

TRAFFIC SIGNAL ESTIMATE OF QUANTITIES

ITEM CODE	ITEM	UNIT	KY 1120 AT RAMP N	KY 1120 AT RAMP D	GRAND AVE AT RAMP C	I-471 AT US 27	US 27 AT RAMP D	US 27 AT RAMP A	TOTAL
4811	JUNCTION BOX TYPE B	EACH	1	1	2	1	1	1	7
4830	LOOP WIRE	LIN FT	325	600	600	375	625	1050	3575
4850	CABLE - NO 1/4 PAIR	LIN FT	50	450	475	225	150	750	2100
4895	LOOP SAW SLOT AND FILL	LIN FT	125	250	225	150	250	375	1375
			-	-	-	-	-	-	-
			-	-	-	-	-	-	-

BID ITEM NOTES

The Standard Specifications for Road and Bridge Construction, current edition, and other special notes and specifications will apply on this project.

Junction box shall include furnishing and installing specified junction box in accordance with the specifications. This item includes concrete (if required), #57 aggregate, and backfilling and restoration of disturbed areas to the satisfaction of the resident engineer. Removal of existing junction boxes shall be incidental to this bid item.

Wire or cable shall include furnishing and installing specified wire or cable within conduit, saw slot, or overhead as indicated on the detail sheets. Incidental to this item shall be the furnishing and installing of splice boots, cable rings or other hardware required for installing cable. The contractor shall install all cable or wire runs splice-free from the controller to each loop wire, signal head, pedestrian head/detector, camera, blankout sign and audible pedestrian head/detector the cable or wire is feeding. Exceptions to this must be approved by the engineer or as specified on the plans. Installation of conduit between junction box and edge of pavement as required in the Loop Details sheet shall be incidental to this bid item.

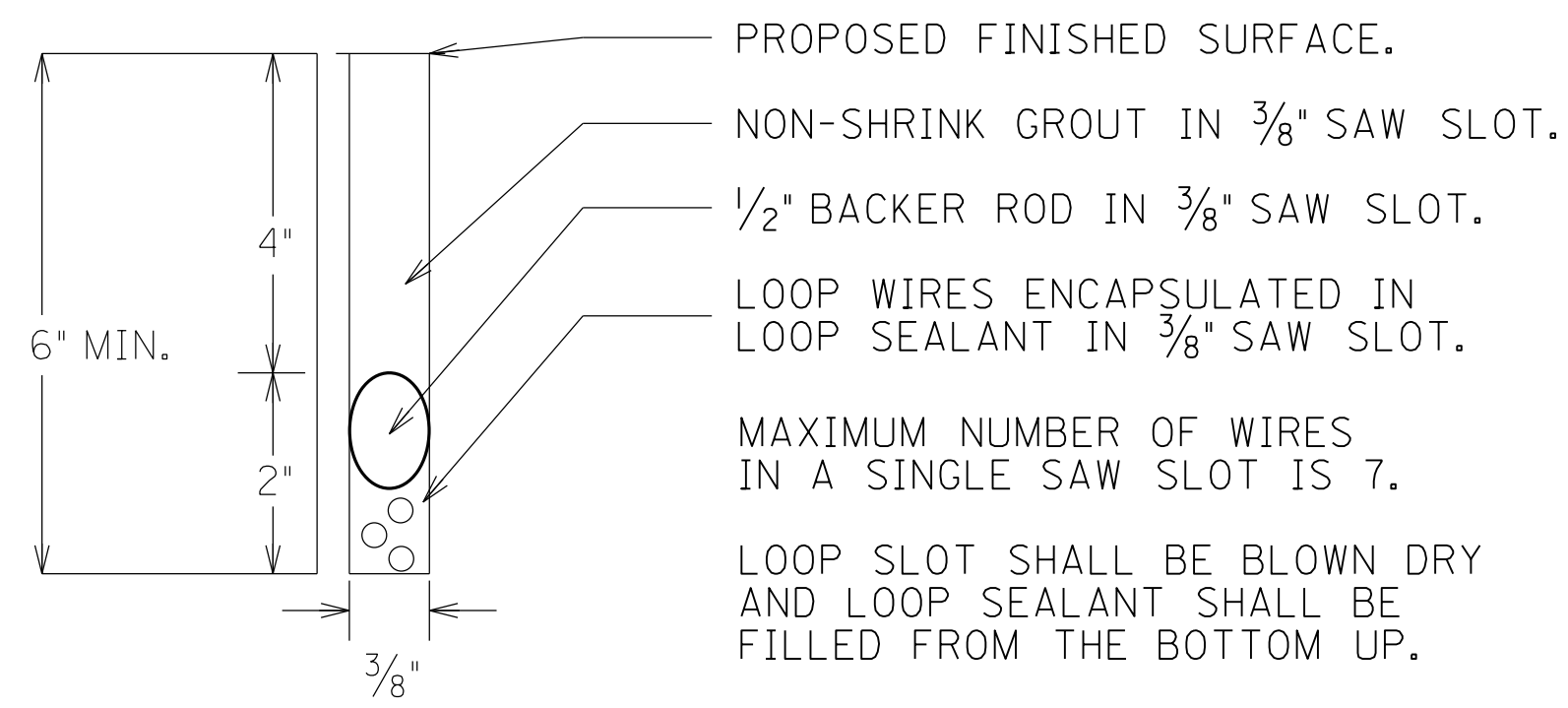
Loop saw slot and fill shall include sawing, cleaning and filling induction loop saw slot with loop sealant material.

Contractor shall be responsible for payment of electric service for all signals. The Kentucky Transportation Cabinet will assume responsibility for payment of electric service when the project is called complete and all testing has been completed. Payment for this item shall be incidental to the cost of the project.

DESIGNED BY: LARRY IRISH	
DATE SUBMITTED: 1/19/2012	
<b>Commonwealth of Kentucky</b> <b>DEPARTMENT OF HIGHWAYS</b> <b>COUNTY OF</b> <b>CAMPBELL</b>	
PROJECT NUMBERS:	FD52 019 0471 000-006
TRAFFIC SIGNAL QUANTITIES AND BID ITEM NOTES	

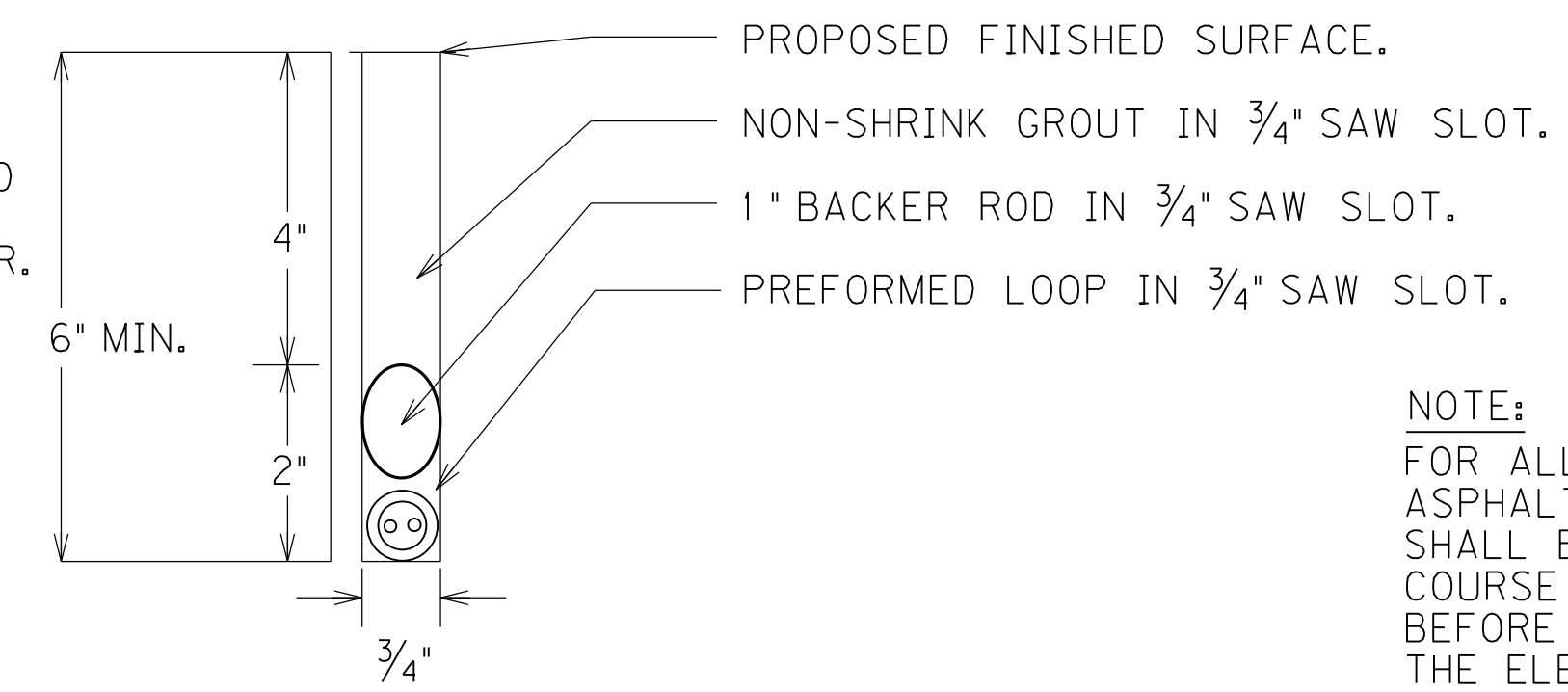


LOOP WIRES SHALL BE ENCAPSULATED WITH LOOP SEALANT PER MANUFACTURER'S INSTRUCTIONS. ALL LOOP SEALANT SHALL BE COVERED WITH A CONTINUOUS LAYER OF BACKER ROD. BACKER ROD SHALL BE INSTALLED SUCH THAT NO VOIDS ARE PRESENT BETWEEN LOOP SEALANT AND BACKER ROD. FILL REMAINING SAW SLOT WITH NON-SHRINK GROUT PER MANUFACTURER'S INSTRUCTIONS. IF LOOP IS INSTALLED AFTER FINAL SURFACE HAS BEEN APPLIED, INSTALL 1/2" OF LOOP SEALANT ON TOP OF NON-SHRINK GROUT. LOOP SEALANT SHALL BE STOPPED 1/8" BELOW FINISHED SURFACE.



