

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

FAP ROUTE 310 US 67/136/IL 110
SECTION (39EXT,33,39)CR;36-T

TYPE of IMPROVEMENT
McDONOUGH & WARREN COUNTIES

C-94-023-17

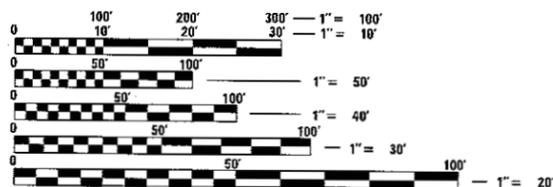
F.A.P.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(39EXT,33,39)CR;36-T	McDonough & Warren	27	1
ILLINOIS			CONTRACT NO. 68D44	

INDEX OF SHEETS

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- 23-27 For Information Only

HIGHWAY STANDARDS

420601-06	701101-05
420701-03	701106-02
442201-03	701201-04
542306-03	701301-04
606001-06	701502-07
701006-05	701901-06
701011-04	704001-08
701001-02	782006
701311-03	

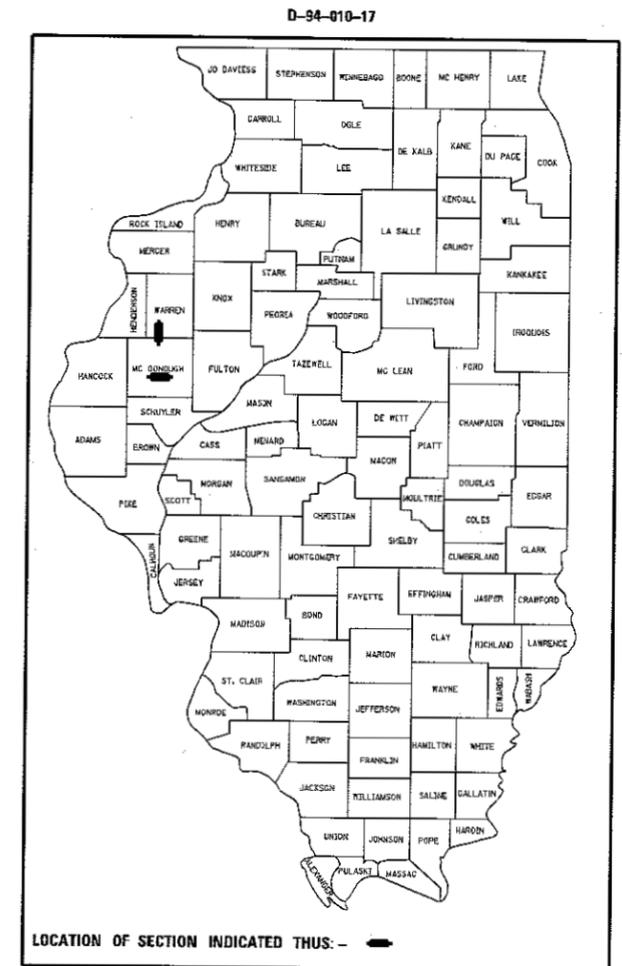


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

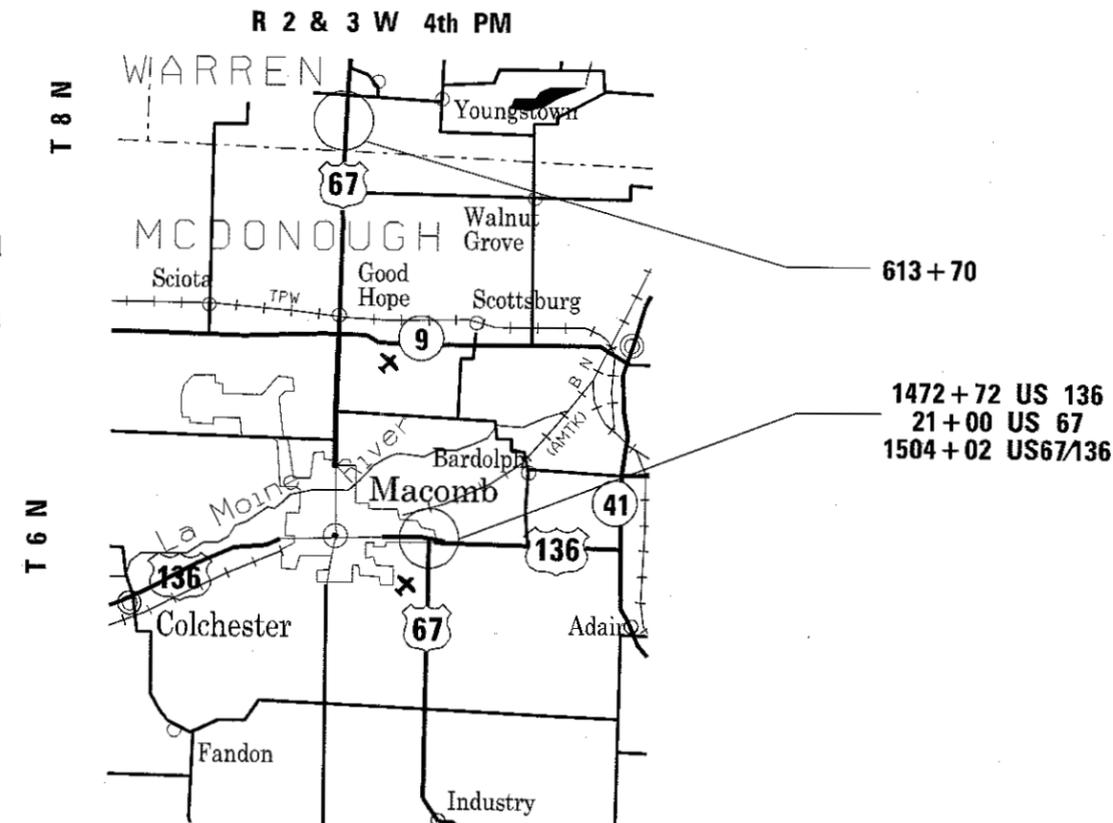
J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT ENGINEER: Richard Dotson (309)671-3455
PROJECT MANAGER: Andre Boykin (309)671-3475

CONTRACT NO. 68D44
CATALOG NO. 035434-00D



Project Description: The project consists of the complete removal and replacement of cross road culverts at two locations, the replacement of the culvert extensions at one location, and the installation of a cross road field tile.



GROSS LENGTH = x.xx FT. = x.xxx MILE
NET LENGTH = x.xx FT. = x.xxx MILE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED May 25 20 17
David A. Jones
REGION THREE ENGINEER

June 30 20 17
Maureen M. Addis PE
ENGINEER OF DESIGN AND ENVIRONMENT

June 30 20 17
James A. Jones
DIRECTOR OF PROGRAM DEVELOPMENT

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OF THE STATE OF ILLINOIS

AVAILABILITY OF ELECTRONIC FILES

Micro Station and GEOPAK files of this project will be made available to the Contractor after contract award. If there is a conflict between the electronic files and the printed contract plans and documents, the printed contract plans and documents shall take precedence over the electronic files. The Contractor shall accept all risk associated with using the electronic files and shall hold the Department harmless for any errors or omissions in the electronic files and the data contained therein. Errors or delays resulting from the use of the electronic files by the Contractor shall not result in an extension of time for any interim or final completion date or shall not be considered cause for additional compensation. The Contractor shall not use, share, or distribute these electronic files except for the purpose of constructing this contract. Any claims by third parties due to use or errors shall be the responsibility of the Contractor. The Contractor shall include this disclaimer with the transfer of these electronic files to any other parties and shall include appropriate language binding them to similar responsibilities.

ENVIRONMENTAL REVIEWS

Prior to the use of any proposed borrow areas, use areas (temporary access roads, detours, run-arounds, etc.) and/or waste areas, the Contractor shall file the required environmental resource request surveys according to Section 107.22 of the Standard Specifications. These surveys are required in order for the Department to conduct cultural and biological resource surveys for the proposed site.

Prior to any waste materials being removed from the construction site the required environmental resource surveys will need to be obtained and filed by the Contractor. Excess waste products removed from the construction site shall be disposed of as required in Section 202.03 of the Standard Specifications.

Any protruding metal bars shall be removed prior to the disposal of broken concrete at approved disposal sites.

The required environmental resource documentation shall include the following:

- * BDE Form 2289 (Environmental Survey Request)
- * BDE Form 2290 (Waste/Use Area Review)
- * A location map showing the size limits and location of the use area
- * Color photographs depicting the use area
- * Borrow Area Entry Agreement form-D4 PI0101

Please note that a minimum of four weeks shall be allowed for the District to obtain the required environmental clearances and six weeks for the required borrow site environmental clearances.

ORDERING LENGTH CONFIRMATION -- DRAINAGE ITEMS

The Contractor shall consult with the Engineer in regard to the exact length of the box/pipe culverts, storm sewers, and/or pipe drains required prior to ordering these items.

EXISTING DRAINAGE PIPES CONNECTED TO NEW STRUCTURES

In accordance with Section 602 of the Standard Specifications, the connecting of existing drain tiles, pipe culverts, or storm sewers to the proposed drainage system structures will not be paid for separately but shall be considered as included in the pay items provided.

ENGINEERS FIELD OFFICE

Add the following sentence to the end of paragraph 670.02 (i) and 670.04 (e):
All of the telephone lines provided shall have unpublished numbers.

HOT-MIX ASPHALT MIXTURE REQUIREMENTS

Mixture Use(s):	Surface Lift (patch & shoulder)	Lower Lifts (patch & shoulder)
AC/PG:	PG 64-22	PG 64-22
Design Air Voids:	4.0% @ N=50	4.0% @ N=50
Mixture Composition: (Gradation Mixture):	IL 9.5	IL 19.0
Friction Aggregate:	Mix C	NA
Quality Management:	QC/QA	QC/QA

Notes: Individual lift thickness of each mix type will be no less than 3 times nominal maximum aggregate size and no more than 6 times nominal aggregate size.

COMMITMENTS

Commitments are not to be altered without the written approval of all parties to which the commitment was made.

FILE NAME = 0468044-shr-plan.dgn	USER NAME = aubreyye	DESIGNED - DRAWN -	REVISED - REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES AND COMMITMENTS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
Default	PLOT SCALE = 100,0000' / 1" =	CHECKED -	REVISED -			310	(39EXT,33,39)CR136-T	McDonough & Warren	27	2	
	PLOT DATE = 5/26/2017	DATE -	REVISED -			SCALE: SHEET OF SHEETS STA. TO STA.		CONTRACT NO. 68044			
						ILLINOIS FED. AID PROJECT					

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				McDonough County	Warren County
				RURAL 0004 100% State	RURAL 0004 100% State
20800150	TRENCH BACKFILL	CU YD	209	209	
35101600	AGGREGATE BASE COURSE, TYPE B 4"	SO YD	56	56	
42000060	WELDED WIRE REINFORCEMENT	SO YD	56	56	
42000211	PORTLAND CEMENT CONCRETE PAVEMENT 7 1/2" (JOINTED)	SO YD	56	56	
44201803	CLASS D PATCHES, TYPE II, 13 INCH	SO YD	13	13	
44201807	CLASS D PATCHES, TYPE III, 13 INCH	SO YD	90	90	
48203029	HOT - MIX ASPHALT SHOULDERS, 8"	SO YD	12	12	
50102400	CONCRETE REMOVAL	CU YD	1	1	
50104400	CONCRETE HEADWALL REMOVAL	EACH	4	4	
50105220	PIPE CULVERT REMOVAL	FOOT	432	432	
50800105	REINFORCEMENT BARS	POUND	133	133	
54002060	EXPANSION BOLTS 3/4 INCH X 12 INCH	EACH	36	36	
54214317	END SECTIONS, EQUIVALENT ROUND-SIZE 42"	EACH	6	6	
54248510	CONCRETE COLLAR	CU YD	4.3	4.3	

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		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	139EXT.33.39ICR36-T	McDonough & Warren	27	3
ILLINOIS FED. AID PROJECT			CONTRACT NO. 68D44	

REV

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				McDonough County <i>RURAL</i> 0004 100% State	Warren County <i>RURAL</i> 0004 100% State
542A1087	PIPE CULVERTS, CLASS A, TYPE 2 42"	FOOT	42	42	
542A5497	PIPE CULVERTS, CLASS A, TYPE 1 EQUIVALENT ROUND-SIZE 42"	FOOT	376	376	
55200100	STORM SEWERS JACKED IN PLACE, 10"	FOOT	210		210
60604400	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.18	FOOT	14	14	
67100100	MOBILIZATION	L SUM	1	1	
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1	
70107005	PAVEMENT MARKING BLACKOUT TAPE, 5"	FOOT	1816	1816	
70107008	PAVEMENT MARKING BLACKOUT TAPE, 8"	FOOT	756	756	
70300150	SHORT TERM PAVEMENT MARKING REMOVAL	50 FT	1194	1194	
70300904	PAVEMENT MARKING TAPE, TYPE IV 4"	FOOT	3620	3620	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	150	150	
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	100	100	
70600260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	2	
70600332	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	2	

14

FILE NAME = 0468044-sht-plan.dgn	USER NAME = aubrugg	DESIGNED -	REVISED -
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	PLOT DATE = 5/26/2017	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(39)EXT.33,39(CR)36-T	McDonough & Warren	27	4
				CONTRACT NO. 68044
ILLINOIS FED. AID PROJECT				

DEL

TRENCH BACKFILL

Station	Cubic Yds
21 + 00	25
1504 + 02	184
total	209

**AGGREGATE BASE CSE TYPE B 4"
PCC PAVEMENT 7 1/2" JNTD
WELDED WIRE REINFORCEMENT**

Station	Square Yds
1504 + 02	56

CLASS D PATCH TY II 13"

Station	Sq Yds
1504 + 02	13

CLASS D PATCH TY III 13"

Station	Sq Yds
21 + 00	46
1504 + 02	44
total	90

PIPE CULV REMOVAL

Station	Foot	Description
21 + 00	88	50"x31" CMP Arch
1472 + 72	18	50"x31" CMP Arch (rt)
1472 + 72	42	42" CMP (lt)
1504 + 02	284	42"x29" CMP Arch
total	432	

HMA SHOULDER 8"

Station	Sq Yd
1504 + 02 lt	12

**CONCRETE REMOVAL (CY)
CONCRETE HEADWALL REMOVAL (EA)**

Station	Each	Cu Yd
1472 + 72 lt		.6
1472 + 72 rt		.4
21 + 00 lt&rt	2	
1504 + 02 lt&rt	2	
total	4	1

see "For Information Only" sheets

PRECAST CONCRETE BOX CULVERT 3'x2.5'

Station	Foot
1472 + 72 rt	18

P CULV CL A, TY 2, 42"

Station	Foot
1472 + 72 lt	42

**P CULV CL A, TY 1, EQU RND SIZE 42"
END SECS, EQU RND SIZE 42"**

Station	Foot	Each
21 + 00	96	2
1504 + 02	280	4
	376	6

CCC&G TYPE B6.18

Station	Foot
1504 + 02 rt	14

PAVEMENT MKG TAPE TYPE IV, 4"

