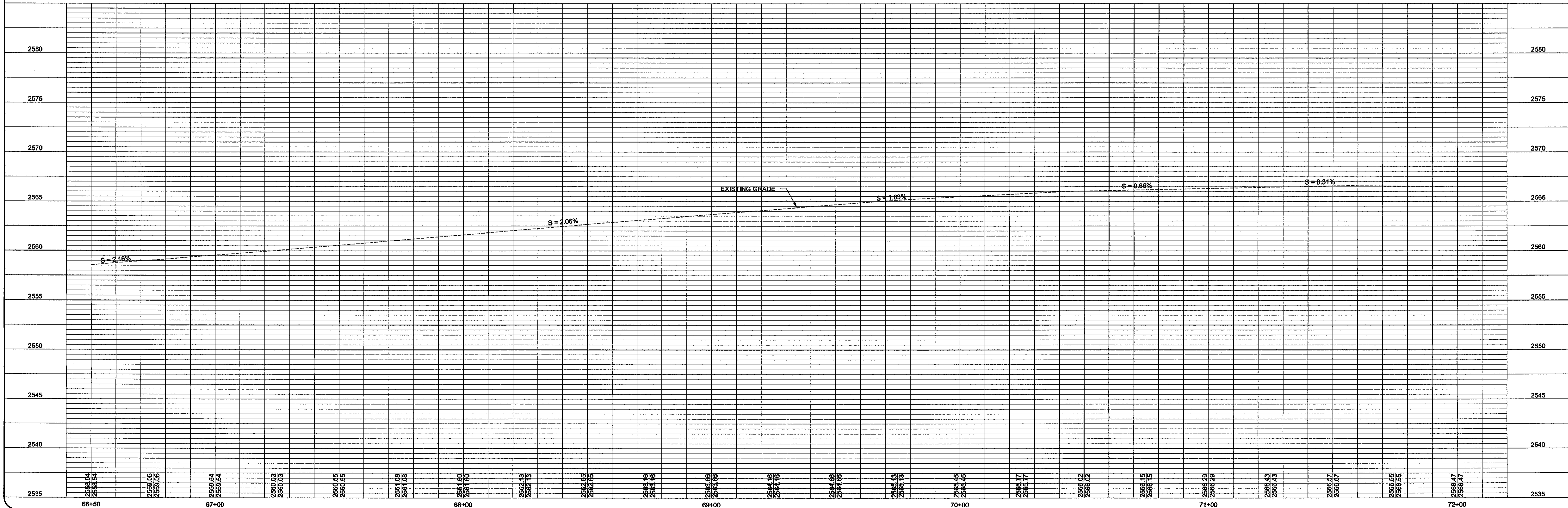
PROJECT NO. URB-6158(1) C.N. 71151	SHEET NO. 16
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NOTES:

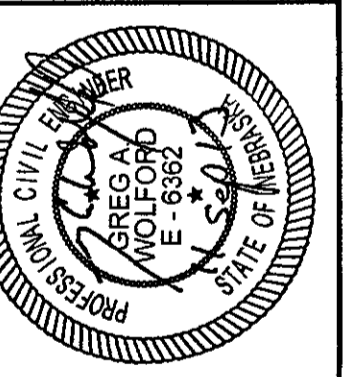
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HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 5'-0"



East 7th and Seminole from H Street to Park Ave.
Project No. URB-6158(1)
MCCOOK, NEBRASKA

WDA ASSOCIATES
Consulting Engineers and Architects
McCook, Nebraska 69001
Hastings, Nebraska 68901



DWG: 842-12PMP CONSTR
DRAWN: AMP
CHECKED:
REVISIONS

16
DATE: MARCH 2013

(INFORMATION ONLY)

Build 4" Asphaltic Concrete Type SPR		
Station to Station	Side	Area Sq. Yds.
72+00.000 to 76+50.610	Lt. & Rt.	1633

Build 8" Concrete Pavement, Plan 329-R9		
Station to Station	Side	Area Yd ²
73+17.570 to 73+21.570	Rt.	1.778
73+36.080 to 73+38.080	Rt.	0.444
74+88.470 to 74+92.470	Rt.	1.778
76+43.210 to 76+47.210	Rt.	1.778

Adjust Manhole to Grade, See Sheet 2-T		
Station	Side	Each
73+19.570	Rt.	1
74+90.470	Rt.	1
76+45.210	Rt.	1

Build 36" Comb. Concrete Curb and Gutter - Plan 301-R10			
Station to Station	Side	Lin. Ft.	
73+04.200 to 73+20.310	Lt.	23.240	
73+06.460 to 73+20.850	Rt.	25.680	
73+52.740 to 73+66.990	Lt.	22.670	
73+52.750 to 73+67.450	Rt.	23.320	
76+33.970 to 76+51.590	Lt.	24.260	
76+34.170 to 76+51.450	Rt.	23.700	

Saw Cut Pavement			
Station to Station	Side	Lin. Ft.	
73+36.890	Rt.	28.800	
73+36.920	Lt.	28.500	
76+50.480	Lt. & Rt.	63.400	

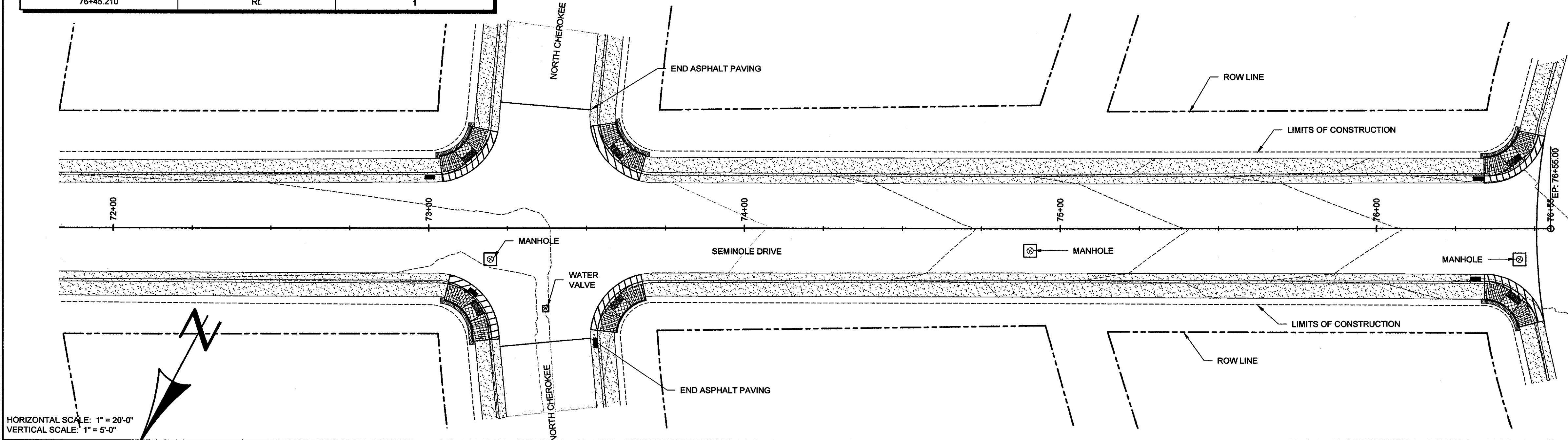
Build 4" Concrete Sidewalk - 5'-0" Wide, Plan 301-R10			
Station to Station	Side	Area Yd ²	
73+03.430 to 73+18.840	Lt.	10.789	
73+04.870 to 73+19.200	Rt.	12.242	
73+54.250 to 73+68.800	Rt.	10.778	
73+54.250 to 73+68.710	Lt.	10.600	
76+33.960 to 76+50.130	Lt.	11.428	
76+34.150 to 76+50.000	Rt.	10.721	

Seeding & Sod				
Station to Station	Side	Seeding Yd ²	Sod Yd ²	
73+02.310 to 73+14.480	Lt.	0.000	2.029	
73+03.850 to 73+14.790	Rt.	0.000	2.290	
73+58.960 to 73+69.790	Lt.	0.000	1.913	
76+32.960 to 76+45.440	Lt.	0.000	1.915	
76+33.140 to 76+45.400	Rt.	0.000	1.867	

Build Curb Ramp, See Sheet 2-T			
Station	Side	Type	Detectable Warning (Sq. Ft.)
73+11.630 to 73+15.340	Lt.	4	10
73+10.450 to 73+17.500	Rt.	4	10
73+57.080 to 73+64.220	Rt.	4	10
73+57.080 to 73+64.190	Lt.	4	10
76+38.840 to 76+46.040	Lt.	4	10
76+39.010 to 76+46.010	Rt.	4	10

Adjust Water Valve to Grade, See Sheet 2-T		
Station	Side	Each
73+37.080	Rt.	1

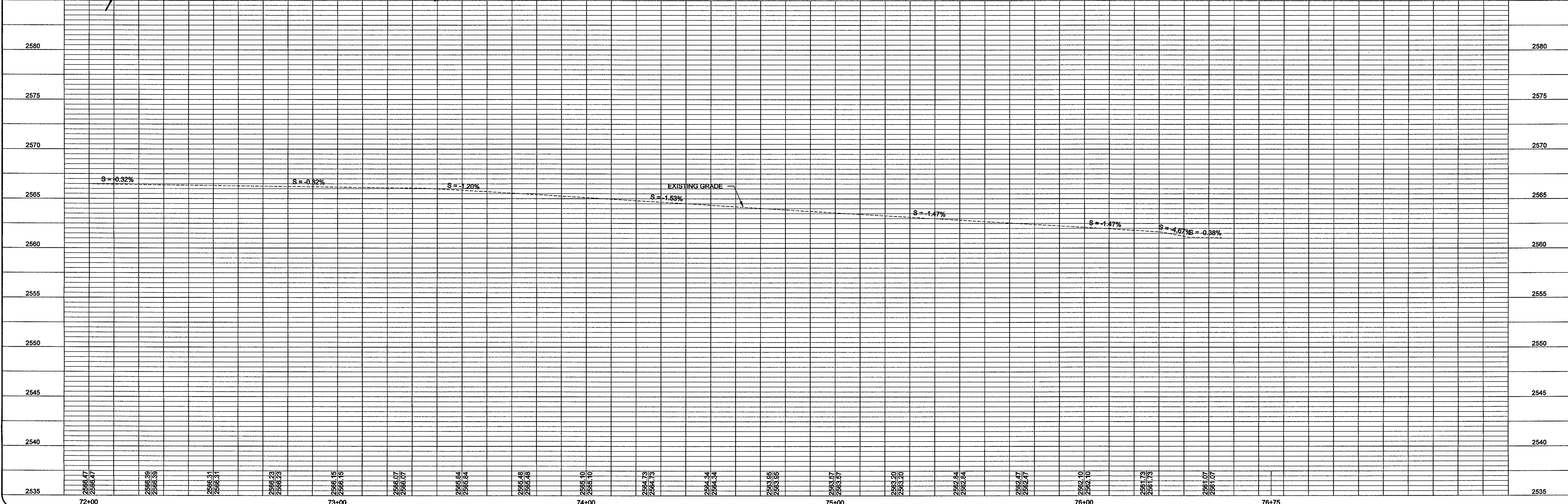
PROJECT NO. URB-6158(1)
SHEET NO. 17
C.N. 71151



HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 5'-0"

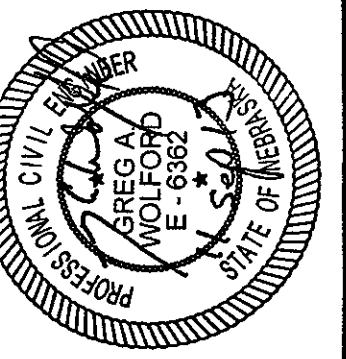
NOTES:

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East 7th and Seminoles from H Street to Park Ave.
Project No. URB-6158(1)
MCCOOK, NEBRASKA

WDA W DESIGN ASSOCIATES
Consulting Engineers and Architects
McCook, Nebraska 69001
Hastings, Nebraska 68901



DWG: 842-12P&P CONSTR
DRAWN: AMP
CHECKED:
REVISIONS

17
DATE: MARCH 2013

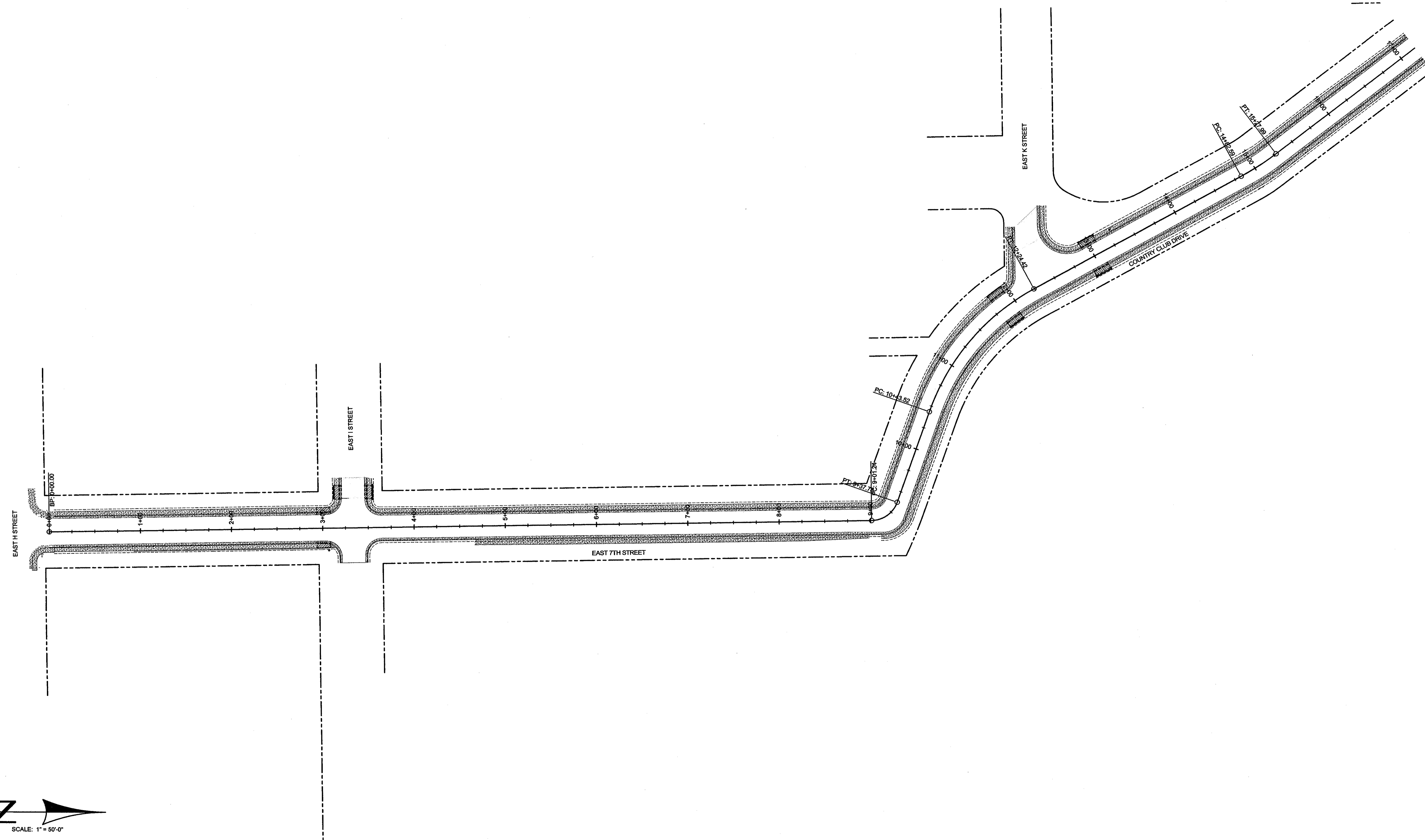
Cold Millings Class 4		
Station to Station	Side	Area Yd ²
Sta. 0+00.00 to Sta. 17+00.00	Lt. & Rt.	5209.248

Remove Sidewalk		
Station to Station	Side	Area Yd ²
Sta. 2+93.390 to Sta. 3+08.390	Lt.	7.974
Sta. 2+93.530 to Sta. 3+08.550	Rt.	7.161
Sta. 3+13.270 to Sta. 3+18.380	Lt.	8.286
Sta. 3+49.220 to Sta. 3+54.170	Lt.	8.046
Sta. 11+78.170 to Sta. 11+96.840	Rt.	9.009
Sta. 11+79.360 to Sta. 11+95.820	Lt.	8.719
Sta. 12+91.490 to Sta. 13+08.990	Rt.	8.857
Sta. 12+91.530 to Sta. 13+09.030	Lt.	8.325

Remove Curb & Gutter		
Station to Station	Side	Lin. Ft.
Sta. 2+93.400 to Sta. 3+08.820	Lt.	15.520
Sta. 2+93.530 to Sta. 3+08.730	Rt.	15.299
Sta. 3+18.270 to Sta. 3+31.080	Lt.	15.026
Sta. 3+46.480 to Sta. 3+49.220	Lt.	15.000
Sta. 11+78.200 to Sta. 11+96.850	Rt.	17.807
Sta. 11+79.370 to Sta. 11+95.820	Lt.	17.403
Sta. 12+91.500 to Sta. 13+09.000	Rt.	17.500
Sta. 12+91.530 to Sta. 13+09.030	Lt.	17.500

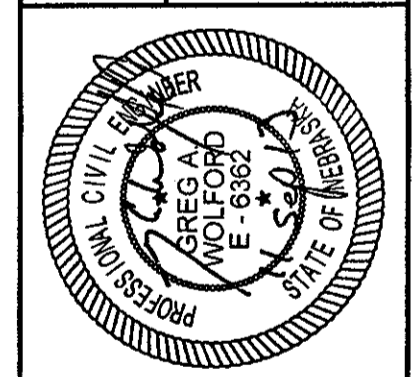
REMOVAL NOTES:

1. IN GENERAL, EXISTING CONCRETE TO BE REMOVED SHALL BE REMOVED TO THE NEAREST JOINT. THE CONTRACTOR SHALL "SQUARE" ALL EDGES THROUGH SAWING AS NECESSARY.
2. ALL EXISTING ASPHALT PAVEMENT SHALL BE SAW CUT EVENLY PRIOR TO PLACEMENT OF THE NEW ADJOINING PAVEMENT.
3. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING SIGNS AS NECESSARY.



East 7th and Seminole from H Street to Park Ave.
 Project No. URB-6158(1)
 McCook, NEBRASKA

WDA W DESIGN ASSOCIATES
 Consulting Engineers and Architects
 McCook, Nebraska 69001
 Hastings, Nebraska 68901



DWG:	842-12 REMOVALS
DRAWN:	AMP
CHECKED:	
REVISIONS:	

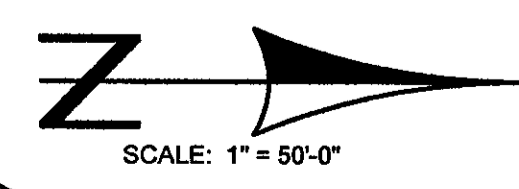
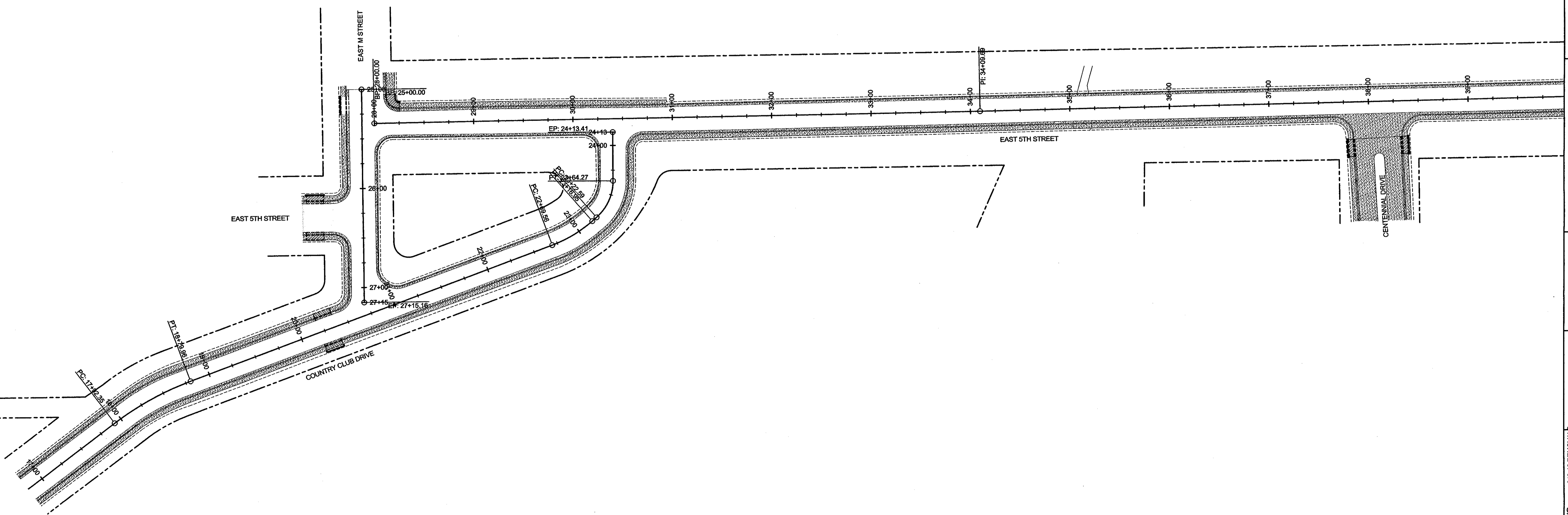
Cold Millings Class 4		
Station to Station	Side	Area Yd ²
Sta. 17+00.00 to Sta. 24+13.42	Lt. & Rt.	2010.629
Sta. 25+00.00 to Sta. 27+15.16	Lt. & Rt.	749.710
Sta. 28+09.65 to Sta. 39+75.00	Lt. & Rt.	3214.323

Remove Sidewalk		
Station to Station	Side	Area Yd ²
Sta. 20+19.540 to Sta. 20+37.040	Lt.	8.563
Sta. 20+19.760 to Sta. 20+37.260	Rt.	7.755
Sta. 26+06.900 to Sta. 26+11.780	Rt.	9.485
Sta. 25+05.700 to Sta. 25+18.860	Lt.	12.057
Sta. 26+46.440 to Sta. 26+51.280	Rt.	9.378
Sta. 37+79.230 to Sta. 37+84.360	Rt.	8.685
Sta. 38+33.670 to Sta. 38+38.740	Rt.	9.099

Remove Curb & Gutter		
Station to Station	Side	Lin. Ft.
Sta. 20+19.580 to Sta. 20+37.080	Lt.	17.500
Sta. 20+19.760 to Sta. 20+37.230	Rt.	17.500
Sta. 25+05.700 to Sta. 25+18.860	Lt.	21.317
Sta. 26+11.780 to Sta. 26+14.730	Rt.	17.500
Sta. 26+43.520 to Sta. 26+46.440	Rt.	17.500
Sta. 37+83.700 to Sta. 37+86.360	Rt.	17.500
Sta. 38+31.670 to Sta. 38+34.060	Rt.	17.492

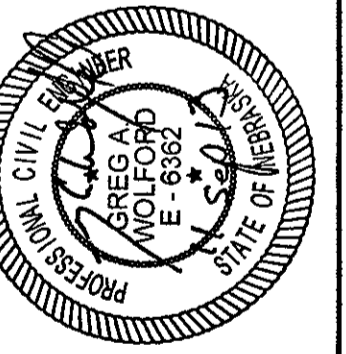
REMOVAL NOTES:

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3. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING SIGNS AS NECESSARY.



East 7th and Seminole from H Street to Park Ave.
 Project No. URB-6158(1)
 MCCOOK, NEBRASKA

WDA ASSOCIATES
 Consulting Engineers and Architects
 McCook, Nebraska 68001
 Hastings, Nebraska 68001



DWG:	842-12 REMOVALS
DRAWN:	AMP
CHECKED:	
REVISIONS:	

DATE: MARCH 2013

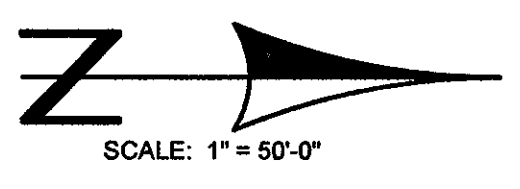
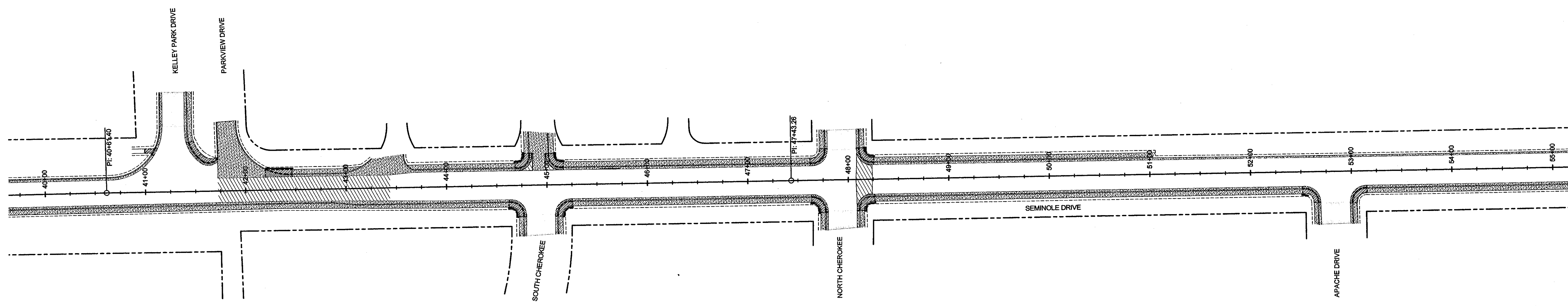
Cold Millings Class 4		
Station to Station	Side	Area Yd ²
Sta. 39+75.000 to Sta. 55+00.000	Lt. & Rt.	5153.204

- REMOVAL NOTES:**
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Remove Sidewalk		
Station to Station	Side	Area Yd ²
Sta. 41+00.150 to Sta. 41+09.700	Lt.	3.996
Sta. 41+44.360 to Sta. 41+72.310	Lt.	16.042
Sta. 42+22.520 to Sta. 42+46.550	Lt.	8.320
Sta. 44+62.120 to Sta. 44+76.240	Rt.	9.723
Sta. 44+88.570 to Sta. 44+82.240	Lt.	10.131
Sta. 45+02.300 to Sta. 45+16.680	Lt.	10.723
Sta. 45+11.030 to Sta. 45+24.980	Rt.	9.669
Sta. 47+62.270 to Sta. 47+76.480	Lt.	10.728
Sta. 47+63.310 to Sta. 47+76.800	Rt.	9.776
Sta. 48+11.510 to Sta. 48+25.590	Lt.	9.729
Sta. 48+11.480 to Sta. 48+26.240	Rt.	9.624
Sta. 52+51.530 to Sta. 52+66.630	Rt.	9.214
Sta. 53+01.340 to Sta. 53+15.480	Rt.	9.691

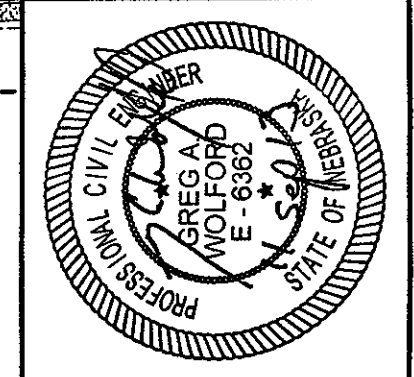
Remove Concrete Pavement		
Station to Station	Side	Area Yd ²
Sta. 41+72.310 to Sta. 43+43.310	Lt. & Rt.	468.208
Sta. 44+72.250 to Sta. 44+86.080	Lt.	6.728
Sta. 44+98.780 to Sta. 45+11.280	Lt.	6.510
Sta. 48+07.480 to Sta. 48+24.250	Lt. & Rt.	63.820

Remove Curb & Gutter		
Station to Station	Side	Lin. Ft.
Sta. 41+06.520 to Sta. 41+13.020	Lt.	8.265
Sta. 41+41.300 to Sta. 41+72.310	Lt.	41.730
Sta. 42+19.880 to Sta. 42+46.540	Lt.	27.500
Sta. 44+62.130 to Sta. 44+79.240	Rt.	25.844
Sta. 44+68.550 to Sta. 44+85.240	Lt.	25.743
Sta. 44+98.290 to Sta. 45+16.650	Lt.	25.370
Sta. 45+08.000 to Sta. 45+24.980	Rt.	25.330
Sta. 47+62.270 to Sta. 47+79.550	Lt.	25.409
Sta. 47+63.300 to Sta. 47+79.620	Rt.	25.519
Sta. 48+08.280 to Sta. 48+26.240	Rt.	25.421
Sta. 48+08.440 to Sta. 48+25.580	Lt.	25.559
Sta. 52+51.520 to Sta. 52+69.360	Rt.	25.254
Sta. 52+98.470 to Sta. 53+15.490	Rt.	25.482



East 7th and Seminole from H Street to Park Ave.
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 MCCOOK, NEBRASKA

WDA ASSOCIATES
 Consulting Engineers and Architects
 McCook, Nebraska 69001
 Hastings, Nebraska 68901



DWG:	842-12 REMOVALS
DRAWN:	AMP
CHECKED:	
REVISIONS:	

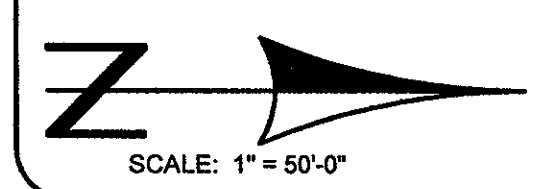
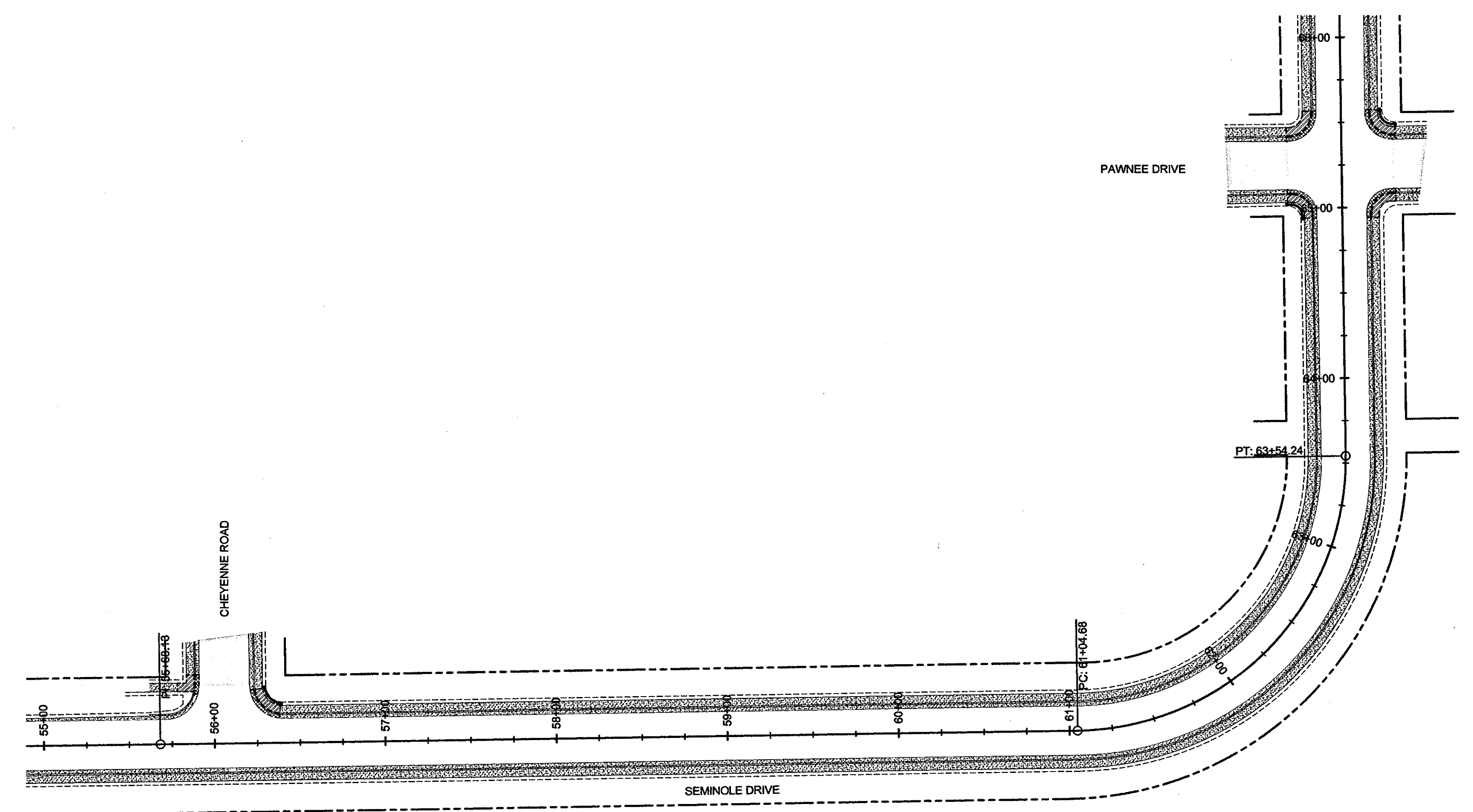
Cold Millings Class 4		
Station to Station	Side	Area Yd ²
Sta. 55+00.000 to Sta. 66+00.000	Lt. & Rt.	3716.559

Remove Sidewalk		
Station to Station	Side	Area Yd ²
Sta. 55+78.450 to Sta. 55+88.580	Lt.	7.956
Sta. 56+23.860 to Sta. 56+38.770	Lt.	9.425
Sta. 64+94.140 to Sta. 65+08.060	Lt.	9.707
Sta. 64+94.170 to Sta. 65+07.930	Rt.	9.605
Sta. 65+42.510 to Sta. 65+56.800	Lt.	10.459
Sta. 65+42.890 to Sta. 65+57.170	Rt.	9.570

Remove Curb & Gutter		
Station to Station	Side	Lin. Ft.
Sta. 55+87.680 to Sta. 55+91.400	Lt.	12.023
Sta. 56+20.850 to Sta. 56+38.200	Lt.	23.686
Sta. 64+94.160 to Sta. 65+10.950	Rt.	25.631
Sta. 64+94.160 to Sta. 65+10.920	Lt.	25.472
Sta. 65+39.310 to Sta. 65+56.780	Lt.	25.620
Sta. 65+39.800 to Sta. 65+57.190	Rt.	25.764

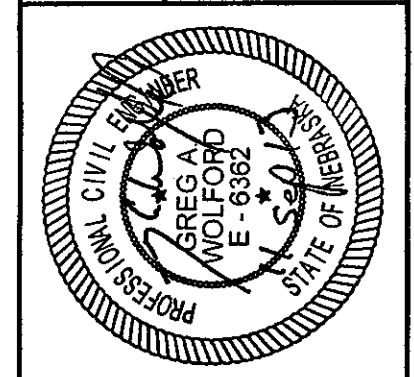
REMOVAL NOTES:

1. IN GENERAL, EXISTING CONCRETE TO BE REMOVED SHALL BE REMOVED TO THE NEAREST JOINT. THE CONTRACTOR SHALL "SQUARE" ALL EDGES THROUGH SAWING AS NECESSARY.
2. ALL EXISTING ASPHALT PAVEMENT SHALL BE SAW CUT EVENLY PRIOR TO PLACEMENT OF THE NEW ADJOINING PAVEMENT.
3. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING SIGNS AS NECESSARY.



East 7th and Seminole from H Street to Park Ave.
 Project No. URB-6158(1)
 McCook, NEBRASKA

WDA W DESIGN ASSOCIATES
 Consulting Engineers and Architects
 McCook, Nebraska 68901
 Hastings, Nebraska 68901



DWG:	842-12 REMOVALS
DRAWN:	AMP
CHECKED:	
REVISIONS:	

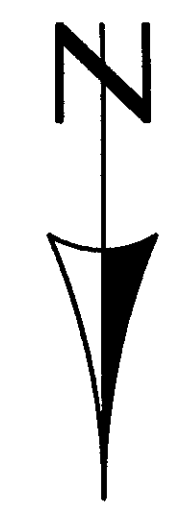
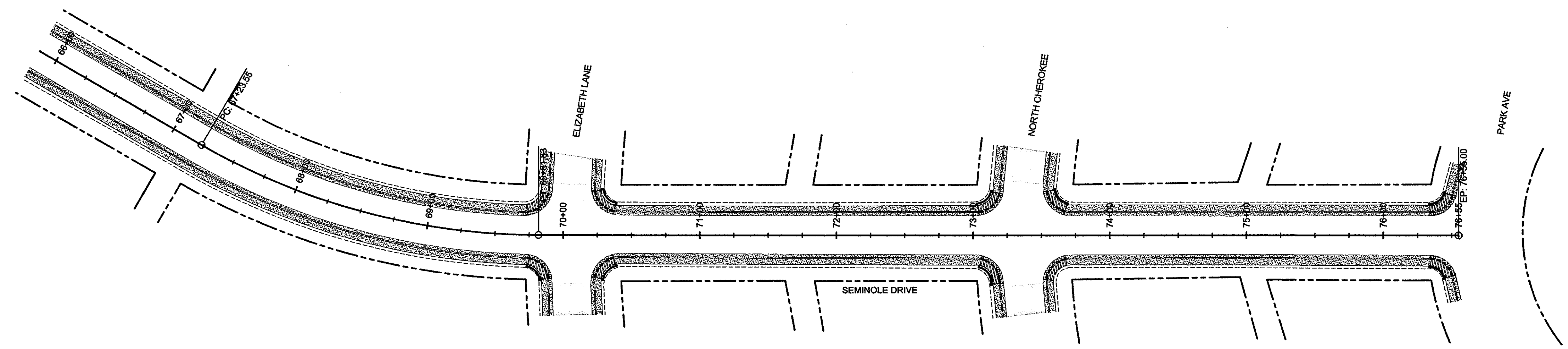
Cold Millings Class 4		
Station to Station	Side	Area Yd ²
Sta. 66+00.00 to Sta. 76+50.610	LT. & RT.	3698.264

REMOVAL NOTES:

1. IN GENERAL, EXISTING CONCRETE TO BE REMOVED SHALL BE REMOVED TO THE NEAREST JOINT. THE CONTRACTOR SHALL "SQUARE" ALL EDGES THROUGH SAWING AS NECESSARY.
2. ALL EXISTING ASPHALT PAVEMENT SHALL BE SAW CUT EVENLY PRIOR TO PLACEMENT OF THE NEW ADJOINING PAVEMENT.
3. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING SIGNS AS NECESSARY.

Remove Sidewalk		
Station to Station	Side	Area Yd ²
Sta. 69+72.660 to Sta. 69+88.620	Lt.	10.220
Sta. 69+74.340 to Sta. 69+88.740	Rt.	9.289
Sta. 70+23.590 to Sta. 70+38.220	Lt.	8.963
Sta. 70+23.720 to Sta. 70+38.170	Rt.	8.339
Sta. 73+03.500 to Sta. 73+18.840	Lt.	9.156
Sta. 73+05.080 to Sta. 73+19.200	Rt.	10.409
Sta. 73+54.230 to Sta. 73+68.670	Lt.	9.835
Sta. 73+54.230 to Sta. 73+68.640	Rt.	9.078
Sta. 76+33.970 to Sta. 76+50.130	Lt.	10.331
Sta. 76+34.170 to Sta. 76+50.000	Rt.	10.271

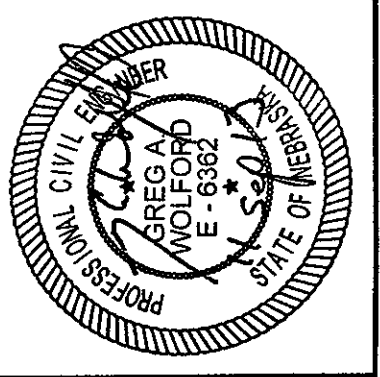
Remove Curb & Gutter		
Station to Station	Side	Lin. Ft.
Sta. 69+73.670 to Sta. 69+91.570	Lt.	22.979
Sta. 69+75.040 to Sta. 69+91.740	Rt.	23.497
Sta. 70+20.660 to Sta. 70+37.400	Lt.	23.206
Sta. 70+20.660 to Sta. 70+37.080	Rt.	22.351
Sta. 73+04.040 to Sta. 73+21.810	Lt.	23.227
Sta. 73+06.100 to Sta. 73+22.350	Rt.	25.709
Sta. 73+51.210 to Sta. 73+67.390	Lt.	22.753
Sta. 73+51.320 to Sta. 73+67.760	Rt.	23.311
Sta. 76+33.970 to Sta. 76+53.120	Lt.	24.199
Sta. 76+34.170 to Sta. 76+52.930	Rt.	23.694



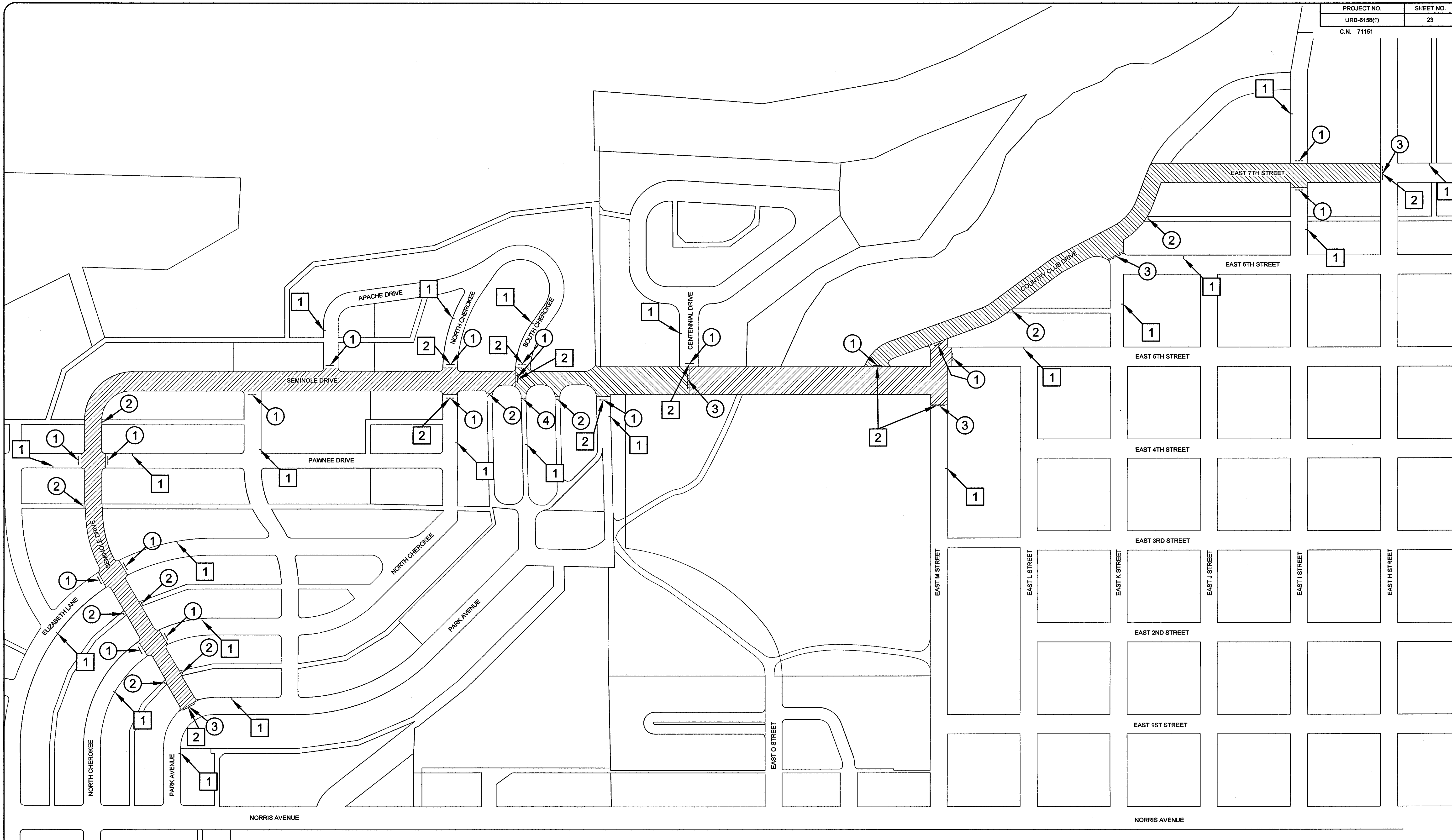
SCALE: 1" = 50'-0"

East 7th and Seminole from H Street to Park Ave.
 Project No. URB-6158(1)
 McCook, NEBRASKA

WDA W DESIGN ASSOCIATES
 Consulting Engineers and Architects
 McCook, Nebraska 68001
 Hastings, Nebraska 68901



DWG:	642-12 REMOVALS
DRAWN:	AMP
CHECKED:	
REVISIONS:	



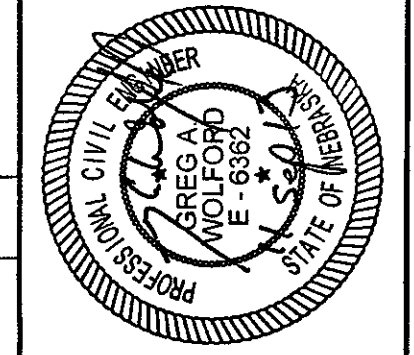
SIGNAGE PLAN
NO SCALE

- SIGNAGE LEGEND**
- ① (1) ROAD CLOSED AHEAD
 - ② (1) LOCAL TRAFFIC ONLY
 - ③ (3) TYPE III BARRICADE WITH ROAD CLOSED SIGN
 - ④ (1) TYPE III BARRICADE
 - ⑤ (5) TYPE III BARRICADE WITH ROAD CLOSED SIGN
 - ⑥ (2) TYPE III BARRICADE WITH ROAD CLOSED SIGN

NOTE: SIGNS & BARRICADES SHALL BE IN ACCORDANCE WITH NDOR STANDARD PLANS 920-R5, 921-R5 AND 924.

East 7th and Seminole from H Street to Park Ave.
Project No. URB-6158(1)
MCCOOK, NEBRASKA

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McCook, Nebraska 68901
Hastings, Nebraska 68901



DWG:	942-12 SIGNAGE
DRAWN:	AMP
CHECKED:	
REVISIONS:	

TRAFFIC ENGINEERING DIVISION

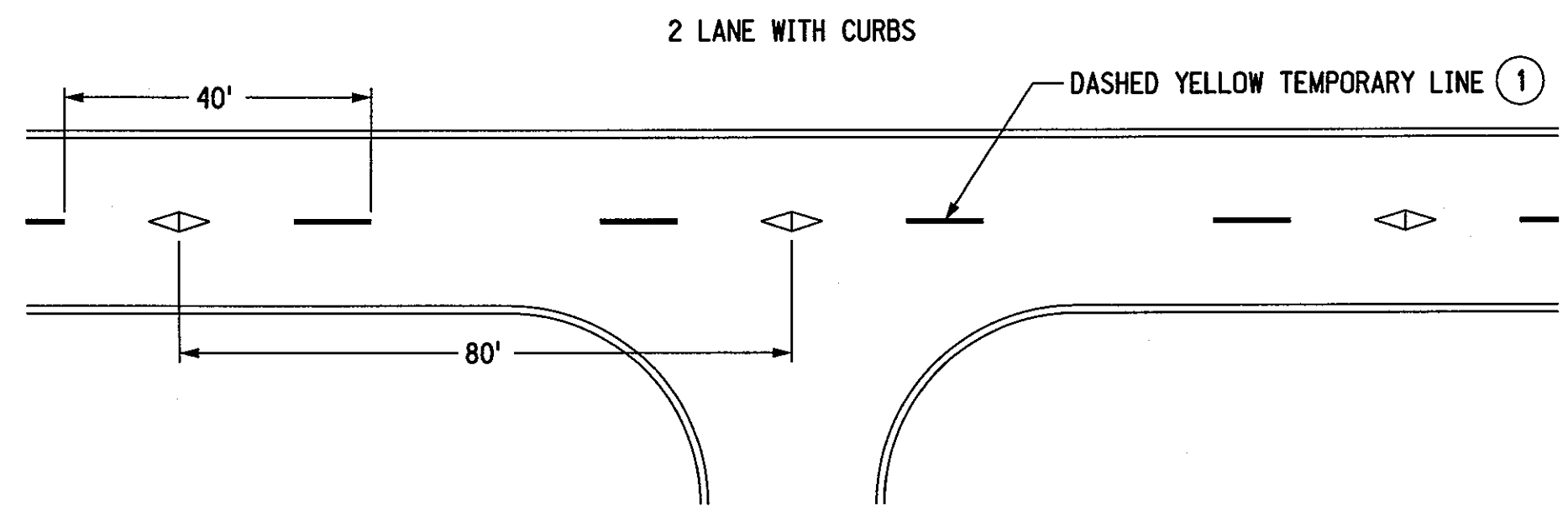
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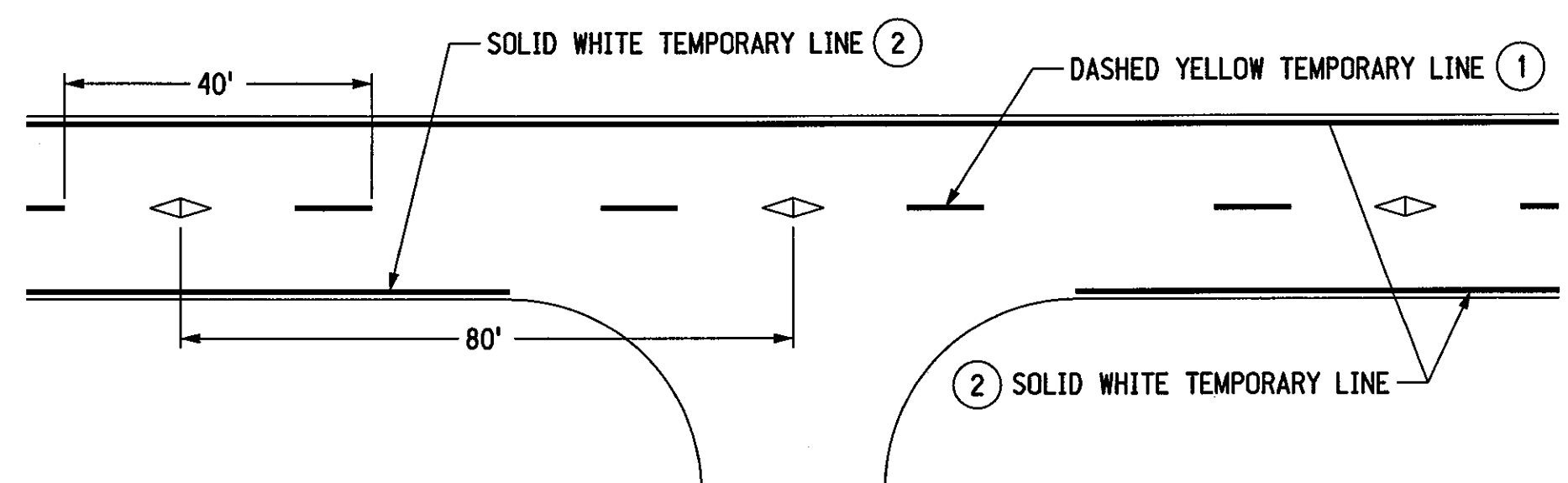
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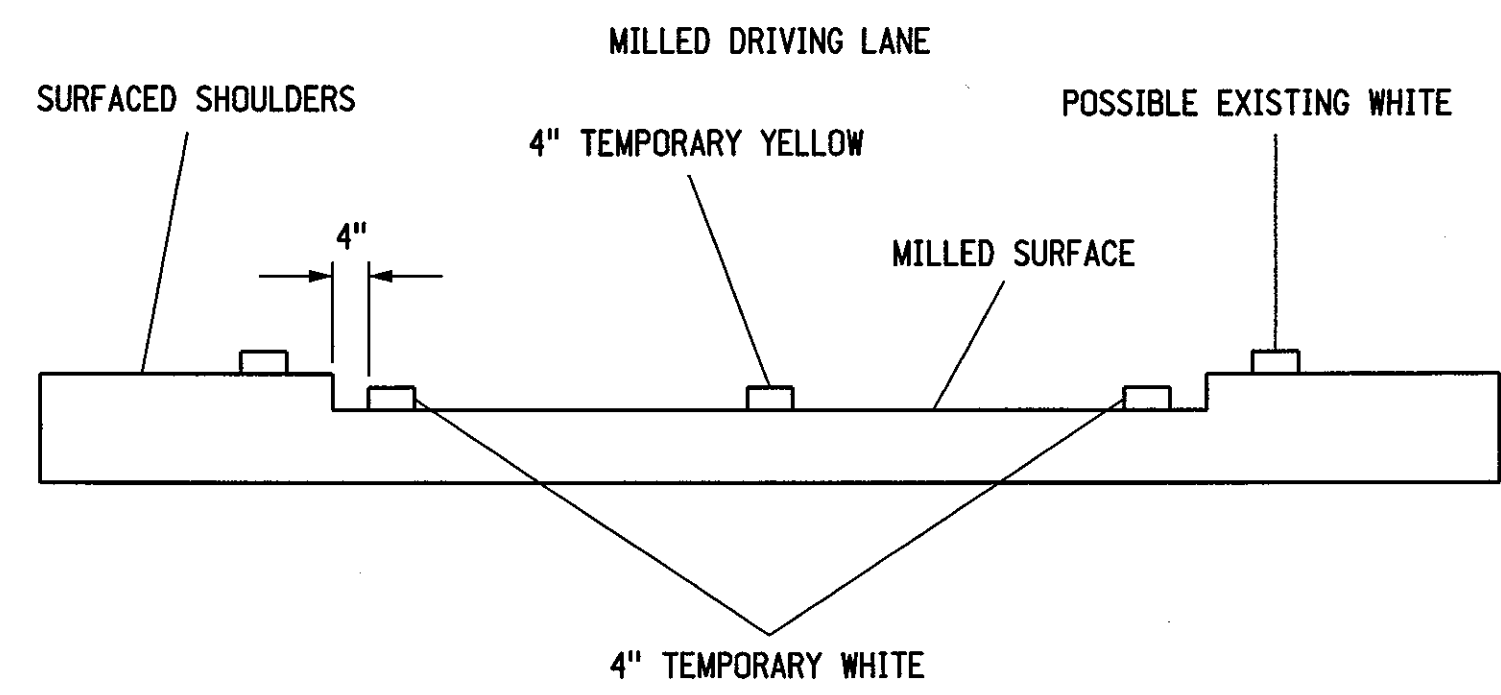
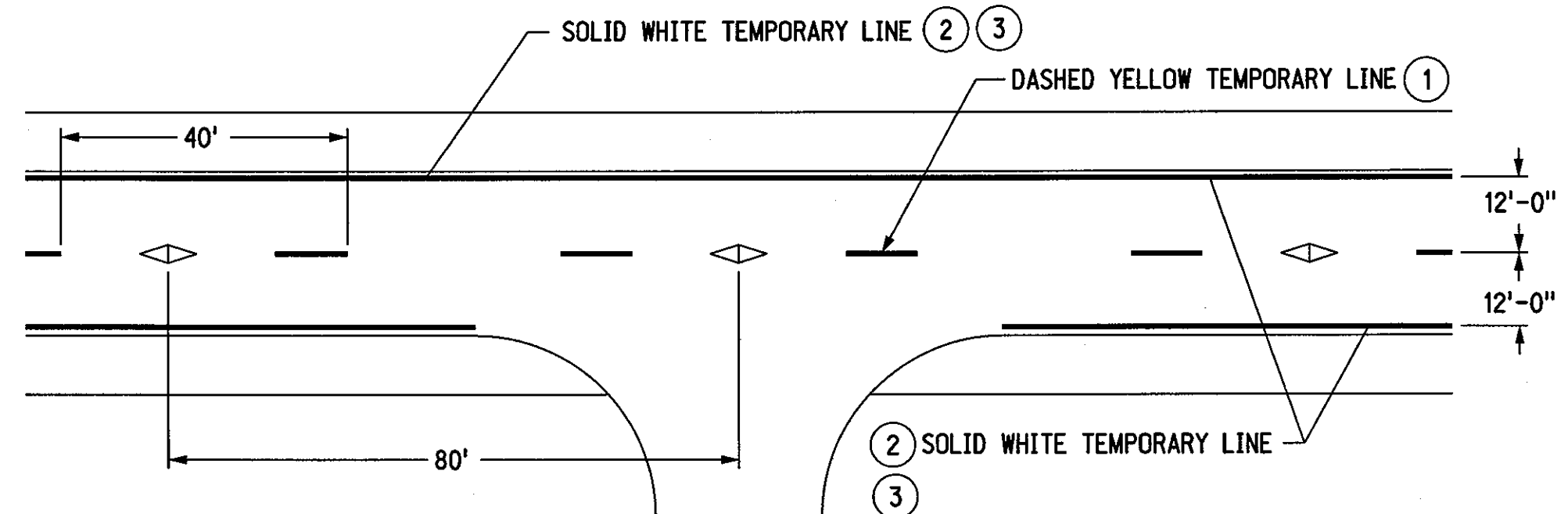
2 LANE ROADWAYS



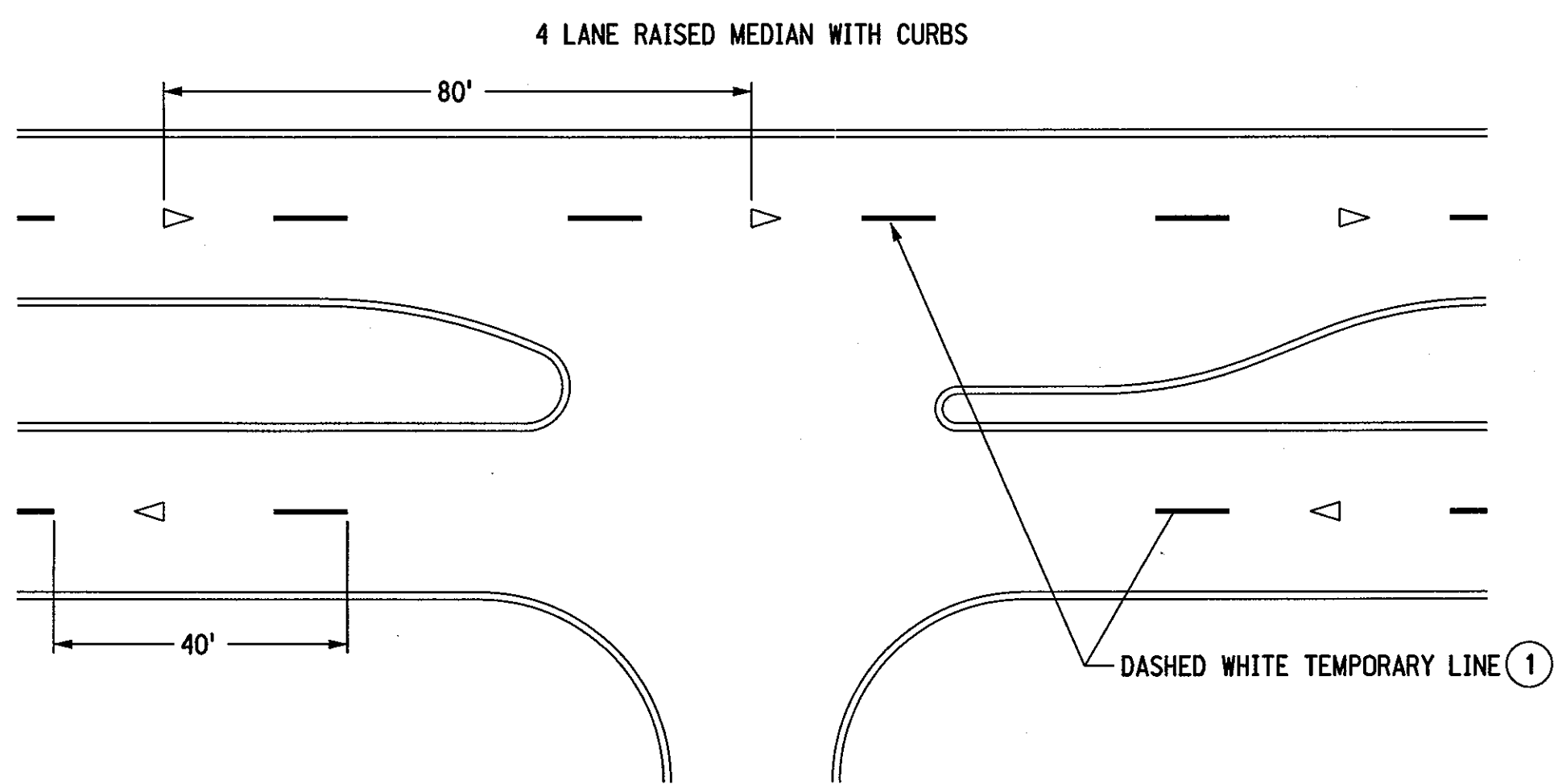
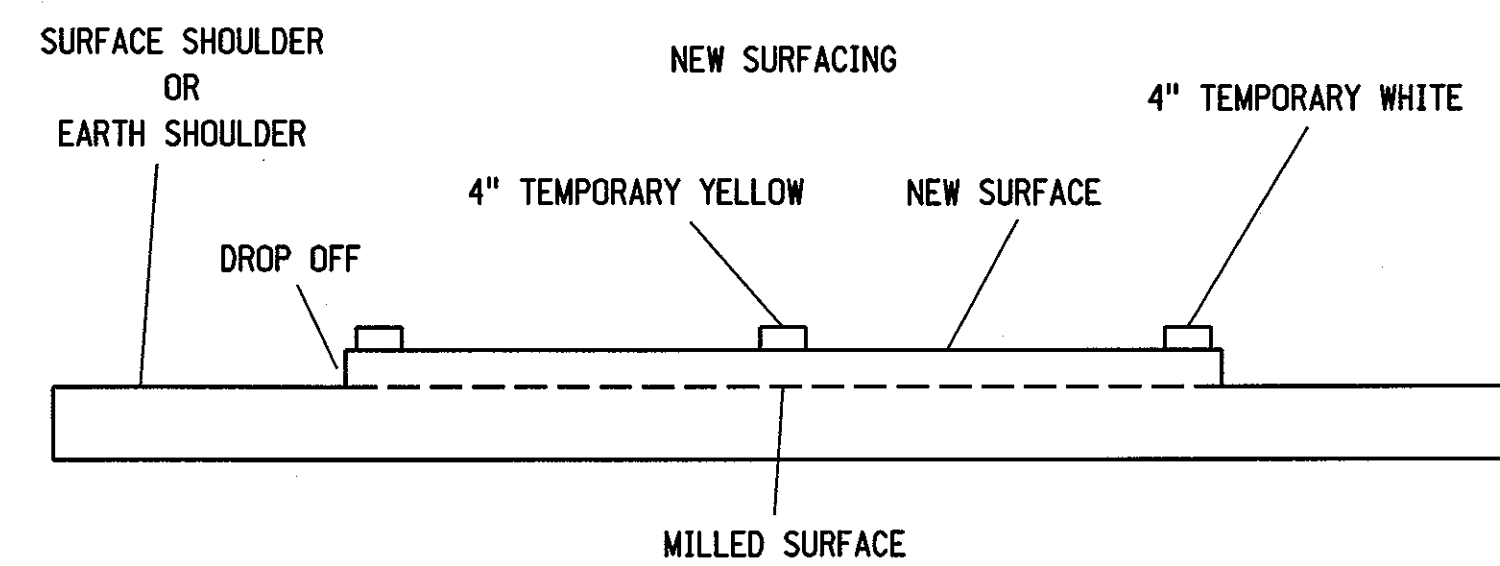
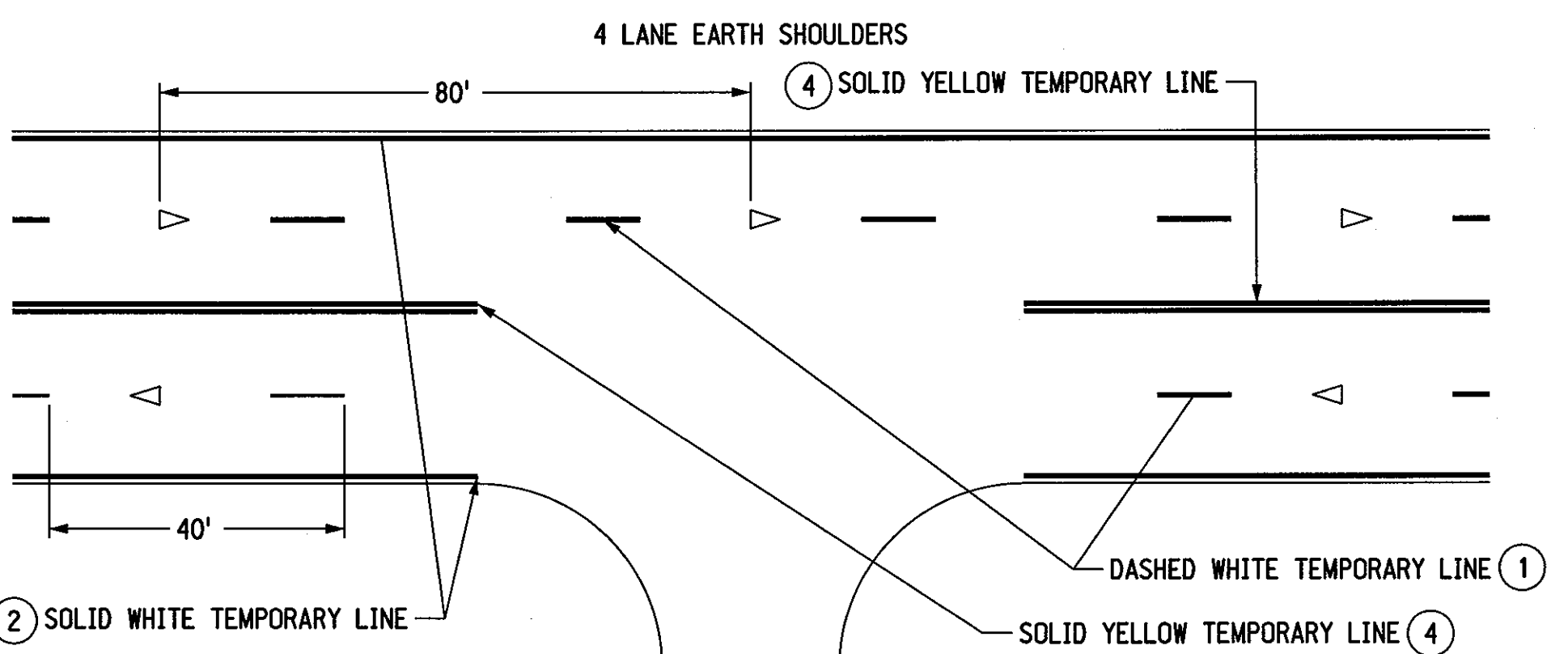
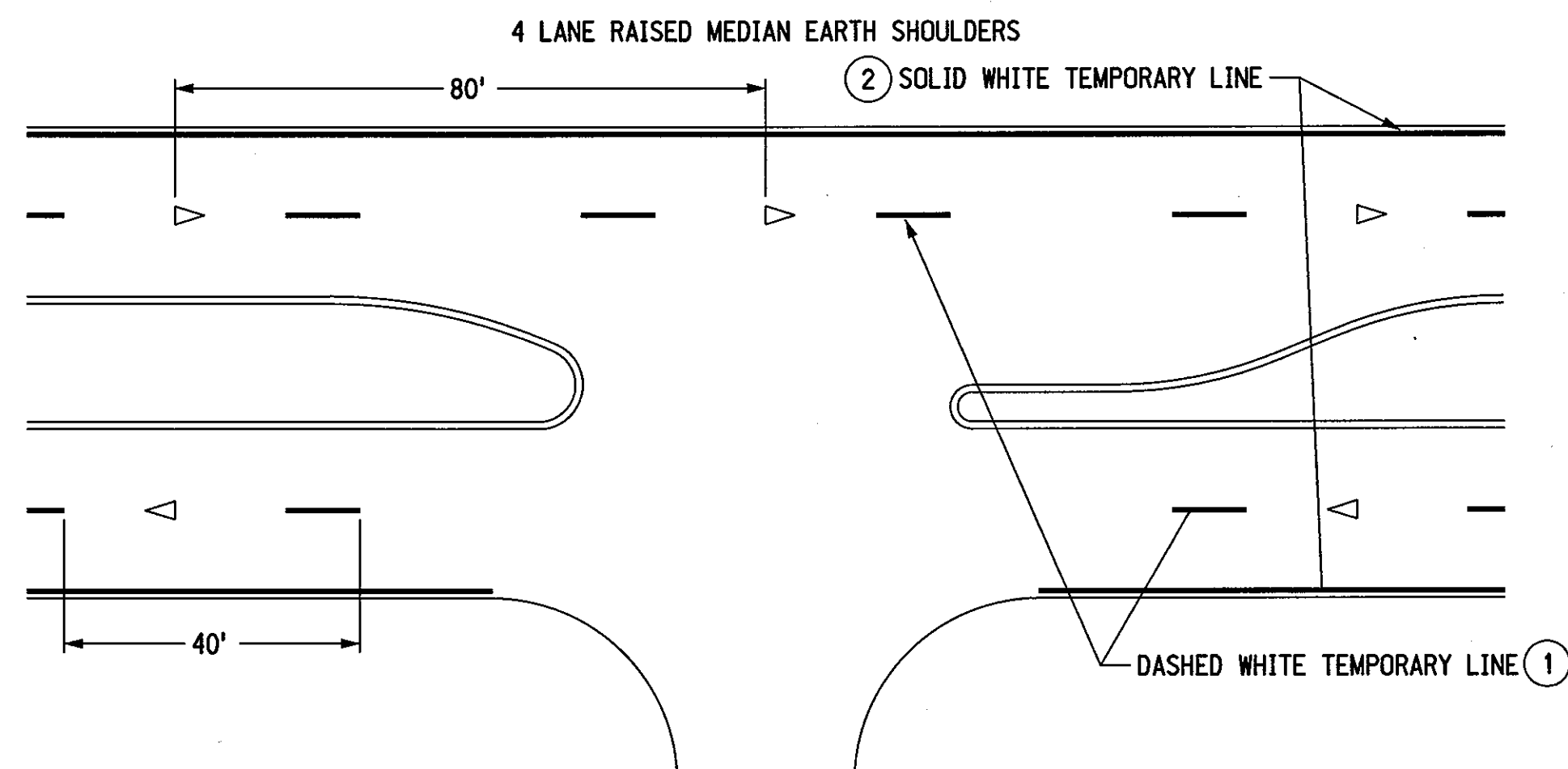
2 LANE EARTH SHOULDERS



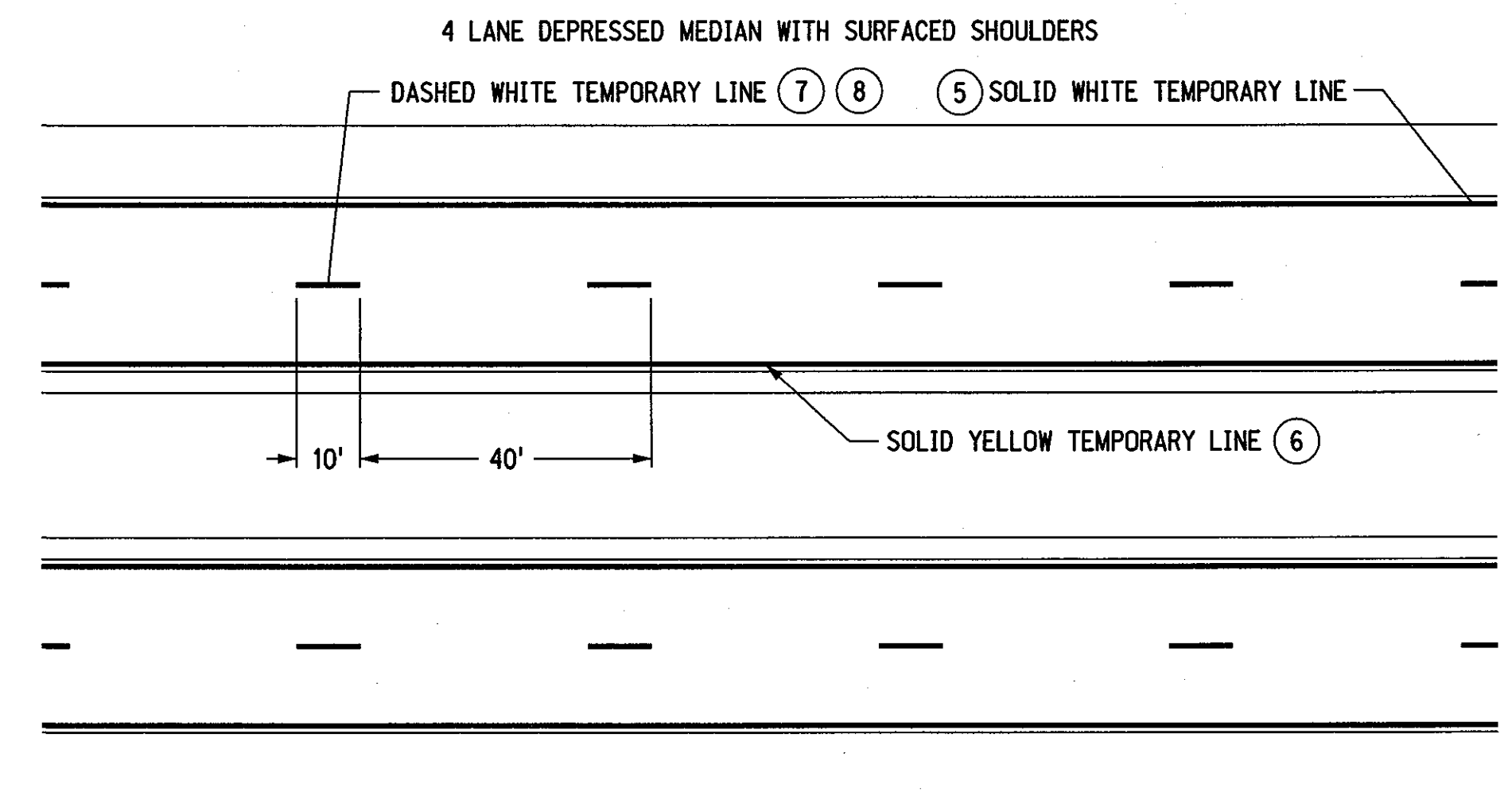
2 LANE SURFACED SHOULDERS



4 LANE ROADWAYS



FREEWAY/RURAL EXPRESSWAY



NOTES

- ① LOWER LAYERS: TEMPORARY DASHED LINE SHALL BE 4" X 10' PAINTED LINE AT 40' INTERVALS OR 4" X 4' TYPE I TAPE LINE AT 40' INTERVALS. TAPE OR PAINT WILL BE SUPPLEMENTED WITH AN OVERLAY MARKER EVERY 80 FEET.
- OVERLAY MARKERS ARE NOT REQUIRED ON MILLED SURFACES, HYDRATED LIME SURFACES AND STABILIZED SURFACES.
- TOP LAYER: BROKEN LINE MARKINGS
- INSTALL 4" X 4' TAPE AT 40' INTERVALS SUPPLEMENTED WITH AN OVERLAY MARKER EVERY 80 FEET.
- OR USE NO TAPE, BUT INSTALL 2 RAISED PAVEMENT MARKERS SPACED 5' APART AT 40' INTERVALS.
- SOLID LINE MARKINGS
- 4" WIDE PAINTED LINE OR PAVEMENT MARKING TAPE. RAISED PAVEMENT MARKERS MAY BE USED IN LIEU OF PAINT OR TAPE, INSTALLED AT 10' INTERVALS.
- ARMOR COATS
FOG SEALS: 2 OVERLAY MARKERS 5' APART, PER 40 FOOT CYCLE (NO PAINT OR TAPE).
- ② TEMPORARY SOLID LINE SHALL BE 4" WIDE PAINTED LINE.
- ③ EDGE LINE SHALL BE PLACED SO THAT THE OUTSIDE EDGE OF PAINT IS THE REQUIRED DISTANCE FROM CENTERLINE ON THE TOP LIFT
- ④ TEMPORARY CENTERLINE SHALL BE TWO 4" PAINTED LINES SPACED 4" APART, CENTERED ABOUT THE JOINT LINE.
- ⑤ EDGELINE SHALL BE 4" PAINTED LINE. PLACED TO THE LEFT OF JOINT LINE.
- ⑥ ALL LAYERS: EDGELINE SHALL BE PLACED 12'-0" FROM THE CENTER JOINT LINE. (RIGHT OF SHOULDER JOINT LINE WHEN APPLICABLE)
- ⑦ MILLED SURFACE OR LOWER LIFTS: THE TEMPORARY WHITE DASH LINE SHALL BE 4" X 10' MINIMUM PAINTED LINE AT 40' INTERVALS, PLACED TO THE LEFT OF THE JOINT LINE.
- ⑧ TOP LIFT: THE TEMPORARY WHITE DASH LINE SHALL BE 4" IN WIDTH X MINIMUM 8' TO MAXIMUM 10' LENGTH, PLACED 2" TO THE LEFT OF THE JOINT LINE. THE INTERVAL (CYCLE) SHALL BE 40' ± 2" TO ALLOW FOR THE PERMANENT PAVEMENT MARKING.
- ⑨ ALL TEMPORARY PAVEMENT MARKING THAT WILL BE COVERED BY PERMANENT PAVEMENT MARKING SHALL COMPLY WITH THE ALIGNMENT AND LOCATION REQUIREMENTS OF THE FINAL PAVEMENT MARKING MATERIAL. TEMPORARY PAVEMENT MARKINGS THAT ARE NOT COVERED BY THE PERMANENT MARKINGS SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE.

