

SECTION A-A

NOTES:

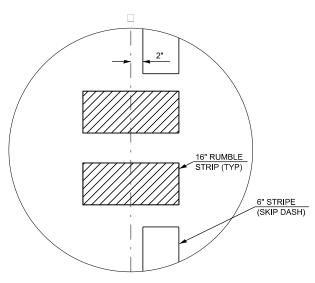
RUMBLE STRIPS SHALL NOT BE PLACED ON BRIDGES.

ALL RUMBLE STRIPS SHALL BE MILLED.

CENTERLINE RUMBLE STRIPS SHALL BE CONTINUOUS THROUGH INTERSECTIONS WITH NO MAJOR ROUTE LEFT TURN LANES.

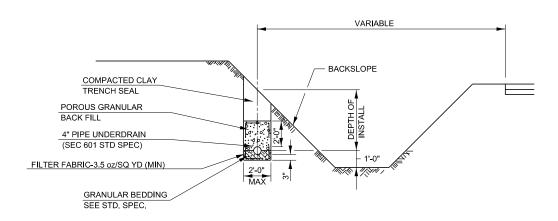
DISCONTINUE CENTERLINE RUMBLE STRIPS THROUGH THE TAPER AND STORAGE LIMITS OF ALL LEFT TURN LANES.

WHERE USED, ADJUST SPACING OF RAISED REFLECTIVE PAVEMENT MARKERS TO FALL IN WIDER GAP BETWEEN RUMBLE STRIPS.



DETAIL B (PASSING ZONE)

USER NAME = anthony.grunstad	DESIGNED -	REVISED -									F.A.P. RTE	SECTION	COUNTY	TOTAL	SHEET
	DRAWN -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CENTERLINE RUMBLE STRIP DETAIL				AIL	-	-	-	-			
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -								CONTRACT	NO.				
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	rs st.	Α.	TO STA.		ILLINOIS FED. A	ID PROJECT		



# **BACKSLOPE DRAIN**

USER NAME = anthony.grunstad	DESIGNED -	REVISED -	_
	DRAWN -	REVISED -	ı
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	ı
PLOT DATE = 10/3/23	DATE -	REVISED -	

						F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
								CONTRACT	NO.	
SCALE:	SHEET	OF	SHEETS	STA.	TO STA.		ILLINOIS F	ED. AID PROJECT		

#### **GENERAL**

CLASS SI CONCRETE SHALL BE USED THROUGHOUT.

THIS SPECIFICATION COVERS SLOTTED DRAIN USED FOR THE REMOVAL OF WATER AS SHOWN ON THE PLANS.

THE SLOTTED DRAIN SHALL BE CORRUGATED PIPE CULVERT WITH INTEGRAL SLOTTED DRAINS.

BEFORE PLACING THE CONCRETE ADJACENT TO THE PIPE, THE SLOT SHALL BE COVERED BY EITHER THIN, FLAT METAL SHEETING OR BY A BOARD NOTCHED TO FIT OVER THE GRATE BARS. THIS COVERING MUST FIT CLOSELY IN THE SLOT TO PREVENT ENTRY OF CONCRETE INTO THE PIPE. PAVING OVER THE SLOTTED DRAIN WILL THEN BE ONE CONTINUOUS OPERATION OVER THE PROTECTED DRAIN. THE PROTECTION FOR THE DRAIN SLOT SHALL THEN BE REMOVED. THE PIPE SHALL DRAIN INTO THE SIDE OF THE INLET. THE OPENING WHERE THE SLOT IS REMOVED SHALL BE COVERED TO PREVENT CONCRETE FROM ENTERING THE PIPE.

THE CORRUGATED STEEL PIPE USED IN THE SLOTTED DRAIN SHALL MEET THE REQUIREMENTS OF AASHTO M36/ ASTM A760.

THE CMP SHALL BE ALUMINIZED STEEL TYPE 2.

THE DIAMETER AND GAGE SHALL BE AS SHOWN ON THE PLAN.

STEEL GRATING SHALL MEET THE GALVANIZING REQUIREMENTS OF AASHTO A123.

THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER FOOT FOR SLOTTED DRAIN 15" WITH 1¾" SLOT, AND SHALL INCLUDE ELBOWS, DRILLING HOLES IN GRATING, SUPPLYING AND PLACING A1 BARS, AND CONCRETE AND GRATING FOR DEPTH SPECIFIED ON PLANS

USE APPROVED END CAP TO PREVENT CONCRETE ENTRY INTO THE PIPE DURING GUTTER CONSTRUCTION ON THE UPSTREAM END OF THE PIPE.

THE CORRUGATED STEEL PIPE SHALL HAVE A MINIMUM OF TWO REROLLED ANNULAR ENDS.

THE SLOTTED DRAIN BANDS SHALL BE MODIFIED HUGGER BANDS TO SECURE THE PIPE AND PREVENT INFILTRATION OF THE BACKFILL

WHEN THE SLOTTED DRAIN IS BANDED TOGETHER, THE ADJACENT GRATES SHALL HAVE A MAXIMUM 3" GAP.

#### **GRATES**

THE GRATES SHALL BE MANUFACTURED FROM ASTM A670, GRADE 36 STEEL. THE SPACERS AND BEARING BARS (SIDES) SHALL BE 3/16" MATERIAL ±0.008".

THE SPACERS SHALL BE ON 6" CENTERS AND WELDED ON BOTH SIDES TO EACH BEARING BAR (SIDES) WITH FOUR (4) 11/4" LONG 3/16" FILLET WELDS ON EACH SIDE OF THE BEARING BAR.

THE PLATE EXTENDER SHALL BE 7 GAGE STEEL MEETING ASTM A761.

THE ENGINEER MAY CALL FOR TENSILE STRENGTH TESTS ON THE GRATE IF THE GRATE IS NOT IN COMPLIANCE WITH THE ABOVE SPACER SPECIFICATIONS. IF TENSILE STRENGTH TESTS ARE CALLED FOR, MINIMUM RESULTS FOR AN IN-PLACE SPACER PULLED PERPENDICULAR TO THE BEARING BAR SHALL BE: T = 12,000 POUNDS FOR 21/2" GRATE

T = 15,000 POUNDS FOR 6" GRATE

#### GALVANIZING

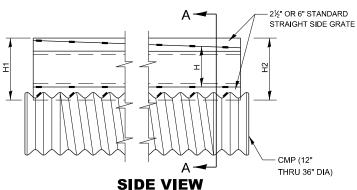
THE GRATE AND PLATE EXTENDERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 EXCEPT WITH A 2 OZ GALVANIZED COATING.

#### GRATE ATTACHED TO CSP

THE GRATE SHALL BE FILLET WELDED WITH A MINIMUM WELD 1" LONG TO THE CSP ON EACH SIDE OF THE GRATE AT EVERY OTHER CORRUGATION.

#### TOLERANCES - FINISHED SLOTTED DRAIN - 20' LENGTH

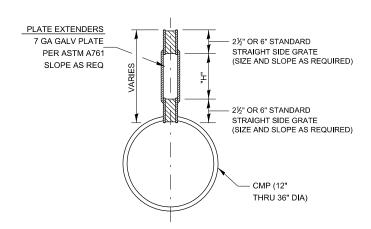
VERTICAL BOW =  $\pm \frac{3}{2}$ HORIZONTAL BOW =  $\pm$ %" TWIST =  $\pm \frac{1}{2}$ "



# **DETAIL WITH VARIABLE HEIGHT GRATE**

LOADING	MAX. EXTENDER
CONDITION	HEIGHT - "H"
H20/H25 * 750 PSI CONCRETE	19"

\* 125 PSI TIRE PRESSURE



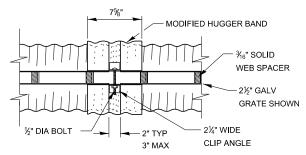
#### **SECTION A-A**

	STA	NDA	RD	SIZE	S					
GAGE	GAGE OF PIPE 12" 15" 18" 24" 30" 36"									
16	Х	Χ	Х	Х	Х	Х				
14	Х	Х	Х	Х	Х	Х				
12	NA	NA	NA	NA	Х	Х				

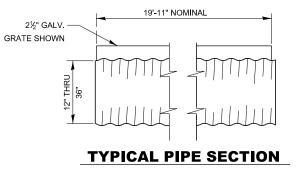
1	RATE YPE	"A"
VERT	2½"	1¾"
VERT	6"	1¾"
TRAP	2½"	2¼"
TRAP	6"	3"
VE	RT = VERTIC	AL
TR	AP = TRAPIZ	OIDAL

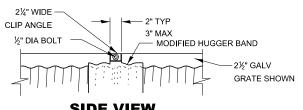
#### SLOTTED DRAIN NOTES

- 1. GRATING IS AVAILABLE IN DEPTHS OF 21/2" AND 6".
- 2. VERTICAL GRATING (STRAIGHT SIDES) WITH VERTICAL SPACERS IS ALSO AVAILABLE
- 3. FOR 6" VERTICAL & TRAPEZOIDAL REQUIREMENTS, THE SLOTTED DRAIN BAND MAY BE FURNISHED WITH THE 4: TECHCO BAND ANGLE.
- 4. DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
- 5. REFERENCE CONTECH BAND MANUAL DWG NO 1002697 FOR BAND DETAILS
- 6. REFERENCE CONTECH SLOTTED DRAIN DWG NO 1002697.
- 7. DIMENSIONS FOR H1 AND H2 AS REQUIRED
- 8. H1 AND H2 MEASURED FROM TOP OF GRATE TO BOTTOM OF GRATE.

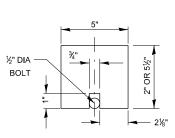


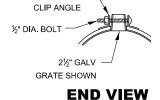
# **TOP VIEW**





**SIDE VIEW** 

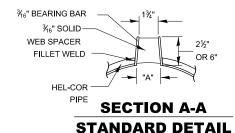


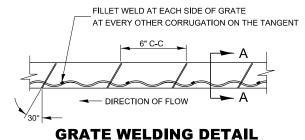


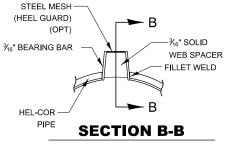
21/4" WIDE

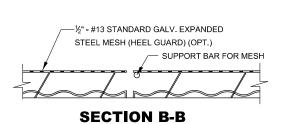
#### **GAP PLATE (OPTIONAL)**

MAY BE PLACED DIRECTLY OVER BAND BOLT TO PROVIDE CONTINUOUS FORM FOR GROUTING





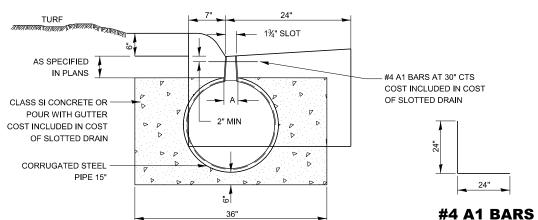




#### **DETAIL WITH MESH**

SCALE:

(TRAPEZOIDAL GALVANDIZED GRATE SHOWN)

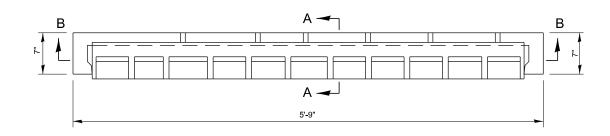


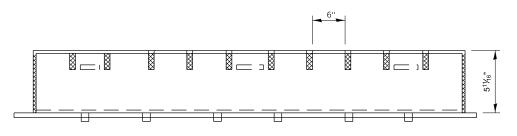
601-2

DESIGNED REVISED JSER NAME = anthony.grunstad DRAWN REVISED HECKED REVISED

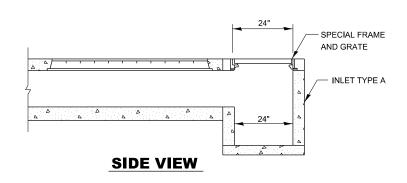
STATE OF ILLINOIS **DEPARTMENT OF TRANSPORTATION** 

COUNTY **SLOTTED DRAIN PIPE** CONTRACT NO. OF SHEETS STA. TO STA.

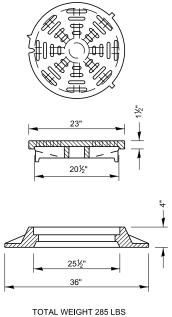


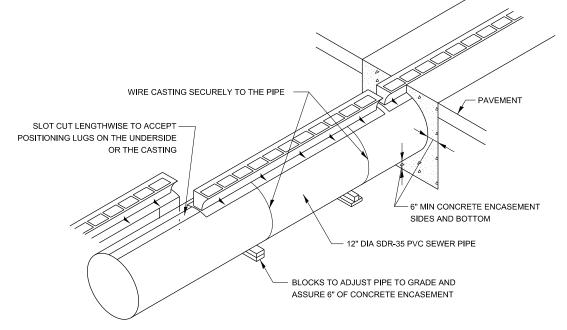


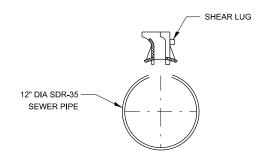
# SECTION B-B



# SPECIAL FRAME AND GRATE







#### **SECTION A-A**

#### **GENERAL NOTES:**

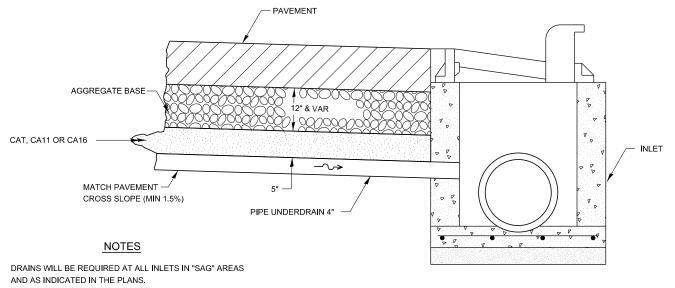
CLASS SI CONCRETE SHALL BE USED THROUGHOUT.

THE CONTRACT UNIT PRICE PER FOOT FOR SLOTTED DRAIN 12" WITH 6" SLOT SHALL INCLUDE THE GRATE, CLASS SI CONCRETE, SDR-35 PVC 12" SEWER PIPE, BLOCKS, WIRE AND EXCAVATION.

THE INLET TYPE A TO BE IN ACCORDANCE WITH STANDARD 602301.

THE CONTRACT UNIT PRICE EACH FOR INLETS, TYPE A, WITH SPECIAL FRAME, OPEN LID SHALL INCLUDE A TYPE A INLET AND THE SPECIAL FRAME AND GRATE DETAILED ABOVE.

USER NAME = anthony.grunstad	DESIGNED -	REVISED -			DET	All OF S	LOTTED VANE DRAIN		F.A. RTE	SECTION	COUNTY TOTAL SHEET
	DRAWN -	REVISED -	STATE OF ILLINOIS	12" WITH 6" SLOT							SHEETS NO.
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION			12 \	WIIT O SLUI				CONTRACT NO.
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS STA.	TO STA.		ILLINOIS FED. A	ID PROJECT



THIS WORK SHALL BE COMPLETED ACCORDING TO SECTION 601 OF THE STANDARD SPECIFICATIONS.

THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER FOOT FOR PIPE UNDERDRAINS OF THE DIAMETER SPECIFIED WHICH PRICE SHALL INCLUDE THE CAT, CA11 OR CA16 AND THE CONNECTION TO THE INLET.

DESIGNER NOTE:

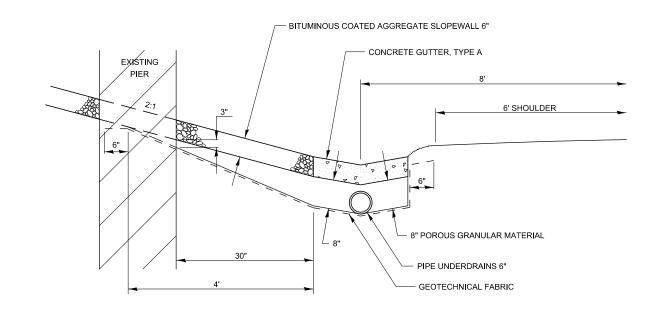
ONLY TO BE USED AT RECOMMENDATION OF MATERIALS

601-4

# **DRAIN FOR AGGREGATE BASES IN URBAN AREAS**

USER NAME = anthony.grunstad	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 10/3/23	DATE -	REVISED -	

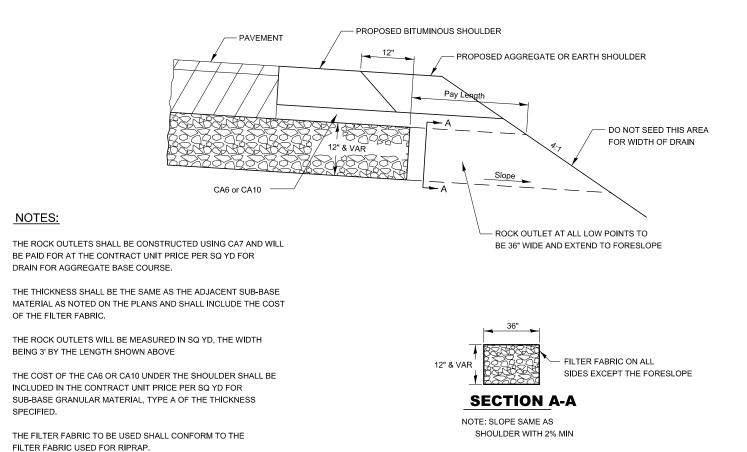
						F.A. RTE	SECT	ΓΙΟΝ		COUNTY	TOTAL SHEETS	SHEET NO.
										CONTRACT	NO.	
SCALE:	SHEET	OF	SHEETS	STA.	TO STA.			ILLINOIS	FED. A	ID PROJECT		



# AGGREGATE SLOPEWALL DRAIN

USER NAME = anthony.grunstad	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 10/3/23	DATE -	REVISED -
		!

							F.A. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ı									CONTRA	CT NO.	
	SCALE:	SHEET	OF	SHEETS	STA.	TO STA.		ILLINOIS F	ED. AID PROJECT		



DRAIN FOR AGGREGATE BASE COURSE

601-6

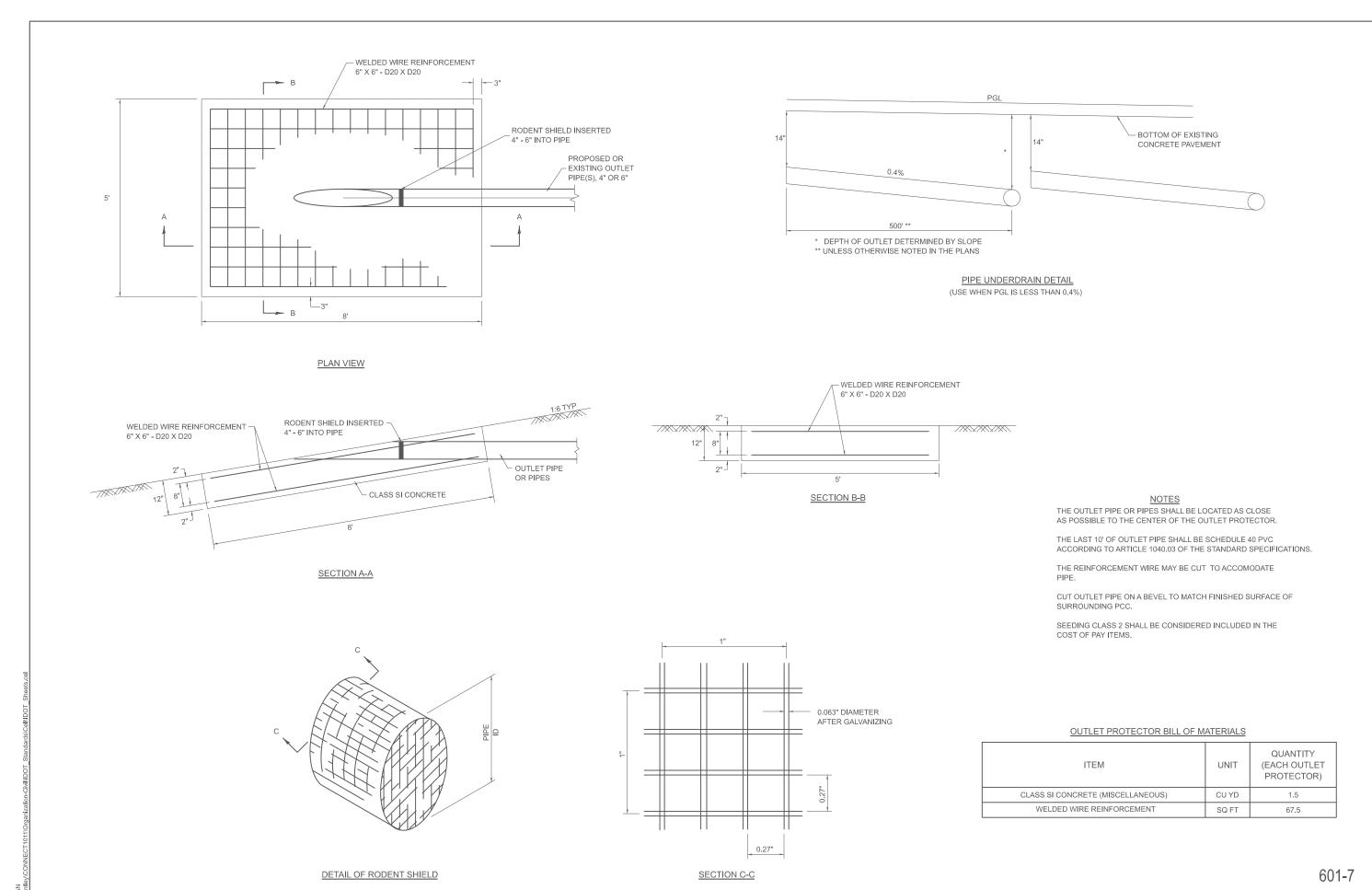
 USER NAME
 = anthony.grunstad
 DESIGNED
 REVISED

 DRAWN
 REVISED

 PLOT SCALE
 = 100,000 ' / in.
 CHECKED
 REVISED

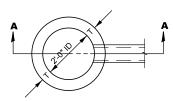
 PLOT DATE
 = 10/3/23
 DATE
 REVISED

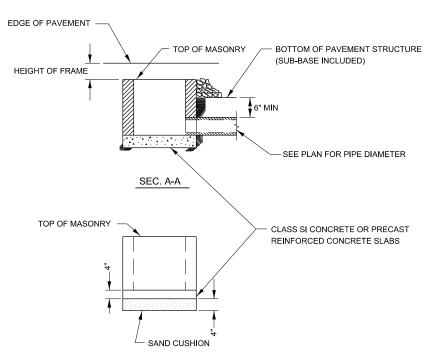
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



USER NAME = Eric.Thomas DESIGNED -REVISED -COUNTY **CONCRETE HEADWALLS FOR PIPE UNDERDRAIN (SPECIAL)** STATE OF ILLINOIS DRAWN -REVISED . CHECKED -REVISED **DEPARTMENT OF TRANSPORTATION** CONTRACT NO. PLOT DATE = 12/7/2022 DATE SCALE: SHEET OF SHEETS STA. REVISED

ALTERNATE MATERIALS FOR WALLS	
PRECAST REINFORCED CONCRETE RISERS	3"
CONCRETE MASONRY UNITS	5"
CAST-IN-PLACE CONCRETE	6"
BUILDING BRICK, GRADE SW, FROM CLAY OR SHALE	8"





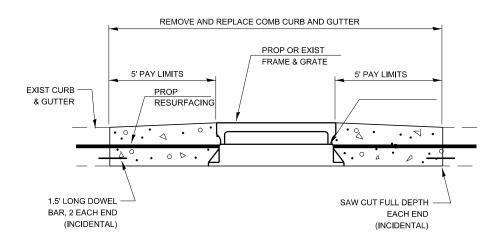
# INLET TYPE A (SPECIAL)

#### NOTE:

- 1. THE CONTRACT UNIT PRICE FOR INLETS TYPE A (SPECIAL) SHALL NOT INCLUDE THE FRAME AND LID OR GRATE.
  2. FURNISHING AND INSTALLING SAND CUSHION IS TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR TYPE A (SPECIAL) INLETS.
  3. THE TYPE A (SPECIAL) INLET SHOULD NOT BE USED AS A RECEIVER OF STORM WATER FROM AND THE BUSINET.
- STORM WATER FROM ANOTHER INLET.

(TO BE USED AT PAVED SECTION WITH CURB & GUTTER) NO SCALE

USER NAME = anthony.grunstad	DESIGNED -	REVISED -							F.A.	SECTION	COUNTY	TOTAL SHEET
	DRAWN -	REVISED -	STATE OF ILLINOIS						IVIE.			SHEETS NO.
PLOT SCALE = 100.000 / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION								CONTRAC	T NO.
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS STA.	TO STA.		ILLINOIS F	D. AID PROJECT	



# **INLET ADJUST**

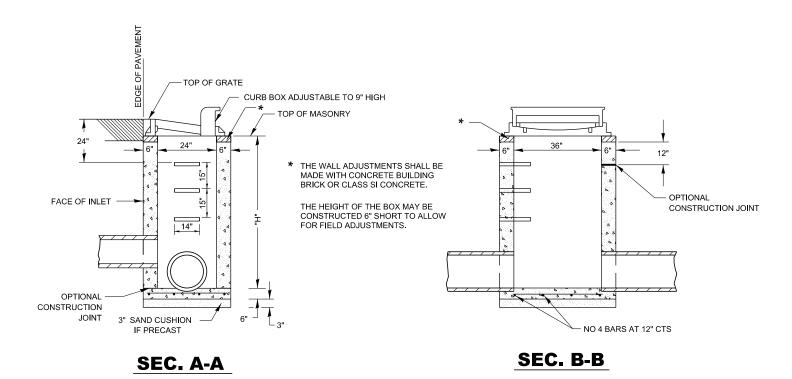
602-2

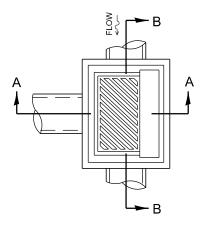
USER NAME = anthony.grunstad	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 10/3/23	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

						F.A. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
								CONTRACT	NO.	
SCALE:	SHEET	OF	SHEETS	STA.	TO STA.		ILLINOIS FE	D. AID PROJECT		

WIDOTIDOCUMENTS/IDOJ OTICES/DISTICL S/PTOJECTS/Z-DATCY DETAILS/DD DETAIL REVISIONS 2023/000-099 INCIDENTAL C





#### NOTES

SEE STANDARD 602701 FOR DETAILS OF STEPS.
STEPS SHALL BE OMITTED WHEN "H" IS LESS THAN 5'

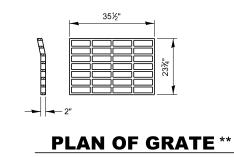
EXCEPT AS NOTED HEREIN INLET SPECIAL SHALL
BE CONSTRUCTED IN ACCORDANCE WITH SECTION
602 OF THE STANDARD SPECIFICATIONS.

THE SIDE WALLS MAY BE BUILT AS PRECAST SEGMENTED SECTIONS.

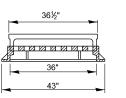
ALL VOIDS AROUND PIPE ENTRANCE, BOTH INSIDE AND OUTSIDE, SHALL BE SEALED WITH MORTAR.

WEIGHT OF CAST IRON FRAME & GRATE = ±530 LBS.

#### **DETAIL OF FRAME & GRATE**



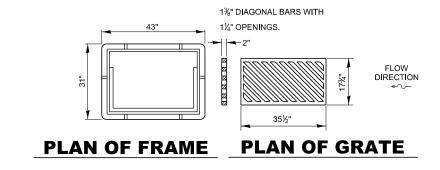
2" R — 6" — ADJUSTABLE
4"
6" — 31"



**SECTION A-A** 

**SECTION B-B** 

\*\* THIS GRATE TO BE USED WITHOUT CURB BOX WHEN INLET IS IN DRIVEWAY.



#### NOTES

CLASS SI CONCRETE OR PRECAST CONCRETE SHALL BE USED THROUGHOUT. PRECAST CONCRETE SHALL BE IN ACCORDANCE WITH ARTICLES 504.01 THROUGH 504.05 OF THE STANDARD SPECIFICATIONS EXECPT THAT CONCRETE STRENGTH SHALL BE 4,000 PSI AFTER 28 DAYS.

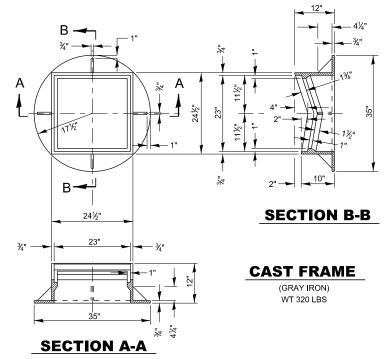
THE CONTRACT UNIT PRICE EACH FOR INLET SPECIAL SHALL INCLUDE THE COST OF CONSTRUCTING THE INLET BOX. FURNISHING AND INSTALLING THE FRAME AND GRATE. THE CAST IRON STEPS, THE PRECAST FLOOR SLAB, SAND CUSHION AND REINFORCEMENT BARS.