Station	Foot
1504 + 02	
Stage I	2020
Stage II	980
Stage III	620
total	3620

PAVEMENT MKG BLACKOUT TAPE 5"

Station	Foot
1504 + 02	1816

PAVEMENT MKG BLACKOUT TAPE 8"

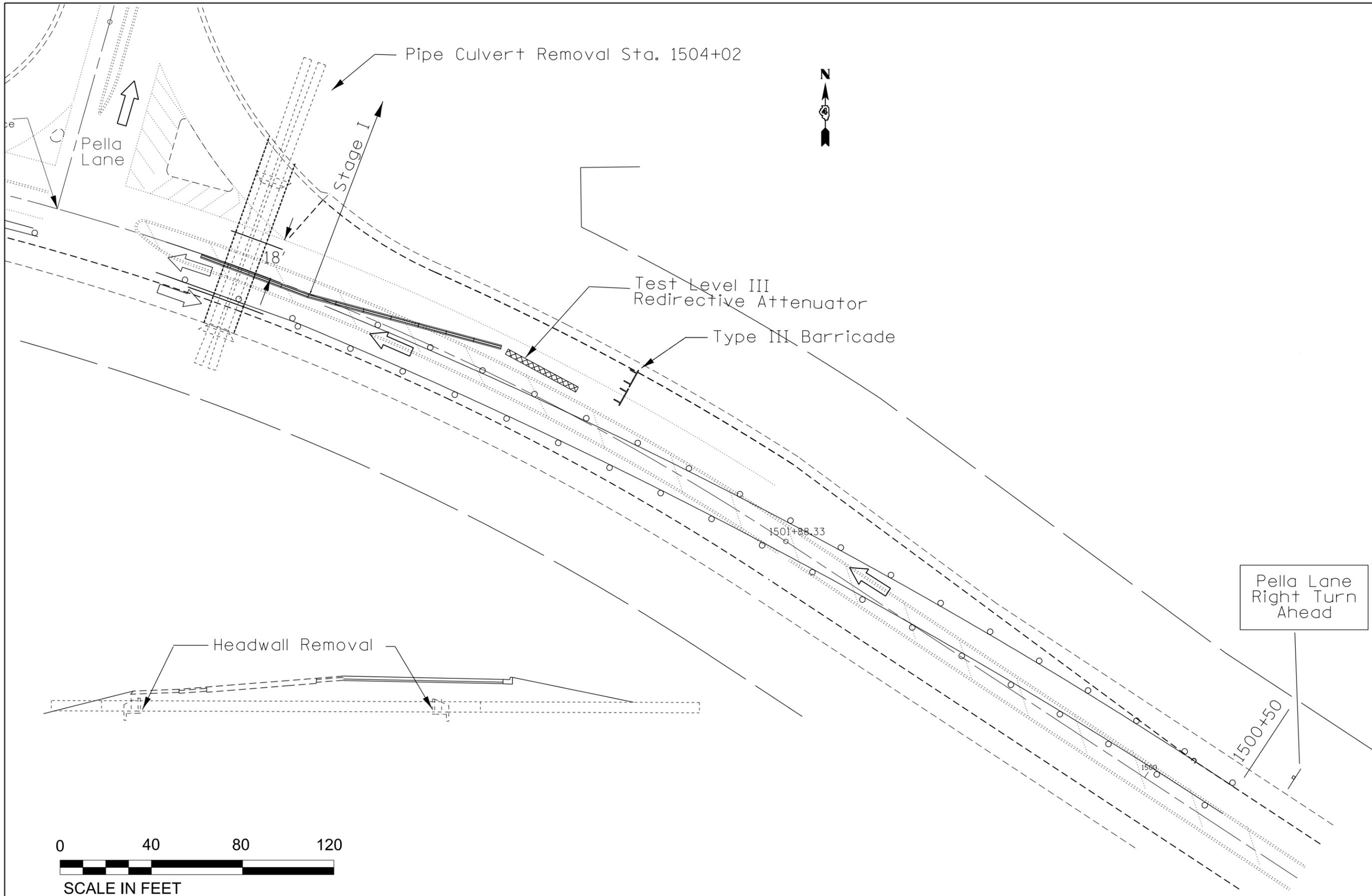
Station	Foot
1504 + 02	756

SHORT TERM PVT MKG REMOVAL

Station	Sq Ft
1504 + 02	2462

**STORM SEWERS JACKED IN PLACE 10"
US 67 Warren Co.**

Station	Foot
613 + 70	210



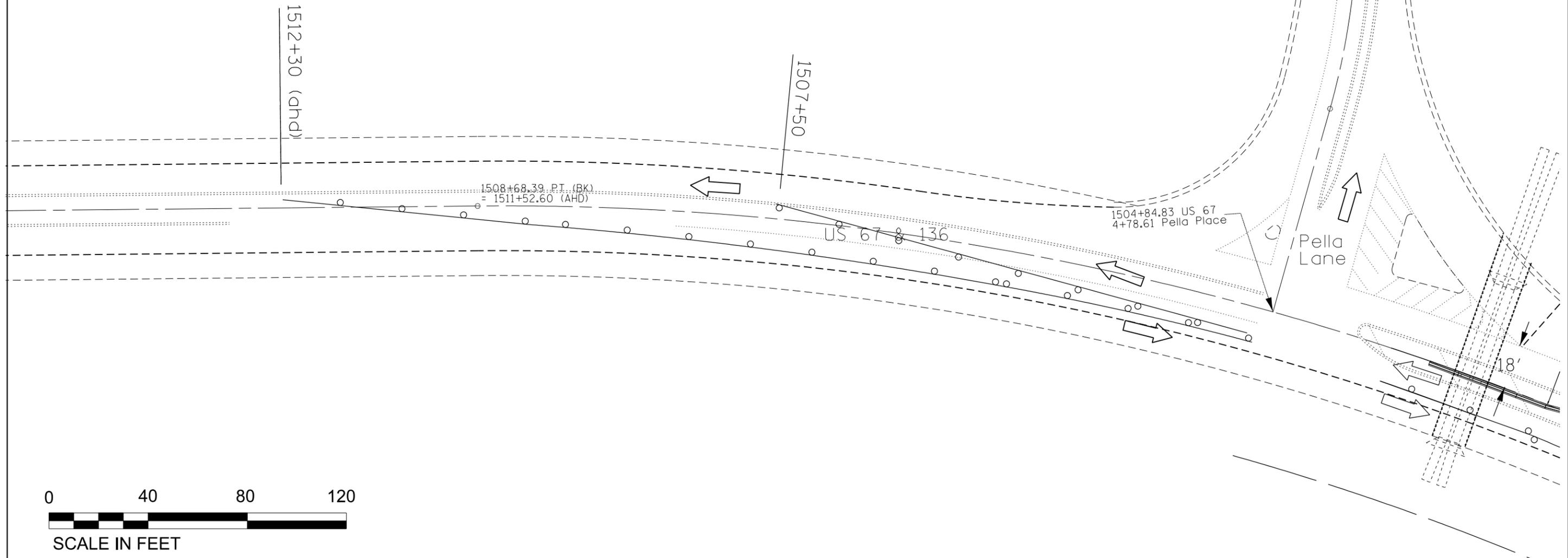
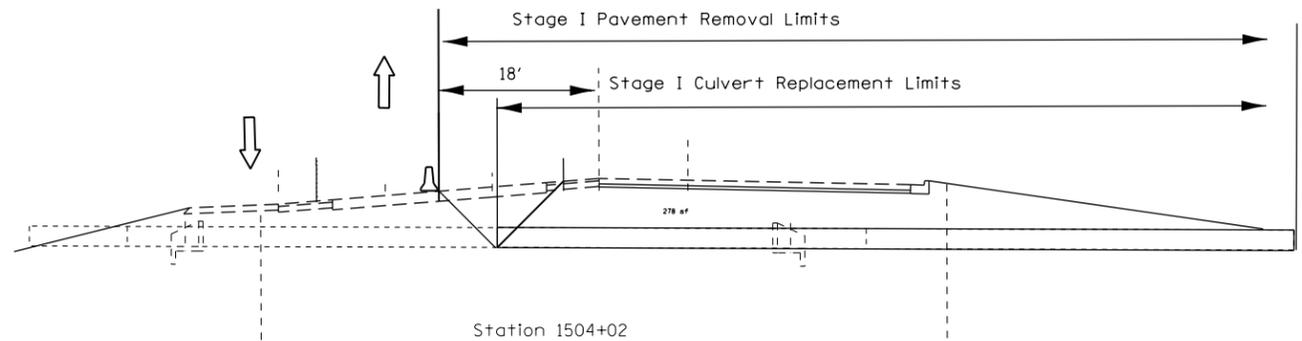
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		DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

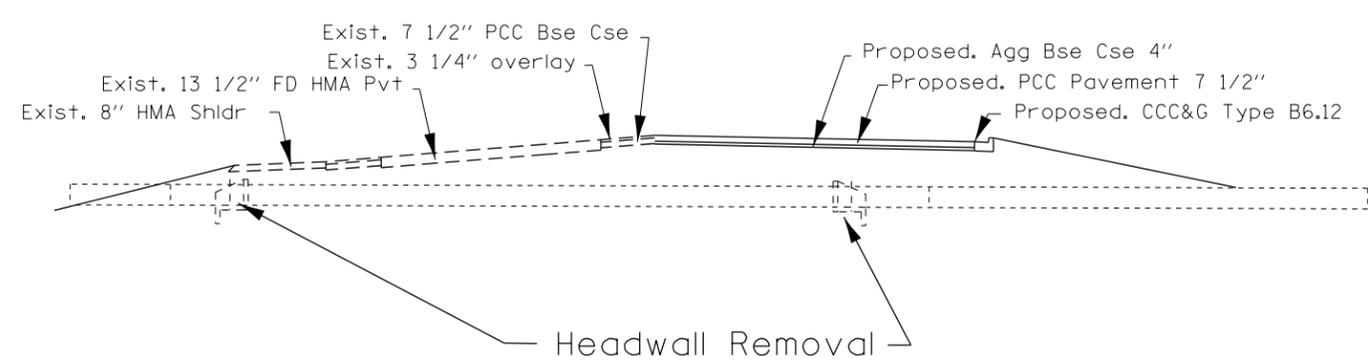
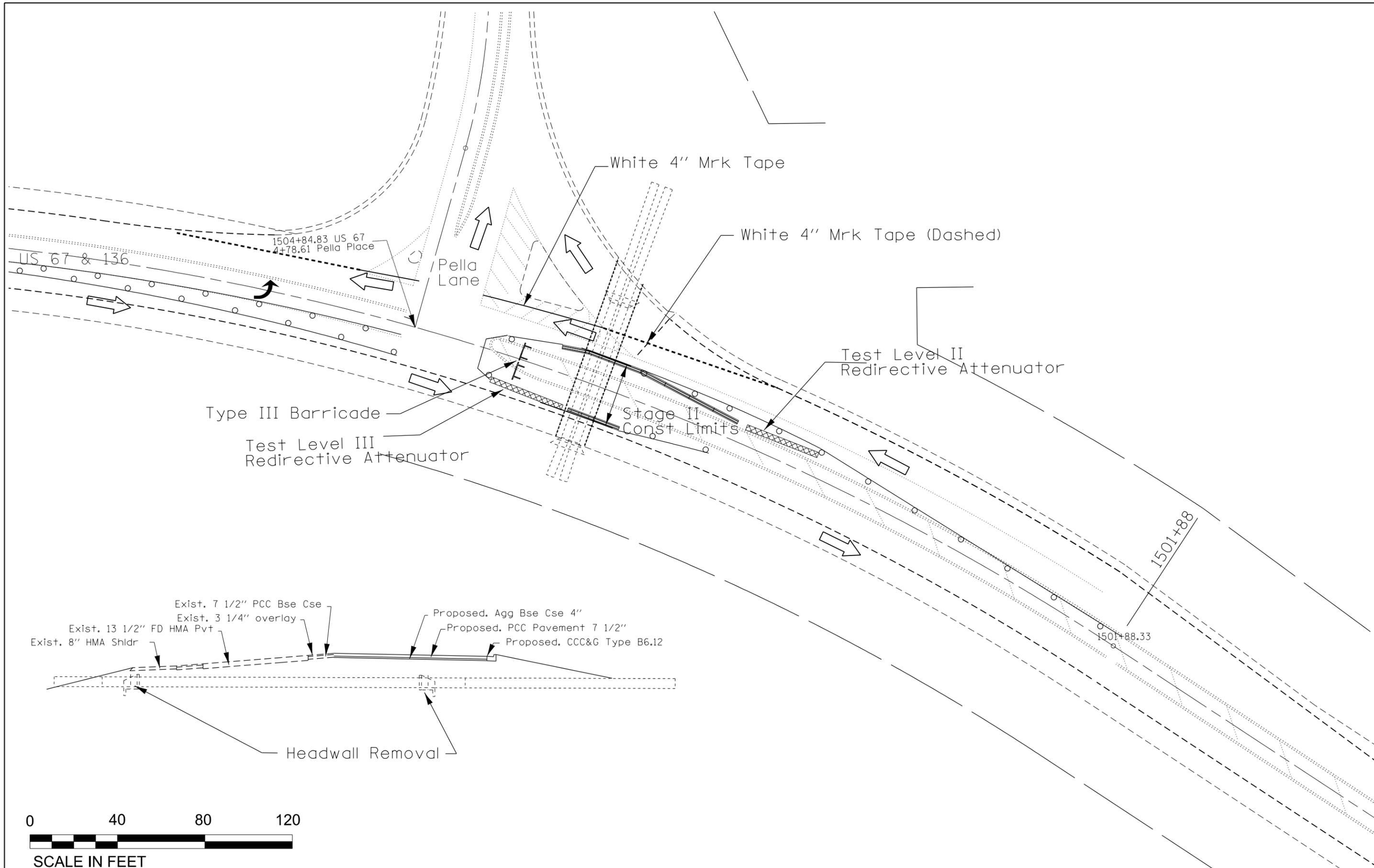
STAGE I TRAFFIC CONTROL AND PROTECTION (SPECIAL)

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(39)EXT,33,39(CR;36-T	McDonough & Warren	27	7
CONTRACT NO. 68D44			ILLINOIS FED. AID PROJECT	

