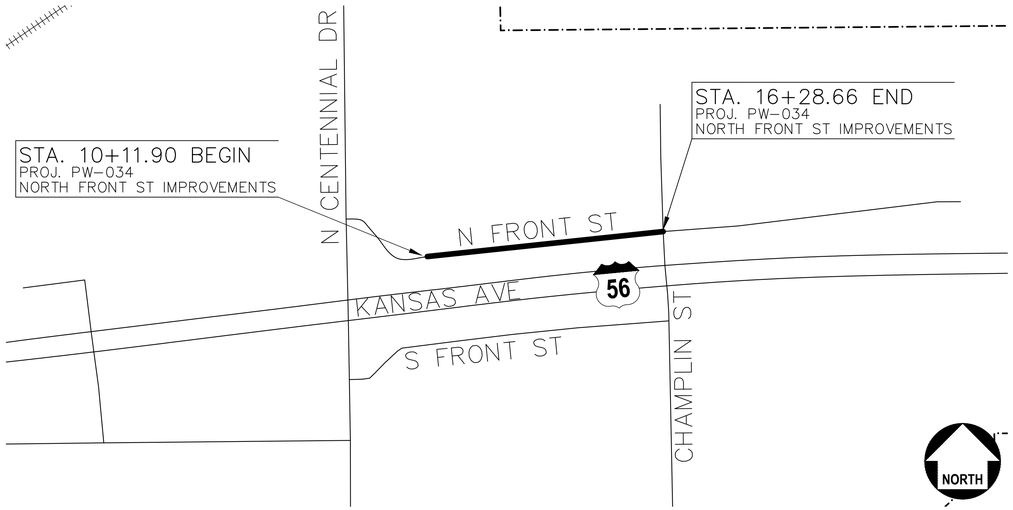
INDEX OF SHEETS

SHEET	DESCRIPTION
1	TITLE SHEET
2	TYPICAL SECTIONS/GENERAL NOTES
3–4	PLAN/PROFILE
5	STORM SEWER
6–8	PAVING DETAILS
9–11	INLET & MANHOLE DETAILS
12	END SECTIONS
13–14	PAVEMENT MARKING DETAILS
15–21	TRAFFIC CONTROL DETAILS
22–23	EROSION CONTROL
24–28	CROSS SECTIONS

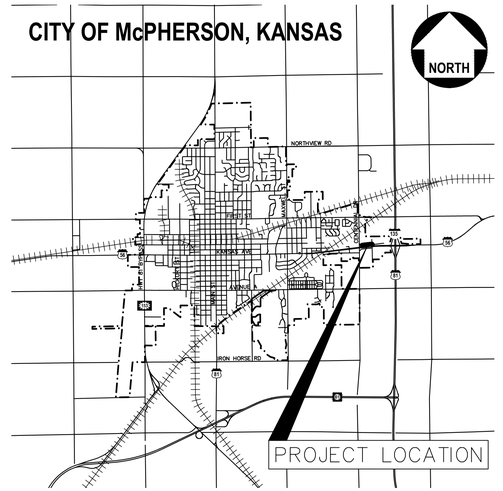
CITY OF McPHERSON, KANSAS
DEPARTMENT OF PUBLIC WORKS

STREET IMPROVEMENTS FOR
NORTH FRONT STREET
MCDONALDS ENTRANCE TO N CHAMPLIN ST
PW-034



PLANS	BY	DATE
DESIGNED:	JUSTIN WALKER	6/30/2017
DRAWN:	JUSTIN WALKER	7/10/2017
CHECKED:	JEFF WOODWARD	7/10/2017

PW-034



GEO-GRID AGGREGATE BASE (8")
CONCRETE PAVEMENT (8")
PAVEMENT MARKINGS
DRIVEWAY ENTRANCES (8")
SIDEWALK REPAIR
CURB & GUTTER

STREET DESIGN CRITERIA					
STREET	LENGTH Ft.	LANES	AADT 2013	AADT 2033	% TRUCKS
NORTH FRONT STREET	616.76	2	1966	2939	7%

TOTAL LENGTH: 616.76'
0.117 Miles

LANE MILES: 0.234

UTILITY OWNERS

Electric & Water –
Board of Public Utilities
Mark Wurm, PE
401 W Kansas Ave
McPherson,Ks 67460
620–755–5665

Storm and Sanitary Sewer –
City of McPherson
Jeff Woodward, PE
400 E Kansas Ave
McPherson,Ks 67460
620–245–2545

Gas Service –
Kansas Gas Service
Dennis Alexander
1644 W Kansas Ave
McPherson,Ks 67460
620–241–0837 ext 224

Telephone –
AT&T
Scott Dunlap
137 S 7th
Salina,Ks 67401
620–665–1939

Cable –
Cox Communications
Noel Tolbert
901 S George Washington Blvd
Wichita,Ks 67211
316–214–4488

Fiber Optic –
Zayo Group
Tommy Bunce
102 N Main St
Buhler,Ks 67522
620–200–3621

Fiber Optic –
Mutual Telephone Company
John Teitjens
Little River,Ks 67457
620–897–6200

McPHERSON
CITY OF McPHERSON, KANSAS
PUBLIC WORKS DEPARTMENT

PLANS REVIEWED BY	DATE	APP'D

DATE	REVISION	BY	APP'D

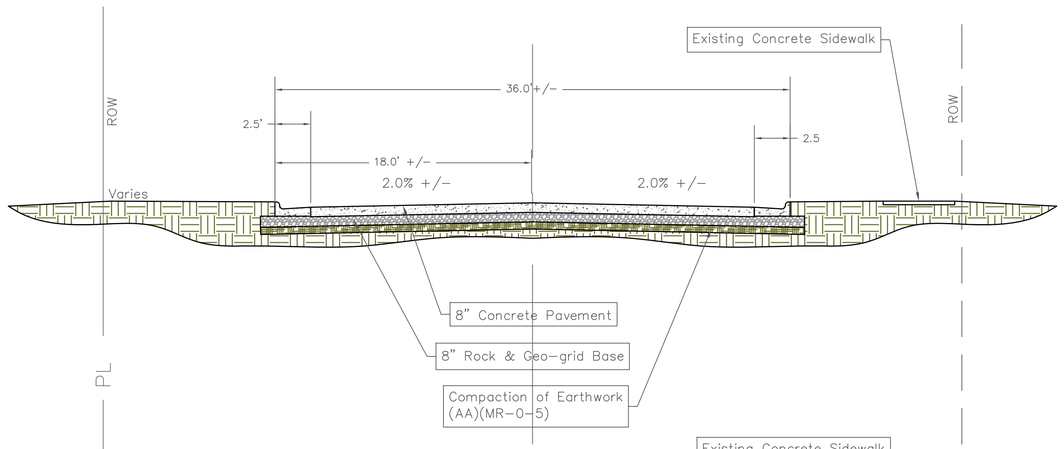
FINAL PLANS
APPROVED FOR CONSTRUCTION

RECOMMENDED BY:
JEFF WOODWARD, P.E.
DIRECTOR OF PUBLIC WORKS
DATE

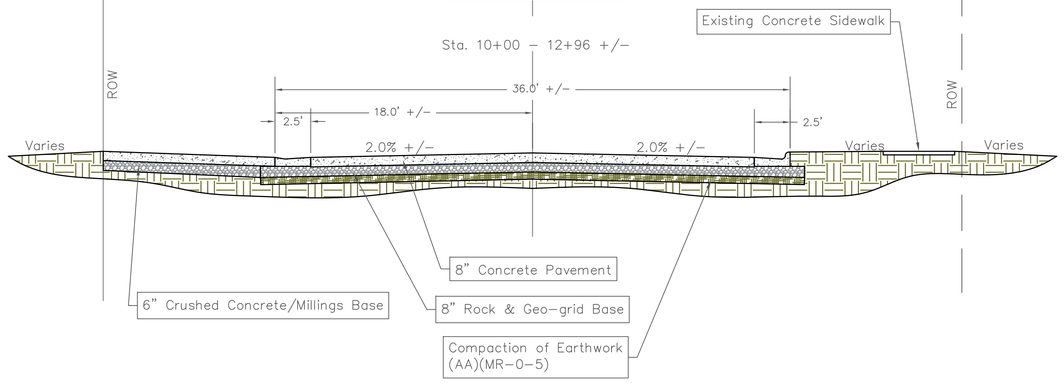
APPROVED BY:
LARRY E WEINS
COMMISSIONER OF STREETS & UTILITIES
DATE

PROJECT NO:	PW–034	FILE:	PW–034_TitleSheet.dwg
WORK ORDER NO:	-----	PLOT BY:	JustinW
CONSTR COMPL:		PLOT DATE:	2017–07–10
FIELD REVISIONS:		SHEET	1 OF 28

Sta. 14+00 – 15+00 +/–



Sta. 10+00 – 12+96 +/–



Project Survey Controls:

Horizontal Datum:

US Survey Feet
NAD83–1502 Kansas South Zone

Horizontal Basis:

OPUS– Processed GPS Observation:
GSS Project Number: G2010–024

N: 1933726.0724
E: 1562749.3600

Monument Description: "X" cut on NW corner of Storm Inlet at SW Corner of Arby's Parking Lot, south of Intersection of S Champlin St and South Front St

Project Coordinates have been Modified to Ground:
C.S.F. = 0.999899629995

Scaling Point:
N: 1933726.0724
E: 1562749.3600

Vertical Datum:

OPUS– Processed GPS Observation:
GSS Project Number: 2010–024

Elevation: 1501.28' NAVD88

Monument Description: "X" cut on NW corner of Storm Inlet at SW Corner of Arby's Parking Lot, south of Intersection of S Champlin St and South Front St

GENERAL NOTES:

1. PROJECT IS TO BE CONSTRUCTED IN 2 PHASES. TO ALLOW CONTINUAL ACCESS TO BUSINESS'. PHASING MAP IS AVAILABLE IN CONTRACT DOCUMENTS. CONTRACTOR SHALL NOTIFY BUSINESS'S 48 HOURS MINIMUM IN ADVANCE. IN PERSON AND/OR BY DOOR HANGER OF STREET CLOSURES AND/OR PHASE SWITCH.
2. ALL SAW CUTS SHALL BE FULL DEPTH AND SUBSIDIARY TO OTHER BID ITEMS. FULL DEPTH SAW CUTS SHALL BE USED TO REMOVE ANY PORTIONS OF PAVEMENT AND/OR CURBS AND CUTTER. SAW CUTS FOR LIMITS OF CONSTRUCTION SHALL BE MARKED BY CITY.
3. THE CONTRACTOR SHALL SUBMIT A STORMWATER POLLUTION PREVENTION PLAN FOR KDHE PERMIT PRIOR TO REMOVING ANY SOIL. THE CITY WILL SUBMIT FOR THE NOI.
4. ALL PROPERTY PINS DISTURBED BY CONSTRUCTION SHALL BE REPLACED BY A LICENSED LAND SURVEYOR. THIS WORK SHALL BE SUBSIDIARY TO OTHER ITEMS OF THE CONTRACT.
5. ALL CONSTRUCTION METHODS AND MATERIALS USED IN THE CONSTRUCTION OF THE IMPROVEMENT S COVERED BY THESES PLANS SHALL BE IN A ACCORDANCE WITH THE MOST RECENT VERSION OF KDOT'S STANDARD SPECIFICATIONS FOR STATE ROAD AND BRIDGE CONSTRUCTION. CITY OF MCPHERSON STANDARD TECHNICAL SPECIFICATIONS AND CURRENT SPECIAL PROVISIONS AS APPLICABLE TO THE PROJECT OR AS OTHERWISE EXCLUDED IN THESE PLANS OR SUPPLEMENTARY CONDITIONS.
6. EXCESS MILLINGS AND CLEAN CONCRETE RUBLE (NO SOIL) SHALL BE HAULED TO THE CITY DEBRIS SITE, AT 1320 TREATMENT PLANT ROAD, BY THE CONTRACTOR. ALL OTHER EXCESS MATERIALS (ROCK,ETC.) SHALL BE WASTED AT LOCATIONS FURNISHED BY THE CONTRACTOR OFF THE PROJECT SITE. WASTE LOCATIONS ARE SUBJECT TO APPROVAL BY THE ENGINEER. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIALS STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WOULD REQUIRE A KANSAS BOARD OF AGRICULTURE PERMIT . ANY MATERIAL DUMPED IN WATERS OF THE UNITED STATES OF WETLANDS IS SUBJECT TO U.S. ARMY CORP OF ENGINEERS PERMITTING REGULATIONS.
7. ALL EXISTING SIGNS, PARKING STOPS, ARE TO B E REMOVED AND REINSTALLED BY THE CITY. CONTRACTOR SHALL NOTIFY THE CITY 72 HOURS PRIOR TO NEEDING SIGN REMOVAL OR INSTALLATION. ANY SIGN DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.
8. CONTRACTORS SHALL MAINTAIN CONSTRUCTIONS LIMITS WITHIN THE EXISTING AND/OR PROPOSED RIGHT–OF–WAY AND EASEMENTS.
9. CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTIONS AND IMPLEMENTATIONS.
10. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER, FOR APPROVAL, A DETAILED WORK SCHEDULE OUTLINING ESTIMATED TIME PERIODS FOR CONSTRUCTION OF SEGMENTS. THE WORK SCHEDULE SHALL BE UPDATED AS WORK PROGRESSES, AND AT LEASE UPDATED EVERY 2 WEEKS.
11. THE CONTRACTOR WILL PROVIDE CONSTRUCTION STAKING FOR THE PROJECT.
12. TRAFFIC CONTROL SHOWN IN PLANS AND TRAFFIC CONTROL DEVICES TAB ARE SHOWN FOR INFORMATION ONLY. FLAGGER OPERATIONS SHALL BE REQUIRED ANY TIME THAT TRAFFIC IS LIMITED TO A SINGLE LANE. FLAGGER OPERATIONS AND/OR SINGLE LANE TWO WAY TRAFFIC IS PROHIBITED DURING NIGHT–TIME HOURS.
13. UTILITY POLES WILL REMAIN IN PLACE EXCEPT WHERE RELOCATED BY THE OWNERS. THE CONTRACTOR SHALL BE REQUIRED TO WORK AROUND THESE POLES TO COMPLETE THE WORK.
14. ALL TREES SHALL BE SAVED WITHIN THE RIGHT–OF–WAY. UNLESS NOTED TO BE REMOVED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SOME HAND WORK MAY BE REQUIRED.
15. ALL CONNECTIONS TO THE EXISTING STORM SEWERS, INLETS, AND MANHOLES SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS OF THE CONTRACT. PLUGGING OF HOLES IN EXISTING STRUCTURES AFTER REMOVAL OF PIPES AND PIPE ENDS EXPOSED BY CONSTRUCTION SHALL NOT BE PAID DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS OF THE CONTRACT.
16. THE LOCATIONS OF ALL UNDERGROUND UTILITIES MAY VARY FROM WHAT IS INDICATED IN THESE PLANS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH ALL UTILITY OWNERS TO LOCATE AND FLAG ALL UNDERGROUND UTILITIES WHETHER INDICATED OR NOT. NO EXCAVATIONS SHALL BE PERMITTED IN THE AREA OF UNDERGROUND UTILITIES UNTIL ALL SUCH UTILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES. ANY DAMAGE TO THE UTILITY SHALL BE REPAIRED OR REPLACED BY THE UTILITY COMPANY AT THE EXPENSE TO THE CONTRACTOR.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION WITH ALL UTILITY OWNERS FOR THE UTILITY RELOCATION AND ADJUSTMENT DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE CONSTRUCTION STAKING OF THE IMPROVEMENTS SO THAT UTILITIES OWNERS CAN RELOCATE THE NEW UTILITIES OUTSIDE OF THE PROPOSED IMPROVEMENTS. NO ADDITIONAL PAYMENT WILL BE GIVEN TO THE CONTRACT FOR TIME DELAYS OR EXTRA EXPENSE FORM THE COORDINATION AND RELOCATION OF THE UTILITIES.

SUMMERY OF QUANTITIES

Description	Quantity	Unit
Contractor Construction Staking	1	LS
Mobilization	1	LS
Common Excavation	516	CY
Rock Excavation	434	CY
Compaction of Subgrade (AA)(MR-0-5)	2651	SY
Geogrid Reinforced Aggregate Base (Crushed Concrete)(8")	2651	SY
Concrete Pavement (8")	2163	SY
Entrance Pavement Concrete (8")	325	SY
Curb & Gutter	1206	Lin Ft
Storm Sewer (15")(RCP)	119	Lin Ft
Storm Sewer (15")(RC) End Section	2	Each
Inlet (Type 22)	4	Each
Flowable Fill	34	CY
Silt Fencing	50	Lin Ft
Filter Sock (8")	100	Lin Ft
Pavement Markings (Epoxy)(White)(6")	200	Ft
Pavement Markings (Epoxy)(White)(24")	45	Ft
Pavement Markings (Epoxy)(Yellow)(4")	930	Ft
Pavement Markings (Epoxy)(Yellow)(12")	78	Ft
Pavement Markings Symbol (Intersection Grade)(White)(Lt Arrow)	6	Each
Seeding and Mulching	1	LS
Traffic Control	1	LS

DATE	REVISIONS	BY	APP'D
7/21/2017	8" Concrete Pavement Typical Section Correction	JRW	JCW

North Front St Reconstruction
North Front St–Typical Sections/Notes/ Quantities/Survey Control

VERTICAL ENG 0.05" 5 10 15 20 SCALE 1/32" ARCH 1 2 3 4 1/16" HORIZONTAL

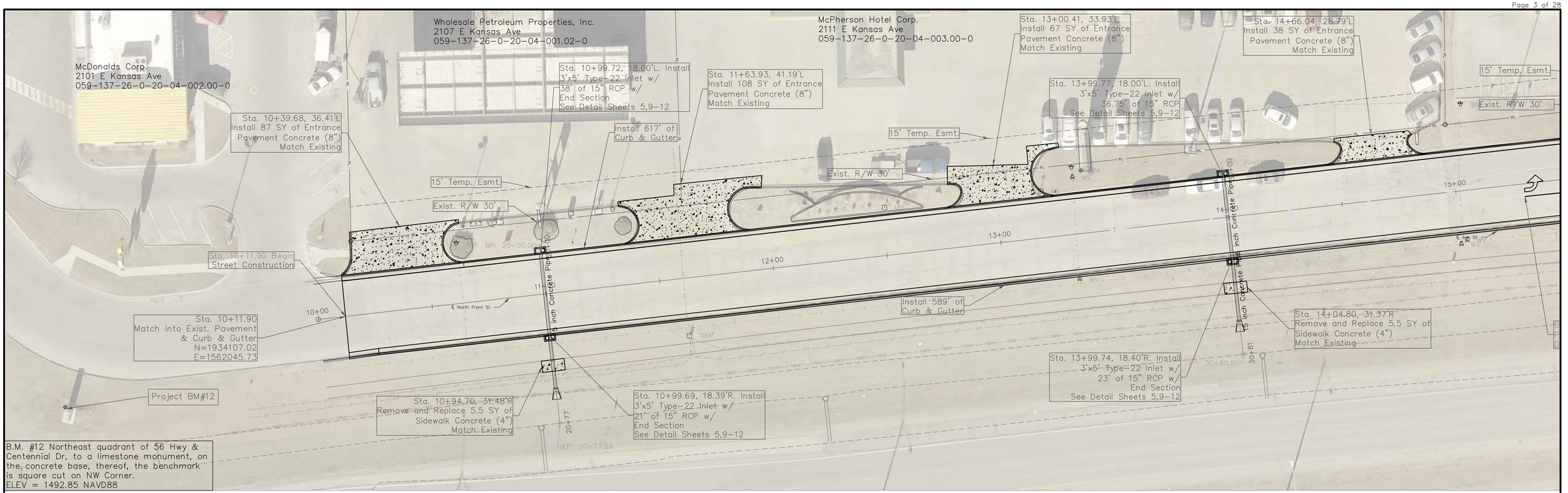
McPHERSON
CITY OF McPHERSON, KANSAS
PUBLIC WORKS DEPT.

FINAL PLANS
APPROVED FOR CONSTRUCTION

PLANS	BY	DATE
SURVEY:	JustinW	2/24/2017
DESIGNED:	JustinW	2017–07–10
DRAWN:	JustinW	2017–07–21
CHECKED:	JeffW	2017–07–21
PLOT BY:	JustinW	2017–07–21
FILE:	2017–06–29_NFrontStDesign.dwg	

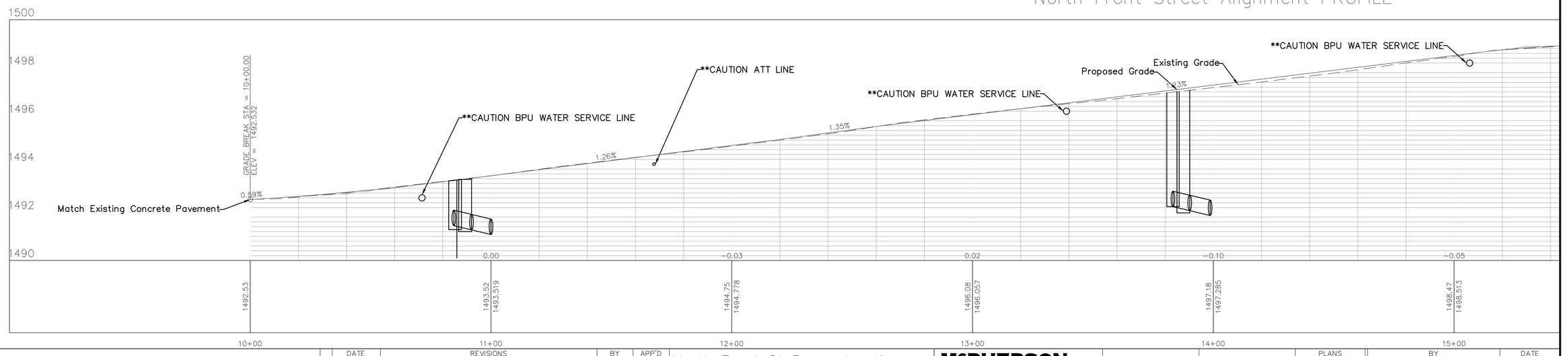
PROJECT NO: PW–034 SHEET 2 OF 28

Design File: I:\PublicWorks\PW_Projects\PW-034_NFrontSt_2017\AutoCAD\2017-06-29_NFrontStDesign.dwg



B.M. #12 Northeast quadrant of 56 Hwy & Centennial Dr, to a limestone monument, on the concrete base, thereof, the benchmark is square cut on NW Corner.
ELEV = 1492.85 NAVD88

North Front Street Alignment PROFILE



DATE	REVISIONS	BY	APP'D

North Front St Reconstruction
McDonald's Entrance to N Champlin St
10+00–15+00

VERTICAL 1" = 2'
ENG 0.05" SCALE 20 40 60 80
1/32" ARCH 1 2 3 4 1/16" HORIZONTAL

McPHERSON
CITY OF McPHERSON, KANSAS
PUBLIC WORKS DEPT.

FINAL PLANS
APPROVED FOR CONSTRUCTION

NORTH

PLANS	BY	DATE
SURVEY:	JustinW	2/24/2017
DESIGNED:	JustinW	7/6/2017
DRAWN:	JustinW	7/6/2017
CHECKED:	JeffW	7/10/2017
PLOT BY:	JustinW	7/10/2017
FILE:	2017-06-29_NFrontStDesign.dwg	

PROJECT NO: PW-034 SHEET 3 OF 28

Design File: I:\PublicWorks\PW_Projects\PW-034_NFrontSt_2017\AutoCAD\2017-06-29_NFrontStDesign.dwg

McPherson Hotel Corp.
2111 E Kansas Ave
059-137-26-0-20-04-003.00-0

Fugate, J Larry Rev Trust
2115 E Kansas Ave
059-137-26-0-20-04-004.00-0

Sta. 13+00.41, 33.93'L
Install 67 SY of Entrance
Pavement Concrete (8")
Match Existing

Sta. 14+66.04, 28.79'L
Install 38 SY of Entrance
Pavement Concrete (8")
Match Existing

Sta. 15+98.90, 24.54'L
Install 25 SY of Entrance
Pavement Concrete (8")
Match Existing

Sta. 16+28.66, End
Street Reconstruction

Sta. 17+13.14,
Pavement Markings
Detail Sheets 13-14

Sta. 13+99.77, 18.00'L. Install
3'x5' Type-22 Inlet w/
36.75' of 15" RCP
See Detail Sheets 5,9-12

15' Temp. Esmt.