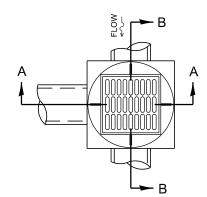
USER NAME = anthony.grunstad	DESIGNED -	REVISED -							F.A.	SECTION	COUNTY	SHEETS NO
	DRAWN -	REVISED -	STATE OF ILLINOIS			INLE			IVIE.			SILEETS NO.
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION								CONTRACT	T NO.
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS STA.	TO STA.		ILLINOIS FED.	. AID PROJECT	

# FRAME AND GRATE TYPE 9 TOP OF MASONRY THE WALL ADJUSTMENTS SHALL BE MADE WITH CONCRETE BUILDING BRICK OR CLASS SI CONCRETE. FACE OF INLET THE HEIGHT OF THE BOX MAY BE CONSTRUCTED 6" SHORT TO ALLOW FOR FIELD ADJUSTMENTS. \_\_\_\_14"\_\_ OPTIONAL CONSTRUCTION JOINT 3" SAND CUSHION -IF PRECAST SEC. A-A

# FRAME AND GRATE TYPE 9 - OPTIONAL CONSTRUCTION JOINT #4 BARS AT 12" CTS

# FRAME AND GRATES TYPE 9





#### NOTES

SEE STANDARD 602701 FOR DETAILS OF STEPS. STEPS SHALL BE OMITTED WHEN "H" IS LESS THAN 5'

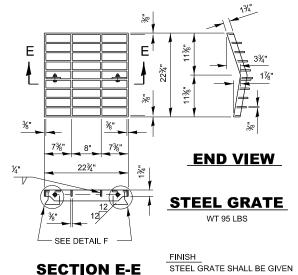
EXCEPT AS NOTED HEREIN INLET SPECIAL SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 602 OF THE STANDARD SPECIFICATIONS.

THE SIDE WALLS MAY BE BUILT AS PRECAST SEGMENTED SECTIONS.

ALL VOIDS AROUND PIPE ENTRANCE, BOTH INSIDE AND OUTSIDE, SHALL BE SEALED WITH MORTAR.

WEIGHT OF CAST IRON FRAME & GRATE = 440 LBS.

# **DETAIL OF FRAME & GRATE**



 $\mathsf{D} \blacktriangleleft \mathsf{J}$ 223/1 SECTION D-D **CAST GRATE** WT 120 LBS **SECTION C-C** 

ONE SHOP COAT OF BLACK

BITUMINOUS PAINT.

(1)= 61/4" MAX (TYP) (2)= 3/4" MIN (TYP)

#### NOTES

CLASS SI CONCRETE OR PRECAST CONCRETE SHALL BE USED THROUGHOUT. PRECAST CONCRETE SHALL BE IN ACCORDANCE WITH ARTICLES 504.01 THROUGH 504.05 OF THE STANDARD SPECIFICATIONS EXECPT THAT CONCRETE STRENGTH SHALL BE 4,000 PSI AFTER 28 DAYS.

**DETAIL F** 

THE CONTRACT UNIT PRICE EACH FOR INLET SPECIAL SHALL INCLUDE THE COST OF CONSTRUCTING THE INLET BOX. FURNISHING AND INSTALLING THE FRAME AND GRATE. THE CAST IRON STEPS, THE PRECAST FLOOR SLAB, SAND CUSHION AND REINFORCEMENT BARS.

# L 132" x 2" SLOTTED HOLE %" SQ. BAR WELDED TO GRATE BAR → 3/8" - GALVANIZED ½" BOLT **LOCKING DEVICE**

17/32" DIA HOLE

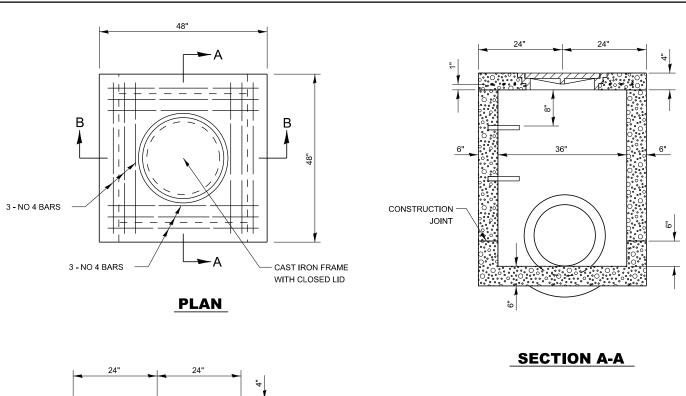
#### **GENERAL NOTES**

THE MATERIAL FOR STEEL GRATE SHALL CONFORM TO ARTICLE 1006.04 OF THE STANDARD SPECIFICATIONS.

THE USE OF EITHER A CAST GRATE OR A STEEL GRATE WITH THE CAST FRAME SHALL BE THE OPTION OF THE CONTRACTOR.

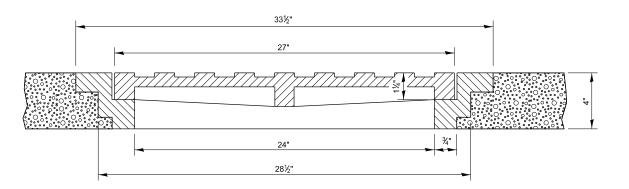
THE CAST GRATE MAY BE MADE OF EITHER GRAY IRON OR DUCTILE IRON CONFORMING TO THE STANDARD SPECIFICATIONS. DUCTULE IRON CASTING SHALL BE GRADE 65-45-12.

USER NAME = anthony grunstad	DESIGNED -	REVISED -								F.A.	:	SECTION	COUNTY	TOTAL	SHEET
	DRAWN -	REVISED -	STATE OF ILLINOIS		NLET S	PECIA	L (TYF	PE A GUT	TTER)	100				SHEETS	-110.
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION						•				CONTRACT	NO.	
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.			ILLINOIS FED. A	ID PROJECT		



NOTES:

# SECTION B-B

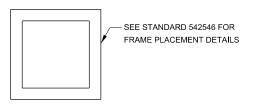


# **SECTION THRU FRAME & LID**

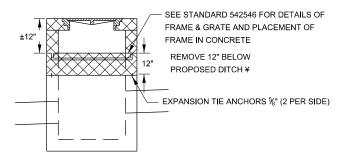
WEIGHT OF FRAME & LID, 300 LBS

# **MANHOLES, SPECIAL**

USER NAME = anthony.grunstad	DESIGNED -	REVISED -							F.A.	SECTION	COUNTY	TOTAL S	HEET
	DRAWN -	REVISED -	STATE OF ILLINOIS						IVIE.			SHEETS	140.
PLOT SCALE = 100.000 / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION								CONTRAC	T NO.	
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS STA.	TO STA.		ILLINOIS FED.	AID PROJECT		



## **PLAN VIEW**



#### NOTES:

THIS WORK SHALL BE DONE IN ACCORDANCE WITH SECTION 602 OF THE STANDARD SPECIFICATIONS, STANDARD 542546 AND THIS DETAIL.

THE PROPOSED TOP SHALL BE CAST-IN-PLACE OR PRECAST.

THE CONCRETE SHALL BE REMOVED ACCORDING TO ARTICLE 501.05 OF THE STANDARD SPECIFICATIONS.

THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR INLETS TO BE RECONSTRUCTED WITH NEW STANDARD 542546 FRAME AND GRATE WHICH PRICE SHALL INCLUDE THE REMOVAL AND DISPOSAL OF THE EXISTING FRAME AND GRATE & CONCRETE, FURNISHING & INSTALLING EXPANSION TIE ANCHORS, CLASS SI CONCRETE, AND FURNISHING & INSTALLING FRAME & GRATE.

# **FLUSH INLET BOX TO BE RECONSTRUCTED**

WITH NEW STANDARD 542546 FRAME AND GRATE

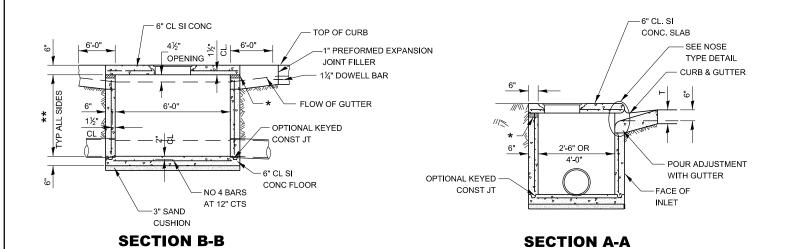
DESIGNER NOTE:

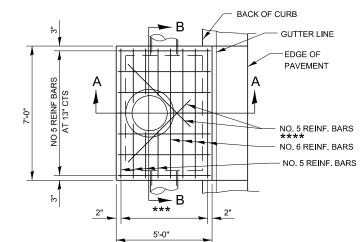
CHECK THE DIMENSIONS
ON THIS DETAIL, CHANGE
TO FIT YOUR CONDITIONS.

602-7

USER NAME = anthony.grunstad	DESIGNED -	REVISED -							F.A. RTE	SECTION	COUNTY TOTA	L SHEET
	DRAWN -	REVISED -	STATE OF ILLINOIS						IVIE.		311221	13 110.
PLOT SCALE = 100.000 / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION								CONTRACT NO.	
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS STA.	TO STA.		ILLINOIS FED. A	ID PROJECT	

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TOP SLAB REINFORCEMENT TO BE EPOXY COATED BARS.

\* THE WALL ADJUSTMENTS SHALL BE MADE WITH CONCRETE BUILDING BRICKS OR CLASS SI CONCRETE.

THE HEIGHT OF THE BOX MAY BE CONSTRUCTED 6" SHORT TO ALLOW FOR FIELD ADJUSTMENTS.

24" FOR TYPE

B-6.24

NO 6 TIE BARS

SLOPE 6%

PAVEMENT

TYPE "A"

\*\* 4'-0" TO 8'-0" - NO 5 REINFORCEMENT BARS AT 12" CENTERS EW 8'-0" TO 13'-0" - NO 5 REINFORCEMENT BARS AT 10" CENTERS EW 13'-0" TO 15'-0" NO 5 REINFORCEMENT BARS AT 8" CENTERS EW

\*\*\* 7 SPAN AT 8" INLET SPECIAL 3 & 4 5 SPAN AT 7%" INLET SPECIAL 5 & 6

\*\*\*\* 2 REBARS FOR INLET SPECIAL 3 & 4 4 REBARS FOR INLET SPECIAL 5 & 6

BARRIER CURB USE TYPE "A"

TOP SLAB

NOSE FOR INLET

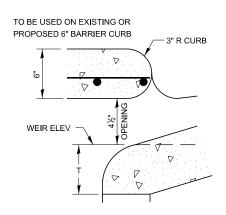
#### **TOP VIEW**

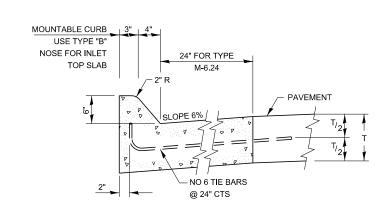
30" 24" \$\frac{22''}{23\frac{3}{4}''}\$

TOTAL WEIGHT 160 LBS

LIGHT WEIGHT MANHOLE CASTING

# **INLET SPECIAL NO. 3, 4, 5,6**





TYPE "B"

# **NOSE TYPE FOR INLET TOP SLAB**

USER NAME = anthony.grunstad	DESIGNED -	REVISED -								F.A. RTE	
	DRAWN -	REVISED -	STATE OF ILLINOIS		INLET			0. 3, 4, 5,	6	IXIL	+
PLOT SCALE = 100.000 / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION								
PLOT DATE = 10/3/23	DATE -	REVISED -	7	SCALE:	SHEET	OF	SHEETS	STA.	TO STA.		

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SEE STANDARD 602701 FOR DETAILS OF STEPS.

STEPS AT 12" TO 16" CENTERS.

NOTES:

STEPS SHALL BE OMITTED WHEN DEPTH OF INLET IS LESS THAN 5'

1" PREFORMED EXPANSION JOINTS AS SHOWN SHALL BE PROVIDED ON EACH SIDE OF INLET.

CLASS SI CONCRETE OR PRECAST CONCRETE SHALL BE USED THROUGHOUT.

THE SIDE WALLS MAY BE BUILT AS PRECAST SEGMENTAL SECTIONS.

THE INLET SHALL BE CAST-IN-PLACE OR PRECAST.

EXCEPT AS NOTED HEREIN INLET SPECIAL SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 602 OF THE STANDARD SPECIFICATIONS.

THE CONTRACT UNIT PRICE EACH FOR INLET SPECIAL SHALL INCLUDE THE COST OF FURNISHING AND INSTALLING THE FRAME, LID, REINFORCEMENT BARS, FLOOR AND TOP SLABS, CAST IRON STEPS (IF USED).

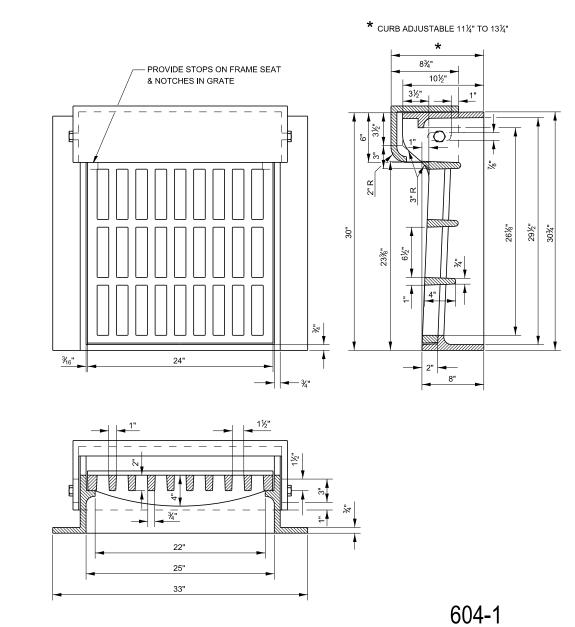
THE CURB AND GUTTER WILL BE PAID FOR SEPARATELY AND WILL BE MEASURED THROUGH THE INLET.

THE CURB AND GUTTER ADJACENT TO AND 6' ON EITHER SIDE OF THE INLET SHALL BE CONSTRUCTED AS SHOWN WITH NO ADDITIONAL COMPENSATION FOR THE TRANSITION.

602-8

CONTRACT NO.