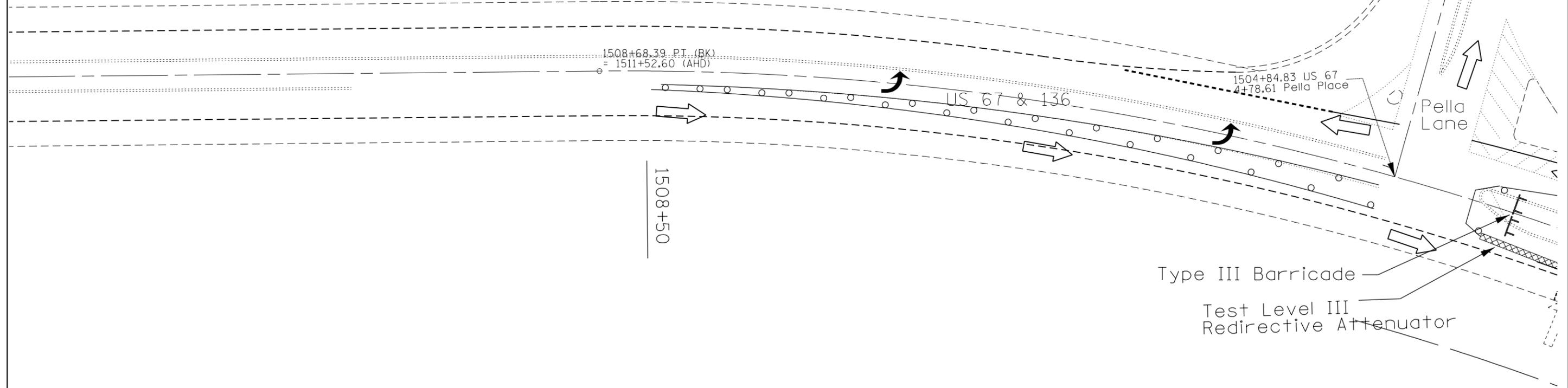
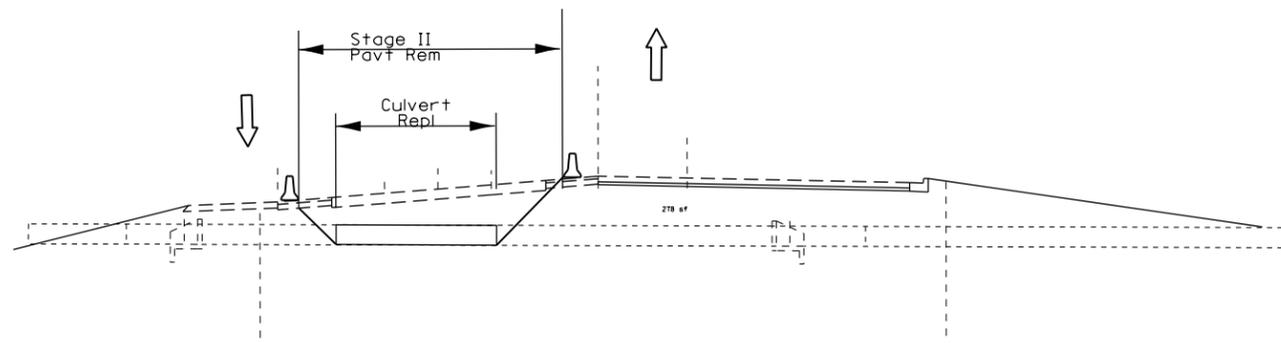
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											ILLINOIS FED. AID PROJECT		



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		DATE -	REVISED -		ILLINOIS FED. AID PROJECT								



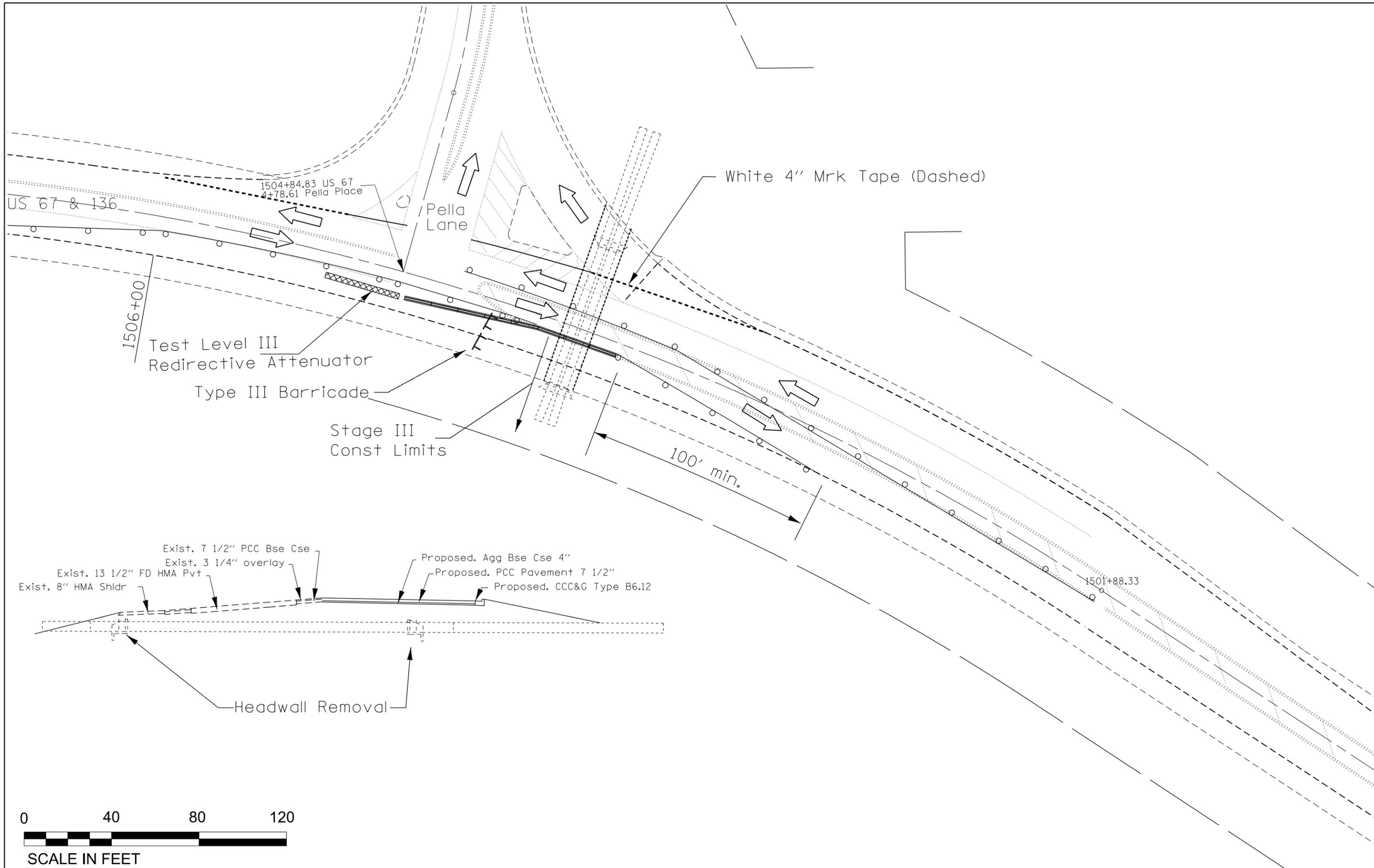
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	PLOT DATE = 5/26/2017	CHECKED -	REVISED -
		DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

STAGE II TRAFFIC CONTROL AND PROTECTION (SPECIAL)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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ILLINOIS FED. AID PROJECT			CONTRACT NO. 68D44	



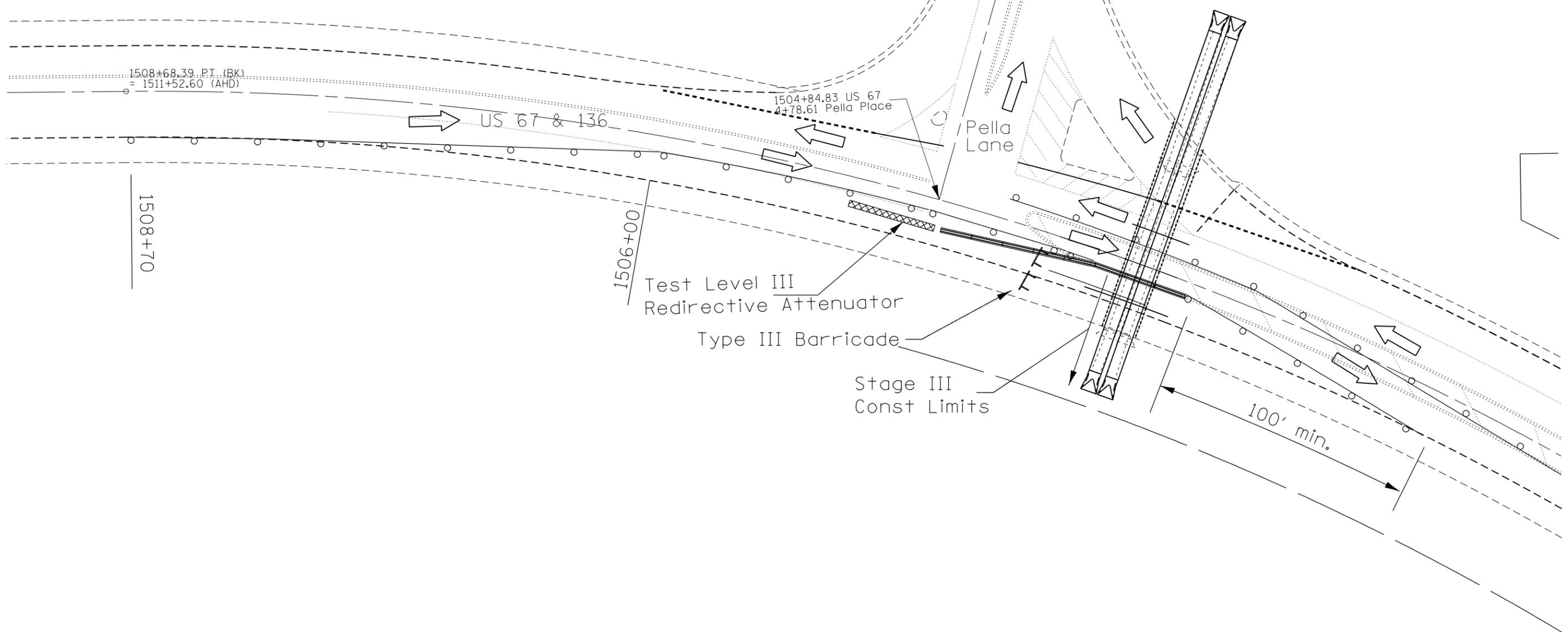
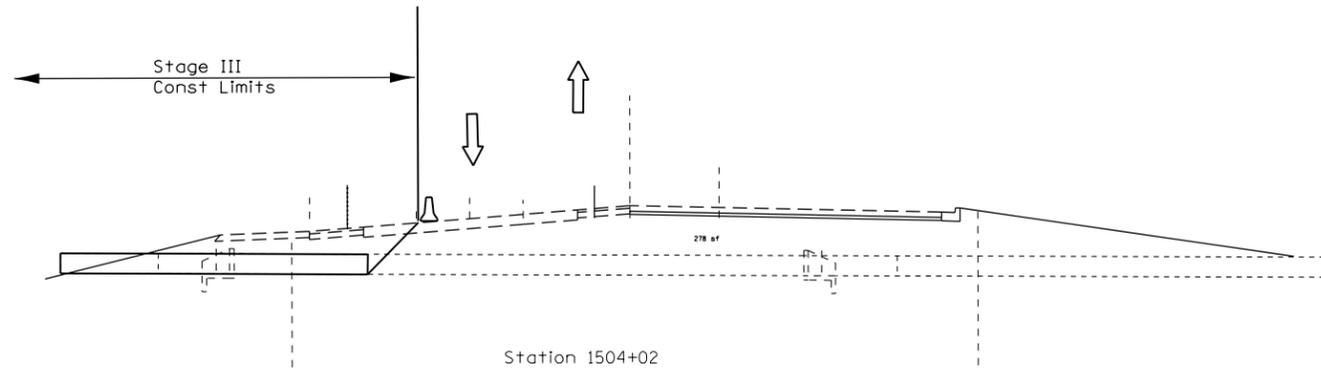
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	PLOT DATE = 5/26/2017	CHECKED -	REVISED -
		DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

STAGE III TRAFFIC CONTROL AND PROTECTION (SPECIAL)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(39EXT,33,39)CR;36-T	McDonough & Warren	27	11
CONTRACT NO. 68044				
ILLINOIS FED. AID PROJECT				



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Default	PLOT SCALE = 40.0000' / in.	DRAWN -	REVISED -
	PLOT DATE = 5/26/2017	CHECKED -	REVISED -
		DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SCALE:	SHEET	OF	SHEETS	STA.	TO STA.
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(39EXT,33,39)CR;36-T	McDonough Warren	27	12
CONTRACT NO. 68D44				
ILLINOIS FED. AID PROJECT				

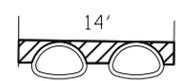
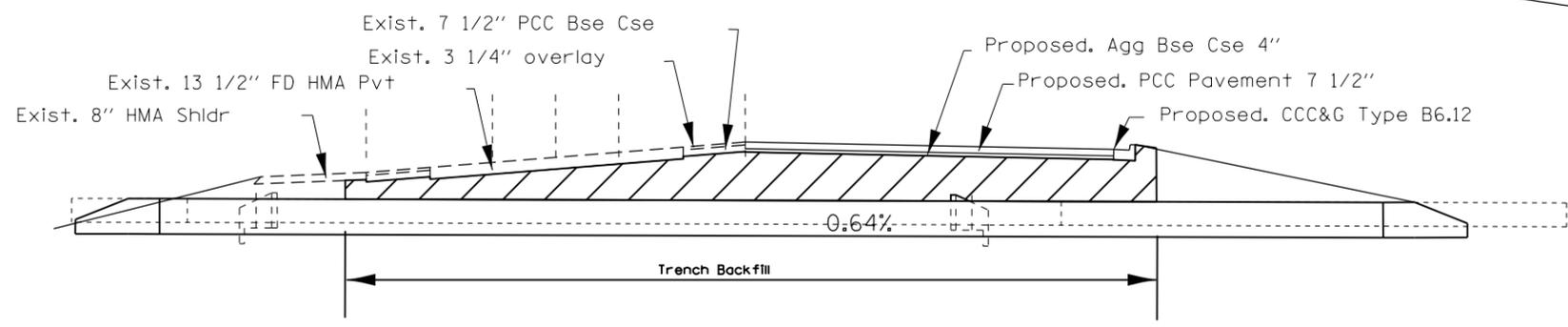


Sta. 1504+02
 Proposed Reinforced Concrete
 Pipe Culvert 42" Equivalent
 2 @ 140'
 US Elev. 93.06
 DS Elev 92.16