Exist. R/W 30'

Sta. 16+28.66
Match into Exist. Pavement
& Curb & Gutter
N=1934175.04
E=1562658.72

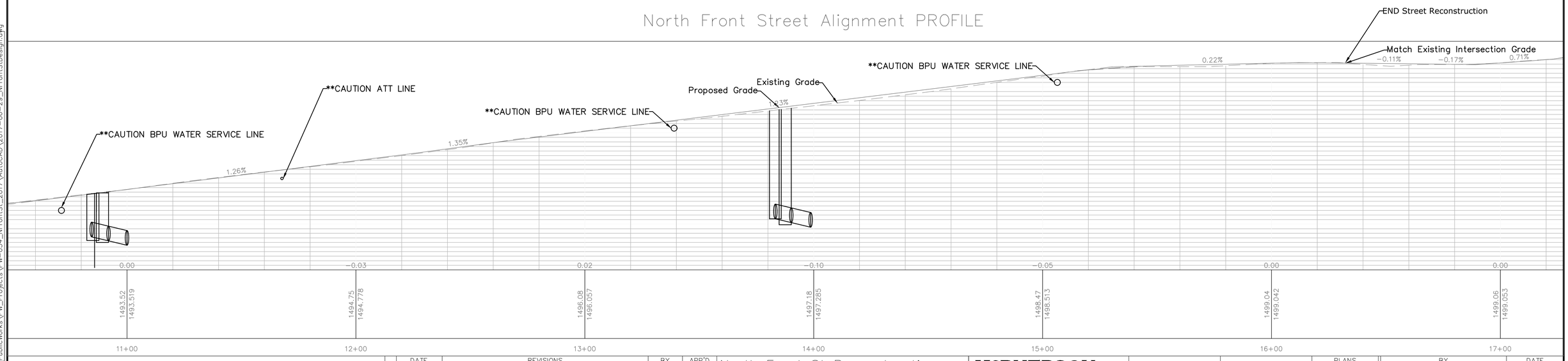
Sta. 14+04.80, 31.37'R
Remove and Replace 5.5 SY of
Sidewalk Concrete (4")
Match Existing

Sta. 15+29.84,
Pavement Markings
Detail Sheets 13-14

Sta. 13+99.74, 18.40'R. Install
3'x5' Type-22 Inlet w/
23' of 15" RCP w/
End Section
See Detail Sheets 5,9-12

CP/B.M. #2 "X" on Northwest Corner of
Storm Inlet in East Right-of-Way of South
Champlin Street/S Front Street Intersection.
N=1933726.074 (NAD83)
E=1562749.360 KS South 1502 US Survey Ft
NAVD88=1501.28
Combined Scale Factor=0.99989963

North Front Street Alignment PROFILE



DATE	REVISIONS	BY	APP'D

North Front St Reconstruction
McDonald's Entrance to N Champlin St
10+50-17+00

VERTICAL 1" = 2'
SCALE
ENG 0.05" 20 40 60 80
1/32" ARCH 1 2 3 4 1/16" HORIZONTAL

McPHERSON
CITY OF McPHERSON, KANSAS
PUBLIC WORKS DEPT.

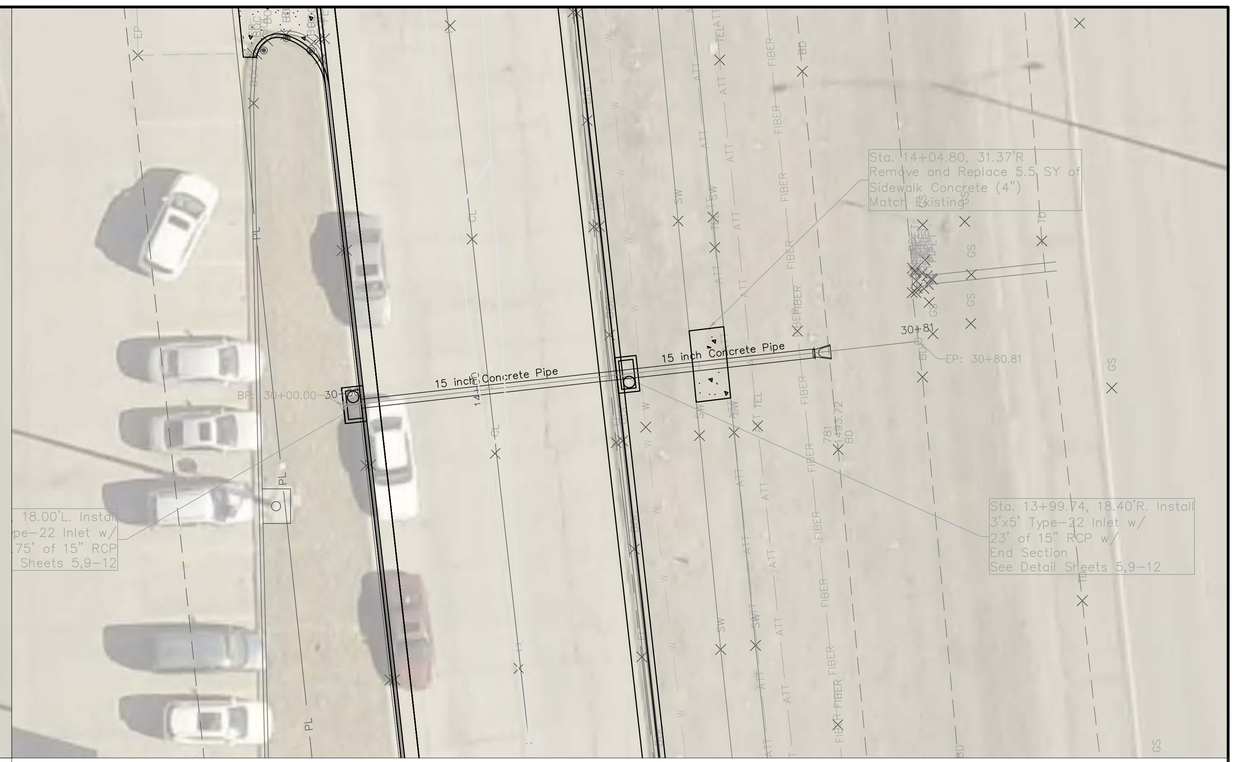
FINAL PLANS
APPROVED FOR CONSTRUCTION

NORTH

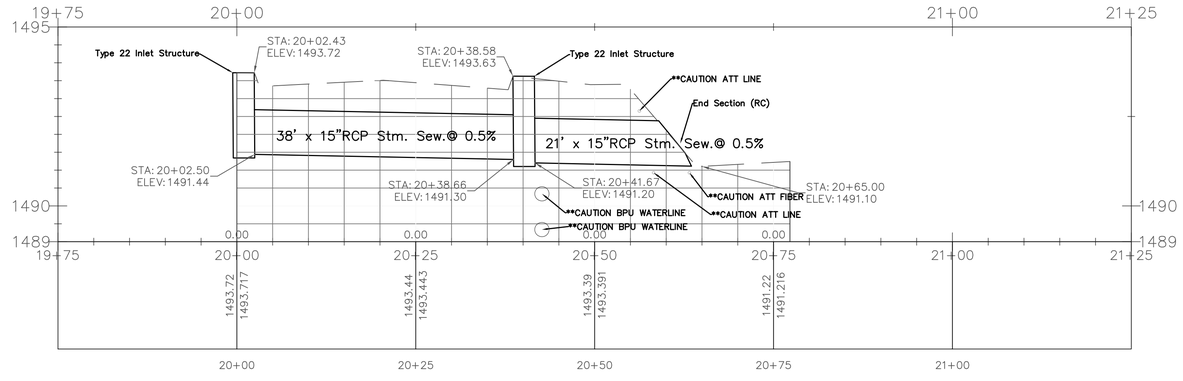
PLANS	BY	DATE
SURVEY:	JustinW	2/24/2017
DESIGNED:	JustinW	7/6/2017
DRAWN:	JustinW	7/6/2017
CHECKED:	JeffW	7/10/2017
PLOT BY:	JustinW	7/10/2017
FILE:	2017-06-29_NFrontStDesign.dwg	

PROJECT NO: PW-034 SHEET 4 OF 28

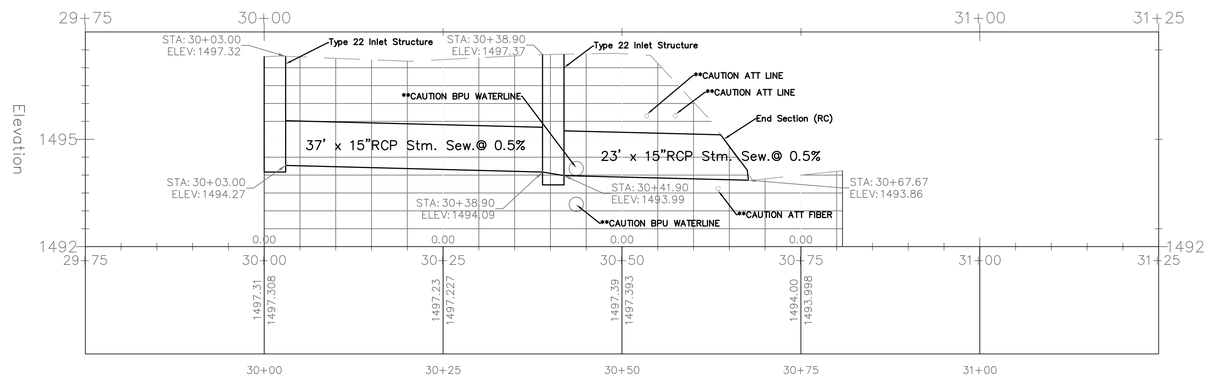
Design File: I:\PublicWorks\PW_Projects\PW-034_NFrontSt_2017\AutoCAD\2017-06-29_NFrontStDesign.dwg



Alignment – West Storm PROFILE



Alignment – East Storm PROFILE



	DATE	REVISIONS	BY	APP'D
1	7/28/2017	East Storm STA & FL Elevation Revisions	JRW	JCW

North Front St Reconstruction

McDonald's Entrance to N Champlin St

20+00–20+77 30+00–30+81

VERTICAL 1" = 2'

SCALE

ENG 0.05" 20 40 60 80

1/32" ARCH 1 2 3 4 1/16" HORIZONTAL

McPHERSON

CITY OF McPHERSON, KANSAS
PUBLIC WORKS DEPT.

FINAL PLANS

APPROVED FOR CONSTRUCTION

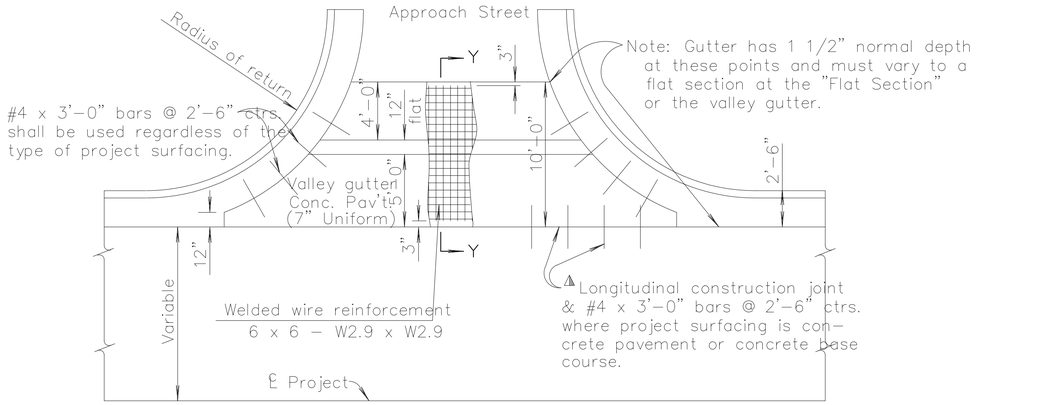
NORTH

PLANS	BY	DATE
SURVEY:	JustinW	2/24/2017
DESIGNED:	JustinW	7/28/2017
DRAWN:	JustinW	7/28/2017
CHECKED:	JeffW	7/28/2017
PLOT BY:	JustinW	7/28/2017
FILE:	2017-06-29_NFrontStDesign.dwg	

PROJECT NO: PW-034 SHEET 5 OF 28

Design File: I:\PublicWorks\PW_Projects\PW-034_NFrontSt_2017\AutoCAD\2017-06-29_NFrontStDesign.dwg

Plotted On

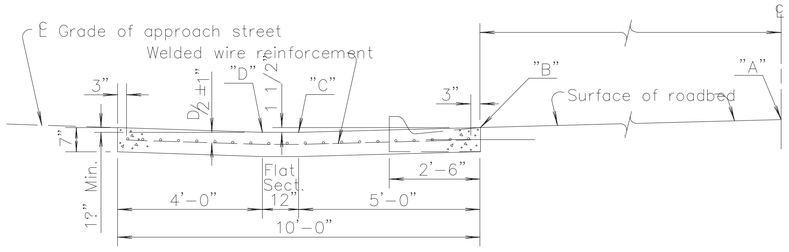


⚠ Where the valley gutter does not abut concrete pavement or concrete base course, omit tie bars and Longitudinal construction joint.

PLAN

NOTE: Valley gutter concrete pavement shall be of 7" uniform thickness, with welded wire reinforcement. Approximate weight of welded wire reinforcement = 58 lbs. per 100 sq. ft. .

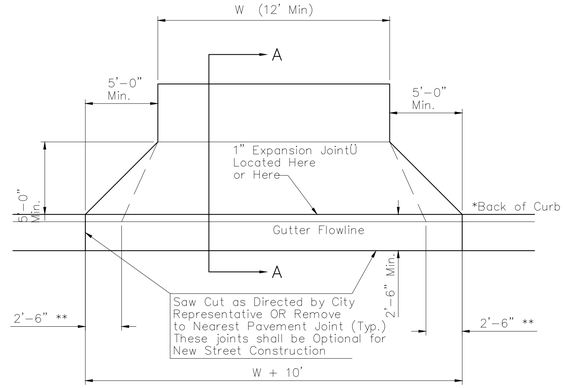
Where valley gutter, alley, and/or entrance pavement is the only pavement on the project, Concrete Grade 3.0 (AE) may be used.



SECTION Y–Y

VALLEY GUTTER SUMMARY							
Street	Station	Side	Elev. Pt. "A"	Elev. on ì of Approach Str. Pt."B" "C" & "D"		Appr. Str. Grade	Sq. Yds. Conc. Pvmt. (7" Uniform)
		ì	––			VARIES	
		ì					
		ì					
		ì					

VALLEY GUTTER

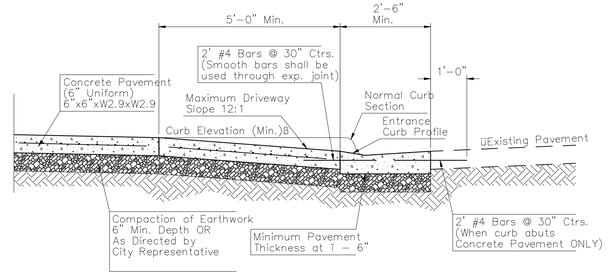


** Denotes Curb Transition from Normal Cross Section to Entrance Curb & Gutter Section

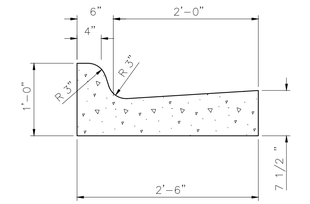
NOTE: Where entrance construction abuts concrete pavement, #4 dowel bars shall be installed at a minimum spacing of 30". Where entrance abuts asphalt pavement existing surface shall be saw cut to a neat line as close to the toe of curb line as possible. Street pavement disturbed during construction shall be replaced at the OWNER's expense.

Concrete shall be "6–sack City Mix" or as approved by the Director of Public Works.

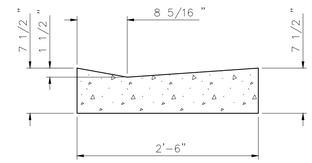
TYPICAL ENTRANCE



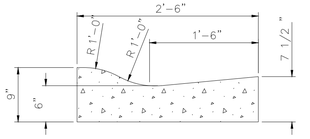
SECTION A–A



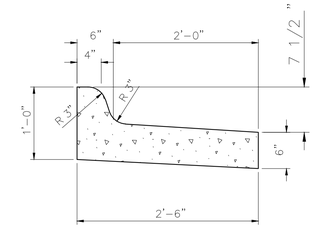
Standard Curb & Gutter



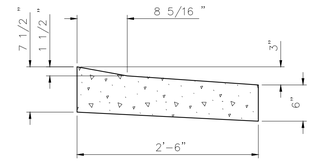
Entrance/ADA Curb



Laydown Curb Detail (Rolled Curb)



Standard Curb & Gutter



Entrance Spill Curb

DATE	REVISIONS	BY	APP'D
2–18–2016	Added Minimum width to Entrances	JRW	JCW

PAVING DETAILS

TYPICAL DRIVEWAY, VALLEY GUTTER, CURB

SCALE: VERTICAL ENG 0.05" | 1/32" ARCH | HORIZONTAL 1 2 3 4 | 1/16"

McPHERSON

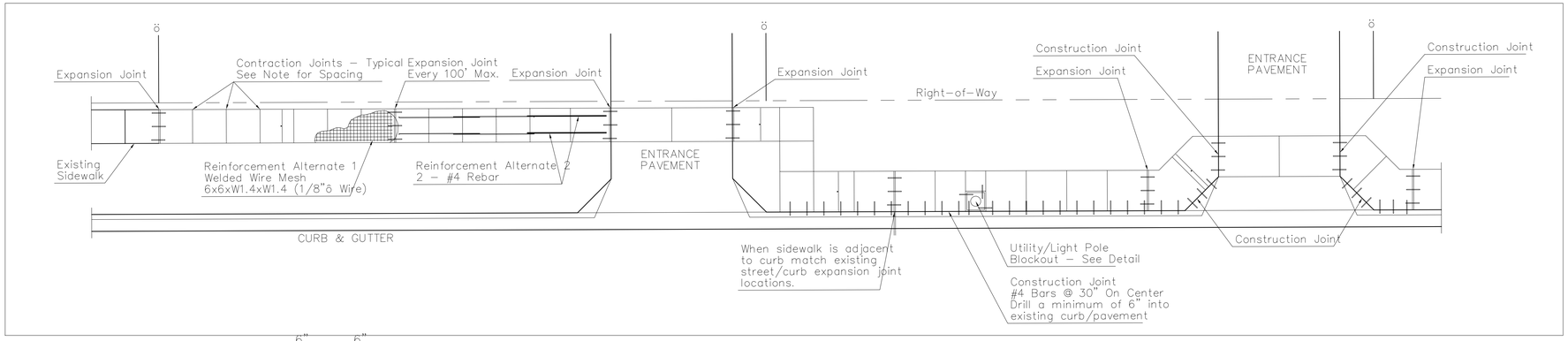
CITY OF McPHERSON, KANSAS
PUBLIC WORKS DEPT.

FINAL PLANS
APPROVED FOR CONSTRUCTION

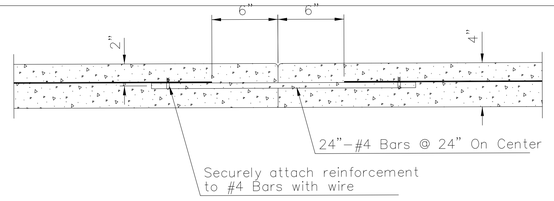
PLANS	BY	DATE
SURVEY:		
DESIGNED:	RichardH	2/08/2015
DRAWN:	JustinW	2/18/2016
CHECKED:	JeffW	2/18/2016
PLOT BY:	JustinW	2017–06–29
FILE:	PavingDetails.dwg	

PROJECT NO: PW–034 | SHEET 6 | OF 28

Design File: i:\PublicWorks\Standards\PavingDetails\PavingDetails.dwg

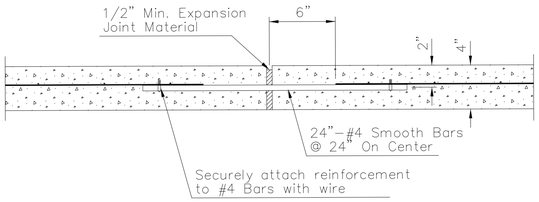


TYPICAL SIDEWALK PLAN



CONSTRUCTION JOINT

Construction Joints shall be constructed at locations shown on the plan or as directed by the Engineer. Construction joints transfer movement between adjacent sections of concrete and prevent the concrete surfaces from shifting.

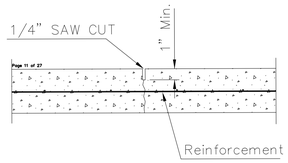


EXPANSION JOINT

Expansion Joints shall be constructed at locations shown on the plan or as directed by the Engineer. Expansion joints isolate movement between adjacent sections of concrete as the concrete expands with increases in temparature.

Expansion joint material may be foam, cedar or redwood board, cut to match the thickness of the finished concrete.

Reinforcing steel, or wire mesh should be cut 6" from the expansion joint to completely isolate the joint. Caps and grease are not required for sidewalk expansion joints.



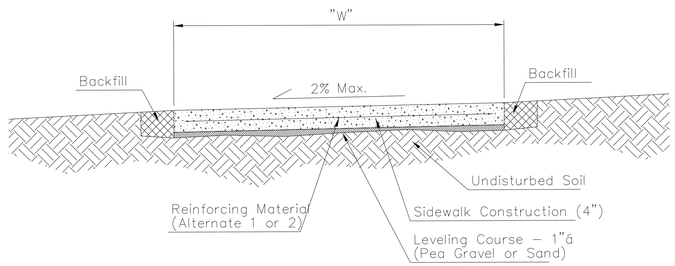
CONTRACTION JOINT

Contraction joints shall be placed in the sidewalk at intervals equal to the width of the sidewalk up to a maximum spacing of seven feet (7'). For example, with a four foot wide sidewalk, joints should be spaced on average every 4 feet.

Contraction joints may be formed in the concrete with a center edger of sufficient depth. Saw cutting may still be required if tooled joints "close up" as the concrete hardens.

Saw cut joints should be made as soon as the concrete is hard enough to prevent spalling and before shrinkage occurs. Typically saw cut joints should be made the same day as the concrete is placed unless otherwise directed by the Engineer.

All reinforcing materials should extend through the contraction joint.

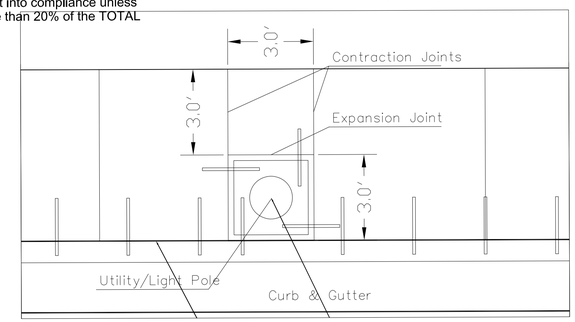


TYPICAL SECTION

Sidewalk width "W" shall match the existing sidewalk width for all maintenance work. For New Construction, minimum sidewalk width "W" shall be 5'-0" for sidewalk adjacent to the right-of-way and 6'-0" for sidewalk adjacent to the curb or street.

Sidewalks constructed shall conform to the latest edition of the Americans with Disabilities Act Accessibility Guidelines, ADAAG, as required by the Department of Justice.

Any features adjacent to the planned construction that are not compliant with the ADAAG guidelines MUST be brought into compliance unless the cost of the additional construction is more than 20% of the TOTAL cost of the project.



UTILITY/LIGHT POLE BLOCKOUT DETAIL

3'–0" Min. is required for ADA access.

GENERAL NOTES

MATERIALS

Concrete used for sidewalk construction shall be "City Paving Mix", 6 Sack, 900#-1" Rock (FA)(AE) unless otherwise specified on the plans or by the Engineer.

Welded wire reinforcement, if used, shall have a six inch (6") square pattern with 1/8" diameter wire or greater (6"x6"xW.4xW1.4, 14# per 100 Sq. Ft.).