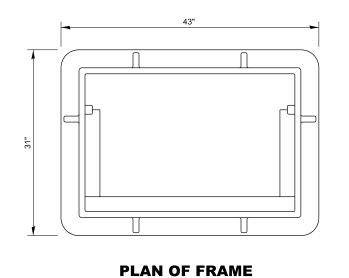
SECTION



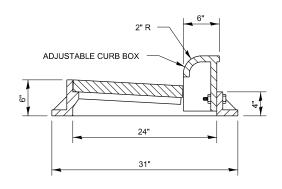
# FRAME AND GRATE SPECIAL

USER NAME = anthony.grunstad	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 10/3/23	DATE -	REVISED -

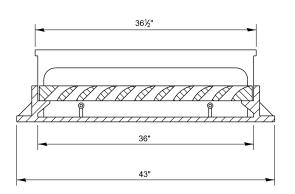
						F.A. RTE	SECT	ION		COUNTY	TOTAL SHEETS	SHEET NO.
										CONTRACT	NO.	
ALE:	SHEET	OF	SHEETS	STA.	TO STA.	ILLINOIS FE			FED. A	AID PROJECT		

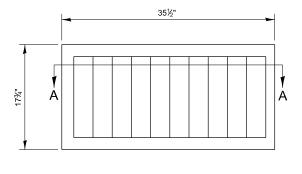


WITHOUT GRATE AND CURB BOX



TRANSVERSE SECTION

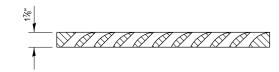




**PLAN OF GRATE** 

## **LONGITUDINAL SECTION**

R 3067 APPROXIMATE WEIGHT - 530 LBS

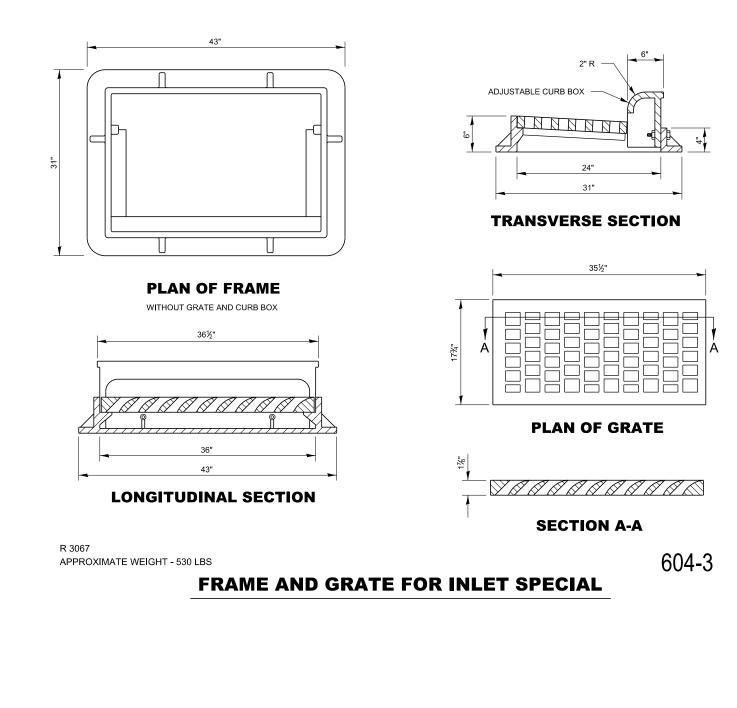


**SECTION A-A** 

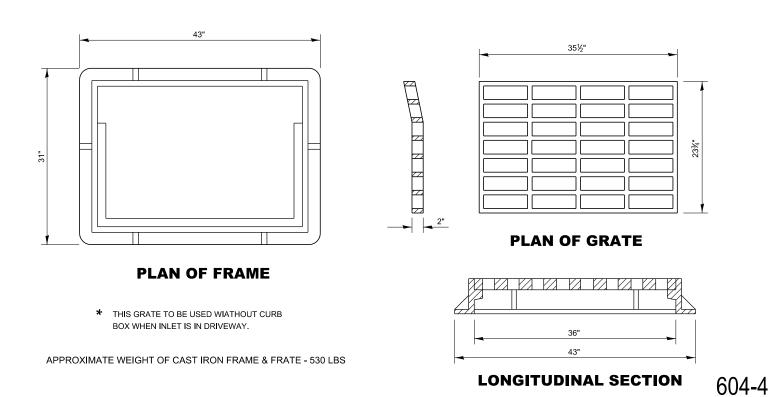
604-2

# FRAME AND GRATE FOR INLET SPECIAL

USER NAME = anthony grunstad	DESIGNED -	REVISED -								F.A.	SECTION	COUNTY	TOTAL SHE	.ET
	DRAWN -	REVISED -	STATE OF ILLINOIS							IVIE.		+	SILELIS NO	-
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION									CONTRACT	NO.	$\neg$
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS S	STA.	TO STA.		ILLINOIS FE	D. AID PROJECT		



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



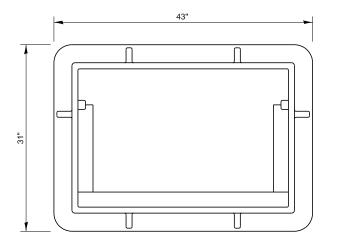
FRAME AND GRATE FOR INLET SPECIAL

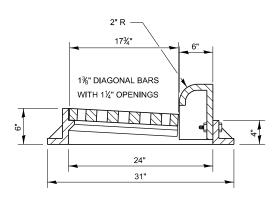
REVISED -

REVISED -

REVISED -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION F.A. SECTION COUNTY SHEETS NO SCALE: SHEET OF SHEETS STA. TO STA. | ILLINOIS FED. AID PROJECT |

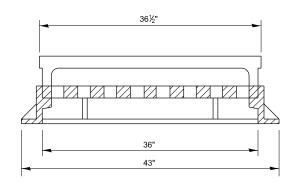




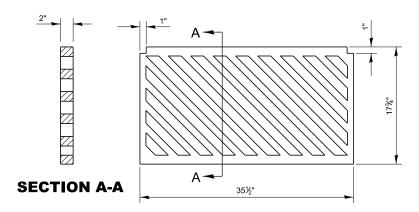
TRANSVERSE SECTION

#### **PLAN OF FRAME**

WITHOUT GRATE AND CURB BOX



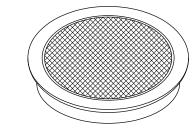
**LONGITUDINAL SECTION** 

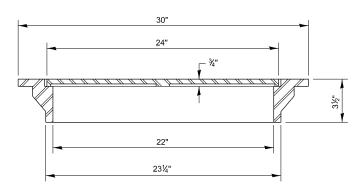


**PLAN OF GRATE** 

# FRAME AND GRATE FOR INLET SPECIAL

USER NAME = anthony grunstad	DESIGNED -	REVISED -								F.A.	SECTION	COUNTY	TOTAL SE	HEET
	DRAWN -	REVISED -	STATE OF ILLINOIS							1112.			SHEETS	<del></del>
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION									CONTRACT	Γ NO.	
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	TA	TO STA		ILLINOIS FE	ED AID PROJECT		_





TOTAL WEIGHT: 160 LBS

#### NOTE:

THE CLOSED LID MAY BE MADE OF EITHER GRAY IRON OR DUCTILE IRON. CONFORMING TO THE STANDARD SPECIFICATIONS.

DUCTILE IRON CASTING SHALL BE GRADE 60-40-18 AND SHALL BE PROOF LOADED IN ACCORDANCE WITH FEDERAL SPECIFICATIONS RR-F-621b, SECTION 3.8.

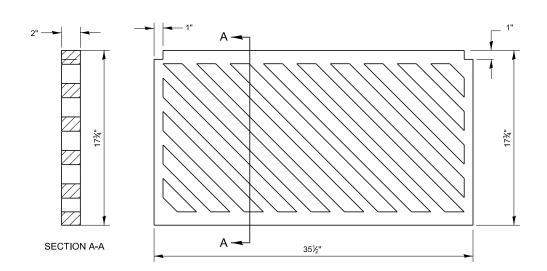
THE PROOF LOAD SHALL BE 25,000 LBS ON A 9" x 9" CAST BLOCK.

# **SPECIAL FRAME CLOSED LID**

604-6

USER NAME = anthony.grunstad	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 10/3/23	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FLOW DIRECTION

 $\leftarrow \frown$ 

# **PLAN VIEW OF CAST IRON GRATE**

1¾" DIAGONAL BARS WITH 1¼" OPENINGS

#### NOTES

THE CONTRACTOR SHALL FIELD CHECK THE SIZE OF THE EXISTING GRATE BEFORE ORDERING THE NEW GRATE TO INSURE THE CORRECT SIZE.

THIS WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH FOR GRATE SPECIAL.

THE EXISTING GRATES ARE TO BE SALVAGED AND TO BECOME THE PROPERTY OF THE

**GRATE SPECIAL** 

604-7

USER NAME = anthony.grunstad	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 10/3/23	DATE -	REVISED -

SCALE:

<u></u>		F.A. RTE	SECTI	:TION		COUNTY	TOTAL SHEETS	SHEET NO.			
								CONTRACT	NO.		
SHEET	OF	SHEETS	STA.	TO STA.	ILLINO			FED. AI	D PROJECT		

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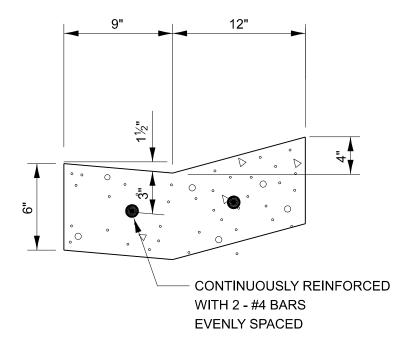
# **ISLAND SIGN POST SPACING DETAIL**

NOTE: THE ENGINEER SHALL DETERMINE THE NUMBER OF OPENINGS REQUIRED.

606-2

USER NAME = anthony.grunstad	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 10/3/23	DATE -	REVISED -

						F.A. RTE	SECT	ION		COUNTY	TOTAL SHEETS	
						CONTRAC				NO.		
SCALE:	SHEET	OF	SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT						

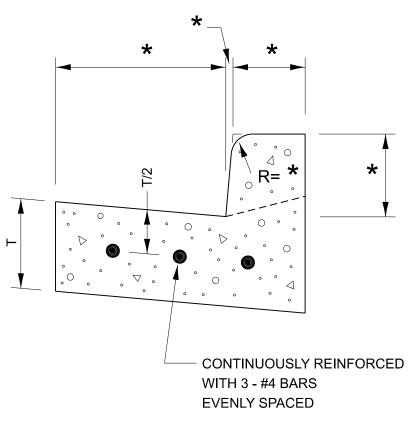


# FOR TYPE V GUTTER

606-3

## **DESIGNER NOTE:**

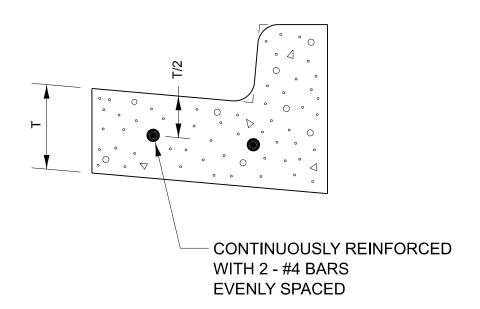
★ VARIES - SEE STANDARD 606001



# FOR COMBINATION CONCRETE CURB AND GUTTER

606-4

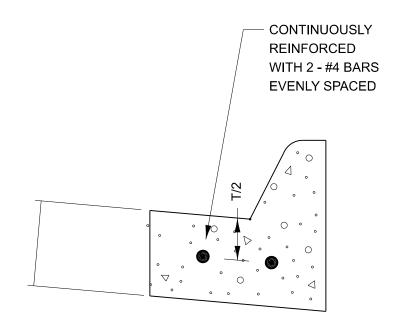
# DESIGNER NOTE:



# FOR COMBINATION CONCRETE CURB AND GUTTER TYPE B-6.18

606-5

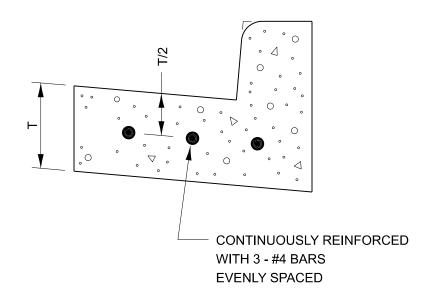
# DESIGNER NOTE:



# COMBINATION CONCRETE CURB AND GUTTER TYPE M-4.06

606-6

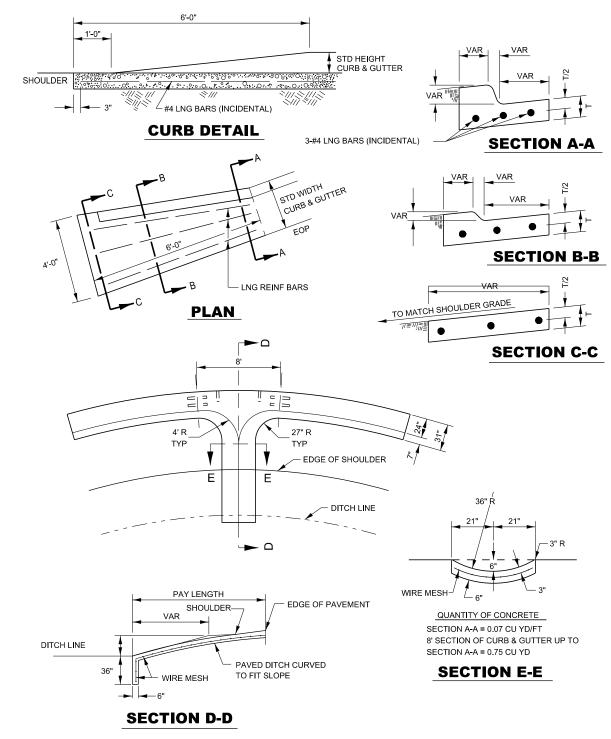
## DESIGNER NOTE:



# FOR COMBINATION CONCRETE CURB AND GUTTER TYPE B-6.24

606-7

# DESIGNER NOTE:



#### NOTE:

CLASS SI CONCRETE SHALL BE USED THROUGHOUT.
CURB AND GUTTER OUTLET SHALL BE TIED TO
PAVEMENT SLAB WITH 2 TIE BARS, 30" LONG 30" CENTERS. OUTLET SHALL BE TIED TO CURB AND
GUTTER AT CONTRACTION JOINTS AS SHOWN. GUTTER
OUTLET AND PAVED DITCH SHALL BE REINFORCED WITH
WIRE MESH HAVING A WEIGHT OF AT LEAST 58 LBS/SQ FT
COST TO BE INCLUDED IN THE UNIT PRICE PER CU YD
FOR CLASS SI CONCRETE (OUTLET).

# **CURB & GUTTER OUTLET, SPECIAL**

606-8

USER NAME = anthony.grunstad	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 10/3/23	DATE -	REVISED -

						F.A. RTE	SECT	ΠΟN		COUNTY	SI
										CONTRACT	
SCALE:	SHEET	OF	SHEETS	STA.	TO STA.			ILLINOIS	FED. A	ID PROJECT	П

CONCRETE CURB AND GUTTER SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 606 OF THE STANDARD SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS, STANDARD 606001 AND THIS DRAWING.

CLASS SI CONCRETE SHALL BE USED THROUGHOUT. A HOLE 1½" IN DIA AND 9" DEEP SHALL BE DRILLED IN THE EXISTING CONCRETE CURB AS SHOWN. A 1¼" x 18" SMOOTH DOWEL BAR SHALL BE GROUTED IN THE HOLE LONGITUDINALLY.

JOINTS OF A TYPE SIMILAR TO THAT IN THE UNDERLYING PAVEMENT (EXPANSION OR CONTRACTION) SHALL BE INSTALLED IN THE CONCRETE CURB IN ALIGNMENT WITH THE JOINTS IN THE PAVEMENT.

INLETS ARE NOT TO BE INCLUDED IN THE MEASUREMENT FOR CURB AND GUTTER REPLACEMENT.

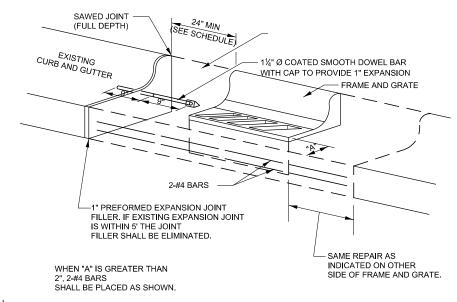
THE PROPOSED CONFIGURATION OF THE CURB AND GUTTER SHALL MATCH THAT REMOVED.