PELLA
 LANE
 TBM Elev. 100.00 (assumed)
 Paint spot on island nose

1504 + 02

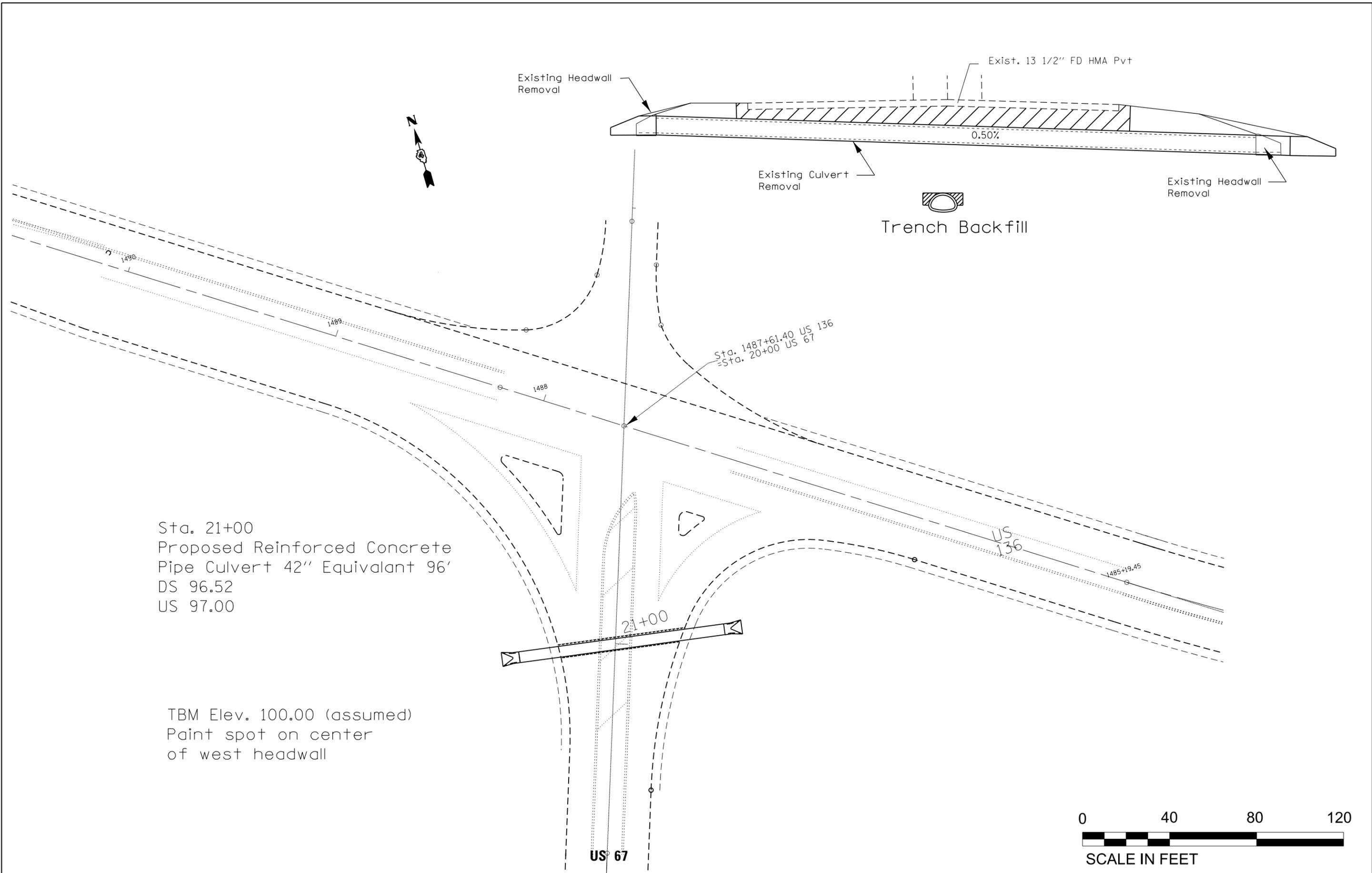
US 67 & 136



Trench Backfill



FILE NAME = D468D44-shk-hp-batp.dgn	USER NAME = aubreyjs	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STATION 1504 + 02 PROPOSED			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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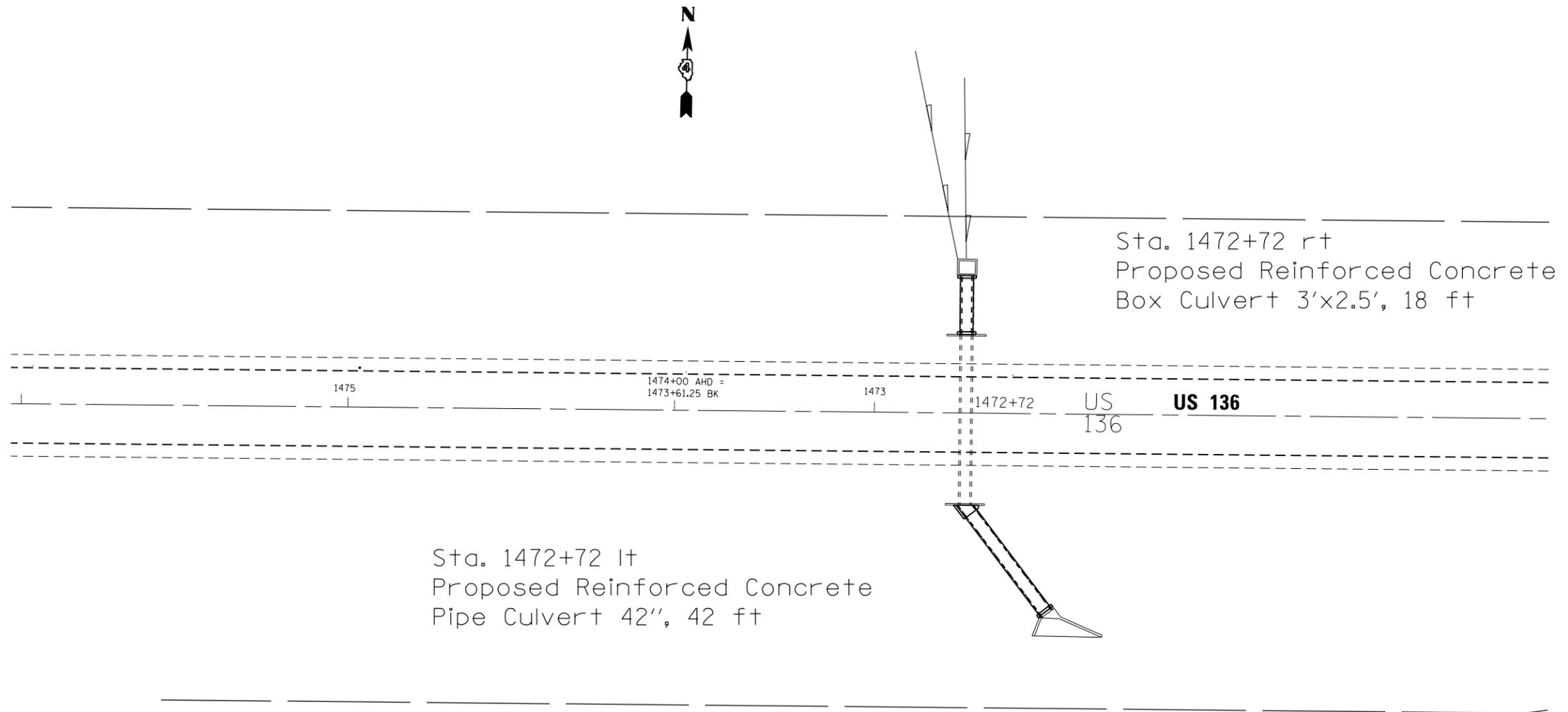


Sta. 21+00
 Proposed Reinforced Concrete
 Pipe Culvert 42" Equivalent 96'
 DS 96.52
 US 97.00

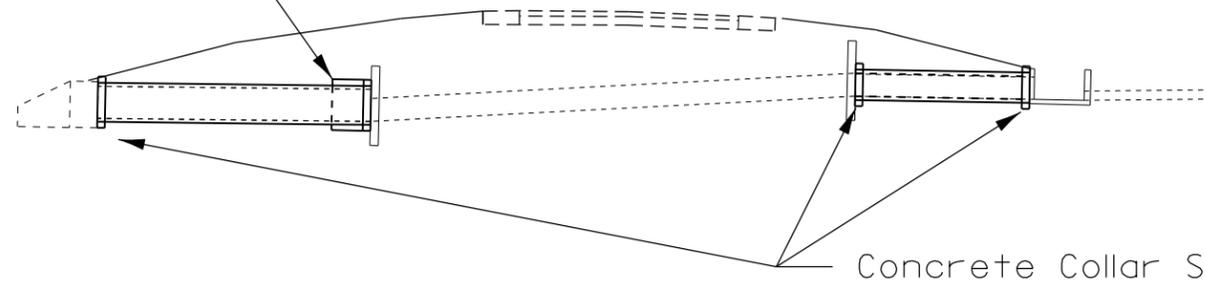
TBM Elev. 100.00 (assumed)
 Paint spot on center
 of west headwall



FILE NAME = D468D44-sht-plan.dgn	USER NAME = aubreys	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STATION 21+00 PROPOSED				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.	(39EXT,33,39)CR:36-T	McDonough Warren	27
Default	PLOT DATE = 5/26/2017	DATE -	REVISED -						CONTRACT NO. 68D44				
												ILLINOIS FED. AID PROJECT	

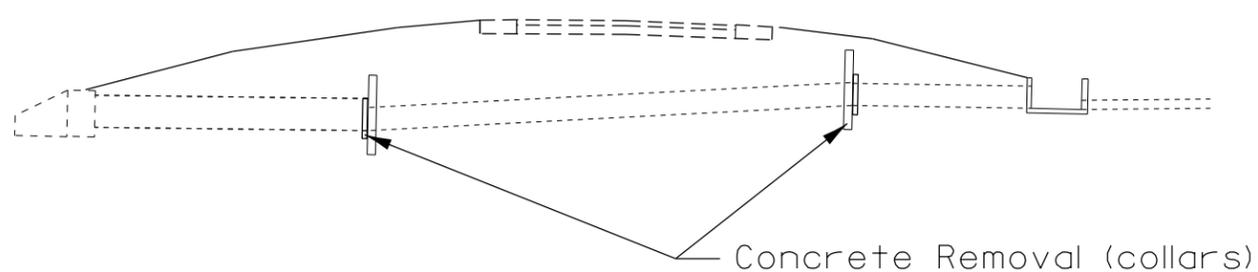
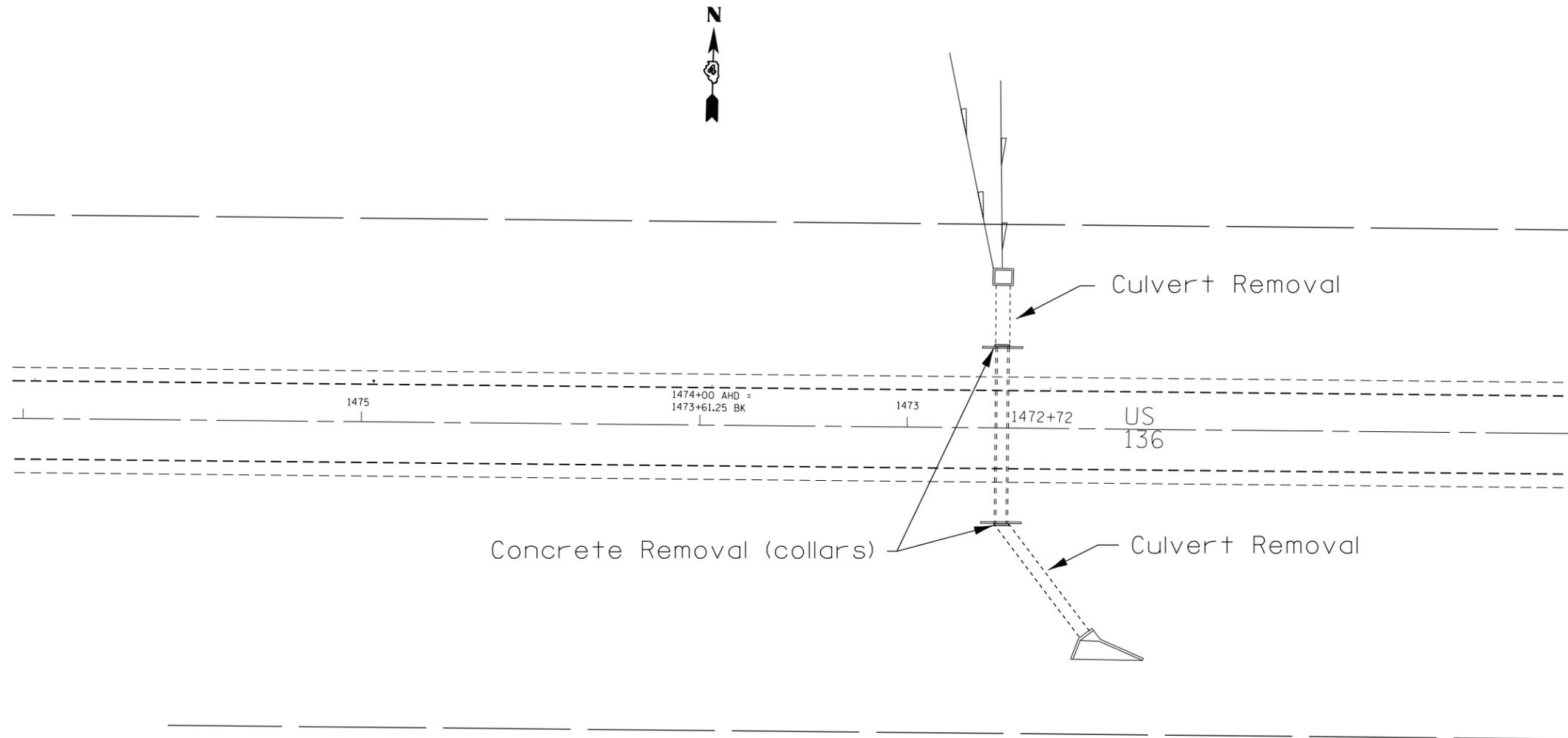


Concrete Collar Std. 542011-D4



Note: Dimensions of collars to be adjusted to meet field conditions.