2 LANE ROADWAY REQUIRED LOCATION FOR PAINTED LINES, IF USED ON THE TOP LAYER

ROADWAY WIDTH	SHOULDER TYPE	DISTANCE FROM C OF ROADWAY TO OUTSIDE EDGE OF PAVEMENT
LESS THAN 24'	SURFACED	EDGE OF LANE
LESS THAN 24'	EARTH	PAVEMENT EDGE
24'	EARTH	PAVEMENT EDGE
24'	SURFACED	12'-0" *
24' TO 28'	EARTH	12'-0" *

* SEE NOTE 3

CENTERLINE MARKING SHALL BE PLACED ON THE "SOUTH" SIDE OF THE CENTER JOINT ON EAST-WEST ROADS AND ON THE "EAST" SIDE OF THE CENTER JOINT ON NORTH-SOUTH ROADS

- LEGEND
- ◁ OVERLAY MARKER
 - ▷ BIDIRECTIONAL OVERLAY MARKER

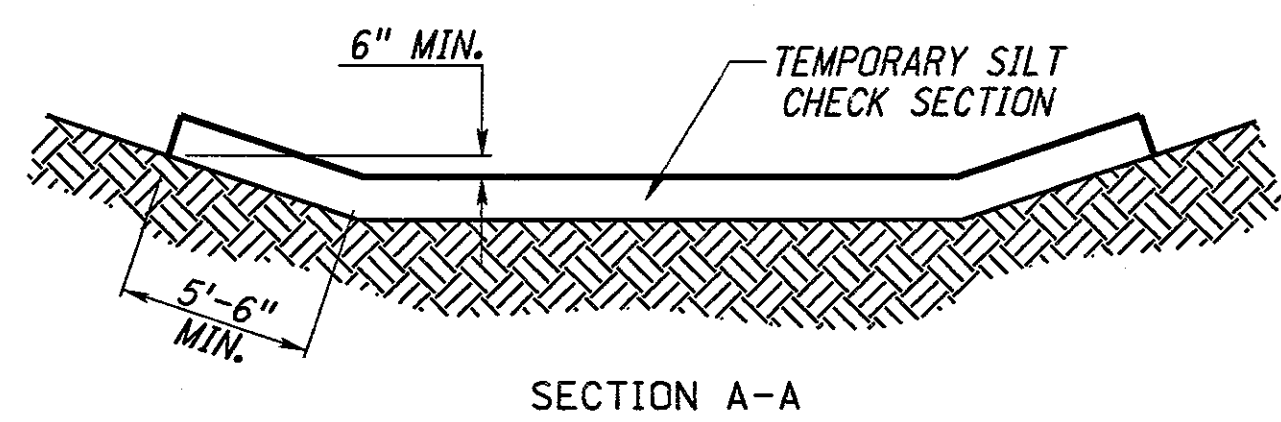


NEBRASKA DEPARTMENT OF ROADS
TRAFFIC ENGINEERING DIVISION

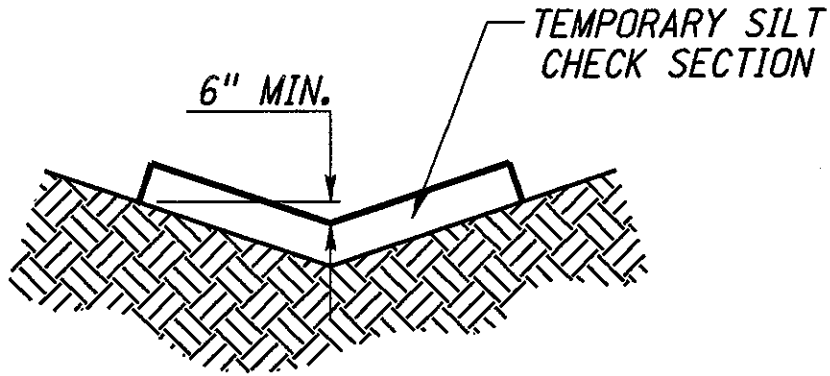
TYPICAL PAVEMENT MARKING

DESIGNED DV	TEMPORARY PAVEMENT MARKING PLAN	1/1
REVIEWED MAN	TRAFFIC ENGINEER	DATE
DATE DRAWN 8/06		

Roadway Design Division

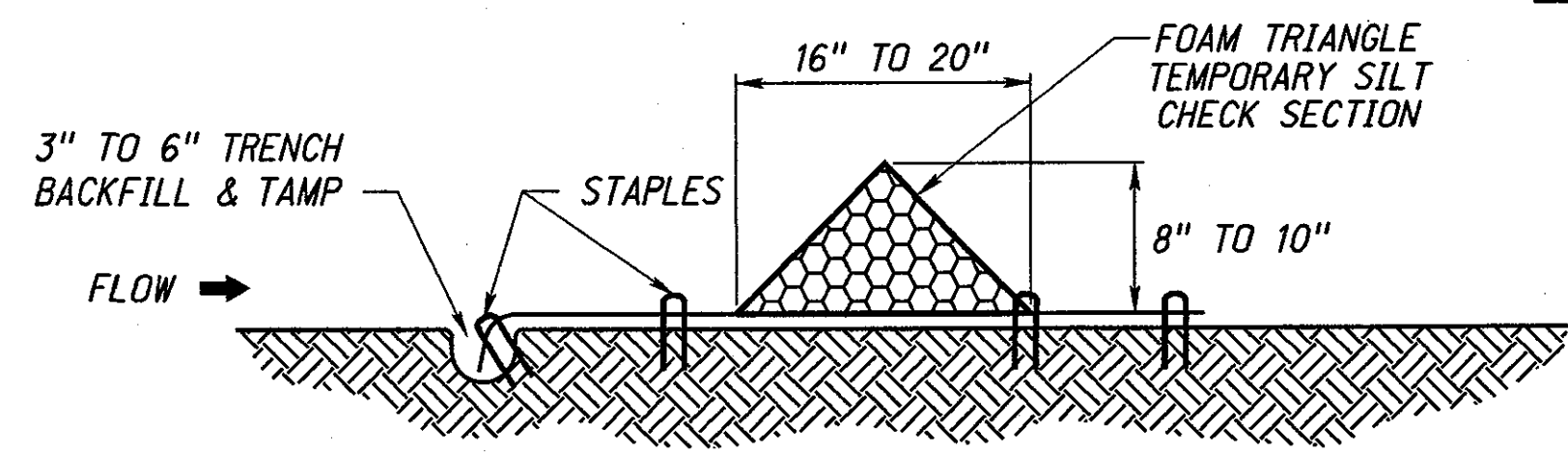


SECTION A-A

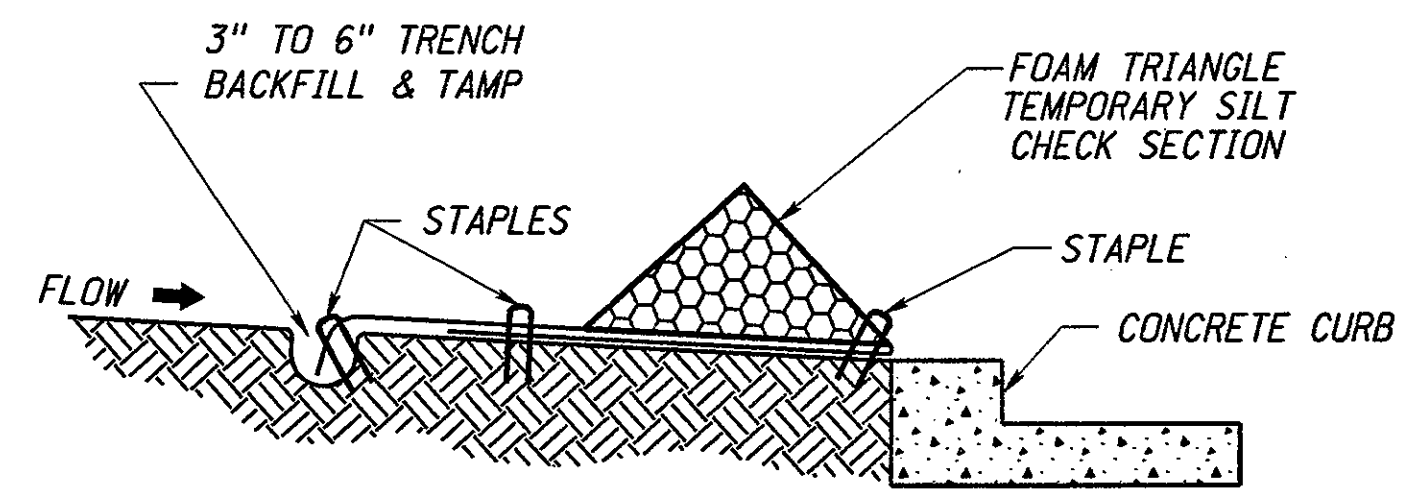


SECTION B-B

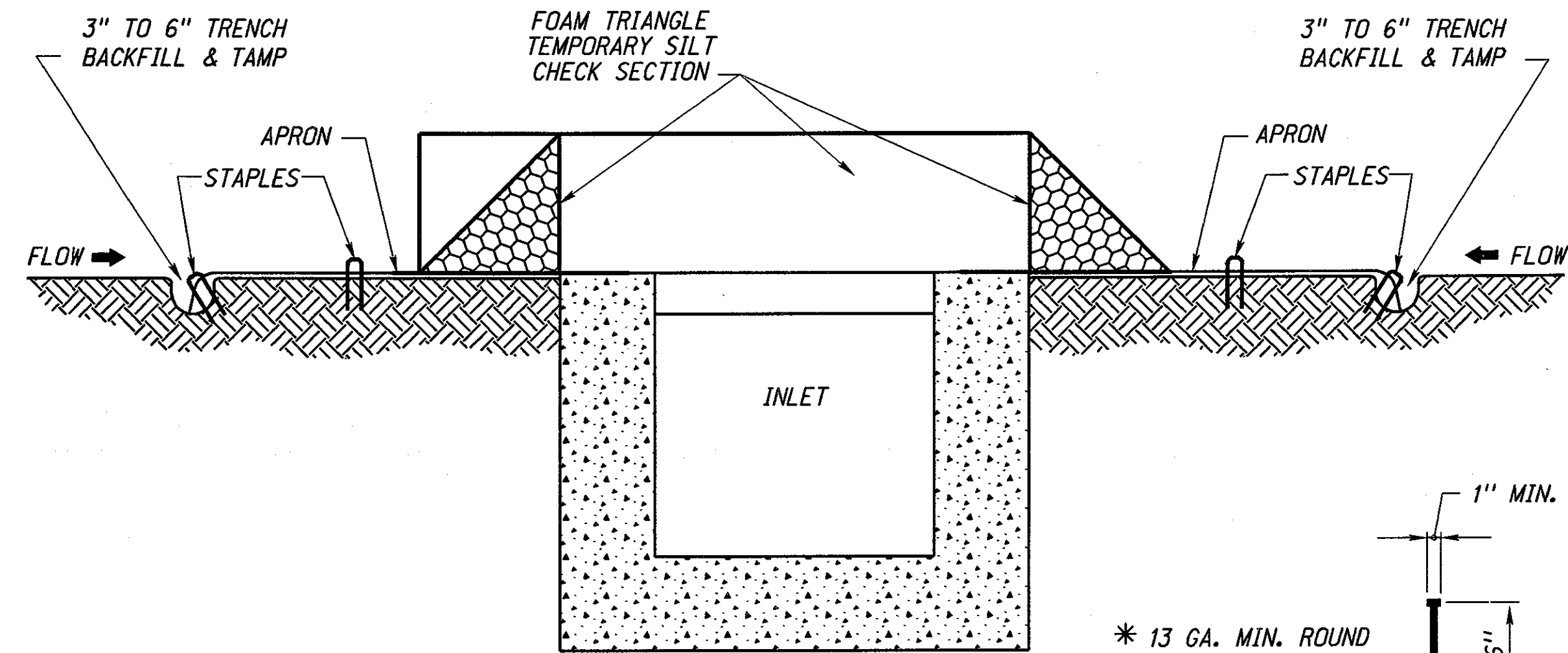
NOTE:
 SECTION A-A & B-B ARE TYPICAL FOR
 FOAM TRIANGLE, WATTLE & RIGID PLASTIC
 TRIANGLE TEMPORARY SILT CHECKS.



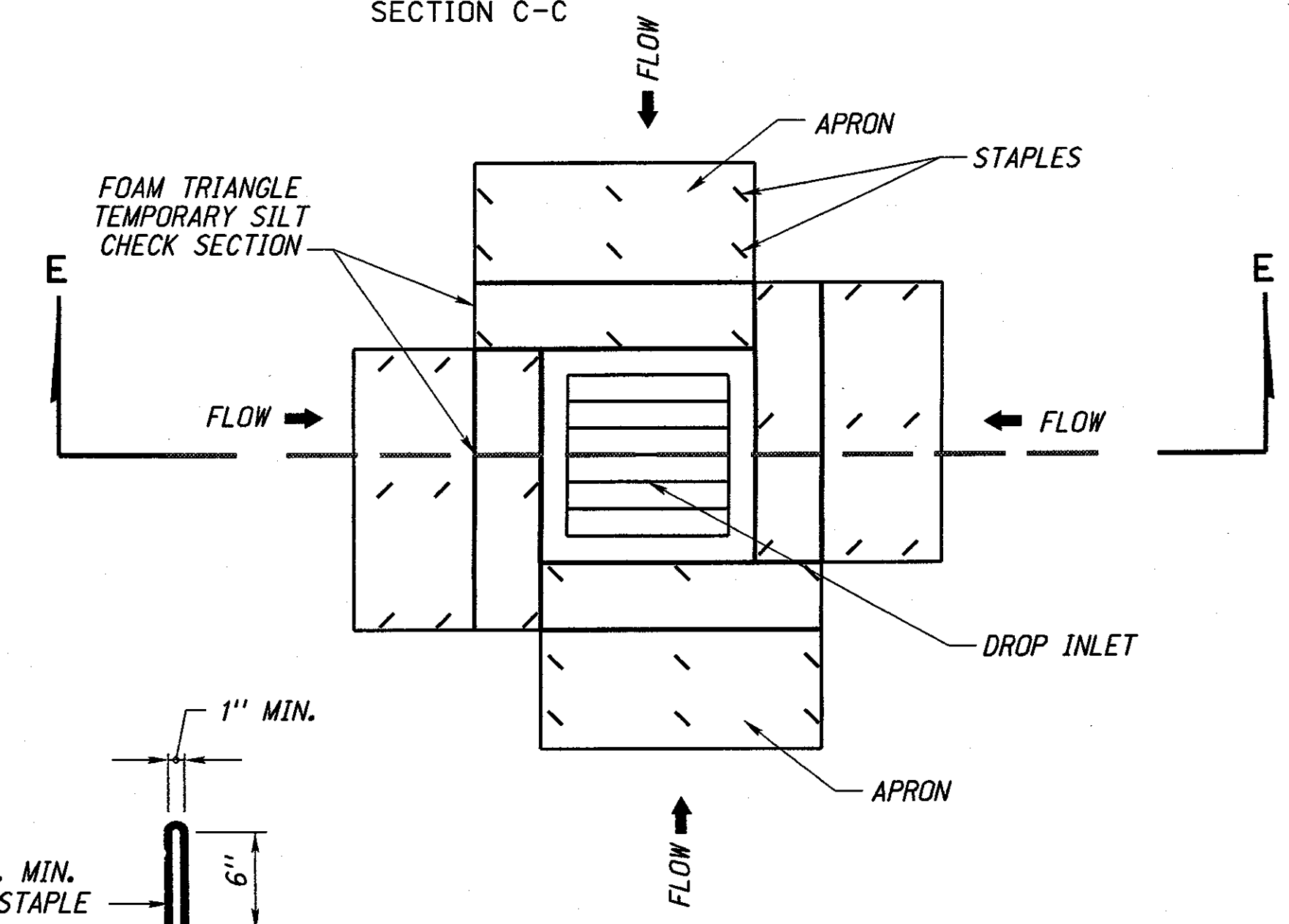
SECTION C-C



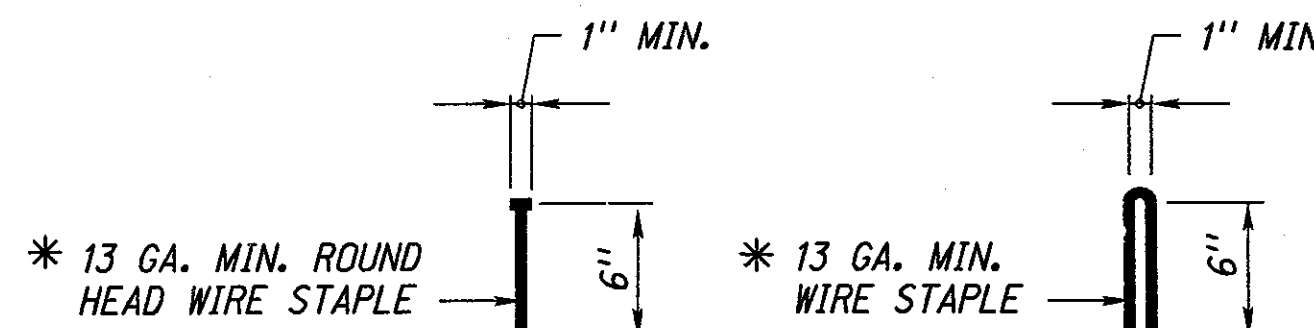
SECTION D-D



SECTION E-E

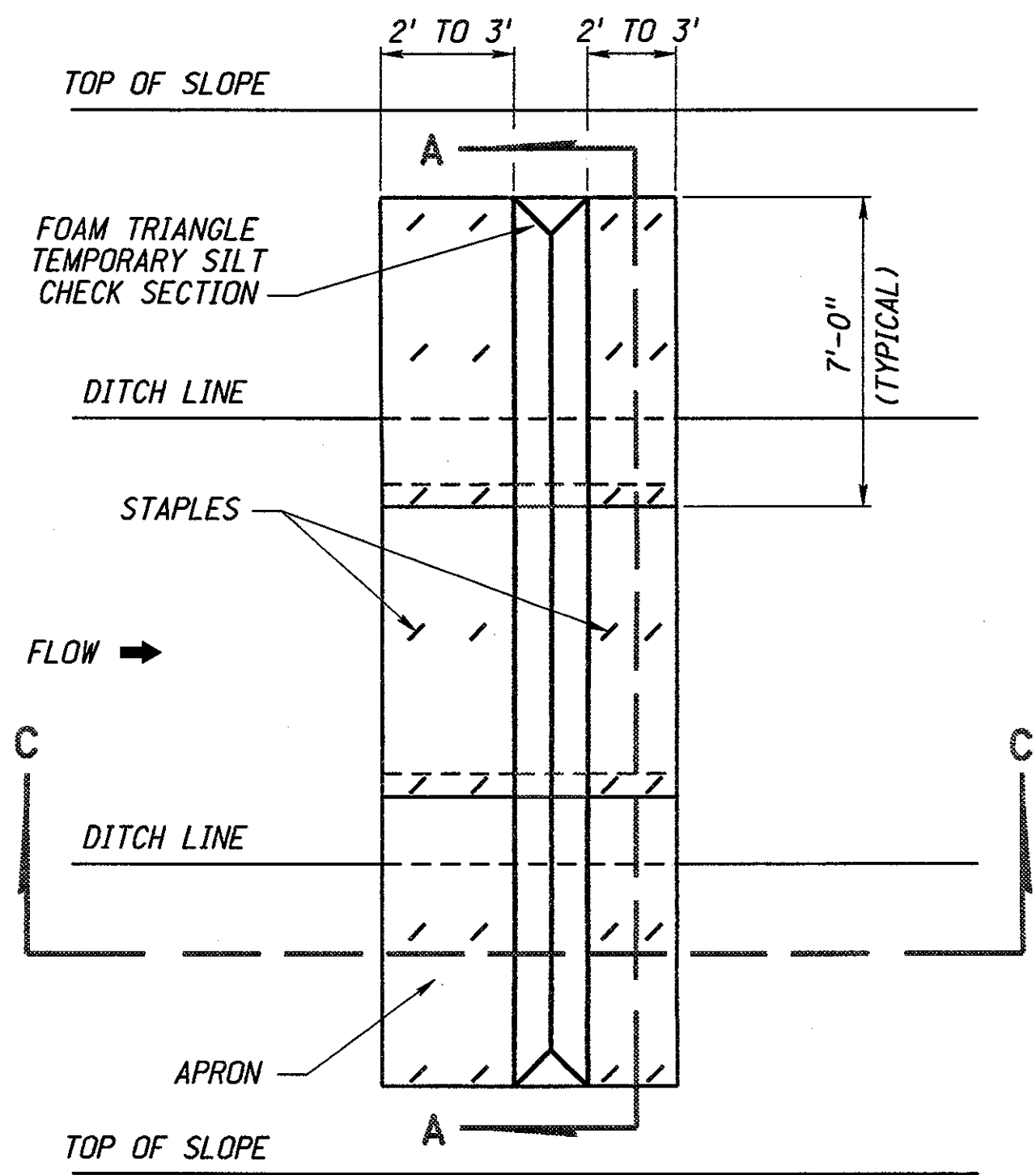


PLAN VIEW
 FOR INLETS

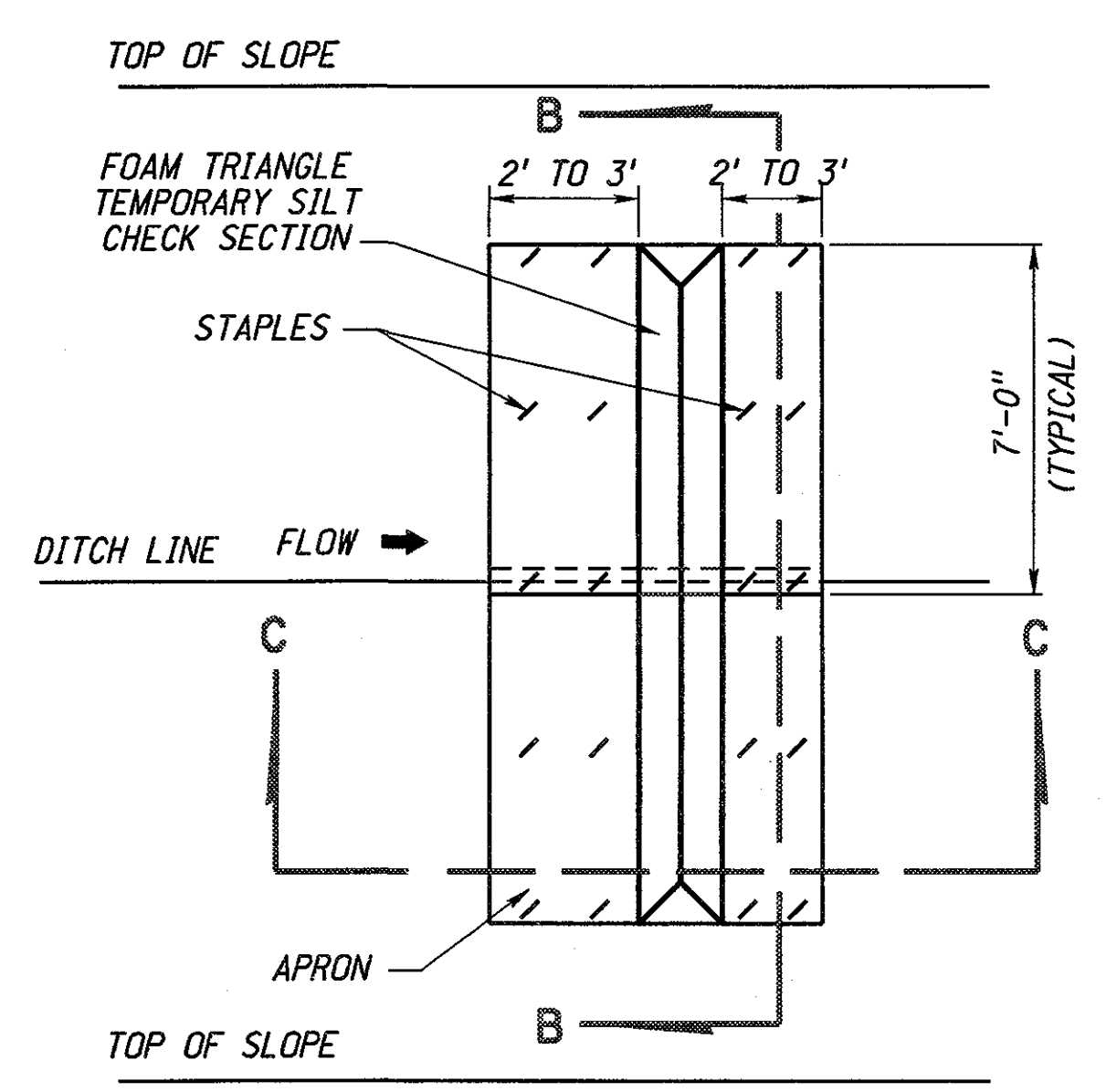


STAPLE DETAIL

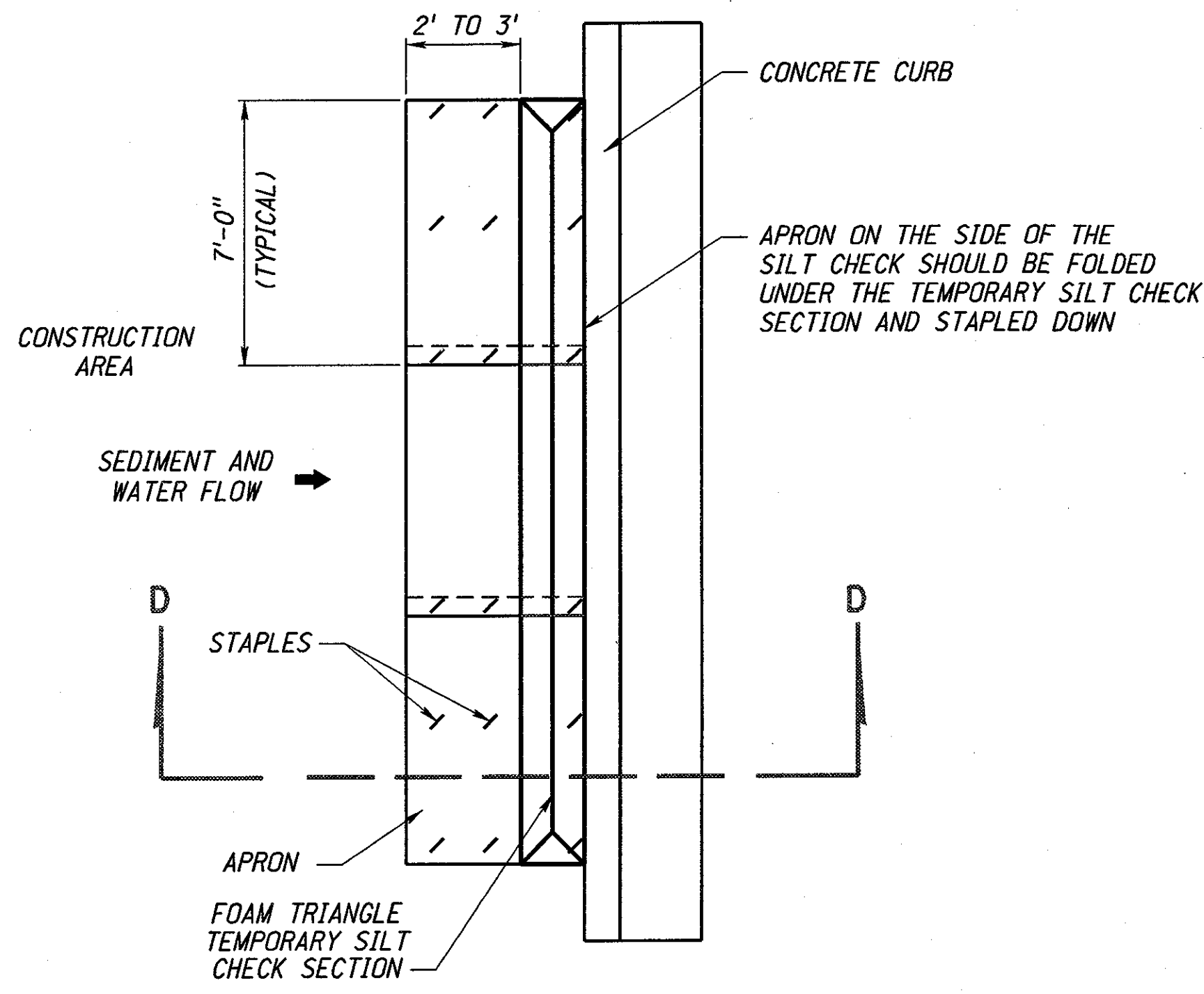
NOTE:
 * 6" - 13 GAGE MINIMUM WIRE STAPLE OR ROUND HEAD WIRE STAPLE MAY BE USED IF 1/3 MORE STAPLES ARE USED.



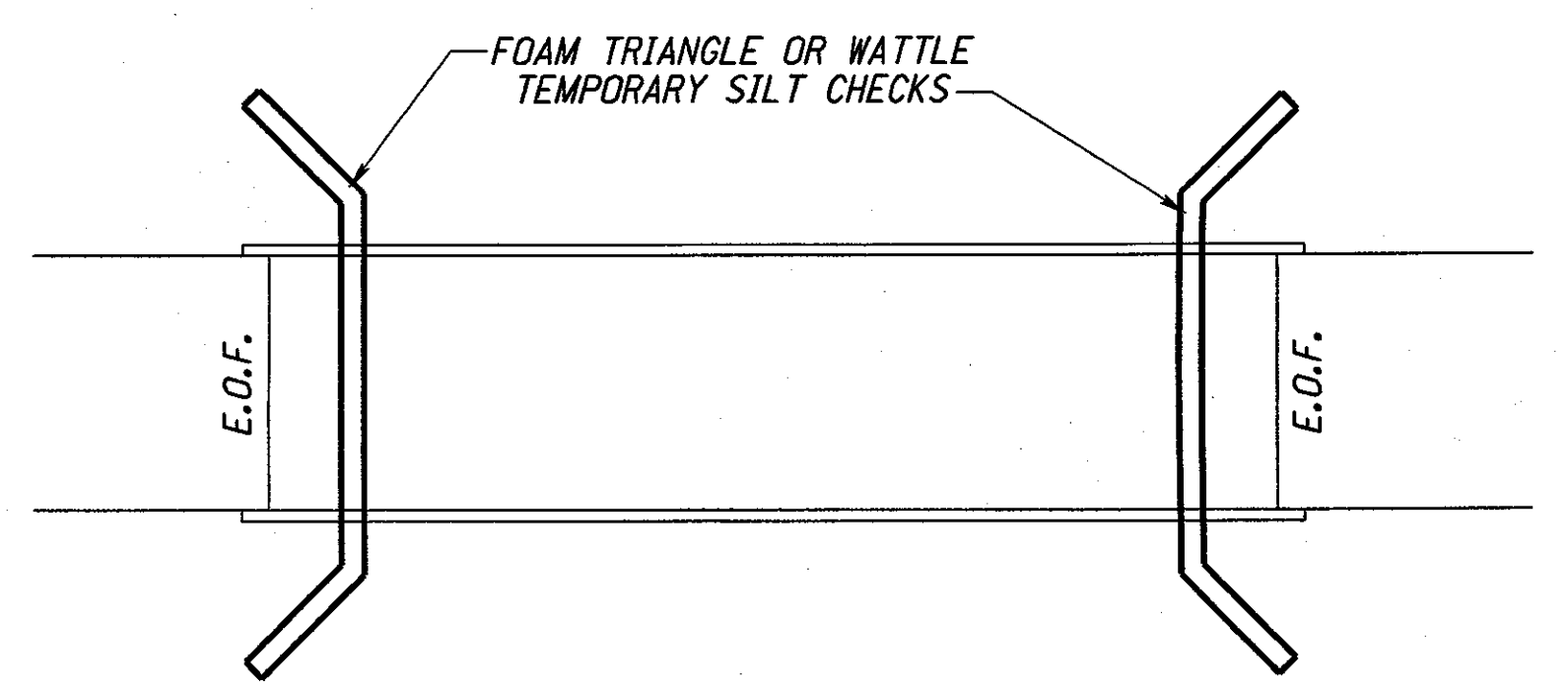
PLAN VIEW
 FOR FLAT BOTTOM DITCH



PLAN VIEW
 FOR V - DITCH

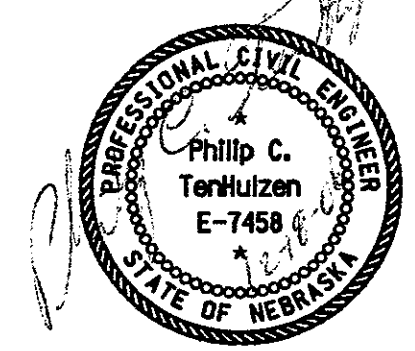


PLAN VIEW
 FOR CONTINUOUS BARRIER



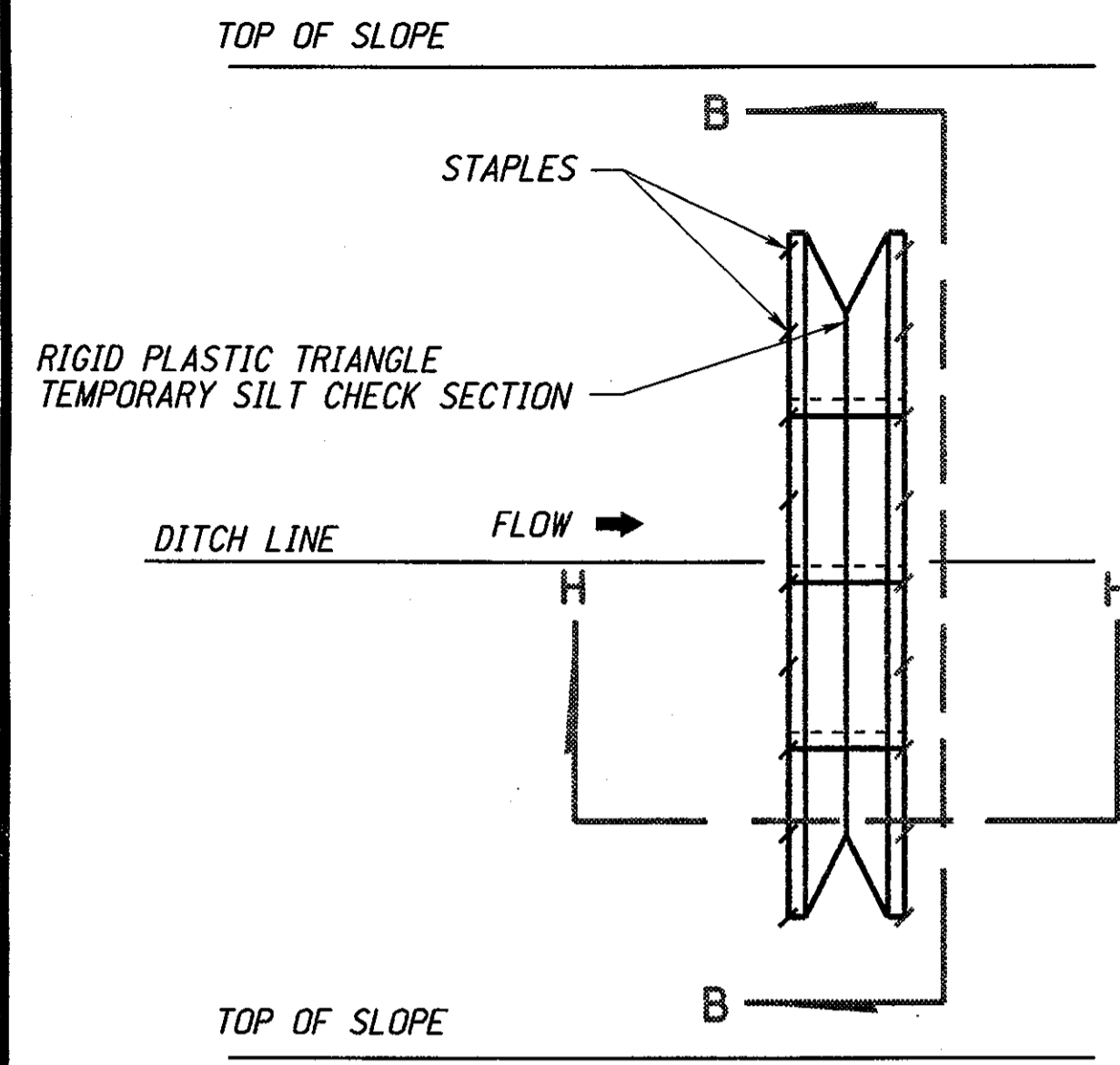
UNDER BRIDGE

NOTE:
 THE MANUFACTURER'S RECOMMENDATIONS FOR STAPLING PATTERNS SHALL BE FOLLOWED.

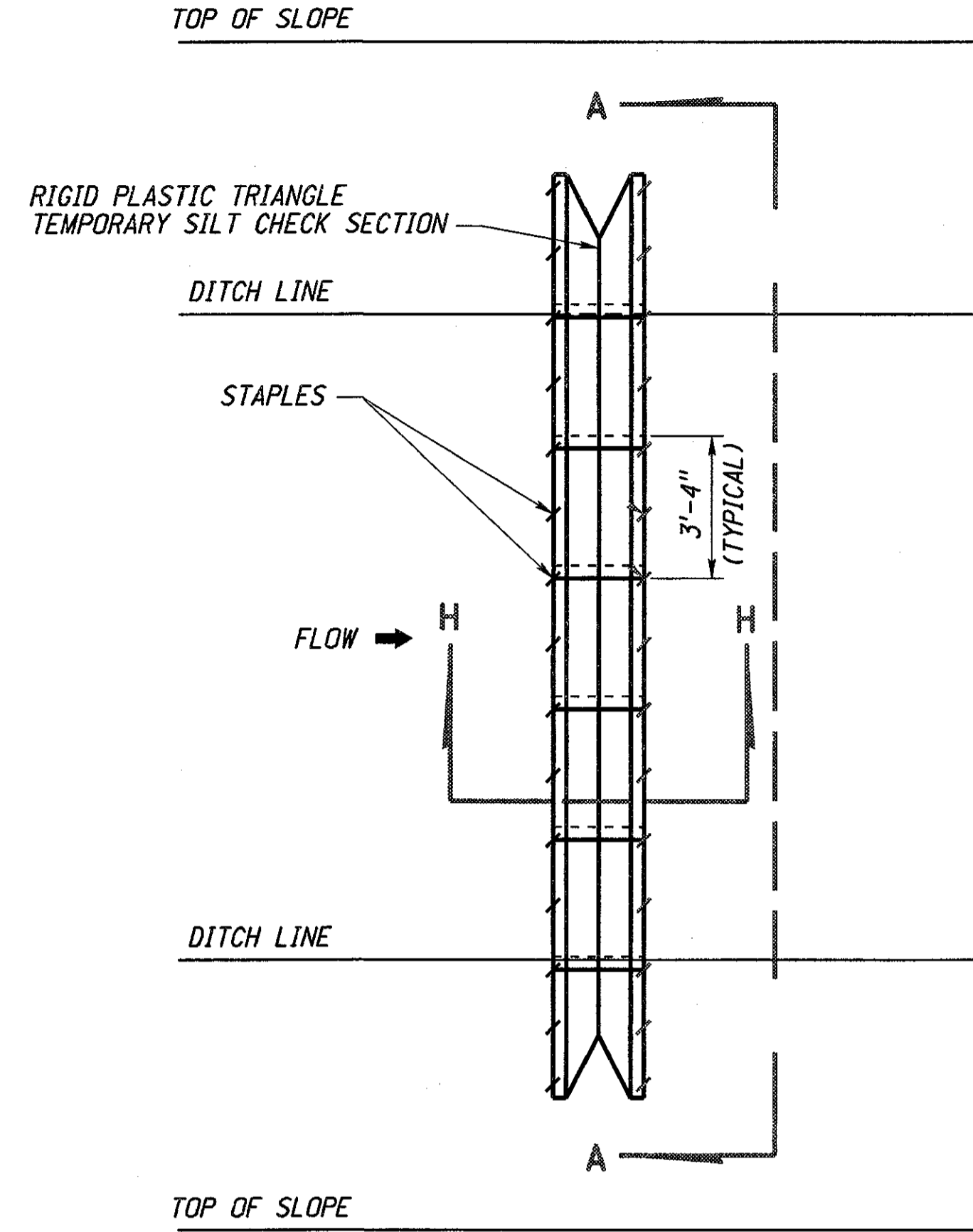


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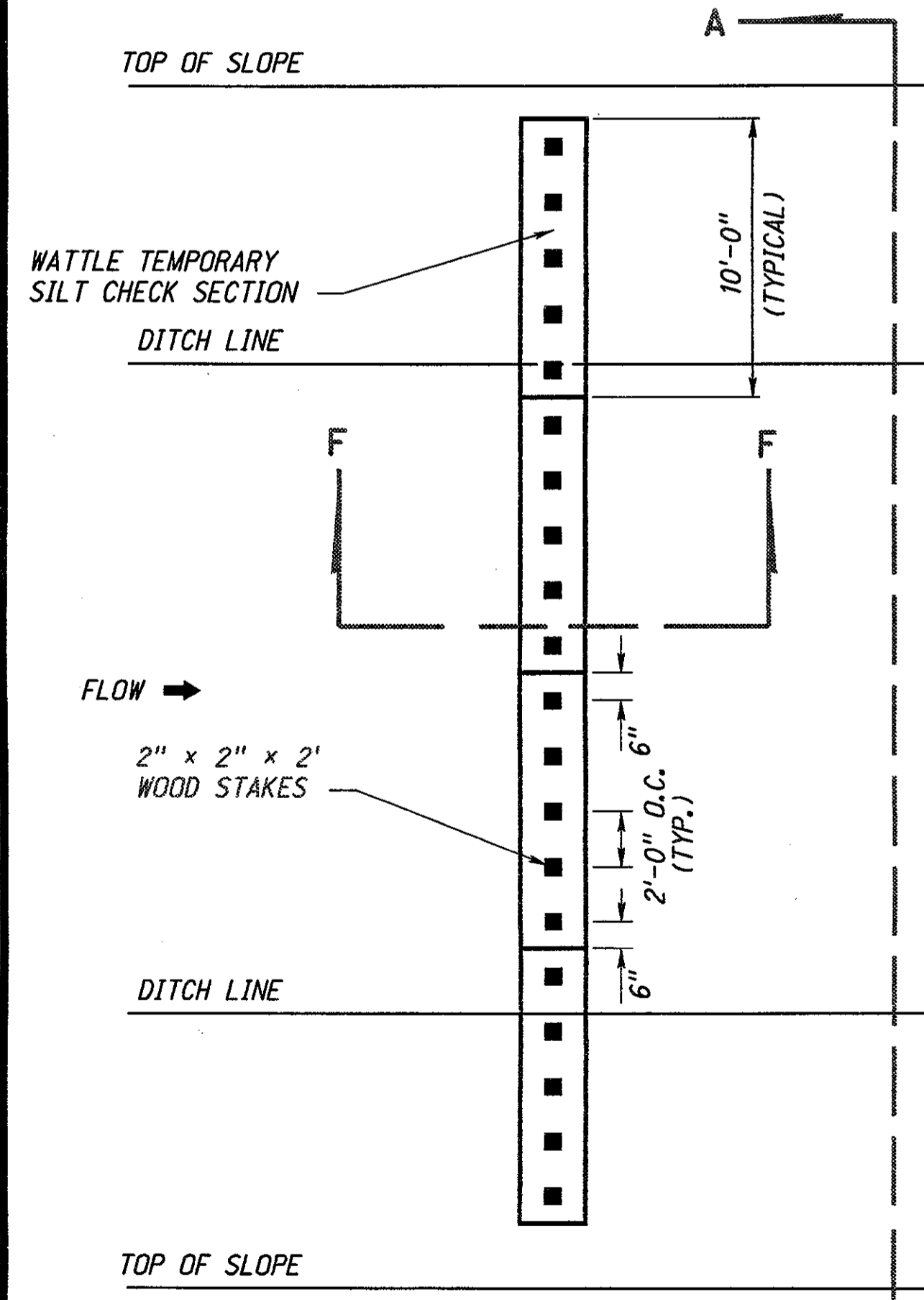
Roadway Design Division