THE CONCRETE REQUIRED BETWEEN THE EDGE OF PAVEMENT AND FRAME AND GRATE SHALL BE CONSIDERED INCLUDED IN THE COST OF THE CURB AND GUTTER.

THE LOCATION OF THE DOWEL BAR SHALL BE DETERMINED BY THE ENGINEER.

THE COST OF ALL MATERIALS AND LABOR REQUIRED TO INSTALL THE JOINTS AND BARS IN THE CURBS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER FOOT FOR COMBINATION CURB AND GUTTER.

ALL EXISTING TIE BARS IN EDGE OF PAVEMENT SLAB THRU REPLACEMENT AREA SHALL BE CUT OFF.



# DETAILS FOR CURB & GUTTER REPLACEMENT AT INLET

606-9

							F.A. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
							CONTRACT NO.				
SCAL	.E:	SHEET	OF	SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT				

CONCRETE CURB AND GUTTER SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 606 OF THE STANDARD SPECIFICATIONS, SUPPLIMENTAL SPECIFICATIONS, STANDARD 606001 AND THIS DRAWING.

CLASS SI CONCRETE SHALL BE USED THROUGHOUT.
A HOLE 1½" IN DIA. AND 9" DEEP SHALL BE
DRILLED IN THE EXISTING CONCRETE CURB AS SHOWN.
A 1½"x18" SMOOTH DOWEL BAR SHALL BE GROUTED
IN THE HOLE LONGITUDINALLY.

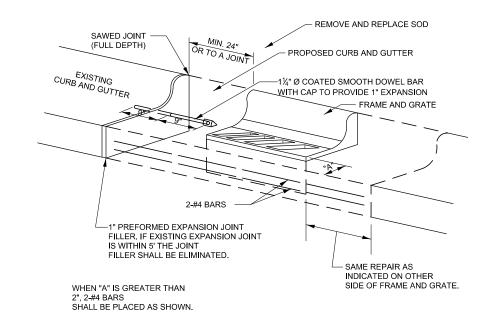
JOINTS OF A TYPE SIMILAR TO THAT IN THE UNDERLYING PAVEMENT (EXPANSION OR CONTRACTION) SHALL BE INSTALLED IN THE CONCRETE CURB IN ALIGNMENT WITH THE JOINTS IN THE PAVEMENT.

THE PROPOSED CONFIGURATION OF THE CURB AND GUTTER SHALL MATCH THE REMOVED.

THE LOCATION OF THE DOWEL BAR SHALL BE DETERMINED BY THE ENGINEER.

ALL EXISTING TIE BARS IN EDGE OF PAVEMENT SLAB THRU REPLACEMENT AREA SHALL BE CUT OFF.

THE WORK SHALL BE DONE IN ACCORDANCE WITH SECTION 602 OF THE STANDARD SPECIFICATIONS AND INCLUDES THE REMOVAL AND REPLACEMENT OF SOD, CONCRETE PAVEMENT AND/OR CURB AND GUTTER ADJACENT TO CATCH BASINS OR INLETS TO BE ADJUSTED OR RECONSTRUCTED AND SHALL BE INCLUDED IN THE PAY ITEM OF CATCH BASINS OR INLETS TO BE ADJUSTED OR RECONSTRUCTED AS SPECIFIED.

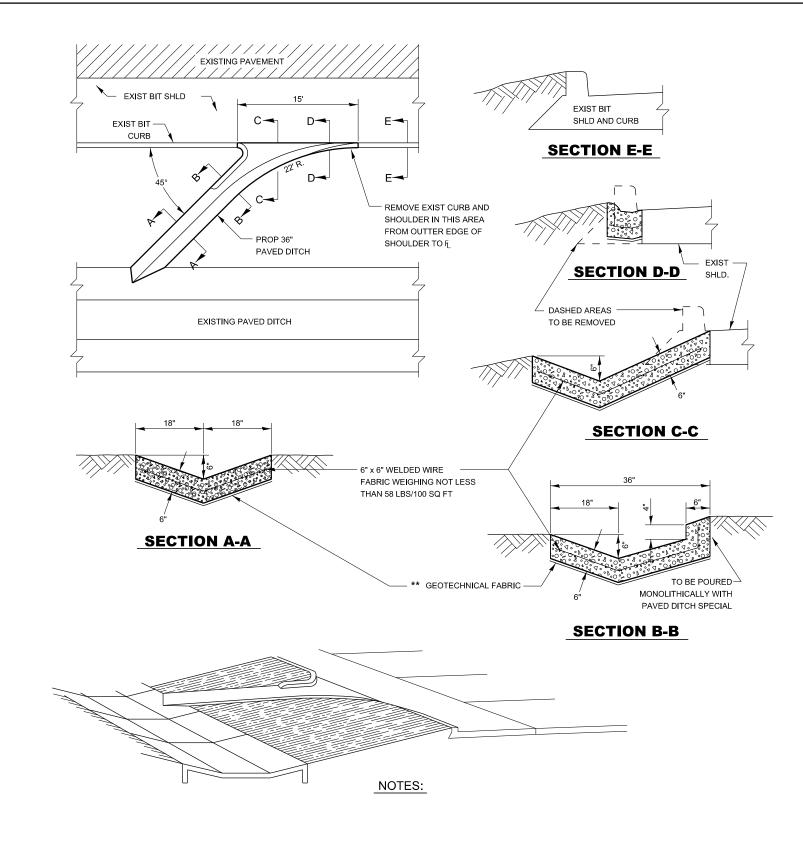


# DETAILS FOR CURB & GUTTER REPLACEMENT CATCH BASIN OR INLETS TO BE ADJUSTED OR RECONSTRUCTED

606-10

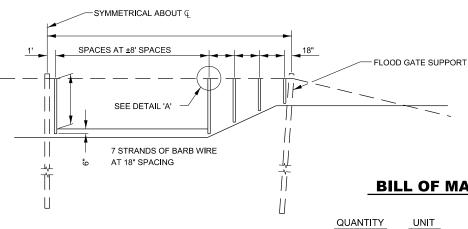
USER NAME = anthony.grunstad	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 10/3/23	DATE -	REVISED -	

						F.A. RTE	SEC	CTION		COUNTY	TOTAL SHEETS	
									CONTRACT	ΓNO.		
SCALE:	SHEET	OF	SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT						



# PAVED DITCH, SPECIAL

USER NAME = anthony.grunstad	DESIGNED -	REVISED -								F.A.	SECTION	COUNTY	TOTAL	SHEET
	DRAWN -	REVISED -	STATE OF ILLINOIS							IVIE.			SHEETS	
PLOT SCALE = 100,000 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION									CONTRACT	Γ NO.	
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.		ILLINOIS FED. A	AID PROJECT		



**BILL OF MATERIALS** 

EACH

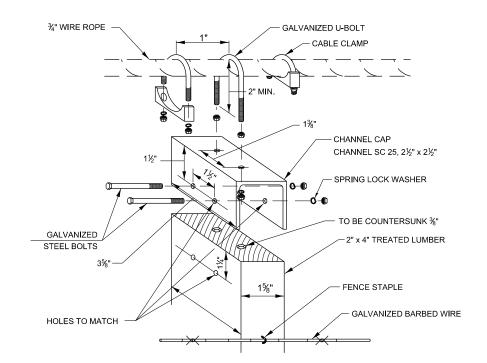
THE ITEMS LISTED IN THE BILL OF MATERIALS SHALL BE THE COST OF THE FLOOD GATE COMPLETE.

2"x4" TREATED LUMBER GALVANIZED BARBED WIRE SPECIAL STEEL CHANNEL FT SC 25, 2½"x2½" %"x3" GALVANIZED EACH STEEL BOLTS AND WASHERS %"x2" GALVANIZED EACH STEEL U-BOLTS

ITEM

LBS GALVANIZED FENCE STAPLES

GALVANIZED CABLE CLAMPS

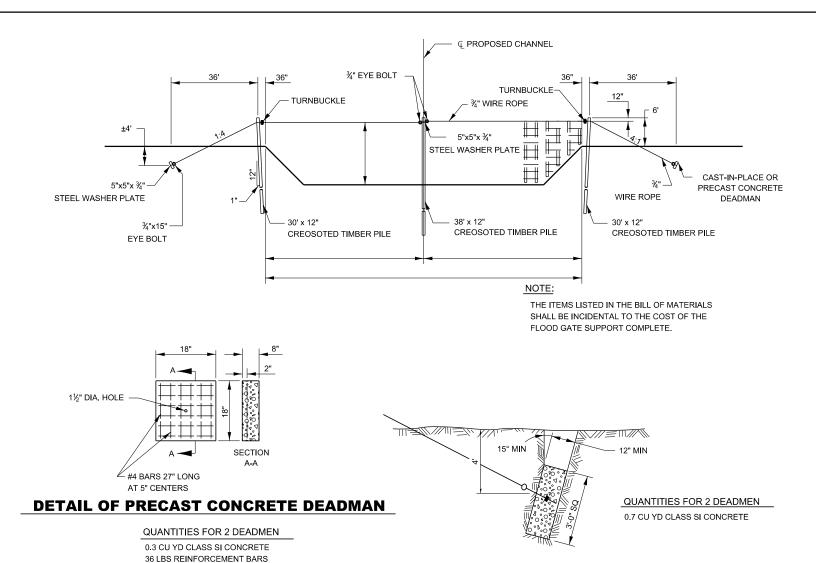


#### **DETAIL 'A'**

EXPLODED VIEW OF FLOOD GATE TO CABLE

# **DETAIL OF FLOOD GATE**

USER NAME = anthony.grunstad	DESIGNED -	REVISED -								F.A. RTF	SECTIO	N	COUNTY	TOTAL :	HEET
	DRAWN -	REVISED -	STATE OF ILLINOIS							1112.				SHEETS	110.
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION										CONTRACT	NO.	
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.		IL	LINOIS FED. A	ID PROJECT		



# DETAIL OF CAST-IN-PLACE CONCRETE DEADMAN

#### NOTE

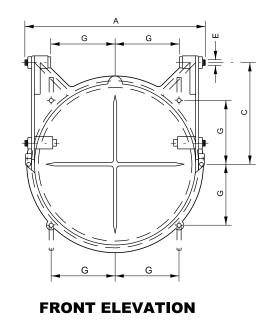
PRECAST CONCRETE DEADMEN AND CAST-IN-PLACE CONCRETE DEADMEN SHALL BE CONSTRUCTED OF CLASS SI CONCRETE

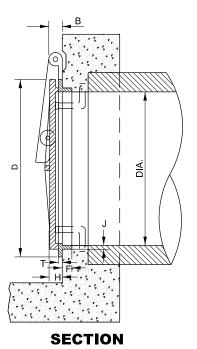
## **BILL OF MATERIALS**

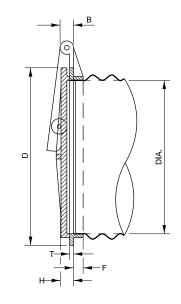
QUANTITY 240	UNIT_ FT	<u>ITEM</u> ¾" DIA. GALVANIZED WIRE ROPE
4	EACH	%" DIA. x 15" GALVANIZED EYE BOLTS WITH NUTS AND WASHERS
2	EACH	¾" DIA. GALVANIZED TURNBUCKLES
20	EACH	¾" DIA. GALVANIZED CABLE CLAMPS
4	EACH	5" x 5" x ¾" STEEL WASHER PLATES
2	EACH	PRECAST CONCRETE DEADMAN OR CAST-IN-PLACE CONCRETE DEADMAN
98	FT	12" CREOSOTED TIMBER PILE (INCLUDES FURNISHING AND DRIVING TIMBER PILES)

# **DETAIL OF FLOOD GATE SUPPORT**

USER NAME = anthony.grunstad	DESIGNED -	REVISED -							F.A. RTF	SECTION	COUNTY	TOTAL	SHEET
	DRAWN -	REVISED -	STATE OF ILLINOIS						IVIE.			SHEETS	-110.
PLOT SCALE = 100.000 / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION								CONTRAC	T NO.	
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS STA.	TO STA.		ILLINOIS FED	. AID PROJECT		





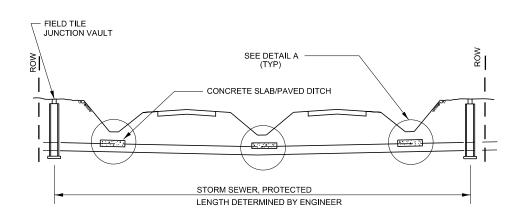


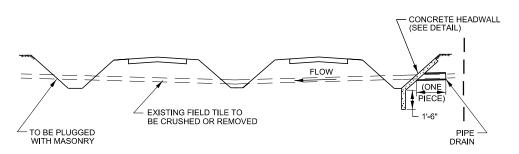
SECTION SHOWING METHOD OF APPLICATION TO CORRUGATED METAL PIPE

## TABLE OF DIMENSIONS

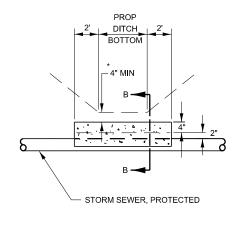
DIAM	А	В	С	D	Е	F	G	Н	J	Т
8"	10 ¾"	1 %"	5 <sup>1</sup> 1/ <sub>16</sub> "	10"	1/2"	1 1/8"	3 %6"	1 ¼"	3%"	3%"
10"	12 ¾"	1 %"	7 %"	12 ¼"	1/2"	1 1/8"	4 %"	1 ½"	1/2"	7⁄16"
12"	14 ¾"	1 %"	8 ½"	14 ½"	1/2"	1 %"	5 1/8"	1 ½"	1/2"	1/2"
14"	17 ¼"	1 %"	9 %"	16 ¾"	1/2"	1 ¼"	5 <sup>15</sup> / <sub>16</sub> "	1 ½"	1/2"	%16"
15"	17 ¾"	1 %"	10 %"	17 ¾"	1/2"	1 ¼"	6 ¼"	1 ½"	1/2"	%16"
16"	19 ¼"	1 %"	11 ¼"	18 ¾"	1/2"	1 ¼"	6 %"	1 ½"	1/2"	% <sub>16</sub> "
18"	22 ¼"	2"	12 %"	21"	3/4"	1 % <sub>16</sub> "	7 1/16"	1 ¾"	%16"	%6"
20"	24 ¾"	2"	14 %"	23 ¾"	3/4"	1 %"	8 ¼"	1 ¾"	5%"	%"
21"	25 ¼"	2"	14 %"	24 ¼"	3/4"	1 %"	8 % <sub>16</sub> "	1 ¾"	<b>5</b> %"	5%"
24"	28 ¼"	2"	17"	27 ½"	3/4"	1 ½"	9 ¾"	1 ¾"	5%"	5%"
30"	35 ¼"	2 ½"	20 ½"	34"	1"	1 % <sub>16</sub> "	12"	2"	1 1/16"	%"
36"	41 ½"	2 ½"	25"	40 %"	1"	2 1/16"	14 ¾ <sub>6</sub> "	2 1/4"	1 %"	<sup>1</sup> ½ <sub>16</sub> "
42"	47 ½"	2 ½"	29 ¾"	47"	1"	2 ¾ <sub>6</sub> "	16 %"	2 1/4"	1 %"	3/4"
48"	53 ½"	2 ½"	34"	54"	1"	2 ¾"	19 1/16"	2 1/4"	1 %"	3/4"
54"	60 ¾"	2 ½"	38"	62 ¼"	1 1/4"	2 ¾"	22"	3"	1 ½"	½"
60"	67"	2 ½"	42"	68 ½"	1 1/4"	2 ¾"	24 1/4"	3"	1 ½"	<sup>15</sup> / <sub>16</sub> "
66"	73 %"	2 ½"	47"	75"	1 1/4"	2 %"	26 ½"	3"	1 ½"	1"
72"	79"	2 ½"	51"	82"	1 1/4"	3"	29"	3"	1 ½"	1"
78"	86"	2 ½"	55 ¼"	88 ¾"	1 1/4"	3 ½"	31 ¾"	3"	1 %"	1 1/8"
84"	92 ½"	3 ½"	59 ½"	95 ½"	1 ½"	3 ½"	33 ¾"	3"	1 ¾"	1 ¼"