FILE NAME = D468D44-sht-plan.dgn	USER NAME = aubreys	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STATION 1472+72 PROPOSED			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -					310	(39EXT,33,39)CR:36-T	McDonough Warren	27	15
Default	PLOT DATE = 5/26/2017	DATE -	REVISED -	SCALE:	SHEET	OF	SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT CONTRACT NO. 68D44		



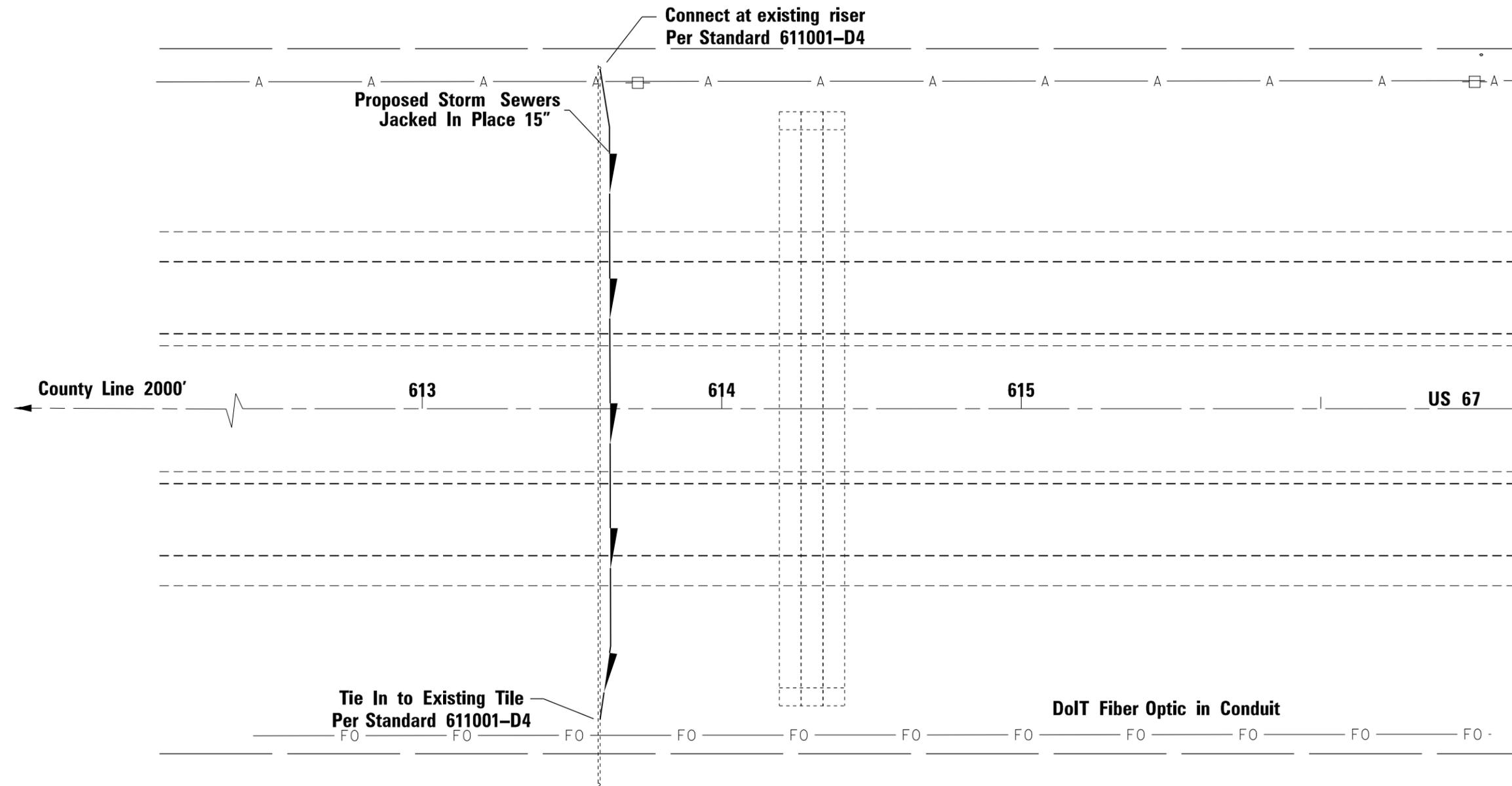
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Default	PLOT SCALE = 40.0000 ' / in.	DRAWN -	REVISED -
	PLOT DATE = 5/26/2017	CHECKED -	REVISED -
		DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

STATION 1472+72 REMOVAL

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(39EXT,33,39)CR:36-T	McDonough Warren	27	16
CONTRACT NO. 68D44				
ILLINOIS FED. AID PROJECT # 68D44				



County Line 2000'

613

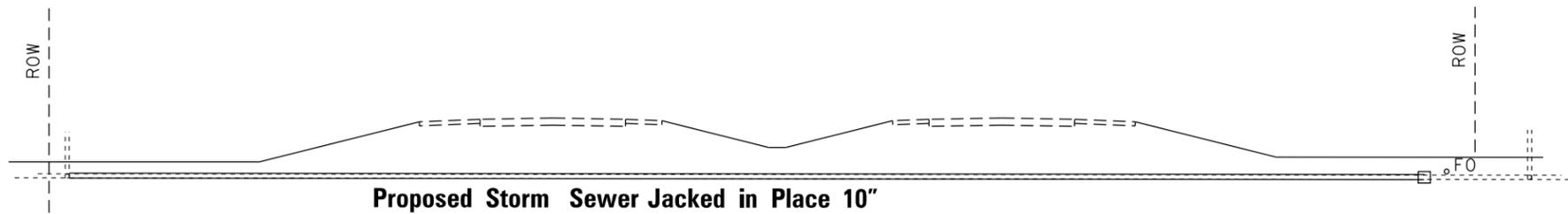
614

615

US 67

Tie In to Existing Tile
Per Standard 611001-D4

DoIT Fiber Optic in Conduit

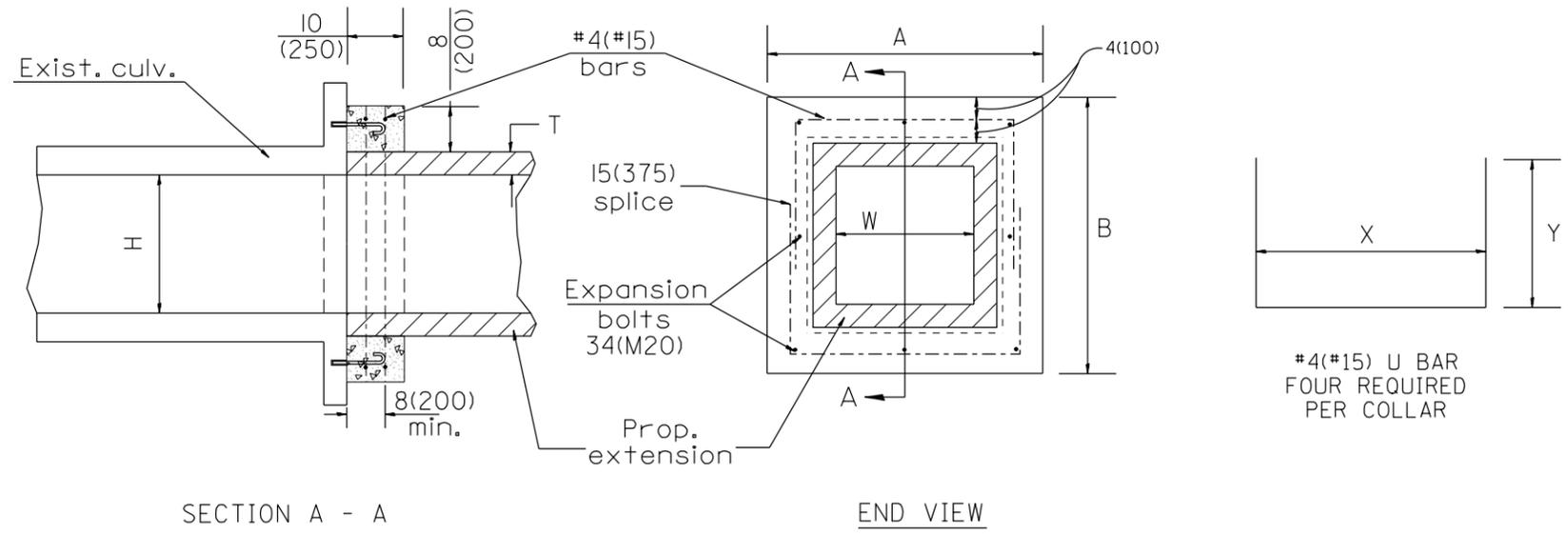


Proposed Storm Sewer Jacked in Place 10"

Note: Fiber Optic conduit is to be exposed prior to installation of the 10" storm sewer.

Verify the existing tile is unobstructed between the proposed tie in and the existing riser prior to connecting 10" tile.

FILE NAME = D468D44-sht-plan.dgn	USER NAME = aubreys	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STORM SEWERS JACKED IN PLACE 10"				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Default	PLOT SCALE = 40,0000' / in.	DRAWN -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.	(39EXT,33,39)CR;36-T	27	17
	PLOT DATE = 5/26/2017	CHECKED -	REVISED -								McDonough Warren		
		DATE -	REVISED -								CONTRACT NO. 68D44		



GENERAL NOTES

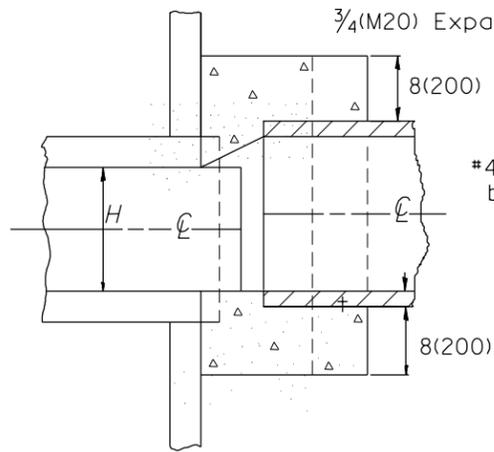
1. The collar shall be constructed entirely of CLASS SI CONCRETE and in accordance with the applicable portions of section 503 of the Standard Specifications. REINFORCEMENT BARS shall conform to section 508.
2. Expansion bolts shall consist of approved expansion anchors, and 3/4(M20) hook bolts which conform to Section 1006.09. These bolts shall extend at least 8(200) into the new concrete.

Station	PROP. BOX		EACH COLLAR							EXPANSION BOLTS EACH	EXT. LENGTH		END SEC.
	W'	H'	CLASS SICONCRETE			REBARS		LBS. (kg)	LT.		RT.		
			CU. YD. (m ³)	A	B	T	X					Y	
1472+72 rt	3'	2.5'	.34	5'	4'6"	4"	4'4"	30.5"	25	8			0
1472+72 rt	3'	2.5'	.34	5'	4'6"	4"	4'4"	30.5"	25	8			0
Totals			.68						50	16			

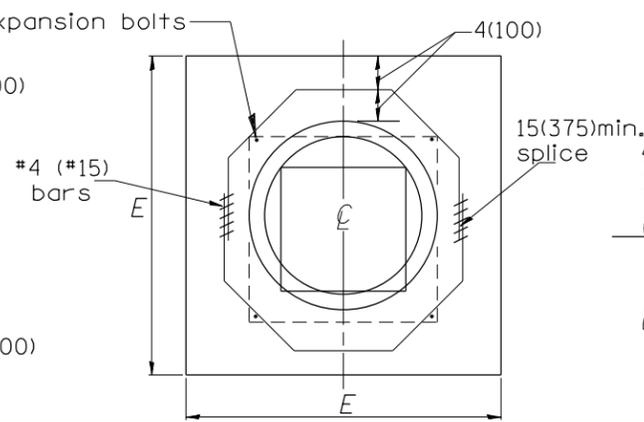
Note: Dimensions of collars to be adjusted to meet field conditions.

QUANTITIES
 CALC. BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 QUANTITY CALCULATIONS ARE ON FILE AT THE DISTRICT 4 OFFICE; BUREAU OF PROJECT IMPLEMENTATION; DOCUMENTATION SECTION

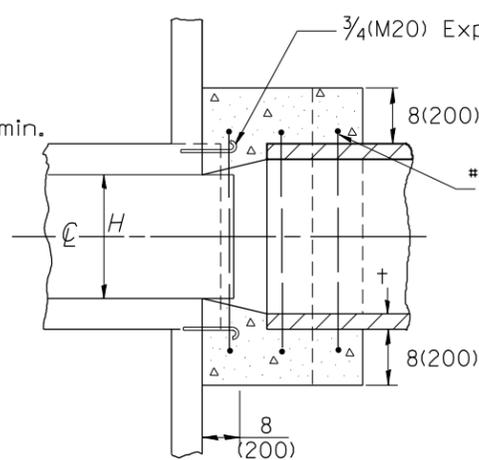
All dimensions are in inches (millimeters) unless otherwise noted.



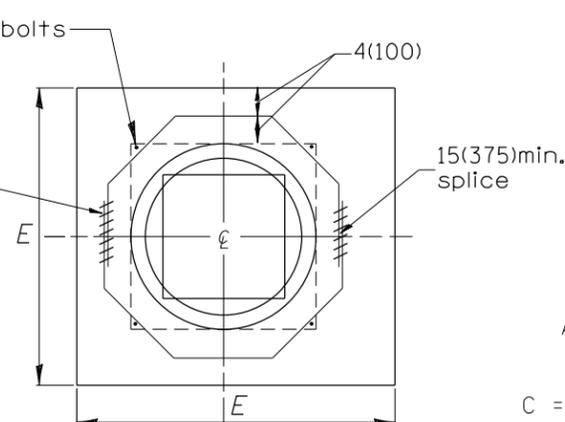
SECTION A-A



END VIEW



SECTION A-A



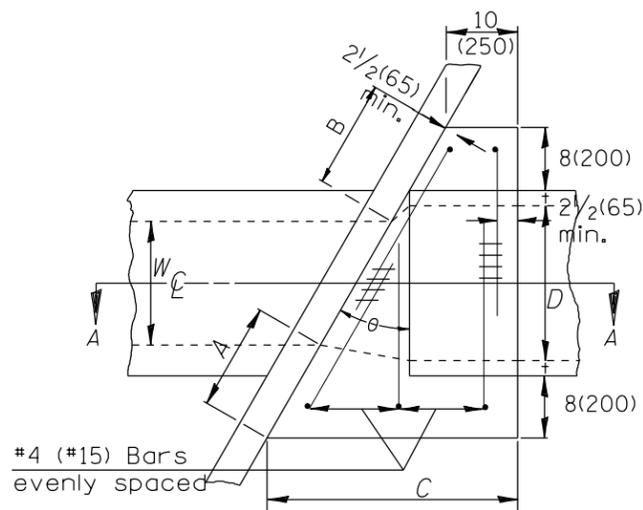
END VIEW

$$A = B = \frac{D - W}{2} + t + 8(200) \cos \theta$$

$$C = \tan \theta [D + 2t + 16(410)] + 10(250)$$

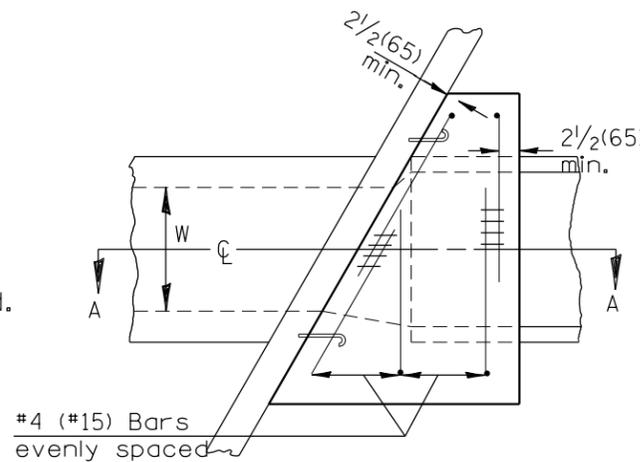
$$G = \frac{D + 2t + 8(200)}{2.4142 [\cos \theta]}$$

(Note: 'G' is based upon maximum skewed length)

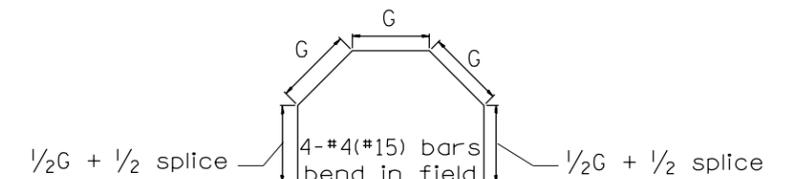


PLAN VIEW UP STREAM

NOTE: Dimensions are shown in Plan View of Up Stream End while Reinforcement is shown in plan view of Down Stream End.