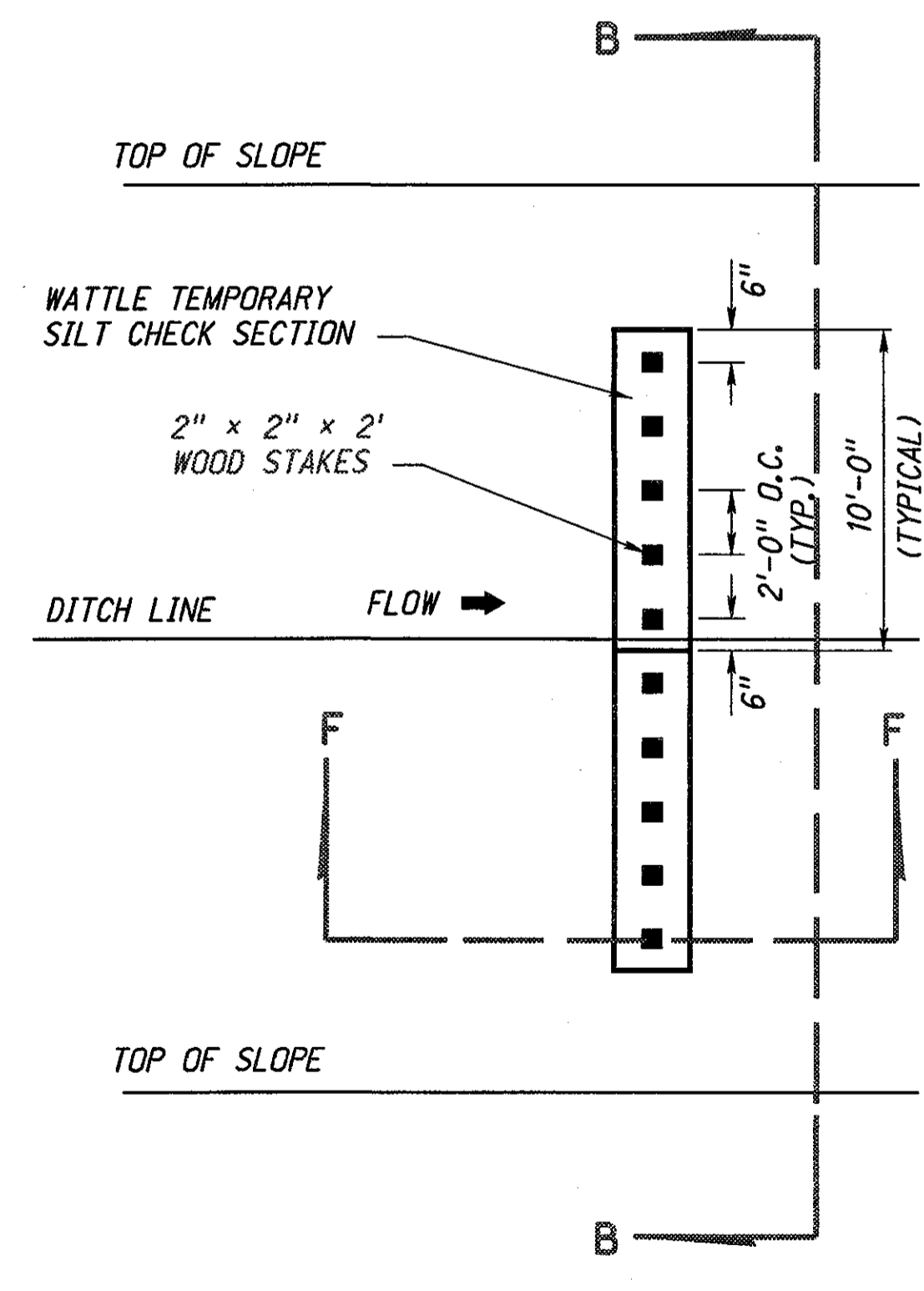
PLAN VIEW
FOR V - DITCH



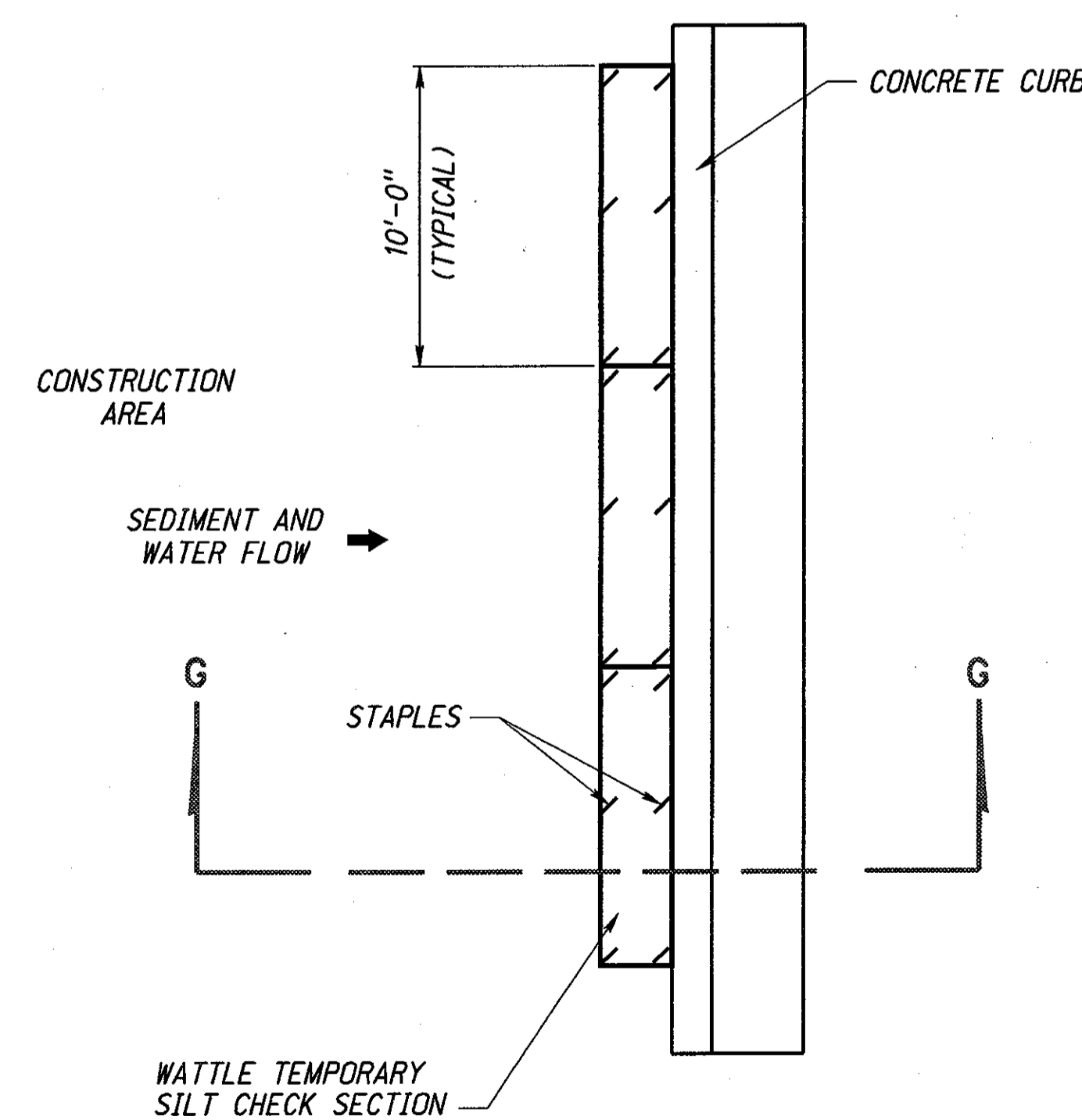
PLAN VIEW
FOR FLAT BOTTOM DITCH



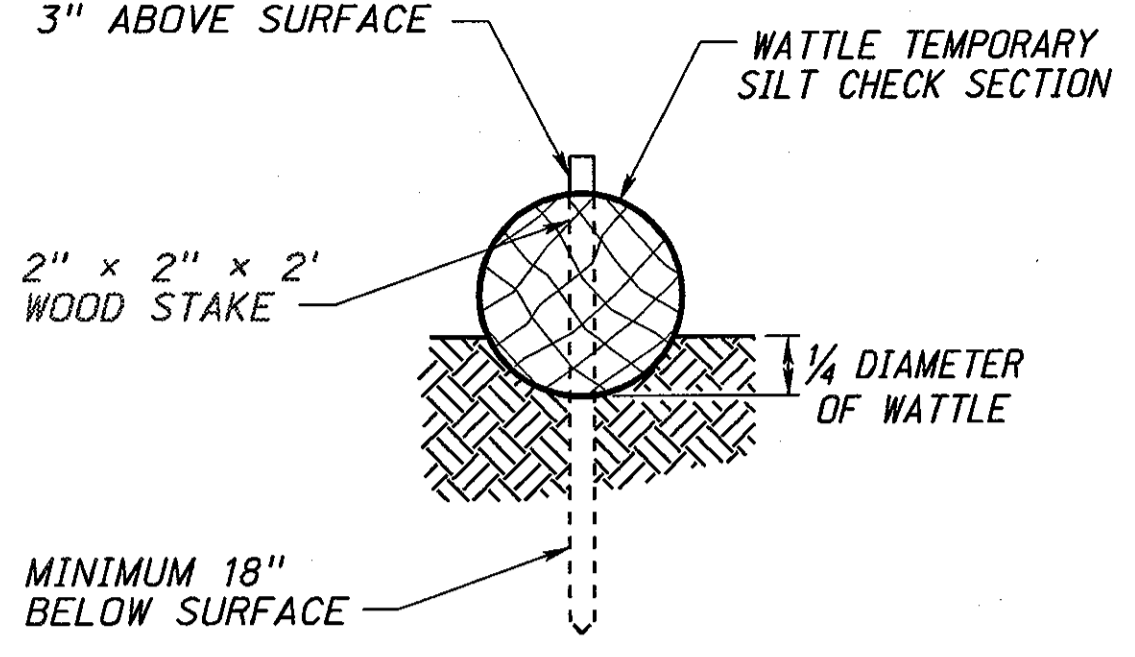
PLAN VIEW
FOR FLAT BOTTOM DITCH



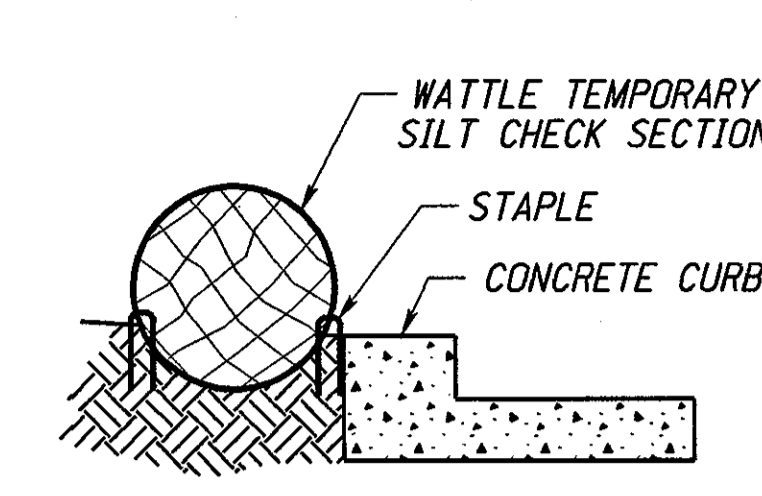
PLAN VIEW
FOR V - DITCH



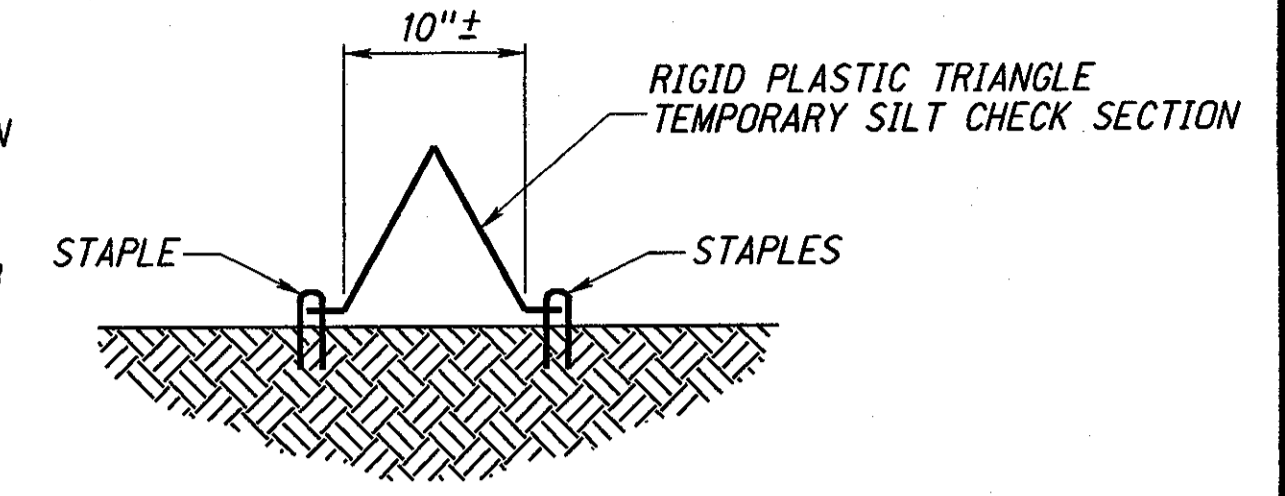
PLAN VIEW
FOR CONTINUOUS BARRIER



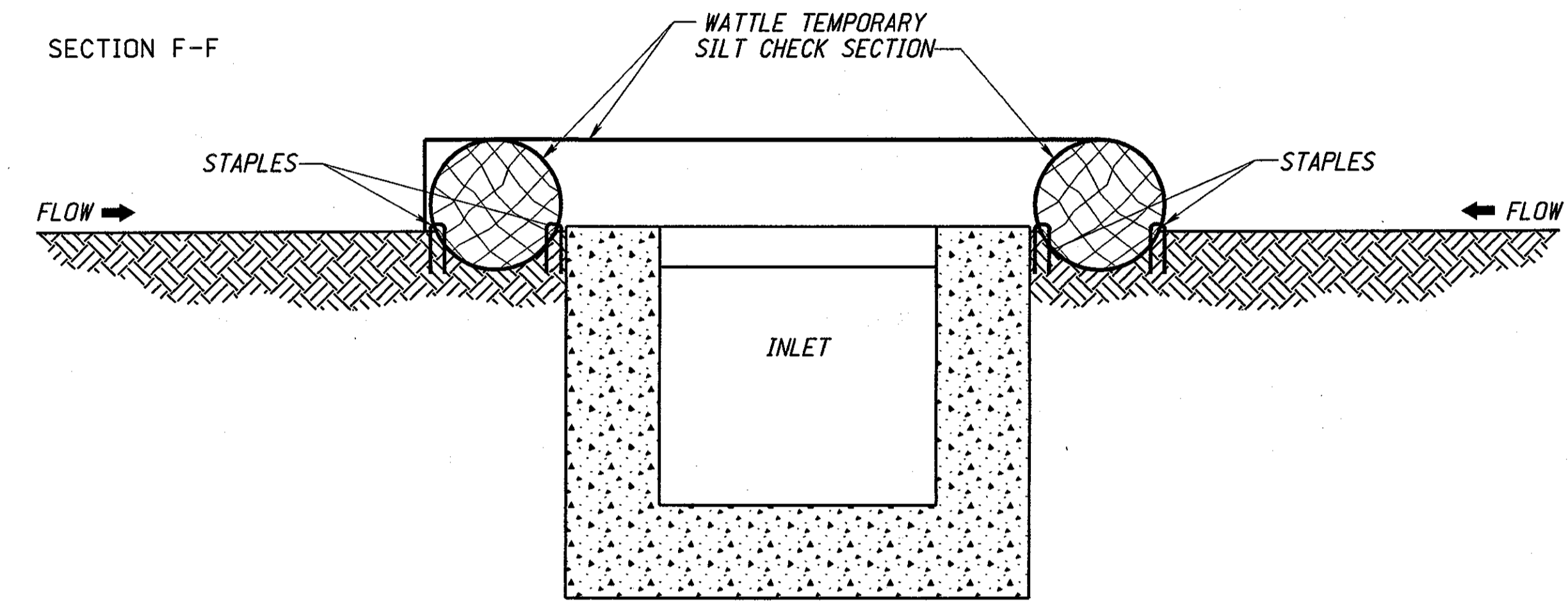
NOTE:
TRENCHING IS OPTIONAL FOR
EXCELSIOR WATTLES ON
BACKSLOPES & FORESLOPES



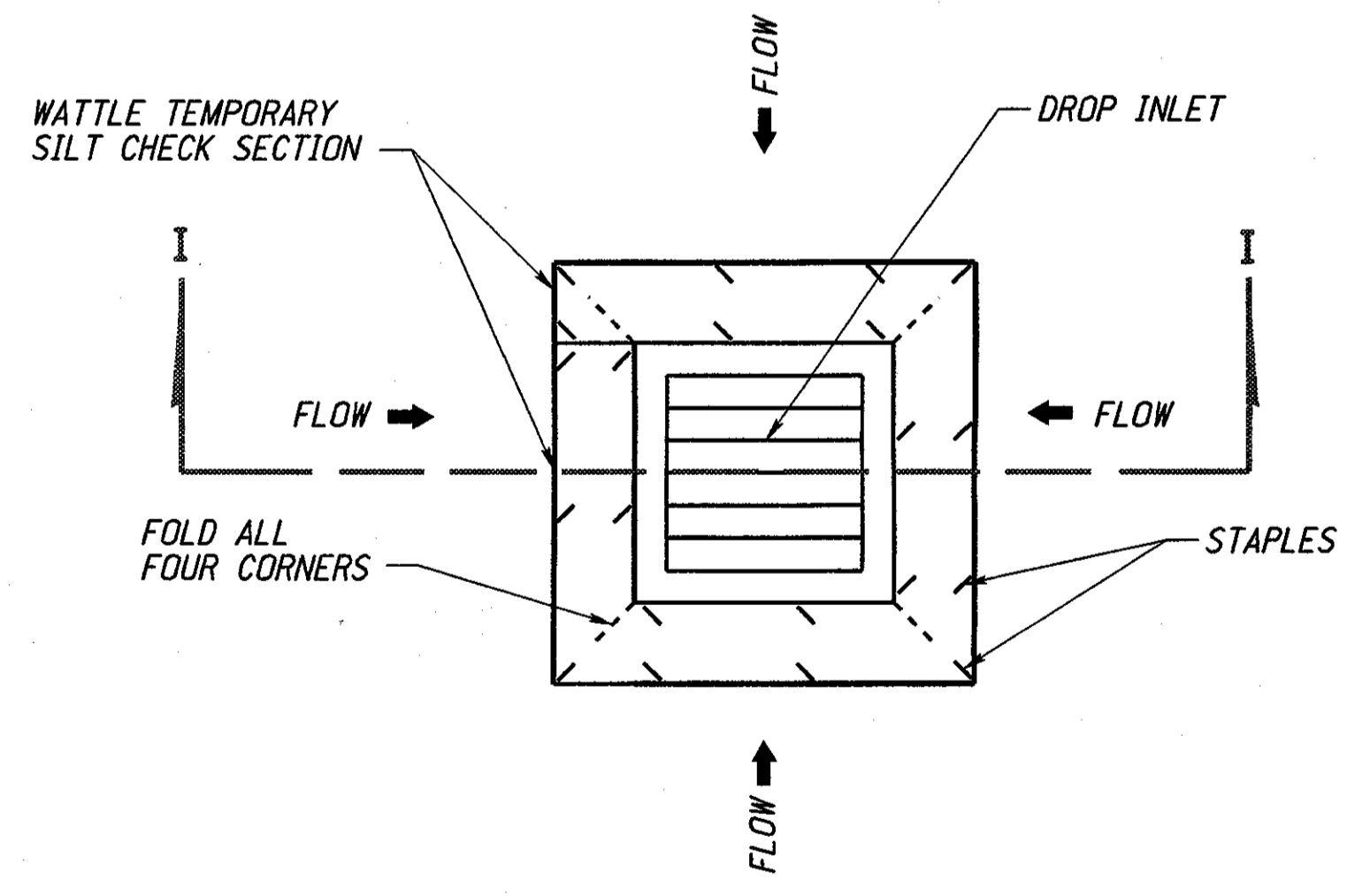
SECTION G-G



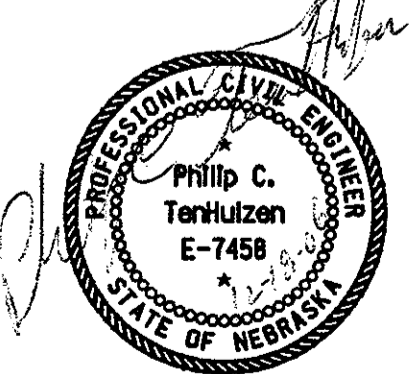
SECTION H-H



SECTION I-I
FOR INLETS

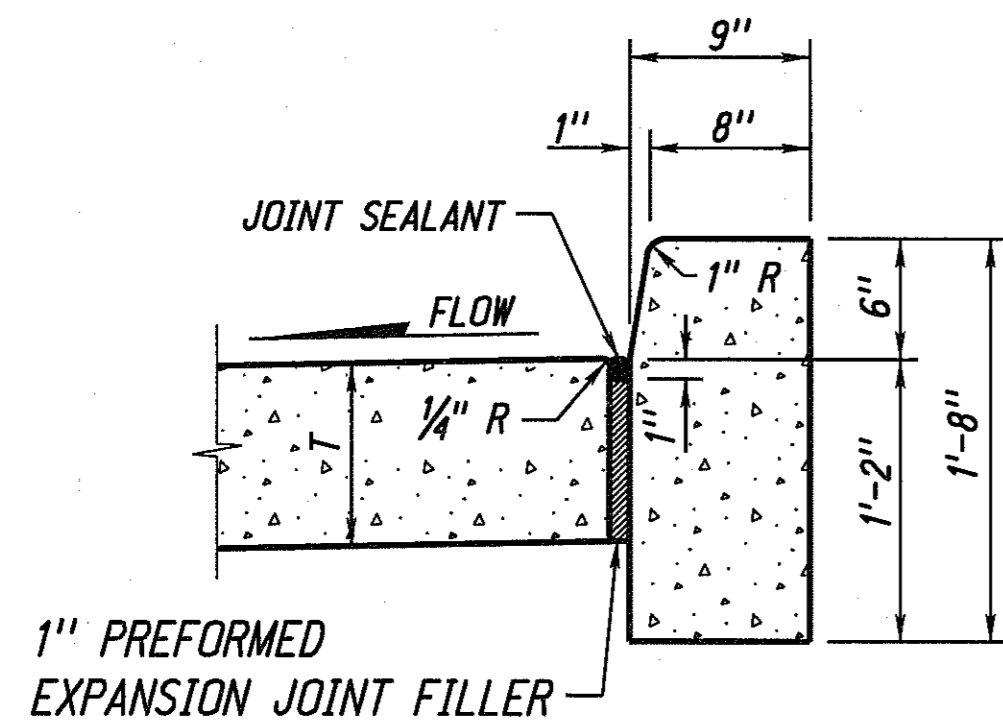


PLAN VIEW
FOR INLETS



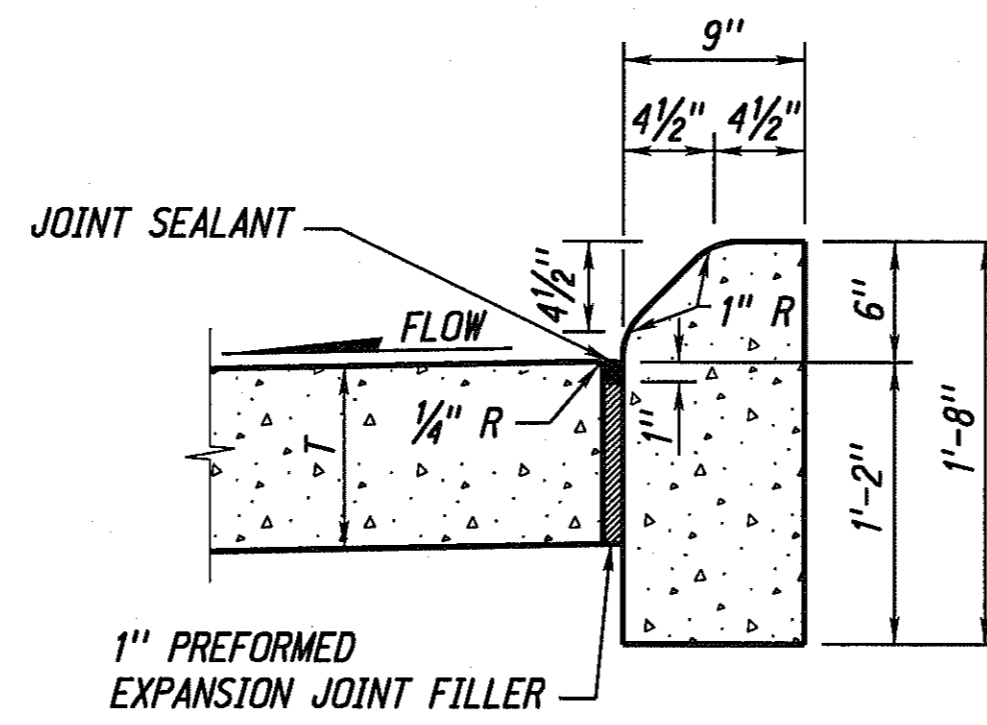
TEMPORARY SILT CHECKS
SHEET 2 OF 2
SPECIAL PLAN 1C

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1001



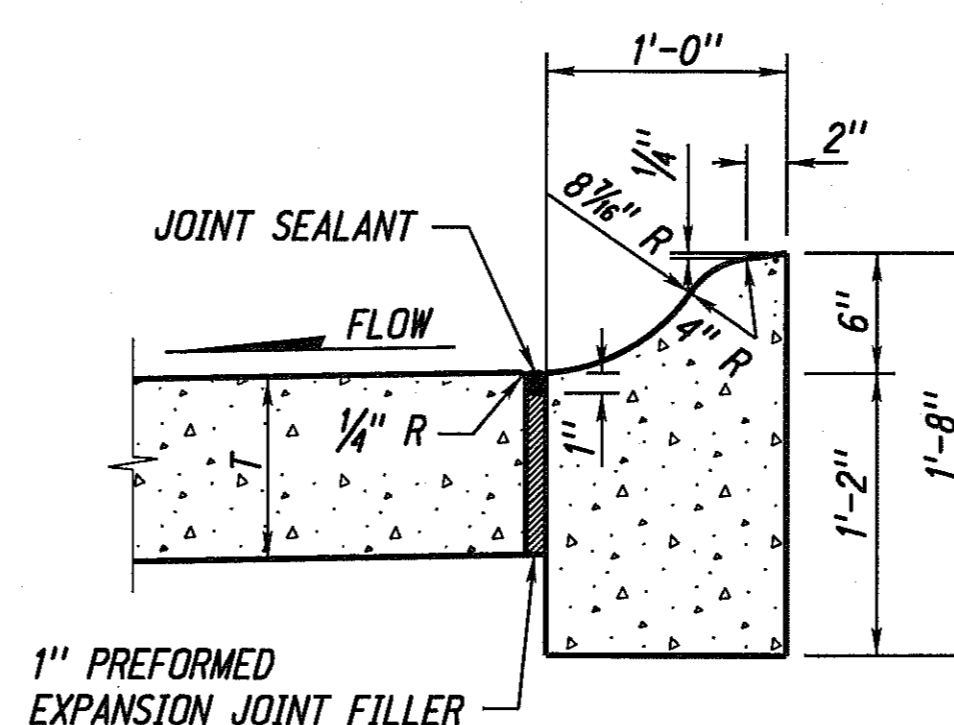
CONCRETE BARRIER CURB *

QUANTITIES
 CONCRETE 4.55 CU. YDS./STA.
 AREA 1.228 SQ. FT.



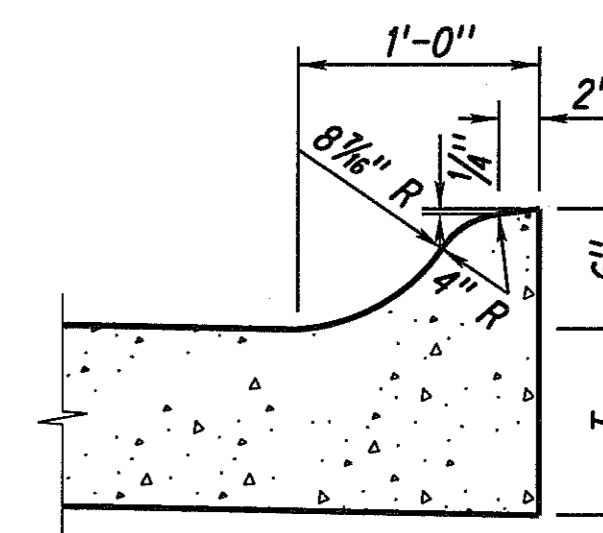
CONCRETE MEDIAN CURB *

QUANTITIES
 CONCRETE 4.42 CU. YDS./STA.
 AREA 1.192 SQ. FT.



**CONCRETE CURB, *
TYPE I**

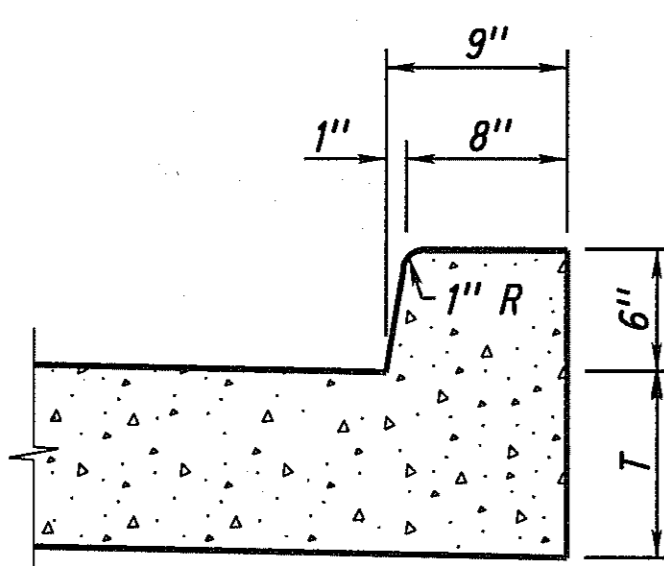
QUANTITIES
 CONCRETE 5.22 CU. YDS./STA.
 AREA 1.408 SQ. FT.



INTEGRAL CONCRETE CURB

QUANTITIES
 CONCRETE 0.89 CU. YDS./STA.
 AREA 0.239 SQ. FT.

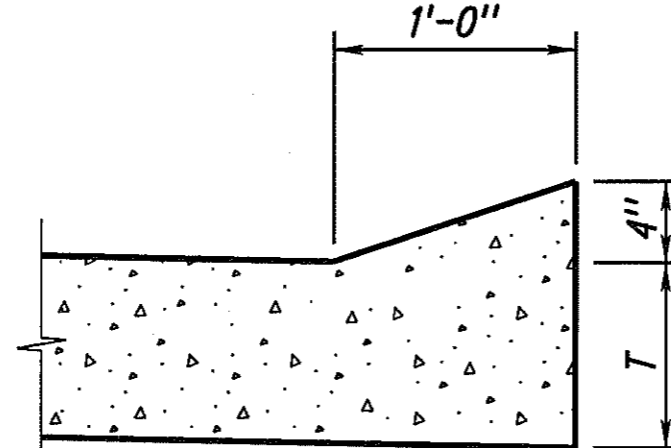
NOTE: * ONE INCH PREFORMED EXPANSION JOINT FILLER SHALL BE PLACED AT INTERVALS OF NOT MORE THAN 100' THRU CONCRETE BARRIER CURB, CONCRETE MEDIAN CURB, AND CONCRETE CURB, TYPE I.



NOTE: MAY BE USED WHEN T IS LESS THAN 12"

INTEGRAL CONCRETE BARRIER CURB

QUANTITIES
 CONCRETE 1.33 CU. YDS./STA.
 AREA 0.359 SQ. FT.



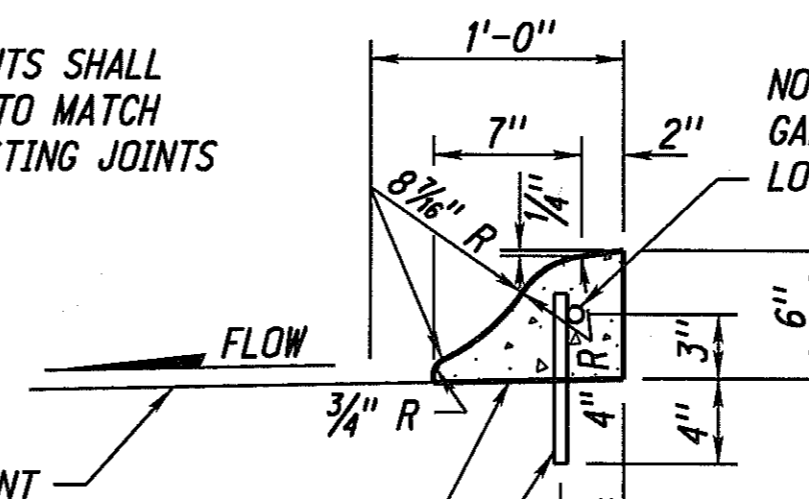
INTEGRAL CONCRETE SLOPING CURB

QUANTITIES
 CONCRETE 0.62 CU. YDS./STA.
 AREA 0.167 SQ. FT.

CONTRACTION JOINTS SHALL BE CONSTRUCTED TO MATCH LOCATION OF EXISTING JOINTS

EXISTING CONCRETE PAVEMENT

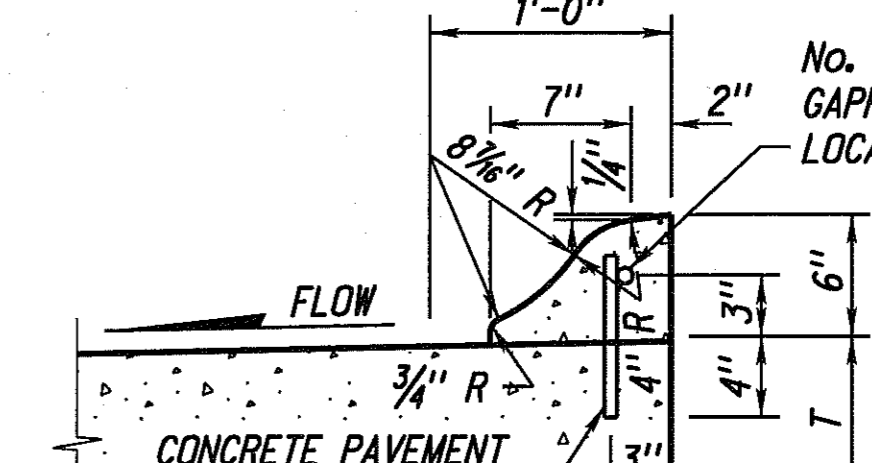
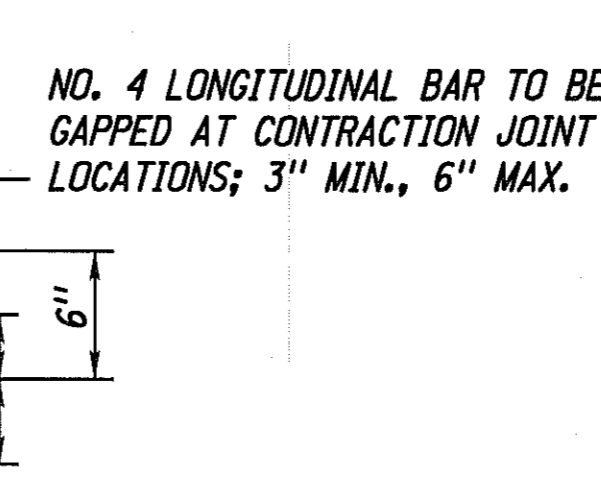
THE AREA BETWEEN CURB AND EXISTING CONCRETE PAVEMENT TO BE CLEANED AND ROUGHENED AS DIRECTED BY THE ENGINEER



NO. 5 x 8" TIE BARS AT 5'-0" CENTERS TO BE DRILLED AND GROUTED INTO EXISTING CONCRETE PAVEMENT (WITH APPROVED GROUT)

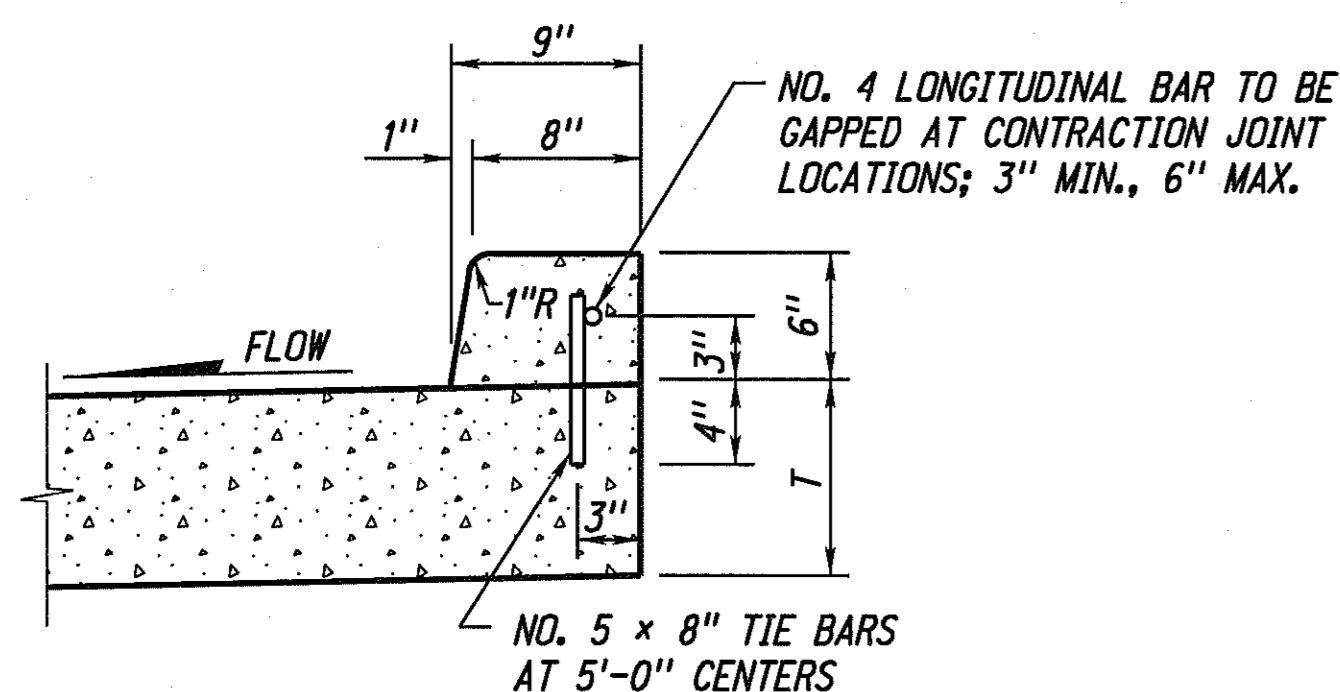
CONCRETE CURB, TYPE II

QUANTITIES
 CONCRETE 0.87 CU. YDS./STA.
 AREA 0.234 SQ. FT.



INTEGRAL CONCRETE CURB ALTERNATE TYPE

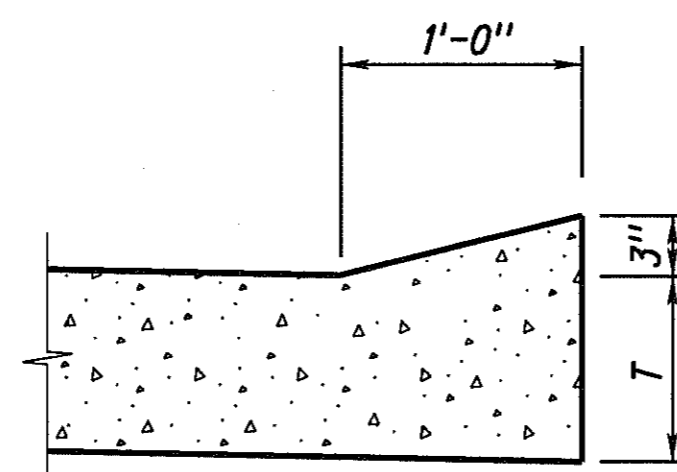
QUANTITIES
 CONCRETE 0.87 CU. YDS./STA.
 AREA 0.234 SQ. FT.



NOTE: USE WHEN T IS 12" OR GREATER

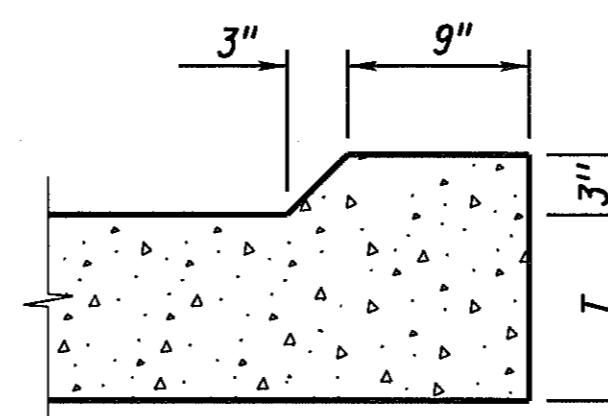
INTEGRAL CONCRETE BARRIER CURB ALTERNATE TYPE

QUANTITIES
 CONCRETE 1.33 CU. YDS./STA.
 AREA 0.359 SQ. FT.



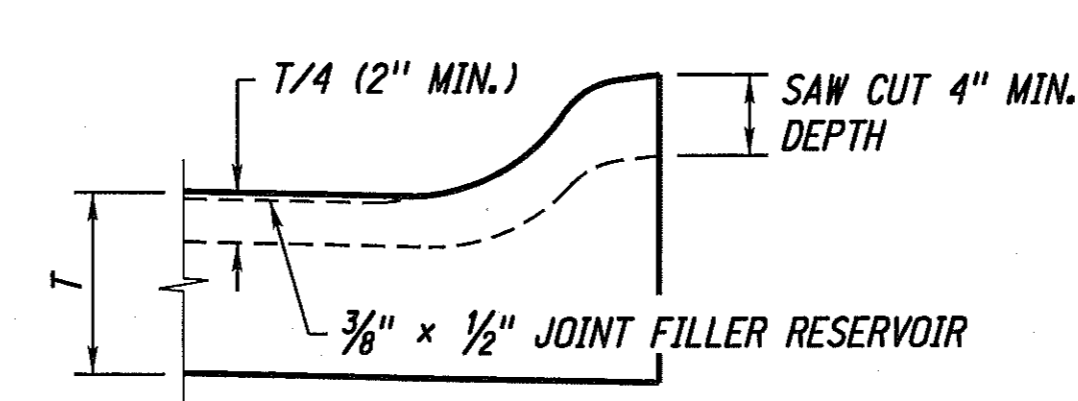
INTEGRAL CONCRETE SLOPING CURB

QUANTITIES
 CONCRETE 0.46 CU. YDS./STA.
 AREA 0.123 SQ. FT.



EROSION CONTROL CURB

QUANTITIES
 CONCRETE 0.81 CU. YDS./STA.
 AREA 0.219 SQ. FT.



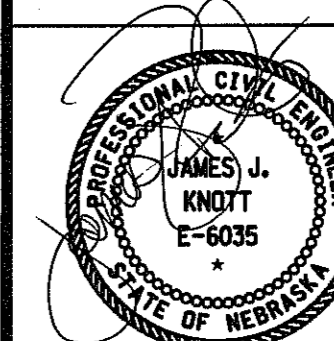
CONTRACTION JOINT THRU CURB

NOTE: T = PAVEMENT THICKNESS

R10	FEB 09	MULTIPLE REVISIONS
R9	MAR.05	MULTIPLE REVISIONS
R8	MAY 01	MULTIPLE REVISIONS
REV. NO.	DATE	DESCRIPTION OF REVISION

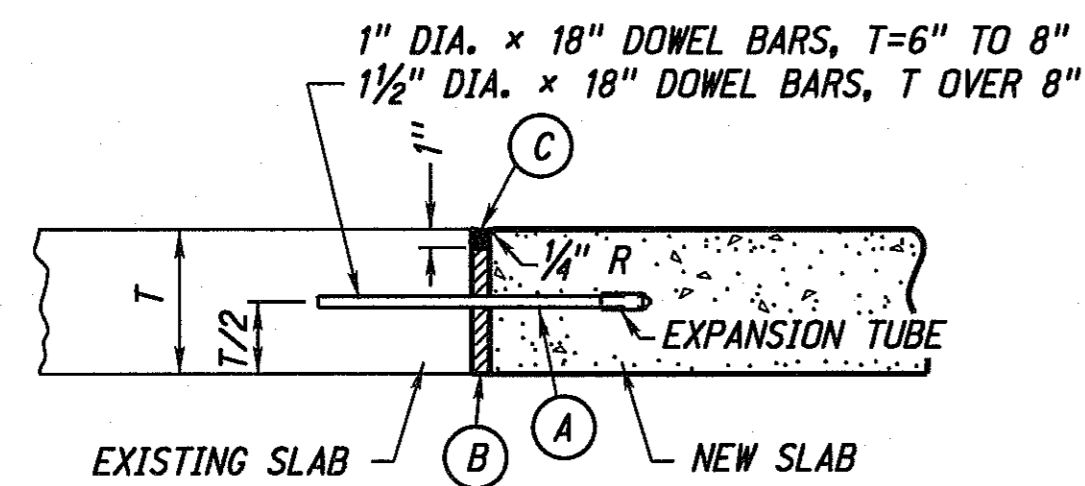
NEBRASKA DEPARTMENT OF ROADS
 STANDARD PLAN NO. 301-R10

PAVEMENT DETAILS



ORIGINAL:
 JANUARY 31, 1974
 DATE

1
 3



- (A) GREASE DOWELBAR ON EXPANSION TUB SIDE
- (B) 1" PREFORMED EXPANSION JOINT FILLER
- (C) JOINT SEALANT

NOTES:

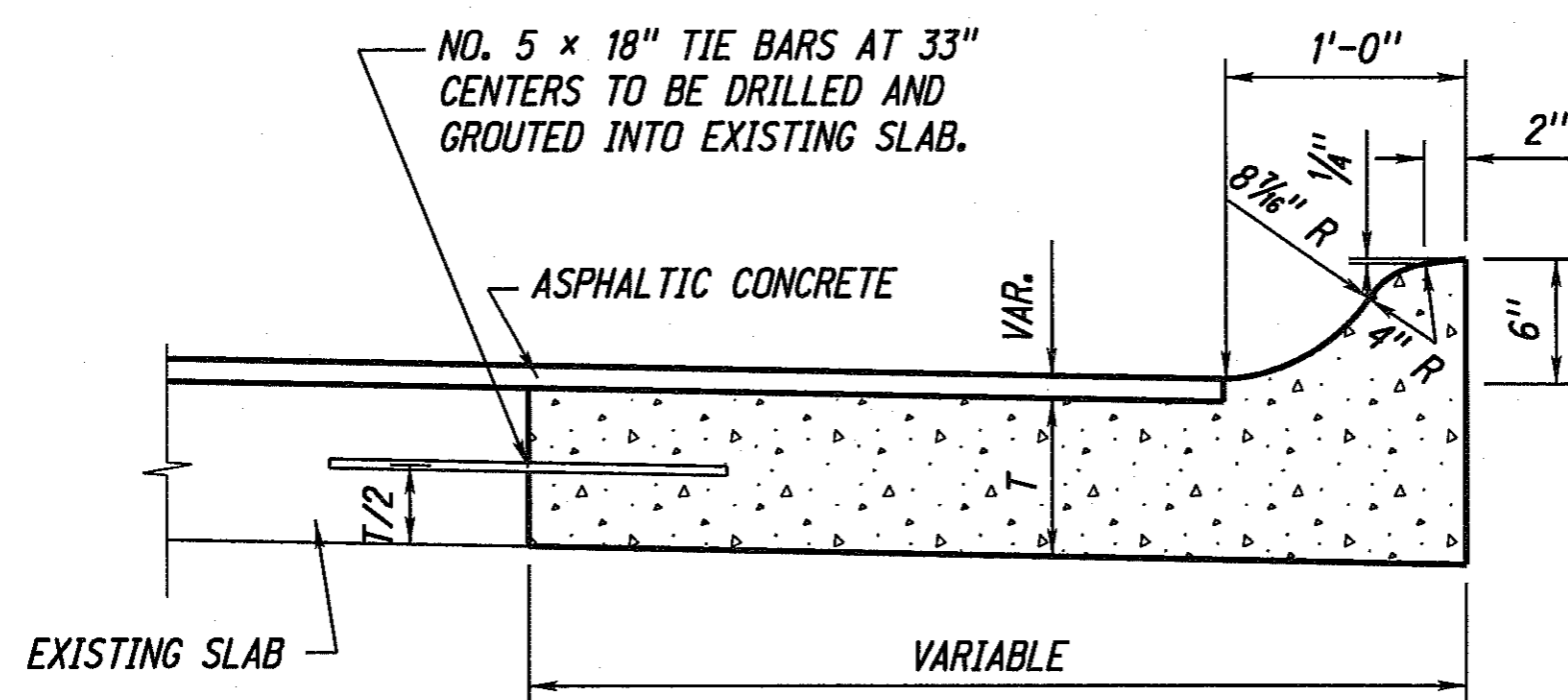
DOWEL BARS SHALL BE DRILLED TO A DEPTH OF 8" INTO EXISTING SLAB AND GROUTED.

DOWEL BARS SHALL BE PLACED AT 1'-0" CENTERS. THE OUTSIDE DOWEL BAR SHALL BE PLACED 6" FROM THE EDGE OF THE SLAB.

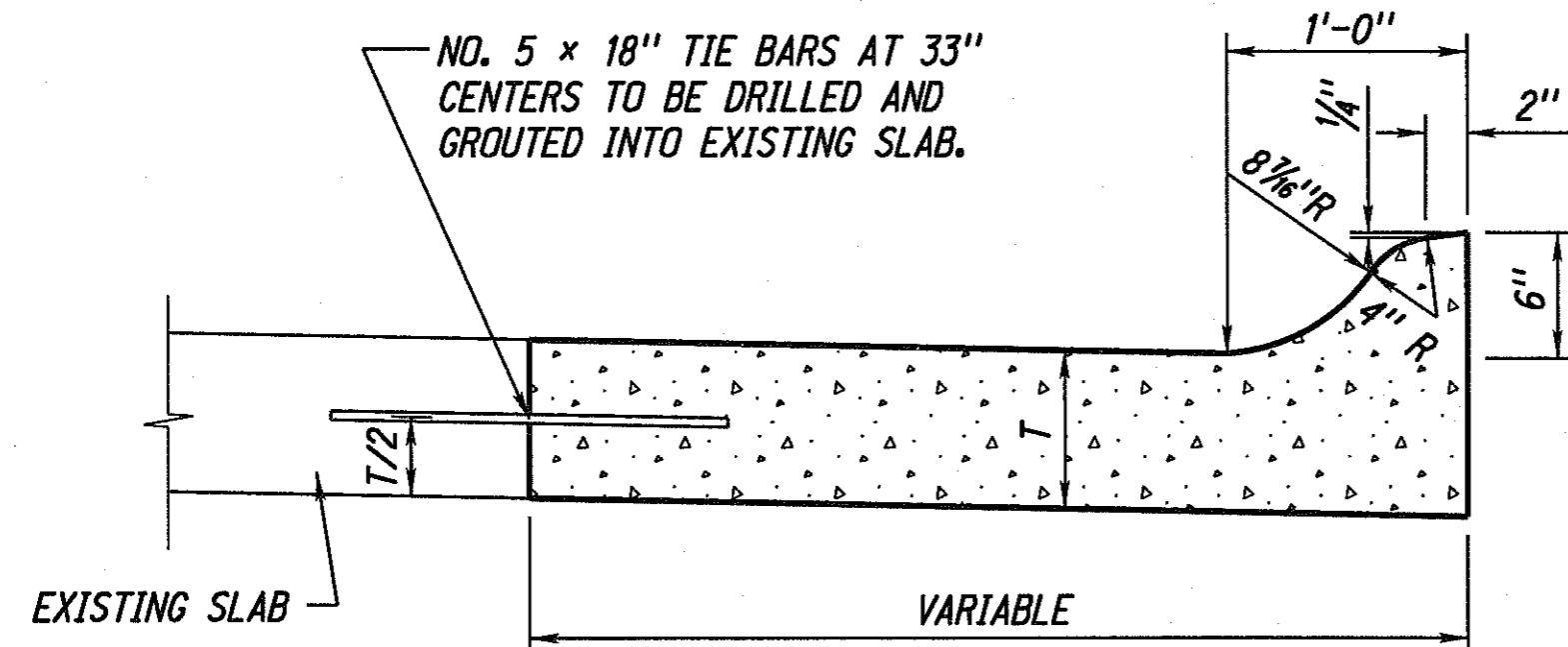
THIS JOINT SHALL BE CONSTRUCTED TRANSVERSE TO THE ROADWAY WHERE THE NEW CONCRETE ABUTS THE EXISTING CONCRETE.

DOWEL BARS SHALL BE PLACED PARALLEL TO THE ROADWAY & AND TO THE ROADBED.

EXPANSION JOINT (SUBSIDIARY)



CONCRETE BASE COURSE W/INTEGRAL CURB



THE FOLLOWING NOTE IS TYPICAL FOR CONCRETE BASE COURSE W/INTEGRAL CURB AND CONCRETE PAVEMENT WIDENING: CONTRACTION AND EXPANSION JOINTS SHALL BE CONSTRUCTED TO MATCH LOCATIONS OF EXISTING JOINTS.

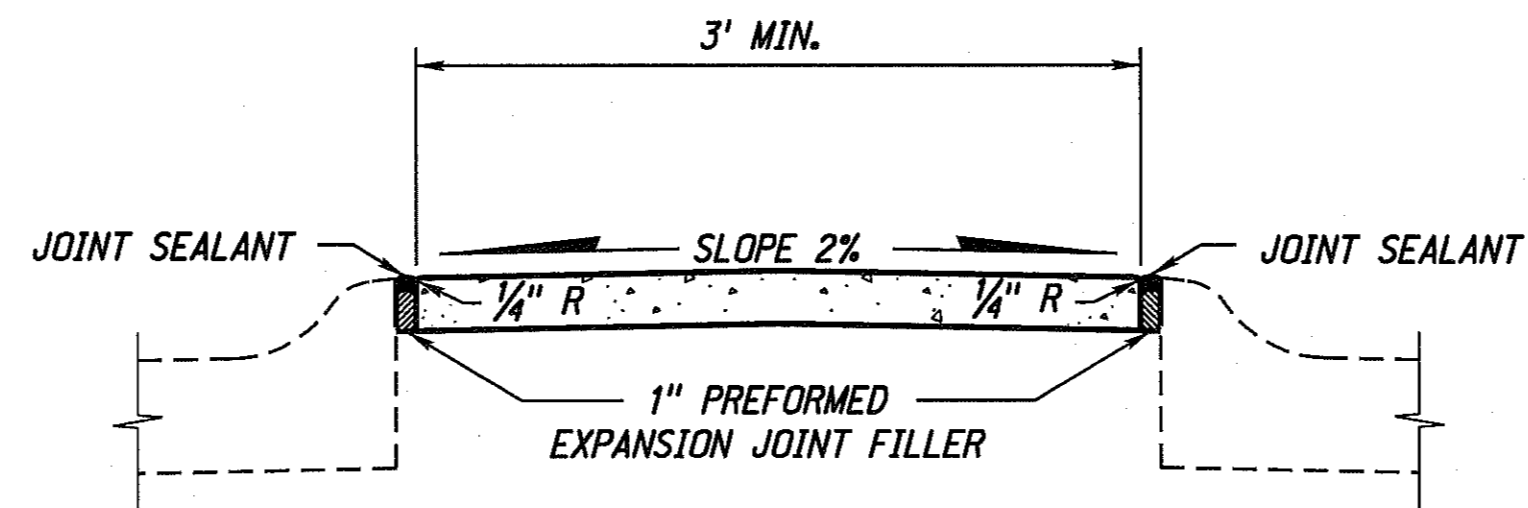
CONCRETE PAVEMENT WIDENING

ONE INCH PREFORMED EXPANSION JOINT FILLER SHALL BE PLACED ACROSS THE FULL WIDTH OF THE MEDIAN SURFACING AT INTERVALS OF NOT MORE THAN 49'-0".

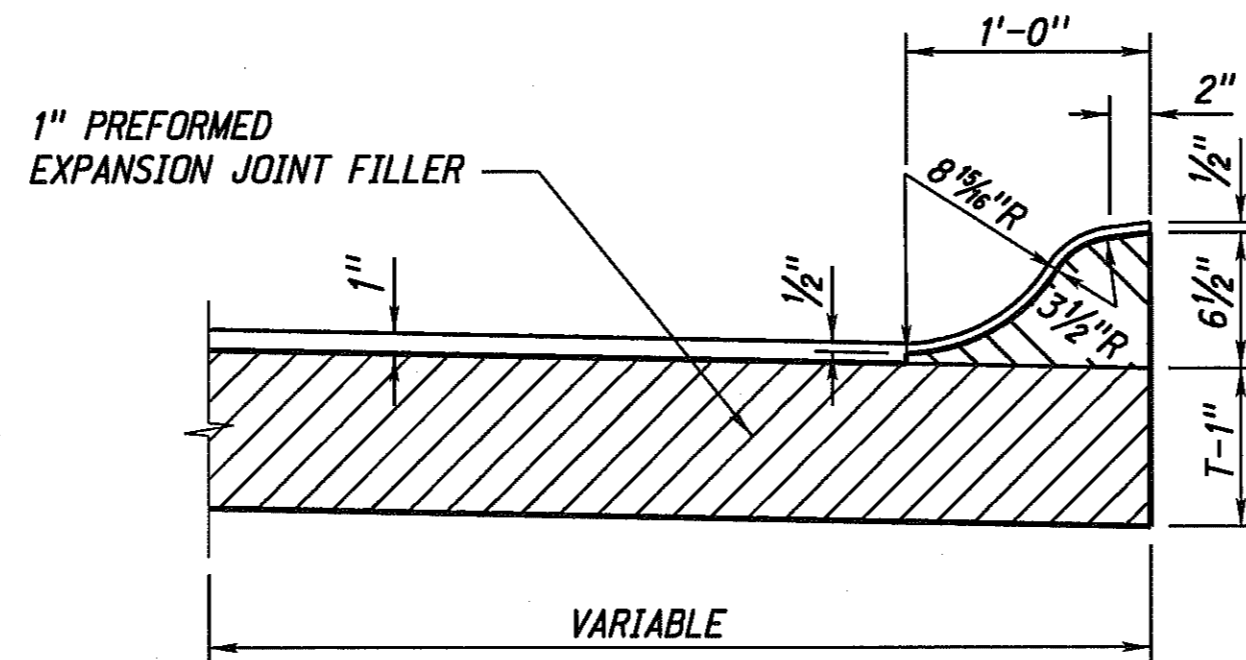
LONGITUDINAL JOINTS ONE INCH DEEP SHALL BE MADE IN ALL MEDIANS WHEN SURFACING WIDTH IS 16' OR GREATER.

TRANSVERSE JOINTS ONE INCH DEEP SHALL BE MADE IN ALL MEDIANS AT INTERVALS OF NOT MORE THAN 8'.

TRANSVERSE AND LONGITUDINAL JOINTS SHALL NOT BE FILLED.



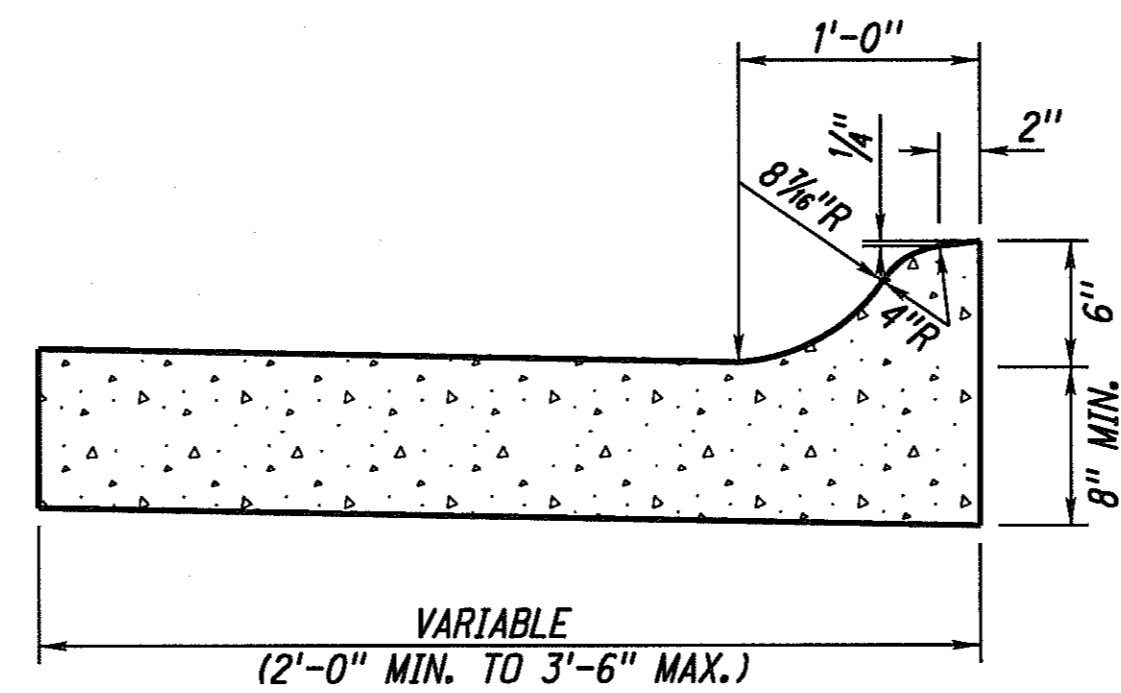
DETAILS OF CONCRETE MEDIAN SURFACING



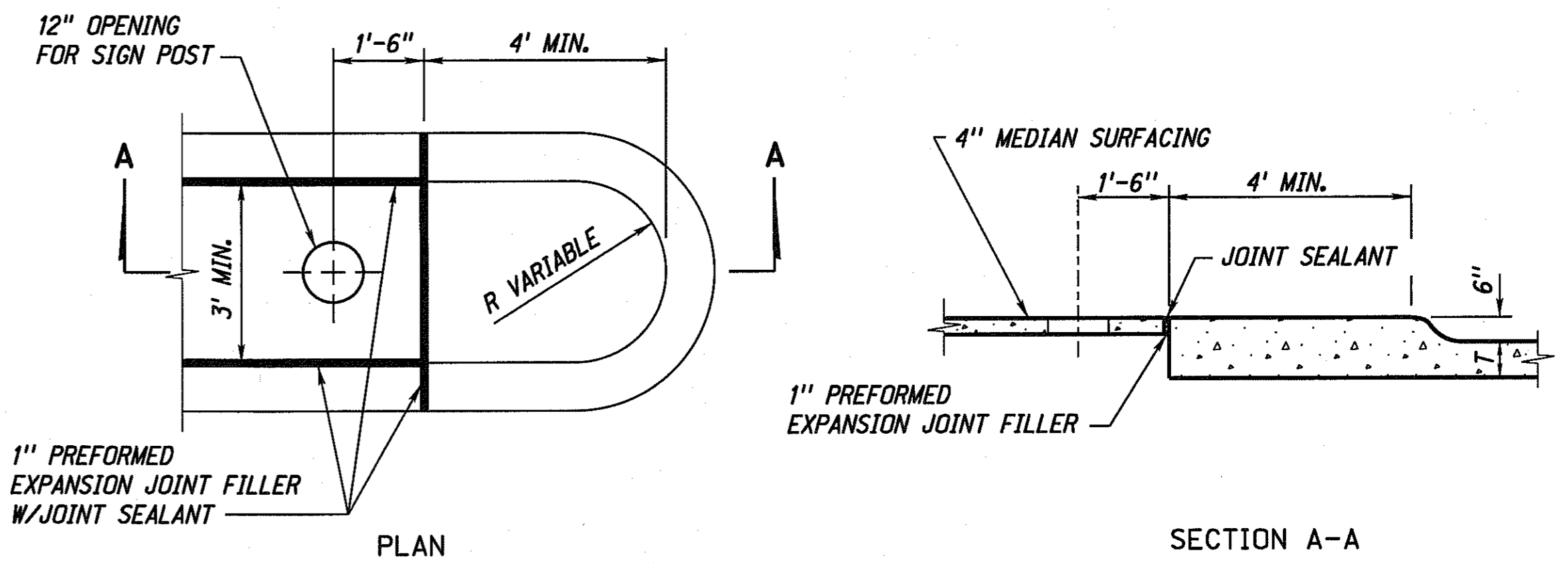
ONE INCH PREFORMED EXPANSION JOINT FILLER SHALL BE PLACED AT INTERSECTION RETURNS AND WHERE SHOWN ON THE PLANS. TRANSVERSE JOINTS SHALL BE PROVIDED EVERY 8' OR WHERE SHOWN ON THE PLANS.

NOTE: RECESS THE EXPANSION JOINT FILLER 1/2" FROM THE TOP SURFACE OF THE CURB TYPE UNDER CONSTRUCTION

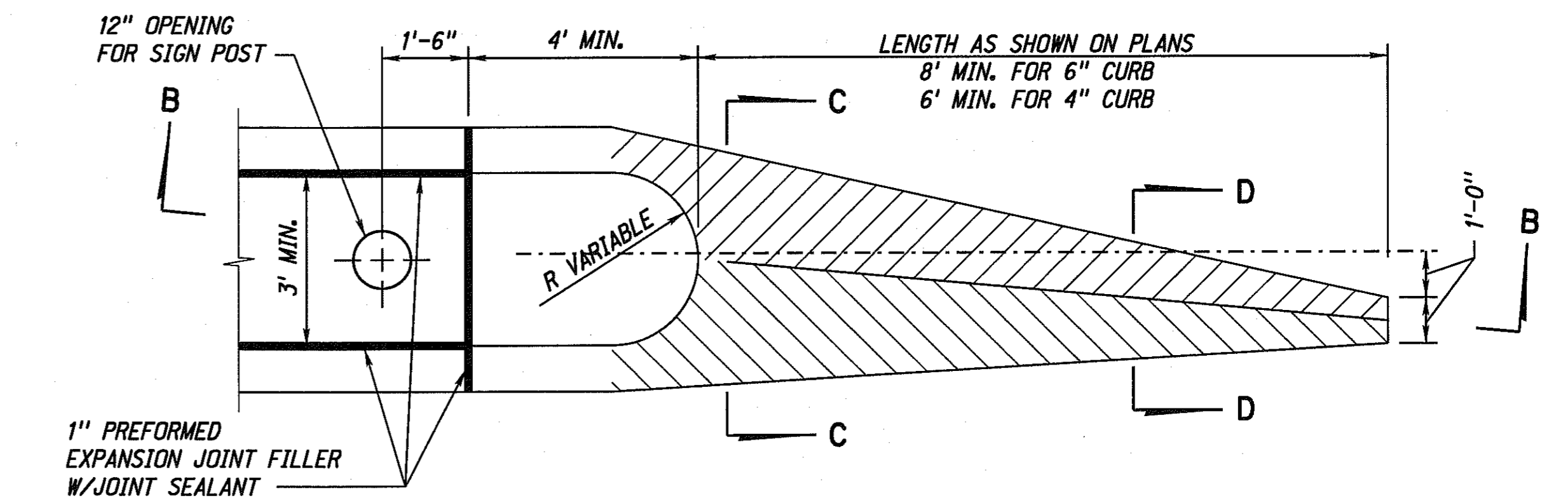
DETAIL FOR CUTTING EXPANSION JOINT FILLER



COMBINATION CONCRETE CURB & GUTTER

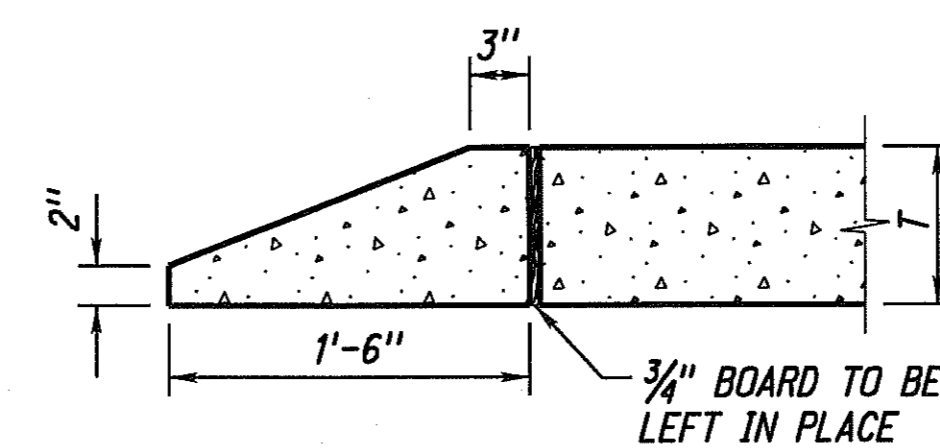


DETAIL AT END OF MEDIAN ISLAND



NOTE: EXISTING CONCRETE PAVEMENT IS TO BE REMOVED IN AREA COVERED BY CONCRETE ISLAND NOSE.

DETAILS OF CONCRETE ISLAND NOSE



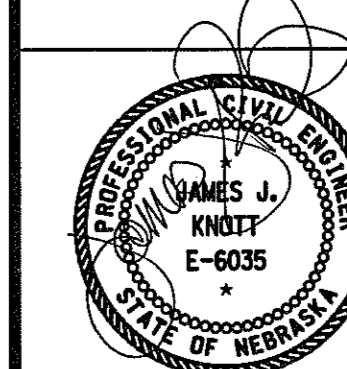
CONCRETE HEADER

NOTE: T = PAVEMENT THICKNESS

REV. NO.	DATE	DESCRIPTION OF REVISION
R10	FEB 09	MULTIPLE REVISIONS
R9	MAR.05	MULTIPLE REVISIONS
R8	MAY 01	MULTIPLE REVISIONS

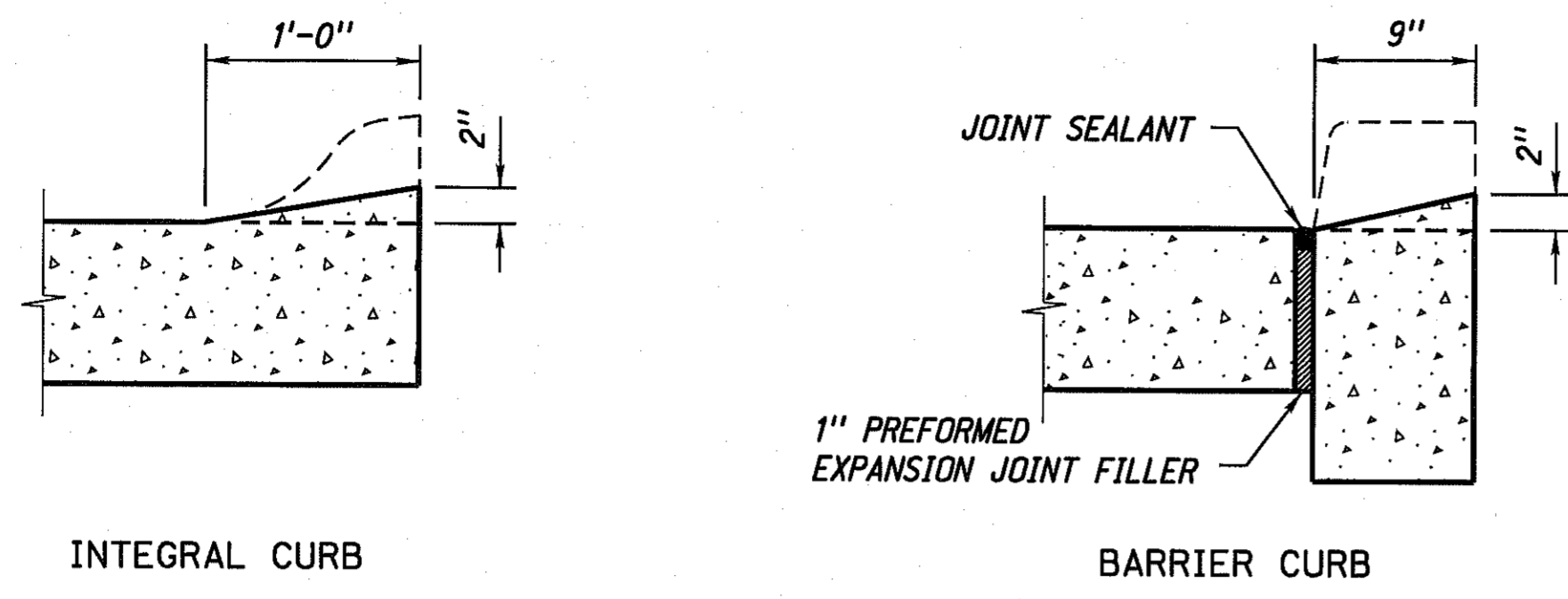
NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 301-R10

PAVEMENT DETAILS



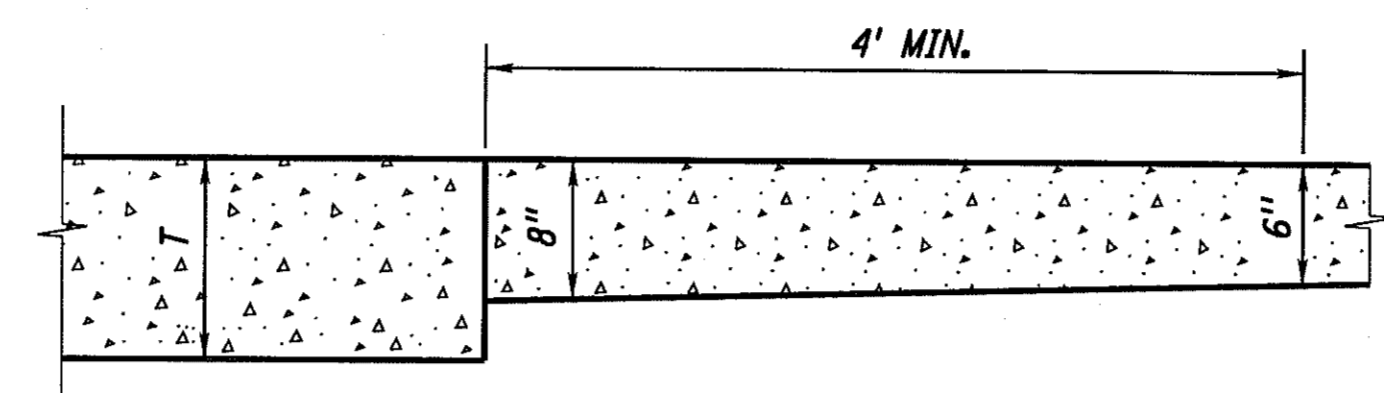
ORIGINAL:
JANUARY 31, 1974
DATE

2
3

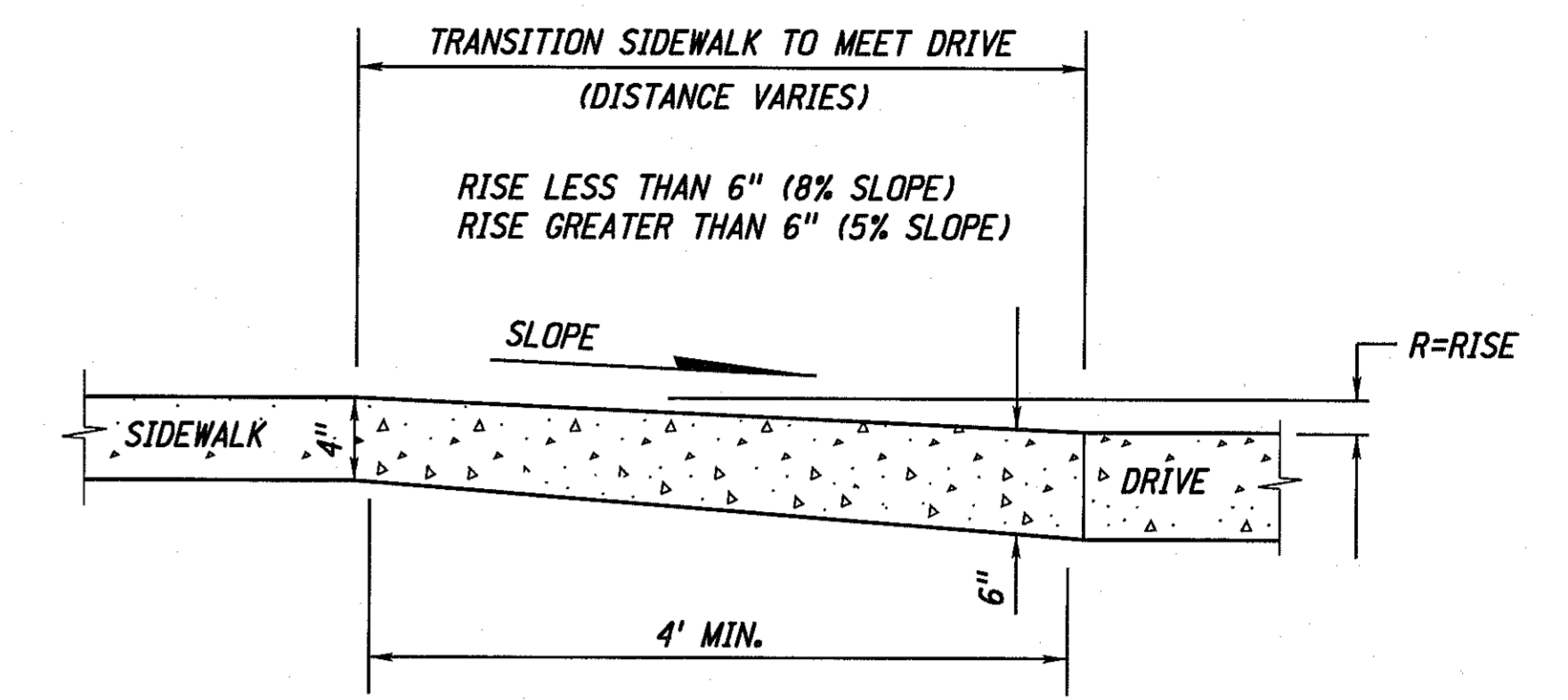


INTEGRAL CURB BARRIER CURB

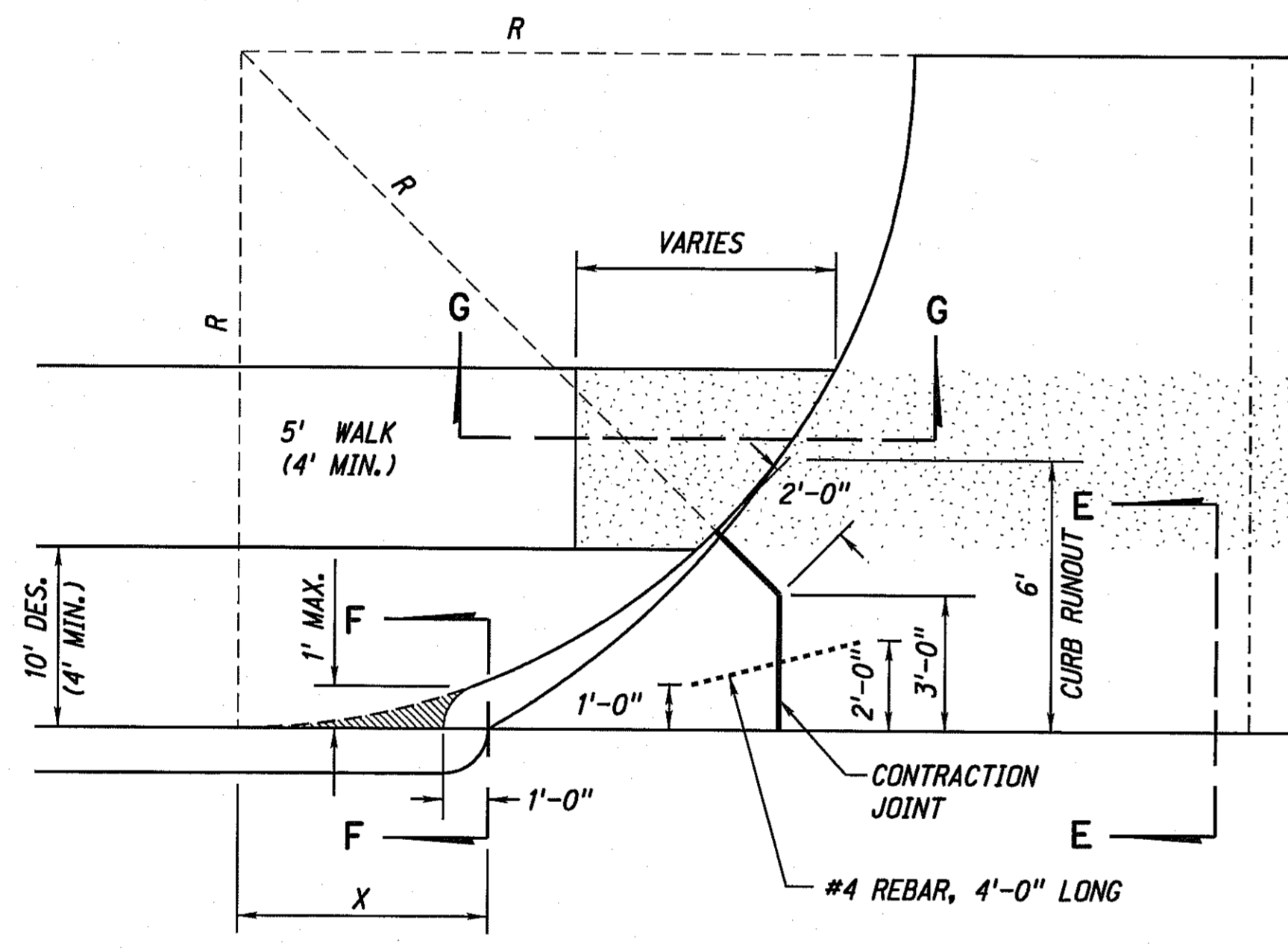
DETAILS OF CURB DROPS



SECTION E-E (RURAL DRIVEWAY)