CONSTRUCTION

Excavation should be made as close to the desired lines and grades as possible so that concrete may be placed on undisturbed and compacted soil. Filler materials such as pea gravel or sand may be used to fill voids or low areas. Filler materials should be placed in lifts and compacted using vibratory equipment to remove any voids. All deleterious materials (roots, trash, etc.) should be removed from the base prior to placement of filler material or concrete.

Cold Weather - When the minimum temperature is less than 40°F, the subgrade should be covered with blankets to prevent it from freezing prior to concrete placement. Concrete shall be covered with blankets as soon as possible after finishing for a minimum of 72 hours (3 days).

Forms shall be of a depth approximately equal to the thickness of the sidewalk and shall be staked and braced as required to prevent movement during or after concrete placement.

Concrete shall be placed in a single course. The composition and consistency shall be uniform and well mixed. The slump shall not exceed four inches (4"). Concrete shall be consolidated by mechanical means to remove voids from the pavement. The surface shall be finished with a float and then broomed perependicular to the sidewalk to produce a granular non-slip surface. The edges and expansion joints shall be edged with an edging tool.

Sidewalks shall be cured immediately after finishing by liquid membrane, concrete blankets or plastic sheeting, or burlap to prevent shrinkage cracks that occur as a result of heat and wind. Liquid membrane shall be of a type suitable for curing of concrete and shall be applied at the rate of 1 gallon per 100 square feet. Concrete Blankets or plastic sheeting should be placed over the concrete immediately after finishing for a minimum of 24 hours to protect the surface from wind, sun or rain. Burlap should be placed over the concrete when surface has hardened sufficiently that the weight of the burlap will not scar the concrete surface. Wet burlap sufficiently to prevent moisture loss from the concrete during curing.

Any disturbed area adjacent to the newly constructed sidewalk shall be backfilled with earthen material suitable for establishing vegetation, and free of any trash, debris or rubble from demolition. Seeding, unless specifically called for in the plans or by the Engineer, shall be the responsibility of the adjacent land owner.

Design File: I:\PublicWorks\Standards\Sidewalk\SidewalkStandardDetails.dwg

DATE	REVISIONS	BY	APP'D

Sidewalk Details

Details for the Typical Construction of Sidewalk

VERTICAL: ENG 0.05" | HORIZONTAL: SCALE 1/32" ARCH, 1, 2, 3, 4, 1/16"

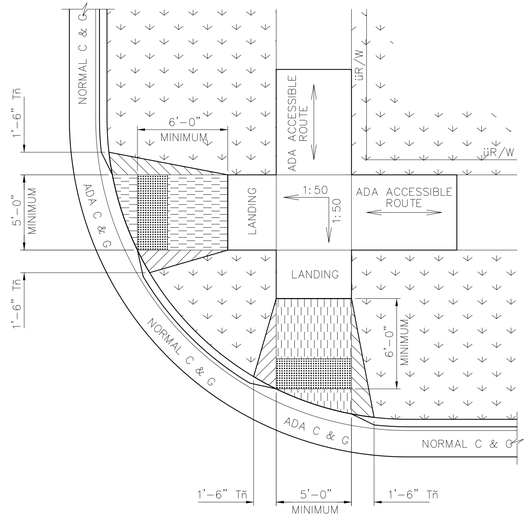
McPHERSON

CITY OF McPHERSON, KANSAS
PUBLIC WORKS DEPT.

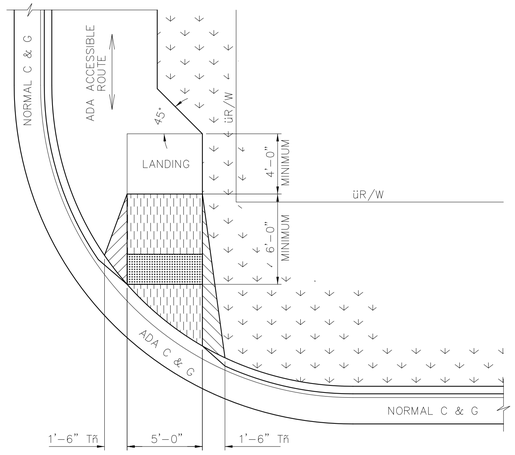
FINAL PLANS
APPROVED FOR CONSTRUCTION

NORTH

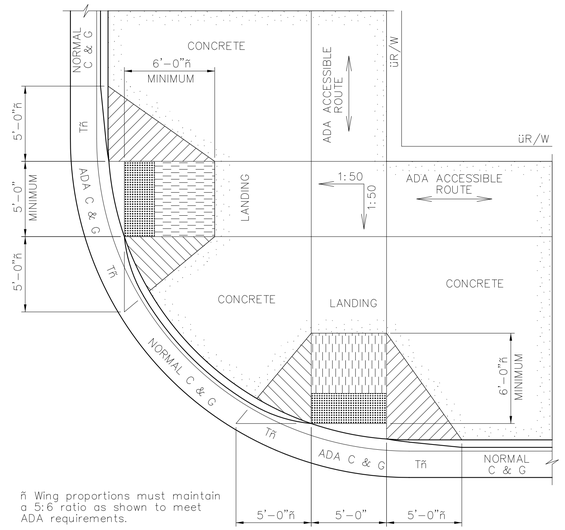
PLANS	BY	DATE
SURVEY:		
DESIGNED:		
DRAWN:		
CHECKED:		
PLOT BY:	JustinW	2017–06–29
FILE:	SidewalkStandardDetails.dwg	
PROJECT NO: PW–034	SHEET 7	OF 28



Type I Ramp

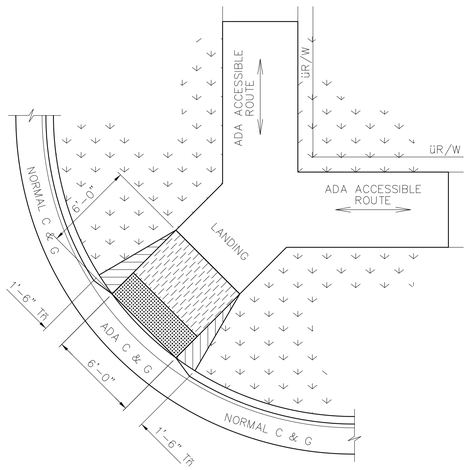


Type Ib Ramp

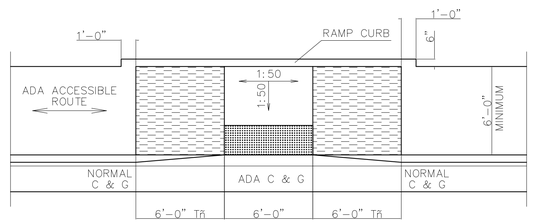


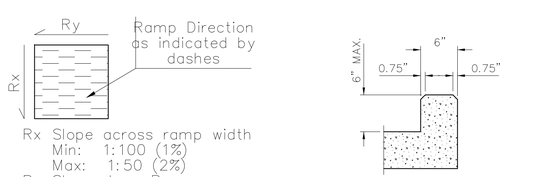
T/A Wing proportions must maintain a 5:6 ratio as shown to meet ADA requirements.

Type Ip Ramp



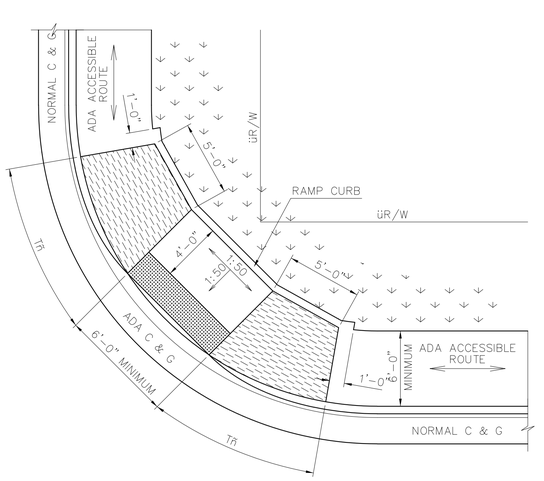
Type II Ramp





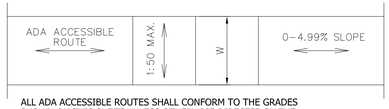
TYPE III RAMP – CURB DETAIL

Type III Ramp



Type IIIr Ramp

ADA ACCESSIBLE ROUTES



ALL ADA ACCESSIBLE ROUTES SHALL CONFORM TO THE GRADES SHOWN ON THIS SHEET UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

FOR SIDEWALK REPAIR AND MAINTENANCE, MATCH THE EXISTING SIDEWALK WIDTH UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

FOR NEW CONSTRUCTION, THE MINIMUM WIDTH "W" FOR AN ADA ACCESSIBLE ROUTE SHALL BE 6'-0" WHEN ADJACENT TO THE CURB AND 5'-0" IN ALL OTHER LOCATIONS.

THE WIDTH OF RAMPS AND TRUNCATED DOME STRIPS SHALL MATCH THE WIDTH OF THE ADA ACCESSIBLE ROUTE IT SERVES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

CURB & GUTTER

NORMAL C & G	SHALL BE THE TYPICAL CURB & GUTTER SPECIFIED ON THE PLANS AND TYPICAL SECTIONS FOR THIS PROJECT.
T/A	DENOTES THE TRANSITION FROM THE NORMAL CURB & GUTTER SECTION TO THE ADA CURB & GUTTER SECTION.
ADA C & G	SHALL BE SIMILIAR TO THE ENTRANCE CURB & GUTTER PROFILE. SPECIAL CARE SHALL BE TAKEN TO ENSURE THAT THE SURFACE DOES NOT HOLD WATER OR HAVE ANY VERTICAL SURFACES WHICH MIGHT IMPEDE TRAVEL OF A WHEELCHAIR OR CREATE A TRIPPING HAZARD.

DETECTABLE WARNINGS - TRUNCATED DOMES

THE METHOD OF CONSTRUCTION OF THE DETECTABLE WARNING SECTION SHALL BE SUBMITTED TO THE ENGINEER IN WRITING AND APPROVED PRIOR TO CONSTRUCTION.

THE DETECTABLE WARNING SECTION SHALL BE 2 FEET LONG AND THE FULL WIDTH OF THE RAMP AS SHOWN.

THE DETECTABLE WARNING SECTION SHALL BE CONSTRUCTED AT 90° TO THE DIRECTION OF TRAVEL FOR THE ADA ACCESSIBLE ROUTE FOR ALL TYPE I ADA RAMPS.

GENERAL NOTES

Concrete used shall be "City Mix 6 Sack"throughout. Welded wire reinforcement (W1.4xW1.4x6x6) shall be required in all sidewalks. Wire shall be installed using wire supports, chairs or during concrete placement to ensure placement at the approximate center of the sidewalk thickness.

The lowest type of ramp should be used for construction. Type II or III ramps should only be used when specifically called for on the plans or directed by the ENGINEER.

Handicap ramps shall be constructed to a minimum thickness of six inches (6"). Handicap ramps shall be measured and paid under the bid item "Sidewalk Construction" as provided in the contract documents. If the handicap ramp is placed continuously with sidewalk of a different thickness, the quantity of "Sidewalk Construction"shall be measured to the dimensions shown on this sheet for the type of ramp constructed.

The quantity of "Sidewalk Construction"shall be measured by the square yard of completed work of the specified thickness.

Smooth bars shall be used through all expansion joints. Handicap ramps should be tied to the curb and gutter with #4 bars on 24"centers drilled a minimum of 6"into the curb and gutter.

All dimensions shown are minimum unless otherwise noted. Final dimensions for construction may be expanded by the CONTRACTOR or as directed by the ENGINEER to meet ADAAG requirements.

Design File: I:\PublicWorks\Standards\Sidewalk\SidewalkRamps.dwg

DATE	REVISIONS	BY	APP'D

ADA Ramp Details

ADA Ramp Types

VERTICAL ENG 0.05" SCALE 1/32" ARCH 1 2 3 4 1/16" HORIZONTAL

McPHERSON

CITY OF McPHERSON, KANSAS
PUBLIC WORKS DEPT.

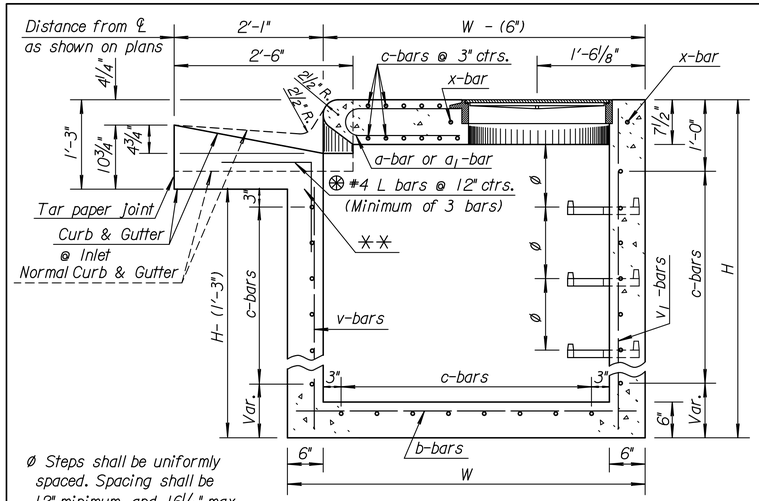
FINAL PLANS
APPROVED FOR CONSTRUCTION

NORTH

PLANS	BY	DATE
SURVEY:		
DESIGNED:		
DRAWN:		
CHECKED:		
PLOT BY:	JustinW	2017–06–29
FILE:	SidewalkRamps.dwg	

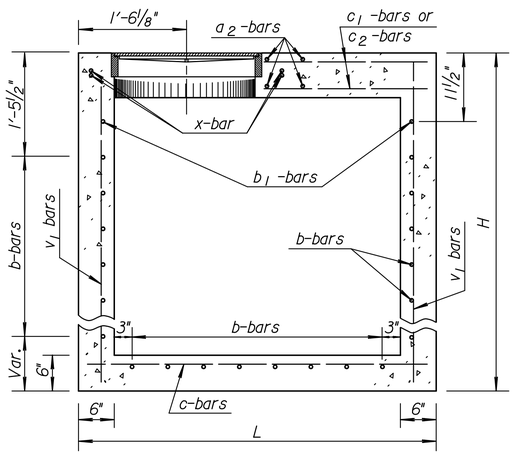
PROJECT NO: PW–034 SHEET 8 OF 28

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	PW-034	2017	9	28

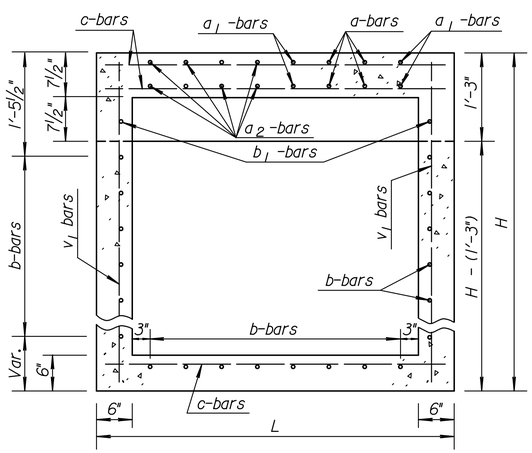


Ø Steps shall be uniformly spaced. Spacing shall be 12" minimum and 16 1/2" max.

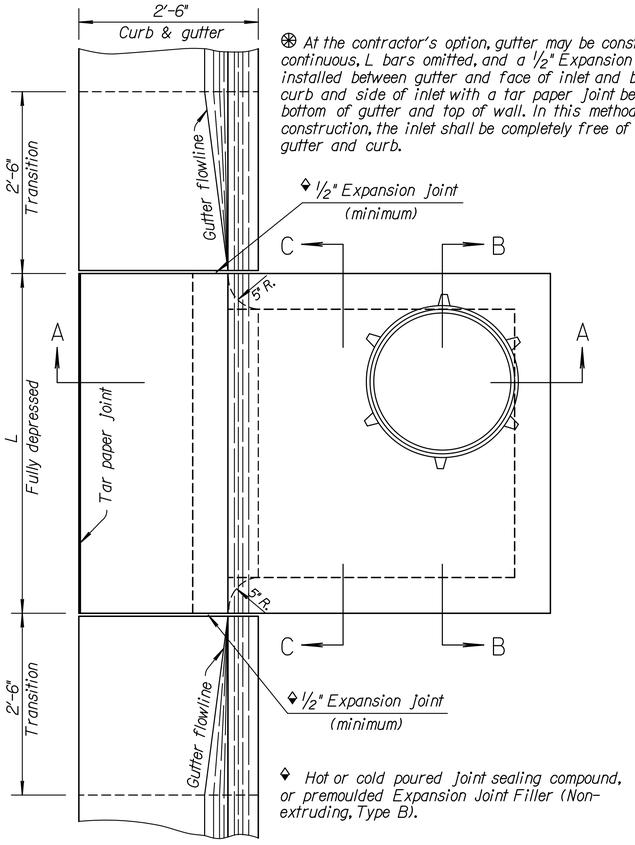
SECTION A-A



SECTION B-B



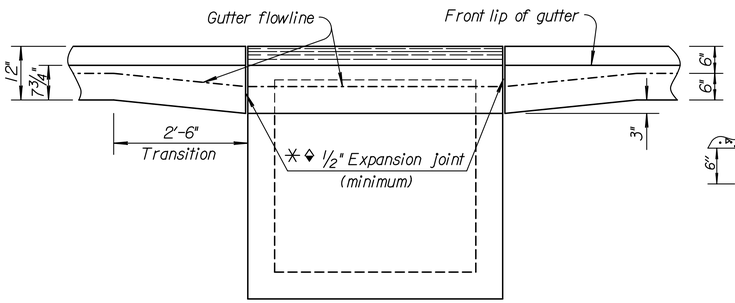
SECTION C-C



PLAN

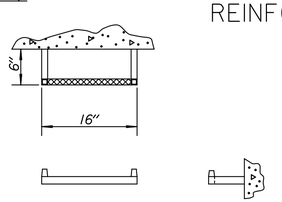
⊛ At the contractor's option, gutter may be constructed continuous, L bars omitted, and a 1/2" Expansion Joint installed between gutter and face of inlet and between curb and side of inlet with a tar paper joint between bottom of gutter and top of wall. In this method of construction, the inlet shall be completely free of the gutter and curb.

♦ Hot or cold poured joint sealing compound, or premoulded Expansion Joint Filler (Non-extruding, Type B).

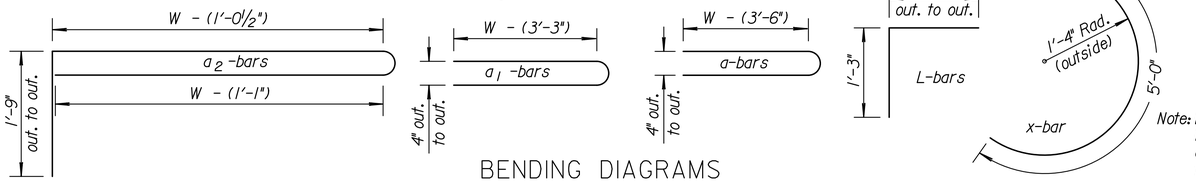


ELEVATION

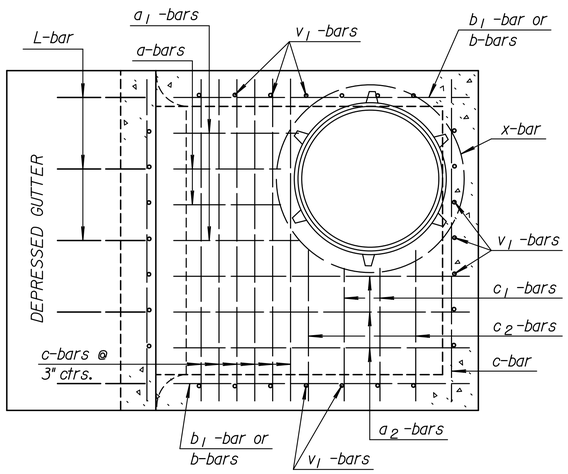
Note: Transition gutter from normal depth of 6" to 9" at inlet in 2'-6". Curb and Gutter sections shall be shaped as shown where required by the installation of curb inlets. This work will be subsidiary to other bid items.



STEP DETAILS



BENDING DIAGRAMS



REINFORCING STEEL TOP VIEW

GENERAL NOTES

Use Concrete Grade 3.0 throughout. All exposed edges shall be finished with an edging tool.

At the contractors option Concrete Grade 3.0 (AE) or mix used in concrete pavement may be used throughout.

In general, pipes will enter and leave manhole at various positions. Where possible bend bars around pipes.

Floor of manhole to be shaped as shown in various "EXAMPLES" with unreinforced Concrete Grade 3.0.

Manhole opening and steps, where used, shall be placed to afford easy access to top of shaped invert. Top reinforcing bars to be adjusted accordingly.

All castings shall be gray iron and shall comply with the KDOT Standard Specifications.

When so ordered by the Engineer, the top of the manhole shall be sloped slightly to approximately fit the ground line or other conditions.

Dimensions and weights of cast iron as shown on this sheet are minimum. Larger dimensions and/or heavier weights of cast iron may be used.

Steps shall be installed in all storm sewer inlets when specified in the plans or when "H" is equal to or greater than six feet. Steps shall comply with the KDOT Standard Specification.

No reduction in concrete quantities shall be made for pipe openings.

When directed by the Engineer, a small opening in the back of the inlet shall be provided in order to drain a low area. Reinforcing bars shall extend through the opening. No reduction in concrete quantities will be made for this opening.

No addition in concrete quantities shall be made for shaping floor of inlet.

No reduction in pay length of curb, gutter, or curb & gutter will be made through the inlet area.

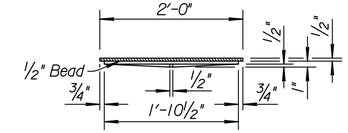
The weight of castings includes no allowance for fillets and overruns.

Curb and Gutter sections shall be shaped as shown where required by the installation of curb inlets. This work shall be subsidiary to other bid items.

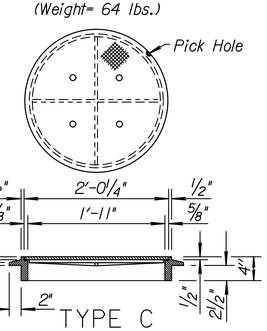
See sheet entitled "Reinforcing Steel for Inlets and Manholes" for details and quantities.

For additional notes and details on Light Type Cast Iron Manhole Cover and Ring Type C and Cast Iron Steps, see Standard Drawing RD633 "Reinforced Concrete Manhole".

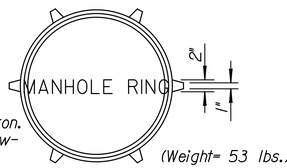
All reinforcing steel shall be #4 at 6" centers except where noted. Minimum clear distance to reinforcement shall be 1 1/2".



MANHOLE COVER TYPE C
(Weight= 64 lbs.)



TYPE C



(Weight= 53 lbs.)

NOTE: All manhole castings are cast iron. Weight of castings includes no allowance for fillets and overruns.

*LIGHT TYPE MANHOLE COVER & RING

*Rings with four equally spaced lugs will be permitted.