USER NAME = anthony.grunstad	DESIGNED -	REVISED -			AUTOMATIC FLAP GATES							CTION	COUNTY	TOTAL	SHEET
	DRAWN -	REVISED -	STATE OF ILLINOIS		ES	1112.				SHEETS					
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION									CONTRACT	T NO.	$\overline{}$	
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.			ILLINOIS FED. A	D PROJECT		



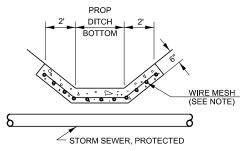


FIELD TILE REPLACEMENT



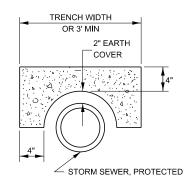
# DETAIL A

- \* IF A 4" COVER CAN NOT BE PROVIDED A PAVED DITCH SHALL BE CONSTRUCTED AS SHOWN IN DETAIL C. NOTES
- 1. WIDTH OF CONCRETE SLAB SHALL BE THE SAME AS THE TRENCH WIDTH IN ACCORDANCE WITH SECTION 550 OF THE STD. SPECIFICATIONS, OR 3' MIN.
- 2. CONCRETE FOR SLAB, HEADWALL AND PAVED DITCH SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR "MISCELLANEOUS CONCRETE."
- 3. COST OF FURNISHING AND INSTALLING WIRE MESH SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER CUBIC YARD FOR MISCELLANEOUS CONCRETE. WIRE MESH TO WEIGH NOT LESS THAN 58# PER 100 SQ FT



# DETAIL C

NO SCALE



36" OR 24" NON-REINF CONC PIPE FULL BELL AND SPIGOT

INLET

CLASS SI CONCRETE OR PRECAST REINFORCED CONCRETE SLABS

NOT LESS THAN 12" WIDE

SAND CUSHION

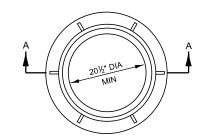
1 NO 4 BAR LIFT LOOP

OUTLET

#### ALTERNATE MATERIALS FOR WALLS PRECAST REINFORCED CONCRETE RISERS 5" CONCRETE MASONRY UNIT MONOLITHIC CONCRETE

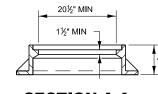
#### NOTES

- 1. THE CONTRACT UNIT PRICE FOR FIELD TILE JUNCTION VAULT SHALL INCLUDE THE COST OF FURNISHING AND PLACING THE FRAME AND GRATE OR PRECAST CONCRETE LID AND WHEN REQUIRED, THE SAND CUSHION.
- 2. ALL FIELD TILE JUNCTION VAULTS SHALL BE 2'-0" IN DIAMETER UNLESS OTHERWISE NOTED ON THE PLANS.





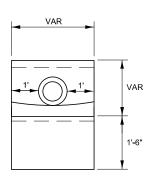
± 145#



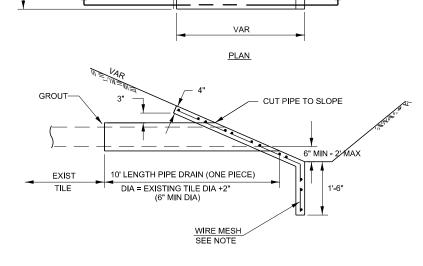
**SECTION A-A** 

#### NOTES

- 1. ANY STORM SEWER SPECIAL OR BACKSLOPE DRAIN OUTLET INTO A DITCH SHALL HAVE
  A HEADWALL BUILT IN ACCORDANCE WITH THIS
- 2. COST OF FURNISHING AND INSTALLING WIRE MESH SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER CUBIC YARD FOR MISCELLANEOUS CONCRETE. WIRE MESH TO WEIGH NOT LESS THAN 58# PER 100 SQ FT



**END VIEW** 



#### **SECTION A-A**

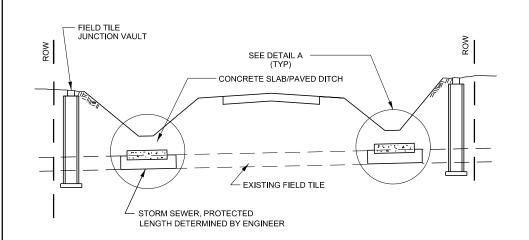
# **CLASS SI CONCRETE HEADWALLS**

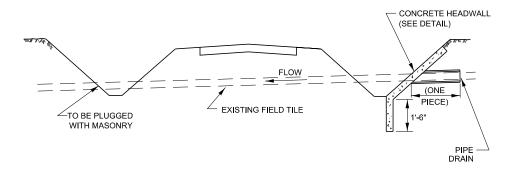
# **FIELD TILE JUNCTION VAULT**

DIA AS REQUIRED

TO FIT JUNCTION VAULT

USER NAME = anthony.grunstad	DESIGNED -	REVISED -								F.A.	SECTION	COUNTY	TOTAL	SHEET
	DRAWN -	REVISED -	STATE OF ILLINOIS							TOTE:			SHEETS	
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION									CONTRACT	r NO.	
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.		ILLINOIS FED.	AID PROJECT		





# PROP DITCH 2' BOTTOM BOTTOM B B B STORM SEWER, PROTECTED

# **DETAIL A**NO SCALE

\* IF A 4" COVER CAN NOT BE PROVIDED A PAVED DITCH SHALL BE CONSTRUCTED AS SHOWN IN DETAIL C.

#### NOTES

- WIDTH OF CONCRETE SLAB SHALL BE THE SAME
   AS THE TRENCH WIDTH IN ACCORDANCE WITH
   SECTION 550 OF THE STD. SPECIFICATIONS, OR 3' MIN.
- 2. CONCRETE FOR SLAB, HEADWALL AND PAVED DITCH SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR "MISCELLANEOUS CONCRETE."

NOTES

1. ANY STORM SEWER OR FIELD TILE OUTLET INTO A DITCH SHALL HAVE A HEADWALL BUILT

IN ACCORDANCE WITH THIS DETAIL.

UNIT PRICE PER CUBIC YARD FOR

LESS THAN 58# PER 100 SQ FT

2. COST OF FURNISHING AND INSTALLING WIRE

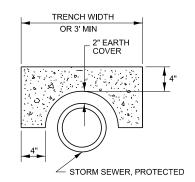
MESH SHALL BE INCLUDED IN THE CONTRACT

MISCELLANEOUS CONCRETE. WIRE MESH TO WEIGH NOT

3. COST OF FURNISHING AND INSTALLING WIRE MESH SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER CUBIC YARD FOR MISCELLANEOUS CONCRETE. WIRE MESH TO WEIGH NOT LESS THAN 58# PER 100 SQ FT

# PROP DITCH 2' WIRE MESH (SEE NOTE)

# DETAIL C

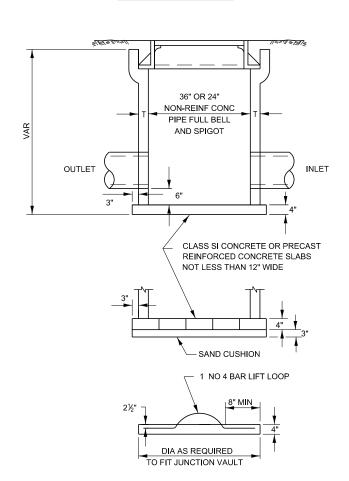


# ALTERNATE MATERIALS FOR WALLS T PRECAST REINFORCED CONCRETE RISERS 4" CONCRETE MASONRY UNIT 5" MONOLITHIC CONCRETE 6"

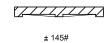
#### NOTES

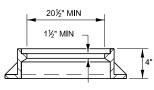
- THE CONTRACT UNIT PRICE FOR FIELD TILE JUNCTION
   VAULT SHALL INCLUDE THE COST OF FURNISHING AND
   PLACING THE FRAME AND GRATE OR PRECAST CONCRETE
   LID AND WHEN REQUIRED, THE SAND CUSHION.
- 2. ALL FIELD TILE JUNCTION VAULTS SHALL BE 2'-0" IN DIAMETER UNLESS OTHERWISE NOTED ON THE PLANS.

#### **SECTION B-B**



# A 20½" DIA MIN



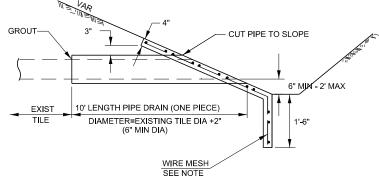


**SECTION A-A** 

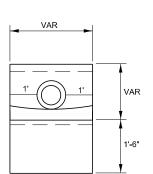
## FIELD TILE REPLACEMENT



VAR PLAN



**SECTION A-A** 



**END VIEW** 

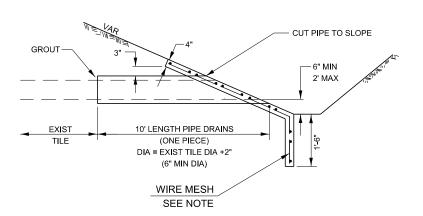
## **CLASS SI CONCRETE HEADWALLS**

### FIELD TILE JUNCTION VAULT

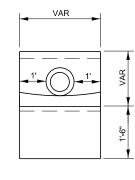
USER NAME = anthony.grunstad	DESIGNED -	REVISED -								F.A. RTF	SECTION	COUNTY	TOTAL S	HEET
	DRAWN -	REVISED -	STATE OF ILLINOIS							INIE			SHEETS	110.
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION									CONTRACT	NO.	
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.		ILLINOIS FED. A	ID PROJECT		

#### NOTES

- ANY FIELD TILE OUTLET INTO A DITCH SHALL HAVE
   A HEADWALL BUILT IN ACCORDANCE WITH THIS DETAIL.
- 2. COST OF FURNISHING AND INSTALLING WIRE MESH SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER CUBIC YARD FOR MISCELLANEOUS CONCRETE. WIRE MESH TO WEIGH NOT LESS THAN 58# PER 100 SQ FT



VAR PLAN



**END VIEW** 

**SECTION A-A** 

611-3

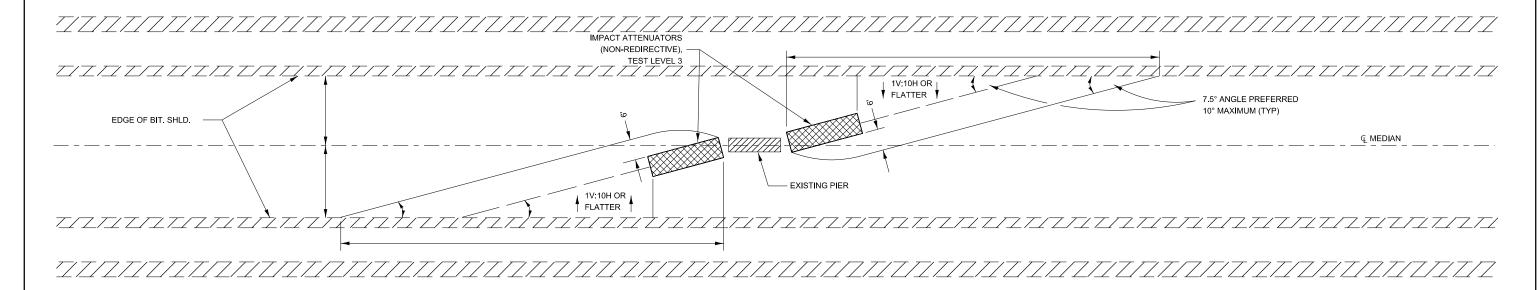
#### PIPE DRAINS & CONCRETE HEADWALLS

USER NAME = anthony.grunstad	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 10/3/23	DATE -	REVISED -	

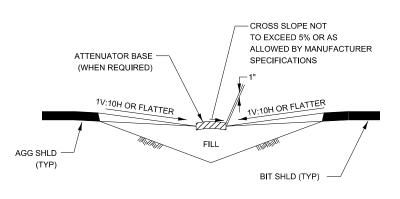
.

#### **GENERAL NOTES**

- 1. THE 10:1 SLOPE CONTROLS NOSE OF ATTENUATOR BASE ELEVATION.
- 2. ATTENUATOR BASE GRADE PARALLELS EDGE OF PAVEMENT GRADE.
- 3. SLOPE ADJACENT TO ATTENUATOR BASE SHALL BE 10:1 OR FLATTER.



#### **IMPACT ATTENUATOR LAYOUT AND GRADING PLAN**

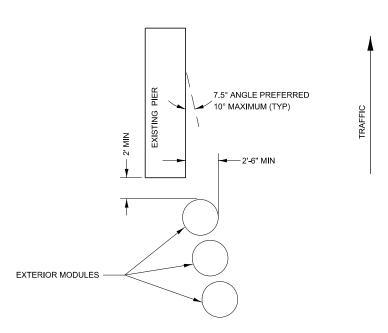


#### SECTION A - A

NOTE:

ATTENUATOR BASE SHALL BE PER MANUFACTURER SPECIFICATIONS EXCEPT SAND MODULE SYSTEMS SHALL HAVE THE FOLLOWING ADDITIONAL REQUIREMENTS:

- ATTENUATOR BASE SHALL PROVIDE A 1' BUFFER ALONG
  THE SIDES AND FRONT OF THE ARRAY.
- 2. SAND MODULE SYSTEMS SHALL BE PLACED ON A HMA OR CONCRETE BASE.



#### **TYPICAL EXTERIOR MODULE LAYOUT**

TO STA.

SECTION

631-1

COUNTY

CONTRACT NO.

USER NAME = anthony grunstad	DESIGNED -	REVISED -						
	DRAWN -	REVISED -	STATE OF ILLINOIS	IMI	PACT IN	STALI	LATIO	N DETAILS
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION					
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.