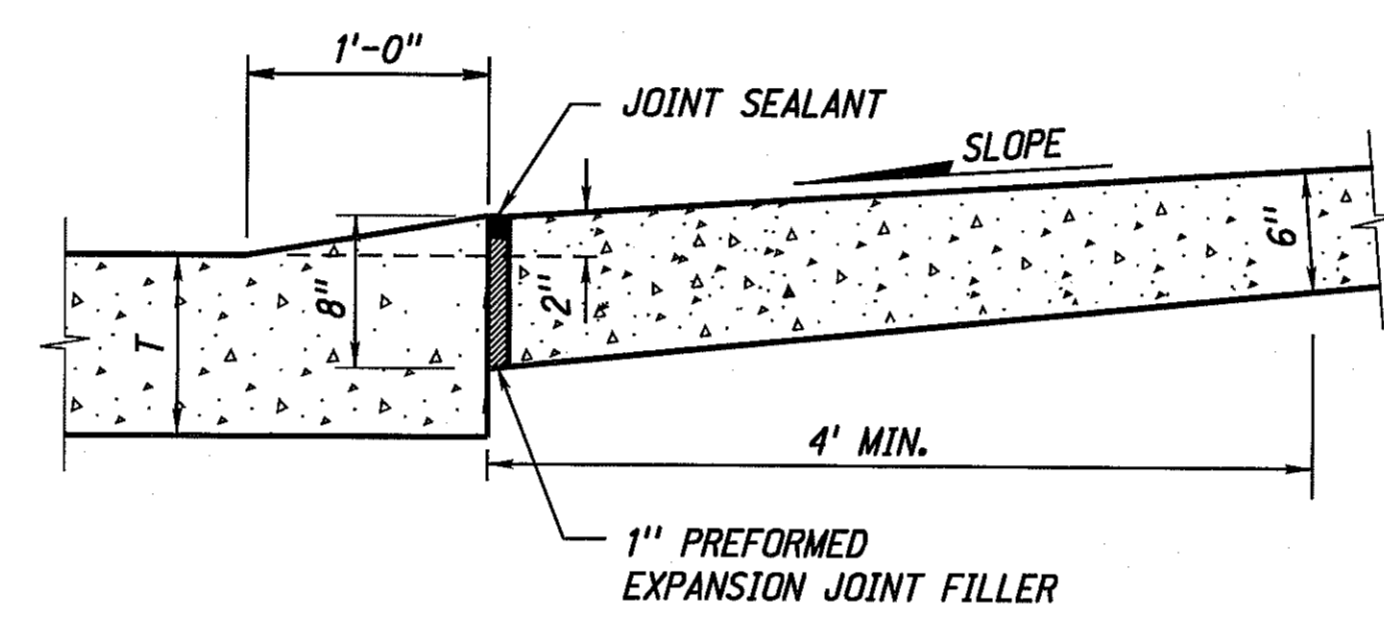
SECTION G-G



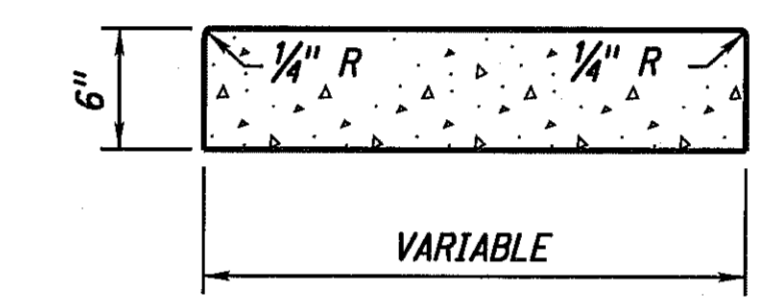
DRIVEWAY PLAN

R	X
5'	3.00'
10'	4.36'
15'	5.38'
20'	6.24'
25'	7.00'
30'	7.68'
35'	8.31'
40'	8.89'

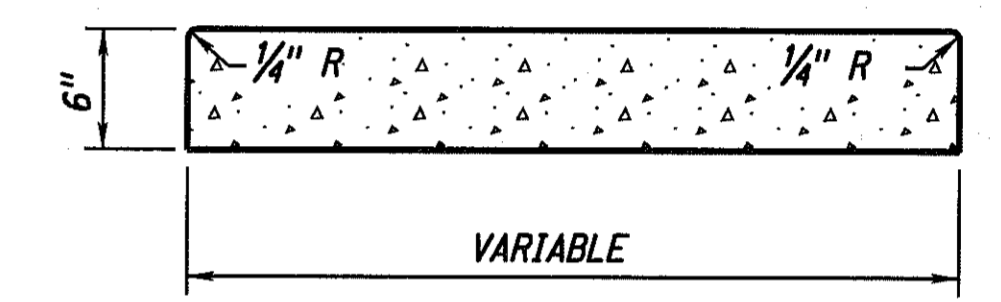
R = RADIUS
X = $\sqrt{(2R-1)}$
(X & R IN FEET)



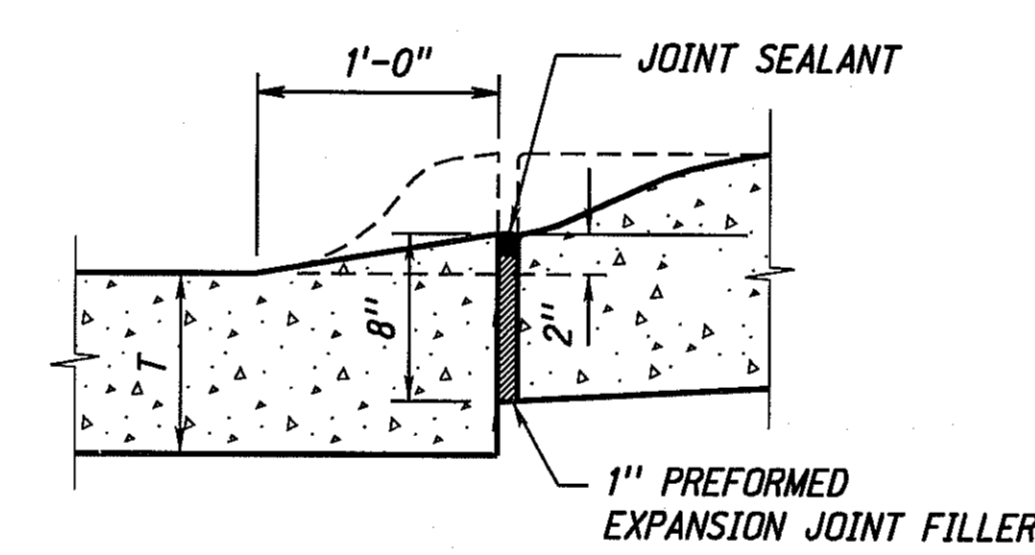
SECTION E-E (URBAN DRIVEWAY)



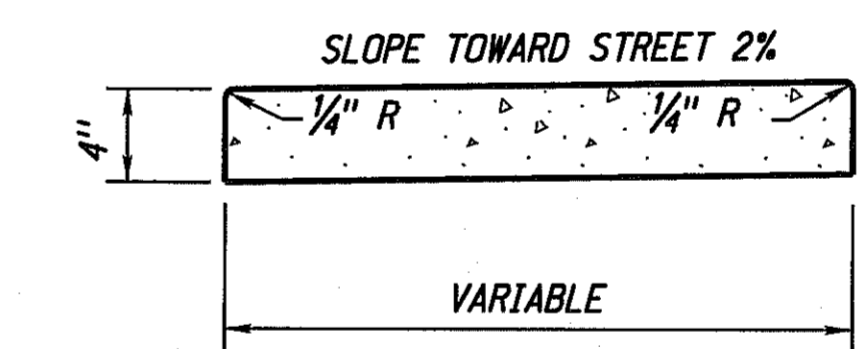
CROSSWALK



DRIVEWAY

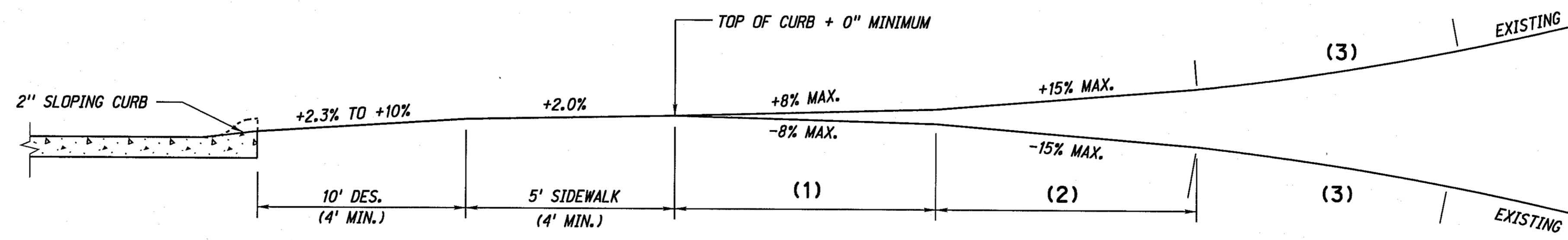


SECTION F-F (URBAN DRIVEWAY)



SIDEWALK

NOTE:
1" PREFORMED EXPANSION JOINT FILLER SHALL BE PLACED IN ALL SIDEWALKS OR CROSSWALKS AT INTERVALS OF NOT MORE THAN 50'-0", AND AT ALL POINTS WHERE SIDEWALKS OR CROSSWALKS ARE ADJACENT TO CURB. IF SIDEWALK OR CROSSWALK TO BE CONSTRUCTED IS LESS THAN 50'-0" IN LENGTH, ONE SUCH EXPANSION JOINT SHALL BE PLACED AS DIRECTED BY THE ENGINEER.



PROFILE URBAN DRIVEWAY WITH SIDEWALK
(MAXIMUM PERCENT OF GRADE)

- (1) 10' MIN. IS REQUIRED WHEN THE EXISTING GRADE IS GREATER THAN ±8%
- (2) 10' MIN. IS REQUIRED WHEN THE EXISTING GRADE IS GREATER THAN ±15%
- (3) 10' MIN. ROUNDING IS REQUIRED WHEN THE EXISTING GRADE IS GREATER THAN ±22%

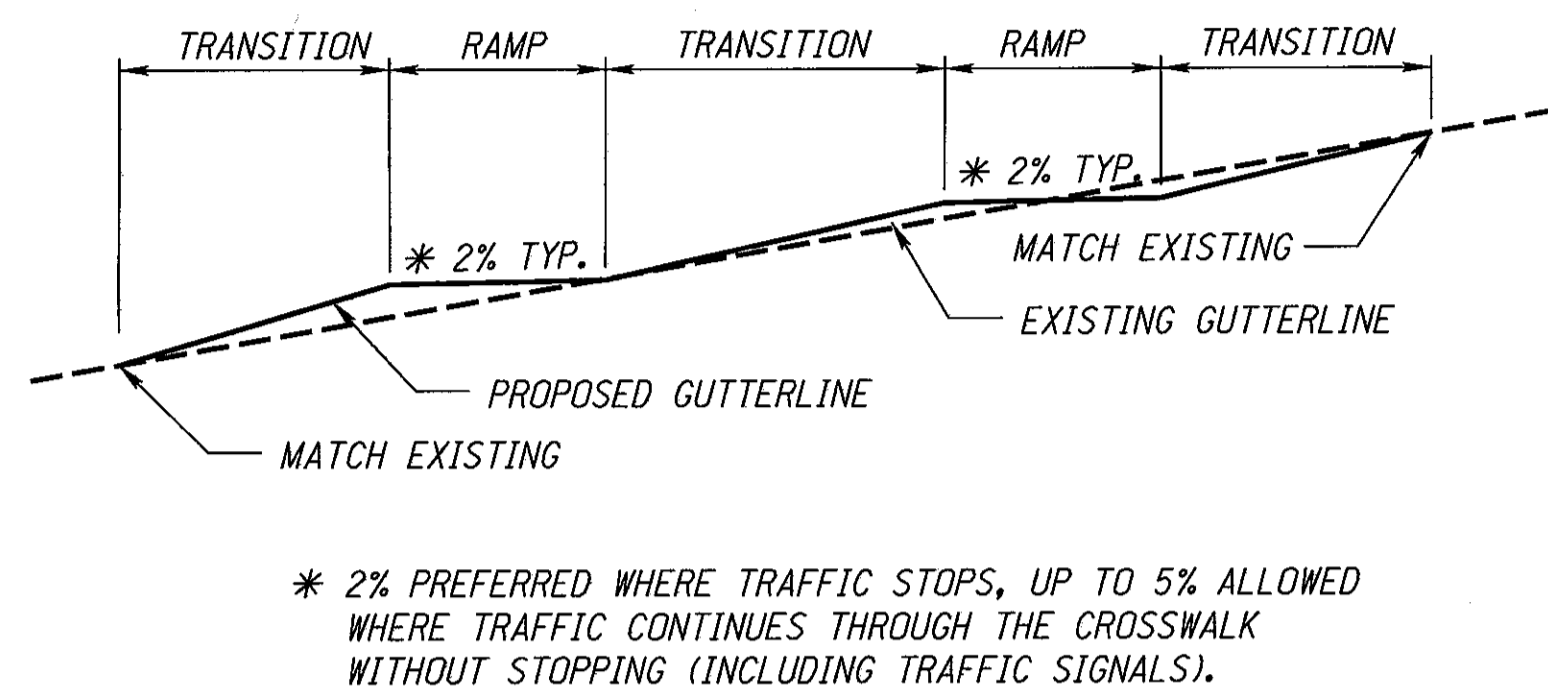
NOTE: T = PAVEMENT THICKNESS

REV. NO.	DATE	DESCRIPTION OF REVISION
R10	FEB 09	MULTIPLE REVISIONS
R9	MAR.05	MULTIPLE REVISIONS
R8	MAY 01	MULTIPLE REVISIONS

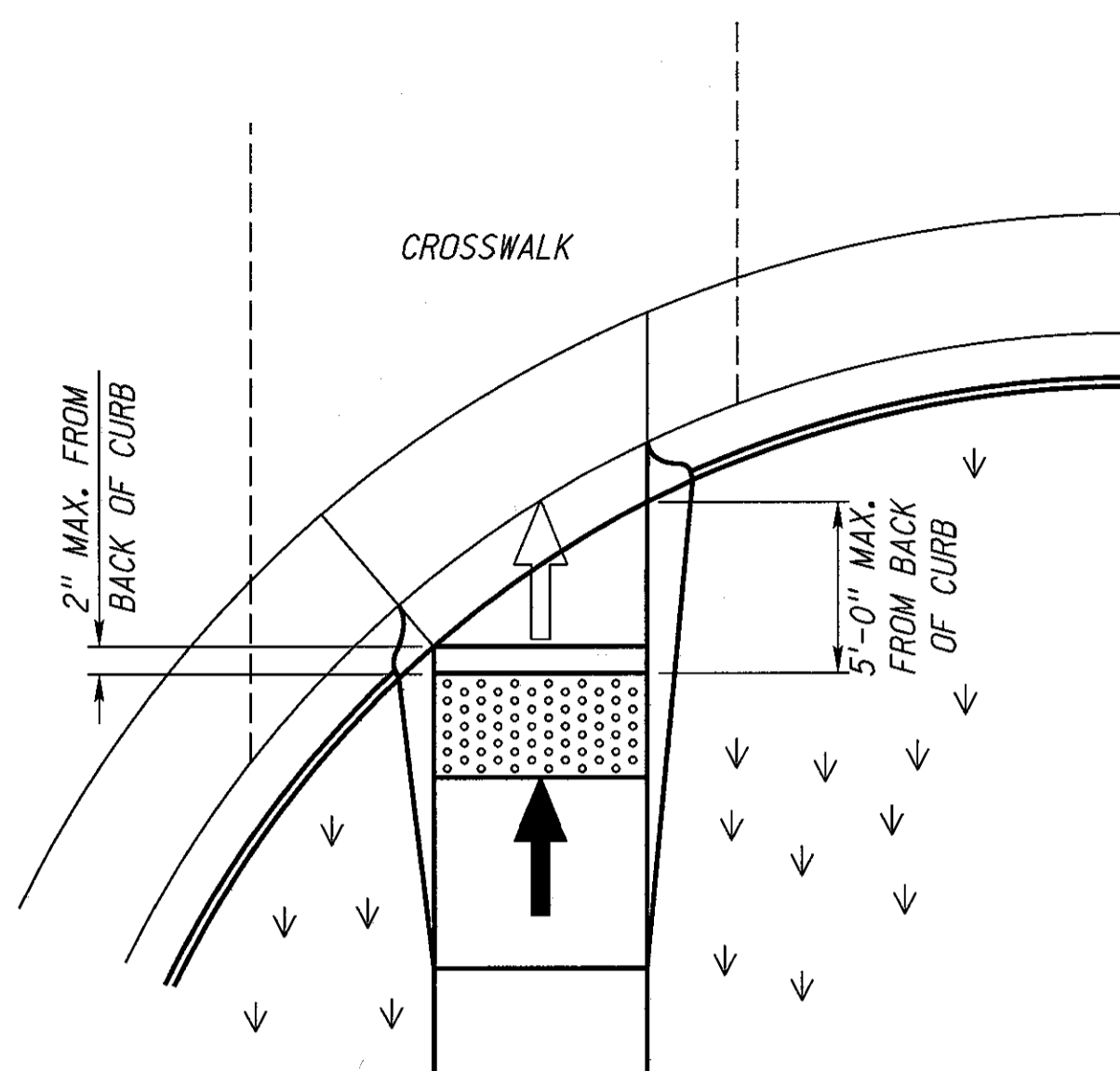
NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 301-R10
PAVEMENT DETAILS



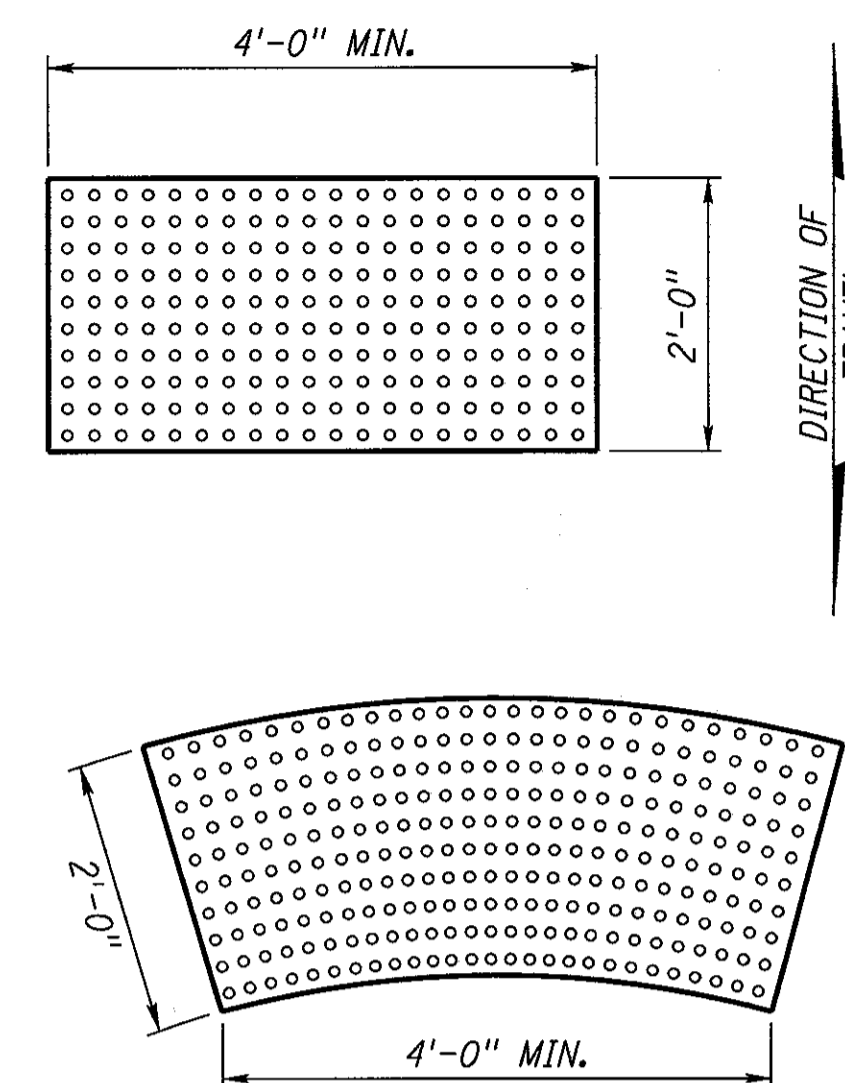
ORIGINAL:
JANUARY 31, 1974
DATE



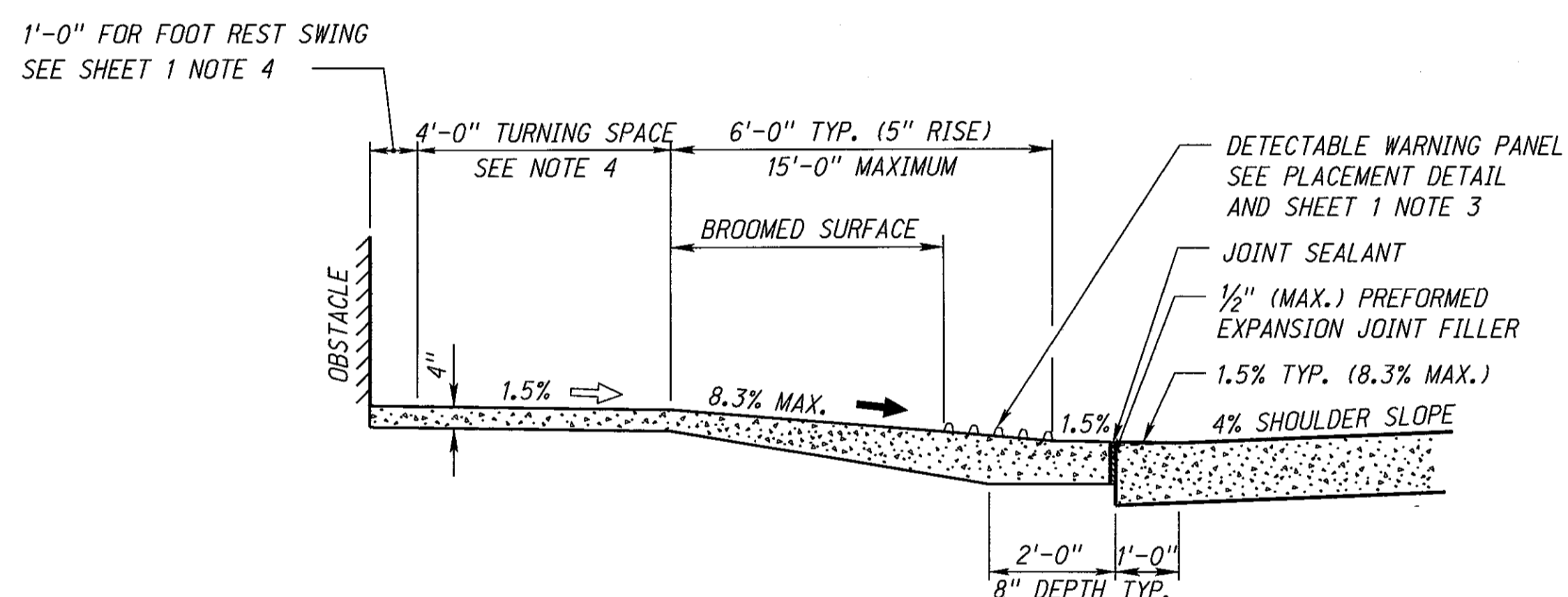
GUTTER PROFILE DETAIL



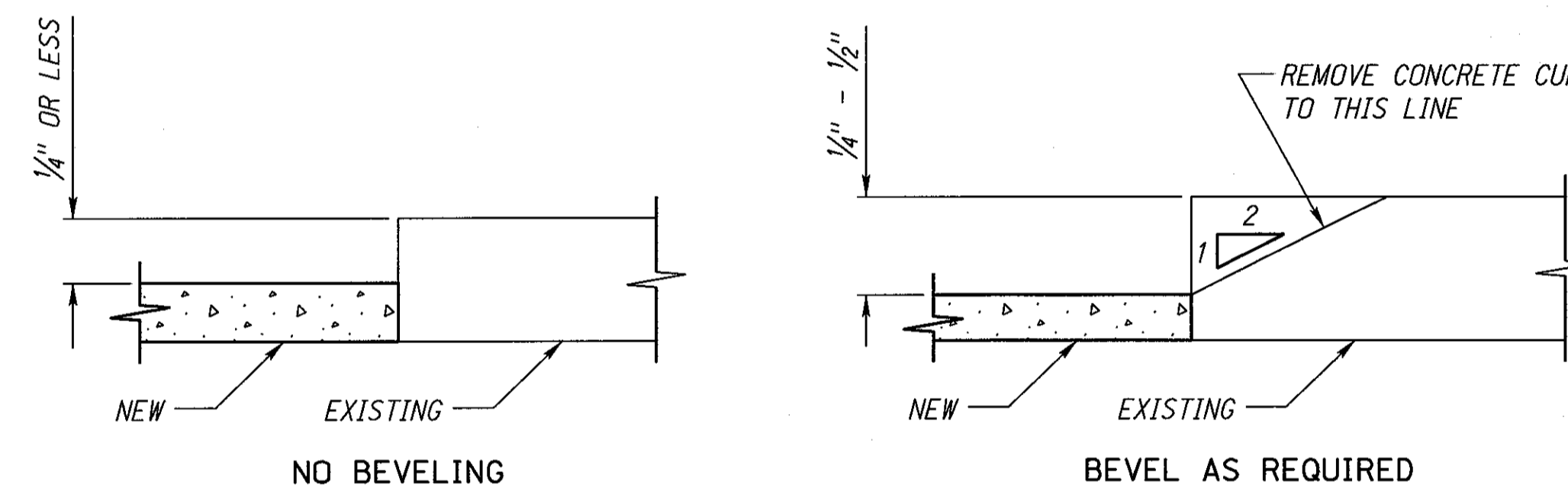
DETECTABLE WARNING PANEL PLACEMENT DETAIL



DETECTABLE WARNING PANELS



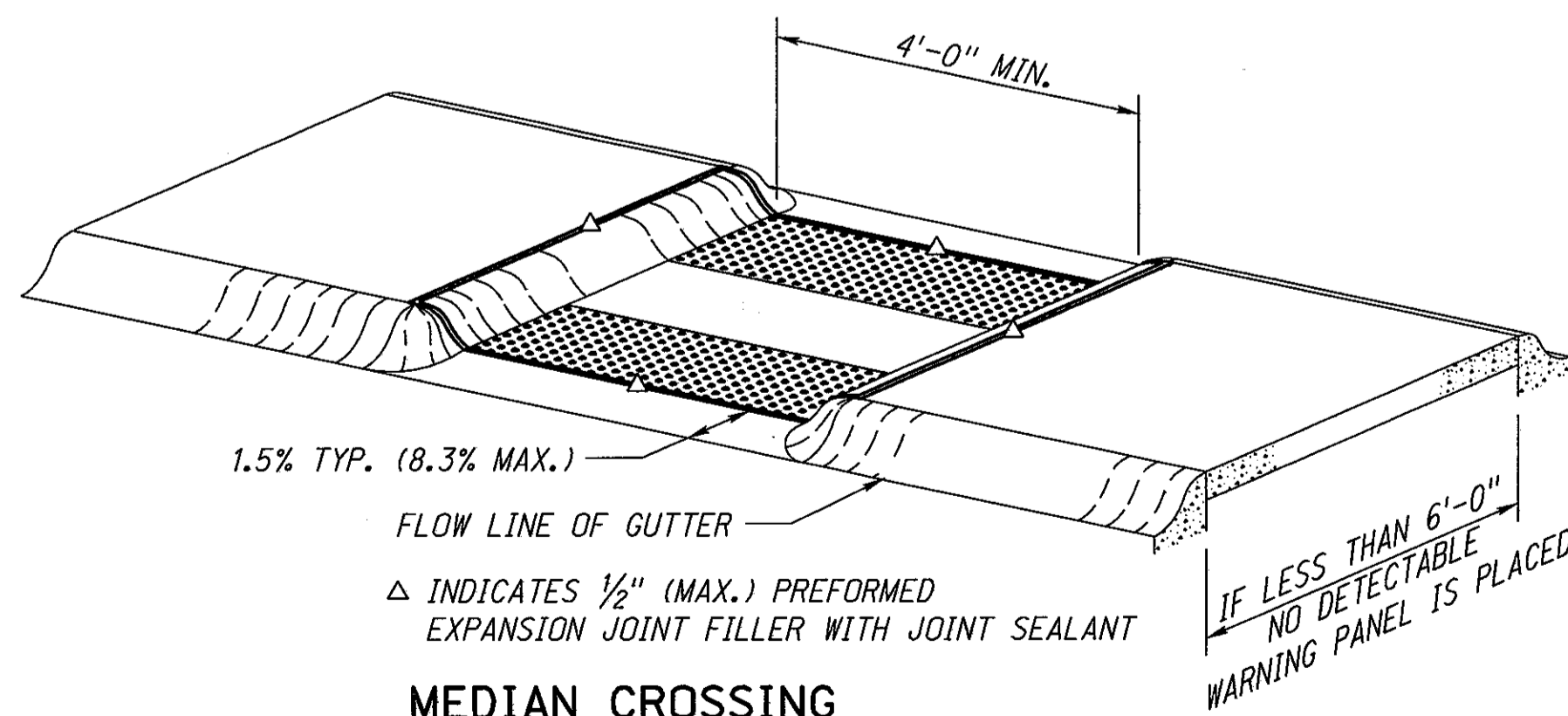
TYPICAL RAMP PROFILE



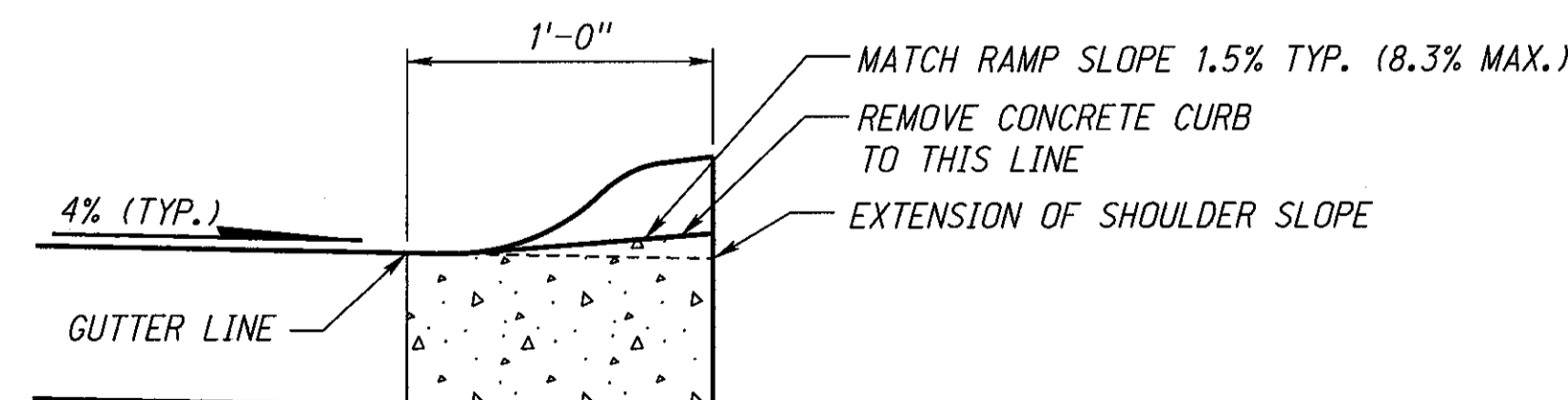
WHEN EXISTING SIDEWALK DOES NOT MEET THE 2% CROSS SLOPE, BEVELING TO MEET PROWAG IS REQUIRED.

THE SIDEWALK PANEL ABUTTING THE EXISTING SIDEWALK (WHICH MAY NOT BE 2% SLOPE): BUILD FULL WIDTH OF THE NEW SIDEWALK, ON 2% MAXIMUM CROSS SLOPE AND BEVEL THE EXISTING SIDEWALK EDGE WHERE IT DOES NOT MEET THE NEW WITHIN 1/4", THIS WORK IS SUBSIDIARY.

BEVELING DETAIL



MEDIAN CROSSING



NOTE: COMBINATION CONCRETE CURB AND GUTTER MAY BE REMOVED AND REPLACED IN LIEU OF MILLING.

CURB DETAIL

SLOPE LEGEND

	SIDEWALK/TURNING SPACE AND RAMP CROSS SLOPE 1.5% TYPICAL, 2.0% MAX. SLOPE
	RAMP RUNNING SLOPE 8.0% TYPICAL, 8.3% MAX. SLOPE
	FLARE 90° TO RAMP 9.0% TYPICAL, 10.0% MAX. SLOPE

THE CONTRACTOR SHOULD ACCOUNT FOR CONSTRUCTION TOLERANCES TO PREVENT EXCEEDING THE MAXIMUM SLOPES. ANY SLOPES EXCEEDING THE MAXIMUMS SHALL NOT BE ACCEPTED WITHOUT PRIOR APPROVAL FROM THE PROJECT MANAGER.

NOTES:

1. THE SURFACE OF ALL CURB RAMPS SHALL BE BROOMED PERPENDICULAR TO THE SLOPE OF THE CURB RAMP.
2. CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE CURB RAMP, FREE OF SAGS AND SHORT GRADE CHANGES.
3. ALL CURB RAMPS SHALL BE CONSTRUCTED WITH A DETECTABLE WARNING PANEL (DWP), 2 FT. x 4 FT. MINIMUM. PLACED WITHIN 2" OF THE BACK OF CURB.

- DETECTABLE WARNING PANEL:
- SHALL BE PAID FOR BY THE SQ. FT.
 - SHALL BE FROM THE APPROVED PRODUCT LIST
 - SHALL BE A CONTRASTING COLOR TO THE SURROUNDING SURFACING.
 - SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP.

NEW CURB RAMPS SHALL HAVE CAST IN CONCRETE DETECTABLE WARNING PANELS.

4. TURNING SPACE SHALL HAVE MINIMUM DIMENSIONS OF 4 FT. x 4 FT. AND SHALL BE A MINIMUM OF 1 FT. FROM ANY OBSTACLE SUCH AS A CURB OR RETAINING WALL FOR SWING OF WHEELCHAIR FOOT REST. THE SLOPE SHALL BE 2% MAXIMUM IN ANY DIRECTION.
5. THE WORK OF CONSTRUCTING CURB RAMPS SHALL BE INCLUDED IN THE QUANTITIES FOR "CONCRETE SIDEWALKS", "CONCRETE MEDIAN SURFACING" OR "CONCRETE BIKEWAY". THE WORK OF MODIFICATION OF NEW OR EXISTING CURB WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS OF WORK FOR WHICH DIRECT PAYMENT IS MADE.

LEGEND

- DETECTABLE WARNING PANEL (DWP)
- BROOMED CURB RAMP WHEN 5% TO 8.3%
- RAMP FLARE
- GRASS OR NON WALKING SURFACE
- CURB TRANSITION
- CURB FACE SLOPE 1 VERT. : 2 HORIZ.

RI	FEB 13	ALL OF PLAN REWORKED (PROWAG)
REV. NO.	DATE	DESCRIPTION OF REVISION

NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 303-R1

CURB RAMPS

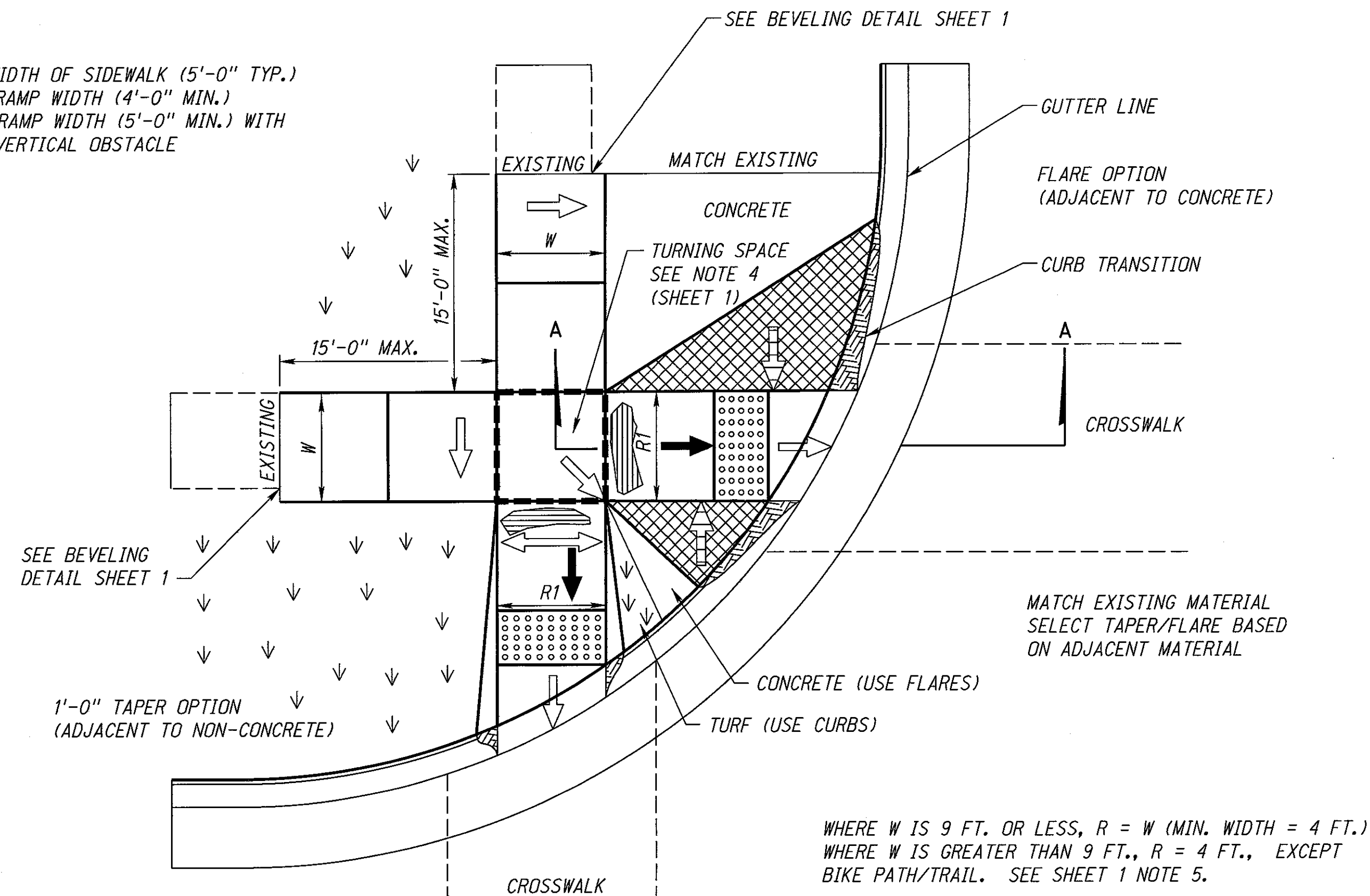
ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

W. J. Knott
DATE: 10-12-2012

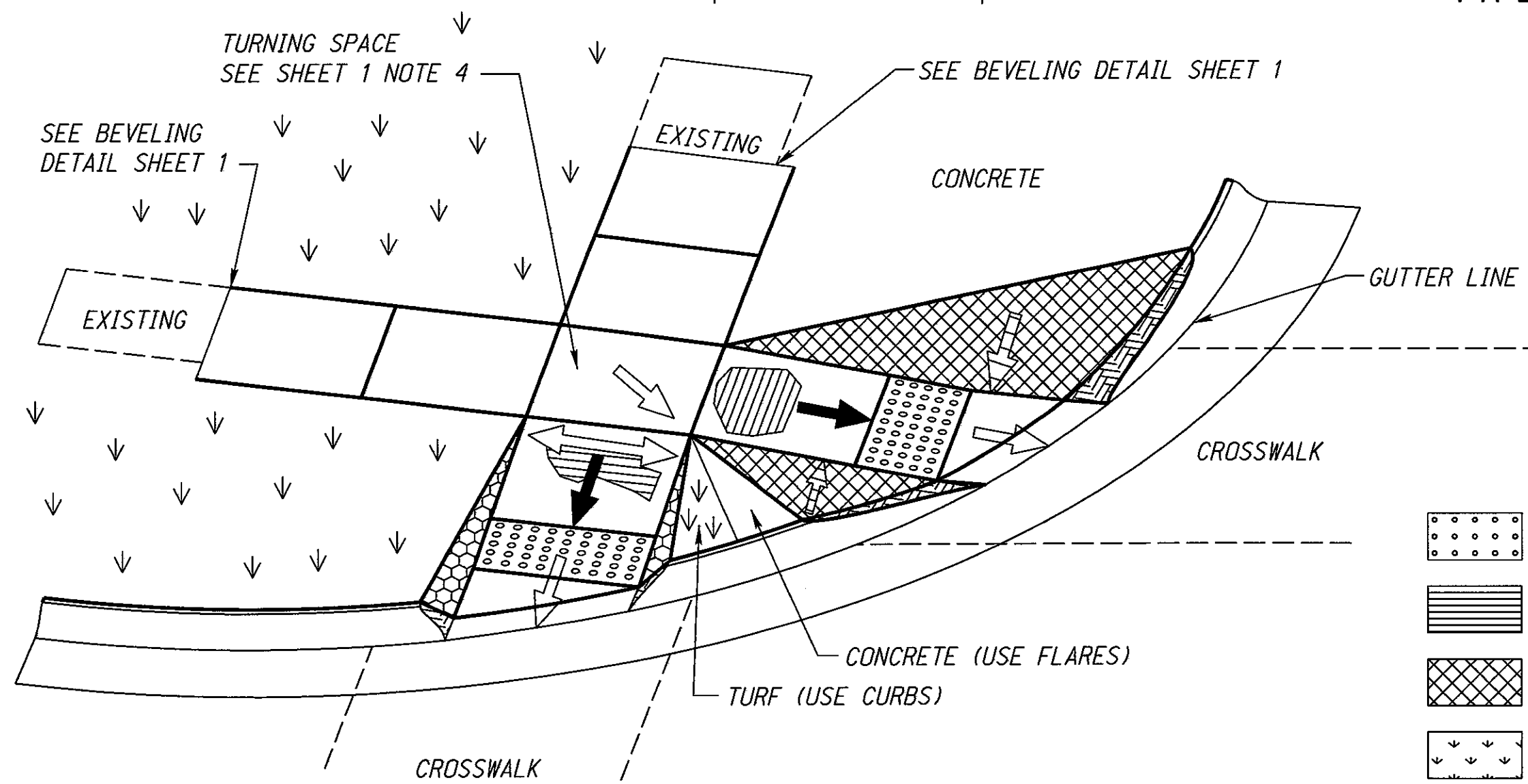
ORIGINAL: MARCH 22, 2010
DATE

1/4

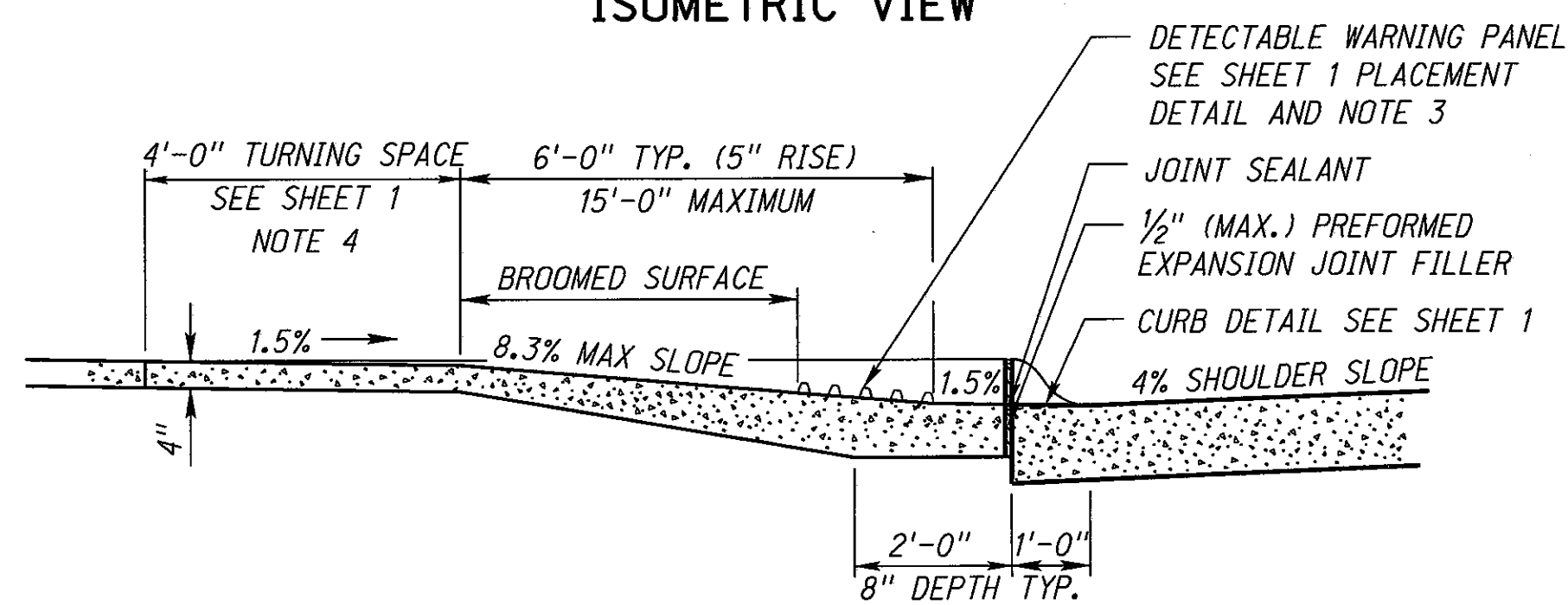
W = WIDTH OF SIDEWALK (5'-0" TYP.)
R1 = RAMP WIDTH (4'-0" MIN.)
R2 = RAMP WIDTH (5'-0" MIN.) WITH VERTICAL OBSTACLE



TYPE A PLAN



ISOMETRIC VIEW



TYPE A CROSS SECTION SECTION A-A

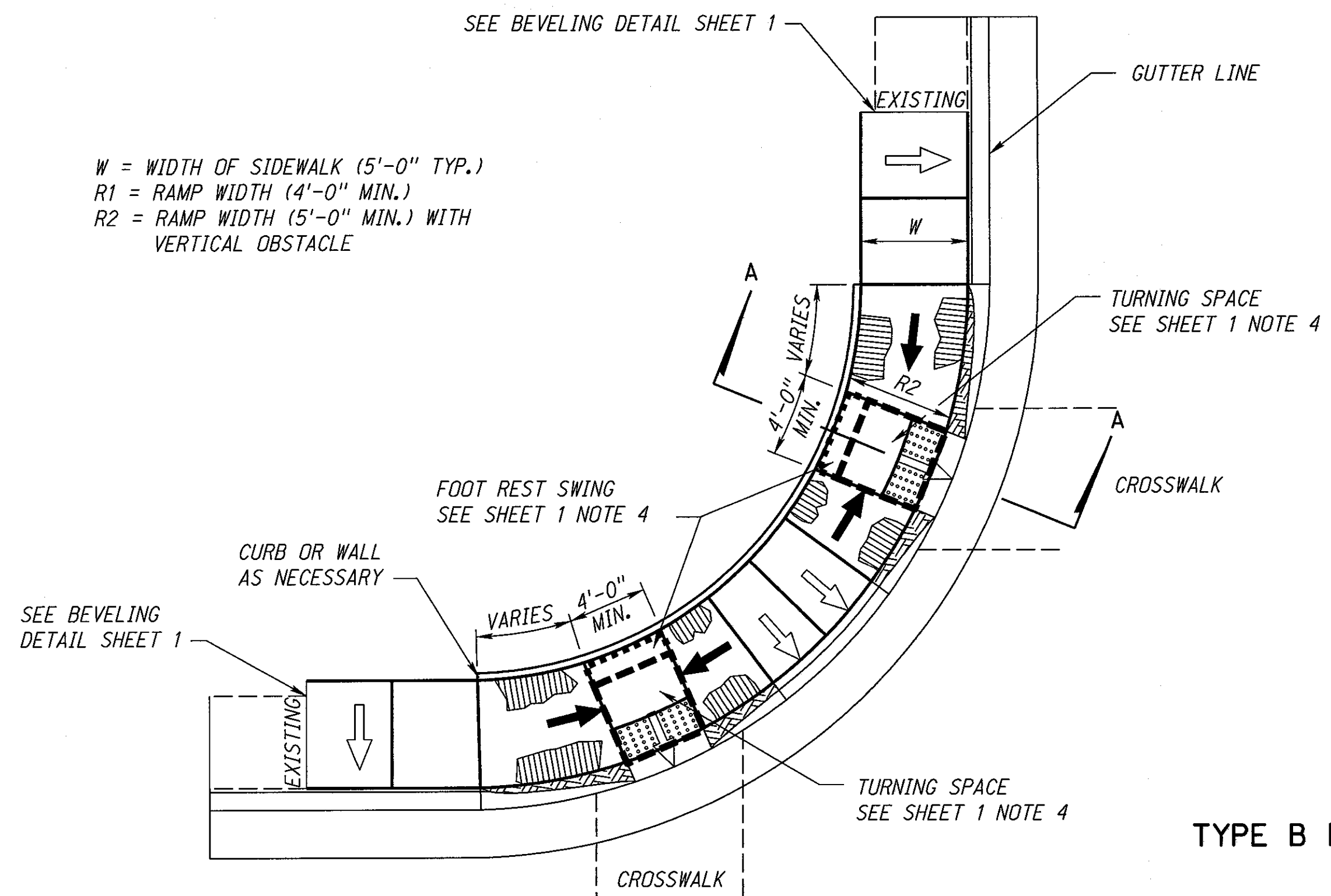
- LEGEND**
- DETECTABLE WARNING PANEL (DWP)
 - BROOMED CURB RAMP WHEN 5% TO 8.3%
 - RAMP FLARE
 - GRASS OR NON WALKING SURFACE
 - CURB TRANSITION
 - CURB FACE SLOPE 1 VERT. : 2 HORIZ.

SLOPE LEGEND

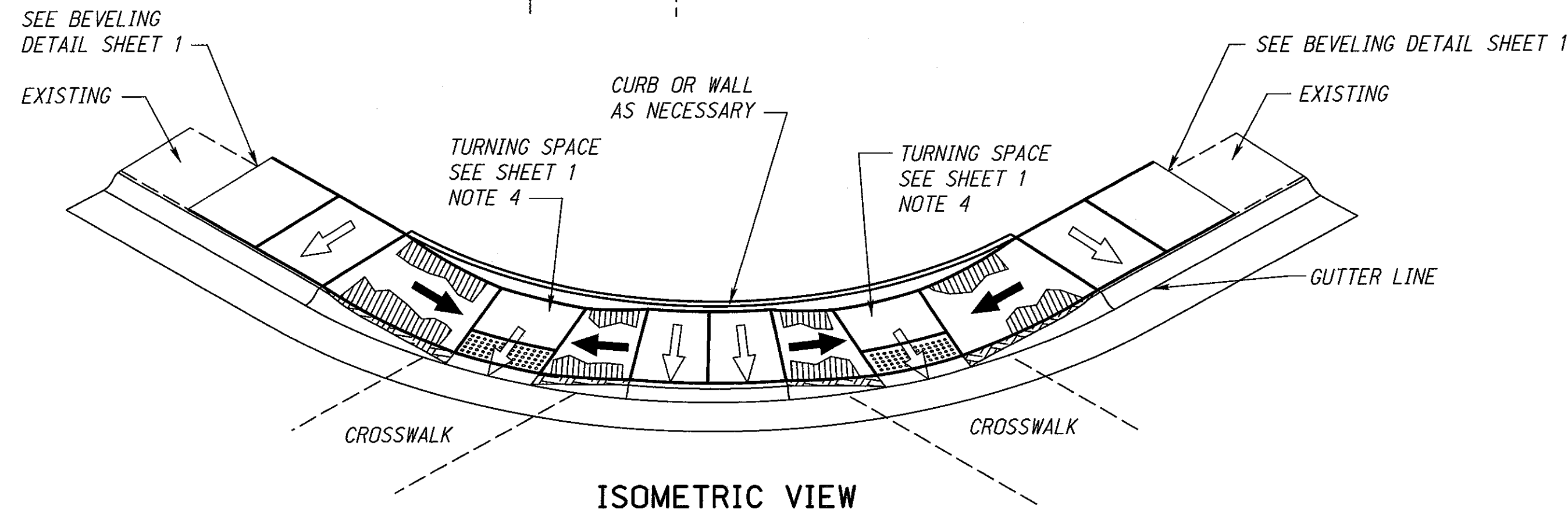
	SIDEWALK/TURNING SPACE AND RAMP CROSS SLOPE 1.5% TYPICAL, 2.0% MAX. SLOPE
	RAMP RUNNING SLOPE 8.0% TYPICAL, 8.3% MAX. SLOPE
	FLARE 90° TO RAMP 9.0% TYPICAL, 10.0% MAX. SLOPE

THE CONTRACTOR SHOULD ACCOUNT FOR CONSTRUCTION TOLERANCES TO PREVENT EXCEEDING THE MAXIMUM SLOPES. ANY SLOPES EXCEEDING THE MAXIMUMS SHALL NOT BE ACCEPTED WITHOUT PRIOR APPROVAL FROM THE PROJECT MANAGER.

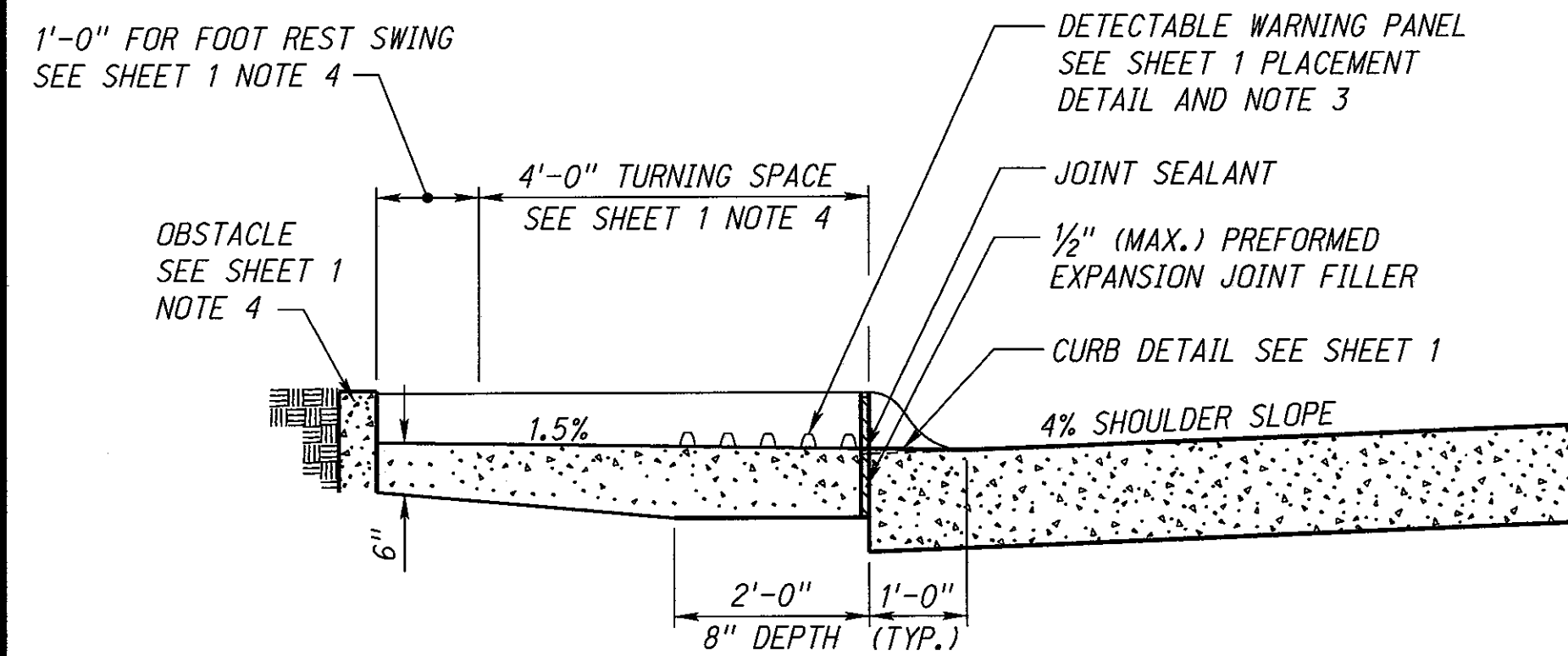
W = WIDTH OF SIDEWALK (5'-0" TYP.)
R1 = RAMP WIDTH (4'-0" MIN.)
R2 = RAMP WIDTH (5'-0" MIN.) WITH VERTICAL OBSTACLE



TYPE B PLAN



ISOMETRIC VIEW



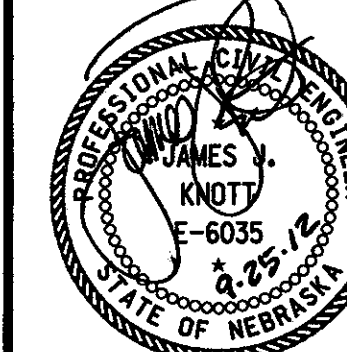
TYPE B CROSS SECTION SECTION A-A

RI	FEB 13	ALL OF PLAN REWORKED (PROWAG)
REV. NO.	DATE	DESCRIPTION OF REVISION

NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 303-R1

CURB RAMPS

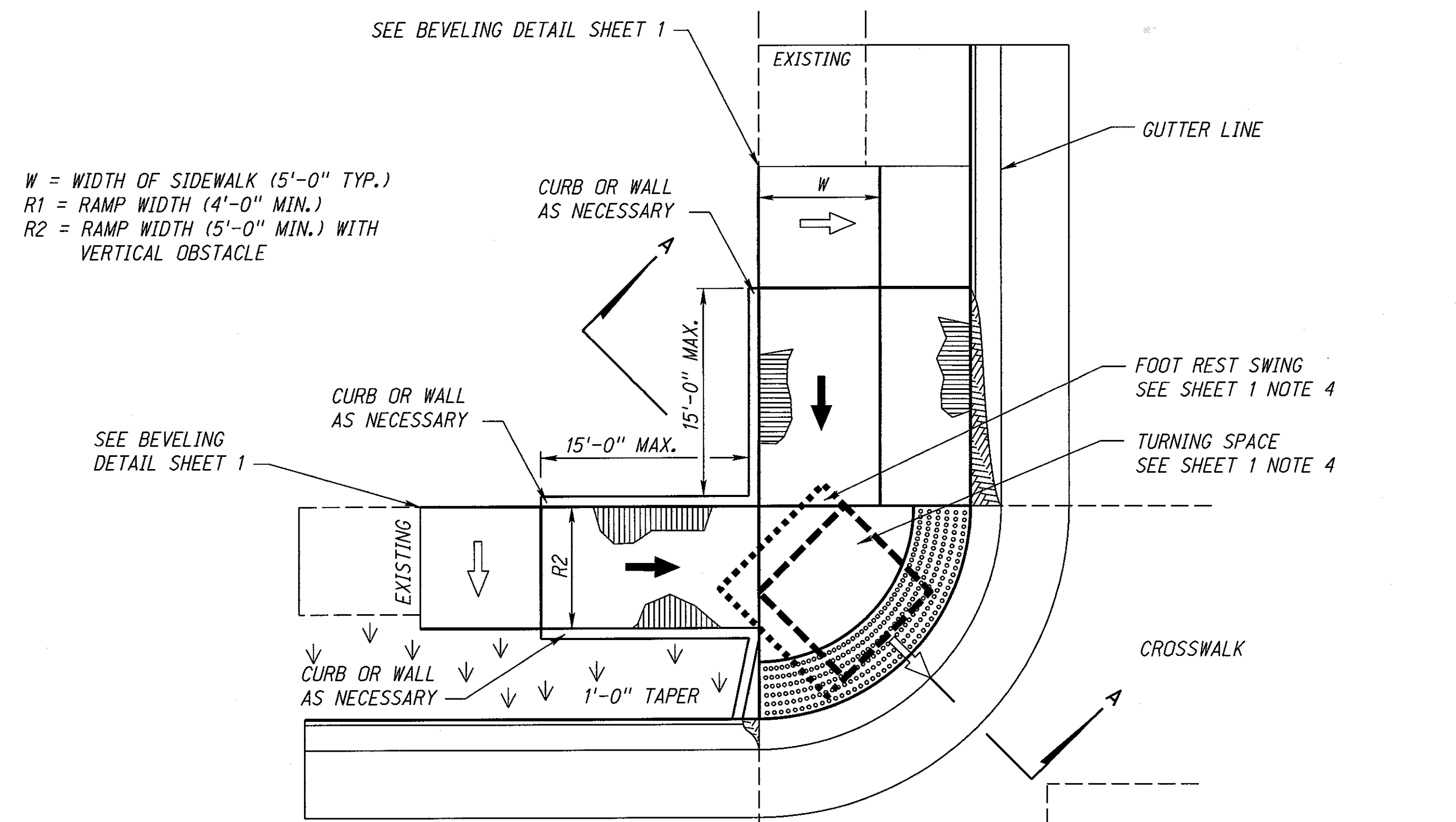
ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:



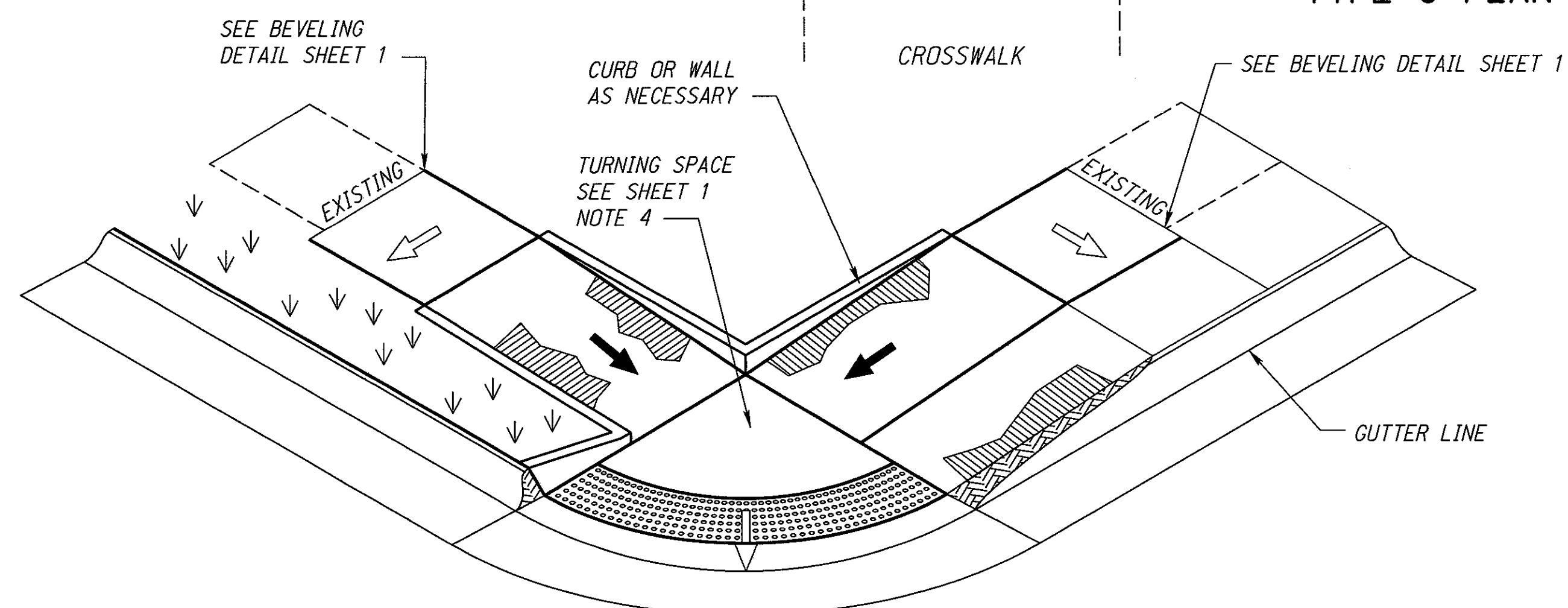
James J. Knott
10-12-2012
DATE

ORIGINAL:
MARCH 22, 2010
DATE

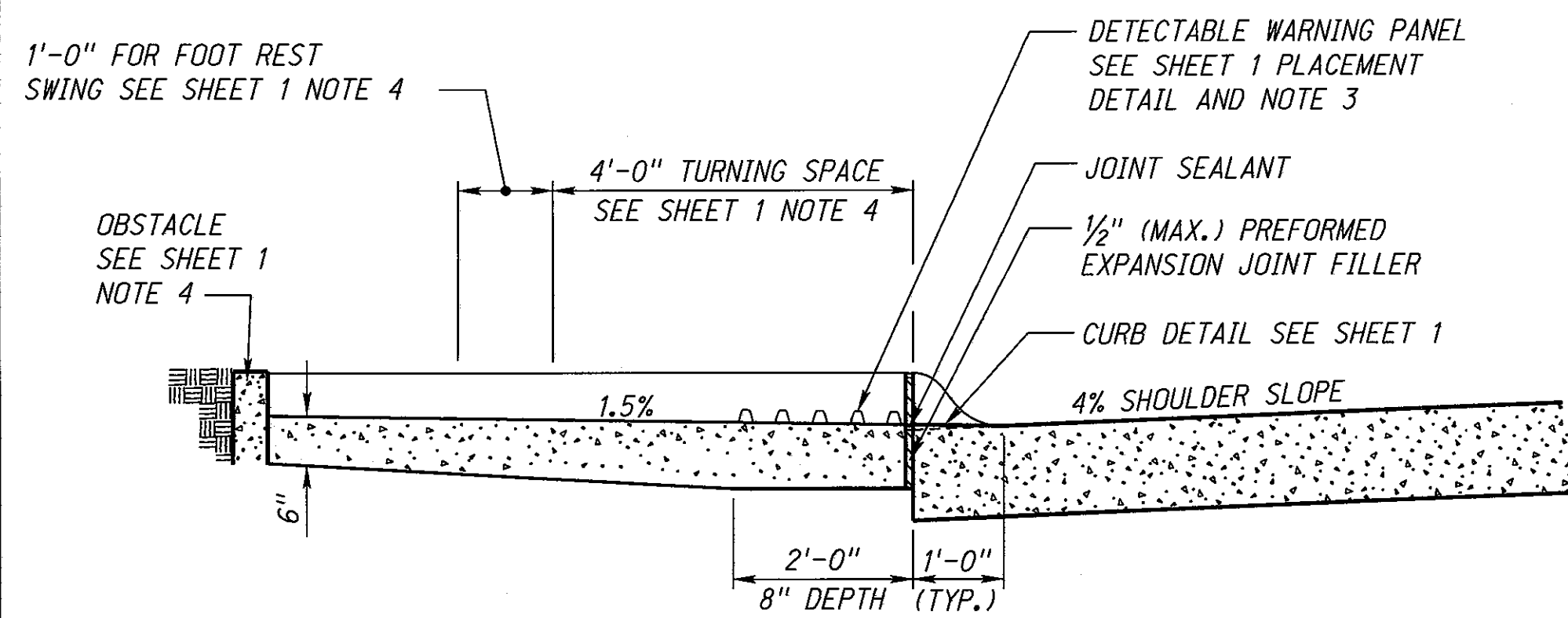
2
4



TYPE C PLAN

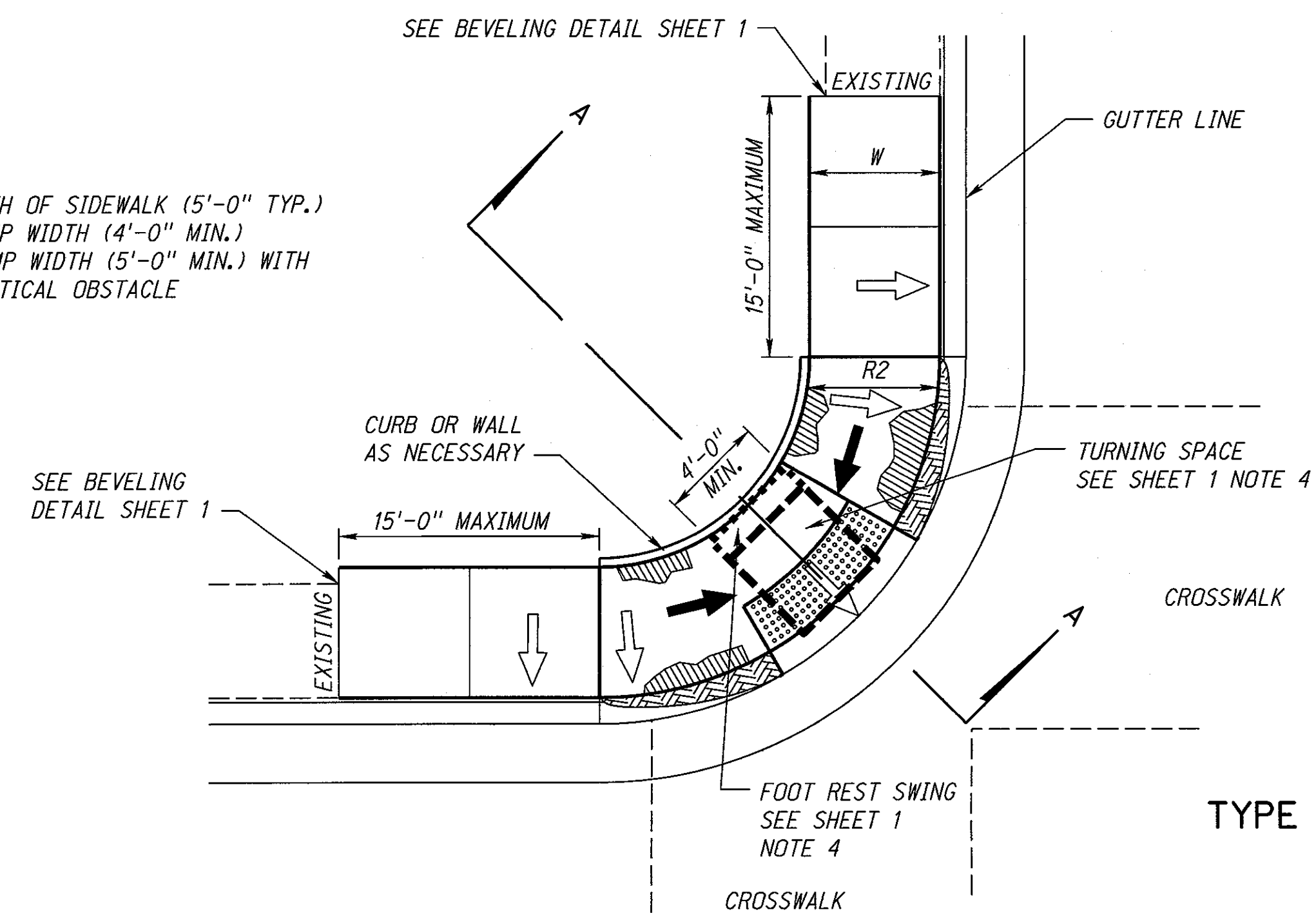


ISOMETRIC VIEW

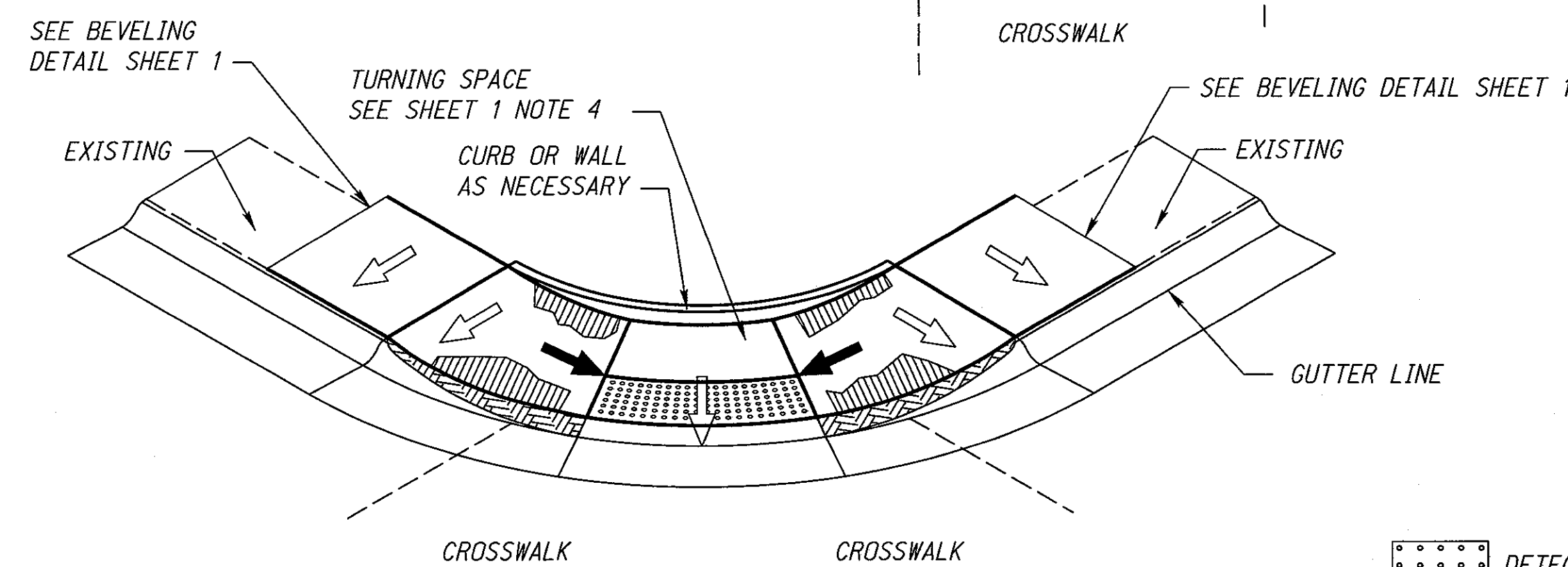


TYPE C CROSS SECTION SECTION A-A

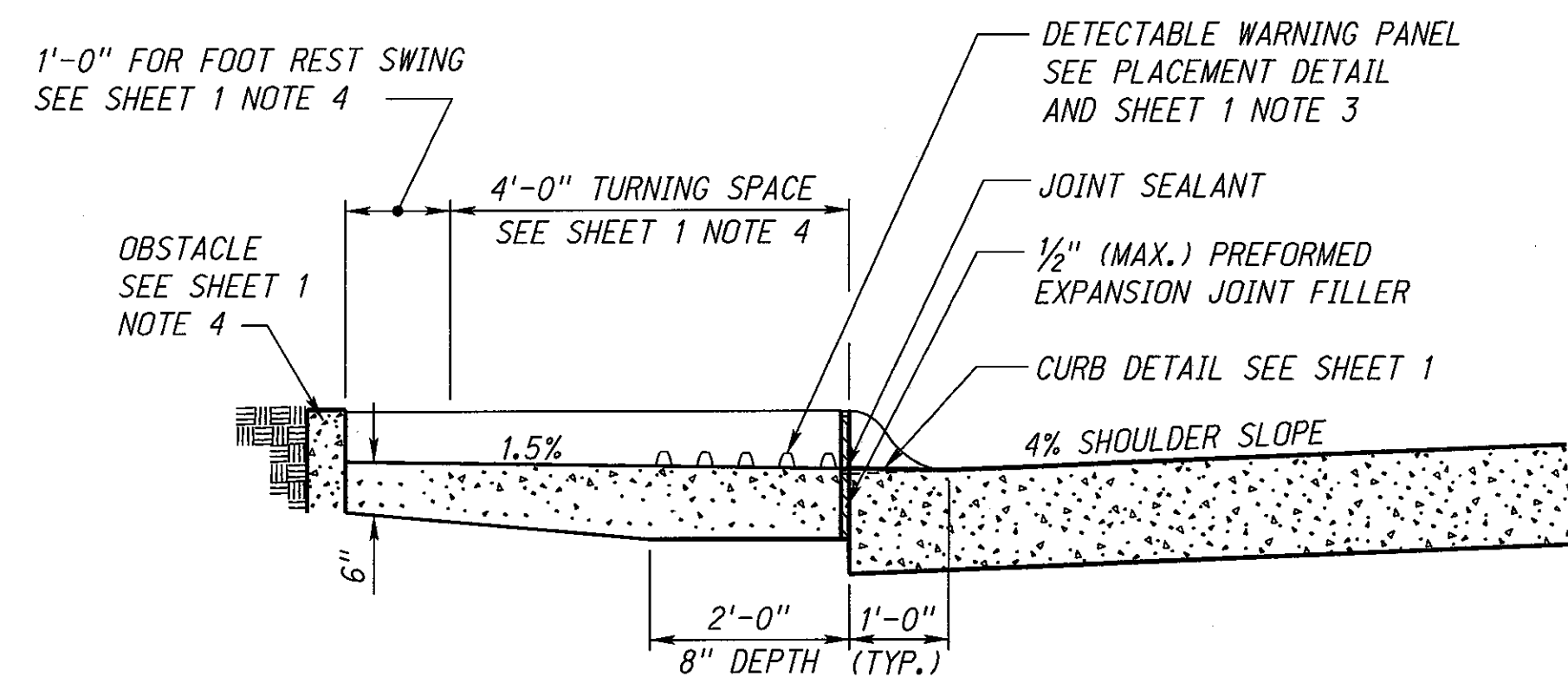
W = WIDTH OF SIDEWALK (5'-0" TYP.)
R1 = RAMP WIDTH (4'-0" MIN.)
R2 = RAMP WIDTH (5'-0" MIN.) WITH VERTICAL OBSTACLE



TYPE D PLAN



ISOMETRIC VIEW



TYPE D CROSS SECTION SECTION A-A

LEGEND

- DETECTABLE WARNING PANEL (DWP)
- BROOMED CURB RAMP WHEN 5% TO 8.3%
- RAMP FLARE
- GRASS OR NON WALKING SURFACE
- CURB TRANSITION
- CURB FACE SLOPE 1 VERT. : 2 HORIZ.

SLOPE LEGEND

	SIDEWALK/TURNING SPACE AND RAMP CROSS SLOPE 1.5% TYPICAL, 2.0% MAX. SLOPE
	RAMP RUNNING SLOPE 8.0% TYPICAL, 8.3% MAX. SLOPE
	FLARE 90° TO RAMP 9.0% TYPICAL, 10.0% MAX. SLOPE

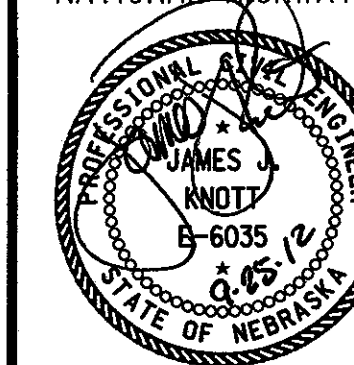
THE CONTRACTOR SHOULD ACCOUNT FOR CONSTRUCTION TOLERANCES TO PREVENT EXCEEDING THE MAXIMUM SLOPES. ANY SLOPES EXCEEDING THE MAXIMUMS SHALL NOT BE ACCEPTED WITHOUT PRIOR APPROVAL FROM THE PROJECT MANAGER.

REV. NO.	DATE	DESCRIPTION OF REVISION
RI	FEB 13	ALL OF PLAN REWORKED (PROWAG)

NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 303-R1

CURB RAMPS

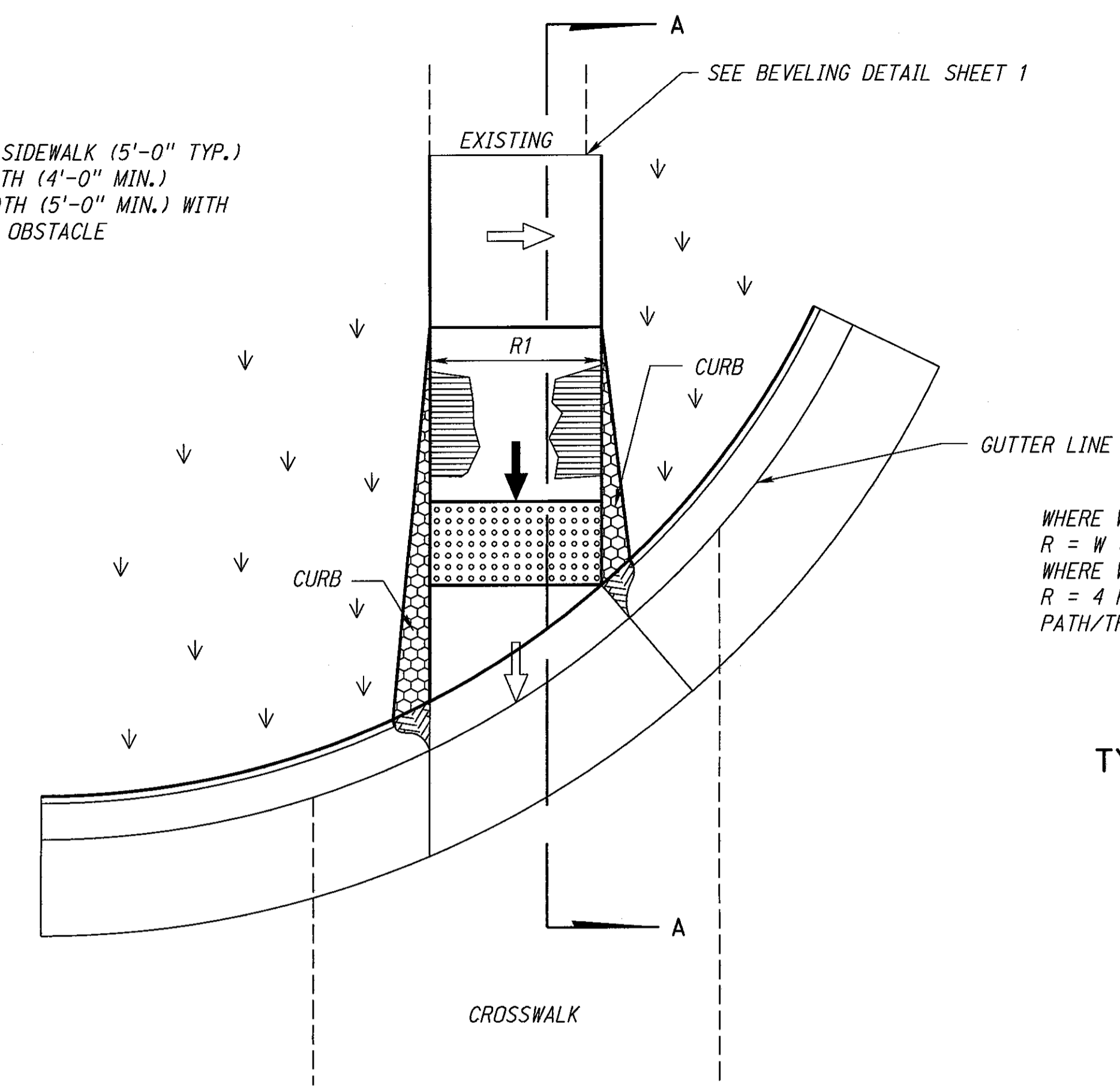
ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:



Wendell D. Dorn
DATE: 10-12-2012

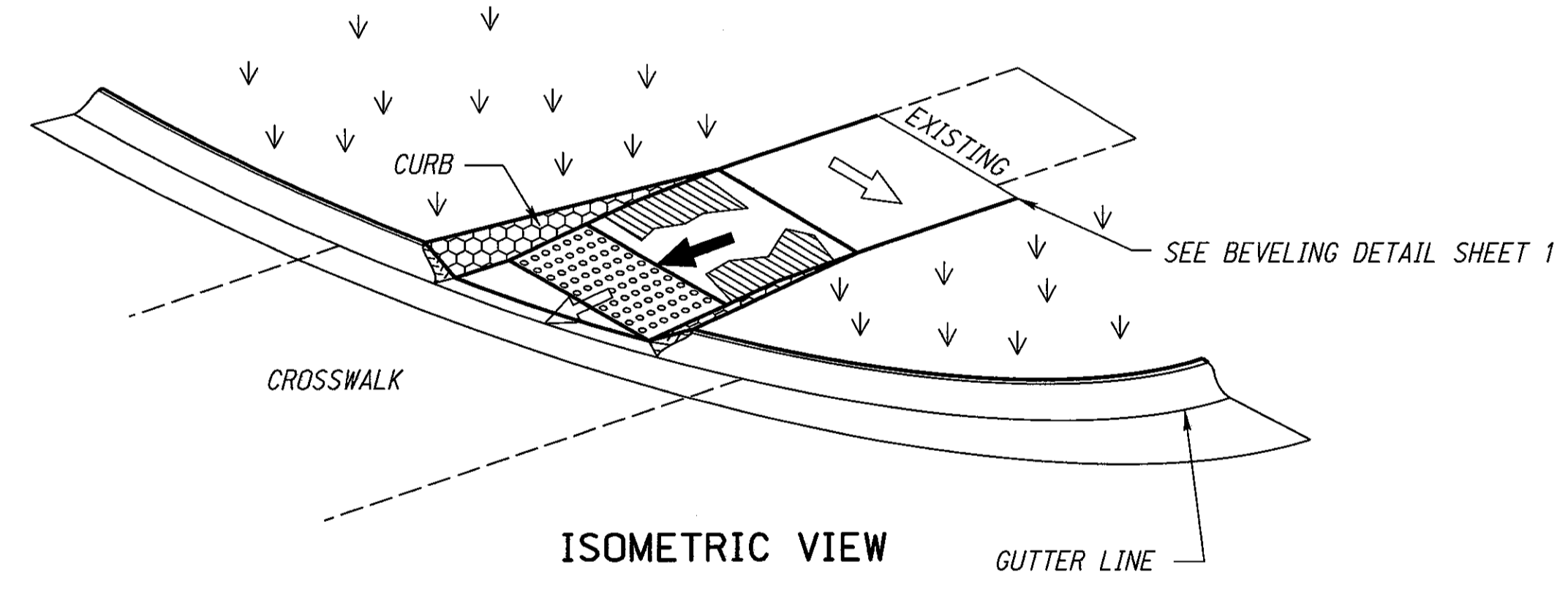
ORIGINAL:
MARCH 22, 2010
DATE

W = WIDTH OF SIDEWALK (5'-0" TYP.)
R1 = RAMP WIDTH (4'-0" MIN.)
R2 = RAMP WIDTH (5'-0" MIN.) WITH
VERTICAL OBSTACLE

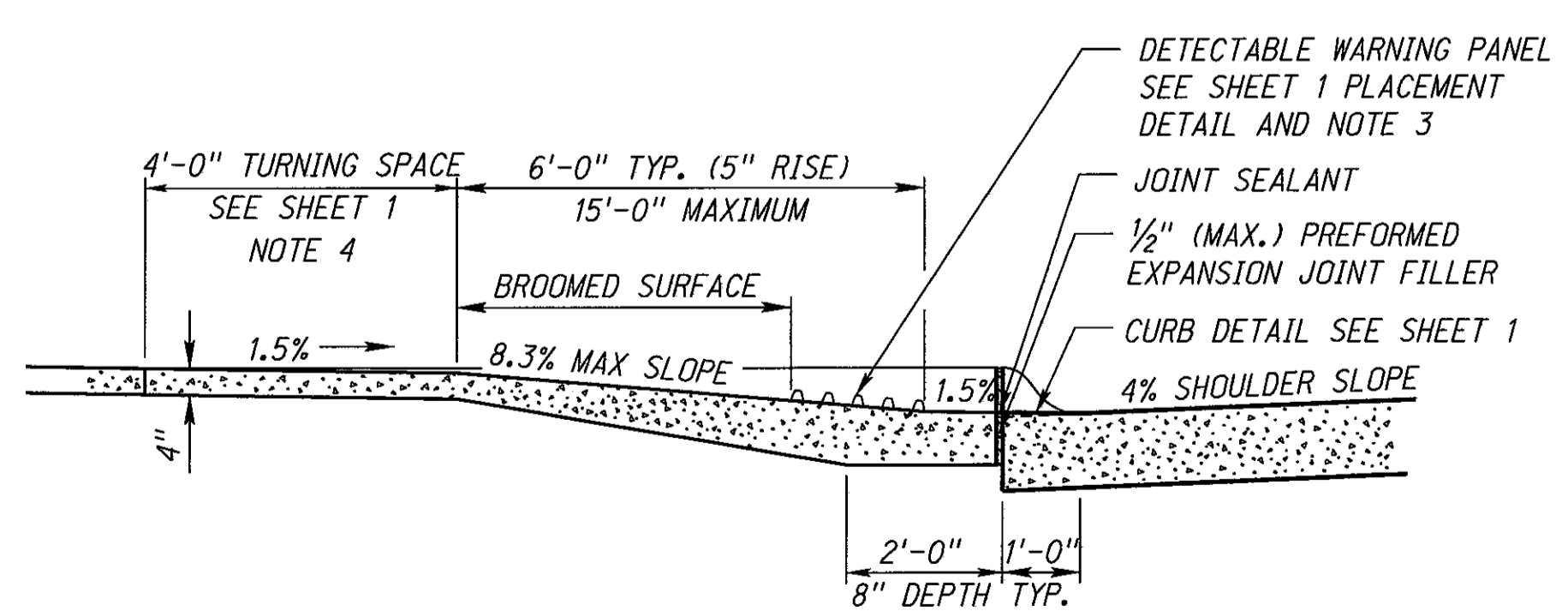


WHERE W IS 9 FT. OR LESS,
R = W (MIN. WIDTH = 4 FT.)
WHERE W IS GREATER THAN 9 FT.,
R = 4 FT., EXCEPT BIKE
PATH/TRAIL. SEE NOTE 5 (SHEET 1)

TYPE E PLAN

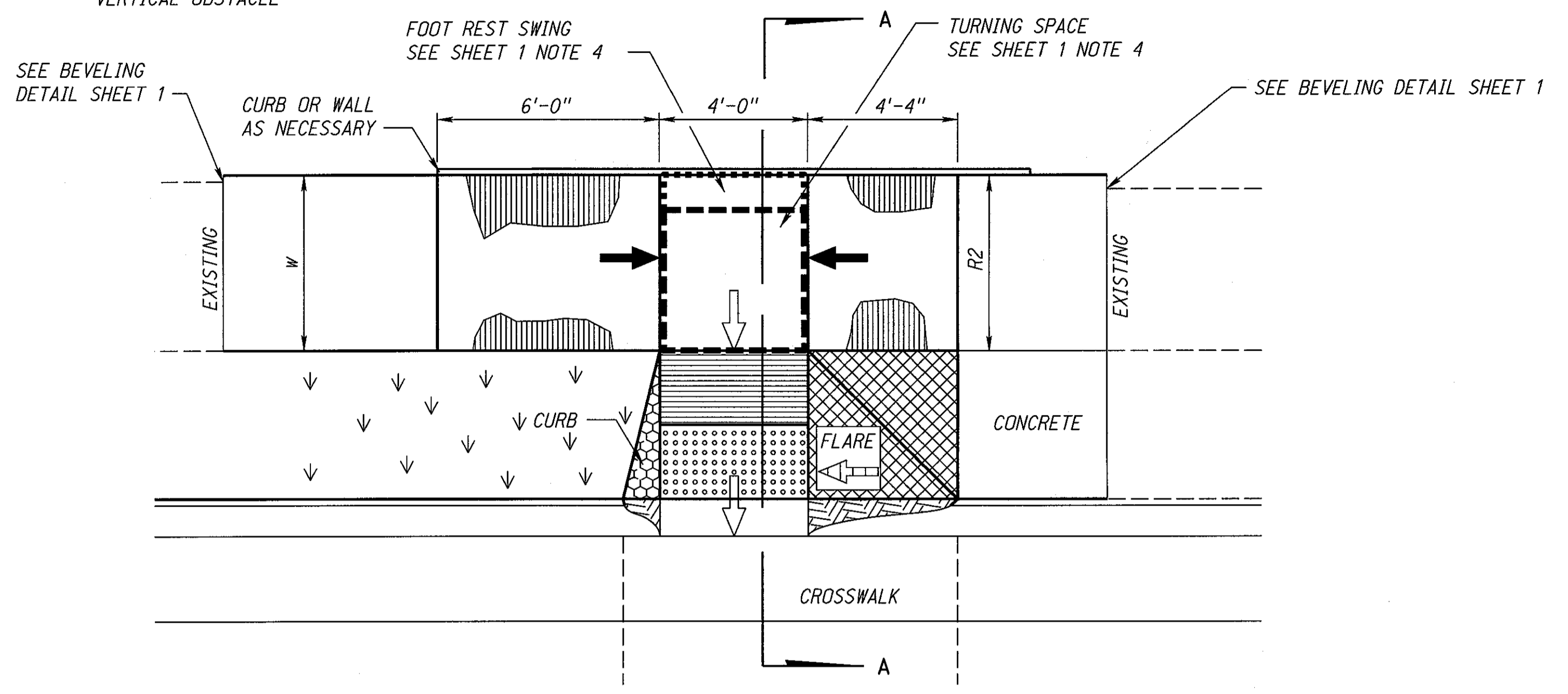


ISOMETRIC VIEW

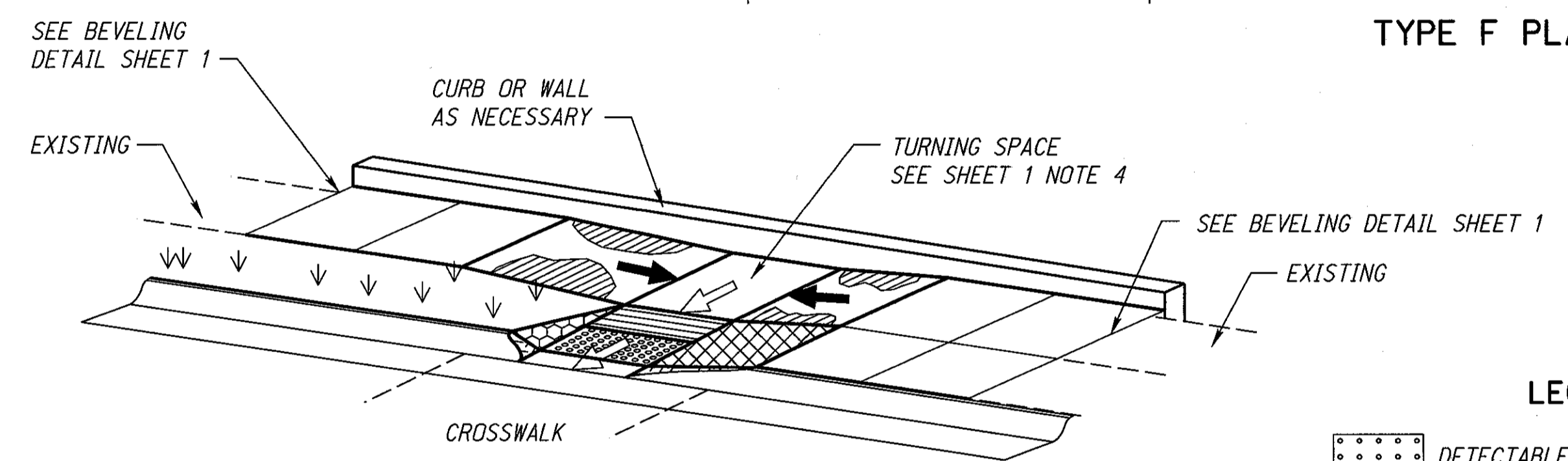


TYPE E CROSS SECTION
SECTION A-A

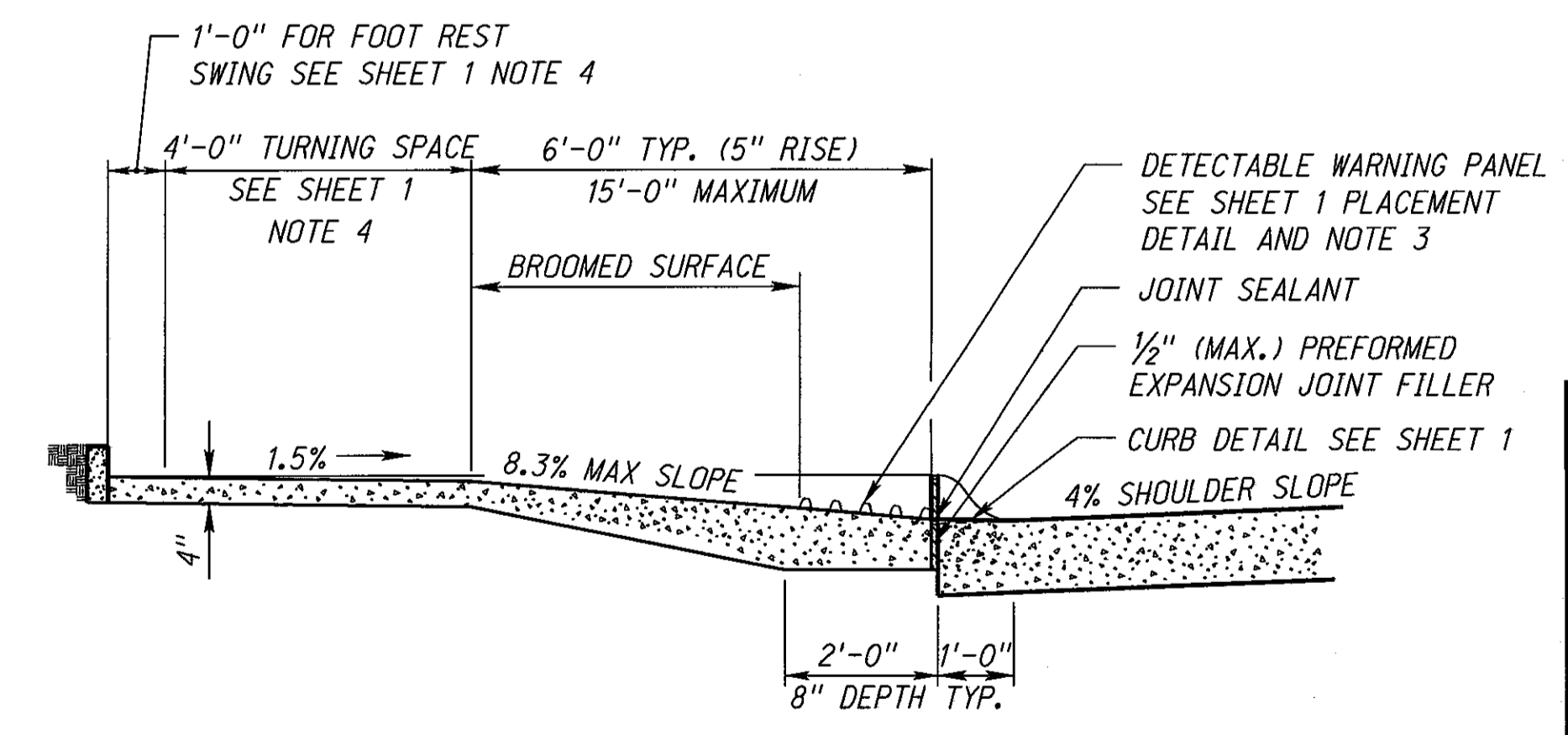
W = WIDTH OF SIDEWALK (5'-0" TYP.)
R1 = RAMP WIDTH (4'-0" MIN.)
R2 = RAMP WIDTH (5'-0" MIN.) WITH
VERTICAL OBSTACLE



TYPE F PLAN



ISOMETRIC VIEW



TYPE F CROSS SECTION
SECTION A-A

LEGEND

- DETECTABLE WARNING PANEL (DWP)
- BROOMED CURB RAMP WHEN 5% TO 8.3%
- RAMP FLARE
- GRASS OR NON WALKING SURFACE
- CURB TRANSITION
- CURB FACE SLOPE 1 VERT. : 2 HORIZ.

SLOPE LEGEND

	SIDEWALK/TURNING SPACE AND RAMP CROSS SLOPE 1.5% TYPICAL, 2.0% MAX. SLOPE
	RAMP RUNNING SLOPE 8.0% TYPICAL, 8.3% MAX. SLOPE
	FLARE 90° TO RAMP 9.0% TYPICAL, 10.0% MAX. SLOPE

THE CONTRACTOR SHOULD ACCOUNT FOR CONSTRUCTION TOLERANCES TO PREVENT EXCEEDING THE MAXIMUM SLOPES. ANY SLOPES EXCEEDING THE MAXIMUMS SHALL NOT BE ACCEPTED WITHOUT PRIOR APPROVAL FROM THE PROJECT MANAGER.

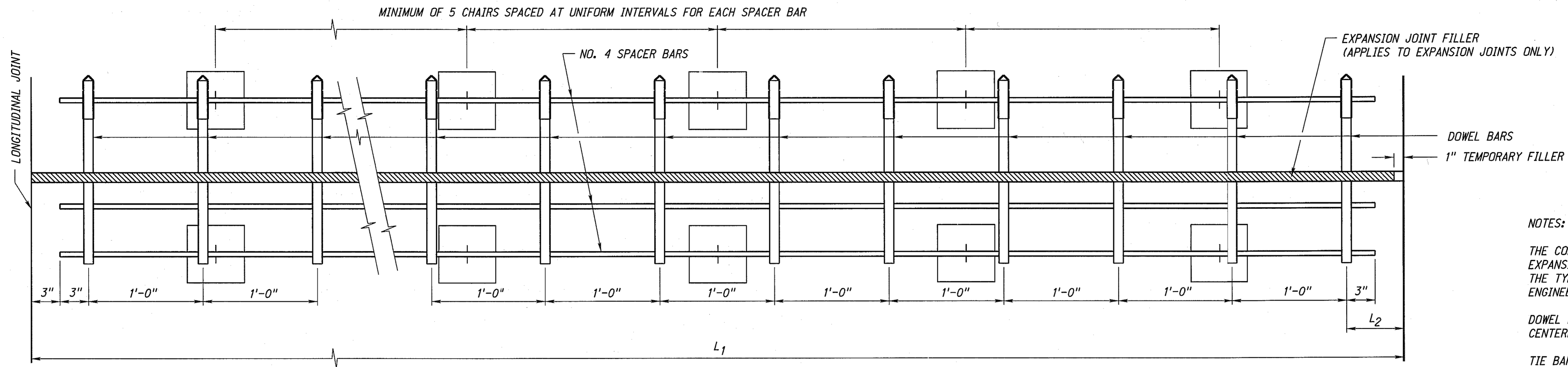
REV. NO.	DATE	DESCRIPTION OF REVISION
RI	FEB 13	ALL OF PLAN REWORKED (PROWAG)

NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 303-R1
CURB RAMPS

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:



Signature: *James J. Kindt*
DATE: 10-12-2012
ORIGINAL: MARCH 22, 2010
DATE



DOWEL BAR HEIGHT AND DIAMETER			
PAVEMENT THICKNESS (T)	MINIMUM BAR DIA.	DOWEL BAR HEIGHT (T/2)	SKEW TOLERANCE
LESS THAN 10"	1 1/4"	T/2 ± 1/2"	1/4"
10" OR MORE	1 1/2"	T/2 ± 1/2"	1/4"

ASSEMBLY PLAN

DOWEL BAR LOCATION TABLE					
L ₁	L ₂	L ₃	#BARS	DESCRIPTION	
12'-0"	6"	5"	12	12'-0" PAVEMENT	
15'-0"	2'-6"	2'-5"	13	15'-0" PAVEMENT (INCLUDES 3'-0" SHOULDER)	
16'-0"	3'-6"	3'-5"	13	16'-0" PAVEMENT (INCLUDES 4'-0" SHOULDER)	
16'-0"	6"	5"	16	16'-0" RAMP & LOOPS	
≥14'-6"	1'-6"	1'-5"	VARIES	PAVEMENT WITH CURB	
≥14'-6"	2'-6"	2'-5"	VARIES	PAVEMENT WITH CURB	
* ≥6'-0"	6"	5"	VARIES	IRREGULAR AREAS (WIDEN, FILLETS, GORE	

NOTES:

THE CONTRACTOR MAY SUBSTITUTE OTHER DESIGNS FOR EXPANSION AND CONTRACTION JOINT SUPPORTS IN LIEU OF THE TYPE SHOWN WITH PRIOR WRITTEN APPROVAL BY THE ENGINEER.

DOWEL BARS SHALL BE A MINIMUM OF 17 3/4" IN LENGTH, CENTERED ON JOINTS AND BE SMOOTH BARS.

TIE BARS SHALL BE DEFORMED BARS.

FOR LOAD TRANSFER DEVICES AT EXPANSION JOINTS IN LANES OTHER THAN THE LANES SHOWN, MAINTAIN THE SPACING OF THE 1'-6" DOWEL BARS AT 1'-0" INTERVALS.

THE ENDS OF THE NO. 4 SPACER BARS SHALL NOT BE LESS THAN 3" FROM THE EDGES OF THE PAVEMENT OR THE LONGITUDINAL JOINT.

THE CONTRACTOR MAY USE A MACHINE FOR PLACING THE LONGITUDINAL TIE BARS IN LIEU OF THE TIE BAR PINS. IF A MECHANICAL TIE BAR PLACEMENT MACHINE IS NOT USED, TIE BAR PINS AS SHOWN SHALL BE USED.

TIE, DOWEL & SPACER BARS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.

KEY TYPE LONGITUDINAL JOINTS AND TRANSVERSE CONSTRUCTION JOINTS SHALL BE EDGED WITH 1/4" R. AT TIME OF CONCRETE PLACEMENT.

CONCRETE PAVEMENT SHALL BE TINED UNLESS OTHERWISE SHOWN IN THE PLANS.

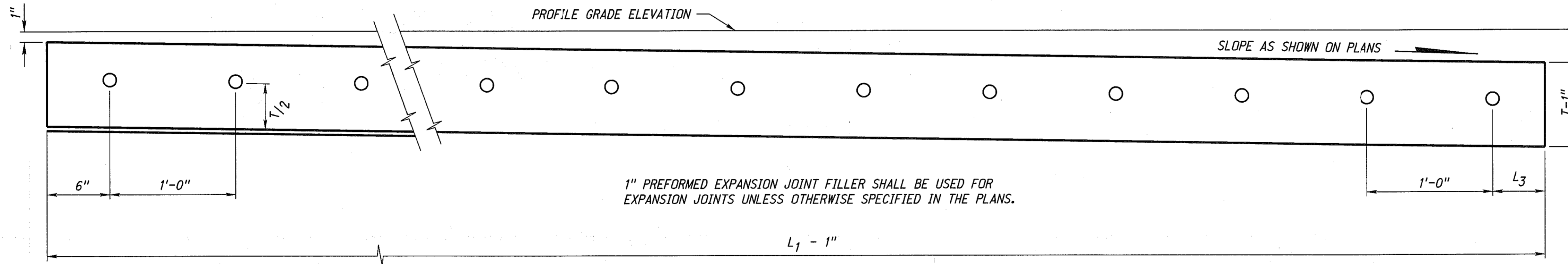
EXPANSION JOINTS SHALL BE INSTALLED AT LOCATIONS SHOWN IN THE PLANS.

PAVEMENT PLACED ADJACENT TO R.R. TRACKS REQUIRES 3-EXPANSION JOINTS SPACED AT APPROX. 49'-6" INTERVALS.

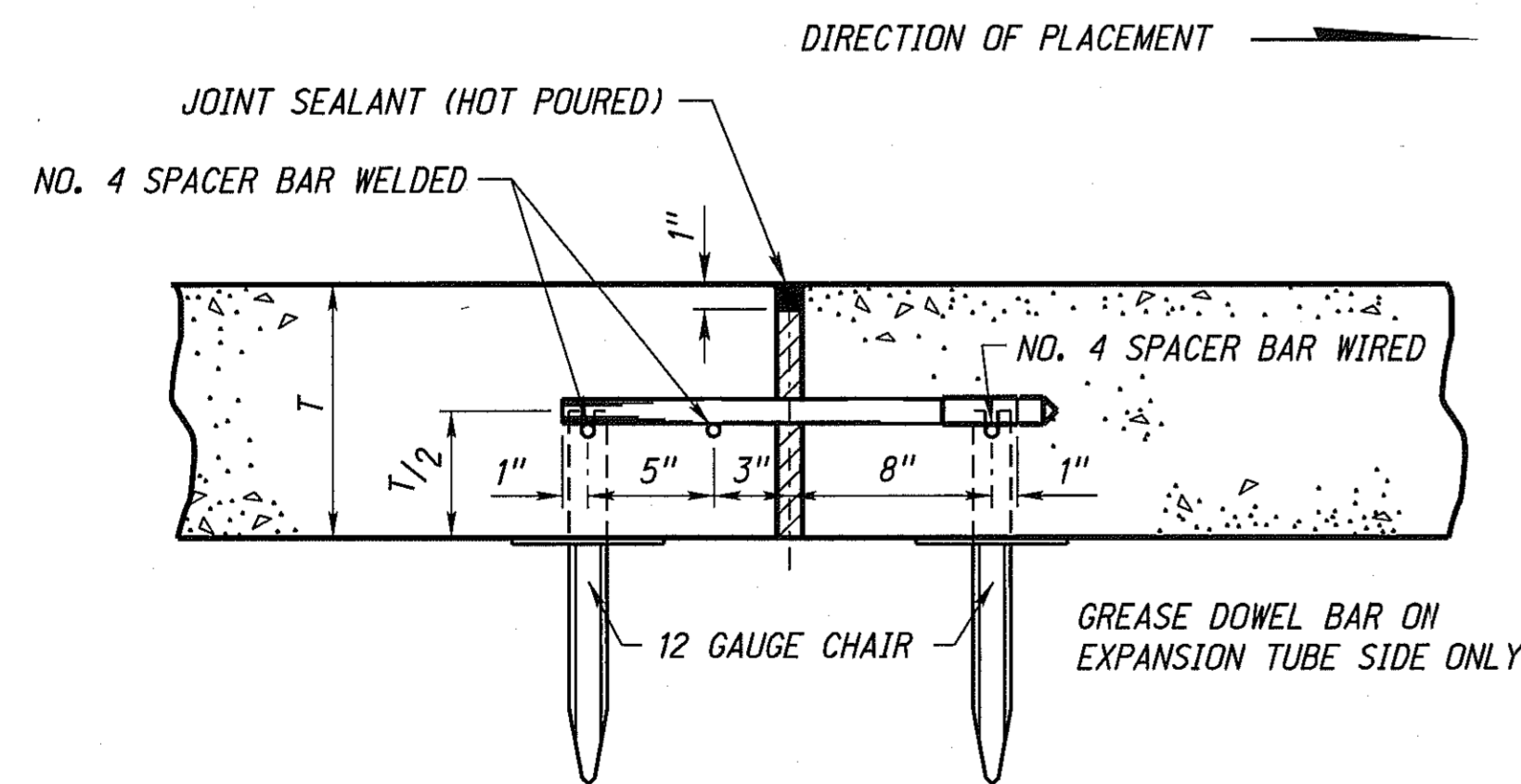
EXPANSION JOINTS SHALL NOT BE SKEWED.

T = PAVEMENT THICKNESS

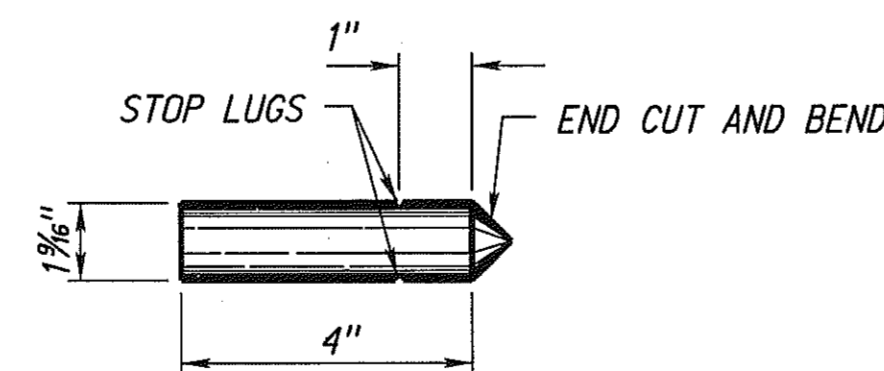
* THE DEPARTMENT REQUIRES THAT DOWEL BASKETS BE PLACED IN ALL CONTRACTION JOINTS WHICH ARE 6'-0" OR WIDER. THE DOWEL BASKETS SHALL BE PLACED TRANSVERSE TO THE DIRECTION OF THE PREDOMINANT TRAFFIC DIRECTION.



PREFORMED EXPANSION JOINT FILLER
(TO BE USED AT EXPANSION JOINTS ONLY)

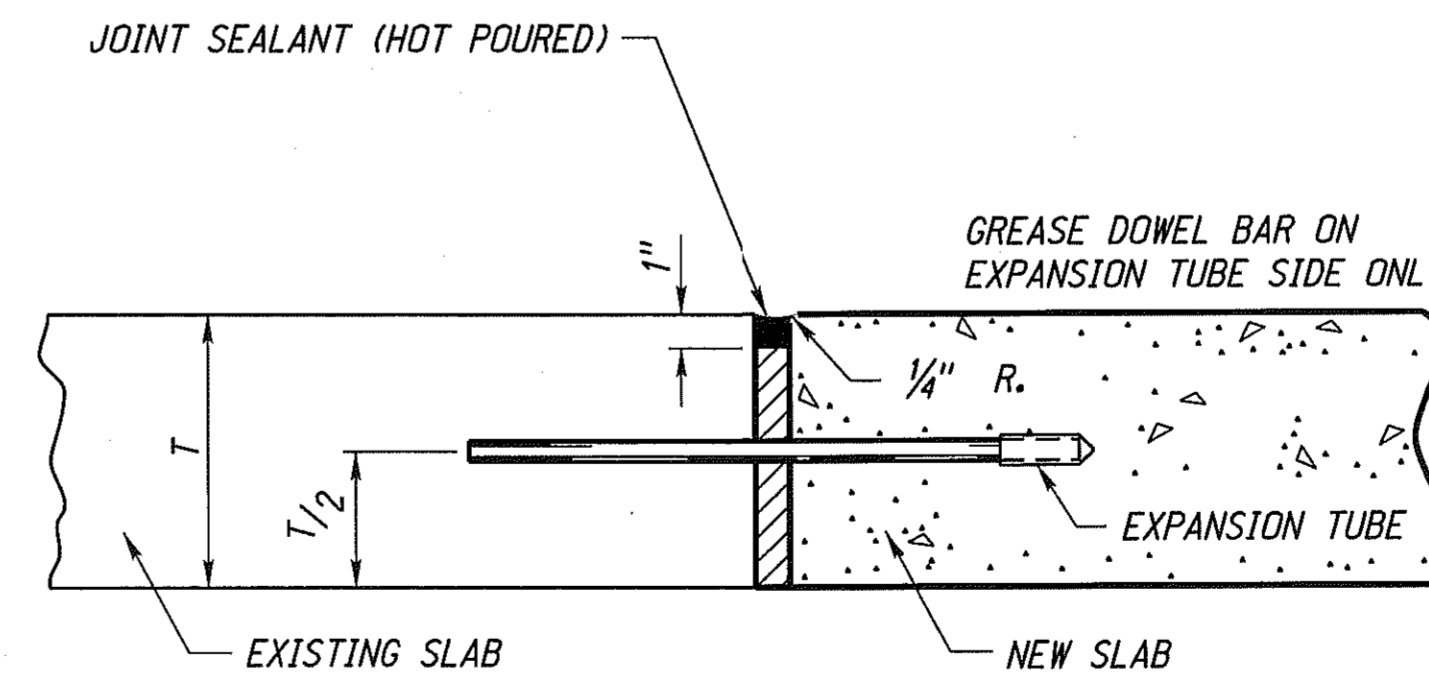


SECTION



EXPANSION TUBE

EXPANSION JOINT
(SUBSIDIARY)

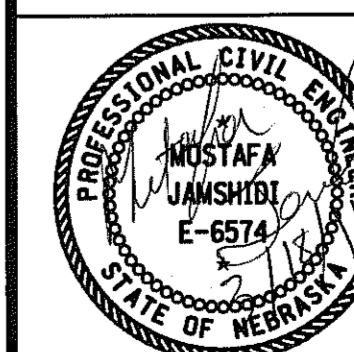


SECTION

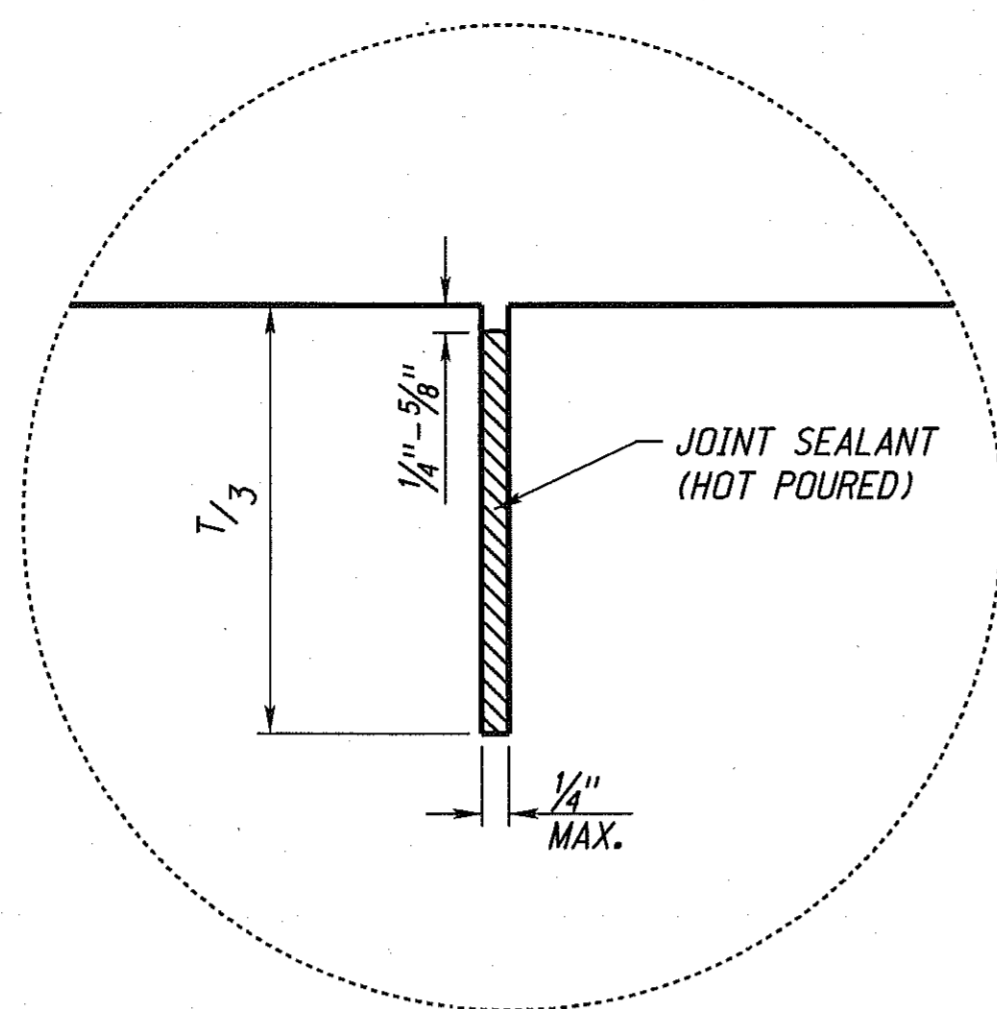
NOTES:
DOWEL BARS SHALL BE DRILLED TO A DEPTH OF 8" INTO EXISTING SLAB AND GROUTED.

R9	JUL 11	JOINT: EARLY SAW CUT
R8	OCT. 10	CHANGED TINING INFORMATION
R7	MAR. 05	MULTIPLE CHANGES
REV. NO.	DATE	DESCRIPTION OF REVISION

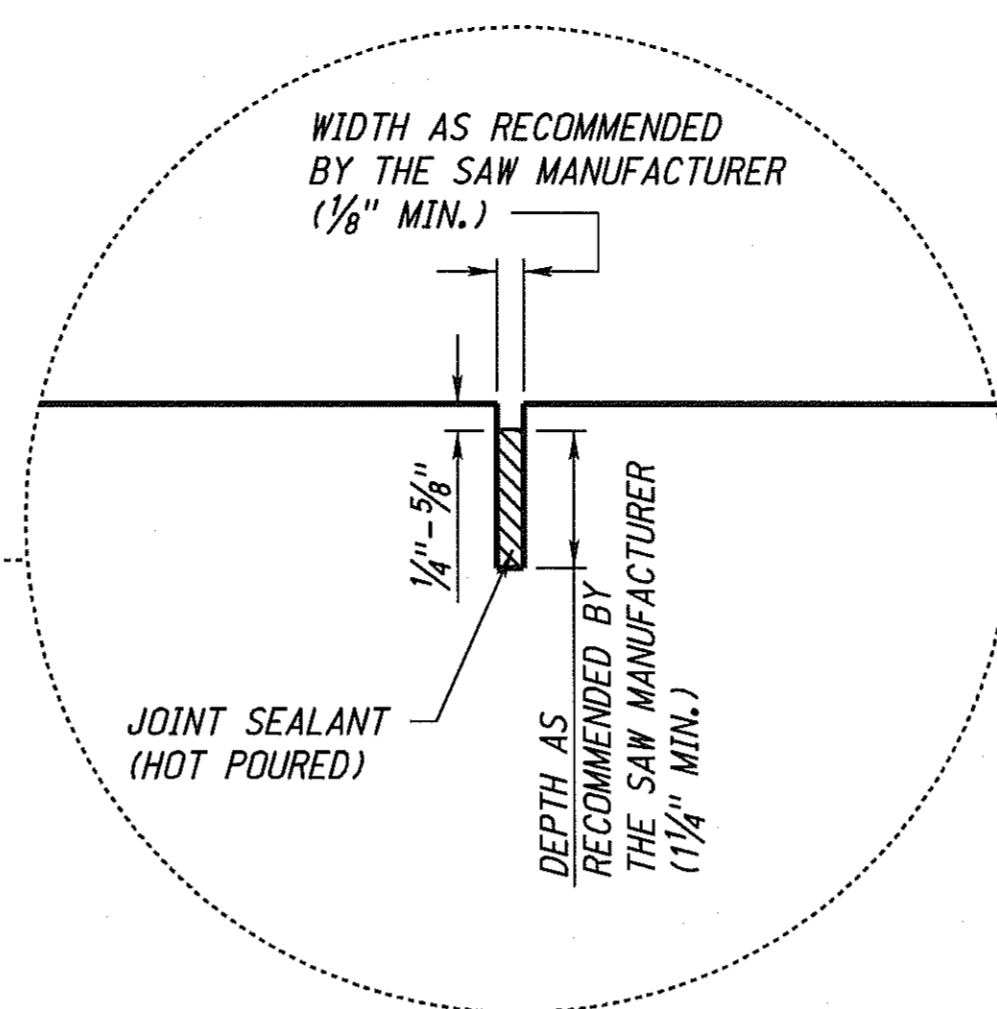
NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 329-R9
**8 TO 16 INCH
CONCRETE PAVEMENT**



FHWA APPROVED:
Walter E. Fiel
3/20/2011
DATE
ORIGINAL:
OCTOBER 25, 1994
DATE



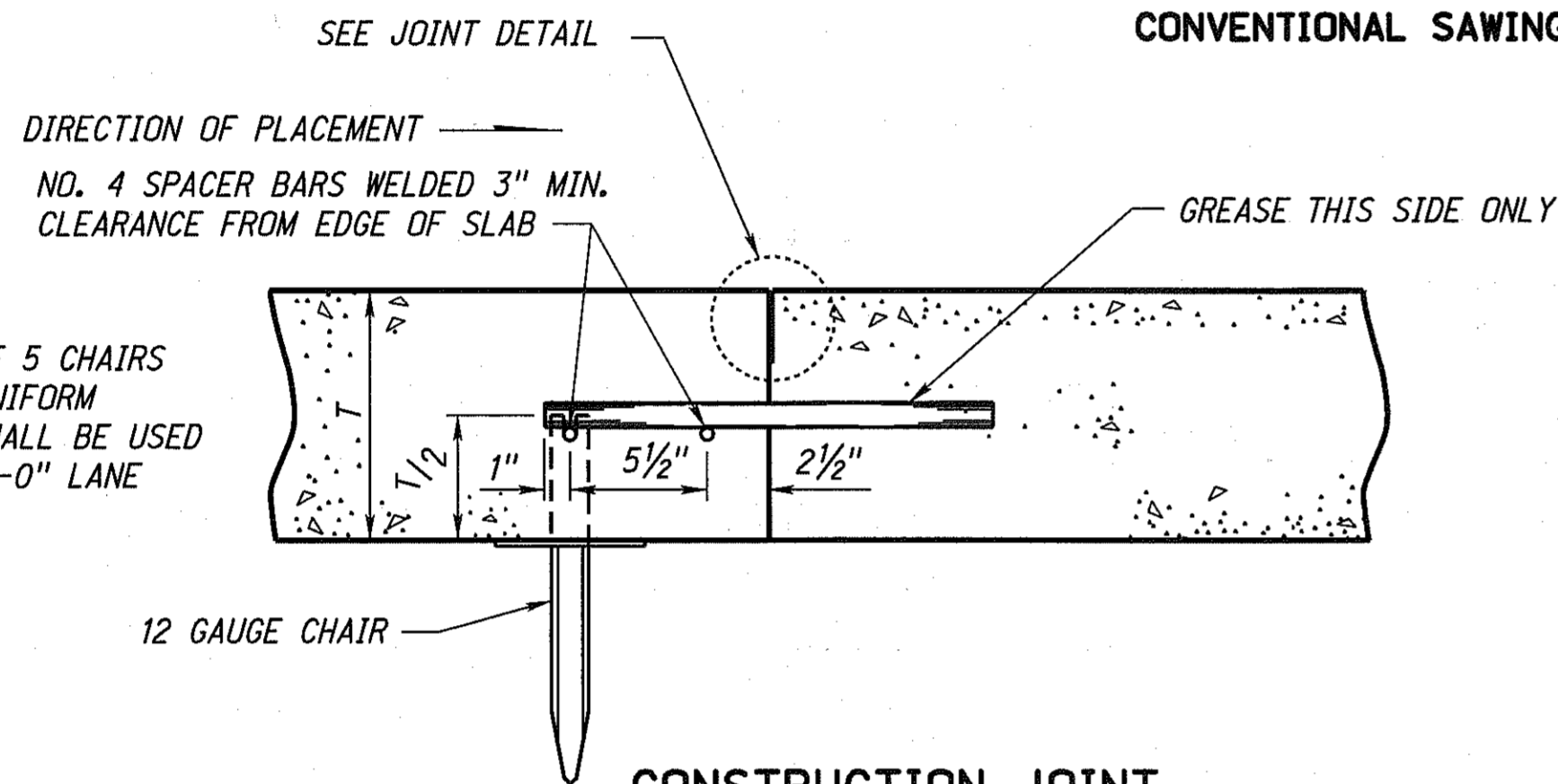
OR



CONVENTIONAL SAWING

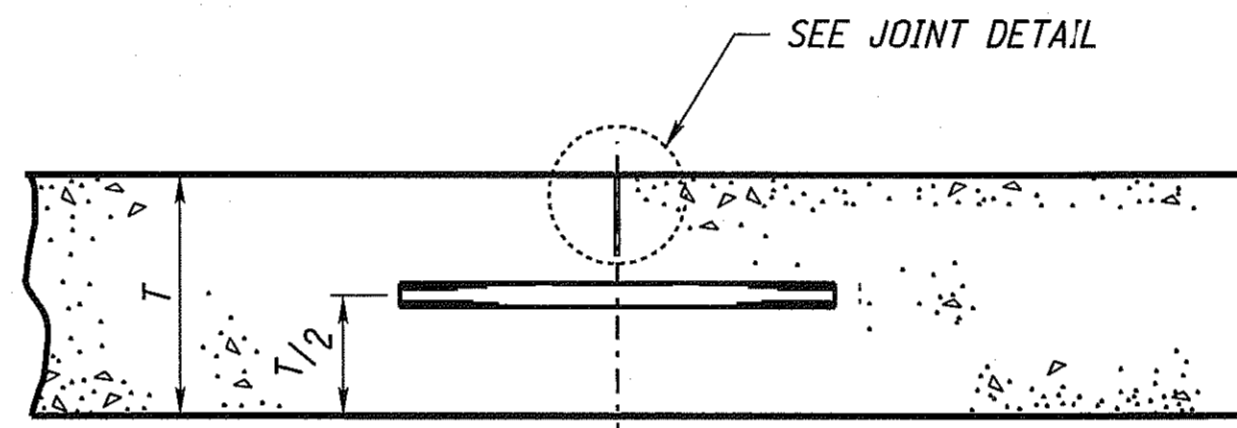
EARLY-SAW CUT

JOINT DETAIL

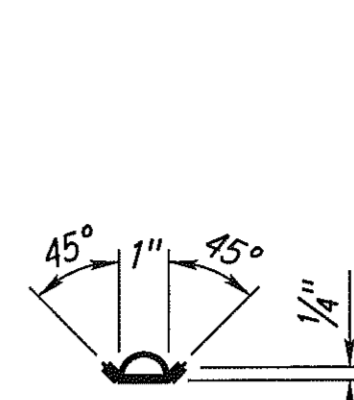


CONSTRUCTION JOINT

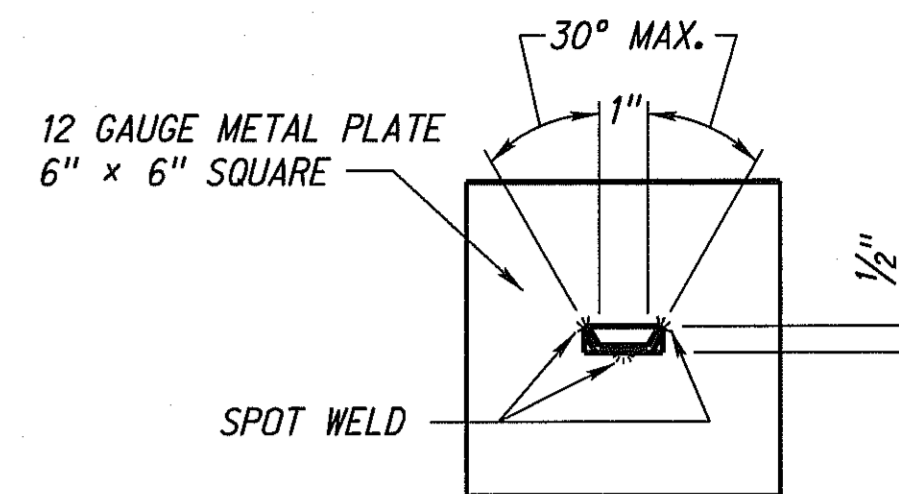
THE DOWEL BAR SPACING SHALL BE THE SAME AS SHOWN FOR THE EXPANSION JOINT. REFER TO BAR LOCATION TABLE AND THE DOWEL BAR HEIGHT AND DIAMETER TABLE ON SHEET 1 OF 4.