NO.	DATE	REVISIONS	BY	APP'D
6	1-28-05	Changed Class to Grade concrete	S.W.K.	J.O.B.
5	12-11-97	Revised step spacing	R.J.S.	J.O.B.
4	3-20-96	Added reinforcement note	R.J.S.	J.O.B.
3	12-8-94	Added misc. notes	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPE 22 CURB INLET

RD646

FHWA APPROVAL	06-10-05	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. Seitz

KDOT Graphics Certified 07-22-2010

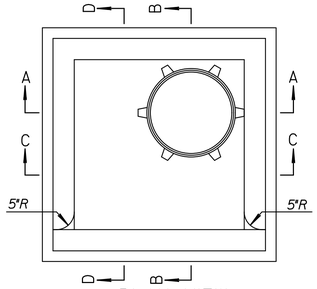
KDOT Graphics Certified

Plotted : 22-JUL-2010 18:24

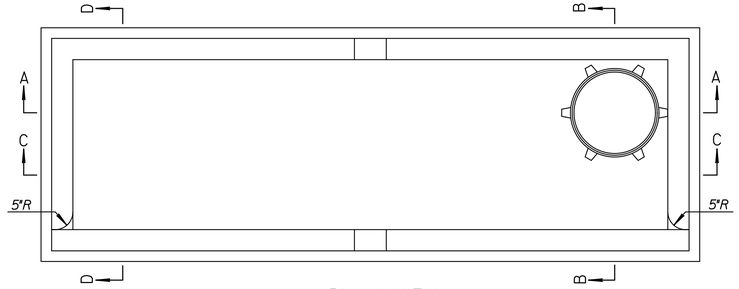
Drawn By : marks

File : rd646.dgn (rd646)

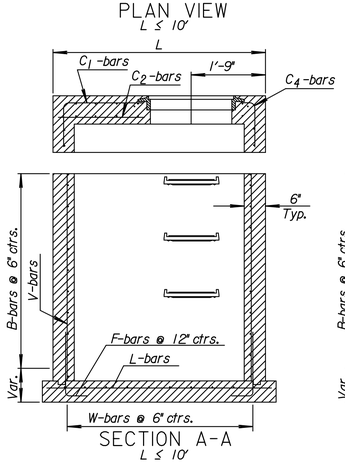
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	PW-034	2017	10	28



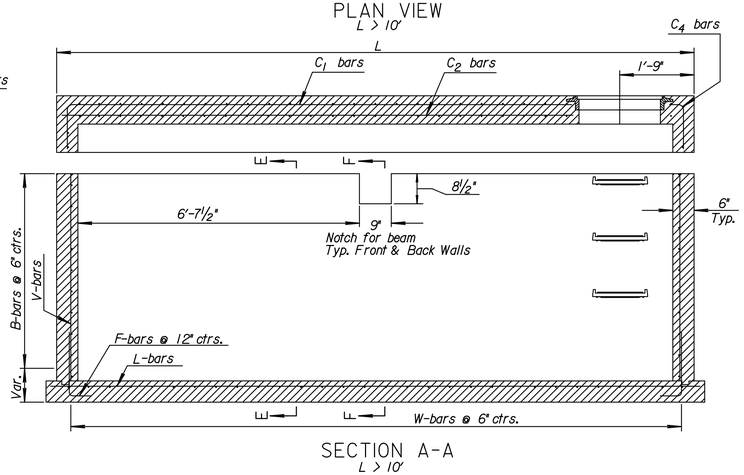
PLAN VIEW
$L \leq 10'$



PLAN VIEW
$L > 10'$



SECTION A-A
$L \leq 10'$



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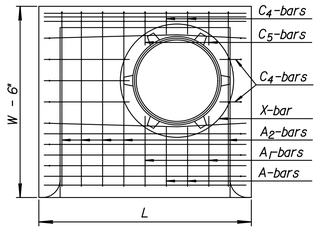
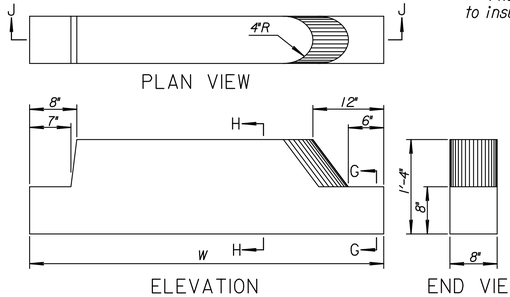
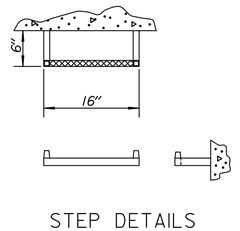


INLET TOP REINFORCING

INLET TOP FRONT ELEVATION





STEP DETAILS

GENERAL NOTES

Use Concrete Grade 3.0 ($f'c \geq$ 3000 psi) throughout. All exposed edges shall be finished with an edging tool.

Manhole opening and steps, where used shall be placed to afford easy access to top of shaped invert.

All castings shall be grey iron and shall comply with the KDOT Standard Specifications.

When so ordered by the Engineer, the top of the manhole shall be sloped slightly to approximately fit the ground line or other conditions.

Dimensions and weights of cast iron as shown on this sheet are minimum. Larger dimensions and/or heavier weights of cast iron may be used. The weight of castings includes no allowance for fillets and overruns.

Steps shall be installed in all storm sewer inlets when specified in the plans when "H" is equal to or greater than six feet. Steps shall comply with the KDOT Standard Specification.

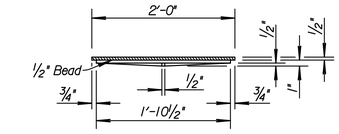
No reduction in pay length of curb, gutter, or curb & gutter will be made through the inlet area. Curb and Gutter sections shall be shaped as shown where required by the installation of curb inlets. This work shall be subsidiary to other bid items.

For additional notes and details on Light Type Cast Iron Manhole Cover and Ring Type C and Cast Iron Steps, see Standard Drawing RD633 "Reinforced Concrete Manhole".

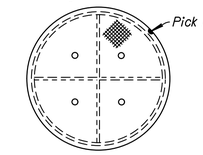
All reinforcing steel shall be #4 at 6" centers except where noted. Minimum clear distance to reinforcement shall be 1½".

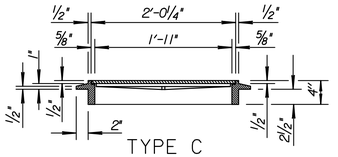
Floor of inlet shall be shaped as shown in various "Examples" on Reinforced Concrete Manhole Standard Drawing RD633. Concrete used for shaping shall be unreinforced Concrete Grade 3.0 or concrete pavement mix.

The Contractor shall determine pipe locations in the field prior to ordering Type 22 Precast Inlets, to insure proper positioning of pipe openings.

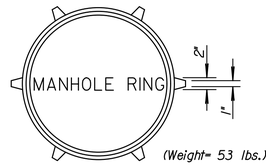


MANHOLE COVER TYPE C
(Weight= 64 lbs.)





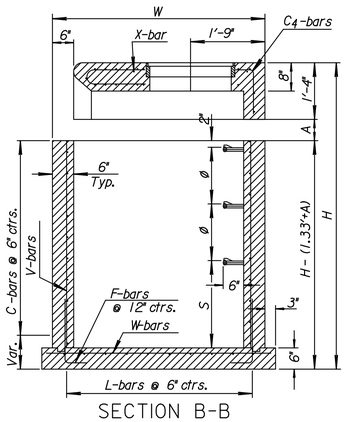
TYPE C



(Weight= 53 lbs.)

∗ LIGHT TYPE
MANHOLE COVER & RING

∗ *Rings with four equally spaced lugs will be permitted.*



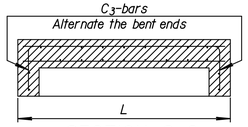
SECTION B-B

Ø *Steps shall be uniformly spaced. Spacing shall be 12" minimum and 16½" maximum.*

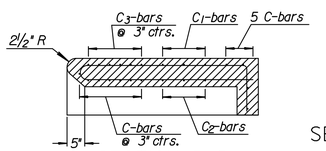
NOTES

"A" Adjustment space, 6" maximum. (Contractor's option, 1" to 6") Allows top to be adjusted to finished curb height, or slope top as may be required.

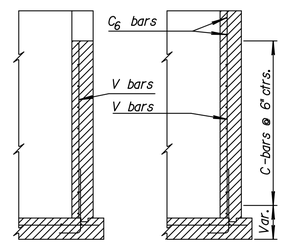
"S" maximum = 2'-3" + ½x ID of outlet pipe.



SECTION C-C



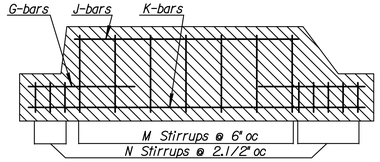
SECTION D-D



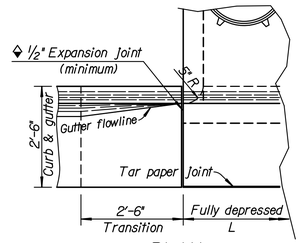
SECTION F-F SECTION E-E

SECTION H-H SECTION G-G

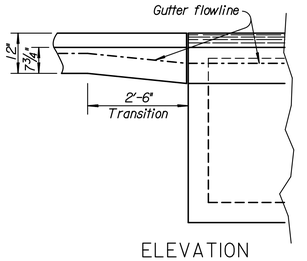
CENTER BEAM DETAILS



SECTION J-J

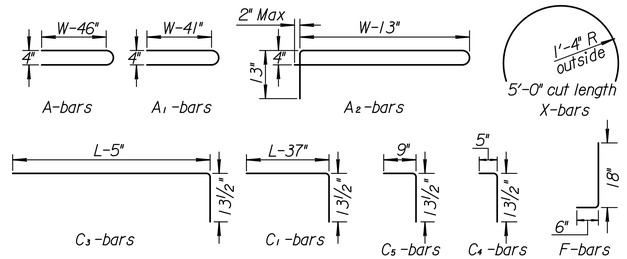


PLAN

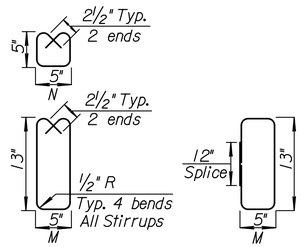


ELEVATION

DETAILS OF GUTTER TRANSITION



BENDING DIAGRAMS



NO.	DATE	REVISIONS	BY	APP'D
3	1-28-05	Changed Class to Grade concrete	R.J.S.	J.O.B.
2	11-12-98	Added concrete strength	R.J.S.	J.O.B.
1	12-16-97	Revised step spacing	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPE 22 PRECAST INLETS

RD649

FHWA APPROVAL	06-10-05	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Remboldt
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. Seitz

KDOT Graphics Certified 07-22-2010

KDOT Graphics Certified

Plotted : 22-JUL-2010 18:25

Drawn By : marks
File : rd649.dgn (rd649)

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	PW-034	2017	11	28

SCHEDULE OF INLETS AND MANHOLES

STATION	SIDE	TYPE					SEWER DATA								ELEVATIONS		DIMENSIONS			STORM SEWER LIN. FT.						END SECTIONS				SEWER EXC. (CU.YD.)		HT. FILL FT.	CONC. AASHTO CL. NO.	PIPE GAUGE	FOR INFORMATION ONLY					STEPS	REMARKS
		MAN-HOLES	CURB INLETS	GUTTER INLETS	DITCH INLETS	RADIUS	INFLOW PIPES						OUTFLOW PIPES				TOP ⊛	FLOOR	L (FT.)	W (FT.)	H (FT.)	15"	18"	21"	24"	30"	36"	15"	18"	21"	24"	COMM.	ROCK			STEEL	CLASS III EXC.	CAST IRON (LBS.)	STRUC. STEEL (LBS.)	REINF. STEEL (LBS.)	CONC. GD. 3.0 (CU.YD.)		
							SIZE	℄ ELEV.	SIZE	℄ ELEV.	SIZE	℄ ELEV.	SIZE	℄ ELEV.	GRADE																											
10+99.72	LT		TYPE 22				3x5						15"	1491.44	0.5%	1493.72		3	5		38'																			N	
10+99.69	RT		TYPE 22				3x5	1491.30	15"				15"	1491.20	0.5%	1493.62		3	5		21'						1													N	
13+99.77	LT		TYPE 22				3x5						15"	1494.27	0.5%	1497.32		3	5		37'																			N	
13+99.74	RT		TYPE 22				3x5	1494.09	15"				15"	1493.99	0.5%	1497.37		3	5		23'						1													N	
TOTAL																					119						2												

⊛ *Note: Top Elevation is located as follows:*
1. *Manhole - Top of Manhole Ring*
2. *Curb Inlet - Top of curb.*
3. *Gutter Inlet - Top back of gutter.*
4. *Inlet - Manhole, Special - Top of Grate.*
5. *Ditch Inlet - Top of Concrete at Cover Plate.*

NO.	DATE	REVISIONS	BY	APP'D
3	1-28-05	Changed Class to Grade concrete	S.W.K.	J.O.B.
2	5-21-99	Added top elevation location note	R.J.S.	J.O.B.
1	10-8-90	Detailed on CADD	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SCHEDULE INLETS AND MANHOLES

RD653H

FHWA APPROVAL	06-10-05	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED B.N.B.
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. R.J.S.

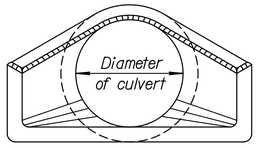
KDOT Graphics Certified 07-22-2010

KDOT Graphics Certified

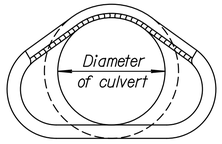
Plotted : 22-JUL-2010 18:25

Drawn By : marks
File : rd653h.dgn (rd653h)

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	PW-034	2017	12	28

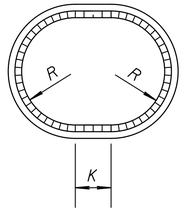


END ELEVATION (TYPE I)

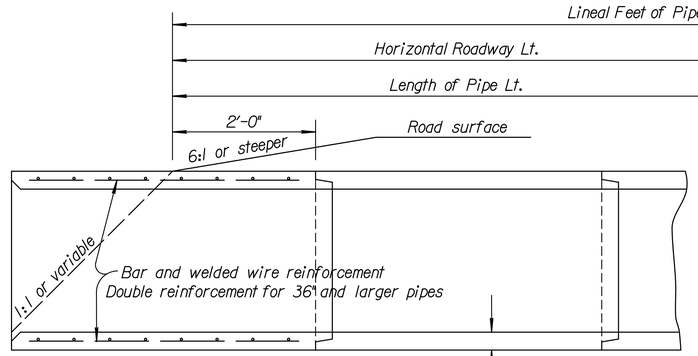


SECTION A-A

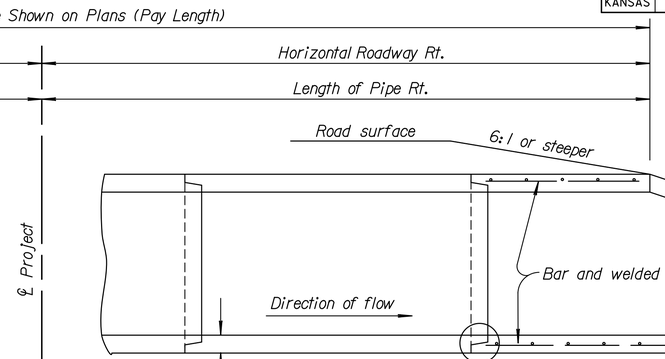
Showing rounding of inside edge of end section.



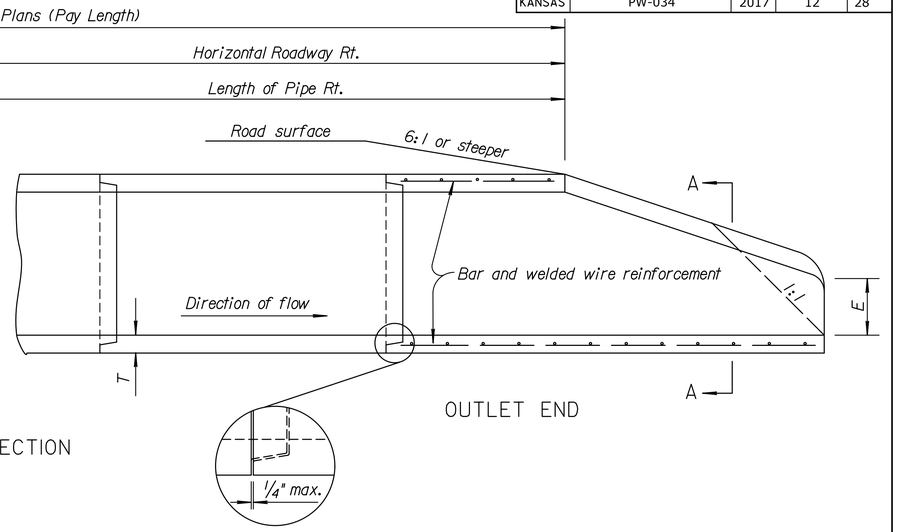
END ELEVATION (TYPE III)



INLET END

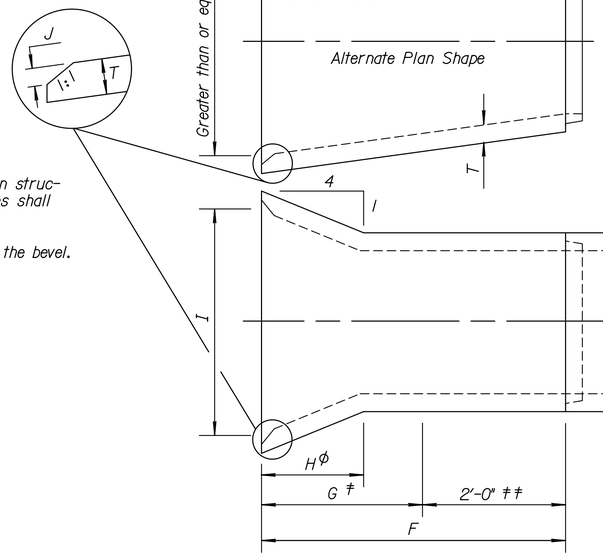


ELEVATION SECTION

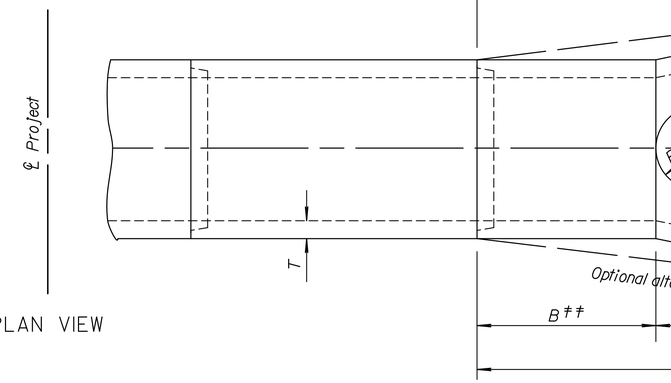


OUTLET END

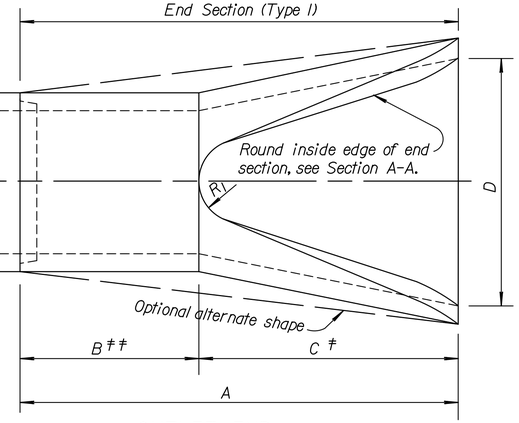
Note: There shall be no payment for gain in length due to joint fit tolerance.



INLET END



PLAN VIEW



OUTLET END

ϕ *Transition to round pipe.*

ǂ *Paid for as separate item of End Section, except when structures shall bid as alternates. In that case End Sections shall be subsidiary to bid item. "Drainage Structure No. ".*

ǂǂ *Included in pay length of pipe.*

⚹ *Minimum waterway area is calculated at the inside of the bevel.*

END SECTION (TYPE I) NOMINAL DIMENSIONS								
Diam.	A	B ǂǂ	C ǂ	D	E	R_1	Slope	T
12"	6'-0 7/8"	4'-0 7/8"	2'-0"	2'-0"	4"	9	3:1	2"
15"	6'-1"	3'-10"	2'-3"	2'-6"	6"	11	3:1	2 1/4"
18"	6'-1"	3'-10"	2'-3"	3'-0"	9"	12	3:1	2 1/2"
24"	6'-1 1/2"	2'-6"	3'-7 1/2"	4'-0"	9 1/2"	14	3:1	3"
30"	6'-1 3/4"	1'-7 3/4"	4'-6"	5'-0"	1'-0"	15	3:1	3 1/2"
36"	8'-1 3/4"	2'-10 3/4"	5'-3"	6'-0"	1'-3"	20	3:1	4"
42"	8'-2"	2'-11"	5'-3"	6'-6"	1'-9"	22	3:1	4 1/2"
48"	8'-2"	2'-2"	6'-0"	7'-0"	2'-0"	22	3:1	5"
54"	8'-2 1/4"	2'-9 1/4"	5'-5"	7'-6"	2'-3"	24	2.4 :1	5 1/2"
60"	8'-3"	3'-3"	5'-0"	8'-0"	2'-11"	24	2:1	6"
72"	8'-3"	1'-9"	6'-6"	9'-0"	3'-0"	24	1.86 :1	7"
84"	9'-3 1/2"	1'-9"	7'-6 1/2"	10'-0"	3'-0"	24	1.6 :1	8"

SIDE TAPERED INLET SECTION (TYPE III)-NOMINAL DIMENSIONS									
Diam.	Min. W.W.⚹ Area Sq.Ft.	F	G	H	I	J	K	R	T
24"	4.5	4'-3"	2'-3"	1'-5 1/8"	2'-8"	1 1/2"	8"	1'-0"	3"
30"	7.0	4'-9 1/2"	2'-9 1/2"	1'-9 1/2"	3'-4"	2"	10"	1'-3"	3 1/2"
36"	10.1	5'-4"	3'-4"	2'-1 1/2"	4'-0"	2"	1'-0"	1'-6"	4"
42"	13.7	5'-10 1/2"	3'-10 1/2"	2'-5 7/8"	4'-8"	2 1/2"	1'-2"	1'-9"	4 1/2"
48"	17.9	6'-5"	4'-5"	2'-10 1/8"	5'-4"	3"	1'-4"	2'-0"	5"
54"	22.7	6'-11 1/2"	4'-11 1/2"	3'-2 1/2"	6'-0"	3 1/2"	1'-6"	2'-3"	5 1/2"
60"	28.0	7'-6"	5'-6"	3'-6 7/8"	6'-8"	4"	1'-8"	2'-6"	6"
72"	40.3	8'-7"	6'-7"	4'-3 5/8"	8'-0"	5"	2'-0"	3'-0"	7"
84"	54.8	9'-8"	7'-8"	5'-0 3/8"	9'-4"	6"	2'-4"	3'-6"	8"

Dimensions for alternate shapes shall be equal to or greater than those shown in the table, unless otherwise shown.

NO.	DATE	REVISIONS	BY	APP'D
2	4-18-08	Added ref. to KDOT Pipe Policy	S.W.K	J.O.B
1	4-05-05	Revised reinforcement callout	S.W.K	J.O.B

KANSAS DEPARTMENT OF TRANSPORTATION

CONCRETE END SECTIONS FOR CONCRETE PIPES TYPE I & SIDE TAPERED INLET SECTION (TYPE III)

RD662

FHWA APPROVAL	6-27-08	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

KDOT Graphics Certified 07-22-2010

KDOT Graphics Certified

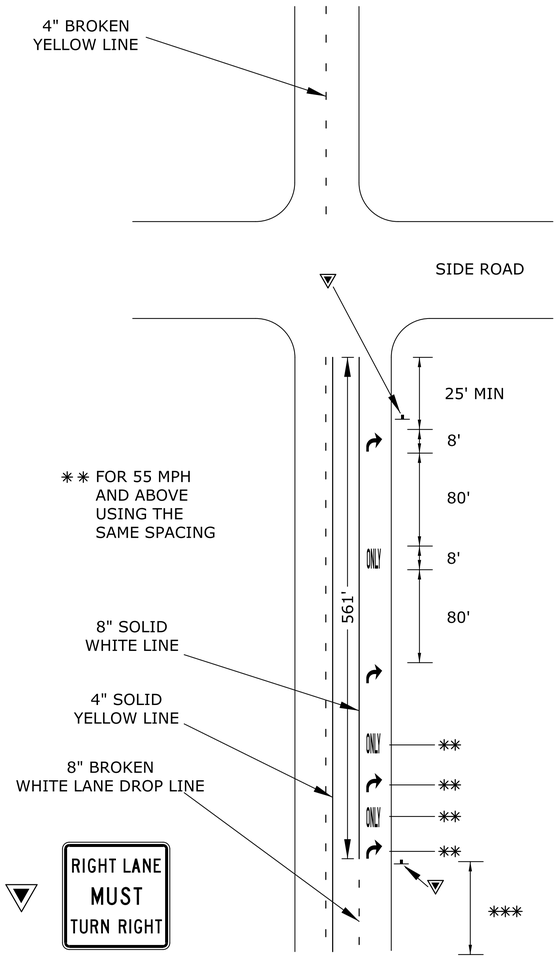
Note to Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the Standard Specifications. Refer to the KDOT Design Manual, Volume I (Part C), Road Section, "Elements of Drainage & Culvert Design" for structural pipe design information which includes: corrugations, sizes, gauges, maximum/minimum fill heights and classes of pipe.