PLAN VIEW DOWN STREAM



GENERAL NOTES

- The collar shall be constructed entirely of CLASS SI CONCRETE and in accordance with the applicable portions of section 503 of the Standard Specifications. Reinforcement bars shall conform to section 508.
- Expansion bolts shall consist of approved expansion anchors, and 3/4 (M20) hook bolts which conform to section 1006.09. These bolts shall extend at least 8(200) into the new concrete.
- This work will be paid for by the cubic yard (cubic meter) for CONCRETE COLLAR, by the pound (kg) for REINFORCEMENT BARS, and by Each for EXPANSION BOLTS of the size indicated.

Station	θ	C	D	E	†	EACH COLLAR			EXPAN. BOLTS EACH	
						CONCRETE CU. YD. (m ³)	REINFORCEMENT BARS G	L		KG(LBS.)
1472+72	45°	5'4"	3'6"	5'7"	4 1/2"	3.0	27"	10'4"	55	10
1472+72	0°	5'4"	3'6"	5'7"	4 1/2"	.61	27"	10'4"	28	10
Totals						3.61			83	20

Note: Dimensions of collars to be adjusted to meet field conditions.

QUANTITIES
 CALC. BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 QUANTITY CALCULATIONS ARE ON FILE AT THE DISTRICT 4 OFFICE; BUREAU OF PROJECT IMPLEMENTATION; DOCUMENTATION SECTION

01-01-97	RENUM. J-11.03, NEW REVISION BOX, REVISED	T.P.
	TITLE BOX, ADDED QUANTITY CALCULATION BOX	
10-16-06	REVISED TO 2007 SPEC.	M.A.
2-15-11	CHANGED REBAR DETAIL	R.D.

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

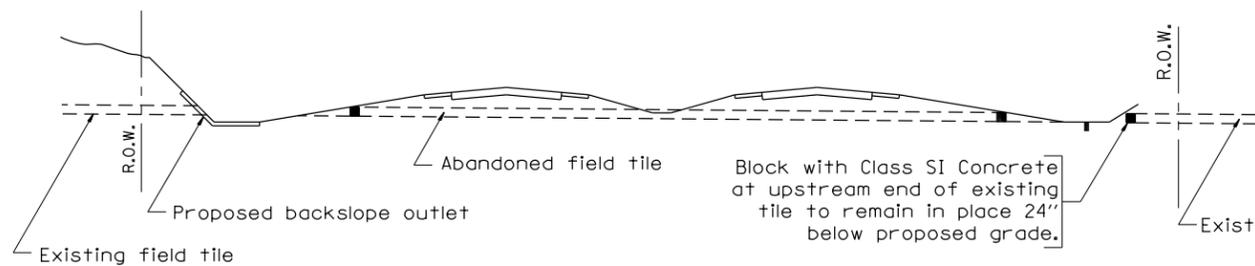
SKewed PIPE CULVERT EXTENSION COLLAR (WITH END SECTION)

NOT TO SCALE

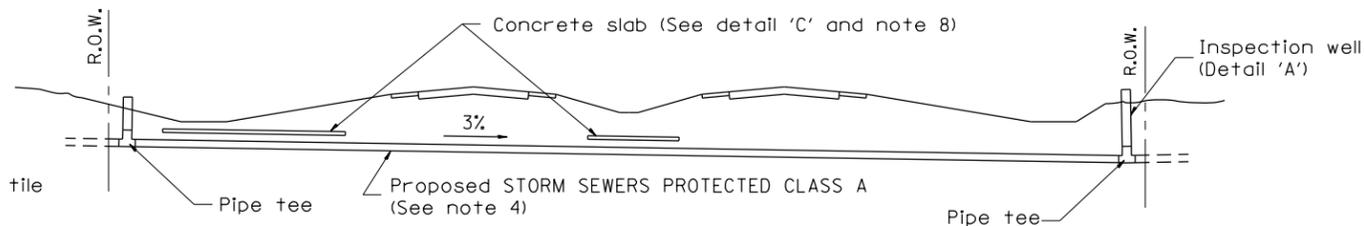
CADD STD. 542011-D4

All dimensions are in inches (millimeters) unless otherwise noted.

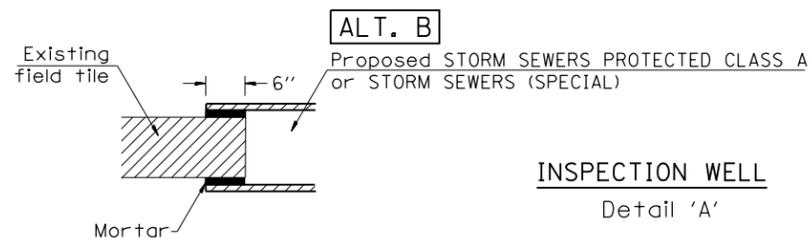
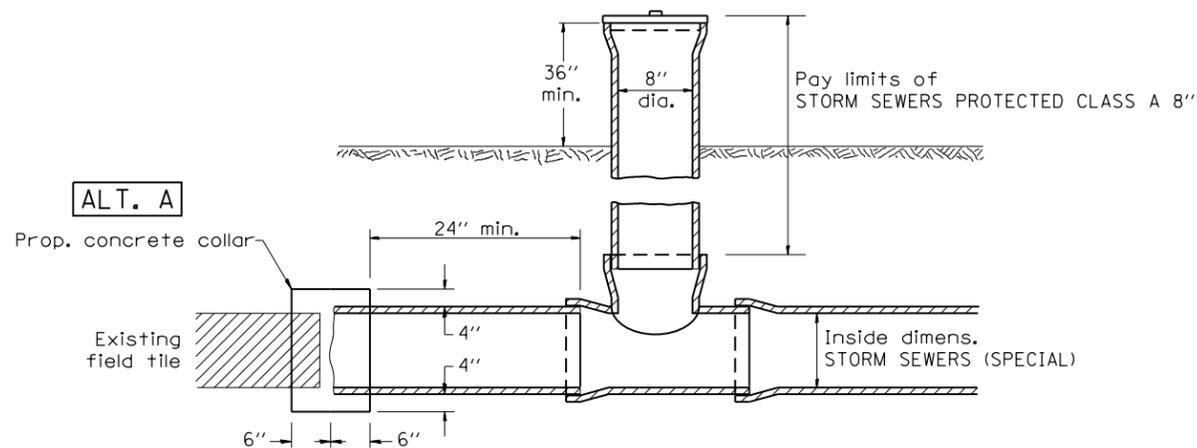
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(39)EXT,33,39(CR)36-T	McDonough & Warren	27	20
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 68D44	



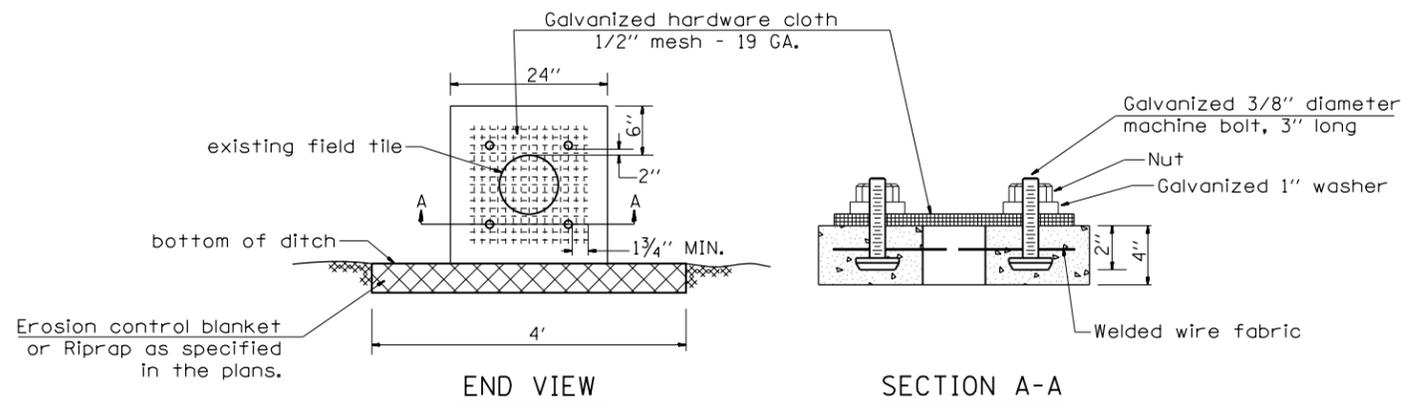
METHOD 'A'
Storm sewer flowline at 6" or more above proposed ditch flowline



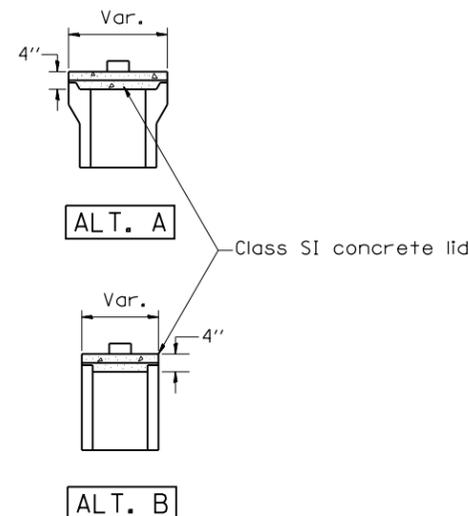
METHOD 'B'
Storm sewers below proposed ditch flowline



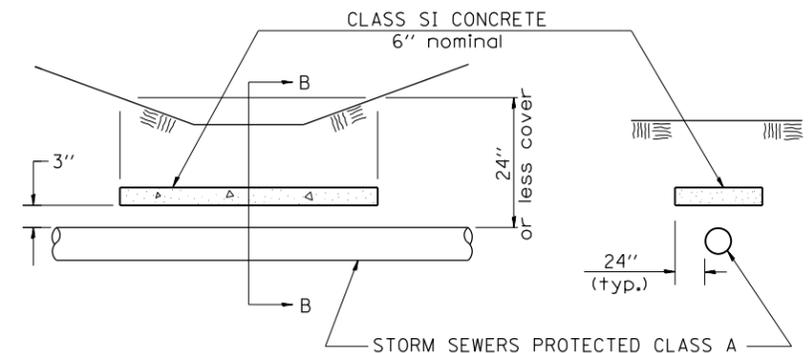
INSPECTION WELL
Detail 'A'



CAST-IN-PLACE CONCRETE HEADWALL
Detail 'D'
Use when outletting through a sloped wall or revetment mat



INSPECTION WELL CONCRETE LID
Detail 'B'



ELEVATION

SECTION B-B

CONCRETE SLAB
Detail 'C'

GENERAL NOTES:

- Method 'A' is the preferred method of installation and should be used to minimize non-essential pipe crossing under pavement. The engineer should consider adjusting ditch elevations to accommodate the field tile outletting 6" above the ditch flowline.
- Method 'B' shall be used only if ditch elevations cannot be adjusted to accommodate the use of method 'A'.
- Abandoned field tiles shall be plugged with Class SI concrete, as directed by the engineer, included in the cost of STORM SEWERS PROTECTED CLASS A or STORM SEWERS (SPECIAL).
- Non-circular field tile shall be replaced with STORM SEWERS PROTECTED CLASS A or STORM SEWERS (SPECIAL) of at least the same cross sectional area as the upstream field tile. All existing field tile shall be replaced with storm sewer of the type required for the minimum depth of cover.
- STORM SEWERS PROTECTED CLASS A 8" shall be used for the inspection well and riser regardless of existing tile size.
- Inspection wells shall be placed approximately 24" inside of both R.O.W. lines at the locations shown on the plans unless arrangements are made by the land acquisition unit to have the wells placed on the property owners side of the R.O.W.
- The inspection well concrete lid shall be constructed of P.C.C. and provided with a handle shaped from a #4 reinforcing bar. This work shall be included in the cost of STORM SEWERS PROTECTED CLASS A or STORM SEWERS (SPECIAL).
- The 6" concrete slab shall be poured the full length of the trench at the ditch flowline locations within the right of way with less than 24" of earth cover. Paid separately as CLASS SI CONCRETE.
- The existing field tiles shall be connected to a STORM SEWERS PROTECTED CLASS A or STORM SEWERS (SPECIAL) by a concrete collar or mortared connection as shown in Detail 'A'.
- All collars, tees, elbows, lids, fittings and mortar necessary to install the storm sewer of the size specified, shall be included in the cost of either STORM SEWERS PROTECTED CLASS A or STORM SEWERS (SPECIAL).
- Applicable portion of the Special Provision for STORM SEWERS PROTECTED CLASS A apply.