MODEL: dist 3 details

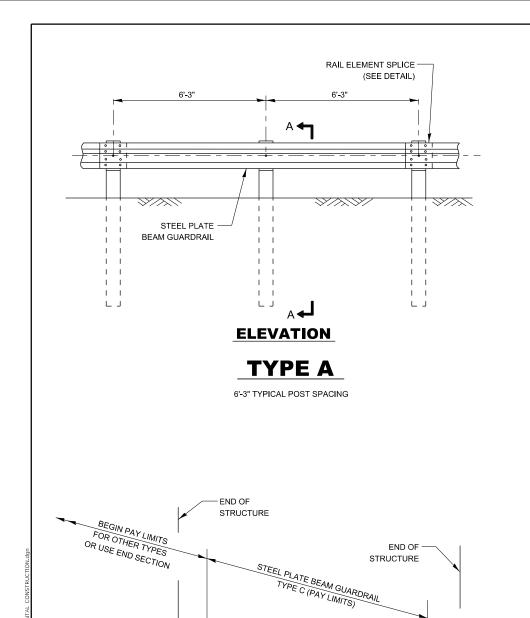
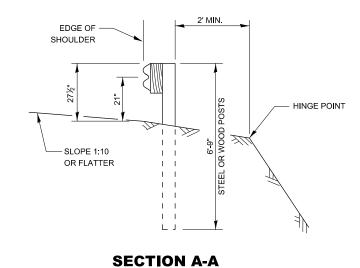
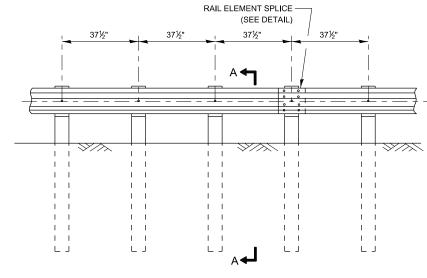


PLATE A

2 - 2 UNIT EXPANSION ANCHORS

FOR %" BOLTS WITH STANDARD WASHERS. (STAGGERED)

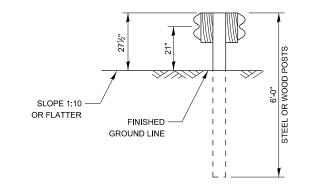


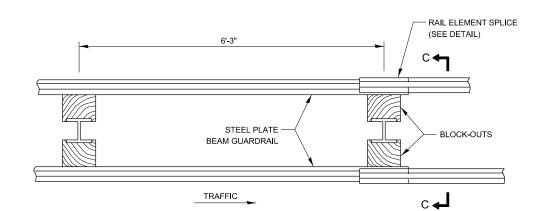


#### **ELEVATION**

### TYPE B

37½" CLOSED POST SPACING

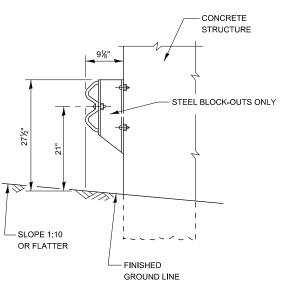




#### **SECTION C-C**

# **PLAN** TYPE D

DOUBLE STEEL PLARE BEAM GUARDRAIL 6'-3" TYPICAL POST SPACING



#### **GENERAL NOTES**

ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

THE EXISTING STEEL POSTS MAY BE DRILLED TO MATCH THE BOLT PATTERN SHOWN HEREIN FOR THE WOOD BLOCK-OUTS, OR A NEW STEEL POST SHALL

THIS DETAIL IS APPLICABLE TO THE GUARDRAIL SYSTEM USED PRIOR TO JANUARY 1, 2007. FOR DETAILS ON THE MIDWEST GUARDRAIL SYSTEM SEE STANDARD 630001.

#### TYPE C 37½" BLOCK-OUT SPACING

BEGIN PAY LIMITS
FOR OTHER TYPES

#### **SECTION B-B**

#### JSER NAME = anthony.grunstad DESIGNED -REVISED DRAWN REVISED CHECKED REVISED PLOT DATE = 10/3/23 REVISED DATE

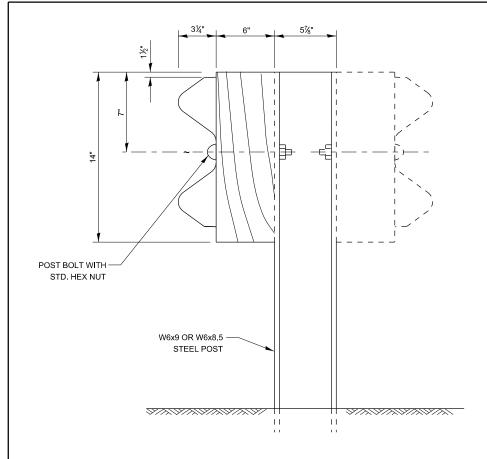
AFTER THIS POST HAS BEEN LOCATED, DRILL HOLES IN

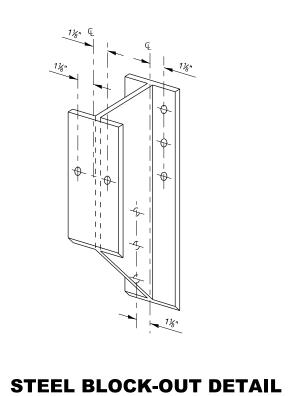
CONCRETE FOR BLOCK-OUT

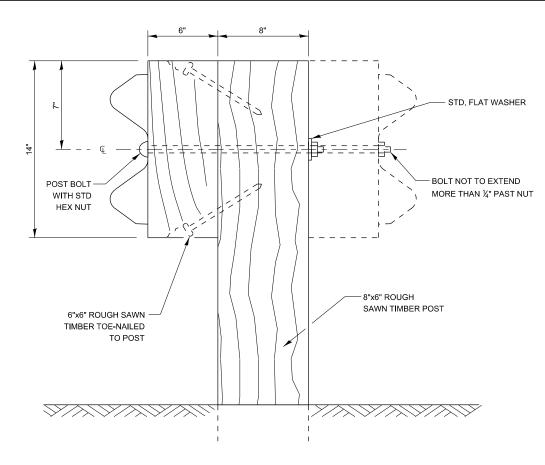
ATTACHMENTS.

STATE OF ILLINOIS **DEPARTMENT OF TRANSPORTATION** 

						F.A. RTE	SECT	ION		COUNTY	TOTAL SHEET
REMOVE AN	ID KEE	RECT	TEEL P	LATE	BEAM GUARDRAIL						
										CONTRACT	NO.
SCALE:	SHEET	OF	SHEETS	STA.	TO STA.			ILLINOIS	FED. A	ID PROJECT	

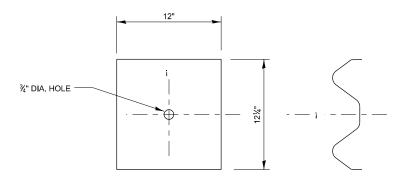






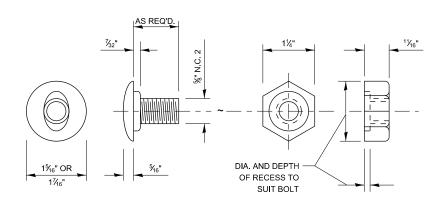
### STEEL POST CONSTRUCTION

## **WOOD POST CONSTRUCTION**



NOTE:
PLATE A SHALL BE PLACED BETWEEN RAIL
ELEMENT AND BLOCK-OUT AT NON-SPLICE
MOUNTING POINTS ONLY WHEN STEEL
BLOCK-OUTS ARE USED.

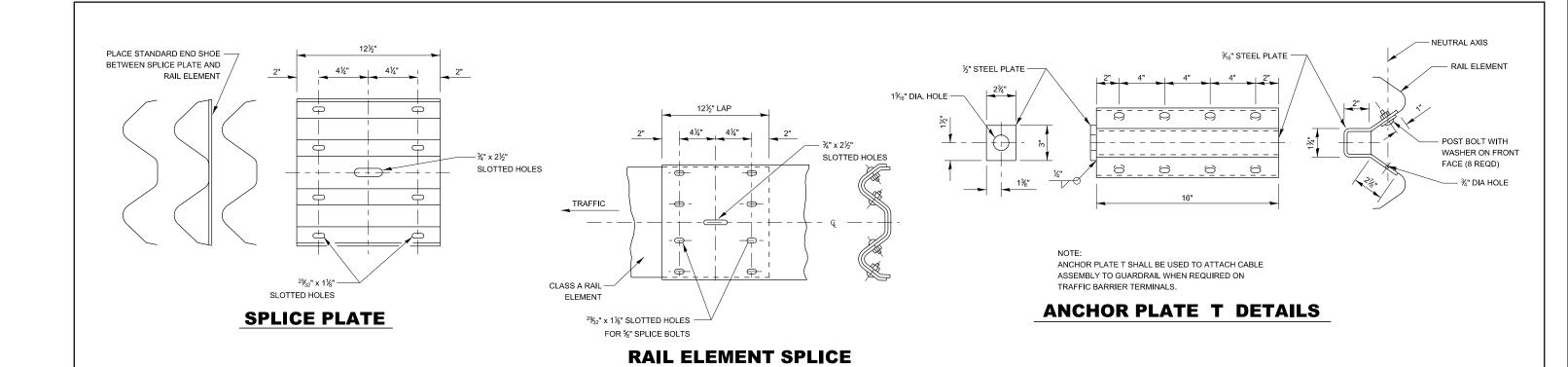
## PLATE A

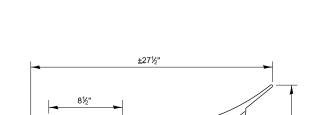


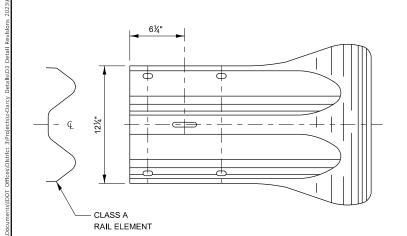
### **POST OR SPLICE BOLT & NUT**

633-1B

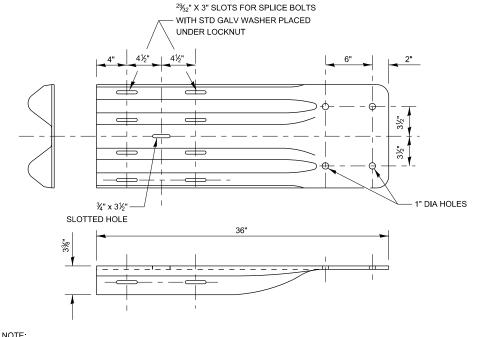
USER NAME = anthony.grunstad	DESIGNED -	REVISED -								F.A. BTF	SECTION	COUNTY	TOTAL SHEET
	DRAWN -	REVISED -	STATE OF ILLINOIS	REMOVE AN	ID REER	ECT ST	'EEL P	PLATE BEA	M GUARDRAIL				
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION									CONTRACT	T NO.
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.		ILLINOIS FED. AI	ID PROJECT	







# **END SECTION**



WHEN END SHOE IS ATTACHED TO A BRIDGE PARAPET WHICH HAS AN EXPANSION JOINT, THE BOLTS SHALL BE PROVIDED WITH A LOCKNUT OR DOUBLE NUT AND SHALL BE TIGHTENED ONLY TO A POINT THAT WILL ALLOW GUARDRAIL MOVEMENT.

THE STANDARD END SHOE SHALL BE ATTACHED TO THE CONCRETE WITH PRE-DRILLED OR SELF-DRILLING ANCHOR BOLTS. THE ANCHOR CONE SHALL BE SET FLUSH WITH THE SURFACE OF THE CONCRETE.

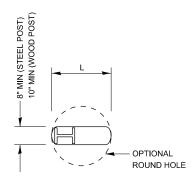
EXTERNALLY THREADED STUDS PROTRUDING FROM THE SURFACE OF THE CONCRETE WILL NOT BE PERMITTED.

# 22¾" 41/4" ¾" x 2½" 1" DIA HOLES SLOTTED HOLES (OPT) <sup>2</sup>%<sub>2</sub>" x 1%" SLOTTED HOLES

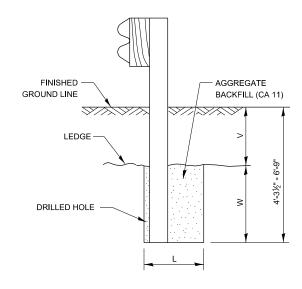
### **ALTERNATE END SHOE**

<b>END</b>	SHOE

												63	3-1C
USER NAME = anthony.grunstad	DESIGNED -	REVISED -								F.A.	SECTION	COUNTY	TOTAL SHEET
	DRAWN -	REVISED -	STATE OF ILLINOIS	REMOVE A	ND REE	RECT S	TEEL	PLATE BE	AM GUARDRAIL	IXIE.			SHEETS NO.
PLOT SCALE = 100.000 / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION									CONTRACT	NO.
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.		ILLINOIS FED.	AID PROJECT	



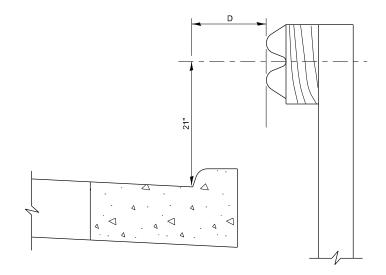
#### **PLAN**



NOTE: LEDGE LINE IS TOP OF ROCK LEDGE OR HARD SLAG FILL.

#### **ELEVATION**

# FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED

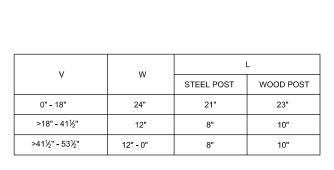


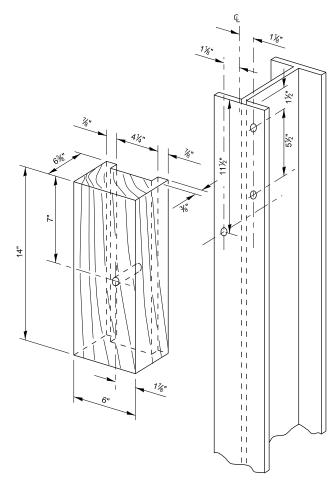
#### NOTE:

IF IT IS NECESSARY FOR D TO BE MORE THAN 12" AND LESS THAN 10"-0" TYPE M-2 CURB AND GUTTER (STD 606001) SHALL BE USED IN FRONT OF AND IN ADVANCE OF THE GUARDRAIL.