Plotted : 22-JUL-2010 18:25

Drawn By : marks
File : rd662.dgn (rd662)

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	PW-034	2017	13	28

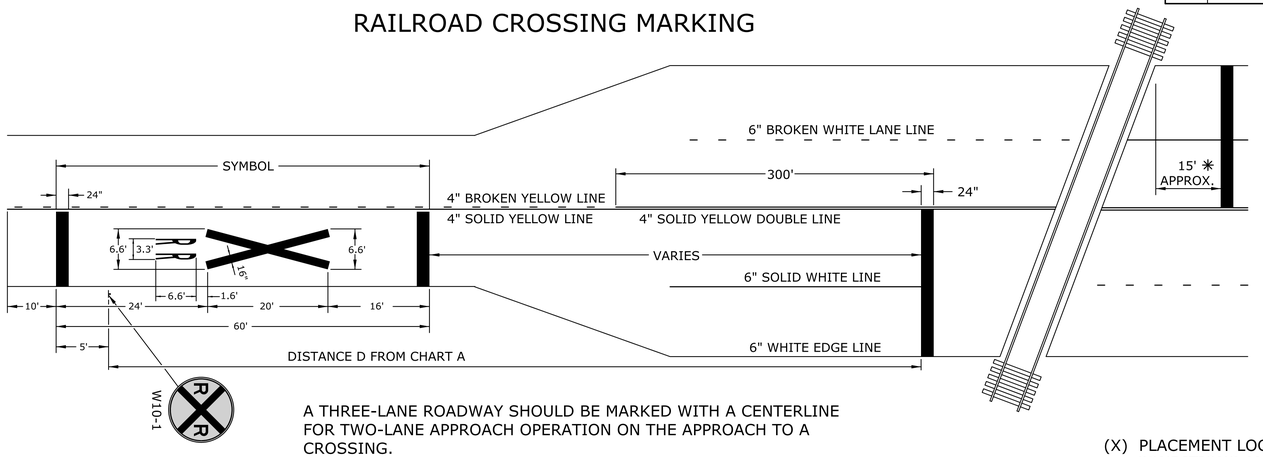
TYPICAL SIGNING AND MARKING FOR RIGHT LANE MUST TURN RIGHT



✳✳ FOR 55 MPH AND ABOVE USING THE SAME SPACING

✳✳✳ THE LANE DROP MARKINGS LENGTH IS A MINIMUM OF 100' AND A MAXIMUM OF 250' PRIOR TO THE 8"SOLID WHITE LINE

RAILROAD CROSSING MARKING



A THREE-LANE ROADWAY SHOULD BE MARKED WITH A CENTERLINE FOR TWO-LANE APPROACH OPERATION ON THE APPROACH TO A CROSSING.
ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL R X R SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.
REFER TO STANDARD ALPHABET FOR HIGHWAY SIGNS AND MARKINGS FOR R X R SYMBOLS DETAILS.

*STOP LINE 8' FROM NEAR EDGE OF GATE OR CANTILEVER, IF PRESENT.

NOTE:
ON NON I, US, AND K ROUTES, 4" EDGE LINES MAY BE INSTALLED.
6" EDGE LINES ARE NOT REQUIRED ON NON I, US, AND K ROUTES.

CHART "A"

SPEED MPH	DISTANCE D (feet)
75	850
70	750
65	650
60	550
55	450
50	375
45	300
40	225
35	150
30	(X)
25	(X)
20	(X)

ALL DISTANCES ARE MINIMUM.

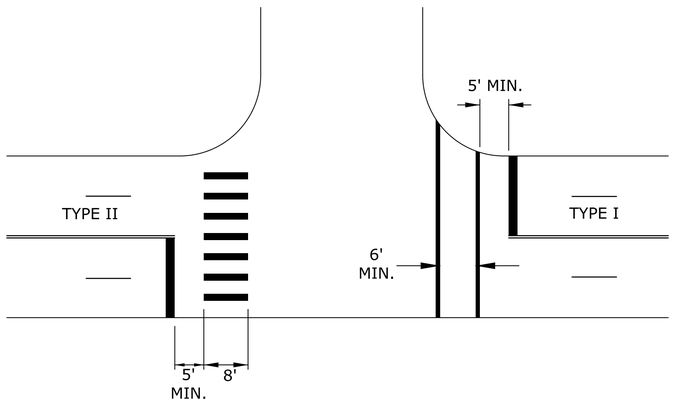
(X) PLACEMENT LOCATION IS DEPENDENT ON SITE CONDITIONS AND OTHER SIGNING TO PROVIDE ADEQUATE ADVANCE WARNING TO THE DRIVER

TYPICAL CROSSWALKS

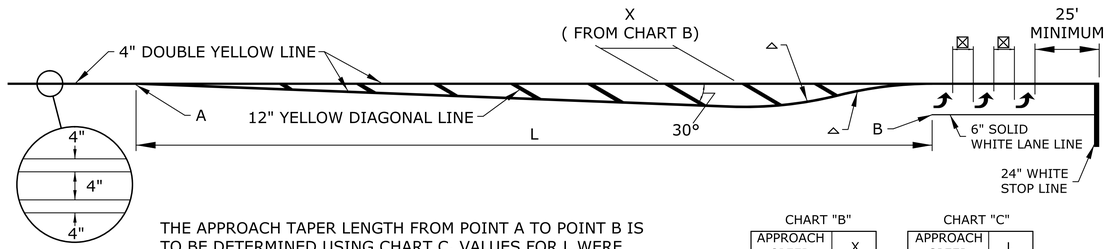
TYPE I: CROSSWALK LINES SHALL BE 12" SOLID WHITE LINES. THEY SHALL BE SPACED A MINIMUM OF 6' APART FROM INSIDE EDGE TO INSIDE EDGE.

TYPE II: THESE LINES SHOULD BE SOLID WHITE 24" WIDE PLACED PARALLEL TO THE DIRECTION OF TRAFFIC FLOW. THE LINE PLACEMENT IS DETERMINED BY LANE LINE,CENTER LINE, AND WHEEL PATH IN SUCH A MANNER AS TO MINIMIZE TRAFFIC WEAR. THE CROSSWALK WIDTH SHOULD BE NOT LESS THAN 8'. THE TRANSVERSE CROSSWALK LINES MAY BE ADDED.

WHEN REQUIRED, STOP LINES SHALL BE INSTALLED A MINIMUM OF 5' FROM CROSSWALKS.



TYPICAL APPROACH TAPER DETAIL



THE APPROACH TAPER LENGTH FROM POINT A TO POINT B IS TO BE DETERMINED USING CHART C. VALUES FOR L WERE CALCULATED USING THE EQUATIONS BELOW AND INCREASED TO THE NEXT HIGHER 5 MPH INCREMENT.

- SPEEDS < 45 MPH $L = \frac{W*S^2}{60}$
- SPEEDS = 45 MPH $L = W*S$

IF ARROWS ARE USED AND UNLESS OTHERWISE SPECIFIED THE SPACE BETWEEN LINES SHOULD BE AT LEAST FOUR TIMES THE HEIGHT OF THE CHARACTERS FOR LOW SPEED ROADS BUT NOT MORE THAN TEN TIMES THE HEIGHT OF THE CHARACTERS, UNDER ANY CONDITIONS.

FOR SPEEDS LESS THAN OR EQUAL TO 40 MPH, R=150'.
FOR SPEEDS GREATER THAN OR EQUAL TO 45 MPH, R=300'.

CHART "B"

APPROACH SPEED	X
20 MPH	20'
25 MPH	25'
30 MPH	30'
35 MPH	35'
40 MPH	40'
45 MPH	45'
50 MPH	50'
55 MPH	55'
60 MPH	60'
65 MPH	65'
70 MPH	70'

CHART "C"

APPROACH SPEED	L
20 MPH	80'
25 MPH	125'
30 MPH	180'
35 MPH	245'
40 MPH	320'
45 MPH	540'
50 MPH	600'
55 MPH	660'
60 MPH	720'
65 MPH	780'
70 MPH	840'

NO.	DATE	REVISIONS	BY	APP'D
3	5/25/12	Updated Chart B and Lane Drop Lines	B.A.H.	B.D.G.
2	10/20/06	RR Xing Symbol Changed from 18' to 16'	T.L.H.	B.D.G.
1	9/20/05	Added 4" Solid Yellow Double Line to RRxing	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL MISCELLANEOUS PAVEMENT MARKING DETAIL SHEET

TE309

FHWA APPROVAL		7/26/2005	APP'D	Brian D. Gower	
DESIGNED	J.F.F.	DETAILED	J.F.F.	QUANTITIES	TRACED
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN. CK.	TRACE CK.

KDOT Graphics Certified 06-26-2012

Sh. No. 13

Plotted : 26-JUN-2012 08:41
Traffic

Drawn By : conniee
File : te309.dgn (te309)

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	PW-034	2017	14	28

SUMMARY OF PAVEMENT MARKINGS

LOCATION	4" Solid WHITE Edge Line	6" Solid WHITE Edge Line	6" Broken WHITE Lane Line	6" Broken WHITE Lane Line (PCP)	6" Dotted WHITE Extension Line	6" Broken WHITE Lane Drop Line	6" Solid WHITE Lane Line	8" Broken WHITE Lane Drop Line	8" Solid WHITE Gore Line	8" Dotted WHITE Extension Line	12" Solid WHITE Diagonal Line	12" Solid WHITE Chevron Line	12" Solid WHITE Type I Crosswalk Line	24" Solid WHITE Type II Crosswalk Line	24" Solid WHITE Stop Line	4" Solid YELLOW Edge Line	4" Solid YELLOW Double Line	4" Solid YELLOW Line	4" Broken YELLOW Line	6" Solid YELLOW Edge Line	12" Solid YELLOW Diagonal Line
N Front St - Lt Turn Lanes							200														
N Front St Stop Lines															45						
N Front St Tapers																	930				
N Front St - Taper Diagonal Lines																					76
TOTALS							200								45		930				76

SUMMARY OF WORD & SYMBOL MARKINGS

LOCATION							STOP	ONLY	X-ING	SCHOOL												
N Front St - Turn Lanes					6																
TOTALS					6																

RECAPITULATION OF QUANTITIES

ITEMS	TOTAL	UNITS
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(4")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(6")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(8")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(12")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(4")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(6")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(12")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(4")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(6")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(8")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(12")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(4")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(6")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(12")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(4")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(6")	200	FT
PAVEMENT MARKING (EPOXY)(WHITE)(8")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(12")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(4")	930	FT
PAVEMENT MARKING (EPOXY)(YELLOW)(6")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(12")	76	FT
PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(12")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(24")	45	FT
PAVEMENT MARKING (INTERSECTION GRADE)(YELLOW)(12")		FT
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)(Lt Arrow)	6	EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(US-SHIELD)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(K-SHIELD)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(I-SHIELD)( )		EACH
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(6")		FT
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(8")		FT
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(12")		FT
PAVEMENT MARKING REMOVAL		FT

NOTE: FOR SPECIFIC PAVEMENT MARKING DETAILS AND DIMENSIONS SEE PLAN SHEETS

NOTE: ALL TOTALS REFLECT ACTUAL QUANTITY OF PAVEMENT MARKING MATERIALS REQUIRED.

NOTE:
WORDS & SYMBOLS SHALL CONFORM TO THE LATEST EDITION OF "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" PRINTED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

PRIOR TO COMMENCEMENT OF PAVEMENT MARKING WORK THE ENGINEER WILL ESTABLISH THE LIMITS FOR "NO PASSING" ZONES. THESE LIMITS SHALL BE USED FOR THE LOCATION OF "NO PASSING" LINES AND FOR THE COMPUTATION OF ACTUAL MARKING QUANTITIES FOR THIS LINE TYPE.

NO.	DATE	REVISIONS	BY	APP'D
2	5/25/12	Added Line Types, Symbols, and Shields	B.A.H.	B.D.G.
1	7/26/05	New FHWA Approval Date	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY AND RECAPITULATION OF PAVEMENT MARKING QUANTITIES

TE311

FHWA APPROVAL		5/25/2012	APP'D	Brian D. Gower	
DESIGNED	J.F.F.	DETAILED	J.F.F.	QUANTITIES	TRACED
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN. CK.	TRACE CK.

KDOT Graphics Certified 06-20-2012

Sh. No. 14

KDOT Graphics Certified

Plotted : 25-JUN-2012 15:43
Traffic

Drawn By : conniee
File : te311.dgn (te311)

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	PW-034	2017	15	28

1) Design Speed: Those items delegated to temporary traffic control should be designed and installed using the posted/legal speed of the roadway prior to work starting.

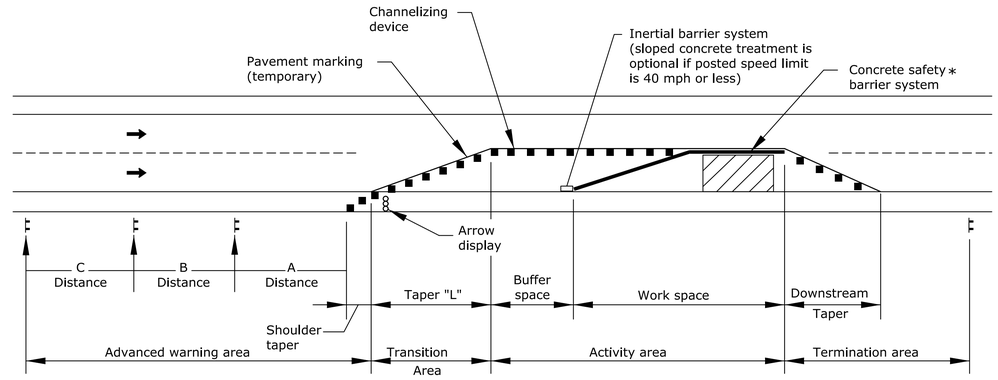
2) Minimum lane width: Lane widths shall be a minimum of 11' (measured between centerlines of pavement markings) or as shown on the plans, or as directed by the engineer. A lane width less than 11' may require restricted roadway width signing.

3) Consideration should be made to seperate pedestrian and, if needed, bicycle movements from both work site activity and vehicular traffic. Unless a reasonable safe route that does not involve crossing the roadway can be provided, pedestrians should be appropriately directed with advance signing that encourages them to cross to the opposite side of the roadway. In urban and suburban areas with high vehicular traffic volumes, these signs should be placed at intersections (rather than midblock locations) so that pedestrians are not confronted with midblock work sites that will induce them to attempt skirting the work site or making a midblock crossing.

4) When existing pedestrian facilities are disrupted, closed, or relocated, the temporary facilities shall be detectable and include accessiblity features consistent with the features present in the existing pedestrian facility.

5) When the driving surface open to traffic is milled, is a temporary surface made of loose material, or when directed by the engineer use the W8-15 (Grooved Pavement) or W8-7(Loose Gravel) a "C" distance after the W20-1 (Road Work Ahead) on mainline approaches. Signs may be used with the W8-15p motorcycle plaque as directed by the engineer. Display signs in advance of the condition as long as the condition is present.

6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-0355 or 785-296-1183.



TYPICAL WORK ZONE COMPONENTS

∗ When concrete barrier system is used, portable channelizing devices are not needed along the tangent barrier section.

Minimum advance warning sign spacing (in feet):

SPEED (MPH) ✳	*A*	*B*	*C*
URBAN (40 MPH OR LOWER)	*100*	*100*	*100*
URBAN (45 MPH OR HIGHER)	*350*	*350*	*350*
RURAL (55 MPH OR LOWER)	*500*	*500*	*500*
RURAL (60 MPH OR HIGHER)	*750*	*750*	*750*
EXPRESSWAY/FREEWAY	*1000*	*1500*	*2640*

✳ Posted speed prior to work starting

The minimum spacing between signs shall be no less than 100', unless directed by the engineer.

The spacing between any signs may be increased beyond the minimum values in the table above as approved by the engineer in order to maximize visibility.

Taper Formulas:

L = WS for speeds of 45 MPH or more

L = $WS^2/60$ for speeds of 40 MPH or less

Where: L =Minimum length of taper in feet
S =Numericial value of posted speed prior to work starting in MPH
W =Width in offset feet

Shifting taper=1/2 L
Shoulder taper=1/3 L

Channelizer placement:

(1) The spacing between devices in transition area (taper) should not exceed a distance in feet equal to 1/2 the posted speed limit in mph prior to work starting.

(2) The spacing between devices in the advanced warning area and the activity area should not exceed a distance in feet equal to two times the posted speed limit in mph prior to work starting.

(3) Channelizing devices shall be placed for optimum visibility, normally at right angles to the traffic flow.

(4) Place directional indicator barricades in series to direct traffic onto the new path. The arrow sign should not be visible to opposing traffic.

(5) Alternating diagonal orange and white striping must slope downward in the direction traffic is expected to pass.

Buffer Space

SPEED (MPH) ✳	*20*	*25*	*30*	*35*	*40*	*45*	*50*	*55*	*60*	*65*	*70*	*75*
LENGTH (ft)	*115*	*155*	*200*	*250*	*305*	*360*	*425*	*495*	*570*	*645*	*730*	*820*

✳ Posted speed prior to work starting

Neither work activity nor storage of equipment, vehicles, or material should occur in the buffer space. When a protection vehicle is placed in advance of the work space, only the space upstream of the vehicle constitutes the buffer space.

If temporary concrete safety barrier system is used to seperate approaching traffic from the work space, the barrier system shall be considered part of the activity area. A full lane width should be available throughout the length of the buffer space. See typical work zone components above.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1	08/18/15	Channerlizer spacing info	R.W.B.	K.E.

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL GENERAL NOTES

TE700

FHWA APPROVAL	08/18/15	APP'D	Kristina Ericksen
DESIGNED B.A.H.	DETAILED R.W.B	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.

KDOT Graphics Certified 08-18-2015

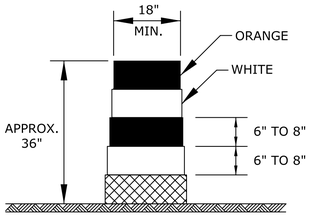
Sh. No. 15

KDOT Graphics Certified

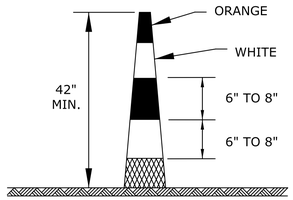
Plotted : 18-AUG-2015 14:02
Traffic

Drawn By : mushock
File : te700.dgn

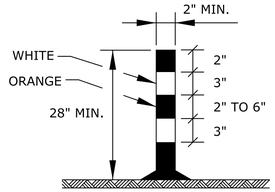
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	PW-034	2017	16	28



DRUM

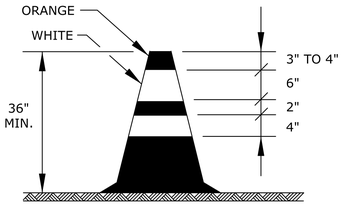


CONICAL DELINEATOR

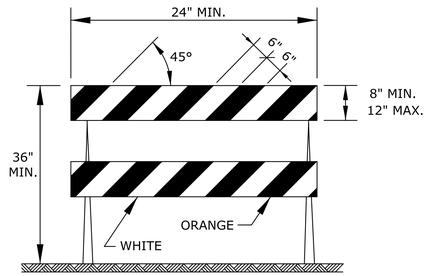


TUBULAR MARKER

Striping as shown for up to 42".

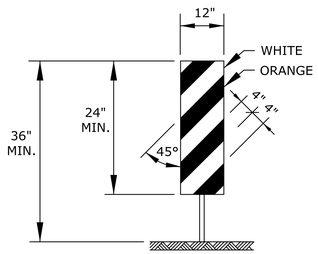


TRAFFIC CONE



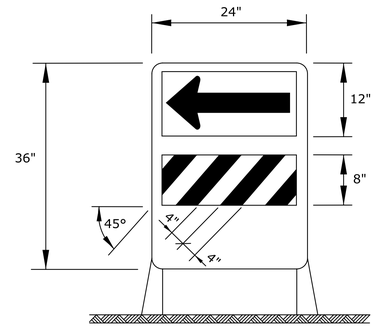
TYPE 2 BARRICADE

For rails less than 36" long, 4" wide stripes may be used. All stripes shall slope downward to the traffic side for channelization.



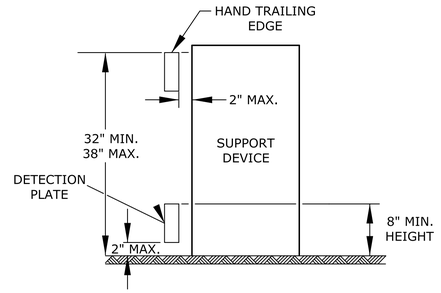
VERTICAL PANEL

The stripes shall slope downward to the traffic side for channelization.



DIRECTION INDICATOR BARRICADE

The stripes shall slope downward in the direction traffic is to pass. The direction indicator barricade shall be used in series to direct the motorist into the intended lane of travel.



PEDESTRIAN CHANNELIZER

1. Support device shall not project beyond the detection plate into the pathway.
2. Hand trailing edges and detection plates are optional for continuous walls.
3. Interconnect pedestrian channelizers to prevent displacement and to provide continuous guidance through or around work.
4. Alternate pathways shall be firm, stable, and slip resistant.
5. Treat height differentials > 1/2" in the surfaces of alternate paths with a firm, stable, and slip resistant temporary ramp having a slope of 12:1 or flatter and having a width equal to the alternate path.
6. Use alternating orange/white on interconnected devices.

ITEM \ LOCATION		Cross-overs	Shoofly Diversions	Tangents	Tapers	Ramps	Head to Head	Object Identifier	Lead-in Devices	Gores
PORTABLE										
	Drums	Yes	Yes	Yes	Yes	Yes	(1)	Yes	Yes	Yes
	Conical Delineators	Yes	Yes	Yes	Yes	Yes	(1)	Yes	Yes	Yes
	Vertical Panels	(2)	(2)	(2)	(2)	(2)	(1,2)	YES	(2)	(2)
	Direction Indicator Barricade	NO	NO	NO	Yes	NO	NO	NO	NO	NO
	Type 2 Barricade	(2)	(2)	(2)	(2)	NO	NO	Yes	NO	NO
	Traffic Cones	NO	NO	(4)	(4)	(4)	NO	(4)	(4)	(4)
FIXED										
	Tubular Markers	(3)	(3)	(3)	NO	(3)	Yes	NO	Yes	Yes
	Vertical Panels	(3)	(3)	(3)	(3)	(3)	(3)	Yes	(2,3)	(2)

(1) Not allowed on centerline delineation along freeways or expressways.
(2) The stripes shall slope downward to the traffic side for channelization.
(3) May be used upon the approval of the engineer.
(4) Daytime operations only.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
CHANNELIZING DEVICES

TE702

FHWA APPROVAL		06/01/15	APP'D	Kristina Ericksen
DESIGNED	L.E.R.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

KDOT Graphics Certified 06-01-2015

Sh. No. 16

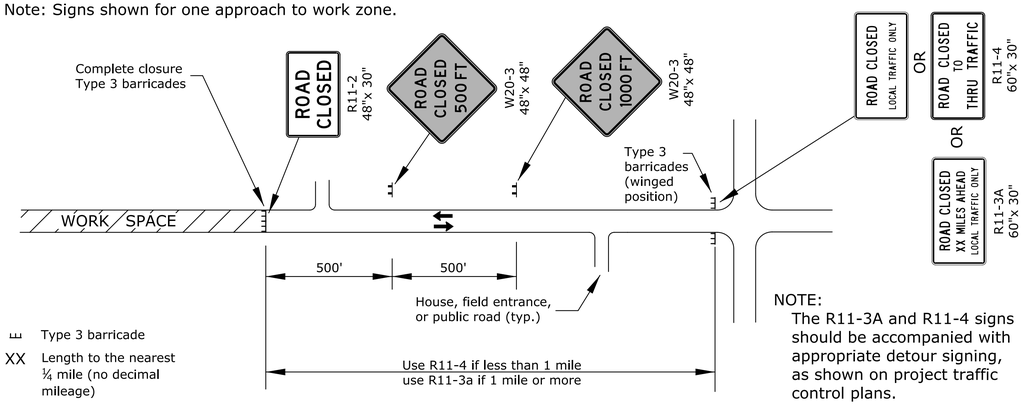
KDOT Graphics Certified

Plotted : 01-JUN-2015 13:54
Traffic

Drawn By : mushock
File : te702.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	PW-034	2017	17	28

Note: Signs shown for one approach to work zone.