SAW SLOT DETAIL FOR NON PREFORMED

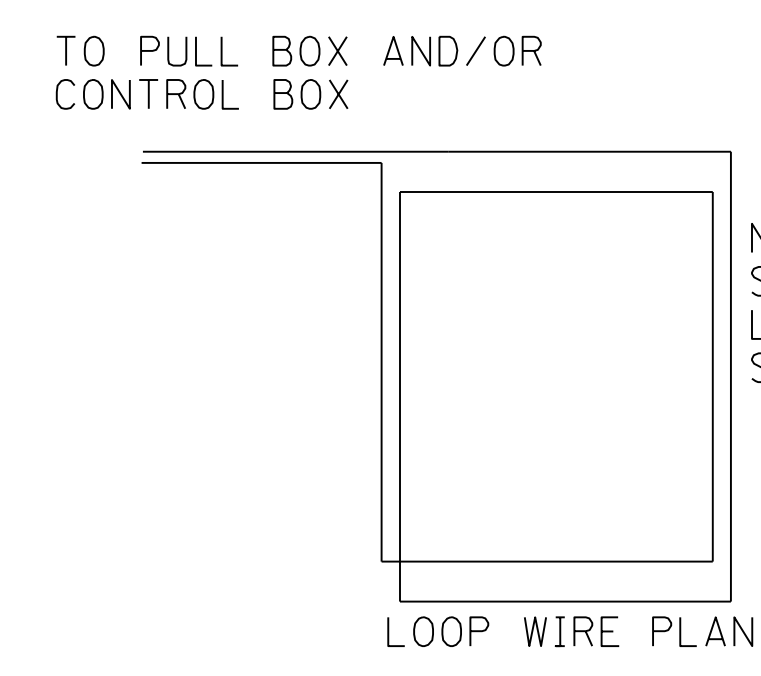
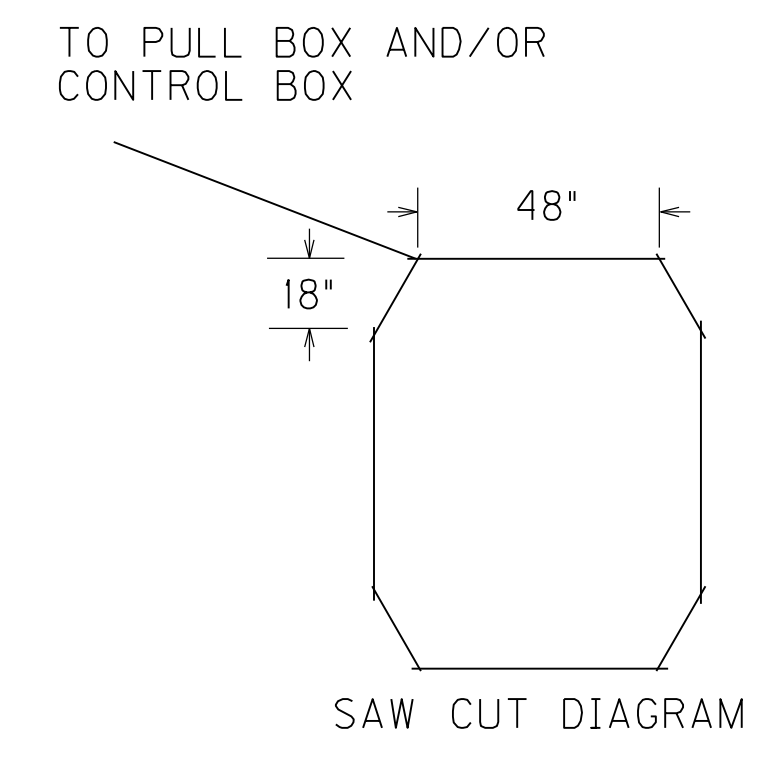
PREFORMED LOOPS SHALL BE CONSTRUCTED WITH 3/8" HEAVY DUTY REINFORCED RUBBER HOSE (CLASS A OIL RESISTANT). THE TEE SHALL BE CONSTRUCTED OF HEAVY DUTY HIGH TEMPERATURE SYNTHETIC RUBBER. STANDARD WIRE SHALL BE WATER RATED #16 THWN.



ASPHALT SAW SLOT DETAIL FOR PREFORMED

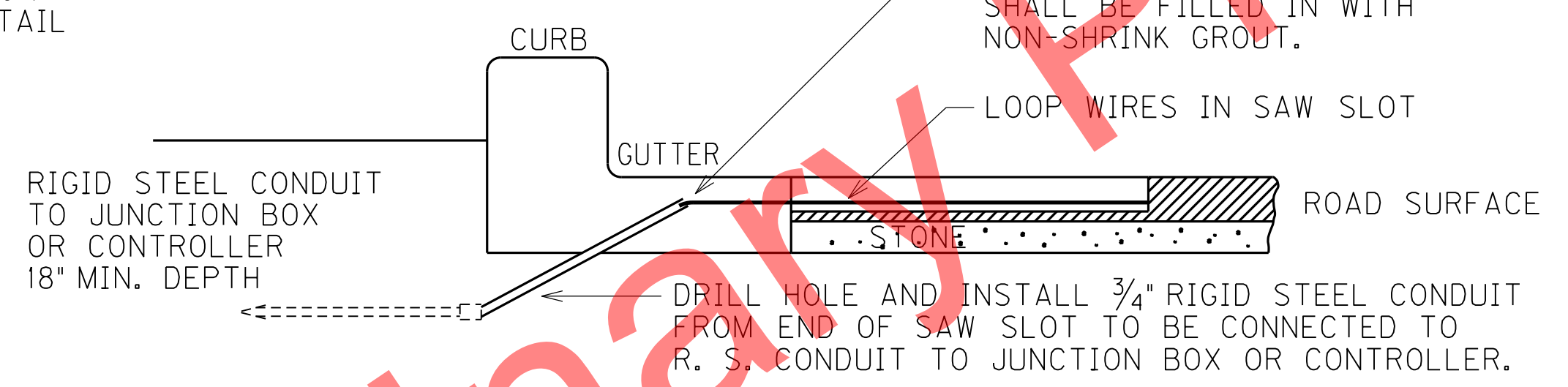
\*Use detail if concrete is four inches or less

NOTE:  
FOR ALL PROJECTS INVOLVING NEW ASPHALT PAVEMENT, TRAFFIC LOOPS SHALL BE INSTALLED IN THE BASE COURSE OF ASPHALT PAVEMENT JUST BEFORE FINAL SURFACE IS CONSTRUCTED. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF TRAFFIC LOOPS WITH THE PAVING CONTRACTOR AND THE RESIDENT ENGINEER.

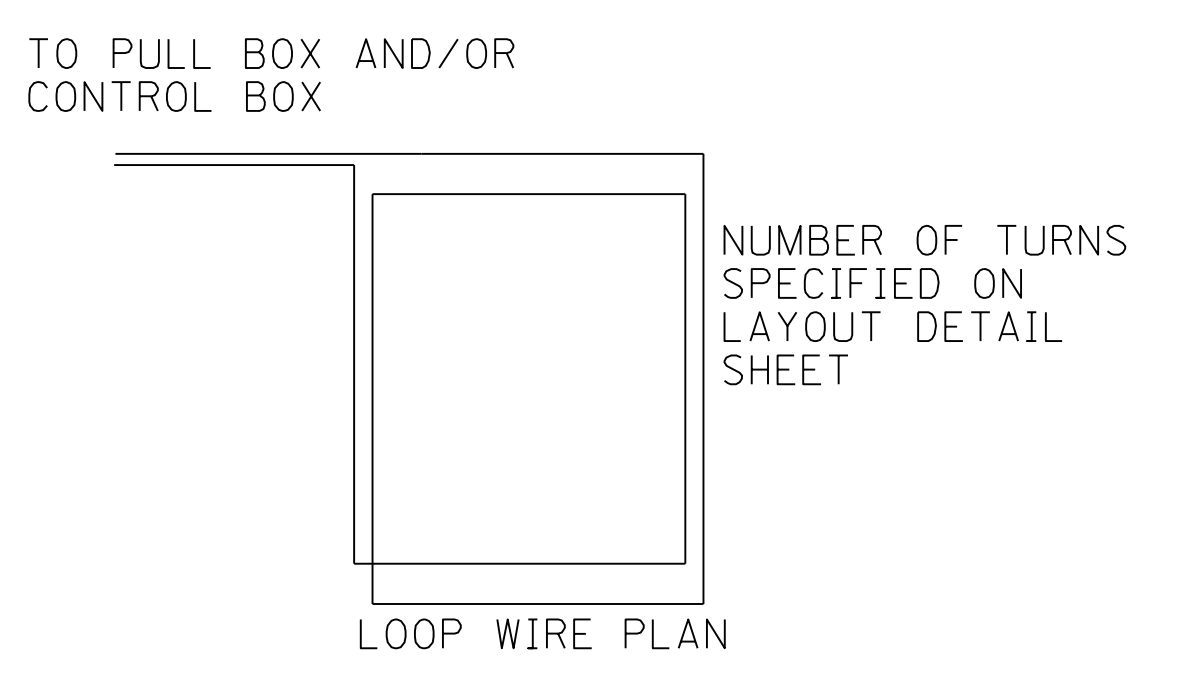
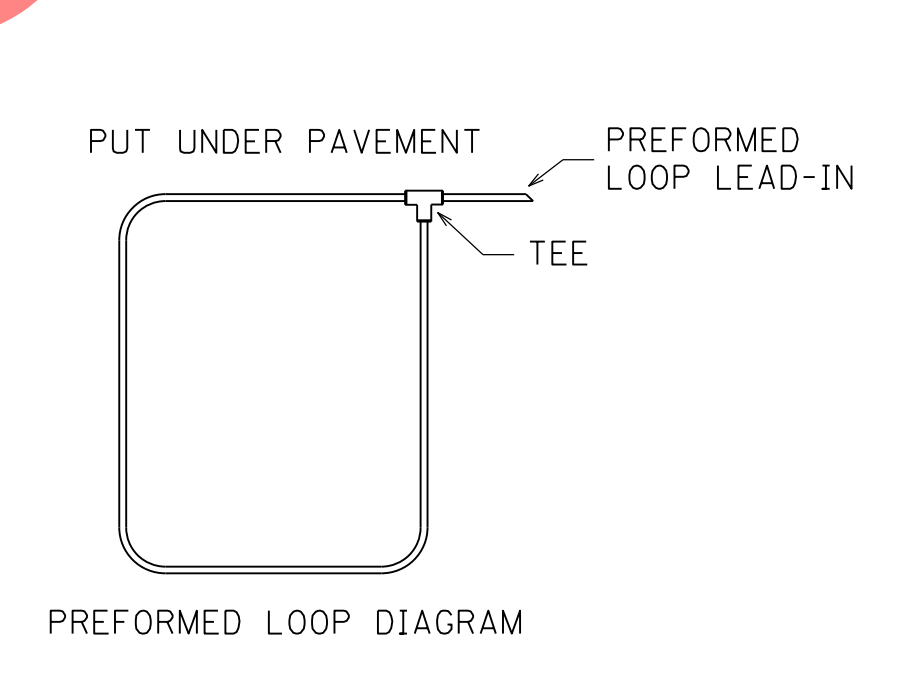