01-01-97	RENUM. A-18.02, NEW REVISION BOX, REVISED TITLE	T.P.	04-25-17	MAJOR REVISIONS	R.D.
06-01-97	REVISED DRAWING & TITLE BOX	J.A.			
10-16-06	REVISED TO 2007 SPEC.	M.A.			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

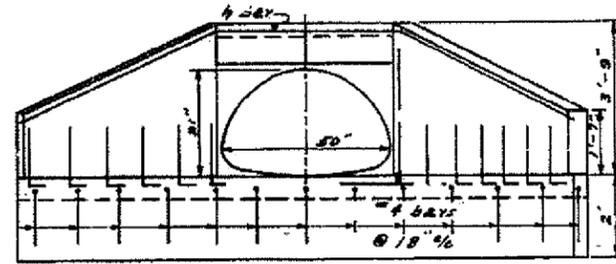
NOT TO SCALE

STORM SEWERS PROTECTED CLASS A
OR
STORM SEWERS (SPECIAL)

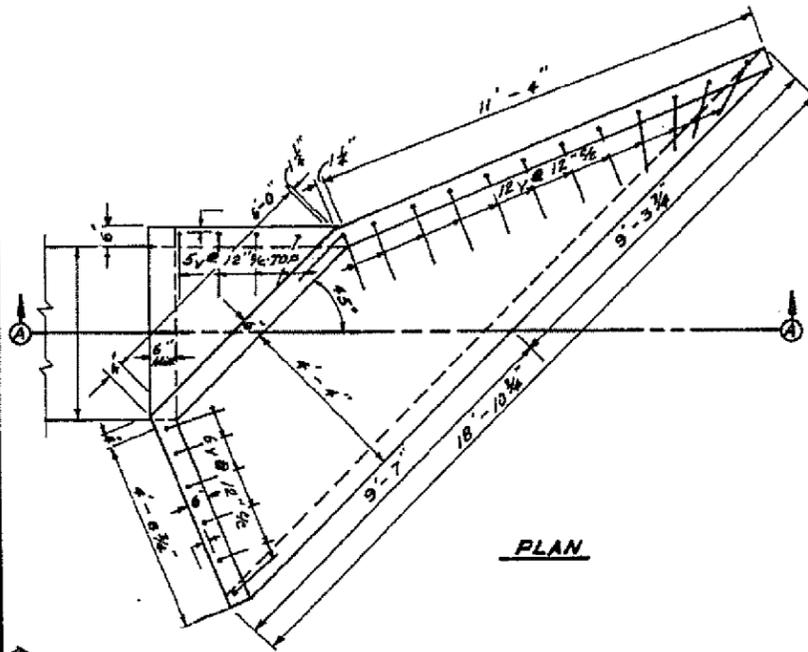
CADD STD. 611001-D4

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(39)EXT,33,39(CR);36-T	McDonough & Warren	27	22
CONTRACT NO. 68D44			ILLINOIS FED. AID PROJECT	

SECTION	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.110	33-2	McDONOUGH	32	12
STA.	TOTAL PROJECT			
21+00	ILLINOIS FED. AID PROJECT			



END VIEW

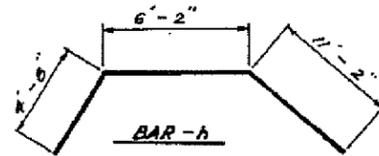


PLAN

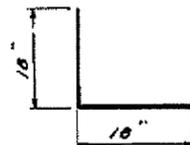
BILL OF MATERIALS

BAR	NO.	SIZE	LENGTH
h	1	1/2"	22'-0"
v	4	1/2"	3'-0"

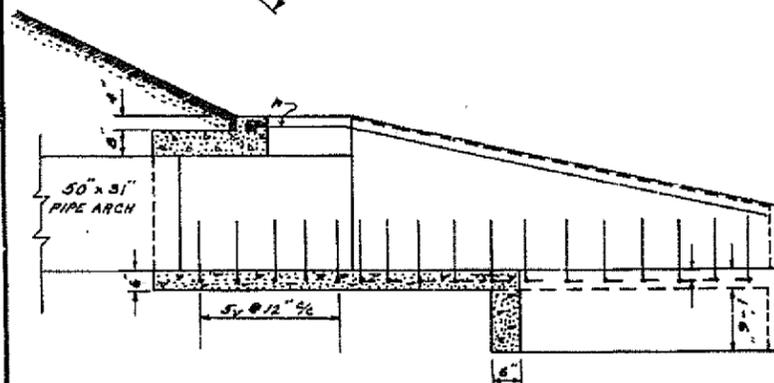
CLASS X CONCRETE 3.5 CU. YD.
RE-BARS 97 LBS.



BAR-h

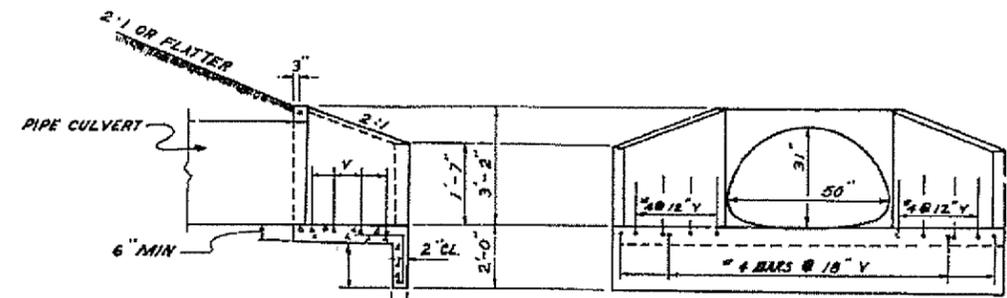


BAR-v



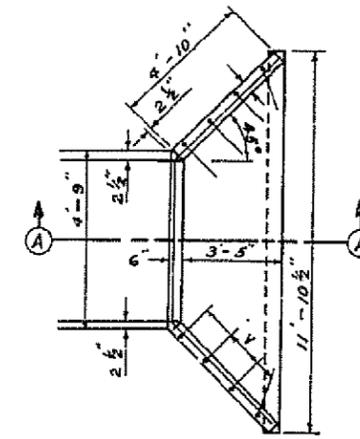
SECTION A-A

REINFORCED CONCRETE HEADWALLS
50" x 31" ARCH
PIPE CULVERT
SKEWED WITH ROADWAY

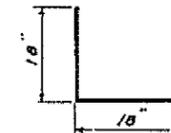


SECTION A-A

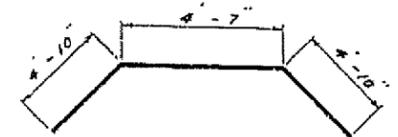
END VIEW



PLAN



V BAR



H BAR
BENT IN FIELD
ONE REQD. IN EACH HOWL.

BILL OF MATERIALS

BAR	NO.	SIZE	LENGTH
h	1	1/2"	14'-3"
v	18	1/2"	3'-0"

CLASS X CONCRETE 1.45 CU. YD.
RE-BARS 96 LBS.

FOR INFORMATION ONLY

REINFORCED CONCRETE HEADWALL
50" x 31" ARCH
PIPE CULVERT
RT. STATION 21+00

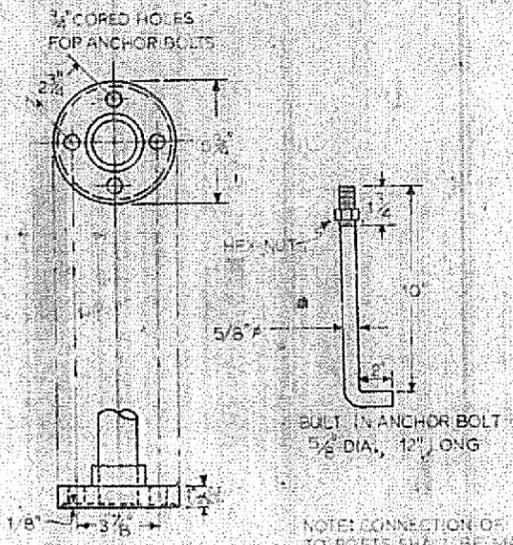
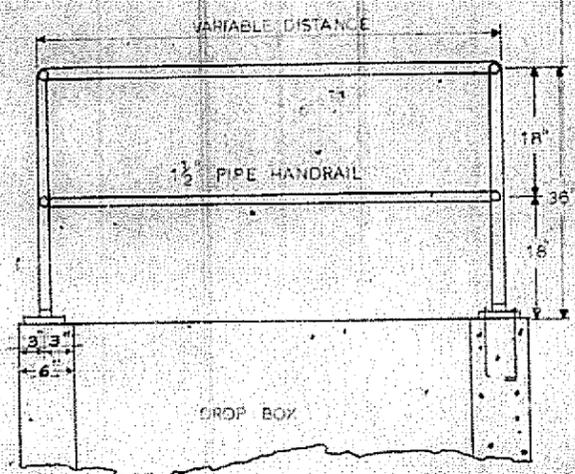
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		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCALE:	SHEET	OF	SHEETS	STA.	TO	STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(39)EXT,33,39(CR)36-T	McDonough & Warren	27	23
CONTRACT NO. 68D44			ILLINOIS FED. AID PROJECT	

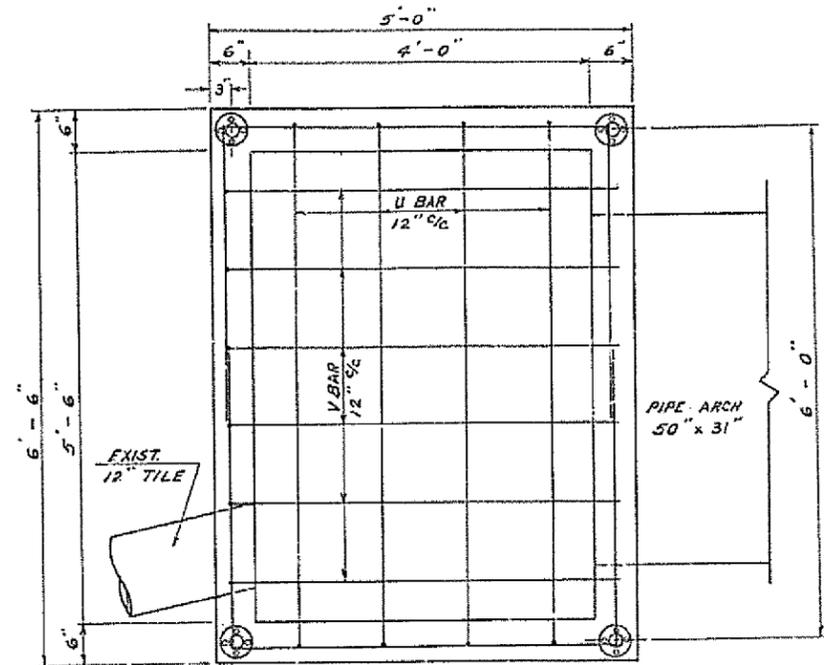
LOCATION	LENGTH OF SIDES %	TOTAL LENGTH
RT. STA. 1472+72	4'-6" 6'-0"	21'-0"



NOTE: CONNECTION OF RAILING TO POSTS SHALL BE MADE BY CONTINUOUS WELDING WITHOUT FITTINGS.

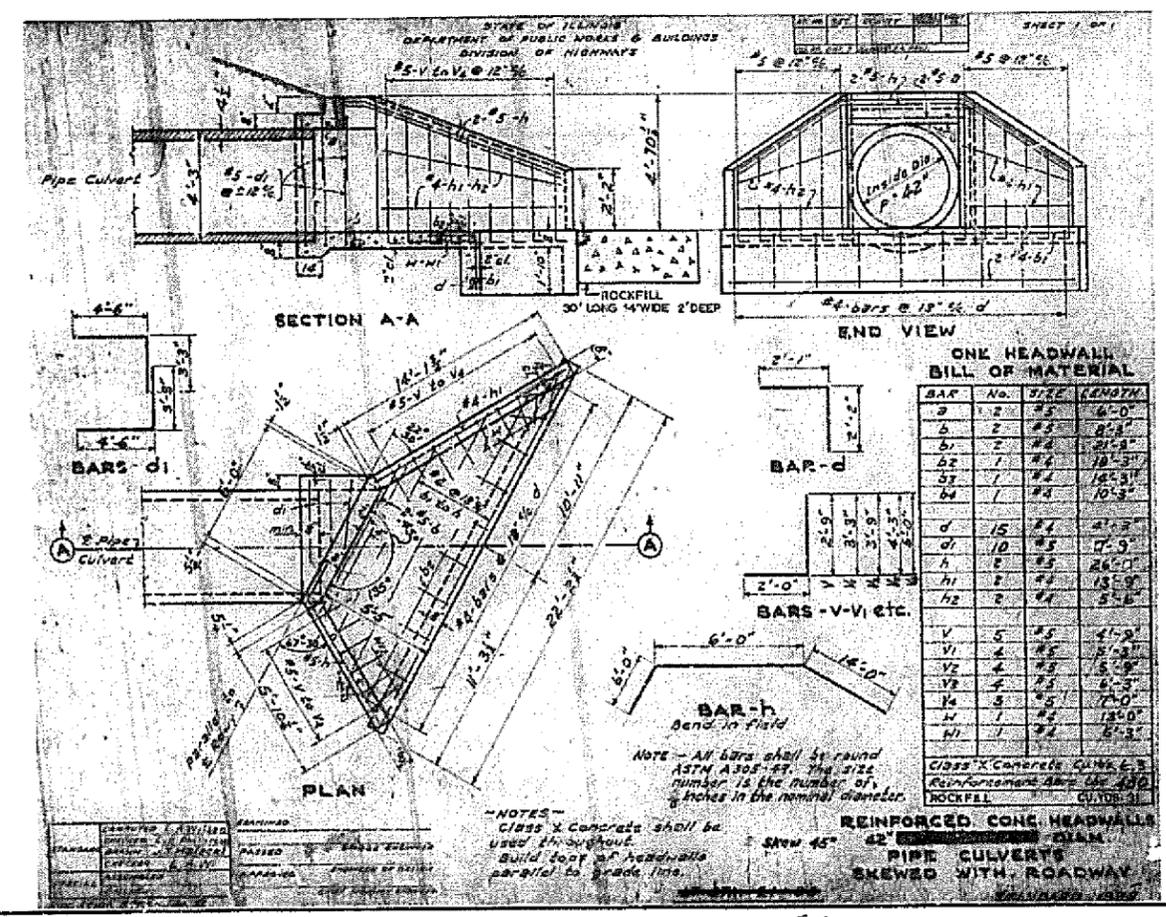
THE CONTRACT UNIT PRICE FOR PIPE HANDRAIL SHALL INCLUDE THE COST OF FURNISHING AND INSTALLING THE ANCHOR BOLTS.

DETAIL OF PIPE HANDRAIL FASTENING TO DROP BOXES
RT. STATION 1472 + 72



BILL OF MATERIALS			
BAR	NO.	SIZE	LENGTH
U	4	#4	12'-6"
V	6	#4	7'-9"
h	8	#4	10'-6"
			CLASS X CONCRETE 1.6 CU YD
			RE-BARS 120 LBS.