NOTE:
The R11-3A and R11-4 signs should be accompanied with appropriate detour signing, as shown on project traffic control plans.

FIGURE 1: TYPICAL SIGNING FOR ROAD CLOSURE (MAINLINE OR SIDE ROAD)

Note: Sign shown for one approach to intersection (work zone).

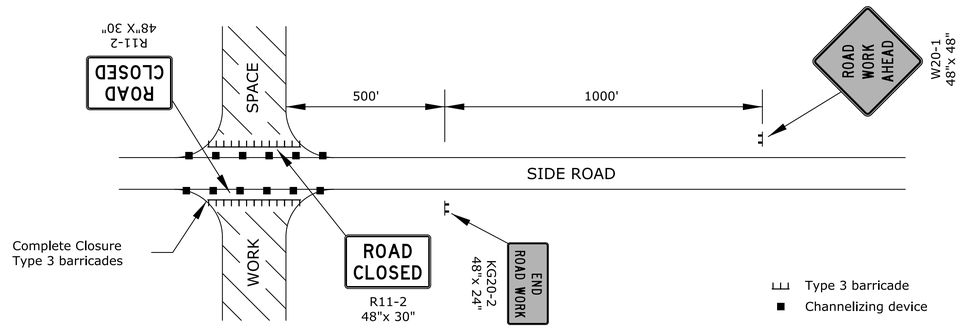


FIGURE 2: TYPICAL SIGNING FOR SIDE ROAD OPEN

Note: Signs shown for one approach to work zone.

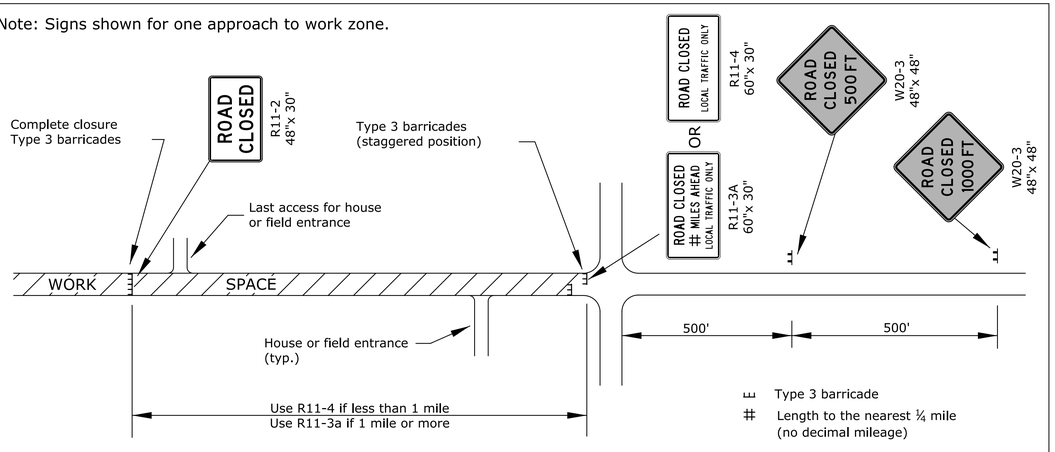


FIGURE 3: TYPICAL SIGNING FOR ROAD CLOSURE - LOCAL TRAFFIC ACCESS

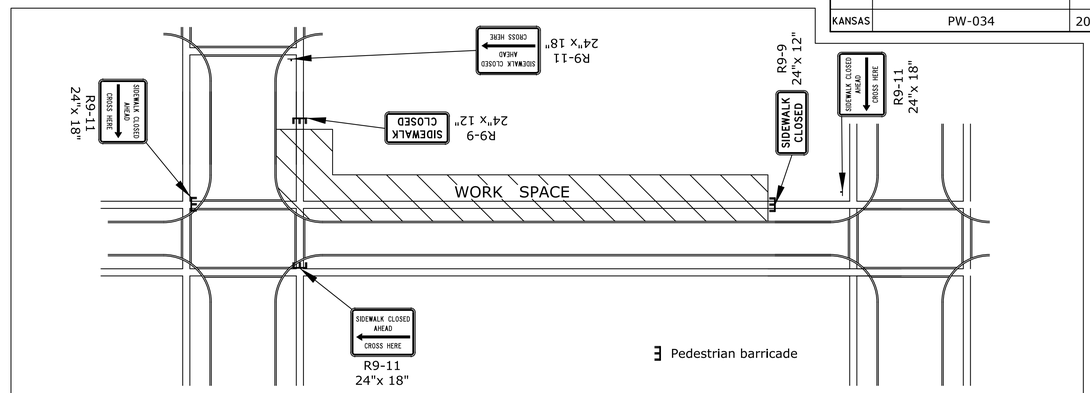
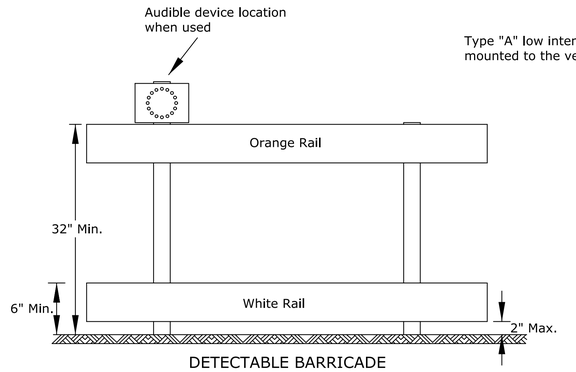
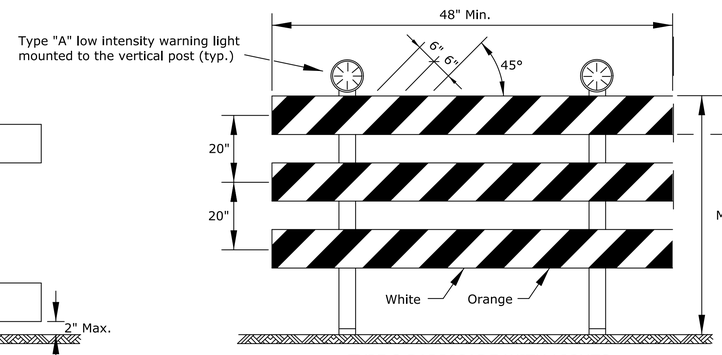


FIGURE 4: TYPICAL SIGNING FOR SIDEWALK CLOSED WITH OPPOSITE SIDEWALK AVAILABLE



DETECTABLE BARRICADE

1. Support device shall not project beyond the detection plate into the pathway.
2. Barricades shall be used to close the entire width of the pathway.
3. Do not use warning lights on pedestrian barricades.
4. Do not use warning lights on audible devices.



TYPE 3 BARRICADE WITH LIGHTS

Approved signs mounted on Type 3 barricades should not cover more than 50% of the top two rails or 33% of the total area of the three rails.

When barricades are placed end-to-end or staggered, a Type "A" low intensity warning light shall be mounted to the vertical post near each outside corner of the end barricades.

ROAD CLOSED GENERAL NOTES

As shown in Figure 1, at the point where thru traffic must detour and local traffic can proceed to the location where the roadway is completely closed, the R11-3a (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) or R11-4 (ROAD CLOSED LOCAL TRAFFIC ONLY or ROAD CLOSED TO THRU TRAFFIC) sign shall be used with Type 3 barricades (winged position), placed on the shoulders of roadway.

As shown in Figure 3, when local traffic must be allowed access into the work zone, Type 3 barricades shall be longitudinally staggered to maintain the appearance of a closed roadway. A second line of end-to-end Type 3 barricades shall be placed just beyond the last access point in the work zone, to completely close the roadway.

The R11-4 (ROAD CLOSED TO THRU TRAFFIC or ROAD CLOSED LOCAL TRAFFIC ONLY) sign shall be used when the distance to the point of complete closure of the roadway is less than 1 mile.

The R11-3a (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) sign shall be used when the distance to the point of complete closure of the roadway is 1 mile or greater.

The words "BRIDGE OUT" (or BRIDGE CLOSED) may be substituted for the words "ROAD CLOSED" on the R11-3a or R11-4 sign where applicable.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL CLOSURES

TE704

FHWA APPROVAL			06/01/15	APP'D	Kristina Ericksen		
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES		TRACED	
DESIGN CK.		DETAIL CK.		QUAN. CK.		TRACE CK.	

KDOT Graphics Certified 06-01-2015

Sh. No. 17

Plotted : 01-JUN-2015 13:54
Traffic

Drawn By : mushock
File : te704.dgn

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	PW-034	2017	18	28

SIGN LAYOUT INFORMATION

KG20-2

STD. SIZE EXPWY/FREEWAY
6" C
48"x 24"

KG20-5

STD. SIZE EXPWY/FREEWAY
6" C
48"x 24"

KM4-2O

STD. SIZE 3" C 24"x 6"

EXPWY/FREEWAY 6" C 48"x 12"

W7-3a

Mileage to be determined by the engineer.

W8-15

STD. SIZE EXPWY/FREEWAY
8" D
48"x 48"

W8-7

STD. SIZE EXPWY/FREEWAY
8" D
48"x 48"

W8-15p

STD. SIZE EXPWY/FREEWAY
30"x 24"

W8-17

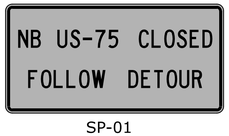
STD. SIZE EXPWY/FREEWAY
48"x 48"

W8-11

STD. SIZE EXPWY/FREEWAY
8" D
48"x 48"

W8-17P
(OPTIONAL)

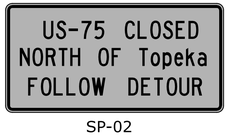
STD. SIZE EXPWY/FREEWAY
30"x 24"



SP-01
(SPECIAL SIGN)

STD. SIZE 6" C

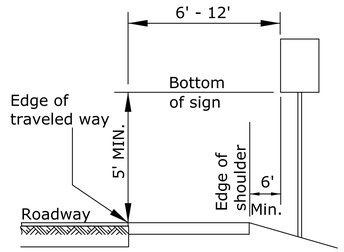
EXPWY/FREEWAY 10" D



SP-02
(SPECIAL SIGN)

STD. SIZE	EXPWY/FREEWAY
UPPERCASE: 6" C	UPPERCASE: 10" D
LOWERCASE: 4.5" C	LOWERCASE: 8" D

ALL CITY NAMES AND STREET NAMES ON SPECIAL SIGNS AND DESTINATION SIGNS MUST HAVE UPPER AND LOWER CASE LETTERS.

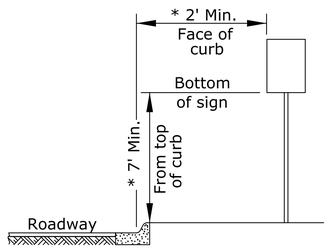


Rural

1) Ground-mounted signs shall be mounted at a minimum height of 5' measured from the bottom of the sign to the near edge of the pavement.

2) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

3) The height of the secondary sign mounted below another sign may be 4' measured from the bottom of the sign to the near edge of the pavement. Signs shall not overlap each other.



Urban

1) Signs shall be mounted at a minimum height of 7' measured from the bottom of sign to the near edge of the pavement.

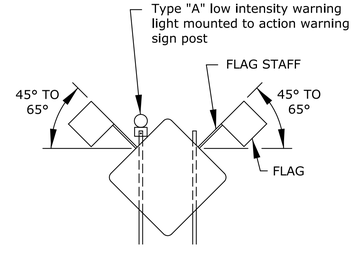
2) Neither portable nor permanent sign supports should be located on sidewalks or areas designated for pedestrian or bicycle traffic.

3) Signs mounted lower than 7' should not project more than 4" into pedestrian facilities.

4) The height from of the secondary sign mounted below another sign may be 6' measured from the bottom of sign to the near edge of the pavement. Signs shall not overlap each other.

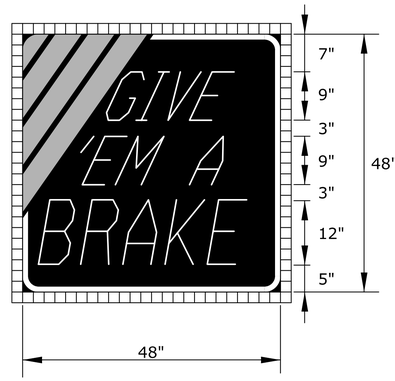
5) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

* 6) Pedestrian detour signing shall be a minimum of 2' measured from the top of the pedestrian pathway to the bottom of the sign and shall not protrude into the walkway nor shall it project beyond the back of curb.



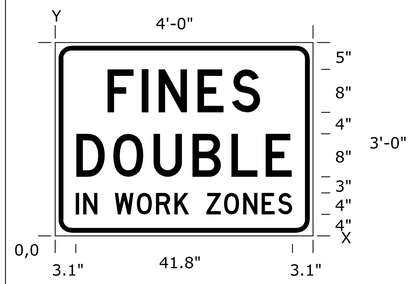
When the sign width is equal to or greater than 9', three or more wood posts may be used with a minimum of 4' between the centerline of each post. All signs less than 9' in width shall use a maximum of two wood posts.

In the case of hitting rock when driving posts
1. Shift the sign location. Do not violate minimum sign spacing.
2. With the engineer's approval, use acceptable alternative sign stands.



KI-104a

SIGN NUMBER	GIVE EM A BRAKE
WIDTH x HEIGHT	4'-0" x 4'-0"
BORDER WIDTH	1.0"
CORNER RADIUS	4.0"
STRIPE WIDTH	3.0"
MOUNTING	GROUND
BACKGROUND	TYPE: NON-REFLECTIVE
	COLOR: BLACK
LEGEND/BORDER	TYPE: REFLECTIVE
	COLOR: WHITE
LEGEND FONT	DUTCH 801 ROMAN SWC 25 DEGREE SLANT
STRIPES	TYPE: REFLECTIVE
	COLOR: ORANGE



KI-105a

SIGN NUMBER	FINES DOUBLE
WIDTH x HEIGHT	4'-0" x 3'-0"
BORDER WIDTH	0.9"
CORNER RADIUS	3.0"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE
	COLOR: WHITE
LEGEND/BORDER	TYPE: NON-REFLECTIVE
	COLOR: BLACK

DIMENSIONS IN INCHES — SPACINGS ARE TO START OF NEXT LETTER

Y FONT	LETTER SPACINGS															HT LEN
23.0 D		F	I	N	E	S										8.0
	9.7	6.4	3.2	7.3	6.4	5.4	9.7									28.6
11.0 D		D	O	U	B	L	E									8.0
	3.9	6.9	7.5	7.3	7.3	6.4	4.9	3.9								40.3
4.0 D		I	N		W	O	R	K		Z	O	N	E	S		4.0
	3.1	1.6	2.7	3.2	4.3	3.8	3.6	2.8	3.2	3.4	3.8	3.6	3.2	2.7	3.1	41.8

Notes:

Typically, there are two sets of informational signs installed per project: one for each direction of traffic.

Install signs a minimum of 500' in advance of the road work ahead sign. The engineer may designate a more appropriate location if conditions dictate.

The informational signs are not to interfere with the traffic control signs for the project.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SIGN INFORMATION

TE710

FHWA APPROVAL		06/01/15	APP'D	Kristina Pyle
DESIGNED	R.W.B.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

KDOT Graphics Certified 06-01-2015

Sh. No. 18

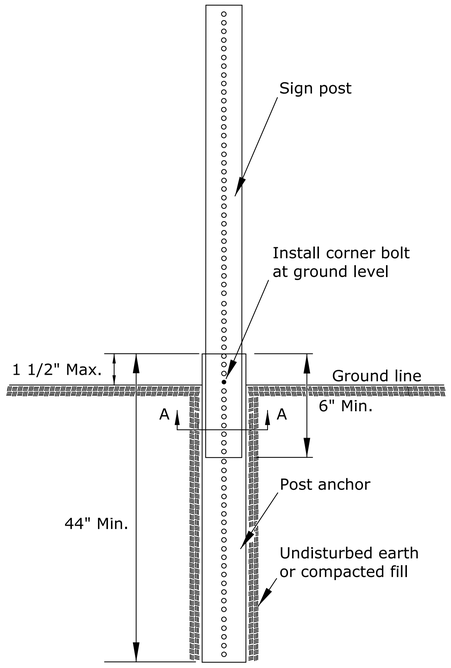
KDOT Graphics Certified

Plotted : 01-JUN-2015 13:54
Traffic

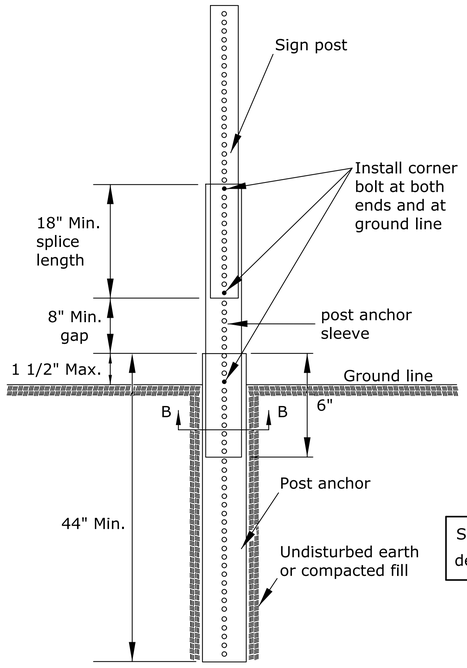
Drawn By : mushock
File : te710.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	PW-034	2017	19	28

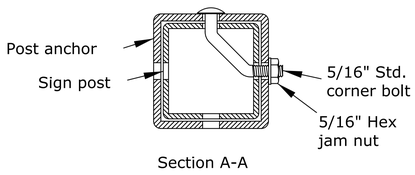
Perforated square steel tube (P.S.S.T.) post setup



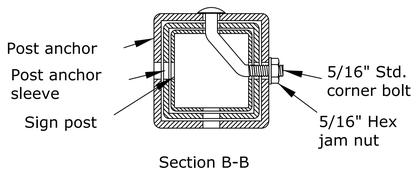
P.S.S.T. detail



Telescoping P.S.S.T. detail



Section A-A

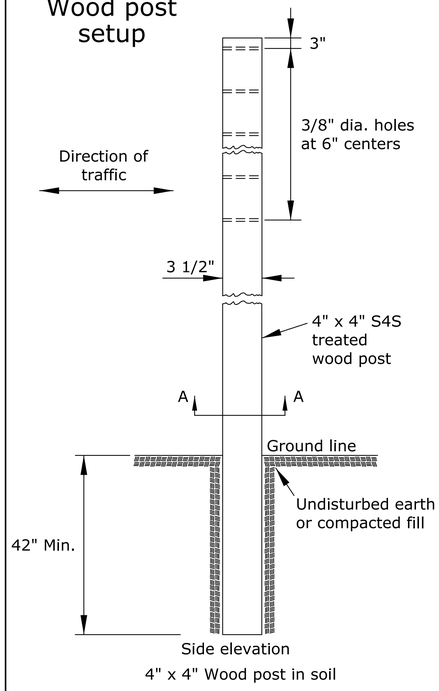


Section B-B

Details for 2", 2 1/4", or 2 1/2" sign posts

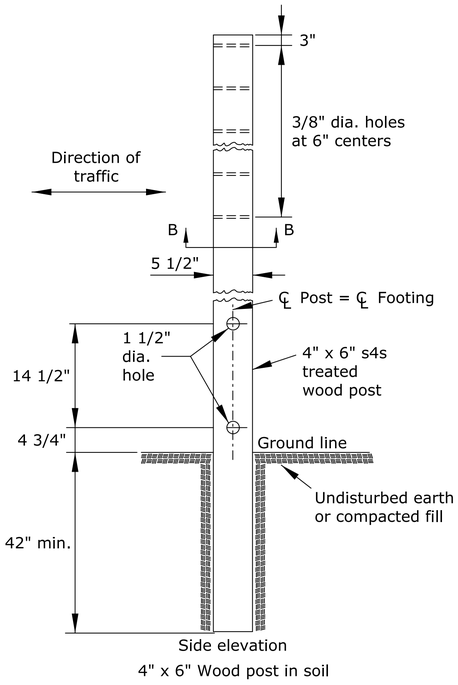
Place bolts in the same corner along each sign post.

Wood post setup



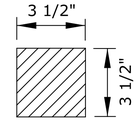
Side elevation

4" x 4" Wood post in soil

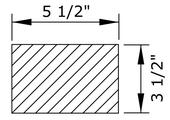


Side elevation

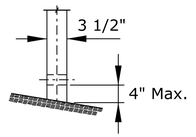
4" x 6" Wood post in soil



Section A-A



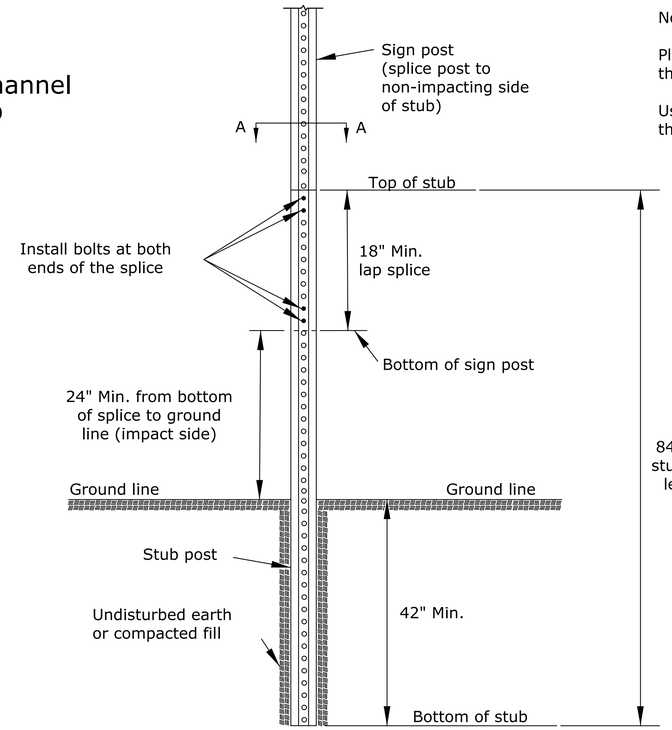
Section B-B



Front elevation

See TE710 for additional details and requirements

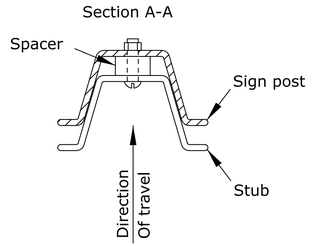
3 lb/f U-Channel setup



Notes:

Place two bolts at both ends of the splice through the holes nearest the ends of the splice.

Use manufacturer recommended spacers over the bolts between the spliced pieces of U-Channel.



NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SIGN POSTS

TE712

FHWA APPROVAL			06/01/15	APP'D	Kristina Pyle	
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES		TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.		TRACE CK.