STANDARD LOOP

\*ALL 6'x6' LOOPS SHALL BE STANDARD



LOOP WIRE TRANSITION - CONCRETE CURB

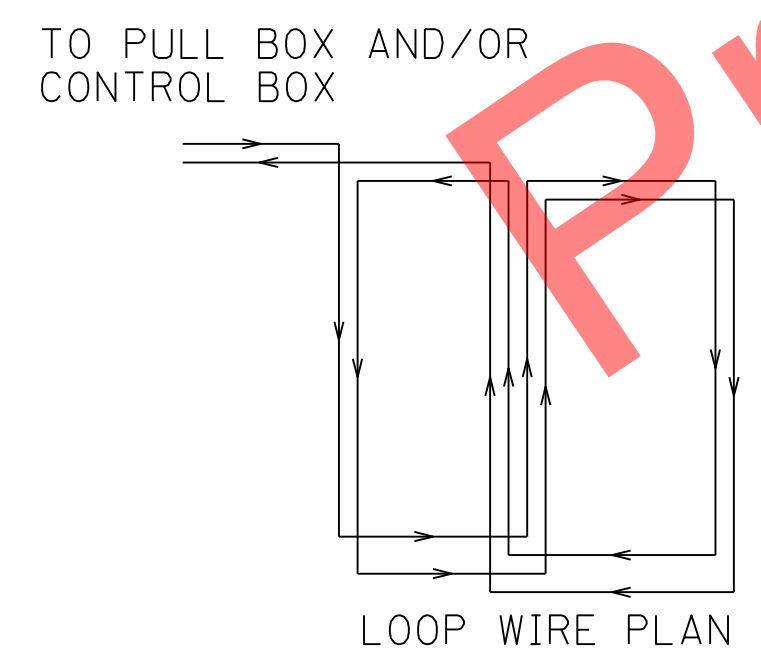
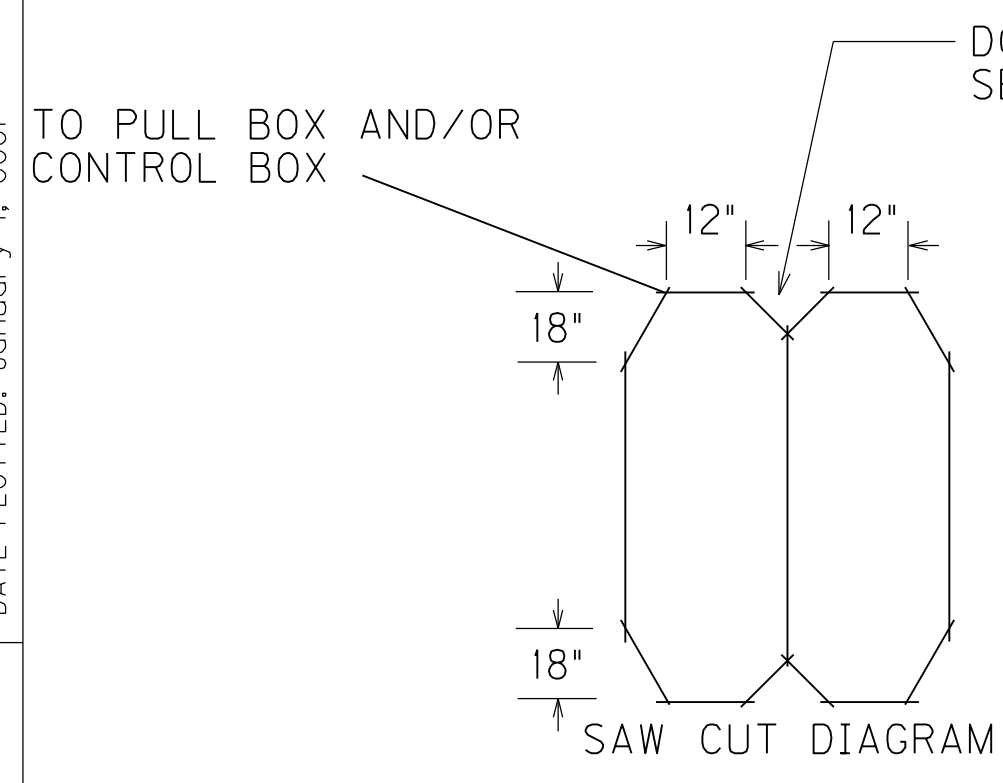


STANDARD PREFORMED LOOP

\*ALL LOOPS THAT ARE NOT QUADRAPOLES SHALL BE STANDARD AND HAVE 3 TURNS

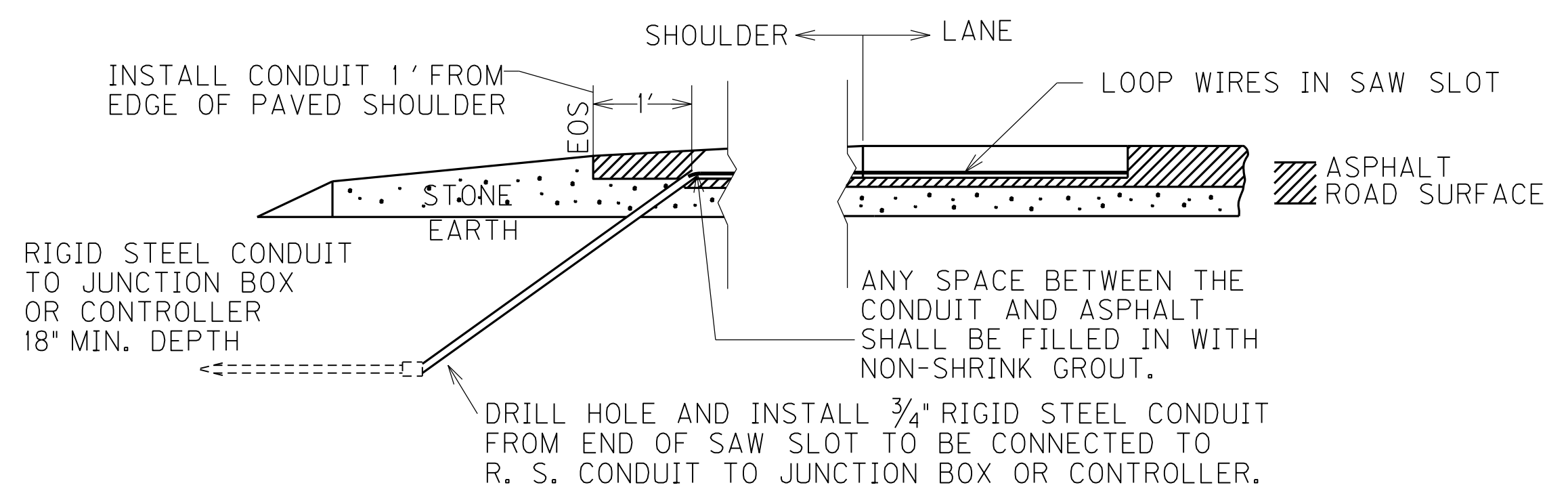
LOOP LEAD-IN WIRES SHALL BE TWISTED WITH THREE TO FIVE TURNS PER FOOT UNTIL TERMINATED AT FIELD CONNECTIONS IN THE CABINET OR CONNECTED TO SHIELDED CABLE.

PREFORMED LOOP LEAD-IN SHALL BE TWISTED WITH THREE TO FIVE TURNS PER FOOT UNTIL TERMINATED AT FIELD CONNECTIONS IN THE CABINET OR CONNECTED TO SHIELDED CABLE.

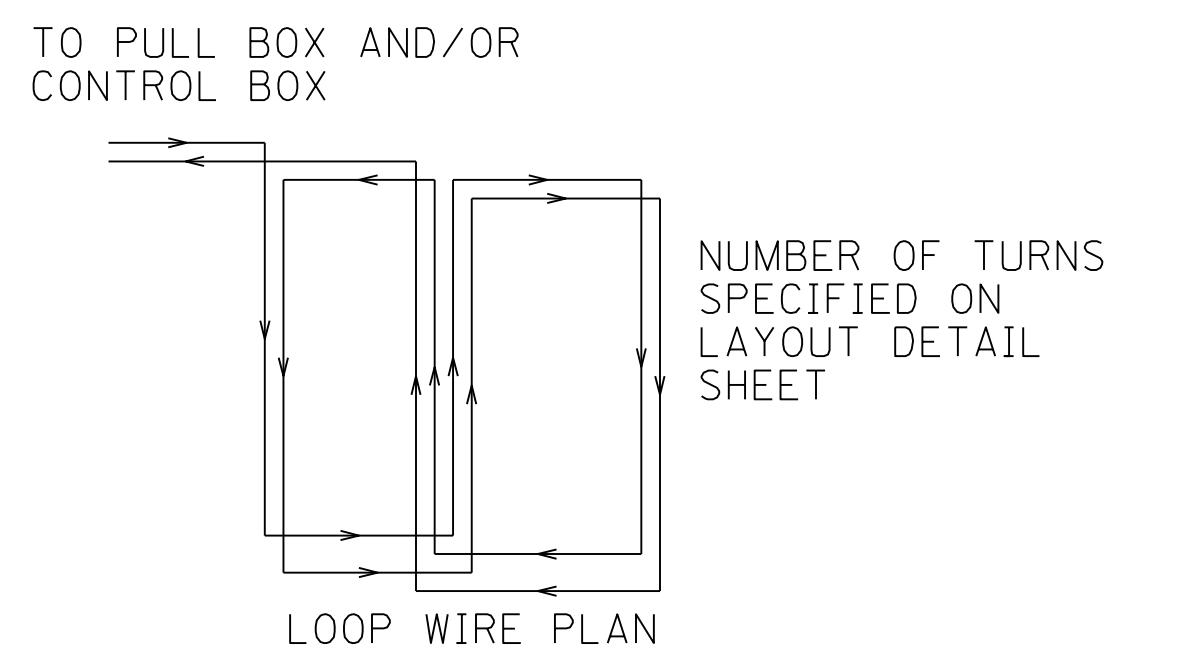
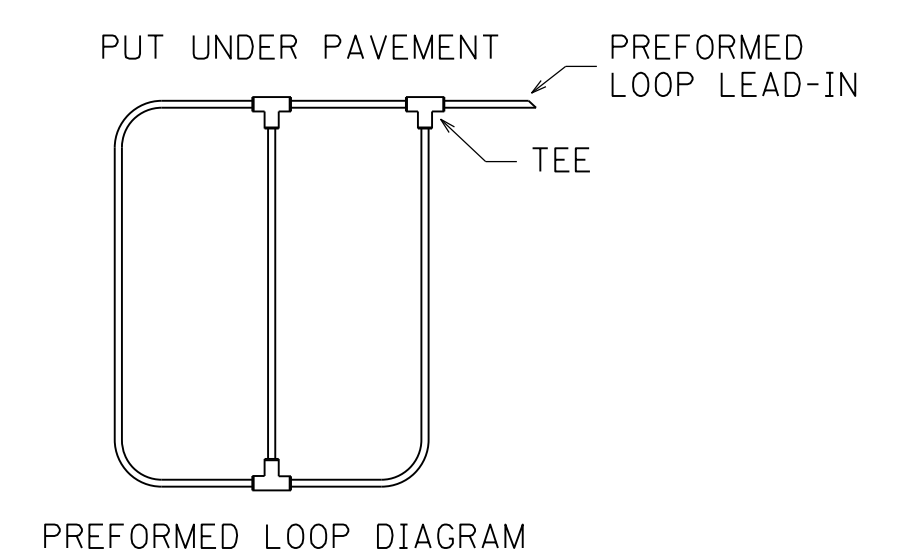