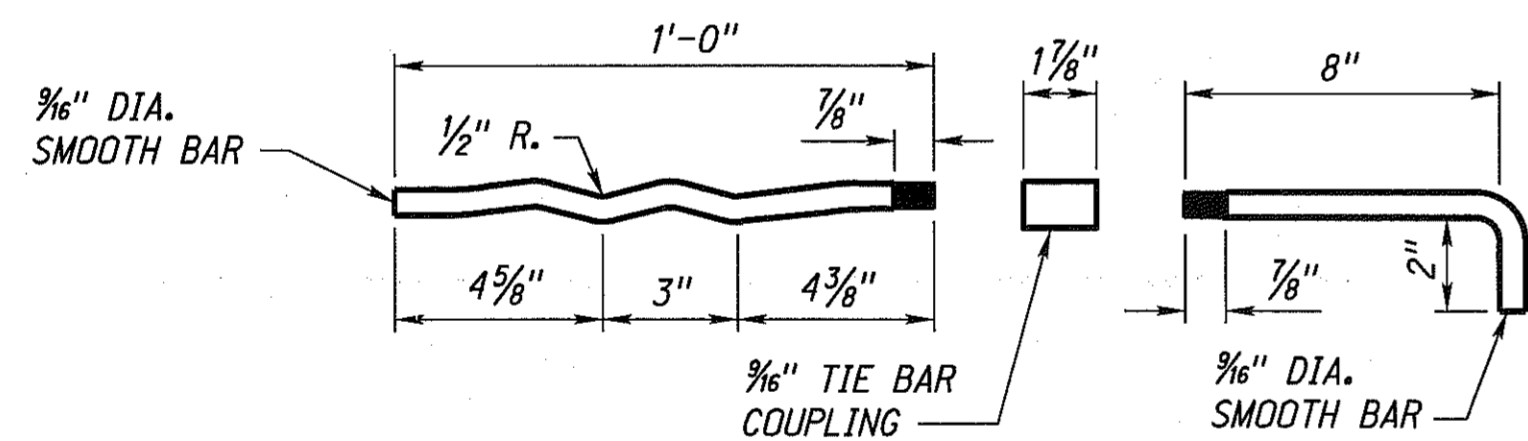
CONTRACTION JOINT



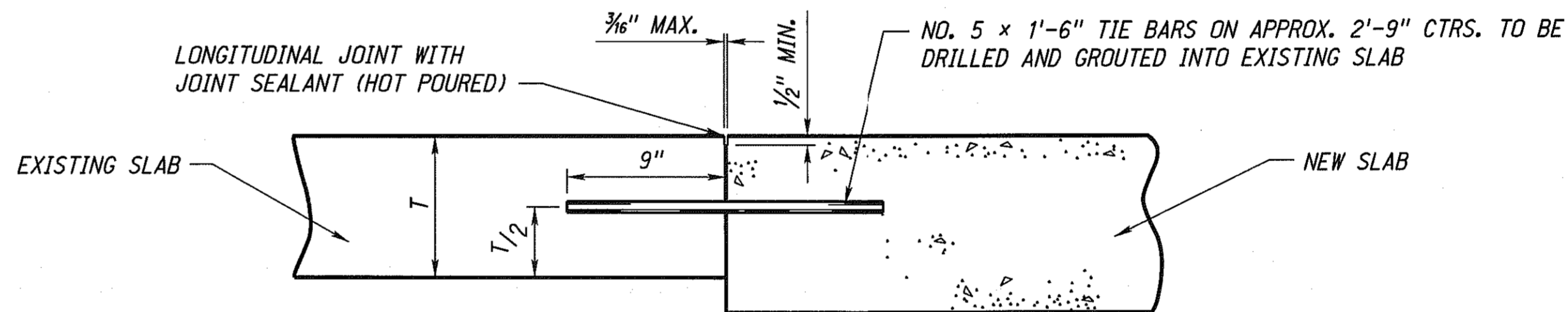
TIE BAR PIN



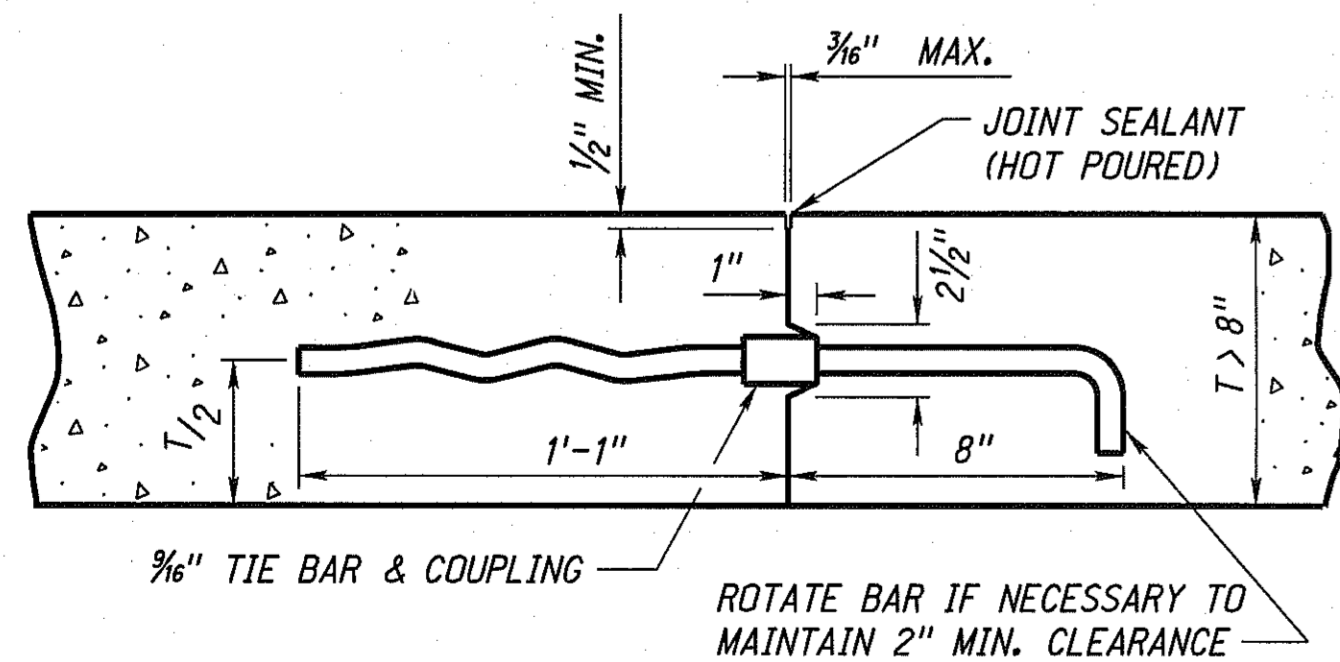
CHAIR



DETAILS OF "W" BAR

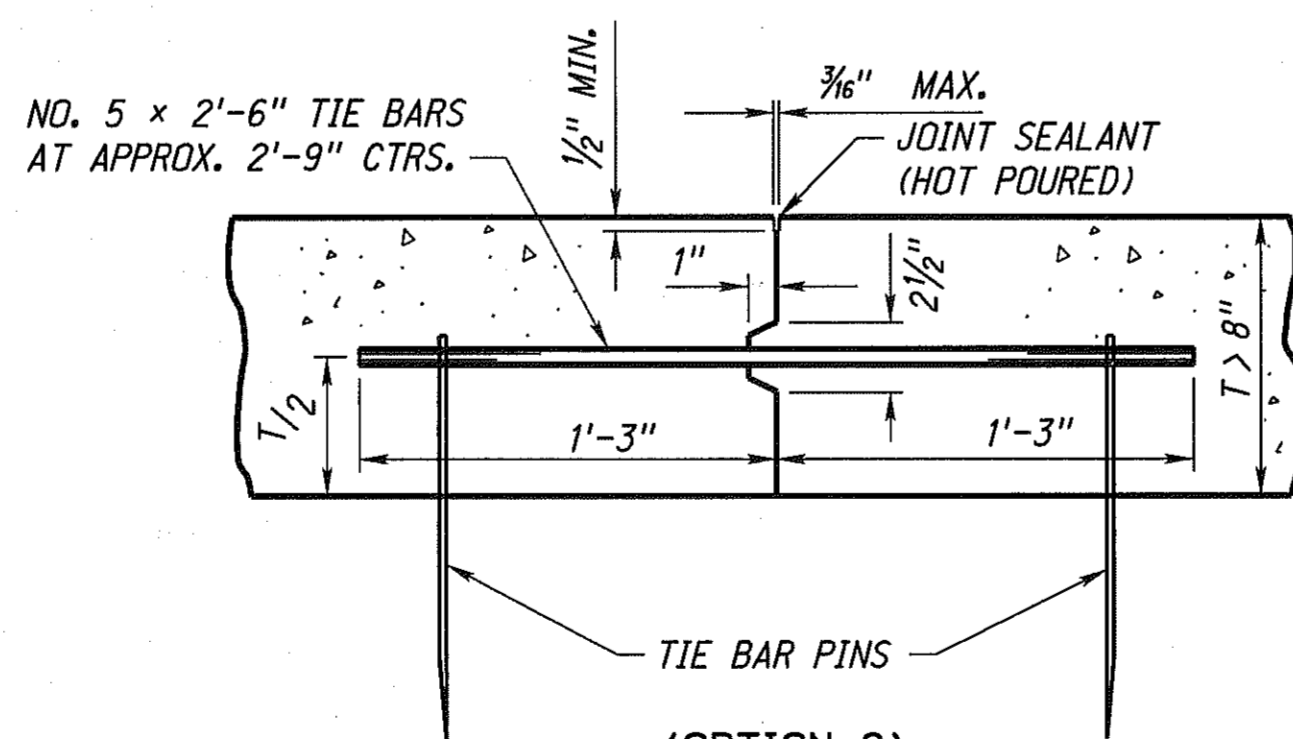


DETAILS OF TIE BAR



(OPTION 1)
KEY TYPE

NO. 5 HOOK AND W-BARS AT APPROX. 2'-9" CTRS.
OR 3/8" HOOK AND W-BARS AT APPROX. 2'-9" CTRS.

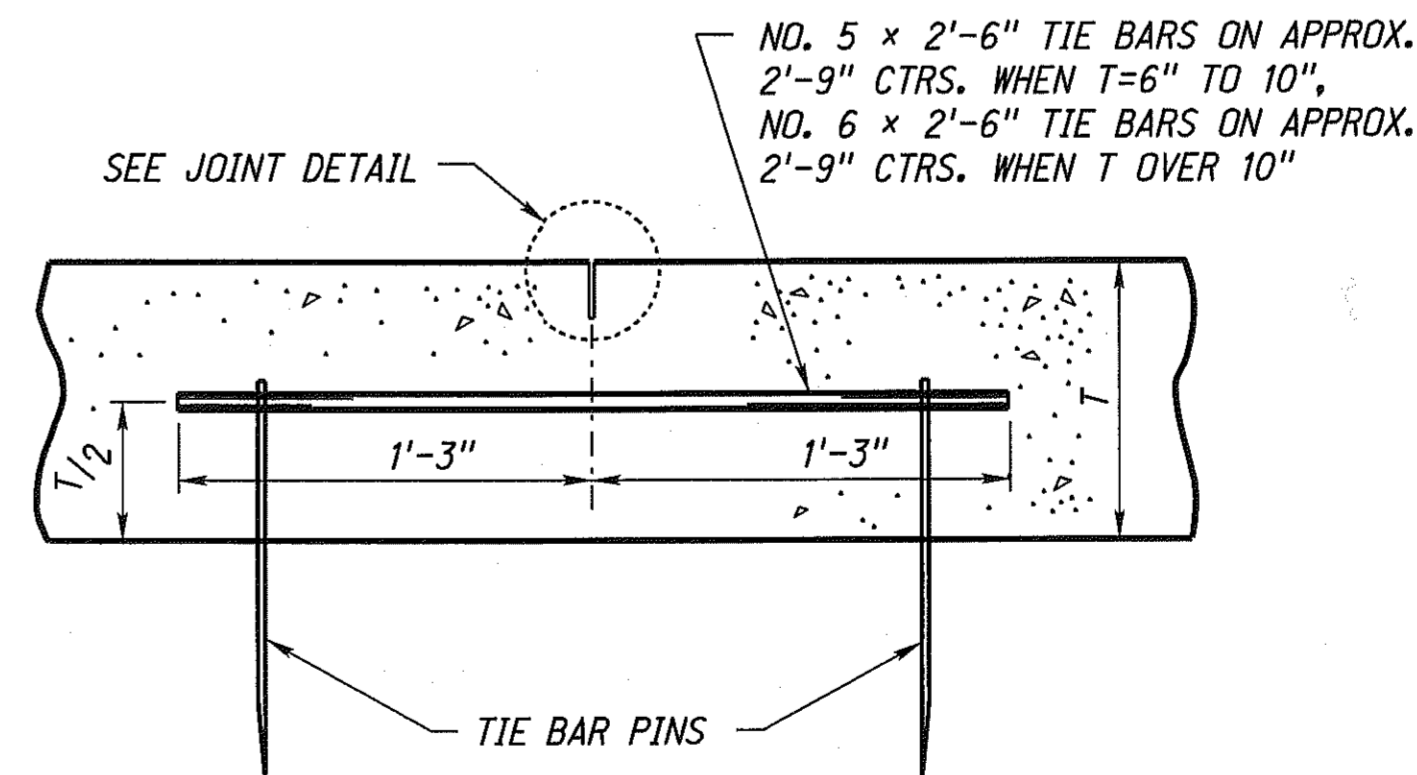


(OPTION 2)
KEY TYPE

KEY TYPE JOINT SHALL BE USED ON ALL LONGITUDINAL CONSTRUCTION JOINTS WHEN THE ADJACENT LANE IS NOT PLACED AT THE SAME TIME

NOTE:
NO TIE BARS SHALL BE CLOSER THAN 1'-3" TO A TRANSVERSE JOINT. ALL LONGITUDINAL JOINTS BETWEEN LANES AND BETWEEN LANES AND SHOULDERS MUST BE TIED. MEDIAN SHOULD NOT BE TIED.

LONGITUDINAL JOINTS



SAWED

WHEN TWO ADJACENT LANES ARE PLACED AT THE SAME TIME, THE LONGITUDINAL JOINT COMMON TO THE LANES SHALL BE SAWED

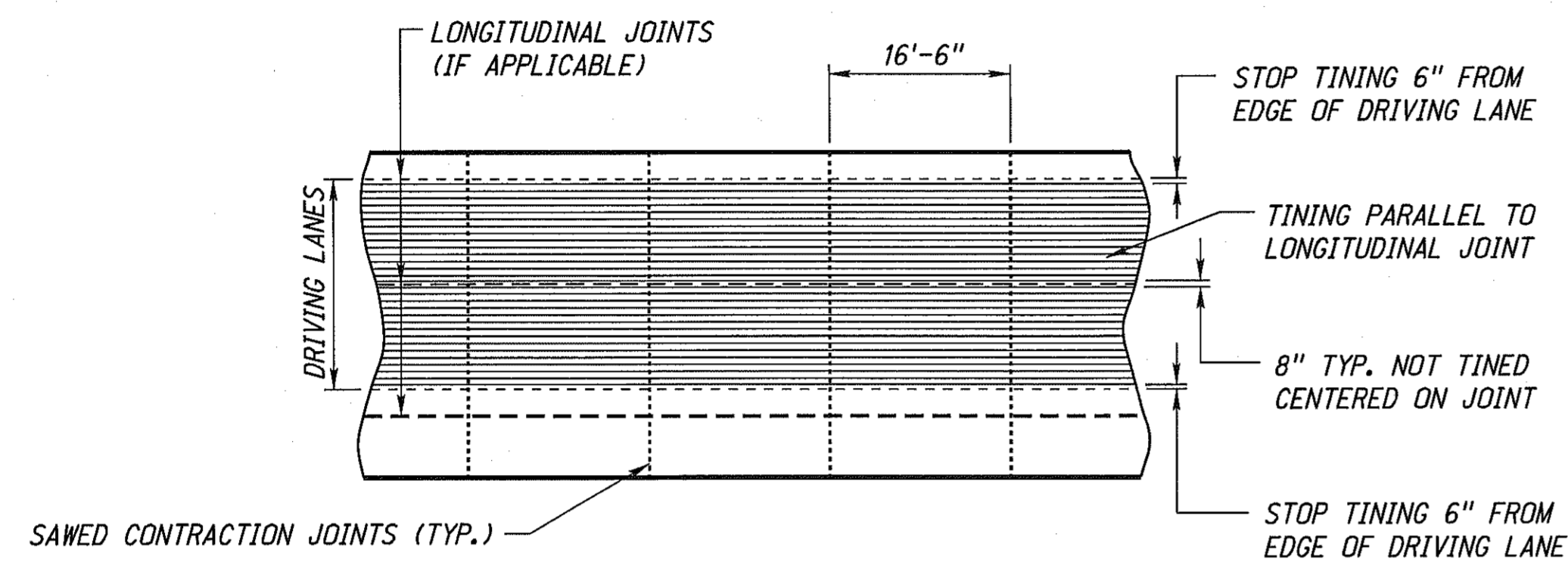
NOTE: T = PAVEMENT THICKNESS

R9	JUL 11	JOINT: EARLY SAW CUT
R8	OCT. 10	CHANGED TYPING INFORMATION
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REV. NO.	DATE	DESCRIPTION OF REVISION

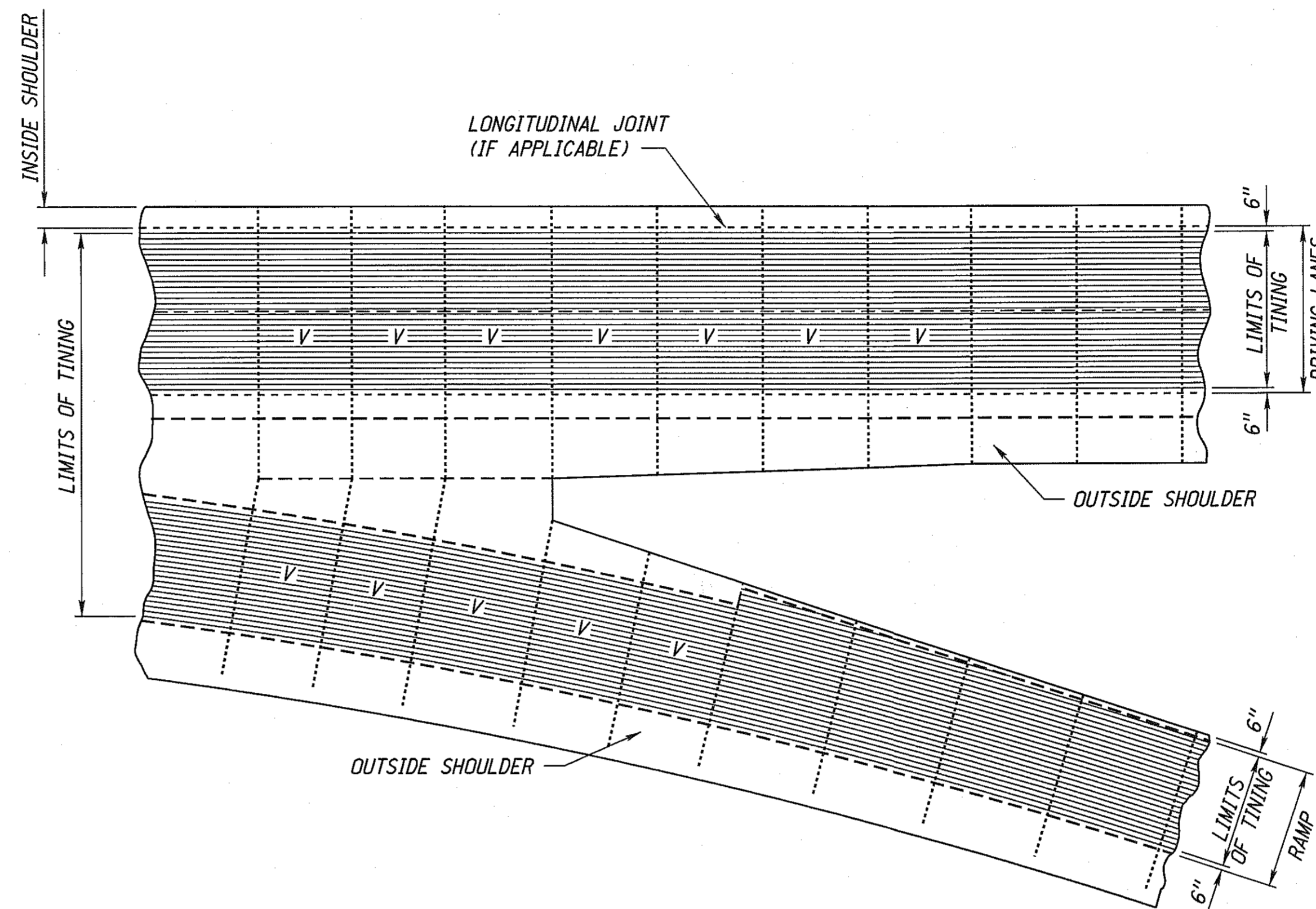
NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 329-R9

8 TO 16 INCH
CONCRETE PAVEMENT

	FHWA APPROVED:		2
	DATE		
ORIGINAL:		OCTOBER 25, 1994	
DATE			



TINING WITH CONCRETE SHOULDER



TINING LIMITS GORE AREA

NOTES:

16'-6" TRANSVERSE JOINT SPACING IS THE STANDARD JOINT SPACING REGARDLESS OF THE PAVEMENT THICKNESS.

V VARIES FROM 10'-0" TO MAX. 16'-6".

THE LONGITUDINAL JOINT BETWEEN THE SHOULDER AND THE 12'-0" DRIVING LANE IS NOT REQUIRED FOR SHOULDER WIDTHS OF 4'-0" OR LESS.

TRANSVERSE JOINTS FOR DOWELED CONCRETE PAVEMENT SHALL BE CONSTRUCTED PERPENDICULAR TO THE ROADWAY.

ALL CONCRETE SURFACES, NOT TINED, WILL REQUIRE TRANSVERSE BROOMING OR BURLAP DRAG. (NOT APPLICABLE TO SHOULDERS)

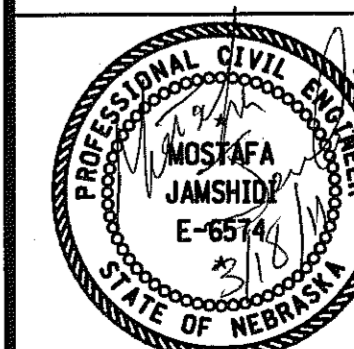
DRDESIGN55
dcr13017
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3290e09.dgn
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SHEET 3 OF 4

R9	JUL 11	JOINT: EARLY SAW CUT
R8	OCT. 10	CHANGED TINING INFORMATION
R7	MAR. 05	MULTIPLE CHANGES
REV. NO.	DATE	DESCRIPTION OF REVISION

NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 329-R9

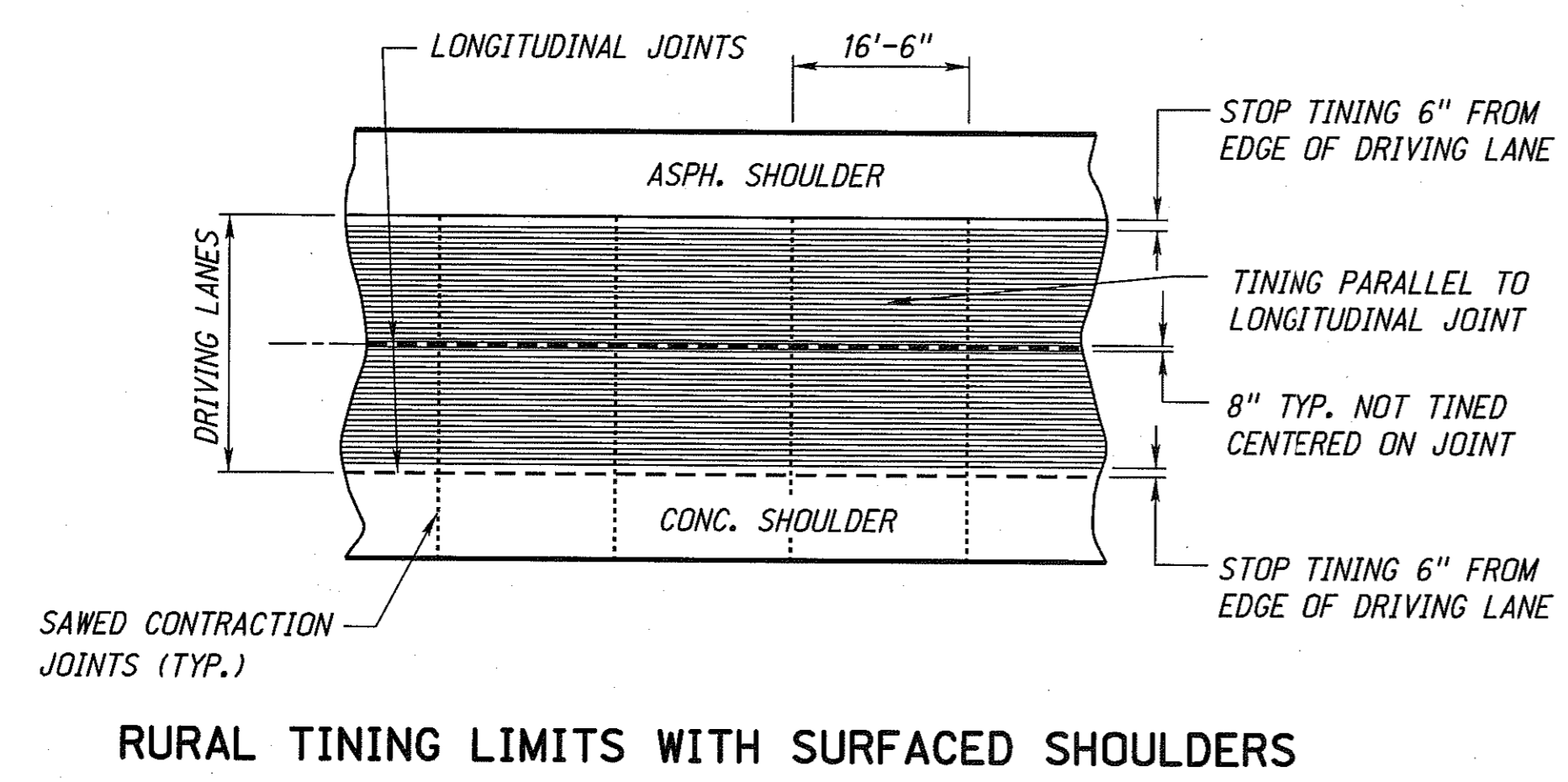
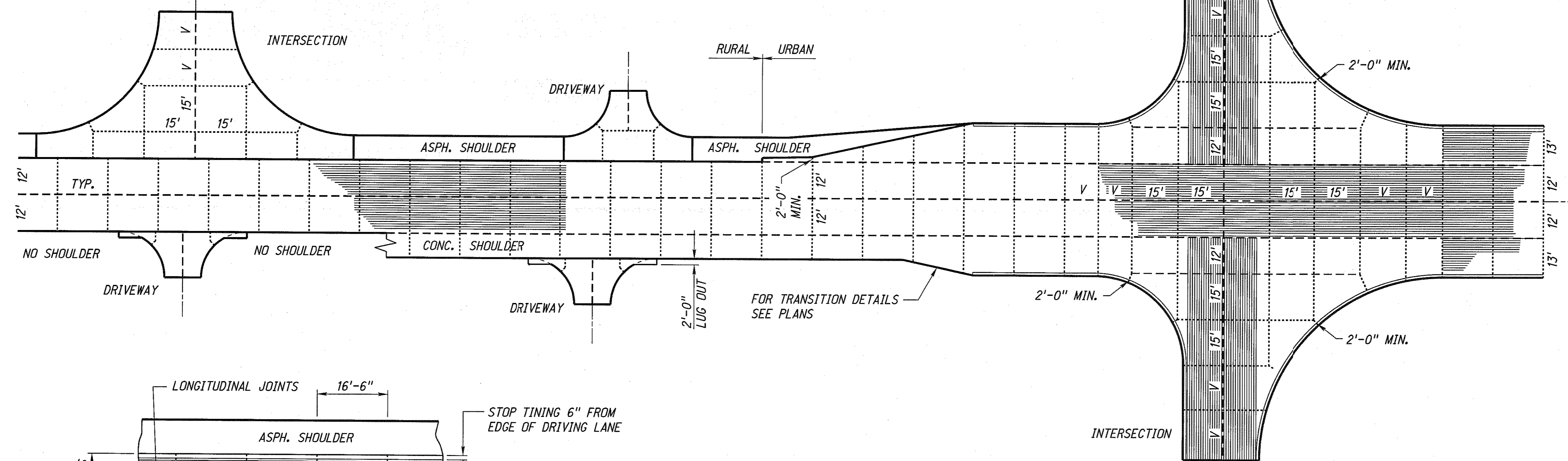
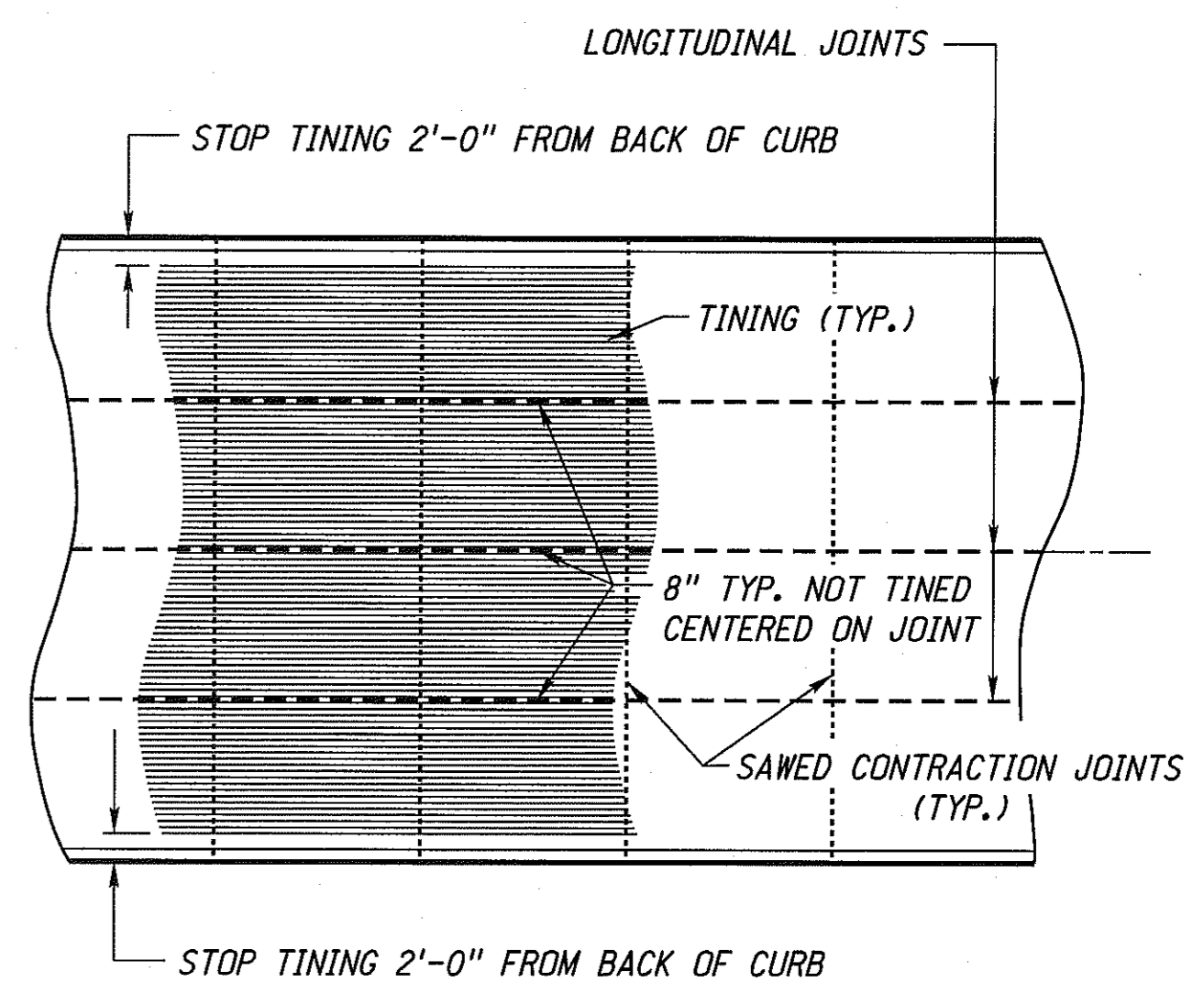
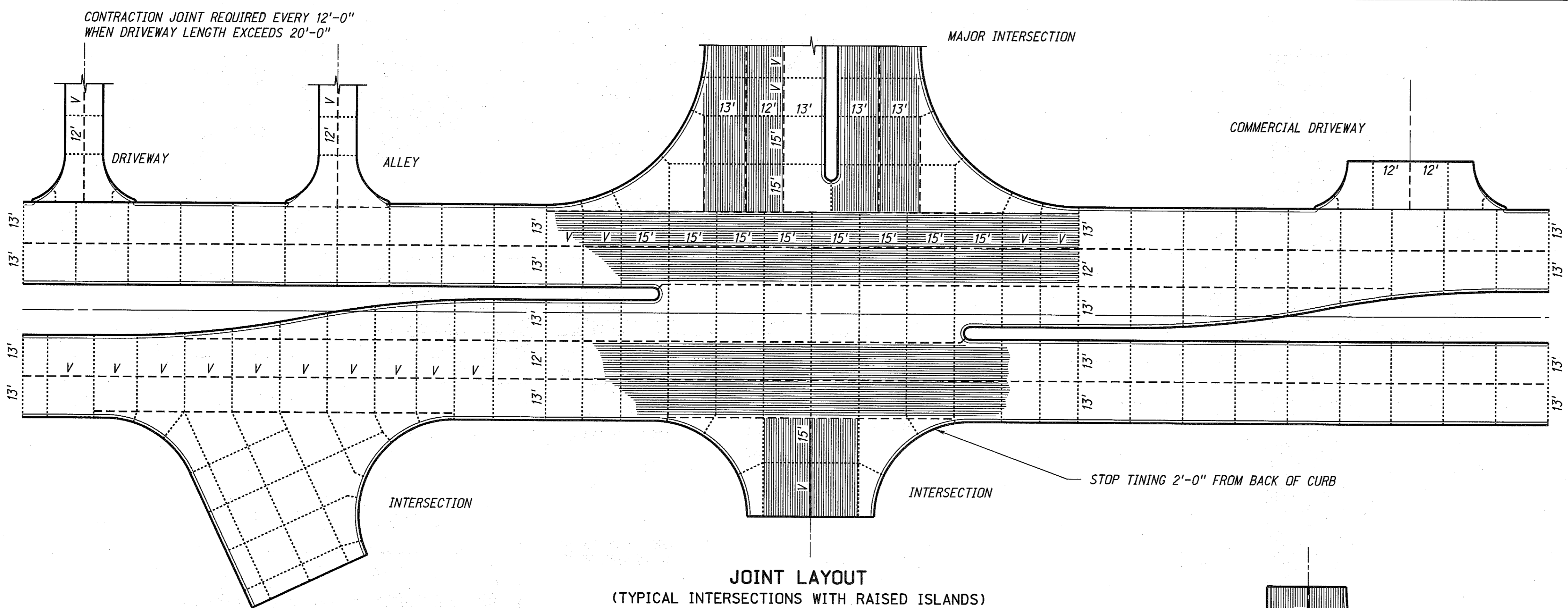
8 TO 16 INCH
CONCRETE PAVEMENT



FHWA APPROVED:
Walter C. Fink
3/30/2011
DATE

ORIGINAL:
OCTOBER 25, 1994
DATE

3
4



LEGEND

..... SAWED CONTRACTION JOINT

----- LONGITUDINAL JOINT

NOTES:

16'-6" TRANSVERSE JOINT SPACING IS THE STANDARD JOINT SPACING REGARDLESS OF THE PAVEMENT THICKNESS.

V VARIES FROM 10'-0" TO MAX. 16'-6".

VARIABLE SPACING IS USED AROUND INTERSECTIONS AND LARGE DRIVEWAYS WHICH IS TIED TO THE CONCRETE LANES OR SHOULDERS TO MATCH THE JOINTS.

ALL CONCRETE SURFACES, NOT TINED, WILL REQUIRE TRANSVERSE BROOMING OR BURLAP DRAG. (NOT APPLICABLE TO SHOULDERS)

R9	JUL. 11	JOINT: EARLY SAW CUT
R8	OCT. 10	CHANGED TINING INFORMATION
R7	MAR. 05	MULTIPLE CHANGES
REV. NO.	DATE	DESCRIPTION OF REVISION

NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 329-R9

**8 TO 16 INCH
CONCRETE PAVEMENT**

FHWA APPROVED:
M. Janshidi
DATE: 5/30/2011

ORIGINAL:
OCTOBER 25, 1994
DATE

4
4

CHANNELIZATION DEVICES

THE FUNCTION OF CHANNELIZATION DEVICES IS TO WARN DRIVERS OF CONDITIONS CREATED BY WORK ACTIVITIES IN OR NEAR THE TRAVELED WAY, TO PROTECT WORKERS IN THE TEMPORARY TRAFFIC CONTROL ZONE, AND TO GUIDE DRIVERS AND PEDESTRIANS SAFELY. CHANNELIZING DEVICES INCLUDE BUT ARE NOT LIMITED TO CONES, TUBULAR MARKERS, VERTICAL PANELS, DRUMS, BARRICADES, TEMPORARY RAISED ISLANDS, AND BARRIERS.

DEVICES USED FOR CHANNELIZATION SHOULD PROVIDE FOR SMOOTH AND GRADUAL TRAFFIC MOVEMENT FROM ONE LANE TO ANOTHER, ONTO A BYPASS OR DETOUR, OR TO REDUCE THE WIDTH OF THE TRAVELED WAY. THEY MAY ALSO BE USED TO SEPARATE TRAFFIC FROM THE WORK SPACE, PAVEMENT DROP-OFFS, PEDESTRIAN PATHS, OR OPPOSING DIRECTIONS OF TRAFFIC.

CHANNELIZING DEVICES SHOULD BE CONSTRUCTED AND BALLASTED TO PERFORM IN A PREDICTABLE MANNER WHEN INADVERTENTLY STRUCK BY A VEHICLE. IF STRUCK, THE DEVICE SHOULD YIELD OR BREAK AWAY, AND FRAGMENTS OR OTHER DEBRIS FROM THE DEVICE SHOULD NOT PENETRATE THE PASSENGER COMPARTMENT OF THE VEHICLE OR BE A POTENTIAL HAZARD TO WORKERS OR PEDESTRIANS IN THE IMMEDIATE AREA.

SPACING OF CHANNELIZING DEVICES SHOULD NOT EXCEED A DISTANCE IN FEET EQUAL TO THE SPEED WHEN USED FOR THE TAPER CHANNELIZATION, AND A DISTANCE IN FEET OF TWICE THE SPEED WHEN USED FOR TANGENT CHANNELIZATION.

SPACING OF CHANNELIZATION DEVICES		
SPEED (MPH)	SPACING OF DEVICES IN FEET	
	TAPER	TANGENT
25	25 FT	50 FT
35	35 FT	70 FT
45	45 FT	90 FT
55	55 FT	110 FT
65	65 FT	130 FT
70	70 FT	140 FT
75	75 FT	150 FT

WARNING LIGHTS ON CHANNELIZING DEVICES. CONSIDERATION SHOULD BE GIVEN TO FOG OR SNOW AREAS, SEVERE ROADWAY CURVATURE, AND USUALLY CLUTTERED ENVIRONMENTS. FLASHING WARNING LIGHTS SHALL BE PLACED ON CHANNELIZING DEVICES USED SINGLY OR IN GROUPS TO MARK A SPOT CONDITION. STEADY-BURN WARNING LIGHTS MAY BE USED ON CHANNELIZING DEVICES USED IN A SERIES.

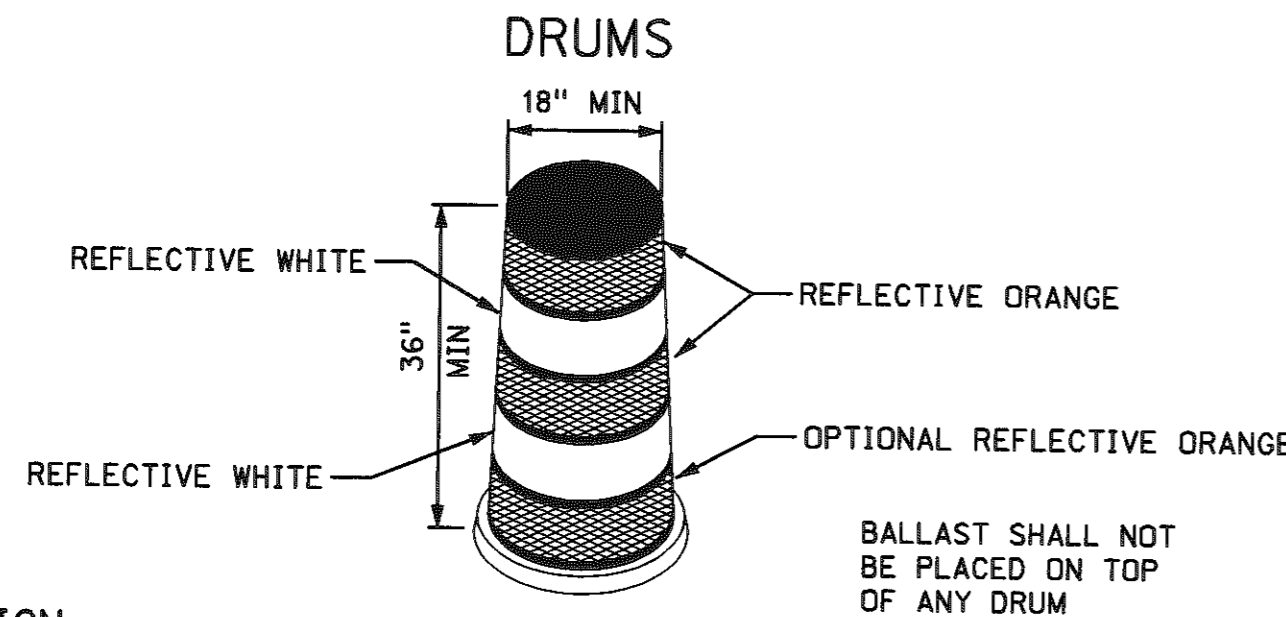
THE RETROREFLECTIVE MATERIAL USED ON CHANNELIZING DEVICES SHALL HAVE A SMOOTH, SEALED OUTER SURFACE, MEETING THE REQUIREMENTS OF THE ASTM SPECIFICATION: D4956, FOR TYPE III SHEETING. THE COEFFICIENT OF RETROREFLECTION OF CHANNELIZING DEVICES SHALL HAVE THE FOLLOWING MINIMUM BRIGHTNESS VALUES MEASURED AT 0.2° OBSERVATION ANGLE AND -4° ENTRANCE ANGLE. CANDELAS PER LUX PER SQUARE METER.

COEFFICIENT OF RETROREFLECTION			
WHITE	ORANGE	RED	YELLOW
125	50	22.5	85

IN ADDITION TO THE MINIMUM COEFFICIENT OF RETROREFLECTION, THE AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) "QUALITY STANDARD FOR WORK ZONE TRAFFIC CONTROL DEVICES" MAY BE USED AS A VISUAL GUIDE FOR DETERMINING IF A TRAFFIC CONTROL DEVICE IS ACCEPTABLE, MARGINAL OR UNACCEPTABLE.

THE NAME AND TELEPHONE NUMBER OF THE AGENCY, CONTRACTOR, OR SUPPLIER MAY BE SHOWN ON THE CHANNELIZING DEVICE BACK OR SUPPORT, BUT NOT ON THE DEVICES FACE. THE LETTERS AND NUMBERS SHALL BE A NON-REFLECTIVE COLOR AND NOT OVER 100 SQUARE CENTIMETERS IN TOTAL AREA.

PARTICULAR ATTENTION SHOULD BE GIVEN TO ASSURING THAT CHANNELIZING DEVICES ARE MAINTAINED AND KEPT CLEAN, VISIBLE, AND PROPERLY POSITIONED AT ALL TIMES. DEVICES SHALL BE REPLACED THAT ARE DAMAGED AND HAVE LOST A SIGNIFICANT AMOUNT OF THEIR RETROREFLECTIVITY AND EFFECTIVENESS.



DESIGN

DRUMS USED FOR TRAFFIC WARNING OR CHANNELIZATION SHALL BE CONSTRUCTED OF LIGHT-WEIGHT, FLEXIBLE, AND DEFORMABLE MATERIALS AND BE A MINIMUM OF 36 INCHES IN HEIGHT AND HAVE AT LEAST A 18 INCHES MINIMUM WIDTH, REGARDLESS OF ORIENTATION. THE PREDOMINANT COLOR OF THE DRUM SHALL BE ORANGE. STEEL DRUMS SHALL NOT BE USED. THE MARKINGS ON DRUMS SHALL BE HORIZONTAL, CIRCUMFERENTIAL, ALTERNATING ORANGE AND WHITE RETROREFLECTIVE STRIPES 6 INCHES TO 8 INCHES WIDE. EACH DRUM SHALL HAVE A MINIMUM OF TWO ORANGE AND TWO WHITE STRIPES. ANY NON-RETROREFLECTIVE SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES, SHALL NOT EXCEED 2 INCHES WIDE. DRUMS SHALL HAVE CLOSED TOPS THAT WILL NOT ALLOW COLLECTION OF ROADWORK OR OTHER DEBRIS.

APPLICATION

DRUMS ARE MOST COMMONLY USED TO CHANNELIZE OR DELINEATE TRAFFIC FLOW BUT MAY ALSO BE USED SINGLY OR IN GROUPS TO MARK SPECIFIC LOCATIONS. DRUMS ARE HIGHLY VISIBLE AND HAVE GOOD TARGET VALUE, GIVEN THE APPEARANCE OF BEING FORMIDABLE OBSTACLES AND, THEREFORE, COMMAND THE RESPECT OF DRIVERS.

DRUMS SHOULD NOT BE WEIGHTED WITH SAND, WATER, OR ANY MATERIAL TO AN EXTENT THAT WOULD MAKE THEM HAZARDOUS TO MOTORISTS, PEDESTRIANS, OR WORKERS. WHEN THEY ARE USED IN REGIONS SUSCEPTIBLE TO FREEZING, THEY SHOULD HAVE DRAINAGE HOLES IN THE BOTTOM SO WATER WILL NOT ACCUMULATE AND FREEZE, CAUSING A HAZARD IF STRUCK BY A MOTORIST. BALLAST SHALL NOT BE PLACED ON TOP OF THE DRUM.

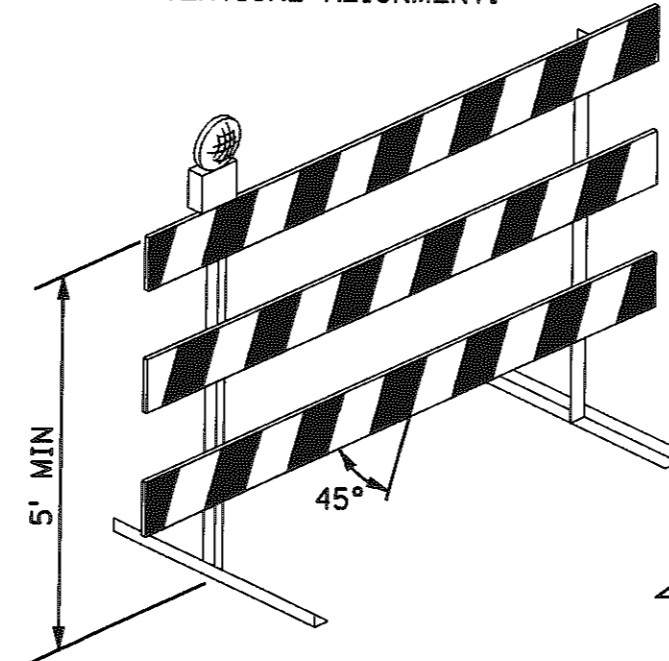
BARRICADES

BARRICADE TYPE	TYPE II	TYPE III
WIDTH OF RAIL *	8 INCHES MIN - 12 INCHES MAX	8 INCHES MIN - 12 INCHES MAX
LENGTH OF RAIL	36 INCHES	8 FEET **
WIDTH OF STRIPES	6 INCHES	6 INCHES
HEIGHT	36 INCHES	5 FEET
REFLECTIVE SHEETING	TYPE III	TYPE III
NUMBER OF REFLECTORIZED RAIL FACES	4 (TWO EACH DIRECTION)	6 (THREE EACH DIRECTION)

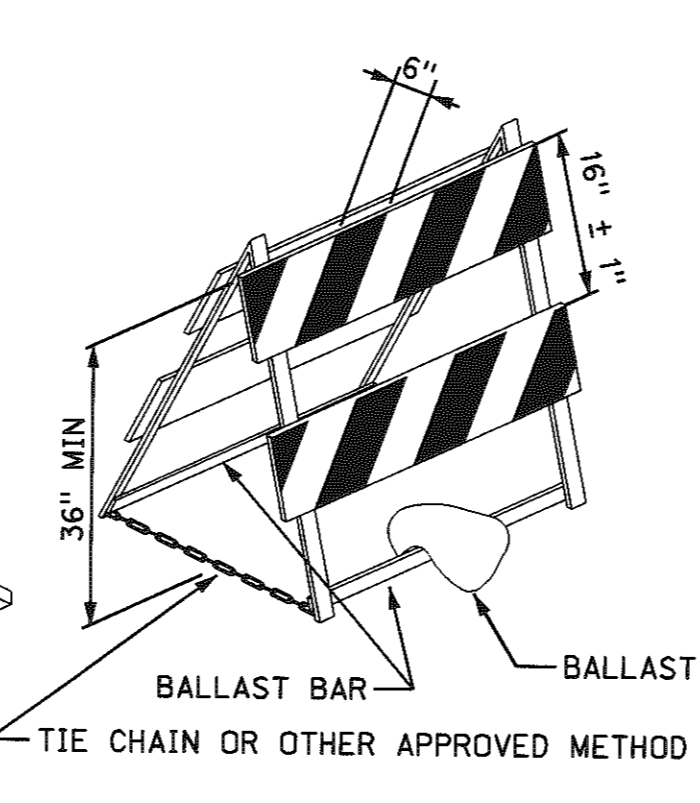
* NOMINAL DIMENSIONS ARE PERMISSIBLE WHEN CONSTRUCTED FROM LUMBER.
** WHEN LATERAL SPACE IS LIMITED, SOME TYPE III BARRICADES WITH A 4 FOOT LENGTH OF RAIL, MAY BE ALLOWED WHEN APPROVED BY THE ENGINEER.

TYPE III BARRICADE

TYPICAL MOUNTING OF FLASHING WARNING LIGHTS. LIGHTS SHALL ALWAYS BE IN VERTICAL ALIGNMENT.



TYPE II BARRICADE



DESIGN

A BARRICADE IS A PORTABLE OR FIXED DEVICE HAVING TWO OR THREE RAILS WITH APPROPRIATE MARKINGS. IT IS USED TO CONTROL TRAFFIC BY CLOSING, RESTRICTING, OR DELINEATING ALL OR A PORTION OF THE RIGHT-OF-WAY.

BARRICADES SHALL BE ONE OF TWO TYPES: TYPE II, OR TYPE III.

STRIPES ON BARRICADE RAILS SHALL BE ALTERNATING ORANGE AND WHITE RETROREFLECTIVE STRIPES (SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TRAFFIC IS TO PASS). THE STRIPES SHALL BE 6 INCHES WIDE. THE MINIMUM RAIL LENGTH IS 36 INCHES.

WHERE A BARRICADE EXTENDS ENTIRELY ACROSS A ROADWAY, THE STRIPES SHOULD SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN. WHERE BOTH RIGHT AND LEFT TURNS ARE PROVIDED, THE STRIPES MAY SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE OR BARRICADES. WHERE NO TURNS ARE INTENDED, THE STRIPES SHOULD SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES.

BARRICADE RAILS SHOULD BE SUPPORTED IN A MANNER THAT WILL ALLOW THEM TO BE SEEN BY THE MOTORIST AND PROVIDE A STABLE SUPPORT NOT EASILY BLOWN OVER BY THE WIND OR TRAFFIC.

BARRICADES ARE LOCATED ADJACENT TO TRAFFIC AND ARE THEREFORE SUBJECT TO IMPACT BY ERRANT VEHICLES. BECAUSE OF THEIR VULNERABLE POSITION AND THE HAZARD THEY CREATE, THEY SHOULD BE CONSTRUCTED OF LIGHTWEIGHT MATERIALS AND HAVE NO RIGID STAY BRACING FOR A-FRAME DESIGNS. TYPE II BARRICADES SHALL BE BUILT WITH LEGS OR SUPPORTS THAT WILL COLLAPSE WHEN THE BARRICADE IS TIPPED OVER OR HAS BEEN LAID DOWN.

ON HIGH-SPEED ROADWAYS OR IN OTHER SITUATIONS WHERE BARRICADES MAY BE SUSCEPTIBLE TO OVERTURNING IN THE WIND, SANDBAGS SHOULD BE USED FOR BALLASTING. SANDBAGS MAY BE PLACED ON LOWER PARTS OF THE FRAME OR STAYS TO PROVIDE THE REQUIRED BALLAST BUT SHALL NOT BE PLACED ON TOP OF ANY STRIPED RAIL. BARRICADES SHALL NOT BE BALLASTED BY HEAVY OBJECTS SUCH AS ROCKS OR CHUNKS OF CONCRETE.

ON THE INTERSTATE, FREEWAY AND EXPRESSWAY SYSTEM, TYPE II BARRICADES SHALL NOT BE USED FOR CHANNELIZATION.

THE BARRICADE OWNERS NAME, NOT TO EXCEED 15 SQUARE INCHES SHALL BE SHOWN ON THE BARRICADE BACK OR SUPPORT, BUT NOT ON ITS FACE.

APPLICATION

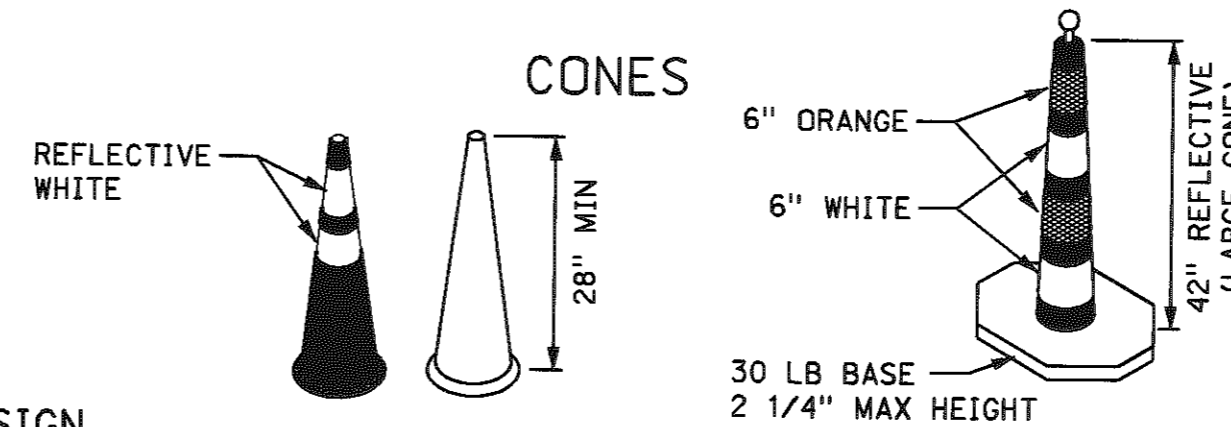
TYPE II BARRICADES ARE INTENDED FOR USE IN SITUATIONS WHERE TRAFFIC IS MAINTAINED THROUGH THE TEMPORARY TRAFFIC CONTROL ZONE. THEY MAY BE USED SINGLY OR IN GROUPS TO MARK A SPECIFIC CONDITION, OR THEY MAY BE USED IN A SERIES FOR CHANNELIZING TRAFFIC. TYPE III BARRICADES SHALL BE SUPPLEMENTED, WITH A LIGHTING DEVICE UNLESS SPECIFICALLY DELETED BY THE ENGINEER TO USE SOME BARRICADES WITHOUT LIGHTS.

TYPE III BARRICADES USED AT A ROAD CLOSURE MAY EXTEND COMPLETELY ACROSS A ROADWAY OR FROM CURB TO CURB. WHERE PROVISION IS MADE FOR ACCESS OF AUTHORIZED EQUIPMENT AND VEHICLES, THE RESPONSIBILITY FOR THE TYPE III BARRICADES SHOULD BE ASSIGNED TO A PERSON TO ENSURE PROPER CLOSURE AT THE END OF EACH WORK DAY.

WHEN A HIGHWAY IS LEGALLY CLOSED BUT ACCESS MUST STILL BE ALLOWED FOR LOCAL TRAFFIC, THE TYPE III BARRICADE SHOULD NOT BE EXTENDED COMPLETELY ACROSS A ROADWAY. A SIGN WITH THE APPROPRIATE LEGEND CONCERNING PERMISSIBLE USE BY LOCAL TRAFFIC SHALL BE MOUNTED.

NORMALLY PERMANENT SIGNS MOUNTED ON BARRICADES SHALL BE ERECTED ABOVE THE BARRICADE. THE SIGNS "ROAD CLOSED", OR "ROAD CONSTRUCTION AHEAD", FOR EXAMPLE CAN EFFECTIVELY BE MOUNTED ABOVE THE BARRICADE THAT CLOSURES THE ROADWAY. TYPE III BARRICADES SHALL BE SUPPLEMENTED WITH A LIGHTING DEVICE UNLESS SPECIFICALLY OMITTED BY THE ENGINEER. DETOUR ARROW AND LARGE WARNING ARROW SIGNS SHOULD BE PLACED ON THE FACE OF BARRICADE.

CONES



DESIGN

CONES SHALL BE PREDOMINANTLY ORANGE, FLOURESCENT RED-ORANGE, OR FLOURESCENT YELLOW/ORANGE, NOT LESS THAN 28 INCHES IN HEIGHT, AND SHALL BE MADE OF A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING VEHICLES ON IMPACT. CONES WHEN ALLOWED ON THE INTERSTATE, FREEWAY OR EXPRESSWAY SYSTEM SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.

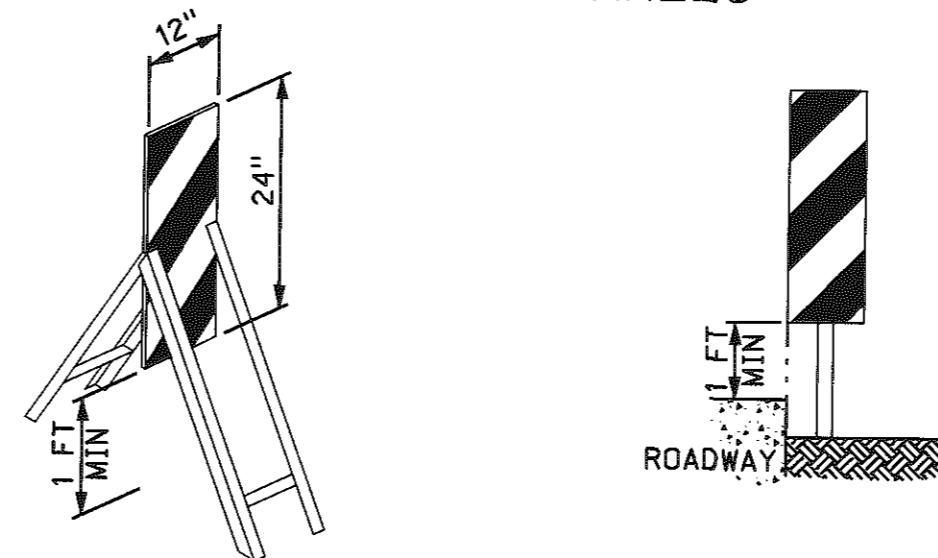
FOR NIGHTTIME USE, CONES SHALL BE RETROREFLECTIVE OR EQUIPPED WITH LIGHTING DEVICES FOR MAXIMUM VISIBILITY. RETROREFLECTION OF 28 INCH OR 36 INCH CONES SHALL BE PROVIDED BY A WHITE BAND 6 INCHES WIDE, NO MORE THAN 3 INCHES TO 4 INCHES FROM THE TOP OF THE CONE, AND AN ADDITIONAL 4 INCHES WIDE WHITE BAND A MINIMUM OF 2 INCHES BELOW THE 6 INCHES BAND. LARGE REFLECTIVE CONES SHALL BE PROVIDED WITH FOUR REFLECTIVE BANDS 6 INCHES EACH, ALTERNATING FROM THE TOP, ORANGE, WHITE, ORANGE, WHITE, WITH A TWO INCH SEPARATION BETWEEN BANDS. WHEN APPROVED BY THE ENGINEER, LARGE CONES MAY BE USED IN PLACE OF VERTICAL PANELS. LARGE CONES SHALL NOT BE USED IN PLACE OF DRUMS OR TYPE II BARRICADES.

APPLICATION

TRAFFIC CONES ARE USED TO CHANNELIZE TRAFFIC, DIVIDE OPPOSING TRAFFIC LANES, DIVIDE TRAFFIC LANES WHEN TWO OR MORE LANES ARE KEPT OPEN IN THE SAME DIRECTION, AND DELINEATE SHORT-DURATION MAINTENANCE AND UTILITY WORK. CONES SHALL NOT BE USED AT NIGHT ON RURAL HIGHWAYS, UNLESS SHOWN ON THE PLANS OR AS APPROVED OR DIRECTED BY THE ENGINEER.

STEPS SHOULD BE TAKEN TO ENSURE THAT CONES WILL NOT BE BLOWN OVER OR DISPLACED BY WIND OR MOVING TRAFFIC. CONES CAN BE DOUBLED UP TO INCREASE THEIR WEIGHT. SOME CONES ARE CONSTRUCTED WITH BASES THAT CAN BE FILLED WITH BALLAST. OTHERS HAVE SPECIAL WEIGHTED BASES, OR WEIGHTS SUCH AS SANDBAG RINGS THAT CAN BE DROPPED OVER THE CONES AND ONTO THE BASE TO PROVIDE ADDED STABILITY. BALLAST, HOWEVER, SHOULD NOT PRESENT A HAZARD IF THE CONES ARE INADVERTENTLY STRUCK.

VERTICAL PANELS



DESIGN

VERTICAL PANELS SHALL BE 12 INCHES WIDE AND AT LEAST 24 INCHES HIGH. THEY SHALL HAVE ORANGE AND WHITE STRIPES, AND BE RETROREFLECTIVE. PANEL STRIPE WIDTHS SHALL BE 6 INCHES, EXCEPT WHERE PANEL HEIGHTS ARE LESS THAN 36 INCHES, THEN 4 INCHES STRIPES MAY BE USED. IF USED FOR TWO-WAY TRAFFIC, BACK-TO-BACK PANELS SHALL BE USED.

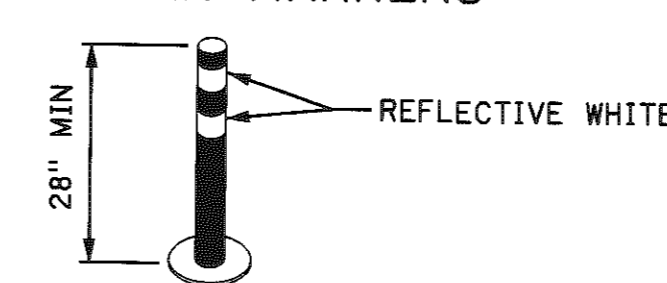
MARKINGS FOR VERTICAL PANELS SHALL BE ALTERNATING ORANGE AND WHITE RETROREFLECTORIZED STRIPES (SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TRAFFIC IS TO PASS).

VERTICAL PANELS SHALL BE MOUNTED UPRIGHT WITH THE TOP A MINIMUM OF 36 INCHES ABOVE THE ROADWAY. VERTICAL PANELS NOT MOUNTED ABOVE CONCRETE BARRIERS SHALL HAVE LEGS OR SUPPORTS THAT WILL BREAK AWAY UPON IMPACT.

APPLICATION

VERTICAL PANELS MAY BE USED TO CHANNEL TRAFFIC, DIVIDE OPPOSING LANES OF TRAFFIC, DIVIDE TRAFFIC LANES OR IN PLACE OF BARRICADES WHERE SPACE IS LIMITED. WHEN APPROVED BY THE ENGINEER, VERTICAL PANELS MAY BE POST-MOUNTED ALONG THE SIDE OF THE ROADWAY.

TUBULAR MARKERS



DESIGN

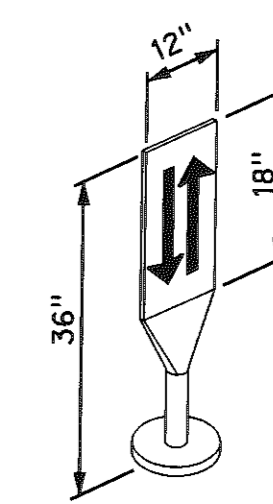
TUBULAR MARKERS SHALL BE PREDOMINANTLY ORANGE, NOT LESS THAN 28 INCHES HIGH, MINIMUM 2 INCHES WIDE WHEN FACING TRAFFIC, AND MADE OF A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING IMPACTING VEHICLES.

FOR NIGHTTIME USE, TUBULAR MARKERS SHALL BE RETROREFLECTIVE. RETROREFLECTION OF TUBULAR MARKERS SHALL BE PROVIDED BY TWO 3 INCHES WIDE WHITE BANDS PLACED A MAXIMUM OF 2 INCHES FROM THE TOP, WITH A MAXIMUM OF 6 INCHES BETWEEN THE BANDS. THE BASE SHALL NOT BE WIDER THAN 12 INCHES OR HIGHER THAN 2 INCHES.

APPLICATION

TUBULAR MARKERS HAVE LESS VISIBLE AREA THAN OTHER DEVICES AND SHOULD BE USED ONLY WHERE SPACE RESTRICTIONS DO NOT ALLOW FOR THE USE OF OTHER MORE VISIBLE DEVICES. THEY MAY BE USED EFFECTIVELY TO DIVIDE OPPOSING LANES OF TRAFFIC OR TO DIVIDE TRAFFIC LANES WHEN TWO OR MORE LANES ARE KEPT OPEN IN THE SAME DIRECTION. STEPS SHOULD BE TAKEN TO ASSURE THAT TUBULAR MARKERS WILL NOT BE BLOWN OVER OR DISPLACED BY TRAFFIC BY EITHER AFFIXING THEM TO THE PAVEMENT WITH ANCHOR BOLTS OR ADHESIVE, USING WEIGHTED BASES, OR WEIGHTS THAT CAN BE DROPPED OVER THE TUBULAR MARKERS AND ONTO THE BASE TO PROVIDE ADDED STABILITY. BALLAST, HOWEVER, SHOULD NOT BE ALLOWED TO PRESENT A HAZARD IF THE TUBULAR MARKERS ARE INADVERTENTLY STRUCK. IF A NONCYLINDRICAL DEVICE IS USED, AND IT COULD BE DISPLAYED WITH A WIDTH LESS THAN THE MINIMUM FACING TRAFFIC, IT SHALL BE ATTACHED TO THE PAVEMENT TO ENSURE THAT THE WIDTH FACING TRAFFIC MEETS THE MINIMUM REQUIREMENTS.

OPPOSING TRAFFIC LANE DIVIDERS



DESIGN

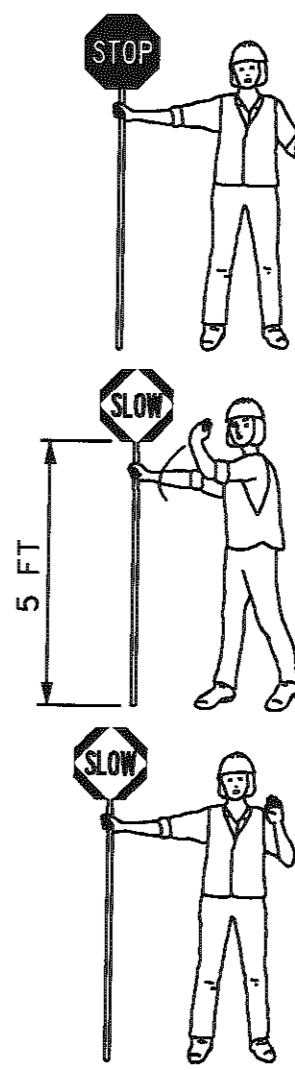
OPPOSING TRAFFIC LANE DIVIDER SHALL BE A TWO SIDED UPRIGHT REFLECTORIZED ORANGE PANEL, WITH A 12 INCHES WIDTH AND 18 INCHES HEIGHT. THE TOP OF THE PANEL SHALL BE 36 INCHES ABOVE THE PAVEMENT. THE SYMBOL ON EACH SIDE SHALL BE TWO OPPOSING BLACK ARROWS. THE LANE DIVIDER SHALL BE MADE OF LIGHTWEIGHT MATERIAL THAT WILL YIELD UPON IMPACT BY A VEHICLE. THE LANE DIVIDER BASE SHALL NOT BE WIDER THAN 12 INCHES OR HIGHER THAN 2 INCHES. THE BASE SHALL BE ATTACHED TO THE EXISTING SURFACE BY EPOXY OR OTHER SUITABLE ADHESIVE, TO ENSURE THAT THE PANEL REMAINS FACING TRAFFIC.

APPLICATION

OPPOSING TRAFFIC LANE DIVIDERS ARE DELINEATION DEVICES USED AS CENTER LANE DIVIDERS TO SEPARATE OPPOSING TRAFFIC ON A TWO-LANE, TWO-WAY OPERATION.

FLAGGERS

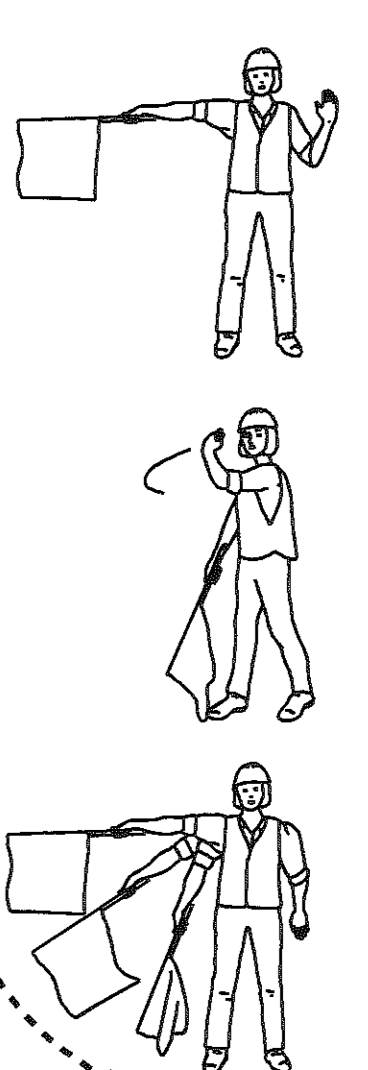
REQUIRED METHOD



TO STOP TRAFFIC

TRAFFIC PROCEED

EMERGENCY USE ONLY



TO ALERT AND SLOW TRAFFIC

FLAGGER PADDLES

FLAGGER PADDLES SHALL BE A MINIMUM 18 INCH WIDE OCTAGON WITH LETTERS AT LEAST 6 INCHES HIGH, WITH A 5 FOOT RIGID HANDLE. FLAGS AND PADDLES SHALL NOT BE USED AT THE SAME TIME. IN EMERGENCIES WHERE THE STANDARD SIGN IS NOT AVAILABLE, A RED FLAG MAY BE USED BY FLAGGERS IN ACCORDANCE WITH THE FLAGGERS HANDBOOK. TO IMPROVE CONSPICUITY, THE STOP/SLOW PADDLES MAY BE SUPPLEMENTED BY ONE OR TWO SYMMETRICALLY POSITIONED FLASHING WHITE HIGH-INTENSITY LAMPS.