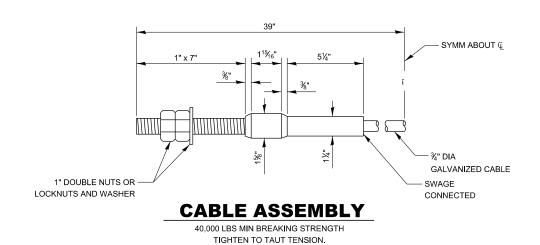
#### **GUARDRAIL PLACED BEHIND CURB**

(D = 0 DESIRABLE TO 12" MAXIMUM)



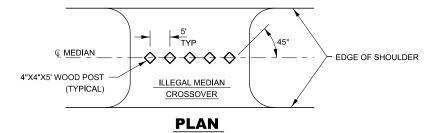


# WOOD BLOCK-OUT AND STEEL POST DETAILS



633-1D

USER NAME = anthony.grunstad	DESIGNED -	REVISED -								F.A. RTF	SECTION	COUNTY	TOTAL SHEETS	SHEET
	DRAWN -	REVISED -	STATE OF ILLINOIS	REMOVE A	ND REE	RECT S	TEEL	PLATE B	BEAM GUARDRAIL	1112			OHEE 15	-1101
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION									CONTRACT	NO.	
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.		ILLINOIS FED. AI	ID PROJECT		



# 4"X4"X5" WOOD POST (TYPICAL)

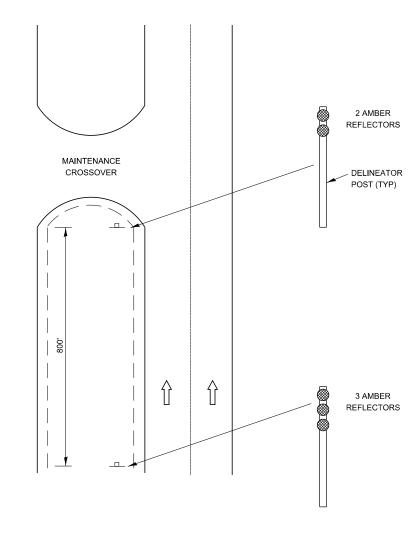
# ELEVATION WOOD POST DETAIL

634-1

USER NAME = anthony.grunstad	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 10/3/23	DATE -	REVISED -

							F.A. RTE	SECTION		COUNTY	TOTAL SHEETS	SHEET NO.
١												
ļ										CONTRACT	NO.	
	SCALE:	SHEET	OF	SHEETS	STA.	TO STA.		ILLINOIS	FED. All	D PROJECT		

III:FWIDOTADOCAINETISTIDO I OTTRESTUBRICE STATOJECESKA-DATCY DETAILSTUD DETAIL REVISIOUS ZOZSTOOUG-999 INCLID



# DELINEATION FOR MAINTENANCE CROSSOVER (TYPICAL FOR BOTH DIRECTIONS)

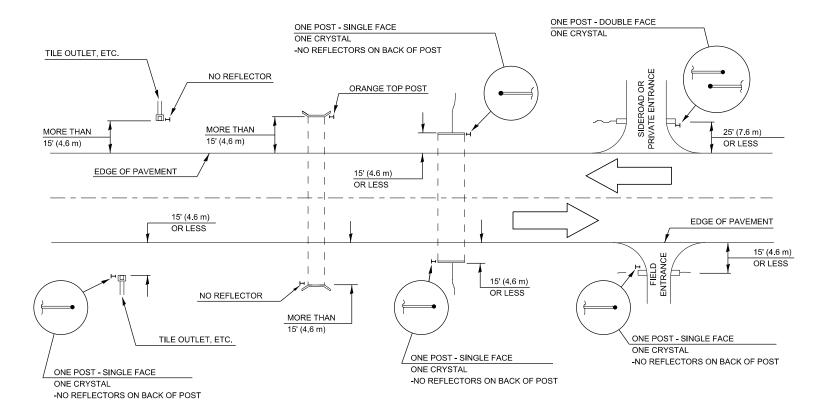
635-2

USER NAME = anthony.grunstad	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 10/3/23	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

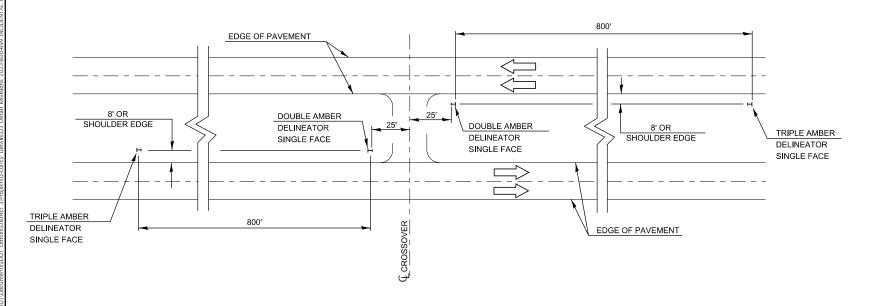
					F.A. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
							CONTRACT	NO.		
ALE: SHEET	OF	SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT					

#### **IDENTIFICATION OF ROADSIDE HAZARDS FOR TWO-LANE ROADWAYS**



#### **MEDIAN DELINEATORS AT CROSSOVER**

(FOR INTERSTATES, EXPRESSWAYS, DUAL HIGHWAYS)



#### **BILL OF MATERIALS**

DELINEATOR TYPE	SINGLE FACE	DOUBLE FACE	NO REFLECTOR	TOTAL DELINEATORS
SINGLE CRYSTAL			N/A	
NO REFLECTOR			TOTAL	

#### NOTE:

DELINEATORS FOR ROADSIDE HAZARDS SHALL ONLY BE PLACED AT LOCATIONS WHERE THERE IS NO GUARDRAIL, OR OTHER PERMANENT BARRIER, ON THE SAME SIDE OF THE ROAD AS THE HAZZARD.

DELINEATORS FOR ROADSIDE HAZARDS SHALL ONLY BE PLACED AT LOCATIONS WHERE DELINEATORS ARE NOT IN PLACE ALONG THE EDGE OF SHOULDER.

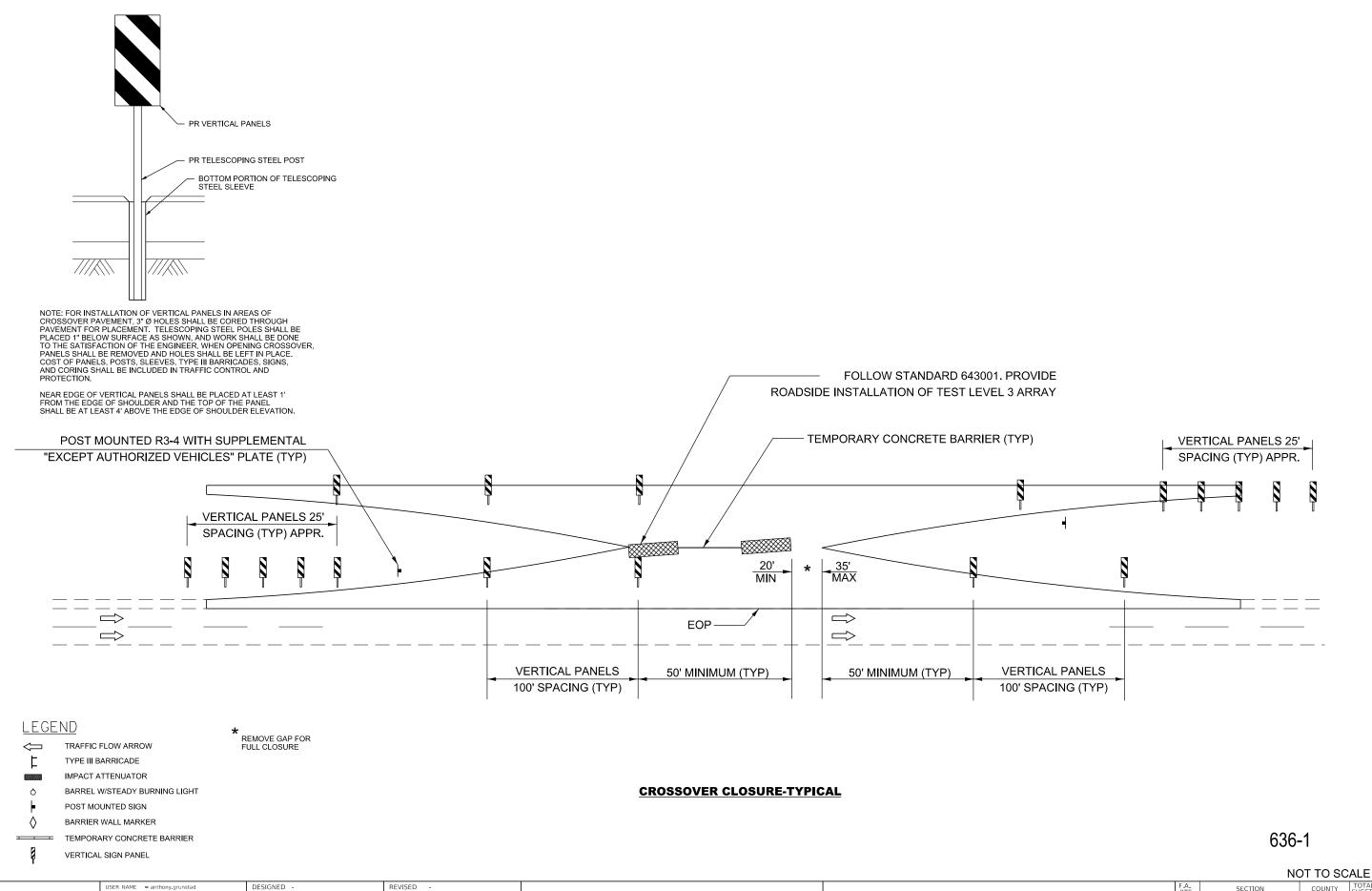
EACH POST SHALL BE CONSIDERED AS ONE DELINEATOR FOR PAYMENT, REGUARDLESS OF THE NUMBER OF DELINEATORS ATTACHED TO IT.

FOR ONE-WAY AND INTERSTATE ROADWAYS THE APPLICATION SHALL BE SIMILAR WITH DELINEATORS PLACED ON THE TRAFFIC APPROACH SIDE OF HAZARDS AND OBJECTS, ONLY SINGLE FACE DELINEATORS WILL BE REQUIRED ON ONE-WAY ROADWAYS, CRYSTAL ON THE RIGHT SIDE AND AMBER ON THE LEFT SIDE.

FOR OTHER DELINEATOR APPLICATIONS, REFER TO HIGHWAY STANDARD 635001.

DESIGNER NOTE:
REMOTE OPENING FOR FILL CLOSURE.

USER NAME = anthony.grunstad	DESIGNED -	REVISED -							F.A.	SECTION	COUNTY	TOTAL	SHEET	
	DRAWN -	REVISED -	STATE OF ILLINOIS		DELINEATOR PLACEMENT			***************************************			SHEETS	110.		
PLOT SCALE = 100.000 / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION						CONTRAC	T NO.				
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS ST	TA.	TO STA.		ILLINOIS FI	ED. AID PROJECT		



JSER NAME = anthony.grunstad

PLOT SCALE = 100.000 ' / in.

PLOT DATE = 10/3/23

DRAWN

DATE

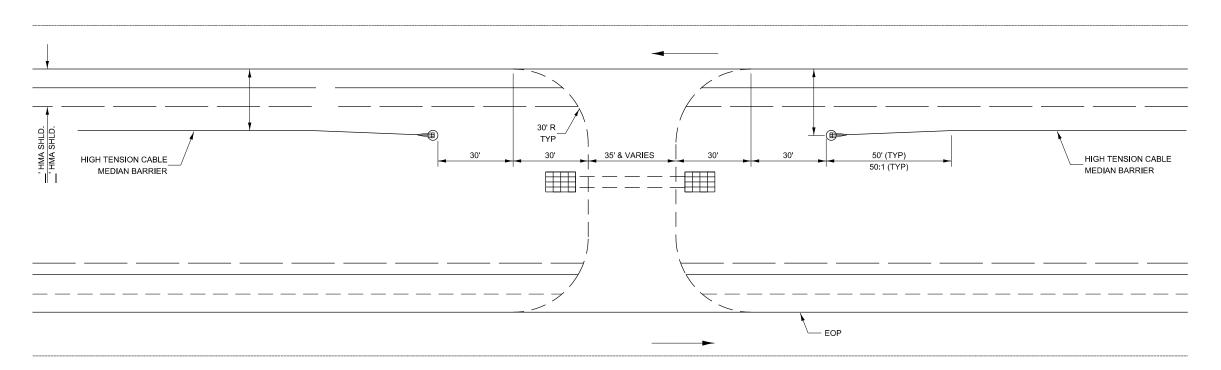
CHECKED

REVISED

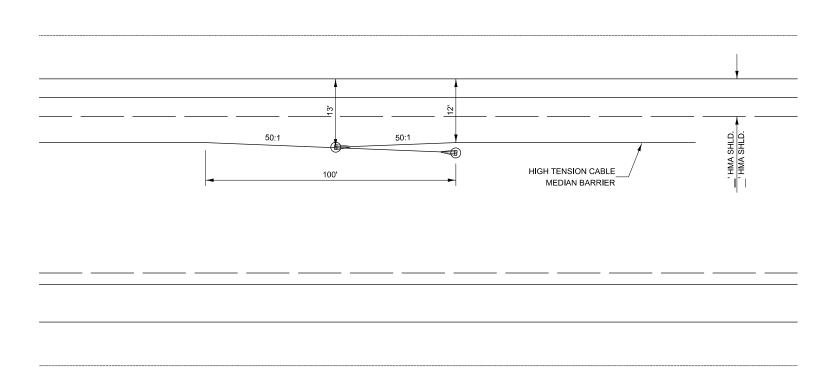
REVISED

REVISED

COUNTY SECTION STATE OF ILLINOIS **DEPARTMENT OF TRANSPORTATION** CONTRACT NO. SCALE: SHEET SHEETS STA. TO STA.



# MAINTENANCE CROSSOVERS MEDIAN CROSSOVERS



## HIGH TENSION CABLE BARRIER OVERLAP DETAIL

USER NAME = anthony,grunstad	DESIGNED -	REVISED -								F.A. RTE	SE	CTION	COUNTY	TOTAL	SHEET
	DRAWN -	REVISED -	STATE OF ILLINOIS							INIE				SHEETS	
PLOT SCALE = 100.000 / in	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION										CONTRACT	r NO.	
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.			ILLINOIS FED. A	AID PROJECT		

#### **LAND SECTION MARKERS**

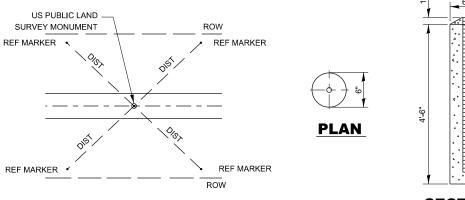
## **NOTES**

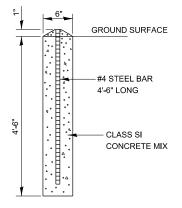
#### PERMANENT SURVEY MARKERS, OF THE TYPE SPECIFIED

SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE, EACH, WHICH WILL BE PAYMENT IN FULL FOR FURNISHING, INSTALLING AND MARKING SAID MARKERS.

#### LAND SECTION MARKERS

SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE, EACH, WHICH WILL BE PAYMENT IN FULL FOR SETTING TIE POINTS,
SETTING FOUR CONCRETE REFERENCE MARKERS, PREPARING MONUMENT RECORDS, RECORDING AT COUNTY RECORDER'S
OFFICE AND PROVIDING A COPY TO THE DISTRICT OFFICE.





**SECTION** 

CONCRETE REFERENCE MARKER

TO STA.

USER NAME = anthony grunstad	DESIGNED -	REVISED -						
	DRAWN -	REVISED -	STATE OF ILLINOIS	•				
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION	•				
PLOT DATE = 10/3/23	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.