QUADRAPOLE LOOP

\*ALL 6'x30' LOOPS SHALL BE QUADRAPOLE



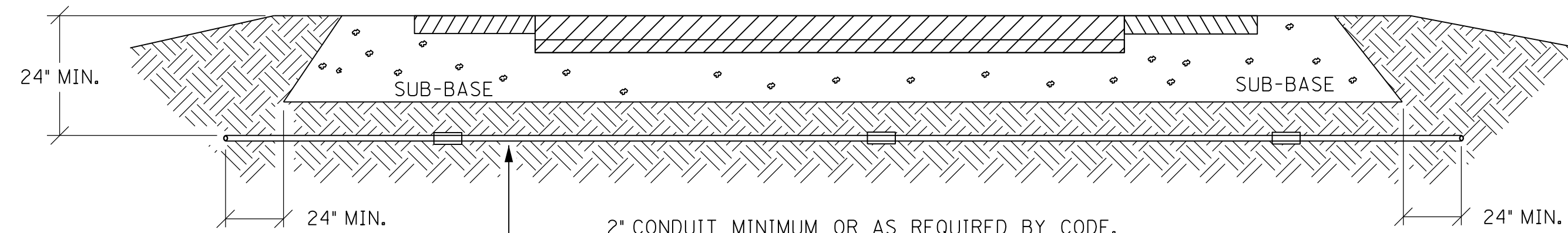
LOOP WIRE TRANSITION - FLAT SHOULDER



QUADRAPOLE PREFORMED LOOP

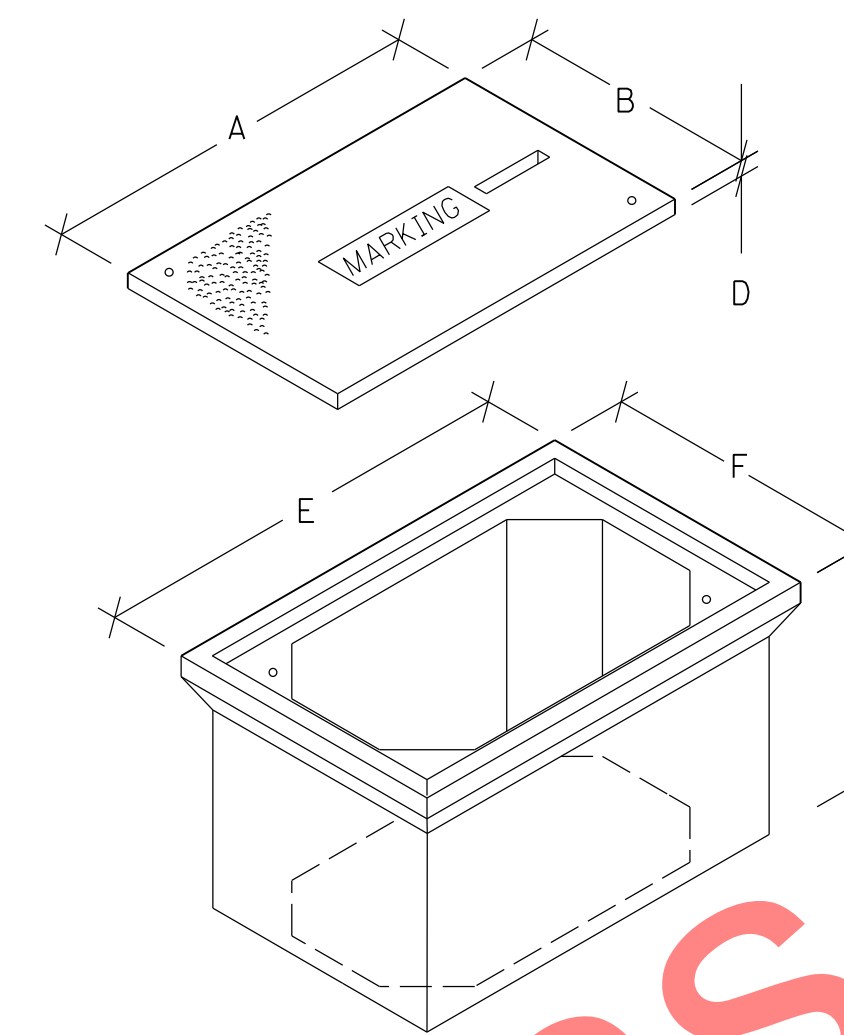
\*ALL 6'x30' LOOPS SHALL BE QUADRAPOLE AND SHALL HAVE A 2-4-2 CONFIGURATION

FILE NAME: G:\DOCUMENTS AND SETTINGS\SWANEGAR\DESKTOP\6-2021 ESHEETS\NEW FOLDER\T04900LP.DGN  
USER: ted.swanegar  
DATE PLOTTED: January 1, 0001  
E-SHEET NAME: T04900LP  
MicroStation v8.11.7.180



2" CONDUIT MINIMUM OR AS REQUIRED BY CODE. UNLESS 'OPEN CUT ROADWAY' IS INCLUDED AS A BID ITEM, CONDUIT MUST BE INSTALLED WITHOUT DISTURBING PAVEMENT. CONDUIT SHALL EXTEND A MINIMUM OF 24" PAST THE EDGE OF SUB-BASE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

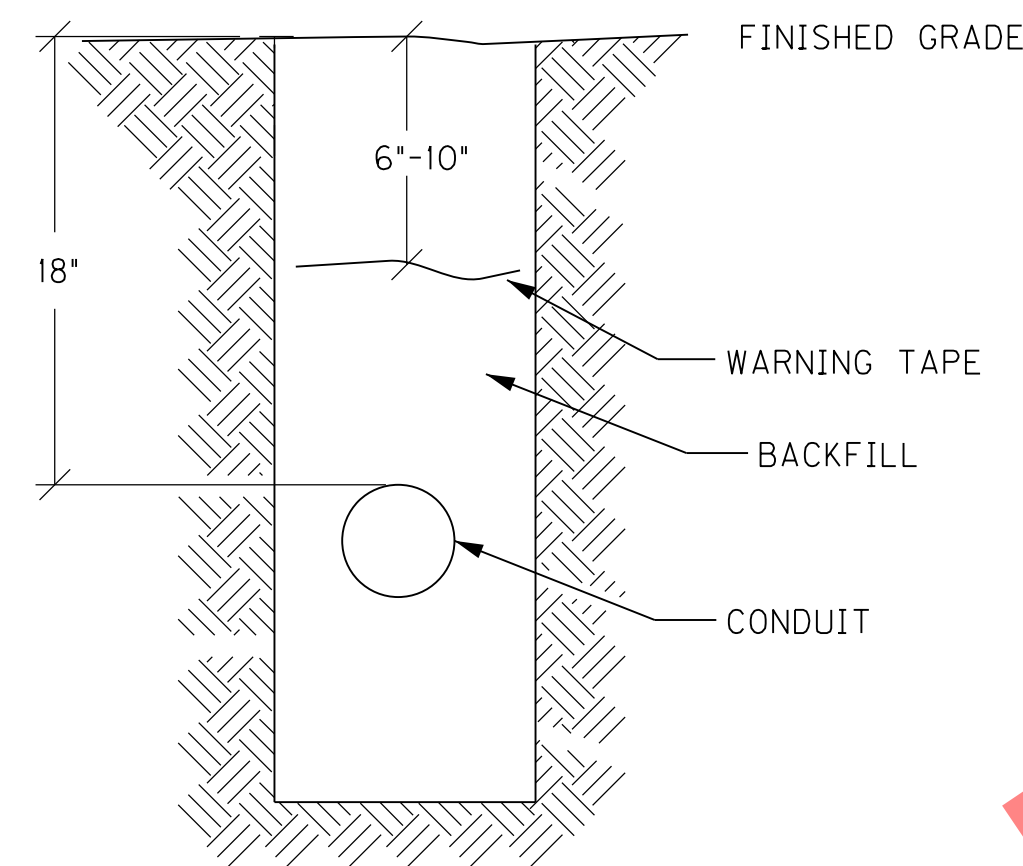
CONDUIT INSTALLATION UNDER EXISTING PAVEMENT DETAIL



JUNCTION BOX DIMENSIONS (NOMINAL)						
	A	B	C	D	E	F
TYPE A	23"	14"	27"	2"	25"	15"
TYPE B	18"	11"	12"	1 3/4"	20"	13"
TYPE C	36"	24"	30"	3"	38"	26"

• MINIMUM  
NOTE: STACKABLE BOXES ARE PERMITTED

CONTRACTOR SHALL INSTALL UNDERGROUND UTILITY WARNING TAPE ABOVE CONDUIT AND/OR DUCTED CABLE AS SHOWN. THE TAPE SHALL BE 6" WIDE BY 7.0 MILS (NOMINAL) THICK, HAVE A MINIMUM TENSILE STRENGTH OF 600 POUNDS PER 6" WIDTH, AND BE COLOR CODE IMPREGNATED WITH ALKALI AND ACID STABLE, LEAD-FREE, ORGANIC PIGMENTS SUITABLE FOR DIRECT BURIAL. THE TAPE SHALL ALSO BE ULTRAVIOLET COLORFAST AND NON-DISTORTING WITH NO ELONGATION. THE TAPE SHALL INCLUDE BLACK LETTERING/SYMBOLS ON A RED BACKGROUND THAT CONFORMS TO THE APWA-ULCC NATIONAL COLOR CODE. THE TAPE SHALL CONTINUOUSLY READ, "CAUTION: ELECTRIC LINE BURIED BELOW" ALTERNATING WITH A 'NO DIGGING' SYMBOL.