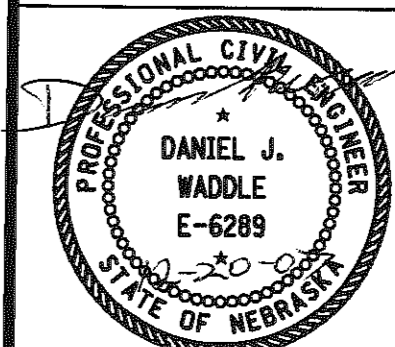
FLAGGERS

A FLAGGER MUST BE DRESSED FOR SAFETY. TO BE EASILY VISIBLE A FLAGGER MUST WEAR A VEST, SHIRT, OR JACKET, AND A CAP OR HARD HAT THAT IS BRIGHT ORANGE, YELLOW, YELLOW GREEN OR FLOURESCENT VERSIONS OF THESE COLORS (FADED OR SOILED GARMENT WILL NOT BE ALLOWED). FOR NIGHTTIME FLAGGING THE GARMENT SHALL BE REFLECTORIZED. FLAGGERS SHALL BE INSTRUCTED IN THE PROPER LOCATION, DUTIES AND PROCEDURES FOR FLAGGERS AS OUTLINED IN THE CURRENT MUTCD AND THE DEPARTMENT OF ROADS FLAGGER'S HANDBOOK. AS REQUIRED BY THE DEPARTMENT OF ROADS, THE FLAGGER SHALL BE CERTIFIED, AND HAVE IN THEIR POSSESSION, A VALID FLAGGER CERTIFICATION CARD.

REV. NO.	DATE	DESCRIPTION OF REVISION
R5	OCT. 98	REVISE CHANNELIZATION DEVICES, TAPER
R4	JAN. 95	REWRITE
R3	AUG. 88	WORDING, REFLECTIVITY

NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 920-R5

TRAFFIC CONTROL CONSTRUCTION AND MAINTENANCE



ORIGINAL:
OCTOBER 1998
DATE

1
2

LIGHTING DEVICES

FUNCTION

CONSTRUCTION AND MAINTENANCE ACTIVITIES OFTEN CREATE CONDITIONS ON OR NEAR THE TRAVELED WAY THAT ARE PARTICULARLY HAZARDOUS AT NIGHT. IT IS OFTEN DESIRABLE AND NECESSARY TO SUPPLEMENT THE REFLECTORIZED SIGNS, BARRIERS, AND CHANNELIZING DEVICES WITH LIGHTING DEVICES. STROBE TYPE LIGHTS ARE NOT PERMITTED.

BARRICADE WARNING LIGHTS DESIGN (BATTERY OPERATED)

TYPE "A" LOW INTENSITY FLASHING WARNING LIGHTS ARE MOST COMMONLY MOUNTED ON BARRICADES, OR WITH SIGNS AND ARE INTENDED TO WARN THE DRIVER THAT THEY ARE PROCEEDING IN A HAZARDOUS AREA. THESE LIGHTS SHALL NOT BE USED FOR DELINEATION, AS A SERIES OF FLASHING LIGHTS IN A ROW WOULD TEND TO OBSCURE THE DESIRED PATH.

TYPE "B" HIGH INTENSITY FLASHING WARNING LIGHTS ARE NORMALLY MOUNTED ON THE ADVANCE WARNING SIGNS. EXTREMELY HAZARDOUS SITE CONDITIONS WITHIN THE CONSTRUCTION AREA MAY REQUIRE THAT THE LIGHTS BE MOUNTED ON TYPE III BARRICADES, SIGNS, OR OTHER SUPPORTS. AS THESE LIGHTS ARE EFFECTIVE IN DAYLIGHT, THEY ARE DESIGNED TO OPERATE 24 HOURS PER DAY.

TYPE "C" STEADY BURN LIGHTS AS USED HEREIN, SHALL MEAN A SERIES OF LOW WATTAGE YELLOW ELECTRIC LIGHTS. WHERE LIGHTS ARE NEEDED TO DELINEATE OR MARK THE TRAVELED WAY THROUGH AND AROUND OBSTRUCTIONS IN A CONSTRUCTION MAINTENANCE AREA, THE DELINEATION SHALL BE ACCOMPLISHED BY USE OF STEADY BURNING LIGHTS.

FLASHING ARROW PANEL (DISPLAY)

AN ARROW PANEL IS A SIGN WITH A MATRIX OF ELEMENTS. THE MATRIX, CAPABLE OF EITHER FLASHING OR SEQUENTIAL DISPLAYS, IS INTENDED TO PROVIDE ADDITIONAL WARNING AND DIRECTIONAL INFORMATION TO ASSIST IN MERGING AND CONTROLLING TRAFFIC THROUGH OR AROUND A TEMPORARY TRAFFIC CONTROL ZONE. AN ARROW PANEL SHOULD BE USED IN COMBINATION WITH APPROPRIATE SIGNS, BARRICADES, OR OTHER TRAFFIC CONTROL DEVICES.

DESIGN

ARROW PANELS SHALL MEET THE SIZE AND SPECIFICATIONS OF THE MUTCD FOR TYPE C ARROW DISPLAYS.

FLASHING ARROW PANEL SHALL BE RECTANGULAR, OF SOLID APPEARANCE AND FINISHED IN NONREFLECTIVE BLACK. THE PANEL SHALL BE MOUNTED ON A VEHICLE, TRAILER OR OTHER SUITABLE SUPPORT. MINIMUM MOUNTING HEIGHT SHALL BE 7 FEET FROM THE ROADWAY TO THE BOTTOM OF THE PANEL, EXCEPT ON VEHICLE-MOUNTED PANELS, WHICH SHOULD BE AS HIGH AS PRACTICABLE.

THE FOLLOWING SELECTIONS SHALL BE PROVIDED ON THE ARROW PANEL	
OPERATING MODE	PANEL DISPLAY
FLASHING ARROW	RIGHT SHOWN; LEFT OPPOSITE
SEQUENTIAL ARROW	RIGHT SHOWN; LEFT OPPOSITE
SEQUENTIAL CHEVRON	RIGHT SHOWN; LEFT OPPOSITE
FLASHING DOUBLE ARROW	
FLASHING OR ALTERNATING CAUTION	OR

THE ARROW PANEL SHALL HAVE A MINIMUM SIZE OF 96 INCHES WIDE AND 48 INCHES HIGH. THE MINIMUM LEGIBILITY DISTANCE SHALL BE 1 MILE. THE PANEL SHALL CONTAIN 25 LAMP ELEMENTS. ARROW PANEL ELEMENTS SHALL BE CAPABLE OF A MINIMUM 50 PERCENT DIMMING, AUTOMATICALLY WHEN AMBIENT LIGHT FALLS BELOW 50 LUX.

THE MINIMUM ELEMENT "ON TIME" SHALL BE 50 PERCENT FOR THE FLASHING MODE AND EQUAL INTERVALS OF 25 PERCENT FOR EACH SEQUENTIAL CHEVRON PHASE. THE FLASHING RATE SHALL BE NO FEWER THAN 25 NOR MORE THAN 40 FLASHES PER MINUTE.

APPLICATION

A FLASHING ARROW OR SEQUENTIAL CHEVRON MAY BE USED FOR STATIONARY OR MOVING LANE CLOSURES. AN ARROW DISPLAY IN THE CAUTION MODE SHALL BE USED ONLY FOR SHOULDER WORK, BLOCKING THE SHOULDER, OR ROADSIDE WORK NEAR THE SHOULDER. AN ARROW DISPLAY SHALL NOT BE USED ON A TWO-LANE TWO-WAY ROADWAY FOR TEMPORARY ONE-LANE OPERATION OR LANE SHIFTS. AN ARROW DISPLAY SHALL NOT BE USED ON A MULTILANE ROADWAY TO LATERALLY SHIFT ALL LANES OF TRAFFIC, BECAUSE UNNECESSARY LANE CHANGING MAY RESULT.

TRAFFIC SIGNALS

TRAFFIC SIGNALS MAY BE ALLOWED AT CERTAIN EQUIPMENT CROSSINGS WHERE THE VOLUME OF FILL MATERIAL AND THE NUMBER OF EQUIPMENT CROSSINGS PER HOUR IS HIGH. TRAFFIC SIGNALS MAY BE ALLOWED AT CERTAIN BRIDGE CONSTRUCTION SITES WHERE A COMBINATION OF ONE-WAY TRAFFIC AND HIGH TRAFFIC VOLUMES WOULD BE BEST SERVED WITH THIS TYPE OF TRAFFIC CONTROL.

ALL TRAFFIC SIGNAL REQUESTS AND METHOD OF INSTALLATION ON THE STATE HIGHWAY SYSTEM SHALL BE IN COMPLIANCE WITH THE MUTCD AND MUST BE APPROVED BY THE STATE TRAFFIC ENGINEER.

FLOOD LIGHTS

WHEN NIGHTTIME WORK IS REQUIRED, FLOODLIGHTS SHOULD BE USED TO ILLUMINATE FLAGGER STATIONS, EQUIPMENT CROSSINGS, AND OTHER AREAS WHERE EXISTING LIGHT IS NOT ADEQUATE FOR THE WORK TO BE PERFORMED SAFELY.

IN NO CASE SHALL FLOODLIGHTING BE PERMITTED TO CREATE A DISABLING GLARE FOR DRIVERS. THE ADEQUACY OF THE FLOODLIGHT PLACEMENT AND ELIMINATION OF POTENTIAL GLARE SHOULD BE CHECKED BY DRIVING THROUGH THE PROJECT.

PAVEMENT MARKING

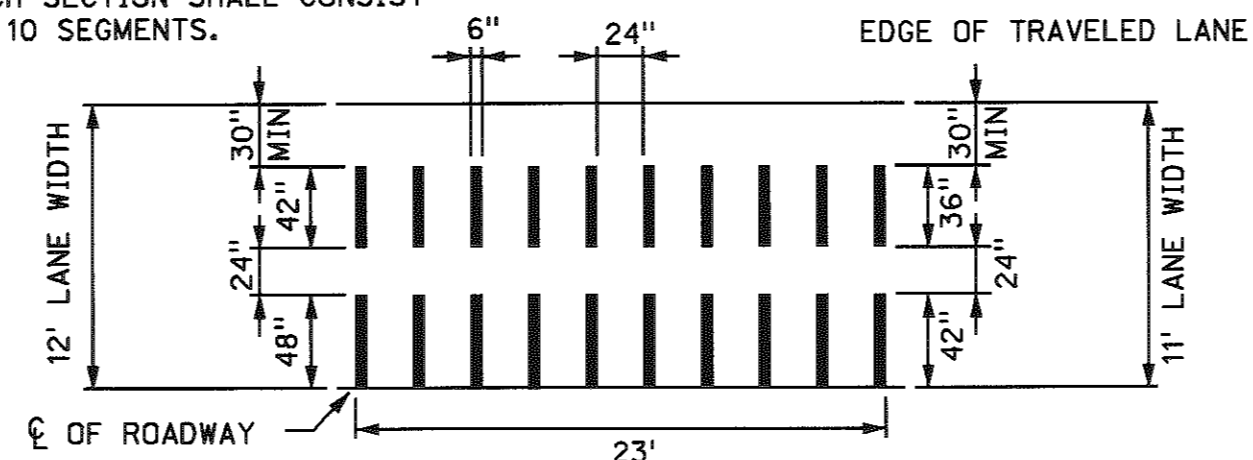
IT IS INTENDED TO THE EXTENT POSSIBLE, THAT MOTORISTS BE PROVIDED MARKINGS WITHIN A WORK AREA COMPARABLE TO THE MARKINGS NORMALLY MAINTAINED ALONG ADJACENT ROADWAYS, PARTICULARLY AT EITHER END OF THE WORK AREA.

ALL MARKINGS AND DEVICES USED TO DELINEATE VEHICLE AND PEDESTRIAN PATHS SHALL BE CAREFULLY REVIEWED DURING DAYTIME AND NIGHTTIME PERIODS TO AVOID INADVERTENTLY LEADING DRIVERS OR PEDESTRIANS FROM THE INTENDED PATH.

PAVEMENT MARKINGS NO LONGER APPLICABLE SHALL BE REMOVED UNLESS OTHERWISE APPROVED BY THE ENGINEER.

RUMBLE STRIPS

EACH SECTION SHALL CONSIST OF 10 SEGMENTS.



DESIGN

RUMBLE STRIPS MAY BE MADE OF ASPHALT PAVING MATERIAL, EPOXY AND AGGREGATE OR OTHER SUITABLE MATERIAL WHICH WILL MAINTAIN A DESIRABLE RUMBLE EFFECT. THE RUMBLE STRIP SHOULD HAVE AN INSTALLED HEIGHT OF 5/8". PREFORMED RUMBLE STRIPS MAY BE USED PROVIDED THEY HAVE A MINIMUM 1/2" HEIGHT.

TAPERS

TAPERS ARE CREATED USING A SERIES OF CHANNELIZING DEVICES OR PAVEMENT MARKINGS PLACED TO MOVE TRAFFIC OUT OF OR INTO ITS NORMAL PATH.

MERGING TAPER

A MERGING TAPER REQUIRES THE LONGEST DISTANCE BECAUSE DRIVERS ARE REQUIRED TO MERGE WITH AN ADJACENT LANE OF TRAFFIC AT THE PREVAILING SPEED. THE TAPER SHOULD BE LONG ENOUGH TO ENABLE MERGING DRIVERS TO ADJUST THEIR SPEEDS AND MERGE INTO A SINGLE LANE BEFORE THE END OF THE TRANSITION.

SHIFTING TAPER

A SHIFTING TAPER IS USED WHEN MERGING IS NOT REQUIRED, BUT A LATERAL SHIFT IS NEEDED. APPROXIMATELY ONE-HALF L HAS BEEN FOUND TO BE ADEQUATE. WHERE MORE SPACE IS AVAILABLE, IT MAY BE BENEFICIAL TO USE LONGER TAPERS. GUIDANCE FOR CHANGES IN ALIGNMENT MAY ALSO BE ACCOMPLISHED BY USING HORIZONTAL CURVES DESIGNED FOR NORMAL HIGHWAY SPEEDS.

SHOULDER TAPERS

A SHOULDER TAPER MAY BE BENEFICIAL ON HIGH-SPEED ROADWAYS WITH IMPROVED SHOULDERS THAT MAY BE MISTAKEN FOR DRIVING LANES (WHEN WORK IS OCCURRING IN THE SHOULDER AREAS). IF USED, SHOULDER TAPERS APPROACHING THE ACTIVITY AREA SHOULD HAVE A LENGTH OF ABOUT ONE-THIRD L.

DOWNSTREAM TAPERS

THE DOWNSTREAM TAPER MAY BE USEFUL IN TERMINATION AREAS TO PROVIDE A VISUAL CUE TO THE DRIVER THAT ACCESS IS AVAILABLE TO THE ORIGINAL LANE/PATH THAT WAS CLOSED. WHEN USED, IT SHOULD HAVE A MINIMUM LENGTH OF ABOUT 100 FEET PER LANE, WITH DEVICES SPACED ABOUT 20 FEET APART.

ONE LANE, TWO WAY TAPER

THE ONE-LANE, TWO-WAY TRAFFIC TAPER IS USED IN ADVANCE OF AN ACTIVITY AREA THAT OCCUPIES PART OF A TWO-WAY ROADWAY IN SUCH A WAY THAT A PORTION OF THE ROAD IS USED ALTERNATELY BY TRAFFIC IN EACH DIRECTION. A SHORT TAPER HAVING A MAXIMUM LENGTH OF 100 FEET WITH CHANNELIZING DEVICES AT APPROXIMATELY 20-FOOT SPACINGS SHOULD BE USED TO GUIDE TRAFFIC INTO THE ONE-WAY SECTION.

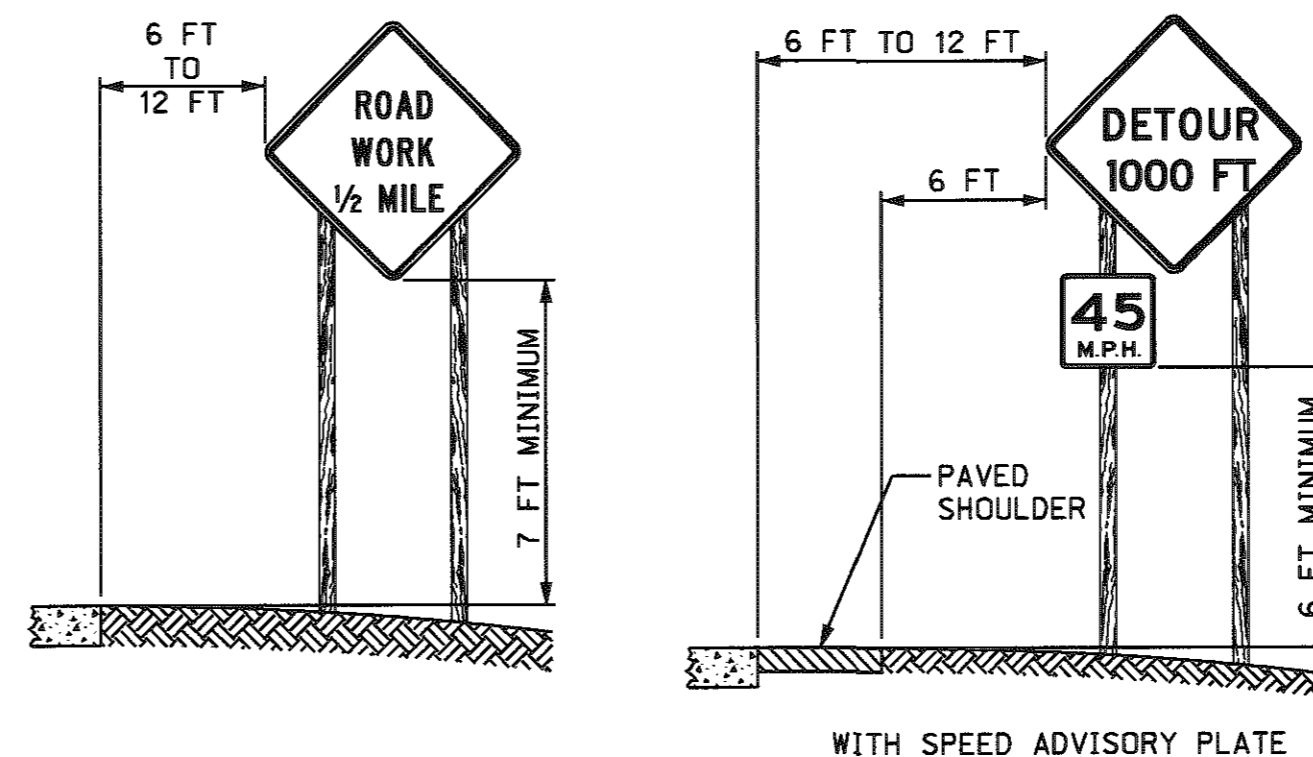
TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES	
TYPE OF TAPER	TAPER LENGTH (FEET)
MERGING TAPER	L MINIMUM
SHIFTING TAPER	1/2 L MINIMUM
SHOULDER TAPER	1/3 L MINIMUM
TWO-WAY TAPER	100 FEET MAXIMUM

FORMULAS FOR L	
SPEED	FORMULA
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR GREATER	$L = WS$

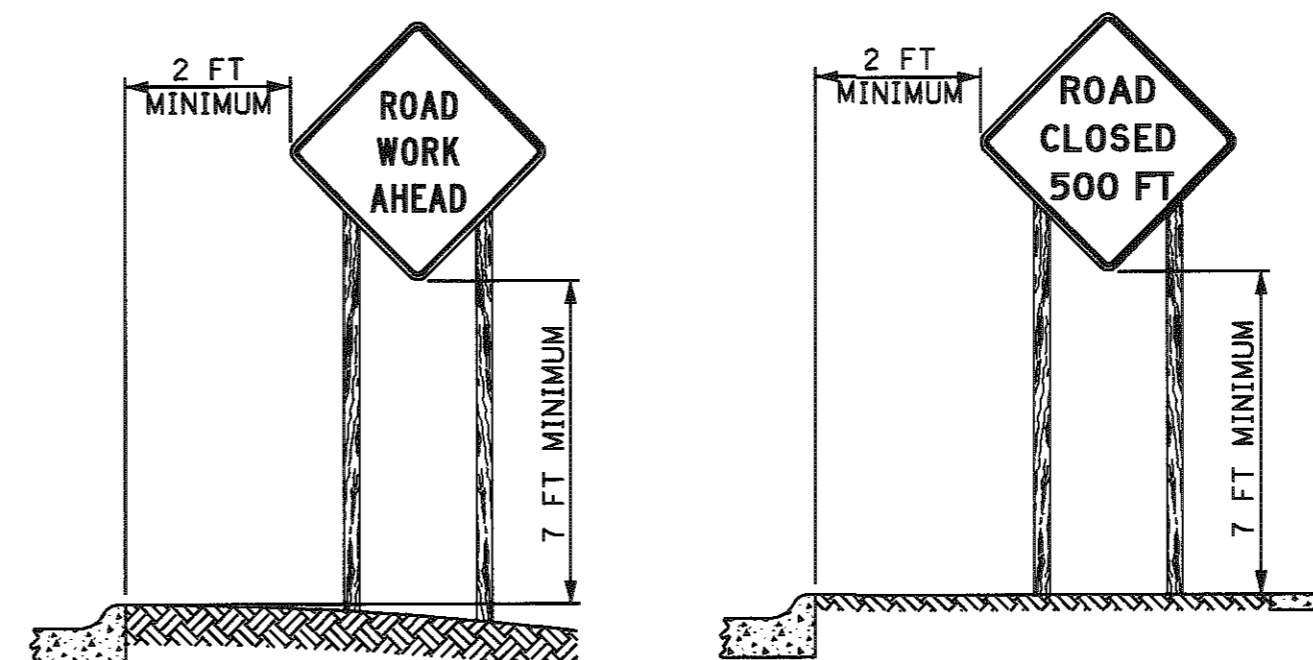
L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = POSTED SPEED LIMIT PRIOR TO WORK IN MPH

SPEED (MPH)	LANE WIDTH			
	10 FT	11 FT	12 FT	12 FT
25	105	115	125	
30	150	165	180	
35	205	225	245	
40	270	295	320	
45	450	495	540	
50	500	550	600	
55	550	605	660	
65	650	715	780	
70	700	770	840	
75	750	825	900	

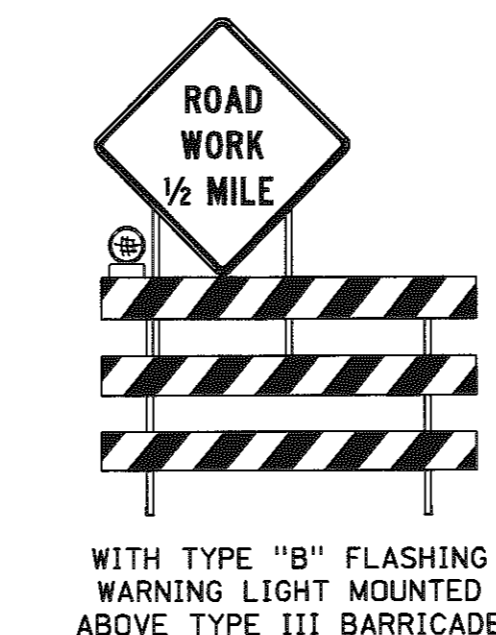
ROADSIDE SIGNS HEIGHT AND LATERAL LOCATION OF SIGNS RURAL AREA



URBAN AREA



TYPICAL FIRST SIGN AT CONSTRUCTION SITE

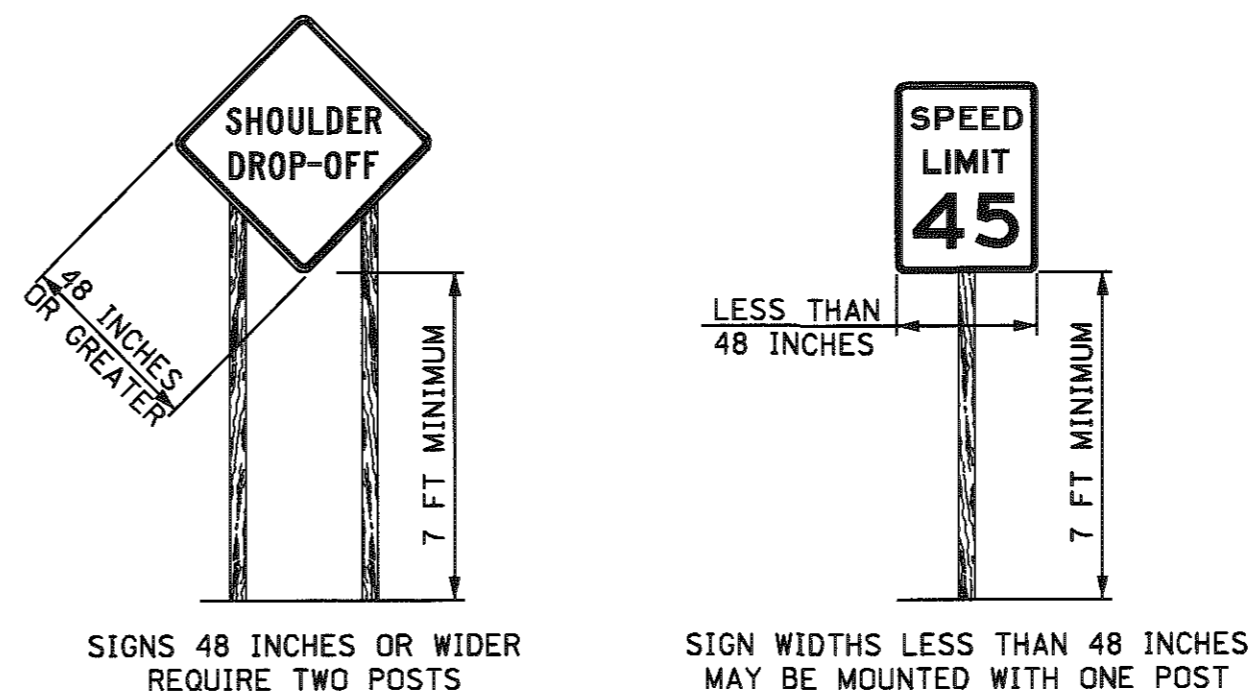


WITH TYPE "B" FLASHING WARNING LIGHT MOUNTED ABOVE TYPE III BARRICADE

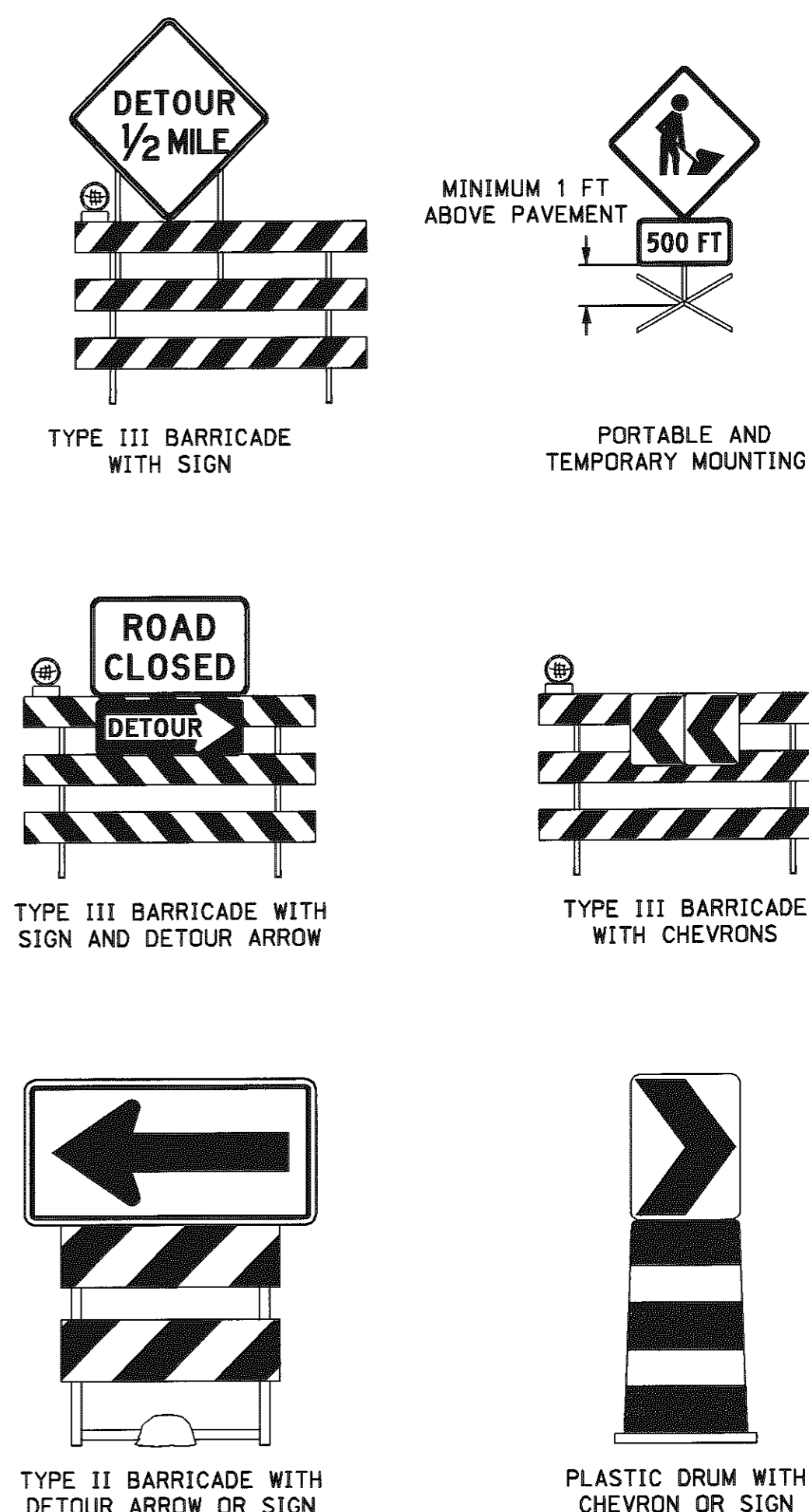
PORTABLE AND TEMPORARY MOUNTING



TYPICAL SIGN MOUNTINGS POST MOUNTED



TYPICAL SIGN MOUNTINGS OTHER THAN POST MOUNTED



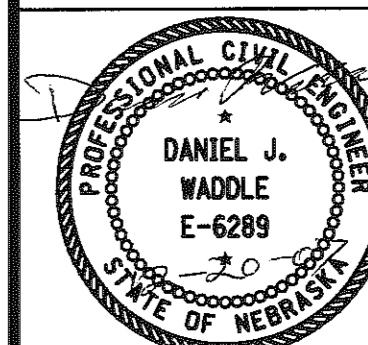
GENERAL NOTES

- ALL TRAFFIC CONTROL DEVICES SHALL MEET THE APPLICABLE STANDARDS AND SPECIFICATIONS PRESCRIBED IN PART VI OF THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (MUTCD)" AND THE STATE OF NEBRASKA SUPPLEMENT TO THE MUTCD.
- TRAFFIC CONTROL PLANS AND DEVICES SHOULD FOLLOW THE PRINCIPLES SET FORTH, BUT MAY DEVIATE FROM THE TYPICAL DRAWINGS TO ALLOW FOR CONDITIONS AND REQUIREMENTS OF THE PROJECT.
- TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SO AS NOT TO OBSTRUCT THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
- THE ENGINEER SHALL HAVE THE AUTHORITY TO REQUIRE THE USE, AND APPROVE THE LOCATION OF ANY OF THE DEVICES SHOWN IN THESE PLANS.
- UNPROTECTED TEMPORARY AND POST MOUNTED SIGNS SHOULD BE CRASHWORTHY (REFER TO THE ROADSIDE DESIGN GUIDE, CHAPTER NINE, FOR ADDITIONAL GUIDANCE).

REV. NO.	DATE	DESCRIPTION OF REVISION
R5	OCT.98	REVISE CHANNELIZATION DEVICES, TAPER
R4	JAN.95	REWRITE
R3	AUG.88	WORDING, REFLECTIVITY

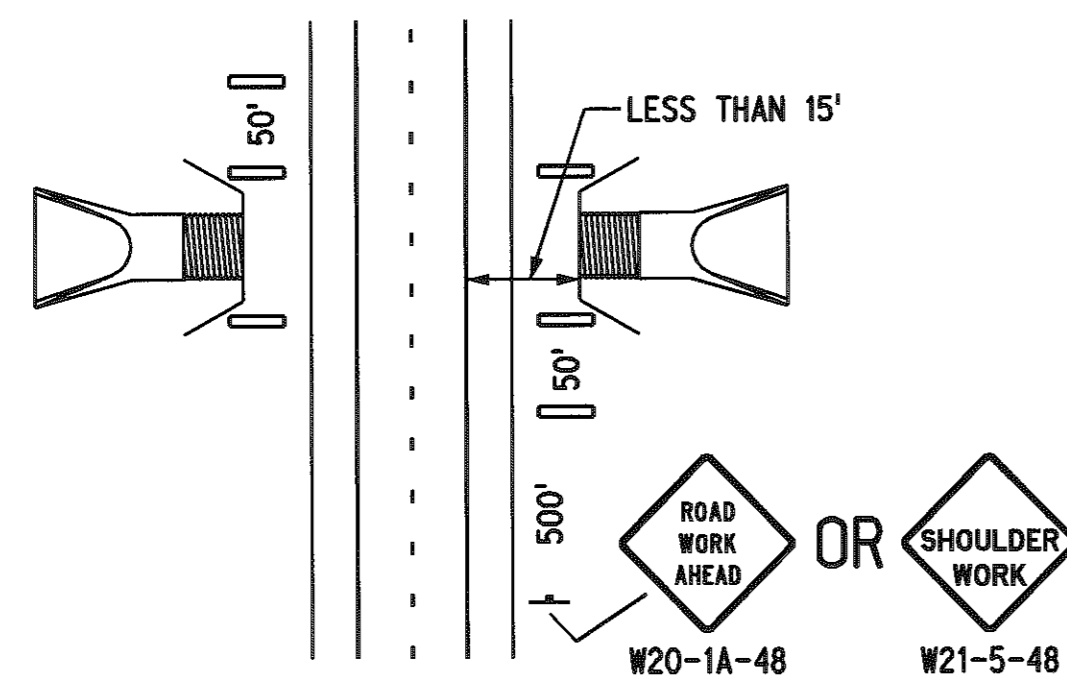
NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 920-R5

TRAFFIC CONTROL CONSTRUCTION AND MAINTENANCE

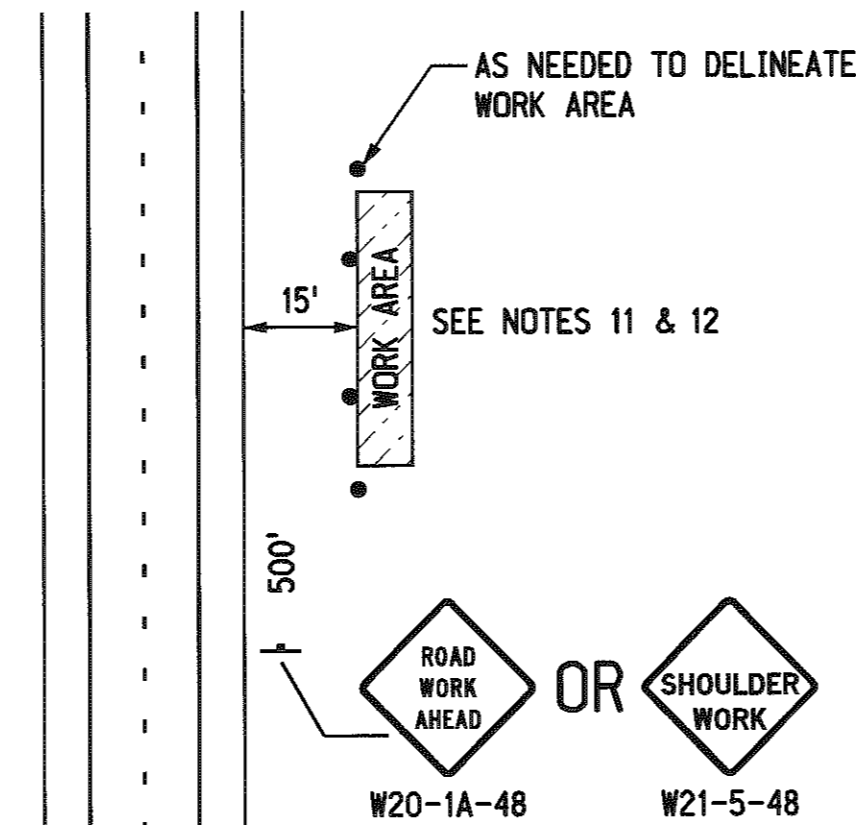


ORIGINAL:
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DATE

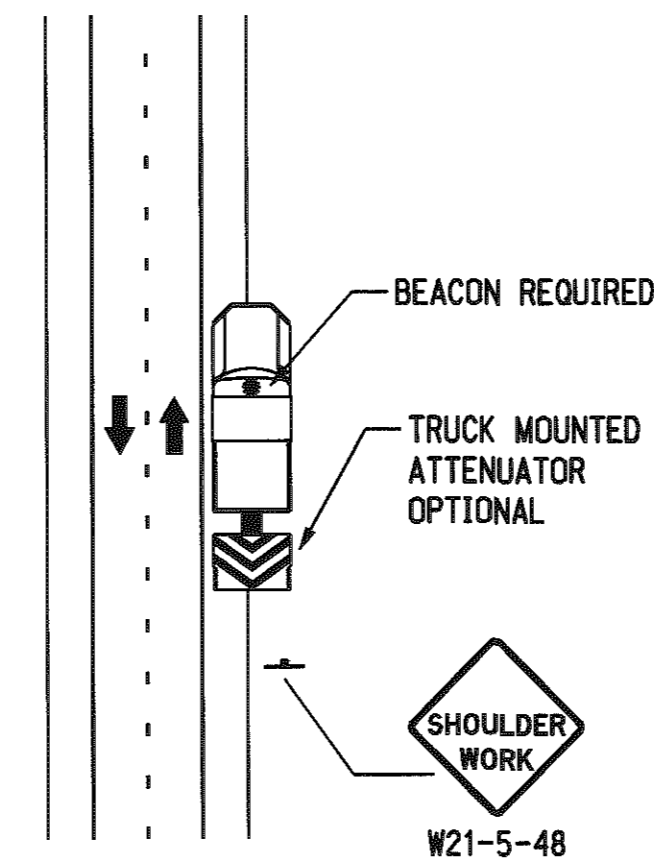
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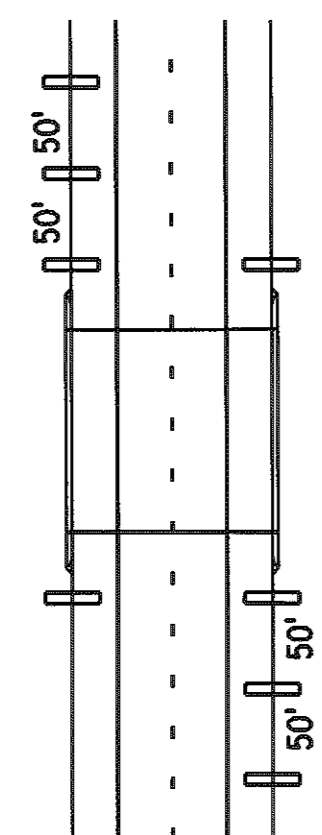
CULVERT PROTECTION
WHEN GUARDRAIL IS REMOVED AND/OR EXCAVATION IS LESS THAN 15 FEET FROM SHOULDER



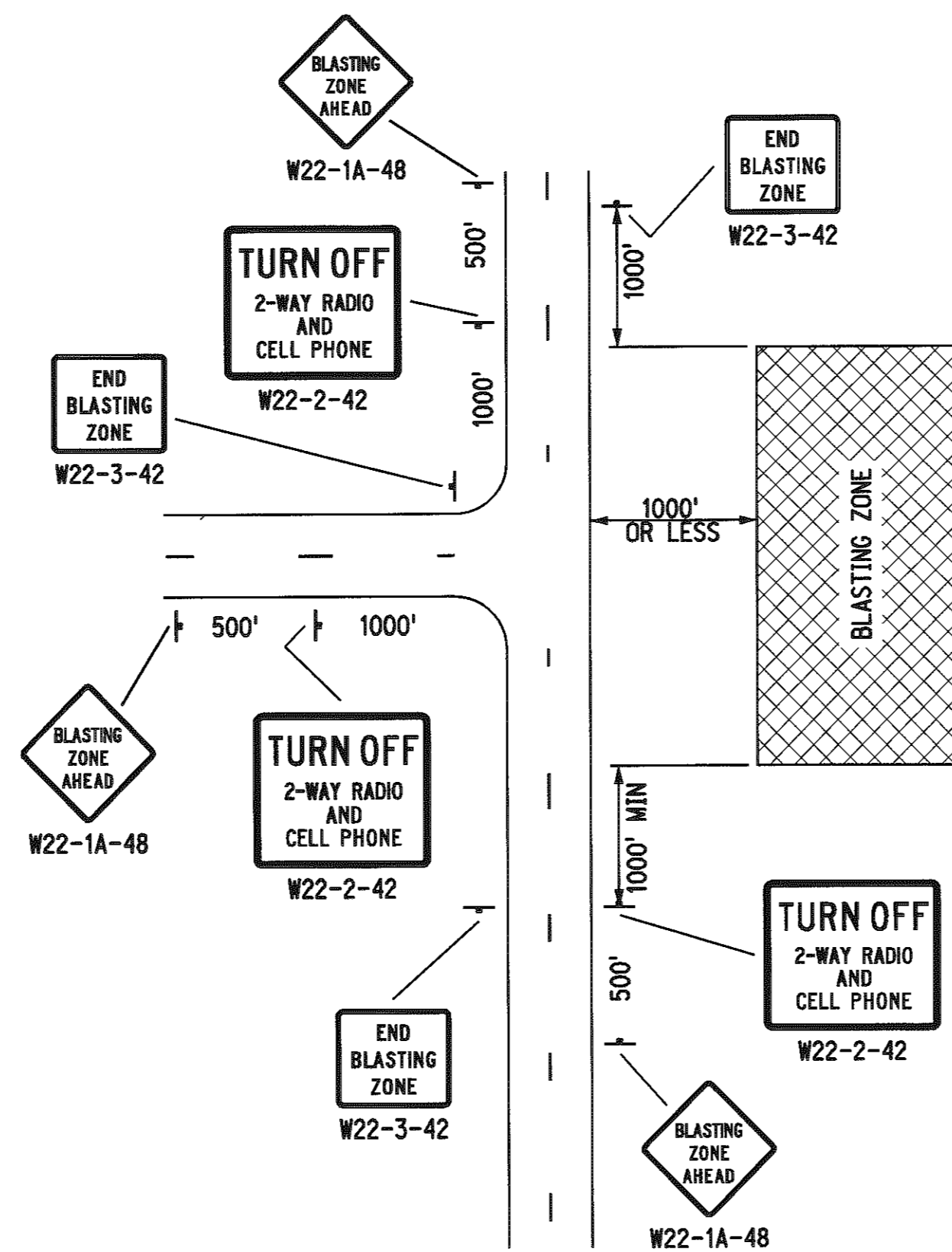
WORK BEYOND THE SHOULDER
TA-1



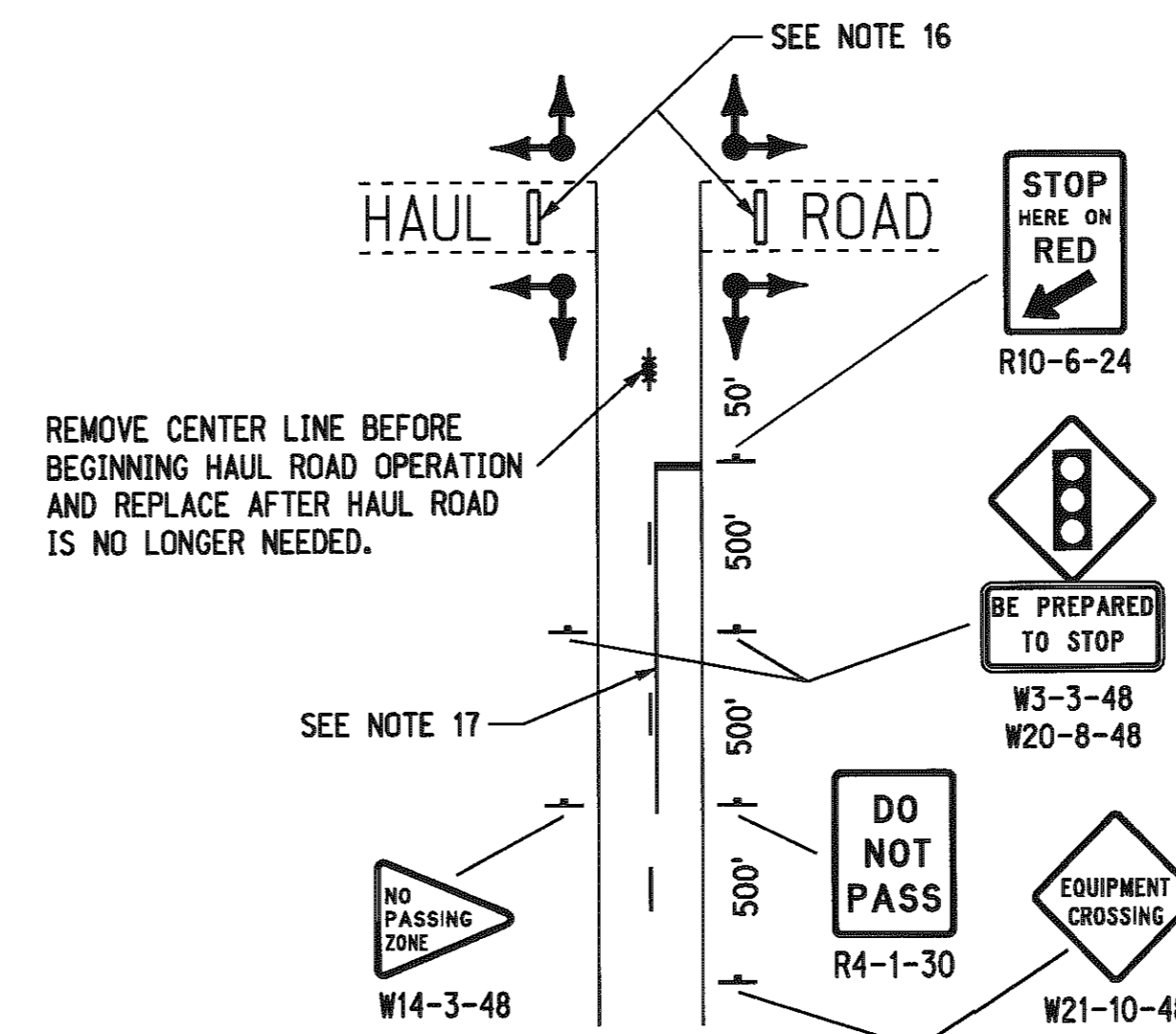
MOBILE OPERATION ON SHOULDER
NO ENCROACHMENT ON TRAVEL LANE
TA-4



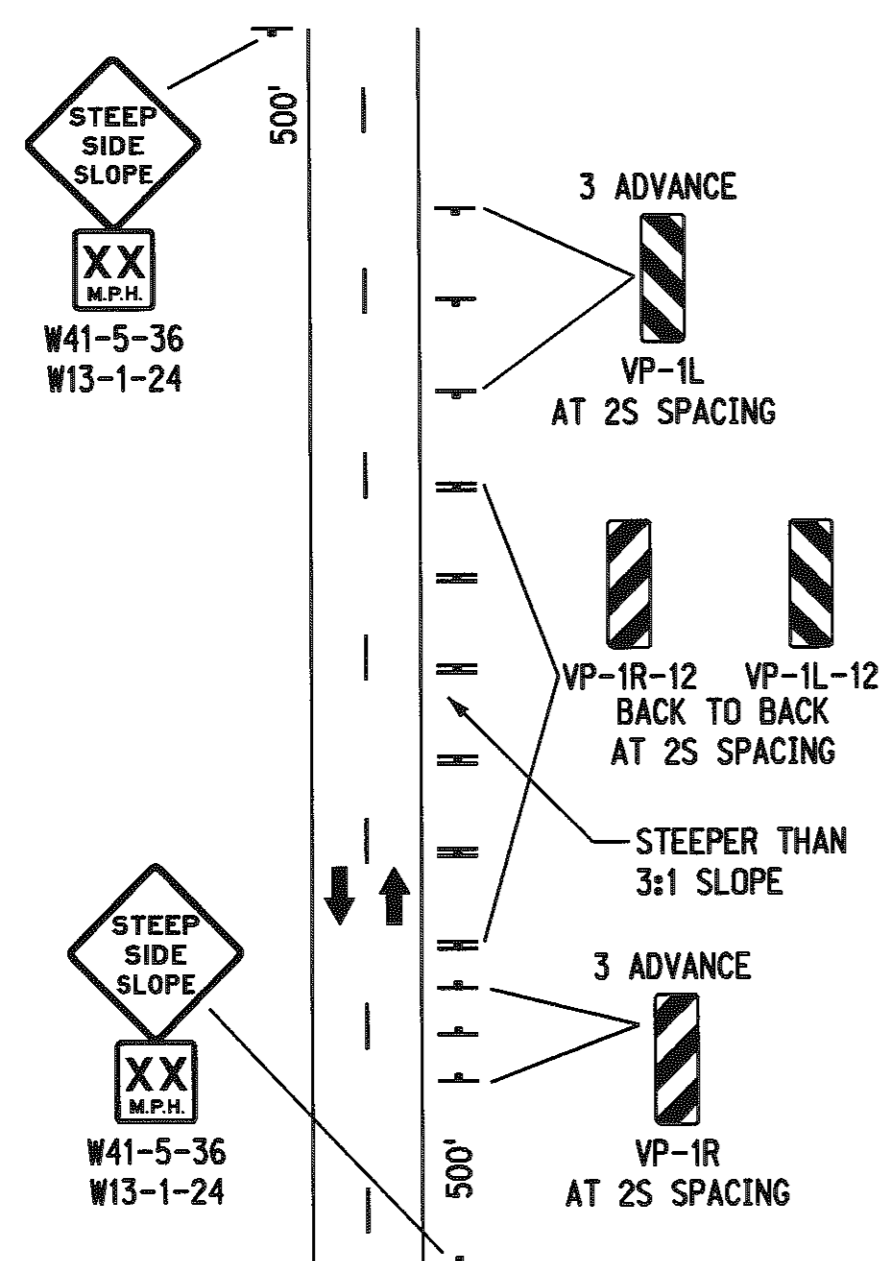
BRIDGE RAIL END PROTECTION
WHEN GUARDRAIL IS REMOVED



BLASTING ZONE
TA-2

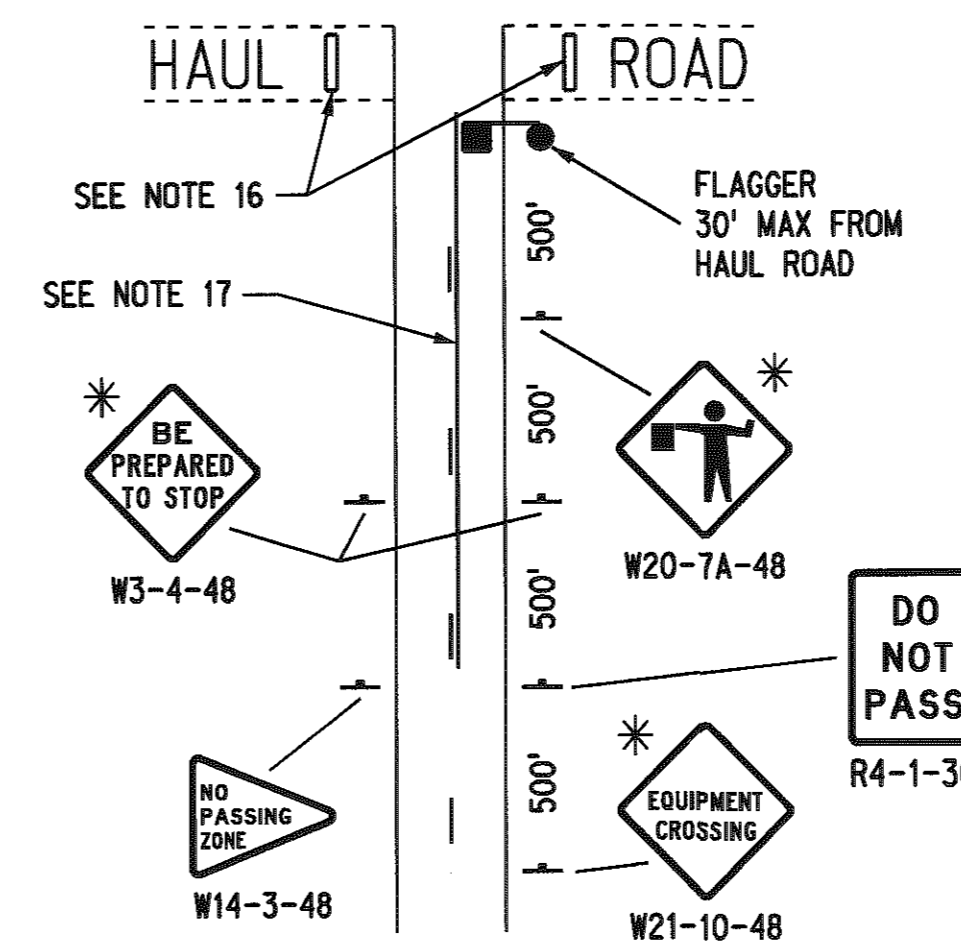


HAUL ROAD CROSSING IN CONSTRUCTION AREA USING TEMPORARY TRAFFIC SIGNAL
TA-14



SLOPE PROTECTION

- LEGEND**
- TYPE III BARRICADE
 - TYPE II BARRICADE OR REFLECTORIZED PLASTIC DRUM
 - ↑ SIGN
 - ◓ FLAGGER
 - △ CONE
 - ◻ CMS CHANGEABLE MESSAGE SIGN
 - ↔ TRAFFIC SIGNAL



HAUL ROAD CROSSING IN CONSTRUCTION AREA USING FLAGGERS
TA-14

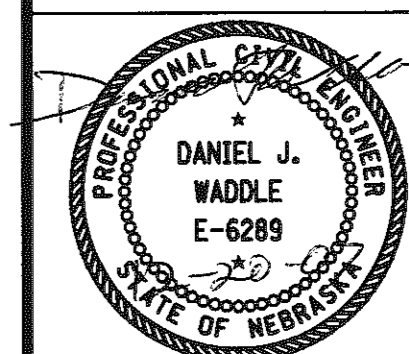
* SIGNS ARE SUBSIDIARY TO THE FLAGGING OPERATION.

NOTES

1. SIGNS SHOWN ARE USUALLY FOR ONE DIRECTION OF TRAVEL ONLY.
2. DESIGNATION OF SPEED SHOWN ON ADVISORY SPEED SIGNS W13-1 SHALL BE DETERMINED BY THE ENGINEER IN ACCORDANCE WITH MUTCD. THE SPEED DESIGNATION SHALL BE AS HIGH AS PRACTICAL AND FEASIBLE.
3. "FLAGGER AHEAD SYMBOL" SIGN (W20-7A) SHALL BE USED WHEN A FLAGGER IS PRESENT, AND REMOVED WHEN NOT APPLICABLE.
4. ALL SIGNS SHALL BE INSTALLED, MAINTAINED IN A CLEAN CONDITION AND REMOVED BY THE CONTRACTOR EXCEPT SIGNS WHICH SHALL BE INSTALLED AND MAINTAINED BY THE DEPARTMENT OF ROADS OR APPROPRIATE GOVERNMENT AGENCY.
5. G20-1 "ROAD WORK NEXT X MILES" SHALL BE USED ON ANY CONSTRUCTION OR MAINTENANCE PROJECT LONGER THAN 2 MILES.
6. WHEN MESSAGE IS NOT PERTINENT, SIGNS SHALL BE TAKEN DOWN, COVERED OR FOLDED. TAPE IS NOT PERMITTED ON THE FACE OF THE SIGN.
7. VEHICLES OR EQUIPMENT SHALL NOT BE PARKED SO AS TO OBSCURE OR DISTRACT FROM TRAFFIC CONTROL DEVICES.
8. ORANGE FLAGS MAY BE USED TO CALL ATTENTION TO WARNING SIGNS.
9. DOUBLE FINE AND REDUCED SPEED ZONE SIGNING NOT REQUIRED FOR SHORT-DURATION WORK LESS THAN 1/2 WORK DAY.
10. CULVERT, BRIDGE AND SLOPE PROTECTION. EXISTING GUARDRAIL SHOULD REMAIN IN PLACE AS LONG AS PRACTICAL FOR THE PROTECTION IT PROVIDES, AND REINSTALLED AS SOON AS PRACTICAL.
11. TA-1 AND CULVERT PROTECTION SIGNING IS NOT REQUIRED IF THE WORK SPACE IS 15 FEET OR MORE BEYOND THE EDGE OF THE SHOULDER.
12. TA-1 AND TA-3 FOR SHORT-DURATION OPERATIONS 60 MINUTES OR LESS, ALL SIGNS AND CHANNELIZING DEVICES MAY BE ELIMINATED IF A VEHICLE WITH AN ACTIVATED HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING OR AMBER STROBE LIGHTS ARE USED, AND THE WORK DOES NOT ENCROACH ONTO THE OPEN TRAVEL LANE.
13. TA-3 WHEN PAVED SHOULDERS HAVING A WIDTH OF 8 FEET OR MORE ARE CLOSED, AT LEAST ONE ADVANCE WARNING SIGN SHALL BE USED. IN ADDITION, CHANNELIZING DEVICES SHALL BE USED TO CLOSE THE SHOULDER IN ADVANCE TO DELINEATE THE BEGINNING OF THE WORK SPACE AND DIRECT VEHICULAR TRAFFIC TO REMAIN WITHIN THE TRAVELED WAY.
14. TA-4 VEHICLE HAZARD WARNING SIGNALS SHALL NOT BE USED INSTEAD OF THE VEHICLE'S HIGH-INTENSITY ROTATING, FLASHING OR AMBER STROBE LIGHTS.
15. TA-10 IF THE QUEUING OF VEHICLES ACROSS ACTIVE RAILROAD TRACKS CANNOT BE AVOIDED, A FLAGGER SHALL BE PROVIDED AT THE RAILROAD CROSSING TO PREVENT VEHICLES FROM STOPPING WITHIN THE RAILROAD CROSSING EVEN IF AUTOMATIC WARNING DEVICES ARE IN PLACE.
16. TA-14 WHEN THE HAUL ROAD IS NOT IN USE, TYPE III BARRICADES SHALL BE IN PLACE. THE "FLAGGER", "SIGNAL AHEAD", AND "BE PREPARED TO STOP" SIGNS SHALL BE COVERED OR REMOVED, AND THE TRAFFIC SIGNAL SHALL BE PUT INTO FLASH YELLOW ON THE HIGHWAY, RED ON THE HAUL ROAD.
17. TA-14 THE "NO PASSING" SIGNS AND PAVEMENT MARKINGS ARE NOT REQUIRED IF HAULING OPERATION IS IN EFFECT ONLY DURING DAYLIGHT HOURS.
18. A TYPE III BARRICADE IS REQUIRED WHEN THE CHANGEABLE MESSAGE IS WITHIN 15' OF THE SHOULDER.
19. BARRELS ARE REQUIRED WHEN THE CHANGEABLE MESSAGE SIGN IS INSTALLED ON OR NEAR A PAVED SHOULDER.
20. APPLICATIONS SHOWN ARE FOR LOCAL SITUATIONS IN PROPERLY MARKED CONSTRUCTION ZONES AND DO NOT INCLUDE LEAD SIGNS WHICH ARE INSTALLED AT THE BEGINNING OF THE PROJECT.
21. THE LEAD SIGNS ARE NOT NEEDED IF TWO PROJECTS ARE LESS THAN 1 MILE APART. THE "END CONSTRUCTION" SIGN (G20-2B-48) SHOULD NOT BE INSTALLED BETWEEN THE PROJECTS.
22. REFER TO STANDARD PLAN NO. 920 FOR GENERAL INFORMATION NOT SHOWN.

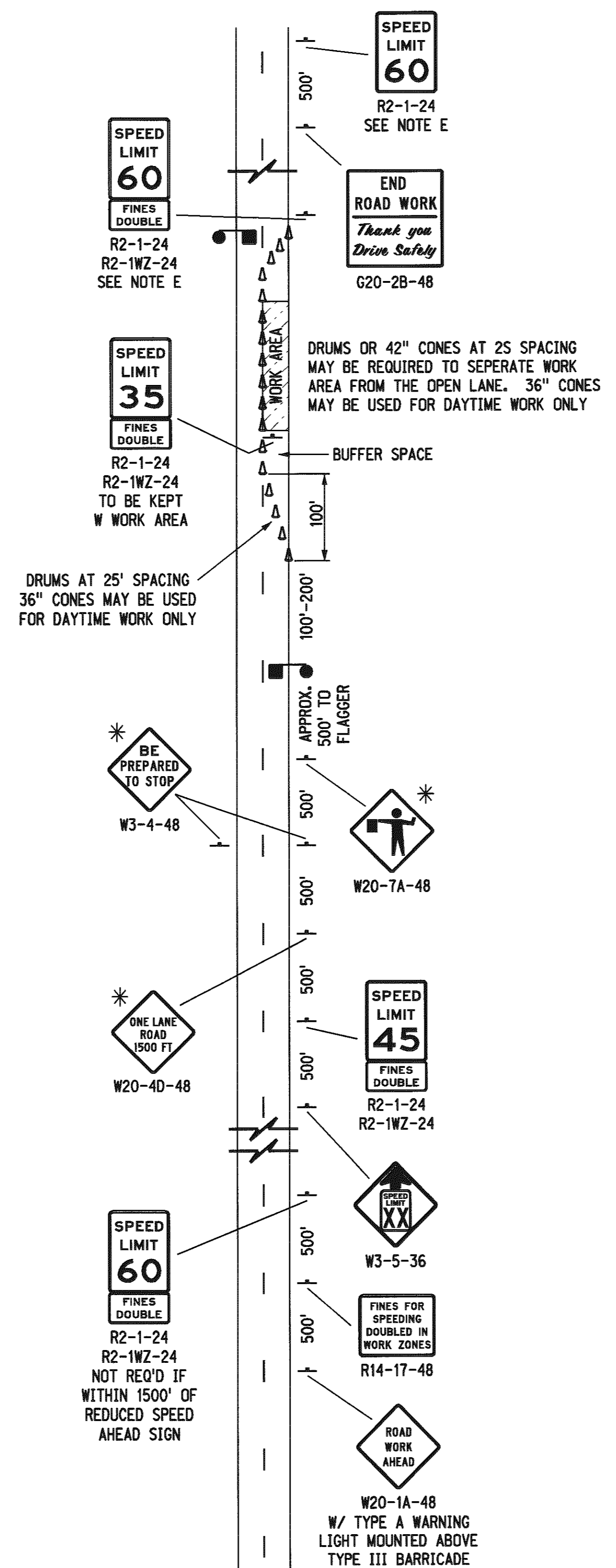
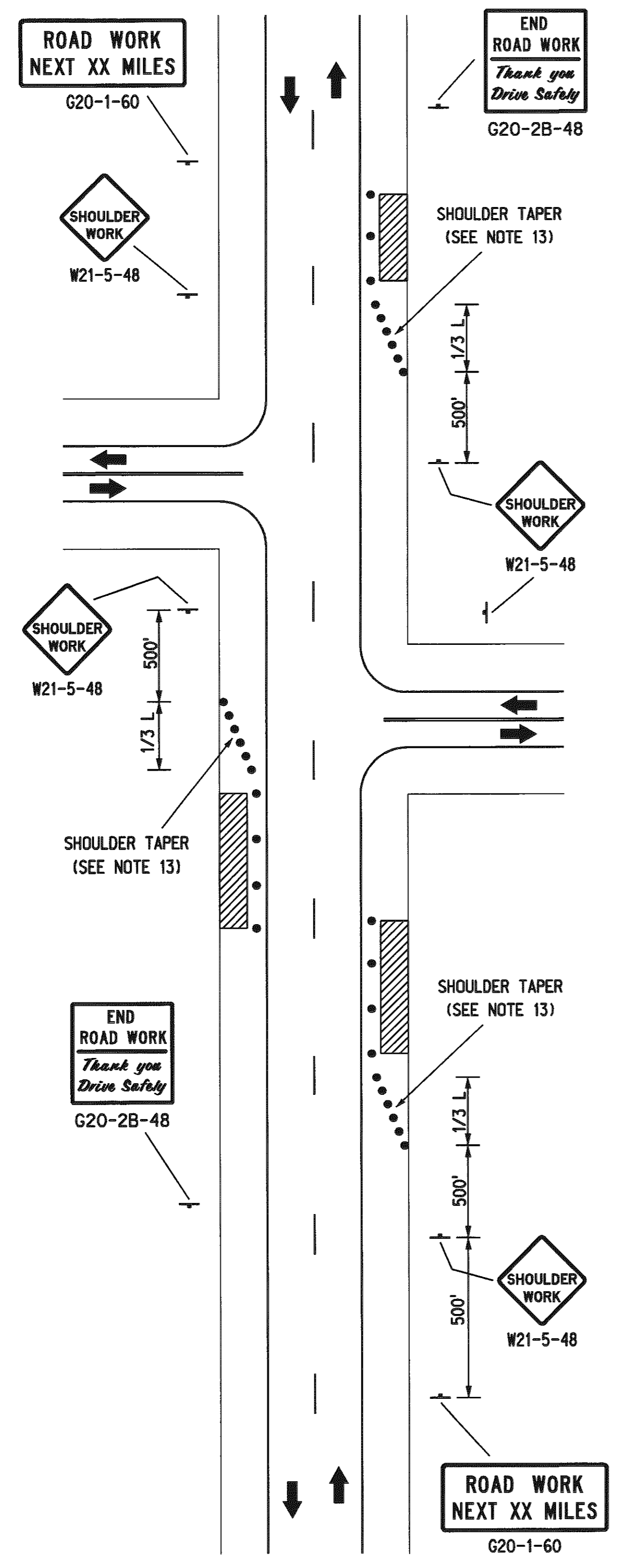
REV. NO.	DATE	DESCRIPTION OF REVISION
R5	DEC.05	2003 MUTCD UPDATE
R4	AUG.98	SIGN CHANGES, ADDITIONS
R3	MAY 83	ADDITIONS

NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 921-R5
**TRAFFIC CONTROL,
CONSTRUCTION AND MAINTENANCE**



ORIGINAL:
JUNE 3, 1980
DATE

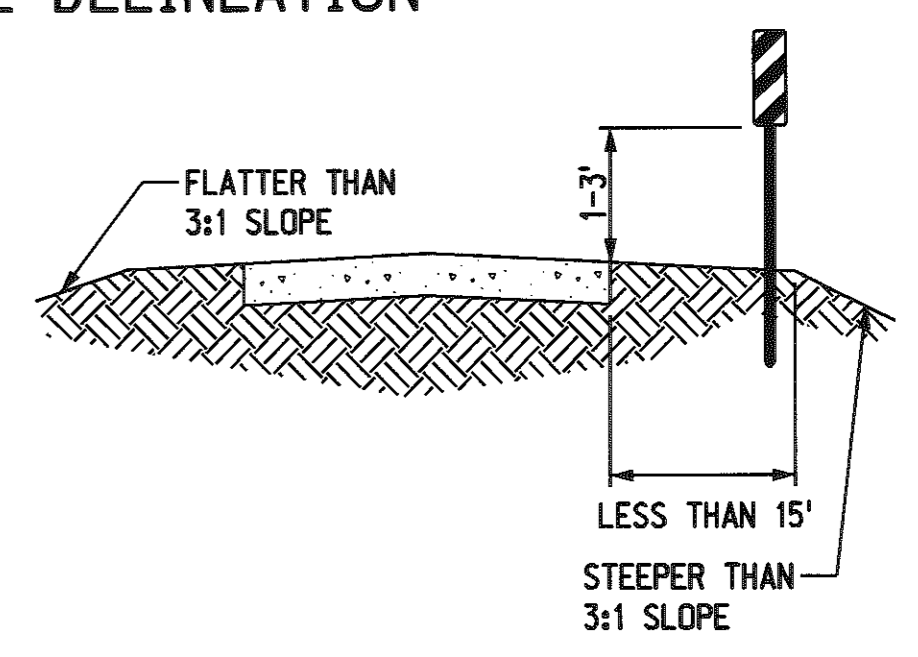
1
2



* SIGNS ARE SUBSIDIARY TO THE FLAGGING OPERATION.