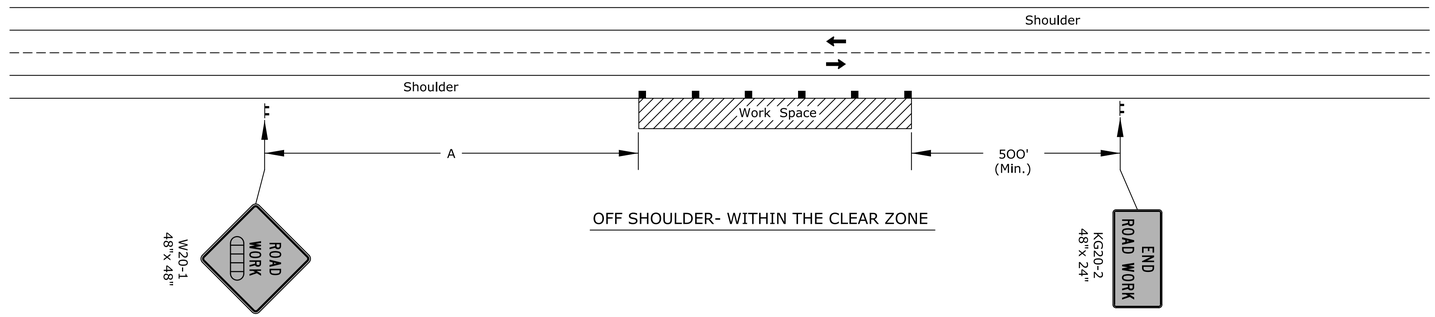
KDOT Graphics Certified 06-01-2015

Plotted : 01-JUN-2015 13:54
Traffic

Drawn By : mushock
File : te712.dgn

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	PW-034	2017	20	28

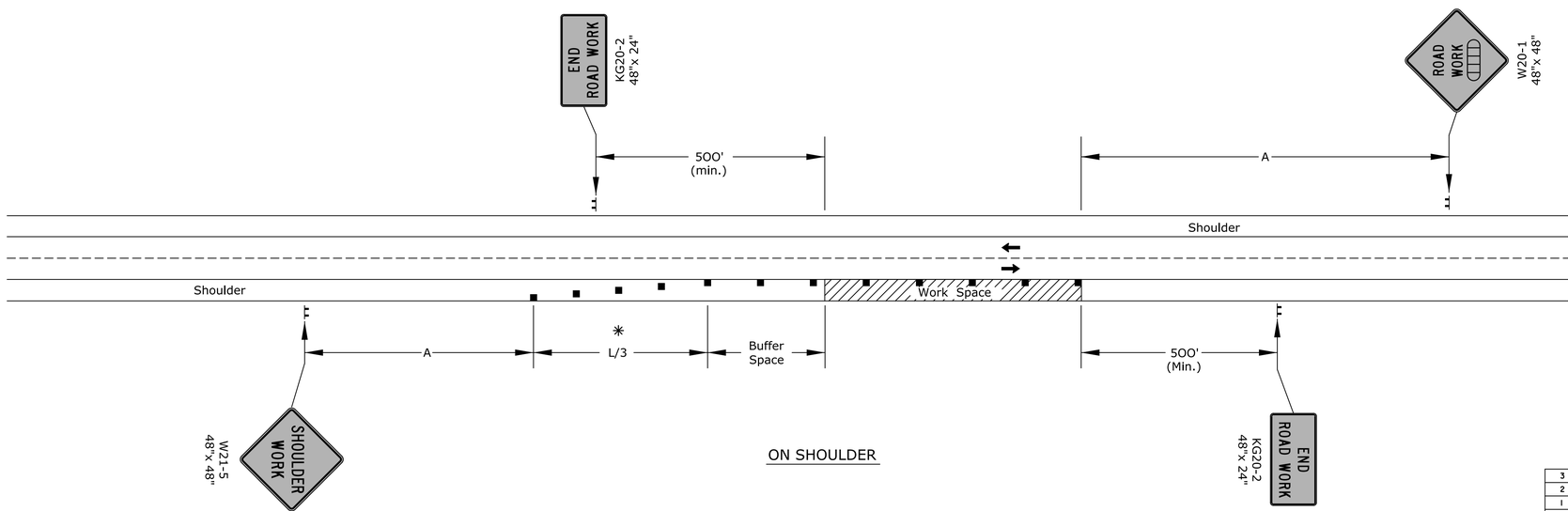


OFF SHOULDER- WITHIN THE CLEAR ZONE

Notes:

No traffic control is required if the work space is located outside of the clear zone.

For operations of 60 minutes or less, all signs and channelizing devices may be eliminated if a vehicle with high-intensity rotating, flashing, oscillating, or strobe lights is used.



ON SHOULDER

* Omit taper if paved shoulder is less than 8' wide.

■ Channelizing device

Ahead, 1500 ft, or 1 mile

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SHOULDER WORK UNDIVIDED ROADWAY

TE720

FHWA APPROVAL		06/01/15	APP'D	Kristina Ericksen	
DESIGNED	L.E.R.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

KDOT Graphics Certified 06-01-2015

Sh. No. 20

KDOT Graphics Certified

Plotted : 01-JUN-2015 13:54
Traffic

Drawn By : mushock
File : te720.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	PW-034	2017	21	28

Summary Of Traffic Control Devices (Each)

Work Zone Sign (Special)		
Sign No.	16.25 Sq.Ft. & Less	16.26 Sq.Ft. & Over

Summary Of Traffic Control Devices (Each Per Day)

✳ Quantity Most Used On The Project At Any One Time

Work Zone Signs ✳			
Sign No.	Size - Sq.Ft.		
	0-9.25	9.26-16.25	16.26 & Over
~~W20-7~~		~~2~~	
W20-1		7	
KG20-2		7	
R11-2		6	
R11-4		5	
R9-9	16		

Barricades ✳		Channelizing Devices ✳		
Type 3 (4' To 12')	Pedestrian	Fixed	Portable	Pedestrian
22	4		60	

Lighted Devices ✳	
Work Zone Warning Light (Type "A" Low Intensity)	12
Work Zone Warning Light (Red Type "B" High Intensity)	
Arrow Display	
Portable Changeable Message Sign	

Recapitulation Of Quantities		
Item	Quantity	Unit
Work Zone Signs (O To 9.25 Sq.Ft.)	16	Each Per Day
Work Zone Signs (9.26 To 16.25 Sq.Ft.)	25	Each Per Day
Work Zone Signs (16.26 Sq.Ft. & Over)		Each Per Day
Work Zone Barricades (Type 3 - 4' To 12')	22	Each Per Day
Work Zone Barricades (Pedestrian)	4	Each Per Day
Channelizer (Fixed)		Each Per Day
Channelizer (Portable)	60	Each Per Day
Channelizer (Pedestrian)		Each Per Day
Work Zone Warning Light (Type "A" Low Intensity)	12	Each Per Day
Work Zone Warning Light (Red Type "B" High Intensity)		Each Per Day
Arrow Display		Each Per Day
Portable Changeable Message Sign		Each Per Day
Pavement Marking (Temporary)		
4" Solid (Type I)		Sta./Line
4" Solid (Type II)		Sta./Line
4" Broken (8.0') (Type I)		Sta./Line
4" Broken (8.0') (Type II)		Sta./Line
4" Broken (3.0') (Type I)		Sta./Line
4" Broken (3.0') (Type II)		Sta./Line
4" Dotted Extension (Type I)		Sta./Line
4" Dotted Extension (Type II)		Sta./Line
Solid (Line Masking Tape)		Sta./Line
Broken (Line Masking Tape)		Sta./Line
Symbol (Type I)		Each
Symbol (Type II)		Each
Flexible Raised Pavement Marker (4" Broken (8.0'))		Sta./Line
Flexible Raised Pavement Marker (4" Broken (3.0'))		Sta./Line
Pavement Marking Removal		Lin. Ft.
Work Zone Sign (Special) (16.25 Sq. Ft. & Less)		Each
Work Zone Sign (Special) (16.26 Sq. Ft. & More)		Each
Rigid Raised Pavement Marker (Type I)		Each
Rigid Raised Pavement Marker (Type II)		Each
Traffic Signal Installation (Temporary)		Lump Sum
Traffic Control (Initial Set Up)	Lump Sum	Lump Sum
Traffic Control		Lump Sum
Flagger (Set Price)	1	Hour

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
SUMMARY OF DEVICES
RECAPITULATION OF QUANTITIES
TE795

FHWA APPROVAL	06/01/15	APP'D	Kristina Ericksen
DESIGNED B.A.H.	DETAILED R.W.B.	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.

KDOT Graphics Certified 10-28-2015

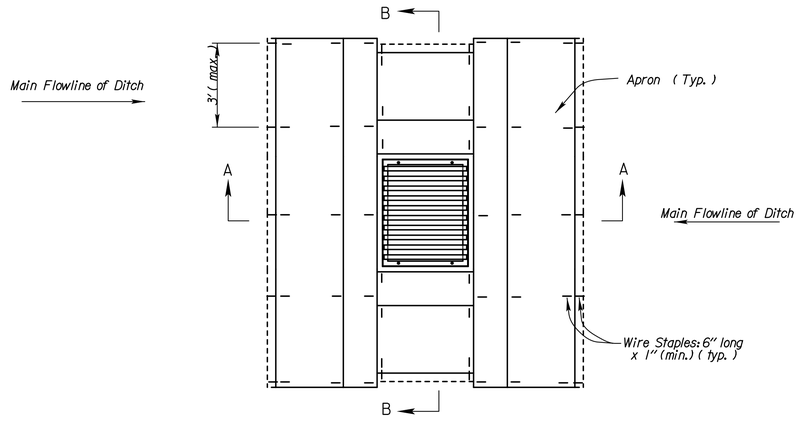
Sh. No. 21

KDOT Graphics Certified

Plotted : 28-OCT-2015 13:57
Traffic

Drawn By : rbartron
File : te795.dgn

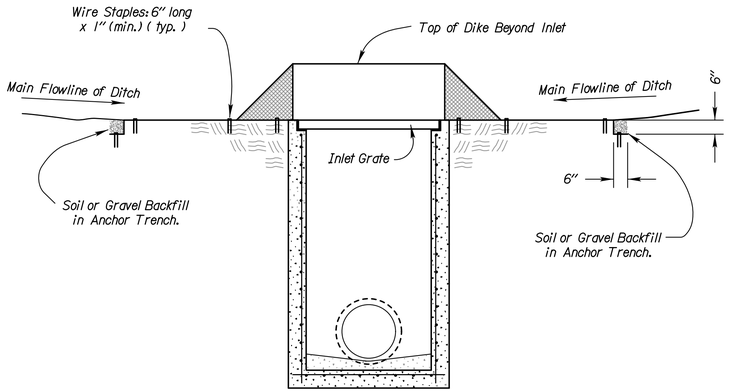
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	PW-034	2017	22	28



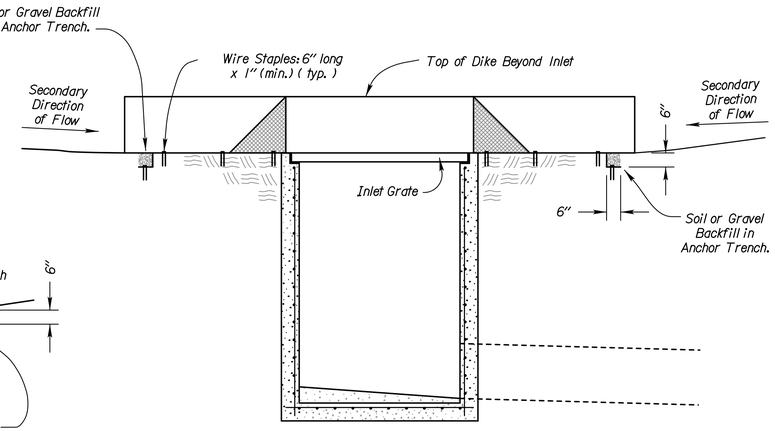
PLAN

TEMPORARY INLET SEDIMENT BARRIER
(TRIANGULAR SILT DIKE METHOD)

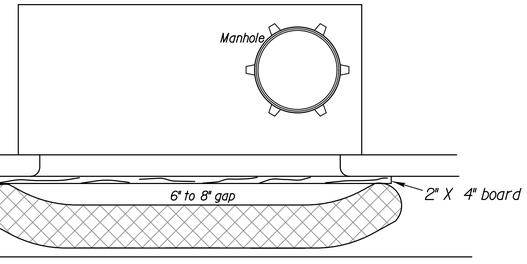
NO SCALE



SECTION A - A



SECTION B - B

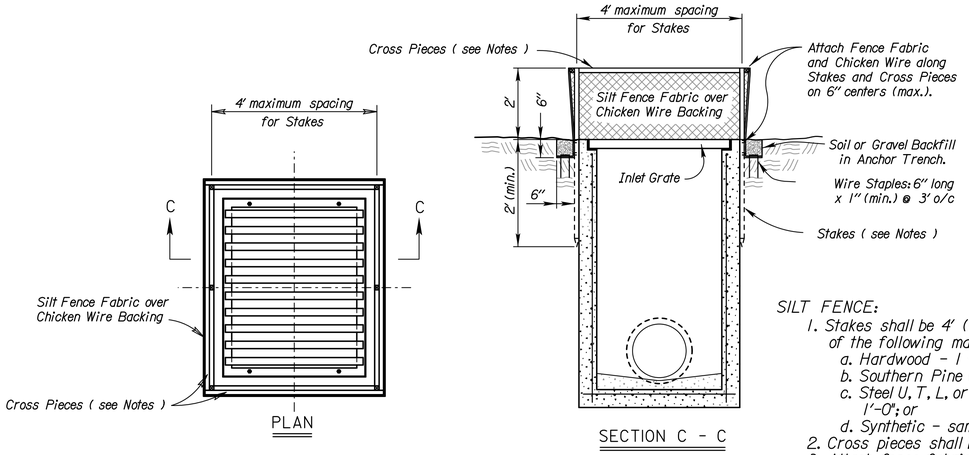


Bags = synthetic net (3mm mesh) or burlap bags

Rock = approximately 1" to 2" diameter

CURB INLET PROTECTION

1. If multiple gravel bags are required, place them in such a way that no gaps are evident.
2. Height of bags (8" minimum diameter) must not be above top of curb.
3. Alternative products may be used other than gravel bags such as the "Gutter Buddy". Products must be approved by the Engineer.
4. Curb inlet protection will be measured and paid for as Filter Sock.

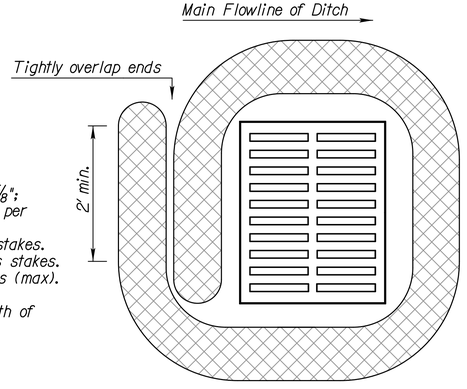


TEMPORARY INLET SEDIMENT BARRIER
(SILT FENCE METHOD)

NO SCALE

SILT FENCE:

1. Stakes shall be 4' (min.) long and of one of the following materials:
   a. Hardwood - 1 3/16" x 1 3/16";
   b. Southern Pine (No. 2) - 2 5/8" x 2 5/8";
   c. Steel U, T, L, or C Section - .95 lbs. per 1'-0"; or
   d. Synthetic - same strength as wood stakes.
2. Cross pieces shall be of same material as stakes.
3. Attach fence fabric securely on 6" centers (max).
4. Use of high flow material is acceptable.
5. Refer to plan sheets to estimate the length of silt fence required.



Drop inlet use
1'-6" TO 1'-8" diameter log

BIODEGRADABLE LOG/FILTER SOCK
DROP INLET PROTECTION

Note: 25% of log shall be keyed into ground during installation.

Stake every 4'

Material Requirements
Use 100% shredded mulch or other non-compost biodegradable material as fill for logs.
No compost or fines.
No hay or straw.
Do not use material which prohibits water infiltration.
Log Mesh: Use mesh with 1/4" openings or larger. Mesh must allow water infiltration but also hold fill materal in place.

NO.	DATE	REVISIONS	BY	APP'D
3	3/01/15	Revised Standard	RA	SHS
2	6/01/13	Revised Standard	MRM	SHS
1	3/01/13	Revised Standard	MRM	SHS

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL

TEMP. INLET SEDIMENT BARRIER (SILT FENCE)
TEMP. INLET SEDIMENT BARRIER (T.S.D.)
CURB INLET PROTECTION
DROP INLET PROTECTION

LA852C

FHWA APPROVAL	3/10/2015	APP'D	Scott H. Shields
DESIGNED RA	DETAILED RA	QUANTITIES	CADD
DESIGN CK. SHS	DETAIL CK. SHS	QUAN.CK.	CADD CK.

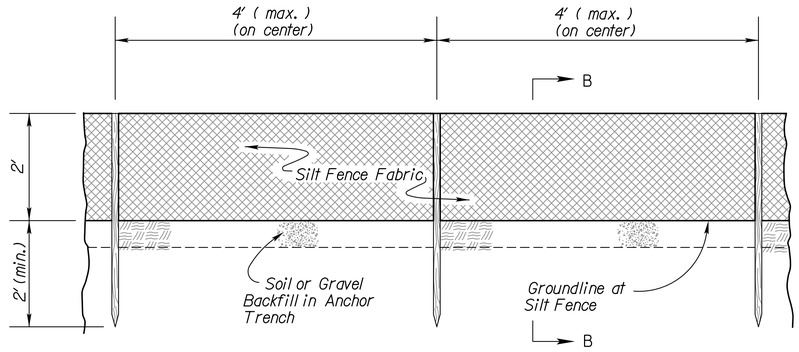
KDOT Graphics Certified 03-12-2015

Sheet No. 22

KDOT Graphics Certified

Std. Base File:
Plotted By: melissa
File: la852c.dgn
Plot Date: 12-MAR-2015 11:27
Plot Location: Landscape

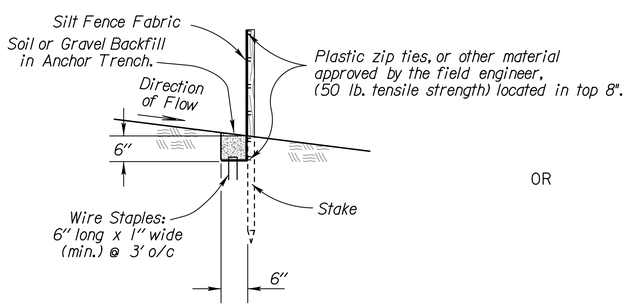
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	PW-034	2017	23	28



TYPICAL ELEVATION

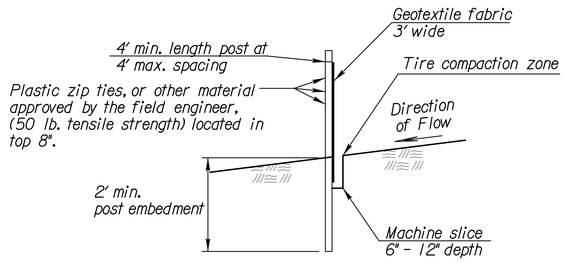
SILT FENCE SLOPE BARRIER

NO SCALE

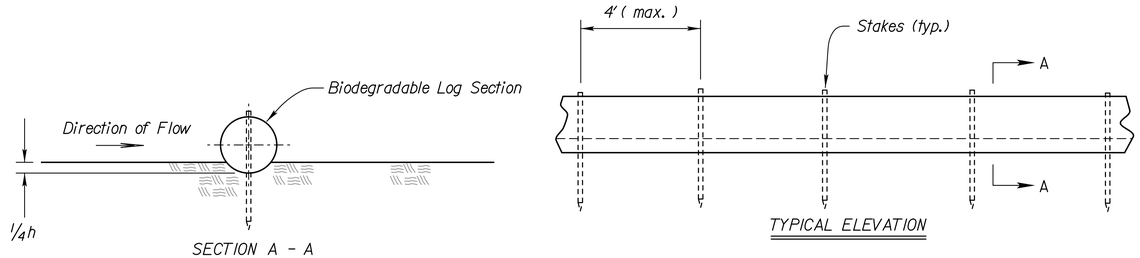


SECTION B-B

OR



SECTION B-B



SECTION A - A

TYPICAL ELEVATION

BIODEGRADABLE LOG SLOPE BARRIER

NO SCALE

INSTALLATION NOTES

SILT FENCE:

1. Stakes shall be 4' (min.) long and of one of the following materials:
   a. Hardwood - 1 3/16" x 1 3/16";
   b. Southern Pine (No. 2) - 2 5/8" x 2 5/8";
   c. Steel U, T, L, or C Section - .95 lbs. per 1'-0"; or
   d. Synthetic - same strength as wood stakes.
2. Cross pieces shall be of same material as stakes.
3. Attach fence fabric securely on 6" centers (max.).
4. Use of high flow material is acceptable.
5. Refer to plan sheets to estimate the length of silt fence required.

BIODEGRADABLE LOG BARRIERS

1. Place biodegradable logs tightly together.
2. Wood stakes shall be 2" x 2" (nom.).
3. Wire staples shall be 6" long x 1" wide (min.) and placed on 4' (max.) centers.
4. Refer to plan sheets to estimate length of biodegradable log barriers required.
5. Logs should be keyed into the ground at a minimum of 25% of its height.
6. Length of stakes should be 2 times the height of the log at a minimum.

Biodegradable Logs, Straw Wattles & Sediment Logs

Slope Gradient	PRODUCT: 9" Sediment Log & 9" Straw Wattle (ft)	12" Sediment Log & 12" Straw Wattle (ft)	20" Sediment Log & 20" Straw Wattle (ft)
≤4H:1V	40	60	80
3H:1V	30	45	60
2H:1V	20	30	40
1H:1V	10	15	20

9" and 12" material should only be used in areas which have been seeded and mulched. 20" material should be used in all other areas. Deviations should be approved by the Field Engineer.

	BIODEGRADABLE LOG MATERIAL: LOW FLOW	HIGH FLOW
9"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber
12"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber
18"-20"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber

GENERAL NOTES

1) The slope barriers shall be placed along contour lines, with a short section turned upgrade at each end of the barrier. The maximum length of the slope barrier shall not exceed 250 feet, and the barrier ends need to be staggered.
2) At culverts, the Silt Fence shall be placed over the culvert, not through the streambed flowline.
3) Barriers damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired immediately by Contractor at no additional cost to KDOT.
4) Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.

NO.	DATE	REVISIONS	BY	APP'D
3	3/01/15	Revised Standard	RA	SHS
2	6/01/13	Revised Standard	MRM	SHS
1	3/01/13	Revised Standard	MRM	SHS

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL

SILT FENCE SLOPE BARRIERS
BIODEGRADABLE LOG SLOPE BARRIERS

LA852D

FHWA APPROVAL		3/10/2015	APP'D	Scott H. Shields	
DESIGNED	RA	DETAILED RA	QUANTITIES	CADD	
DESIGN CK.	SHS	DETAIL CK.	QUAN.CK.	CADD CK.	