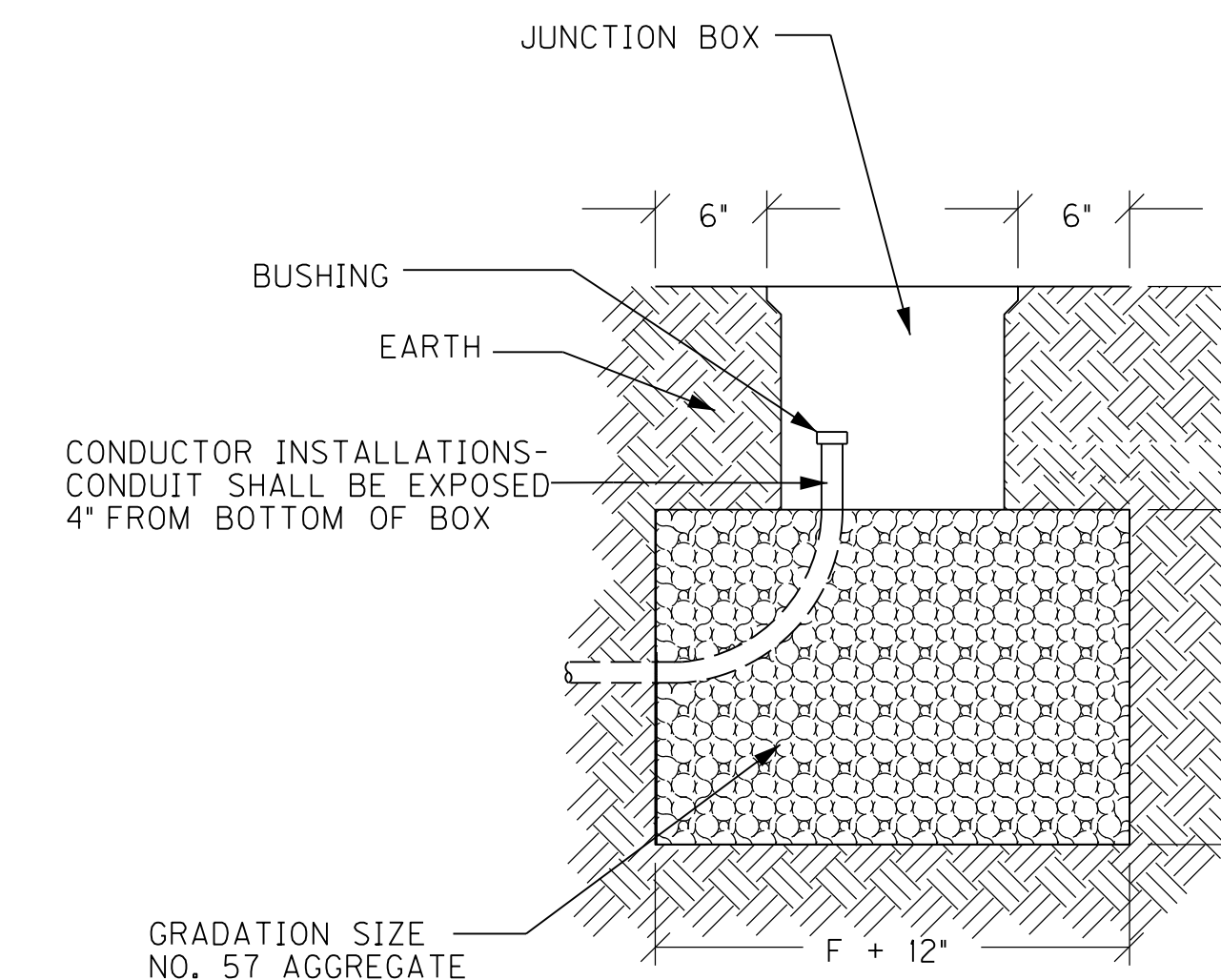
DEPTHS SHOWN FOR CONDUIT AND DUCTED CABLE ARE MINIMUMS. CONTRACTOR SHALL PLACE AND COMPACT BACKFILL IN 9" MAXIMUM LIFTS AND RETORE DISTURBED AREA TO THE SATISFACTION OF THE ENGINEER.

CONDUIT AND WARNING TAPE TRENCH

JUNCTION BOX SHALL MEET OR EXCEED ANSI/SCTE 77-2007, TIER 15 AND SHALL BE INSTALLED FLUSH WITH THE FINISHED GRADE AS SHOWN.

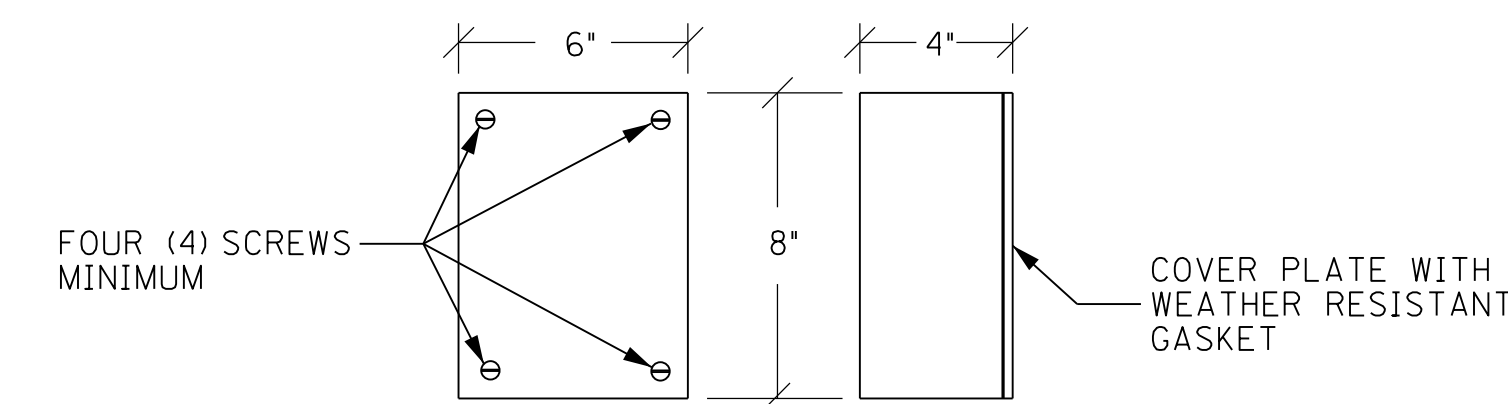
JUNCTION BOX FOR TRAFFIC SIGNAL INSTALLATIONS SHALL BE MARKED "TRAFFIC." JUNCTION BOX FOR LIGHTING INSTALLATIONS SHALL BE MARKED "LIGHTING." COVERS SHALL BE ATTACHED WITH A MINIMUM OF TWO 3/8" STAINLESS STEEL HEX BOLTS.

WHERE REQUIRED, JUNCTION BOX SHALL BE ORIENTED SUCH THAT THE DIMENSIONS COMPLY WITH THE NATIONAL ELECTRICAL CODE.

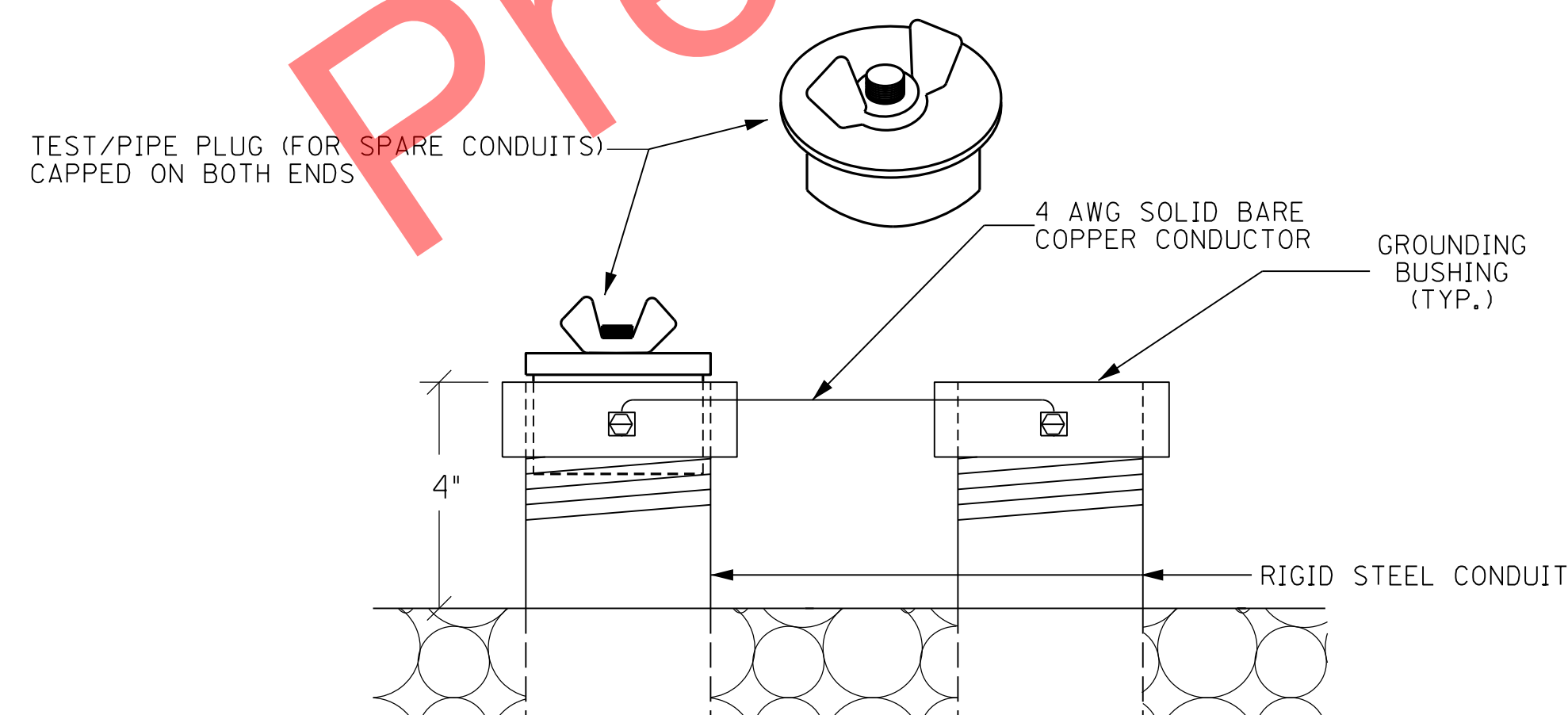


JUNCTION BOX

SPLICE BOX SHALL BE FABRICATED FROM MINIMUM 12 GAUGE STEEL AND GALVANIZED AFTER FABRICATION. BOXES SHALL HAVE NO KNOCKOUTS AND SHALL BE PROVIDED WITH A PLATE COVER WITH A WEATHER RESISTANT GASKET AND A MINIMUM OF FOUR SCREWS FOR ATTACHING THE PLATE COVER TO THE BOX. CABLE CLAMPS SHALL BE PROVIDED FOR CABLES ENTERING AND EXITING THE BOX.