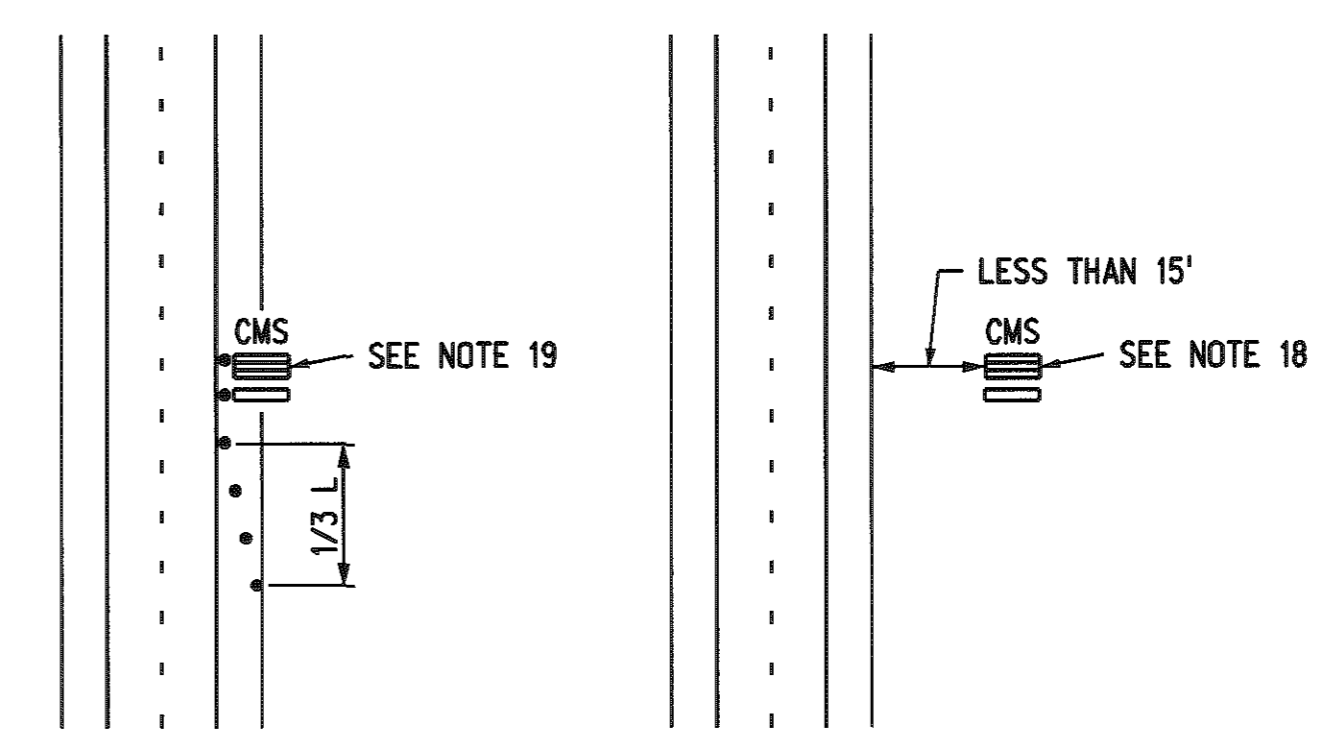
STEEP SLOPE DELINEATION

VERTICAL PANELS SHOULD BE USED FOR AREAS WHERE GUARD RAIL IS REMOVED, OR PROJECT GRADING HAS CREATED A DROP-OFF SLOPE STEEPER THAN 3:1, AND WITHIN 15 FEET OF THE TRAVEL LANE. NOT USED FOR CULVERT OR BRIDGE END PROTECTION. VERTICAL PANEL SPACING MAY BE REDUCED FOR HORIZONTAL CURVES.



WORK ZONE SPEED LIMIT NOTES

- A. WORK ZONE SPEED LIMITS SHALL NOT BE INSTALLED WITHOUT A SPEED ZONE AUTHORIZATION COMPLETED BY THE DEPARTMENT.
- B. REDUCED SPEED LIMITS SHOULD BE USED ONLY IN THE SPECIFIC PORTION OF THE WORK ZONE WHERE CONDITIONS OR RESTRICTIVE FEATURES ARE PRESENT. HOWEVER, FREQUENT CHANGES IN THE SPEED LIMIT SHOULD BE AVOIDED. THE REDUCTION OF SPEED SHOULD BE DESIGNED SO VEHICLES CAN SAFELY TRAVEL THROUGH THE WORK ZONE WITH A SPEED LIMIT REDUCTION OF NO MORE THAN 10 MPH UNLESS OTHERWISE NOTED IN THE PLANS.
- C. WORK ZONE SPEED LIMITS SHOWN ARE TYPICAL APPLICATIONS ONLY AND ARE NOT TO BE ASSUMED AS THE SPEED LIMITS REQUIRED FOR THE WORK.
- D. EXISTING SPEED LIMIT SIGNS SHALL BE REMOVED OR COVERED WHEN A REDUCED WORK ZONE SPEED LIMIT IS IN EFFECT IN THE SAME AREA.
- E. WORK ZONE SPEED LIMIT SIGNS SHALL BE INSTALLED EVERY MILE THROUGH THE WORK AREA WHEN SPEED ZONE IS REDUCED.
- F. A SPEED LIMIT SIGN ENDING THE REDUCED SPEED ZONE SHALL BE INSTALLED AT THE END OF EACH ZONE.



CHANGEABLE MESSAGE SIGN PROTECTION

TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.
 $L = \frac{WS^2}{60}$ FOR SPEEDS OF 40 MPH OR LESS.

WHERE:
 L = MINIMUM LENGTH OF TAPER.
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.
 W = WIDTH OF OFFSET (LANE WIDTH).

LEGEND

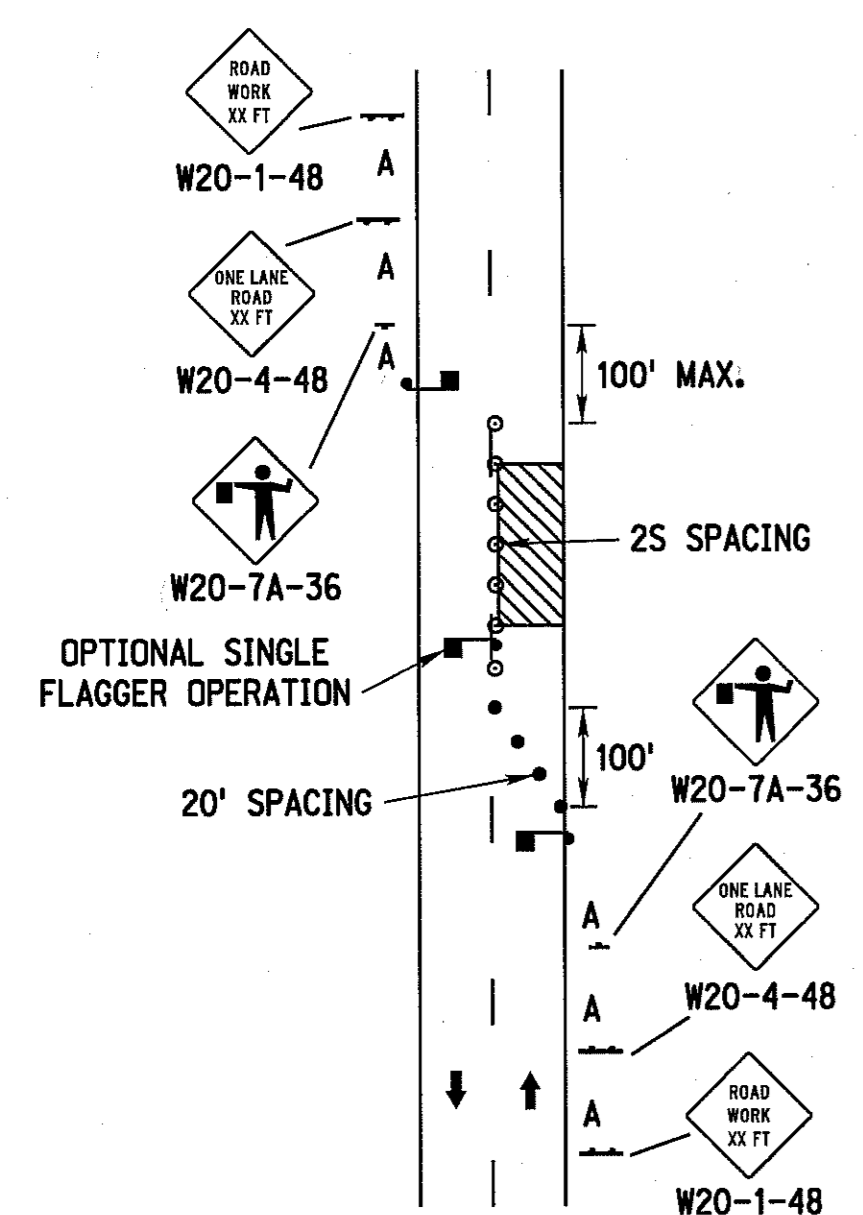
- TYPE III BARRICADE
- TYPE II BARRICADE OR REFLECTORIZED PLASTIC DRUM
- ↑ SIGN
- ⬮ FLAGGER
- △ CONE
- CMS CHANGEABLE MESSAGE SIGN
- ⬆ TRAFFIC SIGNAL

R5	DEC.05	2003 MUTCD UPDATE
R4	AUG.98	SIGN CHANGES, ADDITIONS
R3	MAY 83	ADDITIONS
REV. NO.	DATE	DESCRIPTION OF REVISION

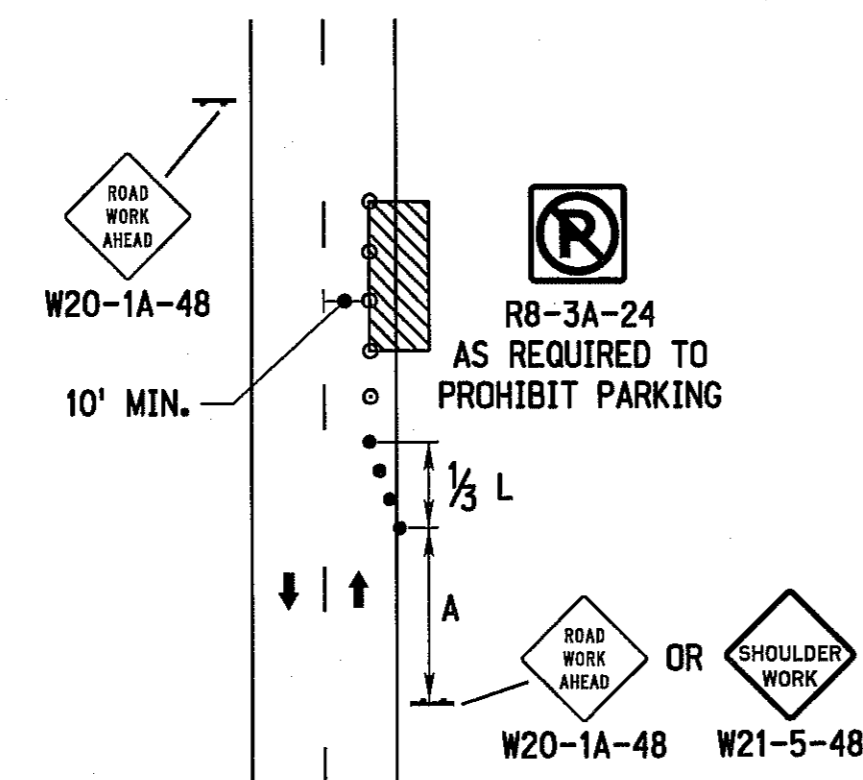
NEBRASKA DEPARTMENT OF ROADS
 STANDARD PLAN NO. 921-R5
**TRAFFIC CONTROL,
 CONSTRUCTION AND MAINTENANCE**

ORIGINAL:
 JUNE 3, 1980
 DATE

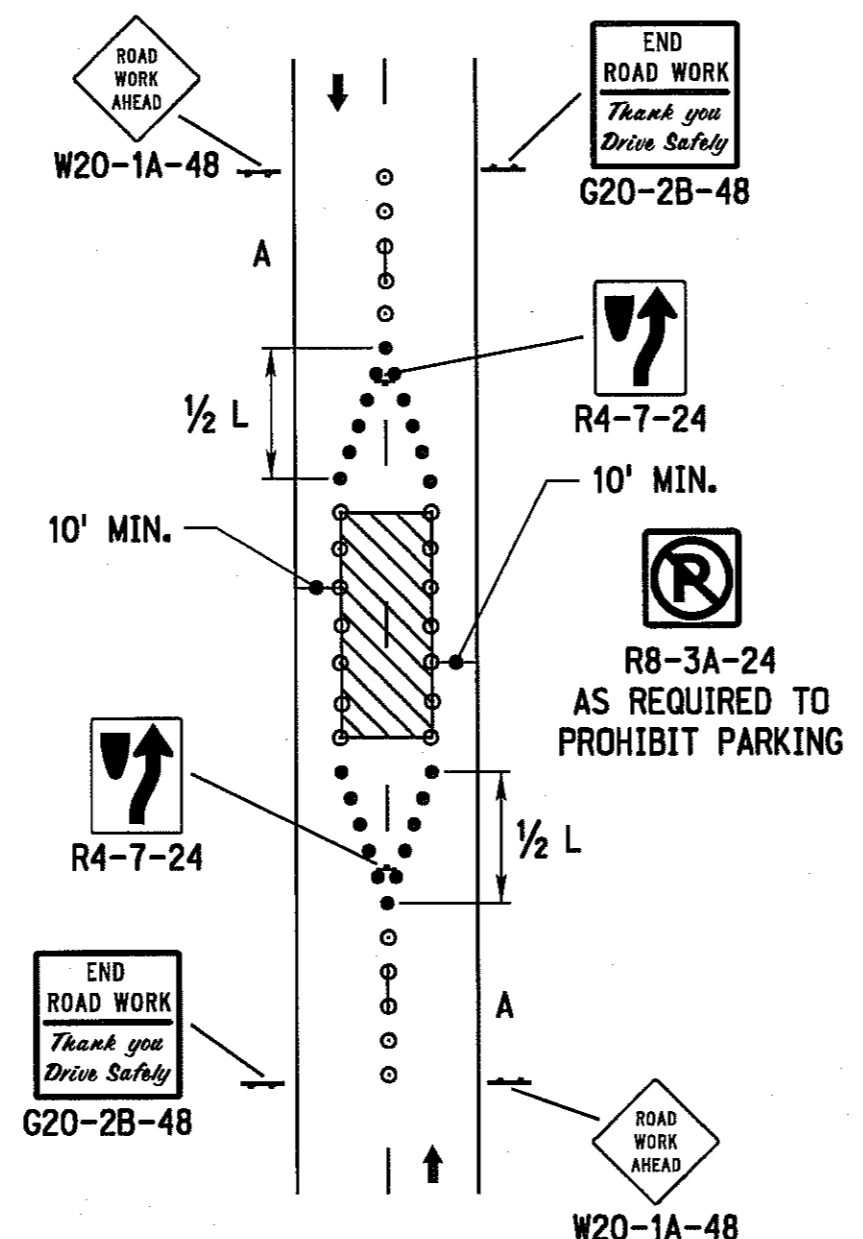
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 2



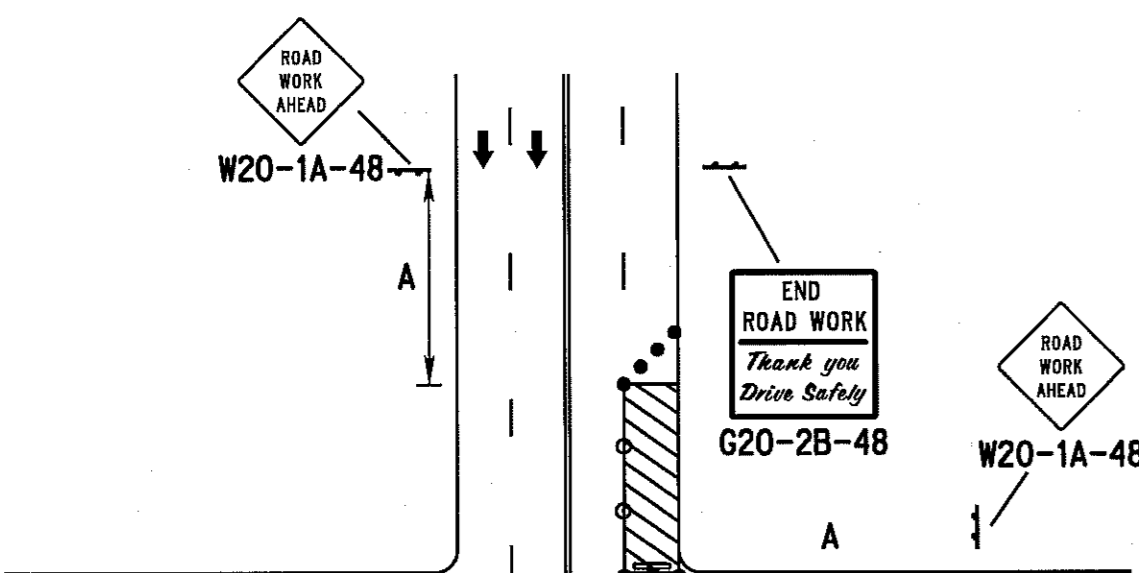
ONE LANE CLOSED WITH FLAGGER



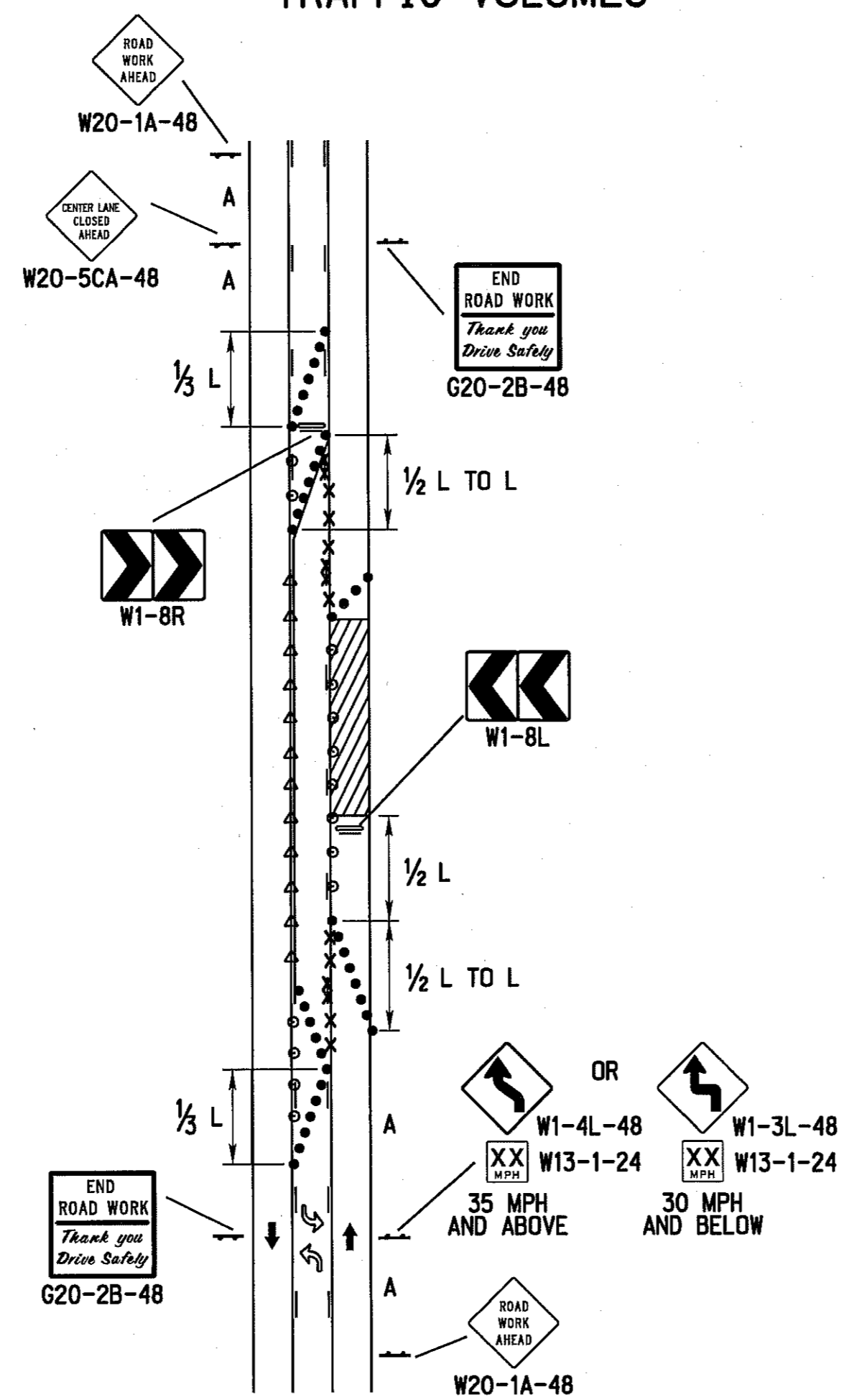
SHOULDER OR PARKING LANE CLOSED



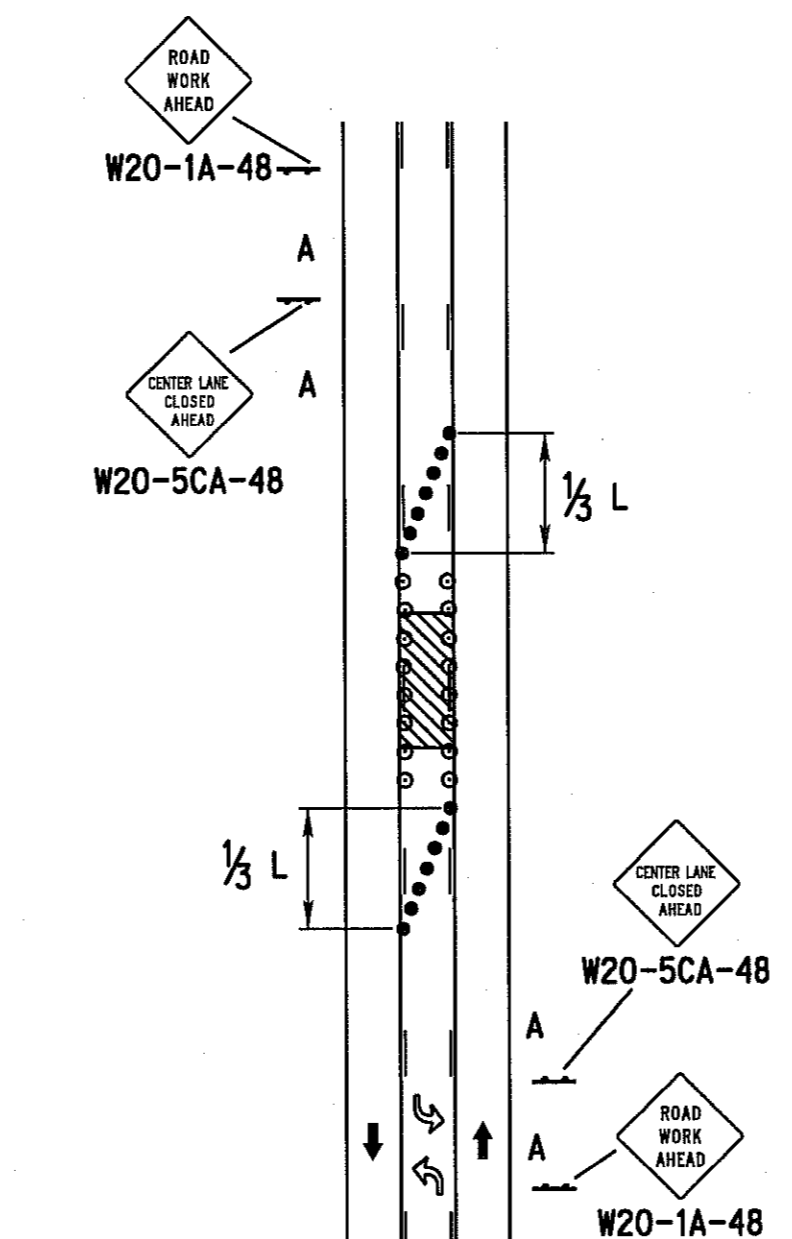
WORK IN CENTER OF ROAD WITH LOW TRAFFIC VOLUMES



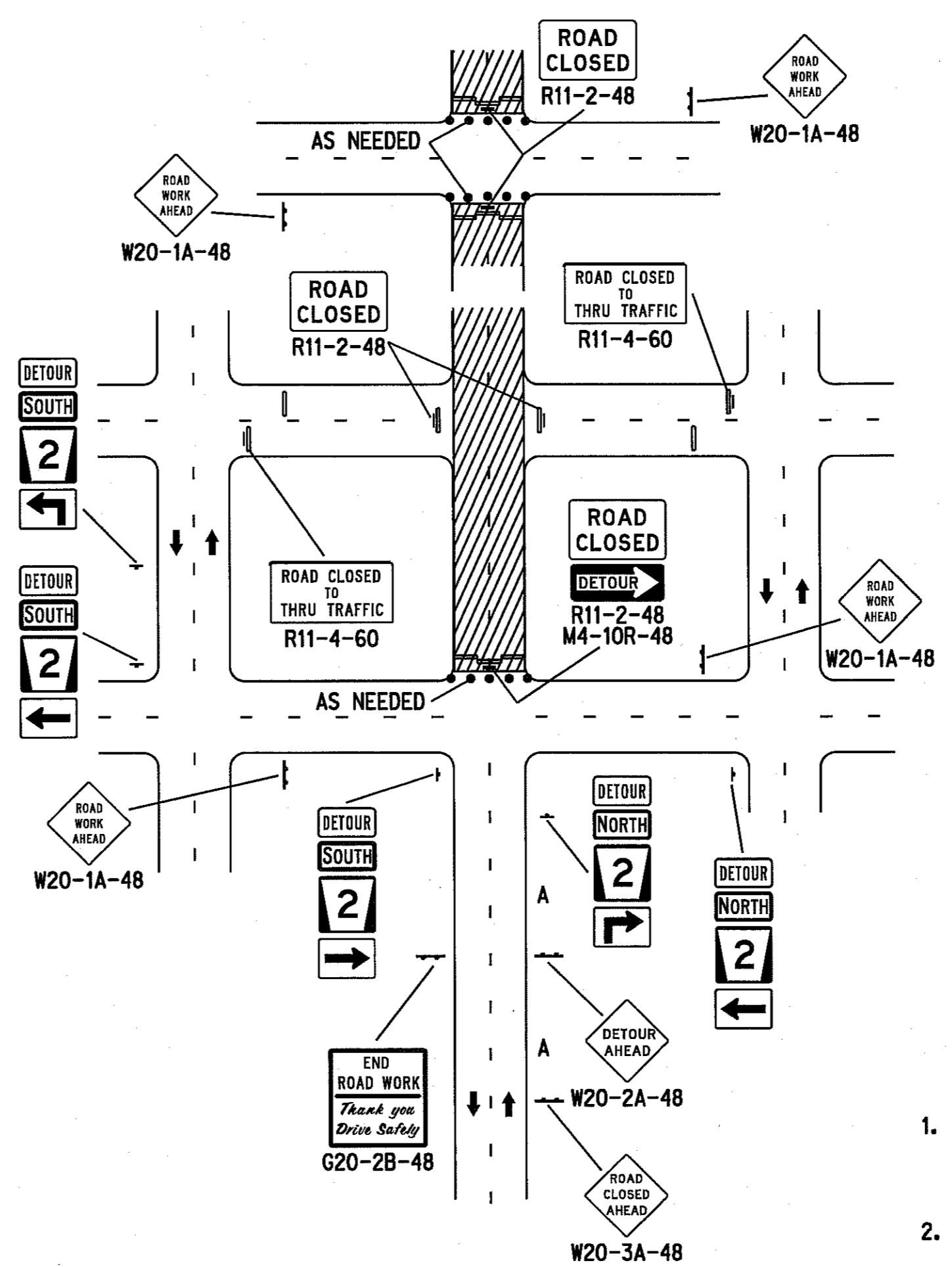
LANE CLOSED NEAR INTERSECTION (RIGHT LANE CLOSED)



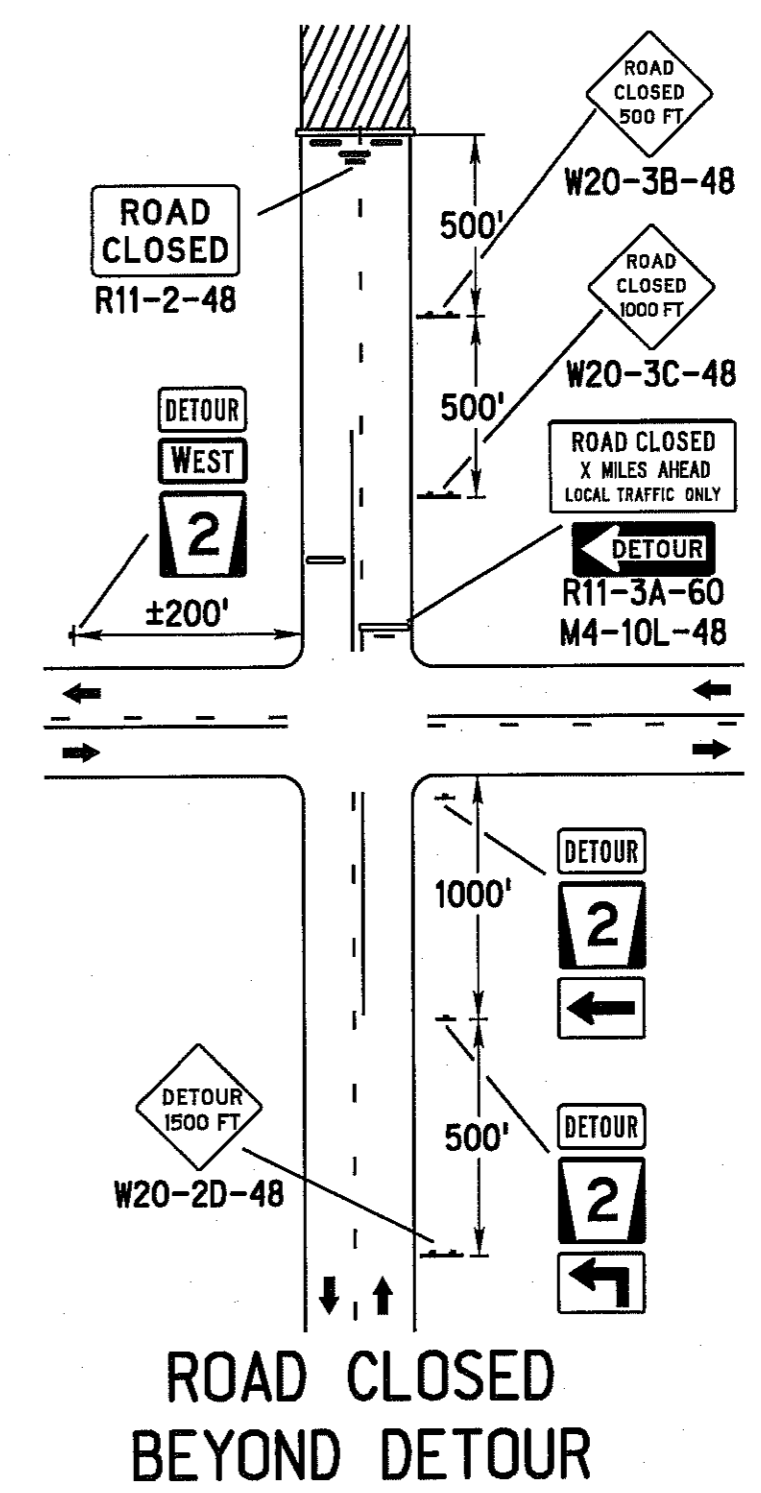
3-LANE ROADWAY ONE LANE CLOSED



TWO-WAY LEFT TURN LANE CLOSED



ROAD CLOSED AT DETOUR



ROAD CLOSED BEYOND DETOUR

LEGEND

- ⚡ FLASHING ARROW PANEL
- ▬ TYPE THREE BARRICADE
- RETRO-REFLECTORIZED PLASTIC DRUM
- △ 42" RETRO-REFLECTORIZED CONE
- REFLECTORIZED PLASTIC DRUM OR 42" RETRO-REFLECTORIZED CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- ⚡ FLAGGER
- xxxxx PAVEMENT MARKING REMOVAL

TAPER FORMULA

- L = MERGING TAPER
- L/2 = SHIFTING TAPER
- L/3 = SHOULDER TAPER
- L = W x S FOR SPEEDS OF 45 MPH OR HIGHER
- L = $\frac{WS^2}{60}$ FOR SPEEDS OF 40 MPH OR LOWER
- L = MINIMUM LENGTH OF TAPER
- S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK
- W = WIDTH OF OFFSET

NOTES

1. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
2. MINIMUM WIDTH OF TRAVELLED LANE SHALL BE AS REQUIRED BY THE ENGINEER.
3. FLASHING ARROW PANEL REQUIRED ON ALL ROADWAYS WITH POSTED SPEED LIMIT 45 MPH OR HIGHER. THE USE OF A FLASHING ARROW PANEL IS OPTIONAL ON ROADWAYS WITH A POSTED SPEED OF 40 MPH OR LOWER.
4. LONG-TERM FLASHING ARROW PANELS IN URBAN RESIDENTIAL AREAS WHERE DIESEL ENGINE NOISE WILL BE DISRUPTIVE TO RESIDENTS, MAY BE REQUIRED TO OPERATE BY 120 VAC, OR IF SIGHT DISTANCE ALLOWS, A SOLAR POWERED ARROW PANEL MAY BE USED.
5. FOR SHORT-TERM WORK (LESS THAN 24 HOURS) SIGN G20-2B-48 (END ROAD WORK, THANK YOU, DRIVE SAFELY) MAY BE OMITTED.
6. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT (S). WHERE CHANNELIZING DEVICES ARE USED ALONG THE WORK AREA, THE SPACING MAY BE INCREASED TO THE DISTANCE IN FEET EQUAL TO THE SPEED LIMIT, DOUBLED (2 x S). SEE "TAPER FORMULA" TABLE FOR MORE INFORMATION.
7. FOR LANE CLOSURES OVER 48 HOURS, REMOVE CONFLICTING PAVEMENT MARKINGS OR COVER EXISTING DURABLE PAVEMENT MARKINGS WITH TYPE II BLACK TEMPORARY PAVEMENT MARKING TAPE.
8. DESIGNATION OF SPEED SHOWN ON ADVISORY SPEED SIGNS W13-1 SHALL BE DETERMINED BY THE ENGINEER IN ACCORDANCE WITH MUTCD. THE SPEED DESIGNATION SHALL BE AS HIGH AS PRACTICAL AND FEASIBLE.

ROAD TYPE	MINIMUM DISTANCE BETWEEN SIGNS
	A
URBAN (LOW SPEED - 25 MPH TO 40 MPH)	100'
URBAN (HIGH SPEED - 45 MPH OR HIGHER)	350'

REV. NO.	DATE	DESCRIPTION OF REVISION

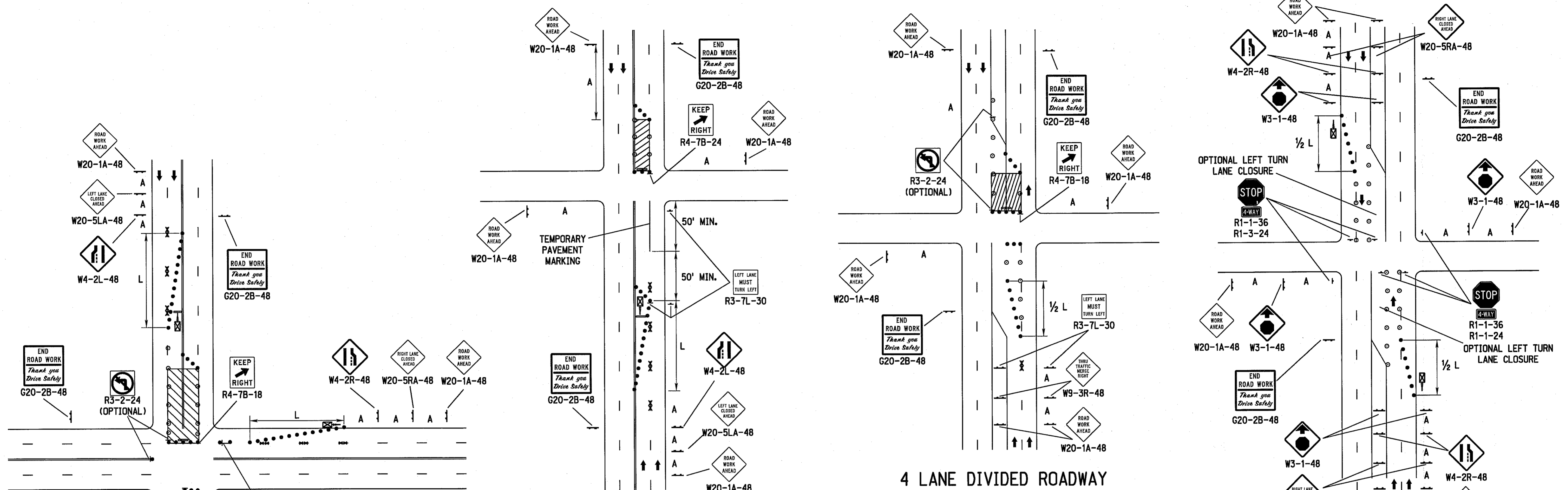
NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 924
TYPICAL URBAN TRAFFIC CONTROL PLAN

FHWA APPROVED:
John J. Peary
DATE: 11/17/2009

DANIEL J. WADDLE
E-6289
1-17
STATE OF NEBRASKA

ORIGINAL:
FEBRUARY 1, 2010
DATE

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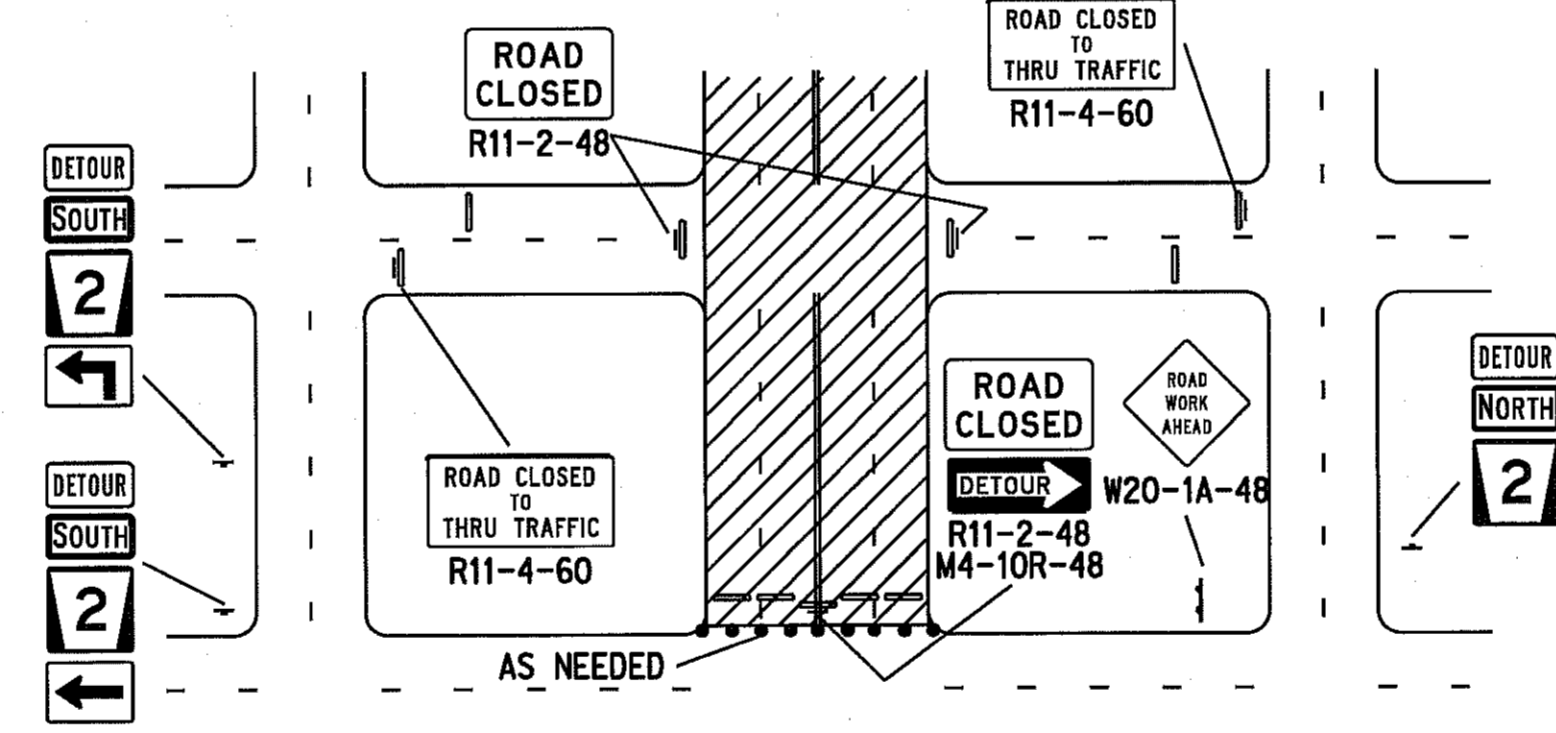


LANE CLOSED NEAR INTERSECTION
(LEFT LANE CLOSURE FORMING A TURNBAY)

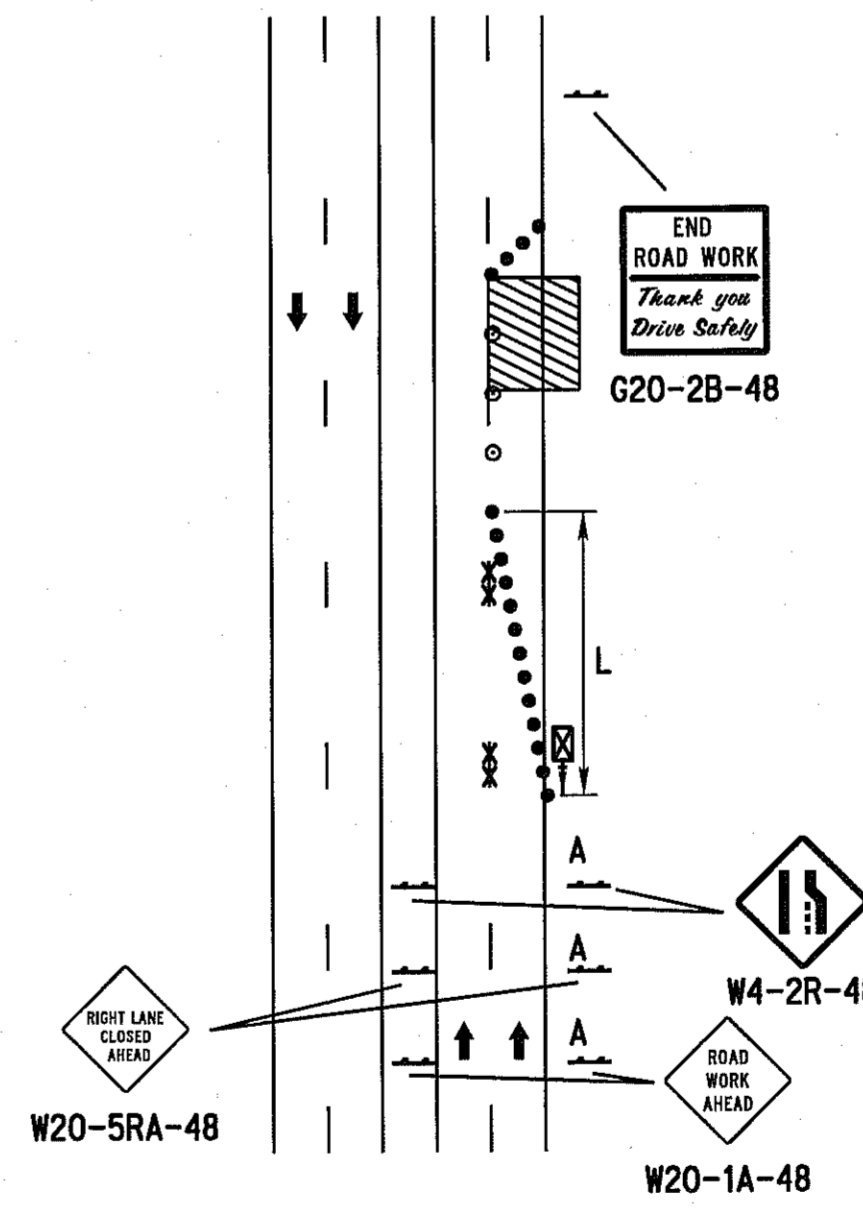
4 LANE DIVIDED ROADWAY
CENTER LANES CLOSED
NEAR INTERSECTION

TEMPORARY 4-WAY STOP
FOR SIGNAL WORK

4 LANE UNDIVIDED ROADWAY
CENTER LANES CLOSED
NEAR INTERSECTION



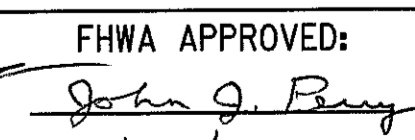
ROAD CLOSED AT DETOUR
(OPTIONAL LANE CLOSURE)

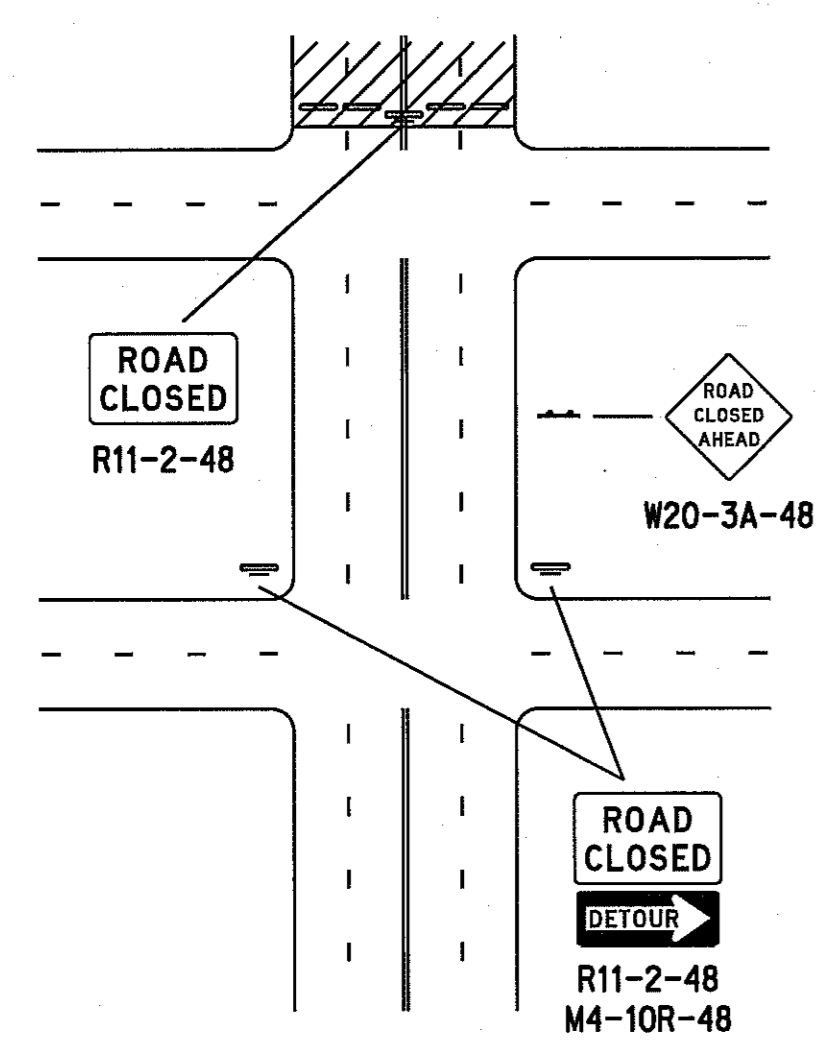


DIVIDED ROADWAY
ONE LANE CLOSED

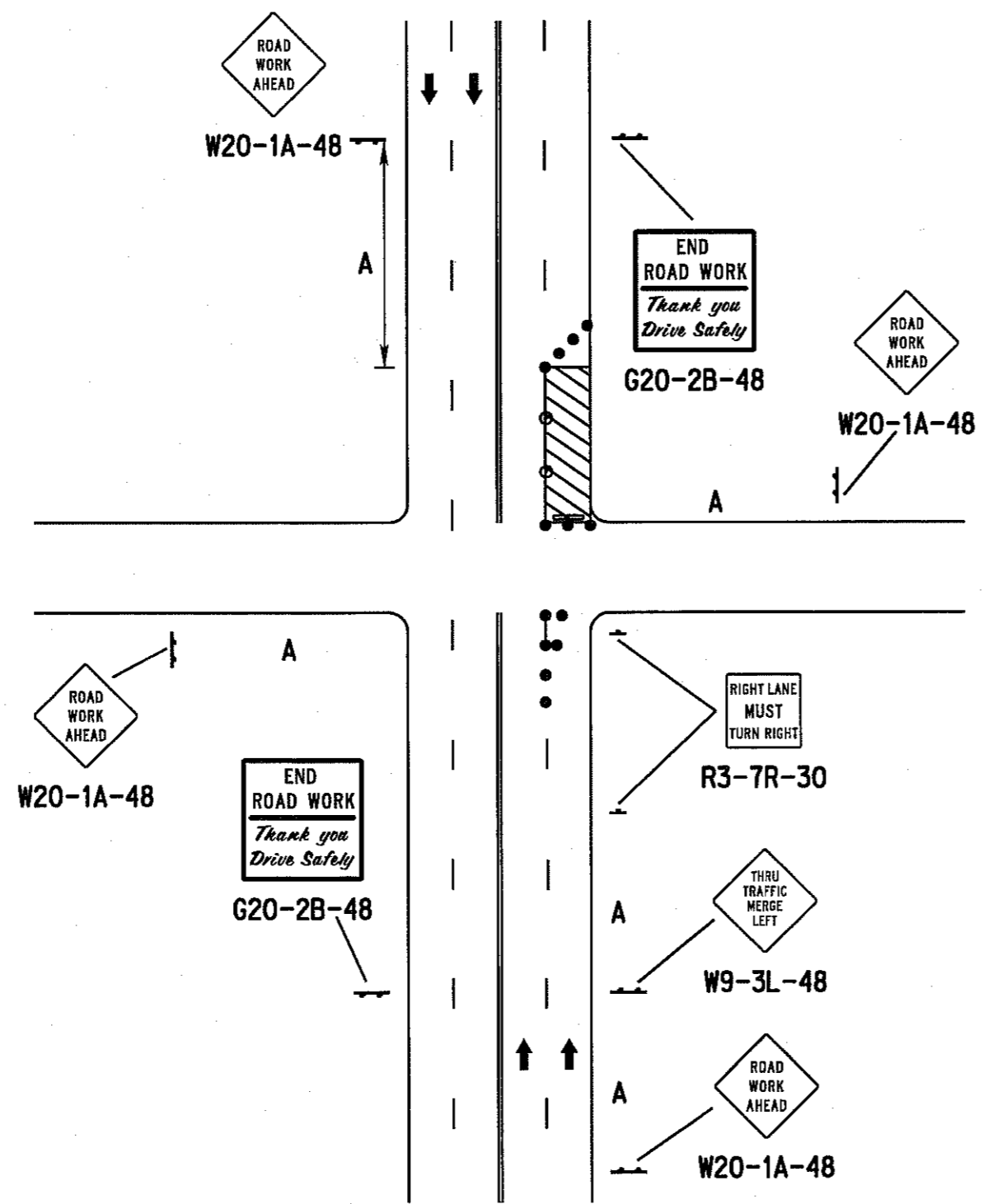
- LEGEND**
- ⚡ FLASHING ARROW PANEL
 - ▬ TYPE THREE BARRICADE
 - RETRO-REFLECTORIZED PLASTIC DRUM
 - △ 42" RETRO-REFLECTORIZED CONE
 - REFLECTORIZED PLASTIC DRUM OR 42" RETRO-REFLECTORIZED CONE
 - ⊣ SINGLE POSTED SIGN
 - ⊢ DOUBLE POSTED SIGN
 - ▬ FLAGGER
 - xxxx PAVEMENT MARKING REMOVAL

- TAPER FORMULA**
- L = MERGING TAPER
 - L/2 = SHIFTING TAPER
 - L/3 = SHOULDER TAPER
 - L = W x S FOR SPEEDS OF 45 MPH OR HIGHER
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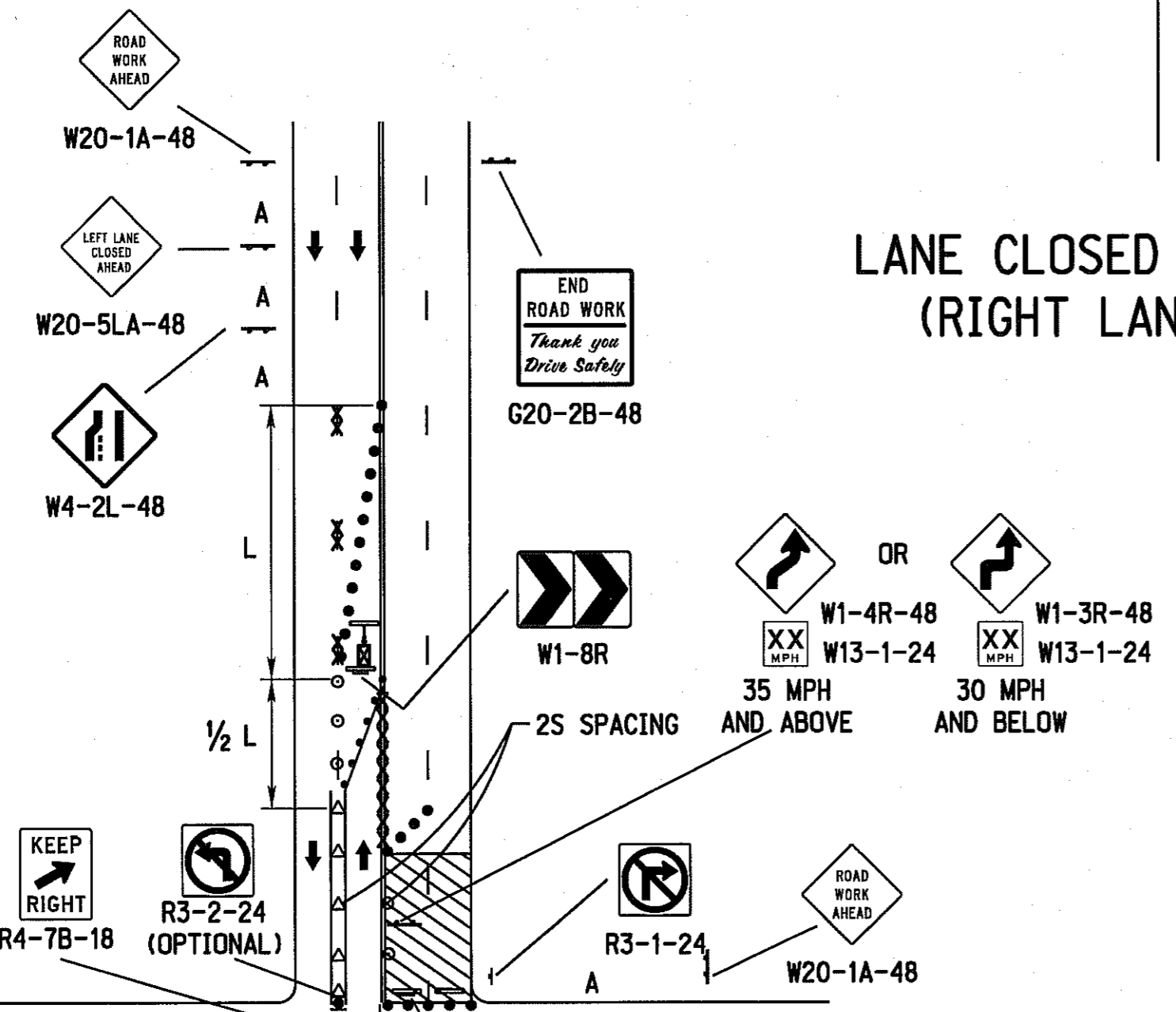
REV. NO.	DATE	DESCRIPTION OF REVISION
NEBRASKA DEPARTMENT OF ROADS STANDARD PLAN NO. 924 TYPICAL URBAN TRAFFIC CONTROL PLAN		
FHWA APPROVED:  DANIEL J. WADDLE E-6289 STATE OF NEBRASKA		2 3
ORIGINAL: FEBRUARY 1, 2010 DATE		2 3



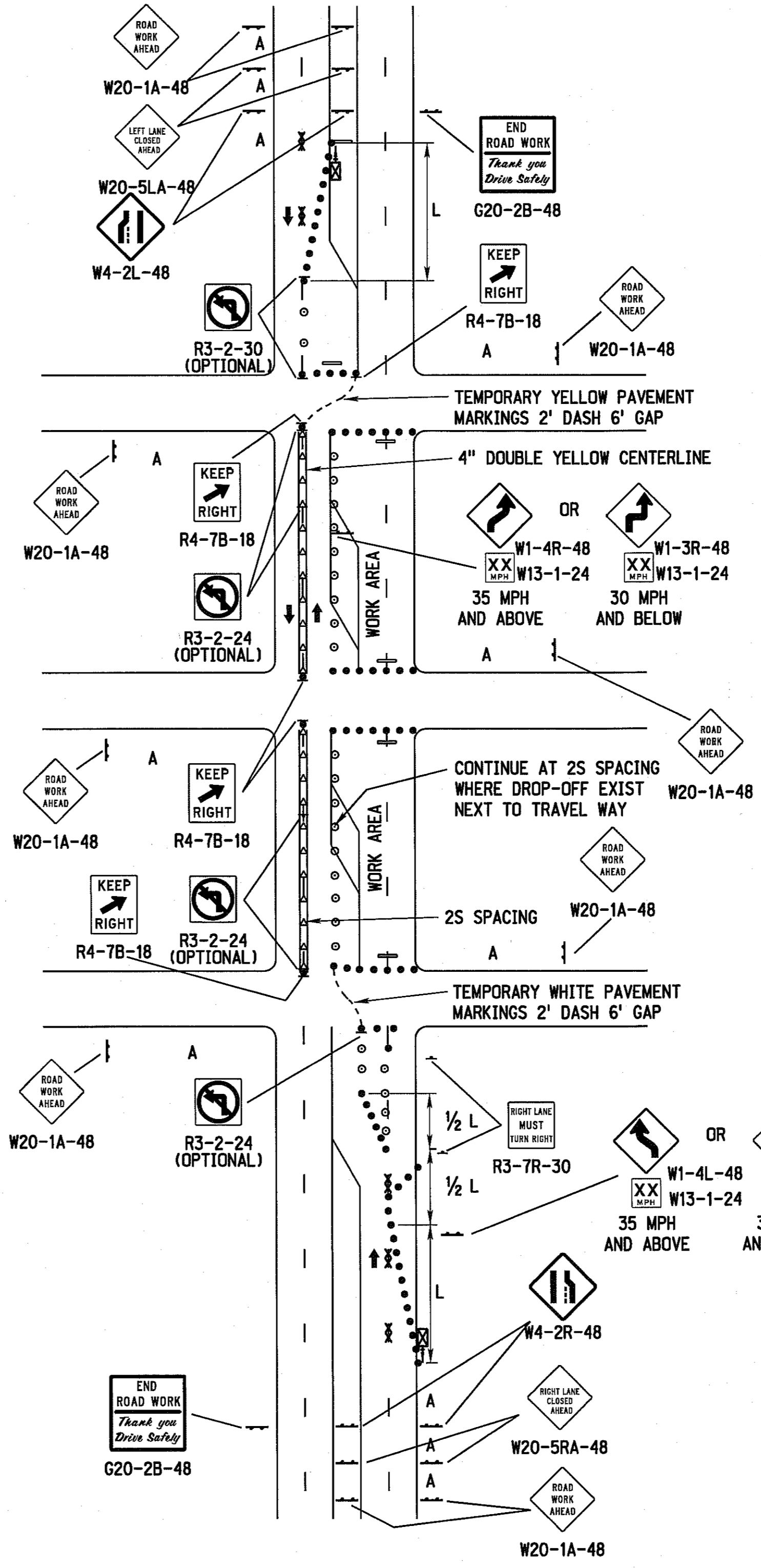
ROAD CLOSED BEYOND DETOUR



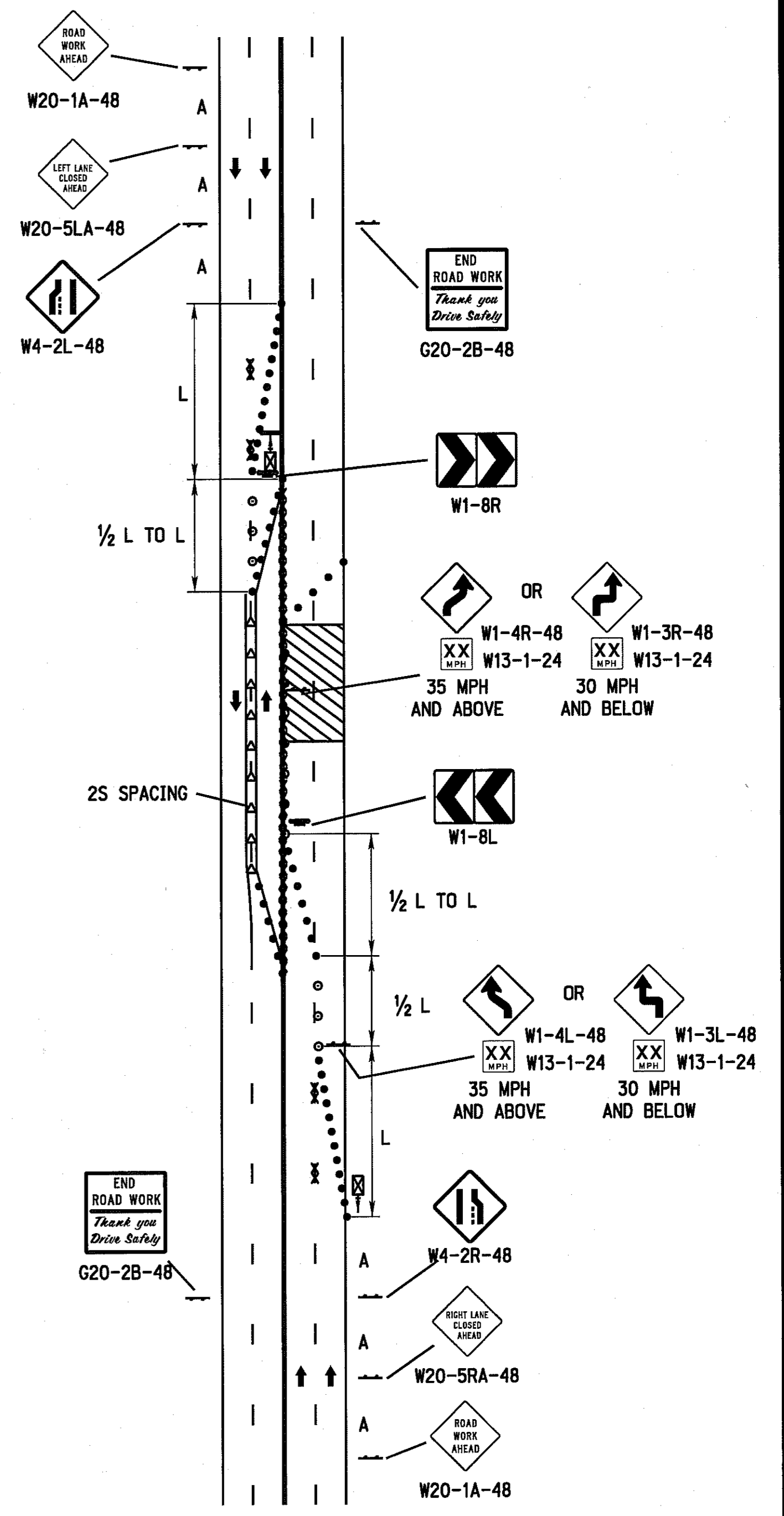
LANE CLOSED NEAR INTERSECTION (RIGHT LANE REMAINS OPEN)



4 LANE UNDIVIDED ROADWAY TWO LANES CLOSED NEAR INTERSECTION



4-LANE DIVIDED HALF CLOSED



4-LANE UNDIVIDED 2 LANES CLOSED

- LEGEND**
- ⚡ FLASHING ARROW PANEL
 - TYPE THREE BARRIcade
 - RETRO-REFLECTORIZED PLASTIC DRUM
 - △ 42" RETRO-REFLECTORIZED CONE
 - REFLECTORIZED PLASTIC DRUM OR 42" RETRO-REFLECTORIZED CONE
 - SINGLE POSTED SIGN
 - DOUBLE POSTED SIGN
 - FLAGGER
 - xxx PAVEMENT MARKING REMOVAL

- TAPER FORMULA**
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 - L/2 = SHIFTING TAPER
 - L/3 = SHOULDER TAPER
 - L = W x S FOR SPEEDS OF 45 MPH OR HIGHER
 - L = $\frac{WS^2}{60}$ FOR SPEEDS OF 40 MPH OR LOWER
 - L = MINIMUM LENGTH OF TAPER
 - S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK
 - W = WIDTH OF OFFSET

PRODESIGN5
 02/10/17
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REV. NO.	DATE	DESCRIPTION OF REVISION
NEBRASKA DEPARTMENT OF ROADS STANDARD PLAN NO. 924 TYPICAL URBAN TRAFFIC CONTROL PLAN		
EHW APPROVED: DATE: 11/17/2009		3 3
ORIGINAL: FEBRUARY 1, 2010 DATE		