KDOT Graphics Certified 03-12-2015

Sheet No. 23

KDOT Graphics Certified

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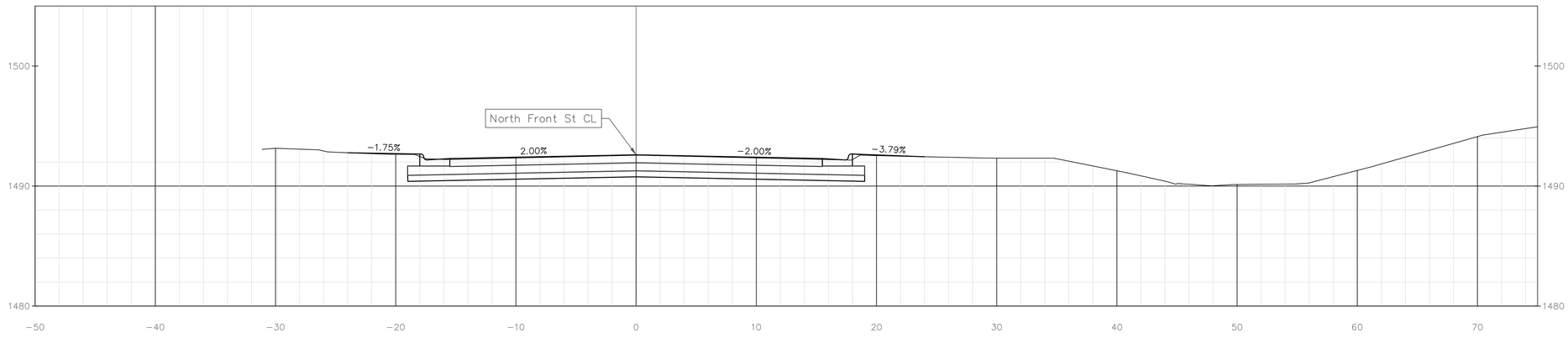
Plotted By: melissa
File: la852d.dgn
Plot Date: 12-MAR-2015 11:30
Plot Location: Landscape

10+11.90



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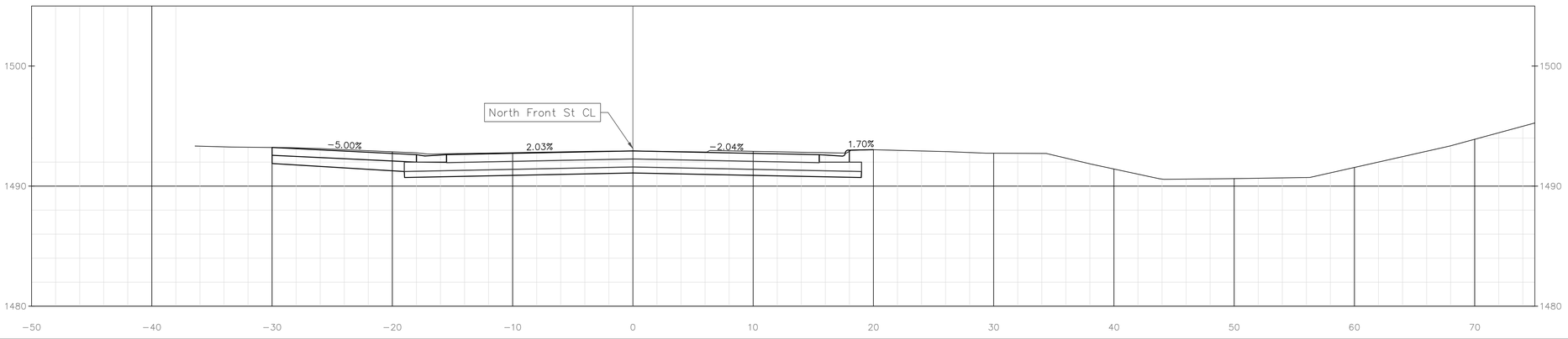

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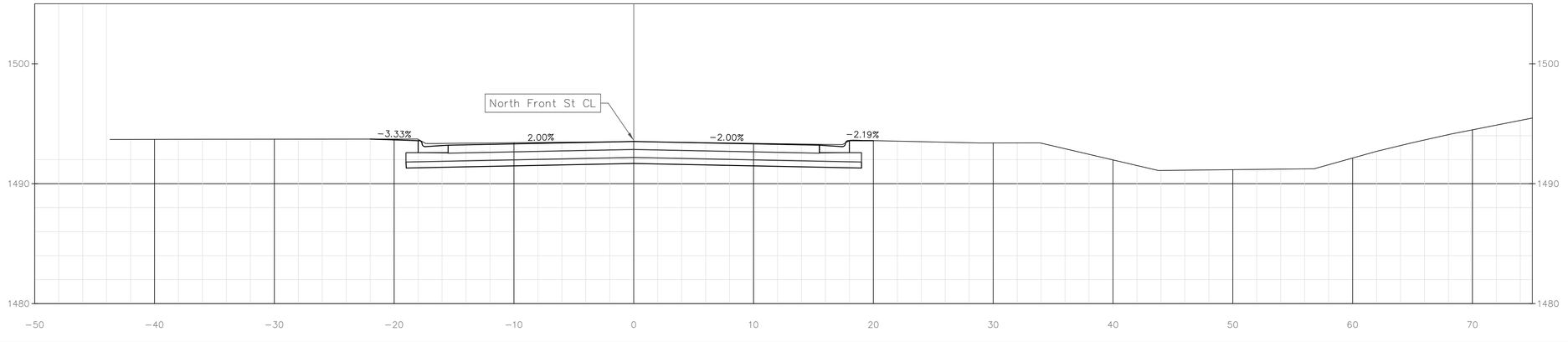


DATE	REVISIONS	BY	APP'D

Cross Sections
10+11.90 – 11+00

VERTICAL ENG 0.05" SCALE 5 10 15 20
HORIZONTAL 1/32" ARCH 1 2 3 4 1/16"

McPHERSON
CITY OF McPHERSON, KANSAS
PUBLIC WORKS DEPT.

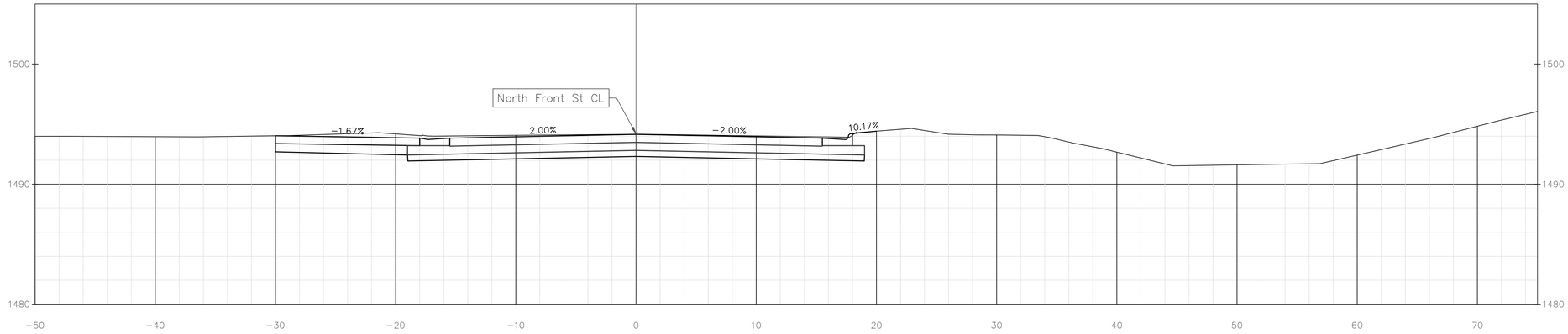
FINAL PLANS
APPROVED FOR CONSTRUCTION

PLANS	BY	DATE
SURVEY:	JustinW	2/24/2017
DESIGNED:	JustinW	7/6/2017
DRAWN:	JustinW	7/6/2017
CHECKED:	JeffW	7/10/2017
PLOT BY:	JustinW	7/10/2017
FILE:	2017-06-29_NFrontStDesign.dwg	

PROJECT NO: PW-034 SHEET 24 OF 28

Design File: I:\PublicWorks\PW_Projects\PW-034_NFrontSt_2017\AutoCAD\2017-06-29_NFrontStDesign.dwg

11+50.00



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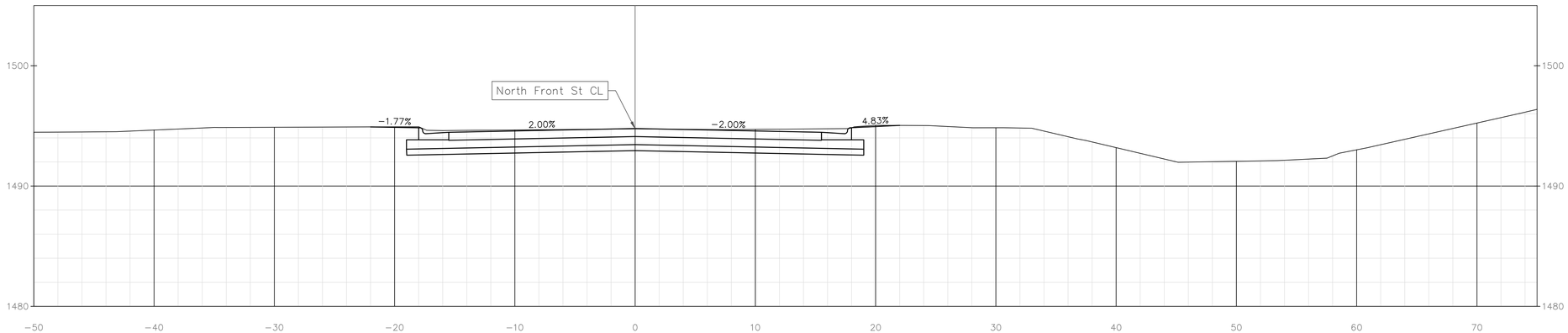

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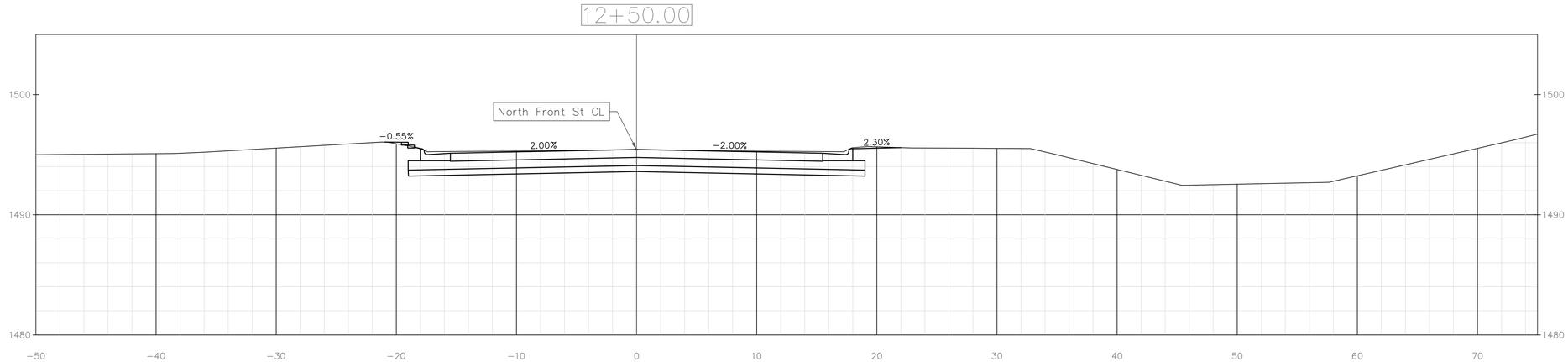

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DATE	REVISIONS	BY	APP'D

Cross Sections
11+50 – 12+50

VERTICAL ENG 0.05" 5 10 15 20 SCALE 1/32" ARCH 1 2 3 4 1/16" HORIZONTAL

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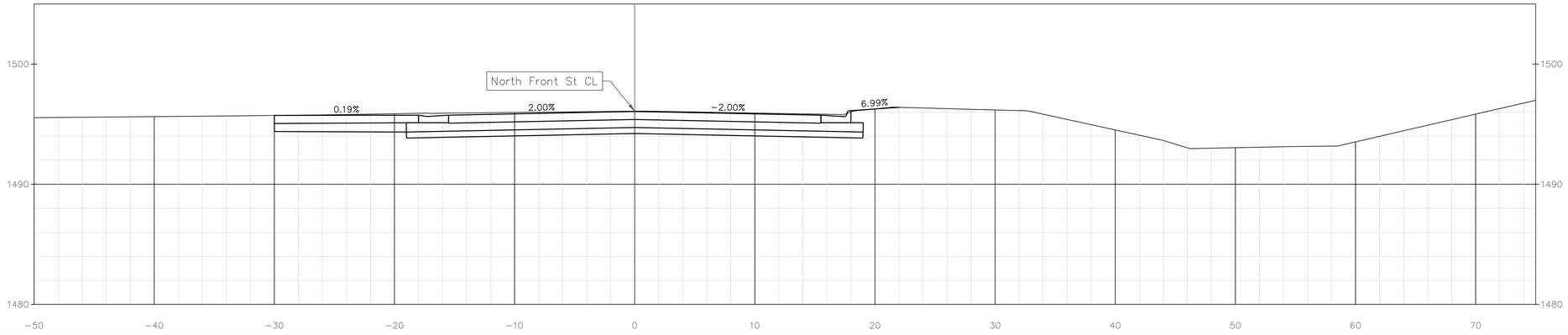
PROJECT NO: PW-034 SHEET 25 OF 28

13+00.00



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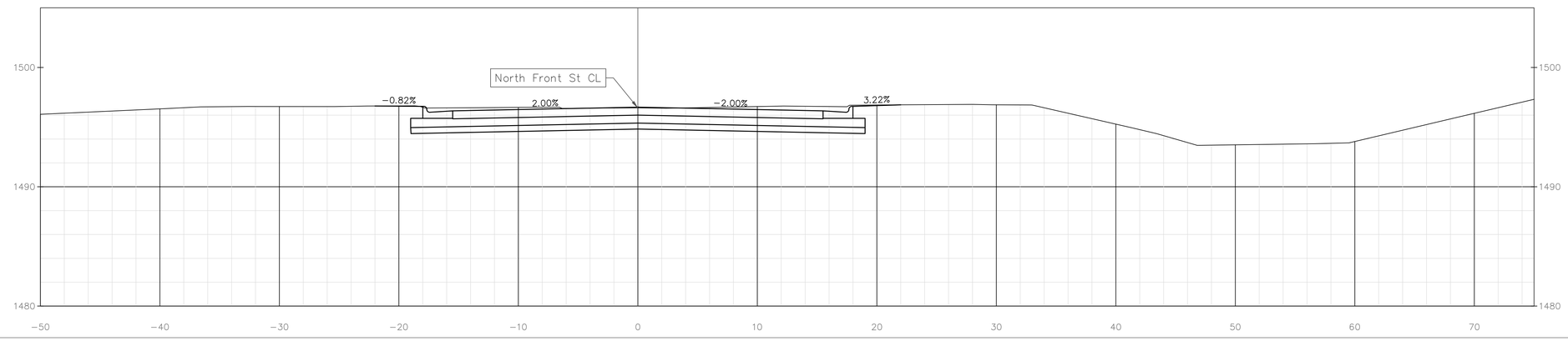

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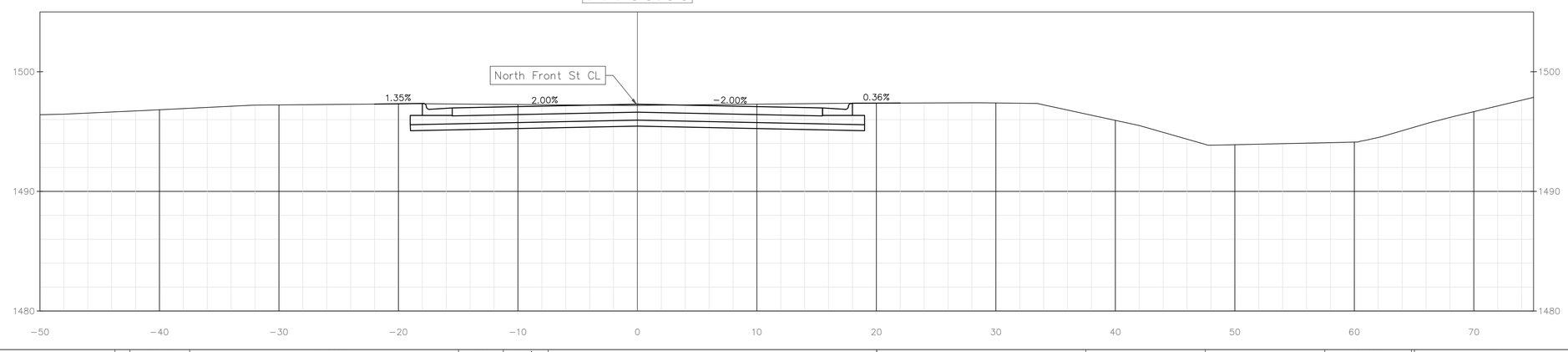

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DATE	REVISIONS	BY	APP'D

Cross Sections
13+00 - 14+00

VERTICAL ENG 0.05" SCALE 5 10 15 20
1/32" ARCH 1 2 3 4 1/16" HORIZONTAL

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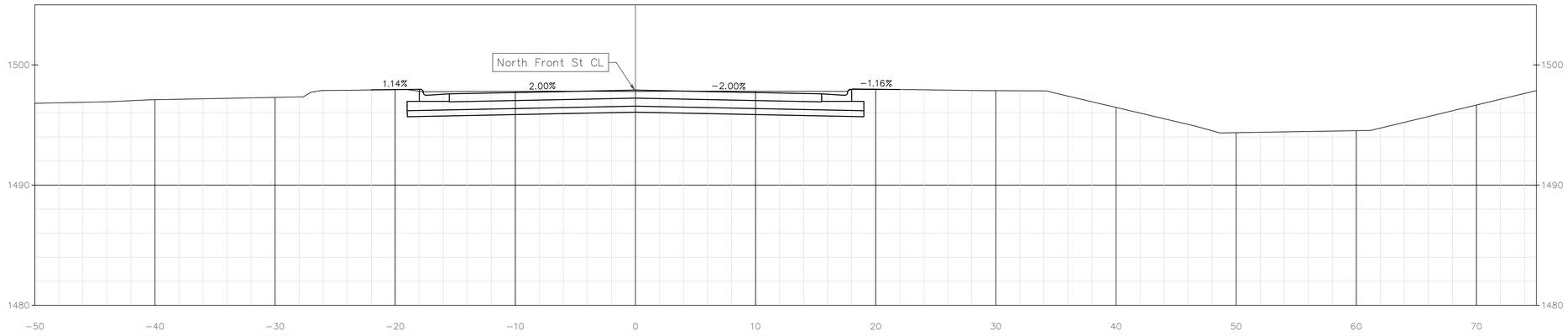
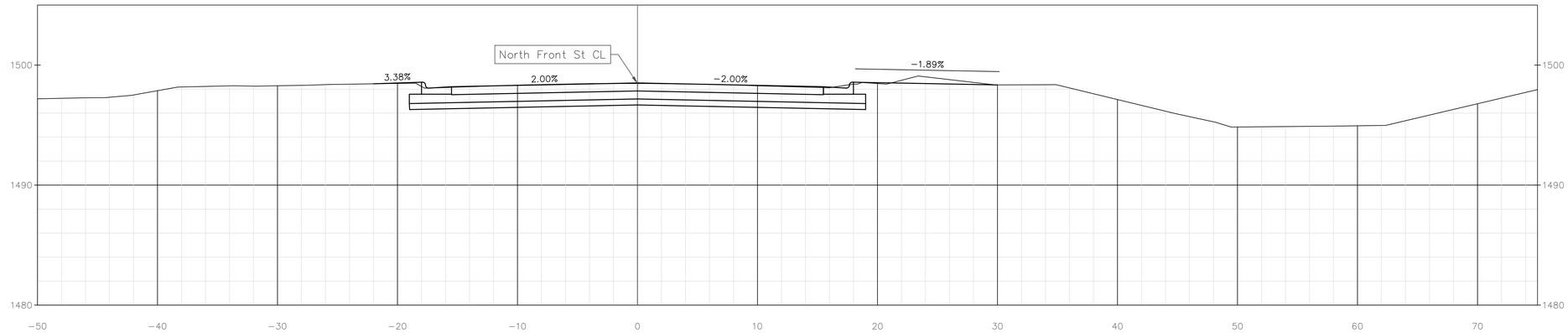
PROJECT NO: PW-034 SHEET 26 OF 28

14+50.00



15+00.00



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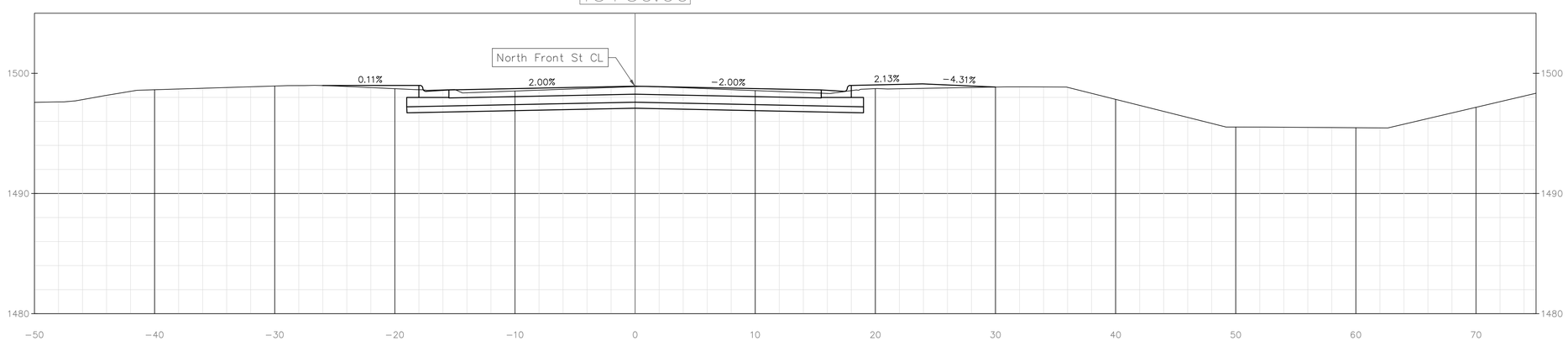

Design File: I:\PublicWorks\PW_Projects\PW-034_NFrontSt_2017\AutoCAD\2017-06-29_NFrontStDesign.dwg

DATE	REVISIONS	BY	APP'D

Cross Sections
14+50 – 15+50

VERTICAL SCALE: ENG 0.05" 5 10 15 20
HORIZONTAL SCALE: 1/32" ARCH 1 2 3 4 1/16"

McPHERSON
CITY OF McPHERSON, KANSAS
PUBLIC WORKS DEPT.

FINAL PLANS
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PLANS	BY	DATE
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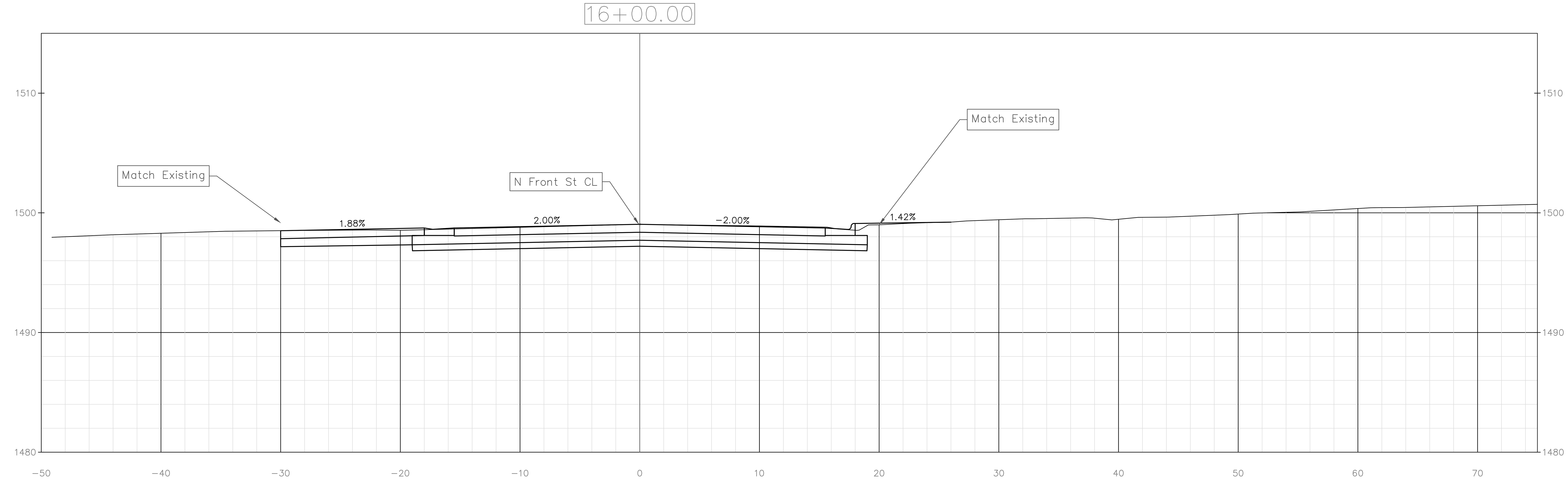
FILE:	2017-06-29_NFrontStDesign.dwg	

PROJECT NO: PW-034 SHEET 27 OF 28



DATE	REVISIONS	BY	APP'D

Cross Sections
16+00

SCALE: VERTICAL ENG 0.05" 5 10 15 20 — HORIZONTAL 1/32" ARCH 1 2 3 4 1/16"

McPHERSON
CITY OF McPHERSON, KANSAS
PUBLIC WORKS DEPT.

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PLANS	BY	DATE
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PLOT BY:	JustinW	7/10/2017
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PROJECT NO: PW-034 SHEET 28 OF 28

Design File: I:\PublicWorks\PW_Projects\PW-034_NFrontSt_2017\AutoCAD\2017-06-29_NFrontStDesign.dwg