SPLICE BOX

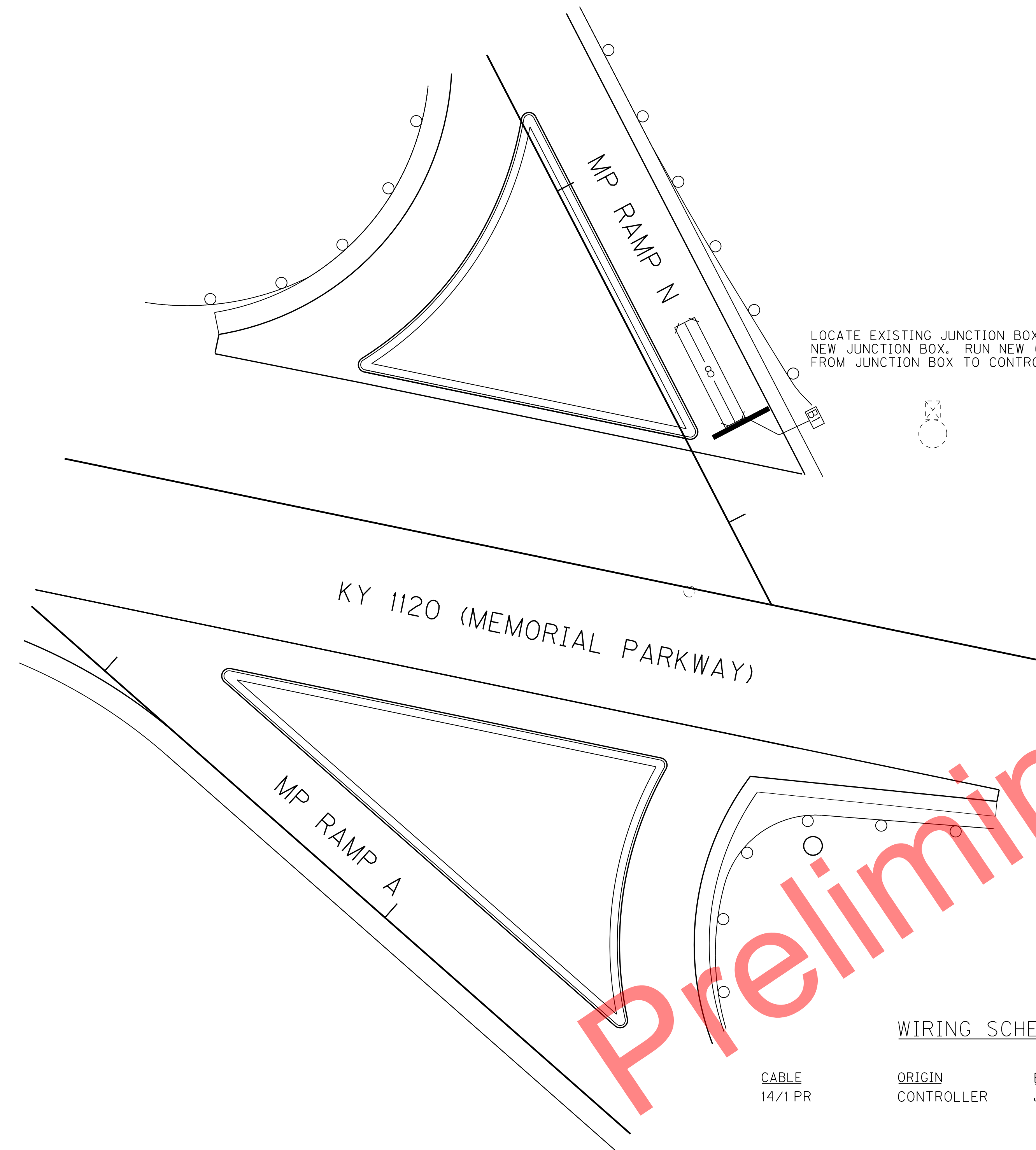


TEST/PIPE PLUG SHALL BE GALVANIZED STEEL OR STAINLESS STEEL MECHANICAL TYPE. IT SHALL HAVE A RUBBER GROMMET THAT EXPANDS INSIDE THE CONDUIT TO SEAL THE CONDUIT.

TEST/PIPE PLUG(FOR SPARE CONDUITS) AND GROUNDING DETAIL

FILE NAME: G:\DOCUMENTS AND SETTINGS\ATD.SWANEGAR\DESKTOP\6-2021 ESHEETS\NEW FOLDER\T050000J.B.DGN  
 USER: ted.swanegor  
 DATE PLOTTED: January 1, 0001  
 E-SHEET NAME: T050000J.B  
 MicroStation v8.11.7.180  
 1/5/2011

FILE NAME: G:\DOCUMENTS AND SETTINGS\TED.SWANSEGOR\DESKTOP\6-2021 ESHEETS\NEW FOLDER\T051005G.DGN  
 USER: ted.swansegor  
 DATE PLOTTED: January 1, 0001  
 E-SHEET NAME: T051005G  
 MicroStation v8.11.7.180



LOCATE EXISTING JUNCTION BOX AND REPLACE WITH NEW JUNCTION BOX. RUN NEW CABLE - NO. 14/1 PAIR FROM JUNCTION BOX TO CONTROLLER.

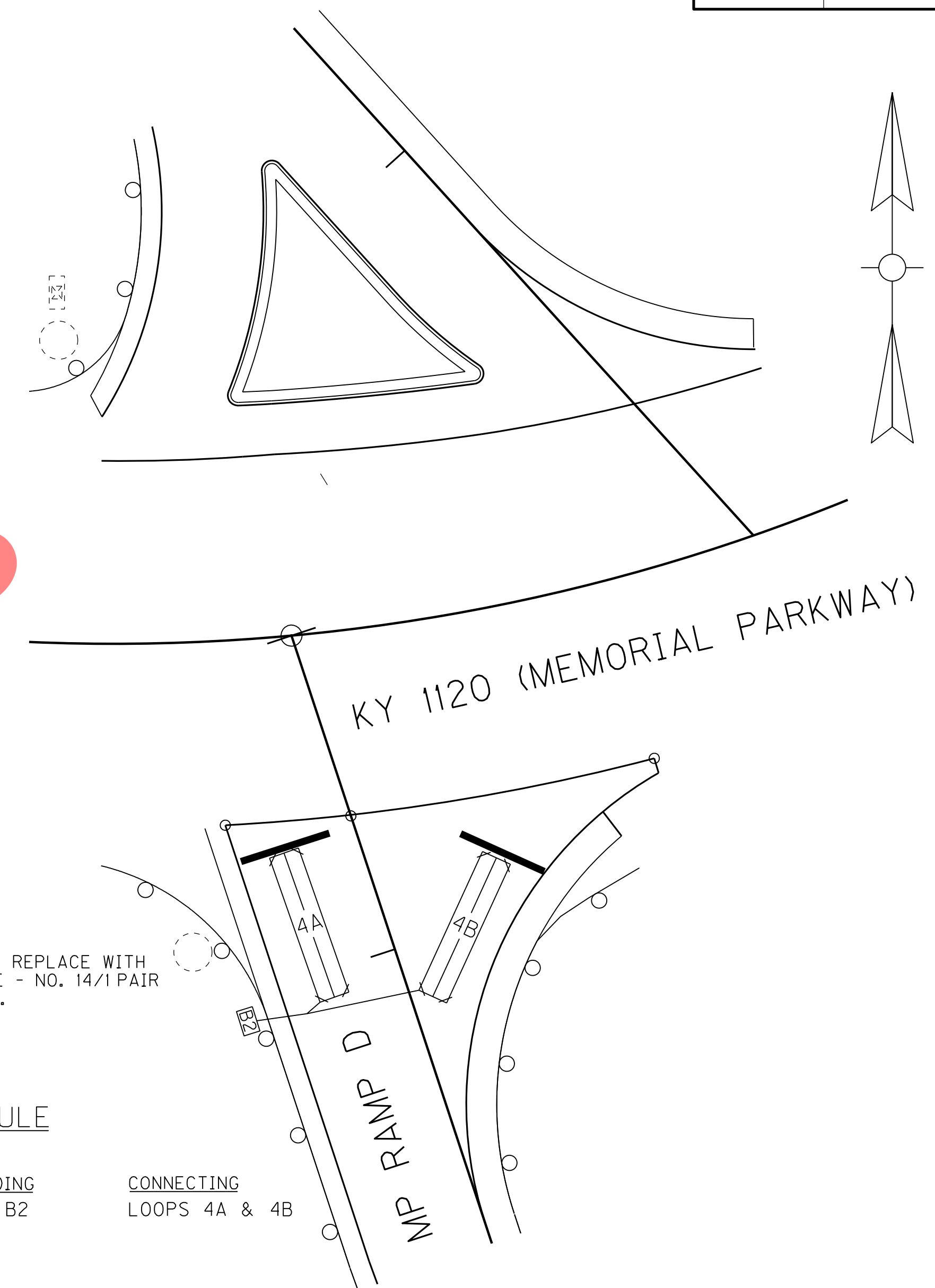
**WIRING SCHEDULE**

CABLE	ORIGIN	ENDING	CONNECTING
14/1 PR	CONTROLLER	JB BI	LOOP 8

**LOOP SCHEDULE**

LOOP	PHASE	SLOT	CHANNEL	SIZE	# OF TURNS	DIST. FROM STOP BAR
8	8	18	1	6X30	2	0

NOTE:  
 THE CONTRACTOR SHALL CONTACT DISTRICT UTILITY AGENT AND ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION. HAND DIG AREAS WHERE POLES OR CONDUIT CROSSES UTILITIES (TELEPHONE, GAS, WATER, SEWER, ETC.)