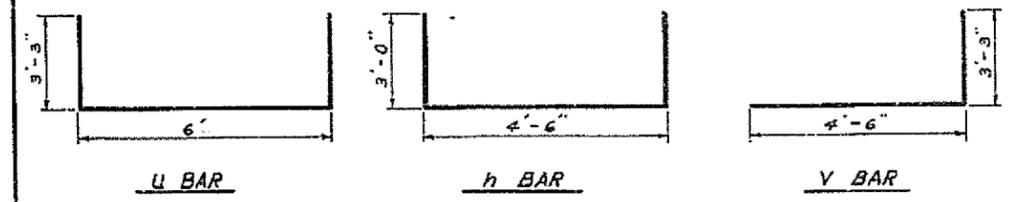
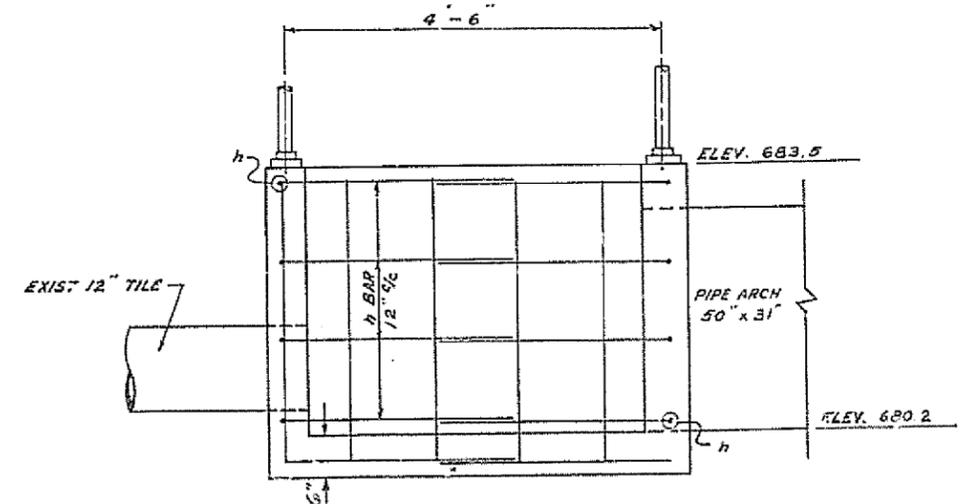
FOR INFORMATION ONLY



ONE HEADWALL BILL OF MATERIAL

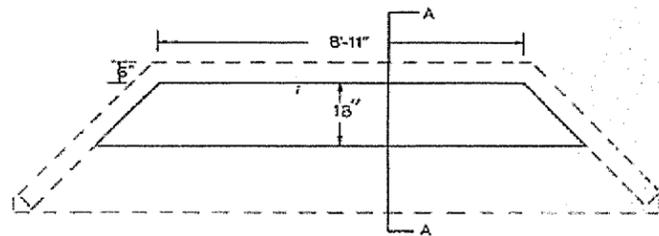
BAR	No.	SIZE	LENGTH
a	2	#5	6'-0"
b	2	#5	8'-8"
c	2	#4	21'-8"
d	1	#4	10'-3"
e	1	#4	18'-3"
f	1	#4	10'-3"
g	15	#4	4'-2"
h	10	#5	7'-5"
i	8	#5	28'-0"
j	2	#4	18'-9"
k	2	#4	5'-6"
l	5	#5	4'-9"
m	4	#5	5'-8"
n	4	#5	5'-9"
o	5	#5	6'-3"
p	5	#5	7'-0"
q	1	#4	18'-0"
r	1	#4	6'-3"

CLASS X CONCRETE CLASS E-3
REINFORCEMENT SHALL BE 40%
ROCKFILL CULVERT 3

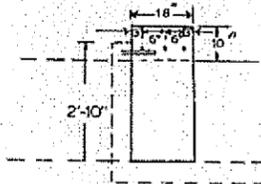


DROP BOX
RT. STA. 1472 + 72

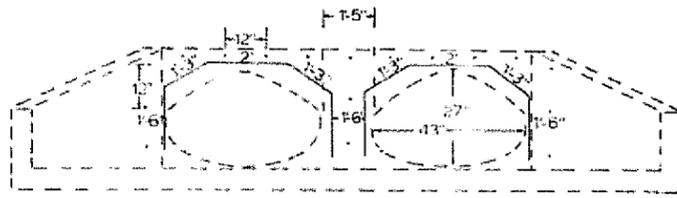
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.M. 10 33-T	McDONOUGH	32	13
TO STA.		FROM STA.	
1504+00		1504+00	
ILLINOIS FED. AID PROJECT			



PLAN



NOTE EXPANSION BOLTS SHALL CONSIST OF SELF DRILLING EXPANSION SHIELDS AND 3/4" Φ HOOKED BOLTS. HOOKED BOLTS SHALL EXTEND A MINIMUM OF 9" INTO NEW CONCRETE. ALSO REFER TO EXPANSION BOLT DETAIL FOR PROPER SPACING OF BOLTS.

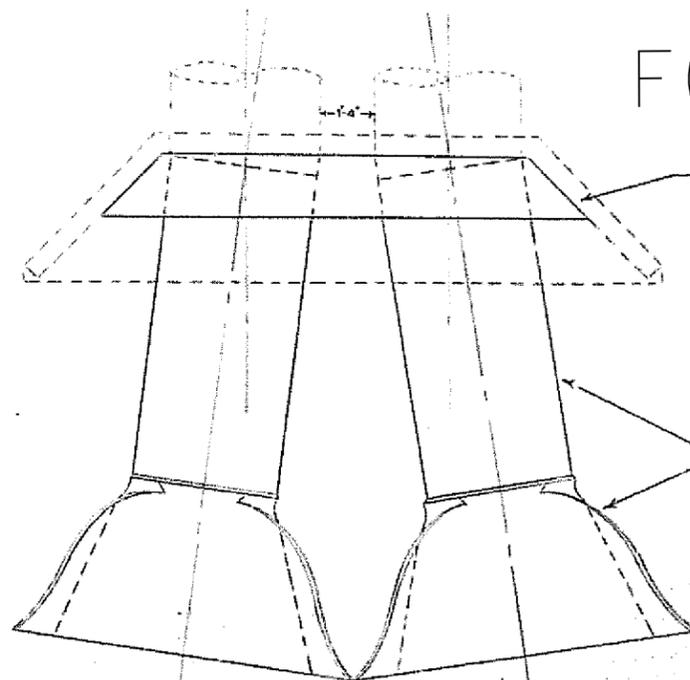


END VIEW

TWO COLLARS

BILL OF MATERIALS			
SIZE	NO	LENGTH	LBS
4	12	7'-6"	60.1
CLASS X CONC.		2.4 CU YD	
EXP BOLTS 3/4"		34 EACH	

PIPE COLLAR
FOR TWIN METAL PIPE ARCH
STA. 1504+02 RT & LT
NO SCALE



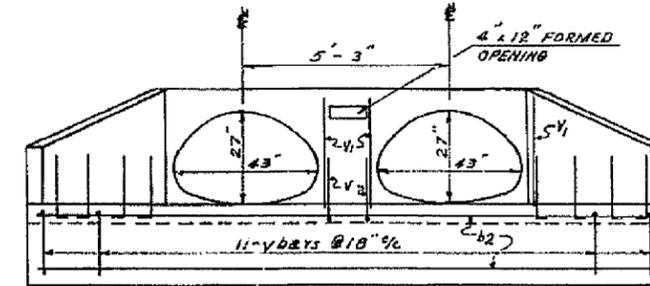
PIPE COLLAR AS PER ABOVE DETAIL

SEE CULVERT SUMMARY SHEET FOR PAY ITEMS

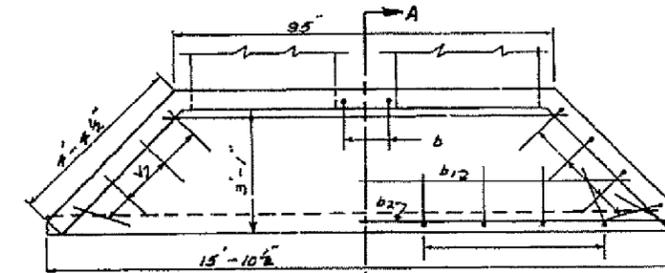
END SECTION INSTALLATION
FOR TWIN 42"x29" METAL PIPE ARCH

NO SCALE LT & RT Sta 1504+02

FOR INFORMATION ONLY



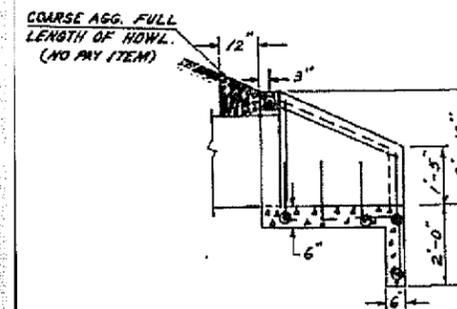
END VIEW



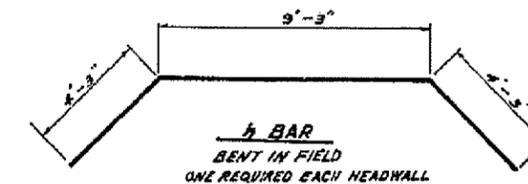
PLAN

BILL OF MATERIALS

BAR NO.	SIZE	LENGTH
b	4	17'-8"
b2	4	15'-6"
b1	2	13'-0"
b	2	10'-0"
y	4#	5'-0"
y	6	2'-8"
CLASS X CONC.		3.3 CU YD
RE-BARS		137 LBS



SECTION A-A



h BAR
BENT IN FIELD
ONE REQUIRED EACH HEADWALL



y BAR

REINFORCED CONCRETE HEADWALL
FOR TWIN 43"x27" METAL PIPE ARCH
AT RIGHT ANGLES TO ROADWAY
STATION 1504+00

FILE NAME = D468044-sht-plan.dgn	USER NAME = aubreys	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

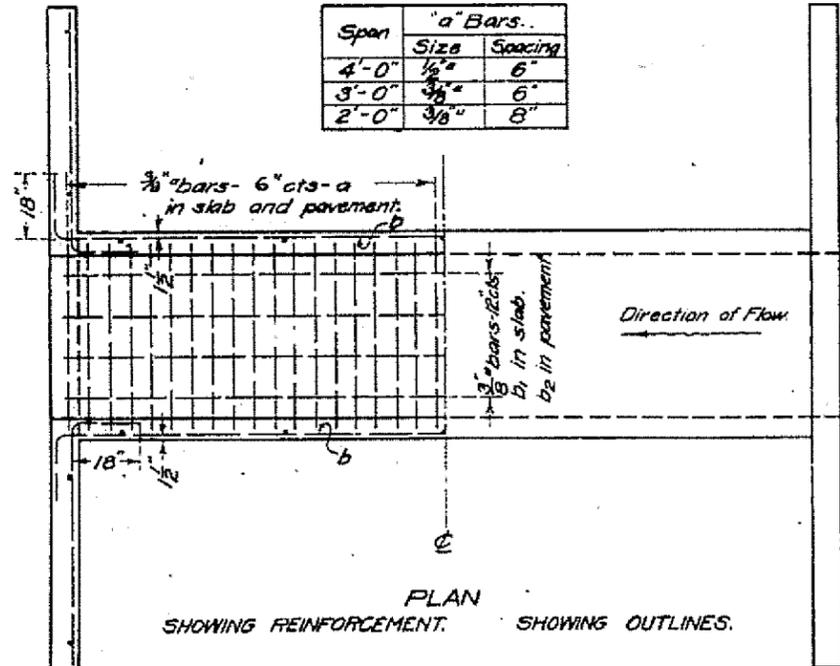
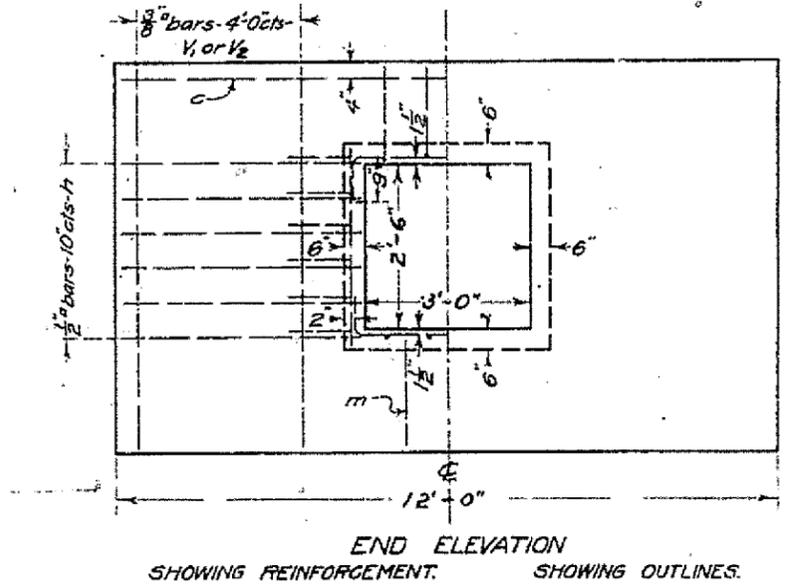
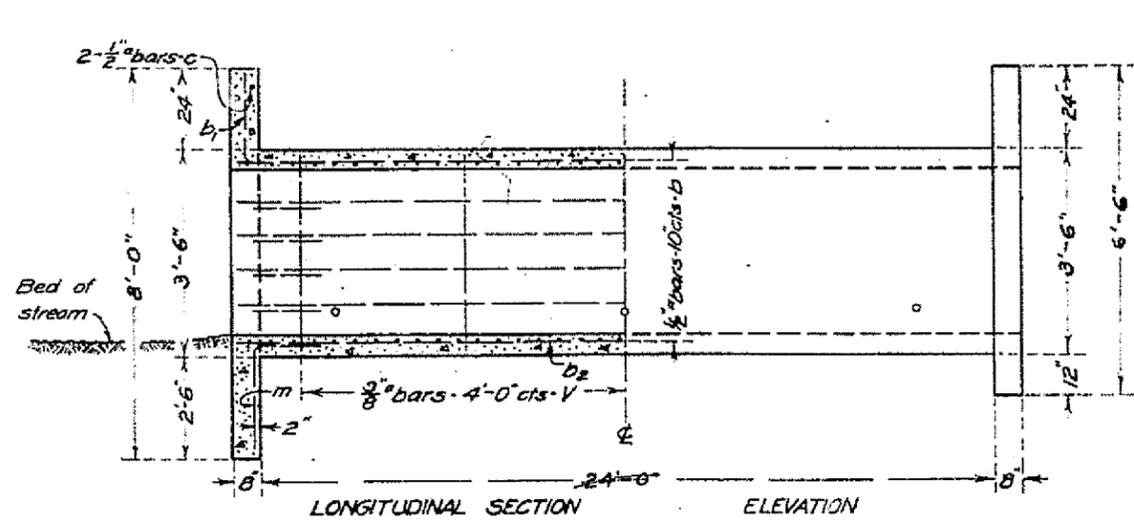
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

1504 + 02 EXISTING

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(39)EXT,33,39(CR)36-T	McDonough & Warren	27	25
CONTRACT NO. 68D44			ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
STATE HIGHWAY DEPARTMENT
REINFORCED CONCRETE BOX CULVERT



Span	"a" Bars.	
	Size	Spacing
4'-0"	1/2"	6"
3'-0"	3/8"	6"
2'-0"	3/8"	8"

Note.
Fill over box should be limited to 4'-0".
Maximum Clearance = 4'-0".
Use "m" bars in downstream headwall only.

BILL OF MATERIAL

Bars	No.	Size	Length
V	12	3/8"	3'-0"
V ₁	4	3/8"	7'-6"
V ₂	4	3/8"	6'-0"
h	16	1/2"	6'-0"
a	100	3/8"	5'-0"
b	8	1/2"	28'-0"
b ₁	3	3/8"	28'-6"
b ₂	3	3/8"	25'-0"
c	4	1/2"	11'-6"
m	2	1/2"	5'-0"
Steel - Lbs.			680
Concrete - Cu. Yds.			9.7

Class A concrete to be used throughout
Proportions 1 - 2 1/4 - 4.

COMPUTED	Walter B. Jordan
CHECKED	H. Byrd
DRAWN	W. J. J.
CHECKED	W. J. J.
ASSEMBLED	C. B. J.
CHECKED	C. B. J.
EXAMINED	
BRIDGE ENGINEER	
APPROVED	
STATE HIGHWAY ENGINEER	

FOR INFORMATION ONLY

1472 + 72

618-24
COPY