LOCATE EXISTING JUNCTION BOX AND REPLACE WITH NEW JUNCTION BOX. RUN NEW CABLE - NO. 14/1 PAIR FROM JUNCTION BOX TO CONTROLLER.

**WIRING SCHEDULE**

CABLE	ORIGIN	ENDING	CONNECTING
2-14/1 PR	CONTROLLER	JB B2	LOOPS 4A & 4B

**LOOP SCHEDULE**

LOOP	PHASE	SLOT	CHANNEL	SIZE	# OF TURNS	DIST. FROM STOP BAR
4A	4	16	1	6X30	2	0
4B	4	16	2	6X30	2	0

SCALE 1" = 20'

**LEGEND**

	EX. BASE MOUNTED CONTROLLER
	EX. POLE MOUNTED CONTROLLER
	EX. STEEL STRAIN POLE
	EXISTING WOOD POLE
	JUNCTION BOXES TYPE B
	LOOP DETECTOR

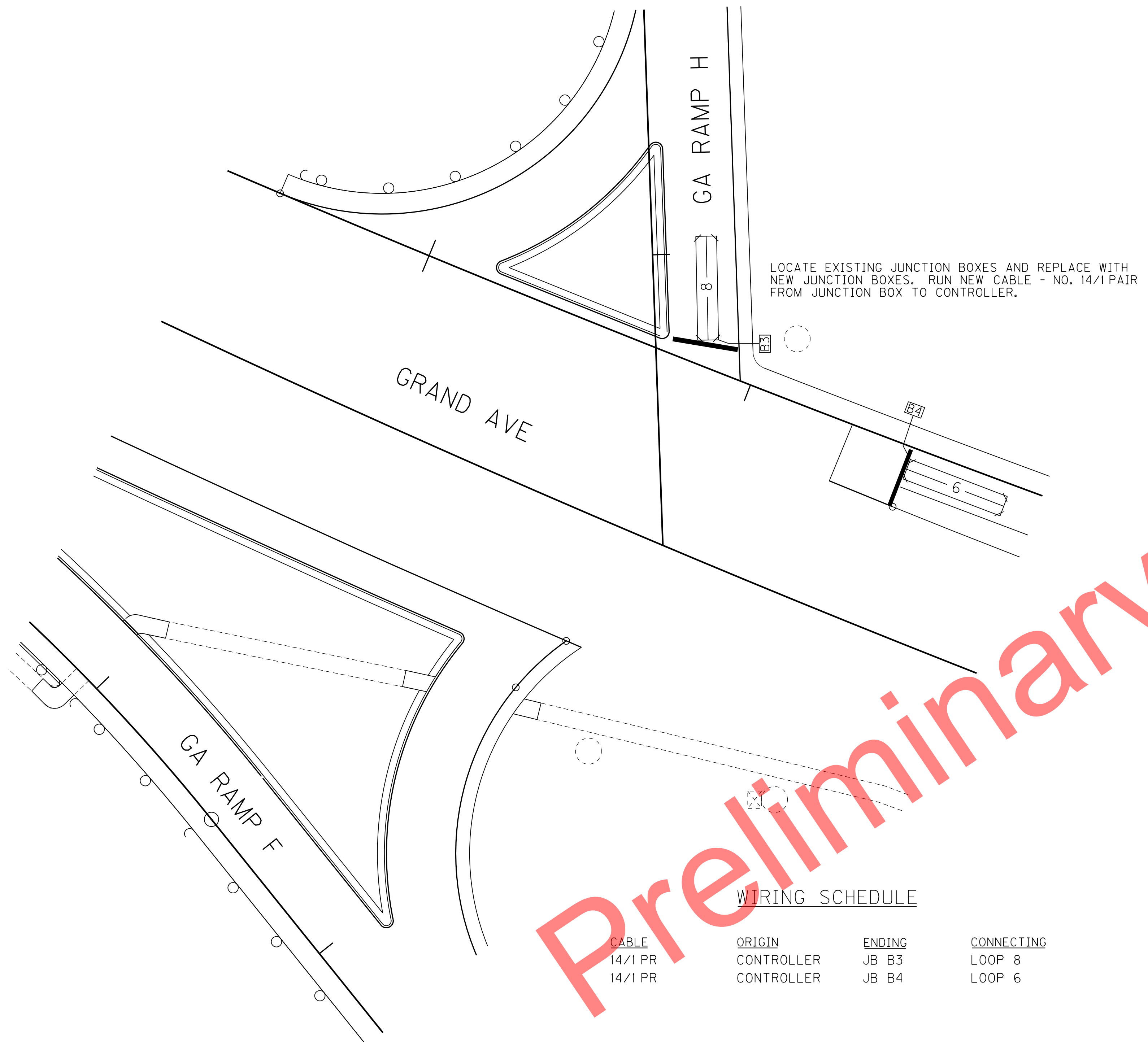
KY 1120 @ I 471  
 RAMP N & RAMP D  
 LOOP INSTALLATION

FILE NAME: G:\DOCUMENTS AND SETTINGS\TED.SWANSEGOR\DESKTOP\6-2021 ESHEETS\NEW FOLDER\T05200SG.DGN

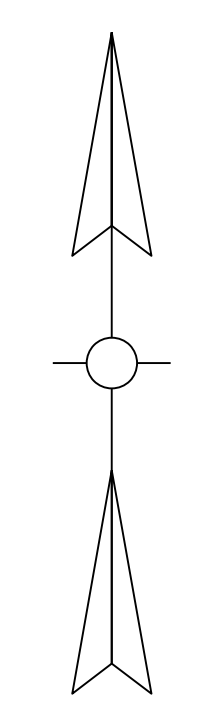
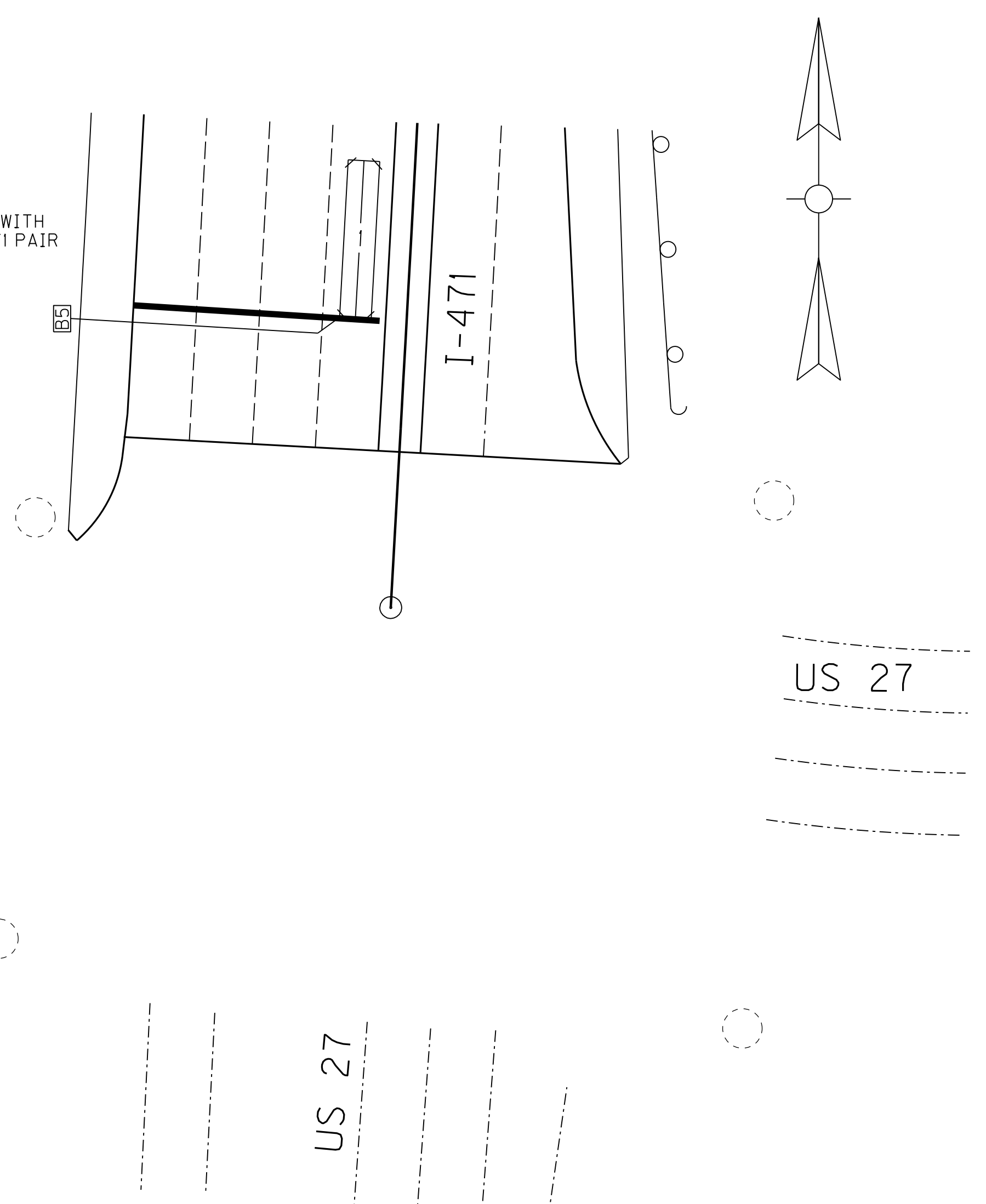
USER: ted.swansegor  
DATE PLOTTED: January 1, 0001

E-SHEET NAME: T05200SG

MicroStation v8.11.7.180



LOCATE EXISTING JUNCTION BOX AND REPLACE WITH NEW JUNCTION BOX. RUN NEW CABLE - NO. 14/1 PAIR FROM JUNCTION BOX TO CONTROLLER.



Preliminary Plans

WIRING SCHEDULE

CABLE	ORIGIN	ENDING	CONNECTING
14/1 PR	CONTROLLER	JB B3	LOOP 8
14/1 PR	CONTROLLER	JB B4	LOOP 6

WIRING SCHEDULE

CABLE	ORIGIN	ENDING	CONNECTING
14/1 PR	CONTROLLER	JB B5	LOOP 1

LOOP SCHEDULE

LOOP	PHASE	SLOT	CHANNEL	SIZE	# OF TURNS	DIST. FROM STOP BAR
1	1	11	1	6X30	2	0

LOOP SCHEDULE

LOOP	PHASE	SLOT	CHANNEL	SIZE	# OF TURNS	DIST. FROM STOP BAR
6	6	16	1	6X30	2	0
8	8	18	1	6X30	2	0

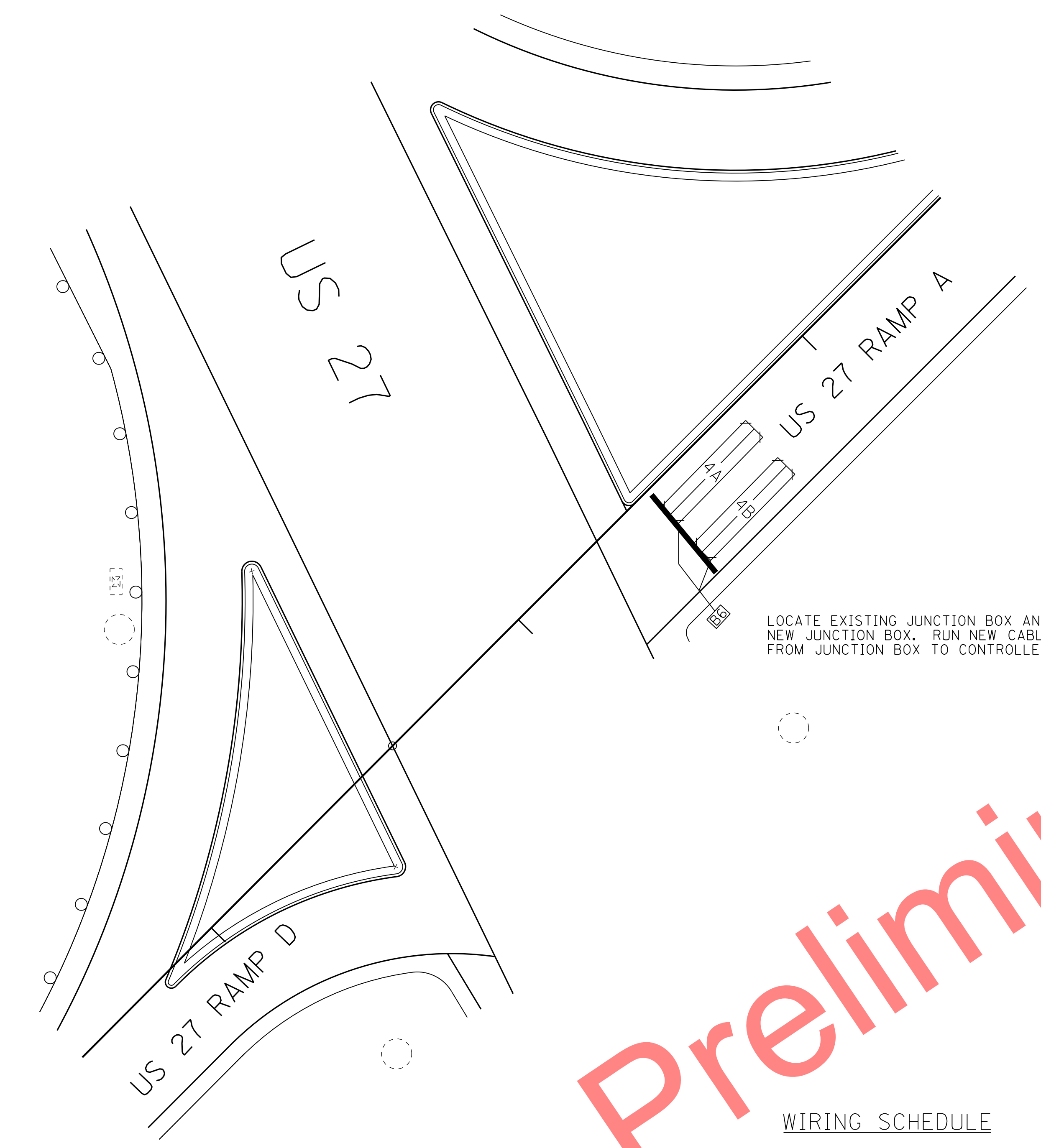
NOTE:  
THE CONTRACTOR SHALL CONTACT DISTRICT UTILITY AGENT AND ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION. HAND DIG AREAS WHERE POLES OR CONDUIT CROSSES UTILITIES (TELEPHONE, GAS, WATER, SEWER, ETC.)

SCALE 1" = 20'

LEGEND	
	EX. BASE MOUNTED CONTROLLER
	EX. POLE MOUNTED CONTROLLER
	EX. STEEL STRAIN POLE
	EXISTING WOOD POLE
	JUNCTION BOXES TYPE B
	LOOP DETECTOR

GRAND AVE. @ I 471 RAMP H &  
I 471 @ US 27  
LOOP INSTALLATION

FILE NAME: C:\DOCUMENTS AND SETTINGS\TED.SWANSEGAAR\DESKTOP\6-2021 ESHEETS\NEW FOLDER\T05300SG.DGN  
 USER: ted.swansegarr  
 DATE PLOTTED: January 1, 0001  
 E-SHEET NAME: T05300SG  
 MicroStation v8.11.7.180



LOCATE EXISTING JUNCTION BOX AND REPLACE WITH NEW JUNCTION BOX. RUN NEW CABLE - NO. 14/1 PAIR FROM JUNCTION BOX TO CONTROLLER.

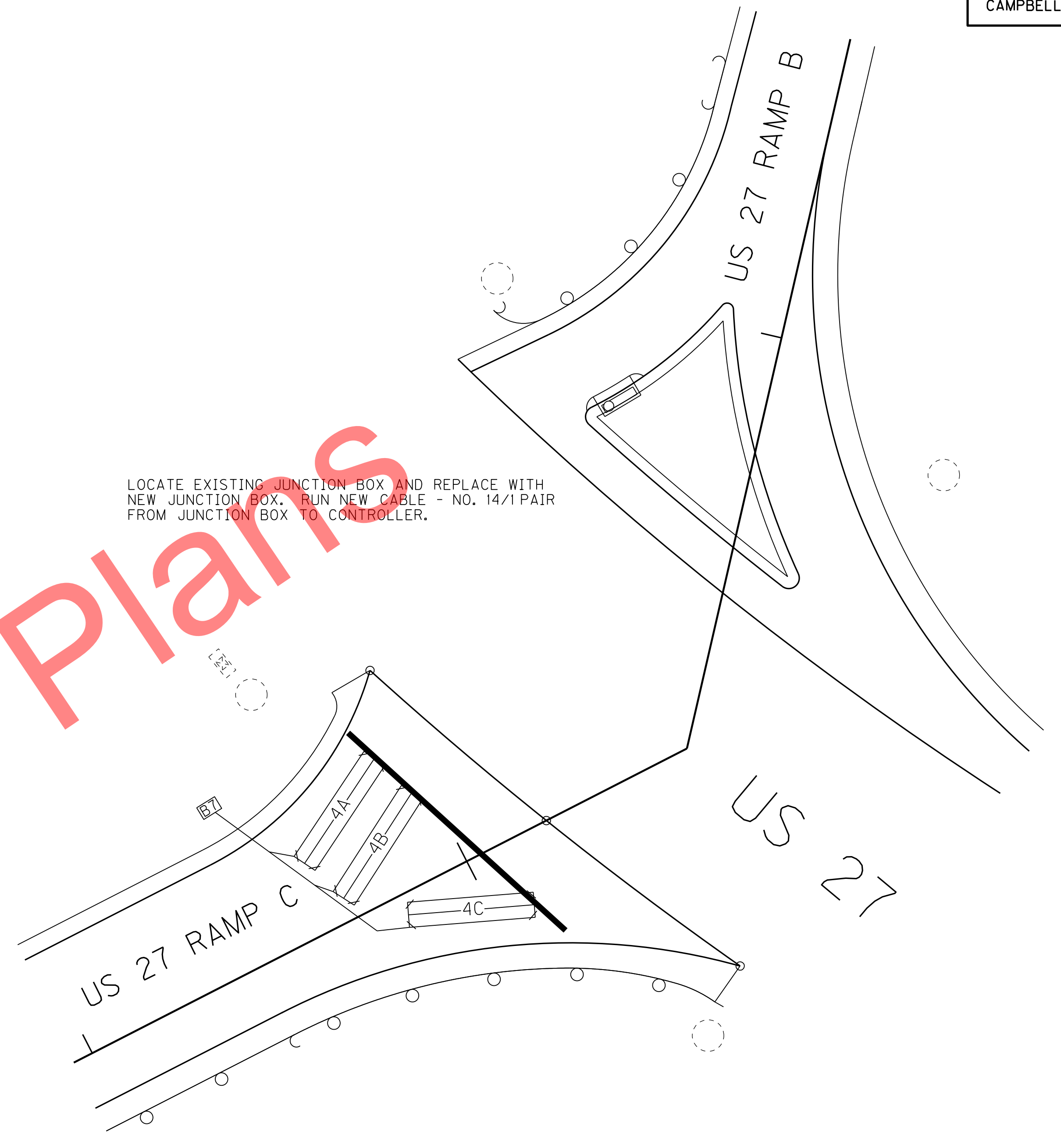
LOOP SCHEDULE

LOOP	PHASE	SLOT	CHANNEL	SIZE	# OF TURNS	DIST. FROM STOP BAR
4A	4	16	1	6X30	2	0
4B	4	16	2	6X30	2	0

WIRING SCHEDULE

CABLE	ORIGIN	ENDING	CONNECTING
2-14/1 PR	CONTROLLER	JB B6	LOOP 4A & 4B

NOTE:  
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LOCATE EXISTING JUNCTION BOX AND REPLACE WITH NEW JUNCTION BOX. RUN NEW CABLE - NO. 14/1 PAIR FROM JUNCTION BOX TO CONTROLLER.

WIRING SCHEDULE

CABLE	ORIGIN	ENDING	CONNECTING
3-14/1 PR	CONTROLLER	JB B7	LOOP 4A, 4B, & 4C

LOOP SCHEDULE

LOOP	PHASE	SLOT	CHANNEL	SIZE	# OF TURNS	DIST. FROM STOP BAR
4A	4	16	1	6X30	2	0
4B	4	16	2	6X30	2	0
4C	4	17	1	6X30	2	0

SCALE 1" = 20'

LEGEND

	EX. BASE MOUNTED CONTROLLER
	EX. POLE MOUNTED CONTROLLER
	EX. STEEL STRAIN POLE
	EXISTING WOOD POLE
	JUNCTION BOXES TYPE B
	LOOP DETECTOR

I 471 @ US 27 RAMP A  
 I 471 @ US 27 RAMP C  
 LOOP INSTALLATION